

City of Dayton

PUBLIC WORKS DESIGN STANDARDS

*Last Updated **June 2023***
Originally adopted September 2006

City of Dayton, Oregon
PO Box 339
Dayton, OR 97114
(503) 864-2221

PUBLIC WORKS DOCUMENTS ORDER FORM

Name: _____

Company/Organization: _____

Address: _____

City: _____ State: _____ Zip _____

Phone: _____ Fax: _____

____ Copies of Dayton Development Ordinance @ \$30.00.....\$ _____

____ Copies of Dayton Zoning & Utility Maps @ \$35.00.....\$ _____

____ Copies of Public Works Design Standards @ \$45.00.....\$ _____

Postage & Shipping\$ _____

Total \$ _____

Make Checks Payable to the City of Dayton **Prepaid Orders Only**

Add \$5.00 postage/shipping for orders that must be shipped (standard U.S. mail or UPS ground service).

Mail Orders to: City of Dayton
PO Box 339
Dayton, OR 97114

Available at: Dayton City Hall
416 Ferry Street
Dayton, OR 97114

**CITY OF DAYTON
PUBLIC WORKS DESIGN STANDARDS**

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
DIVISION 1 GENERAL REQUIREMENTS	1-1
1.1 GENERAL	1-1
1.2 PURPOSE	1-2
1.3 ENGINEERING POLICY	1-3
1.4 DEFINITIONS AND TERMS	1-4
1.5 LOCATION OF UTILITIES WITHIN RIGHT-OF-WAY OR EASEMENT	1-8
1.6 PROVIDING FOR NEW & FUTURE DEVELOPMENT	1-10
1.7 TIME LIMITS FROM DRAWING APPROVAL TO CONSTRUCTION	1-12
1.8 PHASED DEVELOPMENT	1-12
1.9 PRE-DESIGN CONFERENCE/MEETING	1-12
1.10 DRAWING REVIEW PROCEDURE	1-15
1.11 CONSTRUCTION DRAWING SUBMITTAL REQUIREMENTS	1-18
1.12 EASEMENTS, ETC.	1-36
1.13 PUBLIC WORKS VARIANCES TO DESIGN STANDARDS	1-40
1.14 PRECONSTRUCTION CONFERENCE	1-42
1.15 CONSTRUCTION OBSERVATION, INSPECTION & TESTING	1-43
1.16 WARRANTY INSPECTIONS :	1-49
1.17 AS-BUILT DRAWINGS	1-49
 DIVISION 2 STREETS.....	 2-1
2.1 PURPOSE	2-1
2.2 APPLICABILITY	2-1
2.3 SPECIAL ITEMS.....	2-3
2.4 APPROVAL OF ALTERNATE MATERIALS AND METHODS	2-3
2.5 CONSTRUCTION DRAWINGS.....	2-3
2.6 CITY STANDARD DETAILS	2-4
2.7 EXISTING STREET CLASSIFICATIONS	2-4
2.8 OTHER JURISDICTIONS	2-4
2.9 DEFINITIONS AND TERMS	2-5
2.10 MATERIALS	2-8
2.11 IMPROVEMENT STANDARDS BY STREET CLASSIFICATION	2-12
2.12 STREET DESIGN MINIMUM SECTIONS	2-13
2.13 OVERLAYS	2-15
2.14 HORIZONTAL ALIGNMENT	2-16
2.15 MONUMENTATION	2-16
2.16 INTERSECTIONS & PEDESTRIAN CROSSINGS	2-17
2.17 VERTICAL ALIGNMENT AND STREET GRADES	2-20
2.18 STREET CROSS SECTIONS AND STREET CROSS SLOPES	2-22
2.19 GRADING WITHIN PUBLIC RIGHT-OF-WAY	2-22
2.20 CURBS AND GUTTERS	2-23
2.21 SIDEWALKS & MULTI-USE ACCESS ROUTES	2-24
2.22 CLEAR VISION AREA.....	2-27
2.23 CUL-DE-SACS, TURNAROUNDS	2-28
2.24 STUB STREETS, VEHICULAR NON-ACCESS PROVISIONS	2-29
2.25 TRANSITIONS	2-30
2.26 SUBSURFACE DRAINAGE.....	2-30
2.27 ACCESSIBLE ON-STREET PARKING	2-30
2.28 PARKING LOTS & LOADING ZONES	2-31
2.29 DRIVEWAY SPACING & LOCATION	2-35
2.30 DRIVEWAYS, DRIVEWAY APPROACHES, ALLEYS.....	2-35
2.31 PRIVATE STREETS, COMMON DRIVEWAYS, FLAGLOTS, FIRE LANES	2-39

**CITY OF DAYTON
PUBLIC WORKS DESIGN STANDARDS**

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
2.32 STREET LIGHTING	2-41
2.33 BARRICADES AND GUARDRAILS	2-42
2.34 BIKEWAYS	2-42
2.35 STREET SIGNS	2-42
2.36 CUTTING EXISTING STREETS & RESTORATION REQUIREMENTS	2-43
DIVISION 3 STORMWATER MANAGEMENT	3-1
3.1 PURPOSE	3-1
3.2 APPLICABILITY	3-1
3.3 SPECIAL ITEMS	3-2
3.4 APPROVAL OF ALTERNATE MATERIALS AND METHODS	3-3
3.5 CONSTRUCTION DRAWINGS	3-3
3.6 CITY STANDARD DETAILS	3-3
3.7 DEFINITIONS AND TERMS	3-4
3.8 MATERIALS	3-6
3.9 GENERAL DESIGN CONSIDERATIONS	3-11
3.10 DESIGN CALCULATIONS AND CAPACITY	3-14
3.11 OPEN CHANNELS	3-19
3.12 STORM DRAIN ALIGNMENT AND LOCATION	3-20
3.13 STORM DRAIN MINIMUM PIPE SIZE	3-22
3.14 STORM DRAIN MINIMUM COVER	3-23
3.15 STORM DRAIN MINIMUM SLOPE & ROUGHNESS COEFFICIENT	3-23
3.16 UNDERGROUND WARNING TAPE & TONING / TRACER WIRE	3-25
3.17 MANHOLES AND CATCH BASINS	3-25
3.18 DETENTION FACILITIES	3-29
3.19 PRIVATE STORM DRAINAGE COLLECTION SYSTEMS	3-37
3.20 INFILTRATION SYSTEMS, DRYWELLS AND FRENCH DRAINS	3-37
3.21 STORM DRAIN SERVICE LATERALS	3-39
DIVISION 4 SANITARY SEWER	4-1
4.1 PURPOSE	4-1
4.2 APPLICABILITY	4-1
4.3 SPECIAL ITEMS	4-2
4.4 APPROVAL OF ALTERNATE MATERIALS AND METHODS	4-2
4.5 CONSTRUCTION DRAWINGS	4-3
4.6 CITY STANDARD DETAILS	4-3
4.7 DEFINITIONS AND TERMS	4-3
4.8 MATERIALS	4-6
4.9 GENERAL DESIGN CONSIDERATIONS	4-12
4.10 DESIGN PERIOD	4-13
4.11 SEWER DESIGN BASIS & CAPACITY	4-14
4.12 SEWER MINIMUM SIZE	4-15
4.13 SEWER MINIMUM DEPTH	4-15
4.14 SEWER MINIMUM SLOPE & ROUGHNESS COEFFICIENT	4-16
4.15 SANITARY SEWER ALIGNMENT AND LOCATION	4-18
4.16 MANHOLES AND MAINLINE CLEANOUTS	4-22
4.17 WORK ON EXISTING SEWERS	4-27
4.18 SEWER SERVICE LATERALS	4-30
4.19 PRIVATE SANITARY SEWER COLLECTION SYSTEMS	4-35
4.20 UNDERGROUND WARNING TAPE & TONING / TRACER WIRE	4-36

**CITY OF DAYTON
PUBLIC WORKS DESIGN STANDARDS**

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
DIVISION 5 WATER DISTRIBUTION	5-1
5.1 PURPOSE	5-1
5.2 APPLICABILITY	5-1
5.3 SPECIAL ITEMS.....	5-2
5.4 APPROVAL OF ALTERNATE MATERIALS AND METHODS.....	5-2
5.5 CONSTRUCTION DRAWINGS.....	5-3
5.6 CITY STANDARD DETAILS	5-3
5.7 DEFINITIONS AND TERMS	5-3
5.8 MATERIALS	5-6
5.9 GENERAL DESIGN CONSIDERATIONS	5-20
5.10 WATER SYSTEM CAPACITY	5-22
5.11 LOOPING	5-23
5.12 BLOWOFFS.....	5-24
5.13 MINIMUM DEPTH	5-24
5.14 MINIMUM MAINLINE SIZE	5-26
5.15 WATERLINE ALIGNMENT AND LOCATION	5-26
5.16 VALVES	5-30
5.17 FIRE HYDRANTS.....	5-31
5.18 AIR RELEASE VALVES	5-34
5.19 WATER SERVICE LINES & METER LOCATION REQUIREMENTS.....	5-35
5.20 WATER METERS	5-40
5.21 PRIVATE WATER SYSTEMS	5-44
5.22 BACKFLOW PREVENTION.....	5-44
5.23 UNDERGROUND WARNING TAPE & TONING / TRACER WIRE	5-46
5.24 MAINLINE BORED CROSSINGS	5-47

APPENDICES

APPENDIX A – STANDARD DETAILS & SAMPLE TEST REPORT FORMS

• A1 - General Requirements

Latest Revision

101	Typical Utility Locations (Curbed Streets)	8/22
102	Typical Utility Locations (Turnpike and 3/4 Streets)	8/22
115	Survey Monument Box (in Streets or Public Sidewalks).....	9/20

• A2 - Streets

Latest Revision

201-1	30' Residential Street (Local Class I), Minimum Section	8/19
201-2	32' Residential Street (Local Class II), Minimum Section	8/19
201-3	34' Residential Street (Local Class III), Minimum Section	8/19
202	36' Collector Street, 36' Commercial Street, Minimum Section	8/19
203	36' Industrial Street, Minimum Section	8/19
204	Arterial Street, Minimum Section	8/19
205	Standard Cul-de-sac (Residential)	12/15
206	Offset Cul-de-sac (Residential)	12/15
207	Eyebrow Cul-de-sac (Residential)	12/15
210	Type "A" Curb and Gutter and Weephole	12/22
211	Type "C" Curb and Weephole.....	12/22
212	Curblin Sidewalks and Driveway Apron.....	2/21

**CITY OF DAYTON
PUBLIC WORKS DESIGN STANDARDS**

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
212A Residential D/W Apron, Curblin Sidwalk, Uphill Lots only.....	9/21
213 Property Line Sidwalks and Driveway Apron.....	2/21
213A CBU Mailbox & Ramp w/ Property Line Sidwalk	10/21
213B1 48" Square Tree Well Cover Panels.....	6/19
213B2 24" Deep, 30"φ, 4 Panel Root Barrier Tree Wells	2/19
213C 24" Deep, 38"φ, 5 Panel Root Barrier Tree Wells	2/19
214A Intersection Curb Ramps, Curblin Sidwalks, Local Streets	8/22
214A1 Intersection Curb Ramps, Curblin Sidwalks, Local Streets (Alt Layout)	12/22
214B Intersection Curb Ramps, Property Line Sidwalks, Local Streets	1/23
214C Curb Ramps Between Intersections.....	8/22
216 Commercial/Industrial Driveway Approach (High-Volume Truck Option)	12/22
217 Curb Cut for New Driveways or Pedestrian Ramp on Existing Curb	2/22
218 Concrete Valley Gutter (Typ for use in Alleys & Parking Lots)	8/20
219 AC Street Cut for Street Widening or Extension	10/16
220 Hammerhead Turnaround (Private Drives).....	12/22
225 Street Barricade (Stub Streets)	9/16
226 6-inch Bollard (Guard Post)	3/22
227 8-inch Bollard (Guard Post)	3/22
228 30" Tall Collapsible Padlockable Bollard	3/22
230 Typical Street Lamp Post	10/19
231 Sign Post for Street Signs, Stop Signs & Traffic Control Signs	10/20
232 Sign Post with TeleSpar Base & Anchor (Required in ODOT R.O.W).....	10/20
235 Offstreet Parking Dimensions, One Way Traffic Flow	7/22
236 Offstreet Parking Dimensions, Two Way Traffic Flow	7/22
237 Double Accessible Parking Space	9/21
238 Accessible Routes and Crossings in Vehicular Areas	9/21
239 Precast Wheelstop Detail.....	1/13
240 TrueGrid ProPlus Industrial Grade Modular Non-Paved Surface System.....	11/22
250 Trash and Recycling Enclosure	5/14
• A3 – Stormwater Management	Latest Revision
▶ For full size manholes, see Details 401 – 403A	
▶ For storm sewer service laterals, see Details 415 & 416	
▶ For bore casing detail, see Detail 508	
301 Trench Backfill, Bedding and Pipe Zone	2/20
302 Minor or Private Street & AC Driveway Cut Surface Restoration	12/15
302A AC Street Cut Surface Restoration w/Bench Grind.....	12/15
302D ODOT Trench Crossing, Trench Backfill & Surface Restoration	11/22
303 Gravel Surface Restoration	12/15
304 Native Surface Restoration	12/15
310 Standard Side-Inlet Grated Catch Basin	9/20
311 Oversize Side-Inlet Grated Catch Basin	9/20
311A Curb Inlet Catch Basin (Special Use Only)	2/21
312 Catch Basin Grate Details	6/14

**CITY OF DAYTON
PUBLIC WORKS DESIGN STANDARDS**

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
313 Type 3 Ditch Inlet Catch Basin	9/20
313A Storm Outlet Energy Dissipator Basin	9/20
315 Parking Lot Catch Basin (Precast Concrete)	7/12
316 Parking Lot Catch Basin (Lynch Style)	7/12
317 Parking Lot Catch Basin (Traffic Rated PVC w/Trap, Ductile Iron Frame/Grate)	1/13
320 Pollution/Flow Control Manhole	8/20
330 Kuenzi Manhole	7/22
331 Kuenzi Manhole w/Waterline Casing (Existing Waterline).....	7/22
332 Kuenzi Manhole w/Waterline Casing (New Waterline)	7/22
350 24" Diameter Storm Manhole	7/22
351 24" Diameter Storm Manhole (Traffic Rates PVC w/Solid Ductile Iron Frame/Cover).....	8/12
355 Private Area Drain, Non-Traffic Areas	7/22
362 Concrete Pipe End Cap with Grate.....	9/21
370A Trash Trap & Leach Line Plan	2/21
370B Trash Trap & Leach Line Details	2/21
Test Reports	
▶ Storm Drain Mandrel Test Report	
▶ Storm Drain Pipeline TV Inspection Report	

• A4 – Sanitary Sewers

Latest Revision

▶ For trench backfill and surface restoration, see Details 301 – 304	
▶ For bore casing detail, see Detail 508	
401 Standard Manhole for 21" Pipe and Smaller	8/22
402 Flattop Manhole for 21" Pipe and Smaller	7/22
403 Manhole for 24" and 27" Pipe	7/22
403A Deep Manhole for 24" and 27" Pipe.....	7/22
404 Inside Drop Connection for Sanitary Sewer Manhole	7/21
405 Manhole Frame and Cover (Standard and Suburban).....	12/15
406 Lockdown Manhole Frame and Cover	12/15
407 Manhole Rim Adjustment Details	8/22
411 Mainline Cleanout	8/20
415 Sewer & Storm Service Lateral	7/22
416 Standard Service Lateral Cleanout (Sewer & Storm).....	7/22
419 Inserta-Tee Connection to Existing Sewer or Storm Drain.....	12/15

Test Reports

- ▶ Sanitary Sewer Manhole Vacuum Test Report
- ▶ Sanitary Sewer Air Test Report
- ▶ Sanitary Sewer Mandrel Test Report
- ▶ Sanitary Sewer Pipeline TV Inspection Report

**CITY OF DAYTON
PUBLIC WORKS DESIGN STANDARDS**

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
• A5 – Water Distribution	
▶ For trench backfill and surface restoration, see Details 301 - 304	Latest Revision
501 Gate Valve and Valve Box Detail	12/22
502 Butterfly Valve and Valve Box Detail	12/22
503 Standard Fire Hydrant Assembly	2/23
505 Tapping Tee and Valve	9/18
506 Mainline Blowoff Assembly	8/22
507 Standard Blowoff with Plugged End	8/22
508 Bore Casing, Carrier Pipe & Casing Spacer Detail	8/15
510 Horizontal Thrust Blocking	9/14
511 Straddle Block for 12" & Smaller Pipe	12/21
512 Vertical Thrust Blocking	9/06
515 Typical 1" Water Service	12/22
516 1½" and 2" Meter Set with 1" High Bypass	12/22
517 Tapping Requirements, 1½" & Larger Service	5/23
518 1" Combination Air Release Valve (CARV)	3/20
523 3" Domestic Water Meter	12/22
524 4" Domestic Water Meter	12/22
525 6" Domestic Water Meter	12/22
526 8" Domestic Water Meter	12/22
527 Water Meter Vault Bypass Valve Lock	8/14
528 Water Meter Test Port Assembly	3/17
529 Galvanized Pipe Supports w/Galvanized Ext Pipe	1/18
531 2" & Smaller Double Check Valve Assembly	8/22
541 2" & Smaller Reduced Pressure Backflow Assembly	12/22
543 3" Reduced Pressure Backflow Assembly	9/21
544 4" Reduced Pressure Backflow Assembly	9/21
545 6" Reduced Pressure Backflow Assembly	9/21
550 Fire Service Line Connection Requirements (1½" & Larger Service)	5/23
554 4" Double Check Detector Assembly w/FDC	4/23
555 6" Double Check Detector Assembly w/FDC	4/23
556 8" Double Check Detector Assembly w/FDC	4/23
559 4" Forward Flow Test Port inside DCDA Vault (For NFPA 13 & 25 Tests)	11/18
560 Below Grade Check Valve & Ball Drip Valve, in Close Bottom Drain Structure	8/22
561 Below Grade Check Valve & Ball Drip Valve, in Open Bottom Drain Structure	9/22
562 FDC Line Ball Drip Drain Valve (Check Valve in Building), Open Bottom Drain Structure	9/22
563 FDC on Building Exterior & Forward Flow Test Port, Sample & Notes	5/23
Test Reports	
▶ Waterline Pressure Test Report	
• A6 - Erosion Control	
610 Temporary Construction Entrance	5/13
611 Sediment Barriers	4/14
612 Straw Wattle Sediment Barrier	6/15

**CITY OF DAYTON
PUBLIC WORKS DESIGN STANDARDS**

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
613 Inlet Sediment Control	4/14
614 Ditch & Swale Protection	4/14
615 Silt Sack Inlet Detail	9/06
616 Temporary Concrete Washout Area (CWA).....	11/18
617 Stockpile Cover Detail.....	1/19

APPENDIX B - Standard Construction Notes

APPENDIX C - Utility Companies And Agencies

APPENDIX D - Standard Easement Forms, Etc.

APPENDIX E - Sample Insurance Certificates

APPENDIX F - Adopting Ordinance & Resolutions

APPENDIX G - Construction Drawing Review, Public Works Permit, Construction Requirements & Procedures

APPENDIX H – Dayton Small Wireless Facilities Design & Construction Standards

APPENDIX I – Stormwater Detention Systems, Purpose & Example Summary

PREFACE

These design standards have been developed by the City of Dayton to provide a uniform set of standards for public improvements. The intent of these standards is to provide guidelines for the construction of public facilities that will provide an adequate service level for the present as well as for future development. The format has been kept brief and no attempt has been made to cover all possible situations or to provide lengthy explanations.

These design standards are intended to be used in conjunction with the City's PWCS - Public Works Construction Standards (*ie. the Oregon Standard Specifications for Construction – OSSC (ODOT/APWA), most recent edition except as otherwise noted herein*). The PWCS are subject to the material, equipment and provisions specified in these PWDS. In the event of discrepancies between the requirements in these PWDS and the Public Works Construction Standards (PWCS) or between the text of these PWDS and the City standard details, the more stringent requirements as determined by the City Engineer and Public Works Director shall apply.

Copies of these design standards can be obtained from City of Dayton, Oregon , PO Box 339 , Dayton, OR 97114 .

It is anticipated that revisions to the design standards will be made from time to time. The date appearing on the title page is the date of latest revision of the text portion of the standards. The date appearing on the details is the date of latest revision of that particular detail.