



Public Works Department

12/31/2018 Engineering Design Standards Disposition of Changes

Note: This is not an all-inclusive listing of all changes; it is a disposition of the most significant changes made to the Design Standards. It is the responsibility of the user to confirm any changes that have been made via an update or addendum to the Design Standards and design in conformance with the most current edition.

Part 1: Land Development Infrastructure Design Manual

- All parts of the design manual has been updated with:
 - current branding
 - chapters with numbered pages, tables of contents, footers including chapter identification, and clearly identified version date
 - uniform formatting
- Chapter 1 –Introduction and Adoption
 - Revised nomenclature to reference the “Design Manual”, any reference to “Design Manual” or “Design Guide” shall be synonymous
 - Clarified in its entirety, the Engineering Design Standards consist of 3 parts, all utilized concurrently; Part 1-The Land Development Infrastructure Design Manual, Part 2- Plan Notes, and Part 3- Standard Drawings.
- Chapter 3 – Plan Review Process
 - Revised required submittal quantities and formats (i.e., both hard copy and PDF format)
 - Added construction shop drawing submittal requirements
 - Added Design Exception Request process
- Chapter 5 – Record Plans & Digital Submission
 - Included requirements for Record Drawings to be submitted in PDF/A or other digital format as deemed appropriate by Public Works Department
 - Removed TIFF file submission
 - Added lighting and associated infrastructure requirements
 - Added fiber optic requirements
- Chapter 6 – Surveying Standards
 - Reorganized for better flow
- Chapter 7 – Roadway Design
 - Completely updated, removing all content that is per the current edition of the OMUTCD or other standardized document, and made reference to that document to eliminate need for potential change if and when the standardized document is updated
 - Clarified for streets 28-FT pavement width, parking is permitted on only one-side of the street, opposite the water line.
 - Added section of emergency vehicle access.

Part 1: Land Development Infrastructure Design Manual (Continued)

- Clarified all driveways shall not exceed 8% slope.
- Added section on traffic calming features
- Chapter 8 – Traffic Impact Study Standards
 - Completely updated, removing all content that is per the current edition of the OMUTCD or other standardized document, and made reference to that document to eliminate need for potential change if and when the standardized document is updated
 - Revised LOS Criteria
 - Specified the submission of digital copy of the Synchro® files and SimTraffic® files (or other pre-agreed upon format(s) as specified by the City)
- Chapter 10 – Bike and Pedestrian Paths
 - Formerly Chapter 10 was Traffic Calming
 - Formerly bike and pedestrian paths was included in Chapter 7-Roadway Design.
 - Bike and pedestrian path guidelines has been updated in its entirety.
- Chapter 11 – Traffic Signals
 - Completely updated, removing all content that is per the current edition of the OMUTCD or other standardized document, and made reference to that document to eliminate need for potential change if and when the standardized document is updated
 - Installation of new traffic signal process (chart) has been updated/clarified
 - Added inspection form
 - Added traffic signal general notes requirements (See also Plan Notes)
- Chapter 12 – Street Lighting
 - Content ***significantly*** revised (see also changes to the standard details and addition to plan notes), including LED fixtures, and metered power requirements
- Chapter 13 – Fiber Option Conduit and Cable Installation
 - Updated, provided additional specifications for subsurface installation, pull boxes, tracer wire
- Chapter 15-Stormwater Management
 - Provided a summary of stormwater requirements to assist navigating the Design Manual
 - Updated to include design parameters for the Design Engineer to address and design buffers at detention basins, layout and location
 - Updated to be current with the current “Construction Stormwater Permit”
- Chapters 16-Stormwater Quality Regulations
 - Updated to be current with the current “Construction Stormwater Permit”
- Appendix A: Plan Review Fees Form
 - Reformatted with current branding
 - Revised to be for Plan Review fees only
- Appendix B: Design Exception Request Form
 - Formerly COD signature block, this is now included in the General Standard Drawings
 - The Design Exception Request Form was originally issued for implementation in May 2017.
- Appendix C: Storm Sewer Utility Rate Calculation Sheet

Part 1: Land Development Infrastructure Design Manual (Continued)

- Reformatted/updated for ease of use; document to be returned in .XLS format
- Appendix D: Standard Layers for DXF files
 - Newly added to the Design Manual, although no change to previous requirements
- Appendix E: Ladder Truck Turning Performance Analysis
 - Newly added to the Design Manual, although no change to previous requirements
- Appendix F: Airport Proximity Storm water Basin Criteria
 - Was included in Design Guide prior to 2013 Update; has been updated to be current with airport layout and reincorporated into the Design Manual via this edition
- Appendix G: Stormwater Best Management Practices O&M Agreement
 - Newly added to the Design Manual, although no change to previous requirements

Part 2: Plan Notes

General notable changes:

- Added an introduction to the Plan Notes
- Reformatted all notes to be hyphenated
- Added all Residential and Collector Street Light Plan Notes, in their entirety
- Added Traffic Signal General Notes, in their entirety

General Plan Notes:

- GEN-26 Revised and clarified

Storm Plan Notes:

- STM-1 Revised and clarified material specifications
- STM-4 through 8 Revised and new plan notes providing clarification on side yard storm installation, water tight joints, and testing requirements
- STRM-9 Formerly STM-5; all subsequent STRM notes have been renumbered to adjust for the inclusion of the notes indicated above.
- STM-21 New note to address submission of shop drawings

Water Plan Notes:

- WTR-3 Revised and clarified material specifications
- WTR-13 Provide additional specificity for factory-coated bolts/fittings
- WTR-25 Revised and clarified material specifications
- WTR-31 Added per repeat Ohio EPA comment to include this note
- WTR-32 Added per repeat Ohio EPA comment to include this note
- WTR-33 New note to address submission of shop drawings

Sanitary Plan Notes:

- SAS-3 Revised and clarified material specifications
- SAS-4 Revised and clarified material specifications
- SAS-8 Revised and provided additional clarification regarding clay dams on long and short services
- SAS-17 Revised and clarified material specifications
- SAS-19 New note to address submission of shop drawings

Part 3: Standard Drawings

Reference the Standard Drawing Index for a complete listing of all standard drawings and associated disposition of changes.

- General Note for All drawings: the City of Delaware Logo has been updated with the current branding
- RDWD-1.0 28'-0" Local Pavement Section
 - Revised cross-slope from 3/16" per foot to 1/4" per foot
 - Updated pavement section with Current CMS Items
- RDWD-2.0 32'-0 Local Pavement Section
 - Revised cross-slope from 3/16" per foot to 1/4" per foot
 - Updated pavement section with Current CMS Items
- RDWD-3.0 36'-0 Collector Pavement Section
 - Revised cross-slope from 3/16" per foot to 1/4" per foot
 - Updated pavement section with Current CMS Items
- RDWD-4.0 36'-0 Arterial/Industrial Flexible Pavement Section with Curbs
 - Revised cross-slope from 3/16" per foot to 1/4" per foot
 - Updated pavement section with Current CMS Items
- RDWD-5.0 36'-0 Arterial/Industrial Rigid Pavement Section with Curbs
 - Revised cross-slope from 3/16" per foot to 1/4" per foot
 - Updated pavement section with Current CMS Items
- RDWD-6.0 Alley Pavement Section (Public & Private)
 - Revised cross-slope from 3/16" per foot to 1/4" per foot
 - Updated pavement section with Current CMS Items
- RDWD-7.0 Private road Pavement Section with Curb
 - Revised cross-slope from 3/16" per foot to 1/4" per foot
 - Updated pavement section with Current CMS Items
 - Added Item 423, Crack Seal Edge Joints
- RDWD-8.0 Cul-de-sac Detail
 - Relocated and identified sign R4-7
- RDWD-9.0 Residential Drive Concrete Approach
 - Reformatted notes to be numbered
 - Revised PEJF to be rubberized joint material
 - Revised Note 1 and added Notes 2 and 11.
- RDWD-10.0 New Commercial Concrete Driveway Approach
 - Added Notes and removed asterisk references
 - Modified drawing for clarity and uniformity with other drawings
 - Additional contraction control joints to be provided
- RDWD-11.0 New Commercial Asphalt Driveway Approach (Shopping Center Access)
 - Revised cross-slope from 3/16" per foot to 1/4" per foot
 - Revised 24" to Standard curb & gutter
 - Modified drawing for clarity and uniformity with other drawings

Part 3: Standard Drawings (Continued)

- RDWD-12.0 Temporary T Type Turn-Around
 - Reformatted notes to be numbered
- RDWD-13.0 Emergency Ingress/Egress Access Point
 - Modified drawing for clarity
- RDWD-14.0 Widening of Existing Pavement with Berm
 - Revised cross-slope from 3/16" per foot to 1/4" per foot
- RDWD-15.0 Rigid Pavement Relief Joint
 - Reformatted notes to be numbered
- RDWD-16.0 Temporary Stub Street Barricade
 - City of Delaware logo revision only
- RDWD-17.0 Monument Box Installation
 - Modified drawing for clarity
 - Reformatted notes to be numbered
- RDWD-18.1 Pavement Repair and Backfill within Right-of-Way
 - City of Delaware logo revision only
- RDWD-18.2 Standard Pavement Repair Notes
 - Removed redundant Note 4, Renumbered following notes accordingly
 - Note 7, revised minimal to be minimum
 - Added Note 15
- RDWD-18.3 Manhole Casting Adjustment in Pavement
 - Revised all notes and formatted to be numbered
- RDWD-19.1 Standard Sidewalk Specifications
 - Reformatted notes to be numbered
 - Note 2, removed reference to specific other standard drawings
 - Note 4, revised to be rubberized expansion joint material
 - Note 8, reworded for clarity
- RDWD-19.2 Integral Curb & Walk
 - "for Rehabilitation Areas" removed from title
 - Reformatted Notes for uniformity with other drawings
 - Note 6, revised to be rubberized expansion joint material
- RDWD-19.3 Typical Sidewalk and Driveway Approach
 - Added Notes for clarity
 - Specified expansion material to be rubberized expansion joint material
 - removed chart for slope/inch per ft/%
- RDWD-19.4 ADA Compliant Curb Ramp
 - Added Notes for Clarity
 - Specified saw cut joints at ramp landing
 - Specified rubberized expansion joint material
- RDWD-19.5 Curb Ramp Locations
 - City of Delaware logo revision only
- RDWD-20.0 Standard Concrete Combined Curb & Gutter, Item 609
 - Revised measurements at pavement

Part 3: Standard Drawings (Continued)

- Reformatted notes to be numbered
- Modified drawing to provide clarification for minimum aggregate cover over underdrain
- RDWD-21.0 Special 8 Concrete Combined Curb & Gutter, Item 609
 - Revised measurements at pavement
 - Reformatted notes to be numbered
 - Modified drawing to provide clarification for minimum aggregate cover over underdrain
- RDWD-22.0 Straight 18-Inch Concrete Curb
 - Reformatted notes to be numbered
 - Modified drawing to provide clarification for minimum aggregate cover over underdrain
- RDWD-23.0 Concrete Mountable Curb
 - Reformatted notes to be numbered
 - Modified drawing to provide clarification for minimum aggregate cover over underdrain
- RDWD-24.0 Extruded Concrete Curb
 - Reformatted notes to be numbered
- RDWD-25.0 Multi-Use Path Asphalt Pavement Section
 - Revised the profile and pavement sections
 - Revised edge of path grading
 - Removed Note 6 regarding delineators
- RDWD-26.0 (deleted)
 - Formerly (REV 03/01/2012) this was Bike Path Concrete Pavement Section Standard Detail
- RDWD-27.0 (deleted)
 - Formerly (REV 03/01/2012) this was Recreational Path Compacted Aggregate Section Standard Detail
- RDWD-28.0 Removable/Break-Away Bollard Detail
 - City of Delaware logo revision only
- RDWD-29.0 (deleted)
 - Formerly (REV 03/01/2012) this was Maintenance of Traffic For Stationary Operation in One Lane Standard Detail
 - MOT to be per OMUTCD; reference also ODOT standard drawings MT-97.10
- RDWD-30.0 Roundabout Signage
 - Revised to include OMUTCD sign codes
 - Clarified text and format of SPEC signage
 - Noted all signs at roundabouts are to be per the OMUTCD with exception to the signs indicated on this drawing
- RDWD-31.0 Roundabout Sight Distance/Landscaping Exhibit
 - Revised terminology of landscaping areas to be consistent with other standard details
 - Eliminated reference to specific other standard details
 - Revised Note 4 to reference the current standard of practice for design, FHWA-RD-00-067.
- RDWD-32.0 Roundabout Sight Distance/Landscaping Cross Section
 - City of Delaware logo revision only

Part 3: Standard Drawings (Continued)

- RDWD-33.1 Street Tree Details
 - City of Delaware logo revision only
- RDWD-33.2 Street Tree Planting Notes
 - City of Delaware logo revision only
- RDWD-34.1 Light Fixtures for Residential and Collector Street Lighting
 - Formerly (REV 03/01/2012) this was Residential Street Light Head Standard Detail
 - Has been updated to be Light Fixtures for Residential and Collector Street Lighting
 - Detail revised entirely-see document for LED street lighting specification
- RDWD-34.2 Electrical Installation Requirements for Residential Street Lighting
 - Formerly (REV 03/01/2012) this was Isolux for Residential Street Light Standard Detail
 - Has been updated to be Electrical Installation Requirements for Residential Street Lighting
 - Detail revised entirely-see document
- RDWD-34.3 Electrical Installation Requirements for Residential Street Lighting (Continued)
 - Formerly (REV 03/01/2012) this was Light Pole for Residential Street Lights Standard Detail (this information is now located in the Design (Guide) Manual)
- RDWD-34.4 Light Pole Foundation for Residential Street Lights
 - Detail revised entirely-see document
- RDWD-34.5 Light Pole Foundation for Collector Street Lights
 - Detail revised entirely-see document
- RDWD-35.1 Fiber Optic Conduit Installation Detail
 - Revised the quantity of 1-1/4 \emptyset conduits from 2 to 3
- RDWD-35.2 Fiber Optic Conduit Installation Detail Notes
 - Reformatted Notes for clarity and ease of reference
 - Revised the following for aerial installation:
 - revised the quantity of 1-1/4 \emptyset conduits from 2 to 3
 - revised color of conduits from orange and orange with black stripe to be blue, orange, and green
 - revised pull box spacing from no more than 400-FT to 1000-FT
- RDWD-36.0 Street Name Sign Detail
 - Reformatted Notes to be numbered
 - Added detail to Street Name Sign and note 11, regarding the year of installation to be on the sign
 - Added note 12 regarding all bolts and screws to be lubricated with a compound to prevent seizing
 - Revised note 5 (removed Clearview Font, revised to be FHWA approved standard font and in compliance with the OMUTCD)
 - Revised post specifications from round post to 2x2 square post
 - Revised 2' min. bury depth to be ODOT TC 41.20 (Typical square post anchor base installation)
- RDWD-37.0 Sign Post Installation **New Standard Detail**
- RDWD-38.0 Enhanced Crosswalk **New Standard Detail**

Part 3: Standard Drawings (Continued)

- RDWD-39.0 Wood Guard Rail **New Standard Detail**
- SEWD-1.0 Type "C" Manhole (48" Precast base/8" through 27" pipe)
 - Updated requirements for pipe connections and joint materials. Made other clarifications.
- SEWD-2.0 Type "D" Manhole (60" Precast base/30" through 42" pipe)
 - Updated requirements for pipe connections and joint materials. Made other clarifications.
- SEWD-3.0 Inside & Outside Drop Pipes for Sanitary Sewer Manholes
 - Removed references to CIP and VCP, added DIP.
- SEWD-4.0 Manhole Frame & Cover Casting (Sanitary Sewers)
 - Updated manhole casting standard.
- SEWD-5.0 Manhole Frame & Cover Casting (Storm Sewers)
 - Updated manhole casting standard.
- SEWD-6.0 Precast Manhole Base Channelization Detail
 - Minor edits only to clarify text
- SEWD-7.0 Manhole Steps
 - Minor edits only to clarify text
- SEWD-8.0 Curb & Gutter Inlet
 - Minor edits only to clarify text
 - Clarified that curb inlets are to be precast unless approved otherwise
- SEWD-9.0 Cast Iron Frame & Grate for Curb & Gutter Inlet (Standard Curb)
 - City of Delaware logo revision only
- SEWD-10.0 Standard 2-FT x 2-FT Catch Basin
 - Added grate specification
 - Increased maximum pipe size from 18" to 21" to match COC standard
- SEWD-11.1 Outlet Control Orifice Plate
 - City of Delaware logo revision only
- SEWD-11.2 Outlet Control Orifice Pipe
 - City of Delaware logo revision only
- SEWD-12.0 Type 1 Bedding For Flexible Pipe 6" to 60" Diameter
 - Modified title to be up to 60" pipe. Modified minimum trench wall clearance to match table.
- SEWD-13.0 Type 1 Bedding For Rigid Sewer Pipe 6" to 108" Diameter
 - Minor edits only to clarify text
- SEWD-14.0 Typical Trench Detail For Storm Sewers Outside R/W with Cover of 30-inches or Less
 - Minor edits only to clarify text
- SEWD-15.1 Rock Channel Protection Details and Notes
 - City of Delaware logo revision only
- SEWD-15.2 Rock Channel Protection Details and Notes
 - City of Delaware logo revision only
- SEWD-16.1 Drainage Detail French Drain
 - Added bedding below underdrain
- SEWD-16.2 Underdrain Detail (For Use Under Swales and Drainage Basins)
 - Added bedding below underdrain and changed slope threshold for swales.

Part 3: Standard Drawings (Continued)

- SEWD-17.0 Sanitary Lateral Street Crossing (2 Laterals in One Trench)
 - Changed minimum trench width to match bedding detail.
- SEWD-18.0 Minimum Depth of Sanitary Sewer Service
 - Edited note to clarify minimum depth of sewer service.
- SEWD-19.0 Field Drain Tile & Underdrain Replacement
 - Minor edits only to clarify text
- SEWD-20.0 Typical Sanitary House Service Connection
 - Added flexible coupling product spec. Changed to only allow flexible coupling on connection to differing materials. Required connection to same material to be solid sleeve.
- WTRD-1.1 Domestic Water Service Private Water Mains
 - Changed title and added note clarifying detail to be used on private water systems, due to curb boxes no longer being required on public residential water services.
- WTRD-1.2 Domestic Water Service Public Water Mains
 - Changed title and added note clarifying detail to be used on public water systems, due to curb box no longer being required on public residential water systems.
 - Added distance from sidewalk to curb stop.
 - Added tracer wire for PVC mains.
 - Removed Mueller Curb box.
 - Added spec for service clamp (saddle)
- WTRD-1.3 (deleted)
 - Formerly (REV 11/09/2012) this was "Standard Meter Pit Sizing Chart" Standard Detail
 - Via this update this detail has been deleted"
- WTRD-2.0 Typical Air Release
 - City of Delaware logo revision only
- WTRD-3.0 Typical Water Line Lowering
 - Added note clarifying use only applies to lowering of existing water mains.
- WTRD-4.0 Water Service Street Crossings (2 Services in One Trench)
 - Changed Item 304 backfill to COC Item 912
 - Changed dimension of curb stop from sidewalk to be consistent with other details
- WTRD-5.0 (deleted)
 - Formerly (REV 1/09/2012) this was "Cut-In Sleeve Water Tap" Standard Detail
 - Via this update this detail has been deleted
- WTRD-6.0 Full Body Water Tap
 - Minor edits only to clarify text
- WTRD-7.0 Allowable Leakage Table
 - Modified table and formula to match COC L-6640, which uses a more up to date AWWA standard.
- WTRD-8.0 Concrete Valve Support; Horizontal Gate Valve With By-Pass
 - City of Delaware logo revision only
- WTRD-9.0 Typical Hydrant Setting Type "A"
 - City of Delaware logo revision only

Part 3: Standard Drawings (Continued)

- WTRD-10.0 Special Hydrant Settings Type "B" and "B" Modified
 - Removed reference to same standard detail
- WTRD-11.0 Backing for Tees
 - Added text to table notes to clarify dimensions
- WTRD-12.0 Backing for Vertical Bends (Over Bends Only)
 - Removed information for 90 degree bends, which would not be allowed for vertical over bends.
- WTRD-13.0 Backing for Bends Horizontal and Vertical Sag
 - Minor edits only to clarify text
- WTRD-14.0 Thrust Block Detail
 - City of Delaware logo revision only
- WTRD-15.0 Typical Water Trench
 - Changed trench width and bedding requirements to better match COC.
- WTRD-16.0 Water Service Detail for Cul-de-sac
 - Added dimensions to clarify placement of services.
- WTRD-17.0 3" to 12" Dual Meter Setting Detail
 - Removed references to pipe sizes, changed requirement for meter delivery to city from 5 days to 2 days.
 - Added detector check detector assembly to required backflow preventer
- WTRD-18.1 Meter Vault 3" to 12"
 - Added requirement for dismantling joint
 - Added requirement for ladder-up safety post
 - Made miscellaneous clarifications
- WTRD- 18.2 Meter Settings 3" through 12" Meters
 - Removed reference to AMCO water meter
 - Revised manhole casting and lid requirements
 - Removed reference to meter touch pads that are no longer used
- WTRD-18.3 Meter Settings for Inside Buildings 3" through 12" (Domestic or Process)
 - Minor edits only to clarify text
- WTRD-19.0 Inspection Meter Pit Details
 - Formerly (REV 12/15/2012) WTRD-19.0 was "Monitoring Vault Detail" Standard Detail, and has been deleted and replaced with Inspection Meter Pit Details, which is a new detail.
- WTRD-20.0 5/8" to 2" Meters for Domestic and Fire Service
 - Removed reference to heated above grade enclosures
 - Corrected standard drawing references for domestic meter settings
- ERSD-1.0 Catch Basin Sediment Filter
 - City of Delaware logo revision only
- ERSD-2.0 Curb & gutter Inlet Sediment Filter
 - City of Delaware logo revision only
- ERSD-3.0 Standard Construction Entrance
 - City of Delaware logo revision only

Part 3: Standard Drawings (Continued)

- ERSD-4.0 Silt Fence Installation Detail
 - City of Delaware logo revision only
- ERSD-5.0 Fabric Ditch Check Details
 - City of Delaware logo revision only
- ERSD-6.0 Straw Bale Ditch Check
 - City of Delaware logo revision only
- ERSD-7.0 Silt Fence Inlet Protection
 - City of Delaware logo revision only
- ERSD-8.0 Below Inlet Grate Device Inlet Protection
 - City of Delaware logo revision only
- ERSD-10.1 Sediment & Erosion Control Notes
 - Revised temporary seeding requirements to match construction stormwater permit
- ERSD-10.2 Sediment & Erosion Control Notes (Continued)
 - City of Delaware logo revision only
- ERSD-10.3 Soil Stabilization Chart Revised temporary seeding requirements to match construction stormwater permit
- ERSD-10.4 Temporary Seeding & Mulching Chart
 - Formerly this detail was also titled ERSD-10.3 and has been assigned ERSD-10.4 for clarity
 - Revised fertilizer application rate to match current CMS requirement"