

# The Reinforced Earth Company

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## GENERAL NOTES

### DESIGN CRITERIA

- DESIGN IS BASED ON THE ASSUMPTION THAT THE MATERIAL WITHIN THE REINFORCED EARTH VOLUME, METHODS OF CONSTRUCTION AND QUALITY OF PREFABRICATED MATERIALS SHALL CONFORM TO THE CONTRACTING AGENCY'S TECHNICAL SPECIFICATIONS FOR REINFORCED EARTH WALLS.
- SOILS CHARACTERISTICS ASSUMED FOR DESIGN (PER NOTE 30, SHT. 37 OF 63):

SELECT FILL MATERIAL FOR MSE WALLS  
 $\phi = 34$  degrees,  $c = 0$  kPa,  $\gamma = 22$  KN/m<sup>3</sup>

EMBANKMENT BACKFILL (RETAINED SOIL)  
 $\phi = 30$  degrees,  $c = 0$  kPa,  $\gamma = 17.3$  KN/m<sup>3</sup>

FOUNDATION MATERIAL (ALLOWABLE BEARING CAPACITY = 300 kPa)  
 $\phi = 30$  degrees,  $c = 0$  kPa,  $\gamma = 17.3$  KN/m<sup>3</sup>

- THE MAXIMUM APPLIED BEARING PRESSURE AT THE FOUNDATION LEVEL IS AS SHOWN ON THE WALL ELEVATIONS FOR EACH DESIGN CASE. IT IS THE RESPONSIBILITY OF THE OWNER TO DETERMINE THAT THIS APPLIED BEARING PRESSURE IS ALLOWABLE FOR THAT LOCATION.
- ANY UNSUITABLE FOUNDATION MATERIAL BELOW THE REINFORCED EARTH VOLUME, AS DETERMINED BY THE VTRANS RESIDENT ENGINEER, SHALL BE EXCAVATED AND REPLACED WITH GRANULAR BORROW OR OTHERWISE STABILIZED AS DIRECTED BY THE VTRANS RESIDENT ENGINEER.
- REINFORCING STRIPS SHALL BE 50mm WIDE AND 4mm THICK, AND SHALL CONFORM TO THE PHYSICAL AND MECHANICAL PROPERTIES OF ASTM A-572 GRADE 450. GALVANIZATION SHALL BE APPLIED IN ACCORDANCE WITH ASTM A-123 OR AASHTO M111 (610 g/m<sup>2</sup>).

### WALL CONSTRUCTION

- STATIONS SHOWN ARE ALONG VT-12 BASELINE.
- FOR LOCATION AND ALIGNMENT OF REINFORCED EARTH WALL. SEE SHEET NO. 2 OF THESE PLANS AND CONTRACT DRAWINGS.
- IF MANHOLES OR DROP INLETS ARE PRESENT WITHIN THE REINFORCED EARTH VOLUME AND SPECIFIC DETAILS HAVE NOT BEEN INCLUDED IN THESE PLANS, CONTACT THE REINFORCED EARTH COMPANY FOR APPROPRIATE DETAILS.
- FOR PILES LOCATED WITHIN THE REINFORCED EARTH VOLUME, THEY SHALL BE DRIVEN PRIOR TO CONSTRUCTION OF THE REINFORCED EARTH WALL UNLESS A METHOD TO PROTECT THE STRUCTURE, WHICH IS ACCEPTABLE TO VTRANS AND THE REINFORCED EARTH COMPANY, AND IS PROPOSED AND APPROVED IN WRITING.
- BACKFILL MATERIAL SHALL BE COMPACTED IN ACCORDANCE WITH THE SPECIFICATIONS FOR REINFORCED EARTH WALLS TO A LEVEL OF 5 cm ± 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.

### WALL CONSTRUCTION (CONT.)

- COMPACTION AND OPERATION EQUIPMENT SHALL BE KEPT A MINIMUM DISTANCE OF 1M FROM THE BACK FACE OF THE REINFORCED EARTH PANELS. COMPACTION WITHIN 1M OF THE REINFORCED EARTH PANELS SHALL BE ACHIEVED WITH AT LEAST THREE (3) PASSES OF A LIGHTWEIGHT MECHANICAL TAMPER, ROLLER OR VIBRATORY SYSTEM. NO COMPACTION DENSITY TESTS SHALL BE TAKEN WITHIN THE 1M . ZONE.
- IF STRUCTURES IN EXCESS OF 6M IN HEIGHT OCCUR, THE FINISHED GRADE IN FRONT OF THE WALL SHALL BE PLACED AND COMPACTED BEFORE WALL CONSTRUCTION EXCEEDS A HEIGHT OF 6M . FINISHED GRADE BACKFILL SHALL BE COMPACTED TO 95% OF ASTM D-698, METHODS 'C' OR 'D', UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE LOCATION OF ANY GUARDRAIL POSTS BEHIND THE REINFORCED EARTH PANELS. PRIOR TO PLACEMENT OF THE TOP LAYER OF REINFORCING STRIPS, INDIVIDUAL STRIPS MAY BE SKEWED TO AVOID THE POST LOCATIONS IF AUTHORIZED BY THE REINFORCED EARTH COMPANY. ANY DAMAGE DONE TO THE REINFORCING STRIPS DUE TO THE INSTALLATION OF THE GUARDRAIL SHALL BE REPAIRED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.
- IF EXISTING OR FUTURE STRUCTURES, PIPES, FOUNDATIONS OR GUARDRAIL POSTS WHICH ARE WITHIN THE REINFORCED EARTH VOLUME INTERFERE WITH THE NORMAL PLACEMENT OF REINFORCING STRIPS AND SPECIFIC DIRECTION HAS NOT BEEN PROVIDED ON THE PLANS, THE CONTRACTOR SHALL NOTIFY THE REINFORCED EARTH COMPANY TO DETERMINE WHAT COURSE OF ACTION SHOULD BE TAKEN.
- ALL DETAILING AND CHECKING OF REINFORCING STEEL FOR ANY C.I.P. CONCRETE WORK IS THE RESPONSIBILITY OF THE CONTRACTOR.
- TOP PANELS BELOW COPING SHALL EACH HAVE (3) THREE #13 (#4 US) DOWELS.
- FOR OTHER INFORMATION PERTAINING TO WALL CONSTRUCTION PLEASE REFER TO THE REINFORCED EARTH CONSTRUCTION MANUAL.
- THE CONTRACTOR IS RESPONSIBLE FOR GRADUALLY DEFLECTING UPPER REINFORCING STRIPS DOWNWARD TO AVOID CONFLICTS WITH PAVING, FOUNDATIONS AND SUBGRADE PREPARATION. THE CONTRACTOR'S ATTENTION IS DIRECTED ESPECIALLY TO SITUATIONS WHERE ROADWAY SUPERELEVATION, IMPERVIOUS MEMBRANES AND/OR SOIL MIXING ARE ANTICIPATED.
- THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING 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.

### MATERIALS NOTES

- NOMINAL STRIP LENGTHS  
 THE REINFORCING STRIP LENGTHS SHOWN ON THE PLANS, MEASURED FROM BACK FACE OF PANEL, ARE THE NOMINAL LENGTHS REQUIRED BY CALCULATION. THE ACTUAL FABRICATED STRIP LENGTHS ARE OFTEN LONGER (UP TO 15cm) DUE TO MANUFACTURING TOLERANCES. THE REQUIRED HORIZONTAL LIMIT OF GRANULAR BACKFILL IS EQUAL TO THE NOMINAL STRIP LENGTH. ADDITIONAL GRANULAR BACKFILL BEYOND THE NOMINAL STRIP LENGTH IS NOT REQUIRED BY CALCULATION.

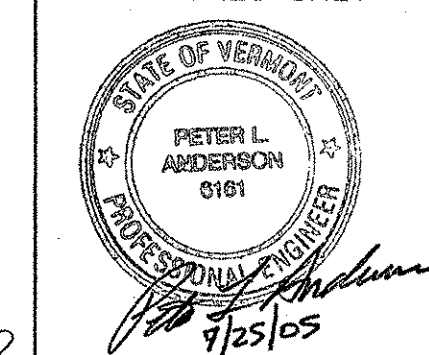
### MATERIALS NOTES (CONT.)

- SELECT BACKFILL QUANTITY  
 THE SELECT BACKFILL QUANTITY IS CALCULATED BY MULTIPLYING THE NOMINAL STRIP LENGTHS SHOWN ON THE PLANS ( PLUS 300mm ) BY THEIR TRIBUTARY WALL SURFACE AREA AND CONVERTING THE RESULT TO A NEATLINE CUBIC METER QUANTITY. THE CONTRACTOR MUST CALCULATE HIS OWN EXCAVATION AND BACKFILL QUANTITIES BASED UPON THE SPECIFIC CONDITIONS OF THE PROJECT.
- PANEL FINISH  
 PRECAST FACING PANELS SHALL HAVE AN ASHLAR STONE FORM LINER FINISH. PANEL TYPES "CE" (CORNER ELEMENTS) AND "J" (SLIP JOINT COVER PIECES) SHALL HAVE A PLAIN STEEL FORM FINISH. ALL PRECAST PIECES SHALL BE COLORED WITH APPROVED STAIN (BY CONTRACTOR) UPON COMPLETION OF WALL CONSTRUCTION.
- NOTE TO CONTRACTORS  
 ONLY THE FOLLOWING MATERIALS ARE SUPPLIED BY THE REINFORCED EARTH COMPANY:  
 - PRECAST CONCRETE FACING PANELS  
 - REINFORCING STRIPS  
 - BOLT SETS (FOR ATTACHING REINFORCING STRIPS TO PANELS)  
 - BEARING BLOKS  
 - RUBBER SHIMS  
 - FILTER CLOTH AND ADHESIVE (FOR PANEL JOINTS ONLY)  
 ANY OTHER MATERIALS CALLED FOR IN THE CONTRACT PLANS OR SPECIFICATIONS ARE TO BE SUPPLIED BY THE CONTRACTOR. ANY JOINT MATERIALS SHOWN AT THE INTERFACE OF PRECAST PANELS AND CAST-IN-PLACE CONCRETE STRUCTURES ARE TO BE SUPPLIED BY THE ERECTION CONTRACTOR. ALL SANDBLASTING, PAINTING, SEALERS, STAIN OR OTHER SPECIAL APPLIED COATINGS ARE ALSO SUPPLIED/INSTALLED BY THE CONTRACTOR IN THE FIELD FOLLOWING PANEL ERECTION.  
 ALL GEOTEXTILES, GEOGRIDS, IMPERVIOUS MEMBRANES ARE SUPPLIED BY THE CONTRACTOR.
- THE REINFORCED EARTH COMPANY SUPPLIES PRECAST CONCRETE FACING PANELS AND ACCESSORIES TO BE USED IN CONJUNCTION WITH OTHER MATERIALS IN THE CONSTRUCTION OF THE REINFORCED EARTH® RETAINING WALLS DETAILED HEREIN. THE CONSTRUCTION AND QUALITY CONTROL PROCEDURES MANUAL FURNISHED BY THE REINFORCED EARTH COMPANY IS INTENDED TO PROVIDE A GENERAL EXPLANATION OF THE SYSTEM. IT IS THE CONTRACTOR'S OBLIGATION TO DEVISE AND EXECUTE A PROJECT SPECIFIC ERECTION SEQUENCE, PANEL UNLOADING, HANDLING AND BRACING SYSTEM, AND FALL PROTECTION SYSTEM. THE BRACING SYSTEM SHOWN IN THE CONSTRUCTION AND QUALITY CONTROL PROCEDURES MANUAL IS GENERAL IN NATURE AND DOES NOT ACCOUNT FOR PROJECT SPECIFIC CRITERIA. COMPLIANCE WITH THE GUIDELINES IN THIS MANUAL DOES NOT RELIEVE THE CONTRACTOR OF ITS RESPONSIBILITY TO ADHERE TO THE PROJECT PLANS, SPECIFICATIONS AND CONTRACT DOCUMENTS OR COMPLIANCE WITH ALL FALL PROTECTION, SAFETY, LAWS, STANDARDS AND PROCEDURES AT THE JOBSITE. CONTRACTORS SHOULD TAKE SPECIAL PRECAUTIONS TO PREVENT THE PANELS FROM SHIFTING OR FALLING DURING THE ERECTION PROCESS.
- PROJECT NOTES  
 SEE CONTRACT DRAWINGS 51, 52, 53, AND 54 OF 130 FOR ADDITIONAL NOTES. SEE PROJECT SPECIAL PROVISIONS SECTION 526 FOR ADDITIONAL REQUIREMENTS.

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5	STANDARD PANEL DETAILS

RECEIVED  
 OK'D BY Kim H. OK'D BY M.S.  
 JUL 28 2005  
 RESUBMIT \_\_\_\_\_ APPROVED \_\_\_\_\_  
 BY CPW DATE 8/31/05

CERTIFIED WITH RESPECT TO THE INTERNAL STABILITY OF REINFORCED EARTH STRUCTURES ONLY



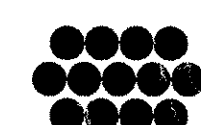
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DESIGNED BY: JMJC	PROJECT NAME BRIDGE IMPROVEMENT VT 12 OVER NEW ENGLAND CENTRAL RAILROAD	DATE 7/21/2005
PROJECT ENGR: JMJC	LOCATION BETHEL VERMONT	CONTRACT NO. 11843
CHECKED BY: KPB	OWNER VT AOT	DRAWING NO. 1 OF 5
ENG. MANAGER	DRAWING COVERS GENERAL NOTES - R.E. WALLS	SCALE AS SHOWN
REV.	DATE	DESCRIPTION