



REINFORCED eARTH®

SUSTAINABLE TECHNOLOGY

25 Technology Parkway South, Suite 100, Norcross, GA 30092, (770) 242-9415

GENERAL NOTES

State: Project Number
GA NH000-0006-02(055)

290A of 604

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 GEORGIA DEPARTMENT OF TRANSPORTATION'S TECHNICAL SPECIFICATIONS FOR REINFORCED EARTH WALLS. DESIGN IS FURTHER BASED ON A LETTER OF UNDERSTANDING BETWEEN THE REINFORCED EARTH COMPANY AND GEORGIA DOT DATED JUNE, 2007.
- SOILS CHARACTERISTICS USED FOR DESIGN (PER B.F.I.):
 SELECT GRANULAR BACKFILL
 $\phi = 34$ DEGREES, $c = 0$ p.s.f., $\gamma = 116$ p.c.f.
 RANDOM BACKFILL
 $\phi = 32$ DEGREES, $c = 0$ p.s.f., $\gamma = 120$ p.c.f.
 FOUNDATION MATERIAL
 $\mu = 0.45$
 SEISMIC COEFFICIENT
 $A_s/g = N/A$
- THE MAXIMUM APPLIED BEARING PRESSURE AT THE FOUNDATION LEVEL IS AS SHOWN ON THE WALL ELEVATIONS FOR EACH DESIGN CASE. WHERE APPLIED BEARING PRESSURE EXCEEDS ALLOWABLE BEARING PRESSURE, CONSTRUCT WALL WITH 30-DAY WAITING PERIOD(S) AS SHOWN ON WALL PROFILES.
- ANY UNSUITABLE FOUNDATION MATERIAL BELOW THE REINFORCED EARTH VOLUME, AS DETERMINED BY THE ENGINEER, SHALL BE EXCAVATED AND REPLACED WITH SUITABLE MATERIAL OR OTHERWISE STABILIZED AS DIRECTED BY THE ENGINEER.
- REINFORCING STRIPS SHALL BE 50mm WIDE AND 4mm THICK AND SHALL CONFORM TO THE PHYSICAL AND MECHANICAL PROPERTIES OF ASTM A-572 GRADE 65. GALVANIZATION SHALL BE APPLIED IN ACCORDANCE WITH ASTM A-123 OR AASHTO M111 (2oz/FT²).

WALL CONSTRUCTION:

- STATIONS ARE SHOWN ALONG ϕ LIBERTY EXPRESSWAY.
- REINFORCED EARTH WALLS IN CURVES WILL FORM A SERIES OF SHORT CHORDS OF 4.92' EACH TO MATCH DESIRED WALL ALIGNMENT.
- FOR LOCATION AND ALIGNMENT OF REINFORCED EARTH WALLS, SEE PLAN VIEW & CONSTRUCTION PLANS SHT. 290 OF 604.
- IF MANHOLES AND DROP INLETS ARE PRESENT, THEY SHALL BE LOCATED AS SHOWN ON THE WALL ELEVATIONS.
- IF PILES ARE 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 THE ENGINEER 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 2" (\pm) ABOVE THE RE 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.
- COMPACTION AND OPERATION EQUIPMENT SHALL BE KEPT A MINIMUM DISTANCE OF 3'-0" FROM THE BACK FACE OF THE REINFORCED EARTH PANELS. COMPACTION WITHIN 3'-0" 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 TEST SHALL BE TAKEN WITHIN THE 3 FT. ZONE.

WALL CONSTRUCTION (CONT.)

- IF STRUCTURES IN EXCESS OF 20' IN HEIGHT OCCUR, THE FINISHED GRADE IN FRONT OF THE WALL SHALL BE PLACED AND COMPACTED BEFORE WALL CONSTRUCTION EXCEEDS A HEIGHT OF 20'. 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 POST 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 GUARDRAIL SHALL BE REPAIRED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.
- IF EXISTING OR FUTURE STRUCTURES, PIPES, FOUNDATIONS OR GUARDRAIL POST WHICH ARE WITHIN THE REINFORCED EARTH VOLUME INTERFERE WITH THE NORMAL PLACEMENT OF THE 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 BENEATH CAST-IN-PLACE COPING SHALL HAVE #4 DOWELS PROTRUDING FROM THEIR TOP EDGE.
- 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 AND SUBGRADE PREPARATION. THE CONTRACTOR'S ATTENTION IS DIRECTED ESPECIALLY TO SITUATIONS WHERE ROADWAY SUPERELEVATION AND/OR SOIL MIXING ARE ANTICIPATED.
- THE CONTRACTOR IS RESPONSIBLE FOR THE 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 EARTH BACKFILL.

MATERIAL 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 8") DUE TO MANUFACTURING TOLERANCES. THE REQUIRED HORIZONTAL LIMIT OF GRANULAR BACKFILL IS EQUAL TO THE NOMINAL STRIP LENGTH PLUS 1 FT.
- SELECT BACKFILL QUANTITY**
 THE SELECT BACKFILL QUANTITY INDICATED BY THE REINFORCED EARTH COMPANY IS CALCULATED BY MULTIPLYING THE NOMINAL STRIP LENGTHS SHOWN ON THE PLANS (PLUS 1 FT.) BY THEIR TRIBUTARY WALL SURFACE AREA AND CONVERTING THE RESULT TO A NEATLINE CUBIC YARD QUANTITY. THIS INFORMATION IS FURNISHED FOR THE CONTRACTOR'S INFORMATION ONLY AND IS NOT INTENDED TO REPRESENT THE ACTUAL QUANTITIES REQUIRED TO COMPLETE THE WORK. THE CONTRACTORS MUST CALCULATE HIS OWN EXCAVATION AND BACKFILL QUANTITIES BASED UPON THE SPECIFIC CONDITIONS OF THE PROJECT.

MATERIALS NOTES (CONT.)

- PANEL FINISH**
 THE PRECAST PANELS FOR THIS PROJECT SHALL HAVE AN PLAIN FINISH UNLESS OTHERWISE SPECIFIED.
- NOTE TO CONTRACTORS**
 ONLY THE FOLLOWING MATERIALS ARE SUPPLIED BY THE REINFORCED EARTH COMPANY:
 - 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)

 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 OR OTHER SPECIAL APPLIED COATINGS ARE ALSO SUPPLIED/INSTALLED BY THE CONTRACTOR IN THE FIELD FOLLOWING PANEL ERECTION.

 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 OR OTHER SPECIAL APPLIED COATINGS ARE ALSO SUPPLIED/INSTALLED BY THE CONTRACTOR IN THE FIELD FOLLOWING PANEL ERECTION.

 ALL FIRMS OR ENTITIES USING THESE PLANS OR INVOLVED IN THE HANDLING, TRANSPORT, LOADING, UNLOADING OR ERECTION OF PRODUCTS SUPPLIED BY RECO, SHALL MAKE AN INDEPENDENT REVIEW AND ASSESSMENT OF ALL HANDLING, LOADING AND LIFTING CONDITIONS AND PROCEDURES AND SHALL NOT SOLELY RELY ON ANY GENERAL RECOMMENDATIONS SUPPLIED BY RECO.

 THE CONTRACTOR SHALL DEVISE AND EXECUTE PROJECT SPECIFIC PROCEDURES FOR HANDLING, LOADING AND LIFTING WHICH COMPLY WITH ALL FEDERAL, STATE AND LOCAL SAFETY LAWS, REGULATIONS AND REQUIREMENTS AND ALL APPLICABLE CONTRACT REQUIREMENTS AT ALL LOCATIONS WHERE RECO MATERIALS ARE LOADED, UNLOADED, HANDLED OR ERECTED.

 ANY PARTY UTILIZING THESE DRAWINGS OR THE RECO CONSTRUCTION MANUAL AGREES TO INDEMNIFY, DEFEND AND HOLD HARMLESS RECO FROM LOSS, COST, DAMAGE OR CLAIM ARISING FROM THEIR HANDLING, LOADING, LIFTING AND ERECTION PROCEDURES, UNLESS PROXIMATELY CAUSED BY THE SOLE AND EXCLUSIVE NEGLIGENCE OF RECO.

INDEX	
SHEET NO.	CONTENTS
1	GENERAL NOTES & INDEX
2	PLAN VIEW WALL 3
3	WALL 3 ELEVATION
4	TYPICAL SECTIONS & DETAILS
5	COPING & BARRIER DETAILS
6	PRECAST BARRIER DETAILS - TYPE TBP
7	STANDARD PANEL DETAILS

DATE: 7/26/14
 Approved in general. Details not checked. This approval shall not relieve the Contractor of any responsibility for conformity with the contract Plans and Specifications.

Georgia DOT
 Office of Bridge Design
 By: [Signature]

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FINAL FOR REVIEW
 APRIL 10, 2014

"REINFORCED EARTH" is the registered trademark of The Reinforced Earth Company.



GEORGIA DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION - BRIDGE DESIGN			
LIBERTY EXPRESSWAY AT SR 91 & SR 133 DOUGHERTY COUNTY			
REINFORCED EARTH RETAINING WALL			
GENERAL NOTES & INDEX			
DESIGNED <u>SLM</u>	TRACED _____	REVIEWED _____	
DRAWN <u>LOP</u>	CHECKED <u>CCJ</u>	APPROVED <u>[Signature]</u>	
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