CONCEPTUAL DRAWINGS
PREPARED FOR

HEAVY HAUL ROAD DESIGN

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CITY

PROVINCE
CONSTRUCTION REQUIREMENTS FOR TENSAR SPECTRA ROADWAY IMPROVEMENT SYSTEM

1.0 PROJECT INTRODUCTION

1.1 The Spectra Roadway Improvement System for this specific project is a mechanically stabilized earth pavement structure. The drawings and associated analysis are prepared by Tensar International Corporation under a subcontract agreement with Niles Environmental Group Inc. (hereinafter collectively referred to as "Tensar") as the client's ultimate contractor.

2.0 MATERIALS

2.1 PAVEMENT MATERIALS

2.1.1 Gravel and sand materials shall be free of excess moisture, roots, clay, silt, snow, frozen lumps, organic matter or other deleterious materials. In addition, all material shall be free of stones greater than 4" in diameter. Failure to meet these criteria shall be considered unstable and shall be removed before further construction.

2.1.2 Fill materials shall meet the requirements of the project specifications and codes.

2.2 SOIL ENHANCEMENT

Geotechnical reinforcement shall be Tensar T41-Geogrid manufactured by the Tensar Corporation, Morrow, Georgia, USA.

3.0 DESIGN RESPONSIBILITY

3.1 Tensar Responsibility

Tensar is responsible for preparing the Spectra Roadway Improvement System to meet the applicable standards for similar construction applications. Design methods employed by Tensar are proprietary. Relevant parameters to the Tensar design were provided by Tensar and are contained within the design. Geotechnical information provided by others in the analysis of the site characteristics is the responsibility of others for ensuring that the following site characteristics are properly addressed by a qualified engineer.

3.2 Responsibility of Others

The client is responsible for ensuring that the design analysis, design drawings, and reports are consistent with the applicable standards and are properly addressed by a qualified engineer.

3.3 Tensar Reports

Tensar reports physical and strength requirements of the backfill geotechnical engineer of record for the project should be consulted to verify all requirements and appropriate backfill methods and frequency.

3.4 HYDROSTATIC CONDITIONS

The client is responsible for ensuring that the design analysis, design drawings, and reports are consistent with the applicable standards and are properly addressed by a qualified engineer.

3.5 DESIGN PARAMETERS

4.0 DESIGN OF THE SPECTRA ROADWAY IMPROVEMENT SYSTEM BASED ON THE SCAVENGER METHOD. THE FOLLOWING PARAMETERS CONTROL THE DESIGN:

4.1 SUBGRADE CBR (%) ≤ 6.0%

4.2 HYDROSTATE PARAMETERS

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

4.4 LOADINGS

4.4.1 CAT 785 TRACK

4.5 HYDROSTATE PARAMETERS

4.5.1 NO SPECIFIC GROUNDWATER CONDITIONS ARE REPORTED FOR THE PROJECT.

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 for following the drawings and the instructions provided in the Spectra Installation Guide provided by Tensar.

5.2 SUBGRADE PREPARATION

Recommended subgrade preparation and testing should be provided by the project geotechnical engineer of record.

5.3 GEOTEXTILE PLACEMENT

5.3.1 The client or contractor is responsible to provide stored geotextile controls and determine the extent of the Spectra Roadway Improvement System. The system shall be employed a minimum of 2 meters beyond the transition area.

5.3.2 Geotextile shall be installed at the locations shown on the drawings herein. Checkpoints to geotextile layout are not permissible without the express written consent of Tensar.

5.3.3 Prior to placing gravel, and sand materials the geotextile should be pulled out and straightened and held in place by the use of pins or piles of soil material.

5.3.4 Geotextile reinforcement shall be elevated a minimum of 30 cm (12 in) above grade at the edges and tail. Geotextile shall be properly cured and installed per the instructions before the geotextile installation is complete. Geotextile reinforcement shall be kept to a minimum to prevent tracking from displacing the fill and/or geotextile reinforcement. If the geotextile reinforcement is used, it shall be less than 15 mm (0.60 in) thick and the cut edge shall be covered with a minimum of 2 inches of fill to minimize sharp tracking when the fill is placed.

5.4 BACKFILL PLACEMENT

5.4.1 Backfill shall be placed in horizontal lifts not exceeding 30 cm (12 in) thick.

5.5 BACKFILL PLACEMENT

5.5.1 Backfill shall be placed and compacted to a minimum of 60% of maximum standard proctor dry density as determined in accordance with ASTM T185 or as directed by the geotechnical engineer.

6.0 SPECIAL PROVISIONS

6.1 THE DESIGN/REPRODUCTION HEREBY DEVALUATES THE SPECTRA ROADWAY IMPROVEMENT SYSTEM FOR THIS PROJECT. THE DESIGN IS BASED ON SCAVENGER PARAMETERS, SUBGRADE CONDITIONS, AND LOADINGS STATED IN SECTION 3.2. GEOTECHNICAL PARAMETERS ARE REPORTED IN THE MATERIAL PROPERTY DATA SHEETS.

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 TENSAR NOTES AND DRAWINGS, AND THE CONTRACT PLANS AND SPECIFICATIONS.
UNREINFORCED ROAD SECTION

REINFORCED ROAD SECTION

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NILEX 4551 - 6 OUNCE OR 4553 - 8 OUNCE NEEDLE PUNCHED NON-WOVEN GEOTEXTILE AS REQUIRED.