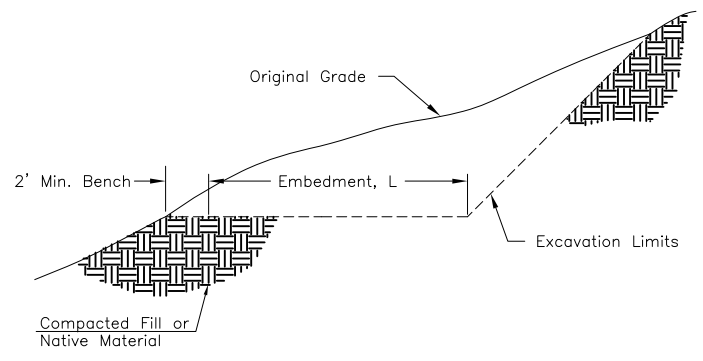


# CONSTRUCTION SEQUENCE

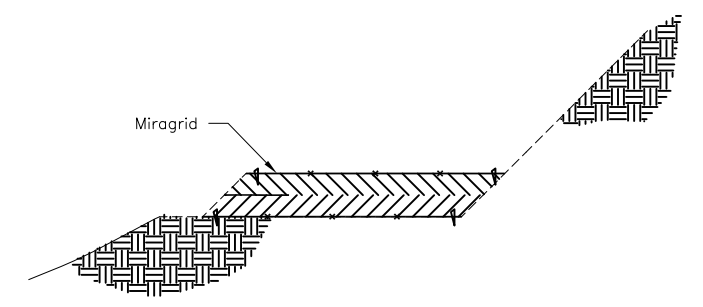
## CONSTRUCTION NOTES FOR MIRAGRID AND BACKFILL SOILS PLACEMENT FOR MECHANICALLY STABILIZED EARTH (MSE) STRUCTURES

◦ EXCAVATE FOR LEVEL BASE TO A LENGTH ADEQUATE FOR GRID EMBEDMENT. ADDITIONAL EXCAVATION MAY BE REQUIRED FOR DRAINAGE BOARD BEHIND THE REINFORCED MASS.



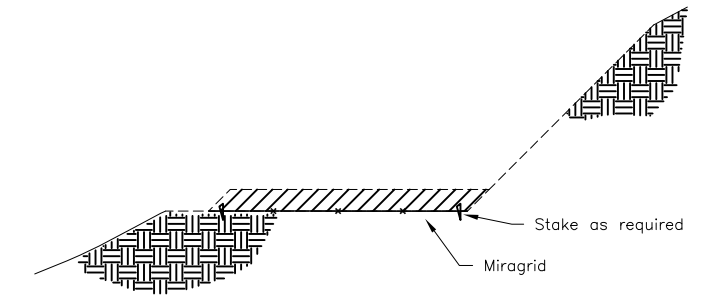
STEP 1

◦ PLACE NEXT LAYER OF MIRAGRID, TENSIONING AND STAKING AS NEEDED.  
 ◦ CONTINUE SLOPE CONSTRUCTION UNTIL FULL HEIGHT IS REACHED.  
 ◦ PLACE ADDITIONAL GRID BY REPEATING STEPS 2 AND 3.  
 (SEE PROJECT PLANS FOR GRID ELEVATIONS AND EMBEDMENT LENGTHS.)



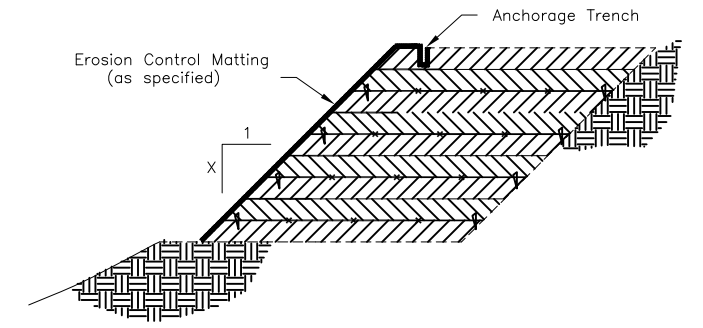
STEP 4

◦ CHECK LEVEL OF BASE.  
 ◦ CHECK ALL LINE, GRADE, AND CURVES.  
 ◦ INSTALL FIRST LAYER OF MIRAGRID WITH ROLL DIRECTION PERPENDICULAR TO SLOPE FACE UNLESS OTHERWISE SPECIFIED BY THE DESIGN ENGINEER.  
 ◦ PULL MIRAGRID TIGHT, KEEP TENSION APPLIED UNTIL BACKFILL IS PLACED, STAPLES OR STAKES MAY BE USED TO MAINTAIN TENSION.  
 ◦ PLACE BACKFILL IN MAXIMUM LIFTS OF 12 INCHES, OR AS SPECIFIED BY THE PROJECT ENGINEER AND COMPACT TO 95% OF RELATIVE DENSITY UNTIL NEXT LAYER OF REINFORCEMENT IS NEEDED.



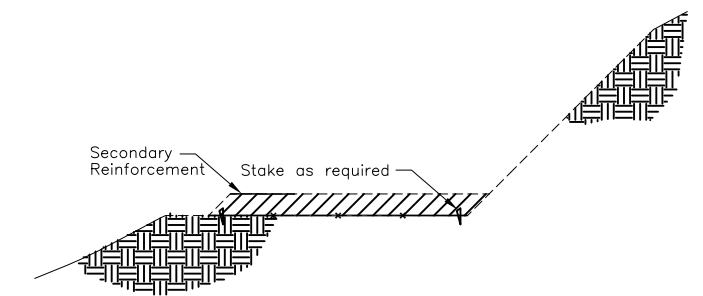
STEP 2

◦ PLACE FINAL COMPACTED BACKFILL LIFT AND TOPSOIL.  
 ◦ CONSTRUCT ANCHORAGE TRENCH FOR EROSION CONTROL MATTING, AS SPECIFIED BY THE DESIGN ENGINEER.  
 ◦ PLACE EROSION CONTROL MATTING AND COMPACT TRENCH.



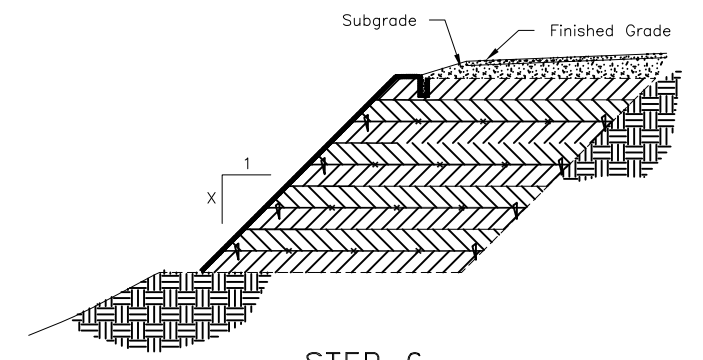
STEP 5

◦ INSTALL SECONDARY REINFORCEMENT PARALLEL TO THE SLOPE FACE AS REQUIRED ON THE PROJECT PLANS.  
 ◦ REPEAT ABOVE STEPS UNTIL ADDITIONAL PRIMARY REINFORCEMENT IS REQUIRED.  
 ◦ INSTALL NEXT LIFT OF BACKFILL AND COMPACT TO 95% OF RELATIVE DENSITY.



STEP 3

◦ CONSTRUCT ROADWAY OR DRAINAGE SWALE ETC. AS SPECIFIED ON THE PROJECT PLANS.



STEP 6

- 1.0 DESIGN PARAMETERS
- 1.1 DESIGN OF THE REINFORCED SOIL STRUCTURES ARE BASED UPON THE FOLLOWING PARAMETERS:
- REINFORCED FILL SOIL
    - FRICITION ANGLE = 26°
    - COHESION = 0 psf
    - MOIST UNIT WEIGHT = 120 pcf
  - RANDOM BACKFILL
    - FRICITION ANGLE = 26°
    - COHESION = 0 psf
    - MOIST UNIT WEIGHT = 120 pcf
  - FOUNDATION
    - FRICITION ANGLE = 37°
    - COHESION = 0 psf
    - MOIST UNIT WEIGHT = 137 pcf
- 1.2 MINIMUM FACTOR OF SAFETY GLOBAL STABILITY = 1.30
- 1.3 UNIFORM SURCHARGE = 250 psf
- 1.4 HYDROSTATIC FORCES NO
- 1.5 SEISMIC FORCES NO

- 2.0 REINFORCEMENT SHALL BE MIRAFI GEOGRID AND GEOTEXTILE: MANUFACTURED BY THE NICOLON MIRAFI GROUP: ATLANTA, GEORGIA.
- 3.0 TECHNICAL REQUIREMENTS
- 3.1 THE FOUNDATION FOR THE THE STRUCTURE SHALL BE GRADED LEVEL FOR A WIDTH EQUAL TO OR EXCEEDING THE APPROVED LENGTH OF THE REINFORCEMENT OR AS SHOWN IN THESE CONSTRUCTION PLANS. PRIOR TO MSE SLOPE CONSTRUCTION, THE FOUNDATION SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY AS DETERMINED BY ASTM D698 AT 1% DRY TO 3% WET OF OPTIMUM MOISTURE CONTENT OR AS DIRECTED BY THE ENGINEER. ANY FOUNDATION SOILS FOUND TO BE UNSUITABLE SHALL BE REMOVED AND REPLACED.
- 3.2 AT EACH REINFORCEMENT ELEVATION, BACKFILL AREA SHALL BE LEVEL BEFORE PLACING THE REINFORCEMENT. THE REINFORCEMENT SHALL BE PLACED NORMAL TO THE FACE OF THE SLOPE. EACH LAYER OF REINFORCEMENT SHALL BE PRE-TENSIONED TO REMOVE SLACK BEFORE PLACEMENT OF BACKFILL. BEFORE STARTING WORK, THE CONTRACTOR SHALL DEMONSTRATE TO THE ENGINEER THE METHOD PROPOSED FOR PRETENSIONING THE REINFORCEMENT.
- 3.3 AT THE END OF EACH DAY'S OPERATIONS, THE CONTRACTOR SHALL SHAPE THE LAST LIFT OF BACKFILL TO MAINTAIN ADEQUATE DRAINAGE AND PREVENT PONDING.
- 3.4 TESTING METHODS, FREQUENCY AND VERIFICATION OF MATERIAL SPECIFICATIONS AND COMPACTION SHALL BE THE RESPONSIBILITY OF THE OWNER.

- 4.0 TC MIRAFI REINFORCEMENT PLACEMENT
- 4.1 MIRAFI REINFORCEMENT PLACEMENT SHALL BE PLACED AT THE LOCATIONS AND ELEVATIONS SHOWN ON THE DRAWINGS.
- 4.2 MIRAFI REINFORCEMENT LENGTH SHALL BE AS SHOWN ON THE CONSTRUCTION DRAWINGS.
- 4.3 PRIOR TO PLACING FILL, THE REINFORCEMENT MATERIALS SHALL BE PLACED TO LAY FLAT AND PULLED TAUT TO REMOVE ANY SLACK IN THE GEOGRID.
- 4.4 TRACKED CONSTRUCTION EQUIPMENT SHALL NOT BE OPERATED DIRECTLY ON THE REINFORCEMENT. A MINIMUM FILL THICKNESS OF 6" IS REQUIRED FOR THE OPERATION OF TRACKED VEHICLES OVER THE REINFORCEMENT. TURNING OF TRACKED VEHICLES SHOULD BE AVOIDED TO PREVENT TRACKS FROM DISPLACING THE FILL AND THE REINFORCEMENT.
- 4.5 RUBBER TIRED VEHICLES MAY PASS OVER THE REINFORCEMENT AT SLOW SPEEDS, LESS THAN 10 MPH. SUDDEN BRAKING AND SHARP TURNING SHALL BE AVOIDED.
- 5.0 REINFORCEMENT LAYOUT OR PLACEMENT CHANGES
- 5.1 NO CHANGES TO THE REINFORCEMENT LAYOUT; INCLUDING, BUT NOT LIMITED TO, LENGTH, REINFORCEMENT STRENGTH (TYPE), OR ELEVATION, SHALL BE MADE WITHOUT THE EXPLICIT WRITTEN CONSENT OF THE ENGINEER.
- 6.0 SURFACE DRAINAGE
- 6.1 BACKFILL SHALL BE GRADED AWAY FROM THE SLOPE FACE AND ROLLED AT THE END OF EACH WORK DAY TO PREVENT PONDING OF WATER ON THE SURFACE OF THE REINFORCED SOIL MASS.
- 6.2 SURFACE DRAINAGE AND SITE GRADING SHALL BE THE RESPONSIBILITY OF OTHERS.
- 7.0 SPECIAL PROVISIONS
- 7.1 THE DESIGN PRESENTED HEREIN IS BASED ON SOIL PARAMETERS, FOUNDATION CONDITIONS, GROUNDWATER CONDITIONS, AND LOADINGS STATED IN SECTION 1.0 OF THESE SPECIFICATIONS. SHOULD ACTUAL CONDITIONS VARY FROM THOSE ASSUMED, THE ENGINEER SHOULD BE NOTIFIED PRIOR TO CONSTRUCTION TO DETERMINE IF REDESIGN OF THE PROPOSED STRUCTURE IS REQUIRED.
- 7.2 TC MIRAFI GROUP ASSUMES NO LIABILITY FOR INTERPRETATION OF SUBSURFACE CONDITIONS SUITABILITY OF SOIL DESIGN PARAMETERS, AND SUBSURFACE GROUNDWATER CONDITIONS.
- 7.3 THE OWNER OR OWNERS REPRESENTATIVE IS RESPONSIBLE FOR REVIEWING AND VERIFYING THAT THE ACTUAL SITE CONDITIONS ARE AS DESCRIBED IN SECTION 1.0 PRIOR TO AND DURING CONSTRUCTION.
- 7.4 ALL PLAN DIMENSIONS MUST BE VERIFIED BY THE CONTRACTOR. THE ENGINEER MUST BE NOTIFIED OF ANY DISCREPANCIES BEFORE THE CONTRACTOR BEGINS WITH WORK.

- GENERAL NOTES:
- EXCAVATION SURFACE SHALL BE CLEARED OF ALL CONSTRUCTION DEBRIS SHARP OBJECTS, LARGE STONES AND EXCESS FILL MATERIAL.
  - REINFORCEMENTS ARE TO BE PLACED WITHIN 3 INCHES OF ELEVATIONS SPECIFIED BY DESIGNER OR AS DIRECTED BY THE THE PROJECT ENGINEER.
  - CORRECT ORIENTATION OF THE REINFORCEMENT SHALL BE VERIFIED PRIOR TO BACKFILLING AND COMPACTION.
  - BACKFILL SHALL BE PLACED IN SUCH A MANNER AS TO MINIMIZE THE DEVELOPMENT OF WRINKLES AND OR DISPLACEMENT OF THE REINFORCEMENT. REINFORCEMENT SHALL BE PLACED AND TENSIONED BEFORE FILL IS PLACED.

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

DRAWN BY	RICH SACK
CHK'D BY	
DATE	AUGUST 2008

TenCate MIRAFI

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 PENDERGRASS, GA 30567

INSERT PROJECT NAME HERE  
 REINFORCED STEEPENED SLOPE  
 LOCALE, STATE