

THE CORPORATION OF THE TOWN OF AMHERSTBURG

BY-LAW NO. 2017 - 27

By-law to provide for the Repair and Improvement to the Leo Beaudoin Drain
based on the Drainage Report by Baird AE.

WHEREAS as request for repair and improvement of the Leo Beaudoin Drain 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 under section 78 of the Drainage Act;

WHEREAS Council of the Corporation of the Town of Amherstburg has authorized Halliday Pearson, P. Eng., Baird AE, to prepare a report and said engineer's report dated March 23, 2017, can be referenced as Schedule A, ~~located in the Clerk's Department agreement file #2017-27~~ attached to this by-law.

WHEREAS \$145,415.00 is the amount to be contributed by the Town of Amherstburg for the drainage works;

AND WHEREAS the report was considered and adopted by Amherstburg Drainage Board at the meeting held on Tuesday, April 4th, 2017.

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 \$145,415.00 being the amount necessary for the improvements of the drainage works.

This project being the Repair and Improvement to the Leo Beaudoin Drain.

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 \$3,015.00 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.

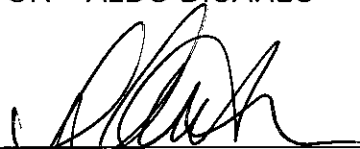
5. SCHEDULE OF ASSESSMENTS OF LANDS AND ROADS

Lot or Part Lot No.	Property Description			Estimated Assessment as per Report	Estimated Grants 33 1/3%	Equal Bi-Annual Rate to be Imposed
	Concession	Geographic Township	Parcel Roll No.			
Part Lot 12	1	Malden	600-08500	\$10,185.00	\$3,395.00	\$1,499.97
Part Lot 10 & 11	1	Malden	600-05600	\$1,310.00	\$436.67	\$192.93
Part Lot 13	1	Malden	600-13300	\$10,912.00	\$3,835.00	\$1,563.37
Part Lot 14	1	Malden	600-10800	\$8,116.00	\$2,826.67	\$1,168.46
Part Lot 14	1	Malden	600-12800	\$3,623.00	\$1,313.33	\$510.23
Part Lot 15 & 16	1	Malden	550-11100	\$14,838.00	\$5,166.67	\$2,136.49
Part Lot 16,17&18	1	Malden	550-08800	\$23,423.00	\$0.00	\$4,698.47
Part Lot 14	1	Malden	600-13200	\$1,200.00	\$0.00	\$265.09
Part Lot 14	1	Malden	600-13000	\$1,305.00	\$0.00	\$288.29
Part Lot 14	1	Malden	600-12900	\$1,555.00	\$518.33	\$229.01
Part Lot 15	1	Malden	550-11170	\$1,691.00	\$0.00	\$373.56
Part Lot 15	1	Malden	550-11090	\$5,245.00	\$0.00	\$1,158.67
Part Lot 18	1	Malden	550-10100	\$6,259.00	\$0.00	\$1,382.47
Part Lot 18	1	Malden	550-10000	\$4,506.00	\$0.00	\$995.42
Total				\$94,168.00	\$17,491.67	\$16,462.43

Read a first and second time and provisionally adopted this 10th day of April, 2017.



 MAYOR – ALDO DICARLO

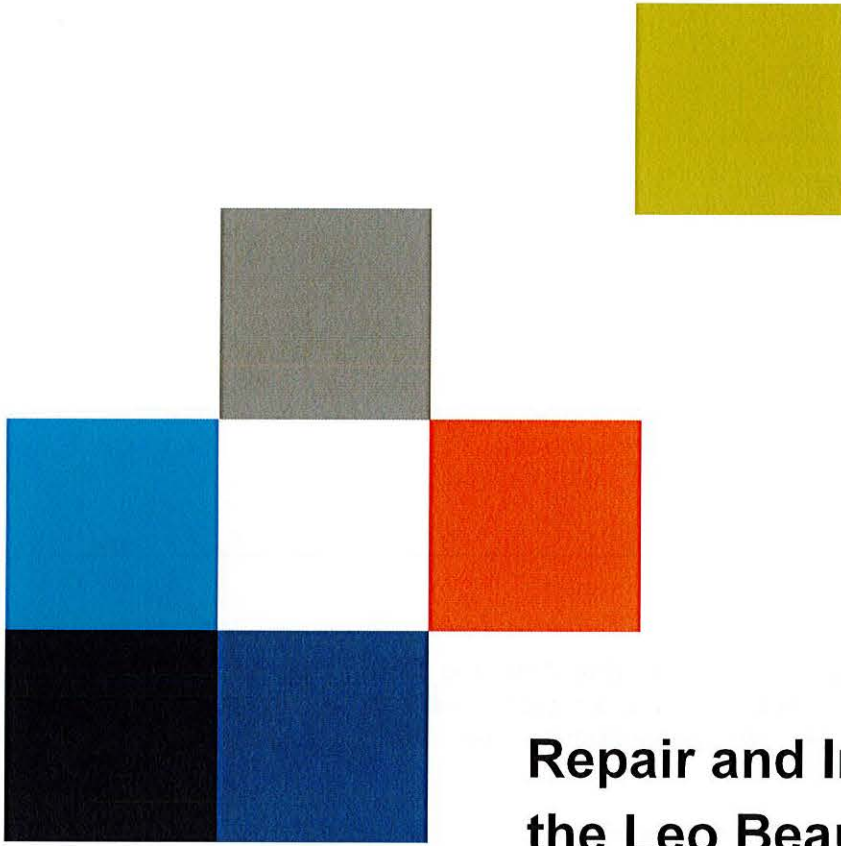


 CLERK – PAULA PARKER

Read a third time and finally passed this 21 day of August, 2017.


MAYOR - ALDO DICARLO


CLERK - PAULA PARKER



Repair and Improvement to the Leo Beaudoin Drain

Town of Amherstburg

March 23, 2017
(Final)

Project No. 12-040
PWD-MD-12-006



27 Princess St., Unit 102
Leamington, ON N8H 2X8
519.326.6161 TF 1.844.842.9188
bairdAE.ca

March 23, 2017

Corporation of the Town of Amherstburg
271 Sandwich Street South
Amherstburg, Ontario
N9V 2A5

Drainage Board Members

Subject: Repair and Improvement
To the Leo Beaudoin Drain
In the Town of Amherstburg
PWD-MD-12-006
Our File Reference 12-040

1.0 Authorization

Pursuant to Section 78 of The Drainage Act, 1990 (the Act), the Corporation of the Town of Amherstburg received a request for the construction of a replacement access culvert over the Leo Beaudoin Drain. The firm of Baird AE, was subsequently appointed to prepare a report as provided for under the provisions of the Act.

As requested by Council, we have made an examination of the Leo Beaudoin Drain being Part of Lots 12 to 18, Concession 1, in the Town of Amherstburg and we report thereon as follows.

2.0 Drainage Act Process

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:

- a) Council determines that repair and improvements are required.
- b) Council appoints an Engineer.
- c) Engineer conducts an onsite meeting.
- d) Engineer conducts a survey of the drain.
- e) Need for preparation of a Preliminary Report is decided.
- f) Engineer completes and provides a Preliminary Report, if required.
- g) Engineer prepares Final Drainage Report and provides copy to the Municipality.
- h) A Meeting to Consider the report is held in front of the Drainage Board with affected landowners.
- i) At the Meeting to Consider, the Drainage Board 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 the Drainage Board for the Court of Revision, within thirty days of adopting the provisional by-law.
- j) The Court of Revision is typically held within 30 days at a subsequent meeting with affected landowners to discuss any disputes regarding assessment of cost to lands and roads.
- k) Council passes by-law for construction of the work after statutory appeal period expires. Typically, the appeal period is a minimum of 40 days from the date of the provisional by-law.

- l) 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.
- m) Upon completion of construction, the Municipal Clerk will finalize all applicable costs and submit grant applications to the Ministry of Agriculture and Food, if applicable. The clerk will then send a final net assessment to the affected landowners. Only lands listed by the Municipal Property Assessment Corporation as having Farm Class Tax Rate are eligible for a 1/3 grant.

3.0 Current Drainage Report

The latest drainage report on file for the Leo Beaudoin Drain is one prepared by William J. Setterington, P. Eng. dated March 5, 1984. This report included provisions for the improvement of the drain along the entire length and reconstruction of the pumping system of the drain's outlet. A review of the current report indicates that the existing drainage area is approximately 131.87 ha in size and encompasses land on both the east and west sides of the Concession 3 South including the lands that utilize the pumping system.

4.0 Purpose of Report

The Town initially received a request for replacement of one culvert that had failed; however, at the site meeting, affected landowners requested that all culverts be examined. The condition of the drain was discussed and it was suggested by landowners that certain portions of the drain required maintenance. It was decided at the site meeting that the drain should be cleaned in conjunction with the proposed culvert works. Therefore, this report provides for the cleaning of the drain and replacement of existing access culverts; however, no improvements are recommended for the pumping system portion of the Leo Beaudoin Drain.

This report provides a description and estimated cost of the proposed work. In addition, the report provides a recommendation for distribution of the construction and incidental costs related to the work as well as providing instructions for the distribution of future maintenance costs. The assessments provided in this report are based upon the estimated cost of the work; these assessments would be pro-rated to the actual cost of the project upon completion of the works.

5.0 Site Meeting

On Thursday, September 11, 2012 at 9:00 a.m., a meeting was held at 3836 Concession 3 South to discuss the proposed work. The following people attended the site meeting:

Landowners Present	Municipal Address
Peter Dunn	3836 Concession 3 S
Ross Esposito	---
Randy Cyr	1265 Tanglewood Crescent, LaSalle
Larry Pajot	555 Martin Lane, LaSalle
George Laprade	3860 Concession 3 S
Edward Faucher	425 County Road 20
Eric Chamberlain	Town of Amherstburg
Halliday Pearson, P.Eng.	Crozier Baird Engineers

Mr. Chamberlain explained the purpose of the meeting. The last report for this drain was prepared in 1984. As one culvert has failed, Mr. Chamberlain expressed concern about the condition of the other culverts on the drain. Mr. Chamberlain asked if those present would agree to a conditional survey of existing culverts. Maintenance clauses for these culverts would be included in the report

for the replacement culvert and should they fail in the future, another Engineer's Report would not be required. This report will also describe methods for replacement culvert cost distribution. Those present agreed to the inclusion of a conditional survey in this report.

Mr. Dunn expressed concern about the high cost of engineering fees associated with drainage works. Mr. Chamberlain explained that a Municipal Drain is a user-pay system. All costs associated with work on the drain are assessed to lands within the watershed.

Mr. Dunn requested sloped gabion stone end of pipe protection. Mr. Chamberlain suggested the use of aluminized corrugated steel pipe or corrugated plastic pipe as these materials typically have a longer service life than galvanized corrugated steel pipe.

Landowners present inquired as to whom would be responsible for replacement costs of the culvert under County Road #20. Mr. Chamberlain stated that the County would pay for the culvert replacement. He further stated that roads, railways and utilities are assessed the total costs of the works within their right-of-way.

A second site meeting was held at 9:00 a.m., at 3836 Concession 3 South on Tuesday, September 10, 2013. The following people attend the site meeting:

Landowners Present	Municipal Address
Peter Dunn	3836 Concession 3 South
Ross Esposito	---
Miriam Gifford	2745 Bridgeway Blvd., Windsor
Larry Pajot	555 Martin Lane, LaSalle
Connie Mathieson	2761 County Road 20
Jeremy Krueger	The County of Essex
Eric Chamberlain	Town of Amherstburg
Halliday Pearson, P.Eng.	Crozier Baird Engineers

Ms. Pearson stated that a survey of all culverts on the drain had been undertaken in October 2012. Certain culverts show signs of deterioration and should be replaced. Photos of each culvert are available for review.

Mr. Dunn stated that he replaced his own culvert. He further stated that the drain flows well now.

Ms. Pearson stated that she would inspect the culvert to ensure it was installed in accordance with Town specifications.

Ms. Mathieson stated that the roadside ditch fronting her property does not drain. Mr. Krueger stated that the drain is a County roadside drain. He will meet with Ms. Mathieson after this meeting to review the roadside drain.

Ms. Gifford expressed concerned about cost. Ms. Pearson stated that an estimated cost of the work would be provided and would be explained in the report. Ms. Pearson and Mr. Chamberlain will be available to answer any questions Ms. Gifford has related to the report.

Various landowners asked if the drain was to be cleaned in conjunction with replacement of access culverts.

Mr. Pajot stated that the upper end of the drain requires cleaning. He suggested that the work proceed.

Mr. Krueger stated that if other culverts were being replaced, the County would like to have the County Road 20 crossing replaced as well.

Mr. Esposito stated that his culvert is not required and would like to be removed as part of this report.

6.0 Topographic Survey

We commenced our survey at the downstream end of the existing drain. The survey continued north-westerly, approximately 1,680 metres to the drain's upper end. A culvert survey was performed to determine the condition of the existing culverts.

7.0 Existing Conditions

We find that the Leo Beaudoin Drain is in need of repair and requires cleaning and culvert replacement pursuant to Section 78 of the Act.

Further, as a result of the survey, we have found the following:

Considerable sediment has accumulated in the bottom of the drain preventing the proper flow of water, particularly between Station 0+027 and Station 0+286 and Station 0+740 and Station 1+080.92. The width of the existing drain bottom varies from approximately 1.0 metre to 2.0 metres.

Considerable vegetation is present throughout the drain, particularly between Station 0+286 and Station 1+080.92.

Numerous washouts were noted along the length of the drain caused by overland flow from adjacent agricultural lands.

Two culverts identified in the 1984 report have been removed from the drain and not replaced. These culverts were located at the following approximate locations: Station 0+103 and Station 0+690.

There are currently two road crossings and five culverts within the Leo Beaudoin Drain as described below:

Culvert No. 1 – The Town of Amherstburg, Concession 3 South
Station 0+000

The existing 1800 mm diameter concrete pipe is in good condition. Sloped gabion stone end of pipe protection is in place. Analysis of this culvert confirms that hydraulic capacity of the culvert is satisfactory. This culvert is currently identified as part of the Leo Beaudoin Drain.

Culvert No. 2 – James & Bonnie Wortley, Roll No. 550-10100
Station 0+255.84

The previous landowner installed a 900 mm diameter corrugated steel pipe with sloped gabion stone end of pipe protection after the first site meeting; the previous 900mm diameter corrugated steel pipe had failed. This culvert provides access to the rear portion of a residential lot. Hydraulic analysis of the culvert confirms that the culvert does not meet current standards. This culvert is currently identified as part of the Leo Beaudoin Drain.

Culvert No. 3 – Malden Marsh Inc., Roll No. 550-08800
Station 0+273.85

The existing 900 mm diameter corrugated steel pipe is in poor condition. Sloped gabion stone end of pipe protection is in place and in poor to satisfactory condition. Hydraulic analysis of the culvert confirms that the culvert does not meet current standards; however, no concerns were raised relative to this culvert or flooding caused by this culvert. This culvert is currently identified as part of the Leo Beaudoin Drain.

Culvert No. 4 – Rosario and Linda Esposito, Roll No. 550-11100
Station 1+066.58

The existing 600 mm diameter corrugated steel pipe is in poor condition. Gabion stone end of pipe protection is no longer in place and has been replaced with stacked concrete pieces. The landowner has requested that this culvert be removed from the Leo Beaudoin Drain. This culvert is currently identified as part of the Leo Beaudoin Drain.

Culvert No. 5 – The County of Essex, County Road 20
Station 1+080.92

The existing 900mm diameter corrugated steel pipe shows signs of deterioration. The sloped gabion stone end of pipe protection is in poor condition. Analysis of this culvert confirms that the hydraulic capacity of the culvert is insufficient. This culvert is currently identified as part of the Leo Beaudoin Drain.

Culvert No. 6 – Edward & Doris Faucher, Roll No. 600-12800
 Peter Crump, Roll No. 660-10800
Station 1+245.05

The existing 900mm diameter corrugated steel pipe appears to be in satisfactory condition although it is bent in the middle. Gabion stone end of pipe protection is in place. Hydraulic analysis of the culvert confirms that the culvert does not meet current standards; however, no concerns were raised relative to this culvert or flooding caused by this culvert. This culvert is currently identified as part of the Leo Beaudoin Drain.

Culvert No. 7 –George & Ruth VandenBrink, Roll No. 600-08500
Station 1+540.43

The existing 800mm diameter corrugated steel pipe is in fair condition and has sloped gabion stone end of pipe protection. Hydraulic analysis of this culvert confirms that it does not satisfy current design standards; however, no flooding has been reported. This culvert is currently identified as part of the Leo Beaudoin Drain.

8.0 Recommendations

We would recommend the following works be performed in order to overcome the above noted deficiencies:

Recommendations for Current Works

- a) Excavation work shall be undertaken to remove accumulated sediment and vegetation within the drain:
 - i. Excavation to the theoretical drain bottom shall be undertaken between Station

0+000 and Station 1+679.13;

- b) Existing culvert and end of pipe protection shall be removed and replaced:
 - i. Culvert No. 2 at Station 0+250.12: 12.0 metres of new 1200mm diameter aluminized corrugated steel pipe with sloped gabion stone end of pipe protection;
 - ii. Culvert No. 3 at Station 0+273.85: 12.3 metres of new 1200mm diameter aluminized corrugated steel pipe with sloped gabion stone end of pipe protection;
- c) Existing culverts to be cleaned:
 - i. Culvert No. 1 at Station 0+000: Clean 27.0 metres of existing 1800mm diameter concrete pipe;
 - ii. Culvert No. 6 at Station 1+245.05: Clean 13.90 metres of existing 900mm diameter corrugated steel pipe;
 - iii. Culvert No. 7 at Station 1+540.43: Clean 11.70 metres of existing 800mm diameter corrugated steel pipe;
- d) Existing culvert to be removed from the Leo Beaudoin Drain:
 - i. Culvert No. 4 at Station 1+066.58: Remove existing corrugated steel pipe, granular material and end of pipe protection. Disturbed drain banks shall be restored using topsoil and grass seed.
- e) Existing road crossing shall be removed and replaced:
 - i. Culvert No. 5 at Station 1+080.92: 20.5 metres of new 1800mm diameter aluminized corrugated steel pipe with sloped gabion stone end of pipe protection. This crossing was designed using a 25 year storm as required by the County of Essex.
- f) Seeding and mulching shall be undertaken on all excavated portions of the drain side-slopes to prevent erosion;
- g) Gabion stone erosion protection for field furrows shall be supplied and laid to prevent further drain bank erosion;
- h) Supply, placement and maintenance of Straw Bale Flow Check Dams and silt fencing;
- i) Removal of debris from pump reservoir after drain cleaning is complete.

Recommendations for Future Works

We would recommend that Culvert Nos. 1, 6 and 7 remain in place; however, should these culverts require future replacement, we would recommend that the culverts be replaced in accordance with the following provisions and in consultation with the affected landowners:

- a) Culvert No. 1 at Station 0+000: We would recommend this culvert remain in place, however, when the culvert degrades to the point of replacement, we would recommend that it be replaced under this by-law as an act of maintenance. The replacement culvert shall meet the current Municipal and Provincial standards.

Pipe Diameter	Pipe Length	Driveable Top Width	Material	End of Pipe Protection	Invert Elevations
1800mm	27.0m	Match Existing	Concrete	Sloped Gabion Stone	Upstream = 172.472 Downstream = 172.410

- b) Culvert No. 6 at Station 1+245.05: We would recommend this culvert remain in place, however, when the culvert degrades to the point of replacement, we would recommend that

it be replaced under this by-law as an act of maintenance and assessed in accordance with proportions set out in the maintenance clauses of this report and any apportionment agreements in place at the time of replacement.

We would recommend the following pipe be installed at the time of replacement:

Pipe Diameter	Pipe Length	Driveable Top Width	Material	End of Pipe Protection	Invert Elevations
1000mm	12.9m	9m	Aluminized Corrugated Steel	Sloped Gabion Stone	Upstream = 173.923 Downstream = 173.916

- c) Culvert No. 7 at Station 1+540.43: We would recommend this culvert remain in place, however, when the culvert degrades to the point of replacement, we would recommend that it be replaced under this by-law as an act of maintenance and assessed in accordance with proportions set out in the maintenance clauses of this report and any apportionment agreements in place at the time of replacement.

We would recommend the following pipe be installed at the time of replacement:

Pipe Diameter	Pipe Length	Driveable Top Width	Material	End of Pipe Protection	Invert Elevations
900mm	13.0m	9m	Aluminized Corrugated Steel	Sloped Gabion Stone	Upstream = 174.168 Downstream = 174.162

9.0 Fisheries Issues

The Leo Beaudoin Drain is a Type 'F' drain. A Type 'F' drain is considered to have intermittent or ephemeral flow. A drain with ephemeral flow is typically dry for more than two consecutive months.

We would recommend the following measures be utilized to mitigate damage to the drain during construction:

- No work shall be undertaken between March 15 and June 30;
- All work shall be completed in the dry;
- Culverts shall be installed with a minimum of 10.0% embedment;
- All disturbed soils shall be stabilized upon completion of the work;
- All spoils must be spread an appropriate distance from the top of the drain bank to ensure the soil is not washed back into the drain.

This report was submitted to Fisheries and Oceans Canada (DFO) and the Ministry of Natural Resources and Forestry (MNRF). Correspondence received from both agencies indicates that there are no issues related to Species at Risk or the provincial Endangered Species Act for fish or mussels. Standard mitigation procedures shall be utilized for other species such as birds, snakes and turtles.

10.0 Sediment and Erosion Control

Sediment and erosion control is of utmost importance during works on the Leo Beaudoin Drain. Debris and sediment are negatively effecting the functioning of the Leo Beaudoin Drain pumping

station located immediately downstream of Station 0+000. In order to limit the amount of sediment entering the pump reservoir we would recommend the following be incorporated into the proposed works:

- Straw Bale Flow Check Dam (OPSD 219.180) shall be supplied, placed and maintained constructed at the upstream end of Culvert No. 1 (Concession 3 South) while working between County Road 20 and Concession 3 South;
- Straw Bale Flow Check Dam (OPSD 219.180) shall be supplied, placed and maintained at the downstream end of Culvert No. 5 (County Road 20) while working in the upper reach of the drain;
- Silt fencing (OPSD 219.110) shall be supplied, installed and maintained downstream of each culvert;
- Brushing and grubbing shall commence after check dams and silt fencing has been installed;
- Drain cleaning (excavation) shall commence immediately after brushing and grubbing has been completed;
- After all works on the open drain are complete, all debris shall be removed from the reservoir.

The attached specifications provide further detail on required erosion and sediment control.

11.0 Drawings and Specifications

Attached to this report is Drawing No. 12-040 Sheets 1 to 6. The drawings illustrate the location of the proposed drainage works and the land affected by the work, together with details and cross sections. Specifications are included in this report showing the dimensions, grades, disposal of material, working areas for construction, and other particulars of the recommended work.

12.0 Working Area

The areas available to the Contractor to be used for the purpose of constructing the recommended works of this report and for future maintenance as provided for under Section 63 of the Act are described as follows:

- Between Station 0+000 and Station 0+024: The Contractor shall utilize the Concession 3 South right-of-way;
- Between Station 0+024 and Station 0+272: The Contractor shall utilize a corridor 6 metres wide measured from the east top of drain bank;
- Between Station 0+272 and Station 1+075: The Contractor shall utilize a corridor 6 metres wide measured from the west top of drain bank;
- Between Station 1+075 and Station 1+105: The Contractor shall utilize the County Road 20 right-of-way;
- Between Station 1+105 and 1+679.13: The Contractor shall utilize a corridor 6 metres wide measured from the east top of drain bank.

13.0 Allowances for Lands Taken and Damages

In accordance with the provisions of the Act, monetary allowances are provided 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.

We find that no 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 obtain access to a Municipal Drainage System, therefore, we have not provided any allowance for lands taken in our estimate as is otherwise normally provided for under sub-section (a) of Section 29 of the Act.

We further find that each of the following owners is entitled to and should receive the following amounts as compensation for the damages to lands and crops as described in Table 1, Allowances. We have used a rate of \$3,700.00 per hectare to determine the compensation paid, if any:

Table 1. Allowances

Roll No.	Owner	Lands Taken	Damages	Total Allowances
550-10000	Suzanne & George Laprade	---	\$324	\$324
550-10100	James & Bonnie Wortley	---	\$226	\$226
550-08800	Malden Marsh Inc.	---	\$932	\$932
550-11100	Rosario & Linda Esposito	---	\$662	\$662
550-11170	David Weaver & Diane Breault	---	\$189	\$189
600-12800	Edward & Doris Faucher	---	\$317	\$317
600-10800	Peter Crump	---	\$364	\$364
600-13300	George & Ruth VandenBrink	---	\$593	\$593
<i>Total for Damages</i>				\$3,607

We have provided for this in our estimate as is provided for under sub-section (b) of Section 29 of the Act.

14.0 Estimate of Cost

Our estimate of the total cost of this work, including all incidental expenses and HST, is the sum of ONE HUNDRED AND FORTY FIVE THOUSAND, FOUR HUNDRED AND FIFTEEN-----dollars (\$145,415.00), and made up as follows:

CONSTRUCTION

- 1) 1,285.0 Cubic metres of material to be excavated along the length of the bottom of the drain including minimal brushing and grubbing as required within working area. Where the drain is adjacent to agricultural lands, the material shall be cast and spread on those adjacent lands. Where the drain is adjacent to residential lands, the material shall be loaded, hauled and disposed of on adjacent agricultural lands.

Complete at \$ 20.00 per cubic metre

\$ 25,700.00

2)	27.0	Metres of existing 1800mm diameter concrete culvert to be cleaned between Station 0+000 and Station 0+027 for the Town of Amherstburg (Culvert No. 1) at \$ <u>80.00</u> per metre.	\$ <u>2,160.00</u>
3)		Existing culvert to be replaced between Station 0+250.12 and Station 0+262.12 for James & Bonnie Wortley (Culvert No. 2):	
		i) Remove 6.0 metres of existing 900 mm diameter corrugated steel pipe and granular material and dispose of offsite complete at \$ <u>500.00</u> Lump Sum	\$ <u>500.00</u>
		ii) Supply and set approximately 12.0 metres of 1200mm diameter aluminized corrugated steel pipe, 68x13mm corrugations, 2.8mm thickness, complete at \$ <u>415.00</u> per metre	\$ <u>4,980.00</u>
		iii) Supply, place and compact approximately 45.0 tonnes of Granular 'A', as per OPSS 1010, as bedding material and to construct driveway at \$ <u>35.00</u> per tonne	\$ <u>1,575.00</u>
		iv) Supply, place and compact approximately 50.0 tonnes of Granular 'B', as per OPSS 1010, as backfill material at \$ <u>25.00</u> per tonne	\$ <u>1,250.00</u>
		v) Supply and place 25.0 square metres of 100 – 230mm diameter gabion stone erosion protection (300mm thick) laid on Terrafix 270R Filter Fabric complete at \$ <u>65.00</u> per square metre	\$ <u>1,625.00</u>
		vi) Fill in existing pond overflow at Station 0+253.1 and construct new open cut overflow downstream of culvert in consultation with Engineer complete at \$ <u>500.00</u> Lump Sum	\$ <u>500.00</u>
		vii) Supply, install and maintain silt fence erosion protection at downstream end of culvert complete at \$ <u>300.00</u> Lump Sum	\$ <u>300.00</u>
		Total to Replace Culvert No. 2	\$ <u>10,730.00</u>

- 4) Existing culvert to be replaced between Station 0+273.85 and Station 0+286.15 for Malden Marsh Inc. (Culvert No. 3):
- i) Remove 14.20 metres of existing 900 mm diameter corrugated steel pipe and granular material and dispose of offsite complete at \$ 1,250.00 Lump Sum \$ 1,250.00
 - ii) Supply and set approximately 12.3 metres of 1200mm diameter aluminized corrugated steel pipe, 68x13mm corrugations, 2.8mm thickness, complete at \$ 415.00 per metre \$ 5,105.00
 - iii) Supply, place and compact approximately 45.0 tonnes of Granular 'A', as per OPSS 1010, as bedding material and to construct driveway at \$ 35.00 per tonne \$ 1,575.00
 - iv) Supply, place and compact approximately 50.0 tonnes of Granular 'B', as per OPSS 1010, as backfill material at \$ 25.00 per tonne \$ 1,250.00
 - v) Supply and place 25.0 square metres of 100 – 230mm diameter gabion stone erosion protection (300mm thick) laid on Terrafix 270R Filter Fabric complete at \$ 65.00 per square metre \$ 1,625.00
 - vi) Supply, install and maintain silt fence erosion protection at downstream end of culvert complete at \$ 300.00 Lump Sum \$ 300.00
- Total to Replace Culvert No. 3 \$ 11,105.00
- 5) Existing culvert to be removed between Station 1+066.58 and Station 1+075.89 for Rosario & Linda Esposito (Culvert No. 4):
- i) Remove 9.30 metres of existing 600 mm diameter corrugated steel pipe and granular material and dispose of offsite complete at \$ 1,250.00 Lump Sum \$ 1,250.00
 - ii) Restore drain banks using good quality topsoil and grass seed complete at \$ 750.00 Lump Sum \$ 750.00

iii) Supply, install and maintain silt fence erosion protection at downstream end of culvert complete at \$ 300.00 Lump Sum \$ 300.00

Total to Remove Culvert No. 4 \$ 2,300.00

6) Existing culvert to be replaced between Station 1+080.92 and Station 1+101.36 for The County of Essex (Culvert No. 5):

i) Remove 20.50 metres of existing 900 mm diameter corrugated steel pipe, granular material, and existing road surface and dispose of offsite complete at \$ 2,000.00 Lump Sum \$ 2,000.00

ii) Supply and set approximately 20.50 metres of 1800mm diameter aluminized corrugated steel pipe, 125x25mm corrugations, 2.8mm thickness, complete at \$ 550.00 per metre \$ 11,275.00

iii) Supply, place and compact approximately 175.0 tonnes of Granular 'A', as per OPSS 1010, as bedding material and to construct driveway complete at \$ 35.00 per tonne \$ 6,125.00

iv) Saw cut approximately 15 metres of road complete at driveway at \$ 2.00 per metre \$ 30.00

v) Supply and place 30 square metres of HL3 (90mm thick) to restore road complete at \$ 100.00 per square metre. Note: The County of Essex requires the contractor to mill and asphalt beyond the limit of the trench. \$ 3,000.00

vi) Supply and place 30.0 square metres of 100 – 230mm diameter gabion stone erosion protection (300mm thick) laid on Terrafix 270R Filter Fabric complete at \$ 65.00 per square metre \$ 1,950.00

vii) Supply, install and maintain silt fence erosion protection at downstream end of culvert complete at \$ 300.00 Lump Sum \$ 300.00

Total to Replace Culvert No. 5 \$ 24,680.00

7)	13.9	Metres of existing 900mm diameter corrugated steel pipe to be cleaned between Station 1+245.05 and Station 1+258.95 for Edward & Doris Faucher and Peter Crump (Culvert No. 6) complete at \$ <u>50.00</u> per metre.	\$ <u>695.00</u>
8)	11.70	Metres of existing 900mm diameter corrugated steel pipe to be cleaned between Station 1+540.43 and Station 1+552.13 complete for George & Ruth VandenBrink. (Culvert No. 7) at \$ <u>50.00</u> per metre.	\$ <u>585.00</u>
9)	L.S.	The Contractor shall provide a traffic control plan to the Town of Amherstburg and the County of Essex for approval before construction commences. The Contractor shall supply, install and maintain the necessary signage during the construction period according to the latest revision of the Ontario Traffic Manual Book 7, Temporary Conditions, complete at \$ <u>2,000.00</u> Lump Sum.	\$ <u>2,000.00</u>
10)	40.0	Square metres of 100 – 230mm diameter gabion stone (300 mm thick) erosion protection laid on Terrafix 270R Filter Fabric to be placed at all existing field furrows, line drains and used to extend existing spillways at 0+807 and Station 0+885.25 to prevent bank slope erosion complete at \$ <u>65.00</u> per square metre.	\$ <u>2,600.00</u>
11)	L.S.	Supply and place good quality topsoil and grass seed on all excavated portions of the drain bank complete at \$ <u>8,500.00</u> Lump Sum.	\$ <u>8,500.00</u>
12)	L.S.	Straw Bale Flow Check Dams to be supplied, placed and maintained near Station 0+027 (immediately upstream of Culvert No. 1) and near Station 1+080 (immediately downstream of Culvert No. 5) as per OPSD 219.180, including continuous cleaning and disposal of sediment complete at \$ <u>2,500.00</u> Lump Sum.	\$ <u>2,500.00</u>
13)	L.S.	After cleaning of the open drain is complete, debris (tree branches, brush, etc.) in pump reservoir shall be removed. Debris shall be loaded, hauled and disposed of at a site determined by the Contractor complete at \$ <u>3,000.00</u> per Lump Sum.	\$ <u>3,000.00</u>
14)	L.S.	Contingency allowance to be used upon approval of Engineer or Drainage Superintendent only complete at \$ <u>5,000.00</u> Lump Sum.	\$ <u>5,000.00</u>
Sub Total for Construction			\$ <u>101,555.00</u>

INCIDENTALS

Attendance at site meeting, survey	\$ 1,955.00
Survey, report, estimate and specifications	\$ 18,740.00
Assistants and expenses, typing report and preparing drawing	\$ 4,305.00
ERCA Fees	\$ 800.00
Attendance at Drainage Board Meetings	\$ 1,500.00
Tender documents	\$ 1,000.00
Construction Inspection and Administration	\$ 9,500.00
	=====
Sub Total for Incidentals	\$ 37,800.00
Sub Total for Construction (brought forward)	\$ 101,555.00
	=====
Sub Total for Construction and Incidentals	\$ 139,355.00
HST Payable (1.76% Non-Recoverable)	\$ 2,453.00
Sub Total for Allowances (brought forward)	\$ 3,607.00
	=====
TOTAL ESTIMATE	\$ 145,415.00
	=====

15.0 Assessment

Assessments to lands are provided in the attached Schedule of Assessment in three separate columns being Special Benefit, Benefit and Outlet. Section 1 of the Act provides the following definitions:

“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.

“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 high 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, roads, buildings or other structures.

“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.

We would recommend that construction and incidental costs be assessed to the affected properties in accordance with the accompanying Construction Schedule of Assessment.

We would recommend that the cost to remove and replace or clean access culverts currently identified as part of the drain be shared between the owner and the upstream lands and roads in accordance with the clauses below and the percentages listed in Table 2. The percentages listed in Table 2 were derived based on the culvert’s approximate location within the drain.

Table 2. Cost Sharing for Access Culverts over the Leo Beaudoin Drain

Culvert No.	Station	Roll Number	Owner	% To Owner	% To Upstream Lands
1	0+000	---	The Town of Amherstburg	100%	0%
2	0+255.84	550-10100	James & Bonnie Wortley	20%	80%
3	0+273.85	550-08800	Malden Marsh Inc.	22%	78%
4	1+066.58	550-11100	Rosario & Linda Esposito	64%	36%
5	1+080.92	---	The County of Essex	100%	0%
6	1+245.05	600-12800 600-10800	Edward & Doris Faucher Peter Crump	37% 37%	26%
7	1+540.43	600-13300	George & Ruth VandenBrink	80%	20%

The cost to supply and install gabion stone erosion protection for field furrows and line drains shall be assessed 100% as Special Benefit to the adjacent lands.

16.0 Maintenance

We would recommend that the areas described in Section 11.0 of this report, and as listed below, be used to access the drain during works of maintenance:

- Between Station 0+000 and Station 0+024: The Contractor shall utilize the Concession 3 South right-of-way;
- Between Station 0+024 and Station 0+272: The Contractor shall utilize a corridor 6 metres wide measured from the east top of drain bank;
- Between Station 0+272 and Station 1+075: The Contractor shall utilize a corridor 6 metres wide measured from the west top of drain bank;
- Between Station 1+075 and Station 1+105: The Contractor shall utilize the County Road 20 right-of-way;
- Between Station 1+105 and 1+679.13: The Contractor shall utilize a corridor 6 metres wide measured from the east top of drain bank.

We would recommend that future maintenance costs be assessed to the affected properties in accordance with the following provisions and the accompanying Maintenance Schedule of Assessment.

The Maintenance Schedule of Assessment has been developed based on an assumed maintenance cost of \$10,000. The amount is arbitrary and does not represent the actual costs to be assessed. Actual costs for future maintenance works, including all engineering and incidental costs shall be assessed against the affected lands and roads in the same proportions as those shown in the attached Maintenance Schedule of Assessment.

Should the drain require brushing or excavation in the future, the cost of said work shall be assessed to the affected lands and roads in the same proportions, as those listed as Benefit and Outlet in the attached Maintenance Schedule of Assessment.

Should an existing access culvert require replacement, we would recommend that the cost to replace the structure be assessed to the benefitting lands and the upstream lands and roads in accordance with the percentages listed in Table 3. Cost Sharing for Access Culverts over the Leo Beaudoin Drain, below. The percentage to be shared with the upstream lands and roads shall be assessed as outlet against those lands.

Table 3. Cost Sharing for Access Culverts over the Leo Beaudoin Drain

Culvert No.	Station	Roll Number	Owner	% To Owner	% To Upstream Lands
1	0+000	---	The Town of Amherstburg	100%	0%
2	0+255.84	550-10100	James & Bonnie Wortley	20%	80%
3	0+273.85	550-08800	Malden Marsh Inc.	22%	78%
4	Removed from the Leo Beaudoin Drain under this report.				
5	1+080.92	---	The County of Essex	100%	0%
6	1+245.05	600-12800 600-10800	Edward & Doris Faucher Peter Crump	37% 37%	26%
7	1+540.43	600-13300	George & Ruth VandenBrink	80%	20%

The cost to maintain gabion stone erosion protection for field furrows and line drains shall be assessed 100% as Benefit to the adjacent lands.

The pump and reservoir shall be maintained by the Town of Amherstburg as set out in the 1984 Settingington report until such time that a new report is adopted for the pump portion of the Leo Beaudoin Drain. The actual costs of the maintenance shall be assessed against all properties served by the pump in the same proportions shown in the 1984 report.

17.0 Grant

In accordance with the provisions of Sections 85, 86 and 87 of the Act, a Provincial grant in the amount of 33 -1/3% of the assessment may be available for privately owned lands identified as assessed under in this report and used for agricultural purposes. We would further recommend that the Town, upon completion of the project, make an application to the Ministry of Agriculture and Food in accordance with Section 88 of the Act for this grant.

The potential grant monies have not been applied to the assessments shown in the attached Schedule of Assessment. If applicable, those grants will be applied to the invoices of the eligible parcels by the Town at the time of invoicing.

All of which is respectfully submitted by:

BAIRD AE
27 PRINCESS STREET, UNIT 102
LEAMINGTON, ONTARIO
N8H 2X8

Halliday Pearson
 Halliday P. Pearson, P. Eng.





**CONSTRUCTION SCHEDULE OF ASSESSMENT
FOR THE REPAIR AND IMPROVEMENT
TO THE LEO BEAUDOIN DRAIN
IN THE TOWN OF AMHERSTBURG
PROJECT REFERENCE 12-040
PWD-MD-2012-006**

Revised as per Court of Revision May 30, 2017

COUNTY LANDS

Roll No.	Con.	Description	Area Owned (Acres)	(Ha.)	Area Affected (Acres)	(Ha.)	Owner	Special Benefit	Benefit	Outlet	Total Assessment
---	---	---	---	---	6.81	2.76	County Road 20	\$ 34,465.00	---	\$ 7,700.00	\$ 42,165.00
								=====	=====	=====	=====
Total on County Lands								\$ 34,465.00	---	\$ 7,700.00	\$ 42,165.00

MUNICIPAL LANDS

Roll No.	Con.	Description	Area Owned (Acres)	(Ha.)	Area Affected (Acres)	(Ha.)	Owner	Special Benefit	Benefit	Outlet	Total Assessment
---	---	---	---	---	3.71	1.50	Concession 3 South	\$ 3,015.00	---	---	\$ 3,015.00
								=====	=====	=====	=====
Total on Municipal Lands								\$ 3,015.00	---	---	\$ 3,015.00

PRIVATELY OWNED NON-AGRICULTURAL LANDS:

Roll No.	Con.	Description	Area Owned (Acres)	(Ha.)	Area Affected (Acres)	(Ha.)	Owner	Special Benefit	Benefit	Outlet	Total Assessment
600-13200	1	Pt. Lt. 14	2.09	0.85	2.10	0.85	Eric Niven	---	---	\$ 1,200.00	\$ 1,200.00
600-13100	1	Pt. Lt. 14	0.67	0.27	0.67	0.27	Carol Ann Ducharme	---	---	\$ 385.00	\$ 385.00
600-13000	1	Pt. Lt. 14	2.30	0.93	2.30	0.93	Marvin & Charline Pickens	---	---	\$ 1,305.00	\$ 1,305.00
600-12895	1	Pt. Lt. 14	1.33	0.54	1.33	0.54	Michael & Jennifer Mathieson	---	---	\$ 760.00	\$ 760.00
600-12890	1	Pt. Lt. 14	0.89	0.36	0.89	0.36	Mark & Clare Robson	---	---	\$ 505.00	\$ 505.00
550-11150	1	Pt. Lt. 15	0.96	0.39	0.96	0.39	Patrick Helferty & Byrony Mole	---	---	\$ 545.00	\$ 545.00
550-11170	1	Pt. Lt. 15	2.50	1.01	2.50	1.01	David Weaver & Diane Breault	---	\$ 475.00	\$ 1,405.00	\$ 1,880.00
550-11090	1	Pt. Lt. 15	9.32	3.77	9.32	3.77	Robert & Stacy Goggin	---	---	\$ 5,245.00	\$ 5,245.00
550-11050	1		0.47	0.19	0.47	0.19	David & Suzanne Varney	---	---	\$ 265.00	\$ 265.00

PRIVATELY OWNED NON-AGRICULTURAL LANDS:

Roll No.	Con.	Description	Area Owned (Acres)	Area Owned (Ha.)	Area Affected (Acres)	Area Affected (Ha.)	Owner	Special Benefit	Benefit	Outlet	Total Assessment
550-10100	1	Pt. Lt. 18	8.28	3.35	8.28	3.35	James & Bonnie Wortley	\$ 3,360.00	\$ 1,315.00	\$ 1,810.00	\$ 6,485.00
550-10000	1	Pt. Lt. 18	19.25	7.79	11.07	4.48	Suzanne & George Laprade	\$ 180.00	\$ 2,110.00	\$ 2,540.00	\$ 4,830.00
Total on Privately Owned Non-Agricultural Lands								=====	=====	=====	=====
								\$ 3,540.00	\$ 3,900.00	\$ 15,965.00	\$ 23,405.00

PRIVATELY OWNED AGRICULTURAL LANDS (GRANTABLE):

Roll No.	Con.	Description	Area Owned (Acres)	Area Owned (Ha.)	Area Affected (Acres)	Area Affected (Ha.)	Owner	Special Benefit	Benefit	Outlet	Total Assessment
600-05600	1	Pt Lt 10 & 11	119.86	48.51	5.98	2.42	Steven & Rose Anne Gyori	---	---	\$ 1,310.00	\$ 1,310.00
600-08500	1	S. Pt. Lt. 12	40.45	16.37	31.63	12.80	Randy J. Cyr	---	\$ 2,010.00	\$ 8,175.00	\$ 10,185.00
600-13300	1	Pt. Lt. 13	150.77	61.01	36.03	14.58	George & Ruth VandenBrink	\$ 1,560.00	\$ 2,285.00	\$ 7,660.00	\$ 11,505.00
600-10800	1	N. Pt. Lt. 14	72.64	29.40	30.02	12.15	Peter Crump	\$ 540.00	\$ 1,905.00	\$ 6,035.00	\$ 8,480.00
600-12800	1	Pt. S. Pt. Lt. 14	13.27	5.37	13.27	5.37	Edward & Doris Faucher	\$ 540.00	\$ 840.00	\$ 2,560.00	\$ 3,940.00
600-12900	1	Pt. Lt. 14	2.74	1.11	2.74	1.11	Constance Mathieson	---	---	\$ 1,555.00	\$ 1,555.00
550-11100	1	Pt. Lt. 15 & N. Pt. Lt. 16	52.74	21.34	50.14	20.29	Rosario & Linda Esposito	\$ 3,690.00	\$ 3,180.00	\$ 8,630.00	\$ 15,500.00
Total on Privately Owned Agricultural Lands								=====	=====	=====	=====
								\$ 6,330.00	\$ 10,220.00	\$ 35,925.00	\$ 52,475.00

PRIVATELY OWNED AGRICULTURAL LANDS (NON-GRANTABLE):

Roll No.	Con.	Description	Area Owned (Acres)	Area Owned (Ha.)	Area Affected (Acres)	Area Affected (Ha.)	Owner	Special Benefit	Benefit	Outlet	Total Assessment
550-08800	1	Pt. Lt. 16, 17 and 18	292.32	118.30	102.80	41.60	Malden Marsh Inc.	\$ 3,595.00	\$ 6,525.00	\$ 14,235.00	\$ 24,355.00
Total on Privately Owned Agricultural Lands (Non-Grantable)								=====	=====	=====	=====
								\$ 3,595.00	\$ 6,525.00	\$ 14,235.00	\$ 24,355.00

TOTAL ASSESSMENT

Total Area								=====	=====	=====	=====
								\$ 50,945.00	\$ 20,645.00	\$ 73,825.00	\$ 145,415.00

**SPECIAL BENEFIT ASSESSMENTS
FOR THE REPAIR AND IMPROVEMENT
TO THE LEO BEAUDOIN DRAIN
IN THE TOWN OF AMHERSTBURG
PROJECT REFERENCE 12-040
PWD-MD-2012-006**

COUNTY LANDS

Roll No.	Con.	Description	Area Owned (Acres)	(Ha.)	Area Affected (Acres)	(Ha.)	Owner	Gabion Stone	Culvert	Total Special Benefit
---	---	---	---	---	6.81	2.76	County Road 20	---	\$ 34,465.00	\$ 34,465.00
								=====	=====	=====
Total on County Lands								---	\$ 34,465.00	\$ 34,465.00

MUNICIPAL LANDS

Roll No.	Con.	Description	Area Owned (Acres)	(Ha.)	Area Affected (Acres)	(Ha.)	Owner	Gabion Stone	Culvert	Total Special Benefit
---	---	---	---	---	3.71	1.50	Concession 3 South	---	\$ 3,015.00	\$ 3,015.00
								=====	=====	=====
Total on Municipal Lands								---	\$ 3,015.00	\$ 3,015.00

PRIVATELY OWNED NON-AGRICULTURAL LANDS:

Roll No.	Con.	Description	Area Owned (Acres)	(Ha.)	Area Affected (Acres)	(Ha.)	Owner	Gabion Stone	Culvert	Total Special Benefit
550-10100	1	Pt. Lt. 18	8.28	3.35	8.28	3.35	James & Bonnie Wortley	\$ 365.00	\$ 2,995.00	\$ 3,360.00
550-10000	1	Pt. Lt. 18	19.25	7.79	11.07	4.48	Suzanne & George Laprade	\$ 180.00	---	\$ 180.00
								=====	=====	=====
Total on Privately Owned Non-Agricultural Lands								\$ 545.00	\$ 2,995.00	\$ 3,540.00

PRIVATELY OWNED AGRICULTURAL LANDS (GRANTABLE):

Roll No.	Con.	Description	Area Owned (Acres)	Area Owned (Ha.)	Area Affected (Acres)	Area Affected (Ha.)	Owner	Gabion Stone	Culvert	Total Special Benefit
600-13300	1	Pt. Lt. 13	150.77	61.01	36.03	14.58	George & Ruth VandenBrink	\$ 910.00	\$ 650.00	\$ 1,560.00
600-10800	1	N. Pt. Lt. 14	72.64	29.40	30.02	12.15	Peter Crump	\$ 180.00	\$ 360.00	\$ 540.00
600-12800	1	Pt. S. Pt. Lt. 14	13.27	5.37	13.27	5.37	Edward & Doris Faucher	\$ 180.00	\$ 360.00	\$ 540.00
550-11100	1	Pt. Lt. 15 & N. Pt. Lt. 16	52.74	21.34	50.14	20.29	Rosario & Linda Esposito	\$ 1,635.00	\$ 2,055.00	\$ 3,690.00
Total on Privately Owned Agricultural Lands								=====	=====	=====
								\$ 2,905.00	\$ 3,425.00	\$ 6,330.00

PRIVATELY OWNED AGRICULTURAL LANDS (NON-GRANTABLE):

Roll No.	Con.	Description	Area Owned (Acres)	Area Owned (Ha.)	Area Affected (Acres)	Area Affected (Ha.)	Owner	Gabion Stone	Culvert	Total Special Benefit
550-08800	1	Pt. Lt. 16, 17 and 18	292.32	118.30	102.80	41.60	Malden Marsh Inc.	\$ 180.00	\$ 3,415.00	\$ 3,595.00
Total on Privately Owned Agricultural Lands (Non-grantable)								=====	=====	=====
								\$ 180.00	\$ 3,415.00	\$ 3,595.00

TOTAL ASSESSMENT

=====	=====	=====
\$ 3,630.00	\$ 9,835.00	\$ 50,945.00
=====	=====	=====

**MAINTENANCE SCHEDULE OF ASSESSMENT
FOR THE REPAIR AND IMPROVEMENT
TO THE LEO BEAUDOIN DRAIN
IN THE TOWN OF AMHERSTBURG
PROJECT REFERENCE 12-040
PWD-MD-2012-006**

Page 1 of 2
March 23, 2017

Revised as per Court of Revision May 30, 2017

COUNTY LANDS

Roll No.	Con.	Description	Area Owned (Acres)	(Ha.)	Area Affected (Acres)	(Ha.)	Owner	Benefit	Outlet	Total Assessment
---	---	---	---	---	6.81	2.76	County Road 20	---	\$ 715.00	\$ 715.00
Total on County Lands										
								-----	-----	-----
								---	\$ 715.00	\$ 715.00

MUNICIPAL LANDS

Roll No.	Con.	Description	Area Owned (Acres)	(Ha.)	Area Affected (Acres)	(Ha.)	Owner	Benefit	Outlet	Total Assessment
---	---	---	---	---	3.71	1.50	Concession 3 South	---	---	---
Total on Municipal Lands										
								-----	-----	-----
								---	---	---

PRIVATELY OWNED NON-AGRICULTURAL LANDS:

Roll No.	Con.	Description	Area Owned (Acres)	(Ha.)	Area Affected (Acres)	(Ha.)	Owner	Benefit	Outlet	Total Assessment
600-13200	1	Pt. Lt. 14	2.09	0.85	2.10	0.85	Eric Niven	---	\$ 110.00	\$ 110.00
600-13100	1	Pt. Lt. 14	0.67	0.27	0.67	0.27	Carol Ann Ducharme	---	\$ 35.00	\$ 35.00
600-13000	1	Pt. Lt. 14	2.30	0.93	2.30	0.93	Marvin & Charline Pickens	---	\$ 120.00	\$ 120.00
600-12895	1	Pt. Lt. 14	1.33	0.54	1.33	0.54	Michael & Jennifer Mathieson	---	\$ 70.00	\$ 70.00
600-12890	1	Pt. Lt. 14	0.89	0.36	0.89	0.36	Mark & Clare Robson	---	\$ 45.00	\$ 45.00
550-11150	1	Pt. Lt. 15	0.96	0.39	0.96	0.39	Patrick Helferty & Byrony Mole	---	\$ 50.00	\$ 50.00
550-11170	1	Pt. Lt. 15	2.50	1.01	2.50	1.01	David Weaver & Diane Breault	\$ 70.00	\$ 130.00	\$ 200.00
550-11090	1	Pt. Lt. 15	9.32	3.77	9.32	3.77	Robert & Stacy Goggin	---	\$ 475.00	\$ 475.00
550-11050	1		0.47	0.19	0.47	0.19	David & Suzanne Varney	---	\$ 25.00	\$ 25.00

PRIVATELY OWNED NON-AGRICULTURAL LANDS:

Roll No.	Con.	Description	Area Owned		Area Affected		Owner	Benefit	Outlet	Total Assessment
			(Acres)	(Ha.)	(Acres)	(Ha.)				
550-10000	1	Pt. Lt. 18	19.25	7.79	11.07	4.48	Suzanne & George Laprade	\$ 305.00	\$ 380.00	\$ 685.00
550-10100	1	Pt. Lt. 18	8.28	3.35	8.28	3.35	James & Bonnie Wortley	\$ 190.00	\$ 170.00	\$ 360.00
Total on Privately Owned Non-Agricultural Lands								=====	=====	=====
								\$ 565.00	\$ 1,610.00	\$ 2,175.00

PRIVATELY OWNED AGRICULTURAL LANDS (GRANTABLE):

Roll No.	Con.	Description	Area Owned		Area Affected		Owner	Benefit	Outlet	Total Assessment
			(Acres)	(Ha.)	(Acres)	(Ha.)				
600-05600	1	Pt Lt 10 & 11	119.86	48.51	5.98	2.42	Steven & Rose Anne Gyori	---	\$ 130.00	\$ 130.00
600-08500	1	S. Pt. Lt. 12	40.45	16.37	31.63	12.80	Randy J. Cyr	\$ 295.00	\$ 665.00	\$ 960.00
600-13300	1	Pt. Lt. 13	150.77	61.01	36.03	14.58	George & Ruth VandenBrink	\$ 330.00	\$ 730.00	\$ 1,060.00
600-10800	1	N. Pt. Lt. 14	72.64	29.40	30.02	12.15	Peter Crump	\$ 275.00	\$ 560.00	\$ 835.00
600-12800	1	Pt. S. Pt. Lt. 14	13.27	5.37	13.27	5.37	Edward & Doris Faucher	\$ 120.00	\$ 235.00	\$ 355.00
600-12900	1	Pt. Lt. 14	2.74	1.11	2.74	1.11	Constance Mathieson	---	\$ 145.00	\$ 145.00
550-11100	1	Pt. Lt. 15 & N. Pt. Lt. 16	52.74	21.34	50.14	20.29	Rosario & Linda Esposito	\$ 460.00	\$ 775.00	\$ 1,235.00
Total on Privately Owned Agricultural Lands								=====	=====	=====
								\$ 1,480.00	\$ 3,240.00	\$ 4,720.00

PRIVATELY OWNED AGRICULTURAL LANDS (NON-GRANTABLE):

Roll No.	Con.	Description	Area Owned		Area Affected		Owner	Benefit	Outlet	Total Assessment
			(Acres)	(Ha.)	(Acres)	(Ha.)				
550-08800	1	Pt. Lt. 16, 17 and 18	292.32	118.30	102.80	41.60	Malden Marsh Inc.	\$ 955.00	\$ 1,435.00	\$ 2,390.00
Total on Privately Owned Agricultural Lands (Non-grantable)								=====	=====	=====
								\$ 955.00	\$ 1,435.00	\$ 2,390.00

TOTAL ASSESSMENT

Total Area								=====	=====	=====
								\$ 3,000.00	\$ 7,000.00	\$ 10,000.00
								=====	=====	=====

SPECIFICATIONS
REPLACEMENT ACCESS CULVERTS
OVER THE LEO BEAUDOIN DRAIN
TOWN OF AMHERSTBURG
PROJECT NO. 12-040

1.0 PIPE MATERIAL

The Contractor shall supply and install, clean or remove the following:

- a) The following culvert and road crossing shall be removed and replaced:
 - I. Culvert No. 2 at Station 0+250.12: 12.0 metres of new 1200mm diameter aluminized corrugated steel pipe with sloped gabion stone and end of pipe protection;
 - II. Culvert No. 3 at Station 0+273.85: 12.3 metres of new 1200mm diameter aluminized corrugated steel pipe with sloped gabion stone end of pipe protection;
 - III. Culvert No. 5 at Station 1+080.92: 20.5 metres of 1800mm diameter aluminized corrugated steel pipe with sloped gabion stone end of pipe protection;
- b) The following culverts shall be cleaned:
 - I. Culvert No. 1 at Station 0+000
 - II. Culvert No. 6 at Station 1+245.05
 - III. Culvert No. 7 at Station 1+540.43.
- c) The following culvert shall be removed and not replaced:
 - I. Culvert No. 4 at Station 1+066.58

2.0 WORKING AREA

The areas available to the Contractor to be used for the purpose of constructing the recommended works of this report and for future maintenance as provided for under Section 63 of the Act are described as follows:

- Between Station 0+000 and Station 0+024: The Contractor shall utilize the Concession 3 South right-of-way.
- Between Station 0+024 and Station 0+272: The Contractor shall utilize a corridor 4.6 metres wide measured from the east top of drain bank.
- Between Station 0+272 and Station 1+075: The Contractor shall utilize a corridor 4.6 metres wide measured from the west top of drain bank.
- Between Station 1+075 and Station 1+105: The Contractor shall utilize the County Road 20 right-of-way.
- Between Station 1+105 and 1+679.13: The Contractor shall utilize a corridor 4.6 metres wide measured from the east top of drain bank.

3.0 DISPOSAL OF EXCAVATED MATERIAL

The Contractor shall cast all excavated material on the adjacent agricultural lands as described below:

- Between Station 0+024 and Station 0+272: The Contractor shall utilize a corridor 4.6 metres wide measured from the east top of drain bank.
- Between Station 0+272 and Station 1+075: The Contractor shall utilize a corridor 4.6 metres wide measured from the west top of drain bank.

3.0 DISPOSAL OF EXCAVATED MATERIAL – Continued

- Between Station 1+105 and 1+679.13: The Contractor shall utilize a corridor 4.6 metres wide measured from the east top of drain bank.

Excavated material shall be spread to a depth of no more than 100 mm along the south top of drain bank and shall be kept at least 1.2 metres clear from the finished edge of the drain, care being taken not to fill up any existing tiles, ditches, furrows or drains with the excavated material.

Where the drain passes in front of any house, garden, lawn, driveway, etc., the excavated material shall be hauled and spread upon the adjacent agricultural lands.

4.0 LOCATION AND ELEVATION OF CULVERT

The location and elevations of the new culvert shall be according to the drawings, 12-040 Sheet 1 to Sheet 6.

5.0 PLACEMENT OF CULVERT

- a) The Contractor shall excavate all vegetation, topsoil and existing granular material from the bank slopes and bottom of the existing drain complete along with hauling materials off site.

The required work includes the supply and installation of new pipe as described in Section 1.0 Pipe Material.

- b) The Contractor shall perform the excavation, placement of the 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.
- c) Supply and place sloped gabion stone end of pipe protection, as required;
- d) Supply and install concrete block headwall, as required.

6.0 PIPE BACKFILL

After the pipe has been set, the Contractor shall backfill the culvert with granular "B" material, O.P.S.S. Spec 1010 according to the attached plan. The backfill material shall be carefully placed so damage to or movement of the culvert is avoided and backfill materials shall be placed in layers not exceeding 300 mm in thickness, loose measurement. Each layer shall be thoroughly compacted in place to a Standard Proctor Density of 98% by means of mechanical compactors. The equipment and method of compacting the backfill material shall be to the full satisfaction of the Commissioner in charge.

Where the pipe is across County Road 20, the Contractor shall backfill the culvert with granular 'A' material according to the attached plan and these specifications. The backfill material shall be carefully placed so damage to or movement of the culvert is avoided and backfill materials shall be placed in layers not exceeding 300 mm in thickness, loose measurement. Each layer shall be thoroughly compacted in place to a Standard Proctor Density of 98% by means of mechanical compactors. The equipment and method of compacting the backfill material shall be to the full satisfaction of the Commissioner in charge.

7.0 QUARRIED ROCK END PROTECTION

Where specified and after the pipe has been set and backfilled the Contractor shall install quarried rock erosion protection at each end of the pipe.

The backfill over the ends of the pipe shall be set on a slope of 1½ metres horizontal to 1 metre vertical from the bottom of the pipe to the top of each side slope and between both side slopes.

The top 300 mm in thickness of the backfill over the ends of the pipe shall be quarried rock. The quarried rock shall be placed on a slope of 1½ metres horizontal to 1 metre vertical from the bottom of the pipe to the top of each side slope of the drain and between both side slopes. The quarried rock shall have a minimum dimension of 100 mm (4") and a maximum dimension of 225 mm (9"). Prior to placing quarried rock end protection over the granular material, 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. The Contractor shall take extreme care not to damage the geotextile filter fabric when placing the quarried rock on top of the filter fabric. The geotextile filter fabric and quarried rock shall be placed to the complete satisfaction of the Municipality's Drainage Superintendent.

8.0 ALIGNMENT

The alignment of the enclosure throughout shall be to the full satisfaction of the Commissioner in charge. The whole of the work shall be done in a neat, thorough and workmanlike manner to the full satisfaction of the Commissioner in charge.

9.0 LOCATION OF STRUCTURES, ETC.

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.

10.0 DAMAGE TO TRAVELLED PORTION OF MUNICIPAL ROAD

The Contractor will 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 is 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.

11.0 CONSTRUCTION SAFETY

The Contractor shall comply with all the requirements of the Occupational Health and Safety Act, 1990 and the regulations passed in connection therewith, as administered by the Ontario Ministry of Labour and all subsequent amendments of the said Act.

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

11.0 CONSTRUCTION SAFETY - Continued

barricades, signs, traffic cones, flashers, lights, plates, warning and other devices, materials and personnel as may be required and 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.

12.0 CERTIFICATE OF CLEARANCE

The Contractor will be required to submit to the Municipality a Certificate of Good Standing from the Workplace Safety & Insurance Board prior to the commencement of the work and the Contractor will be required to submit to the Municipality, a Certificate of Clearance for the project from the Workplace Safety & Insurance Board before final payment is made to the Contractor.

13.0 PROGRESS ORDERS

Monthly progress orders for payment shall be furnished to the Contractor by the Commissioner in charge; said orders shall not be for more than 90% of the value of the work done and the materials furnished on the site. The paying of the full 90% does not imply that any portion of the work has been accepted. The remaining 10% will be paid 45 days after the final acceptance and completion of the work.

14.0 CLEANING UP

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 Commissioner. He shall haul away any excess earth from the site. He shall haul to the site, sufficient earth to fill any depressions caused by his work at his own expense. The site shall be left as close as possible in the same condition as it was prior to the commencement of the work.

15.0 MEASUREMENT AND PAYMENT

Payment for the work shall be on a unit price basis unless otherwise indicated and shall include all the work shown on the accompanying drawings and specifications.

16.0 MAINTAINING FLOW

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

17.0 COMMISSIONER

Where the work "Commissioner" 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. The Commissioner will be permitted to make minor variations in the work so long as these variations will result in a more satisfactory project 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.

18.0 NOTIFICATION OF WORK

Prior to commencing any work of installing the extension of the culvert or removing any existing structures, the Contractor shall inform the Municipality's Drainage Superintendent of his intent to commence work at least 48 hours prior to commencing any work. The Owner or Contractor shall endeavour to install and complete the new structure without delay once he has commenced the work. 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. The completed work must be done to the satisfaction of the Municipality's Drainage Superintendent and be approved by him.

19.0 MAINTENANCE

The Contractor shall repair and make good at his expense any damages or faults in the work that may appear within one year after its completion (as evidenced by the final inspection report), as the result of imperfect or defective work done or materials furnished. Nothing herein contained shall be construed as any way restricting or limiting the liability of the Contractor under the appropriate laws under which the work is being done.

20.0 SEDIMENT CONTROL

The Contractor shall supply, place and maintain silt fence erosion protection as per OPSD 219.110 at the downstream of each culvert while work on the culvert is ongoing. The Contractor shall ensure all sediment is disposed of in accordance with Item 3.0 on page SP-1 and SP-2 of these specifications, namely Specifications Replacement Access Culverts over the Leo Beaudoin Drain. All sediment shall be stabilized upon completion of the work and shall be spread an appropriate distance from the top of the drain bank to ensure the soil is not washed back into the drain.

SPECIFICATIONS
ENVIRONMENTAL PROTECTION SPECIAL PROVISIONS
FOR THE
LEO BEAUDOIN DRAIN
TOWN OF AMHERSTBURG
PROJECT NO. 12-040

1.0 GENERAL

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

2.0 FIRES

Fires and burning of rubbish on site will be permitted only with special approval from the Town.

3.0 DISPOSAL OF WASTES

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.

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.

The disposal of dredge material shall be in accordance with the above.

4.0 POLLUTION CONTROL

The Contractor shall maintain under this Contract temporary erosion, sediment and pollution control features installed.

The Contractor shall control emissions from equipment and plant to local authorities emission requirements.

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.

The Contractor shall abide by local noise By-Laws for the duration of the Contract.

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.

5.0 WHMIS

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.

6.0 DRAINAGE

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 site free from water.

The Contractor shall install and maintain sediment control devices as indicated on the Contract Drawing and as directed by the Engineer.

7.0 PROTECTION OF VEGETATION

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.

8.0 DUST CONTROL

The Contractor will be solely responsible for controlling dust nuisance resulting from his operations, both on the site and within adjacent right-of-ways.

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.

9.0 RESTRICTIONS FOR IN-WATER WORKS

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.

The Contractor shall note that this Project is subject to approval from the governing Conservation Authority and as such, any possible turbidity caused by the construction of the shore protection works is of key importance.

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

9.0 RESTRICTIONS FOR IN-WATER WORKS - Continued

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.

10.0 FISH HABITAT

No work shall be undertaken when there is likelihood of adverse effects on fish spawning or fish habitat in downstream waters.

11.0 SEDIMENT AND EROSION CONTROL

Sediment and erosion control is of utmost importance during the Repair and Improvement of the Leo Beaudoin Drain. In order to prevent the entry of significant quantities of debris and vegetation into the pump reservoir, the following process and strict requirements will be enforced:

1. Straw Bale Flow Check Dams, as per OPSD 219.180, shall be supplied, placed and maintained near:
 - a. Station 0+027: Immediately upstream of Culvert No. 1 while working between Concession 3 South and County Road 20
 - b. Station 1+080: Immediately downstream of Culvert No. 5 while working upstream of County Road 20
2. After the straw bale check dams have been constructed, brushing and grubbing may commence.
3. Excavation of the open drain shall commence immediately after brushing and grubbing.
4. Silt fencing, as per OPSD 219.110, shall be supplied, placed and maintained at the downstream end of each culvert as described.
5. All debris, including brush, tree branches, etc. shall be removed from the pump reservoir after all open drain work is complete. The debris shall be loaded, hauled and disposed of offsite.
6. Additional sediment and erosion protection measures as directed by the Engineer or Drainage Superintendent.

GENERAL SPECIFICATIONS
FOR CONSTRUCTION OF OPEN DRAINS
FOR THE
LEO BEAUDOIN DRAIN
TOWN OF AMHERSTBURG
PROJECT NO. 12-040

1.0 EXAMINATION OF SITE, PLANS AND SPECIFICATIONS

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 period. 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 quantities shown as 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 quantities for accuracy prior to submitting his tender.

2.0 SUPPLY OF MATERIALS

The Contractor shall supply all labour, equipment and materials necessary for the proper completion of the project.

3.0 PROFILE

The excavation of the drain must be at least to the depth intended by the grade line as 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 cut from the surface of the ground at the points where the numbered stakes are set to the final invert of the channel and also the approximate depth of cut 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 profile.

The drain bottom has a width of 2.0 metres between Station 0+027 and Station 0+255.84. The drain bottom has a width of 1.0 metres between Station 0+255.84 and Station 1+679.13.

The minimum slope of the drain bank shall be 1.5 to 1 along the length of the drain between Station 0+000 and Station 1+679.13.

4.0 ALIGNMENT

The alignment of the drain throughout shall be to the full satisfaction of the Commissioner in charge. The whole of the work shall be done in a neat, thorough and workmanlike manner to the full satisfaction of the Commissioner in charge. The bottom widths and side slopes of the various sections of the finished drain are to be true to line and grade as shown on the profile. When completed the drain shall have a uniform and even bottom and in no case shall such bottom project above the grade line as shown on the accompanying drawing, and as determined from the bench mark.

5.0 BRUSHING AND GRUBBING

Where there is any brush or rubbish in the course of the drain, including both side slopes of the drain, or where the earth is to be spread or on that strip of land between where the earth is to be spread and the edge of the drain, all such brush or rubbish shall be grubbed out and close cut and the whole to be burned (with Municipal approval) or removed from the drain, hauled away and disposed of by the Contractor.

Existing select hardwood trees greater than 200 mm in diameter situated in the drain bank within 1.0 metre from the top of the bank may be selectively left standing if the Drainage Superintendent considers the trees will not adversely affect the flow of water within the drain. Prior to removing any trees the Contractor shall meet at the site with the drainage superintendent to review if any vegetation or select trees are environmentally significant for preservation.

6.0 SPREADING EXCAVATED EARTH

The excavated material shall be cast on the following lands:

- Between Station 0+024 and Station 0+272: The Contractor shall utilize a corridor 4.6 metres wide measured from the east top of drain bank.
- Between Station 0+272 and Station 1+075: The Contractor shall utilize a corridor 4.6 metres wide measured from the west top of drain bank.
- Between Station 1+105 and 1+679.13: The Contractor shall utilize a corridor 4.6 metres wide measured from the east top of drain bank.

The excavated material where specified to be cast onto the adjoining land shall be well and evenly spread over a sufficient area so that no portion of the excavated earth is more than 100 mm in depth or as otherwise specified and kept at least 1.2 metres clear from the finished edge of the drain, care being taken not to fill up any existing tiles, ditches, furrows or drains with the excavated material. The excavated material to be spread upon the lands shall be free from rocks, boulders, stumps, rubble, rubbish or other similar material and other materials if encountered, shall be hauled away by the Contractor and disposed of at a site to be obtained by him at his expense.

Where the drain crosses any lawn, garden, orchard or driveway, etc. the excavated material for the full width of the above mentioned areas, shall be disposed of upon the adjacent lands and spread as previously specified.

7.0 FENCING

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

8.0 LOCATION OF STRUCTURES AND UTILITIES

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.

9.0 ACCESS BRIDGES

The Contractor shall satisfactorily clean through all existing access bridges to the grade line as shown on the accompanying drawing.

10.0 BACKFILL FOR CULVERTS

After the pipe has been set, the Contractor shall backfill the culvert with granular "B" material, O.P.S.S. Spec 1010 according to the attached plan. The backfill material shall be carefully placed so damage to or movement of the culvert is avoided and backfill materials shall be placed in layers not exceeding 300 mm in thickness, loose measurement. Each layer shall be thoroughly compacted in place to a Standard Proctor Density of 98% by means of mechanical compactors. The equipment and method of compacting the backfill material shall be to the full satisfaction of the Commissioner in charge.

Where the pipe is across County Road 20, the Contractor shall backfill the culvert with granular 'A' material according to the attached plan and these specifications. The backfill material shall be carefully placed so damage to or movement of the culvert is avoided and backfill materials shall be placed in layers not exceeding 300 mm in thickness, loose measurement. Each layer shall be thoroughly compacted in place to a Standard Proctor Density of 98% by means of mechanical compactors. The equipment and method of compacting the backfill material shall be to the full satisfaction of the Commissioner in charge.

11.0 ROCK PROTECTION FOR CULVERTS

The backfill over the ends of the pipe shall be set on a slope of 1½ metres horizontal to 1 metre vertical from the bottom of the pipe to the top of each side slope and between both side slopes. The top 30 cm in thickness of the backfill over the ends of the pipe shall be quarried rock. The quarried rock shall be placed on a slope of 1½ metres horizontal to 1 metre vertical from the bottom of the pipe to the top of each side slope of the drain and between both side slopes. The quarried rock shall have a minimum dimension of 100 mm and a maximum dimension of 225 mm. Prior to placing quarried rock end protection over the granular material, 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. The Contractor shall take extreme care not to damage the geotextile filter fabric when placing the quarried rock on top of the filter fabric.

12.0 PLACING OF ALUMINIZED CORRUGATED STEEL PIPE

When specified the Contractor shall install all culvert bridges in the location directed by the Commissioner. The excavation for placing the culvert, the type and class of bedding and backfill and culvert end treatment shall be carried out to the width, depth and alignment as specified herein. 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

12.0 PLACING OF ALUMINIZED CORRUGATED STEEL PIPE - Continued

shown in the report but may not be placed on a bed containing frozen materials. The Contractor shall carefully place the bedding and backfill material so damage to or movement of the pipe is avoided. Backfill and cover materials shall be placed in layers not exceeding 250 mm in thickness, loose measurement. Each layer shall be thoroughly compacted before the next layer is placed. Backfill on each side of the pipe shall be placed simultaneously and at no time shall the levels on each side of the pipe differ by more than 250 mm. Where native backfill is approved to be used the material shall not contain boulders larger than 150 mm or other deleterious material. The Contractor will be required to fully restore all paved driveways with materials of similar type and depths. The Contractor shall neatly saw cut all paved driveways at a distance of 300 mm beyond the edge of the excavated trench and this shall be done immediately prior to final restoration of the paved driveway.

When an access culvert or bridge does not have to be lowered or replaced, the Contractor shall clean it to its full cross sectional area using care to avoid causing damage to it in the process. Where pipes are scheduled to be cleaned and flushed only, the material which is removed from the culvert pipe is to be loaded and hauled away. Over digging of the drain at the downstream end of the culvert to accommodate material flushed from a culvert pipe will not be allowed.

Where a pipe culvert is to be reset to a new grade, the Contractor shall carefully remove it, clean it to its full cross sectional area and replace it in the drain as specified herein. Where a culvert is to be replaced, the Contractor shall carefully remove the existing pipe from the drain, clean it to its full cross sectional area and leave it on the drain bank unless otherwise specified. Should either the property owner or the Commissioner in charge not require the salvaged pipe then the Contractor shall dispose of the pipe at the Contractors expense.

The Contractor if using a batter board system for establishing the grade of the culvert pipe, shall utilize a minimum of three batter board stakes for each culvert. The Contractor shall ensure that the batter board stakes placed on the grade stakes shall line up, this being done prior to any excavation taking place for the proposed culvert.

Where pipes are scheduled to be moved or replaced the Contractor shall confirm the new location of the culvert pipe with the owner prior to installation. Where the Contractor has excavated a culvert pipe which has been scheduled to be cleaned and reinstalled and it is found that the condition of the existing culvert pipe is not satisfactory to be reused, the Contractor shall immediately notify the Commissioner in charge who will verify the condition of the existing pipe and may instruct the Contractor to supply a new length of pipe.

13.0 CUTS

The cuts as shown on the accompanying drawing are to be taken from the ground beside the stakes to the bottom of the finished drain, unless otherwise noted on the drawing.

14.0 DAMAGE TO TRAVELLED PORTION OF MUNICIPAL ROAD

The Contractor will 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 is 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.

15.0 SEEDING AND MULCHING

The Contractor shall fine grade the finished surfaces and shall apply hydroseeding and mulch. The seeding and mulching operation shall be carried out according to O.P.S.S. Spec. 572 or as amended herein and the operation shall include the supplying and placing of the following:

- A) Seed Mixture - Creeping Red Fescue - 50%
 - Red Top - 20%
 - Canada Blue Grass - 15%
 - Kentucky Blue Grass - 15%
- B) Nurse Crop - Oats if seeding and mulching is performed during May or June.
 - Annual Rye Grass if seeding and mulching is performed during Sept. or Oct.
- C) Fertilizer - 5-20-10 mixture
- D) Mulch - Wood Cellulose Fibre or Straw
- E) Adhesive - Asphalt Emulsion if straw mulch used
 - Liquid Polyvinyl Acetate if wood fibre mulch used

The application rates shall be as follows:

- A) Grass Seed Mixture - 90 lbs./acre
- B) Fertilizer - 350 lbs./acre
- C) Nurse Crop Seed - 55 lbs./acre
- D) Mulch - 1300 lbs./acre if wood fibre used
 - 1" to 2" depth if straw used
- E) Adhesive - 200 imp.gal/acre for Asphalt Emulsion
 - 205 lbs./acre for Liquid Polyvinyl Acetate

The seeding and mulching operation shall be only carried out as weather conditions permit during the months of May and June in the Spring, and September and October in the Fall. If the excavation work is carried out during the months of May and June, or September or October, the Contractor has the option of contacting the Drainage Superintendent and if the Contractor receives his written permission, the seed mixture as above specified, may be placed on the excavated side slopes by the Contractor by hand, daily, at the completion of his daily excavation operation. If the Contractor has been given written permission by the Drainage Superintendent to place the seeding mixture by hand daily, at the completion of his daily excavation operation, the Contractor shall be responsible to give the side slopes a rough, harrowed texture prior to placing the seed mixture.

16.0 QUARRIED ROCK

The Contractor shall place quarried rock protection at the areas indicated on the accompanying plans. The quarried rock shall be graded in size from a minimum size of 100 mm to a maximum size of 230 mm. The quarried rock shall be placed 300 mm in thickness on a layer of geotextile filter fabric placed on the bottom of the excavation. The filter fabric shall be "Terrafix 270-R" or equal. The Contractor shall excavate for the quarried rock so that the top of the completed quarried rock protection is level with the adjacent ground.

The Contractor shall remove all trees, brush and debris from the area on which the quarried rock is to be placed. The quarried rock shall be carefully placed by the Contractor at the locations and to the dimensions as shown on the accompanying specifications. The specified filter cloth shall be hand laid and have an overlap of 600 mm and all quarried rock that is to be placed over the filter cloth shall be carefully hand or machine placed so that it does not damage the filter cloth. The filter cloth shall extend up the sides of the trench excavated to accept the quarried

16.0 QUARRIED ROCK - Continued

rock and the quarried rock shall extend 300 mm above the top of the surface inlet pipe where applicable.

17.0 MAINTAINING FLOW AND EXISTING SEWERS

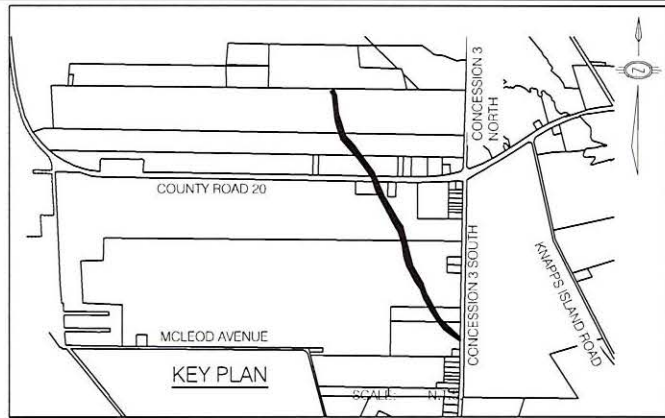
The Contractor shall support and maintain the flow and existing sewers and house connections and any other drainage works encountered in the progress of the work and at no expense to the owner. The Contractor shall obtain written approval from the engineer to stop up any drain, and if necessary, provide pumping equipment, build necessary by-passes, etc. at no expense to the owner.

18.0 SPECIAL PROVISIONS

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.

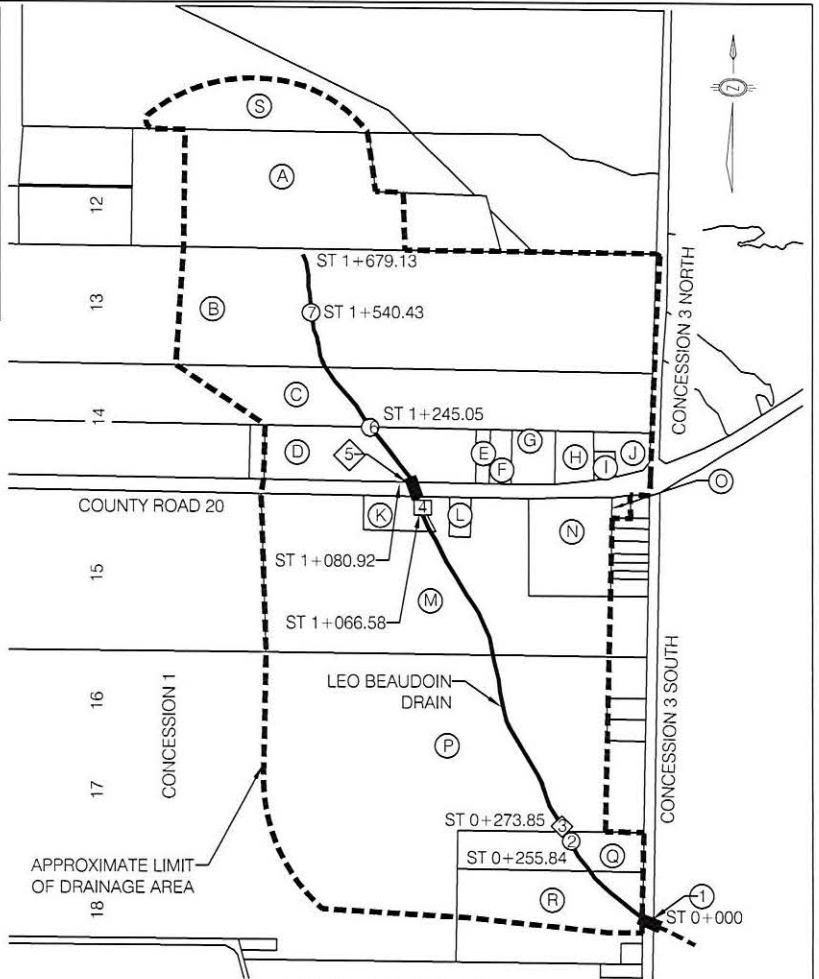
19.0 REMOVAL OF TREES

Whenever practical, existing trees not scheduled for removal will be preserved. The Contractor shall exercise the utmost caution to ensure that the trees are not damaged or disturbed.



SEDIMENT AND EROSION CONTROL

- 1) STRAW BALE FLOW CHECK DAMS, AS PER OPSD 219.180, SHALL BE SUPPLIED, PLACED AND MAINTAINED NEAR:
 - STATION 0+027: IMMEDIATELY UPSTREAM OF CULVERT NO. 1 WHILE WORKING BETWEEN CONCESSION 3 SOUTH AND COUNTY ROAD 20.
 - STATION 1+080: IMMEDIATELY DOWNSTREAM OF CULVERT NO. 5 WHILE WORKING UPSTREAM OF COUNTY ROAD 20.
- 2) SILT FENCING, AS PER OPSD 219.110, SHALL BE SUPPLIED, PLACED AND MAINTAINED AT THE DOWNSTREAM END OF EACH CULVERT AS DESCRIBED.



LEGEND:

②	CULVERT TO BE REPLACED
⑤	CULVERT TO BE CLEANED
③	CULVERT TO BE REMOVED

SHEET SET INDEX:

SHEET NO.	SHEET TITLE
1	DRAINAGE AREA AND KEY PLAN
2	DRAIN PROFILE 0+000 TO 0+730
3	DRAIN PROFILE 0+730 TO 1+470
4	DRAIN PROFILE 1+470 TO 1+680 & TYPICAL DETAILS
5	CROSS-SECTIONS
6	CROSS-SECTIONS

BENCHMARK:

No. 1 TOP NUT OF EXISTING FIRE HYDRANT LOCATED ON THE WEST SIDE OF CONCESSION ROAD 3 JUST SOUTH OF THE EXISTING OUTLET PIPE

GPS ELEVATION = 176.097 METRES

PARCEL INFORMATION

ID NO.	ROLL NO.	OWNER
A	600-08500	RANDY J. CYR
B	600-13300	GEORGE & RUTH VANDENBRINK
C	600-10800	PETER CRUMP
D	600-12800	EDWARD & DORIS FAUCHER
E	600-12890	MARK & CLARE ROBSON
F	600-12895	MICHAEL & JENNIFER MATHIESON
G	600-12900	CONSTANCE MATHIESON
H	600-13000	MARVIN & CHARLINE PICKENS
I	600-13100	CAROL DUCHARME
J	600-13200	ERIC NIVEN
K	550-11170	DAVID WEAVER & DIANE BREault
L	550-11150	PATRICK HELFERTY & BYRONY MOLE
M	550-11100	ROSARIO & LINDA ESPOSITO
N	550-11090	ROBERT & STACY GOGGIN
O	550-11050	DAVID & SUZANNE VARNEY
P	550-08800	MALDEN MARSH INC.
Q	550-10100	JAMES & BONNIE WORTLEY
R	550-10000	SUZANNE & GEORGE LAPRADE
S	600-05600	STEVEN & ROSE ANNE GYORI

DRAINAGE AREA PLAN
SCALE: N.T.S.
REVISED AS PER COURT OF REVISION



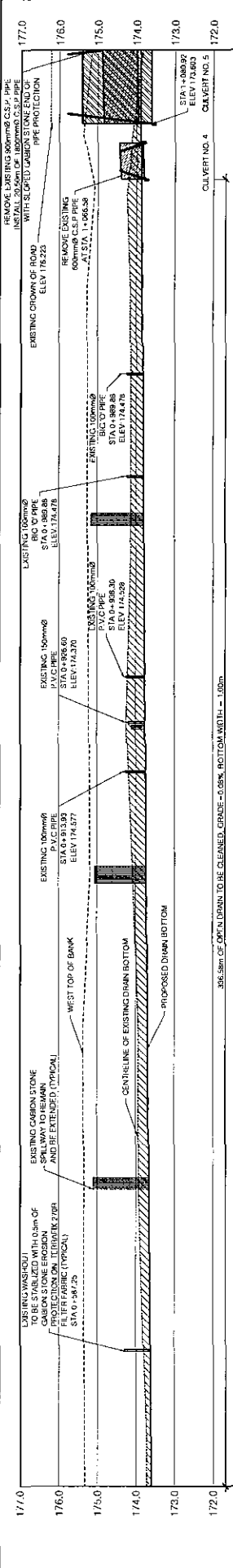
PROJECT TITLE
REPAIR AND IMPROVEMENT OF THE LEO BEAUDOIN DRAIN IN THE TOWN OF AMHERTSBURG

LOTS 12 - 18, CONCESSION 1
IN THE FORMER TOWNSHIP OF ANDERDON

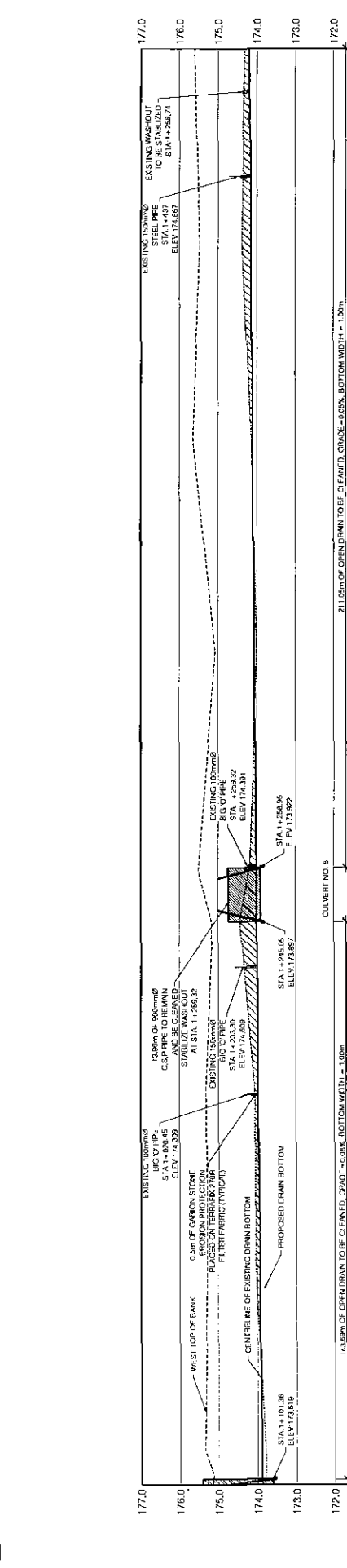


H. P. Pearson
H. P. PEARSON, P.ENG.

DRAWN BY: T.Y.	SCALE: N.T.S.	DATE: MAR. 23/17 MAY 30/17
CHECKED BY: H.P.P.	SHEET No. 1 OF 6	PROJECT No. 12-040

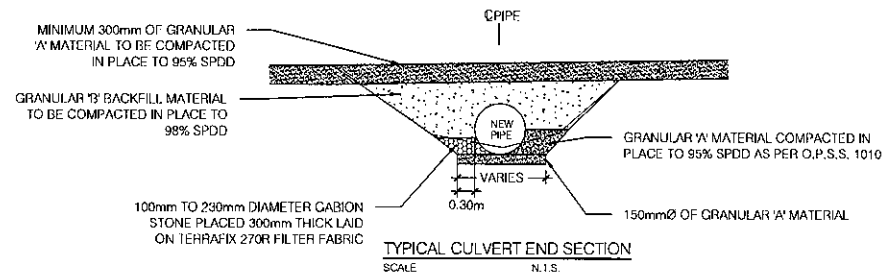
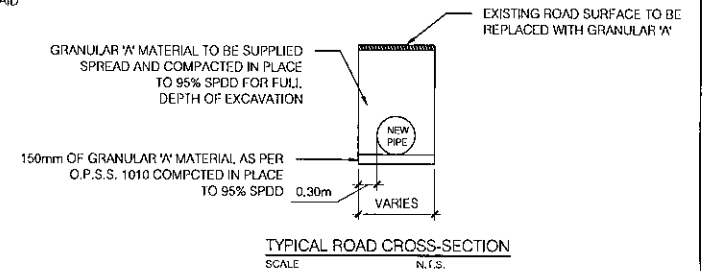
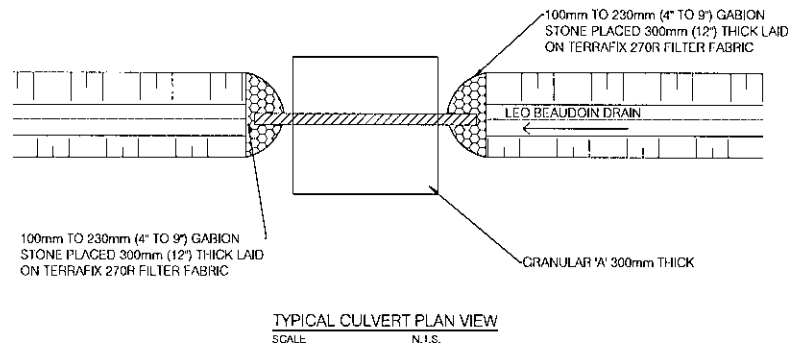
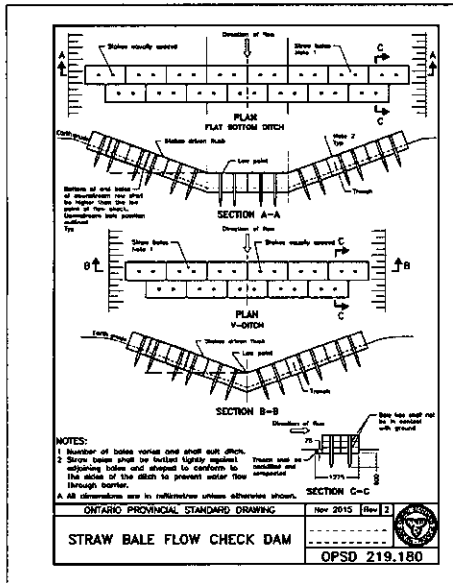
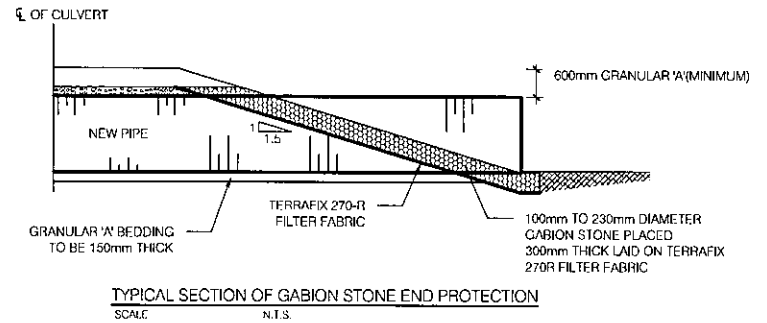
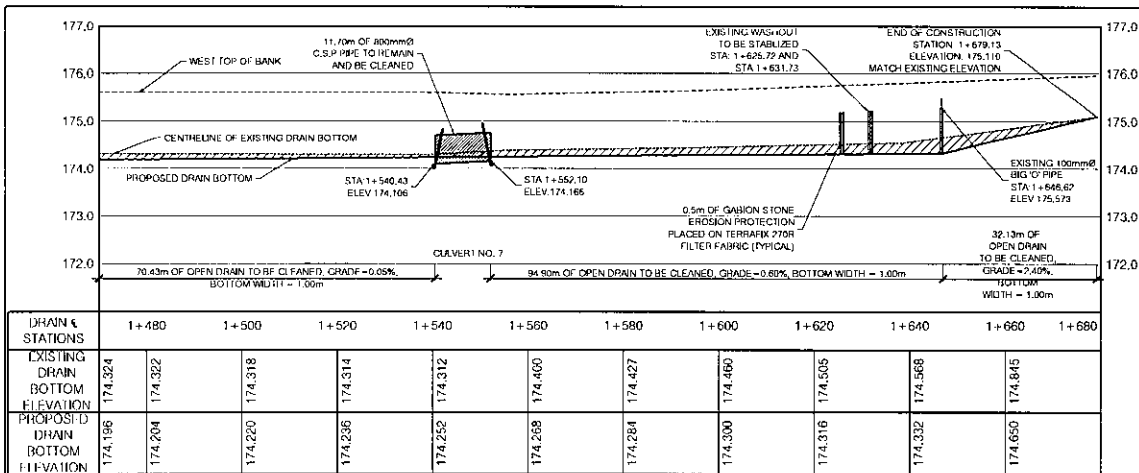


STATION	EXISTING DRAIN BOTTOM ELEVATION	PROPOSED DRAIN BOTTOM ELEVATION	STATION	EXISTING DRAIN BOTTOM ELEVATION	PROPOSED DRAIN BOTTOM ELEVATION
1+100	173.990	173.838	1+360	173.820	174.140
1+120	173.916	173.868	1+380	173.820	174.140
1+140	173.932	173.905	1+400	173.836	174.149
1+160	173.948	174.054	1+420	173.852	174.161
1+180	173.964	174.058	1+440	173.868	174.241
1+200	173.980	174.063	1+460	173.884	174.077
1+220	173.996	174.226	1+480	173.900	173.839
1+240	174.012	174.401			
1+260	174.028	174.183			
1+280	174.044	174.120			
1+300	174.060	174.058			
1+320	174.076	174.029			
1+340	174.092	174.075			
1+360	174.108	174.121			
1+380	174.124	174.198			
1+400	174.140	174.292			
1+420	174.156	174.384			
1+440	174.172	174.360			
1+460	174.188	174.336			
1+480	174.196	174.324			

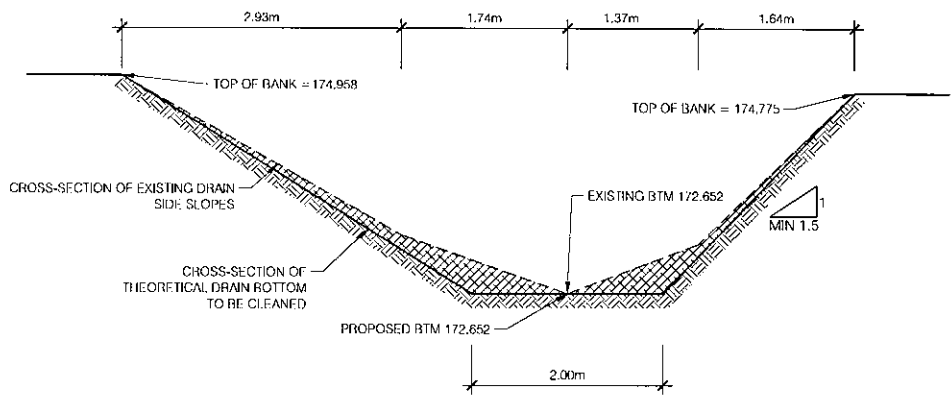


STATION	EXISTING DRAIN BOTTOM ELEVATION	PROPOSED DRAIN BOTTOM ELEVATION	STATION	EXISTING DRAIN BOTTOM ELEVATION	PROPOSED DRAIN BOTTOM ELEVATION
1+720	173.990	173.838	1+980	173.820	174.140
1+740	173.916	173.868	1+1000	173.820	174.140
1+760	173.932	173.905	1+1020	173.836	174.149
1+780	173.948	174.054	1+1040	173.852	174.161
1+800	173.964	174.058	1+1060	173.868	174.241
1+820	173.980	174.063	1+1080	173.884	174.077
1+840	173.996	174.226	1+1100	173.900	173.839
1+860	174.012	174.401			
1+880	174.028	174.183			
1+900	174.044	174.120			
1+920	174.060	174.058			
1+940	174.076	174.029			
1+960	174.092	174.075			
1+980	174.108	174.121			
1+1000	174.124	174.198			
1+1020	174.140	174.292			
1+1040	174.156	174.384			
1+1060	174.172	174.360			
1+1080	174.188	174.336			
1+1100	174.196	174.324			

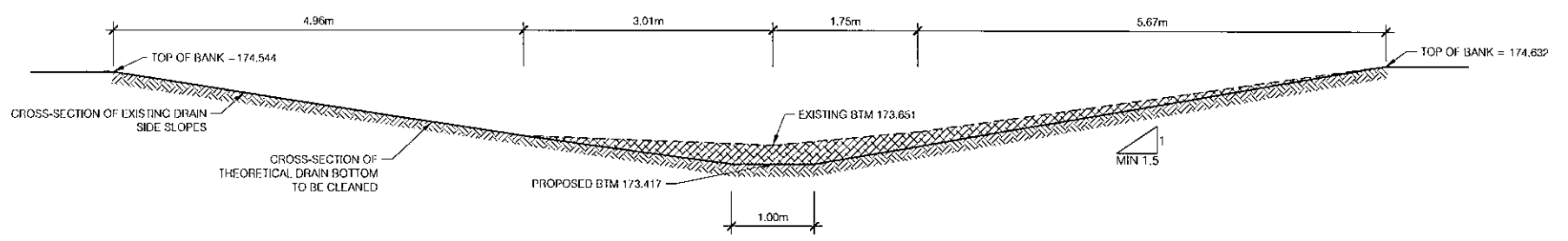
REPAIR AND IMPROVEMENT OF THE LEO BEAUDOIN DRAIN IN THE TOWN OF AMHERSTBURG
 DRAWN BY: T.Y.
 SCALE: 1:1000 HOR., 1:100 VER.
 DATE: MAR. 23, 2017
 CHECKED BY: H.P.P.
 SHEET NO.: 3 OF 6
 PROJECT NO.: 12-040



REPAIR AND IMPROVEMENT OF THE LEO BEAUDOIN DRAIN IN THE TOWN OF AMHERSTBURG			
PROFILE 1+470 TO 1+680	DRAWN BY T.Y.	SCALE: 1:1000 HOR. 1:100 VER.	DATE: MAR. 23, 2017
	CHECKED BY H.P.P.	SHEET No. 4 OF 6	PROJECT No. 12-040



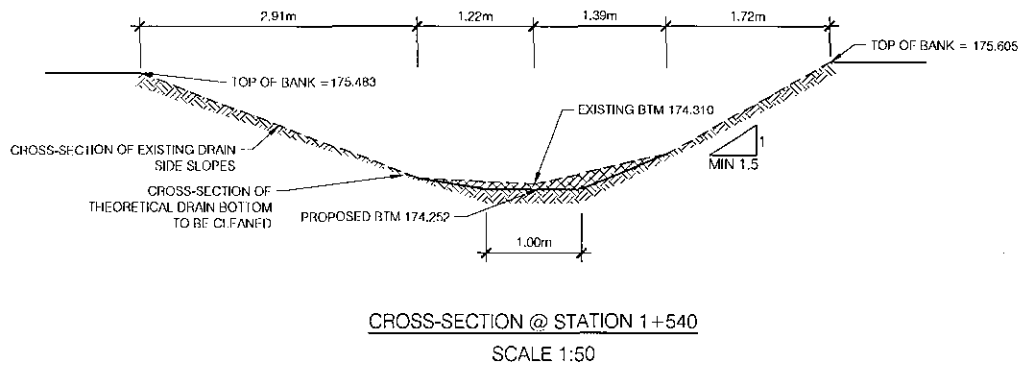
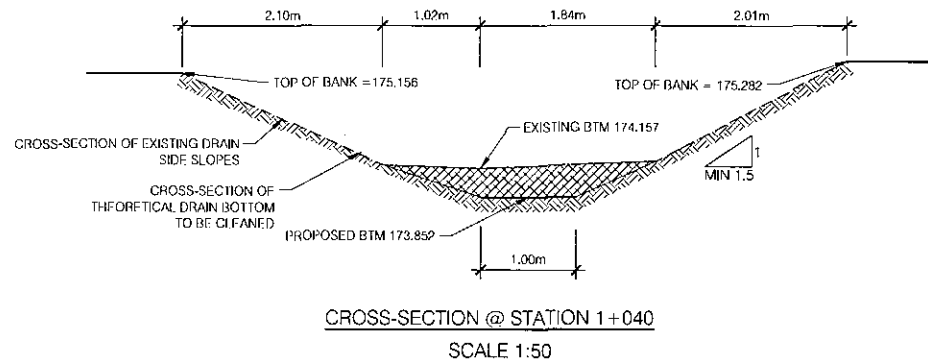
CROSS-SECTION @ STATION 0+027
SCALE 1:50



CROSS-SECTION @ STATION 0+495.70
SCALE 1:50

REPAIR AND IMPROVEMENT OF THE LEO BEAUDOIN DRAIN
IN THE TOWN OF AMHERSTBURG

CROSS-SECTIONS	DRAWN BY T.Y.	SCALE AS SPECIFIED	DATE MAR. 23, 2017
	CHECKED BY H.J.P.	SHEET No. 5 OF 6	PROJECT No. 12-040



REPAIR AND IMPROVEMENT OF THE LEO BEAUDOIN DRAIN
IN THE TOWN OF AMHERSTBURG

CROSS-SECTIONS	DRAWN BY T.Y	SCALE: AS SPECIFIED	DATE MAR. 23, 2017
	CHECKED BY H.P.P	SHEET No. 6 OF 6	PROJECT No. 12-040