

CONCEPTUAL DRAWINGS
PREPARED FOR

PAVED ROAD DESIGN

CITY

PROVINCE

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PRELIMINARY - NOT FOR CONSTRUCTION

THIS DESIGN IS BASED UPON SPECIFIC PROPERTIES OF TENSAR PRODUCTS (GEOGRIDS, DRAINAGE COMPOSITES AND EROSION MEDIA), WHICH ARE PROPRIETARY TO TENSAR INTERNATIONAL CORPORATION. 1210 CITIZENS PARKWAY, MORROW, GA 30260. ANY SUBSTITUTION OF THE SPECIFIED PRODUCTS WILL INVALIDATE THIS DESIGN. THIS DRAWING IS BEING FURNISHED FOR USE ON THIS SPECIFIC PROJECT ONLY. ANY PARTY ACCEPTING THIS DOCUMENT DOES SO IN CONFIDENCE AND AGREES THAT IT SHALL NOT BE DUPLICATED WHOLE OR IN PART, NOR DISCLOSED TO OTHERS, WITHOUT THE CONSENT OF TENSAR INTERNATIONAL CORPORATION.

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Issue/Revisions

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Project PAVED ROAD DESIGN

Sheet Title TITLE SHEET

Drawing Number 001

Rev.

CONSTRUCTION REQUIREMENTS FOR TENSAR SPECTRA ROADWAY IMPROVEMENT SYSTEM

1.0 PROJECT INTRODUCTION

1.1 THE SPECTRA ROADWAY IMPROVEMENT SYSTEM IS A MECHANICALLY STABILIZED EARTH PAVEMENT STRUCTURE. THE DRAWINGS AND ASSOCIATED ANALYSES ARE PRESENTED BY NILEX INC./TENSAR INTERNATIONAL CORPORATION (HEREIN COLLECTIVELY REFERED TO AS TIC).

2.0 MATERIALS

2.1 PAVEMENT MATERIALS

2.1.1 GRANULAR MATERIALS AND COMMON FILL SHALL BE FREE OF EXCESS MOISTURE, ROOTS, MUCK, SOD, SNOW, FROZEN LUMPS, ORGANIC MATTER OR OTHER DELETERIOUS MATERIALS. BACKFILL WHICH DOES NOT MEET THESE CRITERIA SHALL BE CONSIDERED UNSUITABLE AND SHALL BE REMOVED.

2.1.2 GRANULAR MATERIALS AND COMMON FILL SHALL MEET THE REQUIREMENTS OF THE PROJECT SPECIFICATIONS.

2.1.3 AT LEAST 60% BY MASS OF MATERIAL RETAINED ON THE 5 MM SIEVE MUST HAVE 2 OR MORE FRACTURED FACES. MATERIAL TO BE APPROVED PRIOR TO CONSTRUCTION.

2.1.4 GRANULAR MATERIALS MAY BE BUILT UNDER WINTER CONDITIONS, SUBJECT TO APPROVAL PRIOR TO CONSTRUCTION.

2.2 SOIL REINFORCEMENT GEOGRID REINFORCEMENT SHALL BE TENSAR TriAx® GEOGRIDS MANUFACTURED BY THE TENSAR CORPORATION, MORROW, GEORGIA, USA.

3.0 DESIGN RESPONSIBILITY

3.1 TIC RESPONSIBILITY
TIC HAS DESIGNED THE SPECTRA ROADWAY IMPROVEMENT SYSTEM TO MEET APPLICABLE STANDARDS FOR SIMILAR CONSTRUCTION APPLICATIONS. DESIGN METHODS EMPLOYED BY TIC ARE PROPRIETARY. RELEVANT PARAMETERS TO THE TIC DESIGN WERE PROVIDED BY OTHERS AND ARE LISTED IN SECTION 4.0. TIC HAS EXERCISED THE RIGHT TO RELY ON THE INFORMATION PROVIDED BY OTHERS IN COMPLETION OF ITS DESIGN.

3.2 RESPONSIBILITY OF OTHERS
THE SITE CHARACTERISTICS LISTED BELOW AND IN SECTION 4.0 AFFECTS THE PERFORMANCE OF THE SPECTRA ROADWAY IMPROVEMENT SYSTEM. TIC IS NOT RESPONSIBLE FOR EVALUATING OR VERIFYING SITE CHARACTERISTICS, THEREFORE TIC ASSUMES NO LIABILITY FOR THE POTENTIAL NEGATIVE EFFECTS OF THE SITE CHARACTERISTICS. THE CLIENT IS RESPONSIBLE FOR ENSURING THAT THE FOLLOWING SITE CHARACTERISTICS ARE PROPERLY ADDRESSED BY A QUALIFIED ENGINEER.

3.2.1 TIC REPORTS PHYSICAL AND STRENGTH REQUIREMENTS OF THE BACKFILL. THE GEOTECHNICAL ENGINEER OF RECORD FOR THE PROJECT SHOULD BE CONSULTED TO VERIFY BACKFILL SPECIFICATIONS AND APPROPRIATE BACKFILL TESTING METHODS AND FREQUENCY.

3.2.2 HYDROSTATIC CONDITIONS
THE CLIENT IS RESPONSIBLE FOR ENSURING THAT THE DESIGN, ANALYSIS, DETAILING, AND MITIGATION OF SURFACE WATER AND SUBSURFACE WATER, INCLUDING BUT NOT LIMITED TO COLLECTION, DIVERSION, AND EROSION/SCOUR PROTECTION ARE PROPERLY ADDRESSED BY A QUALIFIED ENGINEER.

4.0 DESIGN PARAMETERS

4.1 DESIGN OF THE SPECTRA ROADWAY IMPROVEMENT SYSTEM IS BASED ON PROPRIETARY METHODS. THE FOLLOWING PARAMETERS CONTROL THE DESIGN:

4.2 SUBGRADE UNDRAINED SHEAR STRENGTH = 5 kPa

4.3 GEOGRID
GEOGRID PROPERTIES ARE REPORTED IN THE MATERIAL PROPERTY DATA SHEETS.

4.4 LOADINGS

4.4.1 LEGAL HIGHWAY AXLE LOADS

4.5 HYDROSTATIC PARAMETERS

4.5.1 GROUNDWATER ASSUMED TO BE AT SURFACE.

5.0 CONSTRUCTION

5.1 A COMPLETE SET OF APPROVED CONSTRUCTION DRAWINGS AND CONTRACT SPECIFICATIONS SHALL BE ON SITE AT ALL TIMES DURING CONSTRUCTION OF THE SPECTRA ROADWAY IMPROVEMENT SYSTEM. THE CONTRACTOR IS RESPONSIBLE TO FOLLOW THE DRAWINGS AND THE INSTRUCTIONS PROVIDED IN THE SPECTRA INSTALLATION GUIDE PROVIDED BY TIC.

5.2 FOUNDATION PREPARATION
RECOMMENDATIONS FOR SUBGRADE PREPARATION AND TESTING SHOULD BE PROVIDED BY THE PROJECT GEOTECHNICAL ENGINEER OF RECORD.

5.3 GEOGRID PLACEMENT

5.3.1 THE CLIENT OR CONTRACTOR IS RESPONSIBLE TO PROVIDE SURVEY CONTROLS AND DETERMINE THE EXTENTS OF THE SPECTRA ROADWAY IMPROVEMENT SYSTEM. THE SYSTEM SHALL BE EMPLOYED A MINIMUM OF 2 METERS BEYOND THE TRAFFICKED AREA.

5.3.2 GEOGRIDS SHALL BE INSTALLED AT THE LOCATIONS SHOWN ON THE DRAWINGS HEREIN. CHANGES TO GEOGRID LAYOUT ARE NOT PERMISSIBLE WITHOUT THE EXPRESS WRITTEN CONSENT OF TIC.

5.3.3 UPPER GEOGRID REINFORCEMENT SHALL BE OVERLAPPED A MINIMUM OF 300 mm ON ALL SIDES AND AT THE ENDS OF EACH ROLL. GEOGRID SHALL BE FASTENED WITH ZIP TIES OR APPROVED EQUIVALENT TO ENSURE PRESERVATION OF THE OVERLAP. LOWER GEOGRID OVERLAP SHALL BE A MINIMUM OF 600mm.

5.3.4 TRACKED CONSTRUCTION EQUIPMENT SHALL NOT BE OPERATED DIRECTLY ON THE GEOGRID REINFORCEMENT. A MINIMUM BACKFILL THICKNESS OF 150 MM IS REQUIRED FOR OPERATION OF TRACKED VEHICLES OVER THE GEOGRID REINFORCEMENT. TURNING OF TRACKED VEHICLES SHOULD BE KEPT TO A MINIMUM TO PREVENT TRACKS FROM DISPLACING THE FILL AND/OR GEOGRID REINFORCEMENT. RUBBER-TIRED VEHICLES MAY PASS OVER THE GEOGRID REINFORCEMENT AT SPEEDS LESS THAN 15 KPH. SUDDEN BRAKING AND SHARP TURNING SHALL BE AVOIDED.

5.4 BACKFILL PLACEMENT

5.4.1 GRANULAR BACKFILL SHALL BE PLACED IN HORIZONTAL LIFTS NOT EXCEEDING 300 mm LOOSE THICKNESS. THE FIRST LIFT OF COMMON FILL OVER MUSKEG SHALL BE 900mm PLACED IN ONE LIFT.

5.4.2 GRANULAR BACKFILL SHALL BE PLACED AND COMPACTED TO A MINIMUM OF 95% OF MAXIMUM STANDARD PROCTOR DRY DENSITY AS DETERMINED IN ACCORDANCE WITH AASHTO T-99 OR AS DIRECTED BY THE GEOTECHNICAL ENGINEER.

6.0 SPECIAL PROVISIONS

6.1 THE DESIGN PRESENTED HEREIN IS ONLY VALID FOR THE SPECTRA ROADWAY IMPROVEMENT SYSTEM. THE DESIGN IS BASED ON SOIL PARAMETERS, FOUNDATION CONDITIONS, GROUNDWATER CONDITIONS, AND LOADINGS. TIC ASSUMES NO LIABILITY FOR INTERPRETATION OR VERIFICATION OF SUBSURFACE CONDITIONS, FOR SUITABILITY OF SOIL DESIGN PARAMETERS OR FOR INTERPRETATION OF SUBSURFACE GROUNDWATER CONDITIONS. THE CLIENT IS RESPONSIBLE TO VERIFY THAT ACTUAL SITE CONDITIONS, PARAMETERS, AND STRUCTURE GEOMETRIES ARE AS DESCRIBED HEREIN PRIOR TO AND DURING CONSTRUCTION. PROCEEDING WITH CONSTRUCTION WITHOUT FIRST VERIFYING CONDITIONS AND PARAMETERS DISCUSSED ABOVE SHALL ABSOLVE TIC FROM ALL LIABILITY FOR THE DESIGN AND CONSTRUCTION OF THIS STRUCTURE AND THE CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS TIC FROM ALL RESULTING CLAIMS, DAMAGES, LOSSES AND EXPENSES.

6.2 THE CLIENT IS RESPONSIBLE FOR PROVIDING QUALITY ASSURANCE AND QUALITY CONTROL PROGRAMS THAT ENSURE CONSTRUCTION OF THE MSE STRUCTURE IS PERFORMED IN ACCORDANCE WITH THE TIC NOTES AND DRAWINGS, AND THE CONTRACT PLANS AND SPECIFICATIONS.

6.3 THE CLIENT SHALL IMMEDIATELY REPORT ANY CHANGES TO TIC (403-543-5454) PRIOR TO PROCEEDING WITH CONSTRUCTION.

6.4 TIC IS NOT RESPONSIBLE FOR HAVING PERSONNEL ON-SITE UNLESS SPECIFICALLY PROVIDED FOR IN A WRITTEN CONTRACT SIGNED BY TIC. ANY TIC REPRESENTATIVE ON SITE DOES NOT HAVE THE AUTHORITY TO STOP OR START CONSTRUCTION OF THE MSE STRUCTURE OR ANY OTHER WORK.

7.0 REFERENCE DOCUMENTS

7.1 THE CONSTRUCTION DRAWINGS PREPARED BY TIC ARE BASED UPON THE PERSONAL COMMUNICATIONS WITH THE CLIENT.

Stamps

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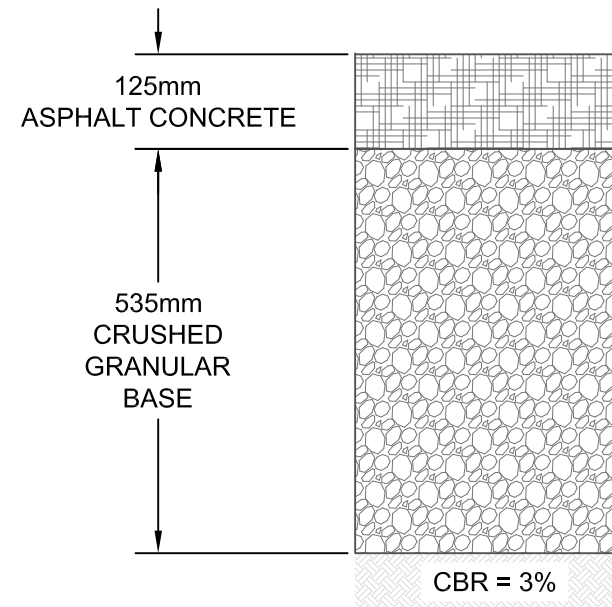
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PAVED ROAD DESIGN

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CONSTRUCTION NOTES

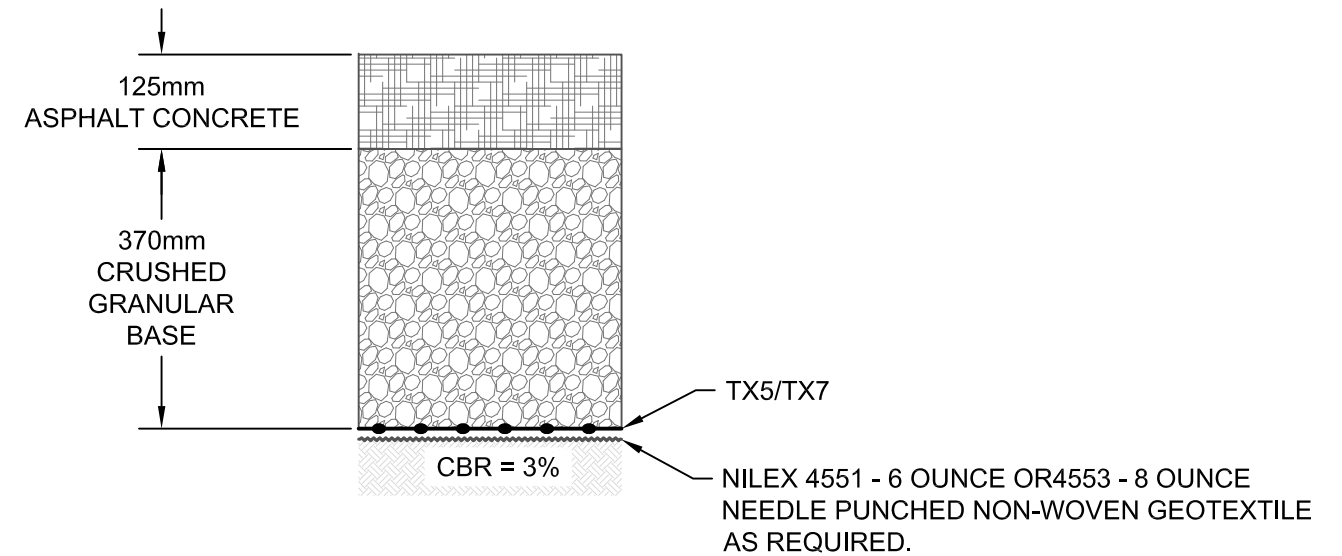
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002

Rev.

DESIGN PARAMETERS	
PARAMETER	VALUE
ANALYSIS PERIOD (YEARS)	
DESIGN RELIABILITY (%)	
STANDARD NORMAL DEVIATE	
STANDARD DEVIATION	
CHANGE IN SERVICEABILITY	
INITIAL	
TERMINAL	
SUBGRADE RESILIENT MODULUS (MPa)	
DESIGN ESALS	



UNREINFORCED ROAD SECTION



REINFORCED ROAD SECTION

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