

Terrafix CASE STUDY

Highway 407 Culvert Sliplining

PROJECT ENGINEERS

407ETR Concession Company

SITE SERVICING CONTRACTOR

Clearwater Structures

CHALLENGE

Over a dozen existing CSP culverts underneath Highway 407 and associated ramps had deteriorated. Rehabilitation of these distressed pipes, ranging in sizes between approximately 1m and 2m in diameter, was required.

SOLUTION

Weholite HDPE pipes, ranging in sizes between 0.762m and 1.524m dia., were used to slipline inside the existing CSP pipes, resulting in a cost effective permanent solution.

PROJECT OVERVIEW

The unique threaded joint on Weholite allows the contractor to install Weholite pipe with no special tools. The jointing system provides for sand-tight connections that are fully restrained to allow the pipes to be pushed or pulled into place. Due to its smooth outer wall service, insertion of the Weholite pipes into the host pipes was quick and easy. Once all pipes were connected and inserted, concrete bulkheads were constructed at the culvert ends. Grout was then pumped into the annular voids between the Weholite pipe and the host culvert. As a result of the completed installations, the traffic on the highway and ramps was not disrupted.



Storm & Waste Water Systems

- Weholite HDPE Pipe
- Corrugated HDPE Pipe
- Subdrain Pipe and Fittings
- Stormwater Infiltration Systems / Triton™ Stormwater Solutions

Erosion & Sediment Control

- Straw, Coconut and Excelsior Blankets
- Coir Mats and Logs
- Turf Reinforcement Mats
- Terraweb® Cellular Confinement System
- Gabion Baskets and Mats
- Silt Curtains
- Fencing Products
- FLEXICRETE™
- UltraFlex™
- Siltsacks® / Envirobags
- GrassPave²
- GravelPave²
- MeterBags

Geotextiles

- Non-woven Geotextiles
- Woven Geotextiles
- High Strength Wovens
- Monofilament Wovens

Retained Soil Systems

- TerraSlope®
- TerraFort Panel Wall System
- TerraSteep® Geogrid Reinforced Earth Systems

Geogrids

- Uniaxial / Biaxial
- Base Reinforcement
- Combigrid®
- STRATAGRID®

Lining Systems

- HDPE Geomembranes
- Thermal Lock Geosynthetic Clay Liner

And much, much more....



Delivery of pipes on a flat bed truck.



760mm dia. Weholite pipe sliplined in a 1000mm dia. CSP pipe.



Sliplining 1372mm dia. Weholite pipes underneath Hwy407 at Appleby Line.



Jacks to anchor Weholite pipe to the bottom prior to grouting



Bulkheads formed to contain the pumped grout.



Grouting annular voids between Weholite pipe and existing CSP.



Final installation.

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Lunch & Learn



Terrafix offers a project specific approach to solving your erosion & sediment and stormwater management solutions.

We offer detailed assistance from the design stage to onsite support. With a professional staff of experienced engineers and specialists, we are available to assist designers and clients in selecting cost effective solutions.

If you are interested in an office Lunch & Learn, please contact our office at (416)674-0363, ext. 241.

Additional Information?

For stormwater and erosion control challenges, please call J.J. Breede, P.Eng. at 416-674-0363, ext. 241 or e-mail at jjbreede@terrafixgeo.com

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