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| Version | Date | Description of Revisions |
| 1 | August 30, 2006 | Approved final document. |
| 2 | March 15, 2011 | Minor change from Legal |
| 3 | August 12, 2014 | First draft review (AV) |
| **4** | **September 16, 2015** | **Updated, Finalized Specification – Reference eDOCS #5823663-v4 (AV)** |
| 5 | May 23, 2017 | Updated references to standards ASME B16.5-2013, ASME B16.11-2016, ASME B16.21-2016, ASTM A182/A182M-16a, ASTM A194/A194M-17, ASTM A240-16a, ASTM A307-14e1, ASTM A312/A312M-17, ASTM A320/A320M-17a, ASTM A563-15, ASTM A778-16, ASTM D1330-04(2015)e1 (AAM) |

NOTE:

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| Item | Size | Description |
| Pipe | 50 mm & smaller | Schedule 40S: ASTM A312/A312M-17, Type [304] [316] seamless, pickled and passivated. |
| 60 mm to 150 mm | Schedule 10S: ASTM A778-16, “as-welded” grade, Type [304lL [316L]. |
| 200 mm & larger | Schedule 5S: ASTM A778-16, “as-welded” grade, Type [304lL [316L]. |
| Joints | 50 mm & smaller | Threaded or flanged at equipment as required or shown on the Drawings. |
| 60 mm & larger | Butt-welded or flanged at valves and equipment. |
| Fittings | 50 mm & smaller | Threaded Forged: 1,000 CWP, ASTM A182/A182M-16a, Grade [304lL [316L]. |
| 60 mm & larger | Butt-Welded: ASTM A774/A774M-14 Grade [304lL] [316L] conforming to MSS SP 43-2013, “as-welded” grade, pickled and passivated; fitting wall thickness to match adjoining pipe; long radius elbows unless otherwise shown on the Drawings. |
| Branch Connections | 50 mm & smaller | Tee or reducing tee in conformance with Fittings above. |
| 60 mm & larger | Butt-welding tee or reducing tee in accordance with Fittings above. |
| Flanges | All | Forged Stainless Steel: ASTM A182/A182M-16a,Grade[304lL] [316L], ASME B16.5-2013Class 150 or Class 300, slip-on weld neck or raised face.  Cast Carbon Steel: ASTM A216/A216M-16 Grade WCA, drilled, ASME B16.5-2013 Class 150 or Class 300 Van Stone Type with stainless steel stub ends, ASTM A240-16a Type [304lL] [316L] “as-welded grade”, conforming to the requirements of MSS-SP43-2013, wall thickness same as pipe. |
| Unions | 50 mm & smaller | Threaded Forged: ASTM A182/A182M-16a, Grade [304l] [316], 13,800 or 20,700 kPag WOG, integral ground seats, Association of American Railroads (AAR) design meeting the requirements of ASME B16.11-2016, bore to match pipe. |
| Bolting | All | Forged Flanges: Type [304l] [316] stainless steel, ASTM A320/A320M-17a Grade B8M hex head bolts and ASTM A194/A194M-17 Grade 8M hex head nuts. |
| Van Stone Flanges: Carbon steel ASTM A307-14e1 Grade B hex head bolts and ASTM A563-15 Grade A hex head nuts. Provide same on mating cast iron flange on valve or equipment with flat ring gasket. |
| Gaskets | All Flanges | Flanged, Water and Sewage Service: 5 mm thick, unless otherwise specified on the Drawings, red rubber (SBR), hardness 80 (Shore A), rated to 93 degrees Celsius, conforming to ASME B16.21-2016, AWWA C207-13, and ASTM D1330-04(2015)e1, Grades 1 and 2. |
| Flanged, Hot Air and Fuel Gas Service: 3 mm thick, unless otherwise specified on the Drawings, homogeneous black rubber (EPDM), hardness 60 (Shore A), rated to 150 degrees Celsius, conforming to the requirements of ASME B16.21-2016 and ASTM D1330-04(2015)e1 Steam Grade. |
| Blind flanges shall be gasketed covering with entire inside face with gasket cemented to blind flange. |
| Thread Lubricant | 50 mm & smaller | Teflon tape. |

**END OF SECTION**