

REINFORCED SOIL SLOPE GENERAL CONSTRUCTION NOTES:

A. HANDLING AND STORAGE

UPON DELIVERY TO THE SITE, ALL GEOGRID MATERIALS SHALL BE INSPECTED TO ENSURE PROPER MATERIAL STRENGTHS. A PRODUCT CERTIFICATION SHALL BE PROVIDED WITH EACH SHIPMENT STATING THAT THE MATERIAL CONFORMS TO PRODUCT SPECIFICATIONS PUBLISHED BY THE SUPPLIER. SEE SPECIAL PROVISION SECTION 900 FOR MORE INFORMATION.

B. GEOGRID PLACEMENT

PRIOR TO PLACING THE REINFORCEMENT, THE EXCAVATION SHALL BE CLEANED OF ALL EXCESS MATERIAL AND THE FOUNDATION BASE PROOF-ROLLED. THE GEOGRID STRIPS MUST BE PLACED PERPENDICULAR TO THE SLOPE FACE. THE GEOGRID STRIPS MUST EXTEND BACK FROM THE SLOPE FACE TO THE DISTANCE SPECIFIED ON THE REINFORCED SOIL SLOPE TYPICAL SECTION. AFTER BEING ROLLED OUT, THE GEOGRID SHALL BE TENSIONED BY HAND UNTIL TAUT, FREE OF WRINKLES, AND LYING FLAT. ADJACENT GEOGRID STRIPS SHALL BE BUTTED TOGETHER SIDE-BY-SIDE WITHOUT OVERLAP. INDIVIDUAL LAYERS OF GEOGRID SHALL BE PLACED LEVEL AND TERMINATED AS THEY "DAY LIGHT" TO THE PROPOSED GRADES.

C. FILL PLACEMENT AND COMPACTION

FILL CAN BE PLACED AND SPREAD DIRECTLY UPON THE GEOGRIDS. EXTREME CARE SHOULD BE TAKEN TO PREVENT WRINKLES AND/OR SLIPPAGE OF GEOGRID DURING FILL PLACEMENT AND SPREADING. WHEN PRACTICAL, FILL IS TO BE PLACED IN THE DIRECTION IN WHICH THE GEOGRID WAS LAID OUT, TO AVOID TENSIONING. HOWEVER, IF FILL MUST BE PLACED TRANSVERSE TO THE ROLL LENGTH, SLIGHT (100) OVERLAPS BETWEEN ROLL WIDTHS WITH THE TOP PIECE OF GEOGRID BEING THE FIRST TO RECEIVE FILL, WILL PREVENT PERMANENT FOLDING OF REINFORCEMENT. RUBBER-TIRED EQUIPMENT IS ALLOWED TO PASS OVER BARE GEOGRID AT SLOW SPEEDS (LESS THAN 10 KPH) AND WITHOUT SUDDEN BRAKING. TRACK EQUIPMENT SHOULD NEVER BE ALLOWED ONTO BARE REINFORCEMENT. THERE MUST BE A MINIMUM OF 150 OF FILL ON TOP OF THE GEOGRID BEFORE TRACK EQUIPMENT CAN BE OPERATED. EACH FILL LIFT SHALL BE COMPACTED TO 95% OF AASHTO T-99.

D. LIMITS OF GEOGRID REINFORCEMENT

THE PURPOSE OF THE GEOGRID IS TO REINFORCE THE NEW EMBANKMENT FILLS. THE PROPOSED EMBANKMENTS SHALL BE REINFORCED TO THE LIMITS ABOVE AND SHOWN IN THE SECTIONS OR AS APPROVED BY THE ENGINEER. THE REINFORCED SOIL SLOPE WRAPS AROUND TO THE EMBANKMENT SIDE SLOPES. THE LIMIT OF GEOGRID ON THE SIDE SLOPES IS SHOWN ON THE GENERAL PLAN, BRIDGE SHEET BR240.

E. PAYMENT

PAYMENT FOR ROADWAY AND EMBANKMENT, GEOGRID SHALL BE MADE AS SPECIFIED IN ITEM 900.675 "SPECIAL PROVISION (REINFORCED SOIL SLOPE)."

REINFORCED SOIL SLOPE (RSS) MATERIAL NOTES:

1. THE GEOGRID USED IN THE REINFORCED SOIL SLOPE SHALL BE COMPOSED OF HIGH-TENACITY POLYESTER, HIGH-DENSITY POLYETHYLENE, OR HIGH-DENSITY POLYPROPYLENE. ALL GEOGRID REINFORCEMENT SHALL HAVE UNIAXIAL DESIGN STRENGTH WITH THE PRIMARY AXIS PLACED PERPENDICULAR TO THE FACE OF THE REINFORCED SOIL SLOPE.
2. THE GEOGRID SHALL BE RESISTANT TO ULTRAVIOLET DEGRADATION, INERT TO BIOLOGICAL DEGRADATION, AND RESISTANT TO NATURALLY ENCOUNTERED CHEMICALS.
3. THE ROADWAY AND EMBANKMENT GEOGRID SHALL BE APPROVED BY THE ENGINEER PRIOR TO PLACEMENT AND SHALL MEET THE FOLLOWING REQUIREMENTS:

PROPERTY	REQUIREMENT	TEST METHOD
LONG TERM ALLOWABLE STRENGTH (T AL) AT 10% STRAIN	76.6 KN/M (MIN.)	GRI-GG4
PULLOUT RESISTANCE FACTOR (F*)	0.42 (MIN.)	ASTM D6706

THE TOTAL LONG TERM STRENGTH (T AL) SHALL BE DETERMINED BY USING THE FOLLOWING FORMULA:

$$T_{AL} = \frac{T_{ULT}}{RFD \times RFID \times RFCR}$$

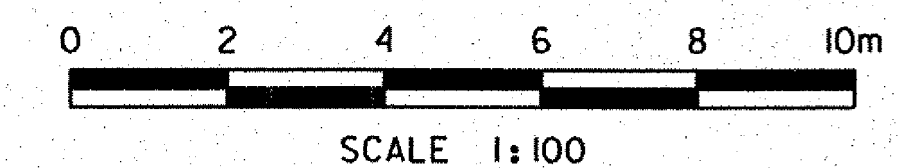
WHERE T_{ULT} = THE ULTIMATE (OR YIELD) TENSILE STRENGTH FROM TENSILE STRENGTH TESTS, TESTED IN ACCORDANCE WITH ASTM D6637 AND BASED ON THE MINIMUM AVERAGE ROLL VALUE (MARV) FOR THE PRODUCT.

RFD = THE DURABILITY REDUCTION FACTOR IN ACCORDANCE WITH EPA 9090 AND ASTM D4595. IT IS A PRODUCT OF THE PARTIAL SAFETY FACTORS FOR THE BIOLOGICAL AND CHEMICAL DEGRADATION OF THE GEOSYNTHETIC AND THE JOINT SEAM STRENGTH OF THE GEOGRID. (MINIMUM VALUE = 1.0)

RFID = THE INSTALLATION DAMAGE REDUCTION FACTOR AS DETERMINED IN ACCORDANCE WITH ASTM D5818 (MINIMUM VALUE = 1.0)

RFCR = THE CREEP REDUCTION FACTOR AS DETERMINED IN ACCORDANCE WITH ASTM D5262; BASED ON A 100-YEAR DESIGN LIFE.

4. REDUCTION FACTORS ARE TO BE PROVIDED BY THE MANUFACTURER AS A DIRECT RESULT OF TESTS PERFORMED IN ACCORDANCE WITH EACH TEST'S CORRESPONDING SPECIFICATION.
5. GRANULAR BORROW SHALL BE USED AS THE EMBANKMENT BACKFILL MATERIAL BELOW THE BOTTOM OF THE FOOTING. BACKFILL ABOVE THE BOTTOM OF THE FOOTING SHALL BE AS PER THE TYPICAL ABUTMENT 1 SECTION ON BRIDGE SHEET BR201.
6. THE GEOGRID SHALL BE PLACED AROUND DRAINAGE ELEMENTS AND ANY OTHER UTILITY COMPONENTS IN A MANNER THAT WILL MINIMIZE WRINKLING. A MINIMUM NUMBER OF GEOGRID ELEMENTS SHALL BE CUT TO LOCATE THE DRAINAGE ELEMENTS. EXCAVATION IN PREVIOUSLY BACKFILLED REINFORCED ZONES TO PLACE DRAINAGE ELEMENTS WILL NOT BE PERMITTED.
7. THE LENGTH OF THE GEOGRID AS SPECIFIED SHALL BE MEASURED FROM THE BACK FACE OF THE STONE FILL.
8. GRUBBING MATERIAL SHALL NOT BE PLACED ON THE STONE FILL UNDER THE SUPERSTRUCTURES.



**STATE OF VERMONT
AGENCY OF TRANSPORTATION**

Town Of	BENNINGTON	Bridge No.	B15, B15N, B15S
Highway No.	VT RTE 279	Log Sta.	
		Surv. Sta.	
VT ROUTE 279 & RAMPS OVER ROARING BRANCH OF WALLOOMSAC RIVER			
REINFORCED SOIL SLOPE DETAILS			
Designed By	M.D. BOWER	Drawn By	A.S. WOODS
Checked By	B.J. CARLSON	Bridge Design Supervisor	K.M. WOJTKOWSKI
Date	04/08	Date	04/08
PROJECT	BENNINGTON	PROJECT NO.	AC NH 019-(K51)
TVGA CAD Drawing No.	GRES.dgn	Date	02/02/2009
Bridge Sheet No.	BR202	Sheet	189 of 367