

Rural Municipality of Rosser

Reeve Frances Smee
Chief Administrative Officer
Beverly Wells, CMMA
www.rmofrosser.com



Box 131,
Rosser, Manitoba
R0H 1E0
Ph: 467-5711 Fax 467-5958
Email: info@rmofrosser.com

October 27, 2015

Tracey Braun, Director
Manitoba Conservation and Water Stewardship
Environmental Approvals
2nd Floor, 123 Main Street (Box 80)
Winnipeg, MB R3C 1A5

Dear Ms. Braun:

Re: Notice of Alteration for the Repairs to the Municipal Lagoon Licence No. 2809

As requested by Ms. Sonja Bridges, please find attached a Notice of Alteration for the erosion repair project at the wastewater treatment lagoon in Rosser.

Please review the notice of alteration and provide approval to the municipality to proceed with repairs as outlined therein.

If you have any questions or concerns, please contact me.

Yours truly,

RURAL MUNICIPALITY OF ROSSER

A handwritten signature in blue ink, which appears to read "Beverly Wells".

Bev Wells, CMMA
Chief Administrative Officer

c: Sonja Bridges Environmental Compliance and Enforcement
Barry MacBride BDM Projects Ltd.
Paul McLeod, Utility Operator
Chris Luellman & Alan Schick, R.M. of Rockwood

Rosser Lagoon – Notice of Alteration Placement of Riprap on Lagoon Dikes October 27, 2015

Introduction

Environment Act Licence 2809 dated April 2, 2008 was issued by the Province to enable the construction and operation of a wastewater treatment lagoon located on SW ¼ 19-12-1 EPM in the Rural Municipality of Rosser. The lagoon currently serves the community of Grosse Isle, which is located in both the Rural Municipality of Rosser and the Rural Municipality of Rockwood.

The lagoon was originally designed for an average flow of 248 cubic metres per day. Current flows are about 33 cubic metres per day. Over the 50,000 square metre area of the cells, the current flow would be less than a millimetre. With evaporation at its location, the cells have never filled up. In fact there is only about 0.4 metres of liquid in them and with a design full level of 1.5 metres, it has never been necessary to discharge.

The lagoon operators have observed that the slopes of the secondary cell have been subject to erosion as shown on Figure 1 and wish to proceed with repair of the erosion and placement of riprap to protect the slopes.



Figure 1 Erosion Secondary Cell

Clause 20 of the licence 2809 states:

20. The Licencee shall, if, in the opinion of the Director, significant erosion of the interior surfaces of the dykes occurs, repair the dyke and place riprap on the interior dyke surfaces from 0.6 metres above the high water mark to at least 0.6 metres below the low water mark to protect the dykes from wave action. ☐

At the request of the municipalities, Manitoba Conservation and Water Stewardship toured the site of the Rosser lagoon on July 8, 2015 and observed the erosion. Subsequently, in a letter dated July 14, 2015, Manitoba Conservation and Water Stewardship (CWS) requested the municipality to submit a Notice of Alteration “outlining a detailed plan and timeframe for the repairs to the secondary cell”. The

request indicated that the municipality would be required to repair the dike in the secondary cell and place riprap on the interior surfaces to at least 0.6 metres above the high water mark to 0.6 metres below the low water mark. Subsequently on August 31, 2015, CWS extended the time frame to November 30, 2015. A copy of both letters is attached as Appendix A.

Erosion Design Detail and Cost Estimate

Rosser contracted with AECOM to provide a design detail and cost estimate to determine the financial impact the repair may have. The AECOM report is attached as Appendix B.

The proposed design involves the placement of geotextile and rock riprap over the slope from the lagoon bottom elevation to 0.6 m above the design high level. The project is expected to require 5200 square metres of geotextile and 2400 cubic metres of rock riprap. AECOM estimated the cost of the work to be \$339,040.

Given the significant cost of the work, it will be necessary to delay any construction until budget approval can be provided. At the current time, it is expected that Rosser and Rockwood will be able to include the cost of the work in its 2016 capital program.

Schedule

A tentative schedule is provided in Table 1 below.

Table 1 - Schedule		
Item	Description	Completion
1	Approval of Notice of Alteration	December 15, 2015
2	Prepare Detailed Design and Specifications	February 15, 2016
3	Tender Period	March 1-15, 2016
4	Construction	June 15- July 15, 2016

Environmental Effects and Human Health Effects from the Alteration

Given the minor nature of the repairs, the incremental effects of the alteration to the terrestrial, aquatic and atmospheric environments will be negligible and limited to the construction period. Proper construction procedures will minimize dust, noise or nuisance from the construction. There is no expected impact on human health from the repair project.

Prepared by: Barry MacBride, P.Eng.
BDM Projects Ltd
bmacbride@shaw.ca
204-781-4382

Appendix A – Letters from Manitoba Conservation and Stewardship

Manitoba 
Conservation and Water Stewardship
Environmental Stewardship Division
Environmental Compliance and Enforcement Branch
1007 Century Street
Winnipeg, Manitoba R3H 0W4
T 945-7100 F 948-2338
www.gov.mb.ca/conservation/ece



July 14, 2015

Client File No. 5270.0
Licence No. 2809

Beverley Wells
Chief Administrative Officer
Rural Municipality of Rosser
Box 131
Rosser, MB R0H 1E0

Dear Ms. Wells:

RE: Site Visit of Rosser Lagoon located at SW 19-12-01 E in the RM of Rosser

Manitoba Conservation and Water Stewardship would like to thank you for inviting us out for a site visit at the Rosser Lagoon with your consultant and operations staff on July 8, 2015.

During the site visit, it was observed that various parts of the berm in the secondary cell are eroded. Pursuant to Clause 20 of Licence No. 2809, the municipality will be required to repair the dyke and place rip rap on the interior dyke surfaces from 0.6 meters above the high water mark to at least 0.6 meters below the low water mark in accordance with the licence.

Please submit a Notice of Alteration outlining a detailed plan and timeframe for the completion of the repairs to the secondary cell to the following address by **August 4, 2015**:

Tracey Braun, Director
Manitoba Conservation and Water Stewardship
Environmental Approvals
2nd floor 123 Main Street (Box 80)
Winnipeg MB R3C 1A5

For more information on Notices of Alteration, a copy of the guideline can be found online at the following link: <http://www.gov.mb.ca/conservation/eal/publs/alteration.guidelines.pdf>

If you have any questions regarding the above, please contact the undersigned at 204-918-4271.

Sincerely,

Sonja Bridges
Environment Officer
Environmental Compliance and Enforcement

c: Tracey Braun, Environmental Approvals Branch
Yvonne Hawryliuk, Environmental Compliance and Enforcement



Conservation and Water Stewardship
Environmental Stewardship Division
Environmental Compliance and Enforcement Branch
1007 Century Street
Winnipeg, Manitoba R3H 0W4
T 945-7100 F 948-2338
www.gov.mb.ca/conservation/ece

August 31, 2015

Client File No. 5270.0
Licence No. 2809

Beverley Wells
Chief Administrative Officer
Rural Municipality of Rosser
Box 131
Rosser, MB R0H 1E0

Dear Ms. Wells:

Re: Request for an Extension to Submit a Notice of Alteration for the Repairs to the Municipal Lagoon

Manitoba Conservation and Water Stewardship has received your letter, dated August 24, 2015, requesting an extension to submit a Notice of Alteration for the repairs to the municipal lagoon located at SW 19-12-1 EPM in the Rural Municipality of Rosser.

Your request for an extension is granted. Please submit a Notice of Alteration to the following address **by November 30, 2015**:

Tracey Braun, Director
Manitoba Conservation and Water Stewardship
Environmental Approvals
2nd floor 123 Main Street (Box 80)
Winnipeg MB R3C 1A5

If you have any questions regarding the above, please contact the undersigned at 204-918-4271.

Sincerely,

Sonja Bridges
Environment Officer,
Environmental Compliance and Enforcement

c: Tracey Braun, Environmental Approvals Branch
Yvonne Hawryliuk, Environmental Compliance and Enforcement

Appendix B – Design Detail and Cost Estimate



AECOM
99 Commerce Drive
Winnipeg, MB, Canada R3P 0Y7
www.aecom.com
204 477 5381 tel
204 284 2040 fax

September 30, 2015

60443110 (500)

VIA EMAIL (info@rmofrosser.com)

Bev Wells, CMMA
Chief Administrative Officer
R.M. of Rosser
Box 131 Rosser, MB R0H 1E0

Dear Ms. Wells:

**Regarding: Rosser Lagoon Secondary Cell – Erosion Repair
Erosion Design Detail and Cost Estimate**

As per your request, AECOM has developed a design detail and a cost estimate for the proposed erosion repairs to be completed at the R.M. of Rosser Lagoon. Please find the design detail and cost estimate attached to this letter.

The secondary cell of the R.M. of Rosser Lagoon was constructed without perimeter riprap for erosion control and has experienced considerable sloughing and localized erosion at the interface with the lagoon contents since it was originally constructed. AECOM recommends that a riprap erosion blanket be installed to repair the existing slope and prevent future erosion. The work would consist of placing a minimum 300mm thick layer of riprap around the entire perimeter of the secondary cell. A non-woven geotextile would be installed between the existing ground and the proposed riprap layer to prevent the loss of bank material through the riprap layer. AECOM completed a topographic survey at the site, which was used to determine the overall quantities of material required to complete the work.

AECOM has prepared an estimate of the overall project cost of the repair. The cost estimate is classified as a Class 3 estimate under AACE International Recommended Practice No. 18R-97 for Cost Estimate Classification methods. As summarized below, the total project cost includes an estimate of professional fees for engineering and contract administration (10% of the construction costs) and a contingency of 20%. As a point of clarification, the professional fees included in the total project cost are an estimate of those costs and not a fee proposal for those services which, if requested, we would be pleased to provide separately.

Total Construction Cost:	\$260,800.00
Professional Fees (10%):	\$26,080.00
Contingency (20%):	\$52,160.00
Total Project Cost:	\$339,040.00

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We trust this information meets your requirements on this matter. Should you have any queries or require further information or clarification, please do not hesitate to contact myself directly at 204-928-9222 or jordan.thompson@aecom.com.

Sincerely,
AECOM Canada Ltd.



Jordan Thompson, P. Eng.
Municipal Engineer
Community Infrastructure
JAT/pab
Encl.

cc: C. Luellman, R.M. of Rockwood (cao@rockwood.ca)
B. MacBride, BDM Projects Ltd (bmacbride@shaw.ca)
C. Macey, AECOM

PROJECT: R.M. OF ROSSER LAGOON SECONDARY CELL EROSION REPAIR
PRELIMINARY COST ESTIMATE
30-Sep-15

ITEM NO.	DESCRIPTION	SPEC. REF.	UNIT	APPROX. QUANTITY	UNIT PRICE	AMOUNT
1.	Supply and Placement of Geotextile	Drawings	m2	5200.0	\$4.00	\$20,800.00
2.	Supply and Placement of Riprap	Drawings	m3	2400.0	\$100.00	\$240,000.00
	TOTAL CONSTRUCTION COST					\$260,800.00
	PROFESSIONAL FEES				10.00%	\$26,080.00
	CONTINGENCY				20.00%	\$52,160.00
	TOTAL PROJECT COST					\$339,040.00

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 Project Management Initials: Designer: Checked: Approved: ANSI B 279 4mm x 431 4mm



GEOTEXTILE SPECIFICATION

Geotextile shall be a non-woven type meeting or exceeding the following properties:

Non-Woven Properties			
Physical	ASTM Test Method	Units	Minimum Average Roll Values
Mass/Unit Area	D-5261	g/m ²	339
Grab Tensile Strength	D-4632	N	1201
Grab Tensile Elongation	D-4632	%	50
Puncture	D-4833	N	3226
Trapezoidal Tear	D-4533	N	467
UV Resistance	D-4355	%@hrs	70/500
Hydraulic			
Apparent Opening Size	D-4751	mm	0.150

* Percent grab tensile strength retained per hours of UV exposure following conditioning in accordance with ASTM-D4355.

Approved Product: Geotex 1071 by Propex or approved equal.

The geotextile material shall be placed by unrolling in orientation and manner recommended by the manufacturer. The geotextile material shall be placed loosely on the slope to allow it to conform to the terrain as riprap is placed. Anchor the geotextile as required with sand bags. Geotextile material placed on sloping surfaces shall be installed in one continuous length from top of slope to toe of slope. Each successive strip of geotextile shall be overlapped a minimum of 600 mm over the previously laid strip.

Installed geotextile material shall be protected from displacement, damage or deterioration before, during and after placement of riprap. Damaged or deteriorated geotextile shall be replaced prior to installing riprap. Repair rips or tears with a patch that covers an area that is a minimum of 1000 mm on each side of the rip or tear. No vehicles shall be permitted directly on the geotextile prior to riprap placement.

RIPRAP SPECIFICATION

Rock for riprap lined lagoon slopes shall consist of clean, angular (interlocking), sound limestone and/or igneous rock. The rock shall be free of sod, roots, organic material and debris prior to placement. The rock shall conform to the following gradation:

Canadian Metric Sieve Size	Percent of Dry Weight Passing
175 000	100%
150 000	85%
100 000	50%
50 000	15%


 Certificate of Authorization
 AECOM Canada Ltd.
 No. 4671 Date: SEPT 30, 2015



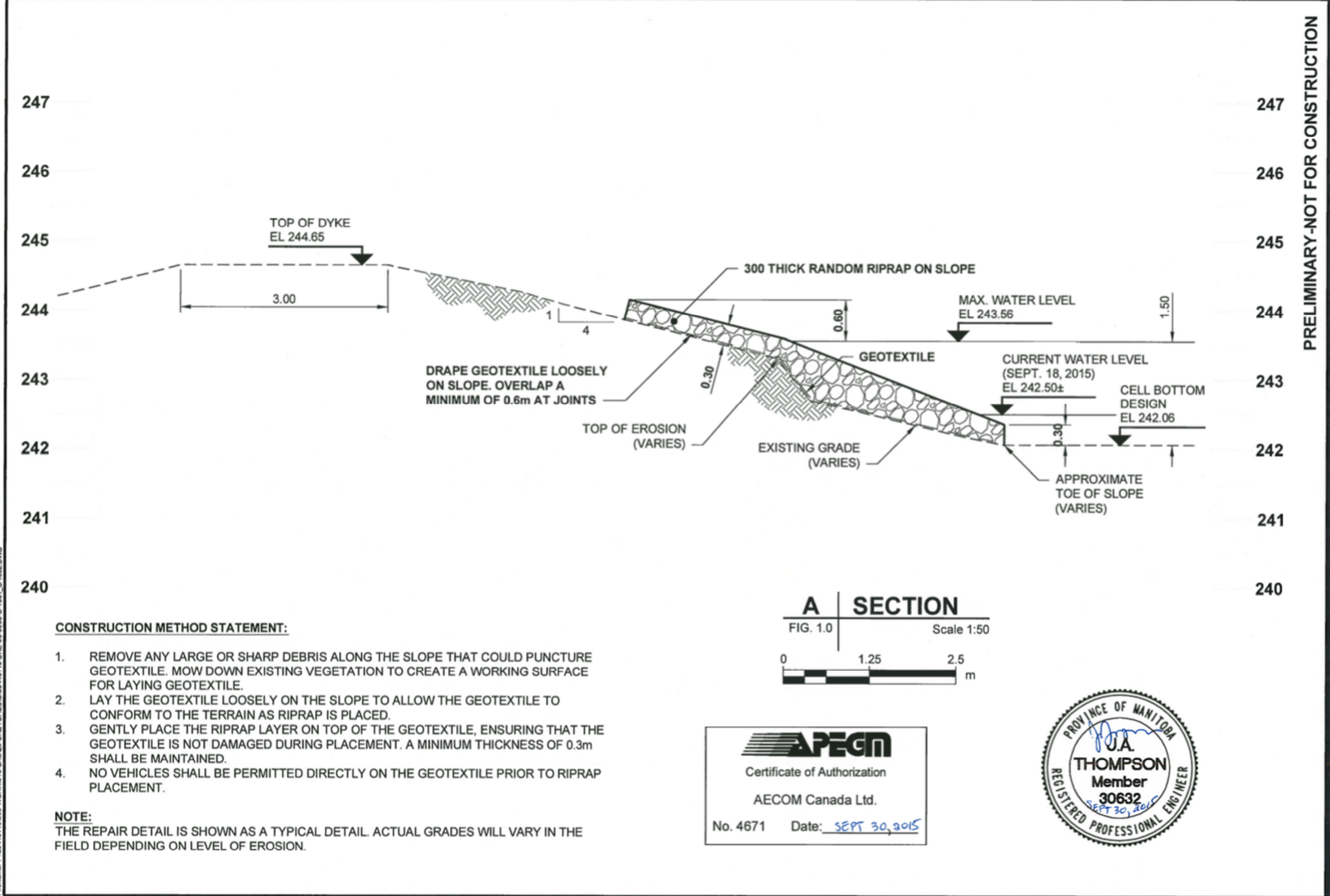
PRELIMINARY-NOT FOR CONSTRUCTION

AECOM
Figure: 1.0

LOCATION PLAN & SPECIFICATIONS

RM OF ROSSER LAGOON
 SECONDARY CELL EROSION REPAIR
 BDM PROJECTS LTD
 Project No.: 60443110 Date: 2015/09/28

Last saved by: MARKREWC/S (2015-09-29) Last Printed: 2015-09-30
 File name: P:\604431\10\600-WORK\10-CAD\25-SKETCHES\604431-10-SKE-00-0000-C-1001-C-1002.DWG
 Project Management Initials: Designer: Checked: Approved: ANSIB 270.4mm x 431.6mm



CONSTRUCTION METHOD STATEMENT:

1. REMOVE ANY LARGE OR SHARP DEBRIS ALONG THE SLOPE THAT COULD PUNCTURE GEOTEXTILE. MOW DOWN EXISTING VEGETATION TO CREATE A WORKING SURFACE FOR LAYING GEOTEXTILE.
2. LAY THE GEOTEXTILE LOOSELY ON THE SLOPE TO ALLOW THE GEOTEXTILE TO CONFORM TO THE TERRAIN AS RIPRAP IS PLACED.
3. GENTLY PLACE THE RIPRAP LAYER ON TOP OF THE GEOTEXTILE, ENSURING THAT THE GEOTEXTILE IS NOT DAMAGED DURING PLACEMENT. A MINIMUM THICKNESS OF 0.3m SHALL BE MAINTAINED.
4. NO VEHICLES SHALL BE PERMITTED DIRECTLY ON THE GEOTEXTILE PRIOR TO RIPRAP PLACEMENT.

NOTE:
 THE REPAIR DETAIL IS SHOWN AS A TYPICAL DETAIL. ACTUAL GRADES WILL VARY IN THE FIELD DEPENDING ON LEVEL OF EROSION.


 Certificate of Authorization
 AECOM Canada Ltd.
 No. 4671 Date: SEPT 30, 2015



PRELIMINARY - NOT FOR CONSTRUCTION

TYPICAL RIPRAP REPAIR DETAIL

AECOM

Figure: 2.0

RM OF ROSSER LAGOON
 SECONDARY CELL EROSION REPAIR
 BDM PROJECTS LTD
 Project No.: 60443110 Date: 2015/09/28