

MECHANICALLY STABILIZED EARTH WALL NOTES

WALL DESIGN

1. FINAL DESIGN DRAWINGS SHOWING PROPOSED PANEL SIZE, THE REQUIRED NUMBER OF REINFORCEMENT STRIPS PER PANEL, THE REINFORCEMENT STRIP LENGTHS, REINFORCEMENT STRIP LAYOUT, CONCRETE PANEL REINFORCEMENT DETAILS, NB/SB CONSTRUCTION SEQUENCING METHOD AND PANEL TIE-IN DETAILS WITH COPING AND LEVELING PAD SHALL BE PREPARED BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER FOR APPROVAL. THE FINAL DESIGN SHALL BE BASED ON THE ASSUMPTION THAT THE MATERIAL WITHIN THE MECHANICALLY STABILIZED EARTH (MSE) VOLUME, METHODS OF CONSTRUCTION AND THE QUALITY OF PREFABRICATED MATERIALS SHALL MEET THE VERMONT AGENCY OF TRANSPORTATION TECHNICAL SPECIFICATIONS FOR MSE WALLS.
2. DESIGN CRITERIA:
 - SOILS CHARACTERISTICS FOR USE IN DESIGN:
 - SELECT GRANULAR BACKFILL
 $\phi = 34^\circ$, $c = 0$ PSF, $\gamma = 140$ PCF
 - EARTH BORROW
 $\phi = 30^\circ$, $c = 0$ PSF, $\gamma = 140$ PCF
 - EXISTING SUBGRADE SOIL
 $\phi = 33^\circ$, $c = 0$ PSF, $\gamma = 127$ PCF
 - ABUTMENT DESIGN LOADS:
 - VERTICAL DEAD LOAD FROM SUPERSTRUCTURE = 10.64 KIPS/FT.
 - VERTICAL LIVE LOAD FROM SUPERSTRUCTURE = 7.83 KIPS/FT.
 - HORIZONTAL LOAD FROM SUPERSTRUCTURE = 0.84 KIPS/FT.
 - LIVE LOAD SURCHARGE = 0.28 KSF
3. THE MAXIMUM ALLOWABLE BEARING PRESSURE FOR THE MSE WALLS IS 6500 PSF.
4. ANY UNSUITABLE FOUNDATION MATERIAL BELOW THE MSE VOLUME, AS DETERMINED BY THE ENGINEER, SHALL BE EXCAVATED AND REPLACED WITH SELECT GRANULAR BACKFILL OR OTHERWISE STABILIZED AS DIRECTED BY THE ENGINEER.

WALL CONSTRUCTION

5. BACKFILL MATERIAL SHALL BE COMPACTED IN ACCORDANCE WITH THE SPECIFICATIONS FOR MSE WALLS TO A LEVEL OF +/- 2" ABOVE THE TIE STRIPS EMBEDDED IN THE PANELS. INSTALLATION OF REINFORCING STRIPS SHALL BE PERMITTED ONLY AFTER PLACEMENT AND COMPACTION OF THE BACKFILL MATERIAL HAS REACHED THE REQUIRED LEVEL.
6. COMPACTION AND OPERATION EQUIPMENT SHALL BE KEPT A MINIMUM DISTANCE OF 3 FEET FROM THE BACK FACE OF THE MSE PANELS. COMPACTION WITHIN 3 FEET OF THE PANELS SHALL BE ACHIEVED WITH AT LEAST THREE (3) PASSES OF A LIGHTWEIGHT MECHANICAL TAMPER, ROLLER OR VIBRATORY SYSTEM.
7. AT A HEIGHT OF 20 FEET, THE FINISHED GRADE IN FRONT OF THE WALL SHALL BE PLACED AND COMPACTED BEFORE WALL CONSTRUCTION EXCEEDS A HEIGHT OF 20 FEET. FINISHED GRADE BACKFILL SHALL BE COMPACTED TO 95% OF AASHTO T-99, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
8. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE LOCATION OF ANY GUARDRAIL POSTS BEHIND THE MSE PANELS. PRIOR TO PLACEMENT OF THE TOP LAYERS OF REINFORCING STRIPS, INDIVIDUAL STRIPS MAY BE SKEWED TO AVOID THE POST LOCATIONS. THE CONTRACTOR SHALL REPAIR ANY DAMAGE DONE TO THE REINFORCING STRIPS DUE TO THE INSTALLATION OF GUARDRAIL AT NO ADDITIONAL EXPENSE TO THE STATE OF VERMONT.

9. THE CONTRACTOR SHALL ACCOMMODATE ANY PIPES, GEOMEMBRANE LINER, DRAINAGE STRUCTURES, FOUNDATIONS, GUARDRAIL POSTS AND OTHER SUCH ITEMS AND APPURTENANCES THAT ARE WITHIN THE DESIGNED MSE VOLUME.
10. TOP PANELS BENEATH COPING SHALL HAVE A MINIMUM OF 3 DOWELS PROTRUDING FROM THEIR TOP EDGE.
11. THE CONTRACTOR IS RESPONSIBLE FOR GRADUALLY DEFLECTING UPPER REINFORCING STRIPS DOWNWARD TO AVOID CONFLICTS WITH PAVING AND SUBGRADE PREPARATION. THE CONTRACTOR'S ATTENTION IS DIRECTED ESPECIALLY TO SITUATIONS WHERE ROADWAY SUPERELEVATION AND/OR SOIL MIXING ARE ANTICIPATED.
12. THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING THE STORM WATER DRAINAGE IN THE VICINITY OF THE WALL DURING CONSTRUCTION. STORM WATER RUNOFF IS TO BE COLLECTED AND DISCHARGED AWAY FROM THE WALL AND REINFORCED BACKFILL.
13. THE REQUIRED HORIZONTAL LIMIT OF GRANULAR BACKFILL SHALL EXCEED THE NOMINAL STRIP LENGTH.

MATERIAL NOTES

14. THE SELECT GRANULAR BACKFILL QUANTITY SHALL BE ESTIMATED BY MULTIPLYING THE NOMINAL STRIP LENGTHS (PLUS 1 FOOT) BY THEIR TRIBUTARY WALL SURFACE AREA AND CONVERTING THE RESULT TO A NEATLINE CUBIC YARD QUANTITY.
15. THE PRECAST PANELS FOR THIS PROJECT SHALL HAVE AN ASHLAR STONE FINISH APPROVED BY THE ENGINEER, UNLESS OTHERWISE SPECIFIED. THE CONCRETE SHALL BE COLORED IN ACCORDANCE WITH AN APPROVED SUBMITTAL FOR CONCRETE COLORING.
16. CONCRETE FOR BOTH THE CAST-IN-PLACE COPING AND LEVELING PAD SHALL BE CONCRETE, CLASS B. CONCRETE FOR THE COPING SHALL BE PAID FOR UNDER ITEM 501.25 "CONCRETE, CLASS B". REINFORCEMENT IN THE COPING SHALL BE PAID FOR UNDER ITEM 507.17, "EPOXY COATED REINFORCING STEEL". LEVELING PAD CONCRETE AND REINFORCING, AND ITS PLACEMENT, SHALL BE PAID FOR UNDER ITEM 526.40, "REINFORCED SLOPE (MSE WALL SYSTEM)".

NOTE TO CONTRACTORS

17. THE FOLLOWING MATERIALS SHALL BE SUPPLIED BY THE MSE WALL SYSTEM MANUFACTURER UNDER ITEM 526.40, "REINFORCED SLOPE (MSE WALL SYSTEM)":
 - PRECAST CONCRETE FACING PANELS
 - REINFORCING STRIPS
 - BOLT SETS (FOR ATTACHING PANELS TO THE REINFORCING STRIPS)
 - BEARING BLOCKS
 - RUBBER SHIMS
 - FILTER CLOTH AND ADHESIVE (FOR PANEL JOINTS ONLY)
18. OTHER MSE WALL MATERIALS CALLED FOR IN THE CONTRACT PLANS OR SPECIFICATIONS SHALL BE SUPPLIED BY THE CONTRACTOR. THIS MAY INCLUDE, BUT IS NOT LIMITED TO, ANY JOINT MATERIAL SHOWN AT THE INTERFACE OF PRECAST PANELS AND CAST-IN-PLACE CONCRETE STRUCTURES, SANDBLASTING, PAINTING, SEALERS OR OTHER SPECIAL APPLIED COATINGS.

STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of FAIRFAX-FAIRFIELD-ST. ALBANS		Bridge No. 87 N&S	
Highway No. 1-89		Log Sta. Surv. Sta.	
1-89 OVER VT 104			
MSE WALL NOTES			
Designed By G. ROY		Drawn By G. ROY	
Checked By M. LOZIER		Bridge Design Supervisor R. R. WHITCOMB	
Date 11/99		Date 11/99	
PROJECT FAIRFAX-FAIRFIELD-ST. ALBANS		PROJECT NO. 1M 089 - 3 (27)	
I.G.C. Info. 196a056Structures\sa056mse.dgn		sa056mwnj	
Bridge Sheet No. BR230		Sheet 108 of 370	