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| Analysis — | Width of | Hydrostatic | Weight of | Pressure on | Bolt Spacing | Stiffener | Load to Bolt | Steel Stress (KSI) | Steel Stress (KSI) |
|---------------|--------------|-------------|-------------|-------------|--------------------------|--------------|--------------|--------------------|--------------------|
| Type | Opening (IN) | Head (FT) | Water (PCF) | Gate (PSF) | (Poly Seal to Rail) (IN) | Spacing (IN) | (LBS) | (Max Local @ AB) | (Max General) |
| AWWA | 14 | 20.60 | 62.4 | 1285.7 | 8 | 8 | 500.0 | 30.9 | 15.4 |
| AWWA | 20 | 14.42 | 62.4 | 900.0 | 8 | 8 | 500.0 | 30.9 | 15.4 |
| AWWA | 26 | 11.09 | 62.4 | 692.3 | 8 | 8 | 500.0 | 30.9 | 15.4 |
| AWWA | 32 | 9.01 | 62.4 | 562.5 | 8 | 8 | 500.0 | 30.9 | 15.4 |
| AWWA | 38 | 7.59 | 62.4 | 473.7 | 8 | 8 | 500.0 | 30.9 | 15.4 |
| AWWA | 44 | 6.56 | 62.4 | 409.1 | 8 | 8 | 500.0 | 30.9 | 15.4 |
| AWWA | 50 | 5.77 | 62.4 | 360.0 | 8 | 8 | 500.0 | 30.9 | 15.4 |
| AWWA | 56 | 5.15 | 62.4 | 321.4 | 8 | 8 | 500.0 | 30.9 | 15.4 |
| AWWA | 62 | 4.65 | 62.4 | 290.3 | 8 | 8 | 500.0 | 30.9 | 15.4 |
| AWWA | 74 | 3.90 | 62.4 | 243.2 | 8 | 8 | 500.0 | 30.9 | 15.4 |
| Analysis | Width of | Hydrostatic | Weight of | Pressure on | Bolt Spacing | Stiffener | Load to Bolt | Steel Stress (KSI) | Steel Stress (KSI) |
| Туре | Opening (IN) | Head (FT) | Water (PCF) | Gate (PSF) | (Poly Seal to Rail) (IN) | Spacing (IN) | (LBS) | (Max Local @ AB) | (Max General) |
| Full Stress | 14 | 39.97 | 62.4 | 2494.3 | 8 | 8 | 970.0 | 59.3 | 29.8 |
| Full Stress | 20 | 27.98 | 62.4 | 1746.0 | 8 | 8 | 970.0 | 59.3 | 29.8 |
| Full Stress | 26 | 21.52 | 62.4 | 1343.1 | 8 | 8 | 970.0 | 59.3 | 29.8 |
| Full Stress | 32 | 17.49 | 62.4 | 1091.3 | 8 | 8 | 970.0 | 59.3 | 29.8 |
| Full Stress | 38 | 14.73 | 62.4 | 918.9 | 8 | 8 | 970.0 | 59.3 | 29.8 |
| Full Stress | 44 | 12.72 | 62.4 | 793.6 | 8 | 8 | 970.0 | 59.3 | 29.8 |
| Full Stress | 50 | 11.19 | 62.4 | 698.4 | 8 | 8 | 970.0 | 59.3 | 29.8 |
| Full Stress | 56 | 9.99 | 62.4 | 623.6 | 8 | 8 | 970.0 | 59.3 | 29.8 |
| Full Stress | 62 | 9.03 | 62.4 | 563.2 | 8 | 8 | 970.0 | 59.3 | 29.8 |
| Full Stress | 74 | 7.56 | 62.4 | 471.9 | 8 | 8 | 970.0 | 59.3 | 29.8 |

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| Analysis Type | Width of Opening (IN) | Hydrostatic Head (FT) | Weight of Water (PCF) | Pressure on Gate (PSF) | Bolt Spacing (Poly Seal to Rail) (IN) | Stiffener Spacing (IN) | Load to Bolt (LBS) | Steel Stress (KSI) (Max Local @ AB) | Steel Stress (KSI) (Max General) |
|------------------|--------------------------|--------------------------|--------------------------|---------------------------|--|---------------------------|-----------------------|--|-------------------------------------|
| AWWA | 14 | 29.88 | 62.4 | 1864.3 | 8 | 8 | 725.0 | 25.9 | 15.5 |
| AWWA | 20 | 20.91 | 62.4 | 1305.0 | 8 | 8 | 725.0 | 25.9 | 15.5 |
| AWWA | 26 | 16.09 | 62.4 | 1003.8 | 8 | 8 | 725.0 | 25.9 | 15.5 |
| AWWA | 32 | 13.07 | 62.4 | 815.6 | 8 | 8 | 725.0 | 25.9 | 15.5 |
| AWWA | 38 | 11.01 | 62.4 | 686.8 | 8 | 8 | 725.0 | 25.9 | 15.5 |
| AWWA | 44 | 9.51 | 62.4 | 593.2 | 8 | 8 | 725.0 | 25.9 | 15.5 |
| AWWA | 50 | 8.37 | 62.4 | 522.0 | 8 | 8 | 725.0 | 25.9 | 15.5 |
| AWWA | 56 | 7.47 | 62.4 | 466.1 | 8 | 8 | 725.0 | 25.9 | 15.5 |
| AWWA | 62 | 6.75 | 62.4 | 421.0 | 8 | 8 | 725.0 | 25.9 | 15.5 |
| AWWA | 74 | 5.65 | 62.4 | 352.7 | 8 | 8 | 725.0 | 25.9 | 15.5 |
| Analysis | Width of | Hydrostatic | Weight of | Pressure on | Bolt Spacing | Stiffener | Load to Bolt | Steel Stress (KSI) | Steel Stress (KSI) |
| Type | Opening (IN) | Head (FT) | Water (PCF) | Gate (PSF) | (Poly Seal to Rail) (IN) | Spacing (IN) | (LBS) | (Max Local @ AB) | (Max General) |
| Full Stress | 14 | 57.69 | 62.4 | 3600.0 | 8 | 8 | 1400.0 | 49.3 | 29.7 |
| Full Stress | 20 | 40.38 | 62.4 | 2520.0 | 8 | 8 | 1400.0 | 49.3 | 29.7 |
| Full Stress | 26 | 31.07 | 62.4 | 1938.5 | 8 | 8 | 1400.0 | 49.3 | 29.7 |
| Full Stress | 32 | 25.24 | 62.4 | 1575.0 | 8 | 8 | 1400.0 | 49.3 | 29.7 |
| Full Stress | 38 | 21.26 | 62.4 | 1326.3 | 8 | 8 | 1400.0 | 49.3 | 29.7 |
| Full Stress | 44 | 18.36 | 62.4 | 1145.5 | 8 | 8 | 1400.0 | 49.3 | 29.7 |
| Full Stress | 50 | 16.15 | 62.4 | 1008.0 | 8 | 8 | 1400.0 | 49.3 | 29.7 |
| Full Stress | 56 | 14.42 | 62.4 | 900.0 | 8 | 8 | 1400.0 | 49.3 | 29.7 |
| Full Stress | 62 | 13.03 | 62.4 | 812.9 | 8 | 8 | 1400.0 | 49.3 | 29.7 |
| Full Stress | 74 | 10.91 | 62.4 | 681.1 | 8 | 8 | 1400.0 | 49.3 | 29.7 |

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| Analysis Type | Width of Opening (IN) | Hydrostatic Head (FT) | Weight of Water (PCF) | Pressure on Gate (PSF) | Bolt Spacing (Poly Seal to Rail) (IN) | Stiffener Spacing (IN) | Load to Bolt (LBS) | Steel Stress (KSI) (Max Local @ AB) | Steel Stress (KSI) (Max General) |
|--|--|---|--|--|---|-----------------------------------|---|---|--|
| AWWA | 14 | 32.97 | 62.4 | 2057.1 | 8 | 8 | 800.0 | 25.7 | 15.3 |
| AWWA | 20 | 23.08 | 62.4 | 1440.0 | 8 | 8 | 800.0 | 25.7 | 15.3 |
| AWWA | 26 | 17.75 | 62.4 | 1107.7 | 8 | 8 | 800.0 | 25.7 | 15.3 |
| AWWA | 32 | 14.42 | 62.4 | 900.0 | 8 | 8 | 800.0 | 25.7 | 15.3 |
| AWWA | 38 | 12.15 | 62.4 | 757.9 | 8 | 8 | 0.008 | 25.7 | 15.3 |
| AWWA | 44 | 10.49 | 62.4 | 654.5 | 8 | 8 | 0.008 | 25.7 | 15.3 |
| AWWA | 50 | 9.23 | 62.4 | 576.0 | 8 | 8 | 0.008 | 25.7 | 15.3 |
| AWWA | 56 | 8.24 | 62.4 | 514.3 | 8 | 8 | 0.008 | 25.7 | 15.3 |
| AWWA | 62 | 7.44 | 62.4 | 464.5 | 8 | 8 | 0.008 | 25.7 | 15.3 |
| AWWA | 74 | 6.24 | 62.4 | 389.2 | 8 | 8 | 0.008 | 25.7 | 15.3 |
| | | | | | | | | | |
| Analysis | Width of | Hydrostatic | Weight of | Pressure on | Bolt Spacing | Stiffener | Load to Bolt | Steel Stress (KSI) | Steel Stress (KSI) |
| Analysis Type | Width of Opening (IN) | Hydrostatic Head (FT) | Weight of Water (PCF) | Pressure on Gate (PSF) | Bolt Spacing (Poly Seal to Rail) (IN) | Stiffener Spacing (IN) | Load to Bolt (LBS) | Steel Stress (KSI) (Max Local @ AB) | Steel Stress (KSI) (Max General) |
| - | | - | _ | | | | | , , | |
| Туре | Opening (IN) | Head (FT) | Water (PCF) | Gate (PSF) | (Poly Seal to Rail) (IN) | Spacing (IN) | (LBS) | (Max Local @ AB) | (Max General) |
| Type Full Stress | Opening (IN) 14 | Head (FT) 64.70 | Water (PCF) 62.4 | Gate (PSF) 4037.1 | (Poly Seal to Rail) (IN) 8 | Spacing (IN) 8 | (LBS) 1570.0 | (Max Local @ AB) 49.9 | (Max General) 29.9 |
| Type Full Stress Full Stress | Opening (IN) 14 20 | Head (FT) 64.70 45.29 | Water (PCF) 62.4 62.4 | Gate (PSF) 4037.1 2826.0 | (Poly Seal to Rail) (IN) 8 8 | Spacing (IN) 8 8 | (LBS) 1570.0 1570.0 | (Max Local @ AB) 49.9 49.9 | (Max General) 29.9 29.9 |
| Type Full Stress Full Stress Full Stress | Opening (IN) 14 20 26 | Head (FT) 64.70 45.29 34.84 | Water (PCF) 62.4 62.4 62.4 | Gate (PSF) 4037.1 2826.0 2173.8 | (Poly Seal to Rail) (IN) 8 8 8 | Spacing (IN) 8 8 8 | (LBS) 1570.0 1570.0 1570.0 | (Max Local @ AB) 49.9 49.9 49.9 | (Max General) 29.9 29.9 29.9 |
| Type Full Stress Full Stress Full Stress Full Stress | Opening (IN) 14 20 26 32 | Head (FT) 64.70 45.29 34.84 28.31 | Water (PCF) 62.4 62.4 62.4 62.4 | Gate (PSF) 4037.1 2826.0 2173.8 1766.3 | (Poly Seal to Rail) (IN) 8 8 8 8 | Spacing (IN) 8 8 8 8 | (LBS) 1570.0 1570.0 1570.0 1570.0 | (Max Local @ AB) 49.9 49.9 49.9 49.9 | (Max General) 29.9 29.9 29.9 29.9 |
| Type Full Stress Full Stress Full Stress Full Stress Full Stress | Opening (IN) 14 20 26 32 38 | Head (FT) 64.70 45.29 34.84 28.31 23.84 | Water (PCF) 62.4 62.4 62.4 62.4 62.4 | Gate (PSF) 4037.1 2826.0 2173.8 1766.3 1487.4 | (Poly Seal to Rail) (IN) 8 8 8 8 8 | Spacing (IN) 8 8 8 8 8 | (LBS) 1570.0 1570.0 1570.0 1570.0 1570.0 | (Max Local @ AB) 49.9 49.9 49.9 49.9 49.9 | (Max General) 29.9 29.9 29.9 29.9 29.9 |
| Type Full Stress Full Stress Full Stress Full Stress Full Stress Full Stress | Opening (IN) 14 20 26 32 38 44 | Head (FT) 64.70 45.29 34.84 28.31 23.84 20.59 | Water (PCF) 62.4 62.4 62.4 62.4 62.4 62.4 | Gate (PSF) 4037.1 2826.0 2173.8 1766.3 1487.4 1284.5 | (Poly Seal to Rail) (IN) 8 8 8 8 8 8 | Spacing (IN) 8 8 8 8 8 8 | (LBS) 1570.0 1570.0 1570.0 1570.0 1570.0 | (Max Local @ AB) 49.9 49.9 49.9 49.9 49.9 49.9 | (Max General) 29.9 29.9 29.9 29.9 29.9 29.9 |
| Type Full Stress | Opening (IN) 14 20 26 32 38 44 50 | Head (FT) 64.70 45.29 34.84 28.31 23.84 20.59 18.12 | Water (PCF) 62.4 62.4 62.4 62.4 62.4 62.4 62.4 | Gate (PSF) 4037.1 2826.0 2173.8 1766.3 1487.4 1284.5 1130.4 | (Poly Seal to Rail) (IN) 8 8 8 8 8 8 8 | Spacing (IN) 8 8 8 8 8 8 8 | (LBS) 1570.0 1570.0 1570.0 1570.0 1570.0 1570.0 | (Max Local @ AB) 49.9 49.9 49.9 49.9 49.9 49.9 49.9 49. | (Max General) 29.9 29.9 29.9 29.9 29.9 29.9 29.9 |

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| Analysis Type | Width of Opening (IN) | Hydrostatic Head (FT) | Weight of Water (PCF) | Pressure on Gate (PSF) | Bolt Spacing (Poly Seal to Rail) (IN) | Stiffener Spacing (IN) | Load to Bolt (LBS) | Steel Stress (KSI) (Max Local @ AB) | Steel Stress (KSI) (Max General) |
|---|--|--|--|--|--|----------------------------|--|--|--|
| AWWA | 14 | 61.81 | 62.4 | 3857.1 | 8 | 8 | 1500.0 | 21.8 | 15.2 |
| AWWA | 20 | 43.27 | 62.4 | 2700.0 | 8 | 8 | 1500.0 | 21.8 | 15.2 |
| AWWA | 26 | 33.28 | 62.4 | 2076.9 | 8 | 8 | 1500.0 | 21.8 | 15.2 |
| AWWA | 32 | 27.04 | 62.4 | 1687.5 | 8 | 8 | 1500.0 | 21.8 | 15.2 |
| AWWA | 38 | 22.77 | 62.4 | 1421.1 | 8 | 8 | 1500.0 | 21.8 | 15.2 |
| AWWA | 44 | 19.67 | 62.4 | 1227.3 | 8 | 8 | 1500.0 | 21.8 | 15.2 |
| AWWA | 50 | 17.31 | 62.4 | 1080.0 | 8 | 8 | 1500.0 | 21.8 | 15.2 |
| AWWA | 56 | 15.45 | 62.4 | 964.3 | 8 | 8 | 1500.0 | 21.8 | 15.2 |
| AWWA | 62 | 13.96 | 62.4 | 871.0 | 8 | 8 | 1500.0 | 21.8 | 15.2 |
| AWWA | 74 | 11.69 | 62.4 | 729.7 | 8 | 8 | 1500.0 | 21.8 | 15.2 |
| Analysis | Width of | Hydrostatic | Weight of | Pressure on | Bolt Spacing | Stiffener | Load to Bolt | Steel Stress (KSI) | Steel Stress (KSI) |
| | | | | | /= 1 | c · /151) | (LDC) | (0.0 1 1 0 0.0) | /a.aai\ |
| Туре | Opening (IN) | Head (FT) | Water (PCF) | Gate (PSF) | (Poly Seal to Rail) (IN) | Spacing (IN) | (LBS) | (Max Local @ AB) | (Max General) |
| Type Full Stress | Opening (IN) 14 | Head (FT) 119.51 | Water (PCF) 62.4 | Gate (PSF) 7457.1 | (Poly Seal to Rail) (IN) 8 | Spacing (IN) 8 | (LBS) 2900.0 | (Max Local @ AB) 41.8 | (Max General) 29.2 |
| | | • • • | | | | | | • - • | • |
| Full Stress | 14 | 119.51 | 62.4 | 7457.1 | 8 | 8 | 2900.0 | 41.8 | 29.2 |
| Full Stress Full Stress | 14 20 | 119.51 83.65 | 62.4 62.4 | 7457.1 5220.0 | 8 8 | 8 | 2900.0 2900.0 | 41.8 41.8 | 29.2 29.2 |
| Full Stress Full Stress Full Stress | 14 20 26 | 119.51 83.65 64.35 | 62.4 62.4 62.4 | 7457.1 5220.0 4015.4 | 8 8 8 | 8 8 8 | 2900.0 2900.0 2900.0 | 41.8 41.8 41.8 | 29.2 29.2 29.2 |
| Full Stress Full Stress Full Stress Full Stress | 14 20 26 32 | 119.51 83.65 64.35 52.28 | 62.4 62.4 62.4 62.4 | 7457.1 5220.0 4015.4 3262.5 | 8 8 8 8 | 8 8 8 8 | 2900.0 2900.0 2900.0 2900.0 | 41.8 41.8 41.8 41.8 | 29.2 29.2 29.2 29.2 |
| Full Stress Full Stress Full Stress Full Stress Full Stress | 14 20 26 32 38 | 119.51 83.65 64.35 52.28 44.03 | 62.4 62.4 62.4 62.4 62.4 | 7457.1 5220.0 4015.4 3262.5 2747.4 | 8 8 8 8 | 8 8 8 8 | 2900.0 2900.0 2900.0 2900.0 2900.0 | 41.8 41.8 41.8 41.8 41.8 | 29.2 29.2 29.2 29.2 29.2 |
| Full Stress Full Stress Full Stress Full Stress Full Stress Full Stress | 14 20 26 32 38 44 | 119.51 83.65 64.35 52.28 44.03 38.02 | 62.4 62.4 62.4 62.4 62.4 62.4 | 7457.1 5220.0 4015.4 3262.5 2747.4 2372.7 | 8 8 8 8 8 | 8 8 8 8 8 | 2900.0 2900.0 2900.0 2900.0 2900.0 2900.0 | 41.8 41.8 41.8 41.8 41.8 41.8 | 29.2 29.2 29.2 29.2 29.2 29.2 |
| Full Stress | 14 20 26 32 38 44 50 | 119.51 83.65 64.35 52.28 44.03 38.02 33.46 | 62.4 62.4 62.4 62.4 62.4 62.4 62.4 | 7457.1 5220.0 4015.4 3262.5 2747.4 2372.7 2088.0 | 8 8 8 8 8 8 | 8 8 8 8 8 8 | 2900.0 2900.0 2900.0 2900.0 2900.0 2900.0 | 41.8 41.8 41.8 41.8 41.8 41.8 41.8 | 29.2 29.2 29.2 29.2 29.2 29.2 29.2 |