



Subject MSE WALL C ESTIMATED QUANTITIES
SNA: No. 121645
Date: 3/12/2021 Iss. No.: 20110903
Compiled: R/E Checked: HJR

MSE WALL QUANTITIES - WALL C																													
Wall Length	% under roadway	% overlap	Wall Sta.	Top of Wall Elev	Top Leveling Post Elev	Top of Abutment Footing	Wall Height	ap Length Fac	Strap Length Calc		Strap Length	Undercut	In Front	Behind	Behind OFFSET	Total Payment Width	203 - Embankment	203 - Granular Material, Type B		203 - Granular Material, Type C		840 - Wall Excavation		840 - Select Granular Backfill		840 - Natural Soil		840 - Foundation Preparation	
									ft									ft		ft		ft		ft		ft			
									ft	ft								ft	ft	ft	ft	ft	ft	ft	ft	ft	ft		ft
Perpendicular	0.49	0.00	-	540.5	518.25	528.04	27.25	0.00	20.03	25.00	6.0	6.77	30.00	30.46	40.23	-	529.22	855.11	-	3563.418	3244.1	10791.9	9669.4	889.7	540.68				
			+13.44	540.5	518.25	528.04	22.25	0.00	20.03	25.00	6.0	6.77	30.00	30.46	40.23	529.22	855.11	-	3563.418	3244.1	10791.9	9669.4	889.7	540.68					
			+13.44	540.5	518.25	528.04	24.75	0.00	22.28	25.00	6.0	6.77	30.00	30.46	40.23	529.22	855.11	-	3563.418	3244.1	10791.9	9669.4	889.7	540.68					
			+63.31	540.5	518.25	528.04	27.25	0.00	22.28	25.00	6.0	6.77	30.00	30.46	40.23	528.48	3813.73	2042.27	12095.3	45169.0	30118.8	213.7	2015.88						
Perpendicular	1.00	0.00	-	540.5	518.25	528.04	27.25	0.00	24.53	25.00	6.0	6.77	30.00	30.46	40.23	-	529.22	855.11	-	3563.418	3244.1	10791.9	9669.4	889.7	540.68				
			+12.18	540.5	518.25	528.04	27.25	0.00	24.53	25.00	6.0	6.77	30.00	30.46	40.23	529.22	855.11	-	3563.418	3244.1	10791.9	9669.4	889.7	540.68					
			+12.18	540.5	518.25	528.04	27.25	0.00	24.53	25.00	6.0	6.77	30.00	30.46	40.23	529.22	855.11	-	3563.418	3244.1	10791.9	9669.4	889.7	540.68					
			+12.18	540.5	518.25	528.04	29.75	0.00	26.78	30.00	6.0	6.77	35.00	30.46	40.23	-	529.22	855.11	-	3563.418	3244.1	10791.9	9669.4	889.7	540.68				
Perpendicular	0.69	0.00	-	540.5	518.25	528.04	29.75	0.00	26.78	30.00	6.0	6.77	35.00	30.46	40.23	-	529.22	855.11	-	3563.418	3244.1	10791.9	9669.4	889.7	540.68				
			+26.2	540.5	518.25	528.04	29.75	0.00	26.78	30.00	6.0	6.77	35.00	30.46	40.23	529.22	855.11	-	3563.418	3244.1	10791.9	9669.4	889.7	540.68					
			+26.2	540.5	518.25	528.04	29.75	0.00	26.78	30.00	6.0	6.77	35.00	30.46	40.23	529.22	855.11	-	3563.418	3244.1	10791.9	9669.4	889.7	540.68					
			+26.2	540.5	518.25	528.04	29.75	0.00	26.78	30.00	6.0	6.77	35.00	30.46	40.23	529.22	855.11	-	3563.418	3244.1	10791.9	9669.4	889.7	540.68					
Skewed	0.00	0.93	-	540.5	518.25	528.04	27.25	0.00	24.53	25.00	6.0	6.77	30.00	30.46	40.23	-	529.22	855.11	-	3563.418	3244.1	10791.9	9669.4	889.7	540.68				
			+24.53	540.5	518.25	528.04	27.25	0.00	24.53	25.00	6.0	6.77	30.00	30.46	40.23	517.65	213.34	-	3563.418	3244.1	10791.9	9669.4	889.7	540.68					
			+24.53	540.5	518.25	528.04	27.25	0.00	24.53	25.00	6.0	6.77	30.00	30.46	40.23	517.65	213.34	-	3563.418	3244.1	10791.9	9669.4	889.7	540.68					
			+24.53	540.5	518.25	528.04	29.75	0.00	26.78	30.00	6.0	6.77	35.00	30.46	40.23	517.65	213.34	-	3563.418	3244.1	10791.9	9669.4	889.7	540.68					
Skewed	0.00	0.88	-	540.5	518.25	528.04	27.25	0.00	24.53	25.00	6.0	6.77	30.00	30.46	40.23	-	529.22	855.11	-	3563.418	3244.1	10791.9	9669.4	889.7	540.68				
			+24.58	540.5	518.25	528.04	27.25	0.00	24.53	25.00	6.0	6.77	30.00	30.46	40.23	517.65	213.34	-	3563.418	3244.1	10791.9	9669.4	889.7	540.68					

46.47

Notes:

- Type B not applied at skewed portion, roadway outside of this area
- See Microstation files for Survey Points of Average Existing Ground Elevation
- % Roadway only accounts for area in front of MSE wall, used in calculation to add/subtract select granular backfill/type B granular material
- Granular Backfill also adds the addition of type B that is not under the roadway

Equation Definitions:

Type B: (Total Length from back of MSE wall to excavation limit) (where 1.1 meets existing) minus the average of the 1:1 slope between top of footing and Proposed surface (to account for sloped end) / (Difference between top of footing and proposed surface) * (length of wall segment)
Embankment is the (Wall Segment difference) / (Top Elev-Avg Elev / 2 - 1.1 slope makes the depth and width at the fill equal)

203E20000 - Embankment

Volume = 1187 CY

203E35110 - Granular Material, Type B

Volume = 4781 CY

203E65000 - Special - Settlement Platform

4 Each

503E11101 - Cofferdams and Excavation Bracing, As Per Plan

Lump Sum \$2,000

512E10001 - Sealing of Concrete Surfaces, As Per Plan

512E10101 - Sealing of Concrete Surfaces (Epoxy Urethane), As Per Plan

Front Area (includes coping, doesn't include barrier) = 3239.255 SF (Csd)

Top of MSE Wall Coping and Bottom of Lip Width = 1.541666667 FT

Length = 285 FT

Area = 439.375 SF

Total Area = 3678.63 SF

Qty 569 SF

516E13200 - 1/2" Preformed Expansion Joint Filler

Length Adjacent to Bridge (Concrete Slope Protection) = 262 ft

1/2" PEUF Height = 0.5 ft

Number of Sides = 2 each

Length Adjacent to Sill (Paved Gutter) = 22.117 ft

1/2" PEUF Height = 0.5 ft

Number of Sides = 1 each

Total Area = 226 SF

601E21000 - Concrete Slope Protection

Length = 262 ft

Width = 1.91666668 ft

Area = 56 SF

601E37501 - Paved Gutter, Type 1-2, As Per Plan

Csd Length in Excavation View = 23 ft

690E98400 - Special - Misc.: Temporary Surcharge

Lump Sum Cost = \$59,000

840E20001 - Mechanically Stabilized Earth Wall, As Per Plan

Csd Area = 4596 SF

840E21000 - Wall Excavation

Volume = 19189 CY

840E22000 - Foundation Preparation

Plan Area (Csd) = 11042.29 SF

Qty 1242 CY

840E23000 - Select Granular Backfill

Volume = 8984 CY

840E23050 - Natural Soil

383 CY

840E25010 - 6" Drainage Pipe, Perforated

Length = 295 ft

840E25020 - 6" Drainage Pipe, Non-Perforated

Length (Csd) = 89 ft

840E26000 - Concrete Coping

Length = 285 ft

840E26050 - Aesthetic Surface Treatment

Area is the item 840E20001 quantity minus the area of the coping

Csd Area = 3896 SF

840E27000 - On-Site Assistance

1 Day

867E00100 - Temporary Wire Face Mechanically Stabilized Earth Wall (Wall C-1)

Temporary MSE Wall C-1 = 2984.3235 SF

Unit Cost = \$50 per SF

Temporary MSE Wall C-1 Cost = \$149,000

867E00100 - Temporary Wire Face Mechanically Stabilized Earth Wall (Wall C-2)

Temporary MSE Wall C-2 = 2250.993 SF

Unit Cost = \$50 per SF

Temporary MSE Wall C-2 Cost = \$113,000