

TABLE OF CONTENTS

The City Standard Manual was revised in 2010. Please see dates in the revised column for details that have been modified after 2010.

PART 1 - DESIGN STANDARDS

| | | | |
|--------------------|--|---------------|----------------|
| Section 1.0 | ENGINEERING PLAN REVIEW PROCESS | Page # | Revised |
| | | | 05/2011 |
| 1.1 | Pre-design Meeting | 1-1 | |
| 1.2 | Plan Review Fees | 1-1 | |
| 1.3 | Plan Checklists | 1-1 | |
| 1.4 | Plan Approval | 1-1 | |
| 1.5 | Engineer's Registration Stamp | 1-2 | |
| 1.6 | Right-of-Way Dedication | 1-2 | |
| 1.7 | Alternative Methods or Construction Materials Request | 1-2 | |
| 1.8 | Plan Review Sequence, Expiration of applications/permits | 1-2 | |
| | | | |
| Section 2.0 | GENERAL PLAN REQUIREMENTS | | 05/2011 |
| 2.1 | General Information on Plans | 2-1 | |
| 2.2 | Plan / Profile Sheets | 2-2 | |
| 2.3 | Project Record Drawing Requirements | 2-2 | |
| 2.4 | General Plan Notes | 2-5 | |
| | | | |
| Section 100 | ROADWAY DESIGN | | 01/2016 |
| 101 | General Roadway Design Criteria | 100-1 | |
| 102 | Street Lighting Specifications | 100-8 | |
| 103 | Roadway Plan Requirements | 100-12 | |
| 104 | Roadway Plan Notes | 100-14 | |
| 105 | Illumination General Notes | 100-15 | |
| | Table 100-1 Roadway Width Design Criteria | 100-17 | |
| | Table 100-2 Geometric Design Criteria | 100-18 | |
| | | | |
| Section 200 | STORMWATER MANAGEMENT | | 10/2019 |
| 200 | General Stormwater Requirements | 200-1 | |
| 201 | Stormwater Management Requirements | 200-3 | |
| 202 & 203 | These pages left intentionally blank | 200-4 | |
| 204 | Conveyance Systems | 200-5 | |
| 205 | Stormwater Maintenance & Operation Requirements | 200-13 | |
| 206 | Public Easements and Tracts | 200-15 | |
| 207 | Stormwater Plan Notes | 200-16 | |

Section 300 WATER SYSTEM REQUIREMENTS 02/2018

| | | |
|-----|--------------------------------|-------|
| 301 | Water System Design Criteria | 300-1 |
| 302 | Water Quality Requirements | 300-4 |
| 303 | Water System Plan Requirements | 300-6 |
| 304 | Water System Plan Notes | 300-7 |

Section 400 SANITARY SEWER SYSTEM 10/2019

| | | |
|-----|---|-------|
| 401 | Sanitary Sewer System Design Criteria | 400-1 |
| 402 | Wastewater Quality Requirements | 400-3 |
| 403 | Design Criteria Specific to Short Plats | 400-6 |
| 404 | Sanitary Sewer Plan Requirements | 400-6 |
| 405 | Sanitary Sewer Plan Notes | 400-7 |
| 406 | Testing Requirements | 400-8 |

Section 500 GRADING, EROSION AND SEDIMENTATION CONTROL 06/2012

| | | |
|-----|--|-------|
| 501 | Erosion and Sedimentation Control Plan | 500-1 |
| 502 | Grading Design Requirements | 500-2 |
| 503 | Grading, Erosion & Sedimentation Control Plan Requirements | 500-3 |
| 504 | Construction Dewatering and Bypass Pumping Standard | 500-4 |
| 505 | Grading, Erosion and Sedimentation Control Plan Notes | 500-5 |

PART 2 - STANDARD DETAILS

100 ROADWAY

01.01 - CROSS SECTIONS, UTILITY LOCATION AND IMPROVEMENTS **Revised**

| <u>Detail #</u> | <u>Name / Description</u> | |
|------------------------|---|---------|
| 01.01.01 | 28' Public Roadway Cross Section | |
| 01.01.02 | 34' Public Roadway Cross Section | |
| 01.01.02A | Public Roadway Cross Section Local Access (Permeable) | 03/2017 |
| 01.01.03 | 36' Public Roadway Neighborhood Collector Cross Section | |
| 01.01.04 | 36' Public Roadway Commercial Collector Cross Section | |
| 01.01.04A | 36' Public Roadway Commercial Collector Cross Section (Permeable) | 03/2017 |
| 01.01.05 | Public Roadway Principal Arterial Cross Section | |
| 01.01.05A | Public Roadway Cross Section Major Arterial (Permeable) | 03/2017 |
| 01.01.06 | Public Roadway Minor Arterial Cross Section | |
| 01.01.06A | Public Roadway Cross Section Minor Arterial (Permeable) | 03/2017 |
| 01.01.07 | Private Roadway 3-4 Lots Cross Section | |
| 01.01.07A | Private Roadway 3-4 Lots Cross Section (Permeable) | 03/2017 |
| 01.01.08 | Private Tract 1-2 Lots Cross Section | 06/2017 |
| 01.01.08A | 20' Private Tract 1-2 Lots Cross Section (Permeable) | 03/2017 |
| 01.01.09 | 20' Private Alley Cross Section | |
| 01.01.10 | Alley Cross Section | 06/2017 |
| 01.01.10A | Alley Cross Section (Permeable) | 06/2017 |
| 01.01.11 | Approach Sight Distance | |
| 01.01.12 | Standard Utility Locations 24' Wide Road | 03/2011 |
| 01.01.13 | Standard Utility Locations 28' Wide Road | 03/2011 |
| 01.01.14 | Standard Utility Locations 34' Wide Road | 03/2011 |
| 01.01.15 | Residential Cul-De-Sac Option 1 | 03/2011 |
| 01.01.16 | Residential Cul-De-Sac Option 2 | 03/2011 |
| 01.01.17 | Monument | |
| 01.01.18 | Roadway Widening | |
| 01.01.19 | Half Street Improvement | |
| 01.01.20 | Street Patch | 03/2018 |
| 01.01.21 | Type III Barricade for Future Extended Roadways | |
| 01.01.24 | Geomembrane Liner Transverse Installation | 02/2017 |

01.02 - SIDEWALK, CURB, AND APPROACHES **Revised**

| <u>Detail #</u> | <u>Name / Description</u> | |
|------------------------|---|---------|
| 01.02.01 | Sidewalk without Planting Strip | 03/2011 |
| 01.02.02 | Sidewalk with Planting Strip | 03/2011 |
| 01.02.03 | Root Barrier Detail | 08/2015 |
| 01.02.04 | Street Tree Planter Blockouts for Sidewalks | 03/2011 |
| 01.02.05 | Ground Cover Planting Detail | |

| | | |
|-----------|--|---------|
| 01.02.06 | Rooted Cutting/Offset/Seedling Detail | |
| 01.02.07 | Street Tree Planting in Planting Strip | 08/2015 |
| 01.02.08 | Ball and Burlap Planting Detail | |
| 01.02.08a | Soil Amendment and Depth | 08/2015 |
| 01.02.09 | Curb and Gutter | 05/2012 |
| 01.02.10 | Curb Cut | |
| 01.02.11 | Minimum Grade Street Cross Gutter | |
| 01.02.12 | Standard Residential Driveway | 03/2011 |
| 01.02.13 | Residential Driveway Alternate 1 | 03/2011 |
| 01.02.14 | Residential Driveway Alternate 2 | |
| 01.02.15 | Residential Driveway with Culvert | |
| 01.02.16 | Standard Commercial Approach | 02/2014 |
| 01.02.17 | Urban Commercial Approach Alternate 1 | |
| 01.02.18 | Urban Commercial Approach Alternate 2 | 03/2011 |
| 01.02.19 | Sidewalk Ramp with Commercial Approaches | 08/2012 |
| 01.02.20 | Type III Barricade for Future Extended Sidewalks | 09/2013 |

01.03 - TRAFFIC CALMING, CHANNELIZATIONS, AND PAVE. MARKINGS **Revised**

| <u>Detail #</u> | <u>Name / Description</u> | |
|------------------------|--|---------|
| 01.03.01 | Traffic Circle | 03/2011 |
| 01.03.02 | Mid-Block Chokers | |
| 01.03.03 | Traffic Bulb with Curb Ramp Type A | 03/2011 |
| 01.03.04 | Traffic Bulb with Curb Ramp Type B | 03/2011 |
| 01.03.05 | Traffic Bulb with Curb Ramp Type C | 03/2011 |
| 01.03.06 | Left/Right Turn Pocket Arrow and Only Layout | 09/2013 |
| 01.03.07 | Two-Way Left Turn Channelization | |
| 01.03.08 | Two-Way Left Turn Channelization (cont.) | |
| 01.03.09 | Left Turn Pockets | |
| 01.03.10 | Pavement Marking Details | |
| 01.03.11 | Crosswalk Detail | 09/2013 |
| 01.03.12 | RR Crossing Symbol Details | |
| 01.03.13 | Taper Marking Layouts | |
| 01.03.14 | Pavement Arrows | 09/2013 |
| 01.03.15 | Pavement Marker "ONLY" | 09/2013 |
| 01.03.16 | Speed Table | 06/2012 |

01.04 - SIGNS

| <u>Detail #</u> | <u>Name / Description</u> | Revised |
|------------------------|---|----------------|
| 01.04.01 | Street Sign Detail | |
| 01.04.02 | Stop Sign Detail | |
| 01.04.03 | Street Sign Name Plate Detail | 11/2014 |
| 01.04.04 | Street Sign Name Plate Notes | 11/2014 |
| 01.04.05 | Standard Location of Restricted Parking Signs | |

01.04.06 Banner Detail Guidelines

01.05 - STREET LIGHTING

| <u>Detail #</u> | <u>Name / Description</u> | Revised |
|------------------------|---|----------------|
| 01.05.01 | Street Light Specifications | 02/2015 |
| 01.05.02 | Street Light Specifications (cont.) | 02/2015 |
| 01.05.03 | Typical Street Light Installation | 02/2015 |
| 01.05.04 | Street Light | 04/2013 |
| 01.05.05 | Street Light Service Meter Cabinet Foundation | |
| 01.05.06 | Concrete Streetlight Foundation Typical | |
| 01.05.07 | Street Light Pole and Bracket Wire Support at Arm End | |
| 01.05.08 | Decorative Street Light | |
| 01.05.09 | Decorative Street Light 2 | |
| 01.05.10 | Remote Photocell | 01/2015 |

01.06 - TRAFFIC SIGNALS

| <u>Detail #</u> | <u>Name / Description</u> | Revised |
|------------------------|--|----------------|
| 01.06.01 | Junction Box | 11/2014 |
| 01.06.02 | Terminal Compartment and Miscellaneous Pole Details | |
| 01.06.03 | Pedestrian Pushbutton Assembly 1 | |
| 01.06.04 | Pedestrian Pushbutton Assembly 2 | |
| 01.06.05 | Meter Cabinet (Street Lighting Control and Traffic Control) | 04/2017 |
| 01.06.06 | Traffic Signal, Meter Cabinet, and Battery Backup System Cab. Found. | |
| 01.06.07 | Video Camera Detection | 05/2012 |

01.07 - SOLAR POWERED SIGNS & BEACONS

| <u>Detail #</u> | <u>Name / Description</u> |
|------------------------|---|
| 01.07.01 | Solar Powered Active Speed Display Sign Notes |
| 01.07.02 | Solar Powered Active Speed Display Sign Notes (2) |
| 01.07.03 | Solar Powered School Zone Flashing Beacon Notes |
| 01.07.04 | Solar Powered School Zone Flashing Beacon Notes (2) |
| 01.07.05 | Solar Powered School Zone Flashing Beacon Notes (3) |

200 STORMWATER

02.01 - MANHOLES AND CATCH BASINS **Revised**

| <u>Detail #</u> | <u>Name / Description</u> | |
|------------------------|-----------------------------------|---------|
| 02.01.01 | Storm Sewer Manhole | 09/2012 |
| 02.01.02 | Catch Basin Type I (Area Drain) | |
| 02.01.03 | Catch Basin Type I (Gutter Drain) | |
| 02.01.04 | Catch Basin Type II | |

| | | |
|----------|--|---------|
| 02.01.05 | Catch Basin Frame and Grate | 03/2011 |
| 02.01.06 | Flow Control Manhole with Cone Section | |
| 02.01.07 | Flow Control Manhole with Flat Top | |
| 02.01.08 | Flow Control Manhole Notes | |

02.02 - CULVERTS AND DITCHES

Revised

| <u>Detail #</u> | <u>Name / Description</u> | |
|------------------------|------------------------------------|---------|
| 02.02.01 | Daylight Culvert Open Ditch | |
| 02.02.02 | Daylight Culvert Detention Channel | |
| 02.02.03 | Trash Rack | |
| 02.02.04 | Stormwater Facility Sign | 03/2014 |

02.03 - EMERGENCY OVERFLOW, SILTATION FENCE AND BARRIERS

| <u>Detail #</u> | <u>Name / Description</u> |
|------------------------|-----------------------------------|
| 02.03.01 | Detention Pond Emergency Overflow |
| 02.03.02 | Siltation Fence |
| 02.03.03 | Straw Bale Barrier for Inlet |
| 02.03.04 | Barrier with Gravel Outlet |
| 02.03.05 | Storm Drain Barriers |
| 02.03.06 | Storm Drain Barriers (Notes) |

02.04 - VAULTS

| <u>Detail #</u> | <u>Name / Description</u> | Revised |
|------------------------|----------------------------------|----------------|
| 02.04.01 | Stormwater Vault | 08/2012 |

02.05 - RESIDENTIAL INFILTRATION

| <u>Detail #</u> | <u>Name / Description</u> | Revised |
|------------------------|--|----------------|
| 02.05.01 | Individual Roof Downspout System | 02/2014 |
| 02.05.02 | Residential Infiltration Trench Sump Structure | |
| 02.05.03 | Individual Roof Downspout System (Notes) | |

02.06 – RAIN GARDENS

| <u>Detail #</u> | <u>Name / Description</u> | Revised |
|------------------------|----------------------------------|----------------|
| 02.06.01 | Rain Garden Section | 03/2017 |
| 02.06.02 | Rain Garden Planting Zones | 03/2017 |
| 02.06.05 | Rain Garden Rocked Overflow | 03/2017 |
| 02.06.06 | Rain Garden Sign | 03/2017 |

02.07 – BIORETENTION

| <u>Detail #</u> | <u>Name / Description</u> | Revised |
|------------------------|----------------------------------|----------------|
|------------------------|----------------------------------|----------------|

| | | |
|----------|--|---------|
| 02.07.01 | Bioretention Section | 03/2017 |
| 02.07.03 | Bioretention Overflow Outlet Structure | 03/2017 |
| 02.07.05 | Bioretention Planting Zones | 03/2017 |

300 WATER SYSTEM

03.01 - VALVES

| <u>Detail #</u> | <u>Name / Description</u> | Revised |
|------------------------|---|----------------|
| 03.01.01 | Valve | 02/2018 |
| 03.01.02 | Valve Marker Post | 02/2018 |
| 03.01.03-1 | Water Main Crossing Other Utilities | 02/2018 |
| 03.01.03-2 | Water Main Crossing Other Utilities Notes | 02/2018 |

03.02 - BLOCKING

| <u>Detail #</u> | <u>Name / Description</u> | Revised |
|------------------------|----------------------------------|----------------|
| 03.02.01-1 | Horizontal Thrust Blocking | 02/2018 |
| 03.02.01-2 | Vertical Thrust Blocking | 02/2018 |
| 03.02.01-3 | Thrust Blocking Table | 02/2018 |

03.03 - SERVICES

| <u>Detail #</u> | <u>Name / Description</u> | Revised |
|------------------------|---------------------------------------|----------------|
| 03.03.01 | ¾" or 1" Water Service Connection | 02/2018 |
| 03.03.02 | 1 ½" or 2" Water Service Connection | 10/2019 |
| 03.03.03 | 3" – 4" – 6" Water Service Connection | 10/2019 |
| 03.03.04 | Private Water Service Connection | 02/2018 |

03.04 - BACKFLOW INSTALLATION

| <u>Detail #</u> | <u>Name / Description</u> | Revised |
|------------------------|----------------------------------|----------------|
| 03.04.01 | 2" and Smaller DCVA Installation | 02/2018 |
| 03.04.02 | 2" and Smaller RPBA Installation | 02/2018 |
| 03.04.03 | 3" and Above RPBA Installation | 02/2018 |

03.05 - FIRE HYDRANT

| <u>Detail #</u> | <u>Name / Description</u> | Revised |
|------------------------|----------------------------------|----------------|
| 03.05.01 | Fire Hydrant Assembly | 02/2018 |

03.06 - BLOW-OFF

| <u>Detail #</u> | <u>Name / Description</u> | Revised |
|------------------------|----------------------------------|----------------|
| 03.06.01 | 2" Blow-Off Assembly | 02/2018 |

03.07 - AIR-VACUUM VALVE

| <u>Detail #</u> | <u>Name / Description</u> | Revised |
|------------------------|----------------------------------|----------------|
| 03.07.01 | Air-Vacuum Valve | 10/2019 |

03.08 - SAMPLING STATION

| <u>Detail #</u> | <u>Name / Description</u> | Revised |
|------------------------|----------------------------------|----------------|
| 03.08.01 | Sampling Station | 02/2018 |

03.09 - PRESSURE REDUCING STATION

| <u>Detail #</u> | <u>Name / Description</u> | Revised |
|------------------------|----------------------------------|----------------|
| 03.09.01 | Pressure Reducing Station | 10/2019 |

03.10 - FIRE REQUIREMENTS

| <u>Detail #</u> | <u>Name / Description</u> | Revised |
|------------------------|----------------------------------|----------------|
| 03.10.01-1 | DCVA Installation | 10/2019 |
| 03.10.01-2 | DDCVA Installation (Notes) | 02/2018 |
| 03.10.02 | Fire Department Connection | 02/2018 |
| 03.10.03 | Post Indicator Valve | 02/2018 |

03.11 - VAULTS

| <u>Detail #</u> | <u>Name / Description</u> | Revised |
|------------------------|----------------------------------|----------------|
| 03.11.01 | Water Vault Detail | 10/2019 |

400 SANITARY SEWER

04.01 - MANHOLES

| <u>Detail #</u> | <u>Name / Description</u> | Revised |
|------------------------|--|----------------|
| 04.01.01 | Sanitary Sewer Manhole | 05/2012 |
| 04.01.02 | Inside Drop Sanitary Sewer Manhole | |
| 04.01.03 | Inside Drop Sanitary Sewer Manhole Notes | |
| 04.01.04 | Shallow Sanitary Sewer Manhole | |

04.02 - SEWER MAIN

| <u>Detail #</u> | <u>Name / Description</u> |
|------------------------|----------------------------------|
|------------------------|----------------------------------|

| | |
|----------|----------------|
| 04.02.01 | Sewer Main Tap |
|----------|----------------|

04.03 - SIDE SEWER

| <u>Detail #</u> | <u>Name / Description</u> |
|------------------------|----------------------------------|
|------------------------|----------------------------------|

Revised

| | | |
|----------|---|---------|
| 04.03.01 | Side Sewer Stub when Utility Easement Exists | |
| 04.03.02 | Side Sewer Stub when Utility Easement does not Exist | 02/2014 |
| 04.03.03 | Side Sewer Residential Connection | 09/2012 |
| 04.03.04 | Commercial Side Sewer Connection with Sampling Connection | 03/2011 |
| 04.03.05 | Side Sewer Clean Out When Placed in Driveway | |

04.04 - FORCE MAIN

| <u>Detail #</u> | <u>Name / Description</u> |
|------------------------|----------------------------------|
|------------------------|----------------------------------|

| | |
|----------|--|
| 04.04.01 | Force Main Cleaning Station Pig Launcher Suggested Cluster |
| 04.04.02 | Force Main Cleaning Station Pig Launcher |
| 04.04.03 | Force Main Cleaning Station Pig Launcher Notes |

04.05 - RESIDENTIAL PUMP SYSTEMS

| <u>Detail #</u> | <u>Name / Description</u> |
|------------------------|----------------------------------|
|------------------------|----------------------------------|

Revised

| | | |
|----------|--|---------|
| 04.05.01 | Pressure Line to Gravity Line Side Sewer Connection and Clean Out Type 1 | |
| 04.05.02 | Grinder Pump Installation Detail | |
| 04.05.03 | Residential Grinder Pump Station Notes | 02/2014 |
| 04.05.04 | E-One Model 2010 – 58” Grinder Pump Detail | 02/2014 |
| 04.05.05 | E-One Model 2010 – 74” Grinder Pump Detail | 02/2014 |
| 04.05.06 | E-One Model 2010 – 96” Grinder Pump Detail | 02/2014 |

04.06 - GREASE INTERCEPTOR

| <u>Detail #</u> | <u>Name / Description</u> |
|------------------------|----------------------------------|
|------------------------|----------------------------------|

Revised

| | | |
|----------|--------------------------|---------|
| 04.06.01 | Grease Interceptor | 11/2016 |
| 04.06.02 | Grease Interceptor Notes | 11/2016 |

500 GRADING, SEDIMENTATION, AND EROSION

05.01 - TEMPORARY CONSTRUCTION ENTRANCE

| <u>Detail #</u> | <u>Name / Description</u> |
|------------------------|----------------------------------|
|------------------------|----------------------------------|

| | |
|----------|--|
| 05.01.01 | Temporary Construction Entrance |
| 05.01.02 | Temporary Construction Entrance (Residential Only) |

05.02 - GRADING, EROSION, AND SEDIMENTATION

| <u>Detail #</u> | <u>Name / Description</u> | Revised |
|------------------------|---|----------------|
| 05.02.01 | Grading, Erosion, and Sedimentation Control Notes | 11/2014 |

05.03 - ROCK WALLS

| <u>Detail #</u> | <u>Name / Description</u> | Revised |
|------------------------|-----------------------------------|----------------|
| 05.03.01 | Rock Retaining Wall | 03/2011 |
| 05.03.02 | Rock Retaining Wall Notes | |
| 05.03.03 | Rock Retaining Wall Notes (cont.) | |
| 05.03.04 | Rock Retaining Wall Notes (cont.) | |
| 05.03.05 | Rock Retaining Wall Notes (cont.) | |

600 MISCELLANEOUS

| <u>Detail #</u> | <u>Name / Description</u> | Revised |
|------------------------|---------------------------------------|----------------|
| 06.01.01 | Pipe Trenching Bedding and Backfill | 02/2017 |
| 06.01.02 | Manhole Ring and Cover with Notes | 02/2018 |
| 06.01.03 | Manhole Step and Handhold | 03/2017 |
| 06.01.04 | Manhole Ladder | 03/2017 |
| 06.01.06 | Mailbox Cluster | 08/2012 |
| 06.01.07 | Removable Bollard | |
| 06.01.08 | Chain Link Fence Type 1 & Type 6 | |
| 06.01.09 | Handrail Installation & Repair Detail | |
| 06.01.09 | Confined Space Sign | 03/2017 |
| 06.01.10 | Utility Trench Dam | 03/2017 |

APPENDIX A Plan Checklists

APPENDIX B [Removed 6/2012](#)
(See Part 1 Design Standard Sections for Notes)

APPENDIX C Right of Way Deed; Easement; Alternative Methods Request (AMR);
Plan Change Request (PCR); Civil Construction Permit Application;
Cost Estimate

APPENDIX D Traffic Signal Design Manual & Specifications