

Sources

These Standards compiled from information or input received from the following sources:

American Public Works Association
American Water Works Association
Newport Municipal Code
Oregon Department of Environmental Quality
Oregon Department of Transportation
Oregon Standards and Specifications for Construction
Portland Cement Association
City of Newberg
City of Bend
City of Tigard
City of Hood River
City of Medford

14.44.030 Engineering Design Criteria, Standard Specifications and Details

The design criteria, standard construction specifications and details maintained by the City Engineer, or any other road authority within Newport, shall supplement the general design standards of this Chapter. The city's specifications, standards, and details are hereby incorporated into this code by reference.

INDEX

SECTION 1: General

- ✓ Authority and Purpose
- ✓ Questions Property Owners Should Discuss with Designers
- ✓ Frontage Improvements

- ✓ Community Development Dept
- ✓ Engineering Department
- ✓ Locates
- ✓ Boundary / Property Lines
- ✓ Service Line
- ✓ Privately Owned Utilities
- ✓ Existing Connections
- ✓ Potholing
- ✓ Property Corners / Survey Markers
- ✓ Owner Builder
- ✓ Owner Developer
- ✓ Project Engineer
- ✓ Contractor
- ✓ Intent of Engineering Design and Construction Standards
- ✓ Interpretation
- ✓ Order of Precedence
- ✓ Revisions to Engineering Design and Construction Standards
- ✓ Non-Enforcement
- ✓ Special Facility Designs
- ✓ Project Engineer's Responsibilities
- ✓ Approval of Alternate Materials, Methods, or Design
- ✓ Responsibility for Exceptions
- ✓ Modification Criteria
- ✓ General
- ✓ OSS Conflicts
- ✓ Exception Submittal
- ✓ Review
- ✓ Appeal
- ✓ Contractor's Site Responsibilities
- ✓ Qualified Personnel
- ✓ Work Hours, Trespass, Staging Areas, and Sanitation
- ✓ Materials
- ✓ Protecting Existing Utilities
- ✓ Field Relocation
- ✓ Preservations, Restoration, and Cleanup
- ✓ Erosion and Sediment Control

- ✓ Erosion Control Slope Mitigation
- ✓ Erosion Control Maintenance
- ✓ Before Commencing Work
- ✓ Agreements and Reviews
- ✓ Permits and Fees
- ✓ Pre-Construction Meeting
- ✓ Business License
- ✓ Water Account
- ✓ Safety During Construction
- ✓ Safety Requirements
- ✓ Temporary Traffic Control
- ✓ Blasting
- ✓ Fire Safety During Construction
- ✓ Protection of Fire Hydrants
- ✓ Enforcement
- ✓ Violation
- ✓ Private Development Requirements
- ✓ Airport Design
- ✓ Survey Plat
- ✓ Pre-Design Conference
- ✓ Supporting Information
- ✓ Electronic Drawing Format for As-Built Submittals
- ✓ Coordinate System
- ✓ Plot Styles
- ✓ Units
- ✓ Model Space and Paper Space
- ✓ Drawing Orientation
- ✓ External Reference (Xref)
- ✓ Sheet Layout
- ✓ Sheet Size
- ✓ Scale of Plans
- ✓ Scale of Symbols
- ✓ Leader Lines
- ✓ Page Layout
- ✓ Construction Notes
- ✓ Standard Drawings
- ✓ Terms and Abbreviations
- ✓ Professional Stamps
- ✓ Revisions
- ✓ General Design Considerations
- ✓ Standard Utility Locations
- ✓ Joint Trenching Crossing City Owned Infrastructure

- ✓ Joint Trenches Non-City Owned Utility
- ✓ Typical Trench Detail for Paved Roads
- ✓ Typical Trench Detail for Gravel Roads
- ✓ Street Cut / T-Patch
- ✓ Pipe Anchor / Cut-off Wall Details
- ✓ Pothole Utility Location Backfill
- ✓ Design Exception Form
- ✓ General Standard Drawings

SECTION 2: ROW Permits and Plan Submittal

- ✓ Undeveloped ROW
- ✓ Developed ROW
- ✓ ROW in Wetlands
- ✓ Separation of Permit Authority
- ✓ Construction Levels
- ✓ Level 1
- ✓ Level 2
- ✓ Minimum Required Plans
- ✓ Cover Sheet
- ✓ ROW Plan Sheet – General Notes
- ✓ ROW Profile Sheet – General Notes
- ✓ Subdivision Development
- ✓ Plan Sheet – Requirements for Subdivisions and Street Improvements
- ✓ Streets – Standard Layouts
- ✓ Streets - Roundabouts
- ✓ Sewer – Plan and Profile Views
- ✓ Water – Plan and Profile Views
- ✓ Stormwater – Plan and Profile Views
- ✓ Landscaping and Irrigation Plans
- ✓ Signing and Striping
- ✓ Grading
- ✓ Erosion and Sediment Control

- ✓ Plan Submittal
- ✓ Plan Check
- ✓ Two-Part Plan Review
- ✓ Provisional Engineering Review
- ✓ Transition to Existing Infrastructure
- ✓ Final ROW Review
- ✓ Site Plan
- ✓ Right-of-Way Permits
- ✓ Developer’s Responsibility
- ✓ ROW Application Submittal
- ✓ Active Period
- ✓ ROW Permit Work
- ✓ ROW Permits for Tree Removal or Tree Trimming
- ✓ ROW Permits for Utility Companies
- ✓ ROW Permit Fees
- ✓ Fees for Utility Franchises
- ✓ New Service Fees
- ✓ Permit Extensions
- ✓ Working Without a Permit
- ✓ Permit Closeout
- ✓ ROW inspections
- ✓ Permit Assurances
- ✓ Insurance Requirements
- ✓ Indemnification
- ✓ Instructions for Completing ROW Permit Application
- ✓ Definitions
- ✓ Part 1: Work Location and Description
- ✓ Part 2: Contractor and Property Owner Information
- ✓ Applicant’s Declarations and Fees
- ✓ Part 4: City Review

SECTION 3: Wastewater

- ✓ Performance Standards
- ✓ Conflicts and Obstructions
- ✓ Sanitary Sewer Systems
- ✓ Minimum Design Criteria
- ✓ Velocity
- ✓ Manning Equation

- ✓ Pipe Coefficient Inflow and Infiltration
- ✓ Fats, Oils and Grease (FOG)
- ✓ Flow Calculation
- ✓ Peak Factor (Domestic Flows Only)
- ✓ Line Diameter and Velocity
- ✓ Minimum Grade (Gravity)
- ✓ Inverted Siphons
- ✓ Flows in Pressure Sewers
- ✓ Minimum Velocity
- ✓ Maximum Velocity
- ✓ Pressure Sewer Appurtenances
- ✓ Connection to Existing Sewers
- ✓ Alignment and Cover
- ✓ Right-of-Way Location
- ✓ Waterline Crossings
- ✓ Minimum Cover
- ✓ Relation to Watercourses
- ✓ Sewer Main Design
- ✓ Depth
- ✓ Manholes
- ✓ Manholes (Pressure)
- ✓ Manholes (Pressure to Gravity Sewer)
- ✓ Manholes (Gravity)
- ✓ Alternate Manhole Features
- ✓ Manhole Placement
- ✓ Sewer Laterals
- ✓ Wyes
- ✓ Tees
- ✓ Insert-a-tee
- ✓ Sewer Lateral Connections
- ✓ By-Pass Pumping Requirements
- ✓ Cleanouts
- ✓ Waste Control from Industrial Developments Sample Manhole
- ✓ Sample Manhole
- ✓ Sewage Pump Station Design
- ✓ Wet-wells
- ✓ Working Capacity
- ✓ Emergency Capacity
- ✓ Design Flow
- ✓ Design Life
- ✓ Wet-well Wiring

- ✓ Level Control
- ✓ Hardware
- ✓ Pumps
- ✓ Pump Types
- ✓ Reliability and Redundancy
- ✓ Telemetry and SCADA
- ✓ Pump Control Panels
- ✓ Electrical Enclosure
- ✓ Standby Generator Receptacle
- ✓ Hydrogen Sulfide Protection
- ✓ Station Access
- ✓ Equipment Access
- ✓ Site Access
- ✓ Station Fencing
- ✓ Force Main Cleanout
- ✓ Flow Metering
- ✓ Bypass System
- ✓ Safety Systems
- ✓ Lift Station Standards
- ✓ Wastewater Design Standards
- ✓ Standard Manhole
- ✓ Doghouse Manhole
- ✓ Flat-top Manhole
- ✓ Pipes Less than 24" Diameter
- ✓ Manhole Base Standard Details
- ✓ Cast-In-Place Rebar Cage
- ✓ Standard Inside Drop Manhole
- ✓ Manhole Cover and Frame Details
- ✓ Manhole Frame Grade Adjustment
- ✓ Standard Service Connection and Later
- ✓ End of Main Line Clean Out
- ✓ Wastewater Standard Drawings

SECTION 4: Water System*

- ✓ Performance Standards
- ✓ Conflicts and Obstructions
- ✓ Pump Stations
- ✓ Pumps
- ✓ Pressure Release Valves
- ✓ PLC/SCADA Equipment

- ✓ Instrumentation
- ✓ Variable Frequency Drives
- ✓ Main Line
- ✓ Materials
- ✓ Minimum Pipe Size
- ✓ Alignment and Cover
- ✓ Separation with Wastewater and Other Utilities
- ✓ Easements
- ✓ Relation to Watercourses
- ✓ Velocities
- ✓ Pressures and Flow Calculations
- ✓ Pressure Reducing Vaults
- ✓ Pressure Reducing Valves
- ✓ Appurtenances
- ✓ Valve Location
- ✓ Gate Valves
- ✓ Butterfly Valves
- ✓ Air Release Valves and Combination Air/Vacuum Release Valves
- ✓ Extension Stems for Valve Operators
- ✓ Size
- ✓ Valve Boxes
- ✓ Meters
- ✓ Hot Tap Automatic Meter Reading Systems
- ✓ Vaults and Meter Boxes
- ✓ Manifolds
- ✓ Restrained Joints
- ✓ Mechanical Joint Restraint
- ✓ Thrust Blocks
- ✓ Testing
- ✓ Test Ports
- ✓ Tie-ins to Live Water System
- ✓ Chlorination
- ✓ Flushing
- ✓ Bac-tee Test
- ✓ Service Lines
- ✓ Premise Isolation
- ✓ Backflow Preventions
- ✓ Double Check Valves
- ✓ Between Main and Meter
- ✓ Sizing

- ✓ Fire Services, Flows and Hydrants
- ✓ Fire Flow Analysis
- ✓ Fire Flow Requirements
- ✓ Fire Service
- ✓ Fire Sprinkler Lines
- ✓ Fire Hydrants
- ✓ Location
- ✓ Operation of Valves in City
- ✓ Typical Water Valve Locations (Minimum)
- ✓ Standard Water Valve Setting Detail
- ✓ Valve Operator Extension Detail
- ✓ Standard Fire Hydrant Assembly Detail
- ✓ Blow-Off Assembly
- ✓ 2" Combination Air Valve Assembly
- ✓ Standard 1" Water Service Connection
- ✓ Standard 2" Water Service Connection
- ✓ 3" Water Service with 3" Meter
- ✓ Concrete Thrust Blocking Details
- ✓ Reduced Pressure Backflow Assembly (2½" Up)
- ✓ Double Check Valve Assembly (¾" - 2")
- ✓ Double Check Detector Assembly (2½" Up)
- ✓ Water Standard Drawings

*Reviewed by Justin Scharbrough and Matt Hall

SECTION 5: Storm Drainage

- ✓ General Design Requirements
- ✓ Performance Standards
- ✓ Conflicts and Obstructions
- ✓ Utility Notification
- ✓ General
- ✓ Protection
- ✓ Property Access
- ✓ Abandoned Utilities

- ✓ Private Storm Drains
- ✓ Private and Public Proprietary Treatment Systems
- ✓ Private
- ✓ Public
- ✓ Small Developments
- ✓ Fee in Lieu of Construction Payment
- ✓ Public Improvements Requirements
- ✓ Storm Water Analysis Report
- ✓ Design Parameters
- ✓ Design Storm
- ✓ Design Volume
- ✓ Design Flow
- ✓ Flow Control and Conveyance
- ✓ Flow Determination
- ✓ Design Event/Storm Frequency
- ✓ Treatment Requirements
- ✓ Design Considerations
- ✓ Impervious Surface Area
- ✓ Figure 6A – Water Quantity and Quality Facilities
- ✓ Storm Design 7 Control Standards
- ✓ Conveyance
- ✓ General Requirements
- ✓ Hydraulic Design Criteria
- ✓ Facility Design Criteria
- ✓ Walls in Water Quantity Facilities
- ✓ Dry Wells
- ✓ Wet Wells
- ✓ Upstream Impacts
- ✓ Downstream Impacts
- ✓ Intersection Valley Gutters
- ✓ Cross-Lot Drainage
- ✓ Outlet Protection/Dissipation of Runoff
- ✓ Subsurface Drains
- ✓ Erosion Protection
- ✓ Planting/Vegetation
- ✓ Fencing in Retention/Detention Area
- ✓ Pipe and Structure Requirements
- ✓ Pipe Diameter and Length

- ✓ Placement and Alignment
- ✓ Mandrel Testing
- ✓ Outfalls
- ✓ Sequential Implementation
- ✓ Embankments
- ✓ Access Road
- ✓ Alignment, Location and Cover
- ✓ Alignment
- ✓ Right-of-Way Location
- ✓ Pipe Cover
- ✓ Structures
- ✓ Manholes
- ✓ Water Quality Manholes
- ✓ Inside-Drop Manholes
- ✓ Manhole Pipe Connectors
- ✓ Pipe Stub-outs for Future Sewer Connections
- ✓ Curb Inlets and Catch Basins
- ✓ Area Drains
- ✓ Ditch Inlets
- ✓ Culverts
- ✓ Tidegates
- ✓ Bridges
- ✓ Retaining Walls
- ✓ Maintenance Responsibilities
- ✓ Public Facilities
- ✓ Private Facilities
- ✓ Erosion and Sediment Control Submittal Prior to Construction
- ✓ Storm Drainage Design Standards
- ✓ Standard Storm Manhole Pipes Less than 24" Diameter
- ✓ Doghouse Manhole
- ✓ Flat-Top Manhole
- ✓ Manhole Base Standard Details
- ✓ Standard Inside Drop Manhole
- ✓ Storm Manhole Cover and Frame Details
- ✓ Storm Manhole Frame Grade Adjustment
- ✓ 24" Square Curbside Catch Basin Inlet
- ✓ In Sidewalk Curb Inlet

- ✓ In Sidewalk Curb Inlet Tops
- ✓ Manhole Curb Inlet
- ✓ Ditch Inlet
- ✓ Area Drain Inlet
- ✓ Headwall with Tidegate
- ✓ Storm Standard Standards Drawings

SECTION 6: Streets **

- ✓ Performance Standards
- ✓ Conflicts and Obstructions
- ✓ Deviation from Streets Standards
- ✓ Right-of-way and Pavement Width and Depth
- ✓ Access
- ✓ Traffic Impact Analysis (TIA)
- ✓ Report and Study Objectives
- ✓ The TIA shall include:
- ✓ Street Components
- ✓ Intersections
- ✓ Arterial Intersections
- ✓ Collector and Local Street Intersections
- ✓ Half-Street Construction
- ✓ Permanent Dead End Streets
- ✓ Gutter Flow Lines
- ✓ Street Runoff
- ✓ Street Classification
- ✓ Design Speed
- ✓ Intersection Sight Distance
- ✓ Intersection Sight Distance vs. Clear Vision Area
- ✓ Clear Visibility Area
- ✓ Intersection Sight Distance
- ✓ Request for Deviation
- ✓ Sight Distance Obstructions
- ✓ Landscaping / Vegetation
- ✓ Street Geometry
- ✓ Local Street Design for Adverse Topography
- ✓ Curb Radius and Curb Returns
- ✓ Horizontal/Vertical Curves and Grades
- ✓ Horizontal Alignment
- ✓ Cross slope
- ✓ Super-elevation

- ✓ Horizontal Curves
- ✓ Vertical Alignment
- ✓ Sight Distance
- ✓ Grades
- ✓ Minimum Grades
- ✓ Maximum Grades
- ✓ Cross Slopes
- ✓ Pavement Design
- ✓ Other Right-of-way Design Elements
- ✓ Driveways
- ✓ Driveway Design
- ✓ Sidewalk Through Driveways
- ✓ Drop Panel Driveways
- ✓ Commercial Driveways
- ✓ Sidewalk
- ✓ Wedge Wall
- ✓ Pony Walls
- ✓ Obstructions
- ✓ Horizontal Alignment
- ✓ Vertical Alignment
- ✓ Surface alterations
- ✓ Encroachments
- ✓ Concrete Curb
- ✓ Curb Ramps, Crosswalks, and Curb Extensions
- ✓ Curb Ramps
- ✓ Number and Direction of Curb (ADA) Ramps
- ✓ Crosswalks
- ✓ Curb Extensions
- ✓ Additional Requirements
- ✓ Planter Strip
- ✓ Parking
- ✓ On-Street Parking
- ✓ Multi-Use Paths
- ✓ Public Use Stairways
- ✓ Bikeways
- ✓ Off-street Bike Paths
- ✓ Traffic Control Signage
- ✓ Sign Design
- ✓ Sign Placement
- ✓ Horizontal and Vertical Clearance
- ✓ Street Name Signs
- ✓ Street Names
- ✓ Colors and Visibility
- ✓ Pavement and Curb Marking

- ✓ Pavement Marking
- ✓ Curb Painting
- ✓ Street Lighting, Trees, and Names
- ✓ Street Lighting
- ✓ Additional Street Lights
- ✓ Illumination Design Requirements
- ✓ Street Trees
- ✓ Underground Utilities
- ✓ City Owned
- ✓ Non-City Owned
- ✓ Four-Year Moratorium Street Cut Replacement Guidelines
- ✓ Trench Restoration Requirement
- ✓ Moratorium Repair
- ✓ Striping Restoration
- ✓ Mailboxes
- ✓ Street Standard Drawings
- ✓ Standard Street Section: Local, Yield, and Shared Streets
- ✓ Standard Street Section: Major Collector And Neighborhood Collector Streets
- ✓ Typical Concrete Section
- ✓ Typical Roadway Layouts: Major Collectors, Neighborhood Collectors, Local Streets
- ✓ Typical Roadway Layouts: Yield and Shared Streets
- ✓ Typical Cul-De-Sac Detail
- ✓ Standard one-Way Driveway Approach Detail
- ✓ Drop Panel Driveway One-Way Approach Detail
- ✓ Commercial One-Way and Two-Way Driveway Reinforcement Detail
- ✓ Multi-Use Path
- ✓ Pony Walls & Wedge Walls
- ✓ Standard Sidewalk Detail
- ✓ Sidewalk and Ramp Details with Planter Strip

- ✓ Sidewalk and Ramp Detail Without Planter Strip
- ✓ Pedestrian Crossing Details
- ✓ Truncated Dome Placement
- ✓ Curb and Gutter Detail
- ✓ Valley Gutter Detail
- ✓ Extruded Curb Detail
- ✓ Standard Sign Detail
- ✓ Clear Vision Area at Intersection
- ✓ Bollard Detail

**Reviewed by Justin Scharbrough

SECTION 7: Landscape***

- ✓ Purpose
- ✓ Applicability
- ✓ Landscape Plan Submittals
- ✓ Design Parameters
- ✓ Stormwater Source Control Principles
- ✓ Water Efficient Landscaping Principles
- ✓ Hydrozoning
- ✓ Landscape Conservation
- ✓ Tree Protection Plan
- ✓ Tree Removal and Relocation
- ✓ Street Trees and Plants
- ✓ Tree Staking
- ✓ Approved Street Tree List
- ✓ Non-approved Street Trees and Plants
- ✓ Height Standards for Street Trees and Plants
- ✓ Size of Street Trees and Plants
- ✓ Street Tree Location and Spacing
- ✓ Exemptions
- ✓ Standard Materials and Equipment
- ✓ Tree Wells
- ✓ Soil Amendments
- ✓ Mulches
- ✓ Fertilizers
- ✓ Irrigation Plan Submittals
- ✓ Design Parameters
- ✓ Safety
- ✓ Hydro-zones

- ✓ Hydraulic Calculations
- ✓ Drip Irrigation Design
- ✓ Standard Materials and Equipment
- ✓ Irrigation Controllers
- ✓ Automatic Control Valves
- ✓ Sprinkler Heads
- ✓ Pipe
- ✓ Blowouts
- ✓ Benches
- ✓ Root Barriers
- ✓ Tree Wells

***Reviewed by Anita (and Mike) P & Rec

SECTION 8: Construction Observation

- ✓ Purpose
- ✓ Authority and Requirements
- ✓ General
- ✓ Authority of the City
- ✓ Roles and Responsibilities
- ✓ Developer
- ✓ Engineer of Record
- ✓ Resident Project Representative
- ✓ Limitations of the Engineer of Record and Resident Project Representative
- ✓ City Authorized Representative
- ✓ City Observer.
- ✓ Construction Management
- ✓ Pre-Construction Meeting
- ✓ Progress Meetings
- ✓ Meetings with Partner Agencies
- ✓ Changes to Approved Plans or Character of Work
- ✓ Contract Document Revisions
- ✓ Modification Criteria
- ✓ Site Visits and Observation
- ✓ General
- ✓ Limitations of City Observer Services:
- ✓ Advance Notification for City Services
- ✓ Scheduling

- ✓ Scheduling Project Observation
- ✓ Scheduling Construction Work
- ✓ Communications
- ✓ Written Communications
- ✓ Other Considerations
- ✓ Contractor Responsibilities
- ✓ General
- ✓ Scheduling
- ✓ Public Notification
- ✓ Obstruction and Protection of Fire Hydrants
- ✓ Work Hours, Trespass, Staging Areas, and Sanitation
- ✓ Safety Requirements
- ✓ Materials
- ✓ Environmental Protection during Construction
- ✓ General Policy and Requirements
- ✓ Erosion Control
- ✓ Contractor’s Responsibility for Existing Utilities
- ✓ Field Relocation
- ✓ Blasting
- ✓ Preservation, Restoration, and Cleanup
- ✓ Enforcement
- ✓ General
- ✓ Violation

SECTION 9: Project Closeout

- ✓ Post-Construction Review
- ✓ Closeout Process
- ✓ Use of System Improvements
- ✓ Final Acceptance and Project Closeout Documentation
- ✓ Maintenance and Warranty
- ✓ Warranty Period
- ✓ Preservation and Restoration
- ✓ Site Restoration and Cleanup
- ✓ Street Cleanup
- ✓ Preservation of Irrigation and Drainage Ditches
- ✓ Record Drawing Stamp and Certification Statements

- ✓ Record Drawings Requirements
- ✓ Minimum information on as-built drawings:
- ✓ General
- ✓ Street
- ✓ Storm Drains
- ✓ Wastewater
- ✓ Water Main
- ✓ Plats
- ✓ Drawing Submittal

SECTION 10: Glossary of Terms

- ✓ Abbreviations
- ✓ Agencies
- ✓ Definitions

SECTION 11: Appendices

- ✓ Appendix A - Construction Observation Tasks And Guidelines
- ✓ Appendix B - Compaction Requirements
- ✓ Appendix C - Plan Submittal Checklist
- ✓ Appendix D – City Of Newport Construction Notes For Private Development
 - General Notes
 - City Standard ESCP Notes
 - Grading Notes
 - Asphalt Concrete Placement (ACP) Notes
 - Sanitary And Storm Pipe Construction Notes
 - Water Construction Notes
- ✓ Appendix E – Pre-Construction Meeting Agenda For Private Development
- ✓ Appendix F - Project Completion Requirements For Maintenance Status for Private Development
- ✓ Appendix G – Project Closeout Checklist For Public Improvement Projects

- ✓ Appendix H – Row Application
And Documentation
- ✓ Appendix I – Right-Of-Way
Permit Requirements
- ✓ Appendix J – Tree Removal
Checklist
- ✓ Appendix K – Contracting &
Bidding Processes
- ✓ Appendix L –
Developer/Engineer
Agreement
- ✓ Definitions
- ✓ Contract Types
- ✓ Bidding Process