



SWEETWATER CREEK

HUME HIGHWAY SOUTHERN ALLIANCE

CLIENT: RTA

MAIN CONTRACTOR: ABIGROUP

SPECIALIST SUB-CONTRACTOR: BTL AUSTRALIA

LOCATION: MULLENGANDRA, NSW

DATE: JANUARY 2009

PRODUCT: LANDLOK 450



FIG.1: INSTALLATION

PROBLEM:

The original design for this drain on the Hume Highway was concrete, however due to wet conditions and poor access, this proved impossible to construct. Engineers for the project approached BTL Australia to investigate the use of Turf Reinforcement Mat (TRM) technology for a financially viable alternative.

SOLUTION:

Landlok 450 proved to be the perfect solution, being lightweight, durable and easy to install. The client also enjoyed cost savings of approximately 50% compared to the originally specified concrete channel construction (see fig 3). The contractor selected Landlok 450 supplied by Global Synthetics.

TRM INFORMATION:

Landlok 450 is a double stitch bonded TRM comprising a dense web of crimped interlocking X3[®] fibres stitched between two lightweight grids. The three-dimensional structure increases the surface area by 40%, thus reducing water velocities. A fully vegetated Landlok 450 TRM drain can resist velocities of up to 5.5 m/sec.

TRMs promote revegetation within the drain by slowing water velocities and trapping sediment. After the area is vegetated the mat then provides a stable and durable reinforcement for the roots of the vegetation. As TRMs are synthetic, they don't break down over time, thus continuing to stabilise the drain, and ultimately reinforcing the vegetation, for up to 50 years or more.



FIG.2: LANDLOK 450 X3[®] TECHNOLOGY

DISTRIBUTORS OF :

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Geogrids

Dewatering Tubes

Subsoil Drainage

Wick Drains

Erosion Control

Gabions & Rock Mattresses

Industrial Fabrics

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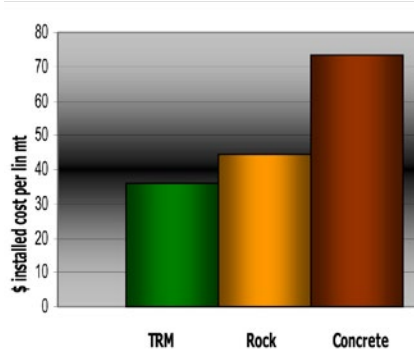


FIG.3: PROJECT COST COMPARISON



FIG.4: VIEW OF CHANNEL



FIG.5: VIEW OF CHANNEL

BENEFITS:

Landlok 450 uses patented X3® fibres – these fibres have a tri-lobe cross section (see fig 2) which traps more soil particles and moisture within the structure compared to standard fibres. Both these components are critical for establishing vegetation

Compared to concrete or rock armouring TRMs are cheaper, faster to install, require no specialized plant / labour and are more environmentally friendly. TRM systems allow water to percolate back into the soil thus recharging the groundwater table rather than simply acting as a conduit for water and sediment to discharge into a natural water course.

Installing TRMs is quick and easy - similar to that of any roll out erosion product. The mat was keyed in where the water will enter the drain to avoid water undermining the mat, pinned at consistent intervals and overlapped in a downstream direction. The TRM was easily cut with a pair of scissors, therefore, installed wherever it was needed, in whatever shape was necessary. For example the TRM was easily cut to fit around the headwalls of pipes and culverts, which negated the need for rock beaching.

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