

TRIECA | CONFERENCE



Thank you to all of our 2015 sponsors:

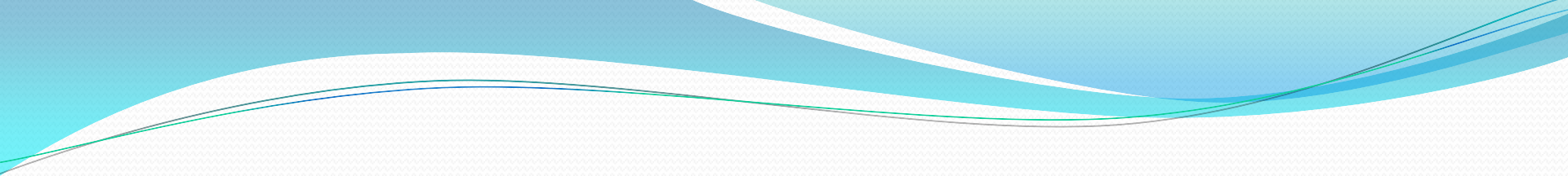


Media Partner

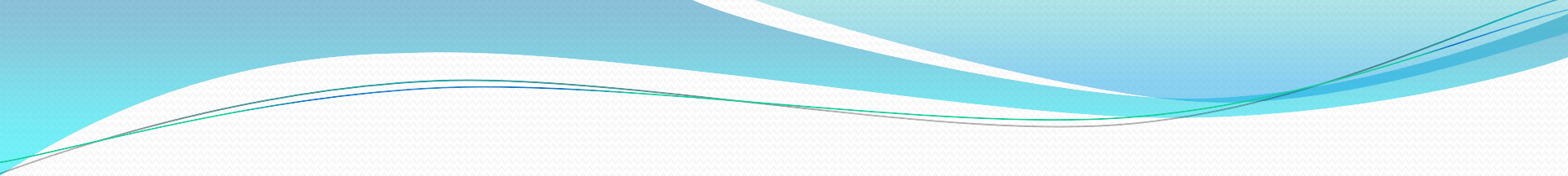


***Watercourse Improvement Projects Where Both
The Biologist And Engineer Can Agree.***

Ravin Nag
Santino Tersigni

- 
- Over time creeks and streams experience erosion which undermine surrounding embankments resulting in loss of soil and vegetation.
 - Two projects, Harmony Creek Branch 1 in Oshawa, Ontario and Rosedale Channel in the City of Brantford experienced these events.
 - In order to mitigate these damages while providing a long term solution, Green Gabions, and gabion mats were used.
 - Green Gabions are PVC coated, and heavily galvanized hexagonally woven double twist wire mesh rectangular baskets with a 45⁰ or 60⁰ front face and lined with a permanent erosion control mat.

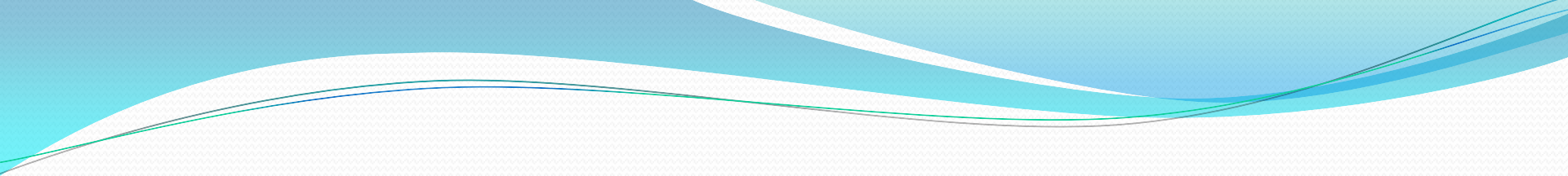
- 
- Once in place they are filled with a combination of 70% stone and 30% nutrient rich organic soil. The permanent erosion control blanket is used to contain soil and acts as a substrate for the insertion of cuttings and rooted woody plant stock or for planting herbaceous plants.
 - Gabion mats line the bottom of these watercourse in order to reduce water loss by seepage, protect from erosion and provide a predetermined value of bed roughness.
 - For added longevity gabion mats are also constructed using PVC coated and heavily galvanized hexagonally woven double twist wire mesh.



Hard Structures



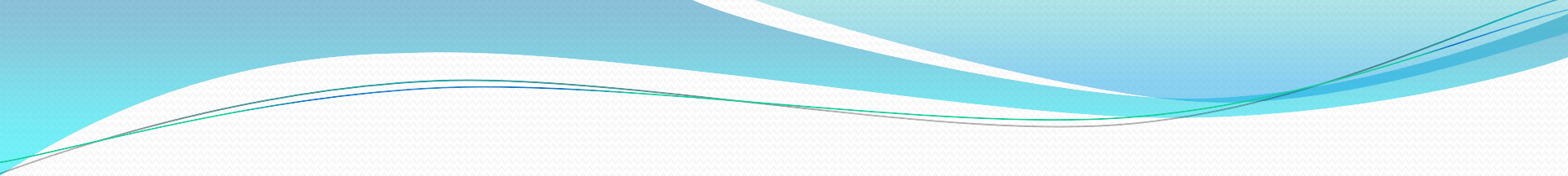




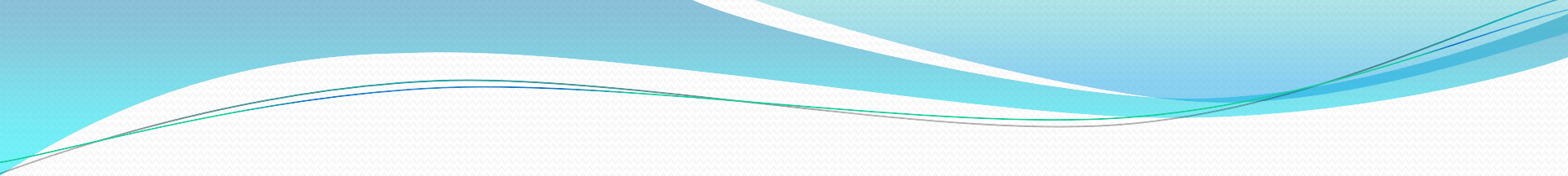
Erodible Soils, Loss of Vegetation





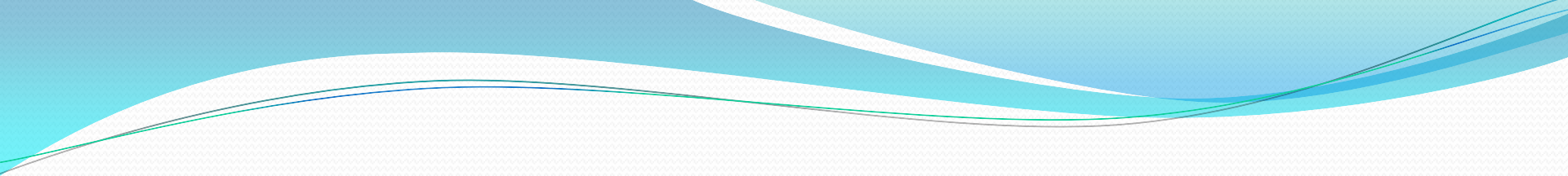


Harmony Creek Branch 1, Oshawa



Project Details:

Project:	Harmony Creek – Branch 1
Contractor:	Cambridge Landscaping
Consulting Engineer:	City of Oshawa
Client:	City of Oshawa
System:	Green Gabions, MacMat R, Gabion Mats

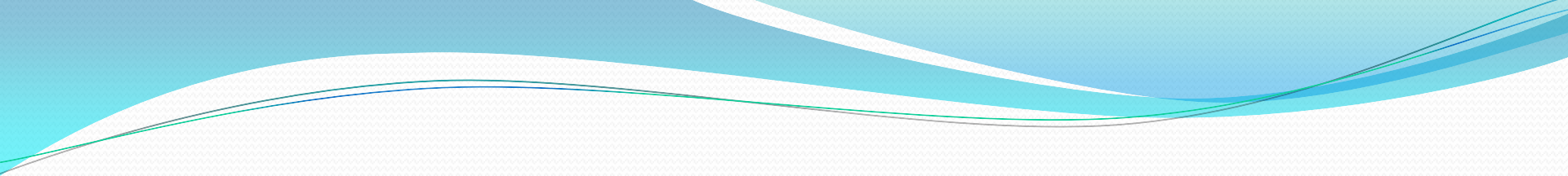


Problem:

- Needed to re-align creek
- Existing gabion mat and gabions were undermined.
- Combination of age and accumulation of debris in creek
- Confined area, with homes on either side of ravine
- The ravine area was in an environmentally sensitive area.
- Some areas of ravine had steep slopes

Solution

- Different options were reviewed.
- Required a solution that could be installed in a short period of time
- Something that was vegetated would be more aesthetically appropriate for area
- Had to overcome rusting concern (old gabions rusted and were undermined)
- Solution: Gabion Mats, Green Gabions and MacMat R

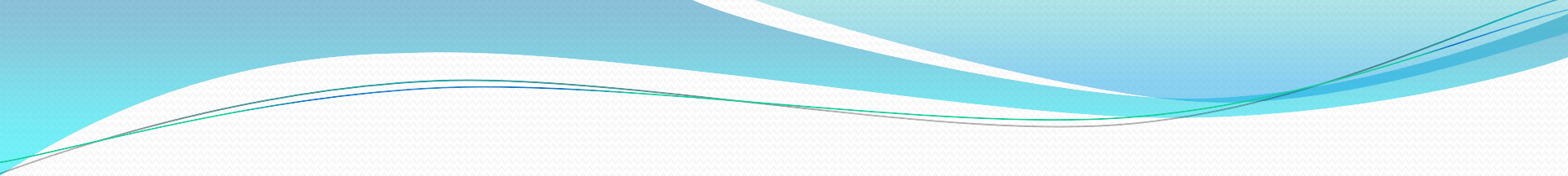


Pre Construction

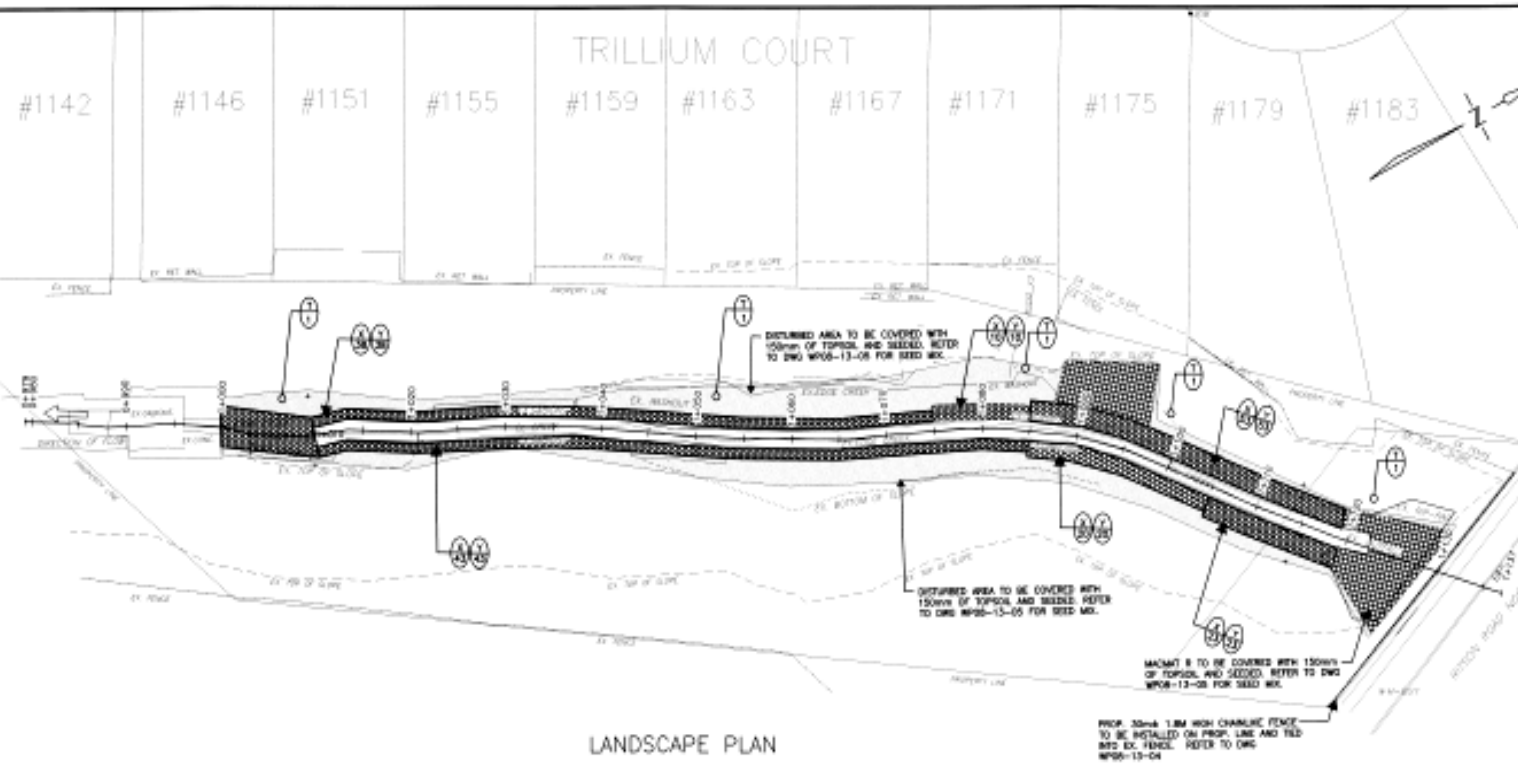








Drawings for Tender and Construction



LIVE STAKES LIST:

KEY	QTY	COMMON NAME	SIZE	SPACING (H)	SPACING (V)
X	187	DOGWOOD SPECIES	35-50mm DIA./1000-1200mm LENGTH	1.0m	0.5m
Y	187	WILLOW SHRUB SPECIES	35-50mm DIA./1000-1200mm LENGTH	1.0m	0.5m

DECIDUOUS TREE LIST:

KEY	QTY	BOTANICAL NAME	COMMON NAME	HT.(mm)	ROOT	SPACING
T	5	FAGUS GRANDIFOLIA	AMERICAN BEECH	1500	POTTED	AS NOTED



NOTES:

1. WOODLAND SEED MIX TO BE USED IN GREEN GARDENS AND WITHIN DISTURBED AREAS.
2. REFER TO DRAWING WP06-13-05 REGARDING TREE REMOVALS.
3. FOR CONSTRUCTION DETAILS REFER TO DRAWING WP06-13-04.
4. FOR GENERAL NOTES AND REFERENCES REFER TO DRAWING WP06-13-05.

LEGEND:

GREEN GARDENS	
MACADAM 8	
SPACED AREA	

REFERENCES:

STUDIES REVIEWED BY: BELL CANADA 10.05.13
 LANDSCAPE OAS 08.08.00 / OAS 08.08.00
 REGIONAL MUNICIPALITY OF DURHAM (CLAY & BARKER) 28.04.12
 CABLE TV 26.04.13 FIELD NOTES: 07.11.12
 NOTE AND REFERENCE SHEET WP06-13-05

No. DATE REVISION BY

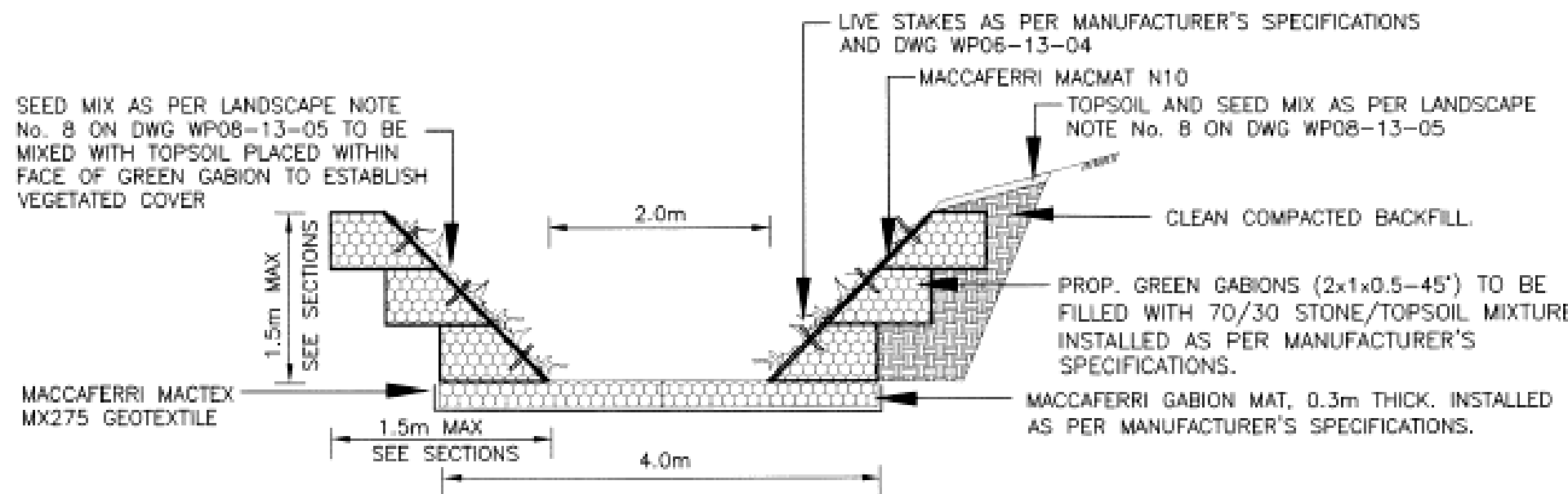
APPROVALS		CONTRACT 0 13-07
CITY OF OSHAWA	REGION OF DURHAM	
	N.A.	PART 1
		SHEET 4 OF 9

DEVELOPMENT	SERVICES	DEPARTMENT
CITY OF OSHAWA	CITY OF OSHAWA	LANDSCAPE PLAN
HARMONY CREEK BR. 1		
AT TRILLIUM COURT		

DATE	BY	DATE	BY	DATE	BY	DATE	BY
13.07.13	REDA	13.07.13	REDA	13.07.13	REDA	13.07.13	REDA

SCALE 1:1000

WP 06-13 DWG. No. WP06-13-04



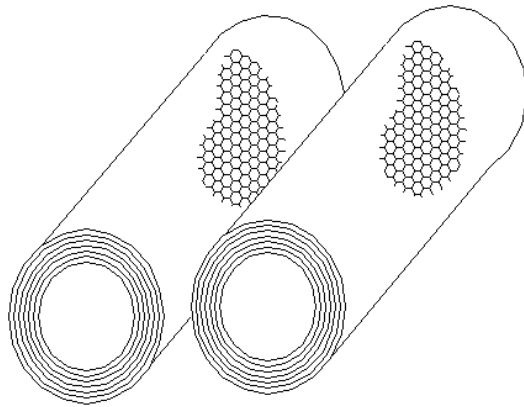
TYPICAL GABION MAT AND GREEN GABION REVETMENT (PART 1)

N.T.S.

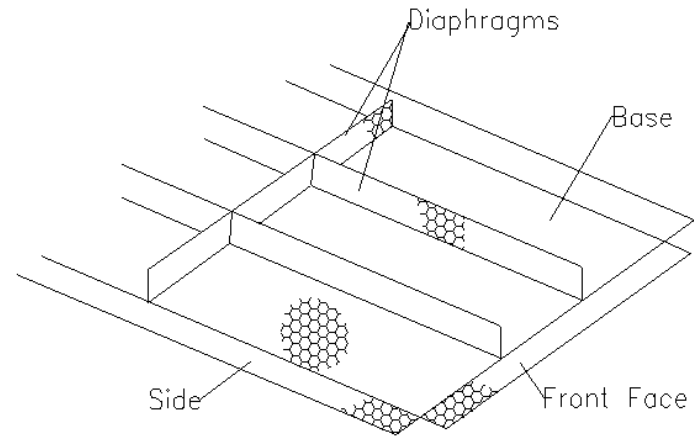
Green Gabion



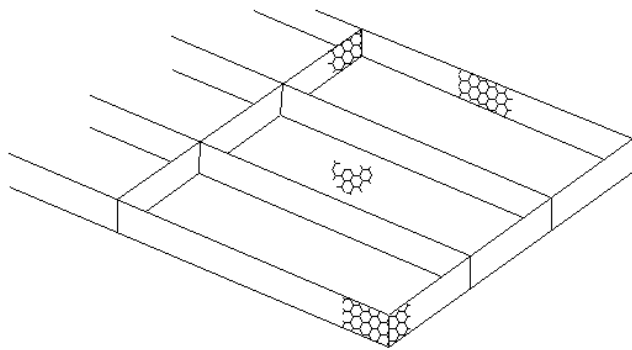
Gabion Mats



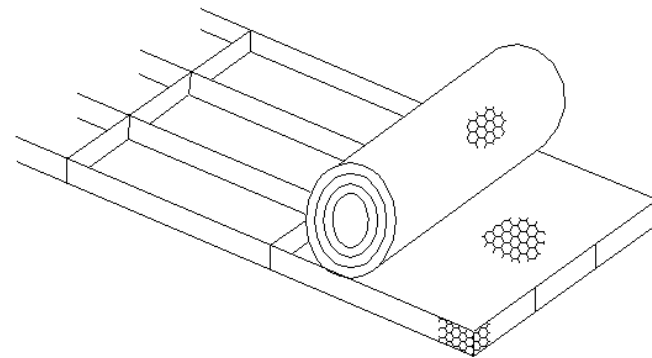
1. Gabion mats are supplied in rolls.



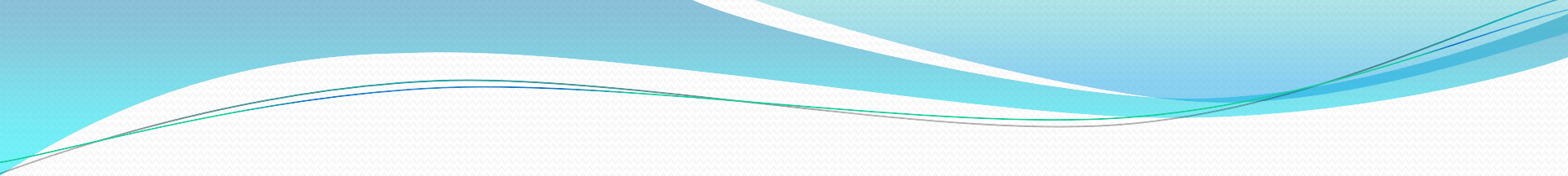
2. Unroll the gabion mats.



3. Lace sides and diaphragms.



4. Fill with stone and attach lid.

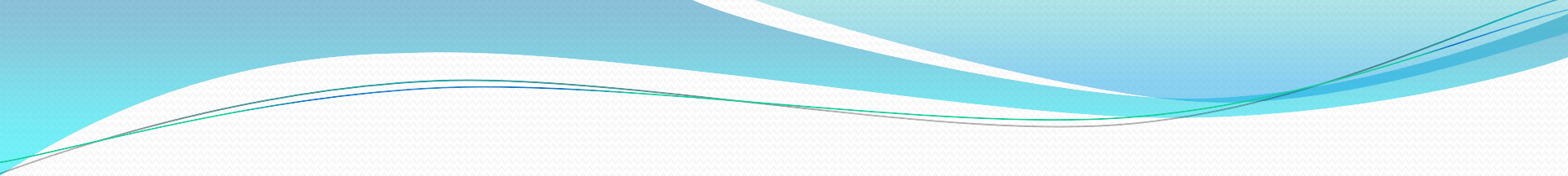


Construction



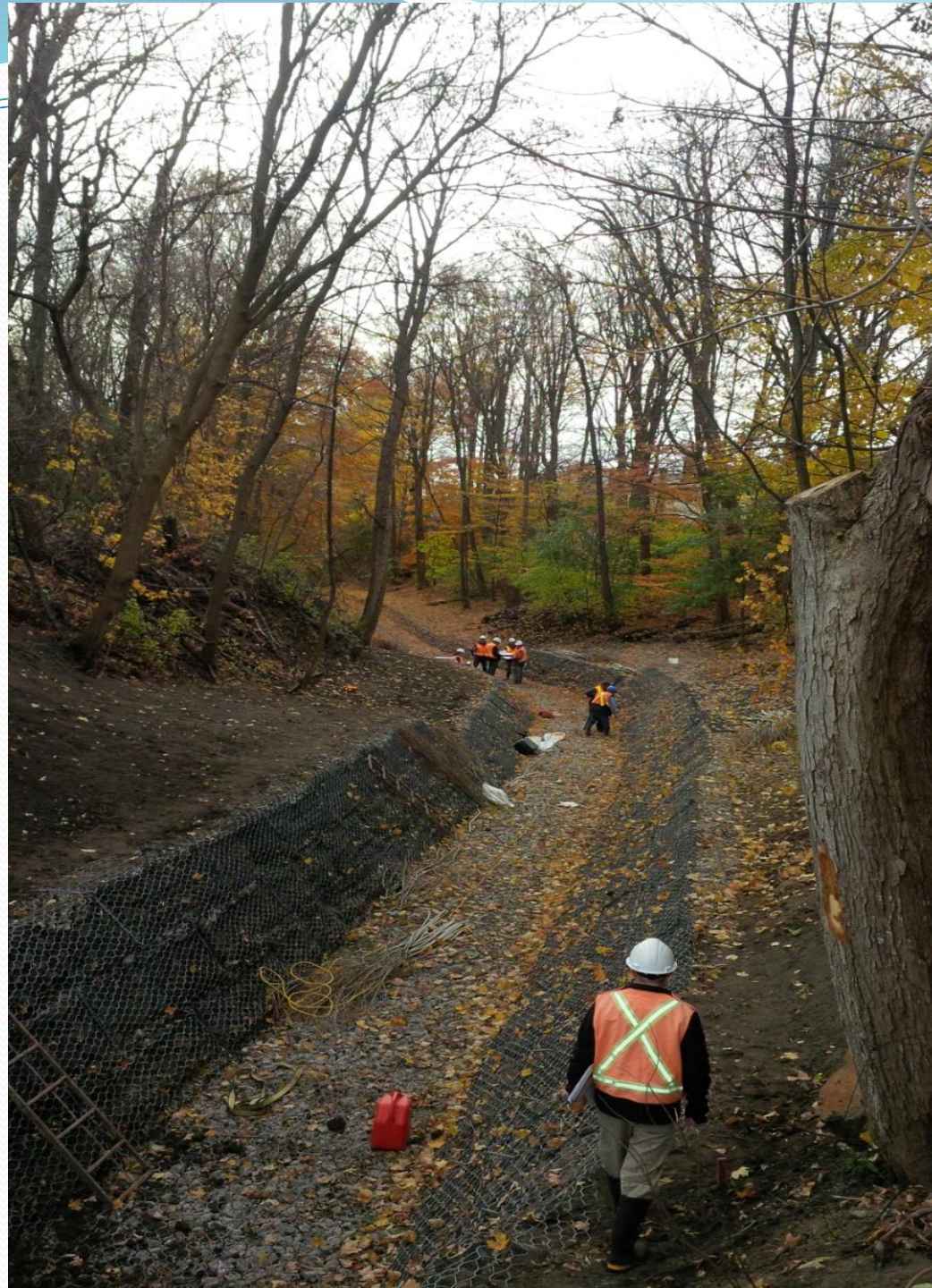






Completion



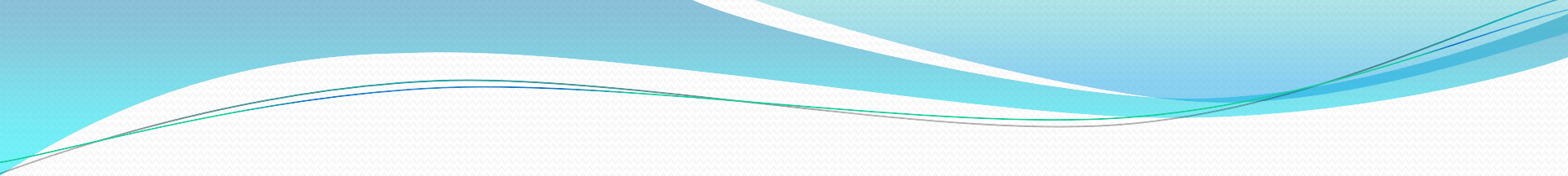






Conclusion

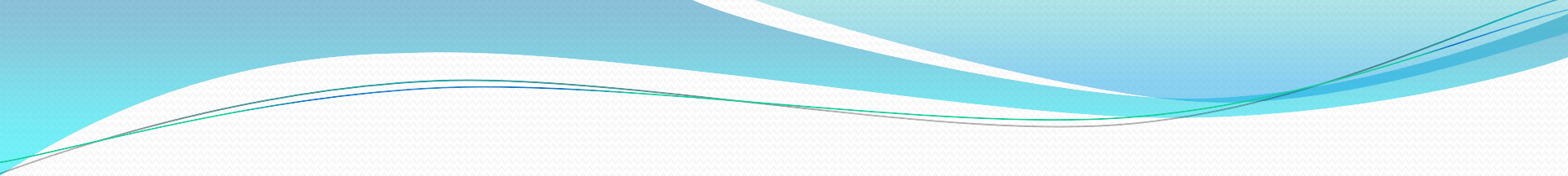
- Green Gabions used on either side of channel for revetment 0.5-1.5m in height.
- Gabion Mat for lining channel.
- MacMat R used for side slopes
- Total Length 120m
- Time to complete...4 weeks, 1 crew with equipment



Case Study Rosedale Channel – Brantford. ON

Rosedale Channel – Brantford. ON

- Owner : City of Brantford
- Designers: Stantec Consulting, Kitchener
- Contractor: Cambridge Landscaping
- Geotechnical Engineer: LVM Naylor Engineering
- Area Covered : 300m Long , 3m high (Avg.)
- Products Used: Gabion Mats(0.30m),Green gabion(2x1x0.5),Gabions, Geotextile,Spenax Clips.



Problem and Concept

Rosedale Channel – Brantford. ON



Rosedale Channel – Brantford. ON

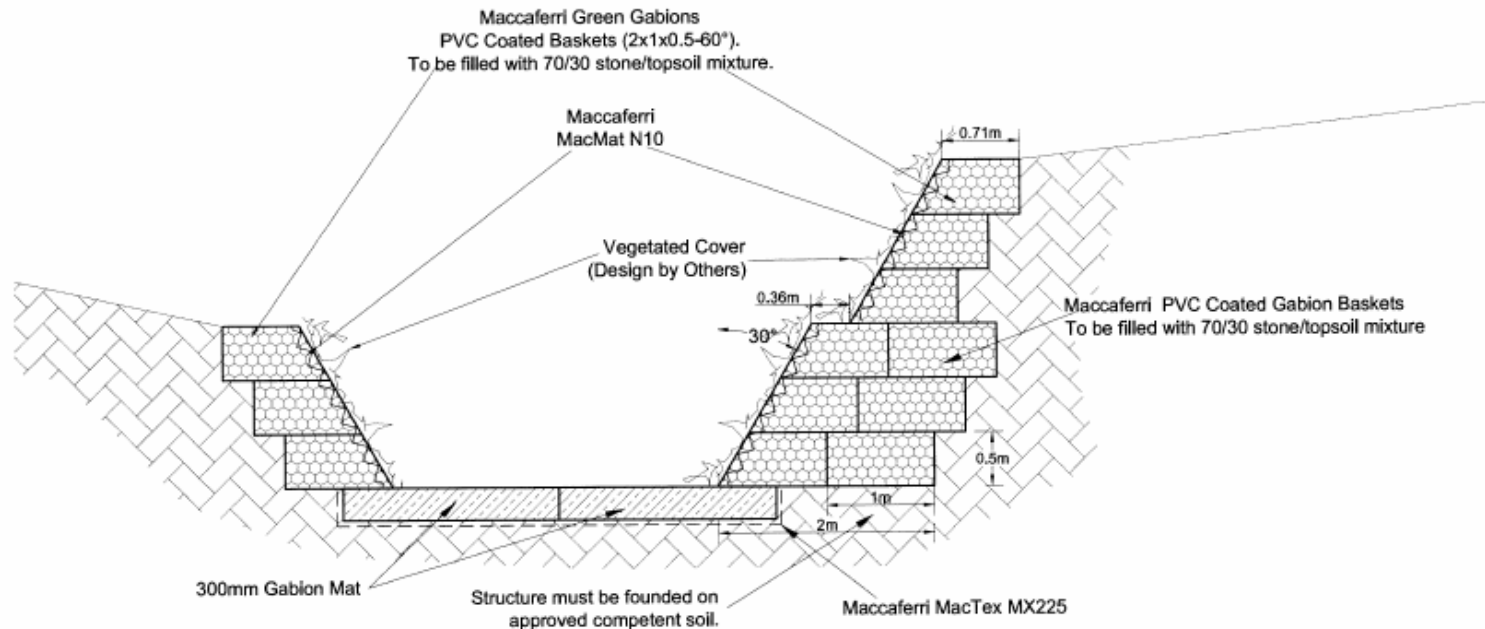


Rosedale Channel – Brantford, ON

CONCEPTUAL DESIGN ONLY

NOTES:

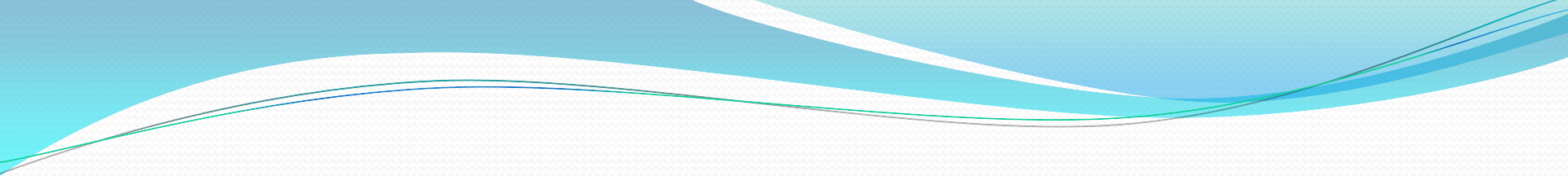
- 1.0 ALL DIMENSION IN METERS UNLESS OTHERWISE NOTED.
- 2.0 GREEN GABION BASKETS SHALL CONFORM TO MACCAFERRI PRODUCT SPECIFICATIONS.



**TYPICAL CROSS SECTION - GREEN GABIONS AND
GABIONS**

Maccaferri Canada Ltd. assumes no responsibility for the drawings and calculations it provides, as they must be intended as a general indication to suggest the proper use of its products.

				Drawing Title: ROSELAND CREEK BRANTFORD, ON				Designed:		Date:		TYPICAL CROSS SECTION
				Project No: CB08056		Client: STANTEC		Drawn: JN		Date: 29/01/09		
				Drawing No: CB08056_01				Scale: NTS		Rev: 0		NOT FOR CONSTRUCTION
								Checked:		Date:		
								Approved:		Date:		
0	Issued to Stantec for Review			JN		29/01/09						
Rev:	Issue / Revision:			Drawn:	App:	Date:						



Construction

Rosedale Channel – Brantford. ON



Rosedale Channel – Brantford. ON



Rosedale Channel – Brantford. ON



Rosedale Channel – Brantford. ON



Rosedale Channel – Brantford. ON

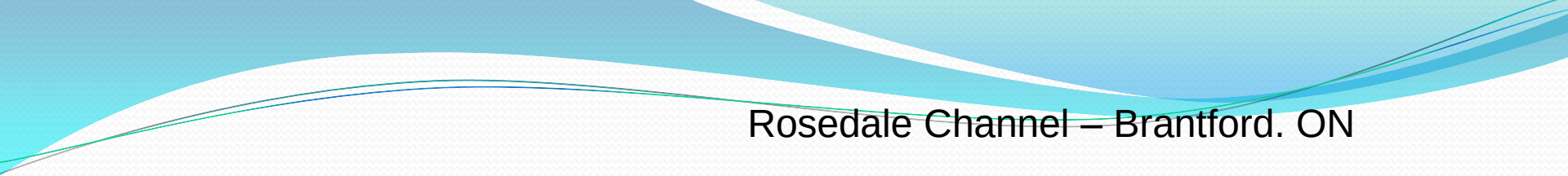


Rosedale Channel – Brantford. ON



Rosedale Channel – Brantford. ON





Rosedale Channel – Brantford. ON

Completed Structure

Rosedale Channel – Brantford. ON



Rosedale Channel – Brantford. ON



Rosedale Channel – Brantford. ON

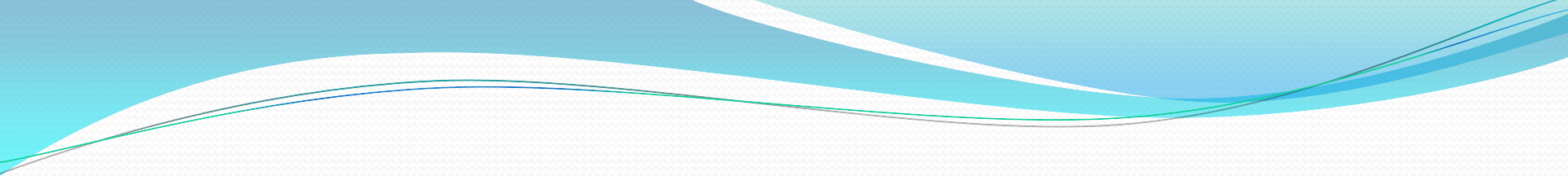


Rosedale Channel – Brantford. ON



Rosedale Channel – Brantford. ON





Thank You