

MECHANICALLY STABILIZED EARTH STRUCTURE INTERSTATE 35, MINNEAPOLIS, MN, USA

SOIL REINFORCEMENT RETAINING WALLS

Product: Terramesh and Green Terramesh

Problem

The replacement and widening of the 38 year old I35E. bridge over the Mississippi river in St Paul, MN, required a large retaining structure due to right of way constraints. The retaining structure had to be aesthetically appealing as it would abut a city park preserve adjacent to the river.

Solution

Maccaferri were approached by GME Consultants to develop a mechanically stabilized earth (MSE) structure. The selected solution consisted of a 57' high, 1130' long MSE structure; on average, the lower 25' would use the Terramesh system and the upper 32' would use Green Terramesh system with a vegetating face. This combination of hard and soft finishes provided a more natural organic appearance than the concrete or blockwork wall alternatives under consideration. Terramesh units consists of a one piece facia and geogrid reinforcement tail, all manufactured from Maccaferri PVC coated galvanized steel wire mesh. Maccaferri supplied units with customized lengths of geogrid reinforcement to suit GME's design and optimize construction efficiency.

Following erection of the units on-site, free draining structural backfill was compacted onto the geogrid tails, locking them into position. Terramesh system has an integral gabion face which was filled with 4-6" durable gabion stone fill, The face of the Green Terramesh unit was filled with lightly compacted topsoil, which was preseeded with indigenous grasses.

When constructed correctly, Terramesh forms flexible, free-draining MSE structures. Despite this, GME specified additional positive drainage within the structure to aid water dispersion in this large and critical infrastructure installation.

Construction took place either side of Winter 2002, as all in-place compacted fill had to be kept from freezing and snow and ice had to be removed prior to fill placement. Vegetation successfully established on the Green Terramesh element of the structure in Spring 2003

Client:

MINNESOTA DEPARTMENT OF TRANSPORTATION

Main contractor:

SHAFFER CONSTRUCTION Co,

Designer:

GME CONSULTANTS Inc.

Product used:

TERRAMESH AND GREEN TERRAMESH

Date of Construction:

FALL 2002 - SPRING 2003



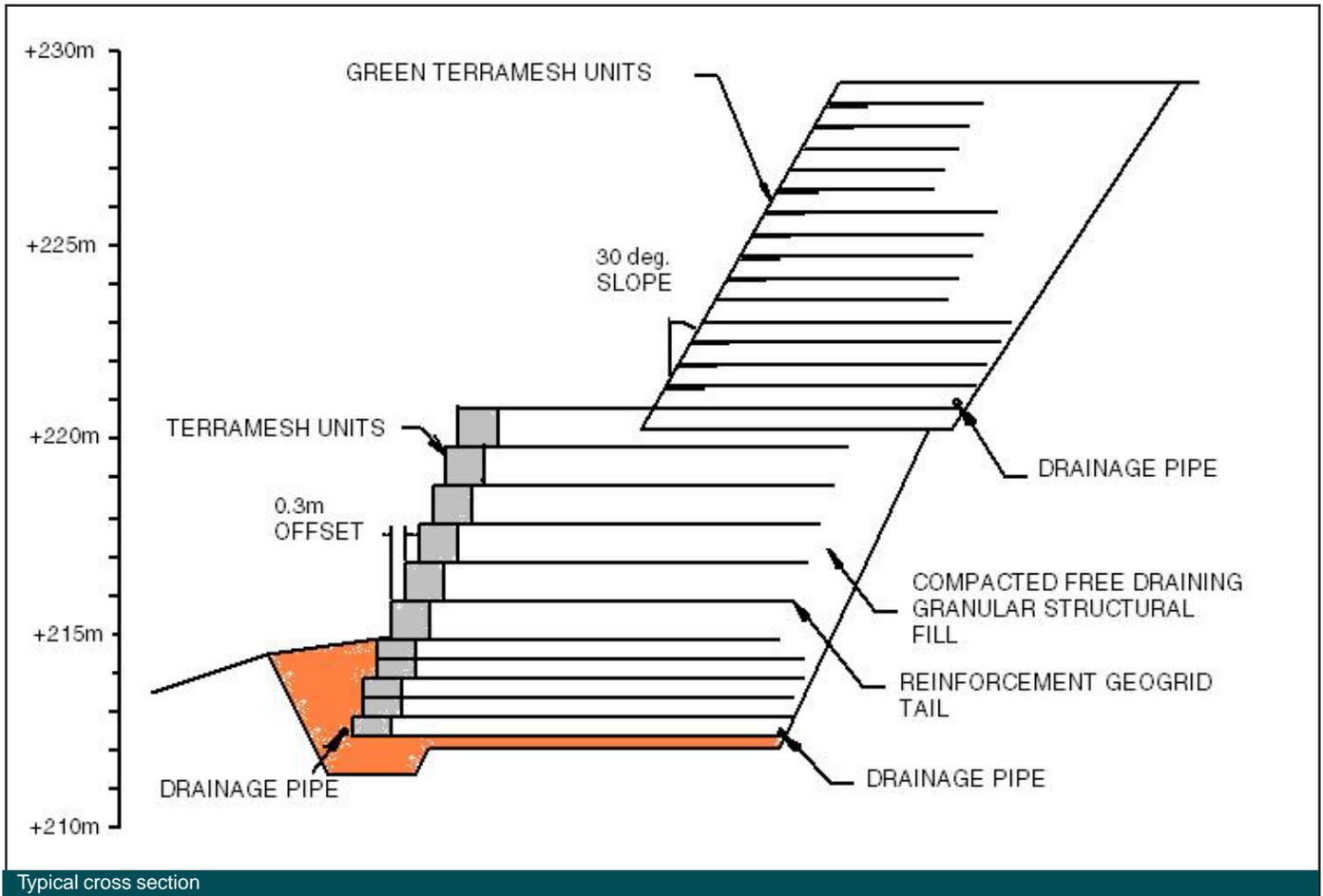
Placement of structural backfill onto geogrid reinforcement



Assembling Green Terramesh units



The overall structure nearing completion



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