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| Version | Date | Description of Revisions |
| 1 | August 30, 2006 | Approved final document. |
| 2 | January 31, 2008 | Upload of appropriate document. |
| 3 | August 12, 2014 | First draft review (AV) |
| 4 | June 8, 2015 | Second Draft for Review (AV) |
| **5** | **September 16, 2015** | **Updated, Finalized Specification – Reference eDOCS #5823659-v4 (AV)** |
| 6 | May 23, 2017 | Updated reference standards ASME B16.9-2012, ASME B16.21-2016, ASME B36.10M-2015, ASTM A307-14e1, ASTM A234/A234M-16, ASTM D1330-04(2015), AWWA C210-15 |

NOTE:

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**The on-line copy is the current version of the document.**

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| Item | Description |
| Pipe | Carbon steel ASTM A283/A283M-13, Grade C or ASTM A285/A285M-12 Grade C, sheet or coil, fabricated in accordance with AWWA C200-12, straight or spiral seam, thickness designed for 66 percent of minimum yield stress at hydrostatic test pressure, minimum thickness 1/4-inch, sizes are to be nominal outside diameters conforming to the requirements of ASME B36.10M-2015. |
| Linings | Cement Mortar: AWWA C205-12 (Buried and concrete encased only).  Coal Tar Epoxy: AWWA C210-15 minimum two topcoats.  Applied by pipe manufacturer. |
| Coatings | Reinforced Cement Mortar: AWWA C205-12 (Buried and concrete encased only).  Coal Tar Epoxy: AWWA C210-15 minimum two topcoats.  Polyethylene Bonded: As specified in Section  [09900, Painting and Protective Coatings].  Applied by pipe manufacturer. |
| Interior Bracing | 60 degree spiders set 600 mm from each end and at the one-third point capable of withstanding backfill loadings. Bracing at one-third point not required for sections less than 3 metres in length. |
| Joints | Sized Bell and Spigot Rings: AWWA C303-08, Section 2.6 and 3.3.  Maximum Pipe Size: 1,448 mm diameter.  Spigot Rings:  Carnegie M3516 for cylinder thickness 10 mm or less.  Carnegie M3818 for cylinder thickness over 10 mm. Double fillet weld lap joint.  Bell Ring Thickness: Minimum of 5 mm or cylinder thickness. |
| Expanded Bell and Spigot Rings: AWWA C303-08, Section 2.6 and 3.3.  Maximum Pipe Size: 1,500 mm diameter and maximum cylinder thickness 8 mm.  Spigot Rings: Carnegie M3516.  Bell Ring Thickness: Minimum of 5 mm or cylinder thickness. |
| Rolled Spigot and Expanded Bell: AWWA C200-12.  Maximum pipe size 750 mm diameter.  Maximum cylinder thickness 6 mm. |
| Welded: AWWA C200-12. Required for all restrained joints and for pipe over 1,450 mm in diameter. Optional for pipe 750 mm diameter and larger. Butt welded or lap welded using bell-and-spigot or butt strap. |
| Flexible Couplings:  Maximum Pipe Size: 1,450 mm diameter. Thicken pipe walls near joints as required for thrust tie lugs, 10 mm minimum.  Grooved or Shouldered End: AWWA C606-11, Type B, C, or D. Victaulic coupling for pipe 600 mm or less in diameter. Thicken pipe walls near joints to a thickness of 10 mm minimum (Non-buried only). |
| Fittings | Fabricated: Carbon steel fabricated from pipe in accordance with AWWA C208-12; elbows to have a 22.5-degree maximum miter section angle, minimum of three sections; wyes, tees, crosses, and outlets to be reinforced in accordance with AWWA M-11, Steel Water Pipe: A Guide for Design and Installation (M11), 4th edition, including Errata. |
| Forged: Butt-welding fittings, ASTM A234/A234M-16, Grade WPB meeting the requirements of ASME B16.9-2012. Fitting wall thickness shall match the thickness of the adjoining pipe. Elbows shall be long radius unless otherwise shown on the Drawings. |
| Flanges | AWWA C207-13, Class D (1050 kPa), Class E (1,900 kPa), or Class F (2,100 kPa) hub or ring type. |
| Bolting | Carbon steel ASTM A307-14e1, Grade A hex head bolts and ASTM A563-15, Grade A hex head nuts. |
| Gaskets | Flanged, Water and Sewage Service: 3 mm thick, unless otherwise specified on the Drawings, red rubber (SBR), hardness 80 (Shore A), rated to 93 degrees Celsius, conforming to the requirements of ASME B16.21-2016, AWWA C207-13, and ASTM D1330-04(2015), Grades 1 and 2. |
| Flanged, Hot Air Service: 3 mm thick, unless otherwise specified in the Contract Documents, homogeneous black rubber (EPDM), hardness 60 (Shore A), rated to 150 degrees C., conforming to the requirements of ASME B16.21-2016 and ASTM D1330-04(2015) Steam Grade. |
| Gasket thickness for AWWA C207-13, Class E and Class F flanges shall be 1.5 mm thick. |
| Ring gaskets shall not be permitted. Blind flanges shall be gasketed covering the entire inside face with the gasket cemented to the blind flange. |
| Bell-and-Spigot Joints: Synthetic rubber conforming to the requirements of AWWA C303-08. |

**END OF SECTION**