

**RAMP E\_MANN\_A**

Curve Data

Curve E\_MANN\_A-1  
 P.I. Station = 1+59.03 N 1,895,290.9559 E 1,105,713.5287  
 Delta = 4° 33' 33.92" (LT)  
 Degree = 1° 26' 03.33"  
 Tangent = 159.0309  
 Length = 317.8939  
 Radius = 3,994.8000  
 External = 3.1642  
 Long Chord = 317.8101  
 Mid. Ord. = 3.1617  
 P.C. Station = 0+00.00 N 1,895,307.9175 E 1,105,555.4049  
 P.T. Station = 3+17.89 N 1,895,286.6177 E 1,105,872.5004  
 C.C. = N 1,899,279.9311 E 1,105,981.4749  
 Back = S 83° 52' 38.67" E  
 Ahead = S 88° 26' 12.59" E  
 Chord Bear = S 86° 09' 25.63" E

Course from PT E\_MANN\_A-1 to PC E\_MANN\_A-2 S 88° 26' 12.59" E Dist 141.0788

Curve Data

Curve E\_MANN\_A-2  
 P.I. Station = 6+19.32 N 1,895,278.3951 E 1,106,173.8144  
 Delta = 42° 42' 38.06" (RT)  
 Degree = 13° 58' 16.22"  
 Tangent = 160.3474  
 Length = 305.7050  
 Radius = 410.1000  
 External = 30.2332  
 Long Chord = 298.6759  
 Mid. Ord. = 28.1574  
 P.C. Station = 4+58.97 N 1,895,282.7692 E 1,106,013.5267  
 P.T. Station = 7+64.68 N 1,895,166.4586 E 1,106,288.6252  
 C.C. = N 1,894,872.8218 E 1,106,002.3396  
 Back = S 88° 26' 12.59" E  
 Ahead = S 45° 43' 34.53" E  
 Chord Bear = S 67° 04' 53.56" E

Course from PT E\_MANN\_A-2 to PC E\_MANN\_A-3 S 45° 43' 34.53" E Dist 250.3584

Curve Data

Curve E\_MANN\_A-3  
 P.I. Station = 11+40.62 N 1,894,904.0210 E 1,106,557.8017  
 Delta = 46° 15' 31.48" (LT)  
 Degree = 19° 29' 18.10"  
 Tangent = 125.5798  
 Length = 237.3660  
 Radius = 294.0000  
 External = 25.6972  
 Long Chord = 230.9715  
 Mid. Ord. = 23.6316  
 P.C. Station = 10+15.04 N 1,894,991.6866 E 1,106,467.8850  
 P.T. Station = 12+52.40 N 1,894,908.3708 E 1,106,683.3061  
 C.C. = N 1,895,202.1944 E 1,106,673.1226  
 Back = S 45° 43' 34.53" E  
 Ahead = N 88° 00' 54.00" E  
 Chord Bear = S 68° 51' 20.27" E

Course from PT E\_MANN\_A-3 to 881 N 88° 00' 54.00" E Dist 125.8573

Point 881 N 1,894,912.7302 E 1,106,809.0880 Sta 13+78.26

Course from 881 to 882 N 87° 52' 34.20" E Dist 55.9504

Point 882 N 1,894,914.8037 E 1,106,864.9999 Sta 14+34.21

**RAMP E\_MANN\_B**

Curve Data

Curve E\_MANN\_B-1  
 P.I. Station = 0+58.70 N 1,895,345.0496 E 1,106,662.5162  
 Delta = 18° 59' 13.47" (LT)  
 Degree = 16° 19' 16.68"  
 Tangent = 58.7048  
 Length = 116.3331  
 Radius = 351.0491  
 External = 4.8747  
 Long Chord = 115.8015  
 Mid. Ord. = 4.8079  
 P.C. Station = 0+00.00 N 1,895,347.7589 E 1,106,721.1585  
 P.T. Station = 1+16.33 N 1,895,323.4082 E 1,106,607.9461  
 C.C. = N 1,894,997.0838 E 1,106,737.3595  
 Back = S 87° 21' 17.43" W  
 Ahead = S 68° 22' 03.96" W  
 Chord Bear = S 77° 51' 40.70" W

Curve Data

Curve E\_MANN\_B-2  
 P.I. Station = 3+37.27 N 1,895,241.9608 E 1,106,402.5709  
 Delta = 101° 25' 44.70" (LT)  
 Degree = 31° 42' 02.23"  
 Tangent = 220.9358  
 Length = 319.9593  
 Radius = 180.7403  
 External = 104.7062  
 Long Chord = 279.7863  
 Mid. Ord. = 66.2983  
 P.C. Station = 1+16.33 N 1,895,323.4082 E 1,106,607.9461  
 P.T. Station = 4+36.29 N 1,895,056.7973 E 1,106,523.0994  
 C.C. = N 1,895,155.3977 E 1,106,674.5755  
 Back = S 68° 22' 03.96" W  
 Ahead = S 33° 03' 40.73" E  
 Chord Bear = S 17° 39' 11.61" W

Curve Data

Curve E\_MANN\_B-3  
 P.I. Station = 6+56.94 N 1,894,871.8757 E 1,106,643.4705  
 Delta = 101° 25' 44.70" (LT)  
 Degree = 31° 44' 31.48"  
 Tangent = 220.6473  
 Length = 319.5414  
 Radius = 180.5042  
 External = 104.5694  
 Long Chord = 279.4208  
 Mid. Ord. = 66.2117  
 P.C. Station = 4+36.29 N 1,895,056.7973 E 1,106,523.0994  
 P.T. Station = 7+55.83 N 1,895,026.5030 E 1,106,800.8732  
 C.C. = N 1,895,155.2689 E 1,106,674.3777  
 Back = S 33° 03' 40.73" E  
 Ahead = N 45° 30' 34.57" E  
 Chord Bear = S 83° 46' 33.08" E

Curve Data

Curve E\_MANN\_B-4  
 P.I. Station = 8+21.58 N 1,895,072.3475 E 1,106,847.9954  
 Delta = 22° 36' 50.56" (LT)  
 Degree = 17° 25' 31.67"  
 Tangent = 65.7436  
 Length = 129.7758  
 Radius = 328.8049  
 External = 6.5082  
 Long Chord = 128.9351  
 Mid. Ord. = 6.3819  
 P.C. Station = 7+55.83 N 1,895,026.5030 E 1,106,800.8732  
 P.T. Station = 8+85.61 N 1,895,132.7868 E 1,106,873.8665  
 C.C. = N 1,895,262.1764 E 1,106,571.5902  
 Back = N 45° 47' 14.73" E  
 Ahead = N 23° 10' 24.17" E  
 Chord Bear = N 34° 28' 49.45" E

**RAMP E\_MANN\_B**

Curve Data

Curve E\_MANN\_B-5  
 P.I. Station = 8+92.06 N 1,895,138.7075 E 1,106,876.4192  
 Delta = 2° 18' 07.11" (LT)  
 Degree = 17° 51' 13.89"  
 Tangent = 6.4476  
 Length = 12.8934  
 Radius = 320.9154  
 External = 0.0648  
 Long Chord = 12.8926  
 Mid. Ord. = 0.0648  
 P.C. Station = 8+85.61 N 1,895,132.7868 E 1,106,873.8665  
 P.T. Station = 8+98.50 N 1,895,144.7260 E 1,106,878.7321  
 C.C. = N 1,895,259.8448 E 1,106,579.1752  
 Back = N 23° 19' 24.93" E  
 Ahead = N 21° 01' 17.82" E  
 Chord Bear = N 22° 10' 21.37" E

Curve Data

Curve E\_MANN\_B-6  
 P.I. Station = 9+12.28 N 1,895,157.5902 E 1,106,883.6758  
 Delta = 4° 26' 58.33" (LT)  
 Degree = 16° 09' 04.64"  
 Tangent = 13.7815  
 Length = 27.5491  
 Radius = 354.7443  
 External = 0.2676  
 Long Chord = 27.5422  
 Mid. Ord. = 0.2674  
 P.C. Station = 8+98.50 N 1,895,144.7260 E 1,106,878.7321  
 P.T. Station = 9+26.05 N 1,895,170.7992 E 1,106,887.6066  
 C.C. = N 1,895,271.9799 E 1,106,547.5978  
 Back = N 21° 01' 17.82" E  
 Ahead = N 16° 34' 19.49" E  
 Chord Bear = N 18° 47' 48.65" E

Curve Data

Curve E\_MANN\_B-7  
 P.I. Station = 9+79.02 N 1,895,221.5705 E 1,106,902.7152  
 Delta = 17° 20' 14.37" (LT)  
 Degree = 16° 29' 26.67"  
 Tangent = 52.9717  
 Length = 105.1337  
 Radius = 347.4421  
 External = 4.0149  
 Long Chord = 104.7331  
 Mid. Ord. = 3.9690  
 P.C. Station = 9+26.05 N 1,895,170.7992 E 1,106,887.6066  
 P.T. Station = 10+31.19 N 1,895,274.5375 E 1,106,902.0078  
 C.C. = N 1,895,269.8971 E 1,106,554.5966  
 Back = N 16° 34' 19.49" E  
 Ahead = N 0° 45' 54.88" W  
 Chord Bear = N 7° 54' 12.31" E