HILFIKER MSE WELDED WIRE WALL SYSTEM

GENERAL NOTES

DESIGN CRITERIA

1. THE ATTACHED DETAILS ARE BASED ON THE ASSUMPTIONS THAT THE MATERIAL WITHIN THE REINFORCED VOLUME, METHODS OF CONSTRUCTION AND QUALITY OF PREFABRICATED COMPONENTS MEET THE GOVERNING AGENCIES SPECIFICATION FOR MECHANICALLY STABILIZED EARTH STRUCTURES

2. MINIMUM DESIGN PARAMETERS

   REFERENCE WALL CONTROL DRAWINGS FOR SOIL CHARACTERISTICS OF FOUNDATION MATERIAL TO BE USED IN THE DESIGN OF THE WALL SYSTEM. THE CONTRACTOR SHALL PROVIDE SOIL DESIGN PARAMETERS FOR BACKFILL MATERIAL BASED ON ACTUAL SOIL CHARACTERISTICS UTILIZED AT THE SITE. THE VALUES OF THE INTERNAL FRICTION ANGLE ,PHI, THE COHESION, C, AND THE UNIT WEIGHT, GAMMA, SHALL BE PROVIDED IN THE SHOP DRAWINGS.

EXTERNAL STABILITY	
OVERTURNING	≥ 2.0
SLIDING	≥ 1.5
BEARING PRESSURE	≥ 2.5
OVERALL STABILITY	≥ 1.5
INTERNAL STABILITY	
PULLOUT	≥ 1.5
STEEL YIELD STRESS	$= 0.47\ F_y$
SERVICE LIFE	= 75 YEARS
LIVE LOAD SURCHARGE	= 250 PSF

3. THE MAXIMUM APPLIED BEARING PRESSURE AT THE INTERFACE OF THE FOUNDATION AND SELECT BACKFILL MATERIAL IS SHOWN ON THE PLANS. THE BEARING PRESSURE SHOWN IS THE MAXIMUM FOR THE GIVEN BASE MAT LENGTH. IT IS THE RESPONSIBILITY OF OTHERS TO DETERMINE THAT THE BEARING PRESSURE IS ALLOWABLE FOR THAT LOCATION.

4. ANY UNSUITABLE FOUNDATION MATERIAL BELOW THE REINFORCED VOLUME AS DETERMINED BY THE ENGINEER SHALL BE EXCAVATED AND REPLACED WITH SUITABLE MATERIAL AS DIRECTED BY THE ENGINEER.

5. THE DESIGN CONTAINED ON THESE DRAWINGS ARE BASED ON INFORMATION PROVIDED BY OTHERS. ON THE BASIS OF THIS INFORMATION, T&B STRUCTURAL SYSTEMS IS RESPONSIBLE FOR THE INTERNAL STABILITY OF THE STRUCTURE ONLY. EXTERNAL STABILITY, INCLUDING FOUNDATION AND SLOPE STABILITY IS THE RESPONSIBILITY OF OTHERS.

WALL CONSTRUCTION

1. WALLS FOUNDED ON CURVES SHALL HAVE THEIR PANELS DIMENSIONED AS A SERIES OF SHORT CORDS (AS DIMENSIONED) IN ORDER TO MATCH THE REQUIRED WALL RADIUS.

2. FOR LOCATION AND ALIGNMENT OF THE MSE STRUCTURES REFERENCE THE RETAINING WALL CONTROL PLANS.

3. IF MANHOLE AND DROP INLETS ARE REQUIRED, THEY SHALL BE LOCATED AS SHOWN ON THE RETAINING WALL ELEVATION DRAWINGS.

4. IF PILES 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 ENGINEER.

5. BACKFILL MATERIAL SHALL BE COMPACTED IN ACCORDANCE WE WITH SECTION 548 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.

6. 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. THE FINISH GRADE SHALL BE COMPACTED TO 95 PERCENT OF AASHTO T-180 UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

7. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ANY GUARDRAIL POSTS PRIOR TO PLACING THE TOP ROW OF SOIL REINFORCEMENT. THE POST SPACING SHALL BE ADJUSTED TO AVOID CONFLICTS WITH THE LONGITUDINAL SOIL REINFORCING WIRE. CUTTING OF THE LONGITUDINAL WIRE SHALL BE ALLOWED ONLY AS DIRECTED BY THE ENGINEER.

8. 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.

9. THE CAP MAT SHALL BE PLACED AS CLOSE TO THE TOP OF WALL LOCATION AS POSSIBLE THE REMAINING FACE PANEL ABOVE THE CAP MAT MAY BE CUT FREE

10. FOR OTHER INFORMATION PERTAINING TO THE CONSTRUCTION OF THE HILFIKER RETAINING WALL PLEASE REFER TO T&B STRUCTURAL SYSTEMS ERECTION MANUAL.

11. IT IS THE RESPONSIBILITY OF THE THE CONTRACTOR TO DEFLECT THE TOP CAP MAT OF THE 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.

CONSTRUCTION NOTES

1. 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 PLUS 2"-4". THE FOUNDATION SHALL BE EXCAVATED TO AN EXTENT OF "B" PLUS 6".

2 THE FOLLOWING MATERIALS ARE SUPPLIED BY T&B STRUCTURAL SYSTEMS

   - WELDED WIRE FACING PANEL
   - SOIL REINFORCING GRIDS
   - CAP MATS
   - CONNECTION PINS
   - SYNTHETIC INDUSTRIES GEOTEX 401 NONWOVEN GEOTEXTILE FILTER FABRIC

   ANY OTHER MATERIAL REQUIRED TO BUILD THE MSE STRUCTURES ACCORDING TO THE GOVERNING SPECIFICATION SHALL BE SUPPLIED BY THE CONTRACTOR.

3. T&B STRUCTURAL SYSTEM SUPPLIES MECHANICALLY STABILIZED EARTH STRUCTURAL COMPONENTS FOR USE WITH THE HILFIKER RETAINING WALL SYSTEMS FOR THE STRUCTURES DETAILED HEREIN. THE ERECTION MANUAL PROVIDED BY T&B STRUCTURAL SYSTEMS IS A GENERAL GUIDELINE FOR ERECTING THE HILFIKER 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 PROJECT PLANS AND SPECIFICATIONS AND ALL LAWS OF THE GOVERNING STATE.

ENGLISH

THIS SYSTEM MAY BE USED IN ALL ENVIRONMENTS

THE DESIGN CONTAINED IN THIS DRAWING IS BASED ON INFORMATION SUPPLIED BY THE FDOT CONSULTANT. TBSS IS CERTIFYING THE INTERNAL STABILITY OF THE MSE MASS ONLY. ALL EXTERNAL STABILITY REQUIREMENTS ARE THE RESPONSIBILITY OF THE OWNER.

T&B STRUCTURAL SYSTEMS INC.
ENGINEERED STRUCTURES
637 WEST HURST BLVD.
HURST, TEXAS 76053
888-280-9858
HILFIKER RETAINING WALL

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION
ROAD DESIGN

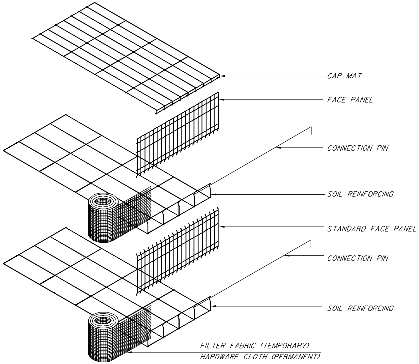
RETAINING WALL SYSTEM
HILFIKER WELDED WIRE WALL

	Names	Dates
Designed By		
Drawn By	TPT	
Checked By	TBW	

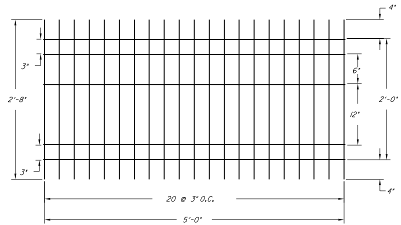
Approved By [signature]
State Structures Design Engineer

Revision	Sheet No.	Index No.
00	1 of 4	5120

$$$$$$$DGNSPECIFICATION$$$$$$$
$$$$$$SYTIME$$$$$$



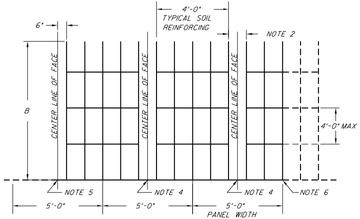
A/1 WELDED WIRE WALL COMPONENT ISOMETRIC



FRONT VIEW

B/1 FACE PANEL DETAIL

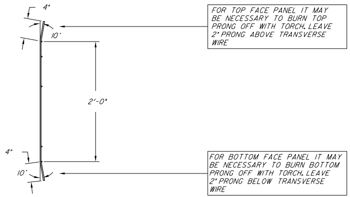
MINIMUM WIRE SIZE IS W4.5 BOTH DIRECTIONS



NOTE:

1. SOIL REINFORCING MAT TO BE PLACED ON PREPARED SURFACE
2. 12" SPACE BETWEEN SOIL REINFORCING MAT U.N.O.
3. PLACE FACE PANEL AT MIDPOINT OF SOIL REINFORCING MAT
4. BUTT FACE PANEL TOGETHER AND SECURE WITH A HOG RING
5. AT START OF WALL PLACE SOIL MAT AND TRIM EXCESS FACE PANEL
6. AT END OF WALL PLACE SOIL MAT AND FACE PANEL AND TRIM EXCESS

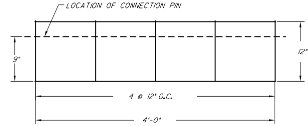
C/1 SOIL REINFORCING LAYOUT PLAN



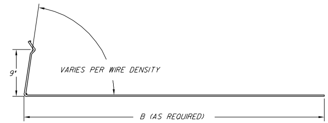
NOTE:

1. BOTTOM FACE PANEL MAY NEED TO HAVE PRONGS BURNED OFF IN FIELD
2. BURN PRONGS OFF 2" FROM TRANSVERSE WIRE
3. GALVANIZED FACE PANELS REQUIRE EXPOSED BLACK STEEL TO BE COATED WITH RICH ZINC PAINT OR APPROVED EQUAL
4. INTERSECTION OF ADJACENT FACE PANEL SECURE VERTICAL WIRES TOGETHER AT INTERFACE

D/1 FACE PANEL SECTION

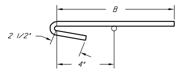


E/1 SOIL REINFORCEMENT FRONT ELEVATION

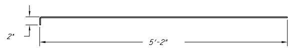


F/1 SOIL REINFORCEMENT SIDE ELEVATION

MINIMUM WIRE SIZE IS W4.5



G/1 CAP MAT DETAIL



H/1 CONNECTION PIN DETAIL

MINIMUM WIRE SIZE IS W4.5

THE DESIGN CONTAINED IN THIS DRAWING IS BASED ON INFORMATION SUPPLIED BY THE FDOT CONSULTANT. TBSS IS CERTIFYING THE INTERNAL STABILITY OF THE MSE MASS ONLY. ALL EXTERNAL STABILITY REQUIREMENTS ARE THE RESPONSIBILITY OF THE OWNER.

T&B STRUCTURAL SYSTEMS INC.
ENGINEERED STRUCTURES
637 WEST HURST BLVD.
HURST, TEXAS 76053
888-280-9858
HILFIKER RETAINING WALL

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION
ROAD DESIGN

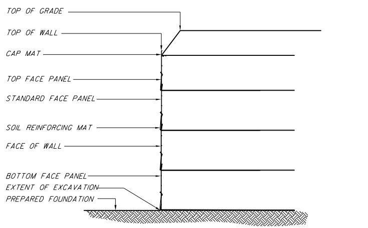
RETAINING WALL SYSTEM
HILFIKER WELDED WIRE WALL

	Names	Dates
Designed By		
Drawn By	TPT	
Checked By	TBW	

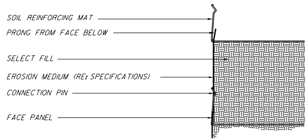
Approved By [signature]
State Structures Design Engineer

Revision	Sheet No.	Index No.
00	2 of 4	5120

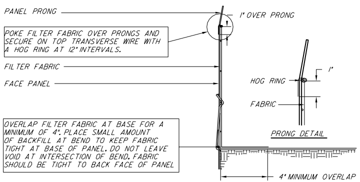
$$$$$$$DGNSPECIFICATION$$$$$$$
$$$$$$SYTIME$$$$$$



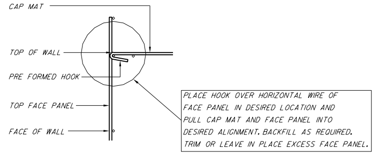
A/2 TYPICAL SECTION WELDED WIRE WALL



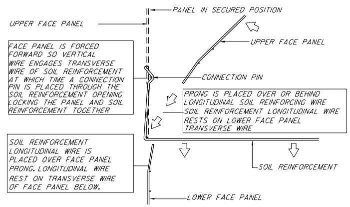
B/2 WELDED WIRE WALL LIFT SECTION



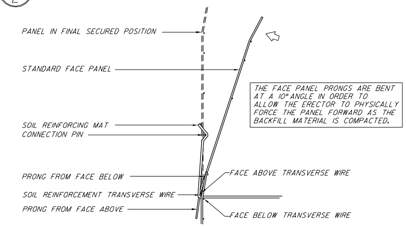
C/2 FILTER FABRIC PLACEMENT



D/2 CAP MAT CONNECTION DETAIL

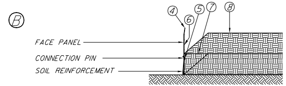


E/2 SOIL REINFORCEMENT CONNECTION SEQUENCE

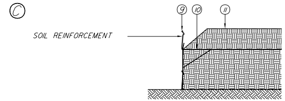


F/2 SOIL REINFORCEMENT CONNECTION SEQUENCE

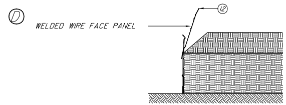
1. PREPARE FOUNDATION
2. PLACE STANDARD SOIL REINFORCING MAT ON PREPARED FOUNDATION
3. PLACE BACK FILL AND COMPACT BACK FILL IN SPECIFIED LIFTS LEAVING 45° VOID AT FACE OF WALL AS SHOWN.



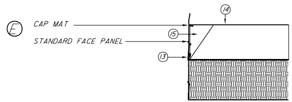
4. PLACE WELDED WIRE FACE PANEL
5. INSERT CONNECTION PIN JOINING SOIL REINFORCING MAT AND FACE PANEL
6. COVER AND HOG RING FILTER FABRIC TO BACK FACE OF PANEL
7. PLACE AND COMPACT BACKFILL IN VOID PAY PARTICULAR ATTENTION TO THE FACE PANEL ALIGNMENT.
8. CONTINUE TO PLACE BACKFILL IN THE SPECIFIED MANNER UNTIL THE REQUIRED ELEVATION OF THE NEXT LIFT IS REACHED LEAVING 45° VOID AT FACE



9. PLACE STANDARD SOIL REINFORCING MAT ON PREPARED LEVEL BACKFILL
10. PLACE AND COMPACT BACKFILL IN VOID OF LIFT BELOW PAYING PARTICULAR ATTENTION TO WALL ALIGNMENT. DO NOT FORCE FACE PANEL OUT.
11. REPEAT ERECTION SEQUENCE 3



12. PLACE WELDED WIRE FACE PANEL THROUGH SOIL REINFORCEMENT AND REPEAT SEQUENCES 5-10 UNTIL REQUIRED ELEVATION IS REACHED



13. PLACE TOP SOIL REINFORCING ELEMENT PLACING AND COMPACTING BACKFILL TO TOP OF WALL ELEVATION LEAVING 45° VOID
14. PLACE CAP MAT AT REQUIRED LOCATION PULLING FACE PANEL INTO PROPER VERTICAL AND HORIZONTAL ALIGNMENT
15. PLACE AND COMPACT BACKFILL IN VOID OF LIFT BELOW PAYING PARTICULAR TO WALL ALIGNMENT. DO NOT FORCE FACE PANEL OUT.

G/2 CONSTRUCTION SEQUENCE

THE DESIGN CONTAINED IN THIS DRAWING IS BASED ON INFORMATION SUPPLIED BY THE FDOT CONSULTANT. TBSS IS CERTIFYING THE INTERNAL STABILITY OF THE MSE MASS ONLY. ALL EXTERNAL STABILITY REQUIREMENTS ARE THE RESPONSIBILITY OF THE OWNER.

T&B STRUCTURAL SYSTEMS INC.
ENGINEERED STRUCTURES
637 WEST HURST BLVD.
HURST, TEXAS 76053
888-280-9858
HILFIKER RETAINING WALLS

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION
ROAD DESIGN

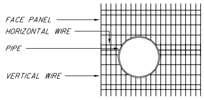
RETAINING WALL SYSTEM
HILFIKER WELDED WIRE WALL

	Names	Dates
Designed By		
Drawn By	TPT	
Checked By	TBW	

Approved By [signature]
State Structures Design Engineer

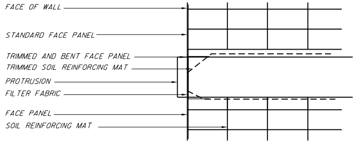
Revision	Sheet No.	Index No.
00	3 of 4	5120

$$$$$$$DGNSPECIFICATION$$$$$$$
$$$$$$SYTIME$$$$$$



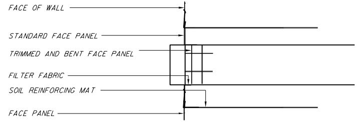
NOTE:
TRIM PROTRUSION AREA FROM FACE PANEL BY CUTTING HORIZONTAL WIRE BETWEEN EACH VERTICAL WIRE. BEND WIRES BACK INTO MSE MASS AND AS CLOSE TO PROTRUSION AS POSSIBLE. APPLY FILTER FABRIC OVER AND AROUND PROTRUSION MAKING SURE FACE PANEL IS COVERED. MAKE SURE THAT ALL GAPS BETWEEN FACE AND PROTRUSION ARE COVERED WITH FILTER FABRIC. IF PROTRUSION INTERFERES WITH SOIL REINFORCING MAT CUT TRANSVERSE WIRES OF MAT AND BEND LONGITUDINAL WIRE TO PASS PROTRUSION AND CONFORM TO THE PROTRUSIONS SHAPE.

A/3 TYPICAL ELEVATION THROUGH PENETRATION



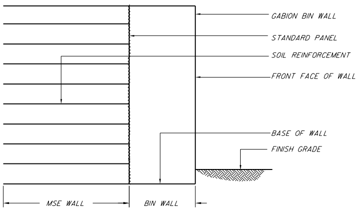
NOTE:
TRIM PROTRUSION AREA FROM FACE PANEL BY CUTTING HORIZONTAL WIRE BETWEEN EACH VERTICAL WIRE. BEND WIRES BACK INTO MSE MASS AND AS CLOSE TO PROTRUSION AS POSSIBLE. APPLY FILTER FABRIC OVER AND AROUND PROTRUSION MAKING SURE FACE PANEL IS COVERED. MAKE SURE THAT ALL GAPS BETWEEN FACE AND PROTRUSION ARE COVERED WITH FILTER FABRIC. IF PROTRUSION INTERFERES WITH SOIL REINFORCING MAT CUT TRANSVERSE WIRES OF MAT AND BEND LONGITUDINAL WIRE TO PASS PROTRUSION AND CONFORM TO THE PROTRUSIONS SHAPE.

D/3 TYPICAL PLAN VIEW THROUGH PENETRATION

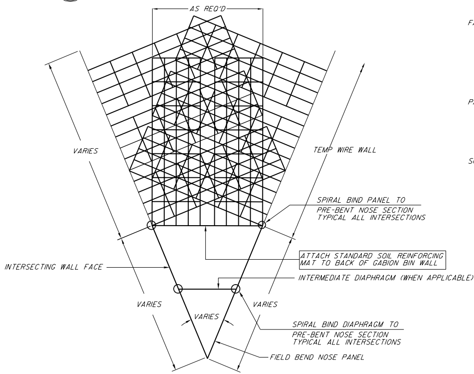


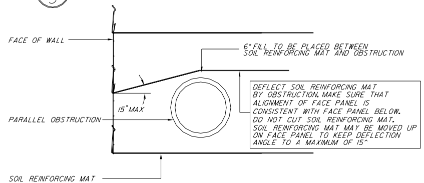
NOTE:
TRIM PROTRUSION AREA FROM FACE PANEL BY CUTTING HORIZONTAL WIRE BETWEEN EACH VERTICAL WIRE. BEND WIRES BACK INTO MSE MASS AND AS CLOSE TO PROTRUSION AS POSSIBLE. APPLY FILTER FABRIC OVER AND AROUND PROTRUSION MAKING SURE FACE PANEL IS COVERED. MAKE SURE THAT ALL GAPS BETWEEN FACE AND PROTRUSION ARE COVERED WITH FILTER FABRIC. IF PROTRUSION INTERFERES WITH SOIL REINFORCING MAT CUT TRANSVERSE WIRES OF MAT AND BEND LONGITUDINAL WIRE TO PASS PROTRUSION AND CONFORM TO THE PROTRUSIONS SHAPE.

F/3 TYPICAL SECTION THROUGH PENETRATION

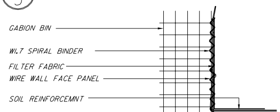


B/3 TYPICAL SECTION THROUGH BIN



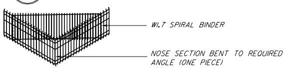


G/3 SECTION AT PARALLEL OBSTRUCTION



NOTE: 12 GAUGE GALVAINZED STEEL HOG RING MAY BE SUBSTITUDED FOR SPIRAL BINDER. HOG RINGS TO BE ATTACHED AT 3" CENTERS

H/3 SPIRAL BINDER CONNECTION



NOTE: 12 GAUGE GALVAINZED STEEL HOG RING MAY BE SUBSTITUDED FOR SPIRAL BINDER. HOG RINGS TO BE ATTACHED AT 3" CENTERS TOP TO BOTTOM.

C/3 ISOMETRIC OF BIN GABION NOSE SECTION

E/3 TYPICAL PLAN VIEW AT BIN

THE DESIGN CONTAINED IN THIS DRAWING IS BASED ON INFORMATION SUPPLIED BY THE FDOT CONSULTANT. TBSS IS CERTIFYING THE INTERNAL STABILITY OF THE MSE MASS ONLY. ALL EXTERNAL STABILITY REQUIREMENTS ARE THE RESPONSIBILITY OF THE OWNER.

T&B STRUCTURAL SYSTEMS INC.
ENGINEERED STRUCTURES
637 WEST HURST BLVD.
HURST, TEXAS 76053
888-280-9858
HILFIKER RETAINING WALLS

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION
ROAD DESIGN

RETAINING WALL SYSTEM
HILFIKER WELDED WIRE WALL

	Names	Dates	Approved By		
Designed By			State Structures Design Engineer		
Drawn By	TPT		Revision	Sheet No.	Index No.
Checked By	TBW		00	4 of 4	5120

$$$$$$$DGNSPECIFICATION$$$$$$$
$$$$$$SYTIME$$$$$$