

EDGEVALLEY SUBDIVISION SWMF SERVICING LONDON, ONTARIO, CANADA

Channelling Works

Problem

The Edgevalley subdivision located in London Ontario, required a new storm water discharge structure for a retention pond. City of London and their project engineers MTE Consultants Inc. approached Maccaferri for assistance in design of this new channel lining.

The design needed to accommodate an expected discharge of 12 m³/s and a velocity 2.61 m/s, with storm water to be ultimately discharged into the Thames River.

A key environmental requirement from the City of London was to also ensure the channel side slopes would be vegetated.

Solution

After analyzing all hydraulic parameters through several design runs, Maccaferri proposed the construction of a 1.6% stepped channel, armored with 30cm thick green gabion mats on the side slopes, and regular gabion mats for the channel base. The extent of the stepped channel was 48.2 meters long by 9.8 meters wide in a V shaped profile.

Gabion mats consist of double twisted wire mesh containers of variable sizes. The mats are uniformly partitioned into internal cells separated by internal diaphragms, which interconnect to adjacent mats to form a continuous monolithic structure. The units are filled with stone at the site to form flexible and permeable units which are commonly used in channel linings, revetments, scour protection for structures, along with other erosion control applications.

The gabion mats were filled with a mix of 70% gabion stones + 30% topsoil to conform with the owners environmental and vegetated requirement. The lid of the gabion mat was installed in combination with a layer of Turf Reinforcement Mat known as our MacMat 10.4 product. The MacMat 10.4 secures the topsoil in concert with the Gabion mat, and resulted in an armored channel lining system with green faced side slopes.

Client: THE CITY OF LONDON

Designer / Consultant: MTE Consultants Inc

Contractor: CH Excavating Ltd

Products used (Qty.)

- Green Gabions	255.40 m ³
- MacMat	251.42 m ²
- Gabion	168 m ³

Date of construction: 09/2018 - 08/2019



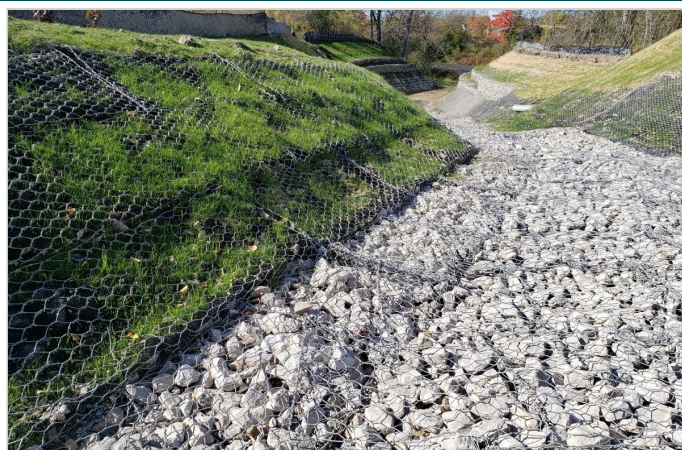
Earth work for the construction of the channel



Detail of the constructions of the gabion mats



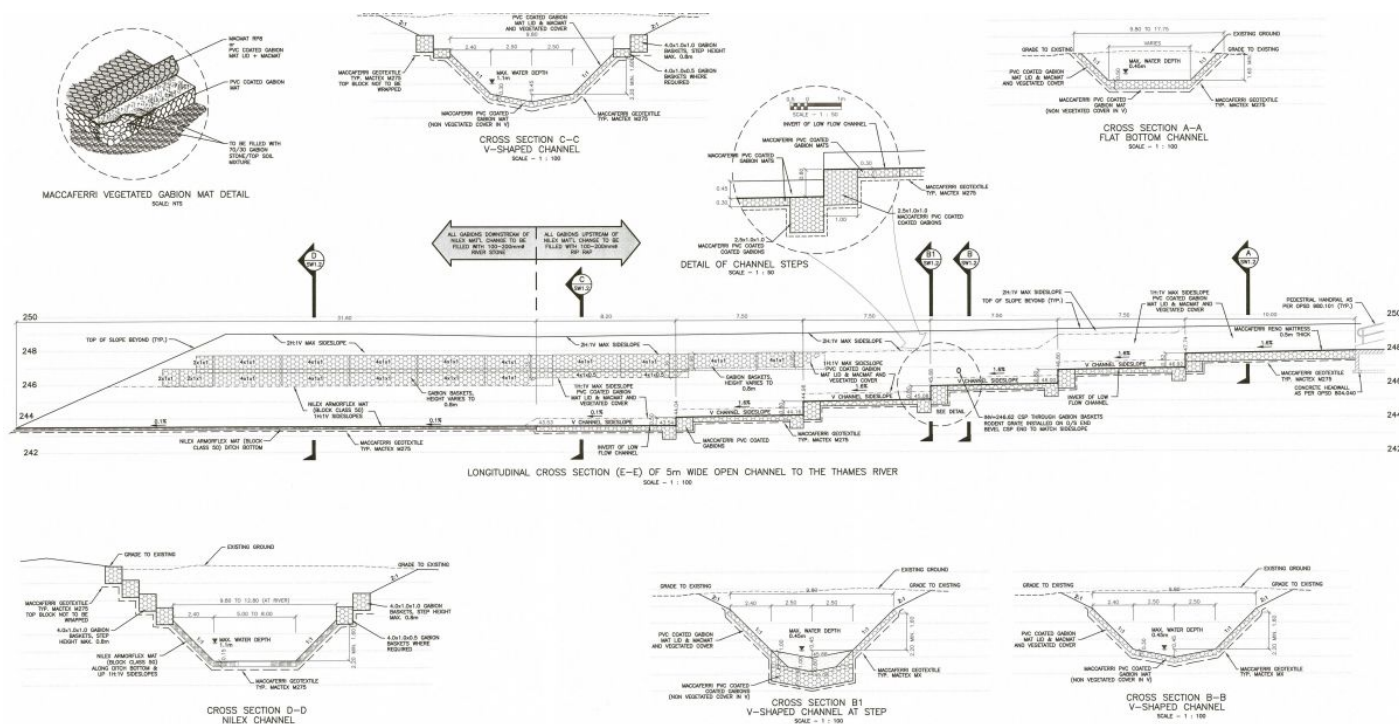
View of finished channel before vegetation establishment



Detail of side slope gabion mat with vegetation



Finished project



Elevation view and cross sections

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