WASHINGTON SUBURBAN SANITARY COMMISSION

STANDARD DETAILS FOR CONSTRUCTION

2016

WSSC

Where Water Matters

ENGINEERING AND CONSTRUCTION TEAM

TECHNICAL SERVICES GROUP

SUMMARY OF MAJOR CHANGES
TO STANDARD DETAILS FOR CONSTRUCTION
DATED NOVEMBER 2016

Section II - Miscellaneous Details

Revised Standard Details:

M/1.0 Crown leader fixed.

M/4.0 Added dimensions. Number of bars revised for clarity.

M/8.1b Added requirements for open-cut method for installing casing pipes.

M/9.0 Revised Note 1 for Standard Details.

M/11.0 Revised post and connections to gate.

M/15.0 Notes about steel removed.

M/16.0 Add references to new Standard Detail S/1.4 and revised dimension of toprung.

M/16.1 Pin being screwed to Stanchion added to Section A-A. Pin to be screwed rather than welded to stanchion.

M/17.0 Removed PVC Pipe from Note 2.

M/17.2 Hold down assembly moved to Detail M/17.3. Steel Casing pipe view showing steel casing joint for options 1 and 2 added.

M/17.3 Details removed for circumferential flange. Strap detail revised for clarity. Hold down assembly from previous Detail M/17.2 added.

M/17.4 Deleted linear plate requirement. Note added about number of straps per length of pipe. Details about anchor bolt attachment for A and B installed by tunneling added. Only one bolt required for attachment to 4”x1/4” steel plate, see section detail.

M/17.5 Revised manhole for fall prevention system requirements and deleted linear plate requirement.

M/17.7 Revised spacing between spacers.

M/18.0 Revised detail to separate water main and house connection requirements. Dimension H_2 changed to be 1’-6”.

M/22.0 Aluminum I Beam specified for 3 sizes has been updated.

New Standard Details:

M/5.0 Guidelines of replacing concrete and composite pavements in areas without jurisdictional requirements

M/5.1 Method of cutting and repairing concrete and bituminous asphalt driveways

M/5.2 Guidelines of repairing hot mix asphalt (HMA) pavements in areas without jurisdictional requirements

M/5.3 General guidelines for repairing concrete/composite pavements in areas with jurisdictional requirements.

M/21.0 Guardrail (All Areas)

M/21.1 Handrail on Stairs

M/21.2 Stair Rail

M/21.3 Stair Rail

Deleted Details:

M/5.0 Method of cutting and repairing roadways in area without jurisdictional requirements.

M/5.1 Method of cutting and repairing driveways.

M/21.0 Guardrail

M/21.1 Guardrail or Public Exposure

M/21.2 Handrail.

M/21.3 Handrail.

Section III-Sewer Details

Revised Standard Details:

S/1.0 Add reference to new Detail S/1.4 for fall prevention systems and added requirements for base slab for manholes deeper than 16'-0".

S/1.1 Added requirements for base slab for manholes deeper than 16'-0".

S/1.2 Added requirements for base slab for manholes deeper than 16'-0", added requirement when fall preventions system are required and provided the special design for middle slab when riser exceeds 10'-0".

S/1.3 Added dimension to locate 30" opening. "Provide inserts for frame and cover."

S/2.1 Added reference for Bentonite Application.

S/2.2 Revised detail to include ductile iron sewers.

S/3.0a Revised detail to include AWWA C900/905 PVC pipe. Standard detail renamed to S/3.0

S/3.03 Add reference to new details. Description added to detail.

S/3.1 Deleted brick as a material for stack for the incoming sewers at the drop connection. Location of ladder removed from plan view.

S/3.1a Deleted brick as a material for stack for the incoming sewers at the drop connection. Location of ladder removed from plan view.

S/3.1b Minimum drop added.

S/3.1c Minimum drop added.

S/3.2 Added manhole base specifications. Note for reinforcement in base added as well as notes for reinforcing bars in cover.

S/3.3 Flow direction added to detail.

S/3.5 Change method of abandoning sewer by filling with flowable or removing.

S/3.6 Change method of abandoning sewer by filling with flowable or removing.

S/4.0 Dimension for diameter of lid removed.

S/4.1 Dimensions for diameter of lid removed.

S/4.2 Deleted brick transition and provide tolerance for setting manhole frame and cover. Anchor rod added to Section A-A.

S/4.2a Anchor rod added to Section A-A.

S/4.21 Dimensions added to detail.

S/4.22 Dimensions added to detail. Dimension of 40" diameter removed.

S/4.3 Frame and cover notes added to sheet. Anchor rod added to Section A-A.

S/5.0 Listed pipe sizes for sewer house connections.

S/5.1 Added PVC cleanout plug and adapter. Note for concrete pad revised.

S/5.2 Listed pipe sizes for sewer house connections. Note for concrete pad revised.

S/6.0 Added Ductile Iron Pipe to the Connection to sewer Main Notes.

S/6.2 Listed pipe sizes for sewer house connections.

S/6.3 Listed pipe sizes for sewer house connections and revised notes.

S/6.4 Listed pipe sizes for sewer house connections. Deleted incoming main line sewer at 180º to SHC.

S/6.5 Listed pipe sizes for sewer house connections and added PVC AWWA C/900 and Ductile Iron Pipe for sewer house connections that will be grouted.

S/6.6 Granular bedding note removed.

S/6.7 Listed pipe sizes for sewer house connections. Added dimensions for grade specifications.

S/6.8 Listed pipe sizes for sewer house connections.

<u>New Standard Details:</u>

S/1.4 Precast Concrete Manhole with Fall Prevention System

S/5.0a Trenchless Cleanout System for Installation on Existing 4-inch and 6-inch Sewer House Connections

S/6.3a 4-inch and 6-inch DIP or PVC AWWA C900 House Connections and Fittings

S/6.9 Backwater Valve Assembly for Existing Service Connectors

S/6.9a Backwater Valve Assembly (Lamphole) Cover Assembly

S/6.9b Backwater Valve Assembly for Existing Service Connectors

Deleted Standard Details:

S/2.0 Precast Concrete Manhole Built Over Existing Sewer - Type I
Deleted detail for brick over pipe and pre-cast manhole section.

S/3.0 Brick Manhole Sanitary Sewer.
In 2005 Standard Specifications only pre-cast manholes were specified for manholes construction.

Section IV-Water Details

Revised Standard Details:

W/2.0 Deleted weep holes and at bottom of manhole. Fixed plan view to line up with Section. Added vent pipe to plan view.

W/2.0a Added note to describe the anchor bolts.

W/2.1 Deleted notched boards.

W2.2 Add table showing when extension stems are required.

W/2.4 Added 16" valve. Changed manhole steps to ladder, added rubber annular hydrostatic sealing device to all pipe openings in vault, and revised dimension for cover for top slab. Depth added to sump. Concrete added as material for piers. Dimensions added to Plan view for clarity.

W/2.4a Added 16" valve. Deleted note that said contractor may use precast concrete vault. Distances T and U revised for all pipe sizes.

W/2.5 Changed top slab and added hole dimensions. Section cut added to plan view.

W/2.5a Changed top slab and added hole dimensions. Added opening for DIP. Section cut added to plan view.

W/2.6 Added 16" valve. Changed manhole steps to ladder, added rubber annular hydrostatic sealing device to all pipe openings in vault, and revised dimension for cover for top slab. Revised dimension for distance to vault pipework.

W/2.7 Added 16" valve and added multiple notes and annotations to drawing.

W/3.0 Revised class of DIP.

W/3.01 Added note 1 about concrete end wall and note 6 about V-BIO encasement.

W/3.02 Revised class of DIP.

W/3.03 Revised class of DIP.

W/3.05 Added notes about restraint.

W/4.2 Added rubber annular hydrostatic sealing device to all pipe openings in vault, revised class of DIP and revised dimension for cover for top slab. Added V-BIO encasement shown.

W/4.3 Added rubber annular hydrostatic sealing device to all pipe openings in vault, revised class of DIP and revised dimension for cover for top slab. Added V-BIO encasement shown.

W/4.4 Added V-BIO encasement.

W/4.5 Added rubber annular hydrostatic sealing device to all pipe openings in vault, revised dimension for cover for top slab, moved setting table to W/4.8, and revised notes and revised class of DIP.

W/5.0 V-BIO encasement shown. Remote reading device removed from Hatch opening. Conduit added for remote reading device.

W/5.0a Changed Fire Hydrant to Hose Connection. Added 10" meter to table. Switched location of Gate Valve and Reducer. Remote reader location for hatch openings added.

W/5.0b V-BIO encasement shown. Remote reading device removed from Hatch opening. Conduit added for remote reading device.

W/5.0c V-BIO encasement shown. Remote reading device removed from Hatch opening. Conduit added for remote reading device.

W/5.0d Changed Fire Hydrant to Hose Connection. Switched location of Gate Valve and Reducer. Remote reader location for hatch openings added.

W/5.1 Bypass pumping was removed from inside the vault for both the 3-Inch and the 4-inch Compound Meter Vaults. Gate Valves were removed from inside the vault. Vault was resized to be 8'x6' Vault. Pillars were moved accordingly. V-BIO encasement was added. Remote reading device in hatch was removed. Details W/5.1a and W/5.1g

W/5.1a Eliminated and replaced with W/5.1c. Bypass piping for 3" and 4" Compound removed and combined with 6" piping layout. V-BIO encasement added. Remote reading device location shown.

W/5.2 Removed Precast from title and removed Notes 3 & 4.

W/5.21 Remove design table for precast top slab and added requirements for submittals for precast slab from contractor, and showing links to other details that use this type of top slab.

W/5.22 Removed Precast from title, added requirements for submittals for precast slab from contractor, requiring submittals for precast slab, and showing links to other details that use this type of top slab.

W/5.23 Removed Precast from title, added requirements for submittals for precast slab from contractor, requiring submittals for precast slab, and showing links to other details that use this type of top slab.

W/5.24 Removed Precast from title, added requirements for submittals for precast slab from contractor, requiring submittals for precast slab, and requiring submittals for precast slab

W/5.25 Removed Precast from title, added requirements for submittals for precast slab from contractor, requiring submittals for precast slab, and requiring submittals for precast slab

W/5.4 Notes added for 6'x12' vault.

W/5.10 Added requirements for connecting to mainline water mains.

W/5.11 Added requirements for connecting to mainline water mains.

W/5.12 Revised blocking and restraining notes.

W/5.13 Added requirements for connecting to mainline water mains.

W/5.14 Added requirements for connecting to mainline water mains.

W/6.0 Revised class of DIP.

W/6.1 DR18 removed for PVC pipe 12 inches and smaller. Section added for 16 inch PVC pipe. DR14 removed for pipe over 16 inches.

W/7.1 Added requirements for copper pipe, union, and requirements for location of remote reader and, changing requirements who will supply the remote reader cable.

W/7.2a Added requirements for copper pipe, union, and requirements for remote reader.

W/7.2b Added requirements for copper pipe, union, and requirements for remote reader.

W/7.3a Added requirements for copper pipe, union, and requirements for remote reader.

W/7.3b Added requirements for copper pipe, union, and requirements for remote reader.

W/10.0 Changed manhole steps to ladder and added rubber annular hydrostatic sealing device to all pipe openings in vault.

W/10.1 Revised class of DIP. Revised No. 5 to be Not used and No. 4 to have flange outlet.

W/10.2 Changed manhole steps to ladder and added rubber annular hydrostatic sealing device to all pipe openings in vault.

W/10.3 Changed manhole steps to ladder.

W/10.5 Changed manhole steps to ladder and added rubber annular hydrostatic sealing device to all pipe openings in vault.

W/10.6 Added requirements for submittals for precast slab from contractor.

W/10.7 Removed Precast from title and added requirements for submittals for precast slab from contractor.

W/12.0 Removed note for installation of Bypass Meter detector check. Added polyethylene encasement. Remote reading device removed from Hatch opening. Conduit added for remote reading device.

W12.0a Changed Fire Hydrant to Hose Connection. Switched location of Gate Valve and Reducer. Remote reader location for hatch openings added.

<u>New Standard Details</u>:

W/2.0c Shallow Type 2-Inch Air Valve in Manhole for 24-inch Diameter and Smaller Pipelines

W/2.0d Shallow Type 2-Inch Air Valve in Manhole for 24-inch Diameter and Smaller Pipelines

W/3.07 Blow-off Connection in Non-Traffic Areas for 4-Inch and 6-Inch Water Mains

W/3.08 Blow-off Connection in Traffic Areas for 4-Inch and 6-Inch Water Mains

W/4.7 Duel Pressure Relief Valve Vault

W/4.8 Pressure Relief Valve Vault Piping Plan

W/5.0f Fire Hose Connection for FM and Detector Check Vault Layouts

W/5.0g 10-Inch F.M. Meter Vault

W/5.0h Fire Hose Connection in Traffic Areas for FM Meter and Detector Check Vault Layouts

W/5.0i 10-Inch FM Meter with Check Valve Vault

W/5.26 Cast in place concrete top slab for 10-inch FM meter with check valve vault.

W/5.9a 2-Inch Meter Setting for Existing 2-Inch Meter Replacement

W/5.16 Existing Outside Meter Temporary Water Service for Water Main Replacement

W/5.16a Existing Inside Meter Setting Temporary Water Service for Water Main Replacement

W/7.9 3-Inch and Larger Indoor Detector Assembly Meter When Room is Not Adjacent to Exterior Building Walls

W/11.1 Pipe Closure Joint Detail for Exist. ACP Water Mains

W/13.0 Connecting to Existing PCCP water mains using ductile iron tee.

W/13.1 Connecting to Existing PCCP water mains for 2-inch and smaller water service.

W/14.0 4-inch, 6-inch and 8-inch Ultrasonic Meter Vault.

W/14.0a 10-inch Ultrasonic Meter Vault

W/14.0b 4-inch, 6-inch, 8-inch and 10-inch Ultrasonic Meter Vault Piping Layout

W/14.0c 4-inch, 6-inch, 8-inch, and 10-inch Ultrasonic Meter Vault Piping Layout

Deleted Details:

W/5.1a 4-Inch Compound Meter Vault (See Detail W/5.1) replaced with W/5.1c

W/5.1b 6-Inch Compound Meter Vault (See Detail W/5.1)

W/9.0 Precast concrete manhole for Pitometer survey.

Section V-Blocking Details

Revised Standard Details

B/1.0 Notes revised to submit to TSG for review.

B/1.7 Changed all reinforcing bars and wedges to Stainless Steel

B/2.0 Revise type of restrain joints.

B/2.1 Revise type of restrain joints and size of main.

B/2.2 Revise type of restrain joints and size of main.

B/3.0 Revised note to submit to TSG for review and change all harness lug and tie rods to stainless steel.

B/3.1 Revised method of construction collar block and connection

B/3.1b Revised method of construction collar block and connection

B/3.2 Note revised to submit to TSG for review.

B/3.3 Note revised to submit to TSG for review and added block dimensions.

Deleted Standard Detail:

B/1.5 Quick Blocking for 3", 4" and 6" Caps and Plugs
This detail was eliminated.

B/1.9 Blocking for Tapped Plugs
This detail was eliminated for the reasons that WSSC does not extend water mainline 1-1/2-inches in diameter. When tapping the water main is require, the tap is placed on the side of the water main.

B/2.2 Alternate Method of Strapping Valve to Hydrant with Tie Bolts
This detail was eliminated for the reasons that WSSC is changing to stainless steel.

B/2.2a Alternate Method of Strapping Valve to Hydrant with Tie Bolts
This detail was eliminated for the reasons that WSSC is changing to stainless steel.

B/2.3 Alternate Method of Strapping Valve to Main with Tie Bolts
This detail was eliminated for the reasons that WSSC is changing to stainless steel.

B/2.7 Wedge Action Restrainer Gland
This detail was eliminated for the reasons that Wedge Action Restrainer Gland was added to specifications.

B/3.1b Quick Harnessed Connection to Thrust Blocking for Ductile Iron and Cast Iron Pipe
This detail was eliminated for the reasons that information to move Details B/3.1 2and B/3.3

Section VI – Corrosion Details

Revised Standard Details:

C/1.0 Wires minimum and maximum length specified. Bond to mechanical joint removed.

C/1.1 Bond to mechanical joint removed. AWG HMWPE copper wire specified.

C/1.2 Specified coating for exposed metal. Bond to coupling ring removed. AWG HMWPE copper wire specified. Crimped ringed terminals called out.

C/1.3 Added details for wire attachments. Conduit added for wires around valve vault.

C/1.4 Bond to mechanical joint removed. AWG HMWPE copper wire specified

C/1.6 Bond to mechanical joint removed. AWG HMWPE copper wire specified.

C/2.0 Notes 4 and 5 revised to describe attachment of thermite weld. Note 2 moved to C/2.1.

C/2.2 Revived sacrificial anode detail.

C/3.0 Note added for coating of insulation joint detail. Reference cell lead wire leader added. Insulation of joint called out in notes.

C/3.1 Reference cell lead wire leader added, 2" PVC conduit and test station box added.

C/3.2 Reference cell lead wire leader added. Bond to mechanical joint removed. 2" PVC conduit and test station box added.

C/3.2a Changed to for lines 12" and smaller. Bond to mechanical joint removed.

C/3.4 Reference cell lead wire leader added. Bond to mechanical joint removed. 2" PVC conduit and test station box added.

C/3.5 Title changed to "Insulated Joint for copper pipe service connections (2" or less).

C/3.6 Added note for testing after insulation.

C/4.0 Bricks used to replace pine boards. Note 2 were revised to call out placement 2' behind sidewalk if possible.

C/4.2 2" PVC conduit and test station box added.

C/4.5 Reference cell lead wire leader, 2" PVC conduit and test station box added.

C/4.6 Colors for wires changed from orange to black. Reference cell lead wire leader, 2" PVC conduit and test station box added.

C/4.7 #8 wires changed to #6 wires. Note added requiring 2" PVC conduit for wires up until bottom of test station assembly. Reference cell lead wire leader added.

<u>Added Standard Details:</u>

C/1.9 Separator to Avoid Electrical Contact

C/2.1 Thermite Weld Detail

C/2.2a Plan View of Sacrificial Anode Installation and Test Station Placement.

C/2.2b Typical Test Station Installation.

C/2.3 Splice Detail Anode Leader to the Header Cable

C/2.5 Hydrant Test Station (Type C)

C/2.6 Test Station at Mechanical Joint / Push-on Cap / Plug

C/3.0a Coating of Insulating Flange Detail

C/3.0b Insulating Flange Test Station (IJ)

C/3.0c Insulating Flange Test Station with Anodes (IJ)

C/4.0a Flush Mounted Test Station Terminal Block

C/5.0 Field Applied Coating When Connecting to Existing CIP and DIP Water Mains

C/5.1 Field Applied Coating When Connecting to Existing PCCP Water Mains

C/5.2 "3" Thru 12" Ductile Iron Water House Connection Insulating Joint

C/6.0 Joint Coating Detail

C/7.0 PVC AWWA C-900 Pipe 4-inch, 6-inch, 8-inch or 10-inch Anode Protection Valve

C/7.1 PVC AWWA C-900 Pipe 12-inch Anode Protection Valve

C/7.2 PVC AWWA C-900 Pipe 4-inch to 12-inch Tapping Sleeve and Valve

C/7.3 PVC AWWA C-900 Pipe 4-inch to 12-inch Anode Protection for Bends

C/7.4 PVC AWWA C-900 Pipe 4-inch to 12-inch Anode Protection for Tee

C/7.5 PVC AWWA C-900 Pipe 4-inch to 12-inch Anode Protection for Cross

C/7.6 PVC AWWA C-900 Pipe 4-inch to 12-inch Anode Protection for Cap

C/7.7 PVC AWWA C-900 Pipe 4-inch to 12-inch Anode Protection for MJ Solid Sleeve

C/7.8 PVC AWWA C-900 Pipe Anode Protection for Fire Hydrant Lead Pipe

C/7.9 PVC AWWA C-900 Pipe 4-inch to 12-inch Anode Protection for Water House Connections

C/7.10 PVC AWWA C-900 Pipe 4-inch to 12-inch Anode Protection for Restrain Joint

C/7.11 PVC AWWA C-900 Pipe 4-inch to 12-inch Anode Protection for Service Saddle

C/7.12 PVC AWWA C-900 Pipe 4-inch to 12-inch Single Anode Placement

C/7.13 PVC AWWA C-900 Pipe 4-inch to 12-inch Multiple Anode Placement

Deleted Standard Details:

C/3.3a Deleted for design pressures

Section VII – Pressure Sewer Details

Revised Standard Detail:

PS/1.1 Added specifications for operating nut on ball valve. Pressure treated Yellow Pine called out.

PS/1.2 Brick pier or concrete pier.

PS/1.41 Pressure treated Yellow Pine called out.

PS/1.6 Removed the requirements for service valve assembly when connecting to gravity SHC. Revised connection to vertical pipe of SHC to use a wye and bend instead of service saddle and corporation.

PS/1.8 Added specifications for operating nut on ball valve. Pressure treated Yellow Pine called out.

PS/8.1 Pressure treated Yellow Pine called out.

Deleted Standard Detail:

PS/1.61 Pressure SHC to Existing Mainline Pressure Sewer "Wet" Tap This detail was eliminated for reasons for maintaining WSSC part of the pressure sewer house connection and future rehabilitation of the mainline sewer will damage the service saddle and corporation.

PS/1.62 Pressure Sewer House Connection to New or Existing Manholes in Gravity System. This detail was eliminated for reasons for maintaining WSSC part of the pressure sewer house connection.

Section VIII-Sediment Control Details

Added Standard Details

SC/1.1 Silt Fence on Pavement

SC/3.2 Stream Bank Protections at Exist. Utility Stream Crossing

SC/15.1 Filter Bag Detail

SC/16.1 At-Grade Inlet Protection Detail

SC/20.0 Filter Log

SC/20.1 Filter Log Notes

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