

# T & B STRUCTURAL SYSTEMS, LLC., STABILIZED EARTH WALL SYSTEM

## GENERAL NOTES

### DESIGN CRITERIA

- THE ATTACHED DETAILS ARE BASED ON THE ASSUMPTIONS THAT THE MATERIAL WITHIN THE REINFORCED VOLUME, METHOD OF CONSTRUCTION AND QUALITY OF PREFABRICATED COMPONENTS MEET MECHANICALLY STABILIZED EARTH RETAINING WALL REQUIREMENTS OF GADOT SPECIFICATION SECTION 627, "MECHANICALLY STABILIZED EMBANKMENT RETAINING WALL-CONTRACTOR DESIGN".

### MINIMUM DESIGN PARAMETERS

- SEE WALL CONTROL DRAWINGS FOR SOIL CHARACTERISTICS OF FOUNDATION MATERIAL TO BE USED IN THE DESIGN OF THE WALL SYSTEM. THE CONTRACTOR HAS PROVIDED SOIL DESIGN PARAMETERS FOR THE BACKFILL MATERIAL BASED ON ACTUAL SOIL CHARACTERISTICS UTILIZED AT THE PROJECT SITE.

EXTERNAL STABILITY		<u>MSE SELECT BACKFILL</u>	
OVERTURNING	≥ 2.0	INTERNAL FRICTION	38°
SLIDING	≥ 1.5	UNIT WEIGHT	142 PCF
BEARING PRESSURE	≥ 2.0		
OVERALL STABILITY	≥ 1.5	<u>RETAINED BACKFILL &amp; FOUNDATION - WALL 1</u>	
INTERNAL STABILITY		INTERNAL FRICTION ANGLE	32°
PULLOUT	≥ 1.5	UNIT WEIGHT	120 PCF
STEEL YIELD STRESS	= 0.48*Fy	<u>RETAINED BACKFILL &amp; FOUNDATION - WALLS 3 &amp; 4</u>	
SERVICE LIFE	= 75 YEARS	INTERNAL FRICTION ANGLE	30°
LIVE LOAD SURCHARGE	= 0.250 KSF	UNIT WEIGHT	120 PCF

- THE MAXIMUM APPLIED BEARING PRESSURE AT THE INTERFACE OF THE FOUNDATION AND THE SELECT BACKFILL MATERIAL IS SHOWN IN THE PROJECT CALCULATIONS. THE BEARING PRESSURE SHOWN IS THE MAXIMUM FOR THE LENGTH OF SOIL REINFORCING GIVEN. IT IS THE RESPONSIBILITY OF OTHERS TO DETERMINE THAT THE BEARING PRESSURE IS ALLOWABLE FOR THAT LOCATION.
- ANY UNSUITABLE FOUNDATION MATERIAL BELOW THE REINFORCED VOLUME AS DETERMINED BY THE ENGINEER OF RECORD (E.O.R.) SHALL BE EXCAVATED AND REPLACED WITH SUITABLE MATERIAL AS DIRECTED BY THE E.O.R.
- THE DESIGN CONTAINED ON THESE DRAWINGS IS BASED ON INFORMATION PROVIDED BY OTHERS. ON THE BASIS OF THIS INFORMATION, T&B STRUCTURAL SYSTEMS, LLC., IS RESPONSIBLE FOR THE INTERNAL STABILITY OF THE STRUCTURE ONLY. EXTERNAL STABILITY DESIGN INCLUDING FOUNDATION AND SLOPE STABILITY IS THE RESPONSIBILITY OF OTHERS.

### WALL CONSTRUCTION

- WALLS FOUNDED ON CURVES SHALL HAVE THEIR PANELS DIMENSIONED AS A SERIES OF CORDS (AS DIMENSIONED IN SHOP DRAWINGS) IN ORDER TO MATCH THE REQUIRED WALL RADIUS.
- FOR LOCATION AND ALIGNMENT OF THE MSE STRUCTURES REFERENCE THE RETAINING WALL CONTROL PLANS.
- IF MANHOLE AND DROP INLETS ARE REQUIRED, THEY SHALL BE LOCATED AS SHOWN ON THE RETAINING WALL ELEVATION DRAWINGS.
- IF PILES/COLUMNS ARE LOCATED WITHIN THE REINFORCED VOLUME THEY SHALL BE DRIVEN PRIOR TO CONSTRUCTION OF THE WALL UNLESS AN ALTERNATE METHOD IS USED TO ISOLATE THE COLUMNS FROM THE REINFORCED VOLUME AS APPROVED BY THE E.O.R.
- BACKFILL MATERIAL SHALL BE COMPACTED IN ACCORDANCE WITH GADOT SECTION 626 C, TO A LEVEL 2" (PLUS OR MINUS) ABOVE THE ELEVATION OF THE SOIL REINFORCING ELEMENT. NO SOIL REINFORCEMENT SHALL BE ATTACHED TO ANY PANEL BEFORE THE BACKFILL IS PLACED AT THE REQUIRED ELEVATION AND IS COMPACTED.
- STRUCTURES GREATER THAN 20 FEET SHALL HAVE THE FINISHED GRADE PLACED AND COMPACTED AT THE FRONT FACE OF THE STRUCTURE BEFORE THE STRUCTURE HEIGHT EXCEEDS 20 FEET. FINISH GRADE SHALL BE COMPACTED TO THE DENSITY SPECIFIED UNDER GADOT SECTION 626 C, OF THE TYPE SPECIFIED IN THE PLANS.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ANY GUARDRAIL POSTS PRIOR TO PLACING THE TOP 2 ROWS OF SOIL REINFORCEMENT. SHIFT OR SPLAY REINFORCING TO ALLOW 18" CLEAR SPACE FROM CENTERLINE OF POST. REFER TO OBSTRUCTION DETAILS FOR ADDITIONAL REQUIREMENTS WHEN DEFLECTING AND SHIFTING GRID STRIPS.

### WALL CONSTRUCTION (CONTINUED)

- IF EXISTING OR FUTURE STRUCTURES ARE TO BE PLACED IN THE REINFORCED VOLUME THAT INTERFERE WITH THE PROPER PLACEMENT OF THE SOIL REINFORCEMENT THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY FOR A COURSE OF ACTION.
- FOR OTHER INFORMATION PERTAINING TO THE CONSTRUCTION OF THE TBSS RETAINING WALL PLEASE REFER TO T&B STRUCTURAL SYSTEMS, LLC., INSTALLATION GUIDE.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DEFLECT THE TOP ROW OF SOIL REINFORCEMENT DOWNWARD SO AS TO NOT CONFLICT WITH ROADWAY MIXING OPERATIONS AND/OR ROADWAY CONSTRUCTION OPERATIONS. ANY SOIL REINFORCING MATERIAL THAT IS DAMAGED SHALL BE REPLACED AT THE CONTRACTORS EXPENSE.

### MISCELLANEOUS NOTES

- NOMINAL SOIL REINFORCING GRID LENGTH

THE WELDED WIRE MESH IS MANUFACTURED IN LENGTHS CORRESPONDING TO THE DIMENSION "B" AS GIVEN IN THE RETAINING WALL ELEVATIONS. THE ACTUAL LENGTH FROM THE FRONT FACE OF THE PANEL TO THE TAIL OF THE SOIL REINFORCING GRID IS "B" PLUS 12" THIS ACCOUNTS FOR THE THICKNESS OF THE PANEL AND THE LOCATION OF THE CONNECTION OF THE SOIL REINFORCING MAT WITH THE PANEL ANCHOR. THE FOUNDATION SHALL BE EXCAVATED TO AN EXTENT OF "B" PLUS 12".

- SELECT BACKFILL QUANTITY

THE REQUIRED VOLUME OF IN-PLACE SELECT BACKFILL IS CALCULATED BY MULTIPLYING THE RETAINING WALL FACE AREA BY THE SOIL REINFORCING LENGTH. THIS IS PERFORMED AT EACH INDIVIDUAL SEGMENT OF WALL FOR EACH CORRESPONDING "B". THE BACKFILL QUANTITY IF GIVEN BY T&B STRUCTURAL SYSTEMS, LLC., IS AN ESTIMATE ONLY. THE CONTRACTOR IS ULTIMATELY TO DETERMINE THE QUANTITY OF SELECT BACKFILL MATERIAL THAT IS REQUIRED.

- PANEL FINISH

THE CONCRETE PANELS SHALL HAVE A SMOOTH FINISH.

- THE FOLLOWING MATERIALS ARE SUPPLIED BY T&B STRUCTURAL SYSTEMS, LLC.,

- PRECAST CONCRETE FACING PANEL
- SOIL REINFORCING GRIDS
- CONNECTION PINS
- 80 DURO 3/4"-3" X 4" BEARING PADS
- NONWOVEN GEOTEXTILE FILTER FABRIC AND ADHESIVE ON QPL 68

ANY OTHER MATERIALS CALLED FOR IN THE CONTRACT PLANS OR SPECIFICATIONS AND NOT LISTED ABOVE 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 WALL INSTALLER. ALL SANDBLASTING, PAINTING, SEALERS OR OTHER SPECIALLY APPLIED COATINGS ARE SUPPLIED BY THE CONTRACTOR.

- T&B STRUCTURAL SYSTEMS, LLC., SUPPLIES MECHANICALLY STABILIZED EARTH STRUCTURAL COMPONENTS FOR USE WITH THE TBSS RETAINING WALL SYSTEMS, LLC., FOR THE STRUCTURES DETAILED HEREIN. THE INSTALLATION GUIDE PROVIDED BY T&B STRUCTURAL SYSTEMS, LLC., IS A GENERAL GUIDELINE FOR ERECTING THE TBSS RETAINING WALL SYSTEM. ALL QUALITY CONTROL PROCEDURES, STAGING PROCEDURES, MATERIAL HANDLING, AND SAFETY IS THE RESPONSIBILITY OF THE CONTRACTOR. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE OBLIGATION TO CONSTRUCT THE RETAINING WALL ACCORDING TO THE GADOT PROJECT PLANS AND SPECIFICATIONS AND ALL LAWS OF THE STATE OF GEORGIA.

- THESE DRAWINGS ARE CERTIFIED WITH THE RESPECT TO INTERNAL STABILITY OF THE STRUCTURE ONLY

- THESE DRAWINGS CONTAIN INFORMATION THAT IS PROPRIETARY TO T&B STRUCTURAL SYSTEMS, LLC., AND IS BEING FURNISHED FOR THE USE IN CONNECTION WITH THIS PROJECT ONLY. THE INFORMATION CONTAINED HEREIN IS NOT TO BE TRANSMITTED TO ANY OTHER ORGANIZATION UNLESS SPECIFICALLY AUTHORIZED IN WRITING BY T&B STRUCTURAL SYSTEMS, LLC. T&B DISTRIBUTES STRUCTURES COVERED BY UNITED STATES PATENTS. THE FURNISHING OF THESE DRAWINGS DOES NOT IMPLY THE RIGHTS TO FURNISH ANY COMPONENTS SHOWN HEREIN.

DATE: FEB 11 2013

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: *WML*

DATE: 1/16/13

Approved in general, details not checked. This approval shall not relieve the Contractor of any responsibility for conformity with the contract Plans and Specifications.

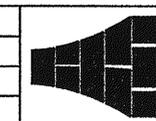
Health & Lineback Engineers, Inc.  
By: *WML*



1/16/2013 6:58:45 AM

REV NO.	DATE	BY	DESCRIPTION

DESIGNED	ES	01/2013
DES. CHK	CMS	01/2013
DRAWN BY	MWC	01/2013
DWG. CHK	ES	01/2013



**T&B STRUCTURAL SYSTEMS**  
6800 MANHATTAN BLVD. - STE 304  
FULTON COUNTY, GA.  
PROJECT: NH-85-2(153)  
P.I. No.: 762380

S.R. 400/1-85-DESIGN BUILD  
FULTON COUNTY, GA.  
PROJECT: NH-85-2(153)  
P.I. No.: 762380

GENERAL NOTES

CONTRACTOR  
ARCHER WESTERN  
TBSS  
PROJECT NUMBER  
12010.6

CONTRACTOR PN  
CONTRACTOR PN  
DWG NO.  
2