

**CONTRACTOR DESIGNED GROUND IMPROVEMENT
PERFORMANCE CRITERIA**

MSE Wall Station	Bearing	Maximum Settlement		Stability - Static		Global Stability - Dynamic		
		Bearing Demand [ksf]	at Tc + 3 month [in]	at Tc + 1 year [in]	Factor of Safety Required		Factor of Safety Required	
					Sliding	Global	Tr = 1000 yr	Tr = 2500 yr
439+23	4.0	2	3	1.5	1.5	1.0	1.0	
439+50	6.0	2	3	1.5	1.5	1.0	1.0*	
440+23	6.0	2	3	1.5	1.5	1.0	1.0*	
441+23	6.0	2	3	1.5	1.5	1.0	1.0	
443+70	5.0	2	3	1.5	1.5	1.0	1.0	
445+70	4.5	2	3	1.5	1.5	1.0	1.0	
447+50	4.0	2	3	1.5	1.5	1.0	1.0	

**ELEVATION
(Looking South)**

Bearing

Bearing demand is the unfactored, static, equivalent uniform demand acting at T/Leveling Pad. Bearing demand includes the envelope of dead load, live load and potential downdrag associated with settlement of adjacent unreinforced embankment acting on an MSE wall of assumed typical proportions. The improved ground shall provide factor of safety = 2.5, calculated as Nominal Bearing Capacity / Bearing Demand.

Settlement

Settlement shall be measured at T/Leveling pad, and referred to a reference elevation taken prior to placement of wall panels. Tc shall be the time of completion of the MSE wall fill.

Stability - Static

Factor of safety calculations shall be based on an assumed MSE wall design of typical proportions. Factor of safety for global stability shall be based on the envelope of trial and error solution of feasible sliding block and rotating wedge failure surfaces.

Liquefaction

Liquefaction analyses reflecting the presence of increased vertical stress due to the proposed wall have been performed and are reported in the Structure Geotechnical Reports for the Darling Spur Wall (SN 082-W234) and the I-70 Connector Bridge (SN 082-0318 and -0319). Mitigation of liquefaction occurrence is not a performance criteria for Contractor Designed Ground Improvement. The occurrence and hazard associated with liquefaction is recognized through performance criteria on global stability which include the effects of predicted liquefaction.

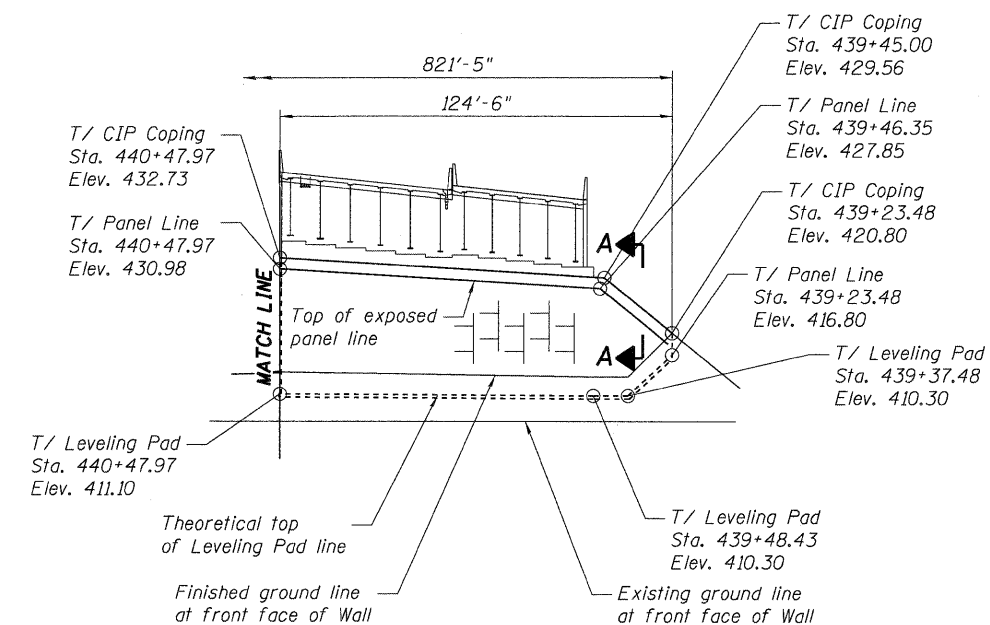
Stability - Dynamic

Factor of safety calculation shall be based on an assumed MSE wall design of typical proportions. Factor of safety for global stability shall be based on the envelope of trial and error solution of feasible sliding block and rotating wedge failure surfaces.

Factor of safety calculations for global stability shall:

- be based on the envelope of trial and error solution of feasible sliding block and rotating wedge failure surfaces.
- reflect a driving inertial force from acceleration equal to 75% of the Modified Peak Ground Acceleration As.
- include reduced soil properties to represent liquefaction for the return periods, locations, and depths at which it is indicated in the Structure Geotechnical Reports for the Darling Spur Retaining Wall and the MRB Connector Bridge.

* For the 2500-year event (only), the stability calculation for sections cut through the abutment may consider a stabilizing contribution from the bridge abutment foundation. The design of these foundations has included an allowance for delivering a restoring shear force of 16.5 kips per foot of wall on an assumed failure plane which intersects the foundations at elevation 392'.



**ELEVATION
(Looking East)**