

THE CORPORATION OF THE TOWN OF AMHERSTBURG

BY-LAW NO. 2022 – 030

By-law to provide for the 2nd Concession Road Drain South (Open Portion North of Lowes Sideroad) Repair and Improvement based on the Drainage Report by Rood Engineering Inc.

WHEREAS a request for improvement of the 2nd Concession Road Drain South was received under section 78 of the Drainage Act;

WHEREAS Council of the Corporation of the Town of Amherstburg appointed an engineer for the purpose of preparation of an engineer's report for the 2nd Concession Road Drain South (Open Portion North of Lowes Sideroad) Repair and Improvement under section 78 of the Drainage Act;

WHEREAS Council of the Corporation of the Town of Amherstburg has authorized Gerard Rood, P. Eng., to prepare a report and said engineer's report dated February 2, 2022, can be referenced as Schedule A, as attached hereto;

WHEREAS \$1,889,600.00 is the estimated cost of improving the drainage works;

AND WHEREAS the report was considered by the Amherstburg Drainage Board at the meeting held on March 22, 2022.

NOW THEREFORE the Council of the Corporation of the Town of Amherstburg hereby enacts as follows:

1. AUTHORIZATION

The attached report is adopted and the drainage works is authorized and shall be completed as specified in the report

2. BORROWING

The Corporation of the Town of Amherstburg may borrow on the credit of the Corporation the amount of \$1,889,600.00 being the amount necessary for the improvements of the drainage works.

3. DEBENTURE(S)

The Corporation may issue debenture(s) for the amount borrowed less the total amount of:

- (a) Grants received under section 85 of the Drainage Act;
- (b) Monies paid as allowances;
- (c) Commuted payments made in respect of lands and roads assessed with the municipality;
- (d) Money paid under subsection 61(3) of the Drainage Act; and
- (e) Money assessed in and payable by another municipality.



4. PAYMENT

Such debenture(s) shall be made payable within 5 years from the date of the debenture(s) and shall bear interest at a rate not higher than 1% more than the municipal lending rates as posted by The Town of Amherstburg's Bank's Prime Lending Rate on the date of sale of such debenture(s).

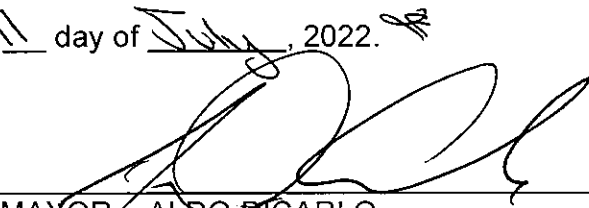

- (1) A special equal annual rate sufficient to redeem the principal and interest on the debenture(s) shall be levied upon the lands and roads and shall be collected in the same manner and at the same as other taxes are collected in each year for 5 years after the passing of this by-law.

(2) All assessments of \$1000.00 or less are payable in the first year in which the assessments are imposed.

Read a first and second time and provisionally adopted this 11th day of April, 2022.


~~MAYOR - ALDO DICARLO~~
~~DEPUTY CLERK - LEOMELOCHE~~

CLERK - VALERIE CRITCHLEY

Read a third time and finally passed this 11 day of July, 2022.


MAYOR - ALDO DICARLO

~~CLERK - VALERIE CRITCHLEY~~
DEPUTY CLERK - TAMMY FOWKES

2ND CONCESSION ROAD DRAIN SOUTH
(OPEN PORTION NORTH OF LOWES SIDEROAD)
REPAIR AND IMPROVEMENT

Town of Amherstburg

(E09-2021-008)



Town of Amherstburg

*271 Sandwich Street South
Amherstburg, Ontario N9V 2A5
519-736-0012*

Rood Engineering Inc.

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

*Project REI2015D024
February 2nd, 2022*

February 2nd, 2022

Mayor and Municipal Council
Corporation of the Town of Amherstburg
271 Sandwich Street South
Amherstburg, Ontario
N9V 2A5

Mayor DiCarlo and Members of Council:

**2ND CONCESSION ROAD DRAIN SOUTH
OPEN PORTION REPAIR AND IMPROVEMENT NORTH OF LOWES SIDEROAD
Geographic Township of Malden
E09-2021-008
Project No. REI2015D024
Town of Amherstburg, County of Essex**

I. INTRODUCTION

Further to the motion from Council at their November 9th, 2015 meeting, authorizing administration to utilize a roster for drainage services under the Drainage Act, and pursuant to instructions received by letter dated November 27th, 2015, from Eric Chamberlain, C.E.T., Manager of Public Works, we have proceeded with an Engineer's Report to repair and improve the 2nd Concession Road Drain South open portion north of Lowes Sideroad. Our instructions, and this drainage report are in accordance with Section 78 of the "Drainage Act, R.S.O. 1990, Chapter D.17, as amended 2021".

The Town of Amherstburg has received a request for repair and improvement of the 2nd Concession Road Drain South open portion by Rocksedge Developments Inc. The repair and improvement of the drain will allow for development of the Rocksedge Developments Inc. lands east of Fryer Street (2nd Concession Road) to the quarry lands of Walker Aggregates, and north from Lowes Sideroad to the back of the lots and along the south side of Simcoe Street, shown as "Block A" on the watershed plan. The works to the 2nd Concession Road Drain South will also allow for the development of the Shaw – Mulberry Court parcels on the north side of Simcoe Street (Pike Road – County Road 18) shown as "Block B" on the watershed plan that will be connected through the Pike Road Auxiliary Drain Outlet.

II. DRAINAGE HISTORY

The 2nd Concession Road Drain South and its tributary the Pike Road Drain West are located entirely within the Town of Amherstburg. The drainage basin served by the 2nd Concession Road Drain South consists of approximately 218.067 hectares (538.84 acres). The upper end of the 2nd Concession Road Drain South watershed commences south of Alma Street (County Road 16) with the new storm sewer that will replace the abandoned portion of the drain extending southerly and downstream along the east side of Fryer Street (2nd Concession Road) to Simcoe Street at the junction of the Pike Road Drain and remaining covered portion of the 2nd Concession Road Drain South. The covered portion then extends just south of the lots along the south side of Simcoe Street and diverts easterly to the rear of the Saint- Jean-Baptiste elementary school where the covered drain outlets into the open portion of the drain. The open portion continues south and west around the school property and then south along the east side of Fryer Street to approximately the line between Lots 21 and 22, Concession 2, Geographic Township of Malden. The drain then continues easterly and southeasterly to an outlet in Big Creek south of Lowes Sideroad and west of Meloche Road (County Road 5). The Pike Road Drain extends along the north side of Simcoe Street (Pike Road – County Road 18) from the west side of Meloche Road westerly and downstream to its outlet in the 2nd Concession Road Drain South at Fryer Street. The last report for this drain is dated January 31st, 2005 and was prepared by Stantec Consulting for the enclosure of the open drain at 560 Simcoe Street. The Pike Road Auxiliary Drain Outlet connects with the Pike Road Drain just west of Martin Crescent and conveys flows to the south side of the lots located along Simcoe Street and westerly to the junction of the covered and open drain portions of the 2nd Concession Road Drain South at the rear of the school parcels as set out in the 2022 report by Rood Engineering. At the time of this report, the Pike Road Drain and Auxiliary Drain Outlet report had not yet been formally adopted by Council under by-law.

A review of the Municipal drainage records indicates that the last major work of repair and improvement to the 2nd Concession Road Drain South was completed under the Engineer's Report prepared by William J. Settrington, P.Eng., dated September 28th, 1979. This report provided allowances to the affected Owners for damages and land taken to relocate the existing open drain and included provisions for improvements to the drain, including excavation and relocation of part of the open portion, enclosing the drain from just south of Simcoe Street (Pike Road - County Road 18) northerly to the existing covered drain opposite Venetian Drive, and ancillary work. Stantec Consulting prepared a drainage report dated January 22nd, 2008, to provide a pipe enclosure of approximately 188 metres to accommodate development of the Saint-Jean-Baptiste Elementary School along Fryer Street. This covered drain through the parkland north of the school allowed for a temporary diversion of the open portion of the drain around the east and south sides of the school property and abandonment and filling in of the open drain along the front of the school property. Other than maintenance, no further works of repair and improvement of the drain by way of an Engineer's Report have been completed on the affected portion since the report prepared by William J. Settrington, P.Eng., dated

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Open Portion Repair and Improvement (E09-2021-008)
Town of Amherstburg - REI2015D024**

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September 28th, 1979, and the Stantec Consulting report dated January 22nd, 2008. Rood Engineering was appointed and provided an updated maintenance schedule of assessment for the drain in their 2012 report to allow for completion of required maintenance to the drain and proceed with proper and fair assessment for the works that the Town had to complete.

The overall Pike Road Drain was last repaired and improved under a report dated April 28th, 1965, prepared by C.G.R. Armstrong, P.Eng. Said report provided for relocation of the drain off the road right-of-way at the request of the County Engineer, and enclosure of the westerly portion that abutted smaller private lots. At the time of this report preparation, a drainage report for the Pike Road Drain and Auxiliary Drain Outlet was also ongoing and being completed by Rood Engineering Inc. and has been submitted to the Town for processing pursuant to the Drainage Act.

III. INVESTIGATIONS AND ON-SITE MEETING

Prior to the on-site meeting, submissions were made to the Ministry of Natural Resources and Forestry (M.N.R.F.) and the Department of Fisheries and Oceans (D.F.O.) since the proposed works would be near the sensitive area of Big Creek. Contact from M.N.R.F. indicated that the area is surrounded by Eastern Fox Snake habitat, and this will require consideration during the course of the project.

D.F.O. responded that their mapping indicated no species at risk in the area. We were contacted by Lucente Engineering who is working for the developer (Rocksedge Developments Inc.) that requested the drain repairs and improvements and discussed coordinating any environmental studies that would be required. Follow-ups were done with biology consultant Dan Barcza of Sage Earth who had been working with biologist Todd Leadley, Lucente Engineering, and their client Rocksedge Developments Inc. Additional information was provided to D.F.O. at their request including extracts from a biological study report dated December 7th, 2011, that was prepared by biologists Gerry Waldron and Todd Leadley. D.F.O. then indicated that the project was being sent to their regulatory review unit in Burlington for a site-specific review. Due to concerns with possible fish habitat destruction, the D.F.O. required that we submit a “request for review” form. In consultation with the key stakeholders on the project, steps were taken to retain Ecofish Research to assist with the preparation of the form.

Through initial Town contact with Walker Aggregates, the developer, and their consultants, it was established that the quarry lands will continue to require an outlet for flows that are generally conveyed through the covered Norbury Drain. A request was made for abandonment of this municipal drain and the developer, and its consultants were asked to make investigations and provide written acceptance from the affected parcel owners to proceed with this and make it a private drain. Provision for this has been indicated on the Lucente Engineering plans and must be accounted for in the design of the development. The Norbury Drain will be abandoned

pursuant to the Drainage Act on the Walker Aggregates and Rocksedge Developments lands. The Drain will be diverted as a private drain from “X1” to “X2” and from “X3” to “X4” as indicated on the Rood Engineering plans in **Appendix “REI-E”** of this report.

An on-site meeting with the affected Owners was scheduled for June 2nd, 2016, at the Libro Credit Union Centre, located just east of the drainage works off Meloche Road. This meeting was well attended with the meeting moderated by Eric Chamberlain (Town Drainage Superintendent) and Gerard Rood (Rood Engineering Inc.). Those in attendance included: Rob Taylor, Randy & Joanne Deneau, Joe & Doris Kitka, Ed Smith (Rocksedge Developments), Julie Hunt, Pat Greenwood, Gerry Bronstein, Ryan Wall (Walker Aggregates), Karl Clifford, Lee Handscomb, Ken & Janet Gardiner, Yvonne Sinasac & Jim Lesperance, Clare Hamelin, and Dale Iler.

Mr. Chamberlain outlined the purpose of the meeting, explaining that the Town is working with the developer to repair and improve the 2nd Concession Road Drain South open portion to facilitate growth in the Town, and that an auxiliary outlet is planned from the Pike Road Drain to the improved 2nd Concession Road Drain South to address flooding concerns along and north of Simcoe Street (Pike Road – County Road 18) as per Council instructions. Mr. Clifford asked about the duration of the project and Mr. Rood suggested that it could take 6 to 10 months depending on regulatory reviews and approvals. Mr. Chamberlain estimated that tendering and construction would take approximately 2 months, once the drainage report has been adopted.

There was a question about filling in the existing drain along Fryer Street. Mr. Rood responded that the development will likely occur in stages, with the work being completed as appropriate. In response to a comment about flooded back yards, Mr. Rood confirmed that the proposed drainage works will be provided with the required capacity. There was also a question about drainage concerns along the Hawthorne area and Mr. Chamberlain suggested that the owners may need to install rear yard drains if none currently exist. He stated that he will meet with owners to review any issues not related directly to the current proposed works. The owner indicated that there have been problems since 2000.

Mr. Taylor asked about the area of the Smith – Rocksedge Developments site. Mr. Rood estimated the area at approximately 68 hectares or 170 acres. Mr. Chamberlain commented that the development will have Storm Water Management (S.W.M.) controls in their plans. Mr. Taylor asked about the subdivision being developed at Simcoe Street and Meloche Road. Mr. Chamberlain informed him that storm flows will proceed to Meloche Road and south to Big Creek and will not drain into the Pike Road Drain. Mr. Bronstein questioned if this would provide some relief to Simcoe and Fryer and Mr. Chamberlain confirmed that it would since the outlet would now be better. Mr. Hunt wanted to know if flows would go down Simcoe from Fryer and Mr. Chamberlain explained that the proposed future auxiliary outlet would intercept some of the upstream flows from the east to provide relief towards Fryer. It was noted by Mr. Hunt that the lands rise going east from Fryer Street and Mr. Rood explained that the improved open drain can

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be widened at the top as needed to go with a minimum 2 horizontal to 1 vertical side slope versus the old standard 1.5 to 1 slopes.

Mr. Lesperance asked about connection of new drain lines. Mr. Rood explained the future diversion and extra capacity for sewers along with provisions for overland conveyance. An owner inquired about the bridge at the Sportsmen's Club along Lowes Sideroad. Mr. Chamberlain stated that it is understood from a preliminary report prepared in 2008 by Stantec Consulting that the old bridge would be removed if the drain is diverted. In reply to a question about cost sharing, he replied that the development will bear the biggest cost, with some maintenance cost to the other affected owners, along with the roads paying their share of cost too. After the works are constructed, the cost of future maintenance of the drainage works will be assessed similar to the recent maintenance project that was carried out on the 2nd Concession Road Drain South.

The report will provide an updated Assessment Schedule along with provisions for sharing cost of work to all the affected lands and roads within the watershed. The procedure under the Drainage Act was also reviewed with the Owners. Mr. Chamberlain explained that assessment for maintenance work depends on where the work is done and who is involved, generally being the adjacent and upstream landowners. Owners were reminded that it is their responsibility to bring their drainage to the drain. It was questioned if the maintenance work should have been delayed and Mr. Chamberlain stated that existing problems needed to be addressed including flooding of the Sportsmen's Club parking. The Town has to take care of drain outlets and cannot allow them to remain blocked or the Town could be liable. Mr. Rood pointed out that the Essex Region Conservation Authority (E.R.C.A.) has controls in place to set grades and reduce the risk of flooding.

Mr. Chamberlain explained that house sewers are policed through the Building Department and Engineering. Mr. McCurdy asked if owners along Fryer Street will be charged for future maintenance and Mr. Chamberlain replied that yes, they would, with work typically conducted every 10 to 15 years. In response to a question about the west side of Fryer Street, he replied that it would remain the same for now. It was also confirmed to the owners that the drainage works would proceed even if the development does not start.

An owner expressed concern with water back up at the Sportsmen's bridge and wanted to know if the work would be done within a year, or he would put in a notice. Mr. Chamberlain responded that it is expected that the work will be done within a year subject to response times and approvals, and that construction timing has to account for the no instream work fish timing window from March 15th to June 30th each year. He confirmed that if a notice is put in, the Town will carry out any required investigations and evaluations pursuant to the Drainage Act. He noted that the Town can televise and flush the covered drain on Fryer Street if necessary. Mr. Greenwood was advised that his assessment for the proposed work should be similar to the maintenance work.

Mr. Chamberlain summed up that the Town would not do any work until the drainage report had been completed. The required work will be carried out as a capital project. He went on to advise that a public meeting with the Drainage Board would be scheduled and notices for same will be sent out to assessed lands along with a copy of the Drainage Report and Schedule of Assessment. The Owners were advised that they may contact either the Drainage Superintendent or the Engineer, if any questions arise in the interim.

IV. FIELD SURVEY AND INVESTIGATIONS

Subsequent to the on-site meeting we arranged for a topographic survey of the drain and bridges to be completed, along with the topography along the alignment of the 2nd Concession Road Drain South open portion, and the area for the proposed Pike Road Auxiliary Drain Outlet. We further arranged to get updated roll information from the Town, including information on the tax class of each of the properties affected by the Municipal Drain.

The consultant for the development provided information on their archaeological assessment including a plan indicating some “Findspots”, but none are located in the direct area of the proposed drainage works. “Findspots” are locations established by the archaeological investigator to possibly contain heritage information or objects that need to be investigated further.

We also made initial submissions to the Essex Region Conservation Authority regarding their requirements for work that would be proposed to be carried out on the drainage works. A response from the Conservation Authority was received on June 1st, 2016. A copy of their concerns and requirements is included in **Appendix “REI-A”** of this report. Further contact was made with E.R.C.A. and they provided comments and items to address in their August 23rd, 2021 response to the July 22nd, 2021 draft drainage report review. The project is located in an area that is within E.R.C.A. jurisdiction and the Town will be required to apply for an E.R.C.A. permit to proceed with construction of the drainage works. Restrictions include any residential construction activities to be located a minimum setback from the top of the drain banks of 8.0 metres plus the depth of the drain to a maximum of 15.0 metres. Any property within 15 metres of the top of a drain bank will require E.R.C.A. approvals for development of a lot and be required to meet all applicable requirements. The drainage works provided for in this report will allow for approvals of development of the abutting lands, but any works related to the subdivision development will be required to also proceed through the appropriate Planning Act provisions and all necessary approvals will need to be obtained from E.R.C.A. prior to any development on the site. The Town and Engineers will arrange for all other reviews and agency approvals to meet municipal, provincial, and federal requirements for proceeding. Should those agencies require any amendments to the works provided for in this drainage report, the Town will have to arrange for revised approvals from the E.R.C.A. office reflecting any changes that would be required. All

requirements and mitigation measures that need to be followed to satisfy E.R.C.A. and D.F.O. are included in the specifications and in **Appendix “REI-A”** of this report.

We also arranged for the Town to review the Ministry of Natural Resources and Forestry (M.N.R.F.) Species at Risk (S.A.R.) former agreement made with the Town pursuant to the Endangered Species Act, 2007. The former Agreement plans indicate that turtle and snake species are a concern for this work area as outlined during meetings with the Town and stakeholders. The former Agreement includes mitigation measures to be followed as outlined in “Schedule C Mitigation Measures” of the document and a copy of same as it relates to turtles and snakes is included herein in **Appendix “REI-B”**. Biology consultant Sage Earth registered the drain activity with the M.N.R.F. in August of 2017 and completed a report that satisfied the ministry requirements for the drainage works and proposed subdivision development. Provisions for offsetting and mitigation are included in the design plans, specifications, and appendix. The final report was prepared by Nicole Wajmer and a copy is available at the Town office for review.

Following submission of the “request for review” to D.F.O. that was prepared in consultation with Ecofish Research Ltd., they responded that a Fisheries Act Authorization may be required in order for the drain work to proceed. Arrangements were made for Ecofish to meet with D.F.O. staff and establish the requirements to satisfy the Authorization. The Authorization package prepared by Ecofish was submitted to D.F.O. in order to obtain the required approvals. Following amendments to the proposed works to the Drain, biology consultant Nicole Wajmer of Insight Environmental assisted with getting final input from the Department of Fisheries and Oceans. A response from the D.F.O. to the Town dated April 16th, 2021, indicated that the amended drainage proposal will not require authorization under the Fisheries Act or Species at Risk Act. A copy of the letter is included in **Appendix “REI-A”**. Ms. Wajmer also assisted with submissions to the Ministry of Environment, Conservation and Parks (M.E.C.P.) for their input and worked with the Town to re-register Eastern Foxsnake under Section 23.9 (Drainage Works) of Ontario Regulation (O. Reg) 242/08 for exemption based on the mitigation plans. Confirmation of registration of the Eastern Foxsnake was received on May 13th, 2021 and is included in **Appendix “REI-B”**. All mitigation requirements and special provisions for proceeding with the drainage works outlined in this report are included in the specifications and in **Appendix “REI-B”**.

Rocksedge Developments retained Landmark Engineers Inc. for the analysis of the new development layout and the required improvements that would be required to the 2nd Concession Road Drain South open portion. The layout and analysis prepared by Dan Krutsch, P.Eng. includes provisions for the future Pike Road Auxiliary Drain Outlet that is to be provided for reduced flooding on the lands served by the Pike Road Drain and for the storm water management for the Shaw – Mulberry Court development shown as “Block B” on the watershed plan. These plans for the 2nd Concession Road Drain South open portion repair and improvement and S.W.M. facilities have been reviewed by us with key stakeholders and are being incorporated as part of this drainage report for the required construction works and for the future

maintenance by the Town as part of the repaired and improved drainage works that serve all lands within the watershed.

V. FINDINGS AND RECOMMENDATIONS

Based on our investigations and the information provided at the on-site meeting, we have established the following:

- From the 1979 report for the drainage work, it was established that the 2nd Concession Road Drain South extends from its outlet into Big Creek near the south limit of Lot 20, Concession 2 northerly and westerly across Lots 20 and 21, Concession 2 to Fryer Street (2nd Concession Road). It then continues as an open drain along the east side of the roadway to just south of Simcoe Street (Pike Road - County Road 18) and then became a covered drain extending northerly to the Pike Road Drain at Simcoe Street.
- The 1979 report also notes that the drain comprises the open channel along with the covered drain along the east side of Fryer Street north of Simcoe Street to Alma Street together with catch basins and appurtenances.
- A new storm sewer will replace the abandoned portion of the 2nd Concession Road Drain South north of Simcoe Street, and the new sewer extends to a point south of Alma Street (County Road 16) to replace the former 2nd Concession Road Drain South covered drain.
- The open channel was temporarily diverted around the new Saint-Jean-Baptiste elementary school on Fryer Street when it was constructed in 2008, and the covered portion extended easterly through the green space north of the school building to the back of the school property to connect with the diverted open drain. We recommend that these works will now form part of the 2nd Concession Road Drain South municipal drainage works pursuant to this report and the Drainage Act.
- The Pike Road Drain extends from the west side of Meloche Road westerly and downstream along the north side of Simcoe Street to its outlet into the 2nd Concession Road Drain South at Fryer Street. This drain currently experiences some flooding on the covered drain portions along Simcoe Street, along with some flooding on some of the lands to the north. A drainage report for the Pike Road Drain and Auxiliary Drain Outlet is being processed for addressing these concerns while this drainage report was being prepared.

We recommend that the proposed works for the 2nd Concession Road Drain South open portion be completed to repair and improve the existing open drain as shown and detailed on the plans prepared by Landmark Engineers Inc. and forming part of this report, including new bridge installations, and the storm water management (S.W.M.) pond on the east side of the drain for the Rocksedge Developments and existing condition of upstream lands and roads, including provision for the storm water management of the Shaw – Mulberry Court development shown as “Block B” on the watershed plan. The S.W.M. pond, open drain improvements, and new bridges are all designed to handle the 1:100 year flows being conveyed to it through the proposed

Pike Road Auxiliary Drain Outlet and existing drain system. All work shall be carried out in conformance with the requirements established by the Authorities as outlined in the specifications and appendices forming part of this report. This will include construction of the improved channel and the S.W.M. pond on the east side of the drain and all offsetting and mitigation requirements set out in the D.F.O. Authorization and as outlined further in this report and in the specifications forming part of this report. The work shall include plantings in the easement along the west and south sides of the repaired and improved drain where it extends east from Fryer Street through the Rocksedge Developments lands, between the back property lines and the top of drain bank, along with measures in the drain channel to enhance aquatic habitat. The existing drain shall be improved with use of silt and sediment controls at the upstream and outlet end until vegetation has been established and the improved open drain section is stabilized. Once the improved drain is opened up, a fish salvage operation may be required to relocate any fish found in the existing drain to the improved channel. Where existing bridge pipes are removed and disposed of as shown on the plans, they shall be abandoned pursuant to Section 19 of the Drainage Act.

To address the flooding concerns with the Pike Road Drain, a separate report has been prepared and recently submitted by Rood Engineering for the construction of an Auxiliary Drain Outlet designed by Landmark Engineers to convey 1:100 year flows to the improved 2nd Concession Road Drain South open portion, connected at the 2nd Concession Road Drain to the northeast of the Saint-Jean-Baptiste elementary school. The Auxiliary Drain Outlet shall be a covered system with a swale constructed in accordance with the details provided in the 2022 Rood Engineering report and the plans and specifications for the new drain, extending from the north side of Simcoe Street to the new outlet into the 2nd Concession Road Drain South open drain location near the east side of the school parcels.

Upon completion of the improved open drain and the S.W.M. facilities on the east side of the 2nd Concession Road Drain South, we recommend that the Norbury Drain covered tile be investigated to maintain its outlet. This will provide for any existing drainage through the tile to be maintained until such time that it is supplanted by any development that occurs in the vicinity of that drain in the future.

The Town has received requests from Walker Aggregates and Rocksedge Developments for abandonment of the existing municipal Norbury Drain that extends across their lands north of Lowes Sideroad. The existing drain will be diverted between "X1" and "X2" and between "X3" and "X4" as shown on the Rood Engineering plan in **Appendix "REI-E"**. We recommend that the existing Norbury Drain portions on the Walker Aggregates and Rocksedge Developments lands from its upper end to the diversion at "X3" be abandoned pursuant to Section 19 of the Drainage Act. The south portion of the existing Norbury Drain on the parcels shown as M.N. 468 and M.N. 484 on the north side of Lowes Sideroad will remain a Municipal drain and be maintained by the Town pursuant to the Drainage Act.

Any lands within the watershed that are proposed to be developed in the future, except the Rocksedge Developments parcels in “Block A” and the Shaw – Mulberry Court development parcels in “Block B” that have been designed for in the drain repair and improvements and S.W.M. system, shall be restricted to their pre-development flows in accordance with current practice. This will prevent surcharging of the drainage system and the increased risk of erosion and damage to the drainage works that would occur.

Along Fryer Street just north of Lowes Sideroad, there is existing drainage from the roadway and a covered drain that extends easterly from lands at the northwesterly corner of Fryer Street and Lowes Sideroad, across Fryer Street to a catch basin maintenance hole on the east side of Fryer Street. It then continues as a tile drain easterly across the Rocksedge Developments lands to the 2nd Concession Road Drain South outletting near the northerly limit of the Sportsmen’s Association parcel M.N. 468. This drainage needs to be maintained when the 2nd Concession Road Drain South open portion is repaired and improved. The new Rocksedge Developments design will be required to include infrastructure works to address this existing drainage as construction proceeds in the southwest corner of the Rocksedge Developments lands shown as parcel M.N. 637 on the watershed plan.

We recommend that all of the works provided for in this report and the design plans prepared by Landmark Engineers will form part of the 2nd Concession Road Drain South including the S.W.M. facility, diversion weirs, and the other components illustrated on the plans and outlined in the report. All of these drainage works shall be maintained by the Town in the future pursuant to the provisions in the “Drainage Act, R.S.O. 1990, Chapter D.17, as amended 2021”.

VI. ALLOWANCES

We find that the work on the drain will impact some of the affected lands, particularly along the repaired and improved sections, and these lands require payment for the land taken by same. We therefore recommend that the following owners be compensated for the land taken for the drain construction repair and improvement including the S.W.M. pond on the east side of the drain as follows, namely:

1)	Rocksedge Developments Inc., Plan ID 1	Owner,	Part of Lots 21 & 22, Concession 2,	\$	10.00
2)	Rocksedge Developments Inc., Plan ID 3	Owner,	Part of Lot 21, Concession 2,	\$	10.00
3)	Rocksedge Developments Inc., Plan ID 2	Owner,	Part of Lot 21, Concession 2,	\$	10.00
4)	Town of Amherstburg,	Owner,	Fryer Street,	\$	10.00

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5)	Town of Amherstburg,	Owner,	Lowes Sideroad,	\$	10.00
					50.00
TOTAL FOR LAND TAKEN					\$ 50.00

We have provided for this land taken compensation in our estimate, as provided for under Section 29 of the “Drainage Act, R.S.O. 1990, Chapter D.17, as amended 2021”.

This compensation shall allow for all of the land necessary to construct the drain improvements, including a nominal value for the area for the S.W.M. facilities on the east side of the drain. A nominal value of \$10.00 for the drain and the buffer area has been provided to the abutting parcels utilizing a standard 8 metre width and the project being fully assessed to the Rocksedge Developments Inc. Nominal values have been used for the drain portions across the roadways as these are public lands intended to serve the landowners and a nominal value for the S.W.M. facilities as they are primarily required for the proposed Rocksedge Developments creation of a residential subdivision between Simcoe Street and Lowes Sideroad, and between Fryer Street and the quarry to the east, and for the Shaw – Mulberry Court development. The allowances provided shall establish the legal right for the Municipal drainage systems in their proposed locations and future access by the Town for any required maintenance works.

We find that all of the bridge work by the Contractor will typically be completed within the confines of the existing drain limits and road right-of-ways and have provided for full restoration works by the Contractor to be conducted at all disturbed areas. Therefore, no allowances to affected lands have been provided for these works pursuant to Sections 29 and 30 of the Drainage Act.

We find that the construction and future maintenance of the drainage works will require access along the east and north side of the drain, the east and south side of the drain adjacent to the Saint-Jean-Baptiste elementary school Parcels 1 and 2 as shown on the watershed plan, and the west side of the drain adjacent to the Sportsmen’s Club Parcel M.N. 468. We therefore recommend that the following owners be compensated for the damages to land and crops, if any, as follows, namely:

1)	Rocksedge Developments Inc., Plan ID 1	Owner,	Part of Lots 21 & 22, Concession 2,	\$	10.00
2)	Rocksedge Developments Inc., Plan ID 3	Owner,	Part of Lot 21, Concession 2,	\$	10.00
3)	Rocksedge Developments Inc., Plan ID 2	Owner,	Part of Lot 21, Concession 2,	\$	10.00
4)	Town of Amherstburg,	Owner,	Lowes Sideroad,	\$	10.00
5)	Town of Amherstburg,	Owner,	Fryer Street,	\$	10.00
					50.00
TOTAL FOR DAMAGES					\$ 50.00

These values for damages are based on a strip of land parallel to and immediately adjacent to the open drain, as set out above, comprising the buffer strip and access easement. This area will be used for the construction of the improved open drain and for future maintenance of the open drain, based on a standard 8 metre wide strip of land. These allowances are based on a nominal value of \$10.00 for damage to the affected lands and crops, if any based on all costs being borne by the Rocksedge Developments Inc. that requested the works to permit development of its lands. Public lands and roadways are provided with a nominal amount, along with the area for the proposed S.W.M. facility that will be primarily required for the Rocksedge Developments parcels denoted as “Block A” on the watershed plan, but also serves the Shaw – Mulberry Court development parcels noted as “Block B” on the watershed plan.

We have provided for this in our estimate as is provided for under Section 30 of the “Drainage Act, R.S.O. 1990, Chapter D.17, as amended 2021”.

VII. ESTIMATE OF COST

Our estimate of the Total Cost of this work, including all incidental expenses, is the sum of **ONE MILLION EIGHT HUNDRED EIGHTY NINE THOUSAND SIX HUNDRED DOLLARS (\$1,889,600.00)**, made up as follows:

CONSTRUCTION

PART A. 2ND CONCESSION ROAD DRAIN SOUTH REPAIR & IMPROVEMENT

- Item 1) **Brushing from Station 0+000 to Station 1+563:** provide all labour, material and equipment to clear all brush and deleterious materials along the course of the drain repair and improvement including all hauling, disposal and clean up, ready for excavation of improved drain channel, remove and re-install fencing when completed where required, approximately 1563 lineal metres, complete.
Lump Sum \$ 15,630.00

- Item 2) **Topsoil Stripping from Station 0+000 to Station 1+563:** provide all labour, material and equipment to strip topsoil and windrow material along the north and east sides of the improved open channel, approximately 150mm thickness and average width of 20 metres, for approximately 1,563 lineal metres, complete.
Lump Sum \$ 23,445.00

- Item 3) **Excavation from Station 0+000 to Station 1+563:** provide all labour, material and equipment to excavate existing drain alignment including loading, hauling material and windrowing along existing drain, grading fill windrow to maximum 4 to 1 side slopes to allow for maintenance, fine grading, clean up and restoration, approximately 1563 lineal metres (approximately 2360 cubic metres) including

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	pipe removal and disposal at locations noted on plans, complete.	Lump Sum	\$	23,600.00
Item 4)	<u>Station 0+320 to Station 0+342; Culvert A; replace existing bridge:</u> provide all labour, materials and equipment to remove existing steel pipe and endwalls; supply and install 22 lineal metres of 2,400mm span by 1,800mm rise precast concrete box culvert with filter cloth and bitumen wrap around joints, including excavation, bedding, granular backfill, compaction, steel sheet pile endwalls on the lower portion, interlocking precast concrete block headwalls minimum 450mm x 710mm x 1200mm size with 150mm thick precast concrete caps on the upper portion, barricade railings, rip rap on filter cloth, loading, hauling, disposal and clean up, complete.	Lump Sum	\$	185,000.00
Item 5)	<u>Station 0+619 to Station 0+641; Culvert B:</u> provide all labour, materials and equipment to supply and install 22 lineal metres of 2,400mm span by 1,800mm rise precast concrete box culvert with filter cloth and bitumen wrap around joints, including excavation, bedding, granular backfill, compaction, steel sheet pile endwalls on the lower portion, interlocking precast concrete block headwalls minimum 450mm x 710mm x 1200mm size with 150mm thick precast concrete caps on the upper portion, barricade railings, rip rap on filter cloth, loading, hauling, disposal and clean up, complete.	Lump Sum	\$	185,000.00
Item 6)	<u>Station 0+942 to Station 0+962; Culvert C:</u> provide all labour, materials and equipment to supply and install 20 lineal metres of 2,400mm span by 1,800mm rise precast concrete box culvert with filter cloth and bitumen wrap around joints, including excavation, bedding, granular backfill, compaction, steel sheet pile endwalls on the lower portion, interlocking precast concrete block headwalls minimum 450mm x 710mm x 1200mm size with 150mm thick precast concrete caps on the upper portion, 975mm storm sewer connection, barricade railings, rip rap on filter cloth, loading, hauling, disposal and clean up, complete.	Lump Sum	\$	192,000.00
Item 7)	<u>Erosion Protection from Station 1+160 to 1+390:</u> supply and install 400mm thick quarried limestone rip rap protection on non-woven filter cloth along pond inlet channel and diversion weir and at pond outlet and flow control weir including excavation, disposal, placement, cleanup and restoration, as shown on the plans, complete:			

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	(i) supply and place quarried limestone rock protection, approximately <u>160</u> tonnes at <u>\$80.00</u> per tonne.	\$	12,800.00
	(ii) supply and place non-woven filter cloth as underlay for rock protection, approximately <u>235</u> square metres at <u>\$6.00</u> per square metre.	\$	1,410.00
Item 8)	<u>Cable Concrete Protection from Station 1+160 to 1+390:</u> supply and install CC-45 cable concrete protection on non-woven filter cloth along pond inlet channel and diversion weir and at pond outlet and flow control weir including excavation, disposal, placement, cleanup and restoration, as shown on the plans, complete:		
	(i) supply cable concrete protection, approximately <u>216</u> square metres at <u>\$90.00</u> per square metre.	\$	19,440.00
	(ii) install and place cable concrete for channel protection, approximately <u>216</u> square metres at <u>\$40.00</u> per square metre.	\$	8,640.00
Item 9)	<u>Rock Vanes from Station 0+167 to Station 0+897:</u> provide all labour, material and equipment to construct rock vanes in the improved open drain bottom including, excavation, hauling and disposal, supply and placement of all rocks and filter cloth, approximately <u>10</u> locations at <u>\$1,550.00</u> each, complete.	\$	15,500.00
Item 10)	<u>Crossing Rock Vanes from Station 0+317 to Station 1+055:</u> provide all labour, material and equipment to construct crossing rock vanes in the improved open drain bottom including, excavation, hauling and disposal, supply and placement of all rocks and filter cloth, approximately <u>9</u> locations at <u>\$3,100.00</u> each, complete.	\$	27,900.00
Item 11)	<u>Snake Hibernaculum from Station 0+690 to Station 1+348:</u> provide all labour, material and equipment to construct hibernaculum sites along the drain as shown on the plans, including, excavation, hauling and disposal, supply and placement of all wood, concrete, rocks, gravel and filter cloth including pipe access from drain to the habitat, fill, grading, topsoil and seeding, approximately <u>4</u> locations at <u>\$2,500.00</u> each, complete.	\$	10,000.00
Item 12)	<u>Seeding, clean up and restoration:</u> supply and place topsoil on all disturbed areas including drain banks and provide hydro-seeding using native grass seed mix and mulch to restore lawn and grass areas and newly excavated areas, including the access easements along both sides of the drain and a 1 metre buffer along the sides		

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	of the drain as outlined in the specifications, including fine grading, clean up and restoration, complete, approximately <u>37,550</u> square metres at <u>\$2.50</u> per square metre.	\$ 93,875.00
Item 13)	<u>Tile Outlets:</u> provide all labour, materials and equipment to install H.D.P.E. ditch ends at locations where the intercepted tile drains outlet into the improved open drain, including excavation, install 300mm diameter plastic tile end with rodent gate, connections, backfill, compaction, and rock on filter cloth protection 1.5 metres wide from 1 metre above the pipe to the drain bottom, complete, approximately <u>4</u> tile ditch ends at <u>\$1,060.00</u> each.	\$ 4,240.00
	Subtotal Part A - 2nd Concession Road Drain South Repair and Improvement	\$ 818,480.00

PART B. STORM WATER MANAGEMENT POND

Item 14)	<u>Topsoil Stripping for SWM Pond:</u> provide all labour, material and equipment to strip topsoil and stockpile material along the pond sides for use in vegetating pond slopes and required bottom areas, approximately 150mm thickness, for approximately 34,000 square metres, complete. Lump Sum	\$ 25,500.00
Item 15)	<u>Excavation of SWM Pond:</u> provide all labour, material and equipment to excavate the pond, inlet and outlet channels, including loading, hauling material and windrowing where directed on site, grading fill windrow to maximum 4 to 1 side slopes to allow for maintenance, fine grading, clean up and restoration, approximately 93,376 cubic metres, complete. Lump Sum	\$ 373,500.00
Item 16)	<u>Construct Refuge Pools in SWM Pond:</u> provide all labour, material and equipment to excavate pools in the pond bottom where they are shown on the plans and cross sections to maximum 2 to 1 side slopes to allow for maintenance, fine grading, placement of compacted fill where required, clean up and restoration, approximately 2,480 sq. metres (approximately 2,600 cubic metres) complete. Lump Sum	\$ 26,000.00

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Item 17)	<u>Construct Rock Clusters in Pond Bottom:</u> provide all labour, material and equipment to construct rock clusters in the pond bottom including, excavation, hauling and disposal, supply and placement of all rocks and filter cloth, approximately <u>6</u> locations at <u>\$900.00</u> each, complete.	\$	5,400.00
Item 18)	<u>Construct Berms at East End of Pond:</u> supply all equipment, materials and labour to place windrowed native material to create berms as shown on the plans, including compaction and topsoil placement and provide hydro-seeding and mulch to create grass areas, including fine grading, clean up and restoration, complete, approximately <u>100</u> lineal metres at <u>\$25.00</u> per lineal metre.	\$	2,500.00
Item 19)	<u>Cable Concrete Protection at North Side of Pond:</u> supply and install CC-45 cable concrete protection on non-woven filter cloth on pond slope along access ramp for future pond maintenance including excavation, disposal, placement, cleanup and restoration, as shown on the plans, complete: (i) supply cable concrete protection for access ramp, approximately <u>180</u> square metres at <u>\$100.00</u> per square metre. (ii) install and place cable concrete for pond bank protection, approximately <u>180</u> square metres at <u>\$50.00</u> per square metre.	\$	18,000.00
		\$	9,000.00
Item 20)	<u>Topsoil placement, clean up and restoration:</u> supply all equipment, materials and labour to place windrowed topsoil on all filled and disturbed areas including filled area of pond bottom and newly graded swales, and provide hydro-seeding and mulch to restore grass areas, including fine grading, clean up and restoration, complete, approximately <u>34,000</u> square metres at <u>\$2.50</u> per square metre.	\$	85,000.00
Item 21)	<u>Station 1+380:</u> supply and install 450mm diameter 320 kPa smooth wall H.D.P.E. pipe including bell and gasket joints to create control flow weir, stripping topsoil, excavation, disposal, bedding, connections, granular backfill, compaction, sloped quarried limestone on filter cloth end protections, and restoration, complete, approximately <u>12</u> lineal metres at <u>\$390.00</u> per lineal metre.	\$	4,680.00
	Subtotal Part B - Storm Water Pond & Ancillary Work	\$	549,580.00

PART C. IMPROVED CHANNEL BUFFERS, OFFSETTING AND MITIGATION

Item 22)	<u>Station 0+012 to Station 1+563 plants;</u> supply approximately 1185 plants that are certified nursery stock free of disease and invasive species, with provenance records where available, as follows:		
	(i) White Cedar (<i>Thuja occidentalis</i>), 1 gal., approximately <u>25</u> plants at <u>\$15.00</u> per each, complete.	\$	375.00
	(ii) Silver Maple (<i>Acer saccharinum</i>), 2 gal., approximately <u>20</u> plants at <u>\$35.00</u> per each, complete.	\$	700.00
	(iii) White Spruce (<i>Picea glanca</i>), 1 gal., approximately <u>25</u> plants at <u>\$16.00</u> per each, complete.	\$	400.00
	(iv) Eastern Redcedar (<i>Juniperus virginiana</i>), 1 gal., approximately <u>25</u> plants at <u>\$20.00</u> per each, complete.	\$	500.00
	(v) Black Walnut (<i>Jugians nigra</i>), 2 gal., approximately <u>20</u> plants at <u>\$35.00</u> per each, complete.	\$	700.00
	(vi) Pin Oak (<i>Quercus palustris</i>), 1 gal., approximately <u>25</u> plants at <u>\$16.00</u> per each, complete.	\$	400.00
	(vii) Shagbark Hickory (<i>Carya ovata</i>), 1 gal., approximately <u>25</u> plants at <u>\$20.00</u> per each, complete.	\$	500.00
	(viii) Black Cherry (<i>Prunus serotine</i>), 1 gal., approximately <u>25</u> plants at <u>\$20.00</u> per each, complete.	\$	500.00
	(ix) Trembling Aspen (<i>Populus tremuloides</i>), 1 gal., approximately <u>20</u> plants at <u>\$20.00</u> per each, complete.	\$	400.00
	(x) Willow (<i>Salix Discolor</i>), 1 gal., approximately <u>100</u> plants at <u>\$14.00</u> per each, complete.	\$	1,400.00
	(xi) Red-osier Dogwood (<i>Cornus stolonifera</i>), 1 gal., approximately <u>100</u> plants at <u>\$15.00</u> per each, complete.	\$	1,500.00
	(xii) Gray Dogwood (<i>Cornus racemosa</i>), 1 gal., approximately <u>100</u> plants at <u>\$16.00</u> per each, complete.	\$	1,600.00
	(xiii) Downy Hawthorn (<i>Crataegus mollis</i>), 1 gal., approximately <u>100</u> plants at <u>\$24.00</u> per each, complete.	\$	2,400.00
	(xiv) Common Elderberry (<i>Sambucus nigra</i>), 1 gal., approximately <u>100</u> plants at <u>\$15.00</u> per each, complete.	\$	1,500.00
	(xv) Prickly Rose (<i>Rosa acicularis</i>), plug 2.5", approximately <u>100</u> plants each at <u>\$5.00</u> per each, complete.	\$	500.00

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(xvi)	Wild Red Raspberry (<i>Rubus adaeus</i>), 1 gal., approximately <u>100</u> plants at <u>\$16.00</u> per each, complete.	\$	1,600.00
(xvii)	Black Raspberry (<i>Rubus occidentalis</i>), 1 gal., approximately <u>100</u> plants at <u>\$15.00</u> per each, complete.	\$	1,500.00
(xviii)	Serviceberry (<i>Amelanchier humilis</i>), 1 gal., approximately <u>100</u> plants at <u>\$18.00</u> per each, complete.	\$	1,800.00
(xix)	Staghorn Sumac (<i>Rhus thphina</i>), 1 gal., approximately <u>75</u> plants at <u>\$14.00</u> per each, complete.	\$	1,050.00

Item 23)	<p><u>Station 0+000 to Station 1+563 install plants;</u> provide all labour, materials and equipment to loosen soil, plant trees at approximately 10 metres spacing along the west and south banks, plant shrubs along the other banks including occasional trees at approximately a 30 metres to 50 metres spacing, under the supervision of a qualified professional to determine appropriate locations of trees and shrubs based on spacing requirements and onsite conditions, complete.</p>	Lump Sum	\$ 18,000.00
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Subtotal Part C - New Channel Buffers, Offsetting and Mitigation	\$	37,325.00
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PART D. MISCELLANEOUS WORK AND ITEMS

Item 24)	<p><u>Lower Existing Water Services;</u> provide all labour, equipment, and material to lower existing water services, if necessary, including excavation, disposal, bedding, fittings, connections, backfill, compaction and restoration, complete, <u>3</u> units at <u>\$515.00</u> for each.</p>	\$	1,545.00
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Item 25)	<p><u>Pond Inlet Channel Access Crossing;</u> provide all labour, equipment, and materials to construct a low level crossing including <u>12</u> metres of 2.8mm thick 1200mm diameter aluminized C.S.P. with bolted 9C couplers, approximately <u>140</u> tonnes of compacted granular "A" backfill, approximately <u>190</u> square metres of synthetic non-woven filter cloth, approximately <u>190</u> square metres of CC-45 cable concrete protection, approximately <u>15</u> tonnes of 400mm thick quarried limestone on filter cloth at outlet end, including all excavation, shaping, placement, compaction, clean up and restoration, complete as shown on the plans.</p>	Lump Sum	\$ 51,250.00
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Item 26)	<p><u>Pond Outlet Channel Access Crossing;</u> provide all labour, equipment, and materials to construct a low level crossing</p>		
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	including <u>12</u> metres of 2.8mm thick 1200mm diameter aluminized C.S.P. with bolted 9C couplers, approximately <u>140</u> tonnes of compacted granular “A” backfill, approximately <u>190</u> square metres of synthetic non-woven filter cloth, approximately <u>190</u> square metres of CC-45 cable concrete protection, approximately <u>15</u> tonnes of 400mm thick quarried limestone on filter cloth at outlet end, including all excavation, shaping, placement, compaction, clean up and restoration, complete as shown on the plans.	Lump Sum	\$	51,250.00
Item 27)	<u>Station 0+000 to Station 0+300 Berm Removal:</u> provide all labour, equipment, and material to load up and remove the existing berm to the east and south of the school parcels and place in development fill areas as shown on the plans, including all topsoil stripping, excavation, hauling, placement, compaction, and restoration including topsoil placement, seeding and mulching, approximately <u>4,450</u> cubic metres, complete.	Lump Sum	\$	44,500.00
Item 28)	<u>Norbury Drain Diversion:</u> provide all labour, materials and equipment to redirect the Drain from “X1” to “X2” and from “X3” to “X4” as shown on the plans, including supply and install approximately <u>290</u> metres of 450mm diameter 320kPa H.D.P.E. smoothwall pipe, wrap couplers, plugs and connections, excavation, bedding, backfill, compaction and restoration, complete.	Lump Sum	\$	63,800.00
Item 29)	<u>Signs and Traffic Control:</u> provide all labour, materials and equipment, including traffic control plan, and coordination of any road closures with all affected public services including the road authority, complete.	Lump Sum	\$	2,500.00
Item 30)	<u>Fish Capture and Release:</u> provide all labour, materials and equipment for fish salvage.	Lump Sum	\$	1,000.00
Item 31)	<u>Final Cleanup and Restoration:</u> provide all labour, materials and equipment to finalize work on the sites, including removal and disposal of the existing bridges at Stations 1+040 and 1+390, complete.	Lump Sum	\$	15,000.00
Item 32)	<u>Contingency for Construction:</u> estimated cost for any unforeseen and extra work authorized by the engineer.	Lump Sum	\$	24,000.00
	Subtotal Part D - Miscellaneous Work and Items		\$	254,845.00
	TOTAL FOR CONSTRUCTION PART A (brought forward)		\$	818,480.00

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TOTAL FOR CONSTRUCTION PART B (brought forward)	\$	549,580.00
TOTAL FOR CONSTRUCTION PART C (brought forward)	\$	37,325.00
TOTAL FOR CONSTRUCTION PART D (brought forward)	\$	254,845.00
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SUBTOTAL FOR CONSTRUCTION	\$	1,660,230.00
Estimated Net H.S.T. (1.76%) on Construction	\$	29,220.00
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TOTAL ESTIMATE FOR CONSTRUCTION	\$	1,689,450.00
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INCIDENTALS		
1) Report, Estimate, & Specifications	\$	42,000.00
2) Survey, Assistants, Expenses, and Drawings	\$	48,000.00
3) Duplication Cost of Report and Drawings	\$	4,000.00
4) Estimated Cost of Letting Contract	\$	2,500.00
5) Estimated Cost of Layout and Staking	\$	3,800.00
6) Estimated Cost of Full-Time Supervision and Inspection During Construction (based on 5 weeks duration)	\$	36,600.00
7) Estimated Biological Consulting Fees	\$	10,500.00
8) Estimated Net H.S.T. on Items Above (1.76 %)	\$	2,726.00
9) Estimated Cost of E.R.C.A. Permit	\$	800.00
10) Contingency Allowance	\$	49,124.00
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TOTAL ESTIMATE FOR INCIDENTALS	\$	200,050.00
TOTAL FOR LAND TAKEN (brought forward)	\$	50.00
TOTAL FOR DAMAGES (brought forward)	\$	50.00
TOTAL FOR CONSTRUCTION (brought forward)	\$	1,689,450.00
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TOTAL ESTIMATE	\$	1,889,600.00
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VIII. DRAWINGS AND SPECIFICATIONS

Also attached to this report and included in **Appendix “REI-D”** and **Appendix “REI-E”** are drawings which consist of plans showing the 2nd Concession Road Drain South open portion and the repairs and improvements to the drain for the development project including the S.W.M. pond components. They illustrate the watershed area, the location of the drains and proposed works, the parcels of the affected landowners, as well as the approximate limit of the watershed.

Also attached, we have prepared Specifications which set out the required construction details for the proposed access bridges and drain repairs and improvements, which also include Standard Specifications labelled therein as **Appendix “REI-C”**.

IX. ASSESSMENT SCHEDULE AND MAINTENANCE WORKS

We have prepared a Schedule of Assessment to be utilized for assessing costs against the affected lands for the construction work conducted to the 2nd Concession Road Drain South open portion as outlined in this report and same has been attached herein. The assessment proportions as outlined within the Schedule of Assessment have been established on the basis of the Rocksedge Developments parcels in “Block A” being able to develop their lands with the S.W.M. pond and ancillary works. The cost of constructing the proposed bridges for the lands in “Block A” have been assessed as a Special Benefit to those lands based on development being able to proceed. In consideration of the above information, 100% of the cost of this project, including all costs related to construction and incidentals as estimated above, have been assessed to the Rocksedge Development Inc. parcels as shown on the watershed plan in Block “A”.

For the purposes of future maintenance on the entire portion of the 2nd Concession Road Drain South, including the S.W.M. pond, all costs shall be levied against the lands and roads within the watershed in accordance with the updated Maintenance Schedule of Assessment as attached. Block assessments will be allocated by the Town to all existing and new parcels within the Block in accordance with the Drainage Act. The schedule is based on the revised March 6th, 2013, assessment schedule as set out in the November 30th, 2012 report for the 2nd Concession Road Drain South by Gerard Rood, P.Eng. The attached Maintenance Schedule reflects severances and updates to lands that form part of the overall watershed since the 2012 drainage report and supersedes the schedule provided under the 2013 amended assessment schedule from the 2012 report. The assessment proportions as outlined within the Maintenance Schedule of Assessment have been established on the basis of an assumed future maintenance cost of \$40,000.00, and it should be understood that the maintenance charges outlined in the attached Maintenance Schedule of Assessment should not be made until such time that maintenance works have been conducted and expended. The actual cost of future maintenance work on the drain shall be assessed against the affected lands and roads in the same relative proportions as shown therein, subject to any future variations that may be made under the authority of the “Drainage Act R.S.O. 1990, Chapter D.17, as amended 2021”.

When future maintenance work is carried out on the upstream covered portions of the drain or the open portion from Lowes Sideroad to the outlet, the physical dimensions which control the extent of maintenance works permitted on the 2nd Concession Road Drain South shall be limited to that which has been set out in the September 28th, 1979 Engineer’s Report by William J. Settington, P.Eng. The covered drain portion at the school parcel shall be maintained in accordance with the January 22nd, 2008 Stantec Consulting report. Any future maintenance costs

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to those drain portions shall be assessed in accordance with the most current schedule of assessment for each.

The cost of the new access bridges provided for in this report to serve the lands in “Block A”, shall be borne by the Rocksedge Developments properties in order for the future development to proceed. These bridges will serve the proposed roadways in the development lands, and the development lands will be responsible for future maintenance costs until the roads become public right-of-ways. Once the roads have been assumed by the Town of Amherstburg, all costs of future repair and maintenance to the bridges for the roadways shall be assessed to the Town of Amherstburg.

X. GRANTS

On September 22nd, 2005, the Ontario Ministry of Agriculture, Food, and Rural Affairs (O.M.A.F.R.A.) issued Administrative Policies for the Agricultural Drainage Infrastructure Program (A.D.I.P.). This program has re-instated financial assistance for eligible costs and assessed lands pursuant to the Drainage Act. Sections 85 to 90 of the Drainage Act allow the Minister to provide grants for various activities under said Act. Sections 85 to 87 make it very clear that grants are provided at the discretion of the Minister. Based on the current A.D.I.P. Policies, "lands used for agricultural purposes" may be eligible for a grant in the amount of 1/3 of their total assessment. The new policies define "lands used for agricultural purposes" as those lands eligible for the "Farm Property Class Tax Rate". There are no lands currently expected to be eligible for the grant for construction of the works in this report with the Rocksedge Developments Inc. lands becoming developed and making them ineligible pursuant to the A.D.I.P. Policies.

Should there still be eligible lands upon completion of the works or future maintenance, we recommend that an application be made by the Town of Amherstburg, on completion of the construction provided for under this report or for future maintenance work, to the Ontario Ministry of Agriculture, Food and Rural Affairs (O.M.A.F.R.A.) in accordance with Section 88 of the "Drainage Act R.S.O. 1990, Chapter D.17, as amended 2021" for any grants that are available.

All of which is respectfully submitted.

Rood Engineering Inc.

Gerard Rood

Gerard Rood, P.Eng.



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att.

ROOD ENGINEERING INC.

Consulting Engineers
9 Nelson Street
LEAMINGTON, Ontario N8H 1G6

SCHEDULE OF ASSESSMENT
2ND CONCESSION ROAD DRAIN SOUTH
(OPEN PORTION NORTH OF LOWES SIDEROAD)
TOWN OF AMHERSTBURG
(E09-2021-008)

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

Plan ID	Con. or Plan No.	Lot or Part of Lot	Acres Afft'd	Hectares Afft'd	Owner's Name	Value of Benefit	Value of Outlet	Value of Special Benefit	TOTAL VALUE
4	2	Pt. Lot 22	28.93	11.709	Block A	\$ 24,645.00	\$ 75,875.00	\$ 239,111.00	\$ 339,631.00
5	2	Pt. Lot 22	46.13	18.668	Block A	\$ 19,646.00	\$ 103,967.00	\$ 381,215.00	\$ 504,828.00
1	2	Pt. Lot 22	2.50	1.012	Block A	\$ -	\$ 5,635.00	\$ 20,661.00	\$ 26,296.00
2	2	Pt. Lot 21	41.61	16.838	Block A	\$ 35,439.00	\$ 75,017.00	\$ 343,841.00	\$ 454,297.00
3	2	Pt. Lot 21	50.20	20.314	Block A	\$ 42,756.00	\$ 106,960.00	\$ 414,832.00	\$ 564,548.00
Total on Privately Owned - Agricultural Lands (non-grantable).....						\$ 122,486.00	\$ 367,454.00	\$1,399,660.00	\$ 1,889,600.00
			584.90	236.707		\$ 122,486.00	\$ 367,454.00	\$1,399,660.00	\$ 1,889,600.00

1 Hectare = 2.471 Acres
 Project No. REI2015D024
 February 2nd, 2022

MAINTENANCE SCHEDULE OF ASSESSMENT**2ND CONCESSION ROAD DRAIN SOUTH****TOWN OF AMHERSTBURG****E09-2021-008****3. MUNICIPAL LANDS:**

Plan <u>ID</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>
Simcoe Street			0.95	0.386	County of Essex	\$ 17.00	\$ 153.00	\$ 170.00
Fryer Street (2nd Concession Road)			12.24	4.953	Town of Amherstburg	\$ 220.00	\$ 2,107.00	\$ 2,327.00
Lowes Sideroad			4.68	1.895	Town of Amherstburg	\$ 84.00	\$ 386.00	\$ 470.00
Riviera Drive			1.14	0.463	Town of Amherstburg	\$ 21.00	\$ 216.00	\$ 237.00
Venetian Drive			2.06	0.833	Town of Amherstburg	\$ 37.00	\$ 390.00	\$ 427.00
Holiday Court			0.54	0.219	Town of Amherstburg	\$ 10.00	\$ 103.00	\$ 113.00
Riviera Place			0.52	0.210	Town of Amherstburg	\$ 9.00	\$ 95.00	\$ 104.00
Boardwalk Avenue			2.25	0.909	Town of Amherstburg	\$ 40.00	\$ 412.00	\$ 452.00
Spring Court			0.55	0.221	Town of Amherstburg	\$ 10.00	\$ 104.00	\$ 114.00
Amlin Street			0.72	0.290	Town of Amherstburg	\$ 13.00	\$ 136.00	\$ 149.00
St. James Court			1.69	0.684	Town of Amherstburg	\$ 30.00	\$ 310.00	\$ 340.00
Richmond Street			2.04	0.825	Town of Amherstburg	\$ 37.00	\$ 373.00	\$ 410.00
Ventnor Avenue			2.62	1.060	Town of Amherstburg	\$ 47.00	\$ 458.00	\$ 505.00
Baltic Avenue			1.56	0.630	Town of Amherstburg	\$ 28.00	\$ 272.00	\$ 300.00
St. Charles Place			1.24	0.503	Town of Amherstburg	\$ 22.00	\$ 217.00	\$ 239.00
Gibb Street			0.81	0.326	Town of Amherstburg	\$ 14.00	\$ 137.00	\$ 151.00

2nd Concession Road Drain South
 Maintenance Schedule - Amherstburg (E09-2021-008)

Plan ID	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
Sullivan Street			0.65	0.262	Town of Amherstburg	\$ 12.00	\$ 110.00	\$ 122.00
Heaton Street			1.38	0.559	Town of Amherstburg	\$ 25.00	\$ 234.00	\$ 259.00
Atlantic Court			0.32	0.131	Town of Amherstburg	\$ 6.00	\$ 57.00	\$ 63.00
Atlantic Avenue			0.86	0.346	Town of Amherstburg	\$ 15.00	\$ 150.00	\$ 165.00
Pacific Avenue			2.92	1.183	Town of Amherstburg	\$ 53.00	\$ 523.00	\$ 576.00
Mediterranean Avenue			1.01	0.410	Town of Amherstburg	\$ 18.00	\$ 162.00	\$ 180.00
Martin Crescent			1.47	0.595	Town of Amherstburg	\$ 26.00	\$ 235.00	\$ 261.00
Bratt Drive			1.91	0.773	Town of Amherstburg	\$ 34.00	\$ 305.00	\$ 339.00
Hainer Court			0.44	0.179	Town of Amherstburg	\$ 8.00	\$ 71.00	\$ 79.00
Hart Street			0.55	0.221	Town of Amherstburg	\$ 10.00	\$ 87.00	\$ 97.00
Pickering Drive			0.21	0.087	Town of Amherstburg	\$ 4.00	\$ 29.00	\$ 33.00
Lilac Court			0.40	0.163	Town of Amherstburg	\$ 7.00	\$ 50.00	\$ 57.00
McCurdy Drive			1.85	0.750	Town of Amherstburg	\$ 33.00	\$ 229.00	\$ 262.00
Walnut Drive			0.56	0.227	Town of Amherstburg	\$ 10.00	\$ 69.00	\$ 79.00
Poplar Court			0.39	0.159	Town of Amherstburg	\$ 7.00	\$ 48.00	\$ 55.00
H. Murray Smith Centennial Park			3.00	1.214	Town of Amherstburg	\$ 13.00	\$ 154.00	\$ 167.00
County Road 18 (Pike Rd.)			6.41	2.595	County of Essex	\$ 115.00	\$ 1,024.00	\$ 1,139.00
Total on Municipal Lands.....						\$ 1,035.00	\$ 9,406.00	\$ 10,441.00

Plan ID	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
4. PRIVATELY OWNED - NON-AGRICULTURAL LANDS:								
B1	2	Pt. Lot 22	0.42	0.168	Larry Bertrand	\$ -	\$ 44.00	\$ 44.00
B2	2	Pt. Lot 22	0.35	0.142	Larry & Diana Bertrand	\$ -	\$ 38.00	\$ 38.00
B3	2	Pt. Lot 22	0.32	0.129	Graeme Hulse	\$ -	\$ 36.00	\$ 36.00
A1	2	Pt. Lot 22	2.11	0.854	Catholiques Providence Conseil Scolaire	\$ 9.00	\$ 65.00	\$ 74.00
A2	2	Pt. Lot 22	4.88	1.974	Catholiques Providence Conseil Scolaire	\$ 44.00	\$ 713.00	\$ 757.00
B4	2	Pt. Lot 22	0.32	0.129	Mark Weber	\$ -	\$ 36.00	\$ 36.00
B5	2	Pt. Lot 22	0.32	0.129	Breeyn Wharram	\$ -	\$ 36.00	\$ 36.00
B6	2	Pt. Lot 22	0.32	0.129	Robin & Karen Charron	\$ -	\$ 36.00	\$ 36.00
B7	2	Pt. Lot 22	0.30	0.123	Randy & Joanne Deneau	\$ -	\$ 29.00	\$ 29.00
B8	2	Pt. Lot 22	0.33	0.135	James Fox & Charlene Sequin	\$ -	\$ 36.00	\$ 36.00
B9	2	Pt. Lot 22	0.32	0.129	Jacqueline & Robert Labute	\$ -	\$ 36.00	\$ 36.00
B10	2	Pt. Lot 22	0.27	0.107	Mitchell & Catherine Temesy	\$ -	\$ 31.00	\$ 31.00
B11	2	Pt. Lot 22	0.26	0.107	Harry & Deborah Crowder	\$ -	\$ 32.00	\$ 32.00
B12	2	Pt. Lot 22	0.51	0.205	Carl Russelo	\$ -	\$ 49.00	\$ 49.00
B13	2	Pt. Lot 22	0.91	0.369	Robert Rainey & Gerry Hennin	\$ -	\$ 76.00	\$ 76.00
B14	2	Pt. Lot 22	0.51	0.205	Rocksedge Developments Inc.	\$ -	\$ 49.00	\$ 49.00
B15	2	Pt. Lot 22	0.85	0.343	James & Kelly Lacey	\$ -	\$ 73.00	\$ 73.00
B16	2	Pt. Lot 22	1.29	0.521	Deborah Kopacz	\$ -	\$ 99.00	\$ 99.00
B17	2	Pt. Lot 22	0.32	0.129	Michael St. Onge	\$ -	\$ 36.00	\$ 36.00
B18	2	Pt. Lot 22	0.32	0.129	Katie Lewis & Mitchell Finlay	\$ -	\$ 36.00	\$ 36.00
B19	2	Pt. Lot 22	0.32	0.128	Justin Hills	\$ -	\$ 35.00	\$ 35.00

Plan ID	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
B20	2	Pt. Lot 22	1.31	0.530	County Of Essex	\$ -	\$ 96.00	\$ 96.00
B21	2	Pt. Lot 22	1.98	0.802	Robert & Divina Price	\$ -	\$ 127.00	\$ 127.00
B22	2	Pt. Lot 22	0.69	0.278	Marion & Duncan Smith	\$ -	\$ 61.00	\$ 61.00
B23	2	Pt. Lot 22	4.69	1.897	Duncan & Marion Smith	\$ -	\$ 240.00	\$ 240.00
B24	2	Pt. Lot 22	0.45	0.181	Marion & Duncan Smith	\$ -	\$ 46.00	\$ 46.00
MN677	2	Pt. Lot 22	50.86	20.583	Walker Aggregates Inc.	\$ -	\$ 837.00	\$ 837.00
1	2	Pt. Lot 21	2.50	1.011	Rocksedge Developments Inc.	\$ 22.00	\$ 74.00	\$ 96.00
MN484	2	Pt. Lot 21	1.43	0.580	Douglas & Linda Bridgen	\$ 13.00	\$ 52.00	\$ 65.00
MN468	2	Pt. Lot 21	3.82	1.546	Amherstburg, Malden & Anderdon Sportsmen's Assoc.	\$ 34.00	\$ 102.00	\$ 136.00
A3	2	Pt. Lot 21	0.41	0.165	Daniel & Shawna Veldhuis	\$ -	\$ 26.00	\$ 26.00
A4	2	Pt. Lot 21	0.21	0.085	Daniel & Shawna Veldhuis	\$ -	\$ 16.00	\$ 16.00
A5	1	Pt. Lot 21	0.82	0.334	Marianna & Tino Riccio	\$ -	\$ 37.00	\$ 37.00
A6	1	Pt. Lot 21	0.35	0.141	Thomas & Ligita Purdie	\$ -	\$ 20.00	\$ 20.00
A7	1	Pt. Lot 21	0.29	0.117	Kenneth & Jennifer Lauzon	\$ -	\$ 17.00	\$ 17.00
A8	1	Pt. Lot 21	0.25	0.102	Amanda Dagagne	\$ -	\$ 16.00	\$ 16.00
A9	1	Pt. Lot 21	0.28	0.113	Paul Deslippe	\$ -	\$ 17.00	\$ 17.00
A10	1	Pt. Lot 21	1.49	0.604	James Bezaire	\$ -	\$ 56.00	\$ 56.00
A11	1	Pt. Lot 21	1.51	0.610	Dan DiPasquale	\$ -	\$ 57.00	\$ 57.00
A12	1	Pt. Lot 21	0.60	0.244	Tom & Bonnie Krakana	\$ -	\$ 29.00	\$ 29.00
A89	1	Pt. Lot 4	0.60	0.243	Robert & Elise Thrasher	\$ -	\$ 29.00	\$ 29.00
A90	1	Pt. Lot 4	0.60	0.243	Pina Simone	\$ -	\$ 29.00	\$ 29.00
A91	1	Pt. Lot 4	0.37	0.150	Garnet & Laura Deneau	\$ -	\$ 18.00	\$ 18.00
A92	1	Pt. Lot 4	0.41	0.166	Brian Gilbert & Jennifer Smith	\$ -	\$ 20.00	\$ 20.00

2nd Concession Road Drain South
 Maintenance Schedule - Amherstburg (E09-2021-008)

Plan ID	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
A13	1	Pt. Lot 22	0.19	0.078	Graziella Celsi	\$ -	\$ 19.00	\$ 19.00
A14	1	Pt. Lot 22	0.18	0.071	Mary-Alice & David Beneteau	\$ -	\$ 18.00	\$ 18.00
A15	1	Pt. Lot 22	0.17	0.071	Andre & Donna Blier	\$ -	\$ 19.00	\$ 19.00
A16	1	Pt. Lot 22	0.17	0.070	Julie Hunt	\$ -	\$ 18.00	\$ 18.00
A17	1	Pt. Lot 22	0.17	0.070	Devon Durham	\$ -	\$ 18.00	\$ 18.00
A18	1	Pt. Lot 22	0.17	0.070	Scott Brown	\$ -	\$ 18.00	\$ 18.00
A19	1	Pt. Lot 22	0.17	0.070	William Metcalfe & April Diemer	\$ -	\$ 18.00	\$ 18.00
A20	1	Pt. Lot 22	0.17	0.070	Donato & Marisa Vitella	\$ -	\$ 18.00	\$ 18.00
A21	1	Pt. Lot 22	0.17	0.069	Paul & Celia Graham	\$ -	\$ 18.00	\$ 18.00
A22	1	Pt. Lot 22	0.18	0.075	Louise Dainter	\$ -	\$ 19.00	\$ 19.00
A23	1	Pt. Lot 22	0.19	0.076	Wilma Davis	\$ -	\$ 19.00	\$ 19.00
A24	1	Pt. Lot 22	0.19	0.076	Bradley & Krystle Hofsteteris	\$ -	\$ 19.00	\$ 19.00
A25	1	Pt. Lot 22	0.19	0.076	William & Elinor West	\$ -	\$ 19.00	\$ 19.00
A26	1	Pt. Lot 22	0.19	0.076	Clare & Bonnie Hamelin	\$ -	\$ 19.00	\$ 19.00
A27	1	Pt. Lot 22	0.21	0.087	Gordon & Marie McDonald	\$ -	\$ 21.00	\$ 21.00
A28	1	Pt. Lot 22	0.16	0.065	Jon & Jaye Gaiarin	\$ -	\$ 18.00	\$ 18.00
A29	1	Pt. Lot 22	0.16	0.065	Haley Dagley	\$ -	\$ 18.00	\$ 18.00
A30	1	Pt. Lot 22	0.16	0.065	Matthew Ciccone & Kristi Maindonald	\$ -	\$ 18.00	\$ 18.00
A31	1	Pt. Lot 22	0.16	0.065	Peter & Heather Redpath	\$ -	\$ 18.00	\$ 18.00
A32	1	Pt. Lot 22	0.23	0.094	Amanda & Diane Serra	\$ -	\$ 22.00	\$ 22.00
A33	1	Pt. Lot 22	0.31	0.124	Grant & Heather Northrup	\$ -	\$ 26.00	\$ 26.00
A34	1	Pt. Lot 22	0.18	0.072	John & Rachel Pagnac	\$ -	\$ 19.00	\$ 19.00
A35	1	Pt. Lot 22	0.31	0.126	Robert & Barbara Riddell & Amanda Rehel	\$ -	\$ 27.00	\$ 27.00

Plan ID	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
A36	1	Pt. Lot 22	0.38	0.155	Philip & Helen Wiebe	\$ -	\$ 31.00	\$ 31.00
A37	1	Pt. Lot 22	0.19	0.077	Jeremy Pongratz	\$ -	\$ 19.00	\$ 19.00
A38	1	Pt. Lot 22	0.19	0.077	Tracy & Stewart Jones	\$ -	\$ 19.00	\$ 19.00
A39	1	Pt. Lot 22	0.17	0.068	Gloria Mooney	\$ -	\$ 18.00	\$ 18.00
A40	1	Pt. Lot 22	0.17	0.070	Francis & Carol Holmes	\$ -	\$ 18.00	\$ 18.00
A41	1	Pt. Lot 22	0.18	0.072	Ryan MacPhee	\$ -	\$ 18.00	\$ 18.00
A42	1	Pt. Lot 22	0.18	0.072	Bernard & Barbara Couvillon	\$ -	\$ 18.00	\$ 18.00
A43	1	Pt. Lot 22	0.18	0.072	Joseph & Michelle Renaud	\$ -	\$ 18.00	\$ 18.00
A44	1	Pt. Lot 22	0.18	0.072	Deborah Johnston & Mathew Chandler	\$ -	\$ 18.00	\$ 18.00
A45	1	Pt. Lot 22	0.17	0.068	Jeffrey Baylis & Razia Mountford	\$ -	\$ 18.00	\$ 18.00
A46	1	Pt. Lot 22	0.19	0.076	Mary Goodison	\$ -	\$ 19.00	\$ 19.00
A47	1	Pt. Lot 22	0.16	0.066	Daniel Germanese & Nicole Beaudoin	\$ -	\$ 18.00	\$ 18.00
A48	1	Pt. Lot 22	0.15	0.060	Gerald Laforge & Laura Barton	\$ -	\$ 16.00	\$ 16.00
A49	1	Pt. Lot 22	0.14	0.057	Danrick & Lorraine Cantin	\$ -	\$ 16.00	\$ 16.00
A50	1	Pt. Lot 22	0.14	0.058	Torin & Nancy Domay	\$ -	\$ 16.00	\$ 16.00
A51	1	Pt. Lot 22	0.14	0.058	David Upcott	\$ -	\$ 16.00	\$ 16.00
A52	1	Pt. Lot 22	0.21	0.085	David & Brenda Sinasac	\$ -	\$ 21.00	\$ 21.00
A53	1	Pt. Lot 22	0.21	0.084	Dean & Iona Hillis	\$ -	\$ 20.00	\$ 20.00
A54	1	Pt. Lot 22	0.26	0.105	Mary Goddard	\$ -	\$ 24.00	\$ 24.00
A55	1	Pt. Lot 22	0.35	0.142	John & Antoinette D'Amore	\$ -	\$ 29.00	\$ 29.00
A56	1	Pt. Lot 22	0.28	0.113	Glen & Doreen Ferguson	\$ -	\$ 25.00	\$ 25.00
A57	1	Pt. Lot 22	0.21	0.085	Mary Olson	\$ -	\$ 21.00	\$ 21.00

Plan ID	Con. or Plan No.	Lot or Part of Lot	Acres Aff't'd	Hectares Aff't'd	Owner's Name	Value of Benefit	Value of Outlet	TOTAL VALUE
A58	1	Pt. Lot 22	0.23	0.095	Dave Derenoski & Charlene Pidutti	\$ -	\$ 23.00	\$ 23.00
A59	1	Pt. Lot 22	0.20	0.079	Christine Heymans	\$ -	\$ 19.00	\$ 19.00
A60	1	Pt. Lot 22	0.20	0.080	Chrystal Perrin	\$ -	\$ 20.00	\$ 20.00
A61	1	Pt. Lot 22	0.27	0.109	Michael Brennan	\$ -	\$ 25.00	\$ 25.00
A62	1	Pt. Lot 22	0.26	0.107	Victor & Audrey Bennett	\$ -	\$ 25.00	\$ 25.00
A63	1	Pt. Lot 22	0.17	0.068	Kelly Seager	\$ -	\$ 18.00	\$ 18.00
A64	1	Pt. Lot 22	0.28	0.115	Michael & Barbara Souliere	\$ -	\$ 25.00	\$ 25.00
A65	1	Pt. Lot 22	0.19	0.076	Daniel Ryan	\$ -	\$ 19.00	\$ 19.00
A66	1	Pt. Lot 22	0.22	0.090	James & Deborah Phillips	\$ -	\$ 21.00	\$ 21.00
A67	1	Pt. Lot 22	0.25	0.101	Carrie & Breanna Sekela	\$ -	\$ 23.00	\$ 23.00
A68	1	Pt. Lot 22	0.21	0.085	George & Rosemary Davis	\$ -	\$ 21.00	\$ 21.00
A69	1	Pt. Lot 22	0.18	0.072	Paul & Karen Stone	\$ -	\$ 18.00	\$ 18.00
A70	1	Pt. Lot 22	0.17	0.067	Tammy & Paul Danelon	\$ -	\$ 18.00	\$ 18.00
A71	1	Pt. Lot 22	0.18	0.074	Patrick & Lynne Freeman	\$ -	\$ 19.00	\$ 19.00
A72	1	Pt. Lot 22	0.17	0.070	Tina Piruzza	\$ -	\$ 18.00	\$ 18.00
A73	1	Pt. Lot 22	0.17	0.070	Peter, Kellie, Robert, David & Sylvia Swyntak	\$ -	\$ 18.00	\$ 18.00
A74	1	Pt. Lot 22	0.17	0.070	Dean & Brandi Cote	\$ -	\$ 18.00	\$ 18.00
A75	1	Pt. Lot 22	0.17	0.070	John & Rachel Howell	\$ -	\$ 18.00	\$ 18.00
A76	1	Pt. Lot 22	0.17	0.070	Joseph & Doris Kitka	\$ -	\$ 18.00	\$ 18.00
A77	1	Pt. Lot 22	0.17	0.070	Nicole Pellow	\$ -	\$ 18.00	\$ 18.00
A78	1	Pt. Lot 22	0.17	0.070	Bradley & Leslie Beneteau	\$ -	\$ 18.00	\$ 18.00
A79	1	Pt. Lot 22	0.17	0.067	John & Jodi Chauvin	\$ -	\$ 18.00	\$ 18.00
A80	1	Pt. Lot 22	0.22	0.089	Mohamad Fakhir	\$ -	\$ 21.00	\$ 21.00

Plan ID	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
A81	1	Pt. Lot 22	0.21	0.085	Matthew Semande & Shannon Beetham	\$ -	\$ 23.00	\$ 23.00
A82	1	Pt. Lot 22	0.18	0.072	Jenny & Paul Robertson	\$ -	\$ 20.00	\$ 20.00
A83	1	Pt. Lot 22	0.19	0.079	Betty Shaw	\$ -	\$ 22.00	\$ 22.00
A84	1	Pt. Lot 22	0.20	0.079	Shelley Lovell-Rees	\$ -	\$ 21.00	\$ 21.00
A85	1	Pt. Lot 22	0.18	0.073	Bart & Anne DiPasquale	\$ -	\$ 20.00	\$ 20.00
A86	1	Pt. Lot 22	0.18	0.073	Joan Courtney	\$ -	\$ 21.00	\$ 21.00
A87	1	Pt. Lot 22	0.23	0.091	Daniel McGuin	\$ -	\$ 24.00	\$ 24.00
A88	1	Pt. Lot 22	0.14	0.056	Kyle Munro & Melanie Fox	\$ -	\$ 17.00	\$ 17.00
A89	1	Pt. Lot 22	0.17	0.069	Todd Legault	\$ -	\$ 20.00	\$ 20.00
A90	1	Pt. Lot 22	0.26	0.103	Hugh & Kristine Quinn	\$ -	\$ 26.00	\$ 26.00
A91	1	Pt. Lot 22	0.33	0.135	Alberto & Mary Faccenda	\$ -	\$ 32.00	\$ 32.00
A92	1	Pt. Lot 22	0.31	0.125	William & Denise Shiells	\$ -	\$ 29.00	\$ 29.00
A93	1	Pt. Lot 22	0.31	0.125	Robert & Judith Giegerich	\$ -	\$ 29.00	\$ 29.00
A94	1	Pt. Lot 22	0.33	0.135	Robert & Alice Sinasac	\$ -	\$ 32.00	\$ 32.00
A99	1	Pt. Lot 22	0.07	0.028	Cody Lucier	\$ -	\$ 10.00	\$ 10.00
A100	1	Pt. Lot 22	0.07	0.028	Penny Yablonski	\$ -	\$ 10.00	\$ 10.00
A101	1	Pt. Lot 22	0.07	0.028	Joel Ouellette & Mary Giguere	\$ -	\$ 10.00	\$ 10.00
A102	1	Pt. Lot 22	0.07	0.028	Michael Wetherup	\$ -	\$ 10.00	\$ 10.00
A103	1	Pt. Lot 22	0.07	0.028	John & Maria Overgaauw	\$ -	\$ 10.00	\$ 10.00
A104	1	Pt. Lot 22	0.07	0.028	Barbara Bergeron	\$ -	\$ 10.00	\$ 10.00
A105	1	Pt. Lot 22	0.07	0.028	Joanna Duttman	\$ -	\$ 10.00	\$ 10.00
A106	1	Pt. Lot 22	0.07	0.028	Joanne Whelan	\$ -	\$ 10.00	\$ 10.00
A107	1	Pt. Lot 22	0.07	0.028	Melissa DiMarco	\$ -	\$ 10.00	\$ 10.00

2nd Concession Road Drain South
 Maintenance Schedule - Amherstburg (E09-2021-008)

Plan ID	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
A108	1	Pt. Lot 22	0.07	0.028	Andrew Martin	\$ -	\$ 10.00	\$ 10.00
A109	1	Pt. Lot 22	0.07	0.028	Dale Kettlewell	\$ -	\$ 10.00	\$ 10.00
A110	1	Pt. Lot 22	0.07	0.028	Andrea Zaccagnini	\$ -	\$ 10.00	\$ 10.00
A111	1	Pt. Lot 22	0.07	0.028	Tamora Muller-Reynolds	\$ -	\$ 10.00	\$ 10.00
A112	1	Pt. Lot 22	0.07	0.028	Michelle Vanderhayden	\$ -	\$ 10.00	\$ 10.00
A113	1	Pt. Lot 22	0.07	0.028	Daniel Vigneux & Jessica Mickle	\$ -	\$ 10.00	\$ 10.00
A114	1	Pt. Lot 22	0.07	0.028	Levi Jariett & Jamie Merrifield	\$ -	\$ 10.00	\$ 10.00
A115	1	Pt. Lot 22	0.07	0.028	Gregory Girard & Lindsay Browning	\$ -	\$ 10.00	\$ 10.00
A116	1	Pt. Lot 22	0.07	0.028	Alfred & Anna Ladouceur	\$ -	\$ 10.00	\$ 10.00
A117	1	Pt. Lot 22	0.07	0.028	Timothy & Violet McAllister	\$ -	\$ 10.00	\$ 10.00
A118	1	Pt. Lot 22	0.07	0.028	Joanna Duttman	\$ -	\$ 10.00	\$ 10.00
A119	1	Pt. Lot 22	0.07	0.028	Margaret Wilder	\$ -	\$ 10.00	\$ 10.00
A120	1	Pt. Lot 22	0.07	0.028	Donald White	\$ -	\$ 10.00	\$ 10.00
A121	1	Pt. Lot 22	0.07	0.028	Remy & Deborah Vigneux	\$ -	\$ 10.00	\$ 10.00
A122	1	Pt. Lot 22	0.07	0.028	Andrew & Jessica Harlow	\$ -	\$ 10.00	\$ 10.00
A123	1	Pt. Lot 22	0.07	0.028	Adrian Harte	\$ -	\$ 10.00	\$ 10.00
A124	1	Pt. Lot 22	0.07	0.028	Danielle Greenwood	\$ -	\$ 10.00	\$ 10.00
A125	1	Pt. Lot 22	0.07	0.028	Helen Levesque	\$ -	\$ 10.00	\$ 10.00
A126	1	Pt. Lot 22	0.07	0.028	Babak Memariani	\$ -	\$ 10.00	\$ 10.00
A127	1	Pt. Lot 22	0.07	0.028	Gregory Chadwick & Crystal Drew	\$ -	\$ 10.00	\$ 10.00
A128	1	Pt. Lot 22	0.07	0.028	Dawn & Jean Pierre Gagnon	\$ -	\$ 10.00	\$ 10.00
A129	1	Pt. Lot 22	0.07	0.028	Nancy Roy	\$ -	\$ 10.00	\$ 10.00

Plan ID	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
A130	1	Pt. Lot 22	0.07	0.028	Janet Hagg	\$ -	\$ 10.00	\$ 10.00
A131	1	Pt. Lot 22	0.07	0.028	Alfred & Julie Probyn	\$ -	\$ 10.00	\$ 10.00
A132	1	Pt. Lot 22	0.07	0.028	Jacqueline & Eugene Sliepenbeek	\$ -	\$ 10.00	\$ 10.00
A133	1	Pt. Lot 22	0.07	0.028	Daniel & Nicole Gemus	\$ -	\$ 10.00	\$ 10.00
A134	1	Pt. Lot 22	0.07	0.028	Sandra Wynands	\$ -	\$ 10.00	\$ 10.00
A135	1	Pt. Lot 22	0.07	0.028	Michael Piva	\$ -	\$ 10.00	\$ 10.00
A136	1	Pt. Lot 22	0.07	0.028	Jessica Nantais	\$ -	\$ 10.00	\$ 10.00
A137	1	Pt. Lot 22	0.07	0.028	1741059 Ontario Limited c/o Jason LaFramboise	\$ -	\$ 10.00	\$ 10.00
A138	1	Pt. Lot 22	0.07	0.028	Jason Vanwaterschoot	\$ -	\$ 10.00	\$ 10.00
A139	1	Pt. Lot 22	0.07	0.028	1741059 Ontario Limited c/o Jason LaFramboise	\$ -	\$ 10.00	\$ 10.00
A140	1	Pt. Lot 22	0.07	0.028	Renata Fauteux	\$ -	\$ 10.00	\$ 10.00
A141	1	Pt. Lot 22	0.07	0.028	Emil Dukic	\$ -	\$ 10.00	\$ 10.00
A142	1	Pt. Lot 22	0.07	0.028	Deborah Boussey	\$ -	\$ 10.00	\$ 10.00
A143	1	Pt. Lot 22	0.07	0.028	Shirlene Hanson	\$ -	\$ 10.00	\$ 10.00
A144	1	Pt. Lot 22	0.07	0.028	Jean & Angel LaForest	\$ -	\$ 10.00	\$ 10.00
A145	1	Pt. Lot 22	0.07	0.028	Alison Macdonald & Mary Simpson	\$ -	\$ 10.00	\$ 10.00
A146	1	Pt. Lot 22	0.07	0.028	Sylvia Entenmann	\$ -	\$ 10.00	\$ 10.00
A147	1	Pt. Lot 22	0.07	0.028	Lee-Anne Burchell	\$ -	\$ 10.00	\$ 10.00
A148	1	Pt. Lot 22	0.07	0.028	George & Dorothy Capel-Cure	\$ -	\$ 10.00	\$ 10.00
A149	1	Pt. Lot 22	0.07	0.028	1741059 Ontario Limited c/o Jason LaFramboise	\$ -	\$ 10.00	\$ 10.00
A150	1	Pt. Lot 22	0.07	0.028	Marie Taylor	\$ -	\$ 10.00	\$ 10.00

2nd Concession Road Drain South
Maintenance Schedule - Amherstburg (E09-2021-008)

Plan ID	Con. or Plan No.	Lot or Part of Lot	Acres Aff't'd	Hectares Aff't'd	Owner's Name	Value of Benefit	Value of Outlet	TOTAL VALUE
A151	1	Pt. Lot 22	0.07	0.028	Morgan Goddard	\$ -	\$ 10.00	\$ 10.00
A152	1	Pt. Lot 22	0.07	0.028	Anthony & Helen Caba	\$ -	\$ 10.00	\$ 10.00
B25	2	Pt. Lot 23	0.32	0.128	Adam Craig & Jennifer Root	\$ 3.00	\$ 38.00	\$ 41.00
B26	2	Pt. Lot 23	0.43	0.173	Kam Tang & Cindy Wong	\$ 4.00	\$ 48.00	\$ 52.00
B27	2	Pt. Lot 23	0.38	0.156	Aldo & Antoinetta Iannucci	\$ 3.00	\$ 43.00	\$ 46.00
B28	2	Pt. Lot 23	0.13	0.054	Ryan Nespolon & Sonja Mercier	\$ -	\$ 21.00	\$ 21.00
B29	2	Pt. Lot 23	0.13	0.054	Michael Laporte & Elyssa Kurylo	\$ -	\$ 21.00	\$ 21.00
B30	2	Pt. Lot 23	0.13	0.054	David & Jeanne Oliver	\$ -	\$ 21.00	\$ 21.00
B31	2	Pt. Lot 23	0.13	0.054	Michelle Hadrian	\$ -	\$ 21.00	\$ 21.00
B32	2	Pt. Lot 23	0.13	0.054	Robert Bondy	\$ -	\$ 21.00	\$ 21.00
B33	2	Pt. Lot 23	0.13	0.054	James Bryant	\$ -	\$ 21.00	\$ 21.00
B34	2	Pt. Lot 23	0.13	0.054	Robertson Brown	\$ -	\$ 21.00	\$ 21.00
B35	2	Pt. Lot 23	0.14	0.055	Samantha Conway & Christopher Dinunzio	\$ -	\$ 21.00	\$ 21.00
B36	2	Pt. Lot 23	0.13	0.054	Donna Bellefleur	\$ -	\$ 21.00	\$ 21.00
B37	2	Pt. Lot 23	0.13	0.054	Kristina Card	\$ -	\$ 21.00	\$ 21.00
B38	2	Pt. Lot 23	0.18	0.072	Edward Root	\$ -	\$ 25.00	\$ 25.00
B39	2	Pt. Lot 23	0.14	0.058	Aontonietta & Donald Durham	\$ -	\$ 22.00	\$ 22.00
B40	2	Pt. Lot 23	0.14	0.058	Ajit & Sarah Saxena	\$ -	\$ 22.00	\$ 22.00
B41	2	Pt. Lot 23	0.14	0.057	Helen & Justin West	\$ -	\$ 22.00	\$ 22.00
B42	2	Pt. Lot 23	0.17	0.068	Paul & Brenda Beneteau	\$ -	\$ 25.00	\$ 25.00
B43	2	Pt. Lot 23	0.15	0.060	Robert & Cheryl Damphouse	\$ -	\$ 23.00	\$ 23.00
B44	2	Pt. Lot 23	0.13	0.054	Richard & Karen Regier	\$ -	\$ 21.00	\$ 21.00
B45	2	Pt. Lot 23	0.13	0.054	Leslie & Barbara Bosch	\$ -	\$ 21.00	\$ 21.00

Plan ID	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
B46	2	Pt. Lot 23	0.17	0.070	Anna D'Alimonte	\$ -	\$ 25.00	\$ 25.00
B47	2	Pt. Lot 23	0.18	0.071	Herman & Elizabeth VanderHeyden	\$ -	\$ 25.00	\$ 25.00
B48	2	Pt. Lot 23	0.18	0.072	Kevin & Veronique Peladeau	\$ -	\$ 25.00	\$ 25.00
B49	2	Pt. Lot 23	0.14	0.056	Amanda & Joseph Goodrich	\$ -	\$ 22.00	\$ 22.00
B50	2	Pt. Lot 23	0.14	0.055	Teresa Handscomb	\$ -	\$ 21.00	\$ 21.00
B51	2	Pt. Lot 23	0.13	0.054	Dave & Karen Deheer	\$ -	\$ 21.00	\$ 21.00
B52	2	Pt. Lot 23	0.13	0.054	Linda Temesy	\$ -	\$ 21.00	\$ 21.00
B53	2	Pt. Lot 23	0.14	0.055	Michele & Kenneth Walker	\$ -	\$ 21.00	\$ 21.00
B54	2	Pt. Lot 23	0.14	0.056	Tanya & Megan Desjardins	\$ -	\$ 22.00	\$ 22.00
B55	2	Pt. Lot 23	0.17	0.067	Daniel & Mary Morency	\$ -	\$ 24.00	\$ 24.00
B56	2	Pt. Lot 23	0.15	0.062	Nicholas & Maria Menna	\$ -	\$ 23.00	\$ 23.00
B57	2	Pt. Lot 23	0.15	0.062	Dale & Mary Iler	\$ -	\$ 23.00	\$ 23.00
B58	2	Pt. Lot 23	0.25	0.100	Claudio & Anna Mancini	\$ -	\$ 32.00	\$ 32.00
B59	2	Pt. Lot 23	0.23	0.091	Michael Bondy	\$ -	\$ 30.00	\$ 30.00
B60	2	Pt. Lot 23	0.20	0.083	Ralph & Grace Barnwell	\$ -	\$ 28.00	\$ 28.00
B61	2	Pt. Lot 23	0.14	0.058	Michael & Paula Paquette	\$ -	\$ 22.00	\$ 22.00
B62	2	Pt. Lot 23	0.14	0.055	Micahel Deneau	\$ -	\$ 21.00	\$ 21.00
B63	2	Pt. Lot 23	0.14	0.055	Christopher Fabian	\$ -	\$ 21.00	\$ 21.00
B64	2	Pt. Lot 23	0.14	0.055	Kaitlynn Scott & Cailen Winmill	\$ -	\$ 21.00	\$ 21.00
B65	2	Pt. Lot 23	0.14	0.055	Gino & Franca Mastronardi	\$ -	\$ 21.00	\$ 21.00
B66	2	Pt. Lot 23	0.14	0.055	Roger Baylis & Elisha Strong	\$ -	\$ 21.00	\$ 21.00
B67	2	Pt. Lot 23	0.14	0.055	Paul Brennan & Julie LaLiberte	\$ -	\$ 21.00	\$ 21.00
B68	2	Pt. Lot 23	0.13	0.055	Daniel & Katie Foster	\$ -	\$ 21.00	\$ 21.00

Plan ID	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
B69	2	Pt. Lot 23	0.17	0.070	Karl Clifford	\$ -	\$ 25.00	\$ 25.00
B70	2	Pt. Lot 23	0.49	0.197	Gwladys & Mary Brush	\$ 4.00	\$ 51.00	\$ 55.00
B71	2	Pt. Lot 23	0.36	0.147	James & Sherrie Hickey	\$ 3.00	\$ 42.00	\$ 45.00
B72	2	Pt. Lot 23	0.36	0.147	Raffaele & Denise Orsi	\$ 3.00	\$ 41.00	\$ 44.00
B73	2	Pt. Lot 23	0.36	0.147	Marilyn & Alvin Deneau	\$ 3.00	\$ 41.00	\$ 44.00
B74	2	Pt. Lot 23	0.36	0.147	Michael Scipione	\$ 3.00	\$ 41.00	\$ 44.00
B75	2	Pt. Lot 23	0.36	0.147	Ermenegildo & Phyllis D'Amore	\$ 3.00	\$ 41.00	\$ 44.00
B76	2	Pt. Lot 23	0.82	0.331	Jodi McLean	\$ 7.00	\$ 72.00	\$ 79.00
B77	2	Pt. Lot 23	0.24	0.098	David Fletcher & Karen Booker	\$ -	\$ 30.00	\$ 30.00
B78	2	Pt. Lot 23	0.24	0.099	Todd & Shirley Goodchild	\$ -	\$ 30.00	\$ 30.00
B79	2	Pt. Lot 23	0.24	0.099	Denis Arsensult & Iris Carberry	\$ -	\$ 30.00	\$ 30.00
B80	2	Pt. Lot 23	0.24	0.098	Ernest & Kimberly Meloche	\$ -	\$ 29.00	\$ 29.00
B81	2	Pt. Lot 23	0.34	0.139	Jason Wells & Michaela Leckonby	\$ -	\$ 37.00	\$ 37.00
B82	2	Pt. Lot 23	0.45	0.180	Antonio D'Ascanio	\$ -	\$ 46.00	\$ 46.00
B83	2	Pt. Lot 23	0.18	0.074	Chelsie Duffy	\$ -	\$ 25.00	\$ 25.00
B84	2	Pt. Lot 23	0.49	0.198	Gerald & Sandra Bronstein	\$ -	\$ 59.00	\$ 59.00
B85	2	Pt. Lot 23	0.68	0.277	Douglas & Maureen Hunt	\$ -	\$ 61.00	\$ 61.00
B86	2	Pt. Lot 23	0.44	0.177	John Fleming & Marion Lee	\$ -	\$ 45.00	\$ 45.00
B87	2	Pt. Lot 23	2.46	0.997	Anitar Inc.	\$ -	\$ 150.00	\$ 150.00
B337	2	Pt. Lot 23	0.16	0.065	Daniel Lombardo & Alicia Savoni	\$ -	\$ 10.00	\$ 10.00
B338	2	Pt. Lot 23	0.16	0.065	Laura & David Handsor	\$ -	\$ 10.00	\$ 10.00
B339	2	Pt. Lot 23	0.16	0.065	Brittany Webster & Codey Smith	\$ -	\$ 10.00	\$ 10.00
B340	2	Pt. Lot 23	0.16	0.065	Gerald & Diane Langlois	\$ -	\$ 10.00	\$ 10.00
B602	2	Pt. Lot 23	0.18	0.073	Ronald & Luane Faucher	\$ -	\$ 11.00	\$ 11.00

Plan ID	Con. or Plan No.	Lot or Part of Lot	Acres Aff't'd	Hectares Aff't'd	Owner's Name	Value of Benefit	Value of Outlet	TOTAL VALUE
B603	2	Pt. Lot 23	0.18	0.073	Mary Casetta & Allen Simpson	\$ -	\$ 11.00	\$ 11.00
B88	2	Pt. Lot 23	0.64	0.259	1741059 Ontario Limited	\$ -	\$ 59.00	\$ 59.00
B89	2	Pt. Lot 23	0.96	0.388	1741059 Ontario Limited	\$ -	\$ 76.00	\$ 76.00
B90	2	Pt. Lot 23	0.50	0.201	Richard Deslippe	\$ -	\$ 48.00	\$ 48.00
B91	2	Pt. Lot 23	1.32	0.535	Kirk & Eleanore Carey	\$ -	\$ 97.00	\$ 97.00
B92	2	Pt. Lot 23	0.27	0.109	Jonathan Curtis	\$ -	\$ 32.00	\$ 32.00
B93	2	Pt. Lot 23	0.13	0.052	James & Michelle Masters	\$ -	\$ 19.00	\$ 19.00
B94	2	Pt. Lot 23	0.19	0.078	Brandon & Megan Gourley	\$ -	\$ 28.00	\$ 28.00
B95	2	Pt. Lot 23	0.18	0.075	Lucio & Antonio Salvati	\$ -	\$ 27.00	\$ 27.00
B96	2	Pt. Lot 23	0.19	0.077	Paul & Teresa Riggi	\$ -	\$ 27.00	\$ 27.00
B97	2	Pt. Lot 23	0.20	0.080	Leo & Diane Dufour	\$ -	\$ 27.00	\$ 27.00
B98	2	Pt. Lot 23	0.20	0.080	Alexander & Shelley White	\$ -	\$ 27.00	\$ 27.00
B99	2	Pt. Lot 23	0.33	0.134	William & Yvette Meloche	\$ -	\$ 39.00	\$ 39.00
B100	2	Pt. Lot 23	0.16	0.064	Domenico & Maria Vespa	\$ -	\$ 24.00	\$ 24.00
B101	2	Pt. Lot 23	0.17	0.067	Annamaria Baker	\$ -	\$ 25.00	\$ 25.00
B102	2	Pt. Lot 23	0.15	0.062	Ryan & Monique Liebrock	\$ -	\$ 24.00	\$ 24.00
B103	2	Pt. Lot 23	0.27	0.109	John & Melissa Tregaskiss	\$ -	\$ 35.00	\$ 35.00
B104	2	Pt. Lot 23	0.23	0.091	David & Mina Swan	\$ -	\$ 31.00	\$ 31.00
B105	2	Pt. Lot 23	0.23	0.091	Trevor & Samantha Kennedy	\$ -	\$ 31.00	\$ 31.00
B106	2	Pt. Lot 23	0.19	0.076	Jennifer Thorne	\$ -	\$ 27.00	\$ 27.00
B107	2	Pt. Lot 23	0.15	0.062	Dennis & Melissa Weaver	\$ -	\$ 24.00	\$ 24.00
B108	2	Pt. Lot 23	0.17	0.067	Shane & Jennifer McVitty	\$ -	\$ 25.00	\$ 25.00
B109	2	Pt. Lot 23	0.16	0.064	Gerald & Phyllis Goggin	\$ -	\$ 24.00	\$ 24.00
B110	2	Pt. Lot 23	0.16	0.064	Caroline White	\$ -	\$ 24.00	\$ 24.00

Plan ID	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
B111	2	Pt. Lot 23	0.16	0.065	Morgan Ouimette & Trina Ciphery	\$ -	\$ 24.00	\$ 24.00
B112	2	Pt. Lot 23	0.16	0.064	Kurt Huard	\$ -	\$ 24.00	\$ 24.00
B113	2	Pt. Lot 23	0.13	0.054	Joseph & Terezia Nagy	\$ -	\$ 21.00	\$ 21.00
B114	2	Pt. Lot 23	0.20	0.083	John & Mary Holzel	\$ -	\$ 28.00	\$ 28.00
B115	2	Pt. Lot 23	0.24	0.098	Jeramie & Tiffany Cote	\$ -	\$ 31.00	\$ 31.00
B116	2	Pt. Lot 23	0.14	0.055	Richard & Tammy Allen	\$ -	\$ 21.00	\$ 21.00
B117	2	Pt. Lot 23	0.29	0.119	Mario & Concetta D'Alimonte	\$ -	\$ 36.00	\$ 36.00
B118	2	Pt. Lot 23	0.29	0.119	Denis & Jennifer Mallet	\$ -	\$ 36.00	\$ 36.00
B119	2	Pt. Lot 23	0.23	0.095	John & Mary Stuart	\$ -	\$ 32.00	\$ 32.00
B120	2	Pt. Lot 23	0.21	0.085	Irene & Leonard Pigeon	\$ -	\$ 29.00	\$ 29.00
B121	2	Pt. Lot 23	0.23	0.093	Aaron Mulder & Connie-Fay Girard	\$ -	\$ 31.00	\$ 31.00
B122	2	Pt. Lot 23	0.21	0.087	Theresa Fox	\$ -	\$ 30.00	\$ 30.00
B123	2	Pt. Lot 23	0.23	0.095	Kirstin Cote	\$ -	\$ 32.00	\$ 32.00
B124	2	Pt. Lot 23	0.21	0.087	Sean & Marcia Cota	\$ -	\$ 30.00	\$ 30.00
B125	2	Pt. Lot 23	0.23	0.094	Ryan Nantais	\$ -	\$ 32.00	\$ 32.00
B126	2	Pt. Lot 23	0.14	0.056	Ian & Laurie Hui	\$ -	\$ 22.00	\$ 22.00
B127	2	Pt. Lot 23	0.13	0.051	Leslie Blais	\$ -	\$ 21.00	\$ 21.00
B128	2	Pt. Lot 23	0.14	0.056	Geoffrey & Donna Hibbert	\$ -	\$ 22.00	\$ 22.00
B129	2	Pt. Lot 23	0.14	0.056	Leo Desbiens	\$ -	\$ 22.00	\$ 22.00
B130	2	Pt. Lot 23	0.13	0.051	Tammy Marancie	\$ -	\$ 21.00	\$ 21.00
B131	2	Pt. Lot 23	0.14	0.056	Matthew Erickson & Yvette Evans	\$ -	\$ 22.00	\$ 22.00
B132	2	Pt. Lot 23	0.15	0.062	Ryan & Melanie D'Alimonte	\$ -	\$ 24.00	\$ 24.00

Plan ID	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
B133	2	Pt. Lot 23	0.20	0.081	Sarah & Keith Shaw	\$ -	\$ 28.00	\$ 28.00
B134	2	Pt. Lot 23	0.16	0.066	Judith Spadafora	\$ -	\$ 25.00	\$ 25.00
B135	2	Pt. Lot 23	0.16	0.066	Kerry & Amberley Foote	\$ -	\$ 25.00	\$ 25.00
B136	2	Pt. Lot 23	0.16	0.066	George & Salvina Pearson	\$ -	\$ 25.00	\$ 25.00
B137	2	Pt. Lot 23	0.16	0.066	Patrick & Pauline Greenwood	\$ -	\$ 25.00	\$ 25.00
B138	2	Pt. Lot 23	0.16	0.065	Sandra Ashton	\$ -	\$ 25.00	\$ 25.00
B139	2	Pt. Lot 23	0.40	0.163	Andrew & Debra Groen	\$ -	\$ 46.00	\$ 46.00
B140	2	Pt. Lot 23	0.32	0.128	Jerry Chadwick	\$ -	\$ 39.00	\$ 39.00
B141	2	Pt. Lot 23	0.34	0.139	John France	\$ -	\$ 41.00	\$ 41.00
B142	2	Pt. Lot 23	0.34	0.139	Allan Kinsey & Stacy Markham	\$ -	\$ 41.00	\$ 41.00
B143	2	Pt. Lot 23	0.34	0.140	Allan Patterson	\$ -	\$ 41.00	\$ 41.00
B144	2	Pt. Lot 23	0.35	0.140	Theodore Girard & Jessica Spencer	\$ -	\$ 41.00	\$ 41.00
B145	2	Pt. Lot 23	0.35	0.140	John & Joanne Guitar	\$ -	\$ 41.00	\$ 41.00
B146	2	Pt. Lot 23	0.35	0.140	Mark & Penny Yablonsky	\$ -	\$ 41.00	\$ 41.00
B147	2	Pt. Lot 23	0.35	0.141	Jennifer Grant & Nathan Buckwell	\$ -	\$ 41.00	\$ 41.00
B148	2	Pt. Lot 23	0.35	0.142	Gary & Darlene Burns	\$ -	\$ 42.00	\$ 42.00
B149	2	Pt. Lot 23	0.36	0.145	Henry & Maureen Abson	\$ -	\$ 42.00	\$ 42.00
B150	2	Pt. Lot 23	0.18	0.072	Lewis Atherley	\$ -	\$ 26.00	\$ 26.00
B151	2	Pt. Lot 23	0.24	0.098	John & Margaret Dufour	\$ -	\$ 29.00	\$ 29.00
B152	2	Pt. Lot 23	0.41	0.164	Isabelle & James Bastien	\$ -	\$ 43.00	\$ 43.00
B153	2	Pt. Lot 23	0.37	0.149	Timothy & Violet Lauriault	\$ -	\$ 40.00	\$ 40.00
B154	2	Pt. Lot 23	0.49	0.199	Michael Holden & Kelly Hunt	\$ -	\$ 49.00	\$ 49.00
B155	2	Pt. Lot 23	0.66	0.267	Timothy & Janet Beaulieu	\$ -	\$ 59.00	\$ 59.00
B156	2	Pt. Lot 23	0.63	0.256	Block B	\$ -	\$ 59.00	\$ 59.00

Plan ID	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
B157	2	Pt. Lot 23	4.76	1.925	Block B	\$ -	\$ 228.00	\$ 228.00
B158	2	Pt. Lot 23	3.04	1.231	Block B	\$ -	\$ 175.00	\$ 175.00
B159	2	Pt. Lot 23	0.67	0.269	Julie Bonenfant	\$ -	\$ 60.00	\$ 60.00
B160	2	Pt. Lot 23	0.44	0.178	Istvan & Sheanna Zambo	\$ -	\$ 45.00	\$ 45.00
B161	2	Pt. Lot 23	0.25	0.103	Manuel & Maria Cacilhas	\$ -	\$ 31.00	\$ 31.00
B162	2	Pt. Lot 23	0.25	0.103	Scott & Jamie Hodgins	\$ -	\$ 31.00	\$ 31.00
B163	2	Pt. Lot 23	0.25	0.102	Todd & Rachel Morin	\$ -	\$ 31.00	\$ 31.00
B164	2	Pt. Lot 23	0.25	0.100	Jenny Labrada Perez	\$ -	\$ 30.00	\$ 30.00
B165	2	Pt. Lot 23	0.24	0.096	George Bondy	\$ -	\$ 29.00	\$ 29.00
B166	2	Pt. Lot 23	0.23	0.092	Maria Dibartolomeo	\$ -	\$ 28.00	\$ 28.00
B167	2	Pt. Lot 23	0.22	0.090	David & Karen Tales	\$ -	\$ 28.00	\$ 28.00
B168	2	Pt. Lot 23	0.24	0.099	Jeremy & Jessica D'Alimonte	\$ -	\$ 30.00	\$ 30.00
B169	2	Pt. Lot 23	0.27	0.108	Ziad & Jennifer Fatallah	\$ -	\$ 31.00	\$ 31.00
B170	2	Pt. Lot 23	0.24	0.099	Stephen Deschamps & Bridget Eveleigh	\$ -	\$ 30.00	\$ 30.00
B171	2	Pt. Lot 23	0.22	0.090	Andrew Cormier & Gillian Heisz	\$ -	\$ 28.00	\$ 28.00
B172	2	Pt. Lot 23	0.22	0.089	Kimberly Wright	\$ -	\$ 27.00	\$ 27.00
B173	2	Pt. Lot 23	0.19	0.077	Community Living Essex County	\$ -	\$ 25.00	\$ 25.00
B174	2	Pt. Lot 23	0.21	0.083	Michael & Tara-Lynn McDowell	\$ -	\$ 26.00	\$ 26.00
B175	2	Pt. Lot 23	0.19	0.078	Antonino Marano	\$ -	\$ 25.00	\$ 25.00
B176	2	Pt. Lot 23	0.19	0.078	Tho Nguyen	\$ -	\$ 25.00	\$ 25.00
B177	2	Pt. Lot 23	0.22	0.089	Gwenyth Harleb & Stephanie Smith	\$ -	\$ 27.00	\$ 27.00
B178	2	Pt. Lot 23	0.22	0.090	Timothy & Stacey Vigneux	\$ -	\$ 28.00	\$ 28.00
B179	2	Pt. Lot 23	0.24	0.098	Kyle & Jody-Lynn Ouellette	\$ -	\$ 30.00	\$ 30.00

Plan ID	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
B180	2	Pt. Lot 23	0.28	0.111	David Harris	\$ -	\$ 32.00	\$ 32.00
B181	2	Pt. Lot 23	0.22	0.090	Lydia & James Ouellette	\$ -	\$ 28.00	\$ 28.00
B182	2	Pt. Lot 23	0.22	0.089	Alan & Laura Piper	\$ -	\$ 27.00	\$ 27.00
B183	2	Pt. Lot 23	0.21	0.087	Jie Zheng & Lin Yang	\$ -	\$ 27.00	\$ 27.00
B184	2	Pt. Lot 23	0.20	0.083	Corey & Nicole Homick	\$ -	\$ 26.00	\$ 26.00
B185	2	Pt. Lot 23	0.20	0.079	Timothy & Marcelle O'Reilly	\$ -	\$ 25.00	\$ 25.00
B186	2	Pt. Lot 23	0.19	0.077	Mahmoud Brouri & Kathleen Bezaire	\$ -	\$ 25.00	\$ 25.00
B187	2	Pt. Lot 23	0.19	0.078	Jeffrey & Darlene Kopacz	\$ -	\$ 25.00	\$ 25.00
B188	2	Pt. Lot 23	0.02	0.007	1233804 Ontario Limited	\$ -	\$ 3.00	\$ 3.00
B189	2	Pt. Lot 23	1.02	0.411	Mikalynn & Michael Parlette	\$ -	\$ 81.00	\$ 81.00
B190	2	Pt. Lot 23	0.46	0.186	Kenneth Jones & Sandra Peever	\$ -	\$ 47.00	\$ 47.00
B191	2	Pt. Lot 23	0.42	0.170	Ronald Triolet	\$ -	\$ 51.00	\$ 51.00
B606	2	Pt. Lot 23	0.21	0.085	Nathan & Andrea Fevreau	\$ -	\$ 30.00	\$ 30.00
B607	2	Pt. Lot 23	0.21	0.085	Nanette Gatt	\$ -	\$ 30.00	\$ 30.00
B192	2	Pt. Lot 23	0.18	0.073	Marianne Ferenczy & Paula Demeter	\$ -	\$ 24.00	\$ 24.00
B193	2	Pt. Lot 23	0.18	0.073	Anna Leardi	\$ -	\$ 24.00	\$ 24.00
B194	2	Pt. Lot 23	0.18	0.073	Brett Bezaire & Amanda Deslippe	\$ -	\$ 24.00	\$ 24.00
B195	2	Pt. Lot 23	0.18	0.073	Sarah Sinasac & Nathan French	\$ -	\$ 24.00	\$ 24.00
B196	2	Pt. Lot 23	0.14	0.057	Michael Fines & Melisa Mulcaster	\$ -	\$ 21.00	\$ 21.00
B197	2	Pt. Lot 23	0.14	0.057	Carlie & Lindsay Mower	\$ -	\$ 21.00	\$ 21.00
B198	2	Pt. Lot 23	0.20	0.083	Leonardo & Nancy Caro	\$ -	\$ 26.00	\$ 26.00

2nd Concession Road Drain South
 Maintenance Schedule - Amherstburg (E09-2021-008)

Plan ID	Con. or Plan No.	Lot or Part of Lot	Acres Aff't'd	Hectares Aff't'd	Owner's Name	Value of Benefit	Value of Outlet	TOTAL VALUE
B199	2	Pt. Lot 23	0.20	0.083	Essex County Association For Community Living	\$ -	\$ 26.00	\$ 26.00
B200	2	Pt. Lot 23	0.12	0.050	Clifford & Marietta Ferriss	\$ -	\$ 19.00	\$ 19.00
B201	2	Pt. Lot 23	0.12	0.050	Eric Markham	\$ -	\$ 19.00	\$ 19.00
B202	2	Pt. Lot 23	0.12	0.050	Eduardo Munoz & Meggi Hutton	\$ -	\$ 19.00	\$ 19.00
B203	2	Pt. Lot 23	0.12	0.050	Roger & Louise Arseneau	\$ -	\$ 19.00	\$ 19.00
B204	2	Pt. Lot 23	0.12	0.050	Jeffrey & Maureen Medd	\$ -	\$ 19.00	\$ 19.00
B205	2	Pt. Lot 23	0.12	0.050	Cheryl Pillon & Kevin Cote	\$ -	\$ 19.00	\$ 19.00
B206	2	Pt. Lot 23	0.12	0.050	Dennis & Anne Bondy	\$ -	\$ 19.00	\$ 19.00
B207	2	Pt. Lot 23	0.15	0.062	Liisa & Steven Levesque	\$ -	\$ 22.00	\$ 22.00
B208	2	Pt. Lot 23	0.14	0.058	Joseph & Marlene Damphouse	\$ -	\$ 21.00	\$ 21.00
B209	2	Pt. Lot 23	0.11	0.046	Joseph & Margaret Joncas	\$ -	\$ 18.00	\$ 18.00
B210	2	Pt. Lot 23	0.11	0.046	Carl & Nanette Gatt	\$ -	\$ 18.00	\$ 18.00
B211	2	Pt. Lot 23	0.11	0.046	Douglas Buchanan	\$ -	\$ 18.00	\$ 18.00
B212	2	Pt. Lot 23	0.12	0.049	Nicola & Anna Simone	\$ -	\$ 19.00	\$ 19.00
B213	2	Pt. Lot 23	0.19	0.075	Nelson Caixeira	\$ -	\$ 24.00	\$ 24.00
B214	2	Pt. Lot 23	0.19	0.075	Roger & Kimberly Schroeder	\$ -	\$ 24.00	\$ 24.00
B215	2	Pt. Lot 23	0.19	0.075	Laurie-Anne Abraham	\$ -	\$ 24.00	\$ 24.00
B216	2	Pt. Lot 23	0.19	0.075	Matthew & Amanda Coughlin	\$ -	\$ 24.00	\$ 24.00
B217	2	Pt. Lot 23	0.12	0.049	Colm Holmes	\$ -	\$ 19.00	\$ 19.00
B218	2	Pt. Lot 23	0.11	0.047	Andrew & Carolyn Dopson	\$ -	\$ 18.00	\$ 18.00
B219	2	Pt. Lot 23	0.11	0.047	Kenneth Bookery & Ashley Dinunzio	\$ -	\$ 18.00	\$ 18.00
B220	2	Pt. Lot 23	0.11	0.046	Jerome Lucier	\$ -	\$ 18.00	\$ 18.00
B221	2	Pt. Lot 23	0.14	0.058	Peter & Beverly Blain	\$ -	\$ 21.00	\$ 21.00

Plan ID	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
B222	2	Pt. Lot 23	0.16	0.066	Gregory Carr	\$ -	\$ 23.00	\$ 23.00
B223	2	Pt. Lot 23	0.11	0.046	Glenn & Marlene Turkington	\$ -	\$ 18.00	\$ 18.00
B224	2	Pt. Lot 23	0.11	0.047	Richard Wilson	\$ -	\$ 18.00	\$ 18.00
B225	2	Pt. Lot 23	0.12	0.047	Kelly Charlebois	\$ -	\$ 18.00	\$ 18.00
B226	2	Pt. Lot 23	0.12	0.047	Jaon & Vida Allen	\$ -	\$ 18.00	\$ 18.00
B227	2	Pt. Lot 23	0.12	0.047	Kristopher & Nikita Ostapovitch	\$ -	\$ 18.00	\$ 18.00
B228	2	Pt. Lot 23	0.12	0.047	James Lacey	\$ -	\$ 18.00	\$ 18.00
B229	2	Pt. Lot 23	0.12	0.047	Bradley & Jennifer Fink	\$ -	\$ 18.00	\$ 18.00
B230	2	Pt. Lot 23	0.12	0.047	Michael & Jackie Allen	\$ -	\$ 18.00	\$ 18.00
B231	2	Pt. Lot 23	0.12	0.048	David Henderson & Kathrine & Tho Nguyen	\$ -	\$ 18.00	\$ 18.00
B232	2	Pt. Lot 23	0.12	0.048	David Thistle	\$ -	\$ 18.00	\$ 18.00
B233	2	Pt. Lot 23	0.12	0.048	Kelly Fowkes	\$ -	\$ 18.00	\$ 18.00
B234	2	Pt. Lot 23	0.12	0.048	Kelly Abbott	\$ -	\$ 18.00	\$ 18.00
B235	2	Pt. Lot 23	0.12	0.048	Alexander Hagg & Heather Mackenzie	\$ -	\$ 18.00	\$ 18.00
B236	2	Pt. Lot 23	0.12	0.048	David & Mary Rampersaud	\$ -	\$ 18.00	\$ 18.00
B237	2	Pt. Lot 23	0.12	0.049	Natalie Ayer	\$ -	\$ 18.00	\$ 18.00
B238	2	Pt. Lot 23	0.12	0.048	Joel & Brytany Archer	\$ -	\$ 18.00	\$ 18.00
B239	2	Pt. Lot 23	0.14	0.057	David & Kimmerly Strickland	\$ -	\$ 21.00	\$ 21.00
B240	2	Pt. Lot 23	0.20	0.079	Roy Colmer & Rosa Savoni	\$ -	\$ 25.00	\$ 25.00
B241	2	Pt. Lot 23	0.14	0.058	Thomas Loxton	\$ -	\$ 21.00	\$ 21.00
B242	2	Pt. Lot 23	0.11	0.043	Jeffery Helkie & Laura Stark	\$ -	\$ 17.00	\$ 17.00
B243	2	Pt. Lot 23	0.12	0.047	Jeffrey & Kristie Melko	\$ -	\$ 18.00	\$ 18.00
B244	2	Pt. Lot 23	0.12	0.047	Anne & Michael Duffey	\$ -	\$ 18.00	\$ 18.00

Plan ID	Con. or Plan No.	Lot or Part of Lot	Acres Aff't'd	Hectares Aff't'd	Owner's Name	Value of Benefit	Value of Outlet	TOTAL VALUE
B245	2	Pt. Lot 23	0.12	0.047	Gregory & Marisa Forsyth	\$ -	\$ 18.00	\$ 18.00
B246	2	Pt. Lot 23	0.14	0.058	Michael MacDonald	\$ -	\$ 21.00	\$ 21.00
B247	2	Pt. Lot 23	0.15	0.061	Tina & Travis Renaud	\$ -	\$ 22.00	\$ 22.00
B248	2	Pt. Lot 23	0.12	0.049	Kyle Donne	\$ -	\$ 19.00	\$ 19.00
B249	2	Pt. Lot 23	0.12	0.049	Denis & Siobhan Paquin	\$ -	\$ 19.00	\$ 19.00
B250	2	Pt. Lot 23	0.12	0.049	Robbie & Karen Bates	\$ -	\$ 19.00	\$ 19.00
B251	2	Pt. Lot 23	0.12	0.049	Matthew Sutton & Michelle Sinasac	\$ -	\$ 19.00	\$ 19.00
B252	2	Pt. Lot 23	0.12	0.049	Louise Ferriss & Dorothy & Frank Wirag	\$ -	\$ 19.00	\$ 19.00
B253	2	Pt. Lot 23	0.12	0.049	Normand & Alida Kingsbury	\$ -	\$ 19.00	\$ 19.00
B254	2	Pt. Lot 23	0.13	0.051	Justin Wrixon & Stephanie Pietrangelo	\$ -	\$ 19.00	\$ 19.00
B255	2	Pt. Lot 23	0.13	0.051	Fernande Laroche	\$ -	\$ 19.00	\$ 19.00
B256	2	Pt. Lot 23	0.13	0.052	Robr Falkanger	\$ -	\$ 19.00	\$ 19.00
B257	2	Pt. Lot 23	0.12	0.050	Sean Lunardi & Felicia Deroy	\$ -	\$ 19.00	\$ 19.00
B258	2	Pt. Lot 23	0.12	0.050	George & Barbara Sesto	\$ -	\$ 19.00	\$ 19.00
B259	2	Pt. Lot 23	0.12	0.050	Ehren Martin	\$ -	\$ 19.00	\$ 19.00
B260	2	Pt. Lot 23	0.12	0.050	Jason & Holly McLean	\$ -	\$ 19.00	\$ 19.00
B261	2	Pt. Lot 23	0.12	0.050	Peter Belanger & Patricia Capalbo	\$ -	\$ 19.00	\$ 19.00
B262	2	Pt. Lot 23	0.15	0.061	Keith & Katherine Jones	\$ -	\$ 22.00	\$ 22.00
B263	2	Pt. Lot 23	0.13	0.054	Mark Meloche & Shelley Gonzalvo	\$ -	\$ 20.00	\$ 20.00
B264	2	Pt. Lot 23	0.23	0.094	Terrance & Bonnie Bertrand	\$ -	\$ 29.00	\$ 29.00
B265	2	Pt. Lot 23	0.14	0.055	Anthony Bastien & Krystina Menard	\$ -	\$ 20.00	\$ 20.00
B266	2	Pt. Lot 23	0.13	0.053	Joel Gonzalvo & Alan Desimpel	\$ -	\$ 20.00	\$ 20.00

Plan ID	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
B267	2	Pt. Lot 23	0.11	0.046	Sheila Moore	\$ -	\$ 18.00	\$ 18.00
B268	2	Pt. Lot 23	0.11	0.046	Charles Copland & Laura Parent	\$ -	\$ 18.00	\$ 18.00
B269	2	Pt. Lot 23	0.14	0.057	Shawn MacDonald	\$ -	\$ 21.00	\$ 21.00
B270	2	Pt. Lot 23	0.15	0.062	Anita Gibb	\$ -	\$ 22.00	\$ 22.00
B271	2	Pt. Lot 23	0.12	0.047	Marion & Graham Clayton	\$ -	\$ 18.00	\$ 18.00
B272	2	Pt. Lot 23	0.12	0.047	Gregory & Carol Farmer	\$ -	\$ 18.00	\$ 18.00
B273	2	Pt. Lot 23	0.13	0.052	Bosko Jugovic & Angela Arce	\$ -	\$ 19.00	\$ 19.00
B274	2	Pt. Lot 23	0.13	0.051	Dustin Deslippe	\$ -	\$ 19.00	\$ 19.00
B275	2	Pt. Lot 23	0.13	0.052	Anthony Olivito	\$ -	\$ 19.00	\$ 19.00
B276	2	Pt. Lot 23	0.13	0.052	Shaun & Stacey Griffiths	\$ -	\$ 19.00	\$ 19.00
B277	2	Pt. Lot 23	0.13	0.052	Eric Weigel & Meaghan Hlavac	\$ -	\$ 19.00	\$ 19.00
B278	2	Pt. Lot 21	0.17	0.068	Robert & Karen Clifford	\$ -	\$ 26.00	\$ 26.00
B279	2	Pt. Lot 21	0.11	0.045	Dance & Jamie Stefanovich	\$ -	\$ 20.00	\$ 20.00
B280	2	Pt. Lot 21	0.11	0.046	Nathan Gillis	\$ -	\$ 20.00	\$ 20.00
B281	2	Pt. Lot 21	0.11	0.045	Curtis Dufour	\$ -	\$ 20.00	\$ 20.00
B282	2	Pt. Lot 21	0.19	0.077	Stacey Wiley & Kyle Pierschke	\$ -	\$ 29.00	\$ 29.00
B283	2	Pt. Lot 21	0.23	0.094	Brian Aucoin & Allison Brown	\$ -	\$ 33.00	\$ 33.00
B284	2	Pt. Lot 21	0.27	0.108	Tong Bui & Trang Le	\$ -	\$ 36.00	\$ 36.00
B285	2	Pt. Lot 21	0.27	0.107	Owen Finn	\$ -	\$ 36.00	\$ 36.00
B286	2	Pt. Lot 21	0.21	0.085	Donald & Kimberly Martin	\$ -	\$ 31.00	\$ 31.00
B287	2	Pt. Lot 21	0.15	0.060	Robert Kammerer & Shelley McCann	\$ -	\$ 24.00	\$ 24.00
B288	2	Pt. Lot 21	0.15	0.060	Chantal Brunet	\$ -	\$ 24.00	\$ 24.00
B289	2	Pt. Lot 21	0.15	0.060	Robin & Debra Russell	\$ -	\$ 24.00	\$ 24.00

Plan ID	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
B290	2	Pt. Lot 21	0.15	0.060	Justin Awram & Chelsea Hennon	\$ -	\$ 24.00	\$ 24.00
B291	2	Pt. Lot 21	0.15	0.060	Krista Sales & Christopher Hayes	\$ -	\$ 24.00	\$ 24.00
B292	2	Pt. Lot 21	0.16	0.063	Murray Janisse & Teresa Davis	\$ -	\$ 25.00	\$ 25.00
B293	2	Pt. Lot 21	0.15	0.060	Donald & Claire MacDonald	\$ -	\$ 25.00	\$ 25.00
B294	2	Pt. Lot 21	0.22	0.091	Robert & Leonarda Faroni	\$ -	\$ 32.00	\$ 32.00
B295	2	Pt. Lot 21	0.20	0.081	Michael & Carolyn Leake	\$ -	\$ 29.00	\$ 29.00
B296	2	Pt. Lot 21	0.18	0.072	Susanne Bergeron	\$ -	\$ 27.00	\$ 27.00
B297	2	Pt. Lot 21	0.17	0.070	Melanie Conaty	\$ -	\$ 27.00	\$ 27.00
B298	2	Pt. Lot 21	0.18	0.072	Michael & Patricia Ford	\$ -	\$ 27.00	\$ 27.00
B299	2	Pt. Lot 21	0.18	0.072	Krystal Kehoe	\$ -	\$ 28.00	\$ 28.00
B300	2	Pt. Lot 21	0.18	0.072	Kevin Souligny	\$ -	\$ 28.00	\$ 28.00
B301	2	Pt. Lot 21	0.18	0.071	Christian Eldred	\$ -	\$ 27.00	\$ 27.00
B302	2	Pt. Lot 21	0.21	0.083	Janet & David Ross	\$ -	\$ 30.00	\$ 30.00
B303	2	Pt. Lot 21	0.26	0.104	Robert & Mary Labrecque	\$ -	\$ 36.00	\$ 36.00
B304	2	Pt. Lot 21	0.19	0.076	Doreen Zajec	\$ -	\$ 28.00	\$ 28.00
B305	2	Pt. Lot 21	0.17	0.070	Margaret Haskell	\$ -	\$ 27.00	\$ 27.00
B306	2	Pt. Lot 21	0.19	0.076	Curtis Ficociello & Carly Baz	\$ -	\$ 28.00	\$ 28.00
B307	2	Pt. Lot 21	0.20	0.082	Gregory & Michele Girty	\$ -	\$ 30.00	\$ 30.00
B308	2	Pt. Lot 21	0.27	0.108	Bradley & Tracy Blackburn	\$ -	\$ 36.00	\$ 36.00
B309	2	Pt. Lot 21	0.19	0.077	Tamasin & Terence Dineen	\$ -	\$ 29.00	\$ 29.00
B310	2	Pt. Lot 21	0.20	0.080	Jeffrey & Janette McCartney	\$ -	\$ 29.00	\$ 29.00
B311	2	Pt. Lot 21	0.24	0.097	Jodi Taylor	\$ -	\$ 33.00	\$ 33.00
B312	2	Pt. Lot 21	0.22	0.089	David Amyotte & Sandra Hodgins	\$ -	\$ 31.00	\$ 31.00

Plan ID	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
B313	2	Pt. Lot 21	0.19	0.078	Orma Fryer	\$ -	\$ 29.00	\$ 29.00
B314	2	Pt. Lot 21	0.20	0.079	Richard Dufour	\$ -	\$ 29.00	\$ 29.00
B315	2	Pt. Lot 21	0.18	0.072	Dennis Rooke	\$ -	\$ 27.00	\$ 27.00
B316	2	Pt. Lot 21	0.22	0.089	Ernest & Antoinette Pecaski	\$ -	\$ 31.00	\$ 31.00
B317	2	Pt. Lot 23	0.23	0.091	Luke & Nicole Goggin	\$ -	\$ 32.00	\$ 32.00
B318	2	Pt. Lot 23 & 24	0.17	0.067	Camillo & Assunta Toppi	\$ -	\$ 26.00	\$ 26.00
B319	2	Pt. Lot 21	0.16	0.064	Clint Merrifield & Miranda Ronholm	\$ -	\$ 26.00	\$ 26.00
B320	2	Pt. Lot 21	0.15	0.063	Dale Simmons	\$ -	\$ 25.00	\$ 25.00
B321	2	Pt. Lot 21	0.16	0.066	Gordon Ross & Wendy Wigle	\$ -	\$ 26.00	\$ 26.00
B322	2	Pt. Lot 21	0.16	0.066	Paul Meloche & Shannon McLaughlin	\$ -	\$ 26.00	\$ 26.00
B323	2	Pt. Lot 21	0.15	0.061	John & Donna Bondy	\$ -	\$ 25.00	\$ 25.00
B324	2	Pt. Lot 21	0.15	0.061	Wilbur & Cynthia Mulder	\$ -	\$ 25.00	\$ 25.00
B325	2	Pt. Lot 21	0.15	0.061	Sabina Harrison	\$ -	\$ 25.00	\$ 25.00
B326	2	Pt. Lot 21	0.15	0.061	Theresa Brennan	\$ -	\$ 25.00	\$ 25.00
B327	2	Pt. Lot 21	0.15	0.061	Gail Bratt & Bernard Krebs	\$ -	\$ 25.00	\$ 25.00
B328	2	Pt. Lot 21	0.16	0.066	Terry & Kimberly Deschamps	\$ -	\$ 26.00	\$ 26.00
B329	2	Pt. Lot 21	0.16	0.066	Tiffany & Leslie Anscombe	\$ -	\$ 26.00	\$ 26.00
B330	2	Pt. Lot 21	0.15	0.061	Carmine & Gladys Cristofaro	\$ -	\$ 25.00	\$ 25.00
B331	2	Pt. Lot 21	0.15	0.061	Daniel & Georgina Marshall	\$ -	\$ 25.00	\$ 25.00
B332	2	Pt. Lot 21	0.15	0.061	Michael & Betty Constantineau	\$ -	\$ 25.00	\$ 25.00
B333	2	Pt. Lot 21	0.15	0.061	James & Randa Parent	\$ -	\$ 25.00	\$ 25.00
B334	2	Pt. Lot 21	0.16	0.065	Christopher Leblanc & Kelly Grantmyre	\$ -	\$ 26.00	\$ 26.00

2nd Concession Road Drain South
Maintenance Schedule - Amherstburg (E09-2021-008)

Plan ID	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
B335	2	Pt. Lot 21	0.19	0.077	Tara Gugliotta & Raymond Lariviere	\$ -	\$ 29.00	\$ 29.00
B336	2	Pt. Lot 21	0.25	0.100	Daria Aybusheva & Andrei Aibouchev	\$ -	\$ 35.00	\$ 35.00
B341	2	Pt. Lot 21	0.69	0.279	Christopher D'Aloisio	\$ -	\$ 79.00	\$ 79.00
B609	156	Pt. Pk. Lot 2	0.10	0.040	Richard & Kathryn Lancop	\$ -	\$ 23.00	\$ 23.00
B610	156	Pt. Pk. Lot 2	0.10	0.040	Kathryn Lancop	\$ -	\$ 23.00	\$ 23.00
B611	156	Pt. Pk. Lot 2	0.10	0.040	Agostino & Lise Menna	\$ -	\$ 23.00	\$ 23.00
B612	156	Pt. Pk. Lot 2	0.10	0.040	Agostino Menna	\$ -	\$ 23.00	\$ 23.00
B608	156	Pt. Pk. Lot 2	0.10	0.040	Christopher D'Aloisio	\$ -	\$ 23.00	\$ 23.00
B342	2	Pt. Lot 21	0.18	0.075	Stephen Nikitiuk	\$ -	\$ 29.00	\$ 29.00
B343	2	Pt. Lot 21	0.18	0.074	Erin & Kenneth Baird	\$ -	\$ 29.00	\$ 29.00
B344	2	Pt. Lot 21	0.18	0.074	Michael & Nicole Ouellette	\$ -	\$ 29.00	\$ 29.00
B345	2	Pt. Lot 21	0.18	0.074	Ronald & Anne Muir	\$ -	\$ 29.00	\$ 29.00
B346	2	Pt. Lot 21	0.18	0.074	Laurie Cavanaugh	\$ -	\$ 29.00	\$ 29.00
B347	2	Pt. Lot 21	0.18	0.074	John & Ruth Cooper	\$ -	\$ 29.00	\$ 29.00
B348	2	Pt. Lot 21	0.18	0.074	Ryan McLean & Melissa Woods	\$ -	\$ 29.00	\$ 29.00
B349	2	Pt. Lot 21	0.20	0.082	Stephen Morello & Stefanie Johnston	\$ -	\$ 30.00	\$ 30.00
B350	2	Pt. Lot 21	0.23	0.094	Sandra & Bradley Duffy & Deborah & Jeffrey Court	\$ -	\$ 33.00	\$ 33.00
B351	2	Pt. Lot 21	0.35	0.141	Lisa & David Riopelle	\$ -	\$ 43.00	\$ 43.00
B352	2	Pt. Lot 21	0.29	0.116	Denise Bratt	\$ -	\$ 37.00	\$ 37.00
B353	2	Pt. Lot 21	0.20	0.080	Jeffrey & Deborah Court	\$ -	\$ 29.00	\$ 29.00
B354	2	Pt. Lot 21	0.35	0.141	Bradley & Sandra Duffy	\$ -	\$ 43.00	\$ 43.00
B355	2	Pt. Lot 21	0.17	0.068	Bradley Flood	\$ -	\$ 26.00	\$ 26.00

Plan ID	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
B356	2	Pt. Lot 21	0.12	0.049	Jakob & Shari Damstra	\$ -	\$ 21.00	\$ 21.00
B357	2	Pt. Lot 21	0.20	0.081	Cheryl West & Gail Doyle	\$ -	\$ 29.00	\$ 29.00
B358	2	Pt. Lot 21	0.19	0.076	Andrew & Jane Bolley	\$ -	\$ 28.00	\$ 28.00
B359	2	Pt. Lot 21	0.19	0.078	Michael & Cindy Doyle	\$ -	\$ 29.00	\$ 29.00
B360	2	Pt. Lot 21	0.18	0.074	David & Dorothy Thrasher	\$ -	\$ 28.00	\$ 28.00
B361	2	Pt. Lot 21	0.20	0.083	Brittany Pretty	\$ -	\$ 30.00	\$ 30.00
B362	2	Pt. Lot 21	0.26	0.107	Adam & Gabrielle Renaud	\$ -	\$ 37.00	\$ 37.00
B363	2	Pt. Lot 21	0.21	0.085	Shirley & Marcel Pare	\$ -	\$ 31.00	\$ 31.00
B364	2	Pt. Lot 21	0.24	0.097	Bonnie Mansell	\$ -	\$ 33.00	\$ 33.00
B365	2	Pt. Lot 21	0.19	0.075	Michael Bates	\$ -	\$ 28.00	\$ 28.00
B366	2	Pt. Lot 21	0.17	0.070	Margaret Halls	\$ -	\$ 28.00	\$ 28.00
B367	2	Pt. Lot 21	0.17	0.070	Nestor Restrepo & Jillian Romero	\$ -	\$ 28.00	\$ 28.00
B368	2	Pt. Lot 21	0.17	0.070	John & Kata Valentik	\$ -	\$ 28.00	\$ 28.00
B369	2	Pt. Lot 21	0.17	0.071	Daniel & Patricia Thibert	\$ -	\$ 28.00	\$ 28.00
B370	2	Pt. Lot 21	0.17	0.071	Lauren Dewar	\$ -	\$ 28.00	\$ 28.00
B371	2	Pt. Lot 21	0.22	0.089	James & Marguerite Jaques	\$ -	\$ 32.00	\$ 32.00
B372	2	Pt. Lot 21	0.19	0.078	Asterie Ndikumana	\$ -	\$ 30.00	\$ 30.00
B373	2	Pt. Lot 21	0.19	0.078	Jerry & Elizabeth Sokolik	\$ -	\$ 30.00	\$ 30.00
B374	2	Pt. Lot 21	0.34	0.137	Douglas & Brenda Thompson	\$ -	\$ 43.00	\$ 43.00
B375	2	Pt. Lot 21	0.40	0.160	Mark Meloche	\$ -	\$ 49.00	\$ 49.00
B376	2	Pt. Lot 21	0.26	0.104	Marcella Dufour & James Best	\$ -	\$ 37.00	\$ 37.00
B377	2	Pt. Lot 21	0.34	0.137	Courtney Ryan & Daniel Michaud	\$ -	\$ 43.00	\$ 43.00
B378	2	Pt. Lot 21	0.27	0.109	Matthew Dipasquale & Katelyn Goodchild	\$ -	\$ 38.00	\$ 38.00

2nd Concession Road Drain South
 Maintenance Schedule - Amherstburg (E09-2021-008)

Plan ID	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
B379	2	Pt. Lot 21	0.21	0.085	Leo Drouillard	\$ -	\$ 32.00	\$ 32.00
B380	2	Pt. Lot 21	0.18	0.072	Paul & Brenda Owen	\$ -	\$ 28.00	\$ 28.00
B381	2	Pt. Lot 21	0.18	0.072	Cheryl & Thomas DiPasquale	\$ -	\$ 28.00	\$ 28.00
B382	2	Pt. Lot 21	0.17	0.069	Mark & Gwen McAllen	\$ -	\$ 28.00	\$ 28.00
B383	2	Pt. Lot 21	0.17	0.069	Aaron Turner & Marija Lelas	\$ -	\$ 28.00	\$ 28.00
B384	2	Pt. Lot 21	0.17	0.069	Frederick Gilbert	\$ -	\$ 28.00	\$ 28.00
B385	2	Pt. Lot 21	0.17	0.069	William Beale	\$ -	\$ 28.00	\$ 28.00
B386	2	Pt. Lot 21	0.17	0.069	Nelson & Pauline St. John	\$ -	\$ 28.00	\$ 28.00
B387	2	Pt. Lot 21	0.17	0.069	Robert & Gloria Taylor	\$ -	\$ 28.00	\$ 28.00
B388	2	Pt. Lot 21	0.17	0.069	Tammy Campbell	\$ -	\$ 28.00	\$ 28.00
B389	2	Pt. Lot 21	0.18	0.072	Rose McKinnon	\$ -	\$ 28.00	\$ 28.00
B390	2	Pt. Lot 21	0.18	0.072	Douglas & Mary Middleton	\$ -	\$ 28.00	\$ 28.00
B391	2	Pt. Lot 21	0.21	0.085	Karl & Domenica Trudell	\$ -	\$ 32.00	\$ 32.00
B392	2	Pt. Lot 21	0.27	0.109	Joshua Hurst	\$ -	\$ 38.00	\$ 38.00
B393	2	Pt. Lot 21	0.34	0.139	David Sinasac	\$ -	\$ 44.00	\$ 44.00
B394	2	Pt. Lot 21	0.26	0.105	Otto & Vera Newhook	\$ -	\$ 37.00	\$ 37.00
B395	2	Pt. Lot 21	0.40	0.162	Paul Simpson	\$ -	\$ 50.00	\$ 50.00
B396	2	Pt. Lot 21	0.35	0.140	Anne Kainz	\$ -	\$ 44.00	\$ 44.00
B397	2	Pt. Lot 21	0.18	0.072	Joseph & Patricia Cunningham	\$ -	\$ 28.00	\$ 28.00
B398	2	Pt. Lot 21	0.18	0.072	Michael & Donita Farmer	\$ -	\$ 28.00	\$ 28.00
B399	2	Pt. Lot 21	0.30	0.122	Jennifer Meunier & Robert Racette	\$ -	\$ 40.00	\$ 40.00
B400	2	Pt. Lot 21	0.30	0.121	Ralph & Heather Attwater	\$ -	\$ 40.00	\$ 40.00
B401	2	Pt. Lot 21	0.17	0.070	Ada & Jeffrey VanDongen	\$ -	\$ 28.00	\$ 28.00

Plan ID	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
B402	2	Pt. Lot 21	0.17	0.070	Bernice & Neil Slater	\$ -	\$ 28.00	\$ 28.00
B403	2	Pt. Lot 21	0.17	0.070	Raquel Hurst	\$ -	\$ 28.00	\$ 28.00
B404	2	Pt. Lot 21	0.17	0.070	Gilbert & Karen Bezaire	\$ -	\$ 28.00	\$ 28.00
B405	2	Pt. Lot 21	0.17	0.070	Nancy Polyak	\$ -	\$ 28.00	\$ 28.00
B406	2	Pt. Lot 21	0.17	0.070	Theresa Lachapelle	\$ -	\$ 28.00	\$ 28.00
B407	2	Pt. Lot 21	0.17	0.070	Albert & Pauline Bump	\$ -	\$ 28.00	\$ 28.00
B408	2	Pt. Lot 21	0.17	0.070	Alex Temesy & Jaide Lyons	\$ -	\$ 28.00	\$ 28.00
B409	2	Pt. Lot 21	0.17	0.070	Daniel Delmore & Dayna DiPasquale	\$ -	\$ 28.00	\$ 28.00
B410	2	Pt. Lot 21	0.17	0.070	Carol Charette	\$ -	\$ 28.00	\$ 28.00
B411	2	Pt. Lot 21	0.17	0.070	John & Patricia McLaughlin	\$ -	\$ 28.00	\$ 28.00
B412	2	Pt. Lot 21	0.17	0.070	Kenneth & Anne Garrod	\$ -	\$ 28.00	\$ 28.00
B413	2	Pt. Lot 21	0.17	0.070	Kenneth Greason	\$ -	\$ 28.00	\$ 28.00
B414	2	Pt. Lot 21	0.22	0.088	John Shearon	\$ -	\$ 32.00	\$ 32.00
B415	2	Pt. Lot 21	0.16	0.063	James & Lynda Parr	\$ -	\$ 26.00	\$ 26.00
B416	2	Pt. Lot 21	0.16	0.063	Natalie Faucher	\$ -	\$ 26.00	\$ 26.00
B417	2	Pt. Lot 21	0.16	0.063	Jennifer & Robert Oriet	\$ -	\$ 26.00	\$ 26.00
B418	2	Pt. Lot 21	0.16	0.063	Glenn & Trudy Hansman	\$ -	\$ 26.00	\$ 26.00
B419	2	Pt. Lot 21	0.19	0.079	Emilia Rufo	\$ -	\$ 30.00	\$ 30.00
B420	2	Pt. Lot 21	0.19	0.079	Gary & Shirley Wigle	\$ -	\$ 30.00	\$ 30.00
B421	2	Pt. Lot 21	0.98	0.395	1882018 Ontario Inc.	\$ 9.00	\$ 101.00	\$ 110.00
B422	2	Pt. Lot 21	0.20	0.079	Erik Eliassen & Amanda Ouellette	\$ 2.00	\$ 32.00	\$ 34.00
B423	2	Pt. Lot 21	0.20	0.079	Dylan & Jessica White & Mary-Josephine McCaffrey	\$ 2.00	\$ 32.00	\$ 34.00

Plan ID	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
B424	2	Pt. Lot 21	0.34	0.139	Bruce Abson	\$ 3.00	\$ 48.00	\$ 51.00
B425	2	Pt. Lot 21	0.34	0.139	Leslie Pettypiece & Linda Mclean	\$ 3.00	\$ 48.00	\$ 51.00
B426	2	Pt. Lot 21	0.24	0.098	Mitchell Bastien	\$ 2.00	\$ 37.00	\$ 39.00
B427	2	Pt. Lot 21	0.24	0.098	Shawn Keizer & Ashley Schott	\$ 2.00	\$ 37.00	\$ 39.00
B428	2	Pt. Lot 21	0.27	0.107	Joseph & Carol Reaume	\$ 2.00	\$ 39.00	\$ 41.00
B429	2	Pt. Lot 21	0.41	0.166	Giuseppe & Angela Desantis	\$ 4.00	\$ 54.00	\$ 58.00
B430	2	Pt. Lot 21	0.40	0.162	Keith & Nicole Lauzon	\$ 4.00	\$ 53.00	\$ 57.00
B431	2	Pt. Lot 21	0.40	0.162	Frederick & Karen Bertrand	\$ 4.00	\$ 52.00	\$ 56.00
B432	2	Pt. Lot 21	0.40	0.162	Ronald & Mary Grant	\$ 4.00	\$ 52.00	\$ 56.00
B433	2	Pt. Lot 21	0.40	0.162	Henrik & Rita Andersen	\$ 4.00	\$ 52.00	\$ 56.00
B434	2	Pt. Lot 21	0.40	0.162	Gerard & Jennifer Shaw	\$ 4.00	\$ 51.00	\$ 55.00
B435	2	Pt. Lot 21	0.40	0.162	Dina Orsi	\$ 4.00	\$ 51.00	\$ 55.00
B436	2	Pt. Lot 21	0.40	0.162	Eric Bratt & Elaine Anderson	\$ 4.00	\$ 51.00	\$ 55.00
B437	2	Pt. Lot 21	0.40	0.162	Rami Chammat & Karen Brookmire	\$ 4.00	\$ 50.00	\$ 54.00
B438	2	Pt. Lot 21	0.40	0.162	Natalie & Luigi D'Ambrosio	\$ 4.00	\$ 50.00	\$ 54.00
B439	2	Pt. Lot 21	0.41	0.166	Maynard & Marva Hurst	\$ 4.00	\$ 51.00	\$ 55.00
B440	156	Pt. Lot 21	0.43	0.174	Drew & Mary Colson	\$ 4.00	\$ 47.00	\$ 51.00
B604	156	Pt. Lot 1	0.11	0.045	2HCoulson Ltd.	\$ -	\$ 22.00	\$ 22.00
B605	156	Pt. Lot 1	0.11	0.045	Steven & Sheila Walton	\$ -	\$ 22.00	\$ 22.00
B441	2	Pt. Lot 21	0.15	0.062	Alan Guthrie & Janice Boismier	\$ -	\$ 26.00	\$ 26.00
B442	2	Pt. Lot 21	0.15	0.062	Michael Bellefleur	\$ -	\$ 26.00	\$ 26.00
B443	2	Pt. Lot 21	0.15	0.062	Sherry & Jeffrey Coulter	\$ -	\$ 26.00	\$ 26.00
B444	2	Pt. Lot 21	0.15	0.062	Ernest & Tracy Godden	\$ -	\$ 26.00	\$ 26.00

Plan ID	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
B445	2	Pt. Lot 21	0.15	0.062	Thomas & Mary Henderson	\$ -	\$ 26.00	\$ 26.00
B446	2	Pt. Lot 21	0.15	0.062	Patrick Heroux & Jo-Anne McDowell	\$ -	\$ 26.00	\$ 26.00
B447	2	Pt. Lot 21	0.15	0.060	John & Gail Deneau	\$ -	\$ 25.00	\$ 25.00
B448	2	Pt. Lot 21	0.18	0.073	Candace Wright & Christopher Mendler	\$ -	\$ 29.00	\$ 29.00
B449	2	Pt. Lot 21	0.27	0.108	Larry & Greta Ruston	\$ -	\$ 37.00	\$ 37.00
B450	2	Pt. Lot 21	0.20	0.079	Leonard & Paula Tetreault	\$ -	\$ 30.00	\$ 30.00
B451	2	Pt. Lot 23 & 24	0.29	0.118	James Durocher & Carly LeBlanc	\$ 3.00	\$ 37.00	\$ 40.00
B452	2	Pt. Lot 23 & 24	0.29	0.119	Livia Donofrio	\$ -	\$ 38.00	\$ 38.00
B453	2	Pt. Lot 23 & 24	0.29	0.116	Donald & Angela Florica	\$ -	\$ 37.00	\$ 37.00
B454	2	Pt. Lot 23 & 24	0.27	0.110	Alberto & Grazietta D'Alimonte	\$ -	\$ 37.00	\$ 37.00
B455	2	Pt. Lot 23 & 24	0.27	0.110	Mary DiPasquale	\$ -	\$ 37.00	\$ 37.00
B456	2	Pt. Lot 23 & 24	0.27	0.110	Corey Pisonneault & Samantha Quinn	\$ -	\$ 37.00	\$ 37.00
B457	2	Pt. Lot 23 & 24	0.27	0.110	Allan & Donna Halowski	\$ -	\$ 37.00	\$ 37.00
B458	2	Pt. Lot 23 & 24	0.27	0.110	Luigi & Tonia Fortini	\$ -	\$ 37.00	\$ 37.00
B459	2	Pt. Lot 23 & 24	0.27	0.110	Michael & Cindy Marentette	\$ -	\$ 37.00	\$ 37.00
B460	2	Pt. Lot 23 & 24	0.27	0.110	Barry & Maureen Renaud	\$ -	\$ 37.00	\$ 37.00
B461	2	Pt. Lot 23 & 24	0.27	0.111	Mark Bailey	\$ -	\$ 37.00	\$ 37.00

Plan ID	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
B462	2	Pt. Lot 23 & 24	0.21	0.085	Richard & Manila Orum	\$ -	\$ 31.00	\$ 31.00
B463	2	Pt. Lot 23 & 24	0.16	0.063	Dawna Gorrell	\$ -	\$ 25.00	\$ 25.00
B464	2	Pt. Lot 23 & 24	0.15	0.062	Mark & Laura Mousseau	\$ -	\$ 25.00	\$ 25.00
B465	2	Pt. Lot 23 & 24	0.15	0.062	Wendy Wallace	\$ -	\$ 25.00	\$ 25.00
B466	2	Pt. Lot 23 & 24	0.15	0.062	William Matte & Shelly Price	\$ -	\$ 25.00	\$ 25.00
B467	2	Pt. Lot 23 & 24	0.16	0.067	Marvin Bennett & Karen Longfield	\$ -	\$ 27.00	\$ 27.00
B468	2	Pt. Lot 21	0.17	0.068	Andrew & Catherine Goral	\$ -	\$ 26.00	\$ 26.00
B469	2	Pt. Lot 23	0.20	0.081	Gareth & Sylvia Williams	\$ -	\$ 29.00	\$ 29.00
B470	2	Pt. Lot 23	0.17	0.067	Gerry Hennin	\$ -	\$ 26.00	\$ 26.00
B471	2	Pt. Lot 23	0.17	0.067	John Gyori & Amanda Ward	\$ -	\$ 26.00	\$ 26.00
B472	2	Pt. Lot 23	0.17	0.067	Uwe & Mary Kollin	\$ -	\$ 25.00	\$ 25.00
B473	2	Pt. Lot 23	0.17	0.067	Annie Mower	\$ -	\$ 25.00	\$ 25.00
B474	2	Pt. Lot 23	0.17	0.067	Renee & Gregory Leal	\$ -	\$ 25.00	\$ 25.00
B475	2	Pt. Lot 23	0.18	0.072	Eugene & Mary Hasson	\$ -	\$ 26.00	\$ 26.00
B476	2	Pt. Lot 23	0.18	0.072	Vance Sinasac	\$ -	\$ 26.00	\$ 26.00
B477	2	Pt. Lot 23	0.18	0.072	Joshua & Olivia Parsons	\$ -	\$ 26.00	\$ 26.00
B478	2	Pt. Lot 23	0.19	0.078	Joshua Lenz & Lisa Wright	\$ -	\$ 28.00	\$ 28.00
B479	2	Pt. Lot 23	0.21	0.085	Sylvie & Daniel Babin	\$ -	\$ 29.00	\$ 29.00
B480	2	Pt. Lot 23	0.25	0.100	Hugh & Margaret Evans	\$ -	\$ 33.00	\$ 33.00
B481	2	Pt. Lot 23	0.18	0.075	Lorne Harrison	\$ -	\$ 27.00	\$ 27.00
B482	2	Pt. Lot 23	0.17	0.067	David Howcroft	\$ -	\$ 25.00	\$ 25.00

Plan ID	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
B483	2	Pt. Lot 23	0.14	0.058	Matthew Pellow	\$ -	\$ 23.00	\$ 23.00
B484	2	Pt. Lot 23	0.14	0.059	Jeffrey & Krisanne Moore	\$ -	\$ 23.00	\$ 23.00
B485	2	Pt. Lot 23	0.15	0.062	Francis & Katherine Beaudoin	\$ -	\$ 24.00	\$ 24.00
B486	2	Pt. Lot 23	0.16	0.067	Michael & Anne Gray	\$ -	\$ 25.00	\$ 25.00
B487	2	Pt. Lot 23	0.17	0.067	Laura Borland	\$ -	\$ 25.00	\$ 25.00
B488	2	Pt. Lot 23	0.05	0.021	Town of Amherstburg	\$ -	\$ 9.00	\$ 9.00
B489	2	Pt. Lot 23	0.18	0.072	Brandon St. Pierre & Kayla Temesy	\$ -	\$ 26.00	\$ 26.00
B490	2	Pt. Lot 23	0.19	0.078	Lauren Deneau	\$ -	\$ 28.00	\$ 28.00
B491	2	Pt. Lot 23	0.16	0.065	Roy Edwards	\$ -	\$ 25.00	\$ 25.00
B492	2	Pt. Lot 23	0.16	0.064	Brenda Sprague	\$ -	\$ 24.00	\$ 24.00
B493	2	Pt. Lot 23	0.16	0.065	Randy Fox	\$ -	\$ 25.00	\$ 25.00
B494	2	Pt. Lot 23	0.16	0.065	Eric & MaryAnn Steel	\$ -	\$ 25.00	\$ 25.00
B495	2	Pt. Lot 23	0.16	0.065	Larry & Deborah Hawksworth	\$ -	\$ 25.00	\$ 25.00
B496	2	Pt. Lot 23	0.19	0.076	Tammy Gatto & Todd Meloche	\$ -	\$ 28.00	\$ 28.00
B497	2	Pt. Lot 23	0.21	0.083	Vincent & Shirley Pare	\$ -	\$ 30.00	\$ 30.00
B498	2	Pt. Lot 23	0.17	0.069	Ignazio & Nives Galvan	\$ -	\$ 27.00	\$ 27.00
B499	2	Pt. Lot 23	0.17	0.069	David Martin	\$ -	\$ 27.00	\$ 27.00
B500	2	Pt. Lot 23	0.17	0.069	Adam & Meghan Gilchrist	\$ -	\$ 27.00	\$ 27.00
B501	2	Pt. Lot 23	0.17	0.069	Mario & Anna Rosso	\$ -	\$ 27.00	\$ 27.00
B502	2	Pt. Lot 23	0.17	0.069	Richard & Maureen Meloche	\$ -	\$ 27.00	\$ 27.00
B503	2	Pt. Lot 23	0.17	0.070	Denis Skenderovic & Anne Feghali	\$ -	\$ 27.00	\$ 27.00
B504	2	Pt. Lot 23	0.17	0.067	Jon & Penny Morse	\$ -	\$ 26.00	\$ 26.00

Plan ID	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
B505	2	Pt. Lot 23	0.17	0.067	Frank Sustar	\$ -	\$ 26.00	\$ 26.00
B506	2	Pt. Lot 23	0.17	0.067	Alan & Gail Doyle	\$ -	\$ 26.00	\$ 26.00
B507	2	Pt. Lot 23	0.17	0.067	James Irvine & Angela Rothwell	\$ -	\$ 26.00	\$ 26.00
B508	2	Pt. Lot 23	0.17	0.067	Kyla & Jeremy McLeod	\$ -	\$ 26.00	\$ 26.00
B509	2	Pt. Lot 23	0.17	0.067	Wayne Laporte	\$ -	\$ 26.00	\$ 26.00
B510	2	Pt. Lot 23	0.17	0.067	Marc Maitre	\$ -	\$ 26.00	\$ 26.00
B511	2	Pt. Lot 23	0.17	0.067	Gladys Gates	\$ -	\$ 26.00	\$ 26.00
B512	2	Pt. Lot 23	0.18	0.072	Charles & Patricia Goodchild	\$ -	\$ 26.00	\$ 26.00
B513	2	Pt. Lot 23	0.15	0.060	Maria Cafarelli	\$ -	\$ 23.00	\$ 23.00
B514	2	Pt. Lot 23	0.15	0.060	Judith Renaud	\$ -	\$ 23.00	\$ 23.00
B515	2	Pt. Lot 23	0.15	0.060	Robin Prior	\$ -	\$ 23.00	\$ 23.00
B516	2	Pt. Lot 23	0.15	0.060	Christopher & Judith Dywelska	\$ -	\$ 23.00	\$ 23.00
B517	2	Pt. Lot 23	0.15	0.060	Jonathan & Stephanie McGuire	\$ -	\$ 23.00	\$ 23.00
B518	2	Pt. Lot 23	0.15	0.060	Brian & Elizabeth Mulder	\$ -	\$ 23.00	\$ 23.00
B519	2	Pt. Lot 23	0.15	0.060	Steven Blais	\$ -	\$ 23.00	\$ 23.00
B520	2	Pt. Lot 23	0.15	0.060	Nada Bratt	\$ -	\$ 23.00	\$ 23.00
B521	2	Pt. Lot 23	0.15	0.059	Michel & Debra Bastien	\$ -	\$ 23.00	\$ 23.00
B522	2	Pt. Lot 23	0.17	0.070	Janos & Ildiko Herits	\$ -	\$ 26.00	\$ 26.00
B523	2	Pt. Lot 23	0.14	0.058	Stacey-Lee Flatt	\$ -	\$ 23.00	\$ 23.00
B524	2	Pt. Lot 23	0.14	0.058	Richard Borland	\$ -	\$ 23.00	\$ 23.00
B525	2	Pt. Lot 23	0.17	0.070	Stephen & Jen-A-Lee Hayes	\$ -	\$ 26.00	\$ 26.00
B526	2	Pt. Lot 23	0.21	0.085	Ricky & Tammy Digiovanni	\$ -	\$ 29.00	\$ 29.00
B527	2	Pt. Lot 23	0.20	0.080	Kenneth & Kathryn Foley	\$ -	\$ 28.00	\$ 28.00
B528	2	Pt. Lot 23	0.15	0.061	Timothy & Kristin Schneider	\$ -	\$ 24.00	\$ 24.00

Plan ID	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
B529	2	Pt. Lot 23	0.13	0.051	Rose McKinnon	\$ -	\$ 21.00	\$ 21.00
B530	2	Pt. Lot 23	0.13	0.051	Richard & Debra Turgeon	\$ -	\$ 21.00	\$ 21.00
B531	2	Pt. Lot 23	0.13	0.051	Erin Killops	\$ -	\$ 21.00	\$ 21.00
B532	2	Pt. Lot 23	0.13	0.051	Scott & Joan Donaldson	\$ -	\$ 21.00	\$ 21.00
B533	2	Pt. Lot 23	0.13	0.051	2309067 Ontario Inc.	\$ -	\$ 21.00	\$ 21.00
B534	2	Pt. Lot 23	0.13	0.051	Carson & Pamela Williams	\$ -	\$ 21.00	\$ 21.00
B535	2	Pt. Lot 23	0.13	0.051	Leone & Dennis McLean	\$ -	\$ 21.00	\$ 21.00
B536	2	Pt. Lot 23	0.14	0.056	William & Michelle Beaudoin	\$ -	\$ 22.00	\$ 22.00
B537	2	Pt. Lot 23	0.13	0.051	Jeffrey & Pemela Hocevar	\$ -	\$ 21.00	\$ 21.00
B538	2	Pt. Lot 23	0.14	0.056	Augusto & Giovina Moscatello	\$ -	\$ 22.00	\$ 22.00
B539	2	Pt. Lot 23	0.18	0.071	Brent Wessels	\$ -	\$ 26.00	\$ 26.00
B540	2	Pt. Lot 23	0.24	0.095	Lorenzo Alfini & Darcie Wright	\$ -	\$ 31.00	\$ 31.00
B541	2	Pt. Lot 23	0.22	0.091	Kevin Giroux	\$ -	\$ 31.00	\$ 31.00
B542	2	Pt. Lot 23	0.23	0.094	Donald & Evelyn Meharg	\$ -	\$ 32.00	\$ 32.00
B543	2	Pt. Lot 23	0.20	0.083	Paul Garner	\$ -	\$ 29.00	\$ 29.00
B544	2	Pt. Lot 23	0.20	0.080	Mathew McLean	\$ -	\$ 28.00	\$ 28.00
B545	2	Pt. Lot 23	0.19	0.079	Christopher & Michelle Short	\$ -	\$ 28.00	\$ 28.00
B546	2	Pt. Lot 23	0.19	0.078	Tina Triolet	\$ -	\$ 28.00	\$ 28.00
B547	2	Pt. Lot 23	0.19	0.076	Lionel & Ederlyn Girard	\$ -	\$ 27.00	\$ 27.00
B548	2	Pt. Lot 23	0.18	0.074	Annabelle Bowden	\$ -	\$ 27.00	\$ 27.00
B549	2	Pt. Lot 23	0.18	0.074	Chirstine & Rolnald Fryer	\$ -	\$ 27.00	\$ 27.00
B550	2	Pt. Lot 23	0.18	0.074	Jeremy Pillon	\$ -	\$ 27.00	\$ 27.00
B551	2	Pt. Lot 23	0.18	0.074	Kevin, Jessie & Joyce Boismier	\$ -	\$ 27.00	\$ 27.00
B552	2	Pt. Lot 23	0.18	0.074	Tina Decarlo	\$ -	\$ 27.00	\$ 27.00

Plan ID	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
B553	2	Pt. Lot 23	0.18	0.074	Robert Carr	\$ -	\$ 27.00	\$ 27.00
B554	2	Pt. Lot 23	0.13	0.051	Larry & Rhonda Hurst	\$ -	\$ 21.00	\$ 21.00
B555	2	Pt. Lot 23	0.19	0.075	Deborah & Kevin Gonda	\$ -	\$ 27.00	\$ 27.00
B556	2	Pt. Lot 23	0.16	0.063	Dennis Pare	\$ -	\$ 24.00	\$ 24.00
B557	2	Pt. Lot 23	0.16	0.063	William & Christine Belcher	\$ -	\$ 24.00	\$ 24.00
B558	2	Pt. Lot 23	0.16	0.063	Joanne Paliga	\$ -	\$ 24.00	\$ 24.00
B559	2	Pt. Lot 23	0.16	0.063	James & Catherine Muir	\$ -	\$ 24.00	\$ 24.00
B560	2	Pt. Lot 23	0.16	0.063	Joshua Oakley	\$ -	\$ 24.00	\$ 24.00
B561	2	Pt. Lot 23	0.16	0.063	Jacob & Margaret Maine	\$ -	\$ 24.00	\$ 24.00
B562	2	Pt. Lot 23	0.16	0.063	Elizabeth Mickle & Pauline Shaw	\$ -	\$ 24.00	\$ 24.00
B563	2	Pt. Lot 23	0.16	0.063	Amber Loughheed	\$ -	\$ 24.00	\$ 24.00
B564	2	Pt. Lot 23	0.15	0.062	Constance Hamilton & Charles Faraday	\$ -	\$ 24.00	\$ 24.00
B565	2	Pt. Lot 23	0.15	0.060	Nelly VanDerHeide	\$ -	\$ 23.00	\$ 23.00
B566	2	Pt. Lot 23	0.15	0.059	Tanya & Bradley McGuinness	\$ -	\$ 23.00	\$ 23.00
B567	2	Pt. Lot 23	0.15	0.060	Gary & Jessica Drouillard	\$ -	\$ 23.00	\$ 23.00
B568	2	Pt. Lot 23	0.15	0.059	Kenneth Kozora	\$ -	\$ 23.00	\$ 23.00
B569	2	Pt. Lot 23	0.15	0.061	Ann Peltier	\$ -	\$ 24.00	\$ 24.00
B570	2	Pt. Lot 23	0.15	0.062	Wayne & Sandra Bastien	\$ -	\$ 24.00	\$ 24.00
B571	2	Pt. Lot 23	0.26	0.104	Carlyle & Christine Brassett	\$ -	\$ 34.00	\$ 34.00
B572	2	Pt. Lot 23	0.16	0.066	Peter & Darlene Bischoff	\$ -	\$ 25.00	\$ 25.00
B573	2	Pt. Lot 23	0.17	0.067	Tara Rousseau & Thomas Triolet	\$ -	\$ 25.00	\$ 25.00
B574	2	Pt. Lot 23	0.16	0.066	Terence & Michelle Hayes	\$ -	\$ 25.00	\$ 25.00
B575	2	Pt. Lot 23	0.16	0.064	Nicholas Vitale	\$ -	\$ 24.00	\$ 24.00

Plan ID	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
B576	2	Pt. Lot 23	0.15	0.063	Edward & Laura Gushulak	\$ -	\$ 24.00	\$ 24.00
B577	2	Pt. Lot 23	0.15	0.063	Troy Stewart	\$ -	\$ 24.00	\$ 24.00
B578	2	Pt. Lot 23	0.15	0.063	Brian & Michelle Barrett	\$ -	\$ 24.00	\$ 24.00
B579	2	Pt. Lot 23	0.15	0.063	Lisa Stewart	\$ -	\$ 24.00	\$ 24.00
B580	2	Pt. Lot 23	0.15	0.063	Gary Triolet	\$ -	\$ 24.00	\$ 24.00
B581	2	Pt. Lot 23	0.15	0.063	Mark & Michelle Fryer	\$ -	\$ 24.00	\$ 24.00
B582	2	Pt. Lot 23	0.15	0.063	Kenneth & Terry Schneider	\$ -	\$ 24.00	\$ 24.00
B583	2	Pt. Lot 23	0.15	0.063	Robert & Diane Donaldson	\$ -	\$ 24.00	\$ 24.00
B584	2	Pt. Lot 23	0.19	0.075	Patricia Batiste	\$ -	\$ 27.00	\$ 27.00
B585	2	Pt. Lot 23	0.15	0.061	Bruce & Jean Galt	\$ -	\$ 24.00	\$ 24.00
B586	2	Pt. Lot 23	0.13	0.051	Silvino & Mary DiMarco	\$ -	\$ 21.00	\$ 21.00
B587	2	Pt. Lot 23	0.18	0.074	Greg & Donna Nemeth	\$ -	\$ 27.00	\$ 27.00
B588	2	Pt. Lot 23	0.24	0.097	Jason Brown	\$ 2.00	\$ 31.00	\$ 33.00
B589	2	Pt. Lot 23	0.30	0.120	Karin Porter	\$ 3.00	\$ 36.00	\$ 39.00
B590	2	Pt. Lot 23	0.27	0.111	Johnny & Rebeckah Muresan	\$ 2.00	\$ 35.00	\$ 37.00
B591	2	Pt. Lot 23	0.25	0.102	James Wright	\$ 2.00	\$ 33.00	\$ 35.00
B592	2	Pt. Lot 23	0.30	0.120	Rocco & Graziella Mancini	\$ 3.00	\$ 37.00	\$ 40.00
B593	2	Pt. Lot 23	0.27	0.111	Joel Cote & Jessica Bagley	\$ 2.00	\$ 36.00	\$ 38.00
B594	2	Pt. Lot 23	0.30	0.120	Joel & Kelli Street	\$ 3.00	\$ 37.00	\$ 40.00
B595	2	Pt. Lot 23	0.25	0.102	Daniel Beneteau & Kristy-Lee Fram	\$ 2.00	\$ 34.00	\$ 36.00
B596	2	Pt. Lot 23	0.30	0.120	Eugene Mcgraw & Susan Renaud	\$ 3.00	\$ 37.00	\$ 40.00
B597	2	Pt. Lot 23	0.30	0.120	Gordon & Leanne Meloche	\$ 3.00	\$ 37.00	\$ 40.00

Plan ID	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
B598	2	Pt. Lot 23	0.30	0.120	Robert & Danijela Pontini	\$ 3.00	\$ 38.00	\$ 41.00
B599	2	Pt. Lot 23	0.21	0.085	Joseph Beattie & Colleen O'Phee	\$ -	\$ 31.00	\$ 31.00
B600	2	Pt. Lot 23	0.21	0.085	Ian & Helen Hayward	\$ -	\$ 31.00	\$ 31.00
B601	2	Pt. Lot 23	0.22	0.091	Thomas & Rozemary Jaber	\$ 2.00	\$ 32.00	\$ 34.00
MN517	2	Pt. Lot 20	0.38	0.153	Mary Bridgen	\$ 3.00	\$ 18.00	\$ 21.00
MN441	2	Pt. Lot 20	3.35	1.355	Mark & Maria Beaudoin	\$ -	\$ 99.00	\$ 99.00
MN425	2	Pt. Lot 20	1.69	0.683	Ruth Balsler	\$ -	\$ 61.00	\$ 61.00
MN2501	2	Pt. Lot 20	1.50	0.608	Giuseppe & Melanie Vitale	\$ -	\$ 57.00	\$ 57.00
Total on Privately Owned - Non-Agricultural Lands.....						\$ 267.00	\$ 23,276.00	\$ 23,543.00

5. PRIVATELY OWNED - AGRICULTURAL LANDS (grantable):

MN2593	2	Pt. Lot 20	14.62	5.917	Hunt Club Creek Inc.	\$ 66.00	\$ 229.00	\$ 295.00
Total on Privately Owned - Agricultural Lands (grantable).....						\$ 66.00	\$ 229.00	\$ 295.00

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

Plan ID	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
4	2	Pt. Lot 22	28.93	11.709	Block A	\$ 130.00	\$ 762.00	\$ 892.00
5	2	Pt. Lot 22	46.13	18.668	Block A	\$ -	\$ 1,044.00	\$ 1,044.00
2	2	Pt. Lot 21	41.61	16.838	Block A	\$ 187.00	\$ 754.00	\$ 941.00
3	2	Pt. Lot 21	50.20	20.314	Block A	\$ 225.00	\$ 1,074.00	\$ 1,299.00

Plan ID	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
6	2	Pt. Lot 20	20.00	8.094	Walker Aggregates Inc.	\$ 90.00	\$ 247.00	\$ 337.00
Total on Privately Owned - Agricultural Lands (non-grantable).....						\$ 632.00	\$ 5,089.00	\$ 5,721.00
				565.10	228.694	\$ 2,000.00	\$ 38,000.00	\$ 40,000.00

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1 Hectare = 2.471 Acres
 Project No. REI2015D024
 February 2nd, 2022

SPECIFICATIONS**2ND CONCESSION ROAD DRAIN SOUTH****(OPEN PORTION NORTH OF LOWES SIDEROAD REPAIR AND IMPROVEMENT)****(Geographic Township of Malden, E09-2021-008)****TOWN OF AMHERSTBURG****I. GENERAL SCOPE OF WORK**

The upper end of the 2nd Concession Road Drain South commences as a storm sewer just south of Alma Street (County Road 16) and extends southerly and downstream along the east side of Fryer Street to Simcoe Street (Pike Road – County Road 18) intersection where it connects to the junction of the 2nd Concession Road Drain South covered drain and the Pike Road Drain covered drain. The covered municipal drain then continues southerly to a point just south of the south limits of the lots along Simcoe Street and then turns easterly to the east limit of the Saint-Jean-Baptiste Elementary School parcels where it outlets into the open drain portion. The open drain then proceeds south and west around the perimeter of the school parcel and turns south along the east side of Fryer Street to approximately the line between Lots 21 and 22, Concession 2, geographic township of Malden. It then continues easterly and southerly and goes across Lowes Sideroad to an outlet in Big Creek. The work under this project generally comprises of repair and improvements to the open drainage system north of Lowes Sideroad through the Rocksedge Development parcels shown as “Block A” on the watershed plan. The work on the open drain includes repair and improvement of the 2nd Concession Road Drain South commencing opposite the parkland north of the Saint-Jean-Baptiste Elementary School on Fryer Street, extending around the school parcel, then south along Fryer Street and then southeasterly to Lowes Sideroad, as shown and detailed on the plans. To relieve flooding along the Pike Road Drain and adjacent lands, an Auxiliary Drain outlet is being provided under a separate drainage report that extends south across Simcoe Street and west along the north side of the Rocksedge Development lands to the open portion of the 2nd Concession Road Drain South at the Saint-Jean-Baptiste Elementary School. Work on the 2nd Concession Road Drain South project will generally include stripping topsoil and windrowing same for future use, excavation of the existing open drain banks starting 600mm above the design bottom as shown on the plans, hauling and placement of fill along the course of the existing open drain, and construction of a Storm Water Management (S.W.M.) pond to the east side of the drain, removal of existing access bridges, and construction of new bridges, together with appurtenances. Ancillary work will include special features for water flow through the pond with a diversion weir in the drain near the north end pond entrance channel and flow control pipe and weir in the drain just south of the pond outlet channel into the drain, access bridges across the channels, including cable concrete and rip rap erosion protection, seed and mulch application to all disturbed areas together with planting trees and shrubs and other mitigation and offsetting measures as outlined on the plans and in the schedule of items and prices. Along the open drain, work will include tile ends, quarried limestone rock on filter cloth protection at bends and other potential erosion locations, including rock vanes (RV), control rock vanes (CRV), and construction of snake hibernaculum (H) sites.

All work shall be carried out in accordance with these specifications, the plans forming part of this drainage project, as well as the Standard Details included in **Appendix “REI-C”**. The bridges and drains shall be of the size, type, depth, etcetera, as is shown in the accompanying drawings, as determined from the Benchmarks, and as may be further laid out at the site at the time of construction. Shop drawings shall be provided by the Contractor to the Engineer for review and approval for the new concrete bridges. The Contractor shall coordinate with the Engineer for any required plans or details required for layout of the work. All work carried out under this project shall be completed to the full satisfaction of the Town Drainage Superintendent and the Engineer.

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

The Contractor will be required to implement stringent erosion and sedimentation controls during the course of the work to help minimize the amount of silt and sediment being carried

downstream into the Big Creek channel. It is intended that work on this project be carried out during relatively dry weather to ensure proper site and drain conditions and to avoid conflicts with sediment being deposited into the outlet drainage systems. All disturbed areas shall be restored as quickly as possible with grass seeding and mulching installed to ensure a protective cover and to minimize any erosion from the work sites subsequent to construction. The Contractor will be required to provide temporary silt fencing and straw bales as outlined further in these specifications. The newly constructed S.W.M. pond will have to be vegetated prior to it being opened up at the upstream end. Once the pond is vegetated, the upstream end shall be opened, and the Contractor shall carry out a fish salvage operation, according to the "Specifications for Fish Salvage" found in **Appendix "REI-A"**, from the existing open channel to the improved drain, as necessary. The construction project is intended to minimize any disturbance to the existing drain bottom portion by leaving the lower 600mm of the channel untouched except where bridge installation or removal is required and offsetting measures such as rock vanes and flow controls and diversions are to be constructed. Future maintenance works will include sediment removal from the drain bottom in accordance with any permits or authorizations that are applicable.

All of the construction work shall be carried out in accordance with any permits or authorizations issued by the Essex Region Conservation Authority (E.R.C.A.) and the Department of Fisheries and Oceans (D.F.O.), copies of which will be provided, if available, and the notes in **Appendix "REI-A"**. The notes include provisions for offsetting and mitigation measures to be carried out along the course of the repaired and improved open drain. The Contractor is advised that no work may be carried out in the existing drains from March 15th to July 15th of any given year because the drain is directly connected to downstream waters that are classified as sensitive to impacts on aquatic life and habitat by E.R.C.A. and D.F.O. Any additional information from D.F.O. will be included in the tender document Appendices for the Contractor and the Town to follow during construction and future maintenance works to the drain.

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:

- a) 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.
- b) 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.
- c) 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 related Ontario Provincial Standards. It is incumbent on the proponent and their Contractors to ensure that sediment and erosion control measures are functioning properly and are maintained and upgraded as required.
- d) Silt or sand accumulated in the barrier traps must be removed and stabilized on land once the site is stabilized.
- e) 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.

III. M.N.R.F. - M.E.C.P. 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.) Town Endangered Species Act (E.S.A.) former Agreement review and submissions to and responses from M.N.R.F. and Ministry of Environment, Conservation and Parks (M.E.C.P.). They have noted that the Eastern Fox Snake is a species that needs to be protected in this area. A copy of the relevant information that was provided by them is included herein as part of **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. – M.E.C.P. information, or any future requirements, and follow the special requirements therein included, during construction. Plans and the schedule of items and prices includes construction of snake hibernaculum sites as part of the mitigation requirements. Any special requirements will be included in the tender document appendices for reference by the Contractor and the Town for the construction and future maintenance work to the drain.

Notwithstanding the above, the Contractor is advised that the Town has signed an **Agreement** with the Ministry of Natural Resources and Forestry (M.N.R.F.) regarding the maintenance operations on Municipal drains and the Endangered Species Act, 2007 (E.S.A.). The Drainage Superintendent has reviewed the endangered species maps and any concerns will be provided in **Appendix “REI-B”**. The review has indicated that there are no endangered fish species. Fish salvage requirements by the Contractor are included in **Appendix “REI-A”** when the drainage is diverted by the Contractor from the existing channel to the new S.W.M. pond, once it is vegetated. Certain species such as turtles and snakes are mobile and may be encountered during construction. Therefore, the mitigation requirements of the **Agreement** have been included in **Appendix “REI-B”** in their entirety for further information and use by the Contractor.

The Contractor shall contact the Drainage Superintendent if an endangered species is encountered during construction. The Contractor shall be responsible for providing the necessary equipment and materials outlined in the mitigation requirements to address the handling of any endangered species encountered during the course of the construction work. The Contractor shall cooperate fully and assist the Drainage Superintendent or M.N.R.F. – M.E.C.P. staff in the proper handling of the endangered species as outlined in the mitigation requirements and as may be further directed by the Drainage Superintendent or the M.N.R.F. – M.E.C.P. and shall govern all its operations accordingly.

IV. ACCESS TO WORK

The Contractor is advised that the majority of the work to be carried out on this project extends along the lands of Rocksedge Developments between Simcoe Street and Lowes Sideroad and east of Fryer Street. The Contractor shall have access for a width of 8 metres (25 feet) along the top of the banks in agricultural and open fields for the existing drains, and around the S.W.M. pond perimeter works, along with the full width of the roadways abutting the proposed drainage works. A sketch plan illustrating the working corridor and grass buffer areas along the affected reach of the drain has been provided in **Appendix “REI-E”**. The Contractor may use the entire width of the Lowes Sideroad and Fryer Street right-of-ways and future roads that access the development lands in “Block A”. The Contractor may utilize the right-of-ways as necessary, to permit the completion of all of the work required to be carried out for this project. The Contractor shall also have access into the driveways as necessary to carry out the removal of the existing access bridges, as set out on the plans and in these specifications, along with a sufficient area in the vicinity of all the bridges to carry out the required construction of the new and replacement structures and ancillary work. All disturbed areas shall be restored to a like or better condition upon completion of the work.

The Contractor shall ensure that the traveling public is protected at all times while utilizing the roadway for its access. The Contractor shall provide traffic control, including flag persons when required. Should the Contractor have to close the roadway for the proposed works, it shall obtain

the permission of the Town Drainage Superintendent and Engineer and arrange to provide the necessary notification of detours around the site. The Contractor shall also ensure that all emergency services, school bus companies, the road authority, etcetera are contacted about the disruption to access at least 48 hours in advance of same. All detour routes shall be established in consultation with the Amherstburg Public Works Department and the County of Essex.

Throughout the course of the work, it is imperative that the Contractor protect as much landscaping and vegetation as possible when accessing along the drain. This will be of particular concern along the lawn areas of developed properties. Due to the extent of the work and the area for carrying out the work, the Contractor will be required to carry out all of the necessary steps to direct traffic and provide temporary diversion of traffic around work sites, including provision of all lights, signs, flag persons, and barricades required to protect the safety of the traveling public. Any accesses or areas used in carrying out the works are to be fully restored to their original conditions by the Contractor at its cost, including topsoil placement and lawn restoration as directed by the Town Drainage Superintendent and the Engineer. Restoration shall include but not be limited to all necessary levelling, grading, shaping, topsoil, seeding, mulching, and granular placement required to make good any damage caused.

V. REMOVAL OF BRUSH, TREES AND RUBBISH

Where there is any brush, trees or rubbish along the course of the drainage works, including the full width of the work access, all such brush, trees or rubbish shall be close cut and grubbed out, and the whole shall be chipped up for recycling, burned or otherwise satisfactorily disposed of by the Contractor. The Contractor is reminded that coarse woody debris is to be used for the snake hibernaculum sites. These sites shall be protected when future maintenance work is conducted on the drain.

The remaining brush and trees removed along the course of the work are to be put into piles by the Contractor in locations where they can be safely chipped and disposed of, or burned by it, or hauled away and disposed of by the Contractor to a site to be obtained by it at its expense. Prior to and during the course of any burning operations, the Contractor shall comply with the guidelines prepared by the Air Quality Branch of the Ontario Ministry of the Environment and shall ensure that the Environmental Protection Act is not violated. The Contractor will be required to notify the local fire authorities to obtain any permits and co-operate with them in the carrying out of any work. The removal of brush and trees shall be carried out in close consultation with the Town Drainage Superintendent or Engineer to ensure that no decorative trees or shrubs are disturbed by the operations of the Contractor that can be saved. It is the intent of this project to save as many trees and bushes as practical within the roadway allowances and on private lands. Where decorative trees or shrubs are located directly over drainage pipes, the Contractor shall carefully extract same and turn them over to the Owner when requested to do so and shall cooperate with the Owner in the reinstallation of same if required.

The Contractor shall protect all other trees, bushes, and shrubs located along the length of the drainage works except for those trees that are established, in consultation with the project biology consultant, Town Drainage Superintendent, the Engineer, and the Owners, to be removed as part of the works. The Contractor shall note that protecting and saving the trees may require the Contractor to carry out hand work around the trees, bushes, and shrubs to complete the necessary final site grading and restoration.

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.

The Contractor shall remove all deleterious materials and rubbish along the course of the open drain and any such materials located in the bridge culverts and enclosures while carrying out its cleaning of same. All such deleterious materials and rubbish shall be loaded up and hauled away by the Contractor to a site to be obtained by it at its cost.

VI. FENCING

Where it is necessary to take down any fence to proceed with the work, the same shall be done by the Contractor across or along that portion of the work where such fence is located. The Contractor will be required to exercise extreme care in the removal of any fencing so as to cause a minimum of damage to same. The Contractor will be required to reinstall any fence that is taken down in order to proceed with the work, and the fence shall be reconstructed in a neat and workmanlike manner. The Contractor will not be required to procure any new materials for rebuilding the fence provided that it has used reasonable care in the removal and replacement of same. When any fence is removed by the Contractor, and the Owner thereof deems it advisable and procures new material for replacing the fence so removed, the Contractor shall replace the fence using the new materials and the materials from the present fence shall remain the property of the Owner.

VII. DETAILS OF OPEN DRAIN AND S.W.M. POND WORK

The open drain shall be excavated to the lines, levels, grades and cross-sections as shown on the accompanying drawings, or as may be further established by the Town Drainage Superintendent or the Engineer at the time of the work. During initial construction, the work in the open drain shall only be carried out on the slopes from 600mm above the drain design grade to avoid any disturbance to the existing drain bottom, except at locations where bridges, flow controls, and erosion protection works are required in the drain bottom. During its construction, the upper end of the S.W.M. pond shall remain closed off from the existing drain until the vegetation is well established and the new S.W.M. pond section is stable. Prior to excavation of the S.W.M. pond, the Contractor shall complete any necessary brushing work along the new alignment, and then strip the topsoil and windrow it along the pond perimeter for use in covering the work areas and establishing the required vegetation. Material excavated from the S.W.M. pond shall be hauled and placed in a windrow along the areas established in consultation with the land owner, Town Drainage Superintendent and Engineer. The excavated material stockpiled shall be placed with slopes no steeper than 4 horizontal to 1 vertical so that it can be maintained including weed cutting while vegetation is established. Excess materials shall be left for use by the landowners in grading their properties. The Contractor shall ensure that the fill stockpiled along the existing drain course maintains current drainage of the lands and does not block any furrows, surface inlets or other drainage off the abutting lands.

Material from the S.W.M. pond excavation shall be used for constructing the berms around the pond as shown on the plans including placement of topsoil and seeding and mulching the fill and excavation areas. At the north side of the pond an access path slope shall be constructed as shown and noted on the plans with 8 horizontal to 1 vertical maximum slope. The access shall include installation of a 4 metre wide cable concrete block on filter cloth mat to protect the pond slope for future maintenance access to the pond. Cable concrete block panels shall be CC-45 and installed and secured to each other in accordance with the supplier specifications as available from International Erosion Control, or equal.

When future maintenance work is carried out, the drain and S.W.M. pond shall be carefully excavated so as not to disturb the existing banks, rock protection, instream features and vegetation, except for those portions of the drain or pond where widening or restoration of a stable drain bank or bottom depth configuration is required. The bottom width of the drain and pond dimensions and the sideslopes of the excavation shall conform to the dimensions and information given on the drawings.

The drain and S.W.M. pond shall be of the size, type, depth, etcetera as shown on the accompanying drawings. When completed, the drain and pond shall have a uniform and even

bottom and in no case shall such bottom project above the grade line, as shown on the accompanying drawings, and as determined from the Benchmarks, except where flow controls are to be constructed. The finished side slopes of the drain and pond shall be no steeper than 2.0 metres horizontal to 1.0 metre vertical and shall match the plan requirements for flatter slopes as shown on the pond detail plan. Work includes the construction of a low flow channel in the pond bottom as indicated on the plans and cross sections, below the design grade of the main drain bottom as shown on the plans for any pool areas. The Contractor shall construct the deep water areas for fish refuge with rock clusters as noted on the pond detail illustrated on Sheet 8 of the plans.

Where storm sewers are connected into the open drain or S.W.M. pond, the Contractor shall provide precast concrete headwalls in accordance with O.P.S.D. 804.040 as shown and detailed on the plans. Where the storm sewer outlets into a proposed access bridge, the sewer shall be connected into the precast concrete box culvert as shown and detailed on sheet 9 of the plans. The pipe shall be securely connected to the box culvert with proper grouting and placement to ensure that there will be no soil or backfill migration through the joint.

The excavated material from the future maintenance of the S.W.M. pond shall be loaded up, hauled away and disposed of by the Contractor to a site to be obtained by the Contractor at its expense and in compliance with any excess soil legislation. Any pond area damaged by the excavation maintenance work shall be restored to its preconstruction condition. The excavated material from future maintenance work along the open drain shall be cast onto the adjoining lands to the north, south, and east of the open drain along the working corridor illustrated on the plans and shall be well and evenly spread over a sufficient area so that no portion of the excavated earth is more than 100mm in depth. The material shall be kept at least 1.2 metres clear from the finished edge of the drain and the 1.0m wide grass buffer, care being taken not to fill up any existing tiles, ditches, furrows or drains with the excavated material and graded to maintain the drainage off the working corridor to the drain. The Contractor shall work around any special features along the length of the drain including the S.W.M. pond connections and snake hibernaculum sites. The excavated material to be spread upon the lands shall be free from rocks, cobbles, boulders, stumps, rubble, rubbish or other similar material and these materials, if encountered, shall be hauled away by the Contractor and disposed of at a site to be obtained by it at its expense. All excavated materials placed along the drain shall be restored with native grass seeding and mulching to stabilize the materials and prevent erosion and sediment movement into the drain.

Where the drain work is conducted alongside the roadway or the work crosses any lawn, garden, orchard, parking, roadway or driveway, etcetera, the excavated material for the full length of the above-mentioned areas shall be hauled away by the Contractor and disposed of to a site to be obtained by the Contractor at its expense. All work at the disposal site shall be established between the Contractor and the site owner. The Contractor shall be responsible for any permits required and shall provide copies of same to the Town and Engineer when requested.

Where there is any brush or rubbish in the course of the drain, including both side slopes of the drain, all such brush or rubbish shall be close cut and grubbed out. Where there is any brush or rubbish where the earth is to be spread, or on that strip of land between where the earth is to be spread and the edge of the drain, all such brush or rubbish shall be close cut and grubbed out. The whole is to be burned, chipped or otherwise satisfactorily disposed of by the Contractor.

VIII. COVERED DRAIN WORK

The Contractor shall provide all material, labour, and equipment to install the flow controls in the drain for the proper operation of the S.W.M. pond with new 320 kPa high density polyethylene (H.D.P.E.) Big "O" Boss 2000 bell and gasket soil tight pipe as shown on the plans.

The Contractor shall note that the placing of the new H.D.P.E. pipe 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 and Engineer. The new plastic pipe shall be set to the grades as noted and as shown and detailed on the plans with special care to match the inverts of the pipe to the structures at each end.

The installation of the complete length of the new H.D.P.E. pipe, including all appurtenances, shall be completely inspected by the Town Drainage Superintendent or Engineer representative prior to backfilling any portions of same. Under no circumstance shall the Contractor backfill same until the Town Drainage Superintendent or Engineer representative inspects and approves said pipe installation.

Once the new smooth wall H.D.P.E. pipe has been satisfactorily set in place, the Contractor shall completely backfill same with select native material, thoroughly compacted around the pipe to ensure that there is minimal settlement upon completion of the work. The backfilling of the smooth wall H.D.P.E. plastic pipe, unless otherwise specified herein, shall be provided in total compliance with Item 3) and Item 4) of the "Standard Specifications for Access Bridge Construction Including Endwall Treatment, Backfilling, and Installation Procedures". These are attached to the back of these Specifications and labelled **Appendix "REI-C"**. The Contractor shall comply in all respects with the General Conditions included in Item 4) in the "Standard Specifications" in said Appendix. Once the backfill has been placed the erosion protection works shall be completed including installation of non woven filter fabric, cable concrete, and quarried limestone and rock protection works as shown and detailed on the plans.

The alignment of drains throughout shall be to the full satisfaction of the Town Drainage Superintendent and the Engineer. The whole of the work shall be done in a neat, thorough and workmanlike manner to the full satisfaction of the Town Drainage Superintendent and the Engineer.

The Contractor shall lay the covered drain to the lines, levels and grades as shown in the accompanying drawings or as may be otherwise laid out and established by the Engineer prior to the time of construction. The Contractor will be held responsible for said lines, levels, and grades of the drain pipe. Should the Engineer determine that the Contractor has not satisfactorily adhered to such lines, levels, and grades, the Engineer may direct the Contractor to take up and relay any portion of the drain which does not conform to such lines, levels and grades.

A laser beam shall be used to maintain line and grade and the Contractor shall have a qualified operator to set up and operate the equipment.

The Contractor should note that, because the covered drain is being installed with an excavator, it is expected that they will provide approximately 100mm (4") of either granular material or 20mm (3/4") clear stone bedding throughout the length of this drain pipe to ensure that a good firm base is provided under the drain pipe, and they shall provide for this item as part of their tender price.

All materials shall be stored and handled by the Contractor at its own expense. It shall be responsible for the safe storage of all materials, for obtaining storage area, for the safe transportation and distribution of all the materials at the job site, and for inspection in order to determine defects and breakage. No additional recompense will be allowed the Contractor for any loss incurred by it in the storage and handling of the materials.

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Pipe, fittings, and all accessory appurtenances must be loaded and unloaded by lifting with means of a hoist or utilizing a skid so as to avoid shock or damage. Under no circumstances shall any pipe material or materials for pipe appurtenances be dropped.

Pipes shall be laid in trenches in the general location shown on the accompanying drawings or as may be specifically directed and laid out by the Engineer at the time of construction. The trench shall be located to clear all existing utilities and structures above, on, or below the ground level. The Contractor will be responsible at all times for complete investigation to determine the location of all such utilities or structures known or unknown, and it shall indemnify and save harmless the Engineer and the Municipality for any responsibility, injury, or liability arising from and damage to such utilities or structures by the Contractor.

The Contractor shall further contact or notify such utility company or commission of its intention to carry out work in the area and co-operate with such utility company or commission in the location, maintenance and preservation of all such utilities. The Contractor shall note that if the trench passes in close proximity to hydro poles, it shall temporarily brace or secure such poles as it deems necessary to prevent any damage to the utility. The location of the pipes and appurtenances as shown on the drawings is approximate and may be changed by the Engineer if deemed advantageous for the progress of the work.

The trenches are to be excavated where directed. If any part of the bottom of the trench is found to be unsound or in any way unsuitable to lay the pipe in the Town Drainage Superintendent's or the Engineer's opinion, they may direct that the location of said trench be changed if it is possible to avoid unsound soil by doing so. The Contractor shall note that exploratory digs may be required by it to establish the depth of water services, particularly along the deepest portions of the proposed Municipal drainage system. The covered drain should clear all service connections that have been provided to the private lands, but the Contractor shall take steps to ensure that these are protected from any damage during the course of its works particularly where those service connections are shallow and may be just below the covered drain invert level. Where water services are impacted by the covered drain installation, the Contractor shall coordinate its lowering operations with the Town Water Department and ensure that all of their requirements are met, including notice to any Owners who may be affected by temporary shutdown of the water supply.

Should the Contractor discover any utility conflicts with existing utilities during the course of the work, that requires the relocation of same as established by the Town Drainage Superintendent or Engineer, the Contractor shall give that utility the opportunity to make any adjustments to their services if required, which work shall be done by the utility at the expense of the utility pursuant to Section 26 of the Drainage Act. The Contractor shall note that the water services that are to be lowered by them shall be done on a unit cost basis as set out in the Schedule of Items and Prices. The Contractor shall provide all couplings, fittings and pipe necessary to carry out any lowering of the water services to the individual properties. All work shall be carried out in accordance with the Town Water Department requirements for same and shall be completed to their full satisfaction including utilization of proper materials and disinfection procedures to ensure that no contamination of the existing water system will occur, and there shall be no leaks.

All excavation shall be made in compliance with the drawings and in such a manner and at such depths and widths as will give ample room for installing the pipe, the bracing, sheeting, or otherwise supporting the sides of the excavation and for the pumping of ground water if encountered. The Contractor is fully responsible for the safety of all its people and equipment and must conform completely to the provisions of the "Construction Safety Act".

The bottoms of the trenches must be carefully excavated and trimmed to the elevation and shape of the bottom of the pipe. The bottom of each trench shall be recessed to receive the pipe in order to allow the pipe to be uniformly supported on firm undisturbed earth or compacted bedding for its entire length. Corrections in depth of excavation caused by the Contractor excavating to an extent greater than that required for the elevation of the pipe shall be made by bedding the pipe with granular material 20mm (3/4") clear stone placed at the time that the pipes are being installed.

The trenches shall be excavated to the depths given by the Engineer and only as far in advance of the pipe installation as permitted by the said Engineer or the Town Drainage Superintendent.

If any part of the bottom of the trench is found to be unsound or in any way unsuitable in the Town Drainage Superintendent's or the Engineer's opinion to lay drain pipe, the Contractor shall remove as much material as may be required and shall replace same with sufficient approved granular material 20mm (3/4") clear stone to form a sound bed for the pipe. The Contractor shall be paid an extra for such additional excavation and for supplying and placing of the granular material in place of unsound soil as per the unit price established for same in the Form of Tender.

No extras will be allowed for excavating any hardpan, boulders, rocks, cobbles, ice or other obstacles found in the excavation or in the line of the trench or for any pumping or bailing of water required in the execution of the work. The trench must be drained or pumped in order to avoid the necessity of making joints under water. The trench must also be drained to avoid any possibility of ground water entering the pipe in the trench until the installation has been successfully completed.

The Contractor shall be responsible for the safe and proper handling of the pipe and shall inspect all pipes to ensure that no cracks, chips or defects exist in the pipe prior to placing the pipe in the drain line. Should the Contractor permit damaged pipe or materials to be installed in the drain, it shall be responsible for the removal and replacement of same at its own expense should the Engineer require such removal and replacement.

If the drain pipe is laid in freezing weather, the Contractor shall take all the necessary precautions to prevent damage to the pipe or to any of the materials used in the construction of the work. In addition, the Contractor shall take care that no frozen ground or backfill is placed in the trench backfilling adjacent to the drain pipe.

All drain pipes and the various other materials used in the placing of said pipe shall be installed in strict compliance with the manufacturer's recommendations.

The Contractor shall also be required, as part of the drain pipe installation, to satisfactorily connect all intercepted tiles or pipes into the new covered drain. When intercepted tiles or pipes are to be connected, the Contractor shall be required to utilize a standard tee fitting or neatly cut the pipe walls with either a hole saw, concrete saw or welding torch where applicable, and connect the existing tiles or pipes to the new covered drain with a mortar joint or where possible, a plastic connecting adapter. The Contractor shall provide all of the above equipment and materials required to connect all intercepted tiles or pipes at no extra cost to the project, and all of same shall be performed to the full satisfaction of the Town Drainage Superintendent or the Engineer and shall not be backfilled until it is inspected by them.

Backfill for the drain pipe shall be in accordance with the specifications noted previously. In the driveway entrance areas, the Contractor shall provide all granular backfill comprising Granular "B", compacted to 98% S.P.D. to within 300mm of the underside of any existing driveway. The top 300mm of the granular backfill shall comprise Granular "A" compacted to 100% S.P.D. If the driveways have asphalt surfaces, the top of the trench shall be completed with a minimum 90mm thick lift of hot mix HL-4 asphalt or equivalent or to match the existing asphalt thickness, in maximum 50mm thick lifts. All asphalt shall be carefully placed and compacted in place with rollers or plate tampers to achieve 92% to 96% of maximum relative density in accordance with O.P.S.S. 310. The Contractor shall at all times be very careful when performing its backfilling and compaction operations so that no damage is caused to the covered drain. To ensure that no damage is caused to the proposed drain pipe, alternative methods of achieving the required backfill compaction shall be submitted to the Engineer or the Town Drainage Superintendent for their approval prior to the commencement of this work.

The Contractor shall note that during future maintenance it will also be required to cut across any asphalt and concrete that may be intercepted by the covered drain work. Said areas shall

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also be restored utilizing hot mix asphalt or concrete placed in accordance with the requirements established previously in these specifications.

The Contractor shall take steps to protect all legal survey bars and markers during the course of its work. If any bars are removed or damaged, the Contractor shall arrange for a legal surveyor to replace same, all at its cost.

All of the work towards the construction of the covered drain shall be performed in a neat and workmanlike manner and the general site shall be restored to its original condition, and all of same is to be performed to the full satisfaction of the Town Drainage Superintendent and Engineer.

The Contractor will be required to provide topsoil and sod or seed and mulch all areas along the length of the new covered drain installation outside the erosion protection areas and areas where the old pipe has been removed. Outside of the roadway limits the topsoil shall consist of good clean, dry loam, fine graded and compacted in place and ready for sodding or seeding and mulching in accordance with O.P.S.S. Form 802. The seeding and mulching operation shall be carried out according to O.P.S.S. Form 804 and all of this work is to be performed to the full satisfaction of the Town Drainage Superintendent and Engineer.

IX. CONSTRUCTING NEW SWALES

The Contractor shall provide all labour, material, and equipment, needed to construct the swale drains to the lines, levels, and grades as is shown and detailed in the accompanying drawings. The centreline of swale finished grade elevation and the finished swale cross section at various locations along the length of the drain are to be provided as is shown and detailed in the design drawings. The Contractor shall be required to strictly adhere to this swale design unless otherwise directed and approved by the Town Drainage Superintendent or Engineer on the project. The drawings include the approximate location of the swale over the new enclosure pipes along the length of the covered drains. The Contractor shall adhere to same unless otherwise directed by the Town Drainage Superintendent or the Engineer.

The swale shall generally be constructed with a V-section, having minimum 3 horizontal to 1 vertical side slopes. All swales shall be graded to ensure positive flow of the surface drainage from the existing driveway each way into the top of any catch basins that act as outlets for the particular swale section. All materials excavated from the swale, except scavenged topsoil, including all deleterious materials shall be loaded up and hauled away and disposed of by the Contractor to a site to be obtained by it at its own expense.

All swales and boulevard areas are to be completely restored with topsoil, seed and mulch. Where required by the work, all disturbed and newly filled areas and surfaces of newly graded shallow swales shall be covered with approximately 50mm of topsoil fine graded. Across all other grass boulevard areas, the swale and drain banks shall be restored by utilizing a seed and mulch mix and shall be thoroughly restored to their pre-construction conditions. The placing and grading of all topsoil and seeding shall be carefully and meticulously carried out according to the specifications above. The Contractor shall provide watering of sod and seed areas in accordance with O.P.S.S. requirements. As part of the work, the Contractor must provide a full one (1) year guarantee on all sod, seeding and mulching work, and will be required to repair all areas that erode or where the grass cover fails to catch. All work shall be meticulously done and completed in a good and workmanlike fashion to the full satisfaction of the Town Drainage Superintendent and the Engineer.

X. DETAILS OF BRIDGE WORK

The Contractor shall provide all material, labour and equipment to remove the existing corrugated steel pipe access bridges and install the proposed concrete road bridge structures in the 2nd Concession Road Drain South as noted on the plans and the schedule of items, along with

endwall work and other improvements as noted. All removals and disposal shall be carried out in conjunction with construction of the new drainage systems so that existing drainage is maintained for all affected lands and roads.

All existing corrugated steel pipes slated to be removed shall be disposed of by the Contractor to a site to be arranged by it at its cost. The bridge immediately south of the Saint-Jean-Baptiste elementary school on Fryer Street shall be replaced with a precast concrete box structure. Pipe removal and disposal shall occur when the replacement bridge is constructed, or improvements are made to the open drain.

The concrete bridge installations on this project shall be set to the grades as shown on the plans or as otherwise established herein and the Town Drainage Superintendent or the Engineer may make minor changes to the bridge alignment as they deem necessary to suit the site conditions. All work on the bridges and enclosures shall be carried out in general accordance with the items in the **“STANDARD SPECIFICATIONS FOR ACCESS BRIDGE CONSTRUCTION”** attached to this report and labelled **Appendix “REI-C”**.

XI. ACCESS BRIDGE & ENCLOSURE PIPE INSTALLATION

Precast concrete bridge structures shall be designed in accordance with the Ontario Highway Bridge Design Code. Box segments shall be secured to each other, and all joints shall be fully sealed against moisture penetration. The Contractor shall arrange for the bridge supplier to provide shop drawings and submit them to the Town Drainage Superintendent or Engineer for review and approval. All installation and ancillary work for each structure shall be in accordance with the plan details and requirements of the suppliers. Headwalls shall be provided on each end of the concrete box structure including steel sheet piling extending from the top of the precast box down to the depths shown, precast concrete blocks at the top of the steel sheets and concrete box, and pedestrian railings. Minimum 400mm thick quarried limestone rip rap on filter cloth protection shall be installed adjacent to the headwalls as shown on the plans. Crossing rock vanes shall be constructed at each end of the bridge as shown on the details on Sheet 10 of the plans.

Any new corrugated steel pipes (C.S.P.) or smooth steel Ultra Flo pipes to be installed on this project shall be aluminized steel type II with the corrugation profile specified on the plans or in the schedule of items and prices. Pipes are required to be provided in the longest lengths that are available. Where the overall access pipe length exceeds the standard pipe lengths, the Contractor shall connect the pipe sections together by use of a manufactured 9-C or hugger band bolted coupler installed in accordance with the manufacturer's recommendations. All coupler joints shall be wrapped with a layer of filter cloth around the complete circumference that extends a minimum of 100mm beyond the coupler on each end, to ensure a positive seal against soil migration through the joints.

Any new heavy duty smooth wall High Density Poly Ethylene (H.D.P.E.) plastic pipes to be installed on this project are required to be provided in the longest lengths that are available and shall be no less than 2.0 metres long when shorter sections are needed to meet the overall pipe length. All plastic pipes shall be 320 kPa strength and have a C.S.A. stamp. Where the overall access pipe length exceeds the standard pipe lengths, the Contractor shall connect the pipe sections together by the use of bell and gasket joints and installed in accordance with the manufacturer's recommendations. All joints shall be wrapped with a layer of filter cloth around the complete circumference that extends a minimum of 100mm beyond the joint on each end, to ensure a positive seal against soil migration through the joints. Plastic pipe ends shall be secured against flotation. For the Norbury Drain diversions the Contractor shall expose the existing tile drain pipe at each end of the proposed diversion and establish a uniform grade for installation of the new pipe segments between the two existing points of the drain. The new H.D.P.E. pipe shall be securely connected to the existing covered tile drain on each end utilizing grouted connections as set out in these specifications. Each end of the existing drain portion being abandoned shall be securely plugged with a minimum length of 300mm grout inside the drain or a manufactured

cap installed in accordance with the manufacturer's specifications ensuring that no soil migration will occur into the abandoned pipe segments.

At the S.W.M. pond inlet channel near the north end of the pond at approximately Station 1+180, the Contractor shall construct a diversion weir in the drain bottom just south of the pond inlet channel. The weir shall include cable concrete on filter cloth at the north upstream end from the drain bottom up the 2:1 slope to a point 1 metre along the top of the weir. At the south downstream end, the cable concrete shall extend for 4 metres along the top of the weir and then down the 2:1 end slope into the rock on filter cloth protection in the drain bottom as shown on the plans. The Contractor shall also install the low level crossing in the pond inlet channel as detailed on the drainage plans including the pipe, backfill, excavation, grading, and installation of erosion protection works and all required restoration.

At the S.W.M. pond outlet to the drain at approximately Station 1+370, the Contractor shall construct the flow control weir in the drain immediately downstream of the pond outlet channel. The weir shall include the 450mm diameter pipe that is shown along with the rock on filter cloth protection at the outlet and cable concrete on filter cloth protection on the inlet and outlet slopes and across the top of the weir. The Contractor shall remove and dispose of the existing access bridge at this location as noted on the plans. The Contractor shall also install the low level crossing in the pond outlet channel as detailed on the drainage plans including the pipe, backfill, excavation, grading, and installation of erosion protection works and all required restoration.

Where shown on the drawings or provided for in the schedule of items and prices, the Contractor shall provide on-line catch basin inlets that are 600mm (24") in diameter. These catch basins shall be manufactured by the pipe supplier as saddle tees on the main line pipe and shall include a suitable cast iron frame and grate that mounts securely on the top of the basin with the specified concrete collar or pad. The top of all catch basin grates shall be set approximately 50mm below the adjacent land grade and all surface areas in the proximity of the basin shall be graded to the basin to ensure positive drainage.

The Contractor shall note that the placement of any new bridge, culvert, or enclosure pipe shall 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 the Engineer. As part of the work, the Contractor will be required to clean out the drain along the full length of the pipe and for a distance of 3.05 metres (10 ft.) upstream and downstream of the bridge or pipe. The Contractor shall note that the bridge and pipe inverts are set a minimum of 10% of the bridge opening height or pipe diameter below the drain bottom to provide the embedment required by E.R.C.A. and D.F.O.

The installation of the complete length of the new bridge, culvert, or enclosure pipe, including all appurtenances, shall be completely inspected by the Town Drainage Superintendent or the Engineer's Inspector prior to backfilling any portions of same. Under no circumstance shall the Contractor commence the construction or backfill of the new culvert or enclosure pipe without the site presence of the Town Drainage Superintendent or the Engineer's Inspector to check and approve said installation. The Contractor shall provide notice to the Town Drainage Superintendent or the Engineer a minimum of two (2) working days prior to commencement of the work. The installations of the new bridge and culvert structures are to be performed during normal working hours of the Town Drainage Superintendent and the Engineer from Monday to Friday unless written authorization is provided by them to amend said working hours.

For the access bridge and enclosure installations, once the new precast concrete boxes, aluminized steel type II corrugated pipe, the smooth wall Ultra Flo aluminized pipe, or the H.D.P.E. plastic pipe has been satisfactorily set in place, the Contractor shall completely backfill same with granular material M.T.O. Type "B" O.P.S.S. Form 1010 with the following exception. The top 305mm (12") of the backfill material for the full top width of the access, and the full top width of the drain or the excavated trench, and any approaches to either side shall be granular material M.T.O. Type "A" O.P.S.S. Form 1010. All of the driveway and roadway approach areas extending from the Municipal roadway to the opposite face of the new bridge culvert shall be backfilled with compacted granular material M.T.O. Type "A" O.P.S.S. Form 1010, but only after

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all topsoil material has been completely removed and disposed of, and the minimum thickness of this granular material shall be 305mm (12"). All areas outside of the access driveway or roadway shall be backfilled with native material compacted to 96% of Standard Proctor Density and topped with a minimum of 50mm of topsoil and receive seed and mulch.

For hard surface driveway and roadway crossings, the top 305mm (12") of the backfill over the bridge below the hard surface treatment shall comprise granular material M.T.O. Type "A" O.P.S.S. Form 1010 compacted to a minimum of 100% Standard Proctor Density. The Contractor shall at all times be very careful when performing its backfilling and compaction operations so that no damage is caused to the pipe. To ensure that no damage is caused to the proposed bridge, alternative methods of achieving the required backfill compaction shall be submitted to the Engineer or the Town Drainage Superintendent for their approval prior to the commencement of this work. The Contractor shall restore any asphalt surface by placing a minimum of the existing thickness or a 90mm minimum thickness of Type HL-4 or equivalent Superpave hot mix asphalt. The asphalt shall be supplied and placed in two (2) approximately equal lifts compacted to a value ranging from 92% to 96% of maximum relative density as per O.P.S.S. 310. For existing concrete driveways, the Contractor shall carefully remove the concrete to the nearest expansion joint. The concrete driveway shall be restored to the original length and width that was removed and include 150mm thick, 30MPa concrete, with 6% \pm 1% air entrainment and 6x6-6/6 welded wire fabric reinforcing installed at the midpoint of the slab. All slab surfaces shall be finished to provide an appearance approximating the finish on the existing concrete driveway abutting the replacement.

The Contractor will be responsible to restore any damage caused to the roadways at its cost. All damaged hard surface roadway areas shall be neatly saw cut and the damaged materials removed and disposed of by the Contractor prior to carrying out any restoration work. The extent of the repairs shall be established in consultation with the Town Drainage Superintendent, the Road Authority, and the Engineer and the repairs shall be completed to their full satisfaction.

When doing maintenance works, the Contractor shall protect existing steel sheet pile and concrete headwalls wherever possible. The Contractor shall carefully extract the existing pipe from the wall, cautiously enlarge the opening as required, and install the new replacement pipe through the salvaged wall. The new pipe shall be thoroughly grouted in place for the full thickness of each headwall, with the surface finish of the grout blended to match to the existing concrete headwall finish, as closely as possible. Grout used for the wall repair shall be in pre-mixed bags or shall comprise of three (3) parts of clean, sharp sand to one (1) part of Portland cement with just sufficient water added to provide a stiff plastic mix and the grouted mortar connection shall be performed to the full satisfaction of the Town Drainage Superintendent or the Engineer. The Contractor is to note that any intercepted pipes or tiles along the length of the existing culverts or enclosures are to be diverted and extended into the rock end protection unless otherwise noted in the accompanying drawings.

The Contractor shall also note that the placing of the new access bridges, culverts and enclosures shall be completed so that they totally comply with the parameters established and noted in the Bridge Details and Tables for each bridge replacement or new installation. These bridges shall be set on an even grade and the placement shall be performed totally in the dry, and the Contractor should be prepared to take whatever steps are necessary to ensure same, all to the full satisfaction of the Town Drainage Superintendent or the Engineer. The Contractor shall also be required to supply a minimum of 100mm (4") of 20mm (3/4") clear stone bedding underneath the bridge or culvert pipe extending from the bottom of the drain to the bridge or culvert invert grade, all to the full satisfaction of the Town Drainage Superintendent or the Engineer. Furthermore, if an unsound base is encountered, it must be removed and replaced with 20mm (3/4") clear stone satisfactorily compacted in place to the full satisfaction of the Town Drainage Superintendent or the Engineer. The Contractor is to note that when replacing the access bridge or enclosure culvert, it shall be required to excavate a trench having a width not less than the new bridge or pipe outside diameter plus a 600mm working width on both sides of the new bridge or pipe to allow for proper installation of granular backfill and compaction of same. The Contractor shall also note that all bridge and pipe installations are to be carried out with

approximately 10% of their diameter or height embedded below the drain design bottom, as shown and noted on the plan and profiles for each of the access bridge installations.

XII. REMOVALS

Where existing access bridges and pipes are to be completely removed and replaced or abandoned, the Contractor shall be required to excavate and completely extract the existing culvert pipe, bridges, and the existing endwalls in their entirety, including poured concrete headwalls, as well as any other deleterious materials that may be encountered in removing same. The Contractor shall neatly saw cut any concrete or asphalt surfaces over the pipes for a sufficient width to allow for the safe removal of same or go to the nearest expansion joint panel of the concrete driveways. The Contractor shall also be required to completely dispose of all removed materials to a site to be obtained by it at its own expense. The Contractor shall dispose of any debris resulting from the work. Where an abandoned bridge is being removed, the Contractor shall excavate the drain cross section to the parameters noted on the plans and provide for topsoil, seed and mulch to vegetate the new open drain segment and provide full restoration.

All unsuitable and deleterious materials from the excavation and removal of the existing bridge and culverts and drain work at lawn areas shall be hauled away and disposed of by the Contractor to a site to be obtained by it at its expense. Likewise, any material excavated to allow for the granular approaches to the bridge, driveway transitions, or installation of new headwalls shall also be hauled away and disposed of by the Contractor.

XIII. BRIDGE HEADWALL AND SLOPED END PROTECTION

Unless otherwise shown or noted, the Contractor is to provide galvanized steel sheet piling and new interlocking precast concrete block headwalls or sloped quarried limestone on non-woven filter cloth end protection for the access bridges and pipes being installed, replaced or repaired under this project. Precast blocks shall be a minimum of 450mm high x 710 mm wide x 1200mm long, or as shown on the plans, with half-length blocks used where needed to stagger the vertical joints, and the walls shall be backed with non-woven filter cloth. The top cap shall be 150mm high.

The steel sheet piling and interlocking precast concrete block walls are to be provided and laid out as is shown and detailed in the accompanying drawings and as is noted in the Standard Specifications in **Appendix “REI-C”**. The precast concrete block supplier shall provide shop drawings of the proposed block layout and installation for approval by the Town Drainage Superintendent or Engineer prior to fabrication and installation. In all cases, the concrete block headwalls shall be installed as shown on Sheet 10 of the plans including the galvanized angle iron anchored on the top of the precast concrete box culvert ends. Joints in each course shall be staggered from the ones above and below using half blocks or equivalent, ensuring that all blocks interlock. Any voids between the blocks and the bridge structure shall be grouted with 30mPa concrete having 6% plus/minus 1% air entrainment and extend for the full thickness of the wall. The face of the grout shall have a smooth finish that blends with the precast concrete blocks. Steel sheet pile wall tiebacks and walers shall comprise galvanized steel and shall be installed as shown and detailed on the plans.

When each precast block retaining wall headwall has been completed, the Contractor shall supply and install the O.P.S.D. 980.101 powder coated steel pedestrian barricade on the top as shown and detailed on the plans including bolted anchors and base plates into the wall cap. Member sizes and spacing of the railing fabrication shall be as shown and noted on the plans.

The installation of the concrete block headwalls, unless otherwise specified, shall be provided in total compliance with the Items included in the **“STANDARD SPECIFICATIONS FOR ACCESS BRIDGE CONSTRUCTION”**. These are attached to the back of this report and labelled **Appendix “REI-C”**. The Contractor shall comply in all respects with the General Conditions included in Item 4 and the **“Typical Concrete Block Headwall End Protection”** detail also shown therein. The

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synthetic filter mat to be used shall be non-woven geotextile GMN160 conforming to O.P.S.S. 1860 Class I, as available from Armtex Construction products through Underground Specialties – Wolseley in Windsor, Ontario, or equal.

Where sloped end protection is specified, the top of backfill material over the ends of the access pipe, from the invert of said pipe to the top of the driveway elevation of the access bridge or enclosure, shall be quarried limestone on non-woven filter cloth with a minimum thickness of 305mm or as shown on the plans. The quarried limestone shall be provided as shown and detailed on the plans or as indicated in the Standard Specifications in **Appendix “REI-C”** and shall be graded in size from a minimum of 100mm (4”) to a maximum of 250mm (10”), as available from Walker Industries Amherstburg Quarry, in Amherstburg, Ontario, or equal. The quarried limestone to be placed on the sloped ends of an access bridge or enclosure shall be underlain with a synthetic **non-woven** geotextile filter fabric. The sloped quarried limestone protection is to be rounded as shown on the plan details and shall also extend along the drain side slopes to a point directly in line with the ends of the culvert pipe. The road side approach to the bridge entrance shall be provided with a minimum 5.0m radius at each end of the driveway entrance. All work shall be completed to the full satisfaction of the Town Drainage Superintendent or the Engineer.

The installation of the sloped quarried limestone end protection, unless otherwise specified herein, shall be provided in total compliance with Item 2, Item 3, and Item 4 of the **“STANDARD SPECIFICATIONS FOR ACCESS BRIDGE CONSTRUCTION”**. These are attached to the back of these specifications and labelled **Appendix “REI-C”**. The Contractor shall comply in all respects with the General Conditions included in Item 4 and the **“Typical Quarried Limestone End Protection Detail”** also in **Appendix “REI-C”**.

XIV. GENERAL QUARRIED LIMESTONE EROSION PROTECTION

At all of the swale and furrow locations entering the drain and at all bends, it is required that general quarried limestone erosion protection and rock chutes be provided on the drain slopes, at the locations indicated, and to the widths generally shown within the details and notes included in the accompanying drawings and be no less than 1.0 metres wide. The rock chutes shall be V-shaped and constructed to direct all flows through the centre portion of the rock chute. Where the drain banks are showing erosion or slumping and distress, the Contractor shall provide quarried limestone on filter cloth general erosion protection as outlined below. Protection locations shall be as established in consultation with the Town Drainage Superintendent and Engineer. Rock vanes and crossing rock vanes, weirs, and riffle installations shall be provided at locations shown on the plans and in accordance with the details on the plans. Rock vanes and riffles shall include round river stone rocks on the drain bottom as detailed on the plans.

The quarried limestone erosion protection shall be embedded into the sideslopes of the drain a minimum thickness of 305mm or the thickness shown on the plans and shall be underlain in all cases with non-woven synthetic filter mat (geotextile fabric). The filter mat shall not only be laid along the flat portion of the erosion protection, but also contoured to the exterior limits of the quarried limestone and the unprotected slope. The width of the general erosion protection shall be as established in the accompanying drawings or as otherwise directed by the Town Drainage Superintendent or the Engineer during construction. In placing the erosion protection, the Contractor shall carefully tamp the quarried limestone pieces into place with the use of the excavator bucket so that the erosion protection when completed will be consistent, uniform and tightly laid. In no instance shall the quarried limestone protrude beyond the exterior contour of the unprotected drain sideslopes along either side of said protection. The synthetic filter mat to be used shall be non-woven geotextile GMN160 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 to a maximum of 250mm, and is available from Walker Aggregates Amherst Quarries, in Amherstburg, Ontario, or equal.

XV. BENCHMARKS

Also, for use by the Contractor, we have established Benchmarks along the course of the work as noted on the plans.

For each of the bridge works, the plans include details, profiles and cross sections illustrating the work to be carried out. The Contractor shall note that in each case a specific design elevation grade has been provided for the invert at each end of the bridge. In all cases, the Contractor is to utilize the specified drain grade to set any new bridge installation. The Contractor shall ensure that it takes note of the direction of flow and sets all bridges and pipes to assure that all grades flow from west to east and north to south to match the direction of flow within the drain. The Contractor's attention is drawn to the fact that the pipe invert grades established herein provide for the bridges and pipes to be set a minimum of 10% of their opening height or diameter below the existing drain bottom or the design grade of the drain, whichever is lower.

XVI. ANCILLARY WORK

During the course of any drain construction, repair or improvements to the bridges and covered drains along the course of the work, the Contractor will be required to protect or extend any existing tile ends or swales and connect them to the drainage works to maintain the drainage from the adjacent lands. All existing tiles shall be extended utilizing solid Big 'O' "standard tile ends" or equal plastic pipe of the same diameter as the existing tile and shall be installed in accordance with the "Standard Lateral Tile Detail" included in the plans or specifications appendix, unless otherwise noted. Connections shall be made using a manufacturer's coupling where possible. Wherever possible, tiles shall be extended to outlet beyond the end of any access culverts or enclosures. When required, openings into new pipes shall be neatly bored, saw cut or burned with a torch to the satisfaction of the Town Drainage Superintendent or the Engineer. All cuts to steel pipes shall be touched up with a thick coat of zinc rich paint (Galvicon or equal) in accordance with the manufacturer's recommendations. For connections to plastic pipes, the Contractor shall employ Inserta Tee fittings or equal. For other connections, the Contractor shall utilize a grouted connection. Grouted mortar joints shall be composed of three (3) parts of clean, sharp sand to one (1) part of Portland cement with just sufficient water added to provide a stiff plastic mix, 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 on the exterior side to ensure a tight, solid seal. The Contractor is to note that any intercepted pipes along the length of the existing culverts and enclosures are to be extended and connected to the new pipe unless otherwise noted in the accompanying drawings.

Where the bridge or enclosure installation interferes with the discharge of an existing swale, the Contractor shall re-grade the existing swales to allow for the surface flows to freely enter the drain or catch basin. Any disturbed grass areas shall be fully restored with topsoil, seed and mulch.

All granular backfill for the bridge and enclosure installations shall be satisfactorily compacted in place to a minimum Standard Proctor Density of 98% by means of mechanical compaction equipment. All other good, clean, native fill material or topsoil to be utilized, where applicable, shall be compacted in place to a minimum Standard Proctor Density of 96%. All of the backfill material, equipment used, and method of compacting the backfill material shall be provided and performed to the full satisfaction of the Town Drainage Superintendent or Engineer.

Where the Contractor removes brick, concrete or asphalt hard surfaces over the bridges or pipes, the Contractor shall restore the hard surfaces as previously outlined. The Contractor will be responsible to restore any damage caused to these roadways or driveways at its cost. All damaged hard surface roadway and driveway areas shall be neatly saw cut and the damaged materials removed and disposed of by the Contractor prior to carrying out any restoration work.

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The new bridges or pipes for these installations are to be provided with a minimum depth of cover measured from the top of the pipe of 305mm (12"), and 400mm (16") for the precast concrete box sections. If the bridge and culvert pipes and enclosures are placed at their proper elevations, same should be achieved. If the Contractor finds that the minimum cover is not being met, they shall notify the Town Drainage Superintendent and the Engineer immediately so that steps can be taken to rectify the condition prior to the placement of any backfill. The minimum cover requirement is **critical** and must be attained. In order for these new access bridge culverts and enclosures to properly fit the channel parameters, **all of the design grade elevations must be strictly adhered to.**

As a check, all of the above access bridge, culvert and covered drain design grade elevations should be confirmed before commencing to the next stage of the installation. The Contractor is also to check that the invert grades are correct by referencing the Benchmark.

Although it is anticipated that the bridge and pipe installation at each site shall be undertaken in the dry, the Contractor shall supply and install a temporary straw bale check dam or silt curtain in the drain bottom immediately downstream of each bridge and pipe site during the time of construction. The straw bale check dam or silt curtain shall be in accordance with Ontario Provincial Standards and shall be to the satisfaction of the Town Drainage Superintendent or Engineer and must be removed upon completion of the construction. The straw bales may be reused at each site subject to their condition. All costs associated with the supply and installation of the straw bale check dam or silt fencing shall be included in the cost bid for the bridge and pipe installations.

XVII. TOPSOIL, SEED AND MULCH

The Contractor will be required to maintain grass buffers along the top of the drain banks where there are currently open field areas. The grass buffer shall extend from the top of the bank for a minimum of 1.0m on the north, south, and east sides and 6.0m on the south and west sides of the improved drain to provide a strip of grass between the cultivated field or any future development and the drain. The topsoil shall be prepared for seeding as noted further in these specifications. Should the existing topsoil be treated to prevent grass growth, the Contractor shall strip the existing topsoil material back and spread it on the adjacent field and supply 50mm thick imported topsoil, or topsoil material scavenged from the drain works, that is suitable for growing grass.

The Contractor shall be required to restore all existing grassed areas and drain side slopes damaged by the structure replacements, new installations, and cutting of the drain cross section. Restoration shall be done by placing topsoil, and then seed and mulch over said areas including any specific areas noted on the bridge and pipe details. The Contractor shall be required to provide all the material and to cover the above-mentioned surfaces with approximately 50mm of good, clean, dry topsoil on slopes and 100mm of good, clean, dry topsoil on horizontal surfaces, fine graded and spread in place ready for seeding and mulching. 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 for lawn areas and include native grass seed species in areas of the improved drain. All cleanup and restoration work shall be performed to the full satisfaction of the Town Drainage Superintendent or 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.

XVIII. SPECIAL PROVISIONS FOR MAINTENANCE, REPAIR AND IMPROVEMENTS

The Contractor shall provide for the construction and improvements and future maintenance to the access bridges and pipes along the 2nd Concession Road Drain South, for the structures noted on the plans, as follows.

For all bridges not being replaced, the Contractor shall clean through the existing structures, to remove all sediment and accumulated materials, and provide for the drain cross section as shown on the profiles and plans. All cleaning and flushing work shall be carried out to the complete satisfaction of the Town Drainage Superintendent or the Engineer. The Contractor will be required to remove all material taken out of the access bridges and culverts and drains or swales along roads and lawn areas and haul away and dispose of same, at a site to be obtained by it, at its own expense. During the course of any maintenance work, the Contractor shall protect the special features located in the drain and along the drain banks as noted below.

Instream and Drain Bank Features

Along the course of the 2nd Concession Road Drain South, the Contractor will be required to carry out work to satisfy D.F.O. compensation and offsetting requirements as shown and noted on the drainage plans and detailed in the schedule of items and prices. Work shall include installation of rock vanes (RV#) and crossing rock vanes (CRV#). Rock vanes at the bends shall be placed on the outside curve of the bank of the drain as shown on the plans. Crossing rock vanes shall be installed across the drain bottom and up the side slopes located as shown on the plans and in accordance with the details provided on the plans. The rock shall be placed on non-woven filter cloth extending across the bottom width of the channel and be embedded into the side slopes to prevent scouring around the rock and erosion of the drain banks.

Surface water inlets shall be a minimum of 2.0m wide or the width of the furrow or swale entering the drain, extending from the top of bank to the drain bottom. The centre of the inlet shall be depressed to direct flows through the middle of the rock. At tile outlets, the rock protection shall be a minimum of 1.0m wide and extend from 500mm above the top of the pipe to the toe of the drain slope. All rock and filter cloth protection shall be installed as previously outlined in the specifications above.

The Contractor shall provide rock clusters in the S.W.M. pond where they are shown on the plans and in accordance with the detail plan and notes. The rock cluster shall be 3-5 armour rocks for each. The clusters and filter cloth shall be placed in accordance with the requirements for general erosion protection as noted above.

At select locations along the drain, the Contractor will be required to install snake hibernaculum as shown and detailed on the plans. This shall include providing all equipment, labour, and materials for all excavation and backfill, installation of special buried materials as noted on the plans, 150mm diameter H.D.P.E. pipe access from the drain, rock cover, and restoration as illustrated on the plan details.

Rock vanes are to be installed along the drain banks where they are shown to provide still areas in the flow channel. To minimize the risk of turbulence and erosion of the drain banks, the deflectors are installed at approximately a 45-degree angle into the drain on the bank as shown on the plans. The structures shall include all rock, round stone, gabion rock and geotextile materials as shown on the plans.

At the locations shown on the plans, the Contractor shall install rock vanes and riffles. A detail of the rock riffle is shown on Sheet 11 of the plans. The riffle will create a pool approximately

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300mm deep on the upstream side. The upstream face of the riffle and the downstream face shall be installed as shown with the centre slightly depressed to direct flows through the middle of the rock on filter cloth installation. The rock and filter cloth shall be as outlined above for general erosion protection. The riffle shall extend across the full width of the channel and be embedded into the drain bottom and banks to minimize the risk of erosion around the perimeter of the installation.

Along the access easements adjacent to the sides of the improved drain, and along the top of the opposite bank, the Contractor will be required to carry out vegetation establishment including plantings as outlined on the plans and schedule of items and prices and detailed below in the notes and tables provided by Ecofish Research.

The Contractor will be required to keep all equipment working along the course of the new drain alignment meticulously clean so that the risk of distributing invasive species including phragmites is minimized. Should any invasive species be detected during the one year maintenance period, the Contractor will be required to spray and cut same to eradicate the plants and allow the other species to grow. Following the Contractor's one year maintenance period, the Town will be required to monitor the new open drain and carry out maintenance work as necessary to prevent the spread of invasive species.

Ecofish Notes and Tables

The riparian habitat of the drain sections will be established by hydro-seeding to rapidly grow native grass to reduce the potential for bank erosion. Planting along both banks of the open drain will also be conducted to establish long-term erosion control, as well as nutrient input and cover for the stream. Along one bank (either the south or west sides to maximize shading) nursery grade trees will be planted at a spacing of 10 m. The other bank will be planted primarily with shrubs to allow access for drain maintenance approximately once every 10 years. If feasible, based on the operational requirements to retain access for channel maintenance, trees will be planted at a spacing of 30 to 50 m. Planting of large trees along the maintenance access side of the drain is to be avoided.

Table 1 outlines appropriate species and quantities for the vegetated buffer. The Contractor shall provide the Drainage Superintendent or Engineer with confirmation of the supply of the materials from a qualified nursery. Planting works shall be carried out under the supervision of a qualified Botanist or professional who can certify the materials and that the installation works are completed in accordance with the specifications and Ministry requirements. Table 22 provides site specific planting prescription which outlines general planting standards applied to maximize survival and riparian habitat benefit. In addition to these standards, a comprehensive management plan should be prepared to control the spread of the noxious invasive weed, Phragmites, which is present on the site (Walden and Leadley 2011).

Table 1. Planting species and density.

2nd Concession Drain Works Species List		
Species Name	Scientific Name	Qty
White Cedar	<i>Thuja occidentalis</i>	25
Silver Maple	<i>Acer saccharinum</i>	20
White Spruce	<i>Picea glauca</i>	25
Eastern Redcedar	<i>Juniperus virginiana</i>	25
Black Walnut	<i>Juglans nigra</i>	20
Pin Oak	<i>Quercus palustris</i>	25
Shagbark Hickory	<i>Carya ovata</i>	25
Black Cherry	<i>Prunus serotina</i>	25
Trembling Aspen	<i>Populus tremuloides</i>	20
Red-osier Dogwood	<i>Cornus stolonifera</i>	100
Gray Dogwood	<i>Cornus racemosa</i>	100
Downy Hawthorn	<i>Crataegus mollis</i>	100
Common Elderberry	<i>Sambucus nigra</i>	100
Prickly Rose	<i>Rosa acicularis</i>	100
Wild Red Raspberry	<i>Rubus idaeus</i>	100
Black Raspberry	<i>Rubus occidentalis</i>	100
White Willow	<i>Salix alba</i>	100
Serviceberry	<i>Amelanchier humilis</i>	100
Staghorn Sumac	<i>Rhus typhina</i>	75

Table 2. Site specific planting prescription for the improved drain.

General Planting Standards
1. Plants must be certified nursery stock free of disease, invasive species with provenance records where available.
2. Planting should be overseen by a qualified professional (QP) to determine appropriate locations of trees and shrubs based on spacing requirements and onsite conditions.
3. Prior to planting, the surface will be de-compacted to a depth where roots are expected to penetrate (~1 m to 1.3 m). Where slope gradient allows, the area will be left rough with no smooth or compacted surfaces. This will reduce erosion and aid in seed capture for additional natural regeneration and colonization.
4. Where applicable, stockpiled topsoil will be replaced over the revegetation area prior to planting.

5. Planting can be completed with the assistance of small machinery (≤ 75 tons) in order to loosen the soil sufficiently to plant. Machinery should not track over the soil once planting has occurred to reduce soil compaction.
6. Hydro-seed should contain an appropriate mix of native species.
7. Planting should occur between September 15 - October 15 or March 15-May 1 as site conditions allow.
8. Coarse woody debris (CWD) can be scattered throughout the revegetation area to increase available habitat for birds, small mammals, reptiles and amphibians. The CWD will be over 20 cm in diameter and 5 m in length. Root balls can be used.
9. Plant survival must be 80% otherwise replanting will be required.
10. The site should be monitored for the colonization of invasive species. If found, species must be controlled.

XIX. GENERAL CONDITIONS

- a) The Town Drainage Superintendent or Consulting Engineer shall have authority to carry out minor changes to the work where such changes do not lessen the efficiency of the work.
- 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 Amherstburg and the Consulting 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 Amherstburg or the Consulting 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 Consulting 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 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) During the course of the work the Contractor shall be required to connect existing drainage pipes to the Municipal Drain. In the event that polluted flows are discovered, the Contractor shall delay the connection of the pipe and leave the end exposed and alert the Town, the Drainage Superintendent, and the Consulting Engineer so that steps can be taken by the Town to address the concern with the owner and the appropriate authorities. Where necessary the Contractor shall cooperate with the Town in providing temporary measures to divert the drain or safely barricade same. Should the connection be found acceptable by the authorities, the Contractor shall complete the connection of the drain as provided for in the specifications, at no extra cost to the project.
- g) 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.
- h) 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.
- i) During the course of the project the Contractor shall deal with any excess soil management from the project in accordance with Ontario Reg 406/19 pursuant to the Environmental Protection Act, R.S.O. 1990, c. E.19 and any subsequent amendments to same.
- j) 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 Consulting 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 Consulting 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.
- k) 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 project from the "Workplace Safety and Insurance Board" before Final Payment is made to the Contractor.

- l) 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.

- m) 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 Amherstburg and its' officials and the Consulting Engineer and their staff as additional insured under the policy. The Contractor must submit a copy of this policy to both the Town Clerk and the Consulting Engineer prior to the commencement of work.
- n) 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 60 days after the final acceptance and completion of the work 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 hereunder have expired or have been satisfied, discharged, or provided for by payment into Court.

The Contractor shall satisfy the Consulting Engineer or Town that there are no liens or claims against the work and that all of the requirements as per the Construction Act, 2018 and its' subsequent amendments have been adhered to by the Contractor.

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- o) 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.
- p) Should extra work be required by the Town Drainage Superintendent or Consulting Engineer, and it is done on a time and material basis, the actual cost of the work will be paid to the Contractor with a 15% markup on the total actual cost of labour, equipment and materials needed to complete the extra work.

APPENDIX “REI-A”

Pike Road Drain and 2nd Concession Drain South - Notice of Site Meeting

1 message

Cynthia Casagrande <CCasagrande@erca.org>

Wed, Jun 1, 2016 at 10:35 AM

To: Eric Chamberlain <echamberlain@amherstburg.ca>

Cc: Nicole Humber <nnumber@amherstburg.ca>, Gerard Rood <gerard@roodengineering.ca>, John Henderson <JHenderson@erca.org>, Dan Jenner <DJenner@erca.org>

Dear Eric:

PWD-MD-2002-014

REI Project 2015D024

This office has received the Notice of Site Meeting scheduled for Thursday, June 2, 2016 regarding the proposed repair and improvement on the Pike Road Drain and 2nd Concession Road Drain South. Unfortunately, we are unable to attend this meeting.

A review of our floodplain mapping for the Pike Road Drain and 2nd Concession Drain South indicates that these drains are located within an area that is under the jurisdiction of the Essex Region Conservation Authority (ERCA) (Section 28 of the *Conservation Authorities Act*). Prior to undertaking works, a permit is required from this office.

This office has had extensive involvement regarding the earlier phases of this overall project. We would recommend scheduling a meeting with representatives of the Town, the Engineer, and ourselves here at the ERCA office to review and outline all ERCA concerns and requirements for this portion of the project to move forward.

Any requirements and/or conditions of development specified by the MNRF and/or DFO would need to form a component of the overall permit issued from this office for the proposed works.

If further information or clarification is required, please do not hesitate to contact this office.

Yours truly,

Cynthia Casagrande

Regulations Coordinator

Essex Region Conservation Authority

360 Fairview Avenue West, Suite 311

Essex ON N8M 1Y6

[519\) 776-5209, Ext. 349](tel:5197765209)



Gerard Rood <gerard.reinc@gmail.com>

2nd Concession Road Drain South - Amherstburg - REI2015D024

1 message

Gerard Rood <gerard@roodengineering.ca>
To: Ashley Gyori <agyori@erca.org>
Cc: Shane McVitty <smcvitty@amherstburg.ca>

Fri, Jul 16, 2021 at 2:09 PM

Good afternoon Ashley:

We are working on finalizing the drainage report for the above noted project. Attached are design plans for the repair and improvement of the open drain portion from Lowes Sideroad northerly to the upper end just south of Simcoe Street. Working with all the stakeholders and biology consultants we have information from DFO and MECP on proceeding with the works. We understand from early ERCA input that a permit will be required for the work to proceed. Attached is the key information for ERCA to review. We would appreciate any input that ERCA can provide on proceeding with the project.

Thank you for your time and prompt attention to this matter. Please contact us if you have any questions or require further information. We look forward to hearing from you.

Regards,

Gerard Rood, P.Eng.

ROOD ENGINEERING INC.


9 Nelson Street
Leamington, Ontario
N8H 1G6


Phone: 519-322-1621

Fax: 519-322-1979

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4 attachments

 **18-039 2nd Concession Drain - Drawing set (22June2021).pdf**
8337K

 **2021-04-16 fr DFO 21-HCAA-00011_Second Concession Drain_LoA.pdf**
123K

 **2021-01-25 fr Nicole Wajmer Addendum Eastern Foxsnake Mitigation and Monitoring Plan_Jan 25 2020_Draft.pdf**
1678K

 **2021-05-14-3 Eastern Fox Snake registration confirmation.pdf**
37K



Gerard Rood <gerard.reinc@gmail.com>

RE: 2nd Concession Road Drain South - Amherstburg - REI2015D024

1 message

Ashley Gyori <AGyori@erca.org>
To: Gerard Rood <gerard@roodengineering.ca>
Cc: Shane McVitty <smcvitty@amherstburg.ca>

Mon, Aug 23, 2021 at 9:29 AM

Good morning Gerard,

We have had the opportunity to review the attached information and based on the submitted design drawings, in principal, ERCA does not have any major concerns; however, we do have the following comments to provide.

1. Please clarify in the report what components will form part of the municipal drainage scheme vs. the elements that will form part of the subdivision agreement (i.e. will the SWM facility, diversion weirs, etc. fall under the Drainage Act?)
2. It should be noted that the setback requirement from the top of bank of the drain for all residential construction activities will be 8 metres, plus the depth of the drain to a maximum of 15 metres.
3. Any property within 15 metres from the top of bank of the drain will require ERCA approvals for any development on the lots and will be required to meet all applicable requirements.
4. Any works related to the subdivision development will be required to go through the appropriate *Planning Act* channels and obtain all required ERCA approvals prior to any development on the site.
5. Additionally, it should be noted that ERCA does not review projects on behalf of other agencies (DFO, MECP, MNRF). It is the responsibility of the proponent to ensure that all applicable municipal, provincial and federal authorizations have been obtained. Should any external agencies require amendments to this proposal, revised approvals from this office reflecting the changes would be required.
6. Additional comments may be provided upon receipt of the Drainage Engineer's Report

We look forward to receiving the a copy of the drainage report. If you have any questions, please do not hesitate to contact this office.

Kind regards,



ASHLEY GYORI

Regulations Analyst

Essex Region Conservation Authority

360 Fairview Avenue West, Suite 311 Essex, Ontario N8M 1Y6

P. 519-776-5209 x 247 F. 519-776-8688

agyori@erca.org essexregionconservation.ca

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**** Please note that the ERCA office is closed to the public; however, staff are continuing to respond to inquiries and review applications in a modified capacity. We appreciate your understanding and patience at this time.****

From: Gerard Rood <gerard@roodengineering.ca>

Sent: Friday, July 16, 2021 2:09 PM

To: Ashley Gyori <AGyori@erca.org>

Cc: Shane McVitty <smcvitty@amherstburg.ca>

Subject: 2nd Concession Road Drain South - Amherstburg - REI2015D024

Good afternoon Ashley:

We are working on finalizing the drainage report for the above noted project. Attached are design plans for the repair and improvement of the open drain portion from Lowes Sideroad northerly to the upper end just south of Simcoe Street. Working with all the stakeholders and biology consultants we have information from DFO and MECP on proceeding with the works. We understand from early ERCA input that a permit will be required for the work to proceed. Attached is the key information for ERCA to review. We would appreciate any input that ERCA can provide on proceeding with the project.

Thank you for your time and prompt attention to this matter. Please contact us if you have any questions or require further information. We look forward to hearing from you.

Regards,

Gerard Rood, P.Eng.

ROOD ENGINEERING INC.

9 Nelson Street

Leamington, Ontario

N8H 1G6

Phone: 519-322-1621



Fisheries and Oceans
Canada

Pêches et Océans
Canada

Ontario and Prairie Region
Fish and Fish Habitat
Protection Program
867 Lakeshore Road
Burlington, ON L7S 1A1

Région de l'Ontario et des Prairies
Programme de la protection
du poisson et de son habitat
867 Lakeshore Road
Burlington, ON L7S 1A1

April 16, 2021

Our file *Notre référence*

20-HCAA-00011

Town of Amherstburg
Attention: Shane McVitty
512 Sandwich St. South,
Amherstburg, ON
N9V 3R2

**Subject: Drain Maintenance, Second Concession Road Drain, Class C and F,
Amherstburg – Implementation of Measures to Avoid and Mitigate the
Potential for Prohibited Effects to Fish and Fish Habitat**

Dear Shane McVitty,

The Fish and Fish Habitat Protection Program (the Program) of Fisheries and Oceans Canada (DFO) received your proposal on January 12, 2021. We understand that you propose to:

- Complete a bottom only cleanout, for 1542 linear metres, of the Class C and Class F Second Concession Road Drain. The cleanout works will remain 0.6 metres above the drain bottom;
- Brush both banks of the Second Concession Road Drain for 1542 linear metres; and
- Install two new box culverts on the drain and replace an existing bridge structure with a box culvert. The culverts will be between 20 and 22 linear metres in length.

Our review considered the following information:

- Request for Review package submitted by N. Wajmer to DFO
- Correspondence between N. Wajmer, S. McVitty, G. Rood and DFO

Your proposal has been reviewed to determine whether it is likely to result in:

- the death of fish by means other than fishing and the harmful alteration, disruption or destruction of fish habitat which are prohibited under subsections 34.4(1) and 35(1) of the *Fisheries Act*;
- effects to listed aquatic species at risk, any part of their critical habitat or the residences of their individuals in a manner which is prohibited under sections 32, 33 and subsection 58(1) of the *Species at Risk Act*;

The aforementioned impacts are prohibited unless authorized under their respective legislation and regulations.

To avoid and mitigate the potential for prohibited effects to fish and fish habitat (as listed above), we recommend implementing the measures outlined in your plan, in addition to the following listed below:

- Conduct work outside the spring timing windows (i.e. no in-water work between **March 15 to July 15**)
- Conduct work in low or no flow
- Follow the culvert replacement BMP in the Guidance for Maintaining and Repairing Municipal Drains in Ontario document
- If the culverts cannot be replaced in the dry, the sites will be isolated and a fish salvage will be completed as necessary
- Reseed and/or replant any disturbed banks caused by the construction activities with native species
- Install and maintain appropriate erosion and sediment control measures
- Install fish habitat features and create and plant the buffers as identified in the draft engineers report submitted to DFO

Provided that you incorporate these measures into your plans, the Program is of the view that your proposal will not require an authorization under the *Fisheries Act* or the *Species at Risk Act*.

Should your plans change or if you have omitted some information in your proposal, further review by the Program may be required. Consult our website (<http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html>) or consult with a qualified environmental consultant to determine if further review may be necessary. It remains your responsibility to remain in compliance with the *Fisheries Act*, and to avoid prohibited effects on listed aquatic species at risk, any part of their critical habitat or the residences of their individuals.

It is also your *Duty to Notify* DFO if you have caused, or are about to cause, the death of fish by means other than fishing and/or the harmful alteration, disruption or destruction of fish habitat. Such notifications should be directed to (<http://www.dfo-mpo.gc.ca/pnw-ppe/CONTACT-eng.html>).

Please notify this office at least 10 days before starting your project. A copy of this letter should be kept on site while the work is in progress. It remains your responsibility to meet all other federal, territorial, provincial and municipal requirements that apply to your proposal.

If you have any questions with the content of this letter, please contact Christopher Biberhofer at 365-323-4178 or by email at Christoher.Biberhofer@dfo-mpo.gc.ca. Please refer to the file number referenced above when corresponding with the Program.

Yours sincerely,



Christopher Biberhofer
A/Senior Biologist

CC: Nicole Wajmer, Insight Environmental Solutions Inc
Gerard Rood, Rood Engineering Inc

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:

- Work will not be conducted at times when flows are elevated due to local rain events, storms or seasonal floods. In-water works will not be undertaken between March 15th and June 30th.
- New culverts are to be installed with a minimum 10 % embedment below the existing bottom or design bottom of the drain (whichever is lower).
- All new culverts must provide for fish passage. Typically, culvert lengths that do not exceed 15.0 metres do not create an obstruction to fish passage. Depending on the proposed culvert diameter, however, longer lengths may be allowed. Concerns with longer culverts relate to velocity, loss of riparian habitat, etc. (Note: IF longer culvert lengths are proposed, we recommend that they be reviewed with this office prior to finalizing the engineer's report. Ultimately, it is the proponent's responsibility to undertake the necessary studies to confirm that the proposed length will not be a barrier to fish passage.)
- All disturbed soils on both 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 spread an appropriate distance from the top of the drain bank to ensure that it is not washed back into the drain.
- 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 related Ontario Provincial Standards. It is incumbent on the proponent and his/her contractors to ensure that sediment and erosion control measures are functioning properly and are maintained/upgraded as required.
- Silt or sand accumulated in the barriers/traps must be removed and stabilized on land once the site is stabilized.
- 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 refueling and maintenance should be conducted away from the water.

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.

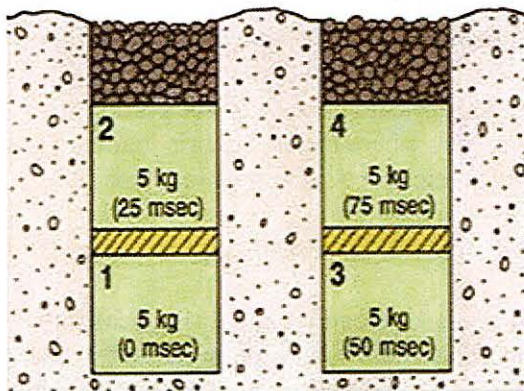
- Plan activities near water such that materials such as paint, primers, blasting abrasives, rust solvents, degreasers, grout, or other chemicals do not enter the watercourse.
- Develop a response plan that is to be implemented immediately in the event of a sediment release or spill of a deleterious 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

BEST MANAGEMENT PRACTICES – CULVERT REPLACEMENTS IN MUNICIPAL DRAINS

This document describes the conditions on which one may proceed with a culvert replacement in a municipal drain without DFO approval/notification. All municipal, provincial, or federal legislation that applies to the work being proposed must be respected. If the conditions/requirements below cannot be met, please complete the Notification of Drain Maintenance or Repair form and submit it to the Fisheries Protection Program form review at: FisheriesProtection@dfo-mpo.gc.ca.

Potential Impacts to Fish Habitat

- Infilling fish habitat by encroachment of the water crossing footprint or channel realignment to accommodate culvert
- Harmful substrate alteration of fish habitat (e.g. blockage of groundwater upwellings, critical Species at Risk (SAR) habitat, spawning areas)
- Removal of vegetation on top and along the banks of the municipal drain
- Removal of edge habitat (e.g. undercut bank, shallower areas with lower velocity, aquatic vegetation) creation of barriers to fish movement (e.g. perched crossings, velocity barriers, alteration of the natural stream gradient)
- Alteration of channel flow velocity and/or depth (e.g. oversized culvert resulting in insufficient depth for fish passage at low flow or undersized culvert resulting in a flow velocity barrier at high flow)
- Alteration of channel morphology and sediment transport processes caused by the physical structure of the crossing resulting in upstream and downstream sediment aggradation/erosion
- Re-entry of sediment that was removed/stockpiled into the watercourse
- Erosion downstream from sudden release of water due to the failure of site isolation
- Stranding of fish in isolated ponds following de-watering of the site
- Impingement or entrainment of fish when de-watering pumps are used
- Short term or chronic transport of deleterious substances, including sediment, into fish habitat from construction or road drainage

Requirements

The following requirements must be met:

- There are no aquatic SAR present in the work zone or impact zone. To confirm there are no aquatic SAR present, refer to the following website at: <http://www.dfo-mpo.gc.ca/species-especes/fpp-ppp/index-eng.htm>.
- The culvert is embedded into the streambed and must allow for the free passage of fish.
- The work involves like-for-like replacements of existing road or private access culverts on all drain types without SAR.
- On C and F drains only, this can also include replacements with extensions and end walls for the purposes of providing the property or road with safe access; however, the project does not involve temporary or permanent work that requires modifications (e.g. encroachment, dewatering, realignment, and relocation) over a total surface area of more than 250 m² below the high water mark.

- The project does not involve replacing a bridge or arch with one or more culverts installed in parallel or a larger-diameter culvert with more than one culvert installed in parallel.
- The project does not involve building more than one culvert installed in parallel on a single watercourse crossing site (e.g. twin culvert).
- The project does not involve temporarily narrowing the watercourse to an extent or for a duration that is likely to cause erosion, structural instability or fish passage problems.
- The municipal drain has no flow/low flow or is frozen to the bottom at the time of the replacement.
- In-water work is scheduled to respect Restricted Activity Timing Windows ([Tables 1 and 2](#)) to protect fish, including their eggs, juveniles, spawning adults, and/or the organisms upon which they feed.
- The work can be conducted using the Culvert Removal Method described below and Standard Measures to Avoid Causing *Serious Harm to Fish* will be implemented when required.

Note: If your project must be conducted without delay in response to an emergency (e.g. the project is required to address an emergency that poses a risk to public health or safety or to the environment or property), you may apply for an Emergency Authorization (<http://www.dfo-mpo.gc.ca/asp/forceDownload.asp?FilePath=/pnw-ppe/reviews-revues/Emergency-Authorizations-Autorisations-Urgences-eng.pdf>).

Culvert Removal Methodology

- Plan/manage the work site in a manner that prevents sediment from entering the municipal drain by installing sediment and erosion control materials where required. Ensure that a sediment and erosion control plan is developed and modified as necessary for the site.
- Where required, install effective erosion and sediment control measures before starting work to prevent sediment from entering the municipal drain.
- Implement site isolation measures when in-water work is required.
 - Install an impervious barrier upstream of the work area ([Figure 1](#)). If possible, install a secondary barrier upstream of the work area for added protection.
 - Attempt to drive out the fish from the work area and then install the impervious barrier downstream of the work area. This may reduce or eliminate the need for a fish salvage.
 - When the drain is flowing, maintain downstream flows (e.g. bypass water around the work site using pumps or flume pipes; [Figure 2](#)). Provide temporary energy dissipation measures (e.g. rip-rap) at discharge point of the hose or temporary outlet pipe when required. Routinely inspect bypass pump and hose or pipe to ensure proper operation. Inspect discharge point for erosion and reposition hose/pipe or install additional temporary energy dissipation material as needed.
 - Dewater the isolated work area. The hose for a pump may discharge along the top of the bank into existing vegetation; however, the area should be monitored for signs of erosion. Reposition the hose or install additional temporary energy dissipation material as needed.

- A fish screen with openings no larger than 2.54 mm (0.10 inches) should be equipped on any pump used during the operation. Note: Additional information regarding fish screens can be found in the DFO Freshwater Intake End-of-Pipe Fish Screen Guideline document (<http://www.dfo-mpo.gc.ca/Library/223669.pdf>).
- Collect any fish present in the isolated work area and relocate them downstream.
- Fish salvage operations must be conducted under a license issued by the Ontario Ministry of Natural Resources and Forestry (MNRF). The MNRF should be contacted well in advance of any work to obtain the required fish collection license.
- Install the culvert so that it is embedded into the streambed; ensure the culvert remains passable (e.g. does not become perched) by fish and wildlife.
- Decommission the site isolation in a manner that minimizes the introduction of sediment. The downstream isolation barrier shall gradually be removed first, to equalize water levels inside and outside of the isolated area and to allow suspended sediments to settle.
- Stabilize and remove waste from the site.
- Where required, maintain effective erosion and sediment control measures until complete revegetation of disturbed areas is achieved.



Figure 1. Isolation of site.

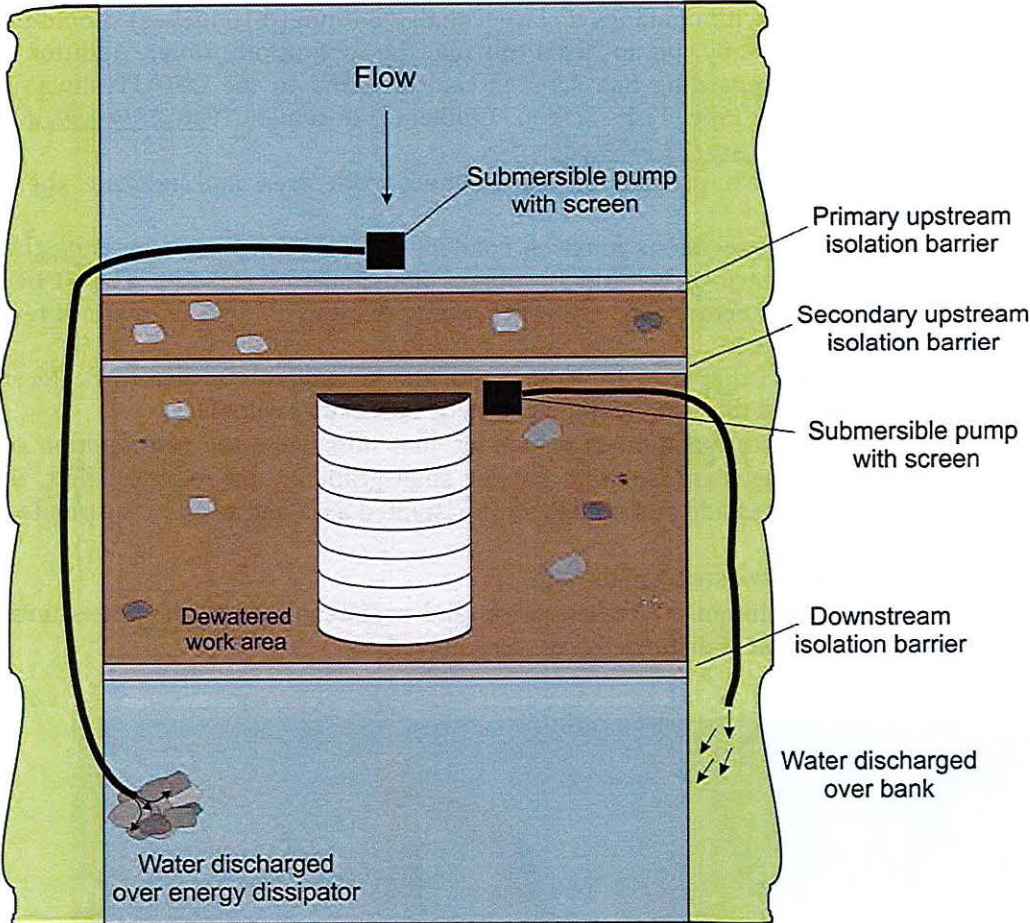


Figure 2. Isolation and bypass diversion when working in-water.

Restricted Activity Timing Windows

Figure 3 and [Tables 1 and 2](#) can be used to determine the Restricted Activity Timing Window for the drain based on its classification. Note: Restricted Activity Timing Windows identified on [Ontario Ministry of Natural Resources and Forestry](#) work permits may differ and take precedence.



Figure 3. Ontario's Northern and Southern Region boundaries for determining application of Restricted Activity Timing Windows.

Table 1. Restricted Activity Timing Windows for the protection of spawning fish and developing eggs and fry in the Northern Region. Dates represent when work should be avoided.

Drain Class	Restricted Activity Period
A	September 1 to July 15
B	April 1 to July 15
C	April 1 to July 15
D	September 1 to July 15
E	April 1 to July 15
F ¹	Periods of Flow
Unrated	September 1 to July 15

¹Flow is defined as the movement of water between two points.

Table 2. Restricted Activity Timing Windows for the protection of spawning fish and developing eggs and fry in the Southern Region. Dates represent when work should be avoided.

Drain Class	Restricted Activity Period
A	October 1 to July 15
B	March 15 to July 15
C	March 15 to July 15
D	October 1 to July 15
E	March 15 to July 15
F ¹	Periods of Flow
Unrated	October 1 to July 15

¹Flow is defined as the movement of water between two points.

Standard Measures to Avoid Causing *Serious Harm to Fish*

When implementing a culvert removal project in a municipal drain, the *Fisheries Act* still requires an individual/company to ensure they avoid causing *serious harm to fish* during any activities in or near water. The following advice will help one avoid causing harm and comply with the *Act* (for additional information see <http://www.dfo-mpo.gc.ca/pnw-ppe/measure-mesures/measure-mesures-eng.html>).

1. Schedule work to avoid wet, windy, and rainy periods that may increase erosion and sedimentation.
2. Whenever possible, operate machinery on land above the high water mark or on ice and in a manner that minimizes disturbance to the banks and bed of the municipal drain.
 - Ensure that machinery arrives on site in a clean condition and is maintained free of fluid leaks.
 - Limit machinery fording of the municipal drain to a one-time event (i.e. over and back), and only if no alternative crossing method is available. If repeated crossings of the municipal drain are required, construct a temporary crossing structure.
 - 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.
 - Keep an emergency spill kit on site in case of fluid leaks or spills from machinery.
3. Install effective sediment and erosion control measures before starting work to prevent sediment from entering the municipal drain. Inspect them regularly during the course of construction and make all necessary repairs if any damage occurs.
4. 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 municipal drain and runoff water is clear.
5. Undertake all in-water activities in isolation of open or flowing water while maintaining the natural flow of water downstream and avoid introducing sediment into the municipal drain.
6. Ensure applicable permits for relocating fish are obtained and relocate any fish that become trapped in isolated pools or stranded in newly flooded areas to the main channel of the watercourse.
7. Ensure that the water that is being pumped/diverted from the site is filtered (sediment removed) prior to being released (e.g. pumping/diversion of water to a vegetated area).
8. Implement measures for containing and stabilizing waste material (e.g. dredging spoils, construction waste and materials, logging waste, uprooted or cut aquatic plants, accumulated debris) above the high water mark of nearby waterbodies to prevent re-entry.
9. Stabilize shoreline or banks disturbed by any activity associated with the project to prevent erosion and/or sedimentation, preferably through revegetation with native species suitable for the site.
10. 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.
11. Remove all construction materials from site upon project completion.

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-B”

RE: Pike Road Drain Auxiliary Outlet & 2nd Concession Road Drain Relocation - Amherstburg - REI2015D024

1 message

ESA Screening Request Aylmer District (MNRF)
<ESAScreeningRequest.AylmerDistrict@ontario.ca>

Mon, May 2,
2016 at 11:14
AM

To: Gerard Rood <gerard@roodengineering.ca>

Cc: "ESA Screening Request Aylmer District (MNRF)" <ESAScreeningRequest.AylmerDistrict@ontario.ca>

Hello Mr. Rood,

The Species at Risk in Ontario (SARO) List is Ontario Regulation 230/08 issued under the *Endangered Species Act, 2007* (ESA 2007). The ESA 2007 came into force on June 30, 2008, and provides both species protection (section 9) and habitat protection (section 10) to species listed as endangered or threatened on the SARO List. The current SARO List can be found on e-laws (<http://www.e-laws.gov.on.ca/navigation?file=home&lang=en>).

An initial SAR screening has been completed for the Pike Road Drain Auxiliary Outlet and 2nd Concession Drain Relocation, Amherstburg.

The proposed project is occurring within regulated habitat for **Eastern Foxsnake (Endangered)**.

Please note that this is an initial screening for SAR and the absence of an element occurrence does not indicate the absence of species. The province has not been surveyed comprehensively for the presence or absence of SAR, and MNRF data relies on observers to report sightings of SAR. Field assessments by a qualified professional may be necessary if there is a high likelihood for SAR species and/or habitat to occur within the project footprint.

It is important to note that changes may occur in both species and habitat protection which could affect whether proposed projects may have adverse effects on SAR. The Committee on the Status of Species at Risk in Ontario (COSSARO) meets regularly to evaluate new species for listing and/or re-evaluate species already on the SARO List. As a result, species designations may change, which could in turn change the level of protection they receive under the ESA 2007. Also, habitat protection provisions for a species may change if a species-specific habitat regulation comes into effect.

If an activity or project will result in adverse effects to endangered or threatened species and/or their habitat, additional action would need to be taken in order to remain in compliance with the ESA 2007. Additional action could be applying for an authorization under section 17(2)c of the ESA 2007, or completing an online registry for an ESA 2007 regulation, if the project is eligible.

Please be advised that applying for an authorization does not guarantee approval and the process can take several months. Please visit MNR's website to determine whether a project may be eligible for the online registry process (http://www.mnr.gov.on.ca/en/About/2ColumnSubPage/STDPROD_104342.html). Questions

about the registry process should be directed to MNR's Registry and Approval Services Centre at [1-855-613-4256](tel:1-855-613-4256) or at mnr.rasc@ontario.ca.

Kyle Stanley

Management Biologist

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TOWN OF AMHERSTBURG

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.



TOWN OF AMHERSTBURG

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.

SNAKES OF ONTARIO IDENTIFIER



toronto ZOO

An identification guide to the Massasauga Rattlesnake and other Ontario snakes.

Recovery through education and conservation.

This guide will help you identify the Massasauga Rattlesnake and other snakes in Ontario. The Massasauga is one of five Ontario snakes with blotches. Snakes on this identifier are grouped by appearance (blotched, striped and no pattern). When you see a snake, look at its size and pattern. Does it have blotches, stripes, or no pattern?

Snakes are illustrated at quarter-life size. These snakes are not found in all Ontario regions. Consult a field guide for maps of snakes in your area. The size of snakes includes U.S. populations as listed in 'Conant, Roger and Joseph T. Collins. 1991 *A Field Guide to Reptiles and Amphibians of Eastern and Central North America*. 3rd edition. Houghton Mifflin Co. Boston'

For information on the Toronto Zoo's Rattlesnake Workshop write to:

Toronto Zoo - Rattlesnakes

361-A Old Finch Ave.

Scarborough, ON, CANADA M1B 5K7

email: alentini@torontozoo.ca

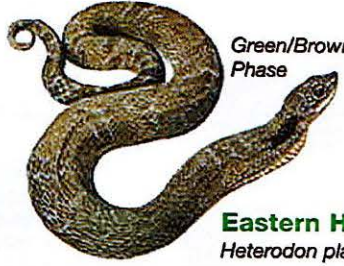
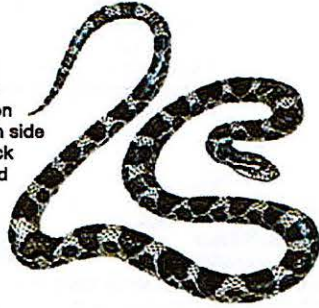
Visit the Massasauga Rattlesnake

Recovery Team website: www.massasauga.ca

Milk

Lampropeltis triangulum

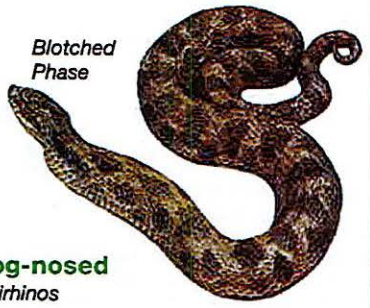
- 61-90 cm; record 132.1 cm
- Cream, tan, or light grey with red or dark brown black-bordered blotches or rings on back alternating with blotches along each side
- Young have red blotches bordered in black
- Blotch on neck may appear Y or V shaped
- Belly whitish with black checkerboard pattern
- Scales smooth; anal scale single
- Lays eggs
- SPECIAL CONCERN (COSEWIC); SPECIAL CONCERN (OMNR)



Blotched Phase

Eastern Hog-nosed *Heterodon platirhinos*

- 51-84 cm; record 115.6 cm
- Large dark blotches down back alternating with smaller blotches along sides
- When threatened, spreads neck to display darker neck pattern and will roll over to play dead
- Can be blotched phase, plain grey, green-brown or even black
- Heavy-bodied
- Flat head with upturned snout
- Belly yellow-grey with greenish grey pattern
- Underside of tail lighter colour than body
- Scales keeled; anal scale divided
- Lays eggs
- THREATENED (COSEWIC); THREATENED (OMNR)



Northern Water

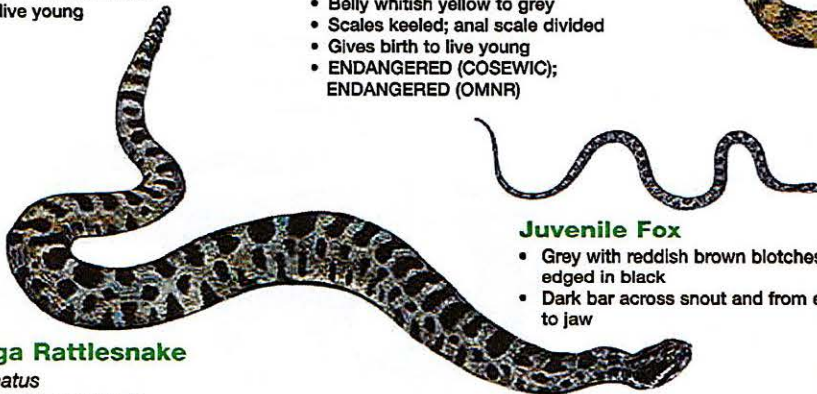
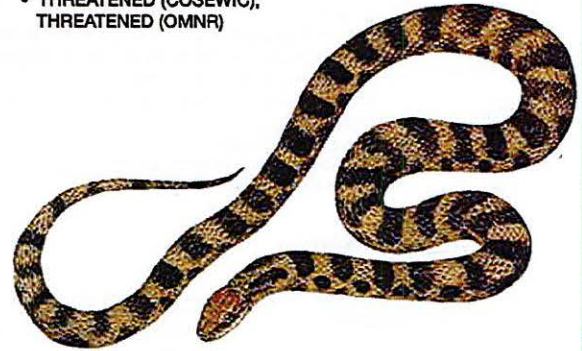
Nerodia sipedon sipedon

- 61-106.7 cm; record 140.5 cm
- Well patterned individuals have reddish brown squarish blotches down back with row of alternating blotches along each side
- At front of body, some blotches extend as saddles over back and on to sides
- Pattern on older individuals may be obscured and they appear black or brown
- Usually found in or near water
- Belly cream with irregular rows of reddish half moon crescents
- Scales keeled; anal scale divided
- Gives birth to live young

Lake Erie Water

Nerodia sipedon insularum

- 61-106.7 cm; record 140.5 cm
- A sub-species of the more wide spread Northern Water snake
- Range from uniformly grey with no markings to dark grey-brown with some banding
- Only found at western end of Lake Erie and on Pelee and surrounding islands
- Belly whitish yellow to grey
- Scales keeled; anal scale divided
- Gives birth to live young
- ENDANGERED (COSEWIC); ENDANGERED (OMNR)



Juvenile Fox

- Grey with reddish brown blotches edged in black
- Dark bar across snout and from eye to jaw

Eastern Fox

Elaphe gloydi

- 91-137 cm; record 179.1 cm (large snake)
- Yellow-brown with large brown or black blotches on back that alternate with smaller blotches along sides
- May have red-brown head
- Belly yellow with black checkerboard pattern
- Scales weakly keeled; anal scale divided
- Lays eggs
- THREATENED (COSEWIC); THREATENED (OMNR)

Massasauga Rattlesnake

Sistrurus catenatus

- Ontario's only venomous snake
- 47.2-76 cm; record 100.3 cm
- Grey to brownish grey with darker blotches along back and several rows of alternating blotches along sides; blotches edged in white
- Black snakes with no pattern, very rare
- Pit on each side of head between eye and nostril
- Distinct segmented rattle
- Tall thick, squarish; does not taper to a point like all others
- Does not always rattle a warning; relies on pattern and remaining motionless to go undetected
- Heavy bodied; often found coiled
- Belly black
- Scales keeled; anal scale single
- Gives birth to live young
- THREATENED (COSEWIC); THREATENED (OMNR)



DeKay's Brown

Storeria dekayi

- 23-33 cm; record 49.2 cm (small snake)
- Light grey-brown to red-brown
- Two rows of spots along light coloured stripe on back
- Rows of spots may be joined by narrow lines
- Dark downward bar on side of head
- Juveniles have three yellowish spots on neck
- Belly cream or pinkish
- Scales keeled; anal scale divided
- Gives birth to live young

Northern Red-bellied

Storeria occipitomaculata occipitomaculata

- 20.3-25.4 cm; record 40.6 cm (small snake)
- Reddish brown to grey-brown in colour
- Three light brown or yellow spots on neck
- Orange-red belly; few dark spots may be present
- Scales keeled; anal scale divided
- Gives birth to live young

Smooth Green

Opheodrys vernalis

- 30.3-51 cm; record 66 cm
- Bright green and shiny
- Belly white or yellow
- Scales smooth; anal scale divided
- Lays eggs

Ring-necked

Diadophis punctatus

- 25.4-38 cm; record 70.6 cm
- Shiny steel blue, slate or brown in colour
- Neck ring and belly orange-yellow
- Scales adjacent to neck ring darker
- Belly has interrupted row of small black spots
- Scales smooth; anal scale divided
- Lays eggs

Eastern Ribbon

Thamnophis sauritus

- 45.7-66 cm; record 96.5 cm
- Black with 3 yellow stripes
- Lateral stripes on scale rows 3 and 4
- Distinct white half-moon spot in front of eye
- May have brown colour along each side of belly
- Belly yellow-green
- Scales keeled; anal scale single
- Gives birth to live young
- SPECIAL CONCERN (COSEWIC); SPECIAL CONCERN (OMNR)



Stripe on scale rows three and four

Queen

Regina septemvittata

- 38-61 cm; record 92.1 cm
- Yellow-brown with yellow stripe along lower flank
- 3-5 dark stripes may be found on back
- Belly cream-yellow; brown stripes may be visible
- Usually found near rivers and marshes
- Scales keeled; anal scale divided
- Gives birth to live young
- THREATENED (COSEWIC); THREATENED (OMNR)

Eastern Garter

Thamnophis sirtalis sirtalis

- 45.7-66 cm; record 123.8 cm
- Black, green or brown with three yellow or yellow-green stripes
- Stripes may be orange or reddish in some parts of range
- Some snakes may be all black with no stripes (melanistic)
- Lateral stripes on scale rows 2 and 3
- May have dark scales or spots between stripes giving it a checkered pattern
- Belly yellowish green
- Scales keeled; anal scale single
- Gives birth to live young

Stripe on scale rows two and three



Blue Racer

Coluber constrictor foxii

- 90-152 cm; record 182.90 cm (large snake)
- Grey to greenish blue
- Head dark, throat white
- Belly light blue
- Only found on Pelee Island
- Scales smooth; anal scale divided
- Lays eggs
- ENDANGERED (COSEWIC); ENDANGERED (OMNR)

Red-sided Garter

Thamnophis sirtalis parietalis

- 41-66 cm; record 124.1 cm
- Black-brown with 3 yellow stripes
- Red bars between stripes and reddish wash on sides between scales
- Lateral stripes on scale rows 2 and 3
- Belly green-black
- In Ontario, only found along the Manitoba border
- Scales keeled; anal scale single
- Gives birth to live young

Juvenile Blue Racer

- Grey with central row of dark grey-brown blotches
- Few or no blotches on brown or grey tail
- Side of head speckled white and black

Butler's Garter

Thamnophis butleri

- 38-51 cm; record 69.2 cm
- Black or brown-green with 3 yellow stripes
- Stripes may be orange
- Lateral stripes on scale row 3 extending onto row 2 below and 4 above
- Towards back of body lateral stripe on scale rows 2 and 3
- Smallish head
- Belly green-yellow
- Only found in SW Ontario
- Scales keeled; anal scale single
- Gives birth to live young
- THREATENED (COSEWIC); THREATENED (OMNR)

Eastern Rat

Elaphe obsoleta

- 106.7-183 cm; record 256.5 cm (large snake)
- In some, faint blotched pattern may be seen
- Throat white
- Belly grey-brown wash
- Scales weakly keeled; anal scale divided
- Lays eggs
- THREATENED (COSEWIC); THREATENED (OMNR)

Juvenile Eastern Rat

- Light grey with grey-brown blotches on body and tail
- Dark bar across snout and from eye to jaw



How to count scale rows on a snake



Smooth Scales



Keeled Scales



Divided Anal Scale



Single Anal Scale

TURTLES OF ONTARIO IDENTIFIER

Illustrations are half life size.



www.torontozoo.com/adaptapond

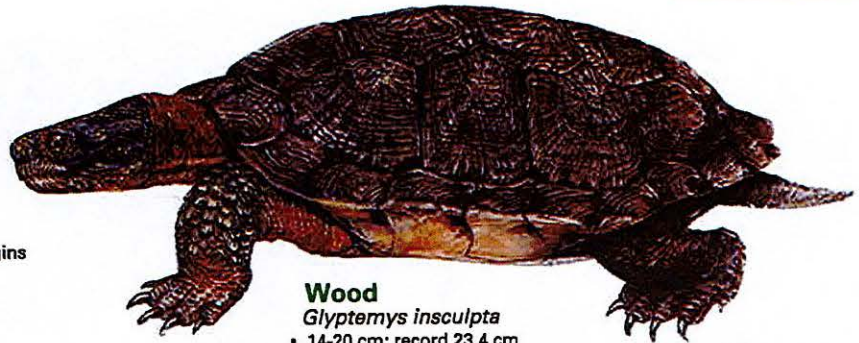


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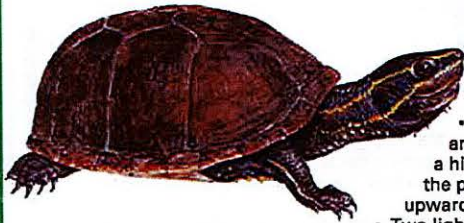
Midland painted
Chrysemys picta marginata

- 11.5-14 cm; record 19.5 cm
- Females larger than males
- Smooth, olive to brownish-grey carapace with orange-red margins
- Yellow plastron with dark central blotch
- Neck, legs and tail striped with red and yellow; yellow blotch behind each eye
- Males have very long nails on front feet
- Often seen basking on logs
- Lays 3-14 oval, white, smooth-shelled eggs



Wood
Glyptemys insculpta

- 14-20 cm; record 23.4 cm
- Brown or greyish-brown, rough, heavily sculptured carapace, often with a central keel or ridge and raised concentric growth rings on each scute
- Rear margin of carapace serrated
- Plastron is yellow with black squares
- Head black; skin brown; adults with orange or yellow on neck and legs
- Found on land (the most terrestrial turtle in Ontario) and in or near streams and wet meadows
- Lays 4-12 oval, white, thin-shelled eggs
- THREATENED (COSEWIC); ENDANGERED (OMNR)



Stinkpot
Sternotherus odoratus

- 5.1-11.5 cm; record 13.7 cm
- Small turtle with smooth, light olive to black, high-domed, narrow carapace
- Plastron is small, yellow-brown and gives little protection to legs; a hinge runs across the front of the plastron allowing it to close upward to protect the head
- Two light stripes on each side of the head
- Barbels (fleshy projections) on chin and throat
- Named for musky odour produced when handled (also known as musk turtle)
- Lays 2-5 oval, white, hard-shelled eggs
- THREATENED (COSEWIC); THREATENED (OMNR)



Western painted
Chrysemys picta bellii

- 9-18 cm; record 25.1 cm
- Light, irregular lines on olive to brownish-grey carapace
- Yellow plastron with large, dark, irregular shaped central blotch
- Often seen basking on logs
- Lays 3-20 oval, white, smooth-shelled eggs

Map

Graptemys geographica

- Male 9-15.9 cm; Female 18-27.3 cm
- Males much smaller than females
- Numerous fine yellow lines on olive green to brownish carapace, resembling a map; may be less obvious in older turtles
- Rear margin of carapace serrated
- Carapace has a slight raised area (or keel) down centre of shell
- Yellow plastron
- Yellow spot, variable in size and shape, behind each eye
- Head and limbs may have light and dark stripes
- Lays 10-18 oblong, parchment-shelled eggs
- SPECIAL CONCERN (COSEWIC); SPECIAL CONCERN (OMNR)



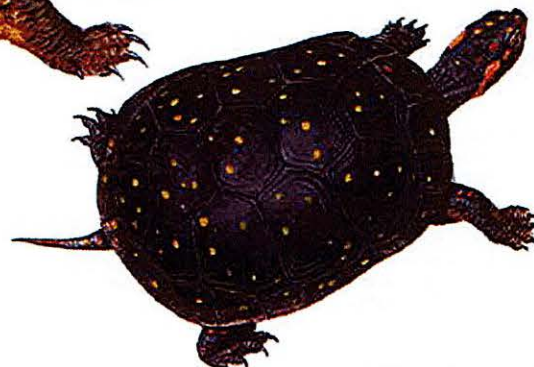
Spotted
Clemmys guttata

- 9-11.5 cm; record 12.7 cm
- Smooth black carapace with bright yellow or orange spots; spots fade in older turtles
- Plastron yellow-orange with large black blotch on each scute
- Males have tan chin and brown eyes; females have yellow chin and orange eyes
- Head, neck, limbs and tail are grey to black with yellow spots; inside of legs washed with orange
- Lays 3-8 oval, leathery textured eggs
- ENDANGERED (COSEWIC); ENDANGERED (OMNR)



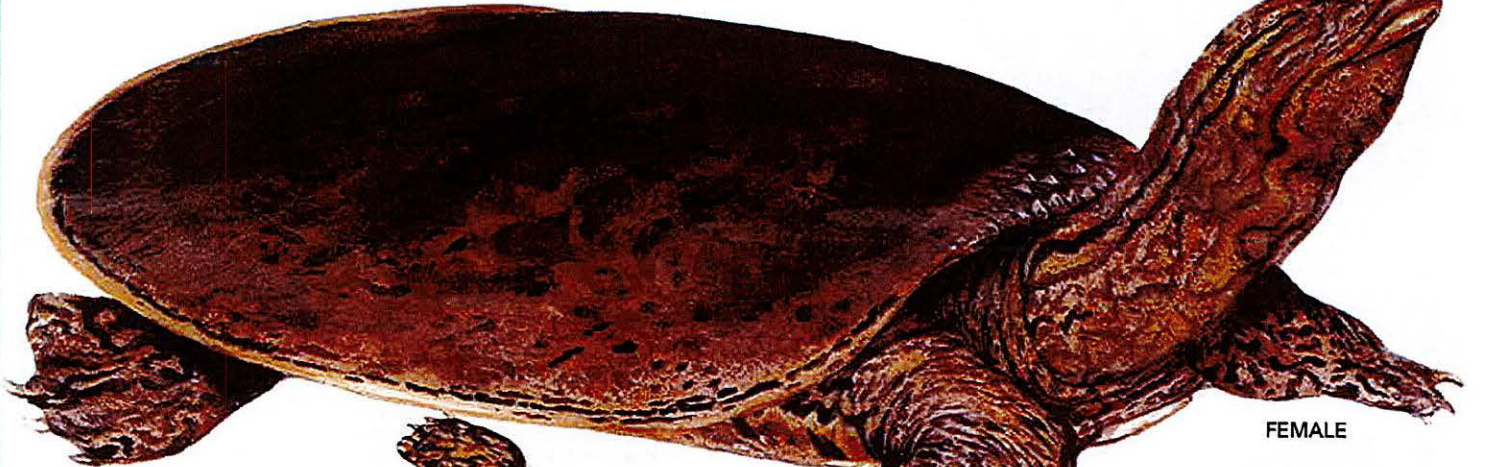
Blanding's
Emydoidea blandingii

- 12.5-18 cm; record 27.4 cm
- Carapace black to greyish-brown with numerous yellowish spots or streaks
- Plastron has a flexible grooved hinge that allows lower shell to close upward to protect head and legs
- Bright yellow on chin and throat
- Protruding eyes
- Domed shell obvious while basking on logs, rocks, or clumps of vegetation
- Lays 6-11 oval, dull white, hard-shelled eggs
- THREATENED (COSEWIC); THREATENED (OMNR)

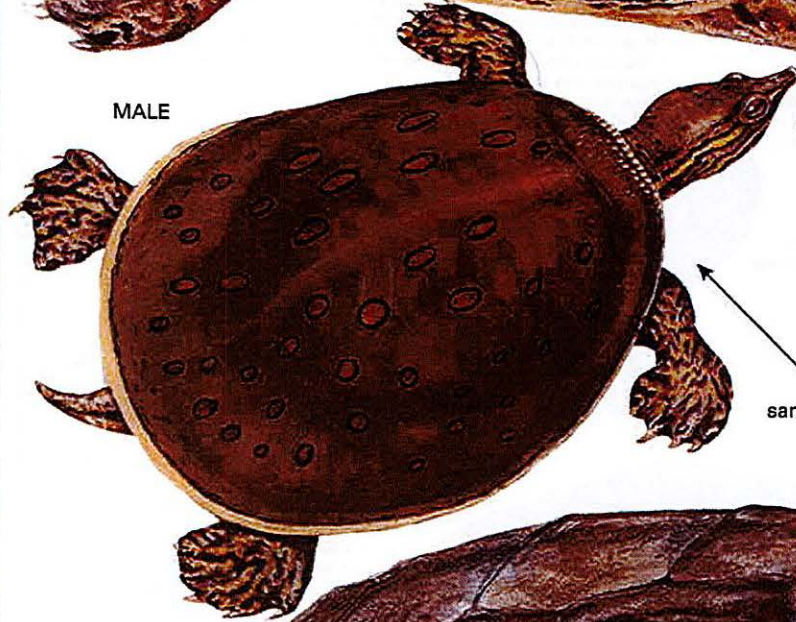


Turtles in Ontario are protected under the Fish and Wildlife Conservation Act. If you find a turtle please do not disturb it or remove it from its habitat. If you find a turtle wandering over land in spring or early summer, it is most likely a female about to lay her eggs. Watch it, love it, but leave it! We all have a roll to play in protecting wetland habitat and turtle nesting areas. Seven of eight Ontario turtles are currently at risk. Observations help to identify important turtle habitats. Submit sightings to Ontario Turtle Tally at <http://www.torontozoo.com/adoptapond/TurtleTally.asp>

These turtles are not found in all Ontario regions. Consult a field guide for maps of turtles in your area. The size of turtles includes U.S. populations as listed in: *Roger Conant and Joseph T. Collins, A Field Guide to Reptiles and Amphibians of Eastern and Central North America, 3rd edition. Houghton Mifflin Co.: Boston, 1991.*



FEMALE



MALE

same species

Eastern spiny soft shell
Apalone spinifera

- Male 12.15-23.5 cm; Female 18-43.2 cm
- Carapace is flat and olive-gray to brown; yellow border edged in black around margin of carapace
- Males and juvenile turtles have large yellow spots outlined in black; females have brownish blotches
- Small tubercles or spines on edge of shell above neck
- Two dark bordered, light yellow lines on each side of head
- Very long neck; tubular "pig like" snout
- Often buries in sand or mud
- Lays 12-18 round, white, hard-shelled eggs
- THREATENED (COSEWIC); THREATENED (OMNR)

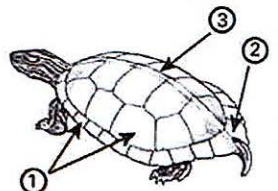
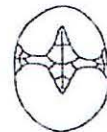
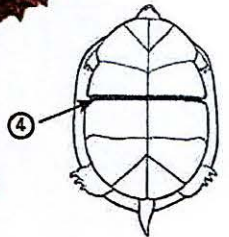


Snapping
Chelydra serpentina

- 20.3-36 cm; record 49.4 cm
- 4.5-16 kg; record 32 kg snapping turtle once lived at Toronto Zoo
- Carapace is light brown to black
- Young turtles have three longitudinal keels, older turtles almost smooth
- Plastron is yellowish, small, and cross-shaped; legs and skin not well protected
- Large head, two barbels on chin; rounded tubercles on neck
- Head, limbs and tail are brown
- Tail is long, same length or longer than carapace with "dinosaur-like" triangular scales projecting from the upper side
- Lays 20-40 round, ping-pong ball-like eggs
- SPECIAL CONCERN (COSEWIC)

Red-eared slider

(not illustrated)
Trachemys scripta elegans
The red-eared slider is often sold in pet stores, but is not native to Ontario. Do not release pet turtles to the wild. They may carry diseases that threaten our native turtles, and are not likely to survive.



- ①-scutes
- ②-serrated marginal scute
- ③-longitudinal keel
- ④-hinge on plastron



CONFIRMATION OF REGISTRATION

Form Name:	Notice of drainage works (s.23.9)
Date Registration Filed:	05/13/2021
Confirmation ID:	M-102-7422873690
Version Number:	001
Update Date:	

Dear Sir/Madam,

It is your responsibility to understand all the applicable requirements of registration and to be aware of which species are eligible or excluded in relation to your activity. Some requirements apply to all activities being initiated on the landscape, such as the minimization of adverse effects on the species. Other requirements vary by activity such as record keeping, monitoring, and creation of mitigation plans and reports. **Please go to <https://www.ontario.ca/page/ditch-and-drainage-work-and-endangered-or-threatened-species> for specific requirements, information and resources.**

It is also your responsibility to monitor changes to the SARO List (O. Reg. 230/08) as well as eligibility and requirements in the General Regulation O. Reg. 242/08.

When documents are requested by the Ministry of Natural Resources and Forestry (MNRF) they are due within 14 days.

The Corporation of the Town of Amherstburg

512 Sandwich ST S
AMHERSTBURG, ON N9V3R2

You have completed the registration portion of Ontario Regulation Reg. 242/08 of the *Endangered Species Act, 2007* and your Notice form has been received by the Ministry of Natural Resources and Forestry for activities eligible under the following regulatory provision:

Notice of drainage works (s.23.9)

located at:

523 Fryer ST

For the species listed in Appendix A.

Species observations must be reported directly to the Natural Heritage Information Centre, within three months, by completing a Rare Species Reporting Form available at <http://www.ontario.ca/page/report-rare-species-animals-and-plants>.

In addition to the General Regulation, information is available at <http://www.ontario.ca/page/natural-resources-approvals>.

You are required to show this Confirmation of Registration upon request of the Ministry. Please refer to Ontario Regulation 242/08 for requirements that apply to your activity.

Any questions related to this registration and/or the Natural Resources and Forestry Registry should be directed to:

Registry and Approval Services Centre
Ministry of Natural Resources and Forestry
300 Water Street
Peterborough, ON, K9J8M5
Toll-free: 1-855-613-4256
E-mail: mnr.rasc@ontario.ca

Appendix A:

Species impacted by the registered activity:

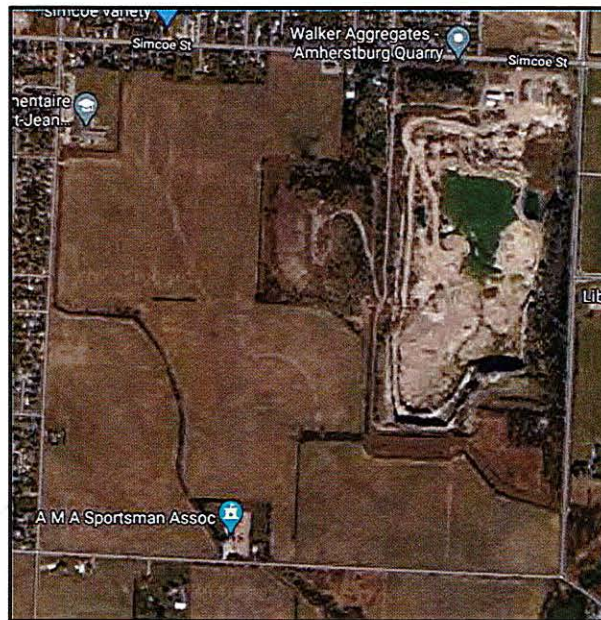
Eastern Foxsnake (Carolinian population) (*Pantherophis gloydi*)



INSIGHT
ENVIRONMENTAL
SOLUTIONS INC.

Eastern Foxsnake Mitigation and Monitoring Plan Addendum

Second Concession Road Drain, Amherstburg



Prepared For:

Ed Smith
Rocksedge Development

Prepared By:

Nicole Wajmer, B.Sc., M.Sc., Principal Wildlife Biologist
Jennifer Neill, BFA, Dip. Env. Technician, Principal Ecologist

Date:

January 2021



INSIGHT
ENVIRONMENTAL
SOLUTIONS INC.

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1.0 INTRODUCTION

Insight Environmental Solutions Inc., (IES) was retained by Ed Smith of Rocksedge Development to update an existing Eastern Foxsnake Mitigation and Monitoring Plan (hereafter referred to as the “Mitigation Plan.”) The original Mitigation Plan was prepared by Sage Earth Restoration and Environmental Services in 2017. It was completed when the development proposal included a full realignment and reconstruction of Second Concession Road Drain. At this time, Eastern Foxsnake was registered with the Ontario Regulation Reg. 242/08 of the *Endangered Species Act* (ESA), 2007 and a Notice of Drainage Works (s.23.9) was received by the Ministry of Natural Resources and Forestry (MNRF).

Since this time, it has been decided that Second Concession Road Drain will no longer be realigned, and instead will receive routine drain maintenance measures. An Environmental Impact Assessment (EIA) has been completed to assess the impacts of the proposed drain maintenance of Second Concession Road Drain and Rocksedge Subdivision. The EIA provides a thorough review of the proposed development, methodologies for field investigations, existing conditions, impacts of the proposed development, applicable policies, and mitigation to avoid impacts. As such, the EIA should be read in conjunction with this Mitigation Plan.

The goal of this Mitigation Plan is to update the Ministry of the Environment, Conservation and Parks Species at Risk Branch (MECP SARB) on the updated status of the project and provide current mitigation and offsetting measures. The Mitigation Plan will include the following information:

1. Describe the area of the operation;
2. Describe the habitat in that area;
3. Describe how effects will be minimized for the species;
4. Describe how habitat will be restored or improved; and
5. Outline the requirements of the Annual Report that must be completed for five years.

1.1 AREA OF OPERATION

The study area is located within Part Lots 21 & 22 in the Town of Amherstburg, County of Essex, Ontario. The total site area measures 68.48 ha. The study area (Part Lots 21 & 22) is surrounded by Simcoe Street/Pike Road (County Road 18) to the north, Amherst Quarries to the east, Lowes Sideroad to the south and Fryer Street (Concession 2) to the west. The Plan of Subdivision is mainly proposed within agricultural lands that are being actively farmed. The Second Concession Road Drain is located along the northern half of the subject property parallel to Fryer Street and bisects the southern half of the property. Refer to **Figure 1** and **2** in the EIA to view the Key Plan and Plan of Subdivision.

1.2 DEVELOPMENT PROPOSAL

1.2.1 Rocksedge Plan of Subdivision

The Rocksedge Plan of Subdivision will create 409 lots that will include:

1. 368 single detached residential homes; and
2. 41 lots for semi-detached houses totalling 82 units.

The Plan of Subdivision also includes a previously dedicated park (0.88ha), a previously dedicated school (2.26ha), a linear park (1.28ha), and two Stormwater Management (SWM) ponds measuring 3.15ha and 0.75ha.

1.2.2 Second Concession Road Drain

The Second Concession Road Drain is a channelized tributary of Big Creek and acts as a Municipal (residential) and agricultural drainage system. A section of the drain parallel to Fryer Street (Concession 2) was diverted (2007-2008) for the development of a school and parking lot. This resulted in a temporary open drain located around the east and south boundary of the school and reconnects to the original drain to the south along Fryer Street. Below the temporary drain, the Second Concession Road Drain flows south along Fryer Street (Concession 2) before bisecting the agricultural field (Lot 21) in a south-east direction towards Lowes Sideroad. The drain then flows east for a short distance prior to crossing Lowes Sideroad. The drain continues to flow south-east eventually discharging into Big Creek. The lower reach of the drain (south of Lowes Sideroad) is included within the Big Creek Marsh Provincially Significant Wetland System. The proposed changes to the drain are summarized below:

1. The drain will not be relocated as previously proposed and will stay in the current location;
2. To avoid disturbing substrates in drain, the channel will be improved starting at approximately 0.6m above the bottom of the drain;
3. The side slopes will be stabilized for the long term;
4. The bends in the channels will have crossing rock veins or weirs to coax flow in upstream directions at each bridge crossing;
5. The drain will be stepped down at each bridge to decrease the gradient and flatten out sections of the drain using two flow control weirs;
6. Invasive plants will be removed from the drain and non-woody native vegetation will be planted on slopes at a 2:1 ratio;
7. Trees will be planted at top of bank to provide shade and canopy for wildlife near bridges and shrubs will be planted intermittently along the drain;
8. Snake hibernacula will be built into the side of the drain; and
9. The baseflow will be routed through the large stormwater management pond (SWM1) as an opportunity to provide upstream water quality control for Big Creek Marsh.



1.3 CONSULTATION

1.3.1 Department of Fisheries and Oceans

The Department of Fisheries and Oceans (DFO) was initially contacted in 2017 by Rood Engineering Inc. regarding the initial plans for a drain realignment. At this time, a Request for Review (RFR) Form and Supplementary Report (16-HCAA-00212) was submitted to DFO as the drain realignment did not qualify for standard drain maintenance under the *Drainage Act* (1990). Following the review of these documents, DFO stated that the proposal was likely to result in serious harm to fish and a *Fisheries Act* Authorization would be required.

DFO was contacted on December 21, 2020 by Insight Environmental Solutions Inc. (IES) to update the Department of the changes to the proposed project. DFO informed IES that the project will now qualify as drain maintenance under the *Drainage Act* as the drain realignment is no longer occurring. A Drain Maintenance Form was submitted to DFO on January 12, 2021 and the project is currently in the authorization process for the proposed drain maintenance activities.

1.3.2 The Ministry of the Natural Resources and Forestry

Rood Engineering Inc. contacted the Ministry of Natural Resources and Forestry (MNRF) in 2016 to complete an Endangered Species Act (ESA) screening for the subject property. Alymer District Management Biologist, Kyle Stanley, responded to the request and informed Rood Engineering that the proposed project is occurring within Regulated Habitat for Eastern Foxsnake. Correspondence with MRNF can be seen in **Appendix B**.

The Drainage Works Section (23.9) of Ontario Regulation 242/08 of the ESA provides exceptions for specific activities. Clause 9(1)(a) and subsection 10(1) of the ESA do not apply to a person who is constructing, improving, maintaining, or repairing Drainage Works if an agreement for the improvement or maintenance is filed under the Drainage Act. As such, Eastern Foxsnake was registered with the Ontario Regulation Reg. 242/08 of the ESA, 2007. A Notice of Drain Maintenance was received by MNRF for activities eligible under the following regulatory provision: Notice of drainage works (s.23.9) on September 8, 2017. Registration of Eastern Foxsnake with the Ontario Reg. 242/08 of the ESA, 2007 can be seen in **Appendix C**.

1.4 PROJECT HISTORY

The lands containing Second Concession Road Drain and Rocksedge Subdivision have been thoroughly surveyed to determine potential impacts to both terrestrial and aquatic flora and fauna. Additionally, these surveys focused on identifying the presence of Species at Risk (SAR) and SAR habitat. The following reports have been completed as part of the proposed development and drain maintenance:

1. Drain maintenance Form (January 2021) prepared and submitted to the DFO by Insight Environmental Solutions Inc.
2. Environmental Impact Assessment (October 2020) prepared by Sage Earth Environmental and Restoration Services
3. Draft Second Concession Road Drain South Drainage Report (July 2020) prepared by Rood Engineering Inc.
4. Rocksedge Subdivision Residential Development Stormwater Management Report (March 2020) prepared by Landmark Engineers Inc.
5. Second Concession Road Drain Eastern Foxsnake Mitigation and Monitoring Plan (July 2017) by Sage Earth Environmental and Restoration Services.
6. DFO RFR Form and Supplementary Report (2017) prepared by Rood Engineering Inc. and Ecofish Research Ltd.

2.0 METHODOLOGIES

The information in Section 2.0 (Methodologies) and Section 3.0 (Existing Conditions) of this report was obtained from the Environmental Impact Assessment and original Eastern Foxsnake Mitigation and Monitoring Plan created by Sage Earth Environmental and Restoration Services.

2.1 SPECIES AT RISK SURVEY METHODS

Field surveys were carried out to determine the potential population and distribution of SAR individuals and to delineate the habitat and habitat features within the study area. The survey was carried out to provide detailed and reliable information on SAR presence or absence, suitable habitat, habitat features, location, distance from the proposed development, population size, management concerns and to ensure that the proposed development does not contravene the Endangered Species Act (2007).

The search efforts were focused on inspecting sites and features with a high probability of supporting SAR. When documenting each SAR specimen/population, habitat or habitat feature the following data was recorded on paper and on a Global Positioning System (GPS):

- Species (scientific name);
- habitat or habitat feature;
- location (Universal Transverse Mercator (UTM) co-ordinates); and,
- relative abundance.

Points were used to delineate the location. UTM coordinates were recorded on hand-held GPS units, downloaded to a computer and mapped on an ortho-rectified digital air photo using a Geographic Information System (GIS).

2.2 EASTERN FOXSNAKE HABITAT SURVEY METHODS

Field surveys were conducted by Sage Earth staff Dan Barcza, to identify all potential Eastern Foxsnake habitat and potential Key Habitat Features for avoidance by the proposed development. During field surveys, the location of any potential Eastern Foxsnake Habitat and potential Key Habitat Features were determined.

When documenting each potential Eastern Foxsnake habitat and potential Key Habitat Feature, the following data was recorded:

- Potential habitat/ Ecological Land Classification vegetation community type;
- Probability that Eastern Foxsnake will use the habitat;
- Aerial extent of habitat (polygon);
- Potential Key Habitat Feature Type; and,
- Location (UTM co-ordinates) of Key Habitat Features (point).

3.0 EXISTING CONDITIONS

3.1 FIELD DATES AND WEATHER

Sage Earth carried out terrestrial investigations of the legal parcel on August 8 and 26, 2016 and the local temperature was 28°C and 28.5°C, respectively. Both field days presented clear skies and sun throughout the day.

3.2 EASTERN FOXSNAKE

3.2.1 Individual Occurrences

Eastern Foxsnake were not observed during Sage Earth's field investigations. The property has been identified as Regulated Habitat of Eastern Foxsnake by MNRF. It is likely that the species may occur on the subject property as telemetry studies have shown that the species travels up to 1,500 metres from their hibernacula (OMNRF, 2012), and are known to use waterways to travel between areas of suitable habitat (Ontario Nature, 2016).

3.2.2 Habitat

There are seven Ecological Land Classification (ELC) communities on the property that are suitable for Eastern Foxsnake to utilize or inhabit. These ELC communities include:

1. Naturalized Deciduous Hedgerow Ecosite (FODM11);
2. Fresh - Moist Cottonwood Deciduous Forest (FODM8-3);
3. Cattail Mineral Shallow Marsh Type (MASM1-1);
4. Meadow (ME), Maple Mineral Mixed Swamp Ecosite (SWMM2);

5. Fresh - Moist Manitoba Maple Deciduous Woodland (WOD5-3); and
6. Fresh - Moist Deciduous Thicket Ecosite (THDM5).

These ELC communities are naturalized and well-connected to the nearby Big Creek watershed and have the potential to provide suitable habitat for Eastern Foxsnake. Therefore, these areas are classified as regulated Eastern Foxsnake habitat. The remaining ELC communities; Extraction (CVC_1), Low Density Residential (CVR_1), Education (CVS_1) and Open Agriculture (OAG) are not considered suitable habitat for the Eastern Foxsnake. Please refer to **Figure 5** of the EIS to see the existing site conditions and ecological land classification.

3.2.3 Potential Habitat Features

Potential habitat features for Eastern Foxsnake (Carolinian population) include areas for nesting, hibernation, and communal shedding and basking. These features are extremely ambiguous without confirmation of utilization through radio telemetry or direct observation. All potential habitat features can be seen in **Appendix D**.

3.2.3.1 Potential Hibernaculum

Eastern Foxsnake hibernacula consist of underground features (natural or man-made) that extend below the frost line where snakes hibernate to avoid extreme cold temperatures during the winter (OMNRF, 2012). Some examples are bedrock crevices, small mammal burrows and building foundations. Hibernacula function as staging areas in the spring and fall. The following potential hibernacula were located on the subject property:

1. Small mammal burrows located on the northern portion of Fryer Street.
2. Rock piles located on the northern portion of Fryer Street.
3. The foundations of homes and buildings along Simcoe Street, Fryer Street, and Lowes Side Road.
4. Gabion rocks noted along the existing Second Concession Drain and the naturalized area surrounding the school.
5. The root systems of trees located in the existing Second Concession drain.

3.2.3.2 Egg Laying Sites

Eastern Foxsnake lay their eggs in both natural and non-natural features. Egg laying sites can include rotten logs, stumps, decaying leaf piles, and other features with appropriate conditions for the incubation of eggs (Ontario Nature, 2016). Egg laying sites are used repeatedly over the lifespan of an individual Eastern Foxsnake.

No potential egg laying sites were observed on the property during Sage Earth's field investigations; however, this does not necessarily prove the absence of Eastern Foxsnake egg laying sites on the property.

3.2.3.3 Communal Shedding Sites

Communal shedding sites are sites that are used by two or more snakes when moulting their outer layer of skin (OMNRF, 2012). Communal shedding sites are used repeatedly over the lifespan of an individual Eastern Foxsnake.

No potential communal shedding sites were observed on the property during Sage Earth's field investigations; however, this does not necessarily prove the absence of Eastern Foxsnake communal shedding sites on the property.

3.2.3.4 Communal Basking Sites

Communal basking sites are areas that the Eastern Foxsnake use to alter their internal body temperature through behavioural patterns, such as exposure to the sun to increase body temperature or seeking out cool areas to lower body temperature (OMNRF, 2012). Communal basking sites can be natural or non-natural. Communal basking sites are used repeatedly over the lifespan of an individual Eastern Foxsnake.

No potential communal basking sites were observed on the property during Sage Earth's field investigations; however, this does not necessarily prove the absence of Eastern Foxsnake communal basking sites on the property.

4.0 MINIMIZING IMPACTS TO EASTERN FOXSNAKE

3.3 EASTERN FOXSNAKE AWARENESS TRAINING AND ONSITE MATERIALS

It is recommended that the proponents hire a Qualified Biologist to provide educational awareness documents and training about Eastern Foxsnake that address:

1. The existence of Eastern Foxsnake Habitat and potential individuals on the subject property and within the development area;
2. Eastern Foxsnake and habitat identification;
3. Appropriate actions to take if an incidental encounter with an Eastern Foxsnake occurs;
4. How to report Eastern Foxsnake Encounters to MECP; and
5. How care should be taken when undertaking all construction activities to avoid unnecessarily damaging or destroying Eastern Foxsnake habitat.

4.1 ADHERING TO SENSITIVE TIMING WINDOWS

Avoiding work during sensitive timing windows is important for Eastern Foxsnake life processes, and helps to minimize adverse impacts to the species. **Table 1** displays the important timing windows for Eastern Foxsnake and which construction activities should be avoided.

TABLE 1: EASTERN FOXSNAKE TIMING WINDOWS

Life Process/Habitats	Timing Window	Activities to Avoid During Timing Window
<p>Hibernation/Hibernacula Foxsnake are found near water and hibernate in cracks and crevices in the bedrock, often in groups. They will also use man-made features for hibernation, such as the foundations of buildings.</p>	<p><i>September 15 to May 15</i></p>	<p>Avoid excavation, blasting, the use of heavy machinery, tree removal, and the creation of culverts and building foundations. Avoid activities that will result in the alteration to the water table or surface drainage (e.g., installing tile beds, ditching, dewatering, clear cutting, etc).</p>
<p>Fall Staging/Terrestrial Habitat around Hibernacula Thermoregulation areas used by Foxsnake found at their hibernation sites prior to entering their hibernation sites.</p>	<p><i>September 15 to October 20</i></p>	<p>Refrain from mowing, applying herbicide or otherwise removing ground vegetation or low-lying shrubs, which provide important cover for snakes as they move throughout the habitat. Avoid constructing large structures and roads. Avoid constructing barriers to snake movement such as retaining walls, sound barriers, concrete medians along roadways or solid fences.</p>
<p>Spring Staging/Terrestrial Habitat around Hibernacula Thermoregulation areas used by Foxsnake found at their hibernation sites for several weeks in the spring following emergence.</p>	<p><i>April 11 to May 20</i></p>	<p>Refrain from mowing, applying herbicide or otherwise removing ground vegetation or low-lying shrubs, which provide important cover for snakes as they move throughout the habitat. Avoid constructing large structures and roads. Avoid constructing barriers to snake movement such as retaining walls, sound barriers, concrete medians along roadways or solid fences.</p>

Personnel should be aware that Eastern Foxsnake sensitive times for hibernation and staging can vary due to seasonal variations in temperature, and it is possible to encounter an Eastern Foxsnake outside of the species' sensitive time. Consultation should be completed with MECP to authorize any site-specific activities listed above that are to occur within the sensitive periods for Eastern Foxsnake.

4.2 INCIDENTAL ENCOUNTERS INCLUDING NESTING, INJURED OR DEAD INDIVIDUALS

4.2.1 Incidental Encounters

1. The proponents should retain the services of a Qualified Biologist who can attend the development area within 30 minutes notice in case a species individual is incidentally encountered during the construction activities.
2. When an incidental encounter occurs within the development area during construction activities, the proponents should:
 - a. Cease all activities within 30m of the species individual that may result in adverse impacts to the individual;
 - b. Contact the Qualified Biologist immediately to report the observation;
 - c. Monitor the location of the species individual at all times until the arrival of the Qualified Biologist;
 - d. Ensure the Qualified Biologist confirms the species individual has left the development area on its own accord before authorizing work to resume within 30m of the location of the incidental encounter and;
 - e. Notify MECP within 48 hours of the incidental encounter and provide MECP with the following information:
 - i. Name of the observer;
 - ii. Date of the observation;
 - iii. Location of the observation (UTM or detailed description);
 - iv. Description of the nature of the situation;
 - v. Digital photograph if possible; and
 - vi. Summary of action taken.

4.2.2 Nests and Nesting Eastern Foxsnake

1. If a species individual is found to be nesting, or a nest is discovered, in the development area, the proponents should:
 - a. Immediately create a minimum 30m setback around the nest and/or nesting individual within which no construction can occur;
 - b. Ensure that the nest and nesting individual is protected from all disturbances for the duration of the nesting season, which includes maintaining a 30m setback;
 - c. Ensure weekly monitoring of the nest site is completed by a Qualified Biologist between August 15th and September 30th; and
 - d. Allow individuals of the species sufficient time to disperse from the nest site under their own ability before construction activities can continue.

4.2.3 Death of an Foxsnake

1. If a species individual is killed or found dead on the Property or development area the proponents should:
 - a. Collect the individual and store it in a safe and refrigerated place;
 - b. Document the circumstances under which the individual was killed or found dead;
 - c. Contact MECP before the end of the next business day; and
 - d. Comply with any instructions provided by MECP regarding the handling and transfer of the dead individual.

4.3 MITIGATION MEASURES TO PROTECT SECOND CONCESSION DRAIN FROM ADVERSE IMPACTS

Second Concession Road Drain and adjacent naturalized habitats have been identified as the highest quality Eastern Foxsnake habitats. To ensure protection of the of these features the following mitigation measures will be implemented:

1. The bottom of the drain will remain naturalized except for the installation of box culverts for crossings, rock features and other in-water structures for fish habitat enhancement;
2. A clean construction site will be maintained to prevent deleterious substances from entering the watercourse;
3. Areas susceptible to erosion will be stabilized prior to start of construction;
4. The portion of the drain running east and then south from Fryer and Lowes Sideroad will maintain a 10m buffer on the north and east side including a 6m maintenance corridor.
5. Maintaining a 10m buffer/green space along the south and west side; and
6. Specific features such as rotting logs or stumps, piles of organic material (such as compost, sawdust, or woodchips), rock piles, brush piles, and dump sites are likely to provide habitat functions for SAR snakes in the project area. If any of these features are found to occur, they must be protected from all disturbances that would result in damage or destruction of their habitat functions.

4.4 CONSTRUCTION MITIGATION MEASURES TO REDUCE ADVERSE IMPACTS TO EASTERN FOXSNAKE

4.4.1 Screening Criteria for Construction

The footprint of the proposed development should be visually marked with flagging tape to avoid encroachment into natural features. Existing culverts or other structures along Second Concession Drain should be inspected for Eastern Foxsnake prior to removal by a Qualified Biologist. Habitat features (**Appendix D**) that are likely to be used as hibernacula (e.g. culverts) should only be removed during the active season (September 15th to May 15th), when snakes will be utilizing hibernaculum sites.

4.4.2 Measures for Operation of Construction Equipment

Construction machinery and equipment that is left idle for over 1 hour or is parked overnight on the property between April 1st to November 30th must be surveyed for the presence of Eastern Foxsnake before (re)ignition. This visual examination should include all lower components of the machinery, including operational extensions and running gear.

5.0 HABITAT OFFSETTING MEASURES

5.1 CREATION OF EASTERN FOXSNAKE HABITAT FEATURES

The following habitat features will be created along the of Second Concession Road Drain to enhance the existing habitat for Eastern Foxsnake:

1. Four Eastern Foxsnake hibernacula;
2. Brush piles created from brushing of the bank slope during drain maintenance; and
3. Ten egg-laying sites.

Consultation with a Qualified Biologist should be completed to determine the location and design of the Eastern Foxsnake artificial habitat features.

5.2 TERRESTRIAL/AQUATIC HABITAT COMPENSATION

1. Rock veins will be added at the bends within the drain to increase stability and decrease erosion;
2. Trees and shrubs will be planted along the banks of the drain and storm water management ponds, which will ultimately increase bank stabilization, shade aquatic habitats and create additional wildlife habitat; and
3. Invasive species will be removed during drain maintenance and bank brushing followed by non-woody native vegetation seeding and/or planting.

5.2.1 Recommendations for Native Prairie Pollinator Seed Mix

Drilling or broadcasting a native prairie pollinator seed mix along the banks of the drain following drain maintenance is recommended. The planting of native species has many benefits including the enhancement of pollination for agricultural crops, providing additional cover for mammals and birds moving along the drain and will improve the quality of the movement corridor. A Qualified Ecologist should ensure that no plants species listed on the Ontario Noxious Weed List are included in the seed mix. The seed mix application should include, but not be limited to, the following species:

1. A cover/nurse crop of Canada Wild Rye (*Elymus canadensis*), Virginia Wild Rye (*Elymus virginicus*) and/or Slender Wild Rye (*Elymus trachycaulus*), drilled at 15 kg/ha or 30 kg/ha if the cover/nurse crops are broadcast. The cover/nurse crops should be seeded in the spring months

- (April, May and June) or in the fall months (late September and October) when the weather is cooler. Avoid seeding *Elymus sp.* during hot, dry weather.
2. A riparian seed mix should be broadcast or drilled at 30 kg/ha and it should consist of a mix of the following plant species, including Big Bluestem (*Andropogon gerardii*), Switchgrass (*Panicum virgatum*), Little Bluestem (*Schizachyrium scoparium*), Indiangrass (*Sorghastrum nutans*), Golden Alexanders (*Zizia aurea*), Blue Vervain (*Verbena hastata*), Virginia Mountain Mint (*Pycnanthemum virginianum*), Ohio Spiderwort (*Tradescantia ohioensis*), Foxglove Beardtongue (*Penstemon digitalis*), Missouri Ironweed (*Vernonia missurica*), Cutleaf Coneflower (*Rudbeckia laciniata*), Gray Coneflower (*Ratibida pinnata*), Great Blue Lobelia (*Lobelia siphilitica*), Butterfly Weed (*Asclepias tuberosa*), Bergamot (*Monarda fistulosa*), Black-eyed Susan (*Rudbeckia hirta*), Ox-eye Sunflower (*Heliopsis helianthoides*) and New England aster (*Symphotrichum novae-angliae*).
 3. Other native prairie plant species indigenous to Essex County may be included in the seed mix if the species listed above are unavailable.

The following southwestern Ontario growers have prairie and meadow seed mixes:

1. **Ontario Nativescape**

Address: 6890 Base Line E, Wallaceburg, ON, N8A 2K6

Contact: Jake Lozon, 6890 Base Line E, Wallaceburg, ON, N8A 2K6,

Tel: (519) 809-5759,

E-mail: jlozon.rlsn@gmail.com

Website: <https://www.ontarionativescape.ca/>

2. **St. Williams Nursery and Ecology Centre**

Address: 885 Norfolk County Highway 24 West (P. O. Box 150), St. Williams, Ontario, Canada, NOE 1P0

Tel: (866) 640-8733 or (519) 586-9116

E-mail: info@stwilliamsnursery.com

Website: www.stwilliamsnursery.com

3. **Sassafras Farms**

Address: 270 Humberstone Road, Welland, ON, L3B 6H1

Tel: (905) 658-8907

E-mail: cdiraddo@sassafrasfarms.ca

Website: www.sassafrasfarms.ca

6.0 MONITORING AND REPORTING REQUIREMENTS

The proponent must prepare an annual report for five years that outlines the following information:

1. How you minimized effects on a species including the following information:
 - a. Summary of the construction activities completed;
 - b. A detailed summary of all Eastern Foxsnake awareness activities completed (i.e., onsite training, educational pamphlets, etc);
 - c. Digital photographs of the development area; and
 - d. Description of all mitigation and offsetting measures implemented.
2. Any observations/sightings of an Eastern Foxsnake or any other Species at Risk. Observations should include the following information:
 - a. Date and time of observation;
 - b. Location of observation; and
 - c. A digital photograph, if possible.
3. Other activities you undertook as part of the Mitigation Plan.

7.0 CONCLUSION

The goal of this Mitigation Plan was to update MECP on the updated status of the project. The Mitigation Plan has included all required information including:

1. Describe the area of the operation;
2. Describe the habitat in that area;
3. Describe how effects will be minimized for the species;
4. Describe how habitat will be restored or improved; and
5. Outline the requirements of the Annual Report that must be completed for five years.

We are seeking the Ministry of the Environment, Conservation and Parks (MECP) Species at Risk Branch (SARB)'s review of the project documentation and this Mitigation Plan. Please advise whether the proposed mitigation and offsetting measures provided within this Mitigation Plan are sufficient to exempt Eastern Foxsnake under the Drainage Works Section (23.9) of Ontario Regulation 242/08 of the Endangered Species Act. Additionally, please advise if the Eastern Foxsnake Registration completed in 2017 is still valid or if the species needs to be re-registered.

8.0 REFERENCES

Endangered Species Act, 2007, S.O. 2007, c.6.

LGL Limited. 2011. Eastern Foxsnake (*Pantherophis gloydi*) Management Plan Created to Meet Conditions of Permit No. AY-D-001-11 Issued Under the Authority of Clause 17(2)(d) of the Endangered Species Act, 2007.

Ontario Ministry of Natural Resources & the Corporation of the Municipality of Leamington. 2010. Agreement under S.23 of O. Reg. 242/08 made under the Endangered Species Act, 2007 (File #: AY-23D-005-10, June 29, 2010).

Ontario Ministry of Natural Resources & the Corporation of the Town of Amherstburg. 2010. Agreement under s.23 of O. Reg. 242/08 Made Under the Endangered Species Act, 2007 file #: AY-23D-005-10

Ontario Ministry of Natural Resources. 2016. Best Management Practices for Mitigating the Effects of Roads on Amphibian and Reptile Species at Risk in Ontario.

Ontario Ministry of Natural Resources. 2012. Categorizing and Protecting Habitat under the Endangered Species Act.

Ontario Ministry of Natural Resources. 2012. Habitat Protection Summary for Eastern Foxsnake (Carolinian Population).

Ontario Ministry of Natural Resources. 2017. Eastern Foxsnake. Retrieved from <https://www.ontario.ca/page/eastern-foxsnake>

Ontario Nature. 2016. Eastern Foxsnake (*Pantherophis gloydi*). Retrieved from https://www.ontarionature.org/protect/species/reptiles_and_amphibians/eastern_foxsnake.pp

Rood Engineering Inc. 2016. Pike Road Drain West Auxiliary Outlet & 2nd Concession Road Drain South Relocation.

APPENDICES

APPENDIX A: NAME AND QUALIFICATIONS OF RETAINED CONSULTANTS



INSIGHT
ENVIRONMENTAL
SOLUTIONS INC.

Wildlife Biologist – Nicole Wajmer, Hon. B.Sc., M.Sc.

Nicole is a wildlife biologist, GIS technician and managing partner of Insight Environmental Solutions Inc. She completed the Wildlife Biology undergraduate and Integrative Biology graduate program at the University of Guelph. Nicole has a wide range of aquatic and terrestrial experiences from her time working in various sectors of biology including industry, government, and academia. She has strong interests in conservation biology and has been involved in recovery programs for the Endangered Northern Spotted Owl and Eastern Loggerhead Shrike. She has successfully completed certifications for First Aid and CPR, ACUC Dive Master, Ontario Benthos Biomonitoring, Backpack 2 Electrofishing, Ontario Stream Assessment Protocol, Ontario Fish Identification, the Department of Fisheries and Oceans Freshwater Mussel Identification Course, and the Ontario Reptile and Amphibian Survey Course. Nicole has contributed to a wide range of environmental and restoration projects throughout Ontario including Species at Risk (SAR) Assessments, Environmental Impact Studies (EIS), Natural Heritage Evaluations (NHE), as well as Land Management and Restoration Plans.

Ecologist – Jennifer Neill, BFA, Dip. Env. Technician

Jennifer is a senior ecologist and managing partner of Insight Environmental Solutions Inc. She holds an honors graduate from the Environmental Technician - Sampling and Monitoring program at Seneca College, a Bachelor of Fine Arts from the Ontario College of Art and Design (OCAD U) and is currently pursuing an M.Sc. at Royal Roads University. Jennifer has managed numerous large and small-scale environmental projects throughout Ontario. Her contributions include, detailed terrestrial and aquatic botanical inventories (native, cultivated and exotic species), ecological land classification, incidental wildlife surveys, benthic macro-invertebrate identification, Ontario Species at Risk (SAR) individual identification, SAR habitat evaluation and ecological restoration. Jen is certified under the Ontario Stream Assessment Protocol, Ontario Fish Identification, the Ontario Benthos Biomonitoring Network, RX100 Low Complexity Prescribed Burn Worker, the Ontario Wetland Evaluation System and demonstrates a high level of competence using the Ecological Land Classification. Jennifer has a strong interest in Botany and the native flora of Ontario. Jennifer holds a position on the Board of Directors for Tallgrass Ontario (TgO).

APPENDIX B: MNRF CORRESPONDENCE



RE: Pike Road Drain Auxiliary Outlet & 2nd Concession Road Drain Relocation - Amherstburg - REI2015D024

1 message

ESA Screening Request Aylmer District (MNRF)
<ESAScreeningRequest.AylmerDistrict@ontario.ca>

Mon, May 2,
2016 at 11:14
AM

To: Gerard Rood <gerard@roodengineering.ca>
Cc: "ESA Screening Request Aylmer District (MNRF)"
<ESAScreeningRequest.AylmerDistrict@ontario.ca>

Hello Mr. Rood,

The Species at Risk in Ontario (SARO) List is Ontario Regulation 230/08 issued under the *Endangered Species Act, 2007* (ESA 2007). The ESA 2007 came into force on June 30, 2008 and provides both species protection (section 9) and habitat protection (section 10) to species listed as endangered or threatened on the SARO List. The current SARO List can be found on e-laws (<http://www.e-laws.gov.on.ca/navigation?file=home&lang=en>).

An initial SAR screening has been completed for the Pike Road Drain Auxiliary Outlet and 2nd Concession Drain Relocation, Amherstburg.

The proposed project is occurring within regulated habitat for **Eastern Foxsnake (Endangered)**.

Please note that this is an initial screening for SAR and the absence of an element occurrence does not indicate the absence of species. The province has not been surveyed comprehensively for the presence or absence of SAR, and MNRF data relies on observers to report sightings of SAR. Field assessments by a qualified professional may be necessary if there is a high likelihood for SAR species and/or habitat to occur within the project footprint.

It is important to note that changes may occur in both species and habitat protection which could affect whether proposed projects may have adverse effects on SAR. The Committee on the Status of Species at Risk in Ontario (COSSARO) meets regularly to evaluate new species for listing and/or re-evaluate species already on the SARO List. As a result, species designations may change, which could in turn change the level of protection they receive under the ESA 2007. Also, habitat protection provisions for a species may change if a species-specific habitat regulation comes into effect.

If an activity or project will result in adverse effects to endangered or threatened species and/or their habitat, additional action would need to be taken in order to remain in compliance with the ESA 2007. Additional action could be applying for an authorization under section 17(2)c of the ESA 2007, or completing an online registry for an ESA 2007 regulation, if the project is eligible.

Please be advised that applying for an authorization does not guarantee approval and the process can take several months. Please visit MNR's website to determine whether a project may be eligible for the online registry process

(http://www.mnr.gov.on.ca/en/About/2ColumnSubPage/STDPROD_104342.html). Questions about

the registry process should be directed to MNR's Registry and Approval Services Centre at 1-855-613-4256 or at mnr.rasc@ontario.ca.

Kyle Stanley

Management Biologist
Aylmer District
Ministry of Natural Resources and Forestry
615 John Street N.
Aylmer, ON N5H 2S8
Phone: 519-773-4785
Fax: 519-773-9014
kyle.stanley@ontario.ca

From: gerard.reinc@gmail.com [<mailto:gerard.reinc@gmail.com>] **On Behalf Of** Gerard Rood
Sent: April-19-16 7:33 AM
To: Veenhof, Dustin (MNRF); Stanley, Kyle (MNRF)
Cc: Eric Chamberlain; Nicole Humber
Subject: Fwd.: Pike Road Drain Auxiliary Outlet & 2nd Concession Road Drain Relocation - Amherstburg - REI2015D024

Good morning Gentlemen:

We have received a reply from DFO on the message below indicating that because of the risk of damage to fish habitat we will need to submit a request for review once we move forward with the project. We have been unable to locate any response from MNRF to the message below. We would appreciate you looking into this and providing us with preliminary input at your first convenience so that we can proceed to move the drainage project forward to the on-site meeting stage.

Thanks for your time and help with this. We look forward to getting the MNRF response. Please contact us if there are any questions on the project.

Regards,

Gerard Rood, P.Eng.

ROOD ENGINEERING INC.

9 Nelson Street
Leamington, Ontario
N8H 1G6

Phone: 519-322-1621

Fax: 519-322-1979

This email is confidential and shall not be distributed without the express authorization of Rood Engineering Inc. If you have received this message in error please notify us and delete all copies immediately.



----- Forwarded message -----

From: **Gerard Rood** <gerard@roodengineering.ca>

Date: Wed, Mar 2, 2016 at 11:39 AM

Subject: Pike Road Drain Auxiliary Outlet & 2nd Concession Road Drain Relocation - Amherstburg - REI2015D024

To: Dustin Veenhof <Dustin.Veenhof@ontario.ca>, Kyle Stanley <kyle.stanley@ontario.ca>, Jennifer Thomas <Jennifer.Thomas@dfo-mpo.gc.ca>, "Balint, David" <David.Balint@dfo-mpo.gc.ca>

Cc: Eric Chamberlain <echamberlain@amherstburg.ca>, Nicole Humber <nhumber@amherstburg.ca>

Good morning to all:

The Town has appointed us pursuant to the Drainage Act to prepare a final drainage report for the above noted project. The initial stages of the project commenced some 7 years ago as outlined in the attached summary notes that we have prepared for the project. We are working with the Town to schedule an on-site meeting for this project. In consultation with Town staff, it was established that due to the location of the project and proximity to a sensitive area, it may be prudent to contact MNR and DFO for some preliminary feedback on the project so that a more thorough and complete presentation can be done at the on-site meeting.

To that end, we would kindly request that MNR and DFO conduct a review of the attached notes and provide us with any comments, suggestions or feedback pertinent to proceeding with this project under the Drainage Act. Should additional mitigation or offsetting be required beyond that already noted in the attachment, we would appreciate that input now so that the affected owners can be made aware of same at the on-site meeting, and so that a DRAFT drainage report can be prepared that would encompass the key requirements and allow for a simpler review when the DRAFT drainage report is submitted to each Authority to establish any permitting or approval requirements.

Thank you for your time and attention to this. We look forward to your help and input and working closely with all the stakeholders to achieve a satisfactory outcome for the project. Should this submission need to follow another procedure, please let us know and we will take the necessary steps to arrange for same.

Please contact us if there are any questions on the project. A timely response would be greatly appreciated to minimize any further delay to proceeding with this project. It is important to minimize the risk of damages to affected lands, particularly along Simcoe Street (Pike Road) and enhance the safety along Fryer Street (2nd Concession Road).

Regards,

Gerard Rood, P.Eng.

ROOD ENGINEERING INC.

9 Nelson Street

Leamington, Ontario

N8H 1G6 Phone: 519-322-1621

Fax: 519-322-1979



**APPENDIX C: REGISTRATION OF EASTERN
FOXSNAKE WITH THE ONTARIO
REGULATION REG. 242/08 OF THE
ENDANGERED SPECIES ACT, 2007**



INSIGHT
ENVIRONMENTAL
SOLUTIONS INC.



CONFIRMATION OF REGISTRATION

Form Name: Notice of drainage works (s.23.9)
Date Registration Filed: 08/10/2017
Confirmation ID: M-102-2197999102
Version Number: 001
Update Date:

Dear Sir/Madam,

Sage Earth

2978 Concession 4 CONC N
Loretto, ON L0G1L0

You have registered with the Ontario Regulation Reg. 242/08 of the *Endangered Species Act, 2007* and your Notice form has been received by the Ministry of Natural Resources and Forestry for activities eligible under the following regulatory provision:

Notice of drainage works (s.23.9)

located at:

Second Concession Road Drain, Between Fryer Rd & Meloche Rd, and Lowes Side Rd & Simcoe St

For the species listed in Appendix A.

It is your responsibility to understand all the applicable requirements of registration and to be aware of which species are eligible or excluded in relation to your activity. **This includes monitoring changes to the SARO List (O. Reg. 230/08) as well as eligibility and requirements in the General Regulation O. Reg. 242/08.** Some requirements apply to all activities being initiated on the landscape, such as the minimization of adverse effects on the species. Other requirements vary by activity such as record keeping, monitoring, and creation of mitigation plans and reports. **Whenever documents are requested by the Ministry of Natural Resources and Forestry (MNRF) they are due within 14 days.**

Species observations must be reported directly to the Natural Heritage Information Centre, within three months, by completing a Rare Species Reporting Form available at <http://www.ontario.ca/page/report-rare-species-animals-and-plants>.

In addition to the General Regulation, information is available at <http://www.ontario.ca/page/natural-resources-approvals>.

You are required to show this Confirmation of Registration upon request of the Ministry. Please refer to Ontario Regulation 242/08 for requirements that apply to your activity.

Any questions related to this registration and/or the Natural Resources and Forestry Registry should be directed to:

Registry and Approval Services Centre
Ministry of Natural Resources and Forestry
300 Water Street
Peterborough, ON, K9J8M5
Toll-free: 1-855-613-4256
E-mail: mnr.rasc@ontario.ca

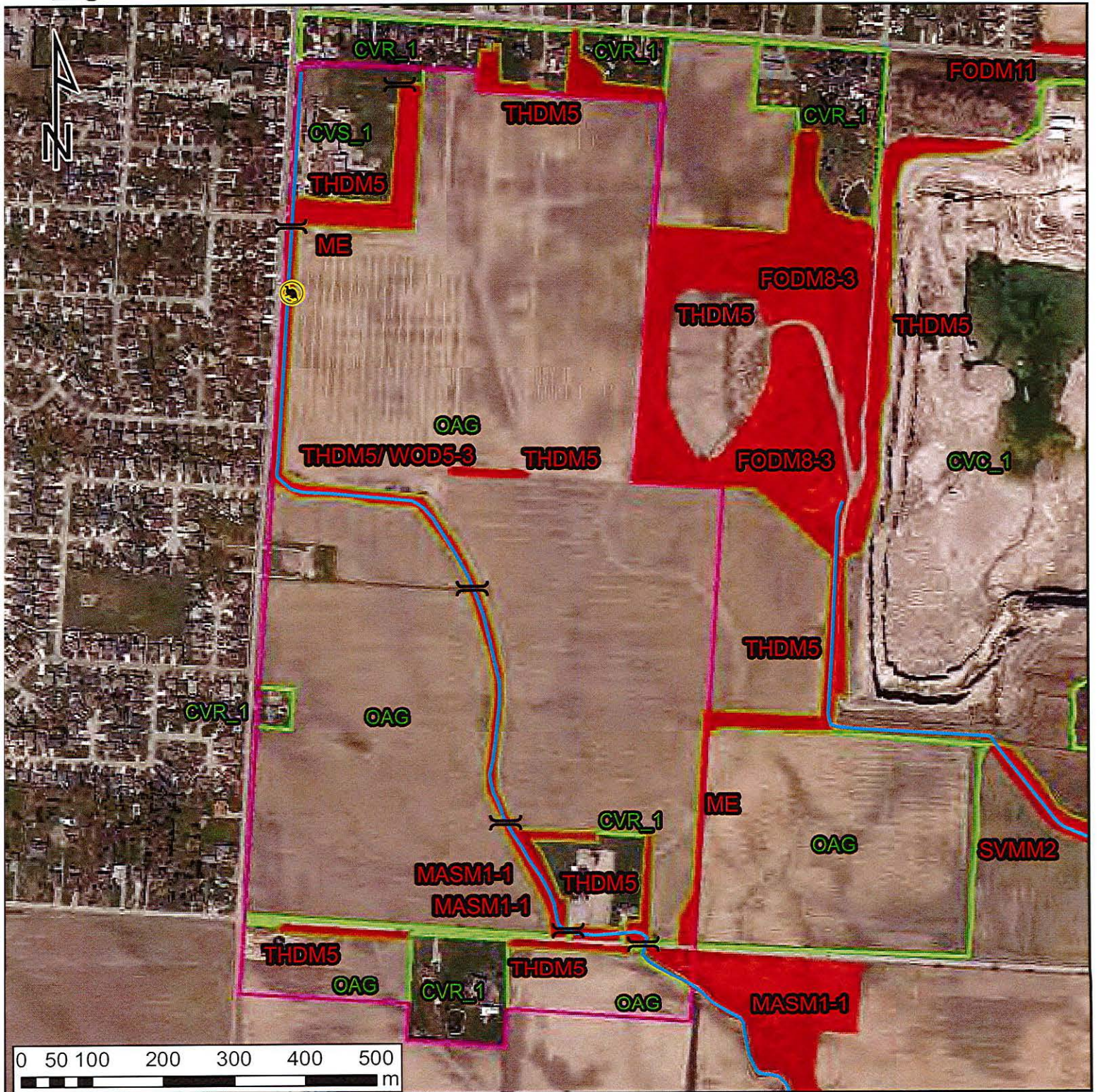
Appendix A:

Species impacted by the registered activity:

Eastern Foxsnake (Carolinian population) (*Pantherophis gloydi*)

APPENDIX D: POTENTIAL HABITAT FEATURES OF EASTERN FOXSNAKE

Figure 4: Eastern Fox Snake Regulated Habitat and Features



Eastern Fox Snake Regulated Habitat		Eastern Fox Snake Habitat Features		Figure #: 4 Scale: 1:7,250 Date: 14 July, 2017 Creator: John Tress
FODM11	Naturalized Deciduous Hedge-row Ecosite		Culvert/ Rip Rap	
FODM8-3	Fresh - Moist Cottonwood Deciduous Forest		Small mammal burrow	
MASM1-1	Cattail Mineral Shallow Marsh Type		Study Area	 Environmental Restoration
ME	Meadow		Watercourses	
SWMM2	Maple Mineral Mixed Swamp Ecosite			
WOD5-3	Fresh - Moist Manitoba Maple Deciduous Woodland			
THDM5	Fresh - Moist Deciduous Thicket Ecosite			
Anthropogenic Land Uses				
CVC_1	Extraction	CVS_1	Education	
CVR_1	Low Density Residential	OAG	Open Agriculture	

APPENDIX “REI-C”

STANDARD SPECIFICATIONS **FOR ACCESS BRIDGE CONSTRUCTION**

1. PRECAST CONCRETE BLOCK & CONCRETE FILLED JUTE BAG HEADWALLS

After the Contractor has set the endwall foundations and the new pipe in place, it shall completely backfill same and install new precast concrete blocks or concrete filled jute bag headwalls at the locations and parameters indicated on the drawing. All concrete used for headwalls shall be a minimum of 30 mPa at 28 days and include 6% +/- 1% air entrainment.

Precast concrete blocks shall be interlocking and have a minimum size of 600mmX600mmX1200mm. Half blocks shall be used to offset vertical joints. Cap blocks shall be a minimum of 300mm thick. A foundation comprising minimum 300mm thick poured concrete or precast blocks the depth of the wall and the full bottom width of the drain plus 450mm embedment into each drain bank shall be provided and placed on a firm foundation as noted below. The Contractor shall provide a levelling course comprising a minimum thickness of 150mm Granular "A" compacted to 100% Standard Proctor Density or 20mm clear stone, or a lean concrete as the base for the foundation. The base shall be constructed level and flat to improve the speed of installation. Equipment shall be provided as required and recommended by the block supplier for placing the blocks such as a swift lift device for the blocks and a 75mm eye bolt to place the concrete caps,. The headwall shall extend a minimum of 150mm below the invert of the access bridge culvert with the top of the headwall set to match the finished driveway grade, unless a 150mm high curb is specified at the edge of the driveway. To achieve the required top elevation, the bottom course of blocks and footing may require additional embedment into the drain bottom. The Contractor shall provide shop drawings of the proposed wall for approval by the Drainage Superintendent or Engineer prior to construction.

Blocks shall be placed so that all vertical joints are staggered. Excavation voids on the ends of each block course shall be backfilled with 20mm clear stone to support the next course of blocks above. Walls that are more than 3 courses in height shall be battered a minimum of 1 unit horizontal for every 5 units of vertical height. The batter shall be achieved by careful grading of the footing and foundation base, or use of pre-battered base course blocks. Filter cloth as specified below shall be placed behind the blocks to prevent the migration of any fill material through the joints. Backfill material shall be granular as specified below. Where the wall height exceeds 1.8 metres in height, a uni-axial geogrid SG350 or equivalent shall be used to tie back the walls and be installed in accordance with the manufacturer's recommendations. The wall face shall not extend beyond the end of the access bridge pipe. Non-shrink grout shall be used to fill any gaps between the blocks and the access bridge pipe for the full depth of the wall. The grout face shall be finished to match the precast concrete block walls as closely as possible.

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, and 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 30 mPa at 28 days and shall include 6% ± 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 450mm (18") 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 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 Drainage Superintendent and Engineer.

4. GENERAL

Prior to the work commencing, the 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 Drainage 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 (¾") 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, or the Municipality, 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.

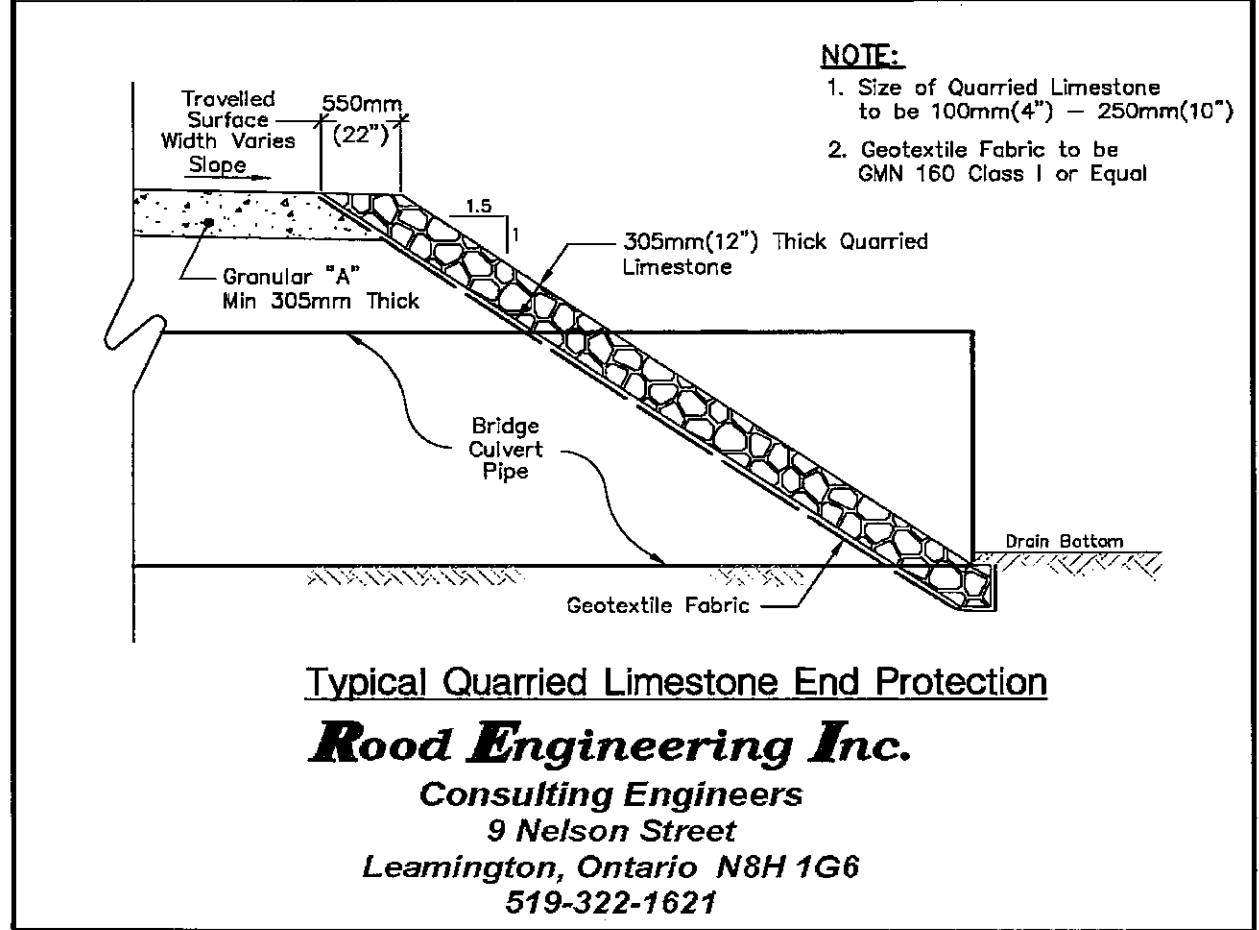
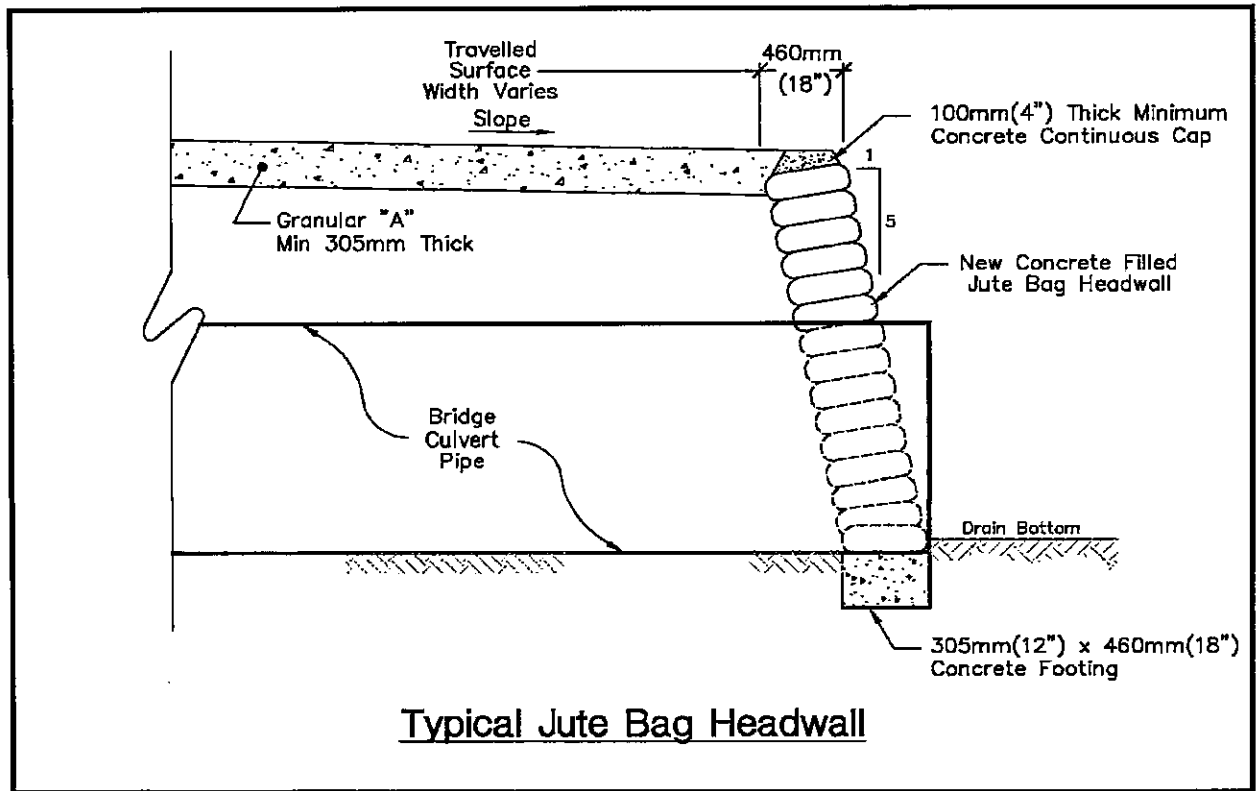
Where applicable, the Contractor and/or landowner constructing the new bridge shall be responsible for any damage caused by them to any portion of the Town road right-of-way. They shall take whatever precautions are necessary to cause a minimum of damage to same and must restore the roadway to its original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

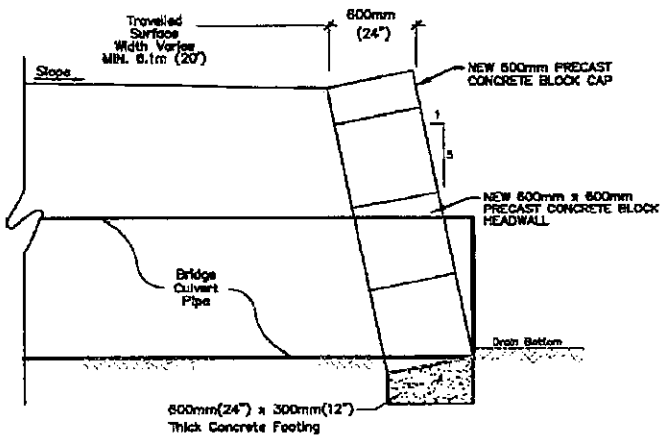
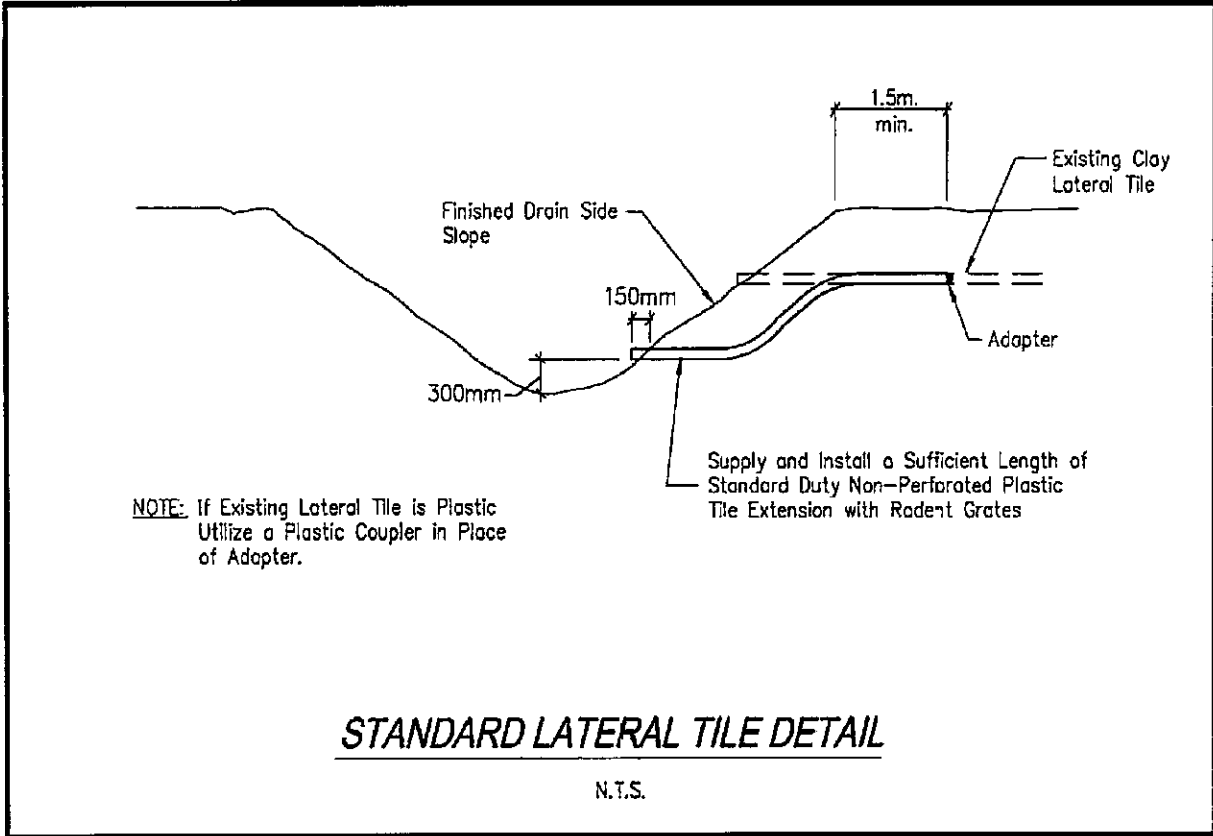
When working along a municipal roadway, the Contractor shall provide all necessary lights, signs, barricades and flagpersons as required to protect the public. All work shall be carried out in accordance with the requirements of the Occupational Health and Safety Act, and latest amendments thereto. If traffic control is required on this project, it is to comply with the M.T.O. Traffic Control Manual for Roadway Work Operations and Ontario Traffic Manual Book 7.

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.

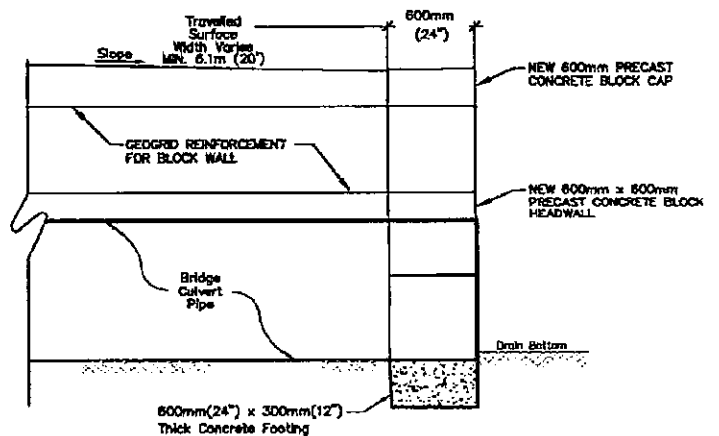
All of the work required towards the installation of the bridge shall be performed in a neat and workmanlike manner. The general site shall be restored to its' original condition, and the general area shall be cleaned of all debris and junk, etc. caused by the work

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





TYPICAL PRECAST CONCRETE BLOCK END PROTECTION
Scale = N.T.S.



TYPICAL VERTICAL PRECAST CONCRETE BLOCK END PROTECTION
Scale = 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”

PLANS SHOWING THE WATERSHED AND DETAILS FOR THE

2ND CONCESSION ROAD DRAIN SOUTH REPAIR AND IMPROVEMENT

IN THE
TOWN OF AMHERSTBURG
IN THE
COUNTY OF ESSEX, ONTARIO

Gerard Roode
GERARD ROOD, P.ENG.

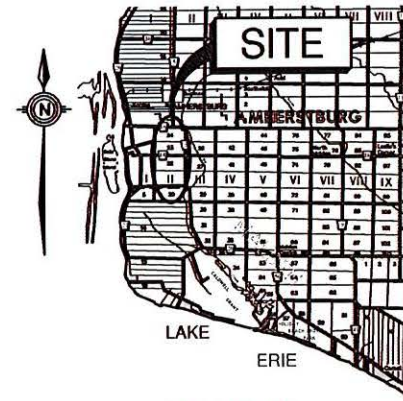


TOWN OF AMHERSTBURG

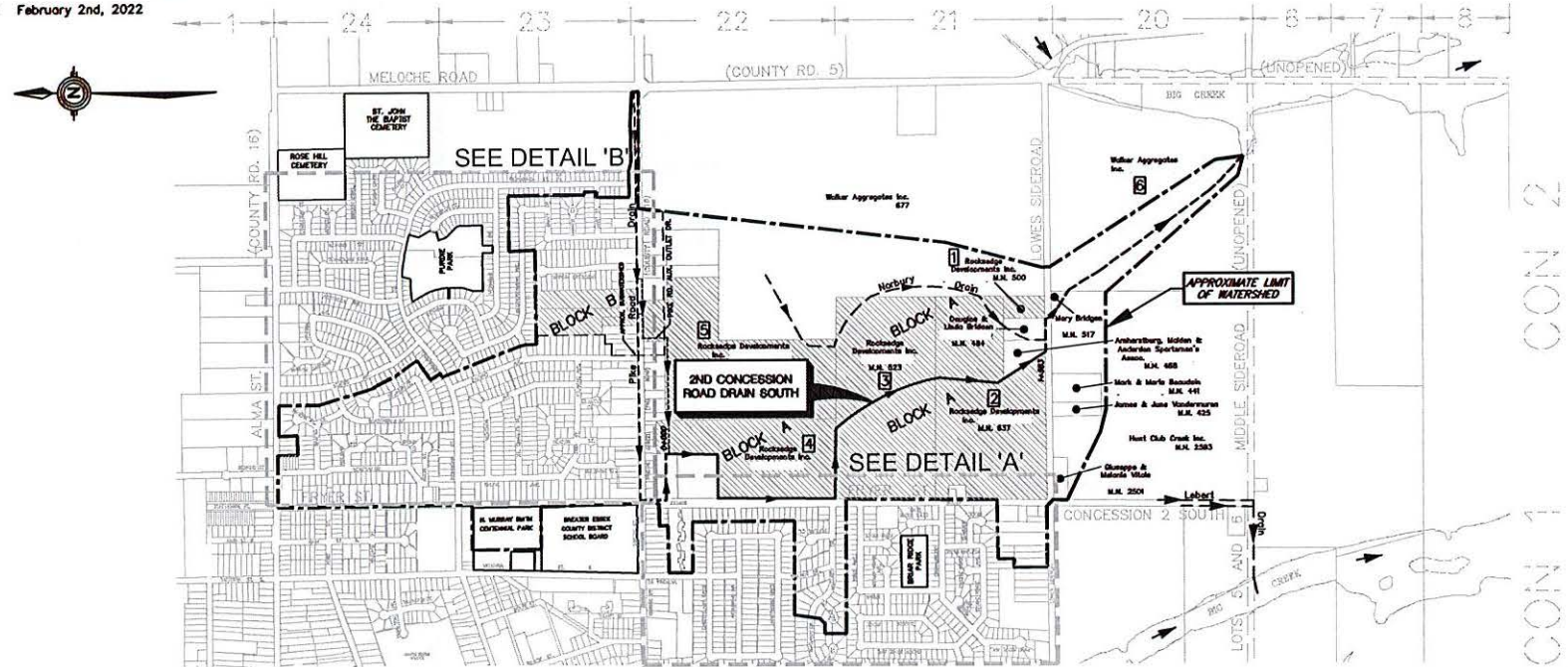
MAYOR: ALDO DICARLO
CLERK: VALERIE CRITCHLEY
DRAINAGE SUPERINTENDENT: SHANE McVITTY, P.ENG.

**ROOD
ENGINEERING
INC.**
CONSULTING ENGINEERS
Leamington, Ontario
519-322-1821

DATE: February 2nd, 2022



KEY PLAN
SCALE = 1:200,000



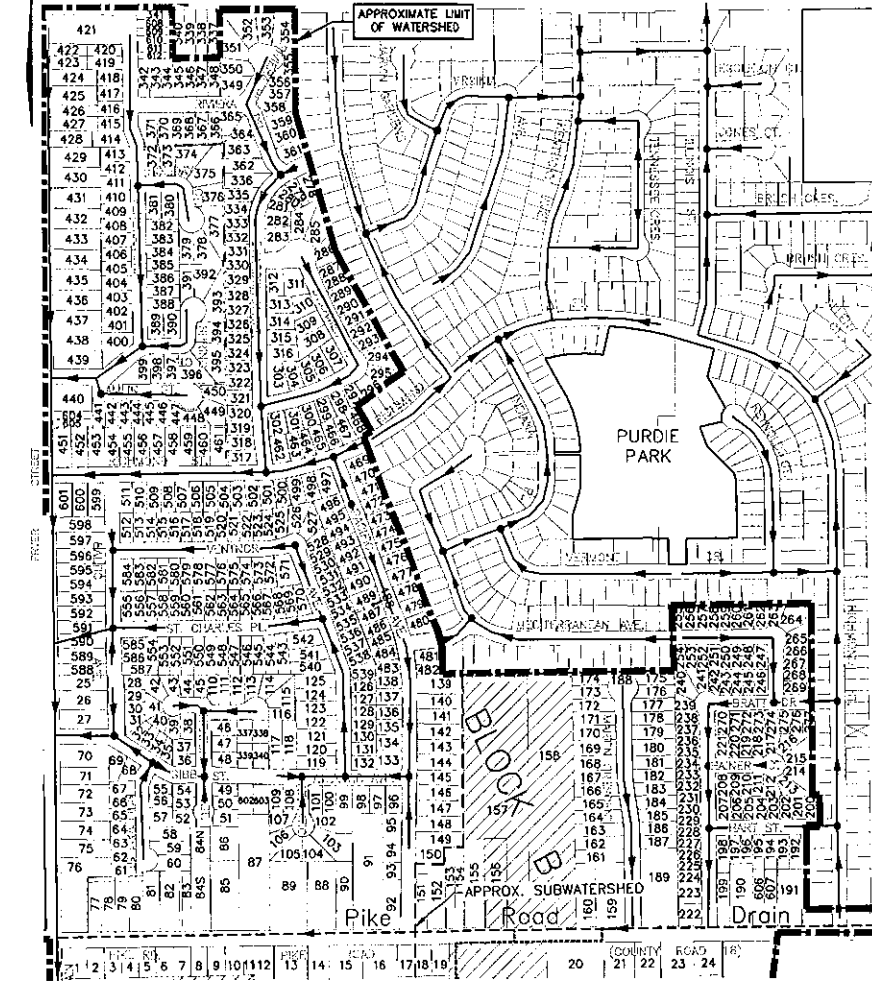
WATERSHED PLAN
SCALE = 1:15,000

SHEET W1 OF 5	
Public Works No. E09-2021-008	Project No. REI2015D024

I:\SERVER-2019\REV Data_Serve\DATA\PROJECTS\PROJECTS\2015\REI2015D024 - P18 Rd Dr And 2nd Con Rd Dr Rehabilitation\DWG\2020 DWG\2020150024 Watershed 2nd Con Rd Dr T1.dwg
 2022-01-24

NOTE:

DETAIL PLANS SHOW STORM SEWERS AND FLOW DIRECTION
BASED ON TOWN GIS MAPPING INFORMATION



DETAIL 'B'

SCALE = 1:15,000

(SEE SHEETS 3, 4 & 5 FOR ROLL INFORMATION)

ROLL INFORMATION DETAIL 'B'

1)	Larry Bertrand	60)	Ralph & Grace Barnwell
2)	Larry & Diana Bertrand	61)	Michael & Paula Paquette
3)	Graeme Hulse	62)	Michael Deneau
4)	Mark Weber	63)	Christopher Fabian
5)	Breeyn Wharram	64)	Kaitlynn Scott & Cailem Winmill
6)	Robin & Karen Charron	65)	Gino & Franca Mastronardi
7)	Randy & Joanne Deneau	66)	Roger Baylis & Elisha Strong
8)	James Fox & Charlene Seguin	67)	Paul Brennan & Julie LaLiberte
9)	Jacqueline & Robert Labute	68)	Daniel & Katie Foster
10)	Mitchell & Catherine Temesy	69)	Karl Clifford
11)	Harry & Deborah Crowder	70)	Gwladys & Mary Brush
12)	Carl Russelo	71)	James & Sherrie Hickey
13)	Robert Rainey & Gerry Hennin	72)	Raffaele & Denise Orsi
14)	Rocksedge Developments Inc.	73)	Marilyn & Alvin Deneau
15)	James & Kelly Lacey	74)	Michael Scipione
16)	Deborah Kopacz	75)	Ermenegildo & Phyllis D'Amore
17)	Michael St-Onge	76)	Jodi McLean
18)	Katie Lewis & Mitchell Finlay	77)	David Fletcher & Karen Booker
19)	Justin Hills	78)	Todd & Shirley Goodchild
20)	County Of Essex	79)	Denis Arsensult & Iris Carberry
21)	Robert & Divina Price	80)	Ernest & Kimberly Meloche
22)	Marion & Duncan Smith	81)	Jason Wells & Michaela Leckonby
23)	Duncan & Marion Smith	82)	Antonio D'Ascanio
24)	Marion & Duncan Smith	83)	Chelsie Duffy
25)	Adam Craig & Jennifer Root	84S)	Gerald & Sandra Bronstein
26)	Kam Tang & Cindy Wong	84N)	Raymond LaFontaine
27)	Aldo & Antonietta Iannucci	85)	Douglas & Maureen Hunt
28)	Ryan Nespolon & Sonja Mercier	86)	John Fleming & Marion Lee
29)	Michael Laporte & Elyssa Kurylo	87)	Anitar Inc.
30)	David & Jeanne Oliver	88)	1741059 Ontario Limited
31)	Michelle Hadrian	89)	1741059 Ontario Limited
32)	Robert Bondy	90)	Richard W. Deslippe
33)	James Bryant	91)	Kirk & Eleanore Carey
34)	Robertson Brown	92)	Jonathan Curtis
35)	Samantha Conway & Christopher	93)	James & Michelle Masters
36)	Dinunzio	94)	Brandon & Megan Courley
37)	Donna Bellefeur	95)	Luicio & Antonio Salvati
38)	Kristina Card	96)	Paul & Teresa Riggi
39)	Edward Root	97)	Leo & Diane Dufour
40)	Antoniotta & Donald Durham	98)	Alexander & Shelley White
41)	Ajit & Sarah Saxena	99)	William & Yvette Meloche
42)	Helen & Justin West	100)	Domenico & Maria Vespa
43)	Paul & Brenda Beneteau	101)	Annarama Baker
44)	Robert & Cheryl Damphouse	102)	Ryan & Monique Liebrock
45)	Richard & Karen Regier	103)	John & Melissa Tregaskiss
46)	Leslie & Barbara Bosch	104)	David & Mina Swan
47)	Anna D'Alimonte	105)	Trevor & Samantha Kennedy
48)	Herman & Elizabeth VanderHeyden	106)	Jennifer Thorne
49)	Kevin & Veronique Peladeau	107)	Dennis & Melissa Weaver
50)	Amanda & Joseph Goodrich	108)	Shane & Jennifer McVitty
51)	Teresa Handscomb	109)	Gerald & Phyllis Goggin
52)	Dave & Karen Deheer	110)	Caroline White
53)	Linda Temesy	111)	Morgan Quimette & Trina Ciphery
54)	Michele & Kenneth Walker	112)	Kurt Huard
55)	Tanya & Megan Desjardins	113)	Joseph & Terezia Nagy
56)	Daniel & Mary Morency	114)	John & Mary Holzel
57)	Nicholas & Maria Menna	115)	Jeramie & Tiffany Cote
58)	Dale & Mary Iler	116)	Richard & Tammy Allen
59)	Claudio & Anna Mancini	117)	Mario & Concetta D'Alimonte
	Michael Bondy	118)	Denis & Jennifer Mallet

SHEET W3 OF 5

Project No.
REI2015D024

ROLL INFORMATION DETAIL 'B'

119)	John & Mary Stuart	183)	Jie Zheng & Lin Yang	245)	Gregory & Marisa Forsyth	309)	Tamasin & Terence Dineen
120)	Irene & Leonard Pigeon	184)	Corey & Nicole Hornick	246)	Michael MacDonald	310)	Jeffrey & Janette McCartney
121)	Aaron Mulder & Connie-Fay Girard	185)	Timothy & Marcelle O'Reilly	247)	Tina & Travis Renaud	311)	Jodi Taylor
122)	Theresa Fox	186)	Mahmoud Brouri & Kathleen Bezaire	248)	Kyle Donne	312)	David Amyotte & Sandra Hodgins
123)	Kirstin Cote	187)	Jeffrey & Darlene Kopacz	249)	Denis & Siobhan Paquin	313)	Orma Fryer
124)	Sean & Marcia Cota	188)	1233804 Ontario Limited	250)	Robbie & Karen Bates	314)	Richard Dufour
125)	Ryan Nantais	189)	Mikalynn & Michael Parlette	251)	Matthew Ferriss & Michelle Sinasac	315)	Dennis Rooke
126)	Ian & Laurie Hui	190)	Kenneth Jones & Sandra Peever	252)	Louise Ferriss & Dorothy & Frank Wirag	316)	Ernest & Antoinette Pecaski
127)	Leslie Blais	191)	Ronald Triolec	253)	Normand & Aida Kingsbury	317)	Luke & Nicole Goggin
128)	Geoffrey & Donna Hibbert	192)	Marianne Ferenczy & Paula Demeter	254)	Justin Wrixon & Stephanie Pietrangelo	318)	Camillo & Assunta Toppi
129)	Leo Desbiens	193)	Anna Leardi	255)	Fernande Laroche	319)	Clint Merrifield & Miranda Ronholm
130)	Tammy Marancie	194)	Brett Bezaire & Amanda Deslippe	256)	Robert Falkanger	320)	Dale Simmons
131)	Matthew Erickson & Yvette Evans	195)	Sarah Sinasac & Nathan French	257)	Sean Lunardi & Felicia Deroy	321)	Gordon Ross & Wendy Wigle
132)	Ryan & Melanie D'Alimonte	196)	Michael Fines & Melissa Mulcaster	258)	George & Barbara Sesto	322)	Paul Meloche & Shannon McLaughlin
133)	Sarah & Keith Shaw	197)	Carlie & Lindsay Mower	259)	Ehren Martin	323)	John & Donna Bondy
134)	Judith Spadafora	198)	Leonardo & Nancy Caro	260)	Jason & Holly McLean	324)	Wilbur & Cynthia Mulder
135)	Kerry & Amberley Foote	199)	Essex County Association For	261)	Peter Belanger & Patricia Capalbo	325)	Sabina Harrison
136)	George & Salvia Pearson	200)	Community Living	262)	Keilh & Katherine Jones	326)	Theresa Brennan
137)	Patrick & Pauline Greenwood	201)	Clifford & Marietta Ferriss	263)	Mark Meloche & Shelley Gonzalvo	327)	Gail Bratt & Bernard Krebs
138)	Sandra Ashton	202)	Eric Markham	264)	Terrance & Bonnie Bertrand	328)	Terry & Kimberly Deschamps
139)	Andrew & Debra Groen	203)	Eduardo Munoz & Meggi Hullon	265)	Anthony Bastien & Kryslina Menard	329)	Tiffany & Leslie Ansombe
140)	Jerry Chadwick	204)	Roger & Louise Arseneau	266)	Joel Gonzalvo & Alan Desimpel	330)	Carmine & Gladys Cristofaro
141)	John France	205)	Jeffrey & Maureen Medd	267)	Sheila Moore	331)	Daniel & Georgina Marshall
142)	Allan Kinsey & Stacy Markham	206)	Cheryl Pilon & Kevin Cote	268)	Charles Copland & Laura Parent	332)	Michael & Betty Constantineau
143)	Allan Patterson	207)	Dennis & Anne Bondy	269)	Shawn MacDonald	333)	James & Randa Parent
144)	Theodore Girard & Jessica Spencer	208)	Liisa & Steven Levesque	270)	Anita Gibb	334)	Christopher Leblanc & Kelly Grantmyre
145)	John & Joanne Guilar	209)	Joseph & Marlene Damphouse	271)	Marion & Graham Clayton	335)	Tara Gugliotta & Raymond Lariere
146)	Mark & Penny Yablonsky	210)	Joseph & Margaret Joncas	272)	Gregory & Carol Farmer	336)	Daria Aybusheva & Andrei Aibouchev
147)	Jennifer Grant & Nathan Buckwell	211)	Carl & Nanette Galt	273)	Bosko Jugovic & Angela Arce	337)	Daniel Lombardo & Alicia Savoni
148)	Gary & Darlene Burns	212)	Douglas Buchanan	274)	Dustin Deslippe	338)	Laura & David Handcor
149)	Henry & Maureen Abson	213)	Nicola & Anna Simone	275)	Anthony Olivio	339)	Brittany Webster & Cody Smith
150)	Lewis Atherley	214)	Nelson Caxeira	276)	Shaun & Stacey Griffiths	340)	Gerald & Diane Langlois
151)	John & Margaret Dufour	215)	Roger & Kimberly Schroeder	277)	Eric Weigel & Meaghan Hlavac	341)	Christopher D'Aloisio
152)	Isabelle & James Basljen	216)	Laurie-Anne Abraham	278)	Robert & Karen Clifford	342)	Stephen Nikituk
153)	Timothy & Violet Lauriault	217)	Matthew & Amanda Coughlin	279)	Dance & Jamie Stefanovich	343)	Erin & Kenneth Baird
154)	Michael Holden & Kelly Hunt	218)	Colm Holmes	280)	Nathan Gilis	344)	Michael & Nicole Ouellette
155)	Timothy & Janet Beaulieu	219)	Andrew & Carolyn Dopson	281)	Curtis Dufour	345)	Ronald & Anne Muir
156)	2047909 Ontario Limited	220)	Kenneth Booker & Ashley Dinunzio	282)	Stacey Wiley & Kyle Pierschke	346)	Laurie Cavanaugh
157)	2047909 Ontario Limited	221)	Jerome Lucier	283)	Brian Aucoin & Allison Brown	347)	John & Ruth Cooper
158)	2047909 Ontario Limited	222)	Peter & Beverly Blain	284)	Tong Bui & Trang Le	348)	Ryan McLean & Melissa Woods
159)	Julia Bonenfant	223)	Gregory Carr	285)	Owen Finn	349)	Stephen Morello & Stefanie Johnston
160)	Istvan & Sheanna Zambo	224)	Glenn & Marlene Turkington	286)	Donald & Kimberly Martin	350)	Sandra & Bradley Duffy & Deborah & Jeffrey Court
161)	Manuel & Maria Cacilhas	225)	Richard Wilson	287)	Robert Kammerer & Shelley McCann	351)	Jeffrey Court
162)	Scott & Jamie Hodgins	226)	Kelly Charlebois	288)	Chantal Brunet	352)	Lisa & David Riopelle
163)	Todd & Rachel Morin	227)	Jason & Vida Allen	289)	Robin & Debra Russell	353)	Denise Bratt
164)	Jenny Labrada Perez	228)	Kristopher & Nikita Ostapovitch	290)	Justin Awram & Chelsea Hennon	354)	Jeffrey & Deborah Court
165)	George Bondy	229)	James Lacey	291)	Krista Sales & Christopher Hayes	355)	Bradley & Sandra Duffy
166)	Maria Dibartolomeo	230)	Bradley & Jennifer Fink	292)	Murray Janisse & Teresa Davis	356)	Bradley Flood
167)	David & Karen Tales	231)	Michael & Jackie Allen	293)	Donald & Claire MacDonald	357)	Jakob & Shari Damstra
168)	Jeremy & Jessica D'Alimonte	232)	David Henderson & Kathrine & Tho	294)	Robert & Leonarda Faroni	358)	Cheryl West & Gail Doyle
169)	Ziad & Jennifer Fatallah	233)	Nguyen	295)	Michael & Carolyn Leake	359)	Andrew & Jane Bolley
170)	Stephen Deschamps & Bridget Eveleigh	234)	David Histle	296)	Susanne Bergeron	360)	Michael & Cindy Doyle
171)	Andrew Cormier & Gillian Heisz	235)	Kelly Fowkes	297)	Melanie Conaly	361)	David & Dorothy Thrasher
172)	Kimberly Wright	236)	Kelly Abbott	298)	Michael & Patricia Ford	362)	Brittany Pretly
173)	Community Living Essex County	237)	Alexander Hagg & Heather Mackenzie	299)	Krystal Kehoe	363)	Adam & Gabrielle Renaud
174)	Michael & Tara-Lynn McDowell	238)	David & Mary Rampsaud	300)	Kevin Souilgny	364)	Shirley & Marcel Pare
175)	Antonino Marano	239)	Natalie Ayer	301)	Christian Eldred		Bonnie Mansell
176)	Tho Nguyen	240)	Joel & Brytany Archer	302)	Janet & David Ross		
177)	Gwenyth Harleb & Stephanie Smith	241)	David & Kimmerly Strickland	303)	Robert & Mary Labrecque		
178)	Timothy & Stacey Vigneux	242)	Roy Colmer & Rosa Savoni	304)	Doreen Zajec		
179)	Kyle & Jody-Lynn Ouellette	243)	Thomas Loxton	305)	Margaret Haskell		
180)	David Harris	244)	Jeffery Helkie & Laura Stark	306)	Curtis Ficociello & Carly Baz		
181)	Lydia & James Ouellette		Jeffrey & Kristie Melko	307)	Gregory & Michele Girty		
182)	Alan & Laura Piper		Anne & Michael Duffey	308)	Bradley & Tracy Blackburn		

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ROLL INFORMATION DETAIL 'B'



365)	Michael Bates	427)	Shawn Keizer & Ashley Schott	491)	Roy Edwards	555)	Deborah & Kevin Gonda
366)	Margaret Halls	428)	Joseph & Carol Reaume	492)	Brenda Sprague	556)	Dennis Pare
367)	Nestor Restrepo & Jillian Romero	429)	Giuseppe & Angela Desantis	493)	Randy Fox	557)	William & Christine Belcher
368)	John & Kata Valentik	430)	Keith & Nicole Lauzon	494)	Eric & MaryAnn Steel	558)	Joanne Palga
369)	Daniel & Patricia Thibert	431)	Frederick & Karen Bertrand	495)	Larry & Deborah Hawksworth	559)	James & Catherine Muir
370)	Lauren Dewar	432)	Ronald & Mary Grant	496)	Tammy Gatto & Todd Meloche	560)	Joshua Oakley
371)	James & Marguerite Jaques	433)	Henrik & Rita Andersen	497)	Vincent & Shirley Pare	561)	Jacob & Margaret Maine
372)	Asterie Ndikumana	434)	Gerard & Jennifer Shaw	498)	Ignazio & Nives Galvan	562)	Elizabeth Mickle & Pauline Shaw
373)	Jerry & Elizabeth Sokolik	435)	Dina Orsi	499)	David Martin	563)	Amber Loughheed
374)	Douglas & Brenda Thompson	436)	Eric Bratt & Elaine Anderson	500)	Adam & Meghan Gilchrist	564)	Constance Hamilton & Charles Faraday
375)	Mark Meloche	437)	Rami Chammat & Karen Brookmire	501)	Mario & Anna Rosso	565)	Nelly VanDerHeide
376)	Marcella Dufour & James Best	438)	Natalie & Luigi D'Ambrosio	502)	Richard & Maureen Meloche	566)	Tanya & Bradley McGuinness
377)	Courlney Ryan & Daniel Michaud	439)	Maynard & Marva Hurst	503)	Denis Skenderovic & Anne Feghali	567)	Gary & Jessica Drouillard
378)	Matthew DiPasquale & Katelyn	440)	Drew & Kary Colson	504)	Jon & Penny Morse	568)	Kenneth Kozora
379)	Goodchild	441)	Alan Guthrie & Janice Boismier	505)	Frank Sustar	569)	Ann Pellier
380)	Leo Drouillard	442)	Michael Bellefleur	506)	Alan & Gail Doyle	570)	Wayne & Sandra Bastien
381)	Paul & Brenda Owen	443)	Sherry & Jeffrey Couller	507)	James Irvine & Angela Rothwell	571)	Carlyle & Christine Brassell
382)	Cheryl & Thomas DiPasquale	444)	Ernest & Tracy Godden	508)	Kyla & Jeremy McLeod	572)	Peter & Darlene Bischoff
383)	Mark & Gwen McAllen	445)	Thomas & Mary Henderson	509)	Wayne Laporte	573)	Tara Rousseau & Thomas Triolet
384)	Aaron Turner & Marija Lelas	446)	Patrick Heroux & Jo-Anne McDowell	510)	Marc Maitre	574)	Terence & Michelle Hayes
385)	Frederick Gilbert	447)	John & Gail Deneau	511)	Gladys Gales	575)	Nicholas Vitale
386)	William Beale	448)	Candace Wright & Christopher Mender	512)	Charles & Patricia Goodchild	576)	Edward & Laura Gushulak
387)	Nelson & Pauline St. John	449)	Larry & Greta Ruston	513)	Maria Cafarelli	577)	Troy Stewart
388)	Robert & Gloria Taylor	450)	Leonard & Paula Tetreault	514)	Judith Renaud	578)	Brian & Michelle Barrett
389)	Tammy Campbell	451)	James Durocher & Carly LeBlanc	515)	Robin Prior	579)	Lisa Stewart
390)	Rose McKinnon	452)	Livia Donofrio	516)	Christopher & Judith Dywelska	580)	Gary Triolet
391)	Douglas & Mary Middleton	453)	Donald & Angela Florica	517)	Jonathan & Stephanie McGuire	581)	Mark & Michelle Fryer
392)	Karl & Domenica Trudell	454)	Alberto & Graziella D'Alimonte	518)	Brian & Elizabeth Mulder	582)	Kenneth & Terry Schneider
393)	Joshua Hurst	455)	Mary DiPasquale	519)	Steven Blais	583)	Robert & Diane Donaldson
394)	David Sinasac	456)	Corey Pisonneault & Samantha Quinn	520)	Nada Bratt	584)	Patricia Batiste
395)	Otto & Vera Newhook	457)	Allan & Donna Halowski	521)	Michel & Debra Bastien	585)	Bruce & Jean Galt
396)	Paul Simpson	458)	Luigi & Tonia Fortini	522)	Janos & Idiko Herils	586)	Silvino & Mary DiMarco
397)	Anne Kainz	459)	Michael & Cindy Marentette	523)	Stacey-Lee Flatt	587)	Greg & Donna Nemeth
398)	Joseph & Patricia Cunningham	460)	Barry & Maureen Renaud	524)	Richard Borland	588)	Jason Brown
399)	Michael & Donita Farmer	461)	Mark Bailey	525)	Stephen & Jen-A-Lee Hayes	589)	Karin Porter
400)	Jennifer Meunier & Robert Racette	462)	Richard & Manila Crum	526)	Ricky & Tammy Digiovanni	590)	Johnny & Rebeckah Muresan
401)	Ralph & Heather Altwater	463)	Dawna Gorrell	527)	Kenneth & Kathryn Foley	591)	James Wright
402)	Ada & Jeffrey VanDongen	464)	Mark & Laura Mousseau	528)	Timothy & Kristin Schneider	592)	Rocco & Graziella Mancini
403)	Bernice & Neil Slater	465)	Wendy Wallace	529)	Rose McKinnon	593)	Joel Cote & Jessica Bagley
404)	Raquel Hurst	466)	William Matte & Shelly Price	530)	Richard & Debra Turgeon	594)	Joel & Kelli Street
405)	Gilbert & Karen Bezaire	467)	Marvin Bennett & Karen Longfield	531)	Erin Killops	595)	Daniel Beneteau & Kristy-Lee Fram
406)	Nancy Polyak	468)	Andrew & Catherine Goral	532)	Scott & Joan Donaldson	596)	Eugene Mograw & Susan Renaud
407)	Theresa Lachapelle	469)	Gareth & Sylvia Williams	533)	2309067 Ontario Inc.	597)	Gordon & Leanne Meloche
408)	Albert & Pauline Bump	470)	Gerry Hennin	534)	Carson & Pamela Williams	598)	Robert & Danijela Pontini
409)	Alex Temesy & Jaide Lyons	471)	John Gyori & Amanda Ward	535)	Leone & Dennis McLean	599)	Joseph Beattie & Colleen O'Phee
410)	Daniel Delmore & Dayna DiPasquale	472)	Uwe & Mary Kollin	536)	William & Michelle Beaudoin	600)	Ian & Helen Hayward
411)	Carol Charette	473)	Annie Mower	537)	Jeffrey & Pamela Hocevar	601)	Thomas & Rozemary Jaber
412)	John & Patricia McLaughlin	474)	Renee & Gregory Leaf	538)	Augusto & Giovina Moscatello	602)	Ronald & Luane Faucher
413)	Kenneth & Anne Garrod	475)	Eugene & Mary Hasson	539)	Brent Wessels	603)	Mary Cassetta & Allen Simpson
414)	Kenneth Greason	476)	Vance Sinasac	540)	Lorenzo Alfini & Darcie Wright	604)	2HCoulson Ltd.
415)	John Shearon	477)	Joshua & Olivia Parsons	541)	Kevin Giroux	605)	Steven & Sheila Walton
416)	James & Lynda Parr	478)	Joshua Lenz & Lisa Wright	542)	Donald & Evelyn Meharg	606)	Nathan & Andrea Fevreau
417)	Natalie Faucher	479)	Sylvie & Daniel Babin	543)	Paul Garner	607)	Nanette Gatt
418)	Jennifer & Robert Oriet	480)	Hugh & Margaret Evans	544)	Mathew McLean	608)	Christopher D'Aloisio
419)	Clenn & Trudy Hansman	481)	Lorne Harrison	545)	Christopher & Michelle Short	609)	Richard & Kathryn Lancop
420)	Emilia Rufo	482)	David Howcroft	546)	Tina Triolet	610)	Kathryn Lancop
421)	Gary & Shirley Wigle	483)	Matthew Pellow	547)	Lionel & Ederlyn Girard	611)	Agostino & Lisa Menna
422)	1882018 Ontario Inc.	484)	Jeffrey & Krisanne Moore	548)	Annabelle Bowden	612)	Agostino Menna
423)	Erik Eliassen & Amanda Ouellette	485)	Francis & Katherine Beaudoin	549)	Christine & Ronald Fryer		
424)	Dylan & Jessica White &	486)	Michael & Anne Gray	550)	Jeremy Pillon		
425)	Mary-Josephine McCaffrey	487)	Laura Borland	551)	Kevin, Jessie & Joyce Boismier		
426)	Bruce Abson	488)	Town of Amherstburg	552)	Tina Decarlo		
	Leslie Pellypiece & Linda Mclean	489)	Brandon St.Pierre & Kayla Temesy	553)	Robert Carr		
	Mitchell Bastien	490)	Lauren Deneau	554)	Larry & Rhonda Hurst		

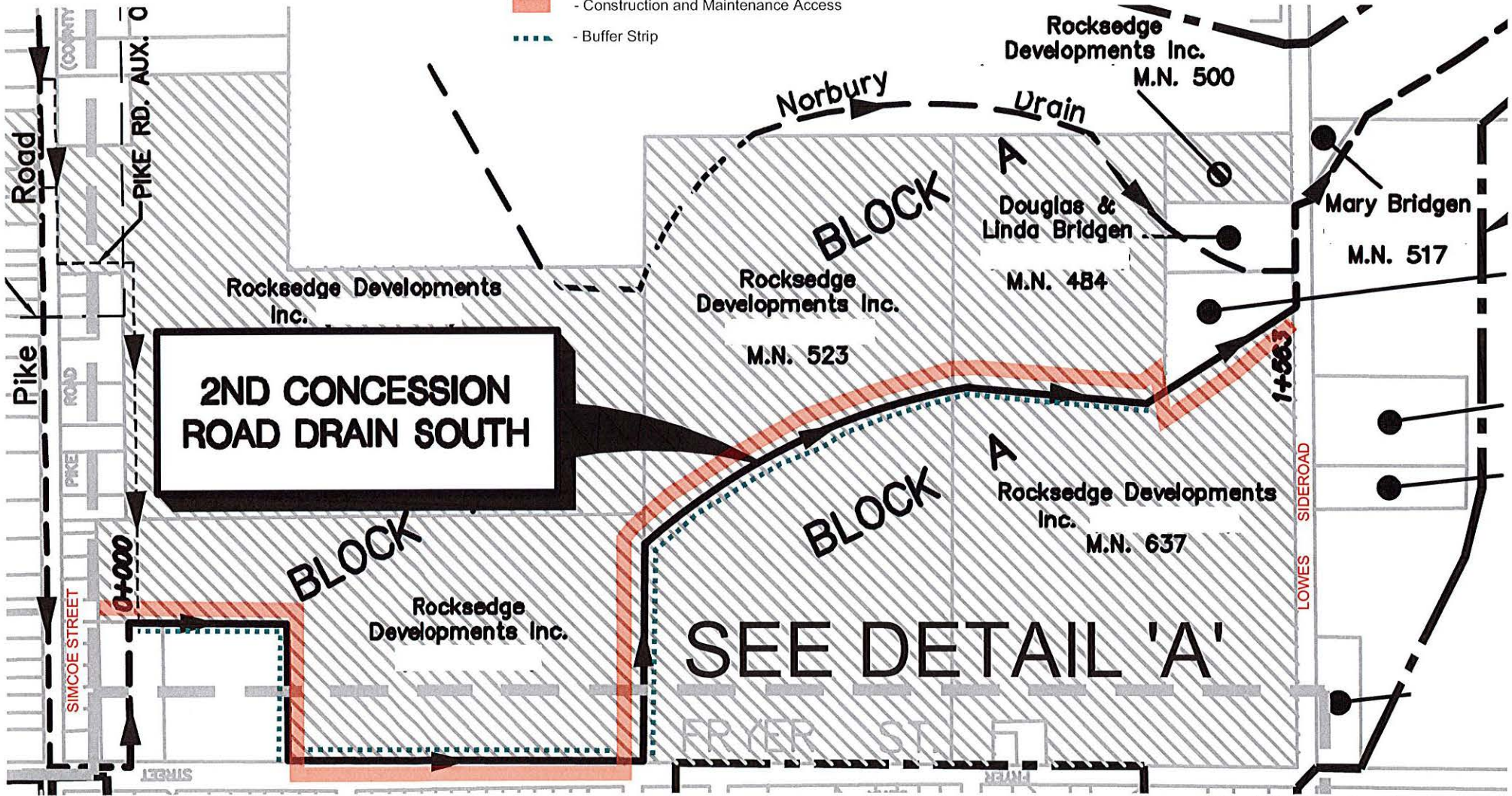
SHEET W5 OF 5

Project No.
REI2015D024

APPENDIX “REI-E”

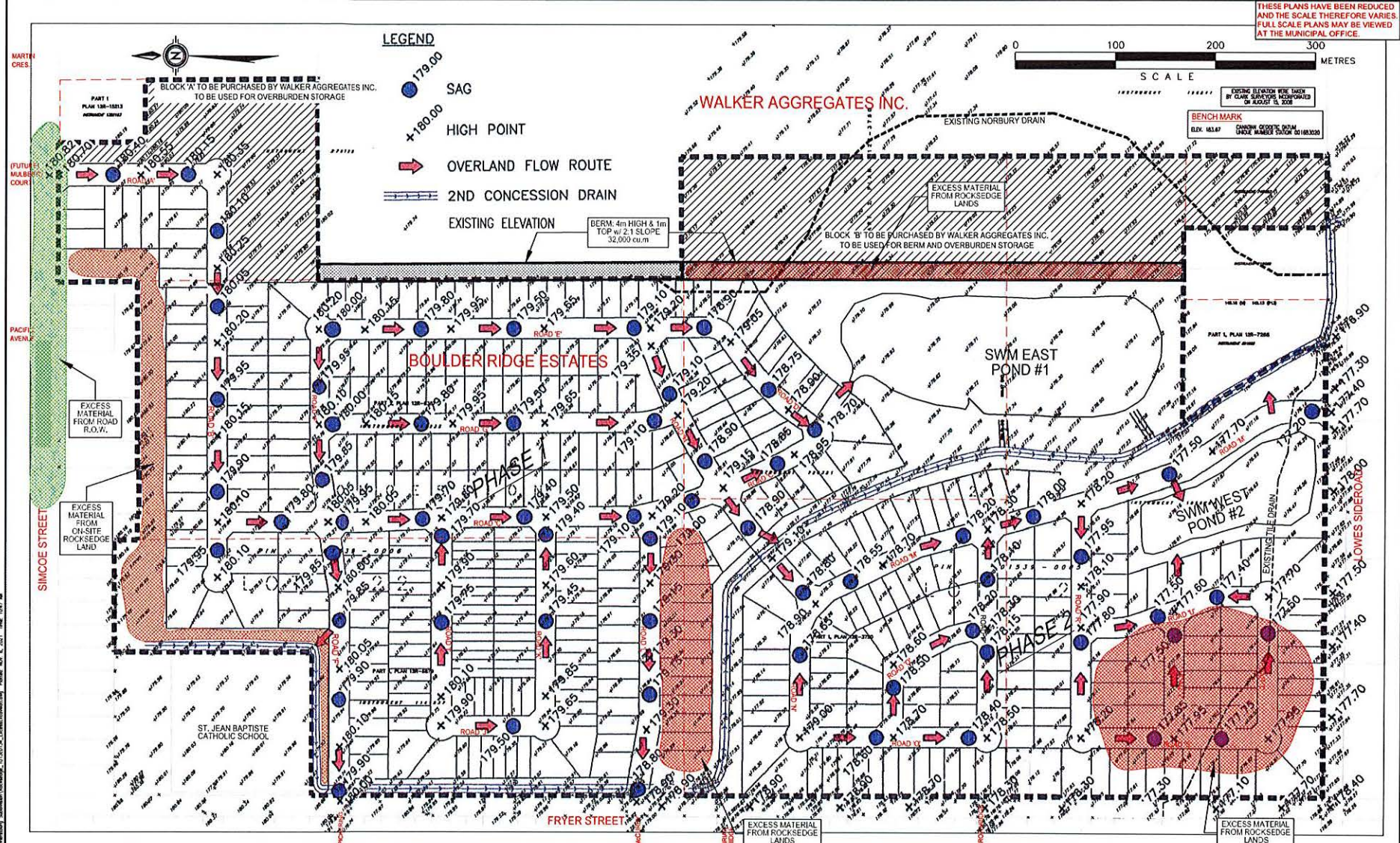


-  - Construction and Maintenance Access
-  - Buffer Strip



Rood Engineering Inc.
 Consulting Engineers
 9 Nelson Street
 Leamington, Ontario N8H 1G6
 519-322-1621

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



NO.	ISSUED FOR	DATE
1	REVISED PER TOWN'S COMMENTS	MAY 5, 2011
2	REVISED	MAY 11, 2011

R. LUCENTE ENGINEERING INC.
CIVIL ENGINEERING CONSULTANT

302-180 Eugene Street West
Kitchener, Ontario, Canada N2K 2J6
Phone: (519) 866-4008
E-mail: rcc@rccengineering.com

DRAWN	R. R. M.	CHECKED	R. L. L.
APPROVED	R. L. L.	DATE	JULY 2018
SCALE	N.T.S.		

ROCKSEGE DEVELOPMENT INC.

PROJECT	BOULDER RIDGE ESTATES RESIDENTIAL SUBDIVISION TOWN OF AMHERSTBURG, ONTARIO
SHEET TITLE	TRANSPORTATION OF EXCESS EXCAVATION MATERIAL PLAN
OFFICE FILE NO.	LR-1019
DRAWING NO.	28-438
FIELD BOOK NO.	
SHEET NO.	1 of 1

P.L. Name: C:\MapInfo\GIS\Draw - Information\Subdivision\Boulder Ridge\28-438-1019-1.dwg Printed: 2011-07-11 10:47 AM

BOULDER RIDGE ESTATES - ROCKSEGE DEVELOPMENT

PLAN FOR THE

2ND CONCESSION ROAD DRAIN SOUTH NORBURY DRAIN WORKS

IN THE
TOWN OF AMHERSTBURG
IN THE
COUNTY OF ESSEX, ONTARIO

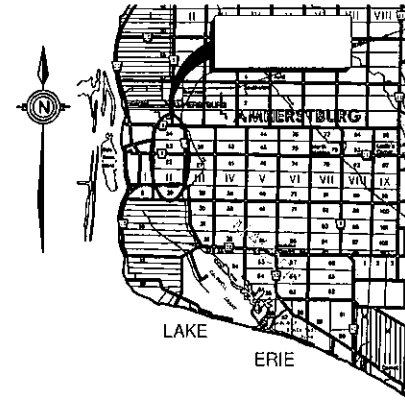
**ROOD
ENGINEERING
INC.**

CONSULTING ENGINEERS
Leamington, Ontario
519-322-1821

DATE: February 2nd, 2022

TOWN OF AMHERSTBURG

MAYOR: ALDO DICARLO
CLERK: VALERIE CRITCHLEY
DRAINAGE SUPERINTENDENT: SHANE McVITTY, P.ENG.



KEY PLAN

SCALE = 1:200,000



Walker Aggregates Inc. M.N. 677

Rocksedge Developments Inc.
M.N. 500

Norbury Drain

Douglas & Linda
Bridgen M.N. 484

X1

X2

REDIRECT DRAIN

X3

X4

SIDEROAD

REDIRECT DRAIN

Rocksedge Developments Inc.
M.N. 523

Amherstburg, Malden & Anderdon
Sportsmen's Assoc. M.N. 468

LOWES

2ND CONCESSION
ROAD DRAIN SOUTH

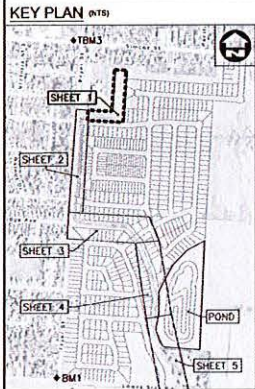
NORBURY DRAIN PLAN

SCALE = 1:3,000

Public Works No.
E09-2021-008

Project No.
REI2015D024

S:\PROJECTS\2015\REI\Boto Server\DRAWINGS\PROJECTS\Projects\2015\REI\20150024 - Plan No Dr Aut & 2nd Con Rd Dr Resubmit\DWG\2020 DWG\REI20150024 - Watermain 2nd Con Rd Dr Tullug 2021-02-03

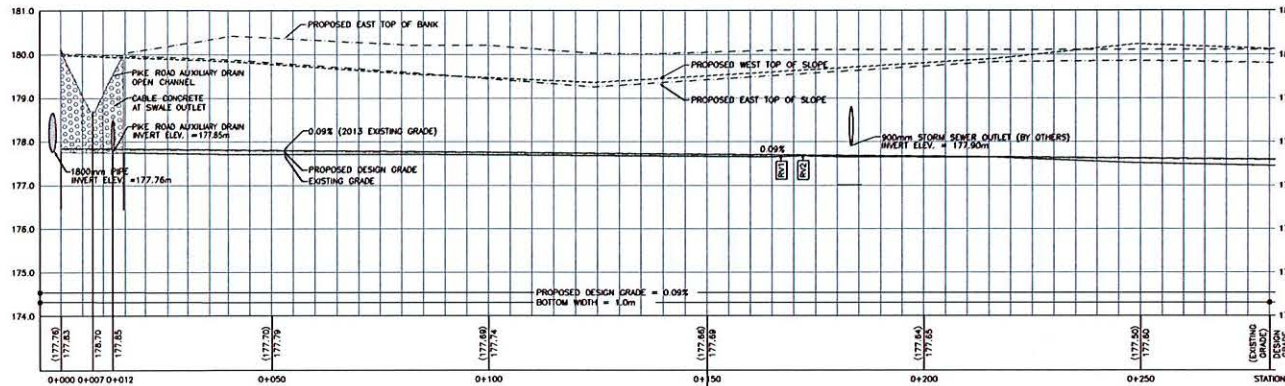
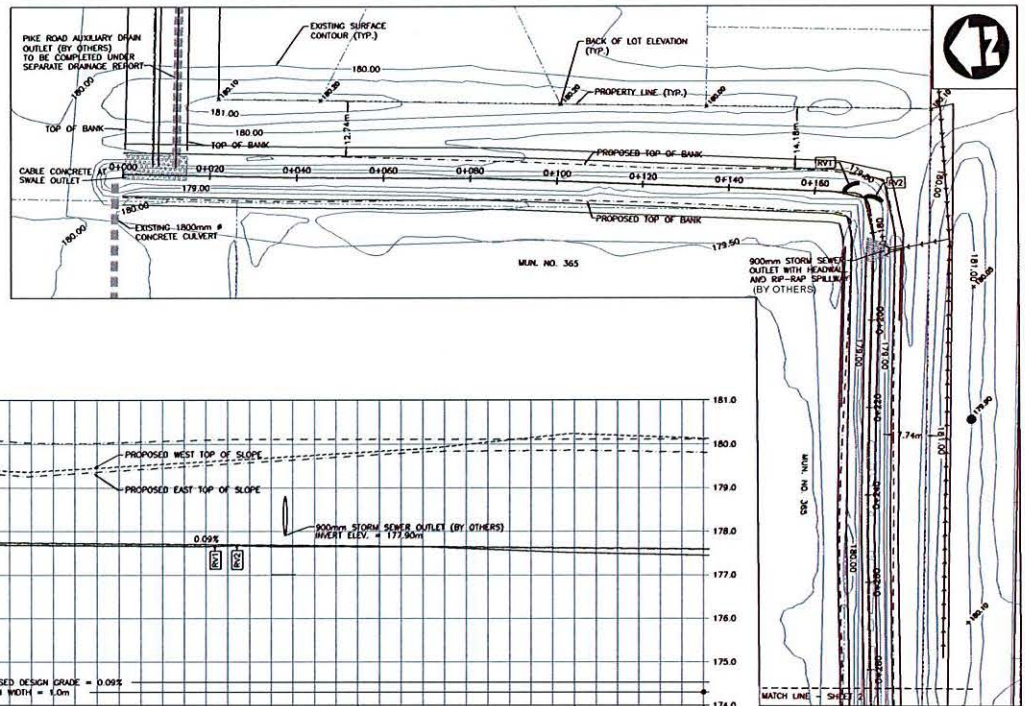


LEGEND

- DRAIN CENTERLINE
- - - PROPOSED EAST TOP OF BANK
- - - PROPOSED WEST TOP OF BANK
- - - PROPOSED DESIGN GRADE
- - - 1979 DESIGN GRADE
- - - EXISTING GRADE
- - - EXISTING SURFACE CONTOURS
- - - PROPERTY LINES
- CRV CONTROL ROCK VANE
- RV ROCK VANE
- HV SNAKE HIBERNACULUM LOCATION

BENCHMARK POINT TABLE				
POINT No.	NORTHING	EASTING	ELEV. (m)	DESCRIPTION
BM1	4661707.82	326386.14	178.32	STONE MONUMENT
BM2	4662872.78	327778.58	183.72	CANADIAN GEODETIC DATUM (PROV. BENCHMARK STATION 02-18-0303)
BM3	4662983.51	328402.89	181.47	TOP HUT OF FIRE HYDRANT

NOTES:
 1) ELEVATIONS ARE BASED ON BENCHMARK (BMS) NOTED ON 2ND CONCESSION ROAD DRAIN DRAWINGS PREPARED BY ROOD ENGINEERING INC.
 2) BMS LOCATED AT SOUTHWEST CORNER B OF INTERSECTION OF BRADCO STREET AND MELCHIE ROAD (OUTSIDE OF AREA DEPICTED IN KEY PLAN).



PLAN - STA 0 + 000 TO 0 + 280
SCALE: 1:500

PROFILE - STA: 0 + 000 TO 0 + 280
SCALE: 1:500 HORIZONTAL
1:50 VERTICAL

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

Rood Engineering Inc.
 Consulting Engineers
 9 Nelson Street
 Leamington, Ontario N8H 1G8
 519-322-1821
 2022-02-02

METRES
 unless otherwise noted



2380 Ardmore Drive Windsor, Ontario N9C 4H4 Phone: (519) 875-8089 Fax: (519) 875-8084 www.landmarkeng.com	
---	--

Rev.	Description	Date
0	ISSUED FOR ENGINEER'S REPORT & APPROVALS	15 JUL 2021
1		
2		
3		
4		
5		
6		

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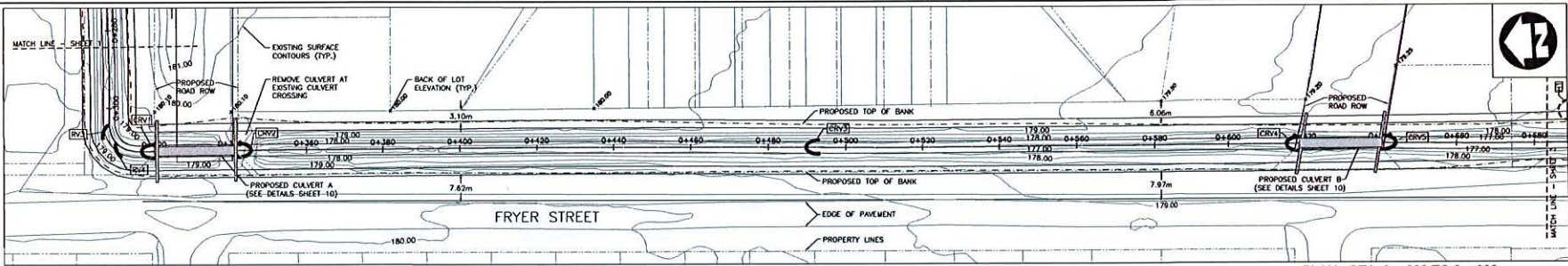
NOTE: THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND LOCATIONS BEFORE PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER FOR CORRECTION BEFORE PROCEEDING WITH ANY PORTION OF THE WORK IN THE CONTRACT.

ROCKSDGE DEVELOPMENTS INC.

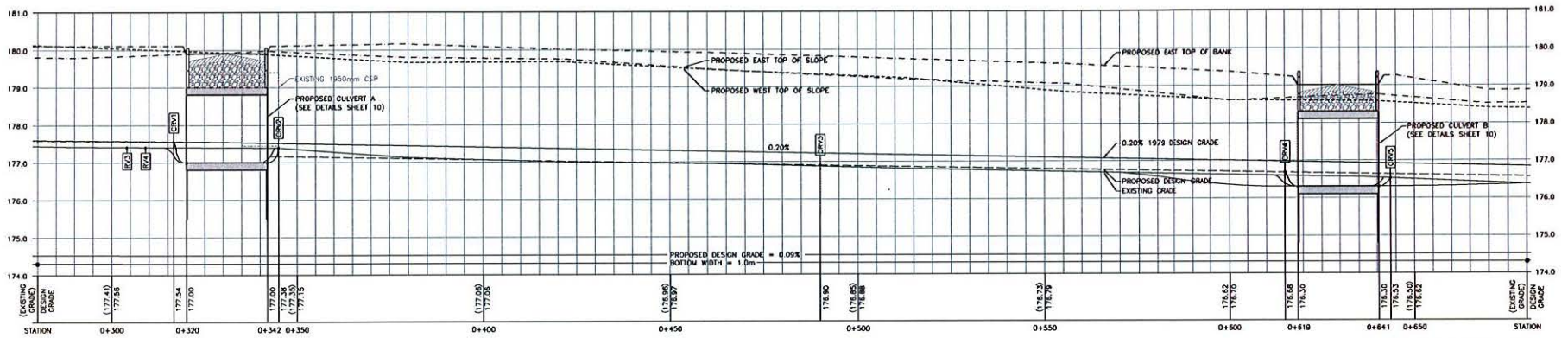
ROCKSDGE RESIDENTIAL DEVELOPMENT

**PROPOSED WORKS
 2ND CONCESSION DRAIN
 PLAN AND PROFILE
 STA. 0+000 TO 0+280**

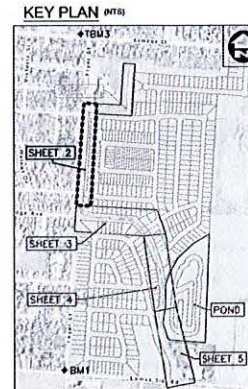
project no.	18-039
drawing no.	18-039-01
sheet no.	1 of 11
scale	AS SHOWN



PLAN - STA: 0 + 280 TO 0 + 680
SCALE: 1:500



PROFILE - STA: 0 + 280 TO 0 + 680
SCALE: 1:500 HORIZONTAL
1:50 VERTICAL



- LEGEND**
- DRAIN CENTERLINE
 - - - PROPOSED EAST TOP OF BANK
 - - - PROPOSED WEST TOP OF BANK
 - PROPOSED DESIGN GRADE
 - 1979 DESIGN GRADE
 - EXISTING GRADE
 - EXISTING SURFACE CONTOURS
 - PROPERTY LINES
 - CONTROL ROCK VANE
 - ROCK VANE
 - SNAKE HIBERNACULUM LOCATION

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

Root Engineering Inc.
Consulting Engineers
2 Nelson Street
Leamington, Ontario N8H 1G8
519-323-1621
2021-02-02

ALL DIMENSIONS ARE IN METRES
UNLESS OTHERWISE NOTED



3260 Anniversary Drive
Midway, Ontario Canada
N0C 4H4

Phone: 810-870-0020
Fax: (519) 573-0044
www.landmark-engineers.ca

Camille
Approved by

drawn by: EMK/JUN
date: JUNE 2021
checked by: DMK
date: JUNE 2021
approved by: DMK
date: JUNE 2021



No.	Description	Date
0	REQUIRED FOR ENGINEER'S REPORT & APPROVALS	19 JUNE 2021
1		
2		
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6		

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Scale: 1:500

A: DETAIL NO.
B: SHEET AN-ETE DETAIL FEED
C: SHEET DETAIL DRAWING ON

Client: ROCKSEDGE DEVELOPMENTS INC.

Project: ROCKSEDGE RESIDENTIAL DEVELOPMENT

Drawing title: PROPOSED WORKS 2ND CONCESSION DRAIN PLAN AND PROFILE STA. 0+280 TO 0+680

Project no.: 18-029
Drawing no.: 18-039-02
Sheet no.: 2 of 11
Scale: AS SHOWN

Project No. 18-039-03
 Date: 06/20/21
 Author: [Signature]
 Checked: [Signature]
 Approved: [Signature]

DATE	DESCRIPTION
15 JUN 2021	DESIGN FOR CONSTRUCTION REVIEW & APPROVALS
15 JUN 2021	REVISED
15 JUN 2021	REVISED
15 JUN 2021	REVISED
15 JUN 2021	REVISED
15 JUN 2021	REVISED
15 JUN 2021	REVISED
15 JUN 2021	REVISED
15 JUN 2021	REVISED

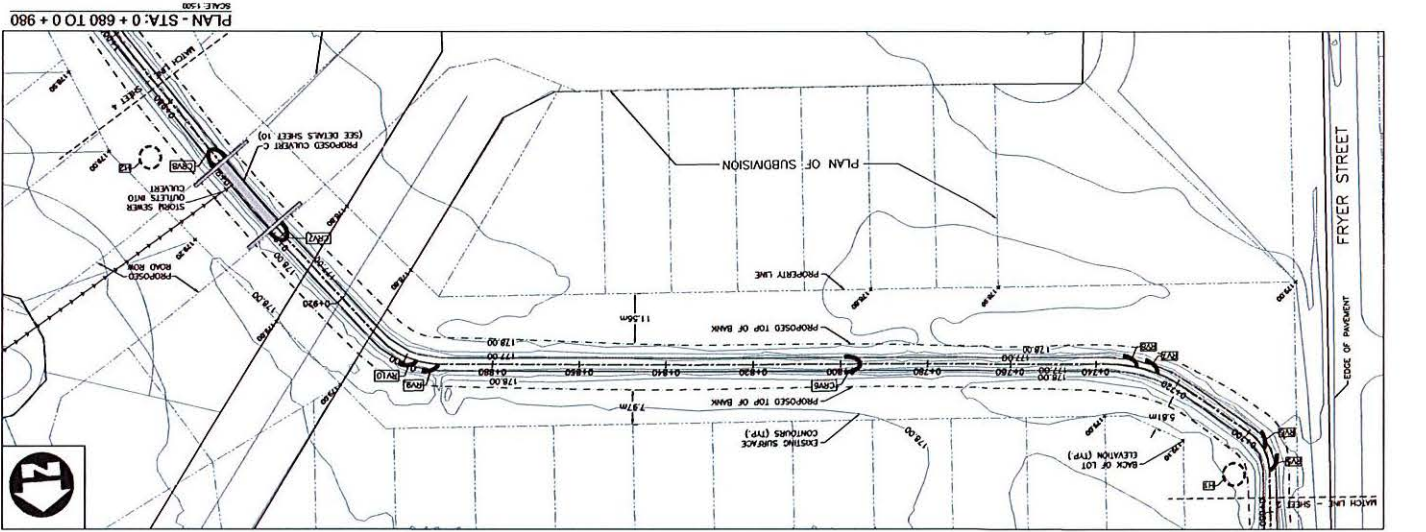
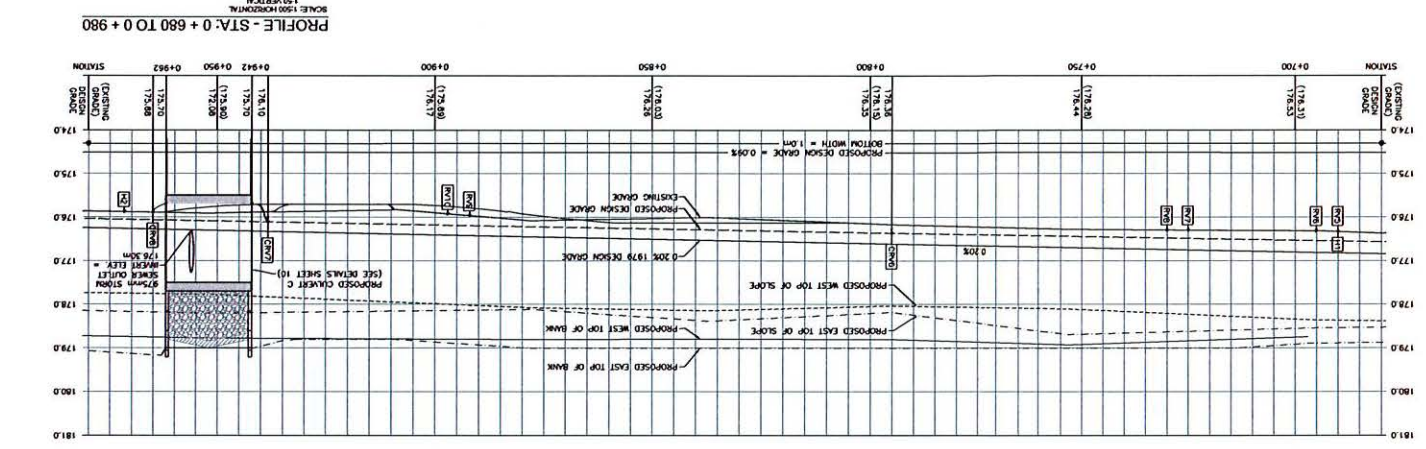
A. TITLE NO. B. SHEET NO. C. SHEET TOTAL
 1 1 1

ROCKLEDGE DEVELOPMENTS INC.
ROCKLEDGE RESIDENTIAL DEVELOPMENT
PROPOSED WORKS STA. 0+680 TO 0+980

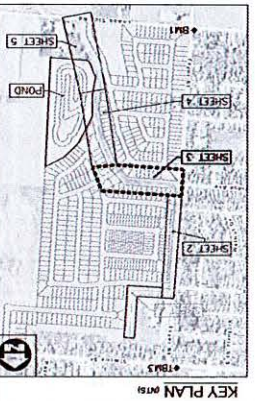
18-039-03
 3 of 11
 459-6044

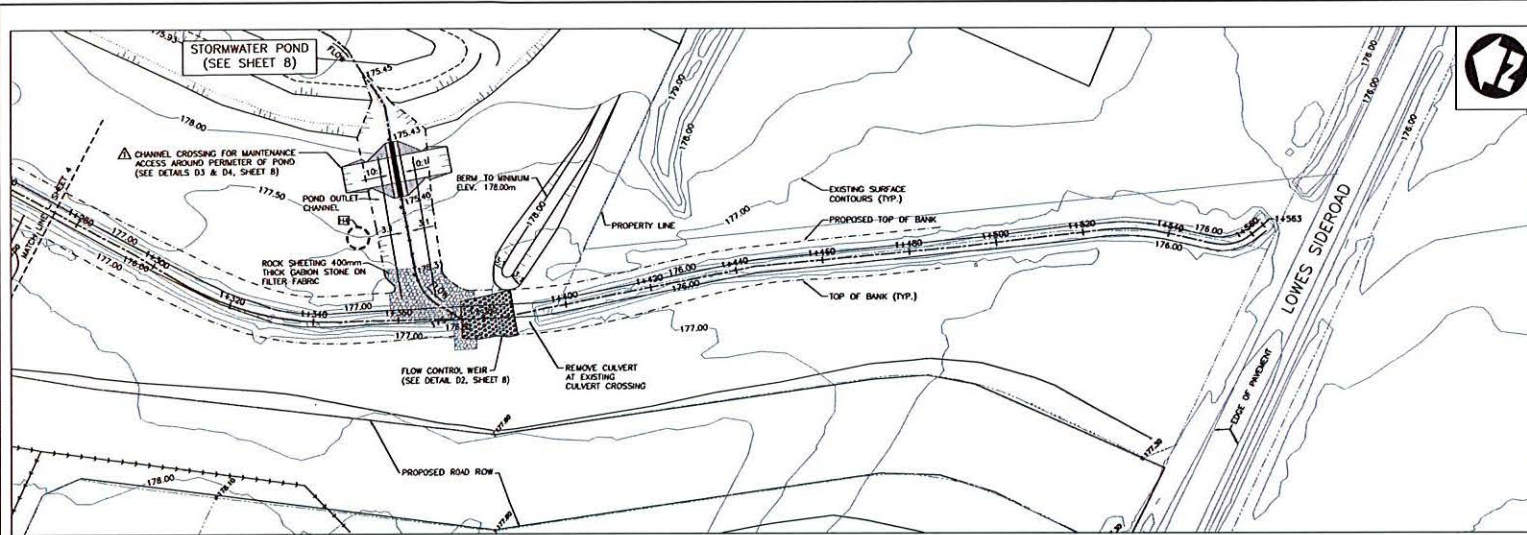
MEITERS
 Consulting Engineers
 9 Madison Street
 Leamington, Ontario N8R 1G8
 519-327-8671
 2022-02-02

Key Plan (N18)
 THESE PLANS HAVE BEEN CHECKED AT THE MUNICIPAL OFFICE. FULL SCALE PLANS MAY BE VIEWED.

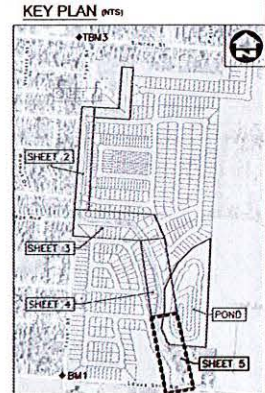


- LEGEND**
- SEWER MANHOLE LOCATION
 - ROCK VANE
 - CONTROL ROCK VANE
 - PROPERTY LINES
 - EXISTING SURFACE CONTOURS
 - EXISTING GRADE
 - 10% DESIGN GRADE
 - PROPOSED DESIGN GRADE
 - PROPOSED WEST TOP OF BANK
 - PROPOSED EAST TOP OF BANK
 - DRAIN CENTRELINE

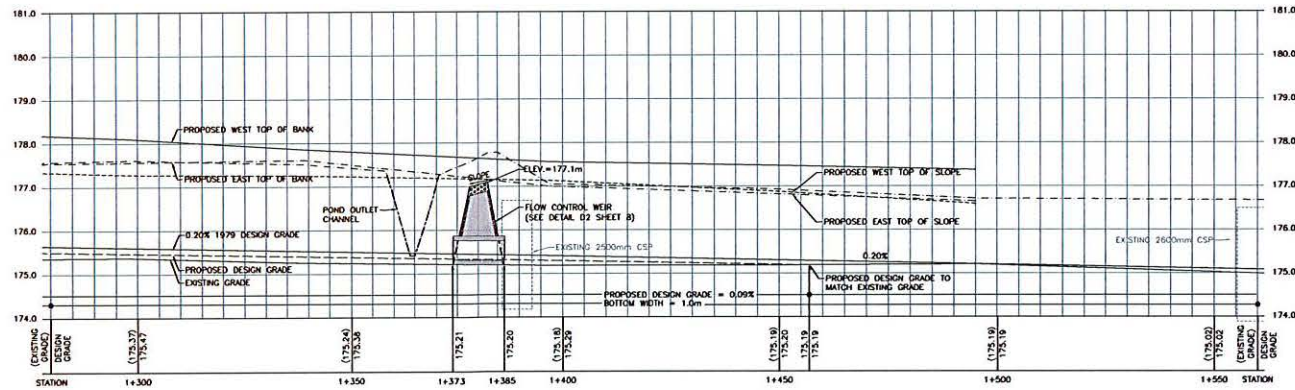




PLAN - STA: 1 + 280 TO 1 + 560
SCALE: 1:500



- LEGEND**
- DRAIN CENTER LINE
 - - - PROPOSED EAST TOP OF BANK
 - - - PROPOSED WEST TOP OF BANK
 - - - PROPOSED DESIGN GRADE
 - - - 1978 DESIGN GRADE
 - - - EXISTING GRADE
 - - - EXISTING SURFACE CONTOURS
 - - - PROPERTY LINES
 - CONTROL ROCKYVALE
 - ROCKYVALE
 - SNAKE HIBERNACULUM LOCATION



PROFILE - STA: 1 + 280 TO 1 + 560
SCALE: 1:500 HORIZONTAL
1:50 VERTICAL

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



2800 Ardenmore Drive
Mississauga, Ontario Canada
M5C 4K4
Phone: (905) 876-0059
Fax: (905) 876-0064
www.landmark-engineers.com

No.	Description	Date
0	ISSUED FOR ENGINEERING REPORT & APPROVALS	15 JULY 2021
1	CHANNEL CROSSING ADDED	10 AUG 2021
2		
3		
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ROCKSEDGE DEVELOPMENTS INC.

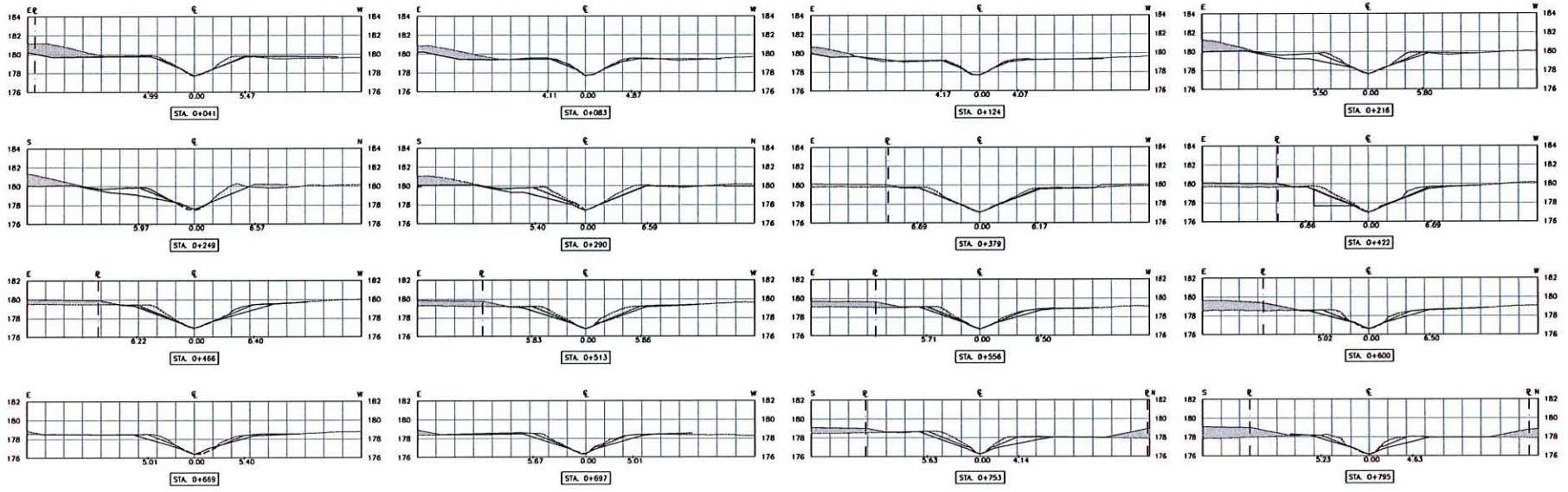
ROCKSEDGE RESIDENTIAL DEVELOPMENT

**PROPOSED WORKS
2ND CONCESSION DRAIN
PLAN AND PROFILE
STA. 1+280 TO 1+560**

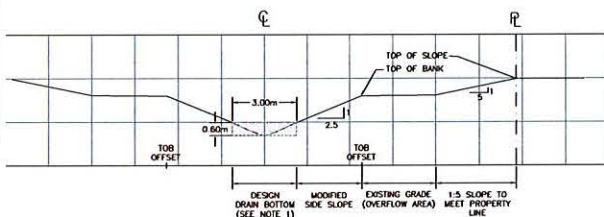
18-039
18-039-05
5 of 11
AS SHOWN

Road Engineering Inc.
Consulting Engineers
3 Nelson Street
Leamington, Ontario N8H 1G8
519-322-1621
2022-02-02

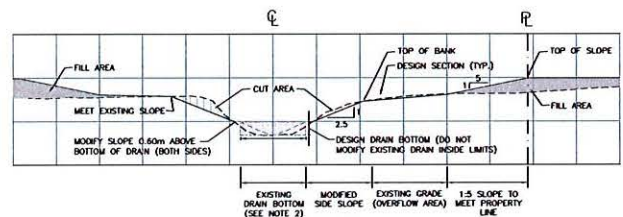




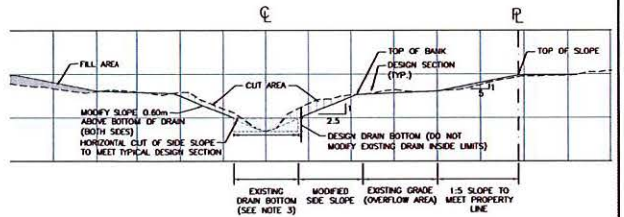
SECTION - STA: 0 + 41 TO 0 + 837
SCALE: 1:200



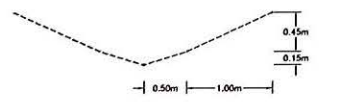
DESIGN SECTION - TYPICAL
SCALE: 1:100



MODIFIED SECTION - EXISTING DRAIN BOTTOM
WIDER THAN DESIGN SECTION
SCALE: 1:100



MODIFIED SECTION - EXISTING DRAIN BOTTOM
NARROWER THAN DESIGN SECTION
SCALE: 1:100



DESIGN SECTION - DRAIN BOTTOM
SCALE: 1:25

NOTES:

1. THE DESIGN SECTION REPRESENTS THE IDEALIZED DRAIN CROSS SECTION TO PROVIDE SUFFICIENT HYDRAULIC CAPACITY AND STABLE SIDE SLOPES. TO AVOID FISH HABITAT IMPACTS, IT IS PROPOSED THAT THE INITIAL DRAIN IMPROVEMENTS AVOID DISTURBANCE OF THE EXISTING DRAIN BOTTOM (DEFINED BY THE BOTTOM SLOPE OF DRAIN).
2. USE THIS SECTION WHEN THE EXISTING DRAIN BOTTOM IS WIDER THAN THE DESIGN DRAIN BOTTOM. FUTURE MAINTENANCE MAY REQUIRE INFILLING OF THE TOE OF SLOPE WITH GABION STONE OR OTHER SUITABLE MATERIAL.
3. USE WHEN THE EXISTING DRAIN BOTTOM IS NARROWER THAN THE DESIGN DRAIN BOTTOM.

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

Rood Engineering Inc.
Consulting Engineers
9 Nelson Street
Leamington, Ontario N8H 1G8
519.322-7621
2020-02-02

LEGEND

- EXISTING DRAIN PROFILE
- - - EXISTING BOTTOM OF DRAIN MODIFICATIONS
- PROPOSED DRAIN PROFILE
- ▨ CUT AREA
- ▨ FILL AREA



Engineers Inc.
2303 Alexander Drive
Windsor, Ontario, Canada
N9C 1K6
Phone: 519-251-0200
Fax: 519-251-0241
www.landmark-engineers.com

drawn by: EM/JUN
JUNE 2021
checked by: DMK
JUNE 2021
designed by: DMK
JUNE 2021

No.	Description	Date
0	ISSUED FOR ENGINEER'S REPORT & APPROVALS	15 JUL 2021
1		
2		
3		
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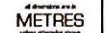
Scale Legend:
A: DETAIL NO.
B: SHEET AND ETC. DETAIL FIGS.
C: SHEET DETAIL DRAWING ON

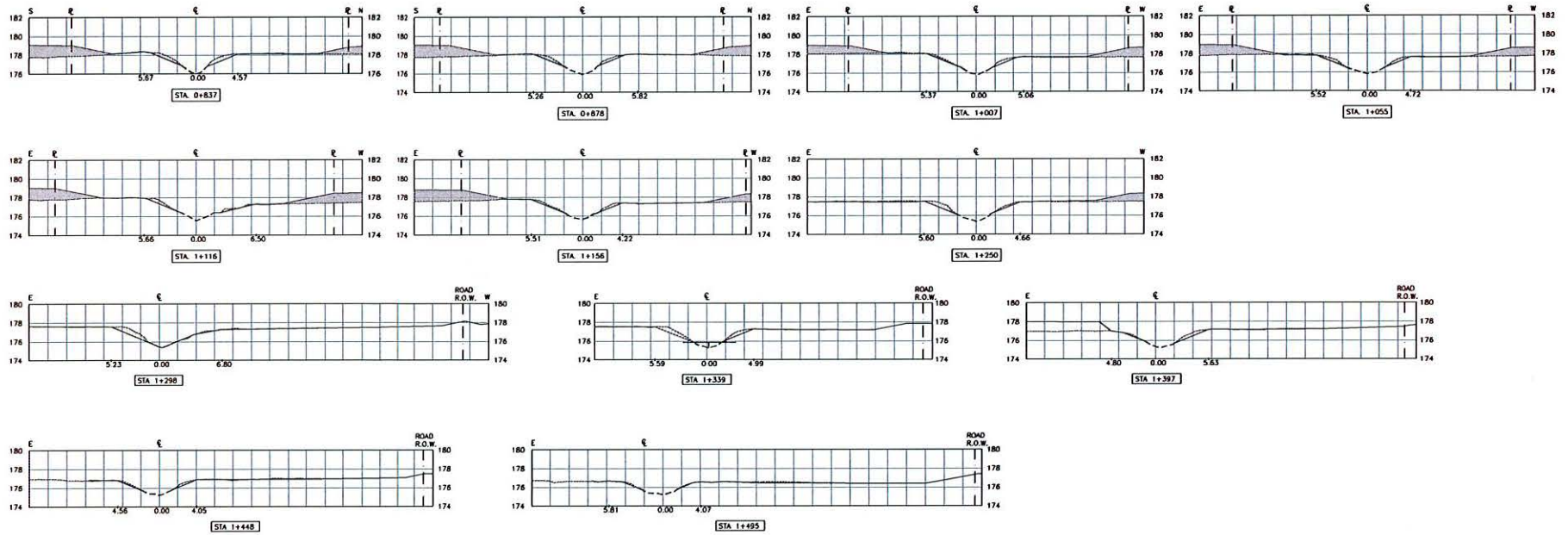
Client: ROCKSEDGE DEVELOPMENTS INC.

Project: ROCKSEDGE RESIDENTIAL DEVELOPMENT

Proposed Works Section: STA. 0+41 TO 0+837

Project No.: 18-039
Drawing No.: 18-039-06
Sheet No.: 6 of 11
Scale: AS SHOWN





SECTION - STA: 0 + 837 TO 1 + 495
SCALE: 1:200

LEGEND

- EXISTING DRAIN PROFILE
- EXISTING BOTTOM OF DRAIN WITH NO MODIFICATIONS
- PROPOSED DRAIN PROFILE
- [Hatched Box] CUT AREA
- [Solid Grey Box] FILL AREA

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

Road Engineering Inc.
Consulting Engineers
9 Nelson Street
Leamington, Ontario N8H 1G6
519-329-1621
2022-02-02

all drawings are in
METRES
unless otherwise stated



2000 Wellington Drive
Leamington, Ontario, Canada
N8C 4K4
Phone: (519) 879-0292
Fax: (519) 879-0944
www.landmark-engineers.com

Approved by: *[Signature]*

Drawn by: EMANJEN
Date: JUNE 2021
Designed by: DMK
Date: JUNE 2021
Checked by: DMK
Date: JUNE 2021



Rev.	Description	Date
0	ISSUED FOR ENGINEER'S REPORT & APPROVALS	15 JUNE 2021
1		
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Detail Legend

A
B
C

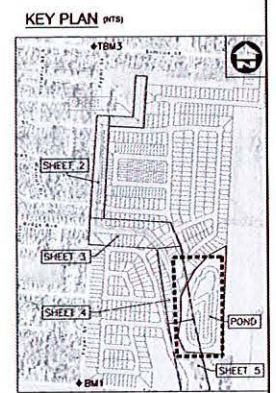
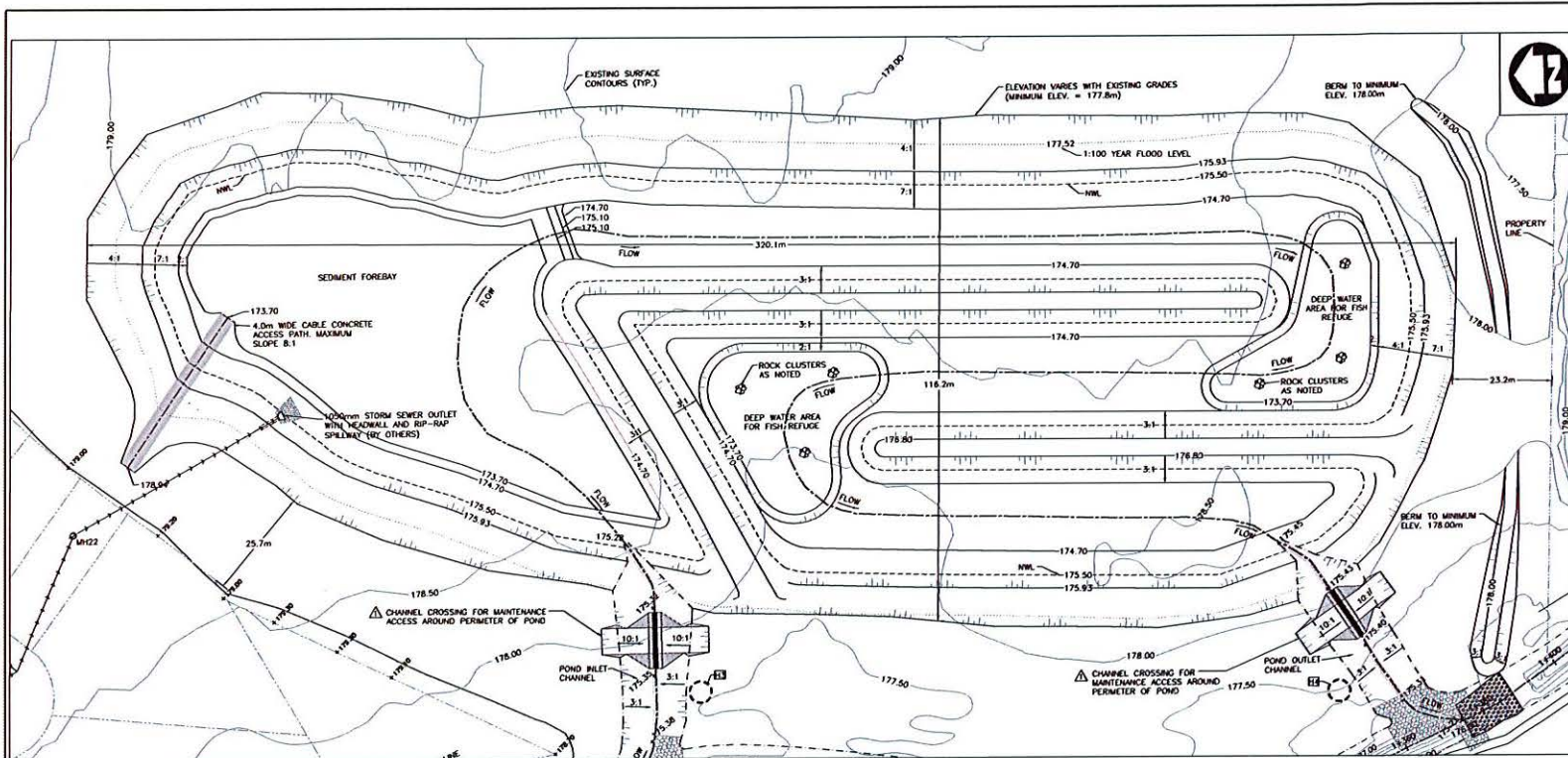
A: DETAIL NO.
B: SHEET OR EYE DETAIL FEED
C: SHEET DETAIL DRAWING ON

ROCKSEDGE DEVELOPMENTS INC.

ROCKSEDGE RESIDENTIAL DEVELOPMENT

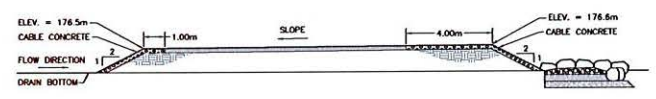
PROPOSED WORKS SECTION
STA. 0+837 TO 1+495

Project No.: 18-039
Drawing No.: 18-039-07
Sheet No.: 7 of 11
Scale: AS SHOWN

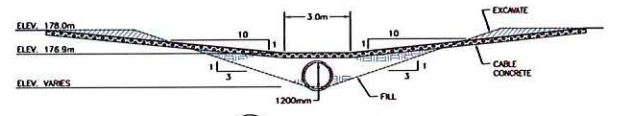


- LEGEND**
- DRAIN CENTERLINE
 - - - PROPOSED EAST TOP OF BANK
 - - - PROPOSED WEST TOP OF BANK
 - - - PROPOSED DESIGN GRADE
 - - - 100 YEAR FLOOD GRADE
 - EXISTING GRADE
 - EXISTING SURFACE CONTOURS
 - PROPERTY LINES
 - (CIV) CONTROL ROCK VANE
 - (RV) ROCK VANE
 - (H) SHAKE HIBERPOLACUM LOCATION
 - (R) ROCK CLUSTERS (3-5 ANHOUR ROCK UNITS EACH)

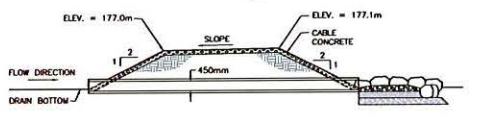
PLAN - POND
SCALE: 1:500



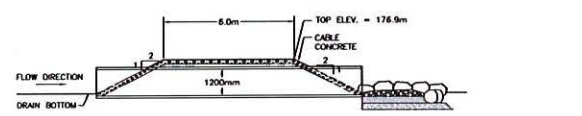
D1 SECTION - DIVERSION WEIR
SCALE: 1:100



D3 SECTION - MAINTENANCE ACCESS CHANNEL CROSSING
SCALE: 1:100



D2 SECTION - FLOW CONTROL WEIR
SCALE: 1:100



D4 PROFILE - MAINTENANCE ACCESS CHANNEL CROSSING
SCALE: 1:100

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

Rood Engineering Inc.
Consulting Engineers
4 Nelson Street
Leamington, Ontario N8H 1G6
519-321-1621
2022-02-02

METRES
MEMBER OF THE ASSOCIATION OF PROFESSIONAL ENGINEERS AND ARCHITECTS OF ONTARIO

Landmark
King's Highway 103
2000 Leamington Drive
Leamington, Ontario N8H 1G6
Phone: 519-876-6252
Fax: 519-876-6261
www.landmarkinc.com

Camille

designed by: **DMK/JEN**
date: **JUNE 2021**

designed by: **DMK**
date: **JUNE 2021**

checked by: **DMK**
date: **JUNE 2021**

Professional Engineer
Ontario
No. 12345

Rev.	Description	Date
0	ISSUED FOR CLIENT'S REPORT & APPROVALS	15 JUL 2021
1	CHANNEL CROSSING ADDED	10 AUG 2021
2		
3		
4		
5		
6		

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Scale: **A**
B
C

ROCKSDGE DEVELOPMENTS INC.

ROCKSDGE RESIDENTIAL DEVELOPMENT

A: DETAIL NO.
B: SHEET FOR ONE DETAIL FIELD
C: SHEET DETAIL DRAWING ONLY

Project No. **18-039**

Project Name: **PROPOSED WORKS POND PLAN**

Sheet No. **B** of **11**

Scale: **AS SHOWN**

