

RUSCOM RIVER DRAIN

(Bank Protection Part Lot 21, Concession 9)

Geographic Township of Gosfield North



TOWN OF KINGSVILLE

**2021 Division Road North
Kingsville, Ontario N9Y 2Y9
519-733-2305**

Rood Engineering Inc.

**Consulting Engineers
9 Nelson Street
Leamington, Ontario N8H 1G6
519-322-1621**

*REI Project 2015D013
September 27th, 2017*

September 27th, 2017

Mayor and Municipal Council
Corporation of the Town of Kingsville
2021 Division Road North
Kingsville, Ontario
N9Y 2Y9

Mayor Santos and Members of Council:

**RUSCOM RIVER DRAIN BANK IMPROVEMENTS
(Geographic Township of Gosfield North)
Town of Kingsville, County of Essex
REI Project 2015D013**

I. INTRODUCTION

In accordance with the instructions issued by you at the April 8th, 2015 meeting and confirmed in the April 30th, 2015 letter from your Drainage Superintendent, Ken Vegh, we have prepared the following report that provides for repairs and improvements to the Ruscom River Drain where it crosses County Road 14 and a steel retaining wall failure has occurred. This municipal drain is generally located running north to south from its outlet into Lake St. Clair, upstream to its head at County Road 31, Concession 7, with contributing drains extending south into Concession 4, just north of Essex County Road 18. Its average watershed width is approximately 8km and its length is approximately 23km. The Ruscom River Drain provides drainage to approximately 18,700 hectares (46,200 acres). The area requiring improvement is the north bank of the drain along Municipal Number (MN) 329 County Road 14, immediately north and just west of the bridge crossing of County Road 14, and will affect all lands and roads in Kingsville and Leamington within the watershed upstream of this location.

Our appointment and the works relative to the repair and improvement of the Ruscom River Drain proposed under this report, is in accordance with Section 78 of the "Drainage Act, R.S.O. 1990, Chapter D.17". We have performed all of the necessary survey, investigations, etcetera, of the Ruscom River Drain, and we report thereon as follows.

II. BACKGROUND

From our review of the Municipality's drainage files, we have determined that the Ruscom River Drain was last repaired and improved under an Engineer's Report prepared by Wm. Settingington, P.Eng., dated October 1st, 1984. This report provided for repairs to the Ruscom River Drain where the reinforced concrete retaining wall and steel retaining wall installed with the bridge in 1960 was failing in the same general location as the current proposed works, along other ancillary work. Said report provided for additional reinforced concrete footings to be placed under the reinforced concrete retaining wall, for the steel retaining wall to be straightened, and the backfill to be replaced as necessary.

A 1969 report for work on the drain in Gosfield North and Mersea including deepening, was prepared by C.G.R. Armstrong, P.Eng. The 1987 report by Ed Dries, P.Eng., provided for work from South Middle Road north to Lot 15, Concession 5 of Rochester Township. Dillon Consulting did a report in 2009 for work in Lakeshore.

The design parameters included within the October 1st, 1984 report, together with its design drawings and specifications were generally utilized to establish the design cross-section and drain grade for the improvements provided for in this report.

The drain is currently experiencing the steel retaining wall failure along the north bank where the drain runs immediately northwest of the bridge crossing of County Road 14. It is intended that the drain be put into a proper state of repair so that the drain bank will be adequately supported along the northern bank edge which has been breaking away and collapsing into the drain.

III. PRELIMINARY EXAMINATION AND ON-SITE MEETING

After reviewing all of the drainage information and documentation provided by the Drainage Superintendent, we arranged with Town staff to schedule an on-site meeting for June 24th, 2015. The following people were in attendance at said meeting: James Staley, Julius & Barbara Langpeter, Nancy & Larry Burgess, Harry Dick, Kendra Powell, Walter Brandner, Tom Keller, Brian Bradley, Robert Pearson, Mark Taylor, Judy Kenna, Don Orton, Doug Trimble, George M. Mravik, Don Fischer, Ed Fischer, Paul Rauch, Doug Stockwell, Clair Pearce, Joe Palmer, Walter Sinclair, John Upcott, Christina Lapointe, Paul Keller, Karyn Templin (County of Essex), Lindsay Dean (Assistant Drainage Superintendent Leamington), Ken Vegh (Drainage Superintendent), and Gerard Rood (Rood Engineering Inc.)

Ken Vegh provided a brief introduction of the purpose of the meeting, outlining that the Town has concerns about the bank stability due to the north bank steel retaining wall failing just northwest of the Ruscom River Drain bridge crossing of County Road 14.

We provided a brief history of the Ruscom River Drain to the Owners as set out in the background information above. We advised them of the solutions that are being considered for the steel retaining wall failure, that could include rock gabion baskets or precast concrete blocks. It is expected that some rock on filter cloth protection will be required for a transition.

The Owners were advised that the above options would be investigated for their practicality and costs and the best overall solution would be determined and an Engineer's Report completed to provide for the necessary work to address the current problems. The report will include appropriate allowances for any land taken and damages. The County has plans for rehabilitating the road bridge and the work will be coordinated with the drainage works.

The Owners went on to advise that there is a concern along the 8th Concession area. The owners are having problems with flooding. Mr. Vegh advised that he has walked and inspected the drain, and it needs to be brushed and the flooding is being caused by a couple of blockages and old

trees that have fallen into the drain. He will arrange for the necessary maintenance work to be done. Spraying programs were discussed for maintenance once the brushing is done.

The overall drainage report procedure, future maintenance processes and grant eligibility were generally reviewed with the owners. Owners were asked to contact Ken Vegh or Gerard Rood if there were any questions on the project or the drainage report that will be done. The owners were also advised that the works will be subject to the approval of the Department of Fisheries and Oceans (D.F.O.), the Ministry of Natural Resources and Forestry (M.N.R.F.), and the Essex Region Conservation Authority (E.R.C.A.).

IV. FIELD SURVEY AND INVESTIGATIONS

Following the on-site meeting we arranged for our survey crew to attend at the site and perform a topographic survey. Our survey included taking all the necessary levels and cross-sections, detailing the bridge under County Road 14, as well as other features in the area of the proposed work, and providing all of the necessary detail along the affected section of the existing drain to allow for the preparation of our report.

For the purposes of establishing and determining the required cross-section for the drain repair, we investigated and reviewed the past Engineer's Report, to accurately establish the drain parameters. We also examined the watershed area of drains adjacent and upstream of the Ruscom River Drain, so that the affected lands and roads could be determined. Our field survey information was utilized to prepare preliminary plans for design, including a profile and cross-sections of the portion of the drain where the bank is to be repaired.

A Ministry of Natural Resources and Forestry (M.N.R.F.) Species at Risk review of the former Town agreement with M.N.R.F. pursuant to the Endangered Species Act, 2007 was carried out for this project. We reviewed the E.R.C.A. and D.F.O. Species at Risk mapping for fish and mussels and submitted a request to E.R.C.A. for review and comment.

V. FINDINGS AND RECOMMENDATIONS

Prior to the preparation of our report, we reviewed the details of the retaining wall installation including the wall options based on the regulatory restrictions and the cost estimates that we were to review. Through our investigations, it was determined that the precast concrete block wall option was the most economical, addressed E.R.C.A. requirements not to affect the drain cross section for flow and storage of the 1:100 yr. storm, and we have proceeded with this option, as discussed at the on-site meeting.

Based on our detailed survey, investigations, examinations, and discussions with affected property owners, we would recommend that the Ruscom River Drain bank be repaired by installing precast concrete blocks and rock on filter cloth protection to replace the failing steel sheet pile wall at the location and to the general parameters as established in our design drawings attached herein.

During the course of our investigations, this drainage project was discussed and reviewed with E.R.C.A., to deal with any Authority and D.F.O. issues and comments related to this Municipal drain. The D.F.O. Species at Risk screening maps confirm that there are no Species at Risk Fish or Mussels identified in this area. The Ruscom River Drain is located within the Regulated Area and is under the jurisdiction of the E.R.C.A., and therefore all work has to comply with the current mitigation provisions of the E.R.C.A. and D.F.O. Details of these mitigation measures are included in the Specifications and Appendix “REI-A” forming part of this report.

As is now required under the new Endangered Species Act, 2007 Provincial Legislation, we have reviewed the M.N.R.F. former agreement with the Town. The M.N.R.F. mapping has basically confirmed that there are no foreseen impacts to natural heritage features or endangered or threatened species on this project; therefore a permit or agreement under the E.S.A. 2007 is not necessary at this time. Because turtles and snakes are mobile and indicated as sensitive in the area, we have included herein a copy of the M.N.R.F. mitigation requirements for them in Appendix “REI-B”.

Based on all of the above, we recommend that the Ruscom River Drain north bank retaining wall be repaired and improved in accordance with this report, the attached specifications, and the accompanying drawings, and that all of the works associated with same be carried out in accordance with Section 78 of the “Drainage Act, R.S.O. 1990, Chapter D.17”.

VI. ALLOWANCES AND COMPENSATION

We find that all of the proposed work can generally be carried out within the limits of the existing drain. It is expected that the majority of the works will be carried out from the north side of the drain and the specifications included herein will provide for the full restoration of any disturbance or damages that may be caused as a result of the work being completed to the drain. It is expected that there will still be some impact to the lawn area alongside the proposed works and along the access from County Road 14 northwesterly to the work site. Accordingly, we find that there is a need to provide for damages, pursuant to Section 30 of the “Drainage Act, R.S.O. 1990, Chapter D.17” as follows:

1)	Mario & Jean Ingratta, (540-02900),	Owners,	Part of Lot 21, Concession 9,	\$	360.00
2)	Derrick Will, (540-02950),	Owner,	Part of Lot 21, Concession 9,	\$	980.00
TOTAL FOR ALLOWANCES AND DAMAGES					\$ 1,340.00

These values for allowances and damages are based on access through the driveway serving the lands and a strip of land 8 metres in perpendicular width parallel to and immediately adjacent to the

drain and driveway, for the parcels abutting the north side of the municipal drain, and are based on a value of \$5.00 per square metre for driveway and \$0.50 per square metre for lawn areas for the affected lands.

We have provided for this in our estimate as is provided for under Sections 29 and 30 of the "Drainage Act, R.S.O. 1990, Chapter D.17, as amended 2010".

VII. ESTIMATE OF COST

Our estimate of the total cost of this work, including all incidental expenses is the sum of **SIXTY TWO THOUSAND FIVE HUNDRED DOLLARS (\$62,500.00)**, made up as follows:

CONSTRUCTION

- | | | |
|---------|--|----------------------------------|
| Item 1) | <u>Brushing and removals from Station 0+007.6 to Station 0+022.6:</u> provide all labour, material and equipment to clear all brush and deleterious materials along the proposed wall including removal of existing steel sheet pile wall and components, all hauling, disposal and clean up, ready for excavation to install new concrete block wall, approximately <u>15</u> lineal metres, complete. | Lump Sum \$ 3,000.00 |
| Item 2) | <u>Topsoil Stripping from Station 0+007.6 to Station 0+022.6:</u> provide all labour, material and equipment to strip topsoil and windrow material along the north side of the new wall excavation, approximately 150mm thickness and average width of 10 metres, for approximately 15 lineal metres, complete. | Lump Sum \$ 240.00 |
| Item 3) | <u>Excavation from Station 0+007.6 to Station 0+022.6:</u> provide all labour, material and equipment to excavate for new wall installation including loading, hauling material and disposal of excess, fine grading, clean up and restoration, approximately 15 lineal metres (approximately 72640 cubic metres) complete. | Lump Sum \$ 1,380.00 |
| Item 4) | <u>Concrete Blocks:</u> provide all labour, materials and equipment to supply and install 12 lineal metres of interlocking precast concrete block main wall (51 full blocks and 6 half blocks front wall) and wings (6 east and 16 blocks west) with filter cloth backing, excavation, bedding, clear stone and clay backfill, compaction, interlocking precast concrete blocks minimum 600mm x 600mm x 1200mm size with 1 horizontal | |

	in 5 vertical batter for front wall, including clean up, complete.	Lump Sum	\$ 20,760.00
Item 5)	<u>Erosion Protection from Station 0+007.6 to 0+010.6:</u> supply and install 300mm thick quarried limestone rip rap protection on non-woven filter cloth along alongside the westerly end of the precast concrete block stepped wingwall including excavation, disposal, placement, cleanup and restoration, approximately 8 metres up drain slope from toe to top of slope, complete:		
	i. Supply and place quarried limestone rock protection, approximately <u>105</u> tonnes at <u>\$60.00</u> per tonne, complete.	\$	6,300.00
	ii. Supply and place non-woven filter cloth as underlay for rock protection, approximately <u>217</u> square metres at <u>\$5.00</u> per square metre, complete.	\$	1,085.00
Item 6)	<u>Seeding, clean up and restoration:</u> supply and place topsoil on all disturbed areas including drain banks and bottom and provide hydro-seeding using grass seed mix and mulch to restore lawn and grass areas and newly excavated areas, including the access easement on the north side of the drain, and restore any damage to the driveway entrance and any work areas along the roadway, including fine grading, clean up and restoration, complete.		
	Lump Sum	\$	4,900.00
	Estimated Subtotal for Construction	\$	37,665.00
	Estimated Net H.S.T. (1.76%)	\$	663.00
TOTAL FOR CONSTRUCTION			\$ 38,328.00
<u>INCIDENTALS</u>			
1)	Report, Estimate and Specifications	\$	8,000.00
2)	Survey, Assistants, Expenses, Drawings, Duplication Cost of Report and Drawings, Consideration Meeting, etc.	\$	7,250.00
3)	Estimated Cost of Preparing Tender Documents	\$	1,200.00

4) Estimated Cost of Construction Supervision and Inspection (based on 5 days)	\$	2,300.00
5) Net H.S.T. on Items Above (1.76%)	\$	1,500.00
6) Estimated Cost of E.R.C.A. permit	\$	1,500.00
7) Estimated Contingency Allowance	\$	662.00
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TOTAL FOR INCIDENTALS	\$	22,832.00
TOTAL FOR ALLOWANCES (brought forward)	\$	1,340.00
TOTAL FOR CONSTRUCTION (brought forward)	\$	38,328.00
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TOTAL ESTIMATE	\$	62,500.00
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VIII. DRAWINGS AND SPECIFICATIONS

As part of this report, we have attached a design drawing for the construction of this replacement retaining wall. The design drawing shows the subject wall location and the details of the new retaining wall installation. The design drawing is attached to the back of this report and is labelled Appendix “REI-E”.

Also attached, we have prepared Specifications which set out the required construction details for the proposed bridge installation, which also includes Standard Specifications within Appendix “REI-C”.

IX. CONSTRUCTION ASSESSMENT

We would recommend that all of the costs associated with the construction of this replacement retaining wall, and the preparation of this Engineer’s report, be assessed against all abutting and upstream affected lands and roads in the Town of Kingsville and the Municipality of Leamington. A Construction Schedule of Assessment has been prepared and included herein to indicate the lands and roads assessed for this replacement retaining wall installation.

Since this is a replacement retaining wall, pursuant to the current Agricultural Drainage Infrastructure Program (A.D.I.P.) Policies that are in place, it is anticipated that abutting and upstream lands designated as Farm Property Tax Class will be eligible for a grant from the Ontario

Ministry of Agriculture, Food and Rural Affairs (O.M.A.F.R.A.) in the amount of 1/3 of their total assessment for this project.

X. FUTURE MAINTENANCE

After the completion of the construction of this replacement retaining wall, all of same shall be maintained in the future by the Town of Kingsville.

Furthermore, if any maintenance work is required to this retaining wall in the future, we recommend that the future maintenance costs shall be assessed as shown in the attached Schedule of Assessment on a pro-rata basis.

We recommend that the replacement retaining wall structure as identified herein, be maintained in the future as part of the drainage works. We would also recommend that this replacement retaining wall newly constructed in the drain, for which the future maintenance costs are to be borne by the upstream lands and roads, be maintained by the Town and that said maintenance would include works to maintain the integrity and functioning of the wall.

The above provisions for the future maintenance of this replacement retaining wall, being constructed under this report, shall remain as aforesaid until otherwise determined under the provisions of the “Drainage Act, R.S.O. 1990, Chapter D.17 as amended 2010”.

All of which is respectfully submitted.

Rood Engineering Inc.



Gerard Rood, P.Eng.



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att.

Rood Engineering Inc.

Consulting Engineers

9 Nelson Street

LEAMINGTON, Ontario N8H 1G6

CONSTRUCTION SCHEDULE OF ASSESSMENT
RUSCOM RIVER DRAIN
(Bank Repair - Northwest of County Road 14 Crossing)
TOWN OF KINGSVILLE

3. MUNICIPAL LANDS:

Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Afft'd	Hectares Afft'd	Owner's Name	Value of Benefit	Value of Outlet	TOTAL VALUE
		County Road 14	12.85	5.200	County of Essex	\$ -	\$ 934.00	\$ 934.00
		County Road 31	12.68	5.131	County of Essex	\$ -	\$ 918.00	\$ 918.00
		Road 8 East	13.47	5.453	Town of Kingsville	\$ -	\$ 884.00	\$ 884.00
		Road 7 East	13.47	5.453	Town of Kingsville	\$ -	\$ 884.00	\$ 884.00
		Road 6 East	9.74	3.944	Town of Kingsville	\$ -	\$ 640.00	\$ 640.00
Total on Municipal Lands.....						\$ -	\$ 4,260.00	\$ 4,260.00

4. PRIVATELY OWNED - NON-AGRICULTURAL LANDS:

Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Afft'd	Hectares Afft'd	Owner's Name	Value of Benefit	Value of Outlet	TOTAL VALUE
400-01400	5	22	16.00	6.475	Double B Investments	\$ -	\$ 210.00	\$ 210.00
400-01500	5	22	9.00	3.642	Walter & Sari Bunn	\$ -	\$ 130.00	\$ 130.00
400-01600	5	22	10.00	4.047	Wayne Epps	\$ -	\$ 131.00	\$ 131.00
400-01700	5	22	10.16	4.112	Mark & Heather Mastronardi	\$ -	\$ 133.00	\$ 133.00
400-01800	5	22	4.56	1.845	Leslie & Beverly Chortos	\$ -	\$ 90.00	\$ 90.00
400-02200	5	22	0.00	-0.001	Bruce Bondy	\$ -	\$ 30.00	\$ 30.00
400-02250	5	22	0.00	0.000	Anna & Jason Bewsher	\$ -	\$ 46.00	\$ 46.00
400-02300	5	22	0.00	0.000	Neil & Mary DeGoey	\$ -	\$ 70.00	\$ 70.00

**Ruscom River Drain
Bank Repair**

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Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Afft'd	Hectares Afft'd	Owner's Name	Value of Benefit	Value of Outlet	TOTAL VALUE
400-02700	5	21	0.00	0.000	Philip & Judith Scarsbrook	\$ -	\$ 206.00	\$ 206.00
400-06001	5	22	0.79	0.320	1109172 Ontario Limited	\$ -	\$ 33.00	\$ 33.00
400-06101	5	22	0.70	0.283	Darren & Lori King	\$ -	\$ 30.00	\$ 30.00
400-06300	5	22	5.39	2.181	Victor & Helen Huebert	\$ -	\$ 106.00	\$ 106.00
400-06400	5	23	0.37	0.150	Ronald Thompson	\$ -	\$ 18.00	\$ 18.00
400-06501	5	23	0.89	0.360	Peter & Lisa Harb	\$ -	\$ 36.00	\$ 36.00
400-06600	5	23	13.00	5.261	Erie Sand and Gravel Limited	\$ -	\$ 171.00	\$ 171.00
400-06700	5	23	10.00	4.047	Sterling Acre Farms Limited	\$ -	\$ 131.00	\$ 131.00
400-06800	5	23	3.00	1.214	David & Gillian Ferguson	\$ -	\$ 83.00	\$ 83.00
450-00300	6	23	7.50	3.035	Jacob Fehr	\$ -	\$ 118.00	\$ 118.00
450-00820	6	23	4.05	1.639	Jacob & Darlene Martens	\$ -	\$ 90.00	\$ 90.00
450-00850	6	22	4.19	1.696	Victor & Carol Martens	\$ -	\$ 94.00	\$ 94.00
450-00920	6	22	0.86	0.348	Alan & Tatijana Feil	\$ -	\$ 35.00	\$ 35.00
450-01100	6	21	6.93	2.805	Ronald Janzen	\$ -	\$ 127.00	\$ 127.00
450-02510	6	22	1.00	0.405	John & Agatha Giesbrecht	\$ -	\$ 39.00	\$ 39.00
450-02550	6	22	0.46	0.186	Ida Assinck	\$ -	\$ 22.00	\$ 22.00
450-02610	6	23	3.91	1.582	Christopher & Christina Lapointe	\$ -	\$ 92.00	\$ 92.00
450-02700	6	23	5.08	2.056	John & Helena Boschman	\$ -	\$ 100.00	\$ 100.00
450-02800	6	23	0.22	0.089	Garry & Wendy Foubert	\$ -	\$ 13.00	\$ 13.00
450-02900	6	23	5.23	2.117	Daniel & Carolin Robinet	\$ -	\$ 103.00	\$ 103.00
450-03000	6	23	9.00	3.642	Christopher Conrad	\$ -	\$ 130.00	\$ 130.00
450-03100	6	23	6.00	2.428	Jerry Vandergaag	\$ -	\$ 118.00	\$ 118.00
450-03200	6	24	1.35	0.546	John & Tina Quiring	\$ -	\$ 48.00	\$ 48.00
450-03300	6	24	0.72	0.292	Paul & Natasha Dugas	\$ -	\$ 30.00	\$ 30.00
450-03325	6	24	0.91	0.368	Jacob & Marlene Teigrob	\$ -	\$ 36.00	\$ 36.00
450-03520	6	24	0.51	0.206	Morgan Belanger & Joseph Teti	\$ -	\$ 23.00	\$ 23.00
470-00105	7	25	0.60	0.242	Donald & Margaret Brehaut	\$ -	\$ 27.00	\$ 27.00

**Ruscom River Drain
Bank Repair**

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Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Afft'd	Hectares Afft'd	Owner's Name	Value of Benefit	Value of Outlet	TOTAL VALUE
470-00110	7	25	5.22	2.113	Patrick & Darlene Wilds	\$ -	\$ 103.00	\$ 103.00
470-00350	7	24	0.48	0.194	Cornelius Loewen	\$ -	\$ 23.00	\$ 23.00
470-00390	7	24	1.28	0.518	Robert Pearson	\$ -	\$ 45.00	\$ 45.00
470-00550	7	24	1.09	0.441	Ronald & Janet Willms	\$ -	\$ 41.00	\$ 41.00
470-00560	7	24	1.98	0.800	Michelle Brown	\$ -	\$ 60.00	\$ 60.00
470-01001	7	22	6.34	2.566	Canadian Broadcasting	\$ -	\$ 117.00	\$ 117.00
470-01110	7	22	6.42	2.598	Stephen Ryan	\$ -	\$ 118.00	\$ 118.00
470-01200	7	22	1.00	0.405	John Halbgewachs	\$ -	\$ 39.00	\$ 39.00
470-01390	7	21	0.46	0.186	William & Valerie Fox	\$ -	\$ 22.00	\$ 22.00
470-02850	7	22	0.47	0.190	Trevor & Valerie Henricks	\$ -	\$ 22.00	\$ 22.00
470-02900	7	22	0.48	0.194	Brenda Dixon	\$ -	\$ 23.00	\$ 23.00
470-03150	7	23	0.89	0.360	Derrick Damm	\$ -	\$ 36.00	\$ 36.00
470-03350	7	25	0.83	0.336	Jacob & Carolyn DeRaadt	\$ -	\$ 34.00	\$ 34.00
470-03360	7	25	2.06	0.834	James & Deborah Zsebok	\$ -	\$ 59.00	\$ 59.00
470-03700	7	25	0.62	0.251	Mark & Julia Taylor	\$ -	\$ 27.00	\$ 27.00
510-01900	8	21	2.21	0.894	Kendra VanBelle	\$ -	\$ 64.00	\$ 64.00
510-01901	8	21	0.91	0.368	James & Michelle Staley	\$ -	\$ 36.00	\$ 36.00
510-01950	8	21	2.72	1.101	Peter & Wanda Rempel	\$ -	\$ 75.00	\$ 75.00
510-02100	8	21	1.07	0.433	Denis Gauvreau & Ronda Seremack	\$ -	\$ 41.00	\$ 41.00
510-02450	8	22	0.64	0.259	Craig & Nicole Gerard	\$ -	\$ 28.00	\$ 28.00
510-02550	8	23	1.27	0.514	Larry & Annette Doan	\$ -	\$ 45.00	\$ 45.00
510-02610	8	23	1.77	0.716	Michael & Mary Janzen	\$ -	\$ 58.00	\$ 58.00
510-02810	8	23	1.67	0.676	John & Hope Jackson	\$ -	\$ 55.00	\$ 55.00
510-02900	8	24	1.05	0.425	James & Constance Heath	\$ -	\$ 40.00	\$ 40.00
510-03100	8	24	0.47	0.190	Betty Carder	\$ -	\$ 22.00	\$ 22.00
510-03205	8	24	0.78	0.316	Steven & Monica Bradley	\$ -	\$ 33.00	\$ 33.00
510-03400	8	24	0.34	0.138	Timothy & Tiffany Hamm	\$ -	\$ 17.00	\$ 17.00

**Ruscom River Drain
Bank Repair**

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Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Afft'd	Hectares Afft'd	Owner's Name	Value of Benefit	Value of Outlet	TOTAL VALUE
510-03500	8	24	1.00	0.405	Jeffrey Drouillard	\$ -	\$ 39.00	\$ 39.00
510-03600	8	25	0.34	0.138	James Webb & Susan Russelo	\$ -	\$ 17.00	\$ 17.00
510-03720	8	25	0.52	0.210	Stephen & Paula Parish	\$ -	\$ 23.00	\$ 23.00
510-03900	8	25	0.99	0.401	Michael & Helen Fritsch	\$ -	\$ 39.00	\$ 39.00
510-04300	8	25	2.59	1.048	Andrew & Yvonne Klein	\$ -	\$ 71.00	\$ 71.00
510-04401	8	25	0.34	0.138	Cornelius & Helena Fehr	\$ -	\$ 17.00	\$ 17.00
510-04402	8	25	1.47	0.595	Amy Maycock & Laurie Renaud	\$ -	\$ 50.00	\$ 50.00
510-04600	8	25	4.81	1.947	Gary Langeman	\$ -	\$ 101.00	\$ 101.00
540-00150	9	25	0.64	0.259	Cornelius & Helen Bergen	\$ -	\$ 28.00	\$ 28.00
540-00300	9	25	3.50	1.416	Gerard & Georgette Derickx	\$ -	\$ 87.00	\$ 87.00
540-00400	9	25	0.42	0.170	Barbara Hunter	\$ -	\$ 20.00	\$ 20.00
540-00500	9	25	0.82	0.332	Paul & Glenda Tremblay	\$ -	\$ 33.00	\$ 33.00
540-00650	9	25	0.57	0.232	Brad & Diane Simon	\$ -	\$ 26.00	\$ 26.00
540-00750	9	25	0.50	0.202	Michael & Amanda Zimmerman	\$ -	\$ 23.00	\$ 23.00
540-00800	9	24	1.75	0.708	Murray & Brenda Hunter	\$ -	\$ 39.00	\$ 39.00
540-00950	9	24	1.07	0.432	Evelyn Neufeld	\$ -	\$ 35.00	\$ 35.00
540-01100	9	24	0.59	0.238	Donald Raymont	\$ -	\$ 26.00	\$ 26.00
540-01150	9	24	1.56	0.631	B. Raymont & Terri Mogilefsky-Raymont	\$ -	\$ 45.00	\$ 45.00
540-01300	9	24	0.50	0.202	Ronald & Sharon Raymont	\$ -	\$ 23.00	\$ 23.00
540-01450	9	24	1.17	0.475	Thomas & Lisa Matis	\$ -	\$ 45.00	\$ 45.00
540-01500	9	24	1.15	0.466	Emil & Anna Matis	\$ -	\$ 44.00	\$ 44.00
540-01700	9	23	0.45	0.182	Ron & Darlene Bell	\$ -	\$ 22.00	\$ 22.00
540-01980	9	23	1.78	0.720	Gary & Susan Guyitt	\$ -	\$ 58.00	\$ 58.00
540-02350	9	22	0.44	0.178	Richard & Jenny Pearce	\$ -	\$ 21.00	\$ 21.00
540-02400	9	22	1.32	0.534	Kenneth Pearce	\$ -	\$ 47.00	\$ 47.00
540-02500	9	22	0.96	0.390	Clair & Sylvia Pearce	\$ -	\$ 38.00	\$ 38.00
540-02600	9	22	0.34	0.139	Marie-Rose Marion	\$ -	\$ 18.00	\$ 18.00

**Ruscom River Drain
Bank Repair**

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Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Afft'd	Hectares Afft'd	Owner's Name	Value of Benefit	Value of Outlet	TOTAL VALUE
540-02700	9	21	0.54	0.219	Brandon & Jodi Hyatt	\$ -	\$ 24.00	\$ 24.00
540-02800	9	21	0.72	0.292	Bradey Miller & Tina Young	\$ -	\$ 30.00	\$ 30.00
540-02801	9	21	0.52	0.210	Kyle Webb & Kristyn Adams	\$ -	\$ 23.00	\$ 23.00
540-02900	9	21	1.98	0.801	Mario & Jean Ingratta	\$ -	\$ 60.00	\$ 60.00
Total on Privately Owned - Non-Agricultural Lands.....						\$ -	\$ 5,354.00	\$ 5,354.00

5. PRIVATELY OWNED - AGRICULTURAL LANDS (grantable):

Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Afft'd	Hectares Afft'd	Owner's Name	Value of Benefit	Value of Outlet	TOTAL VALUE
400-00500	5	23	50.00	20.235	Erie Sand And Gravel Limited	\$ -	\$ 656.00	\$ 656.00
400-00800	5	23	1.59	0.643	Donald & Mary Sayers	\$ -	\$ 21.00	\$ 21.00
400-01001	5	23	6.40	2.590	Richard & Fredrick Sharp	\$ -	\$ 84.00	\$ 84.00
400-01300	5	22	0.54	0.219	Keller Bros Greenhouses Inc.	\$ -	\$ 10.00	\$ 10.00
400-02400	5	21	25.29	10.235	E. & B. Medel Orchards Ltd.	\$ -	\$ 332.00	\$ 332.00
400-02800	5	21	19.07	7.718	Ronald Hamm	\$ -	\$ 250.00	\$ 250.00
400-06000	5	21	11.43	4.626	Andy & Carol Tir	\$ -	\$ 150.00	\$ 150.00
400-06100	5	22	20.05	8.114	Steve & Martha Chobrda	\$ -	\$ 263.00	\$ 263.00
400-06200	5	22	30.00	12.141	Richard Hamm	\$ -	\$ 394.00	\$ 394.00
400-06303	5	22	19.50	7.892	Andrews Greenhouses Inc.	\$ -	\$ 256.00	\$ 256.00
400-06500	5	23	24.60	9.955	Sterling Acre Farms Limited	\$ -	\$ 323.00	\$ 323.00
400-07000	5	24	26.71	10.809	515793 Ontario Limited	\$ -	\$ 351.00	\$ 351.00
400-07100	5	24	33.46	13.541	538269 Ontario Limited	\$ -	\$ 439.00	\$ 439.00
400-07200	5	24	46.15	18.677	Earl Dutot	\$ -	\$ 606.00	\$ 606.00
450-00100	6	24	45.00	18.211	Barbara Langpeter	\$ -	\$ 591.00	\$ 591.00
450-00200	6	24	55.00	22.258	Julius Langpeter	\$ -	\$ 722.00	\$ 722.00

**Ruscom River Drain
Bank Repair**

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Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Afft'd	Hectares Afft'd	Owner's Name	Value of Benefit	Value of Outlet	TOTAL VALUE
450-00400	6	23	7.50	3.035	Issac & Margaret Fehr	\$ -	\$ 118.00	\$ 118.00
450-00500	6	23	10.75	4.350	Andrew Boudry	\$ -	\$ 141.00	\$ 141.00
450-00600	6	23	9.29	3.760	Robert & Michele Neaves	\$ -	\$ 122.00	\$ 122.00
450-00700	6	23	15.71	6.358	Marko & Carmen Jeremic	\$ -	\$ 206.00	\$ 206.00
450-00800	6	23	82.59	33.424	Orton Farms Inc	\$ -	\$ 1,084.00	\$ 1,084.00
450-00900	6	22	34.95	14.144	Andy Tir	\$ -	\$ 459.00	\$ 459.00
450-01000	6	22	55.95	22.643	Peter & Elizabeth Friesen	\$ -	\$ 734.00	\$ 734.00
450-01050	6	22	63.95	25.880	Orton Farms Inc.	\$ -	\$ 840.00	\$ 840.00
450-01300	6	21	89.63	36.273	Donald & Margaret Orton	\$ -	\$ 1,177.00	\$ 1,177.00
450-01400	6	21	64.98	26.297	Donald & Paul Tiveron	\$ -	\$ 853.00	\$ 853.00
450-01500	6	20	34.30	13.881	Julia & John Krosiak	\$ -	\$ 450.00	\$ 450.00
450-02500	6	22	48.54	19.644	Ida & William Assinck	\$ -	\$ 637.00	\$ 637.00
450-03400	6	24	47.06	19.045	Paul & Cindy Orton	\$ -	\$ 618.00	\$ 618.00
450-03500	6	24	49.49	20.028	Robert Woelk	\$ -	\$ 650.00	\$ 650.00
470-00100	7	25	67.18	27.187	Kevin & Karen Flood	\$ -	\$ 882.00	\$ 882.00
470-00200	7	25	48.62	19.676	Paul & Rosemary Rauch	\$ -	\$ 638.00	\$ 638.00
470-00300	7	24	23.73	9.603	David & Anna Dyck	\$ -	\$ 312.00	\$ 312.00
470-00400	7	24	23.71	9.595	David & Anna Dyck	\$ -	\$ 311.00	\$ 311.00
470-00500	7	24	97.14	39.312	Paul Orton	\$ -	\$ 1,275.00	\$ 1,275.00
470-00700	7	23	10.00	4.047	Abe & Maria Knelsen	\$ -	\$ 131.00	\$ 131.00
470-00800	7	23	40.00	16.188	Ronald & Marlene Regehr	\$ -	\$ 525.00	\$ 525.00
470-01100	7	22	42.62	17.248	Robert Cassels	\$ -	\$ 559.00	\$ 559.00
470-01400	7	21	25.00	10.117	William Fox	\$ -	\$ 328.00	\$ 328.00
470-02600	7	21	50.00	20.235	Walter & Annie VandenBerg	\$ -	\$ 656.00	\$ 656.00
470-02700	7	22	50.00	20.235	Walter & Annie VandenBerg	\$ -	\$ 656.00	\$ 656.00
470-02800	7	22	49.14	19.887	Murray & Bradley Simon	\$ -	\$ 645.00	\$ 645.00
470-03000	7	23	50.00	20.235	Joseph Palmer	\$ -	\$ 656.00	\$ 656.00

**Ruscom River Drain
Bank Repair**

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Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Afft'd	Hectares Afft'd	Owner's Name	Value of Benefit	Value of Outlet	TOTAL VALUE
470-03100	7	23	49.11	19.875	Brian & Margaret Reid	\$ -	\$ 645.00	\$ 645.00
470-03200	7	24	50.00	20.235	Robert Sieler	\$ -	\$ 656.00	\$ 656.00
470-03300	7	25	45.96	18.600	Joseph Palmer	\$ -	\$ 603.00	\$ 603.00
470-03400	7	25	12.50	5.059	Janine Flood	\$ -	\$ 164.00	\$ 164.00
510-00100	8	24	42.40	17.159	Leonard & Elfrieda Flaming	\$ -	\$ 557.00	\$ 557.00
510-00200	8	24	32.43	13.124	George & John Krosiak	\$ -	\$ 426.00	\$ 426.00
510-00400	8	24	47.00	19.021	Janette Chevalier & Bradley Simon	\$ -	\$ 617.00	\$ 617.00
510-00450	8	23	55.51	22.465	Jane Klassen	\$ -	\$ 729.00	\$ 729.00
510-00500	8	22	50.00	20.235	Janette Chevalier	\$ -	\$ 656.00	\$ 656.00
510-00600	8	22	50.00	20.235	Walter & Annie VandenBerg	\$ -	\$ 656.00	\$ 656.00
510-00700	8	21	25.00	10.117	Paul Repko	\$ -	\$ 328.00	\$ 328.00
510-01800	8	21	73.76	29.850	Paul Repko	\$ -	\$ 968.00	\$ 968.00
510-02000	8	21	60.49	24.480	1394079 Ontario Inc.	\$ -	\$ 794.00	\$ 794.00
510-02020	8	21	12.35	4.998	Susan Will	\$ -	\$ 162.00	\$ 162.00
510-02200	8	22	25.00	10.117	George & Cynthia Pretli	\$ -	\$ 328.00	\$ 328.00
510-02300	8	22	25.00	10.117	Claire & Sylvia Pearce	\$ -	\$ 328.00	\$ 328.00
510-02400	8	22	38.56	15.605	Frank Klassen	\$ -	\$ 506.00	\$ 506.00
510-02500	8	22	44.86	18.155	Harold & Susan Klassen	\$ -	\$ 589.00	\$ 589.00
510-02575	8	23	1.11	0.449	Edward & Anne Verbeke	\$ -	\$ 42.00	\$ 42.00
510-02600	8	23	20.95	8.478	Budmar Farms Ltd.	\$ -	\$ 275.00	\$ 275.00
510-02800	8	23	55.44	22.436	Steven Bradley	\$ -	\$ 728.00	\$ 728.00
510-03000	8	24	28.51	11.538	Stanley Jackson & Jill Jakob	\$ -	\$ 374.00	\$ 374.00
510-03200	8	24	46.20	18.697	C.J. Bradley & Sons Limited	\$ -	\$ 606.00	\$ 606.00
510-03300	8	24	1.44	0.583	James & Deanne Carder	\$ -	\$ 49.00	\$ 49.00
510-03700	8	25	24.13	9.765	C.J. Bradley & Sons Limited	\$ -	\$ 317.00	\$ 317.00
510-03800	8	25	67.41	27.280	C.J. Bradley & Sons Limited	\$ -	\$ 885.00	\$ 885.00
510-04000	8	25	1.59	0.643	Daniel & Susan Kudroch	\$ -	\$ 54.00	\$ 54.00

**Ruscom River Drain
Bank Repair**

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Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Afft'd	Hectares Afft'd	Owner's Name	Value of Benefit	Value of Outlet	TOTAL VALUE
510-04100	8	25	5.00	2.023	Howard Huy Greenhouses	\$ -	\$ 105.00	\$ 105.00
510-04200	8	25	47.17	19.089	Howard Huy	\$ -	\$ 619.00	\$ 619.00
510-04400	8	25	23.53	9.522	Timothy Flood	\$ -	\$ 309.00	\$ 309.00
510-04500	8	25	20.18	8.167	Timothy & Janine Flood	\$ -	\$ 265.00	\$ 265.00
540-00100	9	25	0.28	0.114	Pyramid Farms	\$ -	\$ 4.00	\$ 4.00
540-00200	9	21	0.50	0.201	Pyramid Farms	\$ -	\$ 7.00	\$ 7.00
540-00600	9	21	2.55	1.032	Kevin Flood	\$ -	\$ 33.00	\$ 33.00
540-00700	9	21	1.81	0.734	Jeff Andrews	\$ -	\$ 24.00	\$ 24.00
540-00800	9	21	1.75	0.708	Murray & Brenda Hunter	\$ -	\$ 39.00	\$ 39.00
540-00900	9	21	0.43	0.174	Daniel Neufeld	\$ -	\$ 6.00	\$ 6.00
540-01000	9	21	5.41	2.190	Frank & Lucille Ryall	\$ -	\$ 71.00	\$ 71.00
540-01200	9	21	4.91	1.988	Bradley Raymont	\$ -	\$ 64.00	\$ 64.00
540-01400	9	21	2.65	1.071	Emil & Anna Matis	\$ -	\$ 35.00	\$ 35.00
540-01600	9	21	2.55	1.032	Ron Bell	\$ -	\$ 33.00	\$ 33.00
540-01800	9	21	2.00	0.810	Vincent & Camillia Mallia	\$ -	\$ 26.00	\$ 26.00
540-01900	9	21	2.00	0.809	John & Nellie Willemse	\$ -	\$ 26.00	\$ 26.00
540-02000	9	21	1.19	0.483	Lawrence Ouellette	\$ -	\$ 16.00	\$ 16.00
540-02200	9	21	3.00	1.214	C.J. Bradley & Sons Ltd.	\$ -	\$ 39.00	\$ 39.00
540-02300	9	21	5.57	2.253	C.J. Bradley & Sons Ltd.	\$ -	\$ 73.00	\$ 73.00
540-02550	9	21	5.01	2.027	Kenneth & Nina Pearce	\$ -	\$ 66.00	\$ 66.00
540-02650	9	21	2.13	0.863	Bonnie & Donald Sherk	\$ -	\$ 28.00	\$ 28.00
540-02850	9	21	1.67	0.675	1088003 Ontario Limited	\$ -	\$ 22.00	\$ 22.00
540-02950	9	21	0.69	0.280	Derrick Will	\$ -	\$ 9.00	\$ 9.00
Total on Privately Owned - Agricultural Lands (grantable).....						\$ -	\$ 36,072.00	\$ 36,072.00

5. PRIVATELY OWNED - AGRICULTURAL LANDS (non-grantable):

<u>Tax Roll No.</u>	<u>Con. or Plan No.</u>	<u>Lot or Part of Lot</u>	<u>Acres Afft'd</u>	<u>Hectares Afft'd</u>	<u>Owner's Name</u>	<u>Value of Benefit</u>	<u>Value of Outlet</u>	<u>TOTAL VALUE</u>
450-02600	6	23	21.09	8.535	Frank & Norrine Mattia	\$ -	\$ 277.00	\$ 277.00
470-00600	7	23	50.00	20.235	George & John Krosiak	\$ -	\$ 656.00	\$ 656.00
470-00900	7	22	25.00	10.117	Joseph & Elizabeth Lamprecht	\$ -	\$ 328.00	\$ 328.00
470-01000	7	22	18.66	7.552	William & Barbara Martens	\$ -	\$ 245.00	\$ 245.00
470-01300	7	21	24.54	9.931	William & Valerie Fox	\$ -	\$ 322.00	\$ 322.00
470-03500	7	25	12.50	5.059	Thomas & Wendy Murray	\$ -	\$ 164.00	\$ 164.00
470-03600	7	25	5.75	2.327	Benjamin & Sara Epp	\$ -	\$ 113.00	\$ 113.00
510-02577	8	23	30.39	12.299	Harold & Susan Klassen	\$ -	\$ 399.00	\$ 399.00
540-00900	9	24	0.43	0.174	Daniel Neufeld	\$ -	\$ 6.00	\$ 6.00
Total on Privately Owned - Agricultural Lands (non-grantable).....						\$ -	\$ 2,510.00	\$ 2,510.00
KINGSVILLE TOTAL ASSESSMENT			3208.13	1298.314		\$ -	\$ 48,196.00	\$ 48,196.00

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CONSTRUCTION SCHEDULE OF ASSESSMENT
RUSCOM RIVER DRAIN
(Bank Repair - Northwest of County Road 14 Crossing)
MUNICIPALITY OF LEAMINGTON

Tax Roll <u>No.</u>	Con. or Plan <u>No.</u>	Lot or Part <u>of Lot</u>	Acres <u>Afft'd</u>	Hectares <u>Afft'd</u>	<u>Owner's Name</u>	Value of <u>Benefit</u>	Value of <u>Outlet</u>	TOTAL <u>VALUE</u>
		County Road 31	12.68	5.131	County of Essex	\$ -	\$ 882.00	\$ 882.00
		Mersea Road 8	2.53	1.022	Municipality of Leamington	\$ -	\$ 160.00	\$ 160.00
		Mersea Road 7	5.12	2.072	Municipality of Leamington	\$ -	\$ 324.00	\$ 324.00
		Mersea Road 6	6.00	2.429	Municipality of Leamington	\$ -	\$ 380.00	\$ 380.00
Total on Municipal Lands.....						\$ -	\$ 1,746.00	\$ 1,746.00

4. PRIVATELY OWNED - NON-AGRICULTURAL LANDS:

Tax Roll <u>No.</u>	Con. or Plan <u>No.</u>	Lot or Part <u>of Lot</u>	Acres <u>Afft'd</u>	Hectares <u>Afft'd</u>	<u>Owner's Name</u>	Value of <u>Benefit</u>	Value of <u>Outlet</u>	TOTAL <u>VALUE</u>
690-04300	5	2	22.21	8.988	Erie Sand And Gravel Limited	\$ -	\$ 281.00	\$ 281.00
690-04301	5	2	0.14	0.057	Erie Sand And Gravel Limited	\$ -	\$ 2.00	\$ 2.00
690-05200	5	1	0.35	0.142	John & Linda Whittle	\$ -	\$ 17.00	\$ 17.00
690-05301	5	1	0.53	0.215	Heinrich & Helena Neufeld	\$ -	\$ 23.00	\$ 23.00

**Ruscom River Drain
Bank Repair**

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Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Afft'd	Hectares Afft'd	Owner's Name	Value of Benefit	Value of Outlet	TOTAL VALUE
690-05302	5	1	0.53	0.214	Abraham & Maira Peters	\$ -	\$ 23.00	\$ 23.00
690-05303	5	1	0.47	0.190	John & Katharina Fehr	\$ -	\$ 21.00	\$ 21.00
690-05400	5	1	0.63	0.255	Gelya Giedziun	\$ -	\$ 26.00	\$ 26.00
690-05505	5	2	0.73	0.295	John & Betty Bartel	\$ -	\$ 30.00	\$ 30.00
690-05700	5	2	0.50	0.202	Morris & Katherine Wiper	\$ -	\$ 22.00	\$ 22.00
720-01900	6	1	0.86	0.348	Rosemarie Tiessen	\$ -	\$ 34.00	\$ 34.00
720-02000	6	1	1.00	0.405	Anthony & Lori Pouget	\$ -	\$ 38.00	\$ 38.00
720-02050	6	1	0.44	0.177	David Wall & Anna Friesen	\$ -	\$ 20.00	\$ 20.00
720-02100	6	1	7.85	3.179	Sidney Oliveira & Nicole Tremblay	\$ -	\$ 119.00	\$ 119.00
720-02310	6	1	2.47	1.000	Diane & Michael Hunt	\$ -	\$ 69.00	\$ 69.00
720-02401	6	1	1.15	0.464	Peter & Elizabeth Friesen	\$ -	\$ 42.00	\$ 42.00
720-02405	6	1	1.39	0.564	Johan & Maria Rempel	\$ -	\$ 48.00	\$ 48.00
720-02410	6	1	1.51	0.613	Peter & Maria Banman	\$ -	\$ 50.00	\$ 50.00
720-02415	6	1	0.99	0.402	Jacob & Aganeta Guenter	\$ -	\$ 38.00	\$ 38.00
720-02510	6	1	1.00	0.404	Margaretha Harms	\$ -	\$ 38.00	\$ 38.00
720-02550	6	1	1.24	0.501	Allan & Callie Kwiatkowski	\$ -	\$ 42.00	\$ 42.00
720-02610	6	1	1.48	0.598	Thomas & Cindy Hutchins	\$ -	\$ 49.00	\$ 49.00
720-02750	6	2	0.52	0.210	Michael Berry	\$ -	\$ 22.00	\$ 22.00
720-02800	6	2	0.56	0.226	Kent Dyke	\$ -	\$ 24.00	\$ 24.00
720-02900	6	2	0.43	0.174	Penny Arquette	\$ -	\$ 20.00	\$ 20.00
720-03005	6	2	0.45	0.181	Kenneth & Tammy Campbell	\$ -	\$ 21.00	\$ 21.00
720-03010	6	2	0.98	0.397	Peter & Katharina Fehr	\$ -	\$ 37.00	\$ 37.00
760-01300	7	2	1.00	0.405	Christopher Ribble & Danieele Belanger	\$ -	\$ 38.00	\$ 38.00
760-01400	7	2	1.00	0.405	Gary & Yvette Chalmers	\$ -	\$ 38.00	\$ 38.00
760-01500	7	2	2.28	0.921	John & Lisa Klassen	\$ -	\$ 63.00	\$ 63.00
760-01504	7	2	2.79	1.130	Douglas Young	\$ -	\$ 74.00	\$ 74.00
760-01505	7	2	6.43	2.600	Gregory Neufeld & Bailey Westgate	\$ -	\$ 114.00	\$ 114.00

**Ruscom River Drain
Bank Repair**

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2017-09-27

Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Afft'd	Hectares Afft'd	Owner's Name	Value of Benefit	Value of Outlet	TOTAL VALUE
760-01601	7	1	0.50	0.203	Michael & Denise Kersey	\$ -	\$ 22.00	\$ 22.00
760-01700	7	1	2.12	0.857	Robert Dietrich	\$ -	\$ 59.00	\$ 59.00
760-01800	7	1	0.62	0.251	Edward & Tanya DeJong	\$ -	\$ 26.00	\$ 26.00
760-01805	7	1	0.61	0.247	Edward & Tanya DeJong	\$ -	\$ 25.00	\$ 25.00
760-01810	7	1	0.62	0.251	Franz & Anna Wiebe	\$ -	\$ 26.00	\$ 26.00
760-01850	7	1	0.79	0.320	Bernhard & Anna Froese	\$ -	\$ 32.00	\$ 32.00
760-01950	7	1	1.02	0.414	Johan & Katharina Neudorf	\$ -	\$ 38.00	\$ 38.00
800-02701	8	1	0.42	0.171	Union Gas Ltd	\$ -	\$ 20.00	\$ 20.00
Total on Privately Owned - Non-Agricultural Lands.....						\$ -	\$ 1,731.00	\$ 1,731.00

5. PRIVATELY OWNED - AGRICULTURAL LANDS (grantable):

Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Afft'd	Hectares Afft'd	Owner's Name	Value of Benefit	Value of Outlet	TOTAL VALUE
690-04200	5	2	13.50	5.465	Jacob & Abrah Friesen & Henry & Isaak Friesen	\$ -	\$ 171.00	\$ 171.00
690-05050	5	1	11.95	4.838	Erie Sand And Gravel Limited	\$ -	\$ 151.00	\$ 151.00
690-05110	5	1	28.24	11.427	Sterling Acre Farms Limited	\$ -	\$ 357.00	\$ 357.00
690-05300	5	1	28.95	11.716	Ruth Whittle & John & Charles Whittle	\$ -	\$ 366.00	\$ 366.00
690-05650	5	2	38.24	15.474	Gerald & Joan Willms	\$ -	\$ 484.00	\$ 484.00
720-01700	6	2	51.49	20.838	Cheryl Willms	\$ -	\$ 652.00	\$ 652.00
720-01800	6	2	51.64	20.898	Robert & Nancy Armstrong	\$ -	\$ 654.00	\$ 654.00
720-02200	6	1	41.79	16.912	Elizabeth Gerandt	\$ -	\$ 529.00	\$ 529.00
720-02300	6	1	49.54	20.049	Katarina Barnesky & Joanne Vellinga	\$ -	\$ 627.00	\$ 627.00
720-02400	6	1	48.86	19.773	Gene Woodsit Inc.	\$ -	\$ 619.00	\$ 619.00

**Ruscom River Drain
Bank Repair**

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2017-09-27

Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Afft'd	Hectares Afft'd	Owner's Name	Value of Benefit	Value of Outlet	TOTAL VALUE
720-02500	6	1	27.25	11.028	Thomas & Cindy Hutchins	\$ -	\$ 345.00	\$ 345.00
720-02600	6	1	20.87	8.446	Thomas & Cindy Hutchins	\$ -	\$ 264.00	\$ 264.00
720-02700	6	2	25.88	10.473	George & Cheryl Willms	\$ -	\$ 328.00	\$ 328.00
720-03000	6	2	24.80	10.036	George Willms	\$ -	\$ 314.00	\$ 314.00
720-03100	6	2	25.35	10.259	1196977 Ontario Limited Attn: Howard Huy	\$ -	\$ 321.00	\$ 321.00
760-01302	7	2	16.30	6.597	Charles & Shirley Chevalier	\$ -	\$ 206.00	\$ 206.00
760-01585	7	1	25.53	10.333	Nancy Burgess	\$ -	\$ 323.00	\$ 323.00
760-01590	7	1	31.95	12.932	Judy Kenna	\$ -	\$ 405.00	\$ 405.00
760-01600	7	1	35.61	14.411	Patricia Jewell	\$ -	\$ 451.00	\$ 451.00
760-01701	7	1	25.07	10.147	Victor & Anita Thiessen	\$ -	\$ 317.00	\$ 317.00
760-01702	7	1	19.74	7.989	Gerhard & Agatha Krahn	\$ -	\$ 250.00	\$ 250.00
760-01900	7	1	24.22	9.802	Thomas & Paul Keller	\$ -	\$ 307.00	\$ 307.00
760-02000	7	1 & 2	23.03	9.320	David Keller	\$ -	\$ 292.00	\$ 292.00
760-02100	7	2	20.02	8.100	Mary Kotulak	\$ -	\$ 253.00	\$ 253.00
760-02105	7	2	20.02	8.100	Mary Kotulak	\$ -	\$ 253.00	\$ 253.00
760-02200	7	2	26.51	10.730	Paul Keller	\$ -	\$ 336.00	\$ 336.00
800-02000	8	2	0.00	0.000	Paul & Rosemary Rauch	\$ -	\$ -	\$ -
800-02100	8	2	0.00	0.000	Douglas & Joanne Stockwell	\$ -	\$ -	\$ -
800-02400	8	2	0.00	0.000	John & Eva Weber	\$ -	\$ -	\$ -
800-02500	8	1	4.00	1.620	Annie Tultz	\$ -	\$ 51.00	\$ 51.00
800-02600	8	1	4.00	1.620	Douglas & Joanne Stockwell	\$ -	\$ 51.00	\$ 51.00
800-02700	8	1	11.05	4.470	Dolores & Michael Jones	\$ -	\$ 140.00	\$ 140.00
Total on Privately Owned - Agricultural Lands (grantable).....						\$ -	\$ 9,817.00	\$ 9,817.00

5. PRIVATELY OWNED - AGRICULTURAL LANDS (non-grantable):

Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Afft'd	Hectares Afft'd	Owner's Name	Value of Benefit	Value of Outlet	TOTAL VALUE
690-05305	5	1	49.85	20.175	Mireya Campbell	\$ -	\$ 631.00	\$ 631.00
690-05600	5	2	29.95	12.122	Abe Fehr & Elizabeth Bergen	\$ -	\$ 379.00	\$ 379.00
Total on Privately Owned - Agricultural Lands (non-grantable).....						\$ -	\$ 1,010.00	\$ 1,010.00
LEAMINGTON TOTAL ASSESSMENT			952.15	385.329		\$ -	\$ 14,304.00	\$ 14,304.00
=====								
KINGSVILLE TOTAL ASSESSMENT			3208.13	1298.314		\$ -	\$ 48,196.00	\$ 48,196.00
PROJECT TOTAL ASSESSMENT			4160.28	1683.643		\$ -	\$ 62,500.00	\$ 62,500.00
=====								

1 Hectare = 2.471 Acres

Project No. REI2015D013

September 27th, 2017

SPECIFICATIONS**RUSCOM RIVER DRAIN****(Bank Protection Part Lot 21, Concession 9)****Geographic Township of Gosfield North****TOWN OF KINGSVILLE****I. GENERAL SCOPE OF WORK**

The Contractor shall provide all material, labour, and equipment to replace the collapsing existing steel sheet pile retaining wall with interlocking precast concrete blocks consisting of 12.0 metres (39.4 ft.) of 600mm x 600mm x 1200mm blocks to create a face wall and wings at each end, all in the Ruscom River Drain. The replacement retaining wall shall be constructed so that the abutting lands have their previous protection restored and land area maintained including protection of the nearby septic system. Work will include quarried limestone rip rap on filter cloth protection at the downstream end of the work to transition from the wall to the bank slope, removal of the existing steel sheet pile wall, drain excavation, and placement of filter cloth, minimum 300mm wide clear stone behind the new wall, and compacted clay backfill. The location of this replacement retaining wall shall be the exact designated location as shown on the plans unless otherwise directed by the Town Drainage Superintendent, prior to the construction of same. Any changes to the location of the replacement retaining wall must be approved in writing by the Engineer. The general layout of the retaining wall and other ancillary work shall be provided as shown and detailed in the accompanying drawings attached within **Appendix "REI-E"**. A Bench Mark has been set near the retaining wall so that same can be utilized for the setting of the new retaining wall elevations. The **Bench Mark** is the *"top nut of fire hydrant on the south side of County Road 14, on the west side of the asphalt driveway to MN 326"*, with same being **Elevation 195.767 metres**.

II. E.R.C.A. AND D.F.O. CONSIDERATIONS

All of the work shall be carried out in accordance with any permits or authorizations issued by the Essex Region Conservation Authority (E.R.C.A.) or the Department of Fisheries and Oceans (D.F.O.), copies of which will be provided, if available. The Contractor shall ensure that sediment and erosion control provisions, set out further in these specifications and in **Appendix "REI-A"**, are followed. Work shall be scheduled so that it can be completed in the dry and when there is no risk of a rain event that might exceed the capacity of the water control system that the Contractor employs. Any damming of the drain will be done on the upstream side in accordance with the provisions set out in **Appendix "REI-A"**. The Contractor will be required to carry out a fish salvage operation if there is water in the drain when the work is being done. Details for the fish salvage are set out in **Appendix "REI-A"**. The standard mitigation response received from E.R.C.A. shall be followed and a copy of same is included within **Appendix "REI-A"**.

The Contractor is to review **Appendix "REI-A"** in detail and is required to comply in all regards with the contents of said E.R.C.A. and D.F.O. measures, and follow the special requirements therein included during construction.

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III. M.N.R.F. CONSIDERATIONS

The Contractor is to note that this project has gone through the Ministry of Natural Resources and Forestry (M.N.R.F.) screening process by way of a Species at Risk (S.A.R.) review of the M.N.R.F. Endangered Species Act, 2007 former agreement with the Town. Although no species are indicated on the agreement plans for this site, turtles and snakes are considered sensitive to the area and mobile, and Schedule 'C' of the agreement has provisions to protect them and mitigate any impacts. A copy of same is included within **Appendix "REI-B"**.

The Contractor is to review **Appendix "REI-B"** in detail and is required to comply in all regards with the contents of said M.N.R.F. measures, and follow the special requirements therein included during construction.

IV. WALL CONSTRUCTION

When completed, the retaining wall along the north bank of the drain shall have a total face length, of approximately 12 metres (39.4 ft.) and a height of 6 courses of 600mm high blocks being approximately 3.6 metres (11.8 ft.). The foundation shall consist of precast interlocking blocks and shall extend the complete length of the concrete retaining wall, set so that a 1 horizontal to 5 vertical batter of the main wall face is achieved. The Contractor shall have access to carry out the work from the north right-of-way and the existing driveway entrance, along with access along both sides of the drain upstream and downstream from the retaining wall and rock protection to complete the installation and drain cleaning as specified. Any accesses or areas utilized in carrying out the works are to be fully restored to their original conditions by the Contractor, including topsoil placement and lawn restoration as directed by the Engineer or the Town Drainage Superintendent. Restoration shall include, but not be limited to, all necessary levelling, grading, shaping, topsoil placement, and granular required to make good any damage caused to the lawn and driveway areas.

The interlocking precast concrete block wall to be provided for this project is to be supplied as minimum 600mm x 600mm x 1200mm blocks, with half blocks to stagger the vertical joints on the face wall. A wing wall shall be constructed of 6 precast concrete blocks installed into the drain bank against the end of the existing cast in place concrete wall. The main wall shall commence tight to the wingwall and extend downstream for approximately 10.8 metres, being 9 full block lengths, 6 courses high for a total of 51 full blocks and 6 half blocks to create the staggered vertical joints. At the downstream end a stepped wingwall of 16 full size blocks shall be provided to transition to the bank slope, with a 3m wide strip of quarried limestone rip rap on filter cloth adjacent to same as shown on the plans. The back of all the precast concrete blocks shall have a minimum of 300mm thick clear stone against the wall with non-woven synthetic filter cloth between the clear stone and native clay and topsoil. The blocks that are to be utilized for this wall installation must be approved by the Town Drainage Superintendent or Engineer, prior to their placement in the drain. The block supplier shall provide shop drawings of the precast concrete blocks and wall layout for approval by the Drainage Superintendent or Engineer prior to fabrication.

The Contractor shall also note that the placement of the replacement retaining wall is to be performed totally in the dry, and it shall be prepared to take whatever steps are necessary to ensure same, all to the full satisfaction of the Town Drainage Superintendent or Engineer. As part of the work, the Contractor will be required to clean out the drain along the full length of the wall and for a distance of 3.05 metres (10.0 ft.) both upstream and downstream of said

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wall. The Contractor shall utilize silt and sediment controls in accordance with O.P.S.D. details, and shall clean out and remove and dispose of the controls once the work areas have been stabilized. The design parameters of the Ruscom River Drain at the location of this retaining wall installation consists of a 2.75m (9 ft.) bottom width, 0.138% grade, and 1.5 horizontal to 1.0 vertical bank side slopes. The Contractor shall be required to cut any brush and strip the existing drain sideslopes of any vegetation as part of the grubbing operation. The Contractor shall also be required to dispose of all excavated and deleterious materials, as well as any demolished unsuitable and grubbed out materials, to a site to be obtained by it at its own expense. The Contractor shall note that the survey indicates that the existing drain bottom is up to approximately 300mm above the design grade. The Contractor shall be required to provide any and all labour, material and equipment to set the wall bottom to the required design grades. The Contractor shall also be required to supply, if necessary for a stable base, a minimum thickness of 150mm (6") of 20mm (3/4") clear stone bedding underneath the precast concrete block walls, all to the full satisfaction of the Town Drainage Superintendent or Engineer.

The installation of the complete length of the retaining wall, including all appurtenances, shall be completely inspected by the Town Drainage Superintendent or Engineer prior to backfilling any portions of same. Under no circumstance shall the Contractor backfill same until the Town Drainage Superintendent or Engineer inspects and approves said wall installation. The Contractor shall provide a minimum notice of 48 hours to the Town Drainage Superintendent or Engineer prior to the commencement of this work. The installation of this retaining wall is to be performed during the normal working hours from Monday to Friday of the Town Drainage Superintendent or Engineer.

Once the new precast concrete block wall has been satisfactorily set in place, the Contractor shall completely backfill same with 300mm thick 20mm clear stone and native clay backfill, with the exception of the top 150mm (6") of the backfill material for the full top length of the the retaining wall, which shall be good clean topsoil. The wall and ancillary work shall be constructed all as shown on the plans included in **Appendix "REI-E"**.

Once the new replacement precast concrete block wall has been set in place at its location, the Contractor shall completely backfill same as noted above, and install the quarried limestone on filter cloth protection on the northwesterly downstream end of the wall. The erosion protection shall comprise quarried limestone rip rap pieces on filter cloth securely tamped in place. The rock shall have a minimum thickness of 305mm (12") as set out in **Appendix "REI-C"**. The installation of the endwalls, as well as the backfilling of the wall where applicable, shall be provided in compliance with Items 2), 3), and 4) of the **"Standard Specifications for Access Bridge Construction"** attached within **Appendix "REI-C"** and in total compliance and in all respects with the General Conditions included in Item 4) of said Appendix. The Contractor, in all cases, shall comply with these specifications and upon completion of the wall installation shall restore the adjacent areas to their original conditions. The synthetic filter mat to be used shall be non-woven, Geotextile GMN 160 conforming to O.P.S.S. 1860 Class I, as available from Armtex Construction Products, or equal. The quarried limestone to be used shall be graded in size from a minimum of 100mm (4") to a maximum of 250mm (10") on the 305mm thick areas. Said rock is available from Walker Aggregates Amherst Quarries in Amherstburg, Ontario, or equal.

Also, for use by the Contractor, we have established a Bench Mark near the site. This Bench Mark is the *"top nut of fire hydrant on the south side of County Road 14, on the west side of the asphalt driveway to MN 326"*, with same being **Elevation 195.767 metres**.

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As part of the work provided for the construction of the retaining wall, the Contractor shall be required to protect or extend any existing lateral tile ends which conflict with the wall installation. All existing lateral tile drains, where required, shall be extended to rock protection adjacent to the retaining wall and installed in accordance with the "Standard Lateral Tile Detail" as shown in **Appendix "REI-C"**, unless otherwise noted. Connections shall be made using manufacturer's couplers wherever possible. Grouted mortar joints shall be composed of three (3) parts of clean, sharp sand to one (1) part of Portland cement and the mortar connection shall be performed to the full satisfaction of the Town Drainage Superintendent or the Engineer. The mortar joint shall be of a sufficient mass around the full circumference of the joint to ensure a tight, solid seal.

All of the granular backfill, native fill, and the compaction levels for same shall be provided to the full satisfaction of the Town Drainage Superintendent or Engineer. The Contractor shall also note that any sediment being removed from the drain bottom as previously specified herein, shall not be utilized for the construction of the retaining wall, and shall be disposed of by the Contractor to a site to be obtained by it at its own expense.

The Contractor shall be required to restore any and all drain sideslopes damaged by the retaining wall installation, utilizing the available scavenged topsoil, and shall seed and mulch over all of said areas.

The placing and grading of any topsoil shall be carefully and meticulously carried out in accordance with Ontario Provincial Standard Specifications, Form 802 dated November 2010, or as subsequently amended, or as amended by these specifications and be readied for the seeding and mulching process. The seeding and mulching of all of the above mentioned areas shall comply in all regards to Ontario Provincial Standard Specifications, Form 803 dated November 2010 and Form 804, dated November 2013, or as subsequently amended, or as amended by these specifications. The seeding mixture shall be the Standard Roadside Mix (Canada No. 1 Lawn Grass Seed Mixture) as set out in O.P.S.S. 804. All cleanup and restoration work shall be performed to the full satisfaction of the Town Drainage Superintendent or Engineer.

As part of the seeding and mulching operation, the Contractor will be required to provide either a hydraulic mulch or spread straw mulch with an adhesive binder in accordance with O.P.S.S. 1103.05.03 dated November 2007, or as subsequently amended, to ensure that the grass seed will be protected during germination and provide a thick uniform cover to minimize erosion, where necessary. All work shall be meticulously done and completed in a good and workmanlike manner to the complete satisfaction of the Town Drainage Superintendent and the Consulting Engineer.

When all of the work for this installation has been completed, the Contractor shall ensure that positive drainage is provided to all areas, and shall ensure that the site is left in a neat and workmanlike manner, all to the full satisfaction of the Town Drainage Superintendent or Engineer.

V. GENERAL CONDITIONS

- a) The Town Drainage Superintendent or Engineer shall have authority to carry out minor changes to the work where such changes do not lessen the efficiency of the work.

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- b) The Contractor shall satisfy itself as to the exact location, nature and extent of any existing structure, utility or other object which it may encounter during the course of the work. The Contractor shall indemnify and save harmless the Town of Kingsville, the County of Essex and the Engineer and their representatives for any damages which it may cause or sustain during the progress of the work. It shall not hold the Town of Kingsville, the County of Essex or the Engineer liable for any legal action arising out of any claims brought about by such damage caused by it.
- c) The Contractor shall provide a sufficient number of layout stakes and grade points so that the Drainage Superintendent and Engineer can review same and check that the work will generally conform to the design and project intent.
- d) The Contractor will be responsible for any damage caused by it to any portion of the Town or County road system, especially to the travelled portion. When excavation work is being carried out and the excavation equipment is placed on the travelled portion of the road, the travelled portion shall be protected by having the excavation equipment placed on satisfactory timber planks or timber pads. If any part of the travelled portion of the road is damaged by the Contractor, the Town shall have the right to have the necessary repair work done by its employees and the cost of all labour and materials used to carry out the repair work shall be deducted from the Contractor's contract and credited to the Town. The Contractor, upon completing the works, shall clean all debris and junk, etcetera, from the roadside of the drain, and leave the site in a neat and workmanlike manner. The Contractor shall be responsible for keeping all public roadways utilized for hauling materials free and clear of mud and debris.
- e) The Contractor shall provide all necessary lights, signs, and barricades to protect the public. All work shall be carried out in accordance with the requirements of the Occupational Health and Safety Act, and latest amendments thereto. If traffic control is required on this project, signing is to comply with the M.T.O. Manual of Uniform Traffic Control Devices (M.U.T.C.D.) for Roadway Work Operations and Ontario Traffic Manual Book 7.
- f) Following the completion of the work, the Contractor is to trim up any broken or damaged limbs on trees which are to remain standing, and it shall dispose of said branches along with other brush, thus leaving the trees in a neat and tidy condition.
- g) The whole of the work shall be satisfactorily cleaned up, and during the course of the construction, no work shall be left in any untidy or incomplete state before subsequent portions are undertaken.
- h) All driveways, laneways and access bridges, or any other means of access on to the job site shall be fully restored to their former condition at the Contractor's expense. Before authorizing Final Payment, the Town Drainage Superintendent and the Engineer shall inspect the work in order to be sure that the proper restoration has been performed. In the event that the Contractor fails to satisfactorily clean up any portion of these accesses, the Engineer shall order such cleanup to be carried out by others and the cost of same be deducted from any monies owing to the Contractor.
- i) The Contractor will be required to submit to the Town a Certificate of Good Standing from the Workplace Safety and Insurance Board prior to the commencement of the work, and the Contractor will be required to submit to the Town a Certificate of Clearance for the

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project from the Workplace Safety and Insurance Board before Final Payment is made to the Contractor.

- j) The Contractor shall furnish a Performance and Maintenance Bond along with a separate Labour and Material Payment Bond within ten (10) days after notification of the execution of the Agreement by the Town. One copy of said bonds shall be bound into each of the executed sets of the Contract. Each Performance and Maintenance Bond and Labour and Material Payment Bond shall be in the amount of 100% of the total Tender Price. All Bonds shall be executed under corporate seal by the Contractor and a surety company, authorized by law to carry out business in the Province of Ontario. The Bonds shall be acceptable to the Town in every way and shall guarantee faithful performance of the contract during the period of the contract, including the period of guaranteed maintenance which will be in effect for twelve (12) months after substantial completion of the works.

The Tenderer shall include the cost of bonds in the unit price of the Tender items as no additional payment will be made in this regard.

- k) The Contractor shall be required, as part of this Contract, to provide Comprehensive Liability Insurance coverage for not less than \$5,000,000.00 on this project, and shall name the Town of Kingsville and its officials and staff, the County of Essex and its officials and staff, and the Engineer and its staff as additional insured under the policy. The Contractor must submit a copy of this policy to both the Town Clerk and the Engineer prior to the commencement of work.
- l) Monthly progress orders for payment shall be furnished the Contractor by the Town Drainage Superintendent. Said orders shall be for not more than 90% of the value of the work done and the materials furnished on the site. The paying of the full 90% does not imply that any portion of the work has been accepted. The remaining 10% will be paid 45 days after the final acceptance and completion of the work and expiry of the lien period and payment shall not be authorized until the Contractor provides the following:
 - i) a Certificate of Clearance for the project from the Workplace Safety and Insurance Board
 - ii) proof of advertising
 - iii) a Statutory Declaration, in a form satisfactory to the Engineer and the Town, that all liabilities incurred by the Contractor and its Sub-Contractors in carrying out the Contract have been discharged and that all liens in respect of the Contract and Sub-Contracts thereunder have expired or have been satisfied, discharged or provided for by payment into Court.

The Contractor shall satisfy the Engineer or Town that there are no liens or claims against the work and that all of the requirements as per the Construction Lien Act, 1983 and its subsequent amendments have been adhered to by the Contractor.

- m) In the event that the Specifications, Information to Tenderers, or the Form of Agreement do not apply to a specific condition or circumstance with respect to this project, the applicable section or sections from the Canadian Construction Documents Committee C.C.D.C.2 shall govern and be used to establish the requirements of the work.

APPENDIX "REI-A"

STANDARD E.R.C.A. AND D.F.O.
MITIGATION REQUIREMENTS

As part of its work, the Contractor will implement the following measures that will ensure that any potential adverse effects on fish and fish habitat will be mitigated:

1. As per standard requirements, work will not be conducted at times when flows in the drain are elevated due to local rain events, storms, or seasonal floods. Work will be done in the dry.
2. All disturbed soils on the drain banks and within the channel, including spoil, must be stabilized immediately upon completion of work. The restoration of the site must be completed to a like or better condition to what existed prior to the works. The spoil material must be hauled away and disposed of at a suitable site, or spread an appropriate distance from the top of the drain bank to ensure that it is not washed back into the drain.
3. To prevent sediment entry into the drain in the event of an unexpected rainfall, silt barriers and/or traps must be placed in the channel during the works and until the site has been stabilized. All sediment and erosion control measures are to be in accordance with the related Ontario Provincial Standards. It is incumbent on the proponent and Contractors to ensure that sediment and erosion control measures are functioning properly and maintained/upgraded as required.
4. Silt or sand accumulated in the barrier traps must be removed and stabilized on land once the site is stabilized.
5. All activities including maintenance procedures should be controlled to prevent the entry of petroleum products, debris, rubble, concrete, or other deleterious substances into the water. Vehicular refuelling and maintenance should be conducted away from the water.
6. Any drain banks trimmed outside of the July 1st to September 15th timing window will require erosion control blankets to be installed to promote re-vegetation and to protect the slope from erosion in the interim.

Measures to Avoid Causing Harm to Fish and Fish Habitat

If you are conducting a project near water, it is your responsibility to ensure you avoid causing [serious harm to fish](#) in compliance with the *Fisheries Act*. The following advice will help you avoid causing harm and comply with the *Act*.

PLEASE NOTE: This advice applies to all project types and replaces all “Operational Statements” previously produced by DFO for different project types in all regions.

Measures

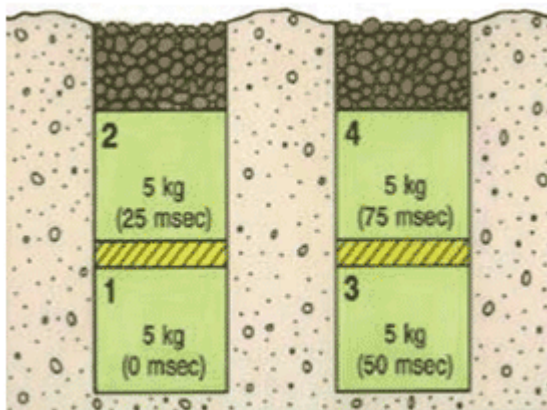
- Time work in water to respect [timing windows](#) to protect fish, including their eggs, juveniles, spawning adults and/or the organisms upon which they feed.
- Minimize duration of in-water work.
- Conduct instream work during periods of low flow, or at low tide, to further reduce the risk to fish and their habitat or to allow work in water to be isolated from flows.
- Schedule work to avoid wet, windy and rainy periods that may increase erosion and sedimentation.
- Design and plan activities and works in waterbody such that loss or disturbance to aquatic habitat is minimized and sensitive spawning habitats are avoided.
- Design and construct approaches to the waterbody such that they are perpendicular to the watercourse to minimize loss or disturbance to riparian vegetation.
- Avoid building structures on meander bends, braided streams, alluvial fans, active floodplains or any other area that is inherently unstable and may result in erosion and scouring of the stream bed or the built structures.
- Undertake all instream activities in isolation of open or flowing water to maintain the natural flow of water downstream and avoid introducing sediment into the watercourse.
- Plan activities near water such that materials such as paint, primers, blasting abrasives, rust solvents, degreasers, grout, or other chemicals do not enter the watercourse.
- Develop a response plan that is to be implemented immediately in the event of a sediment release or spill of a deleterious substance and keep an emergency spill kit on site.
- Ensure that building material used in a watercourse has been handled and treated in a manner to prevent the release or leaching of substances into the water that may be deleterious to fish.

- Develop and implement an Erosion and Sediment Control Plan for the site that minimizes risk of sedimentation of the waterbody during all phases of the project. Erosion and sediment control measures should be maintained until all disturbed ground has been permanently stabilized, suspended sediment has resettled to the bed of the waterbody or settling basin and runoff water is clear. The plan should, where applicable, include:
 - Installation of effective erosion and sediment control measures before starting work to prevent sediment from entering the water body.
 - Measures for managing water flowing onto the site, as well as water being pumped/diverted from the site such that sediment is filtered out prior to the water entering a waterbody. For example, pumping/diversion of water to a vegetated area, construction of a settling basin or other filtration system.
 - Site isolation measures (e.g., silt boom or silt curtain) for containing suspended sediment where in-water work is required (e.g., dredging, underwater cable installation).
 - Measures for containing and stabilizing waste material (e.g., dredging spoils, construction waste and materials, commercial logging waste, uprooted or cut aquatic plants, accumulated debris) above the high water mark of nearby waterbodies to prevent re-entry.
 - Regular inspection and maintenance of erosion and sediment control measures and structures during the course of construction.
 - Repairs to erosion and sediment control measures and structures if damage occurs.
 - Removal of non-biodegradable erosion and sediment control materials once site is stabilized.
- Clearing of riparian vegetation should be kept to a minimum: use existing trails, roads or cut lines wherever possible to avoid disturbance to the riparian vegetation and prevent soil compaction. When practicable, prune or top the vegetation instead of grubbing/uprooting.
- Minimize the removal of natural woody debris, rocks, sand or other materials from the banks, the shoreline or the bed of the waterbody below the ordinary high water mark. If material is removed from the waterbody, set it aside and return it to the original location once construction activities are completed.
- Immediately stabilize shoreline or banks disturbed by any activity associated with the project to prevent erosion and/or sedimentation, preferably through re-vegetation with native species suitable for the site.
- Restore bed and banks of the waterbody to their original contour and gradient; if the original gradient cannot be restored due to instability, a stable gradient that does not obstruct fish passage should be restored.
- If replacement rock reinforcement/armouring is required to stabilize eroding or exposed areas, then ensure that appropriately-sized, clean rock is used; and that rock is installed at a similar slope to maintain a uniform bank/shoreline and natural stream/shoreline alignment.
- Remove all construction materials from site upon project completion.

- Ensure that all in-water activities, or associated in-water structures, do not interfere with fish passage, constrict the channel width, or reduce flows.
- Retain a qualified environmental professional to ensure applicable permits for relocating fish are obtained and to capture any fish trapped within an isolated/enclosed area at the work site and safely relocate them to an appropriate location in the same waters. Fish may need to be relocated again, should flooding occur on the site.
- Screen any water intakes or outlet pipes to prevent entrainment or impingement of fish. Entrainment occurs when a fish is drawn into a water intake and cannot escape. Impingement occurs when an entrapped fish is held in contact with the intake screen and is unable to free itself.
 - In freshwater, follow these measures for design and installation of intake end of pipe fish screens to protect fish where water is extracted from fish-bearing waters:
 - Screens should be located in areas and depths of water with low concentrations of fish throughout the year.
 - Screens should be located away from natural or artificial structures that may attract fish that are migrating, spawning, or in rearing habitat.
 - The screen face should be oriented in the same direction as the flow.
 - Ensure openings in the guides and seals are less than the opening criteria to make “fish tight”.
 - Screens should be located a minimum of 300 mm (12 in.) above the bottom of the watercourse to prevent entrainment of sediment and aquatic organisms associated with the bottom area.
 - Structural support should be provided to the screen panels to prevent sagging and collapse of the screen.
 - Large cylindrical and box-type screens should have a manifold installed in them to ensure even water velocity distribution across the screen surface. The ends of the structure should be made out of solid materials and the end of the manifold capped.
 - Heavier cages or trash racks can be fabricated out of bar or grating to protect the finer fish screen, especially where there is debris loading (woody material, leaves, algae mats, etc.). A 150 mm (6 in.) spacing between bars is typical.
 - Provision should be made for the removal, inspection, and cleaning of screens.
 - Ensure regular maintenance and repair of cleaning apparatus, seals, and screens is carried out to prevent debris-fouling and impingement of fish.
 - Pumps should be shut down when fish screens are removed for inspection and cleaning.
- Avoid using explosives in or near water. Use of explosives in or near water produces shock waves that can damage a fish swim bladder and rupture internal organs. Blasting vibrations may also kill or damage fish eggs or larvae.
 - If explosives are required as part of a project (e.g., removal of structures such as piers, pilings, footings; removal of obstructions such as beaver dams; or preparation of a river or lake bottom for installation of a structure such as a dam or water intake), the potential for impacts to fish and fish habitat should be minimized by implementing the following measures:

- Time in-water work requiring the use of explosives to prevent disruption of vulnerable fish life stages, including eggs and larvae, by adhering to appropriate fisheries [timing windows](#).
- Isolate the work site to exclude fish from within the blast area by using bubble/air curtains (i.e., a column of bubbled water extending from the substrate to the water surface as generated by forcing large volumes of air through a perforated pipe/hose), cofferdams or aquadams.
- Remove any fish trapped within the isolated area and release unharmed beyond the blast area prior to initiating blasting
- Minimize blast charge weights used and subdivide each charge into a series of smaller charges in blast holes (i.e., decking) with a minimum 25 millisecond (1/1000 seconds) delay between charge detonations (see Figure 1).
- Back-fill blast holes (stemmed) with sand or gravel to grade or to streambed/water interface to confine the blast.
- Place blasting mats over top of holes to minimize scattering of blast debris around the area.
- Do not use ammonium nitrate based explosives in or near water due to the production of toxic by-products.
- Remove all blasting debris and other associated equipment/products from the blast area.

Figure 1: Sample Blasting Arrangement



Per Fig. 1: 20 kg total weight of charge; 25 msecs delay between charges and blast holes; and decking of charges within holes.

- Ensure that machinery arrives on site in a clean condition and is maintained free of fluid leaks, invasive species and noxious weeds.

- Whenever possible, operate machinery on land above the high water mark, on ice, or from a floating barge in a manner that minimizes disturbance to the banks and bed of the waterbody.
- Limit machinery fording of the watercourse to a one-time event (i.e., over and back), and only if no alternative crossing method is available. If repeated crossings of the watercourse are required, construct a temporary crossing structure.
- Use temporary crossing structures or other practices to cross streams or waterbodies with steep and highly erodible (e.g., dominated by organic materials and silts) banks and beds. For fording equipment without a temporary crossing structure, use stream bank and bed protection methods (e.g., swamp mats, pads) if minor rutting is likely to occur during fording.
- Wash, refuel and service machinery and store fuel and other materials for the machinery in such a way as to prevent any deleterious substances from entering the water.

Date modified:
2013-11-25

APPENDIX "REI-B"

SCHEDULE C
MITIGATION PLAN

The Mitigation Plan shall be in effect until June 30, 2015.

The Municipality shall undertake measures to minimize adverse effects on species at risk in accordance with the general conditions described in Part B and taxa-specific conditions described in Part C, and the monitoring and reporting requirements described in Part D of this Mitigation Plan.

PART A. DEFINITIONS

1. Definitions:

1.1. In this Schedule, the following words shall have the following meanings:

"DFO" means Fisheries and Oceans Canada;

"MNR" means the Aylmer District Office of the Ministry of Natural Resources;

"Contact" means to contact the MNR in accordance with the notification/contact schedule provided to the Municipality by the MNR Designated Representative from time to time;

"Holding Tub" means a large, light-coloured container fitted with a non-airtight latchable lid approved by the MNR for the temporary storage of captured snakes, turtles, amphibians, birds or eggs;

"Interagency Notification Form" means the form issued by DFO, available at www.dfo-mpo.gc.ca, which is required to be completed when a drain is being maintained or constructed;

"Monitoring and Reporting Form" means the document that must be completed by the Municipality in accordance with Part D to this Schedule and will be provided to the Municipality;

"Ontario Operational Statement" means one of the documents issued by DFO, available at www.dfo-mpo.gc.ca, that sets out the conditions and measures to be incorporated into a project in order to avoid negative impacts to fish and fish habitat in Ontario, as modified from time to time;

"Process Charts" means the charts attached as Part E to this Schedule which describe the steps set out in this Mitigation Plan;

"Seasonal Timing Windows Chart" means the chart attached as Part G to this schedule which describes the Sensitive Periods applicable to each Taxonomic Group;

"Sensitive Area" means a geographic area in the Municipality where additional mitigation measures are required to be undertaken for one or more Taxonomic Groups;

"Sensitive Areas Map" means any one of the maps attached as Part F to this schedule which sets out the applicable Sensitive Areas;

"Sensitive Period" means a time of year set out in the Seasonal Timing Windows Chart during which taxa-specific mitigation measures are required to be undertaken for a Taxonomic Group because of ambient air/water temperatures, water-levels or important life-history stages;

"Taxonomic Group" means the distinct group comprising one or more Species based on their taxonomic relationship and common approaches to mitigating adverse effects (i.e., fish, mussels, turtles, snakes, amphibians, birds or plants); and

"Work Zone" means the geographic area in the Municipality where an Activity in respect of one of the Drainage Works is being conducted.

- 1.2. For greater certainty, any defined terms that are not defined in section 1.1 have the same meanings as in the Agreement.

PART B. GENERAL MEASURES TO MINIMIZE ADVERSE EFFECTS

2. Process Charts

- 2.1. The general steps set out in this Part B are visually described in the Process Charts (Part E).

3. Review of Documentation

- 3.1. Prior to conducting any Activities in respect of the Drainage Works the Municipality shall determine if conditions apply to the place, time or manner in which the Municipality wishes to pursue them by reviewing:
 - (a) the Sensitive Areas Maps (Part F) to determine if the Work Zone for the proposed Activities will occur within a Sensitive Area;
 - (b) the DFO Reference Guide for Fish and Mussel Species at Risk Distribution Maps: A Referral Review Tool for Projects Affecting Aquatic Species at Risk;
 - (c) the Seasonal Timing Windows Chart (Part G) to determine if the proposed Activities will occur during a Sensitive Period for one or more of the Taxonomic Groups; and
 - (d) the Process Charts to determine if prior notification is required;
 - (e) the mitigation measures for each applicable Taxonomic Group in Part C to determine what additional site-specific mitigation measures, if any, are required.
- 3.2. The Municipality shall document the results of the review undertaken in accordance with section 3.1 using the Monitoring and Reporting Form.

4. Sensitive Areas Maps

- 4.1. The Sensitive Areas Maps contain sensitive information about the distribution of species at risk, are provided for the sole purpose of informing this Agreement and are not to be copied or distributed for any other purposes or to any other party without the prior written authorization of the MNR Designated Representative.

5. Prior Notification to Seek Direction

- 5.1. If, after completing the review of documents described in section 3.1, the Municipality determines that the proposed Activities will be undertaken:

- (a) in a place;
- (b) at a time; or
- (c) in a manner,

that requires prior notification in accordance with the Process Charts, the Municipality shall provide prior notification to the MNR in order for the MNR to determine if the Municipality must undertake additional site-specific or Species-specific mitigation

measures to minimize adverse effects on the Species and, if applicable, to identify such measures.

- 5.2. The prior notification under section 5.1 shall include a completed Interagency Notification Form:
- (a) in respect of maintenance/repair where the proposed Activities are being undertaken pursuant to subsection 3(18) or section 74 of the *Drainage Act*; or
 - (b) in respect of construction/improvement where the proposed Activities are being undertaken pursuant to section 77 or 78 of the *Drainage Act*.
- 5.3. Where an Activity is undertaken in accordance with section 124 of the *Drainage Act* and would otherwise have required prior notification under section 5.1, the Municipality shall Contact the MNR by email prior to the commencement of the Activity, and complete and submit the applicable Interagency Notification Form within one week of the Activity's completion, unless otherwise directed in writing by the MNR Designated Representative.

6. General Mitigation Measures

- 6.1. Notwithstanding that prior notification or additional mitigation measures may be required in accordance with this schedule, in undertaking any Activity at any time in respect of the Drainage Works the Municipality shall:
- (a) undertake the mitigation measures for sediment control and for erosion control and bank stabilization set out in The Drain Primer (Cliff Evanitski 2008) published by DFO (ISBN 978-0-662-48027-3), unless otherwise authorized in writing by the MNR Designated Representative;
 - (b) use net free, 100% biodegradable erosion control blanket for all erosion control or bank stabilization done in conjunction with their Activities or, if authorized in writing by the MNR Designated Representative, alternative erosion control blankets that provide equal or greater protection to individual Species; and
 - (c) where applicable, follow the guidelines set out in the following Ontario Operational Statements:
 - (i) Beaver Dam Removal;
 - (ii) Bridge Maintenance;
 - (iii) Culvert Maintenance;
 - (iv) Isolated Pond Construction;
 - (v) Maintenance of Riparian Vegetation in Existing Right of Ways; and
 - (vi) Temporary Stream Crossing.

PART C. TAXA-SPECIFIC MEASURES TO MINIMIZE ADVERSE EFFECTS

ADDITIONAL MITIGATION MEASURES FOR FISH SPECIES

7. Activities undertaken in Sensitive Areas for Fish

- 7.1. Subject to section 7.2, where a proposed Activity will occur in a Sensitive Area for a fish Species, the Municipality shall contact the MNR to seek further direction.
- 7.2. Section 7.1 does not apply where the applicable Drainage Works are:
 - (a) in a naturally dry condition;
 - (b) classified as a Class F drain under DFO's *Class Authorization System for the Maintenance of Agricultural Municipal Drains in Ontario* (ISBN 0-662-72748-7); or
 - (c) a closed drain.

ADDITIONAL MITIGATION MEASURES FOR MUSSEL SPECIES

8. Activities undertaken in Sensitive Areas for Mussels

- 8.1. Subject to section 8.2, where a proposed Activity will occur in a Sensitive Area for a mussel Species, the Municipality shall contact the MNR to seek further direction.
- 8.2. Section 8.1 does not apply where the applicable Drainage Works are:
 - (a) in a naturally dry condition;
 - (b) classified as a Class F drain in DFO's *Class Authorization System for the Maintenance of Agricultural Municipal Drains in Ontario* (ISBN 0-662-72748-7); or
 - (c) a closed drain.

ADDITIONAL MITIGATION MEASURES FOR TURTLE SPECIES

9. Training and Required On Site Materials for Turtles

- 9.1. The Municipality will ensure any person:
 - (a) involved in the capture, temporary holding, transfer and release of any turtle Species has received training in proper turtle handling procedures; and
 - (b) who undertakes an Activity has a minimum of two Holding Tubs and cotton sacks on site at all times.

10. Activities undertaken in Sensitive Areas and Sensitive Periods for Turtles

- 10.1. Subject to section 10.2, where a proposed Activity will occur in a Sensitive Area for any turtle Species and during a Sensitive Period for that Species, the Municipality shall:
 - (a) not undertake any Activities that include the excavation of sediment or disturbance to banks during the applicable Sensitive Period unless otherwise authorized;
 - (b) undertake Activities in accordance with any additional site-specific measures provided in writing by the MNR Designated Representative;
 - (c) avoid draw-down and de-watering of the Sensitive Area during the applicable Sensitive Period; and

- (d) if authorized by the MNR Designated Representative under (a) above to undertake Activities that include excavation of sediment or disturbance of banks, in addition to any other measures required under (b) above, ensure any person undertaking an Activity has at least two Holding Tubs on site at all times.

10.2. Section 10.1 does not apply where the applicable Drainage Works are:

- (a) in a naturally dry condition;
- (b) classified as a Class F drain in DFO's *Class Authorization System for the Maintenance of Agricultural Municipal Drains in Ontario* (ISBN 0-662-72748-7); or
- (c) a closed drain.

11. Measures for Encounters with Turtles During a Sensitive Period

11.1. Where one or more individuals belonging to a turtle Species is encountered in the undertaking of an Activity in any part of a Work Zone (including, but not limited to, a Sensitive Area) during a Sensitive Period for that Species, the Municipality shall:

- (a) capture and transfer all uninjured individuals of that Species into a Holding Tub;
- (b) capture and transfer all individuals injured as a result of the Activities into a Holding Tub separate from any Holding Tub containing uninjured individuals;
- (c) ensure that the Holding Tubs with the captured individuals are stored at a cool temperature to prevent freezing until the individuals can be transferred; and
- (d) immediately Contact the MNR to seek direction and to arrange for the transfer of the individual turtles.

12. Measures for Encounters with Turtles Laying Eggs or Nest Sites

12.1. Where one or more individuals belonging to a turtle Species laying eggs, or an active nest site of any turtle Species, is encountered in undertaking an Activity in a Work Zone, the Municipality shall:

- (a) not disturb a turtle encountered laying eggs and not conduct any Activities within 20 metres of the turtle while it is laying eggs;
- (b) collect any displaced or damaged eggs and capture any injured dispersing juveniles and transfer them to a Holding Tub;
- (c) store all captured injured individuals and collected eggs out of direct sunlight;
- (d) immediately Contact the MNR to seek direction and to arrange for the transfer of any injured individuals and eggs;
- (e) immediately stop any disturbance to the nest site and recover exposed portions with soil or organic material to protect the integrity of the remaining individuals;
- (f) not drive any equipment over the nest site or conduct any Activities within 5 metres of the nest site;
- (g) not place any dredged materials removed from the Drainage Works on top of the nest site;
- (h) mark out the physical location of the nest site for the duration of the project but not by any means that might increase the susceptibility of the nest to predation or poaching; and
- (i) where there are no collected eggs or captured individuals, record relevant information and Contact the MNR within 72 hours to provide information on the location of the nest site.

13. Measures for Encounters with Turtles Outside of a Sensitive Period

- 13.1. Where one or more individuals belonging to a turtle Species is encountered while undertaking an Activity in any part of a Work Zone (including, but not limited to, a Sensitive Area) but outside of any Sensitive Period for that Species, the Municipality shall:
- (a) briefly stop the Activity for a reasonable period of time to allow any uninjured individual turtles of that Species to leave the Work Zone;
 - (b) where individuals do not leave the Work Zone after the Activity is briefly stopped in accordance with (a) above, capture all uninjured individuals and release them in accordance with section 14.1;
 - (c) where circumstances do not allow for their immediate release, transfer captured uninjured individuals for a maximum of 24 hours into a Holding Tub which shall be stored out of direct sunlight and then release them in accordance with section 14.1;
 - (d) capture and transfer any individuals that have been injured into a Holding Tub separate from any Holding Tub containing uninjured individuals; and
 - (e) store all captured injured individuals out of direct sunlight and immediately Contact the MNR to seek direction and to arrange for their transfer.

14. Release of Captured Individuals Outside of a Sensitive Period

- 14.1. Where uninjured individuals are captured under section 13.1, they shall be released:
- (a) within 24 hours of capture;
 - (b) in an area immediately adjacent to the Drainage Works;
 - (c) in an area that will not be further impacted by the undertaking of any Activity; and
 - (d) not more than 250 metres from the capture site.
- 14.2. Following a release under section 14.1, the Municipality shall Contact the MNR within 72 hours of the release to provide information on the name of the Drainage Works, the location of the encounter and the location of the release site.

15. Measures for Dead Turtles

- 15.1. Where one or more individuals of a turtle Species is killed as a result of an Activity in a Work Zone, or if a person undertaking an Activity finds a deceased individual of a turtle Species within the Work Zone, the Municipality shall:
- (a) place any dead turtles in a Holding Tub outside of direct sunlight; and
 - (b) Contact the MNR within 72 hours to seek direction and to arrange for the transfer of the dead individuals.

ADDITIONAL MITIGATION MEASURES FOR SNAKE SPECIES

16. Training and Required On Site Materials for Snakes

- 16.1. The Municipality will ensure any person:
- (a) involved in the capture, temporary holding, transfer and release of any snake Species has received training in proper snake handling procedures; and
 - (b) who undertakes an Activity has a minimum of two Holding Tubs and cotton sacks on site at all times.

17. Activities undertaken in Sensitive Areas and Sensitive Periods for Snakes

- 17.1. Where a proposed Activity involves physical infrastructure (e.g., culverts, pump houses, etc.) and will occur in a Sensitive Area for any snake Species and during a *Sensitive Period – Hibernation* for that Species, the Municipality shall undertake the Activity outside of the Sensitive Period, unless otherwise authorized by and in accordance with any site-specific measures provided in writing by the MNR Designated Representative.
- 17.2. Where a proposed Activity will occur at or adjacent to a known hibernacula (as identified by the MNR) for any snake Species and during a *Sensitive Period – Staging* for that Species, the Municipality shall:
 - (a) erect effective temporary snake barriers approved by the MNR that will not pose a risk of entanglement for snakes and that shall be secured so that individual snakes may not pass over or under the barrier or between any openings to enter or re-enter the Work Zone;
 - (b) inspect the temporary snake barriers daily during periods when snakes are active, capture any individuals incidentally encountered within the area bounded by the snake barrier and release the captured individuals in accordance with section 21.1; and
 - (c) remove the temporary snake barriers immediately upon completion of the Activity.
- 17.3. Where a proposed Activity that does not involve physical infrastructure will occur in a Sensitive Area for any snake Species and during a *Sensitive Period – Staging* for that Species, the Municipality shall undertake the Activity outside of the Sensitive Period, unless otherwise authorized by and in accordance with any site-specific measures provided in writing by the MNR Designated Representative.

18. Measures for Encounters with Snakes During a Sensitive Period

- 18.1. Where one or more individuals belonging to a snake Species is encountered, or should an active hibernacula be uncovered, while conducting an Activity in any part of a Work Zone (including, but not limited to, a Sensitive Area) during a Sensitive Period for that Species, the Municipality shall:
 - (a) capture and transfer all injured and uninjured individual snakes of that Species into individual light-coloured, drawstring cotton sacks;
 - (b) place all cotton sacks filled with the captured individuals into a Holding Tub;
 - (c) ensure that the Holding Tub with the captured individuals is stored at a cool temperature to protect the snakes from freezing until the individuals can be retrieved or transferred;
 - (d) if an active hibernacula is uncovered, cease all Activities at the hibernacula site; and
 - (e) immediately Contact the MNR to seek direction and to arrange for the transfer and/or retrieval.

19. Measures for Encounters with Snake Nests

- 19.1. Where an active nest of any of the snake Species is encountered and disturbed while undertaking an Activity in any part of a Work Zone, the Municipality shall:
 - (a) collect any displaced or damaged eggs and transfer them to a Holding Tub;
 - (b) capture and transfer all injured dispersing juveniles of that Species into a light-coloured drawstring cotton sack;
 - (c) place all cotton sacks with the captured injured individuals into a Holding Tub;

- (d) ensure that the Holding Tub with the captured injured individuals is stored out of direct sunlight;
- (e) immediately Contact the MNR to seek direction and to arrange for the transfer of the injured individuals;
- (f) immediately stop any disturbance to the nest site and loosely cover exposed portions with soil or organic material to protect the integrity of the remaining individuals;
- (g) not drive any equipment over the nest site or conduct any Activities within 5 metres of the nest site;
- (h) not place any dredged materials removed from the Drainage Works on top of the nest site;
- (i) mark out the physical location of the nest site but not by any means that might increase the susceptibility of the nest to predation or poaching; and
- (j) where there are no collected eggs or captured individuals, Contact the MNR within 72 hours to provide information on the location of the nest site.

20. Measures for Encounters with Snakes Outside of a Sensitive Period

20.1. Where one or more individuals belonging to a snake Species is encountered while undertaking an Activity in any part of a Work Zone (including, but not limited to, a Sensitive Area) but outside of any Sensitive Period for that Species, the Municipality shall:

- (a) follow the requirements in section 16;
- (b) briefly stop the Activity for a reasonable period of time to allow any uninjured individual snakes of that Species to leave the Work Zone;
- (c) if the individuals do not leave the Work Zone after the Activity is briefly stopped in accordance with (b) above, capture all uninjured individuals and release them in accordance with section 21.1;
- (d) where circumstances do not allow for the immediate release of captured uninjured individuals, they may be transferred into individual, light-coloured, drawstring cotton sacks before placing them in a Holding Tub which shall be stored out of direct sunlight for a maximum of 24 hours before releasing them in accordance with section 21.1;
- (e) capture and transfer any individuals injured as a result of conducting the Activities into a Holding Tub separate from any Holding Tub containing uninjured individuals; and
- (f) store all captured injured individuals out of direct sunlight and immediately Contact the MNR to seek direction and to arrange for their transfer.

21. Release of Captured Individuals Outside of a Sensitive Period

21.1. Where uninjured individuals are captured under section 20.1, they shall be released:

- (a) within 24 hours of capture;
- (b) in an area immediately adjacent to the Drainage Works where there is natural vegetation cover;
- (c) in an area that will not be further impacted by the undertaking of any Activity; and
- (d) not more than 250 metres from the capture site.

- 21.2. Following a release under section 21.1, the Municipality shall Contact the MNR within 72 hours of the release to provide information on the name of the Drainage Works, the location of the encounter and the location of the release site.

22. Measures for Dead Snakes

- 22.1. Where one or more individuals belonging to a snake Species is killed as a result of an Activity in a Work Zone, or if a person undertaking an Activity finds a deceased individual of a snake Species within the Work Zone, the Municipality shall:
- (a) collect and transfer any dead individuals into a Holding Tub outside of direct sunlight; and
 - (b) Contact the MNR within 72 hours to seek direction and to arrange for the transfer of the carcasses of the dead individuals.

ADDITIONAL MITIGATION MEASURES FOR HERBACEOUS PLANTS

23. Activities Undertaken In Sensitive Areas for Herbaceous Plants

- 23.1. Where a proposed Activity will occur that involves physical disturbance to vegetated banks or the killing and/or removal of vegetation through chemical or mechanical means in a Sensitive Area for any herbaceous plant Species, the Municipality shall:
- (a) undertake the Activity outside of the Sensitive Period, unless otherwise authorized;
 - (b) limit equipment access and operations to the side of the Drainage Works that will minimize disturbances where any of the plant Species occur;
 - (c) locate temporary storage sites for excavated sediments or bank materials on areas of open soil away from where any of the plant Species are likely to occur;
 - (d) not use any broad spectrum herbicides in Sensitive Areas; and
 - (e) undertake Activities in accordance with any additional site-specific measures provided in writing by the MNR Designated Representative.

ADDITIONAL MITIGATION MEASURES FOR TREE SPECIES

24. Additional Measures for Butternut

- 24.1. Where Butternuts may exist in a Work Zone and may be affected by an Activity, the Municipality shall:
- (a) identify and mark as retainable trees all individual Butternut trees within the Work Zone during work planning site visits unless the individual Butternut has been assessed as a non-retainable tree due to infection by Butternut canker by a person designated by the Minister as a Butternut Health Assessor;
 - (b) retain and avoid disturbance to all individuals identified under (a) above that have been identified as retainable trees or that have not been assessed, unless otherwise authorized in writing by the MNR Designated Representative;
 - (c) conduct Activities by:
 - (i) limiting equipment access and operations to the side of the Drainage Works that will minimize disturbance to where any of the individual Butternut trees occur,
 - (ii) working around trees,

Town of Kingsville: Sensitive Areas Map for Snake Species at Risk

LEGEND



Sensitive Areas for all Snake SAR

Sensitive Areas for Butler's Garter Snake

Municipal Drains

Conservation Authority

Essex Region

Subwatershed Boundaries

Municipal Boundaries

First Nations Territories

Urban Area

SCALE: 1:110,000



UTM NAD83 CNT Zone 17

Base data derived from the Natural Resource Values Information System (NRVIS). Sensitive Areas based on data from NRIS. Subwatershed Boundaries provided by Conservation Authorities.

This map was produced by the Aylmer District Office GIS Unit, Ministry of Natural Resources.

This map should not be relied on as a precise indicator of routes or locations, nor as a guide to navigation. The Ontario Ministry of Natural Resources (OMNR) shall not be liable in any way for the use of, or reliance upon, this map or any information on this map.

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Seasonal Timing Windows Chart

Date Codes		Monthly Intervals: E=Early(days 1-10); M=Middle(days 11-20); L=Late(days 21-31)																											
Dates		Jan	Feb	Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov	Dec
Taxa/Common Name				E	M	L	E	M	L	E	M	L	E	M	L	E	M	L	E	M	L	E	M	L	E	M	L		
Aquatic Species																													
Fish		IF in a Sensitive Area Identified on Maps THEN Prior Notification to the MNR is required (regardless of time of year)																											
Mussels		IF in a Sensitive Area Identified on Maps THEN Prior Notification to the MNR is required (regardless of time of year)																											
Turtles																													
Fowler's Toad																													
Jefferson Salamander																													
Terrestrial Species																													
Snakes - Hibernation																													
Snakes - Staging																													
Butler's Gartersnake - Hibernation																													
Butler's Gartersnake - Staging																													
Herbaceous Plants																													
Birds																													
NOT a Sensitive Time		IF NO Sensitive Areas Identified on Maps THEN NO Prior Notification to the MNR is required																											
Sensitive Time		IF in a Sensitive Area Identified on Maps THEN Prior Notification to the MNR is required																											
On-site Consultation		IF in a Highly Sensitive Area (e.g., a known hibernacula) THEN On-site consultation with the MNR is required																											

Staging refers to the time just after emergence from hibernation in the spring and the aggregation of individuals in the fall just prior to entering into hibernation sites.

APPENDIX "REI-C"

STANDARD SPECIFICATIONS **FOR ACCESS BRIDGE CONSTRUCTION**

1. CONCRETE FILLED JUTE BAG HEADWALLS

After the Contractor has set the new pipe in place, it shall completely backfill same and install new concrete filled jute bag headwalls at the locations and parameters indicated on the drawing. When constructing the concrete filled jute bag headwalls, the Contractor shall place the bags so that the completed headwall will have a slope inward from the bottom of the pipe to the top of the finished headwall. The slope of the headwall shall be one unit horizontal to five units vertical. The Contractor shall completely backfill behind the new concrete filled jute bag headwalls with Granular "B" and Granular "A" material as per O.P.S.S. Form 1010 and the granular material shall be compacted in place to a Standard Proctor Density of 100%. The placing of the jute bag headwalls and the backfilling shall be performed in lifts simultaneously. The granular backfill shall be placed and compacted in lifts not to exceed 305mm (12") in thickness.

The concrete filled jute bag headwalls shall be constructed by filling jute bags with concrete. All concrete used to fill the jute bags shall have a minimum compressive strength of 25 MPa in 28 days and shall be provided and placed only as a wet mix. Under no circumstance shall the concrete to be used for filling the jute bags be placed as a dry mix. The jute bags, before being filled with concrete, shall have a dimension of 460mm (18") x 660mm (26"). The jute bags shall be filled with concrete so that when they are laid flat, they will be approximately 100mm (4") thick, 305mm (12") to 380mm (15") wide and 460mm (18") long.

The concrete jute bag headwall to be provided at the end of the bridge pipe shall be a single or double bag wall construction as set out in the specifications. The concrete filled bags shall be laid so that the 460mm (18") dimension is parallel with the length of the new pipe. The concrete filled jute bags shall be laid on a footing of plain concrete being 460mm (18") wide, extending for the full length of the wall, and 305mm (12") thick extending below the bottom of the culvert pipe.

All concrete used for the footing, cap and bags shall have a minimum compressive strength of 25 Mpa at 28 days and shall include 6% \pm 1% air entrainment.

Upon completion of the jute bag headwall the Contractor shall cap the top row of concrete filled bags with a layer of plain concrete, minimum 100mm (4") thick, and hand trowelled to obtain a pleasing appearance. If the cap is made more than 100mm thick, the Contractor shall provide two (2) continuous 15M reinforcing bars set at mid-depth and equally spaced in the cap. The Contractor shall fill all voids between the concrete filled jute bags and the corrugated steel pipe with concrete, particular care being taken underneath the pipe haunches to fill all voids.

The completed jute bag headwalls shall be securely embedded into the drain bank a minimum of 500mm (20") measured perpendicular to the sideslopes of the drain.

As an alternate to constructing a concrete filled jute bag headwall, the Contractor may construct a grouted concrete rip rap headwall. The specifications for the installation of a concrete filled jute bag headwall shall be followed with the exception that broken pieces of concrete may be substituted for the jute bags. The concrete rip rap shall be approximately 460mm (18") square and 100mm (4") thick and shall have two (2) flat parallel sides. The concrete rip rap shall be fully mortared in place using a mixture composed of three (3) parts of clean sharp sand and one (1) part of Portland cement.

The complete placement and backfilling of the headwalls shall be performed to the full satisfaction of the Town Drainage Superintendent and the Engineer.

2. QUARRIED LIMESTONE ENDWALLS

The backfill over the ends of the corrugated steel pipe shall be set on a slope of 1-½ units horizontal to 1 unit vertical from the bottom of the corrugated steel pipe to the top of each end slope and between the drain banks. The top 305mm (12") in thickness of the backfill over the ends of the corrugated steel pipe shall be quarried limestone. The quarried limestone shall also be placed on a slope of 1-½ units horizontal to 1 unit vertical from the bottom of the corrugated steel pipe to the top of each bank of the drain adjacent each end slope. The quarried limestone shall have a minimum dimension of 100mm (4") and a maximum dimension of 250mm (10"). The end slope protection shall be placed with the quarried limestone pieces carefully tamped into place with the use of a shovel bucket so that, when complete, the end protection shall be consistent, uniform, and tightly laid in place.

Prior to placing the quarried limestone end protection over the granular backfill and on the drain banks, the Contractor shall lay non-woven geotextile filter fabric "GMN160" conforming to O.P.S.S. 1860 Class I or approved equal. The geotextile filter fabric shall extend from the bottom of the corrugated steel pipe to the top of each end slope of the bridge and along both banks of the drain to a point opposite the ends of the pipe.

The Contractor shall take extreme care not to damage the geotextile filter fabric when placing the quarried limestone on top of the filter fabric.

3. BRIDGE BACKFILL

After the corrugated steel pipe has been set in place, the Contractor shall backfill the pipe with Granular "B" material, O.P.S.S. Form 1010 with the exception of the top 305mm (12") of the backfill. The top 305mm (12") of the backfill for the full width of the excavated area (between each bank of the drain) and for the top width of the driveway, shall be Granular "A" material, O.P.S.S. Form 1010. The granular backfill shall be compacted in place to a Standard Proctor Density of 100% by means of mechanical compactors. All of the backfill material, equipment used, and method of compacting the backfill material shall be inspected and approved and meet with the full satisfaction of the Town Drainage Superintendent and Engineer.

4. GENERAL

Prior to the work commencing, the Town Drainage Superintendent and Engineer must be notified, and under no circumstances shall work begin without one of them being at the site. Furthermore, the grade setting of the pipe must be checked, confirmed, and approved by the Superintendent or Engineer prior to continuing on with the bridge installation.

The alignment of the new bridge culvert pipe shall be in the centreline of the existing drain, and the placing of same must be performed totally in the dry.

Prior to the installation of the new access bridge culvert, the existing sediment build-up in the drain bottom must be excavated and completely removed. This must be done not only along the drain where the bridge culvert pipe is to be installed, but also for a distance of 3.05 metres (10 ft.) both upstream and downstream of said new access bridge culvert. When setting the new bridge culvert pipe in place it must be founded on a good undisturbed base. If unsound soil is encountered, it must be totally removed and replaced with 20mm (3/4") clear stone, satisfactorily compacted in place.

When doing the excavation work or any other portion of the work relative to the bridge installation, care should be taken not to interfere with, plug up, or damage any existing surface drains, swales, and lateral or main tile ends. Where damage is encountered, repairs to correct same must be performed immediately as part of the work.

The Contractor and/or landowner performing the bridge installation shall satisfy themselves as to the exact location, nature and extent of any existing structure, utility or other object that they may encounter during the course of the work. The Contractor shall indemnify and save harmless the Town, the Engineer and their staff from any damages which it may cause or sustain during the progress of the work. It shall not hold them liable for any legal action arising out of any claims brought about by such damage caused by it.

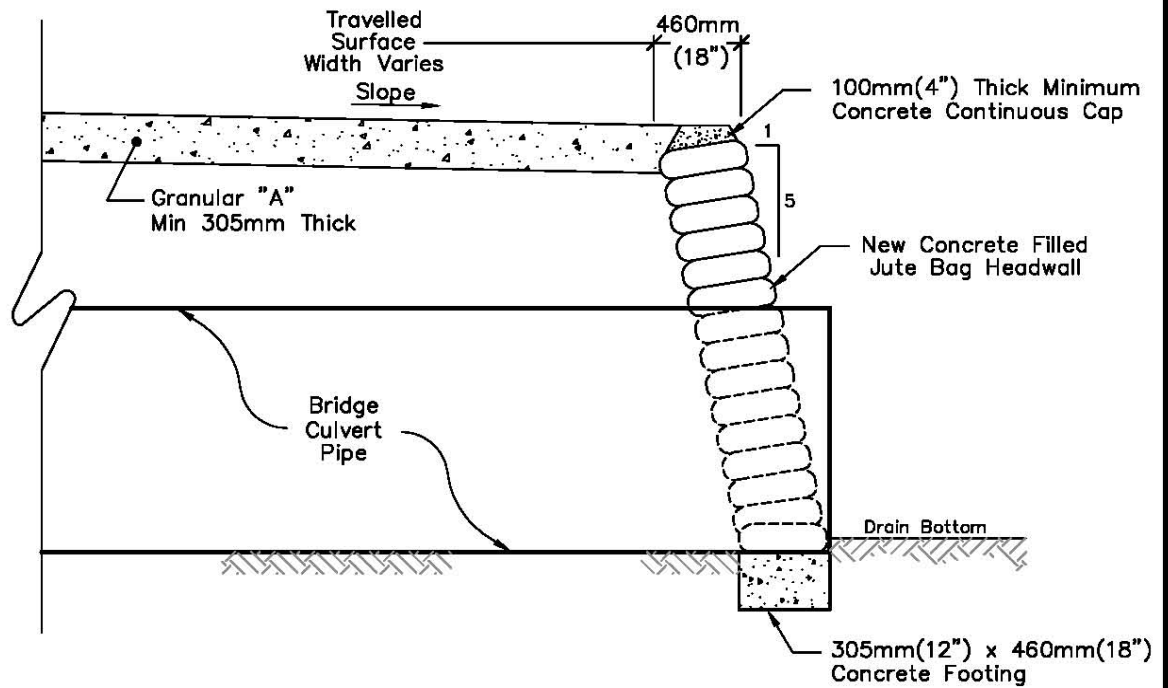
Where applicable, the Contractor and/or landowner constructing the new bridge shall be responsible for any damage caused by them to any portion of the Town road right-of-way. They shall take whatever precautions are necessary to cause a minimum of damage to same and must restore the roadway to its original condition upon completion of the works.

When working along a municipal roadway, the Contractor shall provide all necessary lights, signs, barricades and flagpersons as required to protect the public. All work shall be carried out in accordance with the requirements of the Occupational Health and Safety Act, and latest amendments thereto. If traffic control is required on this project, it is to comply with the M.T.O. Traffic Control Manual for Roadway Work Operations.

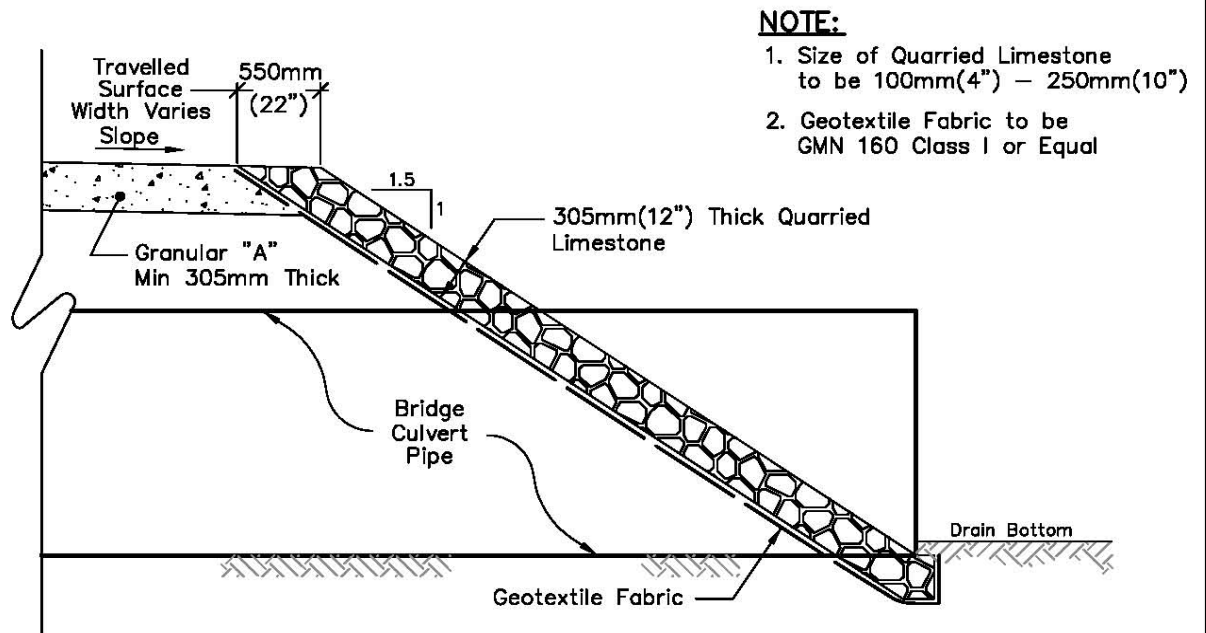
Once the bridge installation has been completed, the drain sideslopes directly adjacent the new headwalls and/or endwalls are to be completely restored including revegetation, where necessary.

All of the work required towards the installation of the bridge shall be performed in a neat and workmanlike manner. The general site shall be restored to its' original condition, and the general area shall be cleaned of all debris and junk, etc. caused by the work

All of the excavation, installation procedures, and parameters as above mentioned are to be carried out and performed to the full satisfaction of the Town Drainage Superintendent and Engineer.



Typical Jute Bag Headwall



Typical Quarried Limestone End Protection

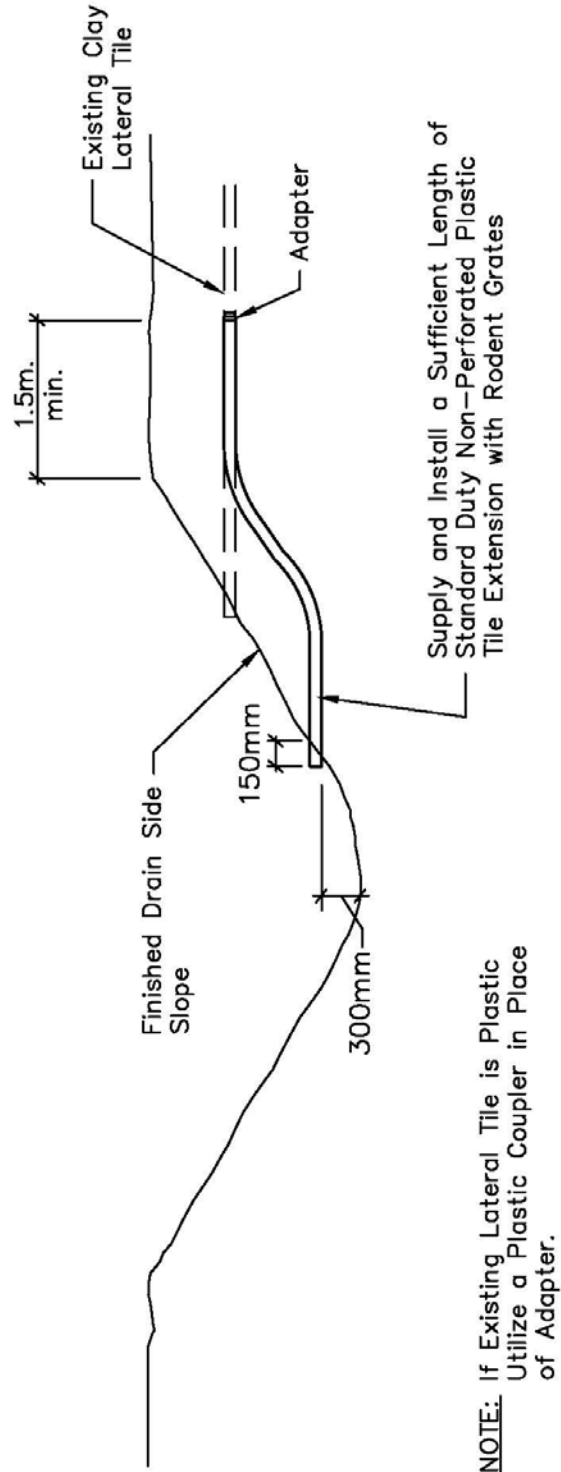
Rood Engineering Inc.

Consulting Engineers

9 Nelson Street

Leamington, Ontario N8H 1G6

519-322-1621



STANDARD LATERAL TILE DETAIL

N.T.S.



Block Headwall Installation Instructions for Culverts

1. A swift lift device will be required to place the blocks. A 75mm eye bolt will be required to place the caps.
2. The bottom course of blocks shall be founded on a firm solid base. The contractor shall provide a minimum levelling course of 150mm of compacted 3/4" Clear Stone, or a 100% compacted granular A, or lean concrete as a foundation base.
3. Ensure that the base is level and flat as this will greatly improve speed of installation.
4. On new culverts a minimum of 150mm of block wall will extend below the culvert to prevent scouring under the culvert.
5. The bottom course of blocks shall be embedded into the drain bottom to achieve the desired top elevation of the wall.
6. Blocks shall extend from the pipe invert across the full height and width of the drain and be imbedded a minimum of 300mm into the drain banks. Where possible the top of the block wall will match the height of the completed driveway.
7. Blocks shall be placed such that all joints are staggered.
8. Any excavation voids on the ends of block walls below subsequent block layers shall be filled with 3/4" Clear Stone.
9. Where block walls extend beyond three blocks in height, they should be battered a minimum of 1 unit horizontal for every 10 units vertical throughout the wall's full height and width. This can be achieved using pre-battered base blocks, or by careful preparation of the base.
10. Filter cloth (270R or equivalent) should be placed behind the wall to prevent the migration of fill material through the joints.
11. The walls should be backfilled with a free draining granular fill.
12. A uni-axial geogrid (SG350 or equivalent) should be used to tie back the headwalls where walls extend beyond 1.8m in height.
13. The face of the block wall shall not extend beyond the end of the pipe culvert.
14. Any gaps between the blocks and culvert shall be sealed with non-shrink grout for the full depth of the block.

APPENDIX "REI-D"

SECTION II
SPECIFICATIONS
FOR FISH SALVAGE

GENERAL
SECTION 201

The Work shall include the capture, salvage and release of fish that are trapped or stranded as the result of the Contractor's operations, at locations identified in the Fish Salvage Plan, and in co-operation with the Essex Region Conservation Authority (E.R.C.A.).

Fish capture shall be performed prior to dewatering, and in such manner that will minimize the injury to the fish.

MATERIALS
SECTION 202

All materials required for fish capture, salvage and release shall be supplied by the Contractor.

CONSTRUCTION
SECTION 203

The Contractor shall not commence any fish capture, salvage and release work until the Fish Salvage Plan has been accepted by the Consultant and the Conservation Authority. All work shall be performed in accordance with the Fish Salvage Plan unless otherwise determined by the Consultant or the Conservation Authority.

The Contractor shall ensure an ice-free pool is maintained throughout all fish capture and release operations.

All fish shall be captured within the area specified, and released at an acceptable location in the downstream water body. Fish shall be captured by electro fishing, netting, seining, trapping, or other method acceptable to the Consultant and/or the Conservation Authority.

MEASUREMENT AND PAYMENT
SECTION 204

Payment for this Work will be made at the lump sum price bid for "Fish Capture and Release". The lump sum price will be considered full compensation for all labour, materials, equipment, tools and incidentals necessary to complete the Work to the satisfaction of the Consultant.

APPENDIX "REI-E"

PLAN, PROFILE & SECTIONS
OF THE
**RUSCOM RIVER DRAIN
BANK PROTECTION**
(Geographic Township of Gosfield North)

IN THE
TOWN OF KINGSVILLE
IN THE
COUNTY OF ESSEX • ONTARIO



**ROOD
ENGINEERING
INC.**
CONSULTING ENGINEERS
Leamington, Ontario
519-322-1621

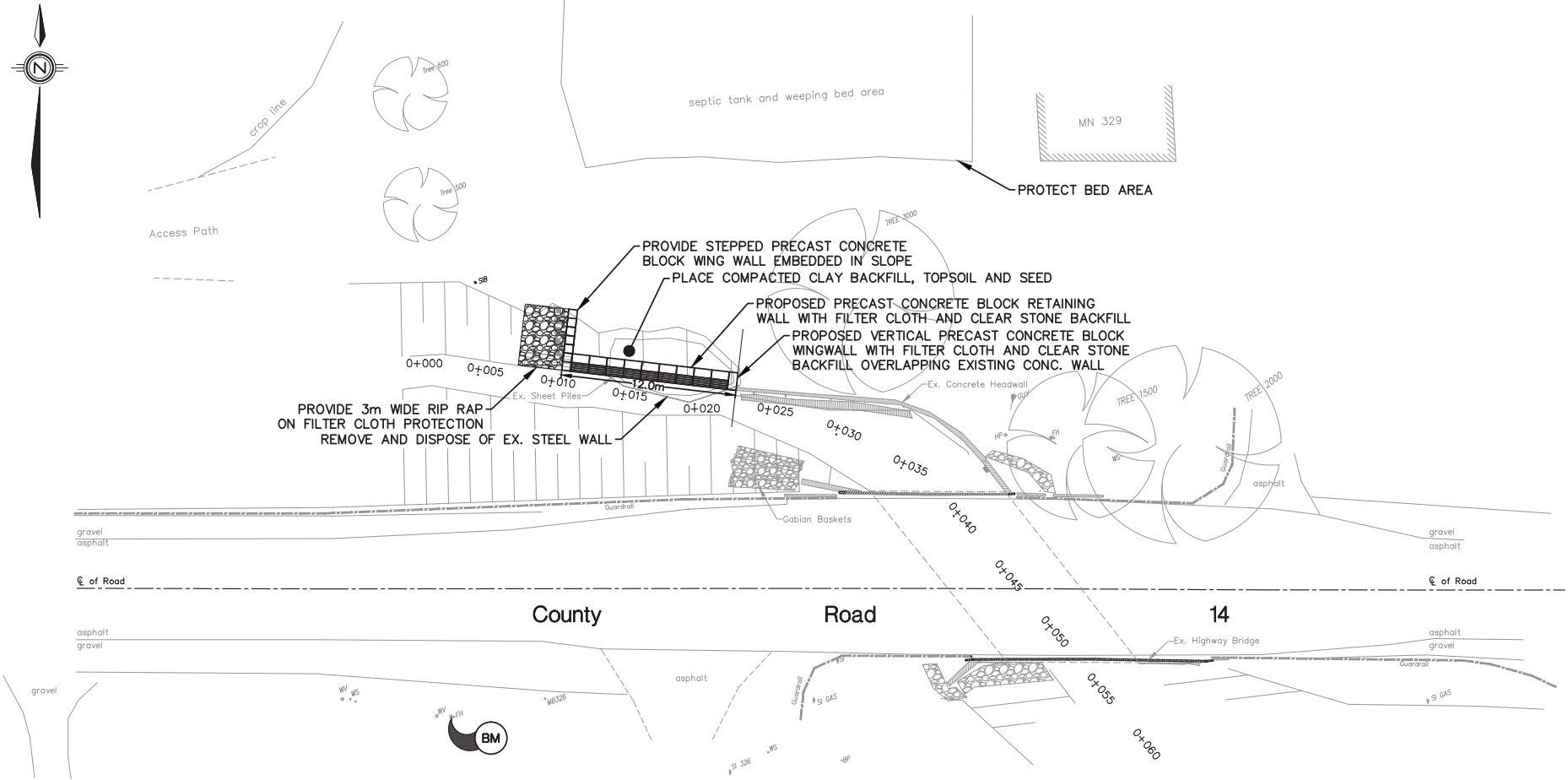
DATE: September 27th, 2017

TOWN OF KINGSVILLE

MAYOR: NELSON SANTOS
CLERK: JENNIFER ASTROLOGO
DRAINAGE
SUPERINTENDENT: KEN VEGH

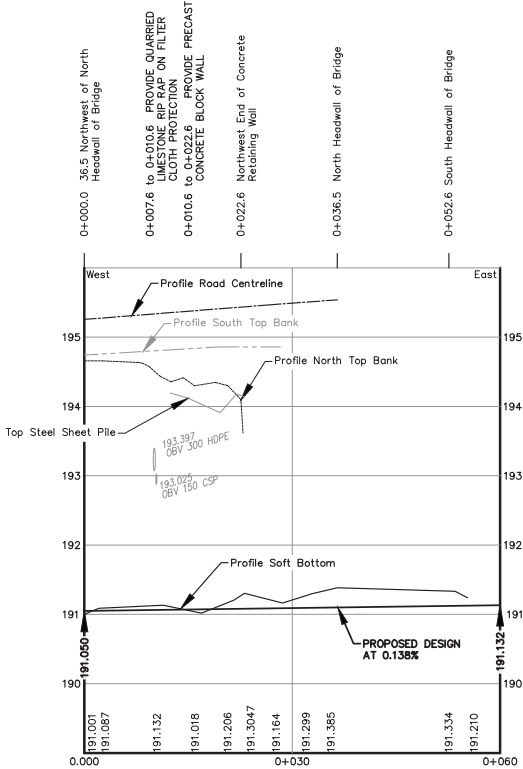
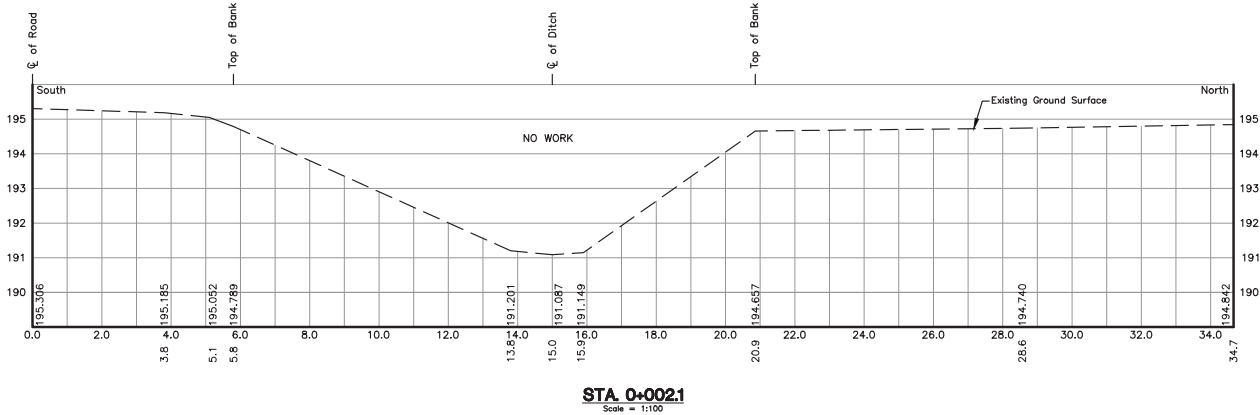
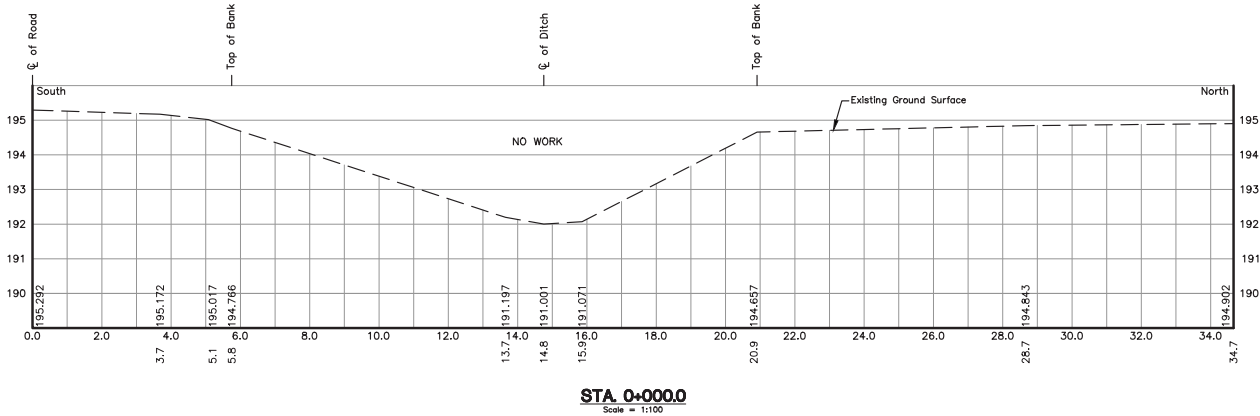
BENCHMARKS:

TOP NUT FIRE HYDRANT LOCATED SOUTH SIDE OF COUNTY
ROAD 14 EAST OF ASPHALT DRIVEWAY MN 326
ELEV. = 195.767m



PLAN

Scale = 1:200

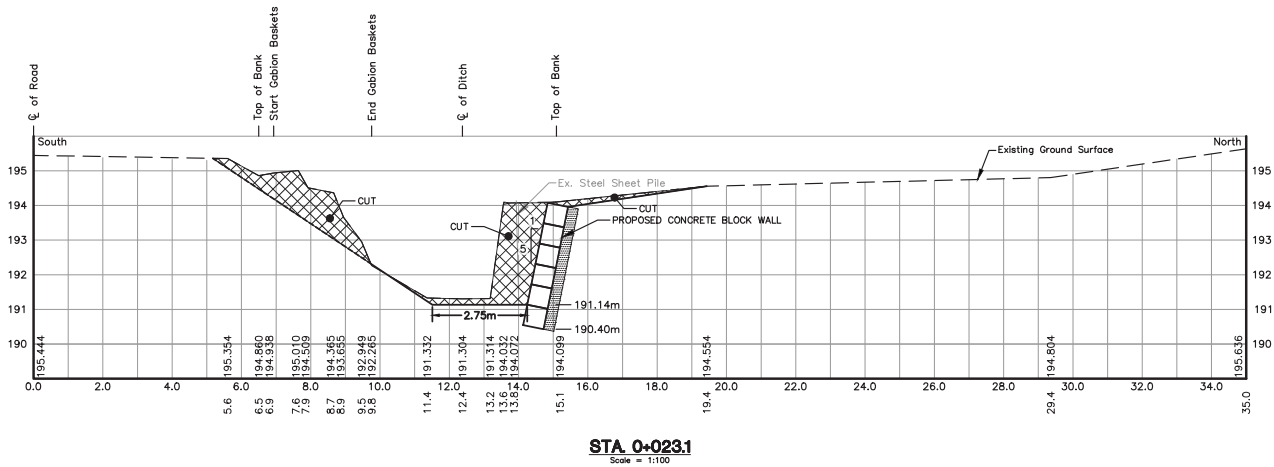
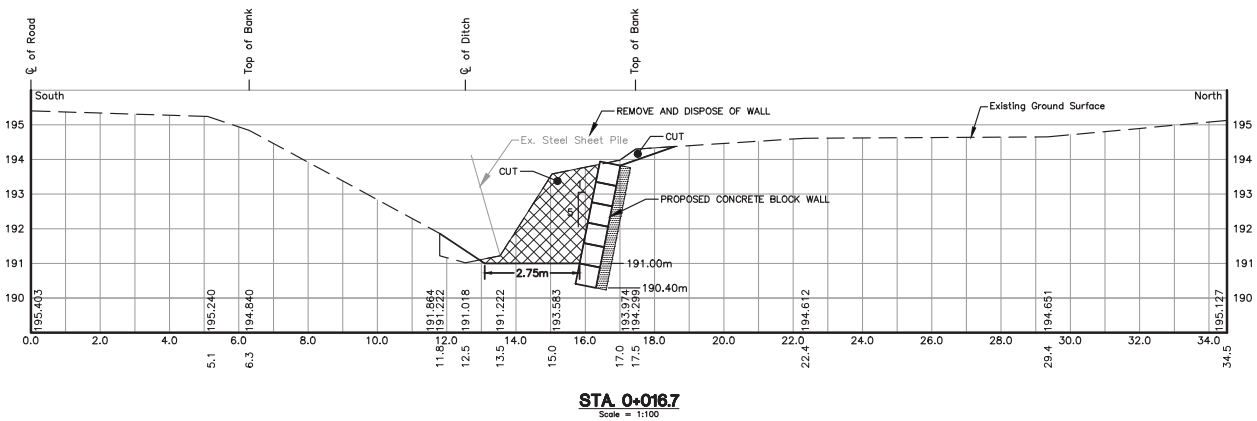
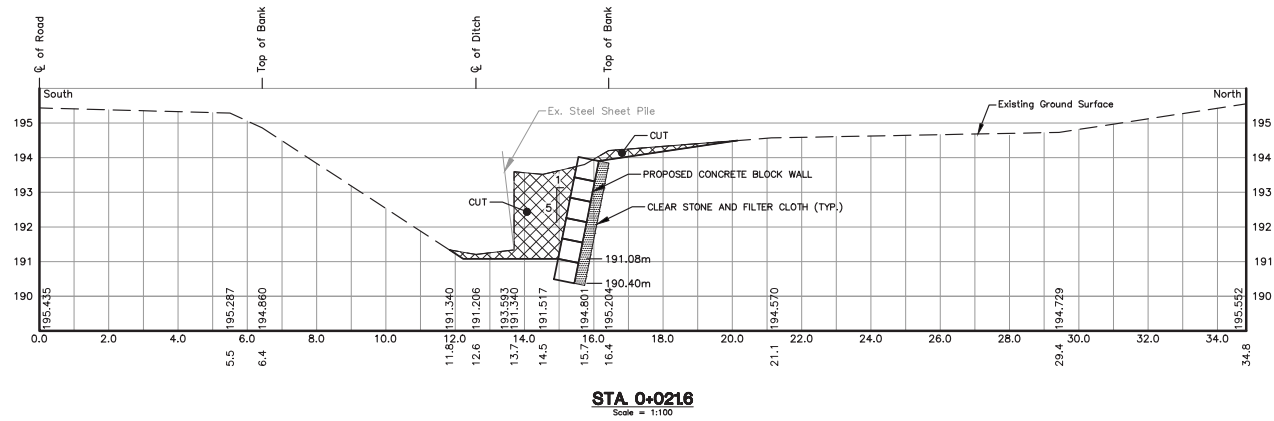
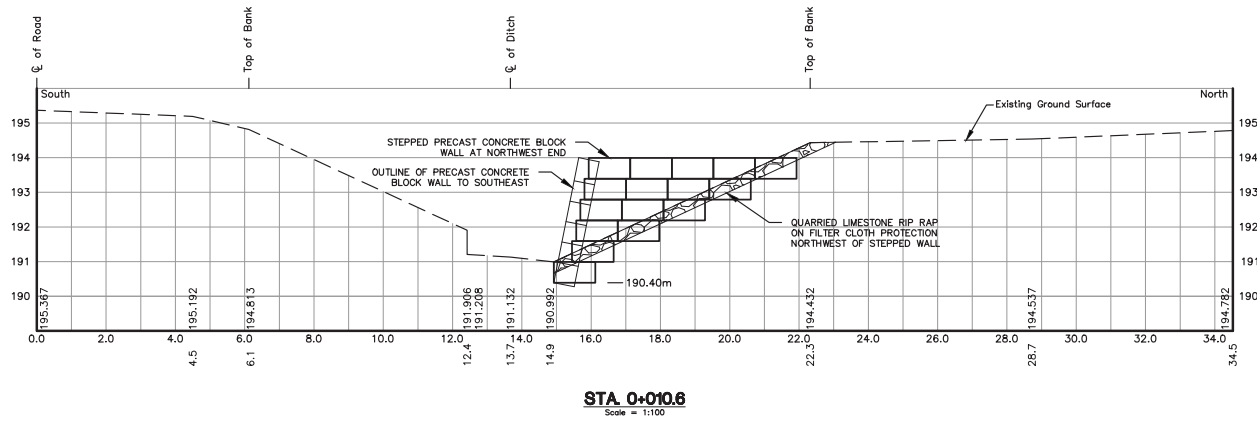


PROFILE

SCALE = 1:500 Hor.
1:50 Vert.

THESE PLANS HAVE BEEN REDUCED
AND THE SCALE THEREFORE VARIES.
FULL SCALE PLANS MAY BE VIEWED
AT THE MUNICIPAL OFFICE.

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PLOT CODE: 1:1
COMPUTER FILE: REI2015D013.DWG
FILE No.: REI2015D013
SHEET No.: 1 OF 2



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WATERSHED & KEY PLAN

OF THE

RUSCOM RIVER DRAIN BANK PROTECTION

(Geographic Township of Gosfield South)

IN THE

TOWN OF KINGSVILLE

IN THE

COUNTY OF ESSEX • ONTARIO

Gerard Road
GERARD ROAD, P.ENG.



**ROOD
ENGINEERING
INC.**
CONSULTING ENGINEERS
Leamington, Ontario
519-322-1621

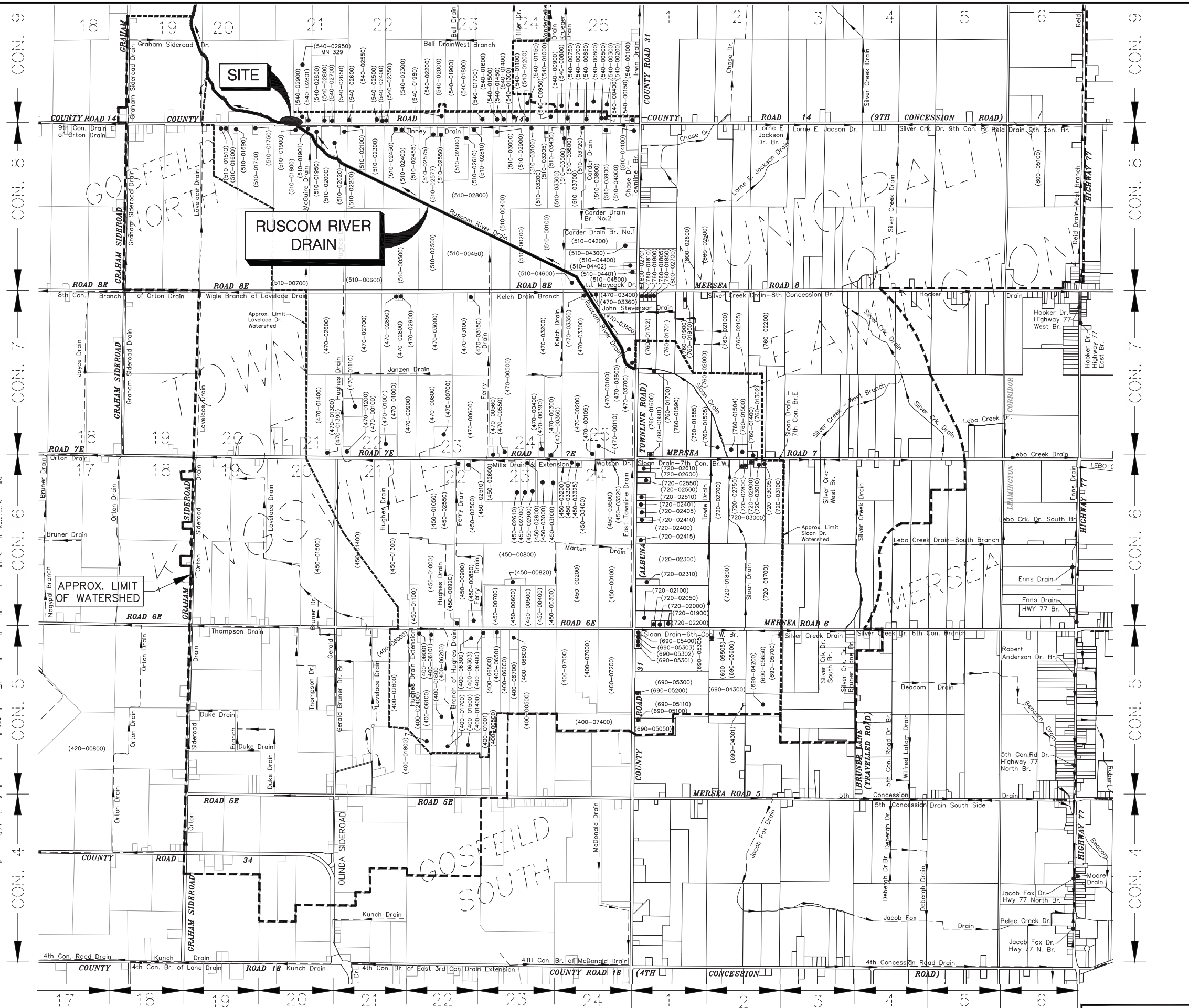
DATE: September 27th, 2017

TOWN OF KINGSVILLE

MAYOR: NELSON SANTOS
CLERK: JENNIFER ASTROLOGO
DRAINAGE SUPERINTENDENT: KEN VEGH



KEY PLAN
Scale = 1:100,000



WATERSHED PLAN

Scale = 1:15,000

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DRAWN BY: G.S.
PLOT CODE: 1:1
COMPUTER FILE: REI2015D013.DWG
FILE No.: REI2015D013 SHEET No.: W1 OF 4

ROLL	OWNERS	ROLL	OWNERS	ROLL	OWNERS
400-00500	Erie Sand and Gravel Limited	450-00200	Julius Langpeter	470-00900	Joseph & Elizabeth Lamprecht
400-00800	Donald & Mary Sayers	450-00800	Orton Farms Inc.	470-01000	William & Barbara Martens
400-01001	Richard & Fredrick Sharp	450-00900	Andy Tir	470-01001	Canadian Broadcasting
400-01400	A G Dick & Sons Ltd.	450-01000	Peter & Elizabeth Friesen	470-01110	Stephen Ryan
400-01500	Walter & Sari Bunn	450-01050	Orton Farms Inc.	470-01200	John Halbgewachs
400-01600	Wayne Epps	450-01300	Donald & Margaret Orton	470-01300	William & Valerie Fox
400-01700	Walter & Sari Bunn	450-01400	Donald & Paul Tiveron	470-01390	William & Valerie Fox
400-01800	Leslie & Beverly Chortos	450-02500	Ida & William Assinck	470-01400	William Fox
400-02400	E & B Medel Orchards Ltd.	450-02510	John & Agatha Giesbrecht	470-01500	Peter & Diane Lein
400-02800	Ronald Hamm	450-02550	Ida Assinck	470-02600	Walter & Annie Vanden Berg
400-06000	Andy & Carol Tir	450-02600	Frank & Norrine Mattia	470-02700	Walter & Annie Vanden Berg
400-06001	1109172 Ontario Limited	450-02610	Christopher & Christina Lapointe	470-02800	Murray & Bradley Simon
400-06100	Steve & Martha Chobrda	450-02700	John & Helena Boschman	470-02850	Trevor & Valerie Henricks
400-06200	Richard Hamm	450-02800	Garry & Wendy Foubert	470-02900	Brenda Dixon
400-06300	Victor & Helen Huebert	450-02900	Daniel & Carolin Robinet	470-03000	Joseph Palmer
400-06303	Andrews Greenhouses Inc.	450-03000	Christopher Conrad	470-03100	Brian & Margaret Reid
400-06400	Ronald Thompson	450-03100	Jerry Vandergaag	470-03150	Derrick Damm
400-06500	Sterling Acre Farms Limited	450-03200	John & Tina Quiring	470-03200	Robert Sieler
400-06501	Peter & Lisa Harb	450-03300	Paul & Natasha Dugas	470-03300	Joseph Palmer
400-06600	Erie Sand and Gravel Limited	450-03325	Jacob & Marlene Teigrob	470-03350	Jacob & Carolyn De Raadt
400-06700	Sterling Acre Farms Limited	450-03400	Paul & Cindy Orton	470-03360	James & Deborah Zsebok
400-06800	David & Gillian Ferguson	450-03500	Robert Woelk	470-03400	Janine Flood
400-07000	515793 Ontario Limited	450-03520	Morgan Belanger & Joseph Teti	470-03500	Thomas & Wendy Murray
400-07100	538269 Ontario Limited	470-00100	Kevin & Karen Flood	470-03600	Benjamin & Sara Epp
400-07200	Earl Dutot	470-00105	Donald & Margaret Brehaut	470-03700	Allan Taylor & Anne Holterman-Taylor
400-07400	Sterling Acre Farms Limited	470-00110	Patrick & Darlene Wilds	510-00100	Leonard & Elfrieda Flaming
450-00200	Julius Langpeter	470-00200	Paul & Rosemary Rauch	510-00200	George & John Krosiak
450-00300	Jacob Fehr	470-00300	David & Anna Dyck	510-00400	Janette Chevalier & Bradley Simon
450-00400	Issac & Margaret Fehr	470-00350	Cornelius Loewen	510-00450	Frank & Jane Klassen
450-00500	Andrew Boudry	470-00390	Robert Pearson	510-00500	Janette Chevalier
450-00600	Robert Neaves & Michele Grant-Neaves	470-00400	David & Anna Dyck	510-00600	Walter & Annie Vanden Berg
450-00700	Marko & Carmen Jeremic	470-00500	Paul Orton	510-00700	Paul Repko
450-00820	Jacob & Darlene Martens	470-00550	Ronald & Janet Willms	510-01100	Andrew & Hildegarde Von Flotow
450-00850	John & Carolann Martens	470-00560	Michelle Brown	510-01510	Francis & Tammy Charette
450-00920	Alan & Tatijana Feil	470-00600	Julia & George Krosiak	510-01600	Catherine & Gary Bondy
450-01100	Ronald Janzen	470-00700	Abe & Maria Knelsen	510-01690	Louie & Linda Tannous
450-00100	Barbara Langpeter	470-00800	Ronald & Marlene Regehr	510-01700	Norman & Rose Jobin

WATERSHED ROLL INFO - KINGSVILLE

THESE PLANS HAVE BEEN REDUCED
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FULL SCALE PLANS MAY BE VIEWED
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DRAWN BY: G.S.
PLOT CODE: 1:1
COMPUTER FILE: REI2015D013.DWG
FILE No.:
REI2015D013
SHEET No.:
W2 OF 4

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ROLL	OWNERS	ROLL	OWNERS	ROLL	OWNERS
510-01750	Jeffrey Wilson	510-04200	Howard Huy	540-02600	Marie-Rose Marion
510-01775	Norman & Rose Jobin	510-04300	Andrew & Yvonne Klein	540-02650	Bonnie & Donald Sherk
510-01800	Paul Repko	510-04400	Timothy Flood	540-02700	Brandon Hyatt
510-01900	Kendra Vanbelle	510-04402	Amy Maycock & Laurie Renaud	540-02800	Bradley Miller & Tina Young
510-01901	James & Michelle Staley	510-04500	Timothy & Janine Flood	540-02801	Kyle Webb & Kristyn Adams
510-01950	Peter & Wanda Rempel	510-04600	Gary Langeman	540-02850	1088003 Ontario Limited
510-02000	1394079 Ontario Inc	540-00150	Cornelius & Helen Bergen	540-02900	Mario & Jean Ingratta
510-02020	Susan Will	540-00200	Pyramid Farms Limited	540-02950	Derrick Will
510-02100	Denis Gauvreau & Ronda Seremack	540-00300	Georgette Derikx	540-03050	Derrick Will
510-02200	George & Cynthia Pretli	540-00400	Barbara Hunter	550-04800	Edmund Holt
510-02300	Claire & Sylvia Pearce	540-00500	Paul & Glenda Tremblay	LEAMINGTON	
510-02400	Frank & Jane Klassen	540-00600	Kevin Flood	690-04200	Jacob, Abram, Isaak, & Henry Friesen
510-02450	Craig & Nicole Gerard	540-00650	Bradley Simon	690-04300	Erie Sand and Gravel Limited
510-02455	Christopher McLean	540-00700	Jeffrey Andrews	690-04301	Erie Sand and Gravel Limited
510-02500	Harold & Susan Klassen	540-00750	Michael & Amanda Zimmerman	690-05050	Erie Sand and Gravel Limited
510-02550	Larry & Annette Doan	540-00800	Murray & Brenda Hunter	690-05100	Charles & Barbara Whittle
510-02575	Jane Klassen	540-00900	Daniel Neufeld	690-05110	Sterling Acre Farms Limited
510-02577	Harold & Susan Klassen	540-00950	David Neufeld	690-05200	John & Linda Whittle
510-02600	Budmar Farms Ltd.	540-01000	Frank & Lucille Ryall	690-05300	Ruth, John, & Charles Whittle
510-02610	Michael & Mary Janzen	540-01100	Heinrich & Katharina Dyck	690-05301	Heinrich & Helena Neufeld
510-02800	Steven Bradley	540-01150	Bradley Raymont & Terri Mogilefsky-Raymont	690-05302	Abraham & Maira Peters
510-02810	John & Hope Jackson	540-01200	Bradley Raymont	690-05303	Kyle & Kaitlyn Hamden
510-02900	James & Constance Heath	540-01300	Ronald & Sharon Raymont	690-05305	Mireya Campbell
510-03000	Stanley Jackson & Jill Jackson-Jakob	540-01450	Thomas & Lisa Matis	690-05400	Gelya Giedziun
510-03100	Betty Carder	540-01500	Emil & Anna Matis	690-05505	John & Betty Bartel
510-03200	C J Bradley & Sons Limited	540-01600	Ronald Bell	690-05600	Abe & Elizabeth Fehr
510-03205	Steven & Monica Bradley	540-01700	Ronald & Darlene Bell	690-05650	Gerald & Joan Willms
510-03300	James & Deanne Carder	540-01800	Joseph & Alice Mallia	690-05700	Morris & Katherine Wiper
510-03400	Timmothy & Tiffany Hamm	540-01900	John & Nellie Willemse	720-01700	Cheryl Willms
510-03500	Jeffrey Drouillard	540-01980	Gary & Susan Guyitt	720-01800	Robert & Nancy Armstrong
510-03600	James Webb & Susan Russelo	540-02000	Lawrence Ouellette	720-01900	Peter & Rosemarie Tiessen
510-03700	C J Bradley & Sons Limited	540-02200	C J Bradley & Sons Limited	720-02000	Anthony & Lori Pouget
510-03720	Stephen & Paula Parish	540-02300	C J Bradley & Sons Limited	720-02050	David Wall & Anna Friesen
510-03800	C J Bradley & Sons Limited	540-02350	Richard & Jenny Pearce	720-02100	Sidney Oliveira & Nicole Tremblay
510-03900	Michael & Helen Fritsch	540-02400	Adam Mailloux & Michelle Mantler	720-02200	Elizabeth Gerandt
510-04000	Daniel & Susan Kudroch	540-02500	Claire & Sylvia Pearce	720-02300	Katarina Barnesky & Joanne Vellinga
510-04100	Huy Howard	540-02550	Lyle and Charlene Pearce	720-02310	Diane & Michael Hunt

WATERSHED ROLL INFO - KINGSVILLE & LEAMINGTON

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DRAWN BY: G.S.
PLOT CODE: 1:1
COMPUTER FILE: RE20150013.DWG
FILE No.:
RE2015D013
SHEET No.:
W3 OF 4

ROLL	OWNERS	ROLL	OWNERS
720-02400	Gene Woodsit inc. c/o Gene Woodsit	760-02100	Mary Kotulak
720-02401	Peter & Elizabeth Friesen	760-02105	Mary & Mary Ann Kotulak
720-02405	Johan & Maria Rempel	760-02200	Paul Keller
720-02410	Peter & Maria Banman	800-02500	Annie Tultz
720-02415	Jacob & Aganeta Guenter	800-02600	Murray & Joanne Stockwell
720-02500	Thomas & Cindy Hutchins	800-02700	Dolores Maylock-Jones & Michael Jones
720-02510	Margaretha Harms	800-02701	Union Gas Ltd Property Tax Department
720-02550	Allan & Callie Kwiatkowski		
720-02600	Thomas & Cindy Hutchins		
720-02610	Thomas & Cindy Hutchins		
720-02700	George & Cheryl Willms		
720-02750	Michael Berry		
720-02800	Kent Dyke		
720-02900	Penny Arquette		
720-03000	Henry Willms		
720-03005	Kenneth & Tammy Campbell		
720-03010	Peter & Katharina Fehr		
720-03100	1196977 Ontario Limited Attn: Howard Huy		
760-01302	Charles & Shirley Chevalier		
760-01400	Gary & Yvette Chalmers		
760-01500	John & Lisa Klassen		
760-01504	Douglas Young		
760-01505	Gregory Neufeld & Bailey Westgate		
760-01585	Nancy Burgess		
760-01590	Judy Kenna		
760-01600	Patricia Jewell		
760-01601	Michael & Denise Kersey		
760-01700	Bradley Dietrich		
760-01701	Victor & Anita Thiessen		
760-01702	Gerhard & Agatha Krahm		
760-01800	Edward & Tanya De Jong		
760-01805	Edward & Tanya De Jong		
760-01810	Franz & Anna Wiebe		
760-01850	Bernhard & Anna Froese		
760-01900	Thomas & Paul Keller		
760-01950	Johan & Katharina Neudorf		
760-02000	David Keller		

WATERSHED ROLL INFO - LEAMINGTON

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