

THE CORPORATION OF THE TOWN OF AMHERSTBURG

BY-LAW NO. 2019 – 094

By-law to provide for the Repair and Improvement of Part of the Ouellette Drain West based on the Drainage Report by R.C. Spencer Associates Inc.

WHEREAS a request for repair and improvement of the on the Ouellette Drain West was received under section 78 of the Drainage Act;

WHEREAS Council of the Corporation of the Town of Amherstburg felt it necessary to appoint an engineer for the purpose of preparation of an engineer's report for the Repair and Improvement of Part of the Ouellette Drain West under section 78 of the Drainage Act;

WHEREAS Council of the Corporation of the Town of Amherstburg has authorized Dennis R. McCready, P. Eng., to prepare a report and said engineer's report dated June 28, 2019, can be referenced as Schedule A, as attached hereto;

WHEREAS \$244,000.00 is the amount to be contributed by the Town of Amherstburg for the drainage works;

AND WHEREAS the report was considered by the Amherstburg Drainage Board at the meeting held on Thursday, November 7th, 2019.

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 \$244,000.00 being the amount necessary for the improvements of the drainage works.

This project being the Repair and Improvement of Part of the Ouellette Drain West.

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) 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 as shown in the

schedule 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) For paying the amount \$36,994.00 being the amount assessed upon the lands and roads belonging to or controlled by the municipality a special rate sufficient to pay the amount assessed plus interest thereon shall be levied upon the whole rateable property in the Town of Amherstburg in each year for 5 years after the passing of this by-law to be collected in the same manner and at the same time as other taxes collected.

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

5. SCHEDULE OF ASSESSMENTS OF LANDS AND ROADS

Property Description				Estimated Assessment as per Report	Estimated Grants 33 1/3%	Annual Debenture Payment Amount
Lot or Part Lot No.	Concession	Geographic Township	Parcel Roll No.			
Pt Lot 5	2N	Anderdon	410-01925	\$1,393.00	\$0.00	313.57
Pt Lots 16-18	1	Anderdon	420-35400	\$31,857.00	\$0.00	7,171.03
Pt Lot 14	1	Anderdon	420-17000	\$2,099.00	\$0.00	472.49
Pt Lot 14	1	Anderdon	420-16900	\$4,087.00	\$0.00	919.99
Pt Lot 14	1	Anderdon	420-16800	\$13,263.00	\$0.00	2,985.51
---	1	Anderdon	500-31800	\$5,489.00	\$0.00	1,235.58
Pt Lot 5	2	Anderdon	410-04000	\$1,924.00	\$641.00	288.80
Pt Lot 6 RP	2	Anderdon	410-03000	\$4,110.00	\$1,370.00	616.78
Pt Lot 14	1N	Anderdon	420-32000	\$1,598.00	\$532.67	239.81
Pt Lot 14	1N	Anderdon	420-32600	\$2,347.00	\$782.33	352.21
Pt Lot 19-21	1	Anderdon	460-01000	\$9,774.00	\$3,258.00	1,466.76
Total				\$77,941.00	\$6,584.00	\$16,062.53

Read a first and second time and provisionally adopted this 25th day of November, 2019.



 MAYOR – ALDO DICARLO


 CLERK – PAULA PARKER

As per the decision of the Court of Revision on Jan 16, 2020, By-law 2019-094 be amended by deleting:

Property Description				Estimated Assessment as per Report
Lot or Part Lot No.	Concession	Geographic Township	Parcel Roll No.	
Lot 31		Anderdon	420-67005	\$105.00
Lot 32		Anderdon	420-67000	\$105.00
Pt Lot 14	1N	Anderdon	420-32000	\$1,598.00
Pt Lot 14	1N	Anderdon	420-32600	\$2,347.00
BLK 51			420-72200	\$297.00
Total				\$4,452.00

And substituting the following:

Property Description				Estimated New Assessment per the Court of Revision
Lot or Part Lot No.	Concession	Geographic Township	Parcel Roll No.	
Lot 31		Anderdon	420-67005	\$0.00
Lot 32		Anderdon	420-67000	\$0.00
Pt Lot 14	1N	Anderdon	420-32000	\$1,087.00
Pt Lot 14	1N	Anderdon	420-32600	\$742.00
BLK 51			420-72200	\$2,623.00
Total				\$4,452.00

Read a third time and finally passed this 18th day of December 2019 ~~2020~~



 MAYOR - ALDO DICARLO



 CLERK - PAULA PARKER

MUNICIPAL DRAINAGE REPORT

**REPAIR AND IMPROVEMENT
OF PART OF
THE OUELLETTE DRAIN WEST**

TOWN OF AMHERSTBURG



RC SPENCER ASSOCIATES INC.
Consulting Engineers

Windsor: 800 University Ave. W. - Windsor ON N9A 5R9
Leamington: 18 Talbot St. W. - Leamington ON N8H 1M4
Chatham-Kent: 138 King St. W. Unit 102 - Chatham ON N7M 1E3

File No. 16-557

June 28, 2019

June 28, 2019

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

Re: Repair and Improvement of Part of the Ouellette Drain West
Town of Amherstburg
Project No. 16-557

Mayor and Members of Council:

1.0 AUTHORIZATION

In accordance with your instructions, we have prepared the following report that provides for the repair and improvement of the Ouellette Drain West.

The Municipality has issued instructions to carry out the necessary repair and improvements to this drain under the provisions of the Drainage Act. Our appointment and the works relating to the repair and improvement of the drain are in accordance with Section 78 of the “Drainage Act, R.S.O. 1990, Chapter D.17”. Accordingly, the firm of RC Spencer Associates Inc. has performed all of the necessary surveys, investigations, etc., and we report thereon as follows.

2.0 CURRENT DRAINAGE REPORT AND HISTORY

A detailed review of the Ouellette Drain West has indicated that this drain serves approximately 217 hectares of land. The Ouellette Drain West begins just west of the Essex Terminal Railway at the farm land with Roll No. 460-01000 and drains west through a number of lands where it finally outlets into the Detroit River. A portion of the Ouellette Drain West has been enclosed through the farm lands with Roll No. 460-41226 and 460-41143 with a 300mm diameter tile drain that outlets into a 900mm diameter CSP culvert that crosses Middle Side Road. The remainder of the drain is an open ditch with the exception of the few culverts through Pointe West Golf Course and road crossings.

The most recent Engineer’s report concerning the Ouellette Drain West was a preliminary report prepared by Don Joudrey, P.Eng. dated December 6, 2012. The purpose of the preliminary report was to determine the most suitable outlet for the Matte-Beneteau Drain. The Engineer was to study the work that would be needed on both the Ouellette Drain East and the Ouellette Drain West, to provide a sufficient outlet for the Matte-Beneteau Drain. The Engineer determined that the Ouellette Drain East was better suited as an outlet for the Matte-Beneteau Drain. A report was prepared by Don Joudrey, P.Eng. dated August 22, 2014 for the repair and improvement of the Ouellette Drain East. As the result of an appeal, an amended report dated February 8, 2016 was prepared pursuant to an order of the Ontario Drainage Tribunal.

A history of work done under an Engineer's report on the Ouellette Drain West is as follows:

- **September 21, 1988 by Nick J. Peralta, P.Eng.:** the drainage report provided for the installation of an 18.9m length of 925mm diameter CSP extending from the southwest end of the existing culvert across Middle Side Road.
- **May 25, 1987 by R. Lucente, P.Eng.:** the drainage report provided for the lowering, widening and realignment of the Ouellette Drain West through Pointe West Gardens Ltd. lands including the construction of a road culvert for the proposed Golfwood Drive.
- **May 21, 1985 by J.M. Horan, P.Eng.:** the drainage report provided for the repair and improvement of the Ouellette Drain West. The recommended works consisted of the excavation and levelling of material for approximately 1,650m of open drain as well as brushing, side-slope improvements and culvert repairs.
- **May 20, 1971 by C. G. Russell Armstrong, P.Eng.:** the drainage report provided for the repair and improvement of the Ouellette Drain West. The recommended works consisted of straightening the drain in areas where severe erosion was occurring due to sharp bends in the drain, and that the whole drain be cleaned, deepened and otherwise improved.
- **May 14, 1964 by C. G. Russel Armstrong, P.Eng.:** the drainage report provided for the repair and improvement of the Ouellette Drain West. The recommended works consisted of the installation of a tile drain in the farm land on Lot 19, the installation 80 lineal feet of 15" diameter CSP across Middle Side Road, and that the drain be improved as an open drain of the form size and depth shown in the profile attached to the report.
- **May 8, 1952 by C. G. Russell Armstrong, P.Eng.:** the drainage report provided for the repair and improvement of part of the Ouellette Drain West near its outlet into the Detroit River. The work commenced at the east end of the road culvert beneath the travelled portion of County Road 20 and proceeded upstream for a length of approximately 60 m. The banks of the open drain were eroding and the drain had become wider, encroaching upon the adjoining residential lands. The recommended works consisted of the construction of sloping erosion control walls on both sides of the drain consisting of horizontal courses of limestone blocks.

3.0 SITE MEETING

After reviewing drainage information and the previous Engineer's reports on the drain, an on-site meeting was held on November 7, 2016 with the landowners in the watershed. A summary of the on-site meeting discussions is included in Appendix 'E'.

4.0 INSPECTION AND SURVEY

Topographic survey data was gathered on the alignment of the Ouellette Drain West in the area where erosion has been occurring immediately upstream of County Road 20. The open channel was inspected, as well as, the closest upstream and downstream structures.

5.0 WATERSHED DESCRIPTION

The drainage area for the Ouellette Drain West was determined through a review of current reports for the surrounding drains. The total land area situated within the drainage basin, within the Town of Amherstburg, is approximately 217 hectares, as shown on the attached drawing. This area is a mixture of residential and agricultural properties which also includes Pointe West Golf Course.

6.0 EXISTING CONDITIONS

The Ouellette Drain West currently runs behind the dwelling located at 751 County Road 20 separating the property in two. Existing stacked limestone erosion protection had been installed in the 1952 drainage report on the banks of the drain near the outlet. Continuous freeze thaw cycles and erosion have caused significant damage to the stacked limestone erosion protection. Consequently, the north bank of the Ouellette Drain West has been slowly eroding towards the adjacent dwelling.

An existing foot bridge at station 0+042 provides a means of access to the remaining portion of the property at 751 County Road 20. Information on the installation of the bridge is unknown. The bridge is in deteriorated condition and may soon become unsafe for use.

The drain banks from Stations 0+000 to 0+042 contain little to no brush; however, Stations 0+042 to 0+060 contain significant vegetation along both drain banks.

7.0 LANDOWNER'S REQUEST

The owner of Roll No. 420-16800 (751 County Road 20), submitted a written request to the Town in 2016, to have the Ouellette Drain West repaired and improved under Section 78 of the Drainage Act. The landowner wanted to investigate the possibility of enclosing a portion of the open drain on their property. At the on-site meeting it was determined that we should examine various options for drain enclosures and remediation of the outlet portion of Ouellette Drain West.

A meeting was held with the owner to discuss the drain enclosure and accompanying costs that would be incurred if we were to proceed with the design in the final report. Another option of a drain remediation with no enclosures, was also discussed which helped reduce the cost of the project. Due to the high costs of providing a drain enclosure, the landowner decided to proceed with the option of keeping the drain as an open drain and having the side slope protection repaired and improved.

8.0 DESIGN CONSIDERATIONS

We recommend that any future subdivisions and other developments that occur in the watershed, have their own storm water management systems with peak outflow rates restricted to a 2-year predeveloped flow.

There have been no requests for increasing the capacity of the drain and no complaints have been received regarding flooding.

9.0 **RECOMMENDATIONS**

Based on our review of the history, the information obtained during the site meeting, subsequent discussions with the landowners and the Municipality, a review of the survey data, and our detailed analyses and designs, we recommend that the Ouellette Drain West be repaired and improved by realigning and installing vertical gabion basket retaining walls to provide drain bank stability. More specifically, the proposed work is as follows:

- a) That any deleterious materials excavated from the drain or found in the working areas shall be removed and disposed of off-site. This includes tree limbs, garbage, rubble, limestone pieces from the old retaining wall, etc. **The owner of Roll No. 420-16800 (Municipal # 751 County Road 20) has indicated that suitable excess excavated materials may be deposited and spread on the south side of the drain from Station 0+040 to Station 0+060, instead of hauling and disposing of the material off-site.**
- b) We recommend that the limestone retaining walls constructed under the 1952 drainage report, be removed and disposed of off-site, **unless the owner of Roll No. 420-16800 (Municipal # 751 County Road 20) indicates that they would like to have the material left on the south side of the drain from Station 0+040 to Station 0+060, instead of hauling and disposing of the material off-site.**
- c) The removal and disposal of brush and trees from the existing drain in the working area.
- d) We recommend that the existing foot bridge at station 0+042 be removed, salvaged and placed in a location that is acceptable with the landowner of Roll No. 420-16800.
- e) We recommend that vertical gabion basket retaining walls be constructed and installed to the alignment and grades shown in the drawings, and with accordance to the manufacturer's shop drawings and the construction specifications attached to this report. The drain banks above the retaining walls shall be reshaped and constructed to the slopes shown on the drawings attached to this report.
- f) The installation of quarried rock erosion protection and filter fabric at four locations as follows:
 - i) Station 0+000 North bank
 - ii) Station 0+000 South bank
 - iii) Station 0+060 North bank
 - iv) Station 0+060 South bank
- g) We recommend that the new drain bank slopes and any bank areas disturbed by the work be reseeded. Further, any lawn or grassed areas, landscaping; and any paved areas disturbed by the operation of equipment shall also be repaired to preconstruction conditions. The property owner shall have the opportunity to salvage the existing plants, shrubs and other items from within the landscaped area located within the working corridor, for their own use elsewhere.
- h) We recommend that the contractor implement sediment control measures during construction. Other environmental protection measures will be implemented, as well as fish screening.

- i) We recommend that the contractor implement traffic control measures during construction.
- j) We recommend that the works constructed under this report be herein after considered a part of the Ouellette Drain West. We recommend that these works be done and the related costs be assessed under the provisions of the Drainage Act.
- k) Access and working corridors are required along the drain for the construction of the work recommended in this report and for future maintenance of the drain. These areas and corridors shall be made available by the property owners in the future for access along the drain and for the operation of construction equipment. These areas shall remain unobstructed and the property owners must realize that anything constructed along the drain such as driveways, landscaping, etc. may be damaged in the future and the adjacent property owners will be responsible for the loss or replacement of any **new** features placed or constructed in the working areas or corridors.

Sections 3.0 and 4.0 of the Special Provisions in Appendix B, describes the access areas and working areas required for construction and future maintenance of the Ouellette Drain West.

10.0 DRAWINGS AND SPECIFICATIONS

As part of this report, we have attached design drawings for the proposed work. There is a set of seven drawings:

- a) Drawing No. 1 – A watershed plan showing the drainage area plan and the location of the drainage works.
- b) Drawings Nos. 2 and 3 - Plan enlargements showing “Parcel Numbers” for the properties in the watershed that coincide with the “Parcel Numbers” in the Schedule of Assessment.
- c) Drawing No. 4 – An enlarged plan showing the site of the work with removals and construction details and notes.
- d) Drawing No. 5 – A drawing showing a profile view of the drain and typical cross-sections of the drain.
- e) Drawing No. 6 – A drawing showing cross-sections along the drain.
- f) Drawing No. 7 – A drawing showing details of the gabion basket walls.

Also attached as **Appendix ‘B’** are:

- a) **‘Special Provisions’** for the proposed work which set out specifications and construction details for the various aspects of the required works to be conducted under this report;
- b) **‘General Specifications for Open Drains’**;
- c) **‘Environmental Protection Special Provisions’**.

Also attached as **Appendix ‘C’** is an ‘**Endangered Species Act Review**’ providing pertinent information.

Also attached as **Appendix ‘D’** is correspondence relating to environmental issues.

11.0 ALLOWANCES

In accordance with the provisions of “The Drainage Act, 1990” allowances are provided to be paid to those landowners from which land is required to be used for the construction of a new drain or for the establishment of an easement for the construction and future maintenance of a drain or for land required to dispose of excavated material or for land required to obtain access to a municipal drainage system.

In accordance with Section 29 (a) and Section 29 (b) of the Drainage Act, we find that each of the affected landowners is entitled to and should receive compensation for land used for permanent or temporary access to the working space. This section shall also provide compensation for land used for temporary material storage required during construction. This amount is calculated at a nominal rate of \$20,000 per hectare (\$8,094 per acre) and is shown in the following Schedule.

SCHEDULE OF ALLOWANCES

Roll No.	Con.	Lot or Part	Owner	Allowances
420-17000	1	Pt Lot 14	Jose Dupont & Therea Anne Whelan	\$ 360.00
420-16900	1	Pt Lot 14	Tracy Anne Foreman	\$ 930.00
420-16800	1 S	Pt Lot 14	Joseph Anthony & Roxanne M Ouellette	\$ 360.00
TOTAL ALLOWANCES				\$ 1,650.00

12.0 ESTIMATE OF COST

Our estimate of the total cost of the proposed work, including the cost of the engineer’s report and all incidental expenses, is as follows:

CONSTRUCTION ITEMS

1. Prepare access to work area via entrance at County Road 20 Complete at Lump Sum. \$ 1,000.00
2. Provide traffic control, signs and safety provisions for working along County Road 20. Complete at Lump Sum. \$ 2,500.00

3. Remove and dispose of existing limestone erosion protection. Approximately 175 square metres.	\$ 5,250.00
4. Remove and dispose of brush and trees from existing drain.	\$ 7,000.00
5. Carefully remove, salvage and place existing wooden foot bridge at a location acceptable by landowner of 751 County Rd 20.	\$ 1,000.00
6. Supply material for gabion basket retaining wall including PVC gabion baskets, SS clips, Geotextile cloth and perforated drainage tile as per manufacturer's recommendations.	\$ 46,000.00
7. Supply quarried rock for gabion basket retaining wall.	\$ 24,285.00
8. Labour and installation of gabion baskets.	\$ 45,000.00
9. Excavation along banks and drain bottom to accommodate for installation of gabion baskets.	\$ 7,500.00
10. Supply, place and compact clear stone backfill behind gabion baskets.	\$ 5,500.00
11. Supply, place and compact granular 'A' backfill behind gabion baskets and for 150mm thick granular walkway.	\$ 8,500.00
12. Supply and install a total of approximately 15.0 cubic metres (30 tonne) of quarried rock protection along the north and south bank at both ends of the gabion baskets, approximately 300 mm in depth including all required excavation, disposal of surplus materials and placement of geotextile non-woven filter fabric.	\$ 1,800.00
13. Restoration of existing asphalt driveways using 40mm HL3 on 50mm HL4 on 300mm Granular 'A'. (approximately 175 square metres)	\$ 13,000.00
14. Restoration of existing grassed and landscaped areas including seeding of drain banks.	\$ 2,500.00
15. Construct, maintain and remove clay earth dams and bypass pumps as required for dewatering.	\$ 7,500.00
16. Sediment Control and Fish Protection	\$ 1,500.00
SUB TOTAL FOR CONSTRUCTION	\$ 179,835.00
H.S.T. ON CONSTRUCTION (1.76% NET)	\$ 3,165.00
TOTAL FOR CONSTRUCTION (including net H.S.T.)	\$ 183,000.00

INCIDENTALS

Allowances under Section 29	\$ 1,650.00
Survey, report, estimate, specifications and drawings.	\$ 45,645.00
Contract administration and inspection.	\$ 5,000.00
Geotechnical investigation and report.	\$ 3,000.00
Cost of ERCA Permit	\$ 800.00
Contingency Allowance (approximately 2.1%)	\$ 3,850.00
SUBTOTAL FOR INCIDENTALS	\$ 59,945.00
H.S.T. ON INCIDENTALS (1.76% NET)	\$ 1,055.00
TOTAL FOR INCIDENTALS (including net H.S.T.)	\$ 61,000.00
TOTAL ESTIMATED COST OF PROJECT	\$ 244,000.00

The estimate provided in this report was prepared according to current materials and installation prices as of the date of this report. In the event of delays from the time of filing of the report by the Engineer to the time of tendering the work, it is understood that the estimate of cost is subject to inflation. The rate of inflation shall be calculated using the Consumer Price Index applied to the cost of construction from the date of the report to the date of tendering.

13.0 UTILITIES

It may become necessary to temporarily or permanently relocate utilities that may conflict with the construction recommended under this report. In accordance with Section 26 of the Drainage Act, we assess any relocation cost against the public utility having jurisdiction. Under Section 69 of the Drainage Act, the public utility is at liberty to do the work with its own forces, but if it should not exercise this option within a reasonable length of time, the Municipality will arrange to have this work completed and the costs will be charged to the appropriate public utility.

14.0 ASSESSMENT SCHEDULE

We have assessed the estimated costs against the affected lands and roads as listed in "Schedule A" under the columns labelled "Benefit" and "Outlet Liability". An explanation of the assessments is contained in Section 15.0.

15.0 ASSESSMENT RATIONALE

15.1 General Information, Definitions and Authority to Assess Costs

Under the Drainage Act, assessments against individual properties are normally comprised of three (3) assessment components. These are “Benefit, “Outlet” and “Special Benefit”.

The following terms related to assessments are defined and described in the Drainage Act as follows:

- **Benefit** – means the advantages to any lands, roads, buildings or other structures from the construction, improvement, repair or maintenance of a drainage works, such as will result in a higher market value or increased crop production or improved appearance or better control of surface or subsurface water or any other advantages relating to the betterment of lands, road, buildings or other structures.

Assessment for Benefit is provided for under Section 22 of the Act wherein lands, roads, buildings, utilities or other structures that are increased in value or are more easily maintained as a result of the construction, improvement, maintenance or repair of a drainage works may be assessed for benefit.

- **Outlet Liability** – means the part of the cost of the construction, improvement or maintenance of a drainage works that is required to provide such outlet or improved outlet.

Assessment for Outlet Liability is provided for under Section 23(1) of the Act wherein lands and roads that use a drainage works as an outlet, or for which, when the drainage works is constructed or improved, an improved outlet is provided either directly or indirectly through the medium of any other drainage works or of a swale, ravine, creek or watercourse, may be assessed for outlet liability. The assessment amount is provided for under Section 23(3) of the Act wherein the assessment for outlet liability shall be based upon the volume and rate of flow of the water artificially caused to flow upon the injured land or road or into the drainage works from the lands and roads liable for such assessments.

- **Special Benefit** – means any additional work or feature included in the construction, repair or improvement of a drainage works that has no effect on the functioning of the drainage works. No such work is involved with this project and no Special Benefit assessments are shown in the attached Schedule of Assessment.
- **Public Utility** – means a person having jurisdiction over any water works, gas works, electric heat, light and power works, telegraph and telephone lines, railways however operated, street railways and works for the transmission of gas, oil, water or electrical power or energy, or any similar works supplying the general public with necessities or conveniences.
- **Road Authority** – means a body having jurisdiction and control of a common or public highway or road, or any part thereof, including a street, bridge and any other structure incidental thereto and any part thereof.

Assessment to Road Authority is provided for under Section 26 of the Act wherein in addition to all other sums lawfully assessed against the property of a public utility or road authority under this Act, and notwithstanding that the public utility or road authority is not otherwise assessable under this Act, the public utility or road authority shall be assessed for and shall pay all the increase of cost of such drainage works caused by the existence of the works of the public utility or road authority.

15.2 Determination of Assessments

For the purpose of preparing the Schedule of Assessment for this report, the following criteria have been used:

The cost of performing the drainage improvement and overhead costs are estimated at \$244,000. This amount is assessed as Benefit and Outlet assessments and is divided as 10% Benefit (\$24,400) and 90% Outlet (\$219,600).

- a) Total Value of Benefit for the Ouellette Drain West was calculated to be \$24,400 which sum was then assessed to the three affected private properties adjacent to the drain and County Road 20. The Benefit assessments were proportioned relative to our estimation of the amount of benefit that each property will receive from the recommended work. The Benefit has been proportioned 55% against Roll No. 420-16800, 20% against Roll No. 420-16900, 10% against Roll No. 420-17000 and 15% against County Road 20.
- b) Total Value of Outlet Liability for the Ouellette Drain West was calculated to be \$219,600 which sum was assessed to all affected lands and roads in the drainage basin that are situated upstream of the work, at an average rate of \$483.30 per equivalent hectare of agricultural land. Outlet assessments were based on the property land use which has an affect on the storm runoff from the lands. Road properties are multiplied by a factor of 5 to determine equivalent agricultural hectares. Residential lands are multiplied by varying factors up to a maximum of 3 to determine equivalent agricultural hectares.

We consider all of the items of work recommended in this report to be proratable items. All of the assessments are proratable. Should additional costs be incurred to deal with utilities and roads under Section 26 of the Drainage Act, those costs are non-proratable.

16.0 FUTURE MAINTENANCE

We recommend that work carried out under this report and the portion of the open drain from Station 0+000 to Station 0+060, be maintained and repaired in the future by the Municipality. The costs shall be levied against the affected lands and roads in the Ouellette Drain West watershed pro-rata to the assessments contained in "Schedule A" attached to this report.

The remainder of Ouellette Drain West shall be maintained in accordance with the most current bylaw or bylaws governing the portion of the drain being maintained.

Furthermore, all of the above provisions for the future maintenance of these works remain as noted above until otherwise determined under the provisions of the 'Drainage Act RSP 1990 Chapter D. 17'.

17.0 FISHERIES ISSUES

The Federal Fisheries Act requires that no deleterious substances be introduced to fish habitat and that there be no net loss of fish habitat as a result of any undertaking. Any activities that may introduce deleterious substances or result in loss of fish habitat may require a permit from the Minister of Fisheries, Oceans and the Canadian Coast Guard.

A self-assessment of the project has been completed and an application for a DFO Review was submitted. A DFO review was made and based on the protection plan provided, the proposal has been identified as a project where a Fisheries Act authorization is not required given that serious harm to fish can be avoided by following standard measures, and a permit under the Species at Risk Act is not required given that the mitigation measures set out in the fish protection plan are followed. The project as proposed is not considered to need an authorization from the Program under the Fisheries Act in order to proceed. The Contractor will be responsible to meet the other requirements of federal, provincial and municipal agencies.

18.0 GRANTS

In accordance with the provisions of Sections 85, 86 and 87 of the Drainage Act, a grant in the amount of 33-1/3 percent of the assessment eligible for a grant may be made in respect to the assessment made under this report upon privately owned lands used for agricultural purposes. The assessments levied against privately owned agricultural land must also satisfy all other eligibility criteria set out in the Agricultural Drainage Infrastructure Program policies. Some of the privately owned lands are used for agricultural purposes and are eligible under the A.D.I.P. policies. We are not aware of any lateral drains involved in this work that would not be eligible for a grant. We recommend that application be made to the Ontario Ministry of Agriculture and Food in accordance with Section 88 of the Drainage Act, for this grant, as well as for all other grants for which this work may be eligible.

19.0 ORDER OF PROCEDURE UNDER THE DRAINAGE ACT – SECTION 78

The following is the general order of procedure that is followed to repair and improve a municipal drainage system pursuant to Section 78 of the Drainage Act. As this is only a summary, additional details may be obtained from the Town Clerk or Engineer.

Please note that a Drainage Board has been appointed under Municipal by-law to carry out certain duties of Council pursuant to the Drainage Act, such as the meeting to consider the report and the Court of Revision.

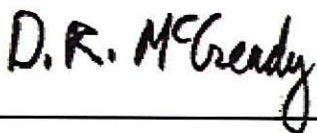
- a) Council determines that repair and improvements are required.
- b) Council appoints an engineer.
- c) Engineer conducts on site meeting.
- d) Engineer conducts survey of the drain.
- e) Engineer prepares drainage report and provides copy to the Municipality.
- f) Council considers drainage report at a public meeting with the affected landowners.

- g) At the meeting for consideration the Municipal Council may adopt the Drainage Report. If adopted the Municipal Clerk prepares a provisional by-law for the recommended work and sends copies of the by-law to affected parties and arranges a second meeting of Council for the Court of Revision.
- h) The Court of Revision is held at a subsequent meeting with the affected landowners to discuss any disputes regarding assessment of cost to lands and roads.
- i) Council passes by-law for construction of the work after statutory waiting periods and appeal periods expire.
- j) Tenders are received by the Municipality to perform the recommended work and construction is carried out. Inspection of the construction work may be provided by the Town Drainage Superintendent or by an inspector from the engineering office.
- k) Upon completion of construction the Municipal Clerk will finalize all applicable costs and submit grant applications to the Ministry of Agriculture, Food and Rural Affairs, if applicable. The clerk will then send a final net assessment to the affected landowners.

All of which is respectfully submitted.

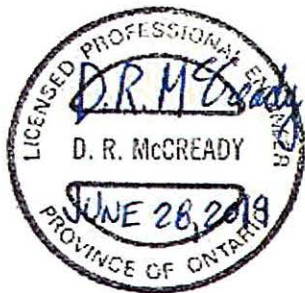
RC SPENCER ASSOCIATES INC.

PREPARED BY:



Dennis R. McCready, B.A.Sc., P. Eng.

Appointed Engineer
June 28, 2019



REVIEWED BY:



Shane LaFontaine, M. Eng., P. Eng.

June 28, 2019



APPENDIX 'A'

SCHEDULE OF ASSESSMENT

FOR THE

REPAIR AND IMPROVEMENT

OF PART OF THE

OUELLETTE DRAIN WEST

IN THE

TOWN OF AMHERSTBURG

COUNTY OF ESSEX

**SCHEDULE A
SCHEDULE OF ASSESSMENT
REPAIR AND IMPROVEMENT OF PART OF THE OUELLETTE DRAIN WEST
TOWN OF AMHERSTBURG**

A) MUNICIPAL LANDS							
PARCEL NO.	Description	AREA AFFECTED (Hectares)	OWNER	(SECTION 22) BENEFIT	(SECTION 23) OUTLET LIABILITY	(SECTION 24) SPECIAL BENEFIT	TOTAL ASSESSMENT
1A	County Road 20 (Front Street N)	0.000	County of Essex	\$ 3,660.00	\$ -	\$ -	\$ 3,660.00
1B	County Road 5 (Conc. Road 2 N)	2.137	County of Essex	\$ -	\$ 5,186.00	\$ -	\$ 5,186.00
2	County Road 10 (Middle Side Road)	6.520	County of Essex	\$ -	\$ 15,778.00	\$ -	\$ 15,778.00
3	Links Drive	0.454	Town of Amherstburg	\$ -	\$ 1,099.00	\$ -	\$ 1,099.00
4	Clubview Drive	2.301	Town of Amherstburg	\$ -	\$ 5,568.00	\$ -	\$ 5,568.00
5	Fescue Lane	0.330	Town of Amherstburg	\$ -	\$ 799.00	\$ -	\$ 799.00
6	Ironwood Drive	1.550	Town of Amherstburg	\$ -	\$ 3,751.00	\$ -	\$ 3,751.00
7	Wright Avenue	0.242	Town of Amherstburg	\$ -	\$ 586.00	\$ -	\$ 586.00
8	Turner Crescent	0.675	Town of Amherstburg	\$ -	\$ 1,633.00	\$ -	\$ 1,633.00
9	Golfwood Drive	1.741	Town of Amherstburg	\$ -	\$ 4,213.00	\$ -	\$ 4,213.00
10	Fairway Crescent	0.101	Town of Amherstburg	\$ -	\$ 244.00	\$ -	\$ 244.00
11	Pointwest Drive	1.932	Town of Amherstburg	\$ -	\$ 4,675.00	\$ -	\$ 4,675.00
12	Angstrom Crescent	0.841	Town of Amherstburg	\$ -	\$ 2,035.00	\$ -	\$ 2,035.00
13	Wyandotte Street	0.164	Town of Amherstburg	\$ -	\$ 397.00	\$ -	\$ 397.00
14	Kingsbridge Drive	0.570	Town of Amherstburg	\$ -	\$ 1,379.00	\$ -	\$ 1,379.00
15	Whelan Avenue	1.908	Town of Amherstburg	\$ -	\$ 4,617.00	\$ -	\$ 4,617.00
16	Baker Crescent	0.354	Town of Amherstburg	\$ -	\$ 857.00	\$ -	\$ 857.00
17	Cambridge Court	0.761	Town of Amherstburg	\$ -	\$ 1,842.00	\$ -	\$ 1,842.00
18	Oxford Crescent	0.784	Town of Amherstburg	\$ -	\$ 1,897.00	\$ -	\$ 1,897.00
19	Knobb Hill Drive	0.080	Town of Amherstburg	\$ -	\$ 194.00	\$ -	\$ 194.00
Total Affected Lands (Hectares)		23.445					
Total Assessment on Municipal Lands				\$ 3,660.00	\$ 56,750.00	\$ -	\$ 60,410.00

B) PRIVATELY OWNED - NON-AGRICULTURAL LANDS									
PARCEL NO.	TAX ROLL NO.	CON. OR PLAN NO.	LOT OR PART OF LOT	AFFECTED AREA (Ha)	OWNER	(SECTION 22) BENEFIT	(SECTION 23) OUTLET LIABILITY	(SECTION 24) SPECIAL BENEFIT	TOTAL ASSESSMENT
20	N/A			N/A	Not in Watershed				
21	410-03005	2 N	Pt Lot 6	0.186	Simeon Joseph & Janis Cheryl Regnier	\$ -	\$ 270.00	\$ -	\$ 270.00
22	410-02995	2 N	Pt Lot 6	0.204	Kimberly Van Essen	\$ -	\$ 293.00	\$ -	\$ 293.00
23	410-03004	2 N	Pt Lot 6	0.192	Michael Stephen Van Essen	\$ -	\$ 279.00	\$ -	\$ 279.00
24	410-03007	2	Pt Lot 6	0.217	Paul & Sophia Leblanc	\$ -	\$ 302.00	\$ -	\$ 302.00
25	410-02998	2	Pt Lot 6	0.204	Jack & Sonia Goncalves	\$ -	\$ 293.00	\$ -	\$ 293.00
26					(Moved to Section C - Grantable)				
27	410-02900	2 W	Pt Lot 6	0.232	Natalino & Gina Cervi	\$ -	\$ 312.00	\$ -	\$ 312.00
28	410-02800	2 W	Pt Lot 6	0.232	Tito Napoleon & Cecilia Maria Deluca	\$ -	\$ 312.00	\$ -	\$ 312.00
29	410-02700	2 W	Pt Lot 6	0.232	Trust Deluca Raimondo	\$ -	\$ 312.00	\$ -	\$ 312.00
30					(Moved to Section C - Grantable)				
31	410-02500	2 N	Pt Lot 5	0.294	Ronald James & Danielle Elaine Regnier	\$ -	\$ 354.00	\$ -	\$ 354.00
32	410-02300	2 N	Pt Lot 5	0.178	Paul Michael & Gail Janet Beaudoin	\$ -	\$ 258.00	\$ -	\$ 258.00
33	410-02200	2 N	Pt Lot 5	0.158	Gerard Alphonse & Heather Marie Meloche	\$ -	\$ 229.00	\$ -	\$ 229.00
34	410-02100	2 N	Pt Lot 5	0.158	Salvatore Froio & Gilda Diponti	\$ -	\$ 229.00	\$ -	\$ 229.00
35	410-01950	2 N	Pt Lot 5	0.665	Helene Anne Comeau-Pellett	\$ -	\$ 605.00	\$ -	\$ 605.00
36	410-01900	2 N	Pt Lot 5	0.182	Timothy Andrew & Christine Joy Jupp	\$ -	\$ 264.00	\$ -	\$ 264.00
37	410-01925	2 N	Pt Lot 5	2.078	Edward Anthony Sabga	\$ -	\$ 1,393.00	\$ -	\$ 1,393.00
38	410-01800	2 N	Pt Lot 5	0.269	Lucio & Antonio Salvati	\$ -	\$ 337.00	\$ -	\$ 337.00

B) PRIVATELY OWNED - NON-AGRICULTURAL LANDS

PARCEL NO.	TAX ROLL NO.	CON. OR PLAN NO.	LOT OR PART OF LOT	AFFECTED AREA (Ha)	OWNER	(SECTION 22) BENEFIT	(SECTION 23) OUTLET LIABILITY	(SECTION 24) SPECIAL BENEFIT	TOTAL ASSESSMENT
39	420-72200	12M373	BLK 51	0.209	Town of Amherstburg	\$ -	\$ 297.00	\$ -	\$ 297.00
40	420-72100	12M373	Lot 15	0.172	Dean Joseph & Laurie Aspeleiter	\$ -	\$ 250.00	\$ -	\$ 250.00
41	420-72000	12M373	Lot 14	0.129	Daniel Grondon	\$ -	\$ 187.00	\$ -	\$ 187.00
42	420-71900	12M373	Lot 13	0.129	Antonio & Betty-Anne Digiovanni	\$ -	\$ 187.00	\$ -	\$ 187.00
43	420-71800	12M373	Lot 12	0.110	Frank & Gwen Ann Giswein	\$ -	\$ 160.00	\$ -	\$ 160.00
44	420-71700	12M373	Lot 11	0.119	Steve & Maria Simone	\$ -	\$ 173.00	\$ -	\$ 173.00
45	420-71600	12M373	Lot 10	0.139	Philip Charles & Susan Doris Medler	\$ -	\$ 202.00	\$ -	\$ 202.00
46	420-71500	12M373	Lot 9	0.218	John Philip & Sharon Louise Bryan	\$ -	\$ 302.00	\$ -	\$ 302.00
47	420-71400	12M373	Lot 8	0.193	Gregg Edmund & Linda Parker	\$ -	\$ 280.00	\$ -	\$ 280.00
48	420-71300	12M373	Lot 7	0.229	Michael G & Katherine L Dipierdomenico	\$ -	\$ 310.00	\$ -	\$ 310.00
49	420-71200	12M373	Lot 6	0.184	Giuseppe & Lisa Felice Varacalli	\$ -	\$ 267.00	\$ -	\$ 267.00
50	420-71100	12M373	Lot 5	0.104	Jaime & Janice Aguilar	\$ -	\$ 151.00	\$ -	\$ 151.00
51	420-71000	12M373	Lot 4	0.104	Robert Dale Way & Deanna Michele Diluca	\$ -	\$ 151.00	\$ -	\$ 151.00
52	420-70900	12M373	Lot 3	0.097	Ronald Gary Demars & Nichola Demars	\$ -	\$ 141.00	\$ -	\$ 141.00
53	420-70800	12M373	Lot 2	0.068	Kristie Duffy	\$ -	\$ 99.00	\$ -	\$ 99.00
54	420-70700	12M373	Lot 1	0.076	Francis Douglas Anguiano & Rose M Hurst	\$ -	\$ 110.00	\$ -	\$ 110.00
55	420-70600	12M373	Lot 44	0.075	Dunn Group of Companies	\$ -	\$ 109.00	\$ -	\$ 109.00
56	420-70500	12M373	Lot 43	0.104	Nathan Casey & Marija Mulder	\$ -	\$ 151.00	\$ -	\$ 151.00
57	420-70400	12M373	Lot 42	0.087	Jeffrey Paul & Jennifer Phyllis Pascoe	\$ -	\$ 126.00	\$ -	\$ 126.00
58	420-70300	12M373	Lot 41	0.087	Shawn Douglas & Jennifer Lynn Beadow	\$ -	\$ 126.00	\$ -	\$ 126.00
59	420-70200	12M373	Lot 40	0.087	Robert Frank & Lisa Maria Morse	\$ -	\$ 126.00	\$ -	\$ 126.00
60	420-70100	12M373	Lot 39	0.087	David & Lynn Kitka	\$ -	\$ 126.00	\$ -	\$ 126.00
61	420-70000	12M373	Lot 38	0.087	Peter & Lisa Chiandussi	\$ -	\$ 126.00	\$ -	\$ 126.00
62	420-69900	12M397	Lot 1	0.094	Antonio Dethomasis	\$ -	\$ 136.00	\$ -	\$ 136.00
63	420-69895	12M397	Lot 2	0.070	Mark Frederick & Victoria Mary Weigel	\$ -	\$ 102.00	\$ -	\$ 102.00
64	420-69890	12M397	Lot 3	0.070	Melissa Mary Alice & Bradley Vincent Allen	\$ -	\$ 102.00	\$ -	\$ 102.00
65	420-69885	12M397	Lot 4	0.070	Leo Paul & Kathleen Rose Drouillard	\$ -	\$ 102.00	\$ -	\$ 102.00
66	420-69880	12M397	Lot 5	0.070	Stephen Anthony & Nicole Christine Loggie	\$ -	\$ 102.00	\$ -	\$ 102.00
67	420-69875	12M397	Lot 6	0.081	Michael & Lisa Gallant	\$ -	\$ 118.00	\$ -	\$ 118.00
68	420-68115	12M397	Lot 7	0.081	William Henry & Jane Wiklie Wiley	\$ -	\$ 118.00	\$ -	\$ 118.00
69	420-68110	12M397	Lot 8	0.070	Donna Nemeth-Percy & Georgia C Nemeth	\$ -	\$ 102.00	\$ -	\$ 102.00
70	420-68105	12M397	Lot 9	0.070	Carlos & Heather Morujo	\$ -	\$ 102.00	\$ -	\$ 102.00
71	420-68100	12M397	Lot 10	0.070	Murray & Elizabeth Anne Rounding	\$ -	\$ 102.00	\$ -	\$ 102.00
72	420-68095	12M397	Lot 11	0.071	Julie & Dawn Russell	\$ -	\$ 103.00	\$ -	\$ 103.00
73	420-68090	12M397	Lot 12	0.071	Darren J Beadow & Bella Rachela Di	\$ -	\$ 103.00	\$ -	\$ 103.00
74	420-68085	12M397	Lot 13	0.071	Justin Pijus & Joanne Mary Kazakevicius	\$ -	\$ 103.00	\$ -	\$ 103.00
75	420-68080	12M397	Lot 14	0.071	David & Gail Murray	\$ -	\$ 103.00	\$ -	\$ 103.00
76	420-68075	12M397	Lot 15	0.071	Justin & Nicole Rusenstrom	\$ -	\$ 103.00	\$ -	\$ 103.00
77	420-68070	12M397	Lot 16	0.071	Aaron James & Stephanie Bryann Katt	\$ -	\$ 103.00	\$ -	\$ 103.00
78	420-68065	12M397	Lot 17	0.071	Sarah D Casey & Linda C Carriere	\$ -	\$ 103.00	\$ -	\$ 103.00
79	420-68060	12M397	Lot 18	0.071	Richard & Caitlin Wilton	\$ -	\$ 103.00	\$ -	\$ 103.00
80	420-68055	12M397	Lot 19	0.071	Louise Jane Beaulieu	\$ -	\$ 103.00	\$ -	\$ 103.00
81	420-68050	12M397	Lot 20	0.071	Jeffery Michael Diana Louise White	\$ -	\$ 103.00	\$ -	\$ 103.00
82	420-68045	12M397	Lot 21	0.071	Andrew Neil & Jennifer Dawn Grubb	\$ -	\$ 103.00	\$ -	\$ 103.00
83	420-68040	12M397	Lot 22	0.071	Michael Wilcox & Helen Josevski	\$ -	\$ 103.00	\$ -	\$ 103.00
84	420-68035	12M397	Lot 23	0.071	Ronie Swiatoschik	\$ -	\$ 103.00	\$ -	\$ 103.00
85	420-68030	12M397	Lot 24	0.077	Thomas Jason Tar	\$ -	\$ 112.00	\$ -	\$ 112.00
86	420-68025	12M397	Lot 25	0.077	Peter Bertram	\$ -	\$ 112.00	\$ -	\$ 112.00
87	420-68020	12M397	Lot 26	0.077	Eugenio & Sandra Agostino	\$ -	\$ 112.00	\$ -	\$ 112.00
88	420-68015	12M397	Lot 27	0.077	Gerry & Angel Carol Zorzan	\$ -	\$ 112.00	\$ -	\$ 112.00

B) PRIVATELY OWNED - NON-AGRICULTURAL LANDS

PARCEL NO.	TAX ROLL NO.	CON. OR PLAN NO.	LOT OR PART OF LOT	AFFECTED AREA (Ha)	OWNER	(SECTION 22) BENEFIT	(SECTION 23) OUTLET LIABILITY	(SECTION 24) SPECIAL BENEFIT	TOTAL ASSESSMENT
89	420-68010	12M397	Lot 28	0.077	Christopher M Seguin & Sarah M Macdonald	\$ -	\$ 112.00	\$ -	\$ 112.00
90	420-68005	12M397	Lot 29	0.078	Sepp & Rosemary Uiberlacher	\$ -	\$ 113.00	\$ -	\$ 113.00
91	420-68000	12M397	Lot 30	0.078	John Charles Duff	\$ -	\$ 113.00	\$ -	\$ 113.00
92	420-67005	12M397	Lot 31	0.072	Donald & Casey Taylor	\$ -	\$ 105.00	\$ -	\$ 105.00
93	420-67000	12M397	Lot 32	0.072	William George & Erin Patricia Seagris	\$ -	\$ 105.00	\$ -	\$ 105.00
94	420-65715	12M397	Lot 33	0.079	Steven Patrick & Laura Jean Stainer	\$ -	\$ 115.00	\$ -	\$ 115.00
95	420-65710	12M397	Lot 34	0.068	Derek Chamberlin & Kimberley Ann Atherley	\$ -	\$ 99.00	\$ -	\$ 99.00
96	420-65705	12M397	Lot 35	0.068	John William & Connie Michelle Dufour	\$ -	\$ 99.00	\$ -	\$ 99.00
97	420-65700	12M397	Lot 36	0.068	Andre & Nina Medeiros	\$ -	\$ 99.00	\$ -	\$ 99.00
98	420-65695	12M397	Lot 37	0.135	Mario & Maria Rosati	\$ -	\$ 196.00	\$ -	\$ 196.00
99	420-65690	12M397	Lot 38	0.191	Mervyn & Becky Ann Herd	\$ -	\$ 277.00	\$ -	\$ 277.00
100	420-65685	12M397	Lot 39	0.084	William Kurtis & Karen Ann Davidson	\$ -	\$ 122.00	\$ -	\$ 122.00
101	420-65680	12M397	Lot 40	0.084	Myles & Stephanie Robinson	\$ -	\$ 122.00	\$ -	\$ 122.00
102	420-65675	12M397	Lot 41	0.084	Linda Lou Anne & Ardeshi Saatchi	\$ -	\$ 122.00	\$ -	\$ 122.00
103	420-65670	12M397	Lot 42	0.084	Andrew M & Emmanuela N Laurie	\$ -	\$ 122.00	\$ -	\$ 122.00
104	420-65665	12M397	Lot 43	0.084	Paul Adam & Grazyna Smoter	\$ -	\$ 122.00	\$ -	\$ 122.00
105	420-65660	12M397	Lot 44	0.084	Dennis Samuel & Jacqueline Louise Kubinec	\$ -	\$ 122.00	\$ -	\$ 122.00
106	420-65655	12M397	Lot 45	0.084	David Alfred & Anna Francis Probyn	\$ -	\$ 122.00	\$ -	\$ 122.00
107	420-65650	12M397	Lot 46	0.084	Maurizio Digiovanni & Julinda Dusha	\$ -	\$ 122.00	\$ -	\$ 122.00
108	420-65645	12M397	Lot 47	0.084	Mario & Sophia Dipaolo	\$ -	\$ 122.00	\$ -	\$ 122.00
109	420-65640	12M397	Lot 48	0.084	Robert George Andrews & Svetlana Aseeva	\$ -	\$ 122.00	\$ -	\$ 122.00
110	420-65635	12M397	Lot 49	0.090	Kevin Foster & Diana Marie Petrozzi	\$ -	\$ 131.00	\$ -	\$ 131.00
111	420-65630	12M397	Lot 50	0.190	Jiri & Hana Prochazka	\$ -	\$ 276.00	\$ -	\$ 276.00
112	420-65625	12M397	Lot 51	0.134	Agostino & Jennifer Lynn D'Alimonte	\$ -	\$ 195.00	\$ -	\$ 195.00
113	420-65620	12M397	Lot 52	0.067	Glen & Cindy Kozmewski	\$ -	\$ 97.00	\$ -	\$ 97.00
114	420-65615	12M397	Lot 53	0.067	David Ross M & Elizabeth Ann Esposito	\$ -	\$ 97.00	\$ -	\$ 97.00
115	420-65610	12M397	Lot 54	0.067	Cynthia Marie & Jordan Patrick Long	\$ -	\$ 97.00	\$ -	\$ 97.00
116	420-65605	12M397	Lot 56	0.080	Kimberley Lynn & Craig Ronald Evans	\$ -	\$ 116.00	\$ -	\$ 116.00
117	420-65600	12M397	Lot 57	0.077	David & Kelly Ludberg	\$ -	\$ 112.00	\$ -	\$ 112.00
118	420-65595	12M397	Lot 58	0.077	Gamet Joseph & Rose Anne Berthiaume	\$ -	\$ 112.00	\$ -	\$ 112.00
119	420-65590	12M397	Lot 59	0.071	Margaret Ann O'Brien	\$ -	\$ 103.00	\$ -	\$ 103.00
120	420-65585	12M397	Lot 60	0.071	Kevin Ronald & Jacqueline Ann McIntyre	\$ -	\$ 103.00	\$ -	\$ 103.00
121	420-65580	12M397	Lot 61	0.071	Ludgerus Lucianus & Wanda Coreen Debont	\$ -	\$ 103.00	\$ -	\$ 103.00
122	420-65575	12M397	Lot 62	0.071	Mark Ernest & Christine Borre	\$ -	\$ 103.00	\$ -	\$ 103.00
123	420-65570	12M397	Lot 63	0.071	Agostino & Lise Bernadette Menna	\$ -	\$ 103.00	\$ -	\$ 103.00
124	420-65565	12M397	Lot 64	0.077	Scott Andrew & Shannon Helaine Newman	\$ -	\$ 112.00	\$ -	\$ 112.00
125	420-65560	12M397	Lot 65	0.084	Robert Douglas & Mindy Elaine Marshall	\$ -	\$ 122.00	\$ -	\$ 122.00
126	420-65555	12M397	Lot 66	0.084	Christopher Scott & Sherry Anne Richard	\$ -	\$ 122.00	\$ -	\$ 122.00
127	420-65550	12M397	Lot 67	0.077	Matthew Robert Zimmerman	\$ -	\$ 112.00	\$ -	\$ 112.00
128	420-65545	12M397	Lot 68	0.071	Robert & Anita Tar	\$ -	\$ 103.00	\$ -	\$ 103.00
129	420-65540	12M397	Lot 69	0.071	Gordon & Jean Moore	\$ -	\$ 103.00	\$ -	\$ 103.00
130	420-65535	12M397	Lot 70	0.071	Michael David Dent	\$ -	\$ 103.00	\$ -	\$ 103.00
131	420-65530	12M397	Lot 71	0.071	David William & Kimberly Ann Halliday	\$ -	\$ 103.00	\$ -	\$ 103.00
132	420-65525	12M397	Lot 72	0.071	Gregory Alan & Vickie Arlene Fields	\$ -	\$ 103.00	\$ -	\$ 103.00
133	420-65520	12M397	Lot 73	0.077	Murray Robert & Jennifer Anne Pickle	\$ -	\$ 112.00	\$ -	\$ 112.00
134	420-65515	12M397	Lot 74	0.077	Gunther & Diane Ivens	\$ -	\$ 112.00	\$ -	\$ 112.00
135	420-65510	12M397	Lot 75	0.080	Steven Mark & Amy Lee Pumford	\$ -	\$ 116.00	\$ -	\$ 116.00
136	420-65505	12M397	Lot 55	0.078	Thomas Patrick & Nadia Francesca Bezaire	\$ -	\$ 113.00	\$ -	\$ 113.00
137	420-65500	12M397	Lot 76	0.078	Monika Kairouz	\$ -	\$ 113.00	\$ -	\$ 113.00
138	420-65495	12M397	Lot 77	0.067	Hani & Dawn-Marie Chammat	\$ -	\$ 97.00	\$ -	\$ 97.00

B) PRIVATELY OWNED - NON-AGRICULTURAL LANDS

PARCEL NO.	TAX ROLL NO.	CON. OR PLAN NO.	LOT OR PART OF LOT	AFFECTED AREA (Ha)	OWNER	(SECTION 22) BENEFIT	(SECTION 23) OUTLET LIABILITY	(SECTION 24) SPECIAL BENEFIT	TOTAL ASSESSMENT
139	420-65490	12M397	Lot 78	0.067	Raymond Millican & Margaret A Jaques	\$ -	\$ 97.00	\$ -	\$ 97.00
140	420-65485	12M397	Lot 79	0.067	Anna Marie D'Alosio	\$ -	\$ 97.00	\$ -	\$ 97.00
141	420-65480	12M397	Lot 80	0.134	Jason William & Heather Marie Oneschuk	\$ -	\$ 195.00	\$ -	\$ 195.00
142	420-65475	12M397	Lot 81	0.174	Karen Elizabeth & Antonio Rosati	\$ -	\$ 253.00	\$ -	\$ 253.00
143	420-65470	12M397	Lot 82	0.084	Louis & Joan Arlene Singer	\$ -	\$ 122.00	\$ -	\$ 122.00
144	420-65465	12M397	Lot 83	0.084	Hans Juergen & Christine Lau	\$ -	\$ 122.00	\$ -	\$ 122.00
145	420-65460	12M397	Lot 84	0.084	Ingrid Hettgen	\$ -	\$ 122.00	\$ -	\$ 122.00
146	420-65455	12M397	Lot 85	0.084	Adriano Joseph & Lori Marguerite Rosati	\$ -	\$ 122.00	\$ -	\$ 122.00
147	420-65450	12M397	Lot 86	0.084	Joseph Carmine & Sarah Alisha D'Amore	\$ -	\$ 122.00	\$ -	\$ 122.00
148	420-65445	12M397	Lot 87	0.084	David Ian & Eva Guthrie	\$ -	\$ 122.00	\$ -	\$ 122.00
149	420-65440	12M397	Lot 88	0.084	Belinda Gail & Robert Paul Philip	\$ -	\$ 122.00	\$ -	\$ 122.00
150	420-65435	12M397	Lot 89	0.084	Ralph Myrtil Readings	\$ -	\$ 122.00	\$ -	\$ 122.00
151	420-65430	12M397	Lot 90	0.084	James Edmond & Jenna Leigh Breault	\$ -	\$ 122.00	\$ -	\$ 122.00
152	420-65425	12M397	Lot 91	0.197	Stuart Peter & Diane Naldi Bertram	\$ -	\$ 286.00	\$ -	\$ 286.00
153	420-65420	12M397	Lot 92	0.206	Gordon Frederick & Dorothy Janice Bauer	\$ -	\$ 294.00	\$ -	\$ 294.00
154	420-65415	12M397	Lot 93	0.105	Shannon Anthony & Donna Marie Falconer	\$ -	\$ 152.00	\$ -	\$ 152.00
155	420-65410	12M397	Lot 94	0.105	Richard Lee & Marguerite Leona Bezaire	\$ -	\$ 152.00	\$ -	\$ 152.00
156	420-65405	12M397	Lot 95	0.077	Louis Richard & Sharon Anne Saint-Cyr	\$ -	\$ 112.00	\$ -	\$ 112.00
157	420-65400	12M397	Lot 96	0.071	Wayne Lloyd & Jacqueline Trudy Dempsey	\$ -	\$ 103.00	\$ -	\$ 103.00
158	420-65395	12M397	Lot 97	0.071	Kenneth Andrew & Mary Margaret Ulch	\$ -	\$ 103.00	\$ -	\$ 103.00
159	420-65390	12M397	Lot 98	0.071	Kristina Pozar Di Paolo	\$ -	\$ 103.00	\$ -	\$ 103.00
160	420-65385	12M397	Lot 99	0.071	Louise Judith-Marie Harris	\$ -	\$ 103.00	\$ -	\$ 103.00
161	420-65380	12M397	Lot 100	0.071	Gregory & Christine Anne Maitre	\$ -	\$ 103.00	\$ -	\$ 103.00
162	420-65375	12M397	Lot 101	0.071	Alan Joseph & Kristina Marie Roehler	\$ -	\$ 103.00	\$ -	\$ 103.00
163	420-65370	12M397	Lot 102	0.075	Michael & Susan D'Aloisio	\$ -	\$ 109.00	\$ -	\$ 109.00
164	420-65365	12M397	Lot 103	0.075	Andrew J & Laura E Braithwaite	\$ -	\$ 109.00	\$ -	\$ 109.00
165	420-65360	12M397	Lot 104	0.071	Christopher James & Tammy Lynn Richard	\$ -	\$ 103.00	\$ -	\$ 103.00
166	420-65355	12M397	Lot 105	0.071	Adolfo Sousa & Mariah Lynne Demelo	\$ -	\$ 103.00	\$ -	\$ 103.00
167	420-65350	12M397	Lot 106	0.071	Kevin Paul & Stacey Lynne Mitchell	\$ -	\$ 103.00	\$ -	\$ 103.00
168	420-65345	12M397	Lot 107	0.071	Judith Marie Thomas	\$ -	\$ 103.00	\$ -	\$ 103.00
169	420-65340	12M397	Lot 108	0.071	Ron & Lina Affleck	\$ -	\$ 103.00	\$ -	\$ 103.00
170	420-65335	12M397	Lot 109	0.071	Petur John & Susan E Regnier	\$ -	\$ 103.00	\$ -	\$ 103.00
171	420-65330	12M397	Lot 110	0.077	Melissa Ann Savo & Michael L Newman	\$ -	\$ 112.00	\$ -	\$ 112.00
172	420-65325	12M397	Lot 111	0.081	Jennifer Jean Grant	\$ -	\$ 118.00	\$ -	\$ 118.00
173	420-65320	12M397	Lot 112	0.071	Michael Sean & Christine A Yeoumans	\$ -	\$ 103.00	\$ -	\$ 103.00
174	420-65315	12M397	Lot 113	0.071	Norman Michael & Rhonda Lynn Taylor	\$ -	\$ 103.00	\$ -	\$ 103.00
175	420-65310	12M397	Lot 114	0.071	Jorge & Lenka Salvador	\$ -	\$ 103.00	\$ -	\$ 103.00
176	420-65305	12M397	Lot 115	0.071	Marc Steven & Lili Colautti	\$ -	\$ 103.00	\$ -	\$ 103.00
177	420-65300	12M397	Lot 116	0.095	Michael Claude & Mariette Clouthier	\$ -	\$ 138.00	\$ -	\$ 138.00
178	420-65200	12M373	Lot 37	0.081	William John & Judith Ann Fetter	\$ -	\$ 118.00	\$ -	\$ 118.00
179	420-65100	12M373	Lot 36	0.077	Vita Grillo	\$ -	\$ 112.00	\$ -	\$ 112.00
180	420-65000	12M373	Lot 35	0.083	David Sr. & Antonette Cook	\$ -	\$ 121.00	\$ -	\$ 121.00
181	420-64900	12M373	Lot 34	0.089	Joey Edward & Linda Fiala	\$ -	\$ 129.00	\$ -	\$ 129.00
182	420-64800	12M373	Lot 33	0.116	Donald & Chalene Gerbrandt	\$ -	\$ 168.00	\$ -	\$ 168.00
183	420-64700	12M373	Lot 32	0.169	Wayne Stanley & Robin Lee Walker	\$ -	\$ 245.00	\$ -	\$ 245.00
184	420-64600	12M373	Lot 31	0.192	Robert & Brenda Pope-Ferguson	\$ -	\$ 279.00	\$ -	\$ 279.00
185	420-64500	12M373	Lot 30	0.158	John Howard & Denise Kathleen Jeffs	\$ -	\$ 229.00	\$ -	\$ 229.00
186	420-64400	12M373	Lot 29	0.098	George Wayne & Mary Elaine Sutton	\$ -	\$ 142.00	\$ -	\$ 142.00
187	420-64300	12M373	Lot 28	0.098	Peter & Assunda Catanzaro	\$ -	\$ 142.00	\$ -	\$ 142.00
188	420-64200	12M373	Lot 27	0.240	Antonio & Senga Diane Salvati	\$ -	\$ 318.00	\$ -	\$ 318.00

B) PRIVATELY OWNED - NON-AGRICULTURAL LANDS

PARCEL NO.	TAX ROLL NO.	CON. OR PLAN NO.	LOT OR PART OF LOT	AFFECTED AREA (Ha)	OWNER	(SECTION 22) BENEFIT	(SECTION 23) OUTLET LIABILITY	(SECTION 24) SPECIAL BENEFIT	TOTAL ASSESSMENT
189	420-64100	12M373	Lot 26	0.231	Christopher James & Shelly Ann Beneteau	\$ -	\$ 311.00	\$ -	\$ 311.00
190	420-64000	12M373	Lot 25	0.086	David Christopher & Laura Nicole Rivait	\$ -	\$ 125.00	\$ -	\$ 125.00
191	420-63900	12M373	Lot 24	0.079	William James & Deborah Ann Scott	\$ -	\$ 115.00	\$ -	\$ 115.00
192	420-63800	12M373	Lot 23	0.073	Domenic & Lorry Ann Cristofaro	\$ -	\$ 106.00	\$ -	\$ 106.00
193	420-63700	12M373	Lot 22	0.076	Kenneth & Eunice Walsh	\$ -	\$ 110.00	\$ -	\$ 110.00
194	420-63600	12M373	Lot 21	0.109	Linda Fata & Remo Dipaolo	\$ -	\$ 158.00	\$ -	\$ 158.00
195	420-63500	12M373	Lot 20	0.098	Richard Wilfred & Linda Anne Barbe	\$ -	\$ 142.00	\$ -	\$ 142.00
196	420-63400	12M373	Lot 19	0.121	Michael Hitchcock	\$ -	\$ 176.00	\$ -	\$ 176.00
197	420-63300	12M373	Lot 18	0.133	Ricky R Simpson & Milissa G Highgate	\$ -	\$ 193.00	\$ -	\$ 193.00
198	420-63200	12M373	Lot 17	0.180	Sean Edward & Anne Noreen Fox	\$ -	\$ 261.00	\$ -	\$ 261.00
199	420-63075	12M373	Lot 16	0.224	Joe & Colleen Renee Dethomasis	\$ -	\$ 307.00	\$ -	\$ 307.00
200	420-63050	12M373	BLK 48 & 49	0.241	Town of Amherstburg	\$ -	\$ 318.00	\$ -	\$ 318.00
201	420-62600	M139	Lot 5	0.210	Ronald Stephen Darleen Ann Swintak	\$ -	\$ 297.00	\$ -	\$ 297.00
202	420-62500	M139	Lot 6	0.185	David Edward & Martha Pieterson Bondy	\$ -	\$ 269.00	\$ -	\$ 269.00
203	420-62400	M139	Lot 7	0.186	Julia Josephine Gauthier	\$ -	\$ 270.00	\$ -	\$ 270.00
204	420-62300	M139	Lot 8	0.186	Theodore Trusevich & Laraine Munro	\$ -	\$ 270.00	\$ -	\$ 270.00
205	420-62200	M139	Lot 9	0.222	Luigi & Laurel Ann Dipierdomenico	\$ -	\$ 305.00	\$ -	\$ 305.00
206	420-62100	M139	Lot 10	0.211	Hong Fun & Lai Foon Wong	\$ -	\$ 298.00	\$ -	\$ 298.00
207	420-62000	M139	Lot 11	0.194	Grace Zec	\$ -	\$ 282.00	\$ -	\$ 282.00
208	420-61900	M139	Lot 12	0.191	Ryan Norman Allison	\$ -	\$ 277.00	\$ -	\$ 277.00
209	420-61800	M139	Lot 13	0.190	Gerald Earl & Linda Anne Newman	\$ -	\$ 276.00	\$ -	\$ 276.00
210	420-61700	M139	Lot 14	0.277	Linda Di Pasquale	\$ -	\$ 343.00	\$ -	\$ 343.00
211	420-61600	M139	Lot 15	0.235	Bart Thomas & Susie Dipasquale	\$ -	\$ 314.00	\$ -	\$ 314.00
212	420-61500	M139	Lot 16	0.216	Gail Thomson	\$ -	\$ 301.00	\$ -	\$ 301.00
213	420-61400	M139	Lot 17	0.238	Cindy Leah Leclair & Kevin James Perry	\$ -	\$ 316.00	\$ -	\$ 316.00
214	420-61300	M139	Lot 18	0.269	Andrew James & Karen Martha Bradie	\$ -	\$ 337.00	\$ -	\$ 337.00
215	420-61200	M139	Lot 19	0.195	John & Shirley Tilden	\$ -	\$ 283.00	\$ -	\$ 283.00
216	420-61100	M139	Lot 20	0.197	Alberto & Jane Lee De Oliveira	\$ -	\$ 286.00	\$ -	\$ 286.00
217	420-61000	M139	Lot 21	0.186	Scott Christopher & Sharon Anne Nanson	\$ -	\$ 270.00	\$ -	\$ 270.00
218	420-60900	M139	Lot 22	0.228	Michael H Lucas & Carolyn C Miles	\$ -	\$ 309.00	\$ -	\$ 309.00
219	420-60800	M139	Lot 23	0.218	Armando & Spinella Quintigliani	\$ -	\$ 302.00	\$ -	\$ 302.00
220	420-60700	M139	Lot 24	0.208	Andrew & Karen Lynn Zila	\$ -	\$ 296.00	\$ -	\$ 296.00
221	420-60600	M139	Lot 25	0.197	Larry & Carrie Allen	\$ -	\$ 286.00	\$ -	\$ 286.00
222	420-60500	M139	Lot 26	0.188	Gary William & Louise Ann Maria Gaudette	\$ -	\$ 273.00	\$ -	\$ 273.00
223	420-60400	M139	Lot 27	0.194	Curtis James & Lorene Engela Clayton	\$ -	\$ 282.00	\$ -	\$ 282.00
224	420-60300	M139	Lot 28	0.194	William & Deborah Marie Vlodarchyk	\$ -	\$ 282.00	\$ -	\$ 282.00
225	420-60200	M139	Lot 29	0.194	Raymond Frank Cerkauskas & Weili Xu	\$ -	\$ 282.00	\$ -	\$ 282.00
226	420-60100	M139	Lot 30	0.194	Derek & Andrea Huisman	\$ -	\$ 282.00	\$ -	\$ 282.00
227	420-59900	M199	Lot 12	0.188	Walid & Smaya Kobrosli	\$ -	\$ 273.00	\$ -	\$ 273.00
228	420-59800	M199	Lot 11	0.160	Samuel & Lynn Fox	\$ -	\$ 232.00	\$ -	\$ 232.00
229	420-59700	M199	Lot 10	0.169	Roger Jean & Brenda Joyce Racette	\$ -	\$ 245.00	\$ -	\$ 245.00
230	420-59600	M199	Lot 9	0.156	Brian Robert & Kaitlyn Giovina Lowe	\$ -	\$ 227.00	\$ -	\$ 227.00
231	420-59500	M199	Lot 8	0.129	John Douglas & Margaret Ruth Van Patter	\$ -	\$ 187.00	\$ -	\$ 187.00
232	420-59400	M199	Lot 7	0.141	Nicole Marie Adams	\$ -	\$ 205.00	\$ -	\$ 205.00
233	420-59300	M199	Lot 6	0.160	Biase Aldo & Biase Rita Jenny Di	\$ -	\$ 232.00	\$ -	\$ 232.00
234	420-59200	M199	Lot 5	0.174	Zane Richard & Jennifer Kristene Handysides	\$ -	\$ 253.00	\$ -	\$ 253.00
235	420-59100	M199	Lot 4	0.163	Larry Henry & Catherine Aurelia Amlin	\$ -	\$ 237.00	\$ -	\$ 237.00
236	420-59000	M199	Lot 3	0.160	Reginald Westgarth & Gilda Poitras	\$ -	\$ 232.00	\$ -	\$ 232.00
237	420-58900	M199	Lot 2	0.162	Jennie Lajoie	\$ -	\$ 235.00	\$ -	\$ 235.00

B) PRIVATELY OWNED - NON-AGRICULTURAL LANDS

PARCEL NO.	TAX ROLL NO.	CON. OR PLAN NO.	LOT OR PART OF LOT	AFFECTED AREA (Ha)	OWNER	(SECTION 22) BENEFIT	(SECTION 23) OUTLET LIABILITY	(SECTION 24) SPECIAL BENEFIT	TOTAL ASSESSMENT
238	420-58800	M199	Lot 1	0.160	Giuseppe Savone & Lisa Pecoraro	\$ -	\$ 232.00	\$ -	\$ 232.00
239	420-58700	M199	Lot 25	0.146	Joseph Alan Morden & Julie Bezaire	\$ -	\$ 212.00	\$ -	\$ 212.00
240	420-58600	M199	Lot 24	0.151	Colin James Novak & Helen Jana Ule	\$ -	\$ 219.00	\$ -	\$ 219.00
241	420-58500	M199	Lot 23	0.143	Lee-Nadj & Choi-Chu	\$ -	\$ 208.00	\$ -	\$ 208.00
242	420-58400	M199	Lot 22	0.154	Robert & Karen Jane Johnson	\$ -	\$ 224.00	\$ -	\$ 224.00
243	420-58300	M199	Lot 21	0.165	Jose & Assuntina Carreira	\$ -	\$ 240.00	\$ -	\$ 240.00
244	420-58200	M199	Lot 20	0.154	Nigel Aidan & Nicole Marie Blunt	\$ -	\$ 224.00	\$ -	\$ 224.00
245	420-58100	M199	Lot 19	0.143	Todd Matthew & Julie Lyn Laliberte	\$ -	\$ 208.00	\$ -	\$ 208.00
246	420-58000	M199	Lot 18	0.165	Rocco Anthony Di Pasquale	\$ -	\$ 240.00	\$ -	\$ 240.00
247	420-57900	M199	Lot 17	0.146	Ingrid I & Leroy James Heugh	\$ -	\$ 212.00	\$ -	\$ 212.00
248	420-57800	M199	Lot 16	0.233	Robert & Amanda Lorraine D'alimonte	\$ -	\$ 313.00	\$ -	\$ 313.00
249	420-57700	M199	Lot 15	0.265	Richard C McCrae & Beverley L Jones	\$ -	\$ 334.00	\$ -	\$ 334.00
250	420-57600	M199	Lot 14	0.207	Jeff & Rebecca Fabischek	\$ -	\$ 295.00	\$ -	\$ 295.00
251	420-57500	M199	Lot 13	0.170	Linda Grace Jurkovic	\$ -	\$ 247.00	\$ -	\$ 247.00
252	420-57400	M207	Lot 32	0.129	Arthur & Patricia Marie Dean	\$ -	\$ 187.00	\$ -	\$ 187.00
253	420-57300	M207	Lot 31	0.117	Glen Leslie & Mary Margaret French	\$ -	\$ 170.00	\$ -	\$ 170.00
254	420-57200	M207	Lot 30	0.112	Brian James Burston & Jennifer Ann Bradie	\$ -	\$ 163.00	\$ -	\$ 163.00
255	420-57100	M207	Lot 29	0.126	David John & Sherry Lynne Hill	\$ -	\$ 183.00	\$ -	\$ 183.00
256	420-57000	M207	Lot 28	0.141	Aaron Charles & Marisa Chambers	\$ -	\$ 205.00	\$ -	\$ 205.00
257	420-56900	M207	Lot 27	0.166	Dorothee Marie & Patrick Tatsuo Endo	\$ -	\$ 241.00	\$ -	\$ 241.00
258	420-56800	M207	Lot 26	0.149	William Lindy Triolet	\$ -	\$ 216.00	\$ -	\$ 216.00
259	420-56700	M207	Lot 25	0.144	Ronald Chittle & Margaret Rooney	\$ -	\$ 209.00	\$ -	\$ 209.00
260	420-56600	M207	Lot 24	0.138	Lawrence Walter & Jean Louise Garvey	\$ -	\$ 200.00	\$ -	\$ 200.00
261	420-56500	M207	Lot 23	0.150	Earle P Morgan & Mavis J Jensen-Morgan	\$ -	\$ 218.00	\$ -	\$ 218.00
262	420-56400	M207	Lot 22	0.150	Carole Penner	\$ -	\$ 218.00	\$ -	\$ 218.00
263	420-56300	M207	Lot 21	0.138	Richard & Tracey Bradwell	\$ -	\$ 200.00	\$ -	\$ 200.00
264	420-56200	M207	Lot 20	0.144	Gary Matthew & Kimberley Grossutti	\$ -	\$ 209.00	\$ -	\$ 209.00
265	420-56100	M207	Lot 19	0.132	Susan Elizabeth & John Peter Severin	\$ -	\$ 192.00	\$ -	\$ 192.00
266	420-56000	M207	Lot 18	0.132	Daniel & Jennifer Di Domenico	\$ -	\$ 192.00	\$ -	\$ 192.00
267	420-55900	M207	Lot 17	0.132	Pamela H. Baksi	\$ -	\$ 192.00	\$ -	\$ 192.00
268	420-55800	M207	Lot 16	0.138	Antonino Pietro & Margaret Corio	\$ -	\$ 200.00	\$ -	\$ 200.00
269	420-55700	M207	Lot 15	0.138	Lucio & Shelley Diane Scodellardo	\$ -	\$ 200.00	\$ -	\$ 200.00
270	420-55600	M207	Lot 14	0.155	Ronald Constanti Moisenko	\$ -	\$ 225.00	\$ -	\$ 225.00
271	420-55500	M207	Lot 13	0.117	Hani Ezzedine & Niza Therese Fadel	\$ -	\$ 170.00	\$ -	\$ 170.00
272	420-55400	M207	Lot 12	0.125	Karen Lynn Walters	\$ -	\$ 181.00	\$ -	\$ 181.00
273	420-55300	M207	Lot 11	0.125	Daniel Edward & Carol Ann St. Pierre	\$ -	\$ 181.00	\$ -	\$ 181.00
274	420-55200	M207	Lot 10	0.130	Brian & Jennifer Scott	\$ -	\$ 189.00	\$ -	\$ 189.00
275	420-55100	M207	Lot 9	0.120	Brian Alan Busch	\$ -	\$ 174.00	\$ -	\$ 174.00
276	420-55000	M207	Lot 8	0.115	Wayne & Michael Haggarty	\$ -	\$ 167.00	\$ -	\$ 167.00
277	420-54900	M207	Lot 7	0.120	Robert & Conception Brewer	\$ -	\$ 174.00	\$ -	\$ 174.00
278	420-54800	M207	Lot 6	0.110	Kevin Courtlyn & Cheryl Ann Meloche	\$ -	\$ 160.00	\$ -	\$ 160.00
279	420-54700	M207	Lot 5	0.130	Michael D & Gundula B Braithwaite	\$ -	\$ 189.00	\$ -	\$ 189.00
280	420-54600	M207	Lot 4	0.115	Michael Misha & Cynthia Louise Nedin	\$ -	\$ 167.00	\$ -	\$ 167.00
281	420-54500	M207	Lot 3	0.120	Marta Leardi-Anderson	\$ -	\$ 174.00	\$ -	\$ 174.00
282	420-54400	M207	Lot 2	0.125	Monique Angela & James Andrew Meloche	\$ -	\$ 181.00	\$ -	\$ 181.00
283	420-54300	M207	Lot 1	0.131	Daniel Solan	\$ -	\$ 190.00	\$ -	\$ 190.00
284	420-54200	12M223	Lot 1	0.144	Dennis Fox & Vynckier Lindsey	\$ -	\$ 209.00	\$ -	\$ 209.00
285	420-54100	12M223	Lot 2	0.130	Alexander M & Jeannine M Campbell	\$ -	\$ 189.00	\$ -	\$ 189.00
286	420-54000	12M223	Lot 3	0.131	Jean Mary Hardstone	\$ -	\$ 190.00	\$ -	\$ 190.00
287	420-53900	12M223	Lot 4	0.135	Giuseppe A Desando & Sarah R Soulliere	\$ -	\$ 196.00	\$ -	\$ 196.00

B) PRIVATELY OWNED - NON-AGRICULTURAL LANDS

PARCEL NO.	TAX ROLL NO.	CON. OR PLAN NO.	LOT OR PART OF LOT	AFFECTED AREA (Ha)	OWNER	(SECTION 22) BENEFIT	(SECTION 23) OUTLET LIABILITY	(SECTION 24) SPECIAL BENEFIT	TOTAL ASSESSMENT
288	420-53800	12M223	Lot 5	0.136	John Douglas Fraser	\$ -	\$ 197.00	\$ -	\$ 197.00
289	420-53700	12M223	Lot 6	0.134	William George & Bonnie-Susan Reeves	\$ -	\$ 195.00	\$ -	\$ 195.00
290	420-53600	12M223	Lot 7	0.134	Steven Matthew & Lisa Ann Bradie	\$ -	\$ 195.00	\$ -	\$ 195.00
291	420-53500	12M223	Lot 8	0.131	Onorio Vitella & Eleonora Talerico-Vitella	\$ -	\$ 190.00	\$ -	\$ 190.00
292	420-53400	12M223	Lot 9	0.128	Peter Paul & Deborah Anne Beaudoin	\$ -	\$ 186.00	\$ -	\$ 186.00
293	420-53300	12M223	Lot 10	0.130	Patricia Sorocky-Hollinger	\$ -	\$ 189.00	\$ -	\$ 189.00
294	420-53200	12M223	Lot 11	0.138	Holger & Barbara Kretschmann	\$ -	\$ 200.00	\$ -	\$ 200.00
295	420-53100	12M223	Lot 12	0.150	Rosanne Mancinone-Cantisani	\$ -	\$ 218.00	\$ -	\$ 218.00
296				3.876	Block A - Essex Condominium Corporation	\$ -	\$ 4,928.00	\$ -	\$ 4,928.00
297					Combined with Parcel No. 296	\$ -	\$ -	\$ -	\$ -
298					Combined with Parcel No. 296	\$ -	\$ -	\$ -	\$ -
299	420-52000	12M223	Lot 51	0.148	Peter & Sylvia Anne Leardi	\$ -	\$ 215.00	\$ -	\$ 215.00
300	420-51900	12M223	Lot 50	0.171	John J & Frances M Tamasovics	\$ -	\$ 248.00	\$ -	\$ 248.00
301	420-51800	12M223	Lot 49	0.140	Jeffery D & Donna E Toplife	\$ -	\$ 203.00	\$ -	\$ 203.00
302	420-51700	12M223	Lot 48	0.121	James David Badour	\$ -	\$ 176.00	\$ -	\$ 176.00
303	420-51600	12M223	Lot 47	0.120	Gerald H & Shirley L Monforton	\$ -	\$ 174.00	\$ -	\$ 174.00
304	420-51500	12M223	Lot 46	0.117	Nicholas Stephen & Jennifer Lynn Swintak	\$ -	\$ 170.00	\$ -	\$ 170.00
305	420-51400	12M223	Lot 45	0.120	Ciaran Sheehan & Kathryn Oper	\$ -	\$ 174.00	\$ -	\$ 174.00
306	420-51300	12M223	Lot 44	0.125	John Emile & Margaret V Laframboise	\$ -	\$ 181.00	\$ -	\$ 181.00
307	420-51200	12M223	Lot 43	0.115	Charles Andrew & Brenda McFarlane	\$ -	\$ 167.00	\$ -	\$ 167.00
308	420-51100	12M223	Lot 42	0.117	Richard Norman & Lorree Louise Purset	\$ -	\$ 170.00	\$ -	\$ 170.00
309	420-51000	12M223	Lot 41	0.125	Frank & Mary Cirino	\$ -	\$ 181.00	\$ -	\$ 181.00
310	420-50900	12M223	Lot 40	0.120	Murray & Jacquelynn Game	\$ -	\$ 174.00	\$ -	\$ 174.00
311	420-50800	12M223	Lot 39	0.127	Frances William & Eleanor Joan Lemire	\$ -	\$ 184.00	\$ -	\$ 184.00
312	420-50700	12M223	Lot 38	0.123	Pamela Goldstein	\$ -	\$ 179.00	\$ -	\$ 179.00
313	420-50600	12M223	Lot 37	0.158	Anthony Duch & Rene Irene Thrasher-Duch	\$ -	\$ 229.00	\$ -	\$ 229.00
314	420-50500	12M223	Lot 36	0.253	Stanley & Mary Lynn Wandeloski	\$ -	\$ 326.00	\$ -	\$ 326.00
315	420-50400	12M223	Lot 35	0.125	Adrian Bernard & Mary Ann Wolff	\$ -	\$ 181.00	\$ -	\$ 181.00
316	420-50300	12M223	Lot 34	0.125	Douglas John & Mary Helen Emery	\$ -	\$ 181.00	\$ -	\$ 181.00
317	420-50200	12M223	Lot 33	0.129	Michael Dennis & Jody Lorraine Fritsch	\$ -	\$ 187.00	\$ -	\$ 187.00
318	420-50100	12M223	Lot 32	0.109	Jinan & Bridget Ann Yousif	\$ -	\$ 158.00	\$ -	\$ 158.00
319	420-50000	12M223	Lot 31	0.108	James A & Colleen P Reimneitz	\$ -	\$ 157.00	\$ -	\$ 157.00
320	420-49900	12M223	Lot 30	0.118	Antonio & Rose Scipione	\$ -	\$ 171.00	\$ -	\$ 171.00
321	420-49800	12M223	Lot 29	0.108	Silvano & Mary Pauline Bertoni	\$ -	\$ 157.00	\$ -	\$ 157.00
322	420-49700	12M223	Lot 28	0.140	Frank John & Carol Ann Sekela	\$ -	\$ 203.00	\$ -	\$ 203.00
323	420-49600	12M223	Lot 27	0.137	Rosemary Sbrocca-Auger	\$ -	\$ 199.00	\$ -	\$ 199.00
324	420-49500	12M223	Lot 26	0.121	Dominic Joseph & Elizabeth Malfara	\$ -	\$ 176.00	\$ -	\$ 176.00
325	420-49400	12M223	Lot 25	0.128	Herbert Frederick & Sylvia Jean Samek	\$ -	\$ 186.00	\$ -	\$ 186.00
326	420-49300	12M223	Lot 24	0.139	Terrance Paul & Leslie Ann Sawchuk	\$ -	\$ 202.00	\$ -	\$ 202.00
327	420-49200	12M223	Lot 23	0.121	Brian W & Lilian Schisler	\$ -	\$ 176.00	\$ -	\$ 176.00
328	420-49100	12M223	Lot 22	0.127	Ronald Orville & Judith Ann Houle	\$ -	\$ 184.00	\$ -	\$ 184.00
329	420-49000	12M223	Lot 21	0.108	Paul Franklin & Mary Lou Pietrangelo	\$ -	\$ 157.00	\$ -	\$ 157.00
330	420-48900	12M223	Lot 20	0.133	David Stephen & Leah Patricia Toombs	\$ -	\$ 193.00	\$ -	\$ 193.00
331	420-48800	12M223	Lot 19	0.152	Connie D'alimonte-Good	\$ -	\$ 221.00	\$ -	\$ 221.00
332	420-48700	12M223	Lot 18	0.119	Michael Angelo & Betsy Alexandra Carosella	\$ -	\$ 173.00	\$ -	\$ 173.00
333	420-48600	12M223	Lot 17	0.125	Katherine Marie & Fred Nelson Cowlin	\$ -	\$ 181.00	\$ -	\$ 181.00
334	420-48500	12M223	Lot 16	0.121	Kenneth & Bunara Orsi	\$ -	\$ 176.00	\$ -	\$ 176.00
335	420-48400	12M223	Lot 15	0.116	Michael Watters & Martha Young	\$ -	\$ 168.00	\$ -	\$ 168.00
336	420-48300	12M223	Lot 14	0.114	Thomas Matthew Hoffman	\$ -	\$ 166.00	\$ -	\$ 166.00
337	420-48200	12M223	Lot 13	0.136	Mark James & Dana Lynn Chekansky	\$ -	\$ 197.00	\$ -	\$ 197.00

B) PRIVATELY OWNED - NON-AGRICULTURAL LANDS

PARCEL NO.	TAX ROLL NO.	CON. OR PLAN NO.	LOT OR PART OF LOT	AFFECTED AREA (Ha)	OWNER	(SECTION 22) BENEFIT	(SECTION 23) OUTLET LIABILITY	(SECTION 24) SPECIAL BENEFIT	TOTAL ASSESSMENT
338	420-48100	12M229	Blk 51 RP	0.015	Town of Amherstburg	\$ -	\$ 22.00	\$ -	\$ 22.00
339	420-48000	12M229	Lot 1	0.127	Jeffrey Wayne & Randi Gene Lamarche	\$ -	\$ 184.00	\$ -	\$ 184.00
340	420-47900	12M229	Lot 2	0.106	Bryan Michael & Brandie Marie Hayes	\$ -	\$ 154.00	\$ -	\$ 154.00
341	420-47800	12M229	Lot 3	0.120	Glen Christopher & Karen Lynne Westrop	\$ -	\$ 174.00	\$ -	\$ 174.00
342	420-47700	12M229	Lot 49	0.124	David & Graziella Foster	\$ -	\$ 180.00	\$ -	\$ 180.00
343	420-47600	12M229	Lot 48	0.116	Richard Jack & Linda Doreen Hanke	\$ -	\$ 168.00	\$ -	\$ 168.00
344	420-47500	12M229	Lot 47	0.119	Carl M Lavoie & Adele N Ramcharan	\$ -	\$ 173.00	\$ -	\$ 173.00
345	420-47400	12M229	Lot 46	0.120	Paul Jay & Maryanne Burgess	\$ -	\$ 174.00	\$ -	\$ 174.00
346	420-47300	12M229	Lot 45	0.126	Calvin Pollard	\$ -	\$ 183.00	\$ -	\$ 183.00
347	420-47200	12M229	Lot 44	0.135	Glen Leslie & Mary Margaret French	\$ -	\$ 196.00	\$ -	\$ 196.00
348	420-47100	12M229	Lot 43	0.140	Joseph Sidney & Christine Erica Caba	\$ -	\$ 203.00	\$ -	\$ 203.00
349	420-47000	12M229	Lot 42	0.131	Eric Gordon & Pamela Darlene Brush	\$ -	\$ 190.00	\$ -	\$ 190.00
350	420-46900	12M229	Lot 41	0.119	Marcel Rene & Christina Marie Nepton	\$ -	\$ 173.00	\$ -	\$ 173.00
351	420-46800	12M229	Lot 40	0.146	Manjit S Jammu & Gurpreet K Auja	\$ -	\$ 212.00	\$ -	\$ 212.00
352	420-46700	12M229	Lot 39	0.113	Derek Paul & Lori Lafferty Viineff	\$ -	\$ 164.00	\$ -	\$ 164.00
353	420-46600	12M229	Lot 38	0.120	Richard & Renee Coughlin	\$ -	\$ 174.00	\$ -	\$ 174.00
354	420-46500	12M229	Lot 37	0.136	Robert G & Sheryl A Lewandowski	\$ -	\$ 197.00	\$ -	\$ 197.00
355	420-46400	12M229	Lot 36	0.150	Jeffrey & Aimee Levy	\$ -	\$ 218.00	\$ -	\$ 218.00
356	420-46300	12M229	Lot 35	0.153	Franz Dalta Bona & Kimberly Lapointe	\$ -	\$ 222.00	\$ -	\$ 222.00
357	420-46200	12M229	Lot 34	0.155	Shawn Edward & Wendy Joan Dufour	\$ -	\$ 225.00	\$ -	\$ 225.00
358	420-46100	12M229	Lot 4	0.172	James Gordon & Wendy Elizabeth Dade	\$ -	\$ 250.00	\$ -	\$ 250.00
359	420-46000	12M229	Lot 5	0.118	Ken & Tamar Sherman	\$ -	\$ 171.00	\$ -	\$ 171.00
360	420-45900	12M229	Lot 6	0.110	Nancy Vasile	\$ -	\$ 160.00	\$ -	\$ 160.00
361	420-45800	12M229	Lot 7	0.106	Jeong Keen Hwang & You Jung Choi	\$ -	\$ 154.00	\$ -	\$ 154.00
362	420-45700	12M229	Lot 8	0.143	Sandra Margaret Andratis	\$ -	\$ 208.00	\$ -	\$ 208.00
363	420-45600	12M229	Lot 9	0.182	Roy Ratko & Cathy Mary Diklich	\$ -	\$ 264.00	\$ -	\$ 264.00
364	420-45500	12M229	Lot 10	0.147	Gary Joseph & Catherine Mary Berthiaume	\$ -	\$ 213.00	\$ -	\$ 213.00
365	420-45400	12M229	Lot 11	0.138	Nicole Marie Mackinnon	\$ -	\$ 200.00	\$ -	\$ 200.00
366	420-45300	12M229	Lot 12	0.142	Daniel Macphee	\$ -	\$ 206.00	\$ -	\$ 206.00
367	420-45200	12M229	Lot 13	0.130	Raymond M & Jane L Gollmer	\$ -	\$ 189.00	\$ -	\$ 189.00
368	420-45100	12M229	Lot 14	0.158	Brad & Luisa Bondy	\$ -	\$ 229.00	\$ -	\$ 229.00
369	420-45000	12M229	Lot 15	0.152	Vincenza Butera	\$ -	\$ 221.00	\$ -	\$ 221.00
370	420-44900	12M229	Lot 16	0.168	Daniel & Monica Eniko Maffei	\$ -	\$ 244.00	\$ -	\$ 244.00
371	420-44800	12M229	Lot 17	0.160	Lyle Vincent Hogan	\$ -	\$ 232.00	\$ -	\$ 232.00
372	420-44700	12M229	Lot 18	0.162	Cameron Woodrow Davy & Amy Goulet	\$ -	\$ 235.00	\$ -	\$ 235.00
373	420-44600	12M229	Lot 19	0.115	Antonio R & Janine A Falsetta	\$ -	\$ 167.00	\$ -	\$ 167.00
374	420-44500	12M229	Lot 20	0.117	Mark Gerard & Mary Catherine Lesperance	\$ -	\$ 170.00	\$ -	\$ 170.00
375	420-44400	12M229	Lot 21	0.117	David Joseph & Cindy Eileen Gagnier	\$ -	\$ 170.00	\$ -	\$ 170.00
376	420-44300	12M229	Lot 22	0.128	Rosemarie & Marie Therese Vajko	\$ -	\$ 186.00	\$ -	\$ 186.00
377	420-44200	12M229	Lot 23	0.113	Brenda Whitehead	\$ -	\$ 164.00	\$ -	\$ 164.00
378	420-44100	12M229	Lot 24	0.133	Keith & Lin White	\$ -	\$ 193.00	\$ -	\$ 193.00
379	420-44000	12M229	Lot 25	0.155	Ann Marie Slipchuk	\$ -	\$ 225.00	\$ -	\$ 225.00
380	420-43900	12M229	Lot 26	0.161	Kalle Midori	\$ -	\$ 234.00	\$ -	\$ 234.00
381	420-43800	12M229	Lot 27	0.139	Jerry Joseph & Amy Macneill	\$ -	\$ 202.00	\$ -	\$ 202.00
382	420-43700	12M229	Lot 28	0.128	Gordon B Angell & Elizabeth M French	\$ -	\$ 186.00	\$ -	\$ 186.00
383	420-43600	12M229	Lot 29	0.123	Daniel Joseph Thomas	\$ -	\$ 179.00	\$ -	\$ 179.00
384	420-43500	12M229	Lot 30	0.126	Daniel & Liliana Bocse	\$ -	\$ 183.00	\$ -	\$ 183.00
385	420-43400	12M229	Lot 31	0.129	Todd & Sabrina Langlois	\$ -	\$ 187.00	\$ -	\$ 187.00
386	420-43300	12M229	Lot 32	0.120	Rocco & Astrid Crudo	\$ -	\$ 174.00	\$ -	\$ 174.00
387	420-43200	12M229	Lot 33	0.134	Manfred & Doreen Bundschuh	\$ -	\$ 195.00	\$ -	\$ 195.00

B) PRIVATELY OWNED - NON-AGRICULTURAL LANDS

PARCEL NO.	TAX ROLL NO.	CON. OR PLAN NO.	LOT OR PART OF LOT	AFFECTED AREA (Ha)	OWNER	(SECTION 22) BENEFIT	(SECTION 23) OUTLET LIABILITY	(SECTION 24) SPECIAL BENEFIT	TOTAL ASSESSMENT
388	420-43101	12M314	Lot 77	0.170	Michael Glenn & Jasminka Kalajdzic	\$ -	\$ 247.00	\$ -	\$ 247.00
389	420-43100	12M314	Lot 76	0.232	Gary Mark & Amy Kathryn Kirk	\$ -	\$ 312.00	\$ -	\$ 312.00
390	420-42900	12M314	Lot 74	0.212	Robert & Dorothy James	\$ -	\$ 299.00	\$ -	\$ 299.00
391	420-42800	12M314	Lot 73	0.112	Stephen & Amalia Szweczuk	\$ -	\$ 163.00	\$ -	\$ 163.00
392	420-42700	12M314	Lot 72	0.112	Luke & Vanessa Livia Dipaolo	\$ -	\$ 163.00	\$ -	\$ 163.00
393	420-42600	12M314	Lot 71	0.111	Darren Scott & Tara Lynn Clarke	\$ -	\$ 161.00	\$ -	\$ 161.00
394	420-42500	12M314	Lot 70	0.129	David Gregory & Roxanne Michel Johnson	\$ -	\$ 187.00	\$ -	\$ 187.00
395	420-42400	12M314	Lot 69	0.190	Sean & Corey Gauvin	\$ -	\$ 276.00	\$ -	\$ 276.00
396	420-42300	12M314	Lot 68	0.192	Carolyn Joy Butzer & Pete McMahon	\$ -	\$ 279.00	\$ -	\$ 279.00
397	420-42200	12M314	Lot 67	0.199	Antonio & Rita Mary Ellen Fata	\$ -	\$ 289.00	\$ -	\$ 289.00
398	420-42100	12M314	Lot 66	0.133	Joseph Raymond & Janice Mary McCarthy	\$ -	\$ 193.00	\$ -	\$ 193.00
399	420-42000	12M314	Lot 65	0.115	James & Christine Standeven	\$ -	\$ 167.00	\$ -	\$ 167.00
400	420-41900	12M314	Lot 64	0.121	Domenic & Susan May Silvaggio	\$ -	\$ 176.00	\$ -	\$ 176.00
401	420-41800	12M314	Lot 63	0.123	James George & Carol Ann Hassay	\$ -	\$ 179.00	\$ -	\$ 179.00
402	420-41700	12M314	Lot 62	0.118	John Paul Robert Howard	\$ -	\$ 171.00	\$ -	\$ 171.00
403	420-41600	12M314	Lot 61	0.134	Robert William & Adriana Jones	\$ -	\$ 195.00	\$ -	\$ 195.00
404	420-41500	12M314	Lot 60	0.135	Timothy O'Callahan	\$ -	\$ 196.00	\$ -	\$ 196.00
405	420-41400	12M314	Lot 59	0.112	Martin Labute	\$ -	\$ 163.00	\$ -	\$ 163.00
406	420-41300	12M314	Lot 58	0.112	Duncan John & Linda Cheryl Simmons	\$ -	\$ 163.00	\$ -	\$ 163.00
407	420-41200	12M314	Lot 57	0.116	Linda Hurdle	\$ -	\$ 168.00	\$ -	\$ 168.00
408	420-41100	12M314	Lot 56	0.114	David & Katherine DeLuca	\$ -	\$ 166.00	\$ -	\$ 166.00
409	420-41000	12M314	Lot 55	0.113	Marco Gianni & Laura Leigh Dibiasse	\$ -	\$ 164.00	\$ -	\$ 164.00
410	420-40900	12M314	Lot 54	0.133	David Armand & Jean Nancy Soulliere	\$ -	\$ 193.00	\$ -	\$ 193.00
411	420-40800	12M314	Lot 53	0.129	Angelo Grandi	\$ -	\$ 187.00	\$ -	\$ 187.00
412	420-40700	12M314	Lot 52	0.109	Donald & Valentina Chow	\$ -	\$ 158.00	\$ -	\$ 158.00
413	420-40600	12M314	Lot 51	0.109	Donato & Maria Carmela Pietrangelo	\$ -	\$ 158.00	\$ -	\$ 158.00
414	420-40500	12M314	Lot 50	0.108	Ricardo Andres Ruzgys	\$ -	\$ 157.00	\$ -	\$ 157.00
415	420-40400	12M314	Lot 49	0.115	Robert Anthony & Carol Ann Dirisio	\$ -	\$ 167.00	\$ -	\$ 167.00
416	420-40300	12M314	Lot 48	0.110	Anthony & Elizabeth Turcano	\$ -	\$ 160.00	\$ -	\$ 160.00
417	420-40200	12M314	Lot 47	0.113	Paul & Wilma Teresa Murray	\$ -	\$ 164.00	\$ -	\$ 164.00
418	420-40100	12M314	Lot 46	0.137	Larry Lloyd & Monica Clementina Shier	\$ -	\$ 199.00	\$ -	\$ 199.00
419	420-40000	12M314	Lot 45	0.143	Linda Jones	\$ -	\$ 208.00	\$ -	\$ 208.00
420	420-39900	12M314	Lot 44	0.104	Dino Natale Latella & Andrea Fyall	\$ -	\$ 151.00	\$ -	\$ 151.00
421	420-39800	12M314	Lot 43	0.110	Glen & Mary O'Neil	\$ -	\$ 160.00	\$ -	\$ 160.00
422	420-39700	12M314	Lot 42	0.109	David & Nancy Vanderhoeven	\$ -	\$ 158.00	\$ -	\$ 158.00
423	420-39600	12M314	Lot 41	0.105	Mary Joanne Hagman	\$ -	\$ 152.00	\$ -	\$ 152.00
424	420-39500	12M314	Lot 40	0.107	Joseph Paul & Judy Elizabeth Lepine	\$ -	\$ 155.00	\$ -	\$ 155.00
425	420-39400	12M314	Lot 39	0.115	James Andrew & Heather Rachel Clarke	\$ -	\$ 167.00	\$ -	\$ 167.00
426	420-39300	12M314	Lot 38	0.115	Duane Keith & Alanna Johnson	\$ -	\$ 167.00	\$ -	\$ 167.00
427	420-39200	12M314	Lot 37	0.112	Anthony & Jacqueline Leardi	\$ -	\$ 163.00	\$ -	\$ 163.00
428	420-39100	12M314	Lot 36	0.142	Thomas & Sandra Fortushniok	\$ -	\$ 206.00	\$ -	\$ 206.00
429	420-39000	12M314	Lot 35	0.153	Thomas Jeffrey & Carmen Grant	\$ -	\$ 222.00	\$ -	\$ 222.00
430	420-38900	12M314	Lot 34	0.115	William & Barbara Barnes	\$ -	\$ 167.00	\$ -	\$ 167.00
431	420-38800	12M314	Lot 33	0.118	Thomas Joseph & Linda Mary Chevalier	\$ -	\$ 171.00	\$ -	\$ 171.00
432	420-38700	12M314	Lot 32	0.118	Susan & John Lowrie	\$ -	\$ 171.00	\$ -	\$ 171.00
433	420-38600	12M314	Lot 31	0.112	David & Sara Di Ponio	\$ -	\$ 163.00	\$ -	\$ 163.00
434	420-38500	12M314	Lot 30	0.116	David Thomas & Anna Adams	\$ -	\$ 168.00	\$ -	\$ 168.00
435	420-38400	12M314	Lot 29	0.123	Anthony & Jennifer Ricciuti	\$ -	\$ 179.00	\$ -	\$ 179.00
436	420-38300	12M314	Lot 28	0.113	Percival & Susan Nicholas	\$ -	\$ 164.00	\$ -	\$ 164.00
437	420-38200	12M314	Lot 27	0.114	Keith James Nichol & Diana Hegedus	\$ -	\$ 166.00	\$ -	\$ 166.00

B) PRIVATELY OWNED - NON-AGRICULTURAL LANDS

PARCEL NO.	TAX ROLL NO.	CON. OR PLAN NO.	LOT OR PART OF LOT	AFFECTED AREA (Ha)	OWNER	(SECTION 22) BENEFIT	(SECTION 23) OUTLET LIABILITY	(SECTION 24) SPECIAL BENEFIT	TOTAL ASSESSMENT
438	420-38100	12M314	Lot 26	0.115	Trevor Brett & Deanna Marie McLennan	\$ -	\$ 167.00	\$ -	\$ 167.00
439	420-38000	12M314	Lot 25	0.108	Randall Francis & Dana Stevens	\$ -	\$ 157.00	\$ -	\$ 157.00
440	420-37900	12M314	Lot 24	0.115	Antonio Ficociello & Jennifer Dinkel	\$ -	\$ 167.00	\$ -	\$ 167.00
441	420-37800	12M314	Lot 23	0.134	Jefferson Ross Wiggins	\$ -	\$ 195.00	\$ -	\$ 195.00
442	420-37700	12M314	Lot 22	0.183	Daniel Robert Huneault	\$ -	\$ 266.00	\$ -	\$ 266.00
443	420-37600	12M314	Lot 21	0.175	Mitch Kwok Ming & Helen Yan Yeung	\$ -	\$ 254.00	\$ -	\$ 254.00
444	420-37500	12M314	Lot 20	0.118	Guy Mario & Darlene Cheryl Lachance	\$ -	\$ 171.00	\$ -	\$ 171.00
445	420-37400	12M314	Lot 19	0.118	Xiuming Hao & Huanglin Wang	\$ -	\$ 171.00	\$ -	\$ 171.00
446	420-37300	12M314	Lot 18	0.118	Roy Thomas & Heather Anne Thomson	\$ -	\$ 171.00	\$ -	\$ 171.00
447	420-37200	12M314	Lot 17	0.118	Alan James & Lin Merritt	\$ -	\$ 171.00	\$ -	\$ 171.00
448	420-37100	12M314	Lot 16	0.151	Jonathan & Amanda Proctor	\$ -	\$ 219.00	\$ -	\$ 219.00
449	420-37000	12M314	Lot 15	0.151	Jame Hrycay & Madonna Beale	\$ -	\$ 219.00	\$ -	\$ 219.00
450	420-36900	12M314	Lot 14	0.145	Edward & Cheryl Predki	\$ -	\$ 211.00	\$ -	\$ 211.00
451	420-36800	12M314	Lot 13	0.128	Angus & Helen Oswald	\$ -	\$ 186.00	\$ -	\$ 186.00
452	420-36700	12M314	Lot 12	0.125	Robert & Lesley Froome	\$ -	\$ 181.00	\$ -	\$ 181.00
453	420-36600	12M314	Lot 11	0.118	Douglas Wayne Zeller	\$ -	\$ 171.00	\$ -	\$ 171.00
454	420-36400	12M314	Lot 10	0.247	Deborah & Jude Mead	\$ -	\$ 322.00	\$ -	\$ 322.00
455	420-36300	12M314	Lot 8	0.126	Troy Alan & Linda Susan Palcit	\$ -	\$ 183.00	\$ -	\$ 183.00
456	420-36200	12M314	Lot 7	0.131	John J. Nassr & Weiya Cai	\$ -	\$ 190.00	\$ -	\$ 190.00
457	420-36100	12M314	Lot 6	0.127	Eva Diane Bernachi	\$ -	\$ 184.00	\$ -	\$ 184.00
458	420-36000	12M314	Lot 5	0.130	Bradley Scott & Margo Lynn Sanger	\$ -	\$ 189.00	\$ -	\$ 189.00
459	420-35900	12M314	Lot 4	0.120	Paul Stephen & Marion Ellen Taylor	\$ -	\$ 174.00	\$ -	\$ 174.00
460	420-35800	12M314	Lot 3	0.124	Maricris Dinardo	\$ -	\$ 180.00	\$ -	\$ 180.00
461	420-35700	12M314	Lot 2	0.118	George & Jennifer Minovski	\$ -	\$ 171.00	\$ -	\$ 171.00
462	420-35600	12M314	Lot 1	0.150	Guy Joseph & Lucy Lima Morneauult	\$ -	\$ 218.00	\$ -	\$ 218.00
463	420-35400	1	Pt Lots 16-18	63.621	Pointe West Golf Club	\$ -	\$ 31,857.00	\$ -	\$ 31,857.00
464	420-34300	1 N	Pt Lot 17	0.412	Lenard Stanley & Olga Stephanie Beaudoin	\$ -	\$ 434.00	\$ -	\$ 434.00
465	420-34200	1 N	Pt Lot 17	0.416	Anthony & Elizabeth Anne Rosati	\$ -	\$ 437.00	\$ -	\$ 437.00
466	420-34100	1 N	Pt Lot 17	0.415	Donald Parsons & Denise Digiovanni	\$ -	\$ 436.00	\$ -	\$ 436.00
467	420-34000	1 S	Pt Lot 17	0.345	Denise Marie Digiovanni	\$ -	\$ 389.00	\$ -	\$ 389.00
468	420-33900	1 S	Pt Lot 17	0.411	Delores Stella & Michael Neville Specht	\$ -	\$ 433.00	\$ -	\$ 433.00
469	420-33800	1 S	Pt Lot 17	0.410	Gary Wayne Emery & Janice Louise Emery	\$ -	\$ 433.00	\$ -	\$ 433.00
470	420-33650	1 N	Pt Lot 16	0.337	Steven & Valerie Pittao	\$ -	\$ 383.00	\$ -	\$ 383.00
471	420-33600	1 N	Pt Lot 16	0.386	Stephen & Justine Silvaggio	\$ -	\$ 416.00	\$ -	\$ 416.00
472	420-33500	1 N	Pt Lot 16	0.554	Marcello & Anne Deluca	\$ -	\$ 530.00	\$ -	\$ 530.00
473	420-33400	1 S	Pt Lot 16	0.471	Sandra Anne Arbour	\$ -	\$ 474.00	\$ -	\$ 474.00
474	420-33300	1 S	Pt Lot 16	0.512	Jeremie Bomais & Kimberly Lynn	\$ -	\$ 502.00	\$ -	\$ 502.00
475	420-33200	1 S	Pt Lot 16	0.450	Michelina & Domenic Michelina	\$ -	\$ 460.00	\$ -	\$ 460.00
476	420-33100	1 N	Pt Lot 15	0.376	John Michael & Valerie Ann Simone	\$ -	\$ 409.00	\$ -	\$ 409.00
477	420-33000	1 N	Pt Lot 15	0.376	Antonia Maria & Tony Nicola Sauro	\$ -	\$ 409.00	\$ -	\$ 409.00
478	420-32900	1 N	Pt Lot 15	0.376	Carlo & Filomena Pacitti	\$ -	\$ 409.00	\$ -	\$ 409.00
479	420-32800	1 N	Pt Lot 15	0.376	Jason Patrick Cristofaro	\$ -	\$ 409.00	\$ -	\$ 409.00
480	420-32700	1	Pt Lot 15	0.408	Robert Clifford & Mary Sue Anderson	\$ -	\$ 431.00	\$ -	\$ 431.00
481	420-32500	1	Pt Lot 15	0.252	Nicholas Amaral & Jeanette Dufour-Amaral	\$ -	\$ 326.00	\$ -	\$ 326.00
482	420-32400	1 S	Pt Lot 15	0.366	Sara & Sebastiano Sebastiano	\$ -	\$ 403.00	\$ -	\$ 403.00
483	420-32300	1 S	Pt Lot 15	0.365	George & Lorraine Levack	\$ -	\$ 402.00	\$ -	\$ 402.00
484	420-32200	1 N	Pt Lot 14	0.316	Marc Picard	\$ -	\$ 369.00	\$ -	\$ 369.00
485	420-32100	1 N	Pt Lot 14	0.333	Natan & Wilma Caratanasov	\$ -	\$ 380.00	\$ -	\$ 380.00
486	420-31900	1 N	Pt Lot 14	0.340	Barry Josepyh & Lee Ann Chute	\$ -	\$ 385.00	\$ -	\$ 385.00
487	420-31800	1	Pt Lot 14	0.785	Ervin Joseph & Mary Donata Meloche	\$ -	\$ 687.00	\$ -	\$ 687.00

B) PRIVATELY OWNED - NON-AGRICULTURAL LANDS									
PARCEL NO.	TAX ROLL NO.	CON. OR PLAN NO.	LOT OR PART OF LOT	AFFECTED AREA (Ha)	OWNER	(SECTION 22) BENEFIT	(SECTION 23) OUTLET LIABILITY	(SECTION 24) SPECIAL BENEFIT	TOTAL ASSESSMENT
488	420-31700	1 S	Pt Lot 14	0.567	Dan & Joanne Elizabeth Simone	\$ -	\$ 539.00	\$ -	\$ 539.00
489	420-31500	1 S	Pt Lot 13 & 14	0.797	Marc Christopher & Lorri Maina Conte	\$ -	\$ 695.00	\$ -	\$ 695.00
490	420-31300	1 N	Pt Lot 13	0.396	Fred Conte	\$ -	\$ 423.00	\$ -	\$ 423.00
491	420-31200	1 N	Pt Lot 13	0.396	Dan Conte	\$ -	\$ 423.00	\$ -	\$ 423.00
492					Combined with Parcel No. 296	\$ -	\$ -	\$ -	\$ -
493	420-17000	1	Pt Lot 14	0.302	Jose Dupont & Therea Anne Whelan	\$ 2,440.00	\$ 19.00	\$ -	\$ 2,459.00
494	420-16900	1	Pt Lot 14	0.334	Tracy Anne Foreman	\$ 4,880.00	\$ 137.00	\$ -	\$ 5,017.00
495	420-16800	1 S	Pt Lot 14	0.175	Joseph Anthony & Roxanne M Ouellette	\$ 13,420.00	\$ 203.00	\$ -	\$ 13,623.00
496	420-16750	1 S	Pt Lot 15	0.101	Tina Michele Di Luca & Jim Joncas	\$ -	\$ 147.00	\$ -	\$ 147.00
497	420-16700	1 S	Pt Lot 15	0.148	Michael & Victoria Di Luca	\$ -	\$ 215.00	\$ -	\$ 215.00
498	420-16600	1 S	Pt Lot 15	0.118	Jeffrey G & Wendy Leigh Dietrich	\$ -	\$ 171.00	\$ -	\$ 171.00
499	420-16500	1	Pt Lot 15	0.323	Michael & Bernadette McCourt	\$ -	\$ 374.00	\$ -	\$ 374.00
500	460-00800	1	Pt Lot 19	0.068	Daniel William Osborne & Ruthann Comeau	\$ -	\$ 99.00	\$ -	\$ 99.00
501	460-00700	1	Pt Lot 19	0.066	Leo Petrilli & Sarah Parent	\$ -	\$ 96.00	\$ -	\$ 96.00
502	460-41436	12M517	BLK 68 RP	0.205	Town of Amherstburg	\$ -	\$ 294.00	\$ -	\$ 294.00
503	460-41438	12M517	BLK 69 RP	0.207	Town of Amherstburg	\$ -	\$ 295.00	\$ -	\$ 295.00
504	500-31800	1	-	3.780	Essex Terminal Railway	\$ -	\$ 5,489.00	\$ -	\$ 5,489.00
510	420-31600	1	Pt Lot 13,14	1.079	Marc Christopher & Lorri Maina Conte	\$ -	\$ 522.00	\$ -	\$ 522.00
Total Affected Lands (Hectares)				144.405					
Total Assessment on Privately Owned Non-Agricultural Lands (Not Grantable)						\$ 20,740.00	\$ 138,755.00	\$ -	\$ 159,495.00

C) PRIVATELY OWNED - AGRICULTURAL LANDS (GRANTABLE)									
PARCEL NO.	TAX ROLL NO.	CON. OR PLAN NO.	LOT OR PART OF LOT	AFFECTED AREA (Ha)	OWNER	(SECTION 22) BENEFIT	(SECTION 23) OUTLET LIABILITY	(SECTION 24) SPECIAL BENEFIT	TOTAL ASSESSMENT
26	410-02950	2	Pt Lot 6	0.230	Natalino & Gina Cervi	\$ -	\$ 311.00	\$ -	\$ 311.00
30	410-02600	2 W	Pt Lot 6	0.232	Trust Deluca Raimondo	\$ -	\$ 312.00	\$ -	\$ 312.00
505	410-04000	2	Pt Lot 5	3.976	Michael Kosyk	\$ -	\$ 1,924.00	\$ -	\$ 1,924.00
506	410-02000	2 N	Pt Lot 5	2.294	David Anthony & Lauriane M Boussey	\$ -	\$ 1,110.00	\$ -	\$ 1,110.00
507	410-02400	2 N	Pt Lot 5	2.619	Raymond George & Doreen Diane Kelly	\$ -	\$ 1,268.00	\$ -	\$ 1,268.00
508	410-03000	2	Pt Lot 6 RP	8.491	Natalino & Gina Cervi	\$ -	\$ 4,110.00	\$ -	\$ 4,110.00
509	420-18100	1	Pt Lot 12-14	2.770	Dunn Group of Companies	\$ -	\$ 1,341.00	\$ -	\$ 1,341.00
510					(Moved to Section B - Non-Grantable)				
511	420-32000	1 N	Pt Lot 14	3.302	658620 Ontario Limited	\$ -	\$ 1,598.00	\$ -	\$ 1,598.00
512	420-32600	1 N	Pt Lot 14	4.850	2037832 Ontario Limited	\$ -	\$ 2,347.00	\$ -	\$ 2,347.00
513	460-01000	1	Pt Lot 19-21	20.195	1486134 Ontario Limited	\$ -	\$ 9,774.00	\$ -	\$ 9,774.00
Total Affected Lands (Hectares)				48.959					
Total Assessment on Privately Owned Agricultural Lands (Grantable)						\$ -	\$ 24,095.00	\$ -	\$ 24,095.00

TOTAL ASSESSMENT FOR SCHEDULE A (SECTIONS A, B & C)	\$ 24,400.00	\$ 219,600.00	\$ -	\$ 244,000.00
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TOTAL LANDS AFFECTED (Ha)	
A) Municipal Lands	23.445
B) Non-Agricultural Lands	144.405
C) Agricultural Lands	48.959
Total Lands Affected:	216.809

NOTE: Assessment Values have been rounded to the nearest whole dollar for presentation purposes.

1 Hectare = 2.471 Acres

APPENDIX 'B'

SPECIAL PROVISIONS AND SPECIFICATIONS

**FOR THE
REPAIR AND IMPROVEMENT
OF PART OF THE
OUELLETTE DRAIN WEST**

**IN THE
TOWN OF AMHERSTBURG
COUNTY OF ESSEX**

SPECIAL PROVISIONS

1.0 GENERAL SPECIFICATIONS

The General Specifications attached hereto are part of Appendix 'B'. It forms part of this specification and is to be read with these specifications and the Drawings contained in the report. Where there is a difference between the requirements of the Special Provisions and the General Specifications, the Special Provisions shall take precedence.

2.0 DESCRIPTION OF WORK

The accompanying Engineer's report deals with the repair and improvement of part of the Ouellette Drain West. The work to be carried out under this Contract generally comprises the supply of all materials, equipment and labour required to remove the existing stacked limestone erosion protection near the outlet of the Ouellette Drain West and construct new gabion basket retaining walls at the drain banks. The estimated length of the drain repair and improvement is approximately 60m. The work also includes clean-up, restoration, topsoil and seeding, driveway repair or replacement, tree removal and traffic controls as required. Traffic control and sediment control is also the responsibility of the Contractor. All excavated materials, brush, trees and surplus materials shall be disposed of off site. "Fish Protection" and protection of the environment shall be carried out by the Contractor to the satisfaction of the Municipality and in accordance with Provincial and Federal legislation and requirements of government agencies.

3.0 ACCESS TO THE WORK

The work is primarily located on the residential properties at 751 County Road 20, 741 County Road 20 and 737 County Road 20. Access to the drain from County Road 20 shall be achieved by using the driveway entrance to 737 County Road 20 and by building a ramp off of County Road 20 onto the portion of the property at 741 County Road 20 lying north of the drain.

In the case of the property at 737 County Road 20, the access area shall be restricted to a width of 9.0 m centered on the existing driveway. The access area shall start at the travelled portion of County Road 20 and follow along the existing private asphalt driveway and connect to the working corridor designated along the south side of the drain from Station 0+000 to Station 0+060.

Through traffic must be maintained at all times along the adjoining road. All required traffic control is as per Section 8.0 in the General Specifications for Open Drains (GSOD). Any damage resulting from the Contractor's access to the site shall be rectified to pre-existing conditions at the contractor's expense and to the satisfaction of the Drainage Superintendent and the Engineer.

4.0 WORKING AREAS

Working areas for storage of materials and operation of equipment are designated on the residential properties located at #737, #741 and #751 County Road 20. The working area shall include the area occupied by the existing drain and the additional area designated as follows:

- The portion of residential lot #741 County Road 20 that is located on the north side of the drain.
- From Station 0+000 to Station 0+060, the designated working area on the south side of the drain shall have a maximum width of 9.0 m measured from the top of the finished south bank of the drain.
- From Station 0+028 to Station 0+060, no working corridor is being provided on the north side of the drain for the operation of equipment. The working area required for personnel on the north side of the drain is very limited and shall be designated in the field by the Drainage Superintendent and the Engineer.

Any damages to lands and/or roads from the Contractor's work within the designated access areas, working corridors and working areas for the construction shall be rectified to pre-existing conditions at the Contractor's expense and to the sole satisfaction of the Drainage Superintendent. This includes restoration of grassed areas, driveways, trees and landscaping, etc. The removal of trees and tree trimming will only be permitted as allowed by the Drainage Superintendent or the Engineer.

Any damage caused to property outside the designated access areas, working corridors and working areas for the construction shall be the sole responsibility of the Contractor and shall be rectified to pre-existing conditions at the Contractor's expense.

5.0 EXCAVATION AND DISPOSAL OF EXCAVATED MATERIAL

No excavated material shall be reused in the drain. Unless otherwise directed by the Drainage Superintendent and/or Engineer, all material excavated from the drain shall become the property of the contractor who shall load, haul and dispose of the excavated material off-site. That any deleterious materials excavated from the drain or found in the working areas shall be removed and disposed of off-site. This includes tree limbs, garbage, rubble, limestone pieces from the old retaining wall, etc. **The owner of Roll No. 420-16800 (Municipal # 751 County Road 20) has indicated that suitable excess excavated materials may be deposited and spread on the south side of the drain from Station 0+040 to Station 0+060, instead of hauling and disposing of the material off-site.**

We recommend that the limestone retaining walls constructed under the 1952 drainage report, be removed and disposed of off-site, **unless the owner of Roll No. 420-16800 (Municipal # 751 County Road 20) indicates that they would like to have the material left on the south side of the drain from Station 0+040 to Station 0+060, instead of hauling and disposing of the material off-site.**

In all cases, the Contractor shall use the benchmarks to establish the proposed drain bottom grade. However, for convenience, the drawings provide the approximate depth from the existing drain bottom to the proposed grades. ***The Contractor shall not excavate deeper than the gradelines shown on the Drawings or cause sloughing of the banks.*** Should over-excavation or sloughing of the drain bank occur, the Contractor will not be permitted to repair with native material packed into place by the excavator and reshaped. Should over-excavation or sloughing occur, the Contractor will be required to have a bank repair detail engineered by a Professional Engineer (hired by the Contractor), to ensure long term stability of the bank is maintained. Such repairs shall be subject to approval by the Engineer and will be at no extra cost to the contract.

Seeding of the disturbed drain banks shall be completed immediately following drain construction and as specified in Section 9.

All excavation work shall be done in such a manner so that no unnecessary disturbance, damage or harm is caused to vegetation and trees except for that required by the specifications and that designated in the field by the Drainage Superintendent. Any unnecessary damage to trees or vegetation caused by the Contractors work shall be restored to the satisfaction of the Drainage Superintendent.

The Contractor shall exercise caution around existing tile outlet pipes and shall confirm with the property owners that all tiles have been located. The Contractor shall repair all damages caused by his operations to the satisfaction of the Drainage Superintendent.

6.0 GABION BASKET RETAINING WALLS

6.1 Location of Gabion Basket Retaining Walls

The gabion basket retaining walls shall be installed as shown on the drawings. Prior to installation, the Contractor shall stake the alignments proposed for the retaining walls and the top of the finished drain banks for review and approval by the Drainage Superintendent and the Engineer, prior to construction.

6.2 Existing Landscaping

There is an existing landscaped area on the south side of the drain that is located within the working corridor required for the access of equipment required to carry out drain maintenance and improvements. The property owner will have the opportunity to salvage the landscaping materials, plants, shrubs and ornamental trees for use elsewhere. If this material is not removed by the landowner prior to construction, the Contractor shall remove and set those materials aside for the use of the landowner if so desired.

The lawn and grassed areas and the asphalt driveway shall be restored to pre-existing conditions by the Contractor to the satisfaction of the Drainage Superintendent and the Engineer. The working area designated in the specifications shall be provided by the landowner, in the future, for the purposes of future maintenance of the drain.

6.3 Reference specifications

Materials shall be as follows:

Gabion Baskets

The gabion basket materials shall be made of PVC coated galvanized steel wire mesh manufactured in accordance with OPSS.MUNI 1430.

Gabion Stone for Gabion Baskets

Gabion Stone shall be supplied in accordance with OPSS.MUNI 1004.

Filter Fabric for Gabion Baskets

“Non-Woven” geotextile MacTex MX-225 by Maccaferri Canada or approved equal. Heavy duty, Class II material with a filtration opening size (FOS) of 115 micron. The material shall be supplied in accordance with OPSS.MUNI 1860.

Rip-Rap Protection for Drain Banks

All stone to be used for erosion protection shall be 125-250 mm clear quarried rock or OPSS 1004, minimum 300 mm thickness. Broken concrete rip-rap and round field stone are not acceptable.

Filter Fabric for Rock Protection

“Non-Woven” geotextile filter fabric with a minimum strength equal to or greater than Terrafix 270R, Amoco 4546, Mirafi 140NC or approved equivalent.

Granular Backfill Material behind Gabion Retaining Walls

A free drainage layer is required behind all retaining walls consisting of 19 mm clear stone having a minimum width of 0.30 m. The clear stone material shall be supplied in accordance with OPSS.MUNI 1004.

Granular Material for Walkway

Granular ‘A’ made from crushed limestone conforming to OPSS Division 10. Minimum 150mm thickness compacted to 100% Standard Proctor Density.

Topsoil

Topsoil conforming to OPSS, 100mm thickness.

Native Material

Select cohesive earth material, dry, free from broken concrete, steel, wood and deleterious substances compacted to 95% Standard Proctor Density.

6.4 Dry Installation

Suitable dykes shall be constructed in the drain so that the installation of the gabion basket retaining walls can be carried out in dry conditions. The drain bottom and wall foundation shall be cleaned, prepared, shaped and compacted to accept the installation of the gabion basket retaining walls, as shown on the drawings. Dewatering is the responsibility of the Contractor. The Contractor shall maintain flows in the drain during construction as required under Section 11 of these Special Provisions. The Contractor's attention is also drawn to the following sections of these Special Provisions that shall be adhered to during construction:

- Section 9.0 - Silt Control
- Section 10.0 - Fish Protection
- Section 12.0 - Endangered Species Act Requirements

6.5 Installation of Gabion Baskets

The existing stacked limestone walls near the outlet of the Ouellette Drain West were constructed under an Engineer's report dated May 8, 1952. The sloping walls on both banks of the drain were constructed of horizontal courses of limestone blocks on each side of the drain. Portions of the sloping walls have failed and require replacement. The report indicated that the walls were to be constructed 600 mm wide. The sloping wall on the southeast side of the drain was to extend from 300 mm below the drain bottom up to a vertical height of 1.80 m above the drain bottom. The sloping wall on the northwest side of the drain was to extend from 300 mm below the drain bottom up to a vertical height of 1.20 m above the drain bottom.

The Contractor shall carefully remove the limestone blocks from the banks of the existing drain and limestone blocks and rubble in the bottom of the drain. The limestone material and all excess excavated material shall become the property of the Contractor and shall be loading hauled and disposed of off site at an approved location.

The construction of the new retaining walls shall be carried out in accordance with the drawings and the provisions of OPSS.MUNI 512 and the recommendation of the manufacturer of the gabion baskets.

The Contractor shall completely backfill in behind the new retaining walls with a 300 mm wide drainage layer consisting of 19 mm clear stone with cohesive select earth beyond that compacted to 95% standard Proctor density. The placing of the gabion basket retaining wall and filter fabric and the backfilling shall be performed in lifts simultaneously. The select earth backfill shall be placed and compacted in lifts not to exceed 300mm (12") in thickness.

Above the top of the retaining walls the banks of the drain shall be resloped and when placing and compacting the fill material to reconstruct the drain banks, benching shall be carried out in accordance with OPSD 208.010. The backfill material shall be placed in layers not exceeding 300 mm in depth, compacted to 95% standard Proctor density.

7.0 RESTORATION OF SITE

The Contractor is responsible for full restoration of the site including lawns, grassed areas, fences, guard railing, roads, driveways including pavement, gravel walkway, etc. All restoration shall be carried out equal to or better than the preconstruction condition and to the satisfaction of the Drainage Superintendent and/or Engineer.

8.0 ASPHALT DRIVEWAY REPAIR

OPSS 311 shall apply and govern except as extended or amended herein.

All asphalt driveway pavement restoration shall be carried out to a condition equal to or better than the preconstruction condition and to the satisfaction of the Drainage Superintendent and/or Engineer.

The Drainage Superintendent and/or Engineer shall determine the extent of repairs or reconstruction required of the Contractor. If reconstruction of the driveway is required, an acceptable finished driveway shall consist of a minimum of 40mm of HL3 surface coarse (OPSS 1150) on a base course of 50mm HL4 (OPSS 1150) laid on a compacted granular base of 300mm of Granular A (OPSS 1010).

The prepared base shall be dry, well compacted and approved by the Engineer before work commences. The driveway shall not be opened to vehicles until the mix have cooled sufficiently to prevent deformation. The finished surface shall be smooth and true to the established grade and of a uniform texture. The surface of the finished driveway shall be free from depressions exceeding 5mm as measured with a 3m straight edge placed anywhere on the pavement parallel to the centreline.

9.0 HYDRAULIC SEEDING OF DRAIN BANKS, ROADSIDE AREAS AND LAWN AREAS.

Hydraulic seeding and mulching shall be carried out in accordance with OPSS 804 as modified below, on the following areas:

- All existing grassed areas disturbed by the construction including lawns and roadside areas.
- All areas where the existing ditch is enclosed with culvert pipe and backfilled with native material and topsoil.
- All disturbed areas of the ditch banks and ditch bottom.

The surface to be seeded shall be loosened to a depth of 25 mm and shall be rendered uniformly loose for that 25 mm depth. The surface shall be predominantly fine and free from weeds and other unwanted vegetation. All other loose surface litter shall be removed and disposed of.

Hydraulic mulch shall consist of finely ground cellulose pulp derived from recycled newsprint and shall be dyed green. Its fiber consistency shall be approximately 60% fine fiber with the balance being paper particles, 40% of which shall be a diameter of 3 mm minimum and 6 mm maximum. Hydraulic mulch shall be applied at 2,000 kg of dry product per 10,000 m². Clean water shall be applied at 42,700 litres per 10,000 m².

Seeding and mulching shall be a one step process in which the seed, fertilizer and hydraulic mulch are applied simultaneously in a water slurry via the hydraulic seeder/mulcher. The materials shall be added to the supply tank while it is being loaded with water. The materials shall be thoroughly mixed into a homogeneous water slurry and shall be distributed uniformly over the prepared surface. The materials shall be measured by mass or by a mass-calibrated volume measurement, acceptable to the Drainage Superintendent.

The hydraulic seeder/mulcher shall be equipped with mechanical agitation equipment capable of mixing the materials into a homogenous state until applied. The discharge pumps and gun nozzles shall be capable of applying the material uniformly. The following seed mixtures are required:

a) Lawn Areas and Roadside Areas

The grass seed mixture shall be M.T.O. Standard Canada No. 1 lawn seed. The nurse crop shall be rye grain, Canada No. 1 seed. The application rates are:

M.T.O. Grass Seed Mix	100 kg
Nurse Crop Seed	60 kg

b) Ditch Banks and Bottom

Grass seed shall be Canada No. 1 grass seed mixture. The seed mixture shall be applied at a rate of 200 kg per 10,000 m². The mixture shall meet the requirements of a Waterway Slough Mixture as supplied by Growmark or approved equal, as follows:

<i>Creeping Red Fescue</i>	20%
<i>Meadow Fescue</i>	30%
<i>Tall Fescue</i>	30%
<i>Timothy</i>	10%
<i>White Clover</i>	10%

Bags shall bear the label of the supplier indicating the content by species, grade and mass. Other grass seed mixtures will be considered with approval of Engineer and Drainage Superintendent. Fertilizer shall be 8-32-16 applied at 350 kg per 10,000 m². It shall be in granular form, dry, free from lumps and in bags bearing the label of the manufacturer, indicating mass and analysis.

The hydraulic seeding shall be deemed "Completed by the Contractor" when the seed has established in all areas to the satisfaction of the Engineer. Re-seeding and/or other methods required to establish the grass will be given consideration to achieve the end result and the costs shall be incidental to the works.

9.0 SILT CONTROL

The contractor shall supply, install, maintain and remove a temporary water permeable filter fence (silt fence) to remove suspended particulates from the water passing through it. At the commencement of construction, the contractor shall install a silt fence across the outlet of the drain. The silt fence shall be constructed of a minimum 1.0 m wide geotextile securely fastened to steel posts. The geotextile shall be attached to the up-gradient side of the posts. Where required, wire or any other type of support may be constructed between the geotextile and the posts in order to improve the load carrying capacity of the silt fence. The geotextile may be a woven or a non-woven material that has a minimum tensile strength of 100 lbs., permittivity of at least 90 gal/min/ft² and an apparent opening size of US Sieve No. 30.

Steel posts of sufficient strength to support the silt fence shall be used. The maximum post spacing shall be approximately 2 m. Every effort must be made to ensure that the bottom edge of the silt fence is in continuous contact with the bottom of the channel.

The silt fence shall remain in place until the project is complete. The contractor shall maintain the silt fence until it is removed. Upon removal, the silt accumulation upstream of the fence shall also be removed. The cost of supply, installation, maintenance and removal of the silt fence shall be included in the Lump Sum price bid for this item.

10.0 FISH PROTECTION

The Contractor is responsible for meeting all requirements of federal, provincial and municipal agencies and the provisions outlines in this report and contract documents.

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 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.

Avoid using explosives in or near water. Use of explosives in or near water produces shock waves that can damage a fish's swim bladder and rupture internal organs. Blasting vibrations may also kill or damage fish eggs or larvae.

The following measures of the fish protection plan must be followed:

1. Prior to commencement of construction, the work site within the drain will be isolated. A protective berm and/or netting will be installed in the channel at the upstream limit of the work. A sediment control barrier, spanning the width of the drain, will be swept through the work zone, starting at the upstream end of the work and extending downstream to the road crossing at County Road 20.
2. Following the above noted sweep, the sediment control barrier will be staked across the full cross section of the drain at the upstream face of the County Road 20 culvert to prevent migration of any sediment downstream. Also, protective berms and/or fish netting will be installed across the channel at this location.
3. Prior to any construction, the work zone will be inspected for the presence of any fish. Any fish detected will be swept downstream and out of the work zone using the technique described above.
4. Sediment control barriers will be installed downstream of the work for the duration of the project.
5. Provisions will be outlined for the contractor in the contract documents and drainage report as outlined above, along with any other measures required by the DFO.

11.0 MAINTAINING FLOWS

The Contractor will be responsible for maintaining flows in the drain. The Contractor shall obtain approval from the Drainage Superintendent before stopping any flows and is responsible for providing any necessary pumping equipment and bypasses required.

12.0 ENDANGERED SPECIES ACT REQUIREMENTS

See Section 11 of the attached “Environmental Protection Special Provisions”.

GENERAL SPECIFICATION FOR OPEN DRAINS

(Revised 2016 11 25)

SECTION 1 - AGREEMENT AND GENERAL CONDITIONS

- (1) Payment for the work shall be on a lump sum basis unless otherwise indicated. The Contractor agrees to enter into a formal contract with the Municipality upon acceptance of the tender. The General Conditions of the contract shall be those of the Stipulated Price Contract CCDC2-Engineers, 2008 or the most recent revision of this document. The form of agreement between Owner and Contractor shall be that of the previously stated document or a form of agreement specifically prepared by the Municipality for this purpose.
- (2) All work shall be in first class condition, comply fully with the report, Special Provisions, General Specifications and the Drainage Act, and be carried out to the satisfaction and approval of the Drainage Superintendent for the Municipality. Upon completion of the project, the work will be inspected by the Engineer and the Drainage Superintendent. Any deficiencies noted during the final inspection shall be immediately rectified by the Contractor. Final inspection will be made by the Engineer within 20 days after the Drainage Superintendent has received notice in writing from the Contractor that the work is completed, or as soon thereafter as weather conditions permit.
- (3) The Contractor shall complete all work on or before the date fixed at the time of tendering. The Contractor will be held liable for any damages or expenses occasioned by his/her failure to complete the work on time and for any expenses of inspection, superintending, re-tendering or re-surveying, due to their neglect or failure to carry out the work satisfactorily or in a timely manner. Any such expenses or damages may be deducted by the Drainage Superintendent from the amount of the contract or may be recovered by the Municipality from the Contractor and his sureties.
- (4) The Contractor shall be required to submit to the Municipality a Certificate of Good Standing from the Workplace Safety and Insurance Board prior to the commencement of the work and the Contractor shall be required to submit to the Municipality a Certificate of Clearance for the project from the Workplace Safety and Insurance Board before final payment is made to the Contractor.
- (5) The Contractor shall keep the work under his/her personal control, and shall not assign, transfer, or sublet any portion without first obtaining the written consent of the Municipality.

SECTION 2 - EXAMINATION OF SITE, PLANS AND SPECIFICATIONS

- (1) Each tenderer must visit the site and review the plans and specifications before submitting his tender and must satisfy himself as to the extent of the work and local conditions to be met during the construction. He is not to claim at any time after submission of his tender that there was any misunderstanding of the terms and conditions of the contract relating to site conditions. The Contractor will be at liberty, before bidding, to examine any data in the possession of the Municipality or of the Engineer.
- (2) The quantities shown or indicated on the drawings or in the report are estimates only and are for the sole purpose of indicating to the tenderers the general magnitude of the work. The tenderer is responsible for checking the quantities for accuracy prior to submitting his tender.

SECTION 3 - CONTRACTOR'S LIABILITY

- (1) The Contractor, his/her agents and all workmen or persons under his control including sub-contractors, shall use due care that no person or property is injured and that no rights are infringed in the prosecution of the work. The Contractor shall be solely responsible for all damages, by whomsoever claimable, in respect to any injury to persons or property of whatever description and in respect of any infringement of any right, privilege or easement whatever, occasioned in the carrying on of the work, or by any neglect on the Contractor's part.
- (2) The Contractor, shall indemnify and hold harmless the Municipality and the Engineer, their agents and employees from and against claims, demands, losses, costs, damages, actions, suits, or proceedings arising out of or attributable to the Contractor's performance of the contract.

SECTION 4 – ONTARIO PROVINCIAL STANDARDS

- (1) Ontario Provincial Standard Specifications (OPSS) and Ontario Provincial Standard Drawings (OPSD) shall apply and govern at all times unless otherwise amended or extended in these Specifications or on the Drawing. Access to the electronic version of the Ontario Provincial Standards is available online through the MTO website, free of charge to all users. To access the electronic standards on the Web go to <http://www.mto.gov.on.ca/english/transrd/>. Under the title Technical manuals is a link to the Ontario Provincial Standards. Users require Adobe Acrobat to view all pdf files.

SECTION 5 – APPROVALS, PERMITS AND NOTICES

- (1) The construction of the works and all operations connected therewith are subject to the approval, inspection, by-laws and regulations of all Municipal, Provincial, Federal and other authorities having jurisdiction in respect to any matters embraced in this Contract. The Contractor shall obtain all approvals and permits and notify the affected authorities when carrying out work in the vicinity of any public utility, power, underground cables, railways, etc.

SECTION 6 – NOTIFICATION OF WORK

- (1) Prior to commencing any work of installing any new bridge or removing any existing structures, the Contractor shall inform the Municipal Drainage Superintendent of his intent to commence work at least 48 hours prior to commencing any work. The Owner or Contractor shall endeavor to install and complete the new structure without delay once the work has commenced. If for any reason the work does not proceed continuously then the Owner or Contractor shall notify the Drainage Superintendent in advance of any backfilling operation or headwall construction so that he may schedule inspection of same.

SECTION 7 – CONSTRUCTION SAFETY

- (1) The Contractor shall comply with all the requirements of the Occupational Health and Safety Act, 2013, and the regulations passed in connection therewith, as administered by the Ontario Ministry of Labour and all subsequent amendments of the said Act.
- (2) The Contractor shall exercise all possible precaution against injury to persons or property resulting from his work. The Contractor shall leave no trenches, pits, holes or excavations uncovered, without providing sufficient protection at all times. The Contractor shall install, erect and provide barricades, signs, traffic cones, flashers, lights, plates, warning and other devices, materials and personnel as may be required at his own expense in order to provide for the safe passage and control of traffic and to ensure public safety. All traffic control shall be in accordance with the latest standards of the Ministry of Transportation.

SECTION 8 – TRAFFIC CONTROL

- (1) The Contractor shall not perform excavation operations from the travelled portion of the roadway nor close a road or reduce the width or number of traffic lanes available for traffic except as specified in the contract documents or approved by the Engineer.
- (2) The Contractor will be required to control vehicular and pedestrian traffic along roads at all times and shall, at his/her own expense, provide for placing and maintaining such barricades, signs, flags, lights and flag persons as may be required to ensure public safety. The Contractor will be solely responsible for controlling traffic and shall appoint a representative to maintain the signs and warning lights at night, on weekends and holidays and at all other times that work is not in progress. The costs associated with provision of proper signage, barricades, lights and flag persons shall be considered incidental to the works to remove the old bridge and complete the new bridge installation.
- (3) **During all phases of the project, adjoining public roadways shall remain open to through traffic with at least one lane being open to through traffic at all times.**
- (4) All traffic control during construction shall be strictly in accordance with the **Occupational Health and Safety Act** and the current version of the **Ontario Traffic Manuals**. Access to the electronic version of the **Ontario Traffic Manual** is available online through the MTO website, free of charge to all users. To access the electronic standards on the Web go to <http://www.mto.gov.on.ca/english/transrd/>, click on "Library Catalogue", under the "Title", enter "Ontario Traffic Manual" as the search. Open the applicable "Manual(s)" by choosing the "Access Key", once open look for the "Attachment", click the PDF file. Users require Adobe Acrobat to view all PDF files.
- (5) **Contractors are reminded of the requirements of the Occupational Health and Safety Act pertaining to Traffic Protection Plans for workers and Traffic Control Plan for Public Safety.**

SECTION 9 – GENERAL CO-ORDINATION

- (1) The Contractor shall be responsible for the coordination between the working forces of other organizations and utility companies in connection with this work. The Contractor shall have no cause of action against the Municipality or the Engineer for delays based on the allegation that the site of the work was not made available to him by the Municipality or the Engineer by reason of the acts, omissions, misfeasance or non-feasance of other organizations or utility companies engaged in other work.

SECTION 10 – STATIONS AND BENCHMARKS

- (1) Reference Stations measured in meters, are indicated on the drawings and represent stations along the course of the work. Stationing is shown along the profile at 25 m intervals numbered consecutively, 0+000, 0+025, 0+050, 0+075, etc. Where cut depths are shown on the profile, they represent the approximate depth, in meters, of the finished drain as measured from the surface of the ground to the design gradeline for the bottom of the open drain. Where excavation depths are shown on the profile, they represent the approximate depth, in meters, from the existing drain bottom down to the design gradeline for the bottom of the open drain.
- (2) The Contractor will be held responsible during the progress of the work for the preservation of all reference stakes, bench marks and survey markers which fall within the limits of the work. The cost of replacing any bench mark or survey marker defaced or destroyed by the Contractor as a result of his work will be deducted from any monies due the Contractor.

SECTION 11 - ALIGNMENT

- (1) Except where specified otherwise, the excavation will follow as nearly as possible the course of the existing drain with sloping and widening carried out on each bank as required to produce the specified cross-section. Wherever sharp or irregular bends occur, all sloping and widening is to be done on that side of the drain that will tend to reduce the curve and improve the alignment of the channel.
- (2) Where one drain bank adjoins the travelled part of any roadway or laneway, all sloping and widening is to be done on that side of the drain farthest from the roadway unless otherwise directed by the Engineer.
- (3) Where the drain bank adjoins an existing fence which is not specified for removal or relocation all required sloping and widening shall be carried out on that side of the drain farthest from the fence.
- (4) Where a drain is to be moved off a road allowance and onto adjoining lands, the top edge of the nearest finished drain bank is to be not closer than 1 metre to the limit of the road allowance or top edge of the abandoned channel. The centreline of the new channel is to be as straight as possible even though this 1 metre dimension is exceeded in places.
- (5) Where a new drain is constructed, its centre line will be as straight as possible and any changes in direction shall be in the form of smooth, regular bends.
- (6) Where a new drain is to be constructed adjoining an existing fence line, the Contractor shall lay out a suitable centre line such that the top edge of the adjacent drain bank, at its widest point, will not be closer than 1 metre to the fence and the Contractor shall use this centre line to establish the drain location.
- (7) The Contractor must lay out the proposed centre line in the field for approval by the Drainage Superintendent prior to construction.

SECTION 12 - PROFILE

- (1) The excavation of the drain must be at least to the depth intended by the grade line shown on the Profile, which grade line is governed by the bench marks. The Profile shows, for the convenience of the Contractors and others, the approximate depth of excavation from the surface of the ground to the final invert of the channel in metres and decimals of a metre and also the approximate depth of excavation from the bottom of the existing channel to the final invert of the channel. Bench marks, which have been established along the course of the drain, shall govern the final elevation of the drain. The location and elevation of the bench marks are shown on the Drawings.

SECTION 13 - BOTTOM WIDTH AND SIDE SLOPES

- (1) The bottom widths and the side slopes of the various sections of the finished drain are to be true to line and grade as shown on the Profile.
- (2) Contractors will not be restricted to the exact dimensions specified but must excavate clear of the specified cross-sections and may excavate such additional depth or width as may be required to accommodate the use of suitable excavating equipment or to allow for minor sedimentation prior to final inspection provided that at no place are the side slopes of the excavation to be cut steeper than the slope specified on the Profile. The Contractor is not to excavate the drain bottom so much deeper than the grade line as to result in the formation of pockets in the drain bottom that will cause water to stand in pools along the drain. Should over-excavation of the drain bank occur, the Contractor will **not** be permitted to repair with native material packed into place by the excavator and reshaped. Should over-excavation occur, the Contractor will be required to have a bank repair detail engineered by a Professional Engineer (hired by the Contractor), to ensure long term stability of the bank is maintained. Such repairs shall be subject to approval by the Engineer and will be at no extra cost to the item.

SECTION 14 - OBSTRUCTIONS

- (1) All brush, timber, logs, stumps, stones, or other obstructions encountered within the limits of the channel along the course of the drain are to be removed by the Contractor. Timber, logs and stumps are to be dealt with in the same manner as specified for brush and trees. Large stones and other similar materials are to be piled near the limit of the spread area so as not to interfere with the spreading of the excavated material. The disposal of this material shall be the owner's responsibility.

SECTION 15 - BRUSH AND TREES

- (1) Brushing shall be carried out on the entire drain within the above identified sections of the drain where required and as specified herein. **All** brush and trees located within the drain side slopes shall be cut parallel to the side slopes, as close to the ground as practicable. Tree branches that overhang the drain shall be trimmed. Small branches and limbs are to be disposed of by the Contractor along with the other brush. Tree stumps, where removed to facilitate the drain excavation and reshaping of the drain banks, may be burned by the Contractor where permitted; otherwise, they shall be disposed of, off the site. All thorn trees shall be disposed of off-site.
- (2) Where the existing bottom widths and side slopes of the drain are sufficient to permit the specified deepening of the drain without disturbing the existing banks above the present drain bottom, the Contractor will be required to cut the brush and trees on the sloping banks flush with the surface of the banks but he will not be required to remove their roots and stumps unless they will obviously create obstructions to the flow of water in the drain.
- (3) Where it is necessary to widen the drain and excavate material from the sloping banks, all brush and trees within the limits of the channel and within 1 metre of the top of the drain banks and within the spread area are to be cut and those roots and stumps in the drain bottom and on the banks where the widening takes place shall be completely removed unless the Drainage Superintendent permits the Contractor to cut the roots and stumps flush with the surface of the finished banks.
- (4) The Contractor shall make every effort to preserve mature trees which are beyond the drain side slopes, and the working corridors. If requested to do so by the Drainage Superintendent, the Contractor shall preserve certain mature trees within the designated working corridors.
- (5) Where there is a fence adjoining the drain, he will be required to cut the brush in the fence line and on the side of the fence opposite the drain only if the excavating equipment will be operated from this side or excavated material is to be placed and levelled on this side.
- (6) The Contractor shall cut off flush with the ground all brush and trees having a diameter of 150 mm or less from the disposal area. Should the Contractor find it necessary to remove trees having a diameter of 150 mm or larger from the disposal area in order to permit the efficient excavation of the drain or spreading of excavated material, he will be at liberty to do so only on permission of the Drainage Superintendent in charge of the work.
- (7) All trees over 200 mm in diameter that are cut are to be trimmed of branches, and the trunks, along with branches over 200 mm in diameter, are to be cut up into log lengths and piled for the use of the adjoining owner unless the owner advises the Drainage Superintendent he does not want them, in which case they are to be disposed of by the Contractor along with the other brush. Small branches and limbs are to be disposed of by the Contractor along with the other brush. Tree stumps may be burned by the Contractor where permitted; otherwise, they shall be disposed of by him away from the site of the work.
- (8) Following completion of the work, the Contractor is to trim up any broken or damaged limbs on trees which remain standing, disposing of the branches cut off along with other brush and leaving the trees in a neat and tidy condition.
- (9) Brush and trees removed from the drain and banks thereof and from the disposal area are to be put into piles by the Contractor, in locations where they can be safely burned, and are to be burned by the Contractor after obtaining the necessary permits, as required. If, in the opinion of the Drainage Superintendent, any of the piles are too wet or green to be burned, he will so advise the Contractor who may then arrange, to the Drainage Superintendent's satisfaction, an agreement in writing, with the owners where the piles are located, for them to burn the material when dry enough. If a satisfactory agreement cannot be made, the Contractor to haul away the unburned materials to an approved dump site.
- (10) Since the trees and brush that are cut off flush with the earth surface may sprout new growth later, it is strongly recommended that the Municipality make arrangements for spraying this new growth at the appropriate time so as to kill the trees and brush.
- (11) Prior to and during the course of 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.
- (12) In no case will brush or trees be buried in the spoil bank or within the excavated material.
- (13) The Contractor will be required to brush rake the excavated material to remove brush and trees from the spoil if so instructed by the Drainage Superintendent.
- (14) As part of this work, the Contractor shall remove any loose timber, logs, stumps, large stones or other debris from the drain bottom and from the side slopes. Timber, logs, stumps, large stones or other debris shall be disposed of off-site.

SECTION 16 – EXCAVATION OF DRAIN

- (1) All excavated material shall be handled as specified in the following section. Materials deposited on the farmlands shall be within the working corridors, at least 2.0 m from the top of the drain bank, or as specified on the drawings. Upon allowing drying of excavated materials (if necessary) and as approved by the Drainage Superintendent, the Contractor shall level excavated materials as specified. Excavated material shall not be placed on dykes, in ditches, tiles or depressions intended to conduct water into the drain.
- (2) Seeding of the disturbed drain banks shall be completed immediately following drain construction as specified in the Special Provisions.
- (3) All excavation work shall be done in such a manner as to not harm any vegetation or trees, not identified in this report or by the Drainage Superintendent for clearing. Any damages to trees or vegetation caused by the Contractors work shall be rectified to the satisfaction of the Drainage Superintendent.
- (4) The Contractor shall exercise caution around existing tile inlets and shall confirm with the property owners that all tiles have been located and tile ends repaired as specified.

SECTION 17 - DISPOSAL OF EXCAVATED MATERIAL

- (1) Where a part of the drain is being relocated, the Contractor shall strip the topsoil from the alignment of the new course and stockpile it for re-use following the completion of the subsoil operations. Subsoil excavated from the new course is to be used first to fill the existing course which is to be abandoned. Where the Contractor can conveniently do so, he may deposit the material in the old course as he excavates it from the new course but where the distance separating the new course from the old course is too great to permit this the excavated material must be loaded onto trucks, hauled to the abandoned drain and placed in the old channel. The material shall be placed in the abandoned channel in layers no greater than 300 mm in thickness. Each layer shall be thoroughly compacted with the levelling equipment available at the site prior to the placement of the subsequent layers. The abandoned channel shall be filled to an elevation at least 300 mm higher than the adjacent natural ground elevation to allow for settlement. If insufficient material is available to fill the old course, the surface of the material shall be graded so as to eliminate any low areas that would collect water.
- (2) Excess excavated material not required for the filling of an abandoned channel or material excavated from the drain under normal construction, repair, or improvement shall be deposited and spread on the immediately adjoining farm lands in the locations set out in the Special Specifications. The material shall be deposited and spread no closer than 2 metres from the top edge of the adjacent drain bank and at least 1 metre clear of all fences.
- (3) Where the excavated material is deposited in bush land, it is to be spread and levelled in the form of a spoil bank over at least the full width of the strip that has been cleared to permit the passage of excavating equipment but in no case is the top surface to be left more than 600 mm above the natural ground level even though this may require additional clearing to produce a sufficient disposal area. On completion, the spoil bank is to be left so that it is smooth enough to drive an ordinary farm vehicle along it.
- (4) Where the adjoining land is sufficiently clear to permit cultivation, the Contractor shall deposit the excavated material on the property and spread the material over a width that, after spreading, the excavated material will generally have a thickness of approximately 150 mm. The Contractor shall utilize a minimum spread width of 6 metres and a maximum spread width of 20 metres even though this results in a depth of material in excess of 150 mm. The material shall be thoroughly spread and levelled with suitable equipment and left in a condition which permits cultivation with ordinary farm equipment without causing undue hardship on farm machinery and personnel.
- (5) After the excavated material has been spread and levelled, any stockpiled topsoil is to be spread over it to a depth of no more than 100 mm.
- (6) No excavated material is to be placed on lawns or ornamental shrubbery but is to be deposited on either or both sides of the lawn on the farm lands immediately adjacent to the lawn.
- (7) Excavated material or topsoil shall not be placed in ditches, tiles or depressions intended to conduct water into the drain.
- (8) The material shall be sufficiently levelled to allow further working by agricultural implements.
- (9) All stones and other debris removed from the drain, which may interfere with agricultural implements, shall be disposed of off-site.
- (10) The Drainage Superintendent in charge will be the sole judge as to the proper disposal of material under the contract and this specification

SECTION 18 - FENCES

- (1) Where it is necessary to remove any fences which parallel the course of the drain in order to permit the excavation of the drain or the disposal of excavated material the Contractor shall remove the fence. An allowance will be made to the owners of the properties to compensate them for damages to fences which are considered capable of restraining cattle. The Contractor shall notify the owner of his intentions to remove the fence at least 7 days prior to doing so. Any owner has the option to salvage his fencing materials but must do so sufficiently in advance of the Contractor's operations so as to cause no unnecessary delays to him. If the owner does not remove his fences, the Contractor shall carefully take down the fence and leave the materials neatly placed beyond the limit of the spread area for disposal or reconstruction by the owner. The owner will be responsible to construct and maintain any temporary fencing during the progress of the work. The landowners and not the Contractor will be responsible for the control of livestock in the adjoining field during the period of construction. Unless otherwise specified, the Contractor will not be required to reconstruct the fences following the completion of the work of excavation and levelling.
- (2) No permanent fencing shall be constructed or reconstructed without the approval of the Drainage Superintendent. Any fences that are constructed or reconstructed along the course of the drain are to be kept at least 1 metre clear of the top edge of the adjacent drain bank.
- (3) Where the Contractor finds it necessary to remove any fences which cross the drain, he shall remove the fencing materials in a careful, workmanlike manner. Unless otherwise directed the Contractor shall reconstruct the cross fences in as good a condition as the old material permits.

SECTION 19 - ROAD CROSSINGS

- (1) Where the drain crosses the travelled part of a road through a bridge, the Contractor shall excavate the drain to its specified dimensions through the bridge opening, using care to avoid damaging it. If after the drain has been excavated at any bridge

structure it appears to the Drainage Superintendent that repairs or replacement may be required, he shall so advise the Road Authority having jurisdiction over the particular bridge.

- (2) Where a new bridge is required or where any underpinning, strengthening or repairs is rendered necessary by the work, it is to be carried out by the Road Authority at its own expense.
- (3) Where the drain crosses the travelled part of a road through a pipe that does not have to be replaced or lowered, the Contractor shall clean the pipe to its full cross-sectional area using care to avoid damaging it.
- (4) Where the existing pipe is of sufficient size and is in a good state of repair but requires to be lowered, the Contractor shall carefully remove it, clean it to its full cross-sectional area and replace it in the drain as specified herein.
- (5) Where the existing pipe must be replaced, the Contractor shall carefully remove it from the drain, clean it to its full cross-sectional area, and leave it beside the drain for removal by the Road Authority. Unless otherwise instructed he shall install the new road culvert as supplied by the Road Authority. All backfill material shall be compacted granular material supplied by the Road Authority, unless otherwise specified.
- (6) The Contractor shall notify the Road Authority having jurisdiction over the structure under construction at least 72 hours in advance of any construction activities.

SECTION 20 - FARM AND ACCESS CULVERTS

- (1) Where a farm or access culvert or bridge does not have to be replaced or lowered, the Contractor shall clean it to its full cross-sectional area using care to avoid causing damage to it in the process.
- (2) Where a pipe culvert is to be lowered, the Contractor shall carefully remove it, clean it to its full cross-sectional area and replace it in the drain with its invert set 10% of the pipe diameter below the grade line.
- (3) Where a culvert is to be replaced, the Contractor shall carefully remove it from the drain, clean it to its full cross-sectional area and leave it on the drain bank. If the pipe was originally supplied and installed by the property owner, it shall be left for disposal by the owner. If the pipe was installed under the provisions of The Drainage Act, it shall be disposed of as directed by the Drainage Superintendent and any salvage value from the sale of the pipe shall be credited to the drain. Wooden or concrete farm or access bridges which must be removed from the drain shall be disposed of in the same manner.
- (4) Where a pipe culvert is to be installed in the drain, all materials shall be supplied by the Drainage Superintendent as an expense to the drain. The Contractor shall install the pipe in the location directed by the Drainage Superintendent in accordance with the specifications governing the installation.
- (5) Where a new culvert is to be installed, the owner may request the Drainage Superintendent to have it placed in a different location from the existing one and this will be permitted so long as the relocation does not result in an increase in the area draining through the culvert. Adequate notice of the change must be given to the Contractor. In no case may the existing culvert be left in the drain when it has been specified that it is to be removed.

SECTION 21 - FARM AND ACCESS PIPE CULVERT INSTALLATION

21.1 Location and Elevation of Access Culvert or Farm Culvert

- (1) In general, the new access or farm culvert shall be installed as shown on the drawings attached to the engineer's report. Prior to installation, the Contractor shall contact the Drainage Superintendent to confirm the exact location for the new culvert. The Drainage Superintendent, in consultation with the property owner, shall establish the exact location for the new culvert in the field.
- (2) The invert (inside bottom) bottom of the pipe shall be set according to the elevations shown on the accompanying plans. For the purpose of construction, the bench mark indicated on the accompanying plans shall be used to determine the elevation of the proposed enclosure.

21.2 Dry Culvert Installation

- (1) Suitable dykes shall be constructed in the drain so that the installation of the pipe can be accomplished in the dry. The Contractor shall perform the excavation, placement of bedding, pipe and backfill in a dry condition and shall provide all required pumps and/or equipment to enable the work to proceed in the dry.

21.3 Pipe Installation

- (1) The required pipe shall be set in the drain to the dimensions shown on the accompanying drawings and the Contractor shall carry out all required excavation to install the pipe and specified rip-rap end treatment. The drain bottom shall be cleaned, prepared, shaped and compacted to suit the new culvert configuration, as shown on the drawings. The Contractor shall excavate sufficient material from the drain banks and bottom to permit placement of the pipe and backfill material. The minimum trench width as shown on the drawings, shall be provided from the face of the pipe to the excavated trench wall along each bank to provide working room to compact the backfill material.
- (2) The surface on which the culvert is to be laid shall be true to grade and alignment and shaped to accept the materials to be placed. The pipe shall be laid to the alignment and grade shown in the report but may not be placed on a bed containing frozen materials.
- (3) The end protection to each end of the pipe structure shall be as specified in the Special Provisions and on the Drawings and in accordance with the following applicable specifications.
- (4) All newly excavated portions of the drain bank shall be seeded.
- (5) The Contractor shall dispose of all surplus excavated material at an approved disposal site at his expense.
- (6) Rivetted corrugated steel pipe shall be laid with the inside circumferential laps pointing in the direction of the flow. The longitudinal laps shall be located in the upper half of the pipe.
- (7) All helical corrugated steel pipe shall be supplied with re-rolled annular ends and shall be installed so that the helix angle is constant for the total length of the installation and each pipe section shall be installed next to the previous section such that the lock-seam forms a continuous helix.
- (8) Corrugated steel pipe sections shall be joined together by means of plant fabricated couplers having a minimum wall thickness of 1.6 mm and a 10 c width. The couplers shall be installed to lap approximately equal portions of the pipe sections being connected, such that the corrugations or projections of the coupler properly engage the pipe corrugations.
- (9) Where fabrication of structural plate structures by the Contractor is specified, they must be assembled in the trench or at the side of the excavation. If the assembled structure has to be moved to its final position, it shall be moved in such a manner that no damage

or distortion is caused to the structure. The materials shall be assembled and handled in accordance with the manufacturers specifications and directions.

- (10) The whole of the work shall be done in a neat, thorough and workmanlike manner such that the alignment of the bridge pipe at each location meets the full satisfaction of the drainage superintendent.

21.4 Backfilling and Compaction

- (1) Backfill and cover material on each side of the culvert pipe shall be carefully placed simultaneously on each side of the pipe so that damage to or movement of the pipe is avoided. At no time shall the levels on each side differ by more than the 300 mm uncompacted layer. Then, a 300mm thick layer of Granular 'A' material, O.P.S.S. Spec 1010 shall be constructed as a road base. All backfill materials shall be placed in layers not exceeding 300mm (12") in thickness, loose measurement. Each layer shall be thoroughly compacted in place to a Standard Proctor Density of 100% by means of mechanical compactors. The Contractor shall provide sufficient water to the granular material such that optimum compaction levels are achieved. The equipment used and method of compacting the backfill material shall be to the full satisfaction of the Drainage Superintendent.

SECTION 22 – LATERAL TILE DRAINS

- (1) Should the Contractor encounter any lateral tiles within the proposed culvert limits as shown and also those not shown on the attached drawings, the Contractor shall re-route the outlet tile drain(s) in consultation with the Drainage Superintendent, as required, to accommodate the new culvert. **Tile drain outlets through the wall of the new culvert pipe will not be permitted.** All costs associated with re-routing lateral tile drains (if any) shall be at the Contractor's expense. Care must be taken in handling plastic drain pipe in cold weather to avoid causing damage.
- (2) Plastic drain pipe shall be held in position on planned grade immediately after installation by careful placement of backfill material.

SECTION 22 – CULVERT END PROTECTION - SLOPING RIP-RAP

- (1) Where specified, the Contractor shall install quarried rip-rap erosion protection materials on the slopes at both ends of the pipe. The backfill and quarried rip-rap protection over the ends of the pipe shall be sloped at 1.5 horizontal to 1 vertical or to a flatter slope specified on the drawings. All stone used for rip-rap culvert end protection shall be 125-225 mm clear quarried rock or OPSS.MUNI 1004 and be placed with a minimum thickness of 300mm thickness. Prior to placing rip-rap materials on the backfill materials, the Contractor shall lay a non-woven geotextile filter fabric equal to a "Terrafix 270R" or approved equal. The geotextile filter fabric shall extend from the bottom of the pipe to the top of each side slope of the drain and between both side slopes of the drain. No portion of the filter fabric shall remain exposed to sunlight. The Contractor shall take extreme care to not damage the geotextile filter fabric when placing the rip-rap on top of the filter fabric. The geotextile filter fabric and quarried stone shall be placed to the complete satisfaction of the Drainage Superintendent. **Concrete rip-rap or round stone will not be permitted.**
- (2) Where a clay layer is specified beneath the Rip-Rap End Protection, it shall be a 500 mm thick layer of cohesive clay material that is dry select earth material free of topsoil, organic matter, broken concrete, steel, wood and deleterious substances. It shall be placed and shaped before the filter fabric layer is placed.

SECTION 23 - BAGGED CONCRETE HEADWALLS – SINGLE BAG THICKNESS

- (1) Sacked concrete end walls that do not exceed 1.8 m in height shall be constructed of a single row of sacked concrete. The installation of the end wall shall be governed by the drawings. The end wall treatment shall extend to the same elevation as the finished travelled surface and fit to the top of bank elevation on both banks and in any event be a minimum of 300 mm above the crown of the pipe.
- (2) Where specified and after the Contractor has set in place the new pipe and partially backfilled same, he shall install new concrete filled jute bag headwalls at each end of the pipe. When constructing the concrete 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.
- (3) The Contractor shall completely backfill in behind the new concrete jute bag headwalls with granular material, Granular "B" per O.P.S.S. 1010, and the granular material shall be compacted in place with 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 300mm (12") in thickness.
- (4) The concrete 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 20 MPa in 28 days and shall be provided and placed only as a wet mix. Under no circumstances 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 x 660mm (18" x 26"). The jute bags shall be filled with concrete so that when they are laid flat they will be approximately 100mm (4") thick, 300mm (12") to 380mm (15") wide and 460mm (18") long.
- (5) The concrete jute bag headwall to be provided at the end of the pipe shall be of single bag wall construction or as specified otherwise. The concrete filled bags shall be laid so that the 460mm (18") dimension is parallel with the longitudinal length of the new pipe. The concrete filled bags shall be laid on a footing of plain concrete being 460mm (18") wide or as otherwise specified, extending for the full length of the wall, and from 0.3 metres (1.0') below the bottom of the corrugated pipe to the bottom of the culvert pipe. All concrete used for the footing shall have a minimum compressive strength of 20 MPa in 28 days.
- (6) The completed jute bag headwalls shall be securely embedded a minimum of 0.50m (20") into the side slopes of the drain. At the road side of the bridge the Contractor shall flair outwards each headwall approximately 1.5m (5.0') as directed by the Drainage Superintendent.
- (7) Upon completion of the jute bag headwall the Contractor shall cap the top row of concrete filled bags with a layer of plain concrete, 150mm (6") thick, and hand trowelled to obtain a pleasing appearance. The concrete cap shall be the same width as the bagged wall and excess concrete will not be allowed to be placed on the cap area. The concrete cap shall not overhang the bagged wall on the driveway side of the wall.
- (8) 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.

SECTION 24 – BAGGED CONCRETE HEADWALLS – DOUBLE BAG THICKNESS

- (1) Sacked concrete end walls that exceed 1.8 m in height shall be constructed of double rows of sacked concrete.
- (2) The concrete filled bags are to be laid so that the 460mm (18") dimension is perpendicular (at right angles) to the longitudinal length of the new pipe. Therefore, the long dimension of the bag will be visible when the headwall is complete.

SECTION 25 – GROUTED CONCRETE RIP-RAP WALL

- (1) Where specified, 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 sections 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 flat parallel sides. The rip rap shall be fully mortared in place using a mixture composed of three parts of clean, sharp sand to one part of Portland Cement.

SECTION 26 – PRECAST CONCRETE HEADWALLS

- (1) Where specified as an alternative, the Contractor may supply and install precast concrete headwalls. Said precast headwalls shall be a custom made product, manufactured by Underground Specialties (Windsor) or similar provider.
- (2) The precast concrete headwall or precast blocks or modules shall be of the shape, size and dimensions shown on the drawings.
- (3) Precast provider to provide stamped engineering drawing for precast headwall and Geotextile restrainers for approval.
- (4) Excavation for the headwalls shall be in conformance with O.P.S.S. Section 902.
- (5) The supply and placement of concrete shall be in conformance with O.P.S.S. Section 904. All concrete shall have a strength of 33 MPa after 28 days. All concrete shall be air entrained to an air content of $6\% \pm 1.5\%$ by volume for 19mm maximum size of aggregate. Minimum cover for concrete shall be 40mm (1 1/2").
- (6) The supply and placement of reinforcing steel shall be in conformance with O.P.S.S. Section 905. The reinforcing steel shall be grade 400 and shall be of the size and type shown on the drawings.
- (7) The Contractor shall place the precast headwall so that it is straight and plumb. The method of backfilling the side slope trenches shall be such that no voids remain under the haunches of the sloping concrete headwall. The Contractor's method of achieving this shall be approved prior to start of construction.
- (8) The Contractor shall provide a sufficient opening in the headwalls so that when the headwalls are set and plumb the corrugated steel pipe may be inserted or adjusted to grade. The void between the corrugated steel pipe and opening in the headwall shall be fully mortared in place using a mixture composed of three parts of clean, sharp sand to one part of Portland Cement.
- (9) After the corrugated steel pipe has been set and partially backfilled with Granular "B" per O.P.S.S. 1010 and compacted to 100% Standard Proctor Density, geotextile tie backs to the precast concrete headwalls in accordance to approved stamped headwall and restraining devices.

SECTION 27 - TILE OUTLET PIPES AND ROAD DRAINS

- (1) Where existing tile outlet pipes of cast iron, asbestos cement, corrugated steel or other rigid material are encountered along the course of the drain, and where they will be removed or rendered useless by the work, the Contractor, as part of his work, shall reinstall the outlet pipes in the re-graded bank.
- (2) Where, in the course of the grading operation tile drains having no outlet pipe are encountered or the existing outlet pipe is not suitable for re-installation, the Contractor shall install an outlet pipe manufactured for that purpose. The outlet pipe shall be one size larger than the diameter of the tile, 3 metres in length, and supplied by the Drainage Superintendent as an expense to the drain.
- (3) All outlet pipes installed shall be at least 3 metres long and shall be embedded 2.5 metres into the bank of the drain and shall protrude 0.5 metres beyond its face. The outlet end shall be fitted with a removable wire rodent guard.
- (4) Where a drain adjoining a road is relocated, the Drainage Superintendent shall arrange to have all existing private and road drains which cross beneath the road extended across the old course of the drain to the drain in its new location. The cost of all pipe materials to extend these drains together with the installation costs will be borne by the Road Authority having jurisdiction.

SECTION 28 – RIP-RAP EROSION PROTECTION

- (1) The Contractor shall supply and install the required quantities of graded stone rip-rap erosion protection materials where specified. All stone used for rip-rap culvert end protection shall be 125-225 mm clear quarried rock or OPSS.MUNI 1004 and be placed with a minimum thickness of 300mm thickness. Prior to placing rip-rap materials on the backfill materials, the Contractor shall lay a non-woven geotextile filter fabric equal to a "Terrafix 270R" or approved equal. No portion of the filter fabric shall remain exposed to sunlight. The Contractor shall take extreme care to not damage the geotextile filter fabric when placing the rip-rap on top of the filter fabric. The geotextile filter fabric and quarried stone shall be placed to the complete satisfaction of the Drainage Superintendent.
Concrete rip-rap or round stone will not be permitted.

SECTION 29 – LOCATION OF STRUCTURES, ETC.

- (1) The Contractor shall satisfy himself as to the exact location, nature and extent of any existing structure, utility or other object which he may encounter during the course of the work. The Contractor shall indemnify and save harmless the Municipality and the Engineer for any damages which he may cause or sustain during the progress of the work. He shall not hold the Municipality or the Engineer liable for any legal action arising out of any claims brought about by such damage caused by him.

SECTION 30 - LAWN RESTORATION

- (1) Where the construction works cross a lawn, the Contractor shall take extreme care to avoid damaging the lawn, shrubs and trees encountered. Upon completion of the work, the Contractor shall completely restore the area by the placement and fine grading of topsoil and seeding or sodding the area as specified by the Engineer or Drainage Superintendent.

SECTION 31 – PROPERTY BARS AND SURVEY MONUMENTS

- (1) The Contractor shall be responsible for marking and protecting all property bars and survey monuments during construction. All missing, disturbed or damaged property bars and survey monuments shall be replaced at the Contractor's expense, by an Ontario Land Surveyor.

SECTION 32 - CLEAN UP AND RESTORATION

- (1) The Contractor shall leave the whole of the site of the work in a neat, thorough and workmanlike appearance to the full satisfaction of the Drainage Superintendent. He shall haul away any excess earth from the site. He shall haul to the site, at his own expense, sufficient earth to fill any depressions caused by his work. All debris and waste materials specified for disposal by others shall be left in a neat condition. All materials to be disposed of under this contract shall be removed by the Contractor and the site left in a neat and tidy condition. The site shall be left, as closely as possible, in the same condition it was in prior to the commencement of the work.
- (2) As part of the work and upon completion, the Contractor shall remove and dispose of, off-site any loose timber, logs, stumps, large stones, rubber tires, cinder blocks or other debris from the drain bottom and from the side slopes. Where the construction works cross a lawn, the Contractor shall take extreme care to avoid damaging the lawn, shrubs and trees encountered. Upon completion of the work, the Contractor shall completely restore the area by the placement and fine grading of topsoil and seeding or sodding the area as specified by the Engineer or Drainage Superintendent.

SECTION 33 - UTILITIES, RAILWAYS, ETC.

- (1) The Contractor shall note that overhead and underground utilities such as hydro, gas, telephone and water are not necessarily shown on the drawings. Before commencing work, the Contractor will investigate the location of any and all railways, utility lines, wires, pipes, poles, towers, cables, etc. which may interfere with the proposed work. He will take all necessary steps to avoid damaging these. The Contractor will be liable for any damage to utilities and should any damage result to them from his operations, he will be completely responsible for these damages and will save harmless the Municipality and the Engineer from any legal actions which may arise as a result of such damage.
- (2) If permits are required to allow the work to be carried out on or adjacent to any utilities, pipelines, railways, etc., the Contractor shall obtain these at his own expense.
- (3) All work on or adjacent to any utility, pipeline, railway, etc., is to be carried out in accordance with the requirements of the utility, pipeline, railway, or other, as the case may be, and its specifications for such work form part of this specification and apply.
- (4) In accordance with Section 26 of the Drainage Act, if utilities are encountered during the installation of the drainage works that conflict with the work, the operating utility company shall relocate the utility at their own costs. The Contractor however will be responsible to co-ordinate these required relocations and their co-ordination work shall be considered incidental to the project.

SECTION 33 – DAMAGE TO TRAVELLED PORTION OF MUNICIPAL ROADS

- (1) The Contractor shall be responsible for any damage caused by him to any portion of the municipal 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 a road, the travelled portion shall be protected by having the excavation equipment placed on satisfactory timber planks or timber pads. If any parts of the travelled portion of the road are damaged by the Contractor, the Municipality 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 Municipality.

SECTION 34 – MAINTAINING FLOWS

- (1) The Contractor shall maintain the flow of any drainage works encountered in the progress of the work at no expense to the Owner. The Contractor shall obtain written approval from the Engineer in charge to stop up any drain and if necessary provide pumping equipment, build necessary by-passes, etc. at no expense to the Owner.

SECTION 35 – MAINTENANCE

- (1) The successful Tenderer shall guarantee the work for a period of one (1) year from the date of acceptance (as evidenced by the final inspection report), thereof from deficiencies that, in the opinion of the Engineer, were caused by faulty workmanship or materials. The successful Tenderer shall, at his/her own expense, make good and repair deficiencies and every part thereof, all to the satisfaction of the Engineer. Should the successful Tenderer for any cause, fail to do so, then the Municipality may do so and employ such other person or persons as the Engineer may deem proper to make such repairs or do such work, and the whole costs, charges and expense so incurred may be deducted from any amount due to the Tenderer or may be collected otherwise by the Municipality from the Tenderer. Nothing herein contained shall be construed as in any way restricting or limiting the liability of the Contractor under the appropriate laws under which the work is being done.

SECTION 36 - DRAINAGE SUPERINTENDENT

- (1) Where the word "Drainage Superintendent" is used in this specification, it shall mean the person or persons appointed by the Council of the Municipality having jurisdiction, to superintend the work.
- (2) The Drainage Superintendent will be permitted to make minor variations in the, work so long as these variations will result in either a more satisfactory drain or a more economical one. These variations, however, must not be such as to change the intent of the work performed nor are they to reduce the standard of quality.

SECTION 37 - SPECIAL PROVISIONS

- (1) The Part of the Specifications headed "Special Provisions" which is attached hereto forms part of this Specification and is to be read with it. Where there is any difference between the requirements of this General Specification and those of the Special Provisions, the Special Provisions shall govern.

RC SPENCER ASSOCIATES INC.
Windsor, Leamington & Chatham, Ontario

ENVIRONMENTAL PROTECTION SPECIAL PROVISIONS

(Revised 2016 11 25)

SECTION 1 – GENERAL

- (1) These Environmental Protection Special Provisions shall apply and form part of this Contract. All costs associated to confirming with these Special Provisions shall be included in the Tender prices bid.

SECTION 2 - FIRES

- (1) Fires and burning of rubbish on site will be permitted only with special approval from the Municipality.

SECTION 3 - DISPOSAL OF WASTES

- (1) The Contractor shall not bury rubbish and waste materials on site unless approved by the Engineer and all applicable approving authorities. The site shall be maintained free of accumulated waste and rubbish. All waste materials should be disposed of in a legal manner at a site approved by all local approving authorities and the Engineer.
- (2) The Contractor shall not allow deleterious substances, waste or volatile materials such as mineral spirits, or paint thinner, to enter into waterways, storm or sanitary sewers.
- (3) The disposal of dredge material where applicable shall be in accordance with the above.

SECTION 4 - POLLUTION CONTROL

- (1) The Contractor shall maintain under this Contract temporary erosion, sediment and pollution control features installed.
- (2) The Contractor shall control emissions from equipment and plant to local authority's emission requirements.
- (3) The Contractor shall not cause excessive turbidity when performing in-water work. The Contractor shall not allow any debris, fill or other foreign matter to enter into the waterway. The Contractor shall remove from the waterway, all extraneous materials resulting from in-water work.
- (4) The Contractor shall abide by local noise By-Laws for the duration of the Contract.
- (5) Spills of deleterious substances into waterways and on land shall be immediately contained by the Contractor and the Contractor shall cleanup in accordance with Provincial regulatory requirements. All spills shall be reported to the Ontario Spills Action Centre (1-800-268-6060), local authorities having jurisdiction and the Engineer. To reduce the risk of fuel entering the waterway, refuelling of machinery must take place a safe distance from the waterway. The Contractor shall note that the Engineer or the Owner takes no responsibility for spills, this shall be the sole responsibility of the Contractor.

SECTION 5 - WHMIS

- (1) The Contractor shall comply with the requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage and disposal of hazardous materials and regarding labelling and the provision of material safety data sheets acceptable to Labour Canada.

SECTION 6 - DRAINAGE

- (1) The Contractor shall not pump water containing suspended materials into waterways, sewers or drainage systems. The Contractor shall be solely responsible for the control, disposal or runoff of water containing suspended materials or other harmful substances in accordance with these specifications, and local authority requirements. The Contractor shall provide temporary drainage and pumping as necessary to keep excavations and the site free from water.
- (2) The Contractor shall install and maintain sediment control devices as indicated on the Contract Drawing and as directed by the Engineer.

SECTION 7 - PROTECTION OF VEGETATION

- (1) The Contractor shall exercise the utmost caution to ensure that existing trees and plants on-site and on adjacent properties are not damaged or disturbed unless noted otherwise in the Removals Special Provisions of this Contract. The Contractor shall restrict tree removal to areas indicated on the Contract Drawings and/or designated on-site. No trees or shrubs shall be removed without the approval of the Engineer.

SECTION 8 - DUST CONTROL

- (1) The Contractor will be solely responsible for controlling dust nuisance resulting from his operations, both on the site and within adjacent right-of-ways.
- (2) Water and calcium chloride shall be applied to areas on or adjacent to the site as authorized by the Engineer as being necessary and unavoidable for the prevention of dust nuisance or hazard to the public. No payment will be made for dust control unless otherwise specified in the Special Provisions.

SECTION 9 - RESTRICTIONS FOR IN-WATER WORKS

- (1) The Contractor shall only perform in-water works during times when conditions permit reasonable production rates to be achieved. The Contractor shall be required to adopt good housekeeping practices that minimize disturbance to the site and the adjacent waterway.

- (2) The Contractor shall note that this Project is subject to approval from the Essex Region Conservation Authority and as such, any possible turbidity caused by the construction of shore protection works is of key importance.
- (3) The Contractor shall minimize the turbidity (sedimentation) produced by any in-water works construction or operations. The Contractor will be ordered to cease operations if, in the opinion of the Engineer or authorities having jurisdiction, the in-water work is producing unacceptable amounts of turbidity in the waterway. Based on this, the Contractor shall either adjust his operation(s) to produce lower turbidity levels, wait for more favourable conditions before operations will be allowed to continue, or undertake approved mitigating measures (e.g. sediment control, etc.). All costs associated with the above will be the sole responsibility of the Contractor, and no claims for extras or delays will be considered.

SECTION 10 - FISH HABITAT

No work shall be undertaken when there is likelihood of adverse effects on fish spawning or fish habitat in downstream waters. The Contractor shall implement the following measures to avoid causing harm to fish and fish habitat:

10.1 - Site Selection

- (1) Design and plan activities and works in the water body such that loss or disturbance to aquatic habitat is minimized and sensitive spawning habitats are avoided.
- (2) Design and construct approaches to the water body such that they are perpendicular to the watercourse to minimize loss or disturbance to riparian vegetation.
- (3) 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.

10.2 - Standard Practices

- (1) Work will not be conducted at times when flows are elevated due to local rain events, storms or seasonal floods. Construct the work 'in the dry' and cut only trees necessary to do the work (no clear-cutting) and as specified in the Construction Specifications. All disturbed areas and all disturbed soils on both banks and within the channel, including spoil, must be stabilized immediately, and upon completion of work returned to a pre-disturbed state or better as soon as conditions allow.

10.3 - Timing Windows

- (1) For spring spawning fish in southwestern Ontario, the timing window for construction, is July 15 to March 15. This covers all warmwater fish species, which is the type of fish that will be found in essentially all the small watercourses and drains in southwestern Ontario. Do not carry out in-water work and any work affecting fish or fish habitat outside of the timing window without prior authorization from the appropriate authorities for emergency situations affecting public safety.

10.4 - Contaminant and Spill Management

- (1) Plan activities near water such that materials such as paint, primers, blasting abrasives, rust solvents, degreasers, grout, poured concrete, or other chemicals do not enter the watercourse. All activities should be controlled to prevent the entry of petroleum products, debris, rubble, concrete or other deleterious substances into the water.
- (2) 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.
- (3) 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.

10.5 - Erosion and Sediment Control

- (1) Develop and implement an 'Erosion and Sediment Control Plan' for the site that minimizes risk of sedimentation of the water body 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 water body 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 into the site, as well as, water being pumped/diverted from the site such that sediment is filtered out prior to the water entering a water body. For example, pumping/diversion of water to a vegetation 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, culvert work). 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.
- Measures for containing and stabilizing waste material (e.g., dredging spoils, construction waste and materials, uprooted or cut aquatic plants, accumulated debris) above the high water mark of nearby water bodies 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. Sediment in the barriers/traps must be removed and stabilized on land to prevent entry of sediment into the water. Removal of non-biodegradable erosion and sediment control materials once the site is stabilized.

10.6 - Fish Protection

- (1) Ensure that all in-water activities, or associated in-water structures, do not interfere with fish passage, constrict the channel width, or reduce flows.
- (2) Retain a qualified 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.
- (3) 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.
- (4) Avoid using explosives in or near water. Use of explosives in or near water produces shock waves that can damage a fish's swim bladder and rupture internal organs. Blasting vibrations may also kill or damage fish eggs or larvae.

10.7 - Operation of Machinery

- (1) Ensure that machinery arrives on site in a clean condition and is maintained free of fluid leaks, invasive species, and noxious weeds. 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.
- (2) 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 water body.
- (3) To cross a municipal drain or watercourse, use the existing crossing structures within the designated working corridors or construct temporary crossing structures approved by the Engineer. Fording will not be permitted unless approved by the Engineer and carried out by the Contractor according to the requirements determined by the Engineer.

10.8- Culvert Work

- (1) It is important to apply the relevant mitigation measures outlined above, to ensure that no deleterious materials reach fish habitat and that there are no detrimental impacts to physical fish habitat.
- (2) Existing culverts may be repaired, replaced, and removed, and debris may be removed from them, without contacting DFO. Important things to consider are:
 - the timing window, which will be July 15 to March 15 for almost 100% of projects;
 - that fish passage must not be obstructed;
 - that the channel cannot be realigned;
 - that culverts are designed for a minimum embedment of 10% below grade;
 - that new material placed below the high water mark must be properly stabilized and protected from erosion;
 - that the channel must not be narrowed; and
 - that work must be done when there is no flowing water.
- (3) It is best to time work when stream flows are at a minimum, but contingency measures should be in place in the event that a heavy rain occurs. Cofferdams or other features should be used above the area of construction and water above it should be pumped into the stream channel downstream of the construction. If the initial dewatering strands fish, they should be captured and placed downstream in the wetted area. It may be necessary to get a permit from MNR to move the fish.

SECTION 11 - ENDANGERED SPECIES ACT

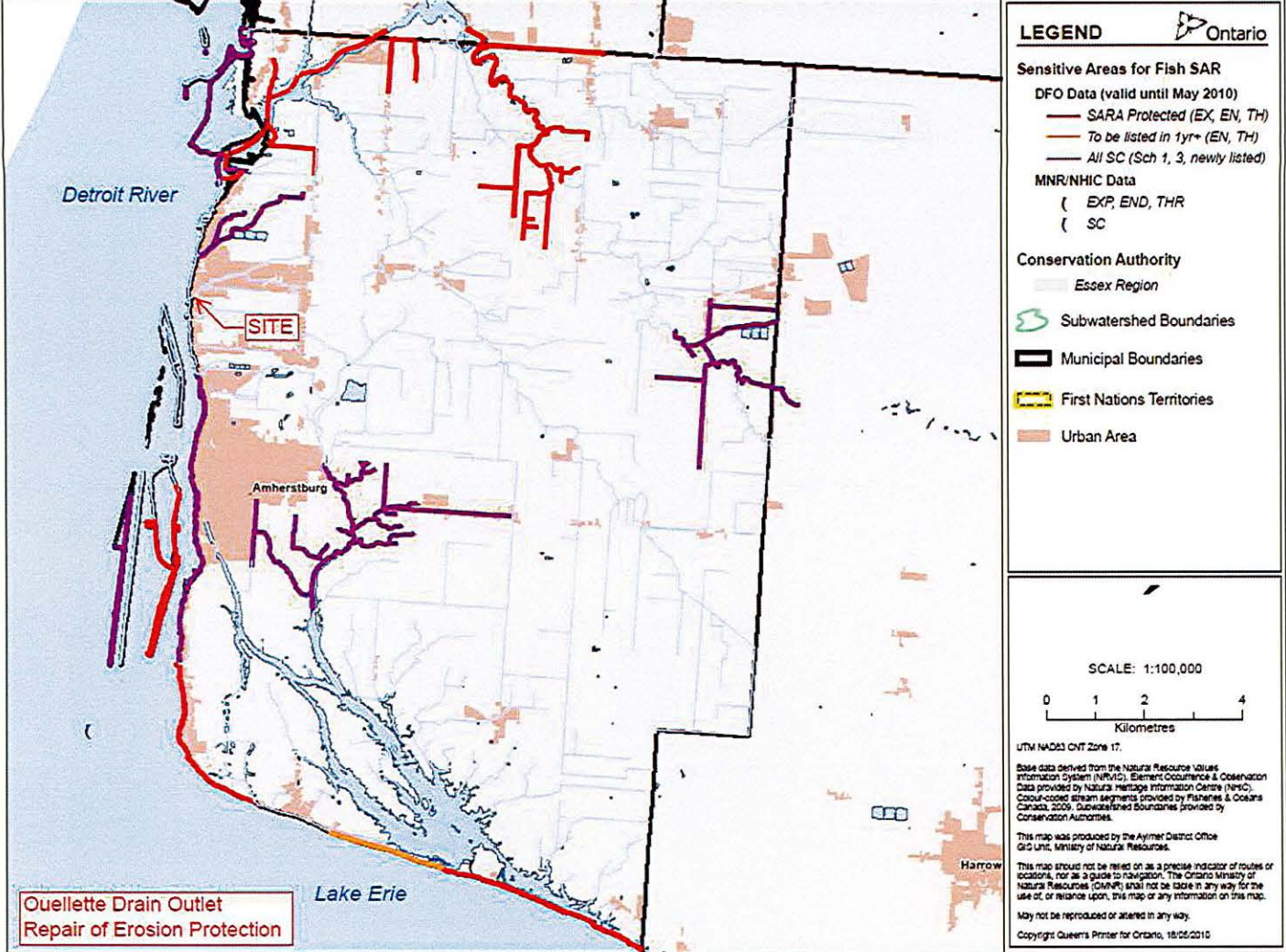
- (1) All work must comply with the current version of the Ontario Endangered Species Act, 2007, S.O. 2007, c.6; O. Reg.230/08: (Species at Risk in Ontario); and O. Reg. 242/08: (General).
- (2) The Municipality shall obtain the most current Endangered Species information available from MNR and other sources. A designated persons employed by the Municipality will be responsible for reviewing habitat maps to determine if registration of prescribed activities or full review and approval by MNR and other agencies is required.
- (3) Prior to the start of any construction activities, the Contractor shall meet with the Municipal Designate to obtain a copy of specific mitigation procedures for dealing with endangered species should they be encountered anytime during construction.

RC SPENCER ASSOCIATES INC.
Windsor, Leamington & Chatham, Ontario

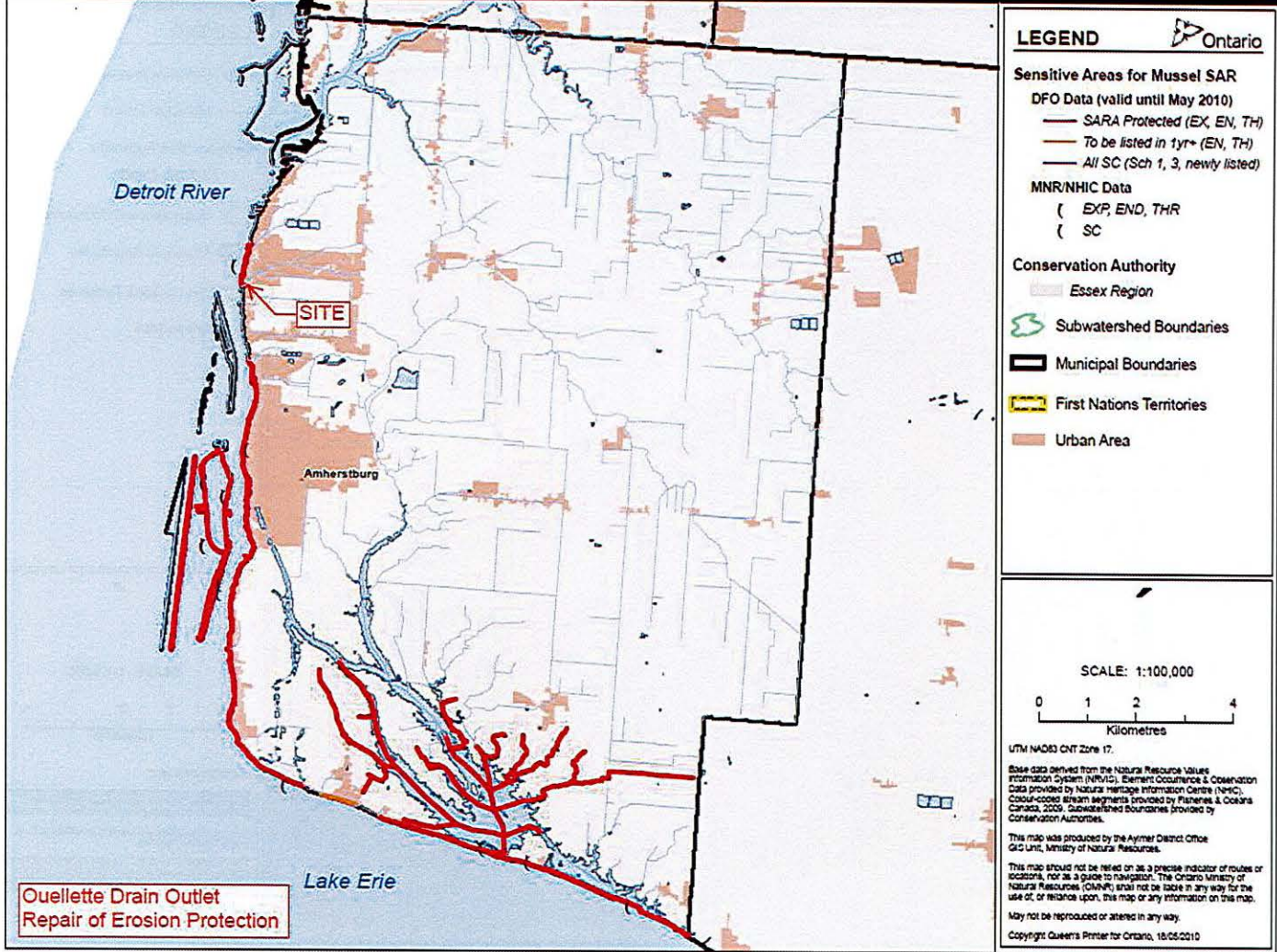
APPENDIX 'C'

ENDANGERED SPECIES ACT REVIEW

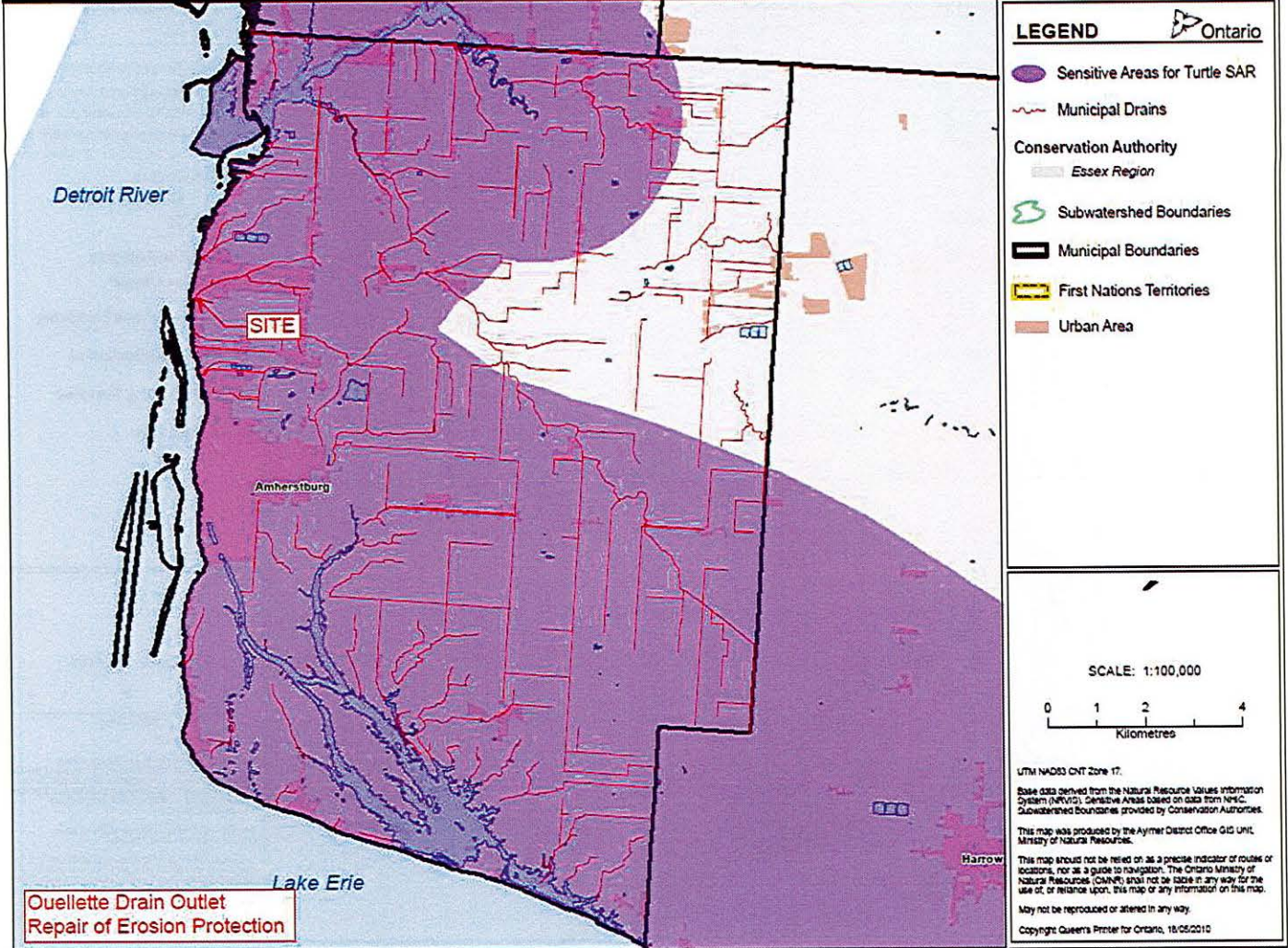
Town of Amherstburg: Sensitive Areas Map for Fish Species at Risk



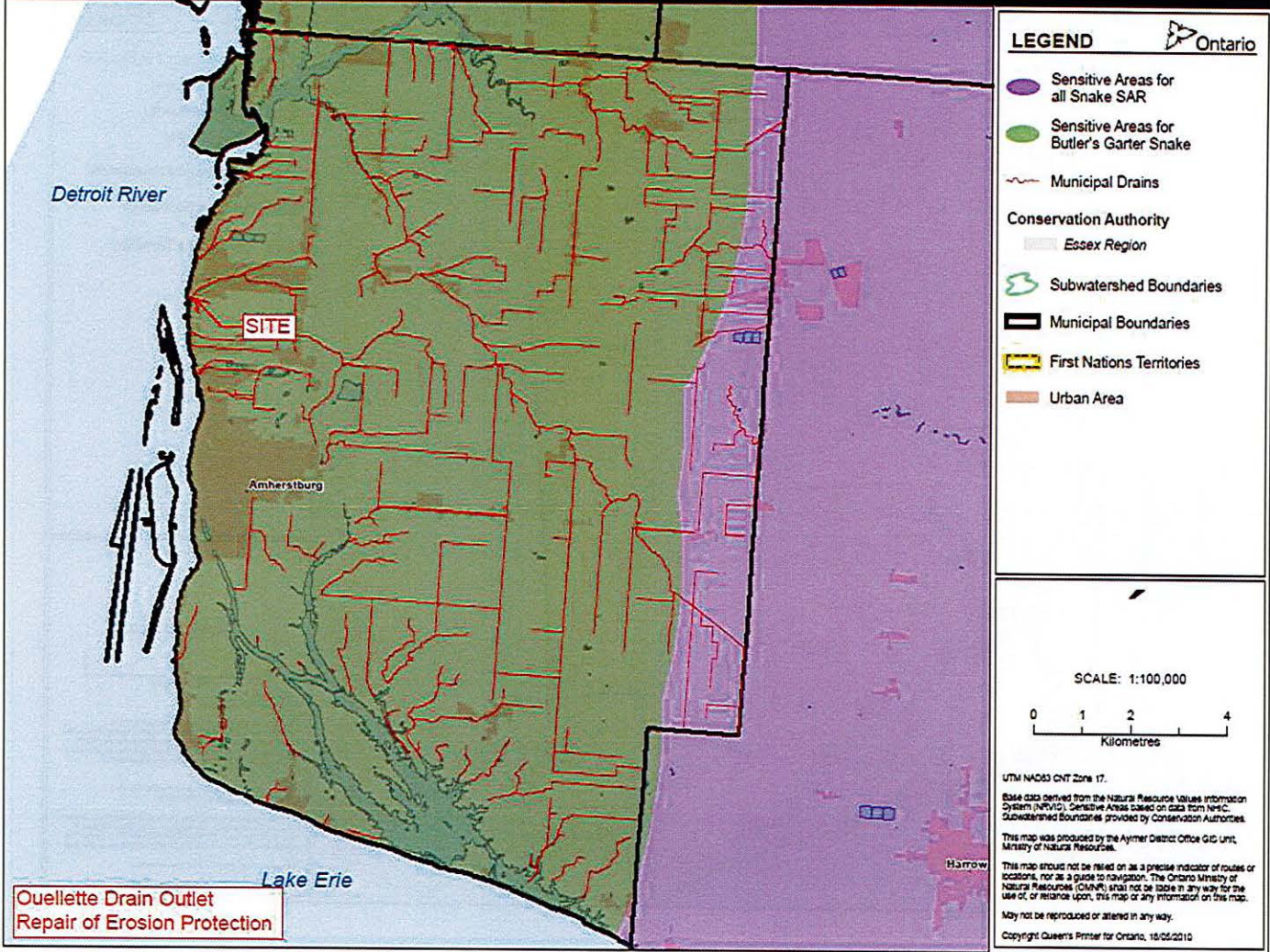
Town of Amherstburg: Sensitive Areas Map for Mussel Species at Risk



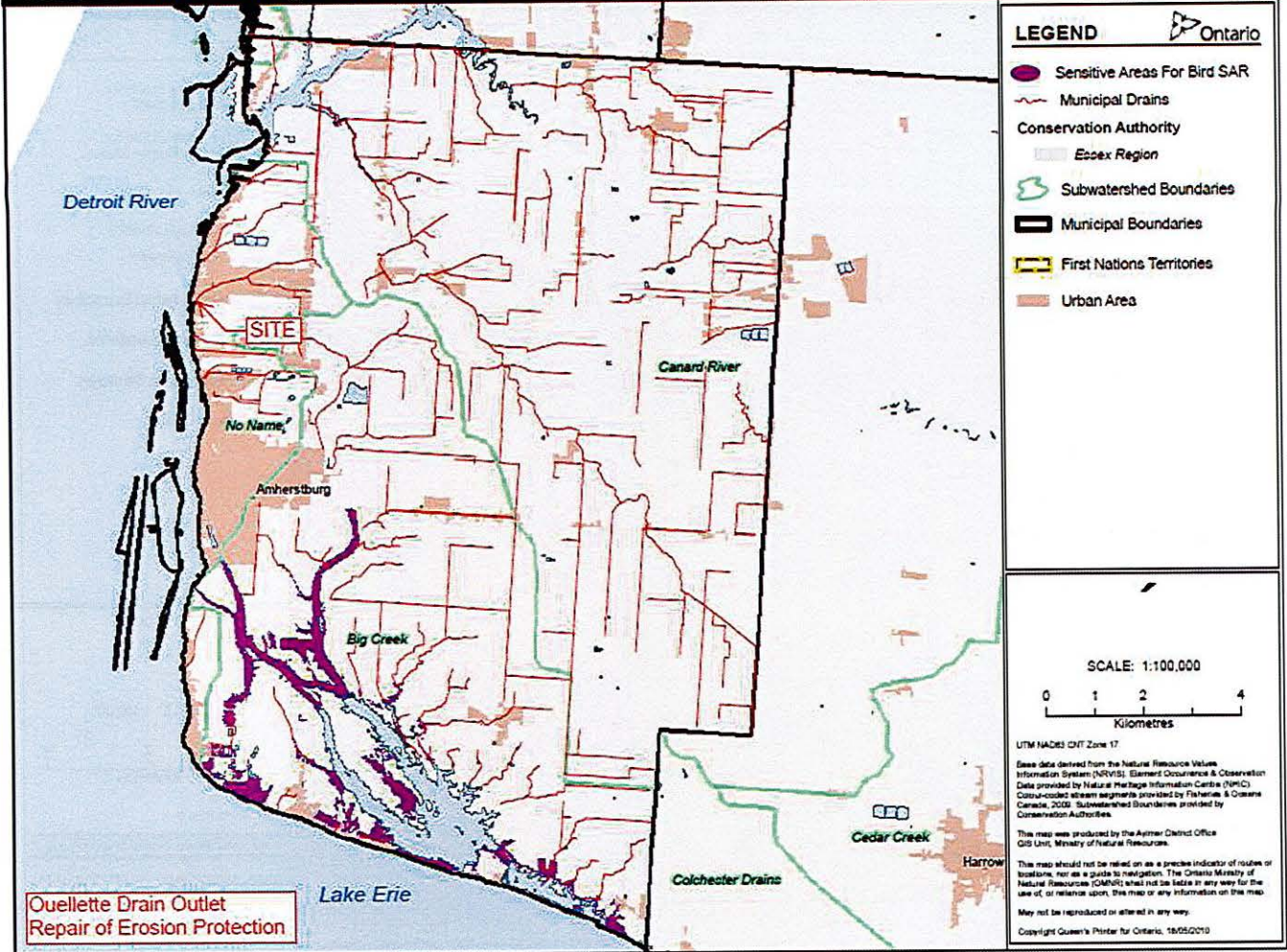
Town of Amherstburg: Sensitive Areas Map for Turtle Species at Risk



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



Town of Amherstburg: Sensitive Areas Map for Bird Species at Risk



SNAKES OF ONTARIO IDENTIFIER

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



toronto ZOO

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: aletin@torontozoo.ca
Visit the Massasauga Rattlesnake Recovery Team website: www.massasauga.ca

Recovery through education and conservation.

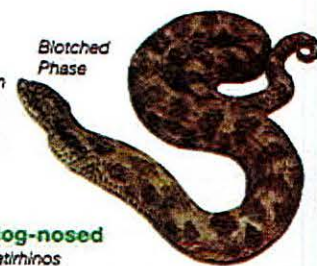
This guide will help you identify the Massasauga Rattlesnake and other snakes in Ontario. The Massasauga is one of five Ontario snakes with blotches. Snakes on this identifier are grouped by appearance (blotched, striped and no pattern). When you see a snake, look at its size and pattern. Does it have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

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)



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

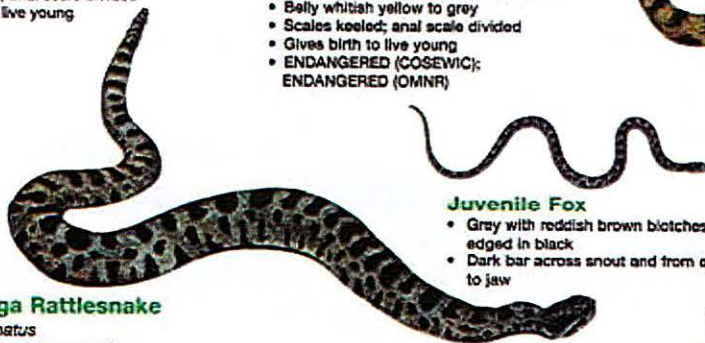
Nerodia sipedon sipedon

- 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
- Tail 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 gray-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

Ophiodrys vernalis

- 30.3-51 cm; record 86 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)



Queen

Regina septemvittata

- 36-61 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

- 38-61 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)

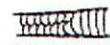
Eastern Rat

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





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.

TURTLES OF ONTARIO IDENTIFIER

Illustrations are half life size.



www.torontozoo.com/adaptapond

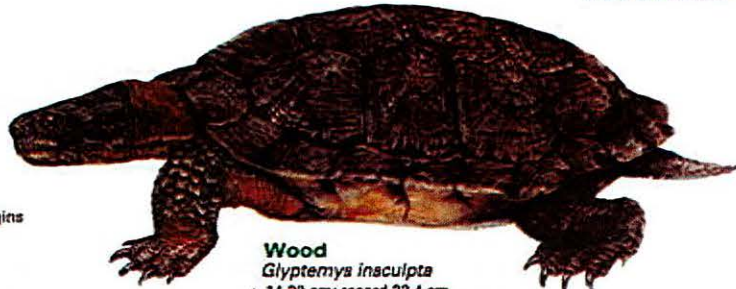


351A Old Finch Ave.
Toronto, ON, Canada M1B 5K7
www.torontozoo.com



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 10-16 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)



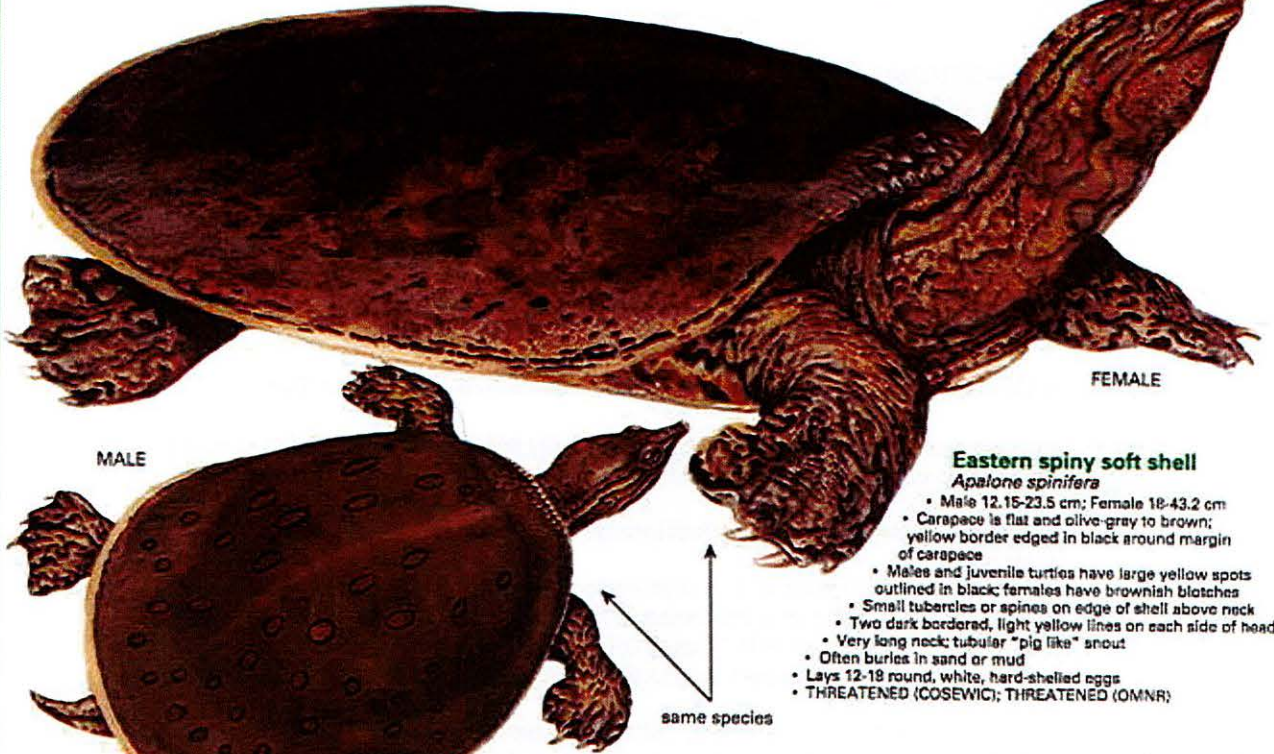
Blanding's
Emydoidea blandingii
• 12.5-18 cm; record 27.4 cm

- 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 8-11 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 role 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/adoptpond/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.



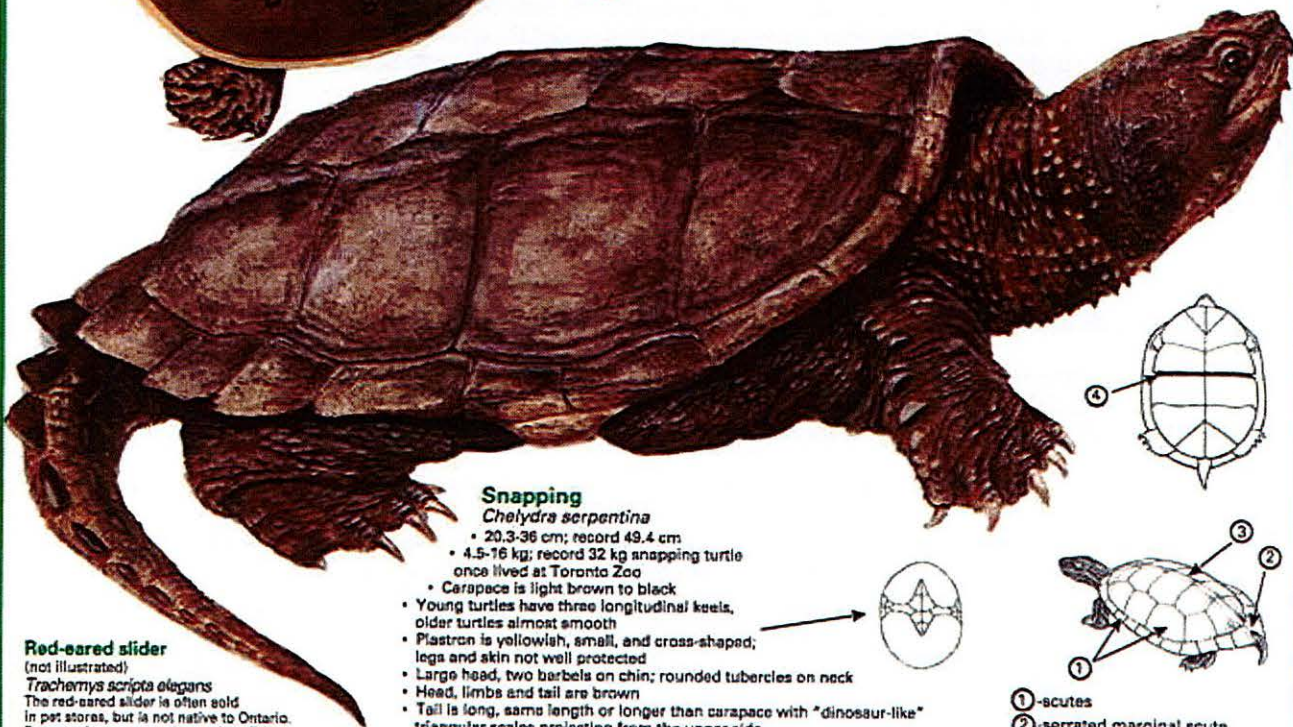
FEMALE

MALE

Eastern spiny soft shell
Apalone spinifer

- 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)

same species



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



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.

Endangered Species Agreement
PWD-MD-2010-026
November 29, 2010

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.

Endangered Species Agreement
PWT-MD-2010-026
November 29, 2010

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:

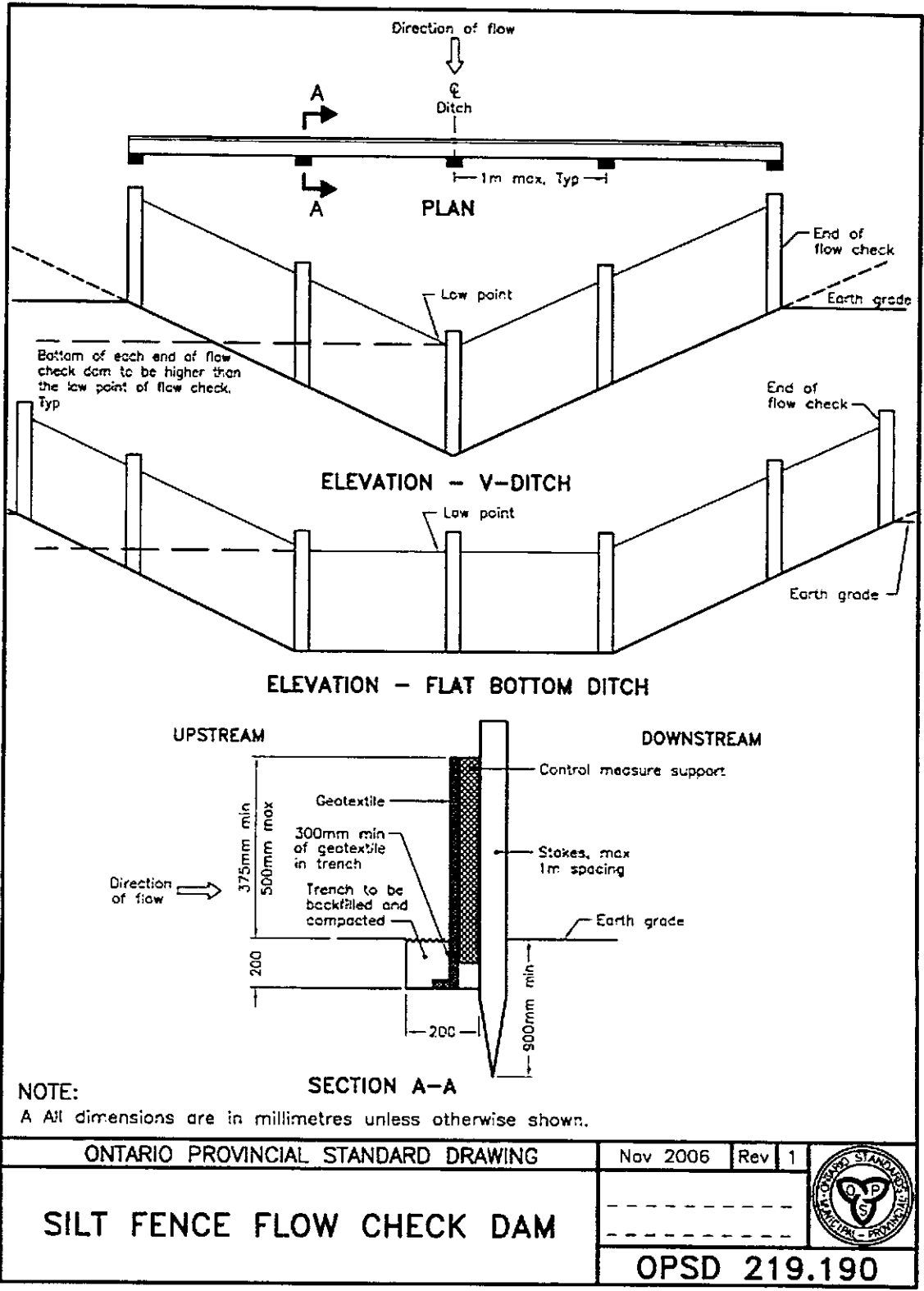
- (a) within 24 hours of capture;
- (b) in an area immediately adjacent to the Drainage Works;
- (c) in an area that will not be further impacted by the undertaking of any Activity;
- and
- (d) not more than 250 metres from the capture site.


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.



ONTARIO PROVINCIAL STANDARD DRAWING		Nov 2006	Rev 1	
SILT FENCE FLOW CHECK DAM		-----		

OPSD 219.190				

APPENDIX 'D'

Correspondence Relating to DFO Review

Lou Zarlenga

From: FPP.CA / PPP.CA (DFO/MPO) <fisheriesprotection@dfo-mpo.gc.ca>
Sent: August-23-17 7:54 AM
To: 'Lou Zarlenga'
Cc: 'Shane McVitty'; 'RC Spencer - Rick Spencer'
Subject: Regulatory Review NOT Required - 17-HCAA-00546 Bank Erosion Protection, Ouellette Drain Outlet, Class F, Town of Amherstburg, SAR

Dear Mr. Zarlenga,

Subject: Regulatory Review NOT Required - 17-HCAA-00546 Bank Erosion Protection, Ouellette Drain Outlet, Class F, Town of Amherstburg, SAR

The Fisheries Protection Program (the Program) of Fisheries and Oceans Canada received your erosion protection proposal which has been reviewed under the *Fisheries Act* and the *Species at Risk Act*.

The following aquatic species which is currently listed under the SARA is believed to use the area:

- Spotted Sucker listed as SPECIAL CONCERN

Based on the information provided, your proposal has been identified as a project where a *Fisheries Act* authorization is not required given that serious harm to fish can be avoided by following standard measures, and a Permit under the *Species at Risk Act* is not required. Your project, as proposed, is not considered to need an authorization from the Program under the *Fisheries Act* in order to proceed. In order to comply with the *Fisheries Act*, it is recommended that you follow our guidance tools which can be found at the following website (<http://www.dfo-mpo.gc.ca/pnw-ppe/measure-mesures/measure-mesures-eng.html>). It remains your responsibility to meet the other requirements of federal, provincial and municipal agencies.

Should your plans change or if you have omitted some information in your proposal such that your proposal meets the criteria for a site specific review, as described on our website (<http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html>), you should complete and submit the request for review form that is also available on the website.

Should you have any questions or concerns about the compliance of your proposal with the *Fisheries Act*, you may wish to engage an environmental professional familiar with measures to avoid impacts to fish and fish habitat (<http://www.dfo-mpo.gc.ca/pnw-ppe/fpp-ppp/index-eng.html>).

Yours sincerely,

Kathleen Buck
Fisheries Protection Biologist
Fisheries and Oceans Canada

Fisheries and Oceans Canada has changed the way new project proposals (referrals), reports of potential *Fisheries Act* violations (occurrences) and information requests are managed in Central and Arctic Region (Alberta, Saskatchewan, Manitoba, Ontario, Nunavut and the Northwest Territories). Please be advised that general information regarding the management of impacts to fish and fish habitat and self-assessment tools (e.g. Measures to Avoid Harm) that enable you to determine *Fisheries Act* requirements are available at DFO's "Projects Near Water" website at www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html. For all occurrence reports, or project proposals where you have determined,

following self-assessment, that you cannot avoid impacts to fish and fish habitat, please submit to fisheriesprotection@dfo-mpo.gc.ca. For general inquiries call 1 855 852-8320.

From: Lou Zarlenga [<mailto:lzarlenga@rcspencer.ca>]
Sent: August-22-17 5:27 PM
To: Buck, Kathleen
Cc: 'Shane McVitty'; 'RC Spencer - Rick Spencer'
Subject: RE: 17-HCAA-00546 - FW: 16-557 - Ouellette Drain Outlet (DFO Request for Review)

Hi Kathleen

Thank you for returning my call. Further to our phone conversation this afternoon we will include your recommendations in the proposed work plan for the Ouellette Drain.

In addition this work would include isolating and protecting the immediate submerged work areas. This would be achieved by incorporating berms and netting to protect any fish that may be present or attempting to enter at the outlet to the Detroit River. The protective berming and netting would extend from the poured concrete head wall at the west limit of the Ouellette Drain to the north east end of the subject landowner's property.

Should you require any additional information please do not hesitate to contact us. Also we wish to congratulate you in your new position.

Lou Zarlenga, P.Eng.
Senior Engineer - Drainage Specialist
RC Spencer Associates Inc.
261 Shepherd Street East
Windsor, Ontario
N8X 2K6

Phone: 519-946-1122 (ext. 1138)
Fax: 519-946-1123
Email: lzarlenga@rcspencer.ca

From: Buck, Kathleen [<mailto:Kathleen.Buck@dfo-mpo.gc.ca>]
Sent: August-22-17 2:46 PM
To: 'lzarlenga@rcspencer.ca' <lzarlenga@rcspencer.ca>
Cc: 'Shane McVitty' <smcvitty@amherstburg.ca>; RC Spencer - Rick Spencer (rcspencer@rcspencer.ca) <rcspencer@rcspencer.ca>
Subject: RE: 17-HCAA-00546 - FW: 16-557 - Ouellette Drain Outlet (DFO Request for Review)

Hi Lou,

I will be leaving work with the DFO by the end the week and am currently trying to close all my ongoing files. Please send the previous requested information to FisheriesProtection@dfo-mpo.gc.ca noting the following file number:

File No. 17-HCAA-00546

File Name: Bank Erosion Protection, Ouellette Drain Outlet, Class F, Town of Amherstburg, SAR

Thank you,

Kathleen Buck

Fisheries Protection Biologist | Biologiste, protection des pêches

Fisheries and Oceans Canada | Pêches et Océans Canada

Fisheries Protection Program | Programme de protection des pêches

867 Lakeshore Road, Burlington, ON, L7S 1A1 | 867, ch. Lakeshore, Burlington, ON, L7S 1A1

T: (905) 336-6235

Email/Courriel: Kathleen.Buck@dfo-mpo.gc.ca

From: Shane McVitty [<mailto:smcvitty@amherstburg.ca>]

Sent: August-15-17 11:30 AM

To: 'lzarlenga@rcspencer.ca'; RC Spencer - Rick Spencer (rcspencer@rcspencer.ca)

Cc: Buck, Kathleen

Subject: FW: 17-HCAA-00546 - FW: 16-557 - Ouellette Drain Outlet (DFO Request for Review)

Lou,

Can you please contact Kathleen ASAP to discuss the Ouellette Drain mitigation plans? I was speaking with her this morning on a separate project and she indicated that she has not heard from you since her June 30th email. She also indicated that she is leaving her position at the DFO by the end of the week, so it is important to get in touch with her soon to avoid the headaches possibly starting over with her replacement.

Thanks,
Shane

Shane McVitty

Drainage Superintendent / Engineering Coordinator

512 Sandwich St. South, Amherstburg, ON, N9V 3R2

Tel: 519-736-3664 Fax: 519-736-7080 TTY: 519-736-9860



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From: Shane McVitty

Sent: June-30-17 3:00 PM

To: Lou Zarlenga

Cc: RC Spencer - Rick Spencer
Subject: Re: 17-HCAA-00546 - FW: 16-557 - Ouellette Drain Outlet (DFO Request for Review)

Please be sure to touch base with DFO once you have your mitigating plans set up. I'd like to be sure that they are happy before we take the report to council.

Thanks,
Shane

Sent from my iPhone

On Jun 30, 2017, at 2:42 PM, Lou Zarlenga <lzarlenga@rcspencer.ca> wrote:

Hi Shane

Thanks for this information we will incorporate this in the drainage report.

Lou Zarlenga, P.Eng.
Senior Engineer - Drainage Specialist
RC Spencer Associates Inc.
261 Shepherd Street East
Windsor, Ontario
N8X 2K6

Phone: 519-946-1122 (ext. 1138)
Fax: 519-946-1123
Email: lzarlenga@rcspencer.ca

From: Shane McVitty [<mailto:smcvitty@amherstburg.ca>]
Sent: June-30-17 1:52 PM
To: lzarlenga@rcspencer.ca; RC Spencer - Rick Spencer <rcspencer@rcspencer.ca>
Subject: Fwd: 17-HCAA-00546 - FW: 16-557 - Ouellette Drain Outlet (DFO Request for Review)

See response from DFO below.

Sent from my iPhone

Shane McVitty

Drainage Superintendent / Engineering Coordinator

512 Sandwich St. South, Amherstburg, ON, N9V 3R2
Tel: 519-736-3664 Fax: 519-736-7080 TTY: 519-736-9860

<image001.gif> <image002.gif>

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Begin forwarded message:

From: "Buck, Kathleen" <Kathleen.Buck@dfo-mpo.gc.ca>
Date: June 30, 2017 at 1:49:40 PM EDT

To: Shane McVitty <smcvitty@amherstburg.ca>
Subject: RE: 17-HCAA-00546 - FW: 16-557 - Ouellette Drain Outlet (DFO Request for Review)

Hi Shane,

I'm currently reviewing the Ouellette Drain outlet repair project. As there may be species at risk present in the Detroit River, I recommend that fish should be excluded from the work area and that you should block the channel off before work starts.

Please confirm the use of these mitigation measures into your project plans.

Thank you and have a great long weekend!

Kathleen

Kathleen Buck
Fisheries Protection Biologist | Biologiste, protection des pêches
Fisheries and Oceans Canada | Pêches et Océans Canada
Fisheries Protection Program | Programme de protection des pêches
867 Lakeshore Road, Burlington, ON, L7S 1A1 | 867, ch. Lakeshore, Burlington, ON, L7S 1A1
T: (905) 336-6235
Email/Courriel: Kathleen.Buck@dfo-mpo.gc.ca

From: RC Spencer - Rick Spencer [<mailto:rcspencer@rcspencer.ca>]
Sent: May-10-17 9:58 AM
To: FPP.CA / PPP.CA (DFO/MPO)
Cc: Shane McVitty; lzarlenga@rcspencer.ca
Subject: 17-HCAA-00546 - FW: 16-557 - Ouellette Drain Outlet (DFO Request for Review)

Dear Sir/Madam,

Please see attached Request for Review form for the repair of the drain bank erosion protection at the outlet of the Ouellette Drain West. Also attached are photos and location of the site with the SAR maps.

The site is located in the Town of Amherstburg and the project involves the remediation of the erosion protection at the banks of the Ouellette drain West near the outlet. The erosion protection was previously installed under a drainage report in 1952 and since then, there has been minimal maintenance to the drain. An existing dwelling is located adjacent to the drain and there is significant concern to the north bank that is creeping closely to the house due to erosion. An aerial view is attached showing the vicinity of the drain to the existing dwelling (Municipal No. 751 County Road 20). The remediation will involve the installation of quarried limestone at the banks, possibly in gabion baskets.

Please let us know if additional information is needed.

Thanks,

Marvel Hormiz, B.A.Sc.
EIT (Engineer in Training)
RC Spencer Associates Inc.
Office: (519) 946-1122 Ext. 1128
Cell: (519) 999-8795

APPENDIX 'E'

SITE MEETING

SITE MEETING

After reviewing the drainage information and the previous Engineer's reports on the drain, an on-site meeting was held on November 7, 2016 at the Libro Centre in the Town of Amherstburg with the affected land owners.

In Attendance:

- Lou Zarlenga
- Marvel Hormiz
- Gerald Monfortin
- Shirley Monfortin
- Richard Campbell
- Wilma Caratanasov
- Natan Caratanasov
- G. Emery
- Ed Predici
- Frank & Gwen Giswein
- Ron & Judy Ncali
- Bill Reeves
- Dan Huneault
- Anthony Leardi
- Jeff Grant
- P. Bertram
- Bryan Hayes
- Jeff Lamarche
- Jeff Dietrich
- Carlo & Alpa Pacitti
- Gregg Parker
- Chuck Roy
- Terry Whelan
- Jose Dupont
- Hani Chammat
- Adrian Wolfe
- Michael DiLuca
- Vickie DiLuca
- Camille Ouellette
- Fred Cowtin
- X. Hio
- Roxanne Ouellette
- Joseph Ouellette
- Mr. R. A. Kalle
- Mrs. R. A. Kalle
- Susan Silvaggio

Representing:

RC Spencer Associates Inc.
RC Spencer Associates Inc.
211 Turner Cr.
211 Turner Cr.
741 Front Road N.
712 Concession 2
712 Concession 2
814 Concession 2
167 Clubview Drive
7 Kingsbridge
222 Turner
121 Golfwood
191 Clubview
124 Links Drive
231 Clubview Drive
77 Whelan
1061 Ironwood Drive
102 Ironwood Drive
759 Front Road N.
754 2nd Concession
2 Whelan Drive
Manor Windsor Realty
737 Front Road N.
737 Front Road N.
35 Cambridge Court
252 Turner Cr.
757 Front Road N.
757 Front Road N.
643 Front Road
118 Golfwood
183 Golfwood
751 Front Road N.
751 Front Road N.
129 Ironwood Dr.
129 Ironwood Drive
111 Fescue Lane

The Drainage Superintendent, Shane McVitty, made introductions, announced the Engineer of record and noted that the authorization to proceed with this project is provided under Section 78 of the Drainage Act, to repair and improve the existing municipal drain.

The Engineer of record, Lou Zarlenga, began the presentation and explained the following:

- General overview of the history and process under the Drainage Act. Mr. Zarlenga emphasized that the on-site meeting is for gathering information and letting the affected land owners know about the nature of the project.
- Mr. Zarlenga began the PowerPoint presentation that was prepared and went through each slide explaining what they represented.
- Mr. Zarlenga showed the area of concern in the drain and explained that over the years, erosion in the bank has been occurring causing the west bank of the drain to shift dangerously close to the existing dwelling.
- Project is focused in a small area of the drain, however, the drainage area is very large and covers many lands.

Questions:

1. Q: What is the solution to the problem?

A: At this stage, the project is very premature. We have not yet decided on a final solution.

2. Q: Was any of the work considered under the last report with Stantec?

A: No, the last report on the Ouellette Drain was addressing a different problem.

3. Q: Question about the watershed limits?

A: The watershed limit is not finalised. The drainage area drawings that we have shown are preliminary and will be final in the drainage report.

4. Q: Will you be looking at the bridge to see if it has caused the erosion problem?

A: We do not believe that the bridge had any impact on the erosion. However, we will look into all possibilities in detail during our survey and investigation.

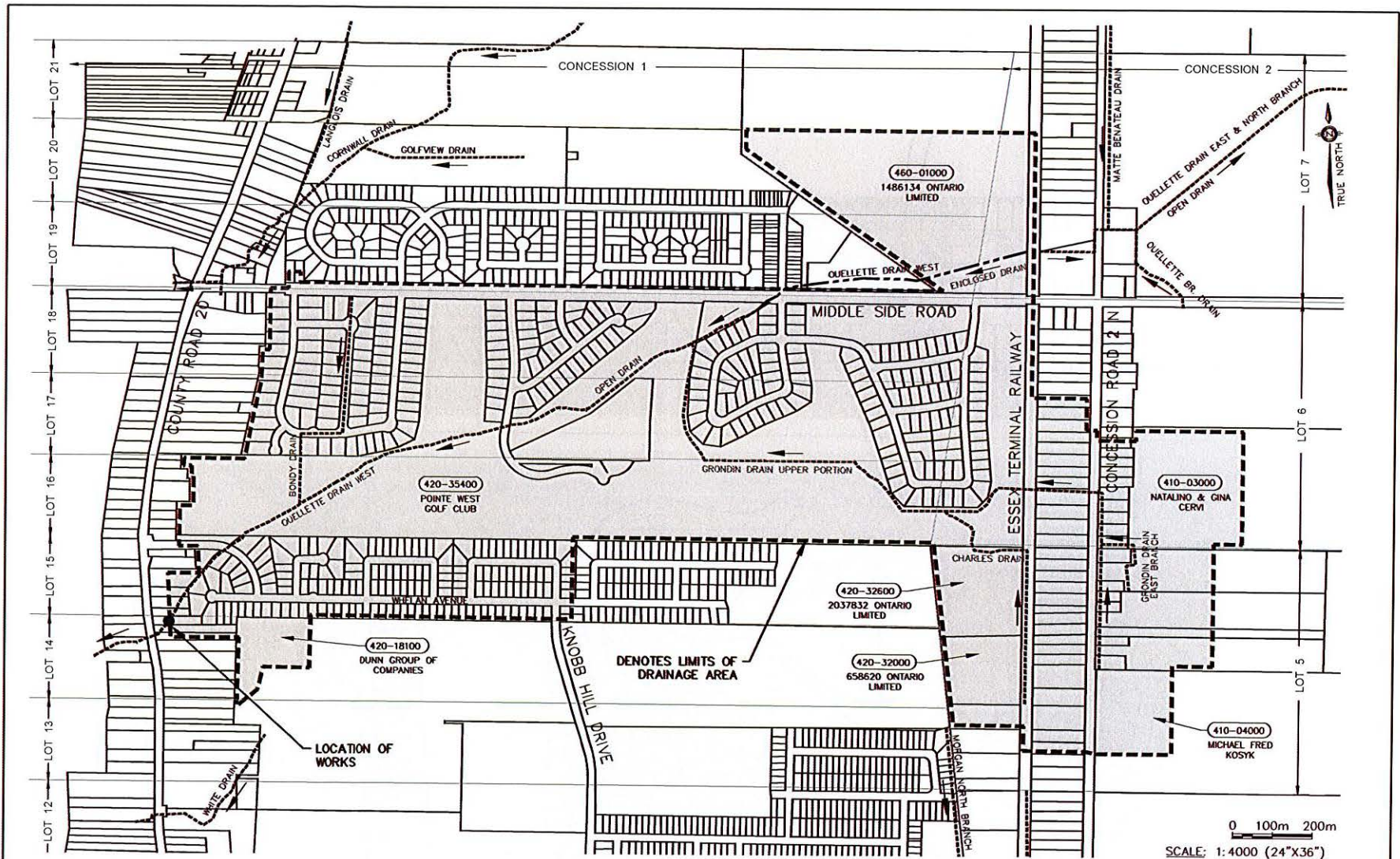
5. Q: Can you tell me about the extent of the erosion of the drain?

A: At this moment we know that there is stacked limestone erosion protection on the banks that have failed and fallen into the drain. The bank has been eroding away over the years because of the failing limestone wall.

6. Q: Does the homeowner own the property east of the Ouellette Drain West?

A: Yes, the homeowner of 751 County Road 20 owns the property east of the drain as well.

7. Q: What are the factors considered for assessment? The property owners at 751 County Road 20 are going to have the most benefit out of the work.
- A: There are three types of assessments a person can be assessed by. A Special Benefit assessment is assessed to a landowner that requests any additional work or feature in the drainage works. A Benefit Assessment is assessed to landowners that are benefiting from the drainage works such as will result in a higher market value or increased crop production or improved appearance or any other advantages relating to the betterment of lands. An Outlet Assessment is based on the volume and flow of water made to artificially flow from a land into the drain.
8. Q: Is the assessment a one-time pay?
- A: The municipality can give you the option to pay your assessment in installments within 5 to 10 years. (Correction: The debenture period is 5 years, not 10 years.)
9. Q: Is the benefit to homeowner going to be reflected in their assessment?
- A: Yes.
10. Q: There should be an easement to how far away you can build from a drain. How was the house allowed to be built so close to the drain?
- A: The house is over 60 years old. Nowadays you would not be able to build a house this close to the drain.
11. Q: My property does not drain in the Ouellette Drain West so I shouldn't be in the watershed?
- A: Some people might not be in the watershed. However, since the watershed limits are only preliminary right now, we have invited more people to make you aware of the project.
12. Q: Why isn't the western part of Kingsbridge included?
- A: We will be looking at the drainage limits in more detail for the final report. We are using information that the municipality has given us.
13. Q: What is the expected time for submission of the final report?
- A: Approximately two months.



THIS PLAN HAS BEEN REDUCED IN SIZE FOR PRESENTATION PURPOSES AND THEREFORE IT IS NOT TO THE SCALES INDICATED. A FULL SIZE SET OF DRAWINGS IS AVAILABLE FOR REVIEW AT THE TOWN OFFICE

BC SPENCER ASSOCIATES INC.
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Professional Engineer
 Civil

D.R. HESLOP
 D.R. HESLOP
 CIVIL ENGINEER
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LEGEND

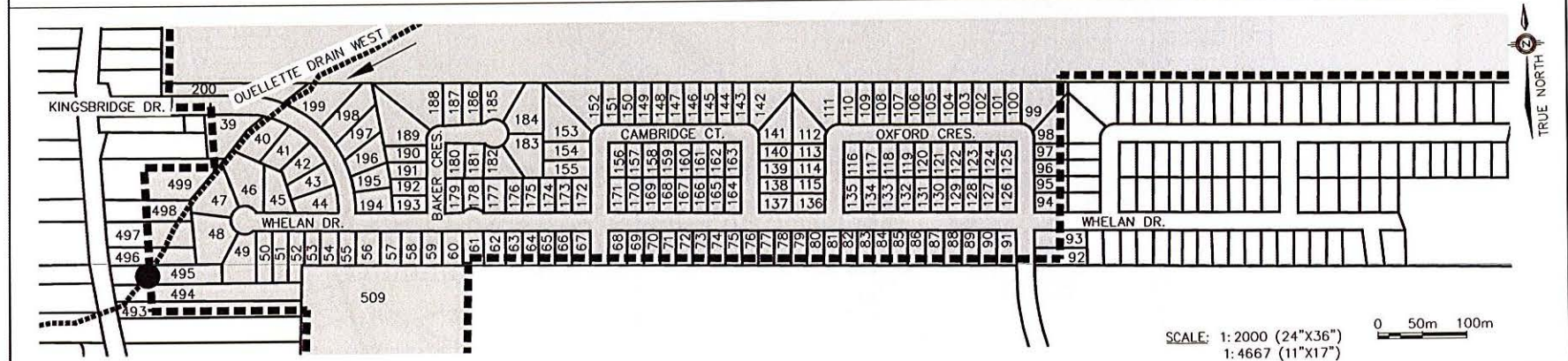
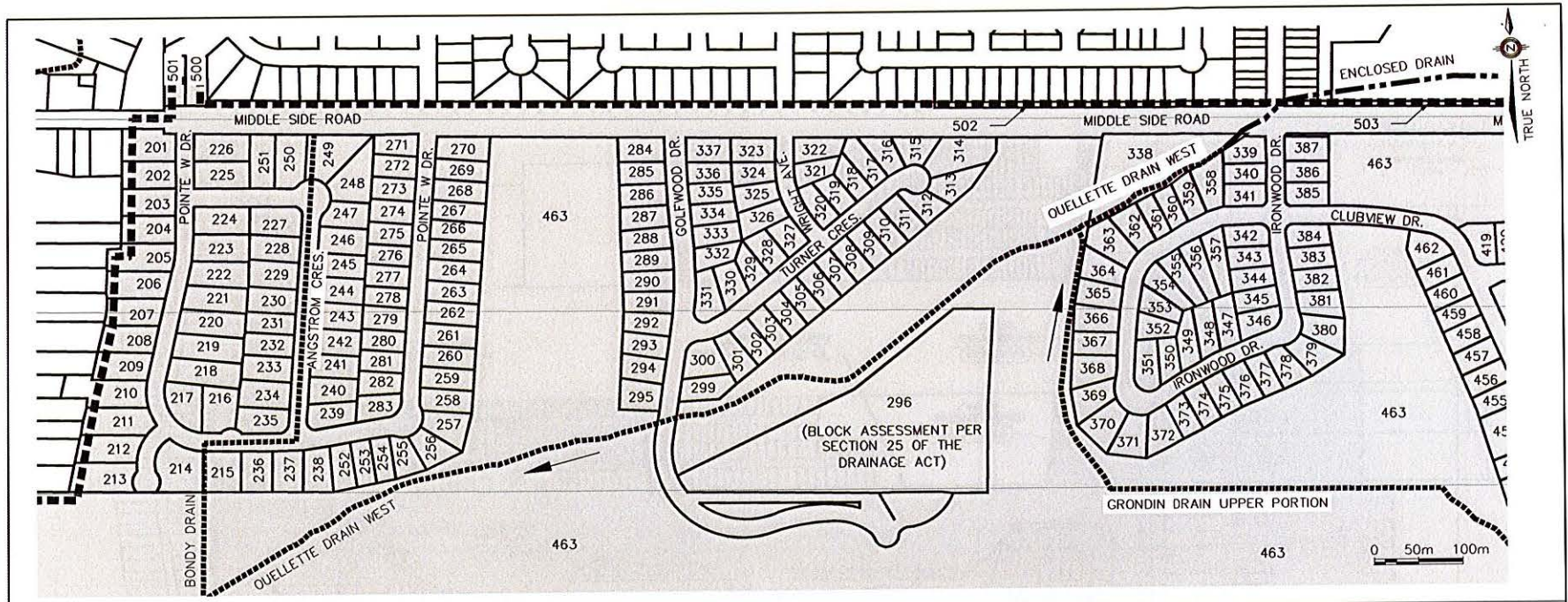
- DRAINAGE AREA
- OPEN MUNICIPAL DRAIN
- ENCLOSED MUNICIPAL DRAIN
- LOCATION OF WORKS
- STORM SEWER

DESIGN M.M.H.
 CHECKED D.M.
 DRAWN M.M.H.
 CHECKED D.M.
 DATE JUNE 28, 2019
 SCALE AS-SHOWN

QUELLETTE DRAIN WEST OUTLET

DRAINAGE AREA PLAN

PROJECT NO. 16-557D
 SHEET NO. 1
 OF 7



SCALE: 1:2000 (24"x36")
1:4667 (11"x17")

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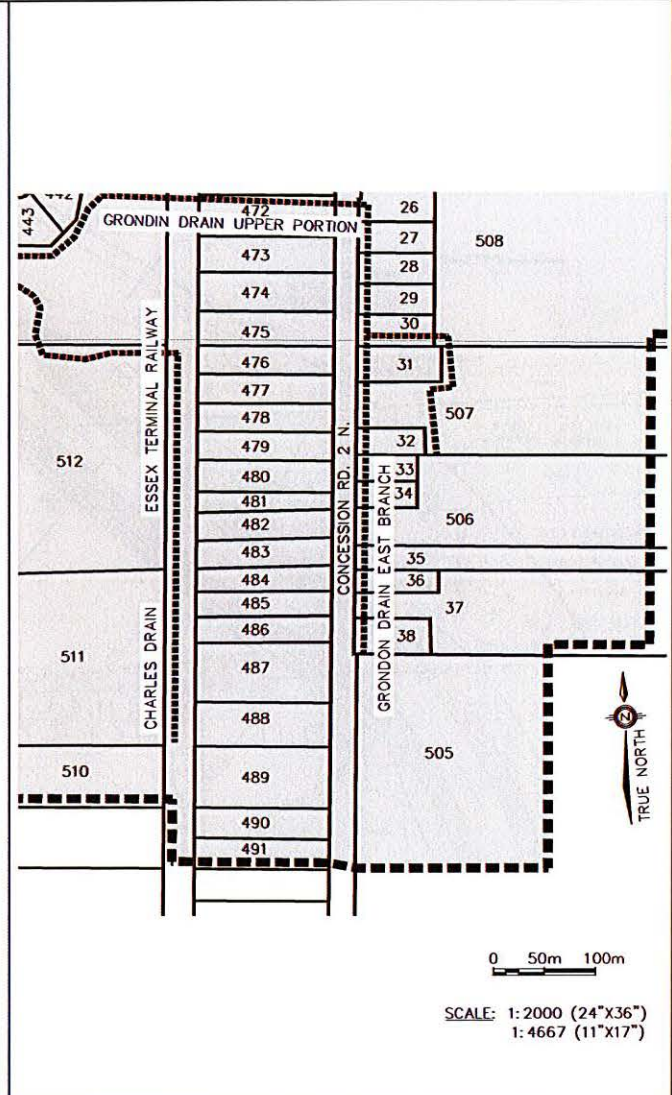
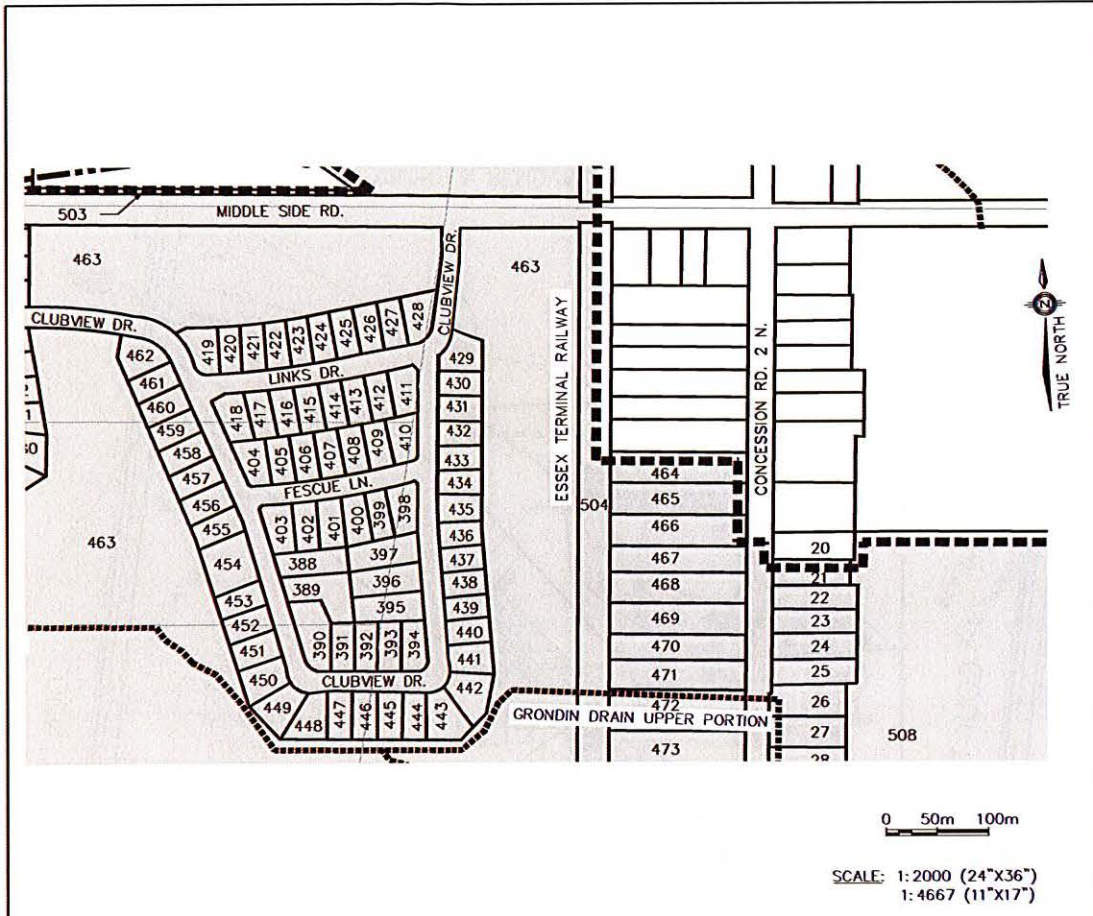
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	DRAINAGE AREA
	OPEN MUNICIPAL DRAIN
	ENCLOSED MUNICIPAL DRAIN
	LOCATION OF WORKS
	STORM SEWER
	295 - PARCEL NUMBER (SEE ASSESSMENT SCHEDULE)

DESIGN M.M.H.
CHECKED D.M.
DRAWN M.M.H.
CREATED D.M.
DATE JUNE 28, 2019
SCALE AS-SHOWN

OUELLETTE DRAIN WEST OUTLET

PLAN ENLARGEMENT
SHOWING PARCEL NUMBERS

PROJECT NO. 16-557D
SHEET NO. 2
OF 7



THIS PLAN HAS BEEN REDUCED IN SIZE FOR PRESENTATION PURPOSES AND THEREFORE IT IS NOT TO THE SCALES INDICATED. A FULL SIZE SET OF DRAWINGS IS AVAILABLE FOR REVIEW AT THE TOWN OFFICE.



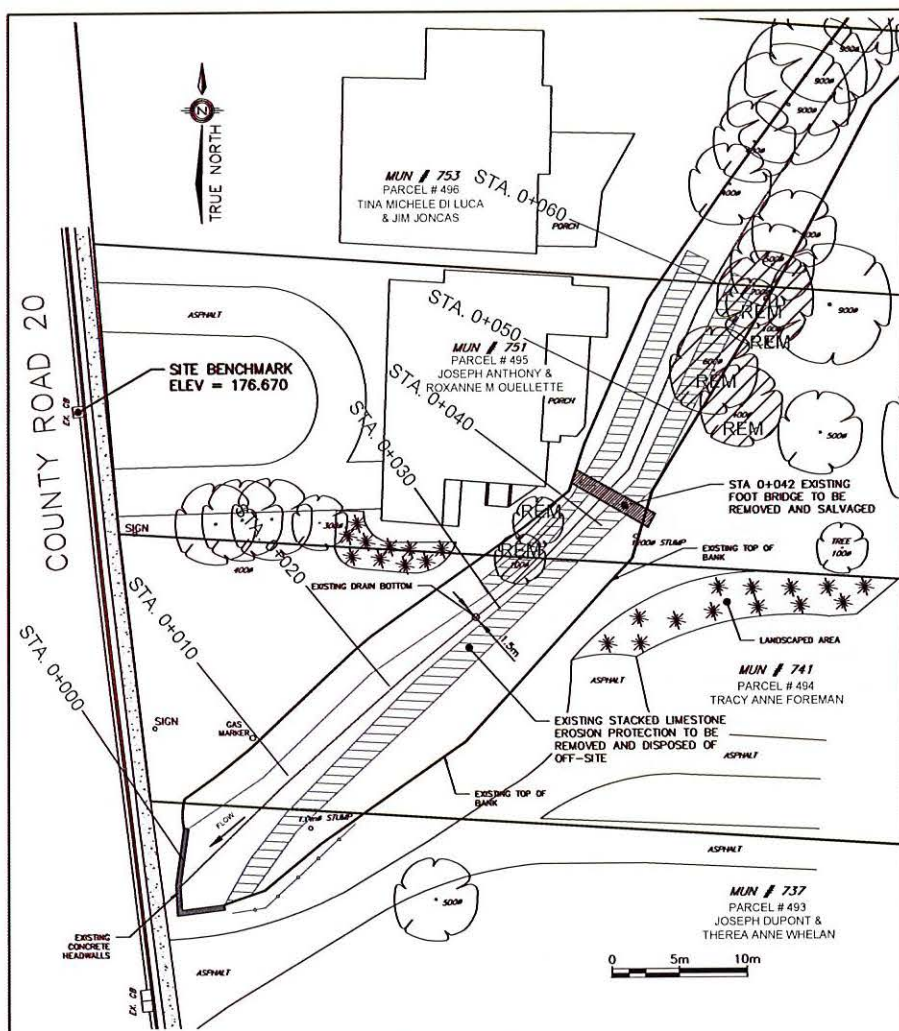
LEGEND	
	DRAINAGE AREA
	OPEN MUNICIPAL DRAIN
	ENCLOSED MUNICIPAL DRAIN
	LOCATION OF WORKS
	STORM SEWER
	295 - PARCEL NUMBER (SEE ASSESSMENT SCHEDULE)

DESIGN	M.M.H.
CHECKED	D.M.
DRAWN	M.M.H.
CHECKED	D.M.
DATE	JUNE 28, 2011
SCALE	AS-SHOWN

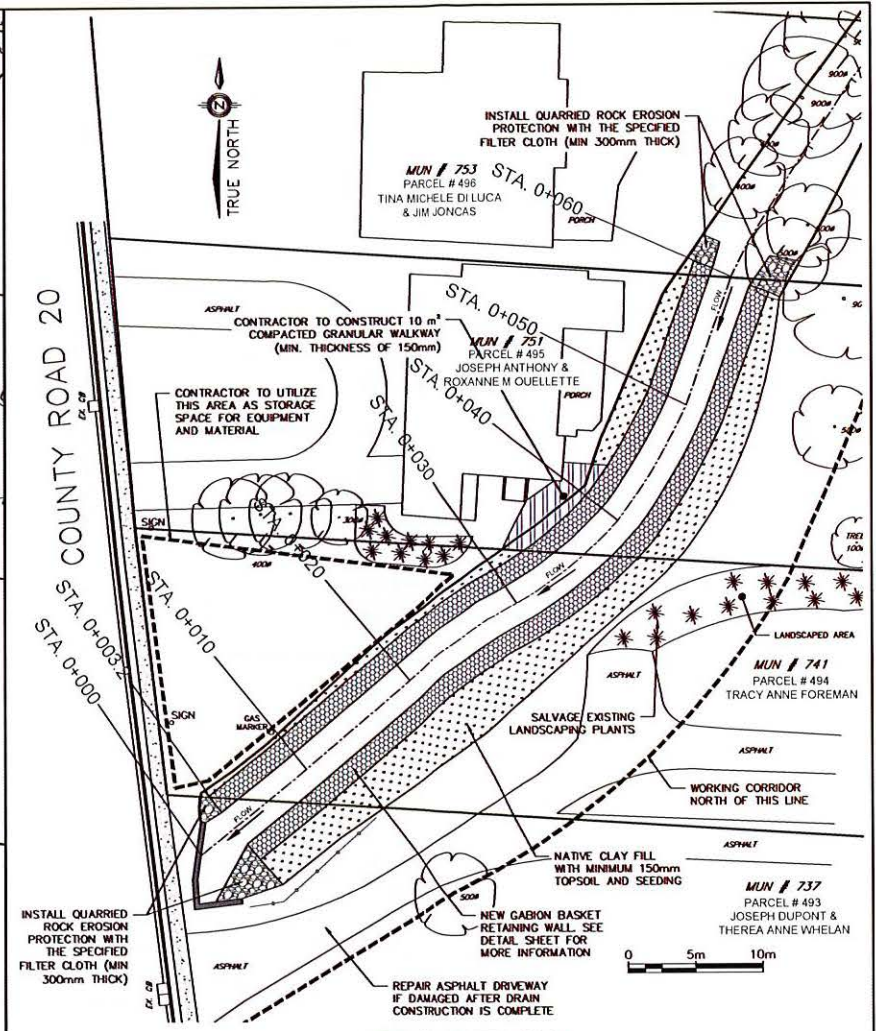
QUELLETTE DRAIN WEST OUTLET

**PLAN ENLARGEMENT
SHOWING PARCEL NUMBERS**

PROJECT NO.	16-557D
SHEET NO.	3
OF	7



EXISTING & REMOVALS
 SCALE: 1:350 (11"x17")
 1:150 (24"x36")



NEW CONSTRUCTION
 SCALE: 1:350 (11"x17")
 1:150 (24"x36")

THIS PLAN HAS BEEN REDUCED IN SIZE FOR PRESENTATION PURPOSES AND THEREFORE IT IS NOT TO THE SCALES INDICATED. A FULL SIZE SET OF DRAWINGS IS AVAILABLE FOR REVIEW AT THE TOWN OFFICE



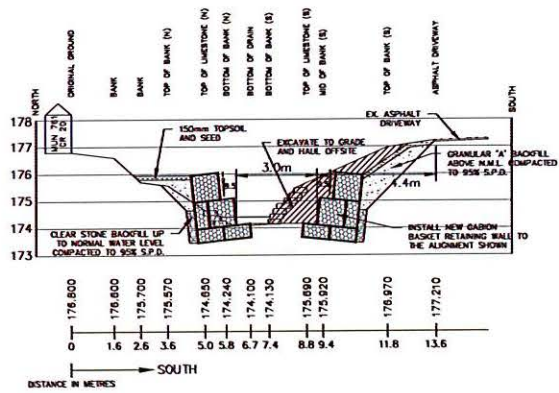
LEGEND	
	TREE - DIAMETER IN mm
	REM REMOVE

SITE BENCHMARK
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 ELEV = 176.670

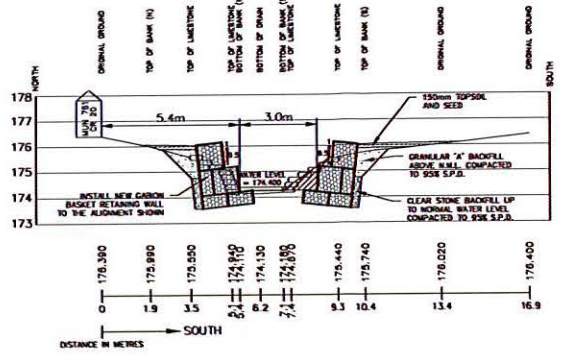
DESIGN	M.M.H.
CHECKED	D.M.
DRAWN	M.M.H.
CHECKED	D.M.
DATE	LINE 28, 2019
SCALE	AS SHOWN

OUELLETTE DRAIN WEST OUTLET
REMOVALS AND SITE PLAN

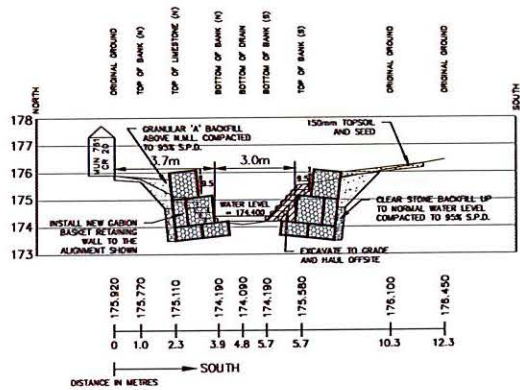
PROJECT NO.	16-557D
SHEET NO.	4
OF	7



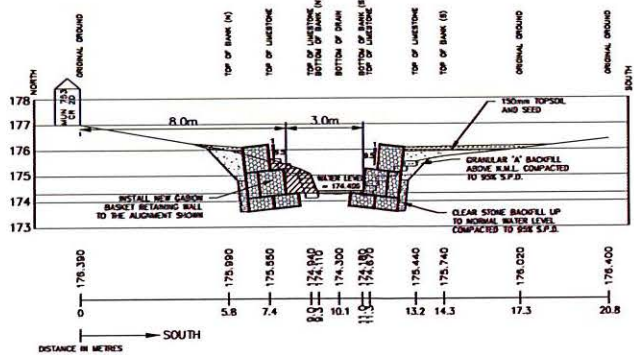
STA 0+030
 SCALE: 1:75 (24"x36")
 1:175 (11"x17")



STA 0+050
 SCALE: 1:75 (24"x36")
 1:175 (11"x17")



STA 0+040
 SCALE: 1:75 (24"x36")
 1:175 (11"x17")



STA 0+060
 SCALE: 1:75 (24"x36")
 1:175 (11"x17")

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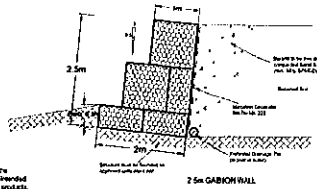
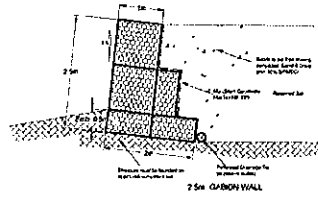
SITE BENCHMARK
 DESCRIPTION: CATCHBASIN FRONTING
 MUN NO. 751 CR 20 ON EAST SIDE
 OF THE ROAD.
 ELEV = 176.670

DESIGN	M.M.H.
CHECKED	D.M.
DRAWN	M.M.H.
CHECKED	D.M.
DATE	JUNE 28, 2015
SCALE	AS-SHOWN

OULETTE DRAIN WEST OUTLET
CROSS-SECTIONS

PROJECT NO.	16-557D
SHEET NO.	6
OF	7

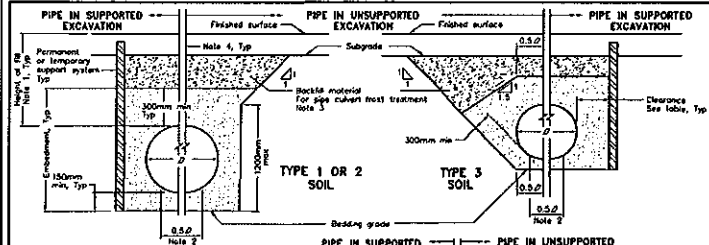
STANDARD CONCEPTUAL DRAWING



NTS
 For all dimensions see the notes of this drawing.
 1. A 100mm x 100mm x 100mm concrete cube shall be used for the test of the concrete strength for the wall.
 2. The concrete shall be of the strength of the concrete.
 3. The concrete shall be of the strength of the concrete.
 4. The concrete shall be of the strength of the concrete.

Maccaferri Canada Ltd. assumes no responsibility for the design and construction of the project, as the project is intended as a general indication to suggest the proper use of its products.

MACCAFERRI		Scale:	NTS
Maccaferri Canada Ltd. 400 Cedar Knoll Drive, Unit 8 Cambridge, ON CANADA N1R 1J7 Ph: (519) 842-9099 Fax: (519) 829-1288		Project No.:	
Client:	Design:	Date:	Drawn By:
Checked By:	Approved By:	Scale:	NTS
Sheet No.:	7	Project No.:	16-5570
Drawn By:	W.M.H.	Scale:	NTS
Checked By:	D.M.	Project No.:	16-5570
Approved By:	D.M.	Scale:	NTS
Date:	JUN 28, 2018	Project No.:	16-5570
Scale:	N/A	Project No.:	16-5570



LEGEND:
 Ø = Inside Diameter

NOTES:

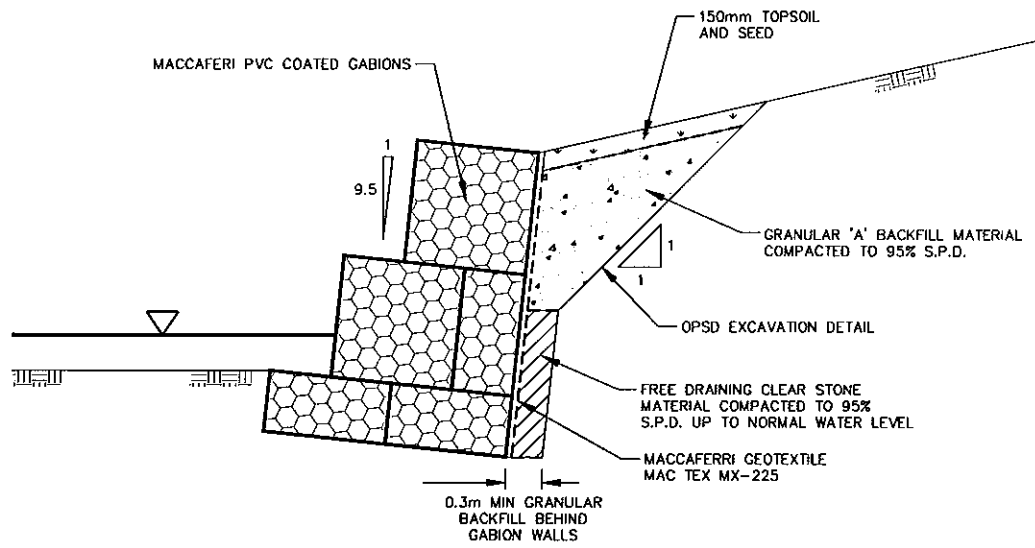
- Height of fill is measured from the finished surface to top of pipe.
- The pipe bed shall be compacted and shaped to receive the bottom of the pipe.
- Pipe culvert frost treatment shall be according to OPSD 803.030 and 803.031.
- Condition of excavation is symmetrical about centreline of pipe.
- Granular material placed in the haunch area shall be compacted prior to placing and compacting the remainder of the embedment material.
- Soil types as defined in the Occupational Health and Safety Act and Regulations for Construction Projects.
- All dimensions are in metres unless otherwise shown.

Pipe Inside Diameter (mm)	Clearance (mm)
900 or less	300
Over 900	500

ONTARIO PROVINCIAL STANDARD DRAWING Nov 2014 [Rev 3]

FLEXIBLE PIPE EMBEDMENT AND BACKFILL EARTH EXCAVATION

OPSD 802.010



GABION BASKET TYPICAL DETAIL
 SCALE: N.T.S.

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 TEL: 604-681-1111 FAX: 604-681-1112
 www.bcengineers.com

REGISTERED PROFESSIONAL ENGINEER
 B. R. W. GIBSON
 JULY 25, 2018
 PROVINCE OF ONTARIO

DESIGN	W.M.H.	PROJECT NO.	16-5570
CHECKED	D.M.	SHEET NO.	7
DRAWN	W.M.H.		
CHECKED	D.M.		
DATE	JUN 28, 2018		
SCALE	N/A		