City of Beaverton

Engineering Design Manual and Standard Drawings

Adopted December 1997 (Res. 3434)
Revised October 1999 (Ord. 4060)

City of Beaverton

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CITY OF BEAVERTON

ENGINEERING DESIGN MANUAL
and
STANDARD DRAWINGS

Resolution 3434 Adopted December 1997
Amended by
Ordinance 4060 Adopted October 1999

COMMUNITY DEVELOPMENT DEPARTMENT
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CITY ENGINEER **DEVELOPMENT SERVICES ENGINEER**

PREFACE

This document sets forth the technical engineering standards that implement the City's Site Development Ordinance. It is published under the authority of Beaverton Code section 9.05.045, and is a compilation of Resolution 3434 (adopted December 1997) and Ordinance 4060 (adopted October 1999). Copies of the resolution and ordinance, as enacted, are available at the City Recorder's office.

Under the authority of Beaverton Code section 9.05.016, the City Engineer may officially interpret the provisions of this document. These interpretations are intended to promote uniformity in the application of the City's Site Development Ordinance. The City Engineer's official interpretations of this document may be used as precedent in the processing of other projects, if the facts and circumstances are substantially the same. A copy of the interpretations is available from the City's Development Services Counter and on the City's Web page.

Unless otherwise specified below, this document is to be used in conjunction with the current editions of the following adopted codes and standards:

- Oregon Revised Statutes
- Oregon Administrative Rules
- City of Beaverton Municipal Code
- City of Beaverton Development Code
- Unified Sewerage Agency Resolutions and Orders
- Manual of Uniform Traffic Control Devices
- AASHTO "A Policy on Geometric Design of Highways and Streets"
- American Water Works Association Standards
- American Public Works Association Standard Specifications for Public Works Construction (current version at the time of this printing is the 1990 addition with the June 22, 1992 and the September 19, 1996 revisions)

Additional notes:

If work is proposed in the Washington County, City of Portland, or the Oregon Department of Transportation right of ways, the applicable standards from that agency will govern, including applicable permit requirements.

If work is proposed in the Tualatin Valley Water District, West Slope Water District, Raleigh Water District, or the City of Portland water service area, the applicable standards from that agency will govern, including applicable permit requirements.

Work in or near wetlands, sensitive areas, floodplains, and floodways may require permits and/or approvals from the Army Corps of Engineers and/or the Oregon Division of State Lands (DSL).

Other permits and standards may be applicable to specific projects. The applicant bears the responsibility to obtain all necessary permits and to apply with all applicable standards related to any specific project.

100 ABBREVIATIONS and Definitions

As used herein, unless the context requires otherwise:

"AASHTO"	means the American Association of State Highway and Transportation Officials.
"AC"	means asphaltic concrete.
"ACI"	means American Concrete Institute.
“ADA”	means Americans with Disabilities Act of 1990.
“ADT”	means Average Daily Traffic.
“ALTA Survey”	means American Land Title Association Survey.
“ANSI”	means American National Standards Institute.
“APWA”	means American Public Works Association.
“ASTM”	means Society for Testing and Materials.
“AWWA”	means American Water Works Association.
“BDR”	means Board of Design Review for the City of Beaverton.
“Bicycle”	means a vehicle having two tandem wheels, propelled solely by human power.
“Bicycle facilities"	means improvements and provisions which accommodate or encourage bicycling, including parking facilities, maps, signs, bike lanes, multi-use paths, and shared roadways designated for bicycle use.
"Bicycle lane"	means the area within the street right-of-way designated specifically for use by bicyclists. The same area may also be referred to as a "bike lane." Bicycle lanes are striped and accommodate only one-way travel.
“Bikeway”	means, in general, any path or roadway facility that is intended and suitable for bicycle use.
“CARV”	means Combination Air and Vacuum Release Valve.
“CBE”	means crushed base equivalent (CBE), which is the number that directly relates the traffic coefficient to the required number of inches of rock for street structural sections.
“CBR”	means California Bearing Ratio.
“City Engineer”	means City Engineer or designated representative.
“DEQ”	means Oregon Department of Environmental Quality.
“Development Code”	means the Beaverton Development Code (Ordinance 2050 and Code amendments).
“Director”	means the Director of the Community Development Department.
“DSL”	means Division of State Lands.

“Engineer”	means the design engineer, stamping engineer, or engineer of record.
“EPA”	means U.S. Environmental Protection Agency.
“Facilities Review Committee”	means the committee that consists of the Planning Manager, Operations and Maintenance Director, City Engineer, Traffic Engineer, Police Chief, and Fire Chief, or their designees. In addition, representatives may attend from the following: private utility companies, School District #48, Tualatin Hills Park and Recreation District, Washington County, Unified Sewerage Agency, the Oregon Department of Transportation, along with the Tualatin Valley, West Slope, and Raleigh Water Districts. This group of people provides analysis and recommendations for projects affecting the physical development of the City of Beaverton.
“FEMA”	means Federal Emergency Management Agency.
“GPS”	means Global Positioning System.
“IE”	means Invert Elevation.
“Intersection”	means the area jointed by two (2) or more roads intersecting. For approaches of a continuous street at an acute curve or some other angle point with different street names.
"Multi-use Path"	means an off-street path that can be used by several transportation modes, including bicycles, pedestrians and other non-motorized modes. Multi-use paths accommodate two-way travel.
“MUTCD”	means Manual on Uniform Traffic Control Devices.
“NEC”	means National Electric Code with Oregon amendments.
“OAR”	means Oregon Administrative Rules.
“ODOT”	means Oregon Department of Transportation.
“ORS”	means Oregon Revised Statute.
“OS and Y”	means Outside Stem and Yoke.
“OSHD”	means Oregon State Highway Division.
“OSHA”	means Occupational Safety and Health Administration.
“Parking Lot”	means paved surfaces on private property intended for the movement and storage of 6 (six) or more vehicles.
“PRV”	means Pressure Reducing Valve.
“Review Authority”	means City staff that the City Engineer consults when a decision regarding a design standard modification is made. For the purposes of this manual, these staff include the Maintenance and Operations Director, Fire Marshal, Traffic Engineer, and Development Services Engineer.
"Shared Roadway"	means a street that is recommended for bicycle use, but that does not have a specific area designated for bicycle use within the right-of-way.

"Sidewalk"	means the area located along streets, within the right-of-way or easement, separated by a curb, planter, or both from the street and designated for use by pedestrians.
“Street”	means a public way which affords the principal means of access to abutting property.
“TCDH”	means Traffic Control Device Handbook.
“Traffic Coefficient”	means a number used in determining the structural section of a street.
"Trail"	when used in the context City of Beaverton Comprehensive Plan, means a multi-use path.
"Transportation Plan"	means the transportation element of the City's Comprehensive Plan.
“UBC”	means Uniform Building Code with Oregon amendments.
“UFC”	means Uniform Fire Code with Oregon amendments.
“UL”	means Underwriter's Laboratory.
“UMC”	means Uniform Mechanical Code with Oregon amendments.
“UPC”	means Uniform Plumbing Code with Oregon amendments.
“USA”	means Unified Sewerage Agency of Washington County.
“Utility”	means the overhead or underground wires, pipelines, conduits, ducts, or other structures owned, operated, or maintained in or across a public right-of-way or easement.
“Wetlands”	means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Identification and delineation of jurisdictional wetlands and wetland boundaries shall be done by a qualified biologist using applicable State and Federal guidelines.

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