

B-504-V2

(This sheet must be accompanied with B-504-01,A3,A5,D3,D5,H1)

-Settlement from backfill/soil reinforcement occurs after Phase II (MSE blocks and MSE backfill)construction completed and Phase I construction micropile installed.

-Rail, Curb, and Micropile are externally stabilized and independent of design height.

-Spacing of micropiles is determined by three force free body diagram from TL4 (54 Kip) rail impact to micropile with 10.83' spread length; A-Frame (Rail, Cap, and (2) Piles) load transfer from rail to bedrock via piles with no contribution of soil/structure interaction.

-Casing is embedded into bedrock to start of usable micropile bond length.

-Damage Avoidance Detail: The dowelbetween the rail and cap is the "Fuse". There is no need to repair below Bridge Rail Type 7 after impact. For corner hit spacing of dowel shall be reduced to 6" DC at 10'-0" from both ends. The cost of extra dowels shall not be paid separately but shall be included in the Pay Item Typ 7 Rail.

stimated	DH or Casing	Minimum	Micropile	Actual
ledrock	Pay Length	Bond	Pay Length	Bedrock
levation	(Ft.)	Length (Ft.)	(Ft.)	Elevation
		-		

1. Grout strength shall be 6 ksi (Min.). Assumed grout-to-ground nominal bond is 16.5 psi.

2. One verification test pile shall be installed at 100' max spacing along wall with a minimum two per wall: one the vertical and one for the slanted piles in accordance with ASTM D1143 (Compressive) and ASTM D3689 (Uplift/Tension).

3. Micropile design per 5'-0" typical spacing shall satisfy at a minimum, 16.5 psi bond strength with the applied Vehicular collision force (CT) with extreme event II load combination.

Axial Compression = 8.663 Kips/Ft, Impact Load for vertical pile. Axial Tension = 9.970 Kips/Ft, Impact Load for slanted pile.

4. Refer to specifications for permanent casing yield strength.

5. Project inspectors shall note actual bedrock elevations on as-built drawings.

6. The vertical and slanted piles are staggered, not in the same plane.

7. Both vertical and slanted piles have the same micropile/casing pay length.

8. Vertical pile casing shall maintain a minimum 6" clearance to the back facing of the element and may be cored through leveling pad.

9. To accomodate asphalt pavement, curb height shall be raised 3 inches.

10. For penetrating rock, starter casing shall have carbide sinter bits and may be reused.

11. For deep seated slope stability (FS > 1.3) the typical 5'-0" micropile spacing may be increased to a max, of 10'-0" according to the geotechnical report, grouting methods, and

12. For B-504-V6 The vertical and slanted piles must be constructed in the same plane.

VO PHASE BL		Project No./Code	
ING MSE/GR	S A-FR	Project Number	
r: XXXXXXX			Code
: XXXXXXX	Numbers	Wall-X-XX-XX	
Subset: Wall	Subset Sheets: WXX of XXX		Sheet Number