

THE CORPORATION OF THE TOWN OF AMHERSTBURG

BY-LAW NO. 2015 - 93

**By-law to provide for the Repair and Improvement
of the Dufour Drain and Branches A & B based on
the Drainage Report by Dillon Consulting Ltd.**

WHEREAS as request for repair and improvement of the Dufour Drain and Branches A & B 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 Tim Oliver, P. Eng., Dillon Consulting Ltd. to prepare a report and said report is dated October 26, 2015;

AND WHEREAS the report was reconsidered and adopted by Council at the meeting held on Monday November 16, 2015;

AND WHEREAS \$129,806.00 is the amount to be contributed by the Town of Amherstburg of the total \$355,100.00 for the drainage works;

AND WHEREAS the report was appealed to the Ontario Drainage Tribunal at a meeting held on August 31, 2016;

AND WHEREAS the revised report, submitted by Tim Oliver, P. Eng., Dillon Consulting Ltd., dated October 7, 2016, as per the Decision of the Drainage Tribunal dated October 4, 2016, and is attached hereto and forms part of this by-law.

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 \$355,100.00 being the amount necessary for the improvements of the drainage works.

This project being the Dufour Drain and Branches A & B.

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 2% more than the municipal lending rates as posted by Infrastructure Ontario 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 \$129,806.00 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 \$500.00 or less are payable in the first year in which the assessments are imposed.

5. SCHEDULE OF ASSESSMENTS OF LANDS AND ROADS

The schedules of assessments are attached as "Schedule A". The schedules of assessments attached under "Schedule A" are subject to change by the following appeals bodies:

- (a) The Municipal Court of Revision
- (b) Ontario Drainage Tribunal
- (c) Ontario Drainage Referee

The schedules of assessment contained under the "Schedule A" will be revised as adjusted by the appeal bodies and prior to third and final reading of the said bylaw.

Read a first and second time and provisionally adopted this 16th day of November, 2015.



MAYOR – ALDO DICARLO



CLERK – PAULA PARKER

Read a third time and finally passed this 24th day of October, 2016.



MAYOR – ALDO DICARLO



CLERK – PAULA PARKER

SCHEDULE A

Dufour Drain and Branches A & B

Schedule of Assessment C-1 – Dufour Drain

Property Description				Estimated Assessment as per Report	Estimated Grants 33 1/3%	Annual Rate to be Imposed Equal Bi-Annually
Lot or Part Lot No.	Concession	Geographic Township	Parcel Roll No.			
Part Lot 6	7	Anderdon	380-05400	\$681.00		\$151.62
Part Lot 7	8	Anderdon	430-02700	\$5,660.00	\$2,420.00	\$721.40
Part Lot 1&2	8	Anderdon	430-08200	\$1,769.00	\$1,189.67	\$128.98
Part Lot 7	8	Anderdon	430-09700	\$1,500.00	\$818.67	\$151.70
Part Lot 7	8	Anderdon	430-02720	\$35,632.00	\$12,094.00	\$5,240.80
Part Lot 7	8	Anderdon	430-00990	\$4,780.00	\$1,593.33	\$709.52
SUB-Total (Schedule C-1)				\$50,022.00	\$18,115.67	\$7,104.02

Schedule of Assessment C-2 – Branch A

Property Description				Estimated Assessment as per Report	Estimated Grants 33 1/3%	Annual Rate to be Imposed Equal Bi-Annually
Lot or Part Lot No.	Concession	Geographic Township	Parcel Roll No.			
Part Lot 7	8	Anderdon	430-01200	\$1,247.00		\$277.64
Part Lot 7	8	Anderdon	430-01500	\$1,303.00		\$290.12
Part Lot 7	8	Anderdon	430-01600	\$886.00		\$197.28
Part Lot 7	8	Anderdon	430-01700	\$838.00		\$186.58
Part Lot 7	8	Anderdon	430-01800	\$780.00		\$173.66
Part Lot 7	8	Anderdon	430-01900	\$757.00		\$168.54
Part Lot 7	8	Anderdon	430-02000	\$724.00		\$161.20
Part Lot 7	8	Anderdon	430-02100	\$660.00		\$146.96
Part Lot 7	8	Anderdon	430-02200	\$632.00		\$140.72
Part Lot 7	8	Anderdon	430-02300	\$653.00		\$145.40
Part Lot 7	8	Anderdon	430-02400	\$606.00		\$134.92
Part Lot 7	8	Anderdon	430-02500	\$588.00		\$130.92
Part Lot 7	8	Anderdon	430-02720	\$2,760.00	\$1,286.67	\$328.04
Part Lot 7	8	Anderdon	430-09900	\$4,992.00	\$1,847.33	\$700.18
SUB-Total (Schedule C-2)				\$17,426.00	\$3,134.00	\$3,182.16
TOTAL (Schedule C-1 + Schedule C-2)				\$67,448.00	\$21,249.67	\$10,286.18

**RECONSIDERED
DRAINAGE REPORT
FOR THE**

**DUFOUR DRAIN AND
BRANCHES A & B**

**TOWN OF AMHERSTBURG
COUNTY OF ESSEX**

***REVISED AS DIRECTED BY AN ORDER FROM THE
AGRICULTURE, FOOD AND RURAL AFFAIRS APPEAL
TRIBUNAL
DATED OCTOBER 4, 2016***



7 OCTOBER 2016
TIM R. OLIVER, P.ENG.
FILE No. 08-9367

File No. 08-9367

Note: All changes to the reconsidered report dated October 26, 2015 ordered by the Tribunal are shown in Bold Italic.

Mayor and Members of Council
The Corporation of the Town of Amherstburg
271 Sandwich St. South
Amherstburg, Ontario
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**Reconsidered
Drainage Report for the
DUFOR DRAIN AND
BRANCHES A & B
In the Town of Amherstburg
County of Essex**

Mayor and Members of Council:

Instructions

In accordance with Council's instructions, we have made an examination and survey of the Dufour Drain within the Town of Amherstburg (former Anderdon Township). The investigation also included the two branches of the Dufour Drain that provide a drainage outlet to the existing Gardiner Subdivision and the proposed Woodland Trails Subdivision on the north side of County Road No. 10, as well as, existing residential lots on the south side of County Road No. 10. The initial requests to improve the Dufour Drain were received from both the owner of the Woodland Trails Subdivision and abutting agricultural landowner Harry and Mary Arts (Roll No. 430-02700).

Council accepted the request under Section 78 of the Drainage Act and on 13 February 2006 appointed Dillon Consulting Limited to prepare a report. Our original report was submitted to the Town back in February 2007 however, it was never considered by council at the request of the Woodland Trails subdivision developer to hold off due to a slowing real estate market.

The purpose of the original report was to accommodate the proposed Woodland Trails Subdivision on the north side of County Road No. 10, involving a re-alignment and a new crossing over the Dufour Drain. The report was also required to update the assessment schedules for future drain maintenance.

In the summer of 2012, the Town of Amherstburg was contacted by the owner of Woodland Trails Subdivision development requesting that the drainage report now be considered for adoption.

Summary of Changes to Original Report

Our original report dated 30 July 2015 was considered by Town of Amherstburg council on August 17, 2015. Council deferred their decision to adopt the report to extend the



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time required to have several landowner's questions answered. The meeting to consider the report was rescheduled and held on September 21, 2015. The report was referred back for reconsideration to address some modifications as listed below:

1. Removed previously recommended drainage works for the proposed Woodland Trails subdivision, namely the new access bridge (Bridge No. 6) and the realignment of the Dufour Drain associated thereof. The subject lands are under new ownership and the new owner had requested the said works be eliminated from the report as they are no longer required.
2. For Bridge No. 3 replacement of the sloping stone end treatment on the culvert pipe has been substituted with vertical concrete blocks. Given the close proximity of the driveway to the lot line and that it is asphalted for Bridge No. 3, a vertical headwall would better suit the intended use. With the reduction in culvert length and backfill materials offsetting the increased cost of the blocks, we estimate costs to be similar to the original design.
3. Removed previously recommended drainage works involving the replacement of an existing road culvert on Middle Sideroad (County Road No. 10) with outlet into the Dufour Drain at Station 1+151. In August 2015 the County of Essex replaced the culvert with their own forces. The special assessment against the County of Essex Road Authority, as a result, is reduced by \$9,000.00.
4. The addition of private drain connection stubs on the six (6) HDPE yard catch basins extending to the property line for the residential properties abutting the Essex Region Conservation Foundation lands (ERCF). The added cost is assessed against the affected lands on the Branch A Drain. The purpose of this work is to facilitate the future pedestrian trail on the ERCF lands.

Watershed Description

The watershed of the Dufour Drain covers a portion of Lots 6, 7 & 8, Concession 8, as well as, a small portion of Lot 7, Concession 7 within the Town of Amherstburg. The drain serves as an outlet for both agricultural and residential lands situated on soils that are a Brookston Clay type that require effective surface and sub-surface drainage to be productive for agriculture. The watershed area is approximately 81.98 hectares (202.64 acres) where the natural topography is flat and the design gradient of the existing drainage works is minimal.

Drain History

The recent history of Engineers' reports for the Dufour Drain follows:

- **28 March 2013 by Tim R. Oliver, P. Eng.:** The recommended work included the construction of a new 1600 mm diameter CSP access culvert for a secondary access to the farm parcel identified as Roll No. 430-09700 (denoted herein as Bridge No. 2).
- **23 April 2010 by Tom H. Marentette, P. Eng.:** The recommended work included the construction of a new 1400 mm diameter CSP access culvert for the residential lot identified as Roll No. 430-05000 (denoted herein as Bridge No. 4).

- **26 June 2002 by Bruce D. Crozier, P. Eng.:** The recommended work included the construction of a new 1600 mm diameter CSP access culvert for the farm parcel identified as Roll No. 430-09700 (denoted herein as Bridge No. 1).
- **28 October 1991 by R. Meo, P. Eng.:** The recommended work included the construction of the Dufour Drain Extension outletting to the eastern limit of the Dufour Drain on the north side of the abandoned Canadian National Railway Tracks (denoted herein as Branch A).
- **31 May 1971 by M. Armstrong, P.Eng.:** The recommended work included the repair and improvement of the Dufour Drain, complete with brushing and a drain clean out.
- **25 August 1961 by M. Armstrong, P. Eng.:** The recommended work included improvements to the upper portion of the Dufour Drain involving a re-alignment and enclosure to move the drain onto private property at the intersection of County Road No. 10 and the 8th Concession Road. The work also included moving the upstream portion of the Dufour Drain onto private property along the south side of County Road No. 10 and east of where it crosses the said road. A new 900 mm diameter concrete culvert was placed under the railway on the north side of the road and continued with a new 900 mm diameter CSP road culvert to connect to the relocated drain portion on the south side of the road.

On-Site Meetings

We conducted an on-site meeting on 18 September 2012. A record of the meeting is provided in Schedule 'A-1', which is appended hereto.

From the discussion and concerns raised by landowners at this meeting about their past flooding experience, the general consensus was to further examine the drain for further improvements hydraulically and for sufficiency of outlet. A second meeting subsequently followed on 14 March 2013 to hear and discuss the engineer's findings pertaining to an expanded scope of work prior to the submission of the final report to Council. A record of the meeting is provided in Schedule 'A-2', which is appended hereto.

Subsequent meetings were held with the new owner of the agricultural lands Roll No. 430-02720 and Roll No. 430-09900 on July 2, 2015; and with the Essex Region Conservation Authority on September 28, 2015. Concerning the future development of these agricultural lands into a residential subdivision (previously known as the Woodland Trails Subdivision), the properties Roll No. 430-02720 and Roll No. 430-09900 are now under new ownership (2439478 Ontario Inc.).

The new owner informed the Town the proposed work had been requested by the previous owner to provide a primary access to Roll No. 430-02720 from County Road No. 10 and to re-align part of the Dufour Drain. This work is no longer necessary for the new owner also owns property Roll No. 430-09700 to the north and therefore has direct access from this property and from the 8th Concession Road to the west. The land is currently zoned for agricultural use and is eligible for the farm property class tax rate.

Following the July 2nd meeting, the new owner contacted the Town requesting to leave this work specifically related to the new access bridge and drain re-alignment within the report since there had been associated engineering costs previously incurred. At the first

council meeting to consider the report on August 17, 2015 the said landowner did not object to the recommended work however council deferred their decision to adopt the report as a result of several other landowners' concerns.

Subsequently, Council reconvened on September 21, 2015 to consider the report. The owner of properties Roll No. 430-02720 and Roll No. 430-09900 decided to appeal the report on the basis of no longer accepting a new access bridge, drain re-alignment and associated engineering costs thereof. Council referred the report back to the engineer to remove the said work from the report except for the associated engineering costs.

Concerning the September 28th meeting with the Essex Region Conservation Authority, the discussion centred around ERCA's future plans to construct a pedestrian trail on the ERCF lands and the proposed drainage works shared with the adjacent residential properties. For better access to the drain for the residential properties and to avoid future disruption to the ERCF lands, it was decided to further extend the drain connections at least 1 metre beyond the south limit of the ERCF lands. This work is accommodated herein.

Survey and Existing Conditions

Our survey and examination of the Dufour Drain and Branches A & B, was carried out in December 2012 while the drain was still free of snow and ice. The survey comprised the recording of topographic data and examining the channel for available depth necessary to provide sufficient drainage. We commenced the survey at the outlet of the Dufour Drain into the Sucker Creek Drain and continued upstream southerly along the channel, parallel to and east of the 8th Concession Road, to where it turns easterly and continued upstream on the north side of County Road No. 10 to the intersection with the former railway lands, now known as the Essex Region Conservation Foundation (ERCF) lands. The survey then continued upstream along Branch A located on the north side of the ERCF lands to where the Gardiner Subdivision drainage outlet exists. Branch B was also surveyed along the south side of County Road No. 10.

Our survey revealed a varying amount of sediment throughout with the heavier deposits near 0.50 metres depth found in the Dufour Drain along the 8th Concession Road and within the most upstream portion of Branch A. Erosion of the drain banks was observed at various locations where surface water inlets exist, which consequently adds to the sediment levels. There is also a significant amount of overgrown brush and vegetation in the upper part of the Dufour Drain and Branch A that reduces the overall capacity within the drain.

There are four (4) existing access bridges on the Dufour Drain including one (1) lawn enclosure that is located at the northeast corner of the 8th Concession Road and County Road No. 10. A summary of their condition follows:

Bridge No. 1 (Roll No. 430-09700) - Station 0+321 consists of a 9.5 m long, 1600 mm diameter corrugated steel pipe (CSP) with vertical concrete headwalls and was constructed in 2002 under a separate report and by-law. The existing bridge is in good condition and we do not recommend any work at this time.

Bridge No. 2 (Roll No. 430-09700) - Station 0+403 consists of an 11 m long, 1600 mm diameter corrugated steel pipe (CSP) with vertical concrete block end walls and was constructed in 2013 under a separate report and by-law. The existing bridge is in good condition and we do not recommend any work at this time.

Bridge No. 3 (Roll No. 430-05050) – Station 0+424.5 consists of an 8 m long, 1400 mm diameter corrugated steel pipe (CSP) with vertical broken concrete end walls. The culvert was not identified in any previous report. It is deficient in hydraulic capacity.

Bridge No. 4 (Roll No. 430-05000) – Station 0+755.5 consists a 13 m long, 1400 mm diameter corrugated steel pipe (CSP) with sloping stone end walls and was constructed in 2010 under a separate report and by-law. The existing bridge is in good condition and we do not recommend any work at this time.

Bridge No. 5 (Roll No. 430-02750) – Station 0+874 is a lawn enclosure consisting of 124 m long, 1200 mm diameter corrugated steel pipe (CSP) with vertical concrete headwalls. The existing lawn pipe is in poor condition and has deteriorated beyond repair shown by the presence of sink holes forming within the lawn portion. It is deficient in hydraulic capacity.

Recommendations

Dufour Drain

We recommend that the entire length of the Dufour Drain be brushed and cleaned out and the hydraulic capacity increased to provide an improved outlet for Branch A & Branch B drains. Accompanied by this work are the following recommended access bridge replacements and upsizing of culverts:

Bridge No. 3 (Roll No. 430-05050) – Station 0+424.5 - We recommend the existing 1400 mm diameter corrugated steel pipe culvert be replaced with a new 9.0 m long, 1600 mm diameter aluminized, corrugated steel pipe (CSP) with vertical concrete block end walls providing a minimum driveable top width of 7 metres to match width of existing residential access.

Bridge No. 5 (Roll No. 430-02750) – Station 0+874 - We recommend the existing 1200 mm diameter corrugated steel pipe lawn culvert be replaced with a new 132 m long, 1780 x 1360 mm polymer laminated, corrugated steel pipe arch (CSPA) with sloping stone end walls. The enclosed drain improves the safety of the intersecting roadways, however given the improvements that are required to the upstream portion of the drain the hydraulic capacity of the present pipe is deficient.

We also recommend stone erosion protection be placed on the drain banks at various surface water inlets, as well as, the construction of a permanent 1 m wide grass buffer strip along the east and north sides of the open drain where it abuts agricultural lands.

Branch A Drain

We recommend the Dufour Drain Extension (1991 report) that runs along the north side of the ERCF lands up to where the Gardiner Subdivision storm drainage outlet enters, be renamed Branch A. It is approximately 533 metres in length and drains an area of 7.63 hectares (18.87 acres). We also recommend that brushing and cleaning of the drain be carried out on the entire length of the Branch A drain from Station 0+000A to Station 0+533A.

We recommend the removal of the existing 750 mm diameter CSP culvert at Station 0+032A on the Branch A drain. Its original purpose, as outlined in the 1991 report, was to provide storm water management control on drainage from the Gardiner Subdivision using Branch A for detention of drainage flows. Using a municipal drain for this

purpose, in our considered opinion, does not provide sufficiency of outlet and is an unacceptable practice.

Given the high concentration of residential properties in the vicinity of this drain and the flooding concerns previously expressed by several landowners, it is prudent that the capacity of Branch A drain be increased to provide a greater level of service. Likewise, the Dufour Drain has been recommended for improvement to obtain sufficient outlet for an improved Branch A. In accordance with OMAFRA's design and construction guidelines, a minimum 5 year design storm criteria was applied.

Branch B Drain

We recommend the original upstream portion of the Dufour Drain that is situated along the south side of County Road No. 10 and flows westerly for approximately 444 metres before heading north across County Road No. 10 and ERCF lands, be renamed Branch B and to include the incorporation of the existing enclosed upper portion which spans across fourteen (14) existing residential lots for a distance of approximately 343 metres. Branch B consists of approximately 73 m of 600 mm diameter high density polyethylene (HDPE) pipe followed by approximately 270 m of 600 mm diameter aluminized corrugated steel pipe (CSP) that provides a minimum 5 year design storm capacity and drains an area of 7.82 hectares (19.33 acres).

We have recommended the replacement of the existing 900 mm diameter corrugated steel pipe portion on Branch B drain starting at the south end of the 900 mm diameter concrete pipe situated under the ERCF lands and continuing southerly under County Road No. 10 as follows:

Bridge No. 1B (ERCF/County of Essex) – Station 0+022B consists of a 15 m long, 900 mm diameter concrete pipe on the north end and approximately 29 m long, 900 mm diameter CSP on the south end. Concerning the existing CSP portion, we recommend it be replaced with 5 m long, 900 mm diameter high density polyethylene smooth wall pipe at the downstream end and 24 m long, 900 mm diameter high density polyethylene smooth wall pipe at the upstream end across County Road No. 10 complete with sloping stone end walls.

In directing the existing north side road ditch to this new culvert, we also recommend a 1500 mm x 1800 mm precast concrete catch basin and 3 m length of 600 mm diameter high density polyethylene smooth wall pipe complete with stone erosion protection.

Allowances

In accordance with Sections 29 and 30 of the Drainage Act, we have made a determination of the amount to be paid for damages to the lands on the east and north sides of the Dufour Drain, the north side of Branch A drain (Station 0+000A to Station 0+173A) and south side of the Branch B drain for the working corridor and placement of drain spoils and for land taken for the establishment of a permanent 1.0 m wide grass buffer strip, as specified herein. Schedules 'B-1', 'B-2' and 'B-3' show the distribution of these allowances in the total amount totalling \$8,200.00.

The land value used to determine the allowances for land used for buffer strips is \$30,000.00 per hectare. For determining damages to lands and crops we have used \$3,700.00 per hectare to represent the average cumulative declining loss in crop production over a 5 year period.

Cost Estimate

We estimate the cost of the recommended improvements to the Dufour Drain and Branches 'A' & 'B' to be as described below:

Item	Description	Amount
	DUFOUR DRAIN	
1.	Brushing of the drain from Station 0+000 to 1+298 including the disposal by burning on-site or removal off-site with trimming and/or removal of existing trees to permit re-alignment of the drain where required. Work shall include the removal and disposal of stumps that are within the drain.	\$1,500.00
2.	Excavation, trucking and/or levelling of excavated materials works, as follows:	
	a) Excavation of the drain bottom only and levelling of excavated material, as follows:	
	i) Sta. 0+000 to Sta. 0+807 cleanout from <u>east side</u> of drain totalling approximately 807 lineal metres of drain (approximately 305 m ³ of material).	\$5,250.00
	ii) Sta. 0+939 to Sta. 1+298 cleanout from <u>north side</u> of drain totalling approximately 359 lineal metres of drain (approximately 115 m ³ of material).	\$2,250.00
	b) Trucking of excavated materials where the drain is to be cleaned from the roadside, as follows:	
	i) Station 0+281 to Station 0+375 totalling approximately 25 m ³ of material.	\$250.00
	ii) Station 0+418 to Station 0+449 totalling approximately 13 m ³ of material.	\$130.00
	iii) Station 0+740 to Station 0+776 totalling approximately 5 m ³ of material.	\$50.00
	iv) Station 0+776 to Station 0+807 totalling approximately 7 m ³ of material.	\$70.00
3.	Access bridge replacement works, as follows:	

Item	Description	Amount
	a) <u>Bridge No. 3 (Roll No. 430-05050) – Station 0+424.5</u> – Remove and dispose of existing 8 m long, 1400 mm diameter CSP culvert and end wall materials off-site. Supply and installation of a new 9.0 m long, 1600 mm diameter corrugated steel pipe CSP culvert with 125 mm x 25 mm corrugations and 2.8 mm thickness (see Specifications), clear stone bedding (approximately 15 tonnes), full Granular 'A' backfill material (approximately 100 tonnes) and vertical concrete block end walls (600 mm x 600 mm x 1200 mm) (approximately 20 full blocks, 4 half blocks, 4 footing blocks). Salvage and re-use existing granular backfill.	\$12,000.00
	b) <u>Bridge No. 3 (Roll No. 430-05050) – Station 0+424.5</u> - Restoration of asphalt driveway with 80 mm thickness of HL3 hot mix asphalt - two 40 mm lifts compacted (approximately 7 tonnes).	\$1,500.00
	c) <u>Bridge No. 5 (Roll No. 430-02750) – Station 0+873</u> – Restoration of two (2) asphalt driveways with 80 mm thickness of HL3 hot mix asphalt - two 40 mm lifts compacted (approximately 8 tonnes) complete with full Granular 'A' backfill material under asphalt driveways (approximately 85 tonnes).	\$5,000.00
	d) <u>Bridge No. 5 (Roll No. 430-02700) – Station 0+873</u> – Restoration of Granular 'A' driveway surface material for farm access at north end of lawn culvert minimum 200 mm thickness (approximately 30 tonnes).	\$800.00
4.	Cleaning of access bridges:	
	a) Bridge No. 1 – Station 0+321, 9.5 m 1600 mm CSP	\$250.00
	b) Bridge No. 2 – Station 0+403, 11 m 1600 mm CSP	\$250.00
	c) Bridge No. 4 – Station 0+755.5, 11 m 1400 mm CSP	\$250.00
5.	Supply and install stone erosion protection on north and south drain banks of existing drain bend from Station 1+288 to Station 1+298 (approximately 60 m ²).	\$3,000.00
6.	Supply and installation of stone erosion protection to repair surface water inlets, (approximately 10 m ² each) as follows:	
	a) Station 0+016 (Roll No. 430-08200) – east bank	\$500.00
	b) Station 0+087 (Roll No. 430-08200) – east bank	\$500.00
	c) Station 0+133 (Roll No. 430-08200) – east bank	\$500.00
	d) Station 0+223 (Roll No. 430-08200) – east bank	\$500.00

Item	Description	Amount
	e) Station 0+281 (Roll No. 430-09700) – east bank	\$500.00
	f) Station 0+448 (Roll No. 430-02700) – east bank	\$500.00
	g) Station 1+014 (Roll No. 430-02700) – north bank	\$500.00
	h) Station 1+089 (Roll No. 430-02700) – north bank	\$500.00
7.	Seeding of a 1.0 m wide permanent grass buffer strip along the east and north sides of the drain from Station 0+000 to Station 1+298 (approximately 1,060 m ²).	\$2,200.00
8.	Supply and install temporary 0.60 m high x 1 m wide rock check dam across bottom of drain channel including 0.30 deep x 1 m wide x 6 m long sediment trap on upstream side starting at Station 0+075 (approx. 5 tonnes of riprap).	\$500.00
	SUB-TOTAL	\$39,250.00
9.	Allowances under Sections 29 & 30	\$5,000.00
10.	Survey, report, assessment and final inspection (cost portion)	\$23,400.00
11.	Expenses and incidentals (cost portion)	\$2,050.00
12.	Contract admin and periodic inspection (cost portion)	\$2,200.00
13.	Engineering fee for previous 2007 report (70% portion – Woodland Trails Development)	\$10,500.00
14.	ERCA permit and review fee	\$800.00
15.	Additional engineering costs to amend report to remove Bridge No. 6, drain re-alignment and associated works related thereof. Includes additional expenses and incidentals to recirculate report and attend subsequent council meetings.	\$5,800.00
	TOTAL ESTIMATE DUFOUR DRAIN excluding Section 26 costs	\$89,000.00

Item	Description	Amount
	Section 26 Costs	
16.	Bridge No. 5 (Roll No. 430-02750) – Station 0+873 – Remove and dispose of existing 124 m long, 1200 mm diameter CSP culvert and concrete headwall materials off-site. Supply and installation of a new 132 m long, 1780 mm x 1360 mm polymer laminated, corrugated steel pipe arch (CSPA) pipe with 125 mm x 25 mm corrugations and 2.8 mm thickness, including two (2)-1780 mm x 1360 mm polymer laminated CSPA 45° bends, three (3) - 1780 mm x 1360 mm x 600 mm polymer laminated riser tee catch basins complete with cast iron grates. The work shall include the road drain connection including supply and placement of 6 m length of 375 mm diameter polyvinyl pipe (PVC) and inserta tee fitting. The work shall also clear stone bedding and backfill up to pipe springline (approximately 390 tonnes), native backfill beyond driveway (approximately 375 m ³), and sloping stone end walls (approximately 30 m ²). The work shall also include removal and reinstatement of wood rail fence and restoration of existing grassed areas where disturbed. Note: Overall length of new culvert includes the length of the 45° bends and tees.	\$145,000.00
17.	Road Culvert (8 th Concession Road) - Station 0+484 - Repair east end of existing 450 mm diameter concrete road culvert pipe with new 3 m long, 450 m diameter high density polyethylene (HDPE Boss 2000 or approved equal) including stone erosion protection on west drain bank (approximately 10 m ²).	\$1,000.00
	SUB-TOTAL	\$146,000.00
18.	Survey, report, assessment and final inspection (cost portion)	\$32,800.00
19.	Expenses and incidentals (cost portion)	\$2,900.00
20.	Contract administration and periodic inspection (cost portion)	\$3,100.00
21.	Engineering fees for previous 2007 report (30% portion – Town of Amherstburg)	\$4,500.00
	TOTAL ESTIMATE DUFOUR DRAIN Section 26 costs	\$189,300.00
	TOTAL ESTIMATE DUFOUR DRAIN including Section 26 costs	\$278,300.00

Item	Description	Amount
BRANCH A		
1.	Brushing of the drain from Station 0+000A to 0+533A including the disposal by burning on-site or removal off-site with trimming and/or removal of existing trees to permit cleanout of the drain and installation of yard catch basin drains where required.	\$3,000.00
2.	Excavation of the drain from south side including trucking and hauling of excavated materials to the north side of drain and levelling within the designated disposal corridor between Station 0+000A and Station 0+173A, as follows:	
	a) Sta. 0+000A to Sta. 0+325A totalling 325 lineal metres of drain (approximately 70 m ³ of material). Work shall include excavation and levelling of excavated materials including restoration of all grassed areas disturbed by construction.	\$2,200.00
	b) Trucking of excavated materials taken from Station 0+000A to Station 0+325A (approximately 70 m ³ of material) to the north side of the drain. Work to include the supply and placement of a temporary access culvert (minimum 900 mm diameter) for the haul route drain crossing to be later removed and drain banks restored.	\$1,000.00
3.	Excavation of the drain from south side including drain widening of south bank, trucking and hauling of excavated materials to the north side of drain and levelling within the designated disposal corridor between Station 0+000A and Station 0+173A, as follows:	
	a) Station 0+325A to Station 0+533A totalling 208 lineal metres of drain (approximately 400 m ³ of material). Work shall include excavation and 0.50 m widening of south drain bank complete restoration of all grassed areas disturbed on ERCF lands.	\$2,500.00
	b) Trucking of excavated materials taken from Station 0+325A to Station 0+533A (approximately 400 m ³ of material) to the north side of the drain between Station 0+000A and 0+173A including levelling within disposal corridor.	\$5,200.00
4.	Hydraulic seeding of re-shaped south drain bank from Station 0+325A and Station 0+533A (approx. 700 m ²)	\$2,300.00
5.	Removal and disposal off-site of existing 4 m long, 750 mm diameter CSP and end wall materials at Station 0+032A.	\$400.00
6.	Supply and installation of stone erosion protection to repair surface water inlets, as follows:	

Item	Description	Amount
	a) Station 0+000A (Roll No. 430-02720) – north bank, approximately 40 m ²	\$2,400.00
	b) Station 0+090A (Roll No. 430-02720) – north bank, approximately 10 m ²	\$600.00
7.	Seeding of a 1.0 m wide permanent grass buffer strip along the north side of the drain from Station 0+000A to Station 0+173A (approximately 173 m ²)	\$700.00
8.	Supply and install 450 mm diameter HDPE yard catch basin (YCB) complete with cast iron grate, two (2) private drain connection stubs to 1 m past the property line (150 mm diameter HDPE) and 16 m long, 150 mm diameter HDPE connection from yard catch basin to Branch A drain. The work to also include stone erosion protection (approximately 5 m ²), fine grading and re-seeding disturbed areas for each as follows:	
	a) YCB1– Station 0+161A (Roll No. 430-02400/ 02500)	\$1,700.00
	b) YCB2–Station 0+185A (Roll No. 430-02200/ 02300)	\$1,700.00
	c) YCB3–Station 0+234A (Roll No. 430-02000/ 02100)	\$1,700.00
	d) YCB4–Station 0+284A (Roll No. 430-01800/ 01900)	\$1,700.00
	e) YCB5–Station 0+333A (Roll No. 430-01600/ 01700)	\$1,700.00
	f) YCB6–Station 0+405A (Roll No. 430-01200/ 01500)	\$1,700.00
	SUB-TOTAL	\$30,500.00
9.	Allowances under Sections 29 & 30	\$1,650.00
10.	Survey, report, assessment and final inspection (cost portion)	\$6,750.00
11.	Expenses and incidentals (cost portion)	\$600.00
12.	Contract administration and periodic inspection (cost portion)	\$700.00
	TOTAL ESTIMATE (BRANCH A)	\$40,200.00

Item	Description	Amount
BRANCH B		
1.	Excavation of the drain from south side of the drain including levelling of excavated materials within the designated working corridor, as follows:	
	a) <u>Sta. 0+044B to Sta. 0+101B</u> totalling approximately 57 lineal metres of drain (approximately 45 m ³ of material).	\$500.00
2.	ERCF lands crossing, as follows:	
	a) <u>Bridge No. 1B (North) – Station 0+015B-0+020B</u> – Remove and dispose of existing 5 m long, 900 mm diameter CSP culvert off-site. Supply and installation of a new 5 m long, 900 mm diameter solid corrugated high density polyethylene (HDPE) smooth wall 320 kPa pipe (Boss Polytite or approved equal), Granular 'B' bedding and backfill up to pipe springline (approximately 10 tonnes) and native backfill from springline to required grade (approximately 10 m ³) including connection to existing south end of 900 mm diameter concrete pipe.	\$3,000.00
3.	Seeding of a 1.0 m wide permanent grass buffer strip along the south side of the drain from Station 0+045B to Station 0+101B excluding areas occupied by existing woodlot (approximately 56 m ²).	\$200.00
	SUB-TOTAL	\$3,700.00
4.	Allowances under Sections 29, 30 & 31	\$1,550.00
5.	Survey, report, assessment and final inspection (cost portion)	\$1,100.00
6.	Expenses and incidentals (cost portion)	\$100.00
7.	Contract administration and periodic inspection (cost portion)	\$150.00
	TOTAL ESTIMATE - BRANCH B excluding Section 26 Costs	\$6,600.00
	Section 26 Costs	
8.	County Road No. 10 crossing, as follows:	

Item	Description	Amount
	a) Bridge No. 1B (South)- Station 0102013-0104413) – Remove and dispose of existing 900 mm diameter CSP culvert off- site. Supply and installation of a new 24 m long, 900 mm diameter solid corrugated high density polyethylene (HDPE) smooth wall 320 kPa pipe (Boss Polytite or approved equal), full Granular 'A' bedding and backfill (approximately 145 tonnes) and stone erosion protection (approximately 40 m ²) and asphalt restoration (120 mm thickness) HL4 hot mix asphalt - two 40 mm lifts and HL3 hot mix asphalt – one 40 mm lift compacted, approximately 8 tonnes).	\$15,000.00
	b) Supply and installation of one (1) new 1500 mm by 1800 mm pre-cast concrete chamber complete with concrete cap section with cast iron maintenance hole frame and cover (OPSD 401.01 Type 'B'), ladder rungs and a minimum 300 mm deep sump. Work is to include connection of all new drain pipes and grouting of all voids around pipes with non-shrink concrete grout. The grate to be equipped with fasteners to secure grate to catch basin as supplied by the manufacturer. Alternatively, an 1800 mm precast maintenance hole (OPSD 701.012) is acceptable.	\$8,500.00
	c) Supply and installation of a new 3 m long, 600 mm diameter solid corrugated high density polyethylene (HDPE) smooth wall 320 kPa pipe (Boss 2000 or approved equal) stub complete with stone erosion protection (approximately 5 m ²).	\$500.00
	SUB-TOTAL	\$24,000.00
9.	Survey, report, assessment and final inspection (cost portion)	\$5,000.00
10.	Expenses and incidentals (cost portion)	\$400.00
11.	Contract administration and periodic inspection (cost portion)	\$600.00
	TOTAL ESTIMATE - BRANCH B Section 26 Costs	\$30,000.00
	TOTAL ESTIMATE - BRANCH B including Section 26 Costs	\$36,600.00
	OVERALL TOTAL ESTIMATE (DUFOUR DRAIN AND BRANCHES 'A' & 'B')	\$355,100.00

The estimate provided in this report was prepared according to current materials and installation prices as of the date of this report. Included within the estimate above are also the costs of temporary financing (interest costs) and the non-rebated portion of the HST (1.76%) that comprise a part of the costs of the drainage works, in accordance with Sections 73(1) and 88(2) of the Drainage Act. In the event of delays from the time of filing of the report by the Engineer to the time of tendering the work, it is understood that the estimate of the cost is subject to inflation. The rate of inflation shall be calculated using the Consumer Price Index applied to the cost of construction from the date of the report to the date of tendering.

Assessment of Costs

The individual assessments are comprised of three assessment components:

- i. Benefit (*advantages relating to the betterment of lands, roads, buildings, or other structures resulting from the improvement to the drain*).
- ii. Outlet Liability (*part of cost required to provide outlet for lands and roads*).
- iii. Special Benefit (*additional work or feature that may not affect function of the drain*).

We have assessed the estimated costs against the affected lands and roads as listed in Schedule 'C-1' for the Dufour Drain, Schedule 'C-2' for Branch A and Schedule 'C-3' for Branch B, under "Special Benefit," "Benefit" and "Outlet" assessments.

Details of the Special Benefit assessment listed in Schedules 'C-1', 'C-2' and 'C-3' are provided in Schedules 'D-1', 'D-2' and 'D-3' respectively. For assessment purposes, the drainage works to be constructed on each of the above drains should be kept separate since they are separated under their own schedule of assessment.

Where special benefit assessments in accordance with Section 26 of the Drainage Act have been assessed against a public utility or road authority as non pro-ratable assessments, we recommend the Municipality keep these items separated within the tender. Under Section 69 of the Drainage Act, the public utility or road authority is at liberty to do the work with its own forces, but if it should not exercise this option within a reasonable time, the Municipality will arrange to have this work completed and the costs will be charged to the appropriate public utility.

Assessment Rationale

Dufour Drain

We have assessed the above estimated cost for the repair and improvements to the Dufour Drain against the affected lands and roads listed in Schedule 'C-1' under "Special Benefit," "Benefit" and "Outlet" assessments.

The estimated costs for the Dufour Drain improvements, excluding the special benefit assessments, have been assessed 25% as a Benefit assessment and 75% as an Outlet assessment against all upstream lands and roads within the drainage area.

Dufour Drain (Special Benefit assessments)

As directed by the decision of the Agriculture, Food and Rural Affairs Appeal Tribunal, the special benefit assessments, related specifically to the costs of Bridge No. 3 and Bridge No. 5, shall not be levied as special benefit assessments against the

owners of Roll No. 430-05050 and Roll No. 430-02750 respectively. Rather these special benefit amounts for each bridge respectively shall be assessed as an outlet liability assessment pro rata to all the upstream non-agricultural lands, excluding roads and the Arts property being Roll No. 430-02750, based on the engineer's outlet liability assessments for the Main Drain, as indicated in the report. These amounts are shown in the following revised Schedule of Assessment 'C-1' and were removed from the Details of Special Benefit as per the revised Schedule 'D-1' enclosed herein.

We have recommended Special Benefit assessments as outlined below:

1. *As ordered by the Agriculture, Food and Rural Affairs Appeal Tribunal*, the cost for replacement of Bridge No. 3 including engineering cost apportionment has been assessed 25% (\$3,750) against the upstream non-agricultural lands, excluding roads and property Roll No. 430-02750, on a pro rata basis using the outlet liability assessments determined for the Main Drain as indicated in the report and remaining 75% (\$11,250) against upstream lands and roads as a pro-ratable outlet assessment since the culvert requires upsizing and premature replacement to increase capacity to a higher design standard of a 5 year storm from its current 2 year storm capacity.
2. The cost to restore existing asphalt driveway portion disturbed during replacement of Bridge No. 3 including engineering cost apportionment has been assessed 100% (\$1,875) against the upstream non-agricultural lands, excluding roads and property Roll No. 430-02750, on a pro rata basis using the outlet liability assessments determined for the Main Drain as indicated in the report.
3. The cost to replace Bridge No. 5 lawn enclosure including engineering cost apportionment has been assessed 60% against the Town of Amherstburg Road Authority and the remaining 40% against the County of Essex Road Authority as a non pro-ratable assessment. The existing Road Authorities were assessed similar cost portions when the Dufour Drain was enclosed as part of the recommendations within the 1961 report.
4. The cost to restore the two (2) existing asphalt driveway portions disturbed during replacement of Bridge No. 5 including engineering cost apportionment has been assessed 50% (\$3,125) to the Town of Amherstburg (8th Concession Road) and 50% (\$3,125) to the County of Essex (County Road No. 10) as part of the installation of the new Bridge No. 5.
5. The cost to restore farm entrance with Granular 'A' at the north end of Bridge No. 5 lawn enclosure including engineering cost apportionment has been assessed 100% against Roll No. 430-02700 as a pro-ratable assessment.

6. The engineering expenditures related to the new Bridge No. 6 including concrete chamber, new storm drain connection stub and two yard catch basins have been assessed 100% against Roll No. 430-02720 as a pro-ratable assessment. The assessment is reduced from the original report as the said drainage works are no longer part of the recommended improvements.
7. The engineering expenditures related to the drain re-alignment from Station 1+248 to Station 1+298 including infilling abandoned drain portion and hydraulic seeding new drain banks have been assessed 100% against Roll No. 430-02720 as a pro-ratable assessment. The assessment is reduced from the original report as the said drainage works are no longer part of the recommended improvements.
8. The cost to repair surface water inlets with stone erosion protection on the drain banks including engineering cost apportionment has been assessed 100% against abutting landowner as a pro-ratable assessment.
9. The cost of trucking excavated materials off-site where the drain spoils are not spread on adjacent lands including engineering cost apportionment has been assessed 100% against abutting landowner as a pro-ratable assessment.
10. The cost to repair east end of road culvert under 8th Concession Road at Station 0+484 including engineering cost apportionment has been assessed 100% against the Town of Amherstburg Road Authority as a non pro-ratable assessment.
11. The engineering expenditures related to road culvert replacement under County Road No. 10 at Station 1+151 has been assessed 100% against the County of Essex Road Authority as a non pro-ratable assessment. The assessment is reduced from the original report as the said drainage works were completed by the road authority in accordance with Section 69 of the Drainage Act.
12. The engineering cost associated with the original 2007 report has been assessed 70% against Roll No. 430-02720 and remaining 30% against the Town of Amherstburg Road Authority as a pro-ratable assessment.
13. The additional engineering costs to amend original report to remove drainage works associated with Woodland Trails subdivision has been assessed 100% against Roll No. 430-02720 as a pro-ratable assessment.

For tile main outlet repairs including stone erosion protection, where specified at the location of the said main tile outlets, the Drainage Superintendent and/or Engineer may direct the contractor to make these repairs at the expense of the landowner. Private lateral tile end repairs shall be assessed 100% against the property on which the said tile exists.

Branch A

We have assessed the above estimated cost for the repair and improvements to Branch A against the affected lands and roads listed in Schedule 'C-2' under "Special Benefit" "Benefit" and "Outlet" assessments.

The above estimated costs, excluding the special benefit assessments, have been assessed 25% as a Benefit assessment and 75% as an Outlet assessment against all upstream lands and road within the drainage area.

Branch A (Special Benefit assessments)

We have recommended Special Benefit assessments as outlined below:

1. The cost to repair surface water inlets with stone erosion protection on the drain banks has been assessed 100% against abutting landowner as a pro-ratable assessment.
2. The cost to provide stone erosion protection at the outlet of Branch A due to the infilling and re-alignment of the Dufour Drain has been assessed 100% against Roll No. 430-02720 as a pro-ratable assessment.
3. The cost of trucking and hauling excavated materials from the south side of drain to north side of drain from Station 0+173A to Station 0+533A has been assessed 100% against Roll No. 430-09900 as a pro-ratable assessment.
4. The cost of each rear yard catch basin and associated connection to Branch A serving to drain the south side of ERCF lands and two abutting residential properties has been assessed 50% to Essex Region Conservation Foundation and 25% each to each residential property (total of six rear yard catch basins) as a pro-ratable assessment.

Branch B

We have assessed the above estimated cost for the repair and improvements to Branch B against the affected lands and roads listed in Schedule 'C-3' under "Special Benefit," "Benefit" and "Outlet" assessments.

The above estimated costs, excluding the special benefit assessments have been assessed 25% as a Benefit assessment and 75% as an Outlet Liability assessment against all upstream lands and road within the drainage area.

Branch B (Special Benefit assessments)

1. The cost to replace the existing corrugated steel pipe portion of Bridge No. 1B across ERCF lands has been assessed 100% against Essex Region Conservation Foundation as a pro-ratable assessment.
2. The costs to replace the existing corrugated steel pipe portion of Bridge No. 1B across County Road No. 10 including concrete chamber and stub connection has been assessed 100% against the County of Essex Road Authority as a non pro-ratable assessment.

Utilities

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

Future Maintenance (Dufour Drain)

We recommend that future work of repair and maintenance of the Dufour Drain be carried out by the Town of Amherstburg in accordance with the specifications under this report and the costs assessed against the affected lands and roads in the same relative

proportions as shown in Schedule 'E-1'. The costs are based on an arbitrary \$10,000.00 and exclude special benefit assessment items that were previously outlined herein.

Future Maintenance (Branch A)

We recommend that future work of repair and maintenance of Branch A be carried out by the Town of Amherstburg in accordance with the specifications under this report and the costs assessed against the affected lands and roads in the same relative proportions as shown in Schedule 'E-2'. The costs are based on an arbitrary \$10,000.00 and exclude special benefit assessment items that were previously outlined herein and are to be assessed for future maintenance in similar fashion.

Future Maintenance (Branch B)

We recommend that future work of repair and maintenance of Branch B be carried out by the Town of Amherstburg in accordance with the specifications under this report and the costs assessed against the affected lands and roads in the same relative proportions as shown in Schedule 'E-3'. The costs are based on an arbitrary \$10,000.00 and exclude special benefit assessment items that were previously outlined herein and are to be assessed for future maintenance in similar fashion.

Future Maintenance of Bridges No. 3 and No. 5 (Dufour Drain)

For future replacement and/or repair of Bridge No. 3, we recommend the costs be assessed 50% to Roll No. 430-05050 and the remaining 50% assessed as an outlet assessment against the upstream lands and roads in the same relative portions as outlined in Schedule 'E-4'. The costs are based on an arbitrary \$1,000.00.

For future replacement and/or repair of Bridge No. 5, we recommend the costs be assessed 60% against the Town of Amherstburg Road Authority and remaining 40% against the County of Essex Road Authority. The costs of maintaining existing driveway access over the lawn culvert including asphalt and gravel materials to be assessed 100% against Roll No. 430-02750.

Bridges No. 1, 2 & 4 are maintained under the provisions of a separate report and by-law. The provisions for maintenance are subject to any other variations that may be made under the authority of the Drainage Act.

Drawings and Specifications

Attached to this report is "Schedule F", which are Specification setting out the details of the recommended works, and "Schedule G," which represents the following drawings that are also attached to this report:

- Page 1 of 12: Overall Plan**
- Page 2 of 12: Property Information**
- Page 3 of 12: Plan 1**
- Page 4 of 12: Plan 2**
- Page 5 of 12: Plan 3**
- Page 6 of 12: Profile 1**
- Page 7 of 12: Profile 2**
- Page 8 of 12: Profile 3**

- Page 9 of 12: Cross Sections
- Page 10 of 12: Bridge No. 3 Details
- Page 11 of 12: Bridge No. 5 Details
- Page 12 of 12: Bank Repair Details

Fisheries Issues

The Dufour Drain has been classified by the Department of Fisheries and Oceans (DFO) as a Type F drain. Type F drains have intermittent water flow and may provide habitat for bait fish. Standard practices shall be followed to minimize disruption.

At the time of construction or maintenance, the Drainage Superintendent shall notify the regulatory agencies to confirm any construction limitations including timing windows or limitations related to in-stream work etc. as required.

All disturbed areas should be stabilized immediately. Upon completion of the work, or as soon as conditions allow, all disturbed areas shall be returned to a pre-disturbed state or better.

Grants

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

Respectfully submitted,


DILLON CONSULTING LIMITED

Tim R. Oliver, P.Eng.

TRO:ges



SCHEDULE 'A-1'
DUFOUR DRAIN AND BRANCHES A & B – TOWN OF AMHERSTBURG
SUMMARY OF ENGINEERING ON-SITE MEETING
1ST MEETING
September 18, 2012 @ 6:00 p.m.
County Road No. 10 / ERCF Lands Crossing

Present:

Tim Galbraith	Landowner
Tammy Brockman	Landowner
Jerry Park	Landowner
Janine Willett	Landowner
Robyn Nease	Landowner
Ian & Lisa Holden	Landowner
Gilbert & Anita Beaulieu	Landowner
Chris & Linda Bondy	Landowner
Joe Brosseau	Landowner
Scott Warnock	Landowner
Matthew Allison	Landowner
Peter Koepko	Landowner
Steve Skov	Landowner
Katherine Roth & Maurice O'Callaghan (1635726 Ontario Limited)	Landowner
Jeff Meloche	Landowner
Ken & Marie Allen	Landowner
Paul & Michelle Halmo	Landowner
Nelson F. Drouillard	Landowner
Nicole Colombe	Landowner
Dante & Bev Lowes	Landowner
Marisa Del Rizzo	Landowner
Via Farina	Landowner
Leo Borovic	Landowner
Bev Lowes	Landowner
Gary O'Neil	Landowner
Karen Renaud	Landowner
Clarence & Yollande McIntyre	Landowner
Harry & Mary Arts	Landowner
Lor Stewart	Landowner
Michael Mastronardi & Susan Silver	Landowner
Chris Mannina	Landowner
Paula Charlebois	Landowner
Ken Holden	Landowner
Jason Bullard	Landowner
Michael Durocher	Landowner
Tim Oliver, P. Eng.	Dillon Consulting Limited
Eric Chamberlain	Town of Amherstburg

Eric Chamberlain: Made introductions and explained the purpose of this meeting was to update landowners on the status of the drainage work for the Dufour Drain. The Town appointed the engineer in 2006 to prepare a report in accordance with Section 78 of the Drainage Act to address some improvements to the Dufour Drain to accommodate the proposed Woodland Trails Subdivision. The project was temporarily on hold in 2007 at the request of the developer, however is now moving forward as the real estate market picks up. The engineer from Dillon Consulting will explain further.

Tim Oliver: These improvements to the Dufour Drain include a re-alignment along the north side of County Road No. 10 in the vicinity of where the former railway lands cross the county road. The purpose being to move the drain off the future residential lands known as the Woodland Trails development and onto the former railway lands, now owned by the conservation authority. The new development also requires a new entrance from County Road No. 10 to be provided for as part of the drainage work on the Dufour Drain. In addition to this work, the drain report will provide new assessment schedules to address land use changes.

The current governing by-law for the Dufour Drain dates back to 1971 and no longer reflects the current watershed area. For the Town to undertake future drain maintenance, the new assessment schedules will apply. The costs associated with the drain re-alignment and entrance will be borne by the owner of the Woodland Trails subdivision. The costs for the new drainage report are being covered by the Town and Woodland Trails at no cost to any other landowner or road authority.

Eric Chamberlain: Explained that arrangements will be made to clean the Dufour Drain under maintenance next year. The maintenance will include removal of brush and sediment from the drain. Several landowners had complained of railway ties blocking the drain alongside the former railway. These ties will be removed from the drain and left for the conservation authority to pick up.

Tim Oliver: The Dufour Drain was examined and confirmed to hydraulically meet the 2 year storm design standard applied to municipal drains serving the agricultural community.

In response, several landowners expressed their concerns over past flooding problems that were experienced specifically to the existing properties abutting the former railway lands and backing on to the drain. The addition of more homes in the area will potentially exacerbate the situation. The general consensus was the drain should be improved to a higher standard so that future flooding does not occur.

Harry & Mary Arts: Our farm land has flooded to a greater severity than the surrounding residential areas. They provided photos that depicted the level of flood waters from a recent storm.

Tim Oliver: Given the large percentage of the watershed being used for residential purposes, to increase the capacity of the Dufour Drain has merit and is a common practice though may be limited to the sufficiency of outlet downstream. Improving the Dufour Drain's upper portion for the existing residential area will also require improvements to the downstream portion along the 8th Concession Road to the outlet into the Sucker Creek Drain. The additional improvements may also include the required upsizing of access culverts over the drain to ensure a sufficient outlet. The costs associated thereof would be assessed to the benefiting landowners.

The decision was to proceed with further examining the drain for improving its capacity. The engineer will report back on the findings and another site meeting will be held prior to finalizing the report.

Summary of Meeting prepared by Tim Oliver, Dillon Consulting Limited

SCHEDULE 'A-2'
DUFOUR DRAIN AND BRANCHES A & B – TOWN OF AMHERSTBURG
SUMMARY OF ENGINEERING ON-SITE MEETING
2nd MEETING
March 14, 2013 @ 6:00 p.m.
United Communities Credit Union Complex

Present:

Gilbert & Anita Beaulieu	Landowner
Chris & Linda Bondy	Landowner
Mariola & Marek Piotrowsk	Landowner
Dante & Marisa Delrizzo	Landowner
James & Michelle Poberenzy	Landowner
Phil Jones	Landowner
Nelson Rocheleau	Landowner
Jason Bullard	Landowner
Chris Mannina	Landowner
Marie Allen	Landowner
Harry Arts	Landowner
Marcello Petrcy	Landowner
Al & Lori Steward	Landowner
Katherine Roth & Maurice O'Callaghan (1635726 Ontario Limited)	Landowner
Tim Oliver, P. Eng.	Dillon Consulting Limited
Ian Wilson	Dillon Consulting Limited
Eric Chamberlain	Town of Amherstburg

Michelle Poberenzy: Wanted to confirm that future maintenance schedule for culvert replacements would be included in report. She noted the higher costs of doing a single culvert report and recognizes the savings of including future maintenance of all culverts under one report.

Tim Oliver: To reduce future costs to land owners the engineer now includes a culvert future maintenance schedule for all his drainage works.

Jason Bullard: Noted has serious pond in rear yard, because conveyance is limited by old rail road tracks/Essex Region Conservation Foundation (ERCF) Lands. Thinks new catch basin and lateral pipe should be used to convey flow from land into the Dufour Drain.

Tim Oliver: Agreed catch basins, in his opinion, would be the most economical solution to improve drainage in the rear of the properties. Mentioned in general we would recommend a catch basin on every other property line and it would be shared by two properties. Costs would likely be assessed between two properties and the ERCF Lands.

Marie Allen: Asked who is responsible for sediment build-up in drain. She also noted that her property is currently serviced by a rear yard catch basin.

Tim Oliver: The Dufour Drain can be extended further upstream by land owners if they petition for drains works.

Eric Chamberlain: Drainage works and maintenance works undertaken by most municipalities is generally re-active when drainage problems arise.

Harry Arts: Mentioned has had drainage problems since the construction of the Gardiner Subdivision.

Phil Jones: Ditch needs to be cleaned out.

Tim Oliver: The report is being undertaken now to address flooding concerns raised by some of the property owners at our last meeting. The area of concern is particularly more evident for the properties backing onto the former railway lands. The Municipality cannot undertake that work legally without obtaining a new engineer's report. Additionally the change in the watershed boundaries was a factor driving for a new report.

Nelson Rocheleau: How are costs charged?

Tim Oliver: Costs are charged by means of assessment against the property for the drainage works. The bill for the work is handled by the Municipality, and once the construction is completed the landowner will get a bill.

Eric Chamberlain: If the cost is less than \$500, the cost will be charged on a single bill with taxes. When greater than \$500, a 5 year debenture could be requested.

Lori Stewart: Mentioned that at last meeting costs were noted to be less to landowners than the figures mentioned at this meeting.

Tim Oliver: The increased costs are because of additional work on the drain including new catch basins for lands adjacent to ERCF lands, additional drain cleanout and upgrades to several existing culverts.

General Comments: Noted by some the drain is often dry, and by other it is sometimes full. What level of service is the Dufour Drain designed to? How can a developed subdivision have the same flows as a farm? I am taxed for my water bill and my sewer bill; am I being taxed twice for Dufour drain works?

Tim Oliver: Dufour Drain, like most drains in Ontario, is designed for a 1:2 storm. This means under large rainfalls (e.g. 5 inches of rain), lands serviced by the Dufour Drain will still experience flooding though to a lesser degree. In a subdivision, compared to farm land, the rate of the flow is the same but there is more volume. Under the Drainage Act a subdivision will pay more than Ag Lands (outlet liability).

Eric Chamberlain: Stormwater Management ponds are used to store rainwater and then release at a low rate into drains. The costs for the drainage works are separate from your drinking water, and sanitary sewer charges.

Mary Allen: Can a Conservation Authority (CA), in this case ERCA, be charged for costs under the Drainage Act? What if ERCA does want to pay or has the assessment schedule changed? Who pays the additional cost?

Tim Oliver: Yes any CA, as a landowner, can be assessed costs for drainage works under the Act. Any landowner assessed may appeal; normally first to the Council and if not satisfied with Council's decision, then to the Drainage Tribunal.

Eric Chamberlain: If a small change in assessment occurs, often the roads will absorb cost. In this case ERCA will likely pay for their assessment.

Michelle Poberezny: What is the estimated timeline for the work?

Tim Oliver: Expect to complete report in time for construction to occur in the fall pending all approvals and no appeals leading to further delay.

Nelson Rocheleau: Will there be construction work on the lawn culvert running along Middle Side Road and 8th Concession? How do you know I am in the drain, my property is currently on the edge of the watershed?

Tim Oliver: Based on the best information available, the survey of the storm sewers and road, we determined the new watershed boundaries. If additional information is available appropriate changes will be made to the report; check what information you have personally and if the town has any records available.

General Comments: It was noted that property 8560 Middle Side Road was tiled into the Dufour Drain and is not currently included in the watershed map. 8560 Middle Side Road shares a tile drain with 8014 Gardiner Crescent and 8018 Gardiner Crescent.

Summary of Meeting prepared by Ian Wilson, Dillon Consulting Limited

"SCHEDULE B-1"
SCHEDULE OF ALLOWANCES
DUFOUR DRAIN
TOWN OF AMHERSTBURG (COUNTY OF ESSEX)

Roll No.	Con.	Description	Owner	Section 30 Damages	Section 29 Land	Total Allowances
430-02700	8	Pt Lot 7	Harry J. & Mary J. Arts	\$850.00	\$750.00	\$1,600.00
430-08200	8	S Pt Lot, RP M246 Lot 1 & Pt Lot 2	Hampton Holdings of Windsor Limited	\$950.00	\$850.00	\$1,800.00
430-09700	8	Pt Lot 7	Christopher & Elaine Mannina	\$500.00	\$450.00	\$950.00
430-02720	8	Pt Lot 7	2439478 Ontario Inc.	\$350.00	\$300.00	\$650.00
TOTAL ALLOWANCES				\$2,650.00	\$2,350.00	\$5,000.00

"SCHEDULE B-2"
SCHEDULE OF ALLOWANCES
BRANCH A
TOWN OF AMHERSTBURG (COUNTY OF ESSEX)

Roll No.	Con.	Description	Owner	Section 30 Damages	Section 29 Land	Total Allowances
430-02720	8	Pt Lot 7	2439478 Ontario Inc.	\$600.00	\$500.00	\$1,100.00
430-00010	8	Pt Lot 7	Essex Region Conservation Foundation	\$0.00	\$550.00	\$550.00
TOTAL ALLOWANCES				\$600.00	\$1,050.00	\$1,650.00

"SCHEDULE B-3"
SCHEDULE OF ALLOWANCES
BRANCH B
TOWN OF AMHERSTBURG (COUNTY OF ESSEX)

Roll No.	Con	Description	Owner	Section 31 Drain	Section 30 Damages	Section 29 Land	Total Allowances
380-06100	8	Pt Lot 6	Joseph Miceli	\$500.00	\$200.00	\$850.00	\$1,550.00
TOTAL ALLOWANCES				\$500.00	\$200.00	\$850.00	\$1,550.00

"SCHEDULE C-1"
SCHEDULE OF ASSESSMENT
 REVISED AS PER AGRICULTURE, FOOD & RURAL AFFAIRS APPEAL TRIBUNAL ORDER DATED OCTOBER 4, 2016
DUFOUR DRAIN
TOWN OF AMHERSTBURG (COUNTY OF ESSEX)

MUNICIPAL LANDS:

Description	Area Affected (Acres) (Ha.)		Owner	Special Benefit	Benefit	Outlet	Total Assessment
Middle Sideroad (County Road 10)	5.00	2.02	County of Essex	\$0.00	\$658.00	\$2,673.00	\$3,331.00
8th Concession Road	3.60	1.46	Town of Amherstburg	\$0.00	\$1,135.00	\$4,627.00	\$5,762.00
Gardiner Crescent	1.42	0.57	Town of Amherstburg	\$0.00	\$59.00	\$2,672.00	\$2,731.00
McGregor Court	0.37	0.15	Town of Amherstburg	\$0.00	\$16.00	\$702.00	\$718.00
Total on Municipal Lands.....				\$0.00	\$1,868.00	\$10,674.00	\$12,542.00

PRIVATELY-OWNED - NON-AGRICULTURAL LANDS:

Roll No.	Con.	Description	Area Affected (Acres) (Ha.)		Owner	Special Benefit	Benefit	Outlet	Total Assessment
380-05400	7	Pt Lot 6	4.20	1.70	Alan A. Bicknell & Tammy L. Kennette	\$0.00	\$35.00	\$646.00	\$681.00
380-05600	8	Pt Lot 6	0.48	0.19	Ralph Readings	\$0.00	\$12.00	\$205.00	\$217.00
380-05700	8	Pt Lot 6	0.57	0.23	Dante & Marisa Delrizzo	\$0.00	\$14.00	\$235.00	\$249.00
380-05800	8	Pt Lot 6	0.53	0.21	Gerald & Beverly Lowes	\$0.00	\$13.00	\$235.00	\$248.00
380-05900	8	Pt Lot 6	0.45	0.18	Leo & Deanna L. Borovic	\$0.00	\$11.00	\$205.00	\$216.00
380-05905	8	Pt Lot 6	0.40	0.16	Gregory G. Girard	\$0.00	\$10.00	\$182.00	\$192.00
380-06000	8	Pt Lot 6	0.64	0.26	Geoffery G. Girard	\$0.00	\$15.00	\$266.00	\$281.00
380-06200	8	Pt Lot 6	0.30	0.12	Canard Developments Inc.	\$0.00	\$7.00	\$163.00	\$170.00
380-06228	8	Pt Lot 6	0.34	0.14	Karen L. Chapman & Leonard W. Sheehan	\$0.00	\$9.00	\$190.00	\$199.00
380-06229	8	Pt Lot 6	0.45	0.18	John T. & Sandra M. Amato	\$0.00	\$11.00	\$244.00	\$255.00
380-06230	8	Pt Lot 6	0.35	0.14	Henry & Deborah A. Schwager	\$0.00	\$9.00	\$190.00	\$199.00
380-06231	8	Pt Lot 6	0.34	0.14	Martin E. A. & Colleen B. Nelson	\$0.00	\$9.00	\$190.00	\$199.00
380-06232	8	Pt Lot 6	0.34	0.14	Robert E. Arce & Mary A. E. Papia	\$0.00	\$9.00	\$190.00	\$199.00
380-06233	8	Pt Lot 6	0.32	0.13	Bradley M. Mai	\$0.00	\$8.00	\$176.00	\$184.00
380-06234	8	Pt Lot 6	0.32	0.13	Travis W.R. and Tina B. Middleton	\$0.00	\$8.00	\$176.00	\$184.00
380-06235	8	Pt Lot 6	0.32	0.13	1403412 Ontario Limited	\$0.00	\$8.00	\$176.00	\$184.00
380-06236	8	Pt Lot 6	0.32	0.13	1403412 Ontario Limited	\$0.00	\$8.00	\$176.00	\$184.00
380-06237	8	Pt Lot 6	0.32	0.13	Scott R. Warnock & Pierrette A. Wray	\$0.00	\$8.00	\$176.00	\$184.00
380-06238	8	Pt Lot 6	0.32	0.13	Derek R. & Jennifer M. Aiken	\$0.00	\$8.00	\$176.00	\$184.00
380-06239	8	Pt Lot 6	0.32	0.13	David Cvetanovski	\$0.00	\$8.00	\$176.00	\$184.00
380-06240	8	Pt Lot 6	0.32	0.13	Community Living Essex County	\$0.00	\$8.00	\$176.00	\$184.00
380-06241	8	Pt Lot 6	0.32	0.13	Beverly A. Santin & Nelson J. Rocheleau	\$0.00	\$8.00	\$176.00	\$184.00
380-00020	8	Pt Lot 6	1.78	0.72	Essex Region Conservation Foundation	\$0.00	\$22.00	\$489.00	\$511.00

Roll No.	Con.	Description	Area Affected		Owner	Special Benefit	Benefit	Outlet	Total Assessment
			(Acres)	(Ha.)					
430-00010	8	Pt Lot 7	5.40	2.19	Essex Region Conservation Foundation	\$0.00	\$68.00	\$1,486.00	\$1,554.00
430-00810	8	RP M285 Lot 18	0.22	0.09	Adam J. Lucier	\$0.00	\$6.00	\$122.00	\$128.00
430-00812	8	RP M285 Lot 17	0.27	0.11	Wallace N. & Rosemary K. Charett	\$0.00	\$7.00	\$149.00	\$156.00
430-00814	8	RP M285 Lot 16	0.24	0.10	Darryl D. Drouillard & Shae L. Jubenville	\$0.00	\$6.00	\$135.00	\$141.00
430-00816	8	RP M285 Lot 15	0.40	0.16	Igor Varga & Shirley Couch	\$0.00	\$10.00	\$217.00	\$227.00
430-00818	8	RP M285 Lot 14	0.29	0.12	Kevin & Penny Veldhuis	\$0.00	\$7.00	\$163.00	\$170.00
430-00802	8	RP M285 Lot 22	0.25	0.10	Matthew B. & Heather E. Allison	\$0.00	\$6.00	\$135.00	\$141.00
430-00820	8	RP M 285 Lot 13	0.20	0.08	Jody A. & Melissa D. Fleming	\$0.00	\$5.00	\$109.00	\$114.00
430-00821	8	RP M285 Lot 12,13 & 14	0.19	0.08	Nistor & Livia Sasca	\$0.00	\$5.00	\$109.00	\$114.00
430-00822	8	RP M285 Lot 12 & 14	0.19	0.08	Richard H. & Patricia J. Prieur	\$0.00	\$5.00	\$109.00	\$114.00
430-00826	8	RP M285 Lot 11	0.22	0.09	Cuc Kim Truong	\$0.00	\$6.00	\$122.00	\$128.00
430-00828	8	RP M285 Lot 10	0.18	0.07	Robert J. & Irene A. McFarlane	\$0.00	\$4.00	\$95.00	\$99.00
430-00830	8	RP M285 Lot 9	0.18	0.07	Kenneth & Marie Allen	\$0.00	\$4.00	\$95.00	\$99.00
430-00832	8	RP M285 Lot 8	0.18	0.07	John F. & Janine J. Willett	\$0.00	\$4.00	\$95.00	\$99.00
430-00834	8	RP M285 Lot 7	0.18	0.07	Jerome & Victoria Pardo	\$0.00	\$4.00	\$95.00	\$99.00
430-00836	8	RP M285 Lot 6	0.18	0.07	Thomas J. & Paula C. Charlebois	\$0.00	\$4.00	\$95.00	\$99.00
430-00838	8	RP M285 Lot 5	0.18	0.07	Ethel I. Pillon	\$0.00	\$4.00	\$95.00	\$99.00
430-00804	8	RP M285 Lot 21	0.20	0.08	Cherie H. Lajoy & Richard J. & Deborah A. Drouillard	\$0.00	\$5.00	\$109.00	\$114.00
430-00840	8	RP M285 Lot 4	0.25	0.10	Marek & Mariola Piotrowski	\$0.00	\$6.00	\$135.00	\$141.00
430-00842	8	RP M285 Lot 3	0.52	0.21	Thomas J. & Karen A. Gagnon	\$0.00	\$13.00	\$280.00	\$293.00
430-00844	8	RP M285 Lot 2	0.42	0.17	Allen C. & Lori A. Stewart	\$0.00	\$11.00	\$231.00	\$242.00
430-00846	8	RP M285 Lot 1	0.27	0.11	Peter Koepke	\$0.00	\$7.00	\$149.00	\$156.00
430-00806	8	RP M285 Lot 20	0.20	0.08	Mark A. Pszczonak & Robyn J. Nease	\$0.00	\$5.00	\$109.00	\$114.00
430-00808	8	RP M285 Lot 19	0.20	0.08	Matthew F. & Carly R. Charlebois	\$0.00	\$5.00	\$109.00	\$114.00
430-01100	8	Pt Lot 7 RP 12R22195 Pt. 1	0.35	0.14	Barbara Bellemore & Betty Jane Belleau	\$0.00	\$9.00	\$190.00	\$199.00
430-01200	8	Pt Lot 7	1.09	0.44	Jason J. & Michelle T. Bullard	\$0.00	\$18.00	\$383.00	\$401.00
430-01500	8	Pt Lot 7	1.42	0.57	Cheryl L. Major & Linda A. Bondy	\$0.00	\$19.00	\$412.00	\$431.00
430-01600	8	Pt Lot 7	0.61	0.25	Thomas J. & Karen Renaud	\$0.00	\$14.00	\$311.00	\$325.00
430-01700	8	Pt Lot 7	0.57	0.23	Nelson F. & Marie Anne B. Drouillard	\$0.00	\$14.00	\$297.00	\$311.00
430-01800	8	Pt Lot 7	0.52	0.21	Clarence & Yollande	\$0.00	\$13.00	\$280.00	\$293.00
430-01900	8	Pt Lot 7	0.48	0.19	Roland P. & Denise M. Jones	\$0.00	\$12.00	\$258.00	\$270.00
430-02000	8	Pt Lot 7	0.46	0.19	Gilbert H. Beaulieu	\$0.00	\$12.00	\$258.00	\$270.00
430-02100	8	Pt Lot 7	0.39	0.16	Daniel J. & Margaret J. Leithhead	\$0.00	\$10.00	\$217.00	\$227.00
430-02200	8	Pt Lot 7	0.36	0.15	Wanda J. Gagnon	\$0.00	\$9.00	\$203.00	\$212.00
430-02300	8	Pt Lot 7	0.38	0.15	Stephen P. & Julie A. Skov	\$0.00	\$9.00	\$203.00	\$212.00
430-02400	8	Pt Lot 7	0.33	0.13	Hydro One Networks Inc.	\$0.00	\$8.00	\$176.00	\$184.00
430-02500	8	Pt Lot 7	0.40	0.16	Kenneth H. Holden	\$0.00	\$10.00	\$217.00	\$227.00

Roll No.	Con.	Description	Area Affected (Acres) (Ha.)		Owner	Special Benefit	Benefit	Outlet	Total Assessment
430-02750	8	Pt Lot 7	1.15	0.47	Harry J. & Maria J. Arts	\$0.00	\$18.00	\$184.00	\$202.00
430-05000	8	Pt Lot 7	0.55	0.22	James P. & Michelle C. Poberezny	\$62.00	\$53.00	\$220.00	\$335.00
430-05050	8	Pt Lot 7	0.46	0.19	Terry F. & Jeannine M. Miller	\$163.00	\$40.00	\$181.00	\$384.00
Total on Privately-Owned - Non-Agricultural Lands.....						\$225.00	\$733.00	\$13,752.00	\$14,710.00

PRIVATELY-OWNED - AGRICULTURAL LANDS

Roll No.	Con.	Description	Area Affected (Acres) (Ha.)		Owner	Special Benefit	Benefit	Outlet	Total Assessment
380-05300	8	Pt Lot 6	2.85	1.15	Paul H. Ouellette	\$0.00	\$24.00	\$255.00	\$279.00
380-06100	8	Pt Lot 6	1.98	0.80	Joseph Miceli	\$0.00	\$17.00	\$212.00	\$229.00
430-02700	8	Pt Lot 7	35.36	14.31	Harry J. & Maria J. Arts	\$2,963.00	\$1,006.00	\$3,291.00	\$7,260.00
430-02800	7	Pt Lot 7	7.00	2.83	Viscount Mobile Homes Ltd.	\$0.00	\$59.00	\$640.00	\$699.00
430-08200	8	S Pt Lot, RP M246 Lot 1&Pt Lot 2	20.00	8.09	Hampton Holdings of Windsor Limited	\$2,500.00	\$413.00	\$656.00	\$3,569.00
430-09700	8	Pt Lot 7	27.00	10.93	Christopher & Elaine Mannina	\$937.00	\$532.00	\$981.00	\$2,450.00
430-02720	8	Pt Lot 7	22.93	9.28	2439478 Ontario Inc.	\$33,450.00	\$465.00	\$2,367.00	\$36,282.00
430-09900	8	Pt Lot 7	40.55	16.41	2439478 Ontario Inc.	\$0.00	\$596.00	\$4,184.00	\$4,780.00
Total on Privately-Owned - Agricultural Lands.....						\$39,850.00	\$3,112.00	\$12,586.00	\$55,548.00

SECTION 26 INCREASED COSTS - NON PRO-RATABLE

Roll No.	Con.	Description	Owner	Special Benefit	Benefit	Outlet	Total Assessment
		Middle Sideroad (County Road 10)	County of Essex	\$77,875.00	\$0.00	\$0.00	\$77,875.00
		8th Concession Road	Town of Amherstburg	\$117,625.00	\$0.00	\$0.00	\$117,625.00
Total Section 26 Increased Costs (Non Pro-ratable).....				\$195,500.00	\$0.00	\$0.00	\$195,500.00
TOTAL ASSESSMENT - DUFOUR DRAIN.....				\$235,575.00	\$5,713.00	\$37,012.00	\$278,300.00

	(Acres)	(Ha.)
Total Area:	202.64	81.98

"SCHEDULE C-2"
SCHEDULE OF ASSESSMENT
BRANCH A
TOWN OF AMHERSTBURG (COUNTY OF ESSEX)

ONTARIO LANDS:

Description	Area Affected (Acres)	(Ha.)	Owner	Special Benefit	Benefit	Outlet	Total Assessment
Gardiner Crescent	1.20	0.49	Town of Amherstburg	\$0.00	\$316.00	\$1,995.00	\$2,311.00
McGregor Court	0.35	0.14	Town of Amherstburg	\$0.00	\$89.00	\$570.00	\$659.00
Total on Municipal Lands.....				\$0.00	\$405.00	\$2,565.00	\$2,970.00

PRIVATELY-OWNED - NON-AGRICULTURAL LANDS:

Roll No.	Con.	Description	Area Affected (Acres)	(Ha.)	Owner	Special Benefit	Benefit	Outlet	Total Assessment
430-00010	8	Pt Lot 7	5.40	2.19	Essex Region Conservation Foundation	\$6,378.00	\$2,761.00	\$2,676.00	\$11,815.00
430-00802	8	RP M285 Lot 22	0.25	0.10	Gerald G. Gardiner	\$0.00	\$39.00	\$244.00	\$283.00
430-00804	8	RP M285 Lot 21	0.22	0.09	Cherie H. Lajoy & Richard J. & Deborah A. Drouillard	\$0.00	\$35.00	\$220.00	\$255.00
430-00806	8	RP M285 Lot 20	0.20	0.08	M. Pszczonak & R. Nease	\$0.00	\$31.00	\$195.00	\$226.00
430-00808	8	RP M285 Lot 19	0.20	0.08	Matthew F. & Carly R. Charlebois	\$0.00	\$31.00	\$195.00	\$226.00
430-00810	8	RP M285 Lot 18	0.22	0.09	Adam J. Lucier	\$0.00	\$35.00	\$220.00	\$255.00
430-00812	8	RP M285 Lot 17	0.27	0.11	Wallace N. & Rosemary K. Charette	\$0.00	\$43.00	\$269.00	\$312.00
430-00814	8	RP M285 Lot 16	0.24	0.10	Darryl D. Drouillard & Shae L. Jubenville	\$0.00	\$39.00	\$244.00	\$283.00
430-00816	8	RP M285 Lot 15	0.40	0.16	Igor Varga & Shirley Couch	\$0.00	\$62.00	\$391.00	\$453.00
430-00818	8	RP M285 Lot 14	0.29	0.12	Kevin & Penny Veldhuis	\$0.00	\$46.00	\$293.00	\$339.00
430-00820	8	RP M 285 Lot 13 & 14	0.19	0.08	Jody A. & Melissa J. Fleming	\$0.00	\$31.00	\$195.00	\$226.00
430-00821	8	RP M285 Lot 12,13 & 14	0.20	0.08	Nistor & Livia Sasca	\$0.00	\$31.00	\$195.00	\$226.00
430-00822	8	RP M285 Lot 12 & 14	0.19	0.08	Richard H. & Patricia J. Prieur	\$0.00	\$31.00	\$195.00	\$226.00
430-00826	8	RP M285 Lot 11	0.22	0.09	Cuc Kim Truong	\$0.00	\$35.00	\$220.00	\$255.00
430-00828	8	RP M285 Lot 10	0.18	0.07	Robert J. & Irene A. McFarlane	\$0.00	\$27.00	\$171.00	\$198.00
430-00830	8	RP M285 Lot 9	0.18	0.07	Kenneth & Marie Allen	\$0.00	\$27.00	\$171.00	\$198.00
430-00832	8	RP M285 Lot 8	0.18	0.07	John F. & Janine J. Willett	\$0.00	\$27.00	\$171.00	\$198.00
430-00834	8	RP M285 Lot 7	0.18	0.07	Jerome & Victoria Pardo	\$0.00	\$27.00	\$171.00	\$198.00
430-00836	8	RP M285 Lot 6	0.18	0.07	Thomas J. & Pula C. Charlebois	\$0.00	\$27.00	\$171.00	\$198.00
430-00838	8	RP M285 Lot 5	0.18	0.07	Ethel I. Pilon	\$0.00	\$27.00	\$171.00	\$198.00
430-00840	8	RP M285 Lot 4	0.28	0.11	Marek & Mariola Piotrowski	\$0.00	\$43.00	\$269.00	\$312.00
430-00842	8	RP M285 Lot 3	0.25	0.10	Thomas J. & Karen A. Gagnon	\$0.00	\$39.00	\$244.00	\$283.00
430-00844	8	RP M285 Lot 2	0.24	0.10	Allen c. & Lori A. Stewart	\$0.00	\$39.00	\$244.00	\$283.00
430-00846	8	RP M285 Lot 1	0.27	0.11	Peter Koepke	\$0.00	\$43.00	\$269.00	\$312.00
430-01100	8	Pt. Lot 7 RP 12R22195 Pt. 1	0.35	0.14	Barbara Bellemore & Betty J. Belleau	\$0.00	\$54.00	\$342.00	\$396.00

Roll No.	Con.	Description	Area Affected		Owner	Special Benefit	Benefit	Outlet	Total Assessment
			(Acres)	(Ha.)					
430-01200	8	Pt Lot 7	1.09	0.44	Jason J. & Michelle T. Bullard	\$531.00	\$109.00	\$607.00	\$1,247.00
430-01500	8	Pt Lot 7	1.42	0.57	Cheryl L. Major & Linda A. Bondy	\$531.00	\$118.00	\$654.00	\$1,303.00
430-01600	8	Pt Lot 7	0.37	0.15	Thomas J. & Karen Renaud	\$531.00	\$58.00	\$297.00	\$886.00
430-01700	8	Pt Lot 7	0.33	0.13	Nelson F. & Marie Anne B. Drouillard	\$531.00	\$50.00	\$257.00	\$838.00
430-01800	8	Pt Lot 7	0.28	0.11	Clarence & Yollande McIntyre	\$531.00	\$43.00	\$206.00	\$780.00
430-01900	8	Pt Lot 7	0.24	0.10	Roland P. & Denise M. Jones	\$531.00	\$39.00	\$187.00	\$757.00
430-02000	8	Pt Lot 7	0.22	0.09	Gilbert H. Beaulieu	\$531.00	\$35.00	\$158.00	\$724.00
430-02100	8	Pt Lot 7	0.15	0.06	Daniel J. & Margaret J. Leithead	\$531.00	\$23.00	\$106.00	\$660.00
430-02200	8	Pt Lot 7	0.12	0.05	Wanda J. Gagnon	\$531.00	\$19.00	\$82.00	\$632.00
430-02300	8	Pt Lot 7	0.16	0.06	Stephen P. & Julie A. Skov	\$531.00	\$23.00	\$99.00	\$653.00
430-02400	8	Pt Lot 7	0.11	0.04	Hydro One Networks Inc.	\$531.00	\$15.00	\$60.00	\$606.00
430-02500	8	Pt Lot 7	0.07	0.03	Kenneth H. Holden	\$531.00	\$12.00	\$45.00	\$588.00
Total on Privately-Owned - Non-Agricultural Lands.....						\$12,750.00	\$4,174.00	\$10,904.00	\$27,828.00
PRIVATELY-OWNED - AGRICULTURAL LANDS:									
430-02720	8	Pt Lot 7	0.40	0.16	2439478 Ontario Inc.	\$3,750.00	\$23.00	\$87.00	\$3,860.00
430-09900	8	Pt Lot 7	1.40	0.57	2439478 Ontario Inc.	\$5,000.00	\$78.00	\$464.00	\$5,542.00
Total on Privately-Owned - Agricultural Lands.....						\$8,750.00	\$101.00	\$551.00	\$9,402.00
TOTAL ASSESSMENT - BRANCH A.....						\$21,500.00	\$4,680.00	\$14,020.00	\$40,200.00
			(Acres)	(Ha.)					
Total Area:			18.87	7.62					

"SCHEDULE C-3"
SCHEDULE OF ASSESSMENT
BRANCH B
TOWN OF AMHERSTBURG

MUNICIPAL LANDS:

Description	Area Affected (Acres) (Ha.)		Owner	Special Benefit	Benefit	Outlet	Total Assessment
Middle Sideroad (County Road 10)	3.00	1.21	County of Essex	\$30,000.00	\$297.00	\$726.00	\$31,023.00
Total on Municipal Lands				\$30,000.00	\$297.00	\$726.00	\$31,023.00

PRIVATELY-OWNED - NON-AGRICULTURAL LANDS:

Roll No.	Con.	Description	Area Affected (Acres) (Ha.)		Owner	Special Benefit	Benefit	Outlet	Total Assessment
380-05400	7	Pt Lot 6	4.20	1.70	Alan A. Bicknell & Tammy L. Kennette	\$0.00	\$34.00	\$205.00	\$239.00
380-05600	8	Pt Lot 6	0.24	0.10	Ralph Readings	\$0.00	\$6.00	\$36.00	\$42.00
380-05700	8	Pt Lot 6	0.28	0.11	Dante & Marisa Delrizzo	\$0.00	\$7.00	\$40.00	\$47.00
380-06200	8	Pt Lot 6	0.30	0.12	Canard Developments Inc.	\$0.00	\$22.00	\$72.00	\$94.00
380-06228	8	Pt Lot 6	0.34	0.14	Karen L. Chapman & Leonard W. Sheehan	\$0.00	\$18.00	\$51.00	\$69.00
380-06229	8	Pt Lot 6	0.45	0.18	John T. & Sandra M. Amato	\$0.00	\$21.00	\$65.00	\$86.00
380-06230	8	Pt Lot 6	0.35	0.14	Henry & Deborah A. Schwager	\$0.00	\$18.00	\$51.00	\$69.00
380-06231	8	Pt Lot 6	0.34	0.14	Martin E. A. & Colleen B. Nelson	\$0.00	\$18.00	\$51.00	\$69.00
380-06232	8	Pt Lot 6	0.34	0.14	Robert E. Arce & Mary A. E. Papi	\$0.00	\$18.00	\$51.00	\$69.00
380-06233	8	Pt Lot 6	0.32	0.13	Bradley M. Mai	\$0.00	\$18.00	\$47.00	\$65.00
380-06234	8	Pt Lot 6	0.32	0.13	Travis W.R. and Tina B. Middleton	\$0.00	\$18.00	\$47.00	\$65.00
380-06235	8	Pt Lot 6	0.32	0.13	1403412 Ontario Limited	\$0.00	\$18.00	\$47.00	\$65.00
380-06236	8	Pt Lot 6	0.32	0.13	1403412 Ontario Limited	\$0.00	\$18.00	\$47.00	\$65.00
380-06237	8	Pt Lot 6	0.32	0.13	Scott R. Warnock & Pierrette A. Wray	\$0.00	\$18.00	\$47.00	\$65.00
380-06238	8	Pt Lot 6	0.32	0.13	Derek R. & Jennifer M. Aiken	\$0.00	\$18.00	\$47.00	\$65.00
380-06239	8	Pt Lot 6	0.32	0.13	David Cvetanovski	\$0.00	\$18.00	\$47.00	\$65.00
380-06240	8	Pt Lot 6	0.32	0.13	Community Living Essex County	\$0.00	\$18.00	\$47.00	\$65.00
380-06241	8	Pt Lot 6	0.32	0.13	Beverly A. Santin & Nelson J. Rocheleau	\$0.00	\$18.00	\$47.00	\$65.00
380-0020	8	Pt Lot 6	1.78	0.72	Essex Region Conservation Foundation	\$3,750.00	\$30.00	\$130.00	\$3,910.00
Total on Privately-Owned - Non-Agricultural Lands						\$3,750.00	\$354.00	\$1,175.00	\$5,279.00

PRIVATELY-OWNED - AGRICULTURAL LANDS

380-05300	8	Pt Lot 6	2.85	1.15	Paul H. Ouellette	\$0.00	\$23.00	\$139.00	\$162.00
380-06100	8	Pt Lot 6	1.98	0.80	Joseph Miceli	\$0.00	\$40.00	\$96.00	\$136.00
Total on Privately-Owned - Non-Agricultural Lands						\$0.00	\$63.00	\$235.00	\$298.00

TOTAL ASSESSMENT - BRANCH B **\$33,750.00** **\$714.00** **\$2,136.00** **\$36,600.00**

(Acres) (Ha.)
Total Area: 19.33 7.82

"SCHEDULE D-1"
DETAILS OF SPECIAL BENEFIT
 REVISED AS PER AGRICULTURE, FOOD & RURAL AFFAIRS APPEAL TRIBUNAL ORDER DATED OCTOBER 4, 2016
DUFOUR DRAIN
TOWN OF AMHERSTBURG (COUNTY OF ESSEX)

SPECIAL BENEFIT ASSESSMENT
(GENERAL DESCRIPTION OF SPECIAL BENEFIT)

Roll No.	Owner	Item Description	Estimated Cost	Cost of Report	Special Benefit
430-08200	Hampton Holdings of Windsor Limited	Repair surface water inlet w/ stone erosion protection - Station 0+016 east bank (100%)	\$500.00	\$125.00	\$625.00
		Repair surface water inlet w/ stone erosion protection - Station 0+087 east bank (100%)	\$500.00	\$125.00	\$625.00
		Repair surface water inlet w/ stone erosion protection - Station 0+133 east bank (100%)	\$500.00	\$125.00	\$625.00
		Repair surface water inlet w/ stone erosion protection - Station 0+223 east bank (100%)	\$500.00	\$125.00	\$625.00
Sub-total - Roll No. 430-05050					\$2,500.00
430-09700	Christopher & Elaine Mannina	Trucking of excavated materials Station 0+281 to Station 0+375 (100%)	\$250.00	\$62.00	\$312.00
		Repair surface water inlet w/ stone erosion protection - Station 0+281 east bank (100%)	\$500.00	\$125.00	\$625.00
Sub-total - Roll No. 430-09700					\$937.00
430-05050	Terry F. & Jeannine M. Miller	Trucking of excavated materials Station 0+418 to Station 0+449 (100%)	\$130.00	\$33.00	\$163.00
430-05000	James P. & Michelle C. Poberezny	Trucking of excavated materials Station 0+740 to Station 0+776 (100%)	\$50.00	\$12.00	\$62.00
430-02700	Harry J. & Maria J. Arts	Trucking of excavated materials Station 0+740 to Station 0+776 (100%)	\$70.00	\$18.00	\$88.00
		Bridge No. 5 - restoration of farm entrance with Granular 'A' (100%)	\$800.00	\$200.00	\$1,000.00
		Repair surface water inlet w/ stone erosion protection - Station 0+448 east bank (100%)	\$500.00	\$125.00	\$625.00
		Repair surface water inlet w/ stone erosion protection - Station 1+014 north bank (100%)	\$500.00	\$125.00	\$625.00
		Repair surface water inlet w/ stone erosion protection - Station 1+089 north bank (100%)	\$500.00	\$125.00	\$625.00
Sub-total - Roll No. 430-02700					\$2,963.00
430-02720	2439478 Ontario Inc.	Report costs relating to the previously recommended work as follows:			
		- Re-alignment of open drain from Station 1+248 to Station 1+298 (100%)	\$0.00	\$375.00	\$375.00
		- Hydraulic seeding of re-aligned open drain from Station 1+248 to Station 1+298 (100%)	\$0.00	\$225.00	\$225.00
		- Infilling of abandoned drain portion due to re-alignment from Station 1+248 to Station 1+298 (100%)	\$0.00	\$300.00	\$300.00

Roll No.	Owner	Item Description	Estimated Cost	Cost of Report	Special Benefit
430-02720	2439478 Ontario Inc.	- Bridge No. 6 - supply and install new 58 m long 1200 mm diameter concrete pipe with sloping stone endwalls (100%)	\$0.00	\$12,500.00	\$12,500.00
		- Supply and install new 1800 mm x 2400 mm pre-cast concrete chamber (100%)	\$0.00	\$2,750.00	\$2,750.00
		- Supply and install new 6 m long 900 mm diameter HDPE stub pipe (100%)	\$0.00	\$375.00	\$375.00
		- Supply and install two (2) 450 mm diameter HDPE yard	\$0.00	\$625.00	\$625.00
		- Engineering costs for 2007 report (70%)	\$0.00	\$10,500.00	\$10,500.00
		Additional engineering costs to amend report to remove drainage works associated with Woodland Trails Subdivision (100%)	\$0.00	\$5,800.00	\$5,800.00
Sub-total - 430-02720					\$33,450.00
Total Special Benefit Assessment (Excl. Non Pro-Ratable Costs).....					\$40,075.00

SPECIAL BENEFIT ASSESSMENT
(SECTION 26 COSTS)

Roll No.	Owner	Item Description	Estimated Cost	Cost of Report	Special Benefit
8th Concession Road	Town of Amherstburg	Bridge No. 5 - Replacement of existing lawn culvert with new 124 m long, 1780 mm x 1360 mm CSPA complete with sloping stone endwalls (60%)	\$87,000.00	\$21,750.00	\$108,750.00
		Bridge No. 5 - Restoration of two existing asphalt driveways on property Roll No. 430-02750 (50%)	\$2,500.00	\$625.00	\$3,125.00
		Road Culvert Station 0+484 - repair east end of existing 450 mm concrete road culvert complete with stone erosion protection (100%)	\$1,000.00	\$250.00	\$1,250.00
		Engineering costs for 2007 report (30%)	\$0.00	\$4,500.00	\$4,500.00
Sub-total - 8th Concession Road					\$117,625.00
Middle Sideroad (County Road 10)	County of Essex	Bridge No. 5 - Replacement of existing lawn culvert with new 124 m long, 1780 mm x 1360 mm CSPA complete with sloping stone endwalls (40%)	\$58,000.00	\$14,500.00	\$72,500.00
		Bridge No. 5 - Restoration of two existing asphalt driveways on property Roll No. 430-02750 (50%)	\$2,500.00	\$625.00	\$3,125.00
		Road culvert Station 1+151 - Reports costs related to the replacement of existing road crossing with new 20 m long, 450 mm diameter HDPE culvert complete with sloping stone endwalls (100%)	\$0.00	\$2,250.00	\$2,250.00
Sub-total - County Road No 10					\$77,875.00
Total Special Benefit Assessment (Non Pro-Ratable Costs).....					\$195,500.00
OVERALL TOTAL SPECIAL BENEFIT ASSESSMENT					\$235,575.00

"SCHEDULE D-2"
DETAILS OF SPECIAL BENEFIT
BRANCH A
TOWN OF AMHERSTBURG (COUNTY OF ESSEX)

SPECIAL BENEFIT ASSESSMENT
(GENERAL DESCRIPTION OF SPECIAL BENEFIT)

Roll No.	Owner	Item Description	Estimated Cost	Cost of Report	Special Benefit
430-02720	2439478 Ontario Inc	Provide stone erosion protection - Station 0+000A north bank, 40m ² (100%)	\$2,400.00	\$600.00	\$3,000.00
		Repair surface water inlet w/ stone erosion protection - Station 0+090A north bank, 10m ² (100%)	\$600.00	\$150.00	\$750.00
		Sub-total - Roll No. 430-02720			\$3,750.00
430-09900	2439478 Ontario Inc.	Trucking of excavated materials taken from the drain excavation between Station 0+173A and Station 0+443A and hauling to the north side of the drain from Station 0+000A to Station 0+173A, approx 300 m ³ . (100%)	\$4,000.00	\$1,000.00	\$5,000.00
430-02400	Hydro One Networks Inc.	YCB1 - Station 0+161A - Supply and install 450mm HDPE yard catch basin complete with 16 m long, 150 mm diameter HDPE connection to outlet to drain. (25%)	\$425.00	\$106.00	\$531.00
430-02500	Kenneth H. Holden	YCB1 - Station 0+161A - Supply and install 450mm HDPE yard catch basin complete with 16 m long, 150 mm diameter HDPE connection to outlet to drain. (25%)	\$425.00	\$106.00	\$531.00
430-02200	Wanda J. Gagnon	YCB2 - Station 0+185A - Supply and install 450mm HDPE yard catch basin complete with 16 m long, 150 mm diameter HDPE connection to outlet to drain. (25%)	\$425.00	\$106.00	\$531.00
430-02300	Stephen P. & Julie A. Skov	YCB2 - Station 0+185A - Supply and install 450mm HDPE yard catch basin complete with 16 m long, 150 mm diameter HDPE connection to outlet to drain. (25%)	\$425.00	\$106.00	\$531.00
430-02000	Gilbert H. Beaulieu	YCB3 - Station 0+234A - Supply and install 450mm HDPE yard catch basin complete with 16 m long, 150 mm diameter HDPE connection to outlet to drain. (25%)	\$425.00	\$106.00	\$531.00
430-02100	Daniel J. & Margaret J. Leithhead	YCB3 - Station 0+234A - Supply and install 450mm HDPE yard catch basin complete with 16 m long, 150 mm diameter HDPE connection to outlet to drain. (25%)	\$425.00	\$106.00	\$531.00
430-01800	Clarence & Yollande McIntyre	YCB4 - Station 0+284A - Supply and install 450mm HDPE yard catch basin complete with 16 m long, 150 mm diameter HDPE connection to outlet to drain. (25%)	\$425.00	\$106.00	\$531.00
430-01900	Roland P. & Denise M. Jones	YCB4 - Station 0+284A - Supply and install 450mm HDPE yard catch basin complete with 16 m long, 150 mm diameter HDPE connection to outlet to drain. (25%)	\$425.00	\$106.00	\$531.00

Roll No	Owner	Item Description	Estimated Cost	Cost of Report	Special Benefit
430-01600	Thomas J. & Karen Renaud	YCB5 - Station 0+333A - Supply and install 450mm HDPE yard catch basin complete with 16 m long, 150 mm diameter HDPE connection to outlet to drain. (25%)	\$425.00	\$106.00	\$531.00
430-01700	Nelson F. & Marie Anne B. Drouillard	YCB5 - Station 0+333A - Supply and install 450mm HDPE yard catch basin complete with 16 m long, 150 mm diameter HDPE connection to outlet to drain. (25%)	\$425.00	\$106.00	\$531.00
430-01200	Jason J. & Michelle T. Bullard	YCB6 - Station 0+405A - Supply and install 450mm HDPE yard catch basin complete with 16 m long, 150 mm diameter HDPE connection to outlet to drain. (25%)	\$425.00	\$106.00	\$531.00
430-01500	Cheryl L. Major & Linda A. Bondy	YCB6 - Station 0+405A - Supply and install 450mm HDPE yard catch basin complete with 16 m long, 150 mm diameter HDPE connection to outlet to drain. (25%)	\$425.00	\$106.00	\$531.00
430-00010	Essex Region Conservation Foundation	YCB1 - Station 0+161A - Supply and install 450mm HDPE yard catch basin complete with 16 m long, 150 mm diameter HDPE connection to outlet to drain. (50%)	\$850.00	\$213.00	\$1,063.00
		YCB2 - Station 0+185A - Supply and install 450mm HDPE yard catch basin complete with 16 m long, 150 mm diameter HDPE connection to outlet to drain. (50%)	\$850.00	\$213.00	\$1,063.00
		YCB3 - Station 0+234A - Supply and install 450mm HDPE yard catch basin complete with 16 m long, 150 mm diameter HDPE connection to outlet to drain. (50%)	\$850.00	\$213.00	\$1,063.00
		YCB4 - Station 0+284A - Supply and install 450mm HDPE yard catch basin complete with 16 m long, 150 mm diameter HDPE connection to outlet to drain. (50%)	\$850.00	\$213.00	\$1,063.00
		YCB5 - Station 0+333A - Supply and install 450mm HDPE yard catch basin complete with 16 m long, 150 mm diameter HDPE connection to outlet to drain. (50%)	\$850.00	\$213.00	\$1,063.00
		YCB6 - Station 0+405A - Supply and install 450mm HDPE yard catch basin complete with 16 m long, 150 mm diameter HDPE connection to outlet to drain. (50%)	\$850.00	\$213.00	\$1,063.00
Sub-total - Roll No. 430-00010					\$6,378.00
OVERALL TOTAL SPECIAL BENEFIT ASSESSMENT - BRANCH A					\$21,500.00

"SCHEDULE D-3"
DETAILS OF SPECIAL BENEFIT
BRANCH B
TOWN OF AMHERSTBURG (COUNTY OF ESSEX)

SPECIAL BENEFIT ASSESSMENT
(GENERAL DESCRIPTION OF SPECIAL BENEFIT)

Roll No.	Owner	Item Description	Estimated Cost	Cost of Report	Special Benefit
430-00010	Essex Region Conservation Foundation	Bridge No. 1B (North)- Station 0+015B - 0+020B - replacement of existing culvert with new 5 m long, 900 mm diameter HDPE (100%)	\$3,000.00	\$750.00	\$3,750.00
Total Special Benefit Assessment (Excl. Non Pro-Ratable Costs)			\$3,000.00	\$750.00	\$3,750.00

SPECIAL BENEFIT ASSESSMENT
(SECTION 26 - NON PRO-RATABLE COSTS)

Roll No.	Owner	Item Description	Estimated Cost	Cost of Report	Special Benefit
Middle Sideroad (County Road 10)	County of Essex	Bridge No. 1B (South) - Station 0+020B - 0+044B - replacement of existing CSP culvert with new 24 m long, 900 mm diameter HDPE complete with erosion protection at inlet end and restoration of road surface. (100%)	\$15,000.00	\$3,750.00	\$18,750.00
		Supply and installation of one (1) 1500 mm x 1800 mm pre-cast concrete chamber (100%)	\$8,500.00	\$2,125.00	\$10,625.00
		Supply and installation of new 3 m long 600 mm diameter HDPE stub connection complete with stone erosion protection (100%)	\$500.00	\$125.00	\$625.00
Total Special Benefit Assessment (Non Pro-Ratable Costs)			\$24,000.00	\$6,000.00	\$30,000.00
OVERALL TOTAL SPECIAL BENEFIT ASSESSMENT - BRANCH B					\$33,750.00

"SCHEDULE E-1"
SCHEDULE OF ASSESSMENT (FUTURE MAINTENANCE)
DUFOUR DRAIN
TOWN OF AMHERSTBURG (COUNTY OF ESSEX)

MUNICIPAL LANDS:

Description	Area Affected		Owner	Special Benefit	Benefit	Outlet	Total Assessment
	(Acres)	(Ha.)					
Middle Sideroad (County Road 10)	5.00	2.02	County of Essex	\$0.00	\$283.00	\$590.00	\$873.00
8th Concession Road	3.60	1.46	Town of Amherstburg	\$0.00	\$491.00	\$1,160.00	\$1,651.00
Gardiner Crescent	1.42	0.57	Town of Amherstburg	\$0.00	\$26.00	\$455.00	\$481.00
McGregor Court	0.37	0.15	Town of Amherstburg	\$0.00	\$7.00	\$120.00	\$127.00
Total on Municipal Lands.....				\$0.00	\$807.00	\$2,325.00	\$3,132.00

PRIVATELY-OWNED - NON-AGRICULTURAL LANDS:

Roll No.	Con.	Description	Area Affected		Owner	Special Benefit	Benefit	Outlet	Total Assessment
			(Acres)	(Ha.)					
380-05400	7	Pt Lot 6	4.20	1.70	Alan A. Bicknell & Tammy L. Kennette	\$0.00	\$15.00	\$93.00	\$108.00
380-05600	8	Pt Lot 6	0.48	0.19	Ralph Readings	\$0.00	\$5.00	\$28.00	\$33.00
380-05700	8	Pt Lot 6	0.57	0.23	Dante & Marisa Delrizzo	\$0.00	\$6.00	\$32.00	\$38.00
380-05800	8	Pt Lot 6	0.53	0.21	Gerald & Beverly Lowes	\$0.00	\$6.00	\$34.00	\$40.00
380-05900	8	Pt Lot 6	0.45	0.18	Leo & Deanna L. Borovic	\$0.00	\$5.00	\$30.00	\$35.00
380-05905	8	Pt Lot 6	0.40	0.16	Gregory G. Girard	\$0.00	\$4.00	\$26.00	\$30.00
380-06000	8	Pt Lot 6	0.64	0.26	Geoffery G. Girard	\$0.00	\$6.00	\$38.00	\$44.00
380-06200	8	Pt Lot 6	0.30	0.12	Canard Developments Inc.	\$0.00	\$3.00	\$21.00	\$24.00
380-06233	8	Pt Lot 6	0.32	0.13	Bradley M. Mai	\$0.00	\$4.00	\$23.00	\$27.00
380-06234	8	Pt Lot 6	0.32	0.13	Travis W.R. and Tina B. Middleton	\$0.00	\$4.00	\$23.00	\$27.00
380-06235	8	Pt Lot 6	0.32	0.13	1403412 Ontario Limited	\$0.00	\$4.00	\$23.00	\$27.00
380-06236	8	Pt Lot 6	0.32	0.13	1403412 Ontario Limited	\$0.00	\$4.00	\$23.00	\$27.00
380-06237	8	Pt Lot 6	0.32	0.13	Scott R. Warnock & Pierrette A. Wray	\$0.00	\$4.00	\$23.00	\$27.00
380-06238	8	Pt Lot 6	0.32	0.13	Derek R. & Jennifer M. Aiken	\$0.00	\$4.00	\$23.00	\$27.00
380-06239	8	Pt Lot 6	0.32	0.13	David Cvetanovski	\$0.00	\$4.00	\$23.00	\$27.00
380-06240	8	Pt Lot 6	0.32	0.13	Community Living Essex County	\$0.00	\$4.00	\$23.00	\$27.00
380-06241	8	Pt Lot 6	0.32	0.13	Beverly A. Santin & Nelson J. Rocheleau	\$0.00	\$4.00	\$23.00	\$27.00
380-06228	8	Pt Lot 6	0.34	0.14	Karen L. Chapman & Leonard W. Sheehan	\$0.00	\$4.00	\$24.00	\$28.00
380-06229	8	Pt Lot 6	0.45	0.18	John T. & Sandra M. Amato	\$0.00	\$5.00	\$31.00	\$36.00
380-06230	8	Pt Lot 6	0.35	0.14	Henry & Deborah A. Schwager	\$0.00	\$4.00	\$24.00	\$28.00
380-06231	8	Pt Lot 6	0.34	0.14	Martin E. A. & Colleen B. Nelson	\$0.00	\$4.00	\$24.00	\$28.00
380-06232	8	Pt Lot 6	0.34	0.14	Robert E. Arce & Mary anne E. Papia	\$0.00	\$4.00	\$24.00	\$28.00
380-00020	8	Pt Lot 6	1.78	0.72	Essex Region Conservation Foundation	\$0.00	\$10.00	\$63.00	\$73.00
430-00010	8	Pt Lot 7	5.40	2.19	Essex Region Conservation Foundation	\$0.00	\$30.00	\$191.00	\$221.00
430-00810	8	RP M285 Lot 18	0.22	0.09	Adam J. Lucier	\$0.00	\$2.00	\$16.00	\$18.00
430-00812	8	RP M285 Lot 17	0.27	0.11	Wallace N. & Rosemary K Charett	\$0.00	\$3.00	\$19.00	\$22.00
430-00814	8	RP M285 Lot 16	0.24	0.10	Darryl D. Drouillard & Shae L. Jubenville	\$0.00	\$3.00	\$17.00	\$20.00

Roll No	Con	Description	Area Affected (Acres) (Ha.)		Owner	Special Benefit	Benefit	Outlet	Total Assessment
430-00816	8	RP M285 Lot 15	0.40	0.16	Igor Varga & Shirley Couch	\$0 00	\$4 00	\$28 00	\$32 00
430-00818	8	RP M285 Lot 14	0.29	0.12	Kevin & Penny Veldhuis	\$0 00	\$3 00	\$21 00	\$24 00
430-00802	8	RP M285 Lot 22	0.25	0.10	Matthew B. & Heather E Allison	\$0.00	\$3 00	\$17 00	\$20.00
430-00820	8	RP M 285 Lot 13	0.20	0.08	Jody A. & Melissa D.	\$0.00	\$2 00	\$14 00	\$16 00
430-00821	8	RP M285 Lot 12,13 & 14	0.19	0.08	Nistor & Livia Sasca	\$0.00	\$2 00	\$14 00	\$16 00
430-00822	8	RP M285Lot 12 & 14	0.19	0.08	Richard H & Patricia J. Prieur	\$0.00	\$2 00	\$14 00	\$16 00
430-00826	8	RP M285 Lot 11	0.22	0.09	Cuc Kim Truong	\$0.00	\$2.00	\$16 00	\$18.00
430-00828	8	RP M285 Lot 10	0.18	0.07	Robert J. & Irene A. McFarlane	\$0 00	\$2 00	\$12 00	\$14.00
430-00830	8	RP M285 Lot 9	0.18	0.07	Kenneth & Marie Allen	\$0 00	\$2 00	\$12.00	\$14.00
430-00832	8	RP M285 Lot 8	0.18	0.07	John F. & Janine J. Willett	\$0 00	\$2.00	\$12.00	\$14.00
430-00834	8	RP M285 Lot 7	0.18	0.07	Jerome & Victoria Pardo	\$0 00	\$2.00	\$12.00	\$14 00
430-00836	8	RP M285 Lot 6	0.18	0.07	Thomas J. & Paula C. Charlebois	\$0 00	\$2.00	\$12.00	\$14.00
430-00838	8	RP M285 Lot 5	0.18	0.07	Ethel I. Pillon	\$0 00	\$2.00	\$12.00	\$14 00
430-00804	8	RP M285 Lot 21	0.20	0.08	Cherie H. Lajoy & Richard J. & Deborah A. Drouillard	\$0.00	\$2 00	\$14 00	\$16.00
430-00840	8	RP M285 Lot 4	0.25	0.10	Marek & Mariola Piotrowski	\$0.00	\$3 00	\$17.00	\$20.00
430-00842	8	RP M285 Lot 3	0.52	0.21	Thomas J. & Karen A. Gagnon	\$0.00	\$6 00	\$36.00	\$42.00
430-00844	8	RP M285 Lot 2	0.42	0.17	Allen C. & Lori A. Stewart	\$0.00	\$5.00	\$30.00	\$35 00
430-00846	8	RP M285 Lot 1	0.27	0.11	Peter Koepke	\$0 00	\$3 00	\$19.00	\$22.00
430-00806	8	RP M285 Lot 20	0.20	0.08	Mark A. Pszczonak & Robyn J. Nease	\$0.00	\$2 00	\$14 00	\$16.00
430-00808	8	RP M285 Lot 19	0.20	0.08	Matthew F. & Carly R. Charlebois	\$0.00	\$2 00	\$14.00	\$16.00
430-01100	8	Pt Lot 7 RP 12R22195 Pt. 1	0.35	0.14	Barbara Bellemore & Betty Jane Belleau	\$0.00	\$4 00	\$24.00	\$28.00
430-01200	8	Pt Lot 7	1.09	0.44	Jason J. & Michelle T. Bullard	\$0.00	\$8.00	\$49.00	\$57.00
430-01500	8	Pt Lot 7	1.42	0.57	Cheryl L. Major & Linda A. Bondy	\$0.00	\$8.00	\$53.00	\$61.00
430-01600	8	Pt Lot 7	0.61	0.25	Thomas J. & Karen Renaud	\$0.00	\$6.00	\$40.00	\$46.00
430-01700	8	Pt Lot 7	0.57	0.23	Nelson F. & Marie Anne B. Drouillard	\$0.00	\$6.00	\$38.00	\$44 00
430-01800	8	Pt Lot 7	0.52	0.21	Clarence & Yolande	\$0 00	\$6.00	\$36 00	\$42.00
430-01900	8	Pt Lot 7	0.48	0.19	Roland P. & Denise M. Jones	\$0.00	\$5.00	\$33.00	\$38.00
430-02000	8	Pt Lot 7	0.46	0.19	Gilbert H. Beaulieu	\$0.00	\$5.00	\$33.00	\$38.00
430-02100	8	Pt Lot 7	0.39	0.16	Daniel J. & Margaret J. Leithead	\$0.00	\$4.00	\$28.00	\$32 00
430-02200	8	Pt Lot 7	0.36	0.15	Wanda J. Gagnon	\$0.00	\$4.00	\$26.00	\$30.00
430-02300	8	Pt Lot 7	0.38	0.15	Stephen P. & Julie A. Skov	\$0.00	\$4.00	\$26.00	\$30.00
430-02400	8	Pt Lot 7	0.33	0.13	Hydro One Networks Inc.	\$0.00	\$4.00	\$23.00	\$27.00
430-02500	8	Pt Lot 7	0.40	0.16	Kenneth H. Holden	\$0.00	\$4 00	\$28.00	\$32.00
430-02750	8	Pt Lot 7	1.15	0.47	Harry J. & Maria J. Arts	\$0 00	\$8 00	\$43.00	\$51.00
430-05000	8	Pt Lot 7	0.55	0.22	James P. & Michelle C. Poberezny	\$0 00	\$23 00	\$29.00	\$52.00
430-05050	8	Pl Lot 7	0.46	0.19	Terry F. & Jeannine M. Miller	\$0 00	\$17 00	\$22 00	\$39.00
Total on Privately-Owned - Non-Agricultural Lands						\$0 00	\$324 00	\$1,813.00	\$2,137 00

Roll No.	Con.	Description	Area Affected (Acres) (Ha.)		Owner	Special Benefit	Benefit	Outlet	Total Assessment
PRIVATELY-OWNED - AGRICULTURAL LANDS									
380-05300	8	Pt Lot 6	2.85	1.15	Paul H Ouellette	\$0 00	\$10 00	\$63 00	\$73 00
380-06100	8	Pt Lot 6	1.98	0.80	Joseph Miceli	\$0 00	\$7 00	\$47 00	\$54 00
430-02700	8	Pt Lot 7	35.36	14.31	Harry J. & Maria J. Arts	\$0 00	\$441 00	\$832 00	\$1,273 00
430-02800	7	Pt Lot 7	7.00	2.83	Viscount Mobile Homes Ltd.	\$0 00	\$26 00	\$160 00	\$186 00
430-08200	8	S Pt Lot, RP M246 Lot 1&Pt Lot 2	20.00	8.09	Hampton Holdings of Windsor Limited	\$0 00	\$181 00	\$287 00	\$468 00
430-09700	8	Pt Lot 7	27.00	10.93	Christopher & Elaine Mannina	\$0 00	\$233 00	\$429 00	\$662 00
430-02720	8	Pt Lot 7	22.93	9.28	2439478 Ontario Inc.	\$0 00	\$171 00	\$557 00	\$728 00
430-09900	8	Pt Lot 7	40.55	16.41	2439478 Ontario Inc.	\$0 00	\$300 00	\$987 00	\$1,287 00
Total on Privately-Owned - Agricultural Lands.....						\$0 00	\$1,369 00	\$3,362 00	\$4,731 00
TOTAL ASSESSMENT - DUFOUR DRAIN.....						\$0 00	\$2,500 00	\$7,500 00	\$10,000 00
			(Acres)	(Ha.)					
Total Area:			202.64	81.98					

"SCHEDULE E-2"
SCHEDULE OF ASSESSMENT (FUTURE MAINTENANCE)
BRANCH A
TOWN OF AMHERSTBURG (COUNTY OF ESSEX)

ONTARIO LANDS:

Description	Area Affected (Acres)	(Ha.)	Owner	Special Benefit	Benefit	Outlet	Total Assessment
Gardiner Crescent	1.20	0.49	Town of Amherstburg	\$0.00	\$168.00	\$1,064.00	\$1,232.00
McGregor Court	0.35	0.14	Town of Amherstburg	\$0.00	\$48.00	\$305.00	\$353.00
Total on Ontario Lands				\$0.00	\$216.00	\$1,369.00	\$1,585.00

PRIVATELY-OWNED - NON-AGRICULTURAL LANDS:

Roll No.	Con.	Description	Area Affected (Acres)	(Ha.)	Owner	Special Benefit	Benefit	Outlet	Total Assessment
430-00010	8	Pt Lot 7	5.40	2.19	Essex Region Conservation Foundation	\$0.00	\$765.00	\$1,431.00	\$2,196.00
430-00802	8	RP M285 Lot 22	0.25	0.10	Gerald G. Gardiner	\$0.00	\$21.00	\$131.00	\$152.00
430-00804	8	RP M285 Lot 21	0.22	0.09	Cherie H. Lajoy & Richard J. & Deborah A. Drouillard	\$0.00	\$19.00	\$118.00	\$137.00
430-00806	8	RP M285 Lot 20	0.20	0.08	M. Puszczonak & R. Nease	\$0.00	\$17.00	\$105.00	\$122.00
430-00808	8	RP M285 Lot 19	0.20	0.08	Matthew F. & Carly R. Charlebois	\$0.00	\$17.00	\$105.00	\$122.00
430-00810	8	RP M285 Lot 18	0.22	0.09	Adam J. Lucier	\$0.00	\$19.00	\$118.00	\$137.00
430-00812	8	RP M285 Lot 17	0.27	0.11	Wallace N. & Rosemary K. Charette	\$0.00	\$23.00	\$144.00	\$167.00
430-00814	8	RP M285 Lot 16	0.24	0.10	Darryl D. Drouillard & Shae L. Jubenville	\$0.00	\$21.00	\$131.00	\$152.00
430-00816	8	RP M285 Lot 15	0.40	0.16	Igor Varga & Shirley Couch	\$0.00	\$33.00	\$209.00	\$242.00
430-00818	8	RP M285 Lot 14	0.29	0.12	Kevin & Penny Veldhuis	\$0.00	\$25.00	\$157.00	\$182.00
430-00820	8	RP M 285 Lot 13 & 14	0.19	0.08	Jody A. & Melissa J. Fleming	\$0.00	\$17.00	\$105.00	\$122.00
430-00821	8	RP M285 Lot 12,13 & 14	0.20	0.08	Nistor & Livia Sasca	\$0.00	\$17.00	\$105.00	\$122.00
430-00822	8	RP M285 Lot 12 & 14	0.19	0.08	Richard H. & Patricia J. Prieur	\$0.00	\$17.00	\$105.00	\$122.00
430-00826	8	RP M285 Lot 11	0.22	0.09	Cuc Kim Truong	\$0.00	\$19.00	\$118.00	\$137.00
430-00828	8	RP M285 Lot 10	0.18	0.07	Robert J. & Irene A. McFarlane	\$0.00	\$14.00	\$91.00	\$105.00
430-00830	8	RP M285 Lot 9	0.18	0.07	Kenneth & Marie Allen	\$0.00	\$14.00	\$91.00	\$105.00
430-00832	8	RP M285 Lot 8	0.18	0.07	John F. & Janine J. Willett	\$0.00	\$14.00	\$91.00	\$105.00
430-00834	8	RP M285 Lot 7	0.18	0.07	Jerome & Victoria Pardo	\$0.00	\$14.00	\$91.00	\$105.00
430-00836	8	RP M285 Lot 6	0.18	0.07	Thomas J. & Pula C. Charlebois	\$0.00	\$14.00	\$91.00	\$105.00
430-00838	8	RP M285 Lot 5	0.18	0.07	Ethel I. Pillon	\$0.00	\$14.00	\$91.00	\$105.00
430-00840	8	RP M285 Lot 4	0.28	0.11	Marek & Mariola Piotrowski	\$0.00	\$23.00	\$144.00	\$167.00
430-00842	8	RP M285 Lot 3	0.25	0.10	Thomas J. & Karen A. Gagnon	\$0.00	\$21.00	\$131.00	\$152.00
430-00844	8	RP M285 Lot 2	0.24	0.10	Allen c. & Lori A. Stewart	\$0.00	\$21.00	\$131.00	\$152.00
430-00846	8	RP M285 Lot 1	0.27	0.11	Peter Koepke	\$0.00	\$23.00	\$144.00	\$167.00
430-01100	8	Pt. Lot 7 RP 12R22195 Pt. 1	0.35	0.14	Barbara Bellemore & Betty J. Belleau	\$0.00	\$29.00	\$183.00	\$212.00
430-01200	8	Pt Lot 7	1.09	0.44	Jason J. & Michelle T. Bullard	\$0.00	\$58.00	\$325.00	\$383.00
430-01500	8	Pt Lot 7	1.42	0.57	Cheryl L. Major & Linda A Bondy	\$0.00	\$63.00	\$350.00	\$413.00
430-01600	8	Pt Lot 7	0.37	0.15	Thomas J. & Karen Renaud	\$0.00	\$31.00	\$159.00	\$190.00

Roll No.	Con.	Description	Area Affected		Owner	Special Benefit	Benefit	Outlet	Total Assessment
			(Acres)	(Ha.)					
430-01700	8	Pt Lot 7	0.33	0.13	Nelson F. & Marie Anne B. Drouillard	\$0.00	\$27.00	\$138.00	\$165.00
430-01800	8	Pt Lot 7	0.28	0.11	Clarence & Yollande McIntyre	\$0.00	\$23.00	\$110.00	\$133.00
430-01900	8	Pt Lot 7	0.24	0.10	Roland P. & Denise M. Jones	\$0.00	\$21.00	\$100.00	\$121.00
430-02000	8	Pt Lot 7	0.22	0.09	Gilbert H. Beaulieu	\$0.00	\$19.00	\$85.00	\$104.00
430-02100	8	Pt Lot 7	0.15	0.06	Daniel J. & Margaret J. Leithead	\$0.00	\$12.00	\$56.00	\$68.00
430-02200	8	Pt Lot 7	0.12	0.05	Wanda J. Gagnon	\$0.00	\$10.00	\$44.00	\$54.00
430-02300	8	Pt Lot 7	0.16	0.06	Stephen P. & Julie A. Skov	\$0.00	\$12.00	\$53.00	\$65.00
430-02400	8	Pt Lot 7	0.11	0.04	Hydro One Networks Inc.	\$0.00	\$8.00	\$32.00	\$40.00
430-02500	8	Pt Lot 7	0.07	0.03	Kenneth H. Holden	\$0.00	\$6.00	\$24.00	\$30.00
Total on Privately-Owned - Non-Agricultural Lands.....						\$0.00	\$1,521.00	\$5,837.00	\$7,358.00
PRIVATELY-OWNED - AGRICULTURAL LANDS:									
430-02720	8	Pt Lot 7	0.40	0.16	2439478 Ontario Inc.	\$0.00	\$186.00	\$46.00	\$232.00
430-09900	8	Pt Lot 7	1.40	0.57	2439478 Ontario Inc.	\$0.00	\$577.00	\$248.00	\$825.00
Total on Privately-Owned -Agricultural Lands.....						0.00	763.00	294.00	1,057.00
TOTAL ASSESSMENT - BRANCH A.....						\$0.00	\$2,500.00	\$7,500.00	\$10,000.00
			(Acres)	(Ha.)					
Total Area:			18.87	7.62					

"SCHEDULE E-3"
SCHEDULE OF ASSESSMENT (FUTURE MAINTENANCE)
BRANCH B
TOWN OF AMHERSTBURG

MUNICIPAL LANDS:

Description	Area Affected (Acres)	(Ha.)	Owner	Special Benefit	Benefit	Outlet	Total Assessment
Middle Sideroad (County Road 10)	6.50	2.63	County of Essex	\$0.00	\$1,035.00	\$4,247.00	\$5,282.00
Total on Municipal Lands				\$0.00	\$1,035.00	\$4,247.00	\$5,282.00

PRIVATELY-OWNED - NON-AGRICULTURAL LANDS:

Roll No.	Con.	Description	Area Affected (Acres)	(Ha.)	Owner	Special Benefit	Benefit	Outlet	Total Assessment
380-05400	7	Pt Lot 6	4.20	1.70	Alan A. Bicknell & Tammy L. Kennette	\$0.00	\$69.00	\$549.00	\$618.00
380-06200	8	Pt Lot 6	0.30	0.12	Canard Developments Inc.	\$0.00	\$51.00	\$194.00	\$245.00
380-06228	8	Pt Lot 6	0.34	0.14	Karen L. Chapman & Leonard W. Sheehan	\$0.00	\$44.00	\$136.00	\$180.00
380-06229	8	Pt Lot 6	0.45	0.18	John T. & Sandra M. Amato	\$0.00	\$49.00	\$174.00	\$223.00
380-06230	8	Pt Lot 6	0.35	0.14	Henry & Deborah A. Schwager	\$0.00	\$44.00	\$136.00	\$180.00
380-06231	8	Pt Lot 6	0.34	0.14	Martin E. A. & Colleen B. Nelson	\$0.00	\$44.00	\$136.00	\$180.00
380-06232	8	Pt Lot 6	0.34	0.14	Robert E. Arce & Mary anne E. Papia	\$0.00	\$44.00	\$136.00	\$180.00
380-06233	8	Pt Lot 6	0.32	0.13	Bradley M. Mai	\$0.00	\$43.00	\$126.00	\$169.00
380-06234	8	Pt Lot 6	0.32	0.13	Travis W.R. and Tina B. Middleton	\$0.00	\$43.00	\$126.00	\$169.00
380-06235	8	Pt Lot 6	0.32	0.13	1403412 Ontario Limited	\$0.00	\$43.00	\$126.00	\$169.00
380-06236	8	Pt Lot 6	0.32	0.13	1403412 Ontario Limited	\$0.00	\$43.00	\$126.00	\$169.00
380-06237	8	Pt Lot 6	0.32	0.13	Scott R. Warnock & Pierrette A. Wray	\$0.00	\$43.00	\$126.00	\$169.00
380-06238	8	Pt Lot 6	0.32	0.13	Derek R. & Jennifer M. Aiken	\$0.00	\$43.00	\$126.00	\$169.00
380-06239	8	Pt Lot 6	0.32	0.13	David Cvetanovski	\$0.00	\$43.00	\$126.00	\$169.00
380-06240	8	Pt Lot 6	0.32	0.13	Community Living Essex County	\$0.00	\$43.00	\$126.00	\$169.00
380-06241	8	Pt Lot 6	0.32	0.13	Beverly A. Santin & Nelson J. Rocheleau	\$0.00	\$43.00	\$126.00	\$169.00
500-40800	8	Pt Lot 6	2.70	1.09	Essex Region Conservation Foundation	\$0.00	\$90.00	\$529.00	\$619.00
Total on Privately-Owned - Non-Agricultural Lands						\$0.00	\$822.00	\$3,124.00	\$3,946.00

PRIVATELY-OWNED - AGRICULTURAL LANDS

Roll No.	Con.	Description	Area Affected (Acres)	(Ha.)	Owner	Special Benefit	Benefit	Outlet	Total Assessment
380-05300	8	Pt Lot 6	2.85	1.15	Paul H. Ouellette	\$0.00	\$46.00	\$371.00	\$417.00
380-06100	8	Pt Lot 6	1.98	0.80	Joseph Miceli	\$0.00	\$97.00	\$258.00	\$355.00
Total on Privately-Owned - Non-Agricultural Lands						\$0.00	\$143.00	\$629.00	\$772.00

TOTAL ASSESSMENT - BRANCH B \$0.00 \$2,000.00 \$8,000.00 \$10,000.00

"SCHEDULE E-4"
 SCHEDULE OF ASSESSMENT (FUTURE MAINTENANCE OF BRIDGE NO. 3)
 DUFOUR DRAIN
 TOWN OF AMHERSTBURG (COUNTY OF ESSEX)

MUNICIPAL LANDS:

Description	Area Affected (Acres) (Ha.)		Owner	Special Benefit	Benefit	Outlet	Total Assessment
8th Concession Road	2.10	0.85	Town of Amherstburg	\$0.00	\$0.00	\$45.00	\$45.00
Middle Sideroad (County Road 10)	4.94	2.00	County of Essex	\$0.00	\$0.00	\$106.00	\$106.00
Gardiner Crescent	1.42	0.57	Town of Amherstburg	\$0.00	\$0.00	\$30.00	\$30.00
McGregor Court	0.37	0.15	Town of Amherstburg	\$0.00	\$0.00	\$8.00	\$8.00
Total on Municipal Lands				\$0.00	\$0.00	\$189.00	\$189.00

PRIVATELY-OWNED - NON-AGRICULTURAL LANDS:

Roll No.	Con	Description	Area Affected (Acres) (Ha.)		Owner	Special Benefit	Benefit	Outlet	Total Assessment
380-05400	7	Pt Lot 6	4.20	1.70	Alan A Bicknell & Tammy L. Kennette	\$0.00	\$0.00	\$18.00	\$18.00
380-05600	8	Pt Lot 6	0.48	0.19	Ralph Readings	\$0.00	\$0.00	\$6.00	\$6.00
380-05700	8	Pt Lot 6	0.57	0.23	Dante & Marisa Delrizzo	\$0.00	\$0.00	\$7.00	\$7.00
380-05800	8	Pt Lot 6	0.53	0.21	Gerald & Beverly Lowes	\$0.00	\$0.00	\$7.00	\$7.00
380-05900	8	Pt Lot 6	0.45	0.18	Leo & Deanna L. Borovic	\$0.00	\$0.00	\$6.00	\$6.00
380-05905	8	Pt Lot 6	0.40	0.16	Gregory G. Girard	\$0.00	\$0.00	\$5.00	\$5.00
380-06000	8	Pt Lot 6	0.64	0.26	Geoffery G. Girard	\$0.00	\$0.00	\$7.00	\$7.00
380-06200	8	Pt Lot 6	0.30	0.12	Canard Developments Inc.	\$0.00	\$0.00	\$4.00	\$4.00
380-06233	8	Pt Lot 6	0.32	0.13	Bradley M. Mai	\$0.00	\$0.00	\$4.00	\$4.00
380-06234	8	Pt Lot 6	0.32	0.13	Travis W.R. and Tina B. Middleton	\$0.00	\$0.00	\$4.00	\$4.00
380-06235	8	Pt Lot 6	0.32	0.13	1403412 Ontario Limited	\$0.00	\$0.00	\$4.00	\$4.00
380-06236	8	Pt Lot 6	0.32	0.13	1403412 Ontario Limited	\$0.00	\$0.00	\$4.00	\$4.00
380-06237	8	Pt Lot 6	0.32	0.13	Scott R. Warnock & Pierrette A. Wray	\$0.00	\$0.00	\$4.00	\$4.00
380-06238	8	Pt Lot 6	0.32	0.13	Derek R. & Jennifer M. Aiken	\$0.00	\$0.00	\$4.00	\$4.00
380-06239	8	Pt Lot 6	0.32	0.13	David Cvetanovski	\$0.00	\$0.00	\$4.00	\$4.00
380-06240	8	Pt Lot 6	0.32	0.13	Community Living Essex County	\$0.00	\$0.00	\$4.00	\$4.00
380-06241	8	Pt Lot 6	0.32	0.13	Beverly A. Santin & Nelson J. Rochelcau	\$0.00	\$0.00	\$4.00	\$4.00
380-06228	8	Pt Lot 6	0.34	0.14	Karen L. Chapman & Leonard W. Sheehan	\$0.00	\$0.00	\$4.00	\$4.00
380-06229	8	Pt Lot 6	0.45	0.18	John T. & Sandra M. Amato	\$0.00	\$0.00	\$6.00	\$6.00
380-06230	8	Pt Lot 6	0.35	0.14	Henry & Deborah A. Schwager	\$0.00	\$0.00	\$4.00	\$4.00
380-06231	8	Pt Lot 6	0.34	0.14	Martin E. A. & Colleen B. Nelson	\$0.00	\$0.00	\$4.00	\$4.00
380-06232	8	Pt Lot 6	0.34	0.14	Robert E. Arce & Mary anne E. Papia	\$0.00	\$0.00	\$4.00	\$4.00
380-00020	8	Pt Lot 6	1.78	0.72	Essex Region Conservation Foundation	\$0.00	\$0.00	\$11.00	\$11.00
430-00010	8	Pt Lot 7	5.40	2.19	Essex Region Conservation Foundation	\$0.00	\$0.00	\$35.00	\$35.00
430-00810	8	RP M285 Lot 18	0.22	0.09	Adam J. Lucier	\$0.00	\$0.00	\$3.00	\$3.00
430-00812	8	RP M285 Lot 17	0.27	0.11	Wallace N & Rosemary K. Charett	\$0.00	\$0.00	\$3.00	\$3.00
430-00814	8	RP M285 Lot 16	0.24	0.10	Darryl D. Drouillard & Shae L. Jubenville	\$0.00	\$0.00	\$3.00	\$3.00
430-00816	8	RP M285 Lot 15	0.40	0.16	Igor Varga & Shirley Couch	\$0.00	\$0.00	\$5.00	\$5.00
430-00818	8	RP M285 Lot 14	0.29	0.12	Kevin & Penny Veldhuis	\$0.00	\$0.00	\$4.00	\$4.00

Description			Area Affected (Acres) (Ha)		Owner	Special Benefit	Benefit	Outlet	Total Assessment
430-00802	8	RP M285 Lot 22	0.25	0.10	Matthew B. & Heather E. Allison	\$0.00	\$0.00	\$3.00	\$3.00
430-00820	8	RP M 285 Lot 13	0.20	0.08	Jody A. & Melissa D.	\$0.00	\$0.00	\$3.00	\$3.00
430-00821	8	RP M285 Lot 12, 13 & 14	0.19	0.08	Nistor & Livia Sasca	\$0.00	\$0.00	\$3.00	\$3.00
430-00822	8	RP M285 Lot 12 & 14	0.19	0.08	Richard H. & Patricia J. Prieur	\$0.00	\$0.00	\$3.00	\$3.00
430-00826	8	RP M285 Lot 11	0.22	0.09	Cuc Kim Truong	\$0.00	\$0.00	\$3.00	\$3.00
430-00828	8	RP M285 Lot 10	0.18	0.07	Robert J. & Irene A. McFarlane	\$0.00	\$0.00	\$2.00	\$2.00
430-00830	8	RP M285 Lot 9	0.18	0.07	Kenneth & Marie Allen	\$0.00	\$0.00	\$2.00	\$2.00
430-00832	8	RP M285 Lot 8	0.18	0.07	John F. & Janine J. Willett	\$0.00	\$0.00	\$2.00	\$2.00
430-00834	8	RP M285 Lot 7	0.18	0.07	Jerome & Victoria Pardo	\$0.00	\$0.00	\$2.00	\$2.00
430-00836	8	RP M285 Lot 6	0.18	0.07	Thomas J. & Paula C. Charlebois	\$0.00	\$0.00	\$2.00	\$2.00
430-00838	8	RP M285 Lot 5	0.18	0.07	Ethel I. Pillon	\$0.00	\$0.00	\$2.00	\$2.00
430-00804	8	RP M285 Lot 21	0.20	0.08	Cherie H. Lajoy & Richard J. & Deborah A. Drouillard	\$0.00	\$0.00	\$3.00	\$3.00
430-00840	8	RP M285 Lot 4	0.25	0.10	Marek & Mariola Piotrowski	\$0.00	\$0.00	\$3.00	\$3.00
430-00842	8	RP M285 Lot 3	0.52	0.21	Thomas J. & Karen A. Gagnon	\$0.00	\$0.00	\$7.00	\$7.00
430-00844	8	RP M285 Lot 2	0.42	0.17	Allen C. & Lori A. Stewart	\$0.00	\$0.00	\$5.00	\$5.00
430-00846	8	RP M285 Lot 1	0.27	0.11	Peter Koepke	\$0.00	\$0.00	\$3.00	\$3.00
430-00806	8	RP M285 Lot 20	0.20	0.08	Mark A. Pszczonak & Robyn J. Nease	\$0.00	\$0.00	\$3.00	\$3.00
430-00808	8	RP M285 Lot 19	0.20	0.08	Matthew F. & Carly R. Charlebois	\$0.00	\$0.00	\$3.00	\$3.00
430-01100	8	Pt Lot 7 RP 12R22195 Pt. 1	0.35	0.14	Barbara Bellemore & Betty Jane Belleau	\$0.00	\$0.00	\$4.00	\$4.00
430-01200	8	Pt Lot 7	1.09	0.44	Jason J. & Michelle T. Bullard	\$0.00	\$0.00	\$9.00	\$9.00
430-01500	8	Pt Lot 7	1.42	0.57	Cheryl L. Major & Linda A. Bondy	\$0.00	\$0.00	\$10.00	\$10.00
430-01600	8	Pt Lot 7	0.61	0.25	Thomas J. & Karen Renaud	\$0.00	\$0.00	\$7.00	\$7.00
430-01700	8	Pt Lot 7	0.57	0.23	Nelson F. & Marie Anne B. Drouillard	\$0.00	\$0.00	\$7.00	\$7.00
430-01800	8	Pt Lot 7	0.52	0.21	Clarence & Yollande	\$0.00	\$0.00	\$7.00	\$7.00
430-01900	8	Pt Lot 7	0.48	0.19	Roland P. & Denise M. Jones	\$0.00	\$0.00	\$6.00	\$6.00
430-02000	8	Pt Lot 7	0.46	0.19	Gilbert H. Beaulieu	\$0.00	\$0.00	\$6.00	\$6.00
430-02100	8	Pt Lot 7	0.39	0.16	Daniel J. & Margaret J. Leithead	\$0.00	\$0.00	\$5.00	\$5.00
430-02200	8	Pt Lot 7	0.36	0.15	Wanda J. Gagnon	\$0.00	\$0.00	\$5.00	\$5.00
430-02300	8	Pt Lot 7	0.38	0.15	Stephen P. & Julie A. Skov	\$0.00	\$0.00	\$5.00	\$5.00
430-02400	8	Pt Lot 7	0.33	0.13	Hydro One Networks Inc.	\$0.00	\$0.00	\$4.00	\$4.00
430-02500	8	Pt Lot 7	0.40	0.16	Kenneth H. Holden	\$0.00	\$0.00	\$5.00	\$5.00
430-02750	8	Pt Lot 7	1.15	0.47	Harry J. & Maria J. Arts	\$0.00	\$0.00	\$9.00	\$9.00
430-05000	8	Pt Lot 7	0.55	0.22	James P. & Michelle C. Poberezny	\$0.00	\$0.00	\$7.00	\$7.00
430-05050	8	Pt Lot 7	0.46	0.19	Terry F. & Jeannine M. Miller	\$0.00	\$0.00	\$6.00	\$6.00
Total on Privately-Owned - Non-Agricultural Lands						\$0.00	\$0.00	\$338.00	\$338.00

Description	Area Affected		Owner	Special Benefit	Benefit	Outlet	Total Assessment		
	(Acres)	(Ha.)							
PRIVATELY-OWNED - AGRICULTURAL LANDS									
380-05300	8	Pt Lot 6	2.85	1.15	Paul H. Ouellette	\$0.00	\$0.00	\$11.00	\$11.00
380-06100	8	Pt Lot 6	1.98	0.80	Joseph Miceli	\$0.00	\$0.00	\$8.00	\$8.00
430-02700	8	Pt Lot 7	35.36	14.31	Harry J. & Maria J. Arts	\$0.00	\$0.00	\$151.00	\$151.00
430-02800	7	Pt Lot 7	7.00	2.83	Viscount Mobile Homes Ltd	\$0.00	\$0.00	\$29.00	\$29.00
430-02720	8	Pt Lot 7	22.93	9.28	2439478 Ontario Inc.	\$0.00	\$0.00	\$100.00	\$100.00
430-09900	8	Pt Lot 7	40.55	16.41	2439478 Ontario Inc.	\$0.00	\$0.00	\$174.00	\$174.00
Total on Privately-Owned - Agricultural Lands						\$0.00	\$0.00	\$473.00	\$473.00
TOTAL ASSESSMENT - DUFOUR DRAIN						\$0.00	\$0.00	\$1,000.00	\$1,000.00
			(Acres)	(Ha.)					
Total Area:			154.08	62.33					

"SCHEDULE F"
DRAINAGE REPORT FOR THE
DUFOUR DRAIN
TOWN OF AMHERSTBURG
COUNTY OF ESSEX
SPECIAL PROVISIONS - GENERAL

1.0 GENERAL SPECIFICATIONS

The General Specifications attached hereto is part of "Schedule F." It also forms part of this specification and is to be read with it, but where there is a difference between the requirements of the General Specifications and those of the Special Provisions which follow, the Special Provisions will take precedence.

2.0 DESCRIPTION OF WORK

The work to be carried out under this Contract includes, but is not limited to, the supply of all **labour and materials** to complete the following items:

Dufour Drain

- Brushing of the drain from Station 0+000 to 1+298 including the disposal by burning on-site or removal off-site with trimming and/or removal of existing trees to permit re-alignment of the drain where required. Work shall include the removal and disposal of stumps that are within the drain.
- Excavation, trucking and/or levelling of excavated materials works, as follows:
 - a) Excavation of the drain bottom only and levelling of excavated material, as follows:
 - i) Sta. 0+000 to Sta. 0+807 totalling approximately 807 lineal metres of drain (approximately 305 m³ of material).
 - ii) Sta. 0+939 to Sta. 1+298 totalling approximately 359 lineal metres of drain (approximately 115 m³ of material).
 - b) Trucking of excavated materials where the drain is to be cleaned from the roadside, as follows:
 - i) Station 0+281 to Station 0+375 totalling approximately 25 m³ of material.
 - ii) Station 0+418 to Station 0+449 totalling approximately 13 m³ of material.
 - iii) Station 0+740 to Station 0+776 totalling approximately 5 m³ of material.
 - iv) Station 0+776 to Station 0+807 totalling approximately 7 m³ of material.
- Access bridge replacement works, as follows:
 - a) Bridge No. 3 (Roll No. 430-05050) - Station 0+424.5 - Remove and dispose of existing 8 m long, 1400 mm diameter CSP culvert and end wall materials off site. Supply and installation of a new 9.0 m long, 1600 mm diameter corrugated steel pipe CSP culvert with 125 mm x 25 mm corrugations and 2.8 mm thickness (see Specifications), clear stone bedding (approximately 15 tonnes), full Granular 'A' backfill material (approximately 100 tonnes), asphalt driveway restoration (approximately 35 m²) and vertical concrete block end walls (600 mm x 600 mm x 1200 mm) (approximately 20 full blocks, 4 half blocks, 4 footing blocks). Salvage and re-use existing granular backfill.

- b) Bridge No. 3 (Roll No. 430-05050) – Station 0+424.5 - Restoration of asphalt driveway with 80 mm thickness of HL3 hot mix asphalt - two 40 mm lifts compacted (approximately 7 tonnes).
 - c) Bridge No. 5 (Roll No. 430-02750) – Station 0+873 – Remove and dispose of existing 124 m long, 1200 mm diameter CSP culvert and concrete headwall materials off-site. Supply and installation of a new 132 m long, 1780 mm x 1360 mm polymer laminated, corrugated steel pipe arch (CSPA) pipe with 125 mm x 25 mm corrugations and 2.8 mm thickness, including two (2) -1780 mm x 1360 mm polymer laminated CSPA 45° bends, three (3) - 1780 mm x 1360 mm x 600 mm polymer laminated riser tee catch basins complete with cast iron grates. The work shall include the road drain connection including supply and placement of 6 m length of 375 mm diameter polyvinyl pipe (PVC) and “Inserta Tee” fitting. The work shall also include clear stone bedding and backfill up to pipe springline (approximately 390 tonnes), native backfill beyond driveway (approximately 375 m³), and sloping stone end walls (approximately 30 m²). The work shall also include removal and reinstatement of wood rail fence and restoration of existing grassed areas where disturbed. Note: Overall length of new culvert includes the length of the 45° bends and tees.
 - d) Bridge No. 5 (Roll No. 430-02750) – Station 0+873 – Restoration of two (2) asphalt driveways with 80 mm thickness of HL3 hot mix asphalt - two 40 mm lifts compacted (approximately 8 tonnes) complete with full Granular 'A' backfill material under asphalt driveways (approximately 85 tonnes).
 - e) Bridge No. 5 (Roll No. 430-02700) – Station 0+873 – Restoration of Granular 'A' driveway surface material for farm access at north end of lawn culvert minimum 200 mm thickness (approximately 30 tonnes).
- Cleaning access bridges:
 - a) Bridge No. 1 – Station 0+321, 9.5 m 1600 mm CSP
 - b) Bridge No. 2 – Station 0+403, 11 m 1600 mm CSP
 - c) Bridge No. 4 – Station 0+755.5, 11 m 1400 mm CSP
 - Road culvert work, as follows:
 - a) Road Culvert (8th Concession Road) – Station 0+484 - Repair east end of existing 450 mm diameter concrete road culvert pipe with new 3 m long, 450 mm diameter high density polyethylene (HDPE Boss 2000 or approved equal) including stone erosion protection on west drain bank (approximately 10 m²).
 - Supply and install stone erosion protection on north and south drain banks of existing drain bend from Station 1+288 to Station 1+298 (approximately 60 m²).
 - Supply and installation of stone erosion protection to repair surface water inlets, (approximately 10 m² each) as follows:
 - a) Station 0+016 (Roll No. 430-08200) – east bank
 - b) Station 0+087 (Roll No. 430-08200) – east bank
 - c) Station 0+133 (Roll No. 430-08200) – east bank
 - d) Station 0+223 (Roll No. 430-08200) – east bank
 - e) Station 0+281 (Roll No. 430-09700) – east bank
 - f) Station 0+448 (Roll No. 430-02700) – east bank
 - g) Station 1+014 (Roll No. 430-02700) – north bank
 - h) Station 1+089 (Roll No. 430-02700) – north bank

- Seeding of a 1.0 m permanent grass buffer strip along the east and north sides of the drain from Station 0+000 to Station 1+298 excluding areas where grass lawns already exist (approximately 1060 m²).
- Supply and install temporary 0.60 m high x 1 m wide rock check dam across bottom of drain channel including 0.30 deep x 1 m wide x 6 m long sediment trap on upstream side starting at Station 0+075 (approx. 5 tonnes of rip-rap).

BRANCH A

- Brushing of the drain from Station 0+000A to 0+533A including the disposal by burning on-site or removal off-site with trimming and/or removal of existing trees to permit cleanout of the drain and installation of yard catch basin drains where required.
- Excavation of the drain from south side including trucking and hauling of excavated materials to the north side of drain and levelling within the designated disposal corridor between Station 0+000A and Station 0+173A, as follows:
 - a) Sta. 0+000A to Sta. 0+325A totalling 325 lineal metres of drain (approximately 70 m³ of material). Work shall include excavation and levelling of excavated materials including restoration of all grassed areas disturbed by construction.
 - b) Trucking of excavated materials taken from Station 0+000A to Station 0+325A (approximately 70 m³ of material) to the north side of the drain. Work to include the supply and placement of a temporary access culvert (minimum 900 mm diameter) for the haul route drain crossing to be later removed and drain banks restored.
- Excavation of the drain from south side including drain widening of south bank, trucking and hauling of excavated materials to the north side of drain and levelling within the designated disposal corridor between Station 0+000A and Station 0+173A, as follows:
 - a) Station 0+325A to Station 0+533A totalling 208 lineal metres of drain (approximately 400 m³ of material). Work shall include excavation and 0.50 m widening of south drain bank complete with levelling of excavated materials and restoration of all grassed areas disturbed by construction.
 - b) Trucking of excavated materials taken from Station 0+325A to Station 0+533A (approximately 400 m³ of material) to the north side of the drain between Station 0+000A and 0+173A including levelling within disposal corridor.
- Hydraulic seeding of south drain bank from Station 0+325A and Station 0+533A (approx. 700 m²).
- Removal and disposal of existing 4 m long, 750 mm diameter CSP and end wall materials at Station 0+032A.
- Supply and installation of stone erosion protection to repair surface water inlets, as follows:
 - a) Station 0+000A (Roll No. 430-02720) – north bank, approximately 40 m²
 - b) Station 0+090A (Roll No. 430-02720) – north bank, approximately 10 m²
- Seeding of a 1.0 m wide permanent grass buffer strip along the north side of the drain from Station 0+000A to Station 0+173A (approximately 173 m²).
- Supply and install 450 mm diameter HDPE yard catch basin (YCB) complete with cast iron grate, two (2) private drain connection stubs to 1 m past the property line (150 mm diameter HDPE) and 16 m long, 150 mm diameter HDPE connection from yard catch basin to Branch A drain.

The work to also include stone erosion protection (approximately 5 m²), fine grading and re-seeding disturbed areas for each as follows:

- a) YCB1– Station 0+161A (Roll No. 430-02400/ 02500)
- b) YCB2–Station 0+185A (Roll No. 430-02200/ 02300)
- c) YCB3–Station 0+234A (Roll No. 430-02000/ 02100)
- d) YCB4–Station 0+284A (Roll No. 430-01800/ 01900)
- e) YCB5–Station 0+333A (Roll No. 430-01600/ 01700)
- f) YCB6–Station 0+405A (Roll No. 430-01200/ 01500)

BRANCH B

- Excavation of the drain from south side of the drain including levelling of excavated materials within the designated working corridor, as follows:
 - a) Sta. 0+044B to Sta. 0+101B totalling approximately 57 lineal metres of drain (approximately 45 m³ of material).
- ERCF lands crossing, as follows:
 - a) Bridge No. 1B (North) – Station 0+015B-0+020B – Remove and dispose of existing 5 m long, 900 mm diameter CSP culvert off-site. Supply and installation of a new 5 m long, 900 mm diameter solid corrugated high density polyethylene (HDPE) smooth wall 320 kPa pipe (Boss Polytite or approved equal), Granular ‘B’ bedding and backfill up to pipe springline (approximately 10 tonnes) and native backfill from springline to required grade (approximately 10 m³) including connection to existing south end of 900 mm diameter concrete pipe
- County Road No. 10 access bridge, as follows:
 - a) Bridge No. 1B (South)– Station 0+020B-0+044B – Remove and dispose of existing 900 mm diameter CSP culvert off-site. Supply and installation of a new 24 m long, 900 mm diameter solid corrugated high density polyethylene (HDPE) smooth wall 320 kPa pipe (Boss Polytite or approved equal), full Granular ‘A’ bedding and backfill (approximately 145 tonnes) and stone erosion protection (approximately 40 m²) and asphalt restoration (120 mm thickness) HL4 hot mix asphalt - two 40 mm lifts and HL3 hot mix asphalt – one 40 mm lift compacted, approximately 8 tonnes).
 - c) Supply and installation of one (1) new 1500 mm by 1800 mm pre-cast concrete chamber complete with concrete cap section with cast iron maintenance hole frame and cover (OPSD 401.01 Type ‘B’), ladder rungs and a minimum 300 mm deep sump. Work is to include connection of all new drain pipes and grouting of all voids around pipes with non-shrink concrete grout. The grate to be equipped with fasteners to secure grate to catch basin as supplied by the manufacturer. Alternatively, an 1800 mm diameter precast maintenance hole (OPSD 701.012) is acceptable.
 - c) Supply and installation of a new 3 m long, 600 mm diameter solid corrugated high density polyethylene (HDPE) smooth wall 320 kPa pipe (Boss 2000 or approved equal) stub complete with stone erosion protection (approximately 5 m²).
- Seeding of a 1.0 m wide permanent grass buffer strip along the south side of the drain from Station 0+045B to Station 0+101B excluding areas occupied by existing woodlot (approximately 56 m²).

3.0 ACCESS TO THE WORK

Access to the Dufour Drain shall be from 8th Concession Road and County Road No. 10. Access to the Branch A shall be from County Road No. 10 and ERCA lands. Access to the Branch B shall be from County Road No. 10. The Contractor shall make his/her own arrangements for any additional access for his/her convenience. All road areas and grass lawn areas disturbed shall be restored to original conditions at the Contractor’s expense.

4.0 WORKING AREA

The Contractor shall restrict his equipment to the working corridors as specified in this Section. Any damage resulting from non-compliance with this Section, shall be borne by the Contractor. The working corridor shall be measured from the top of the new drain bank and shall be as follows:

FROM	TO	WORKING CORRIDOR
		Dufour Drain
0+000	0+750	9.0 m wide on east side of drain measured from top of bank
0+750	0+785	8 th Concession Road ROW
0+785	0+807	9.0 m wide on east side of drain measured from top of bank
0+807	0+890	8 th Concession Road ROW / 6 m wide on Roll No. 430-05000
0+890	0+939	County Road No. 10 ROW / 6 m wide on Roll No. 430-05000
0+930	1+298	9.0 m wide of north side of drain measured from top of bank
		Branch A
0+000A	0+173A	9.0 m wide on north & south side of drain measured from top of bank
0+173A	0+533A	9.0 m wide on south side of drain measured from top of bank
		Branch B
0+000B	0+044B	ERCF Lands & County Road No. 10 ROW
0+044B	0+101B	9.0 m wide on south side of drain measured from top of bank

Should the Contractor for any reason damage any area where grass lawn, driveways or roadways exist, it shall be repaired at the Contractors expense to pre-construction conditions. During the construction period, all such areas shall be kept in clean and tidy condition. The Contractor shall restrict his equipment to the working corridors as specified in this Section. Any damage resulting from non-compliance with this Section shall be borne by the Contractor. One lane of 8th Concession Road and County Road No. 10 shall remain open during the construction period and traffic control maintained at all times (see General Specifications). Any damages to lands and/or roads from the Contractor’s work within the working area for the bridge sites shall be rectified to pre-existing conditions at his expense.

SPECIAL PROVISIONS – OPEN DRAIN

5.0 BRUSHING

Brushing shall be carried out on the entire drain within the above identified sections of the drain where required and as specified herein. **All** brush and trees located within the drain side slopes shall be cut parallel to the side slopes, as close to the ground as practicable. Tree branches that overhang the drain shall be trimmed. Small branches and limbs are to be disposed of by the Contractor along with the other brush. Tree stumps, where removed to facilitate the drain excavation and reshaping of the drain banks, may be burned by the Contractor where permitted; otherwise, they shall be disposed of, off the site. The Contractor shall make every effort to preserve mature trees which are beyond the drain side slopes, and the working corridors. If requested to do so by the Drainage Superintendent, the Contractor shall preserve certain mature trees within the designated working corridors (see Section 4.0).

Except as specified herein, all brush and trees shall be stockpiled adjacent to the drain within the working corridors. Stockpiles shall not be less than 100 m apart and shall be a minimum of 2.0 m from the edge of the drain bank. All brush, timber, logs, stumps, large stones or other obstructions and deleterious materials that interfere with the construction of the drain, as encountered along the course of the drain are to be removed from the drain by the Contractor. Large stones and other similar material shall be disposed of by the Contractor off the site.

Following completion of the work, the Contractor is to trim up any broken or damaged limbs on trees which remain standing, disposing of the branches cut off along with other brush and leaving the trees in a neat and tidy condition. Brush and trees removed from the working area are to be put into piles by the Contractor, in locations where they can be safely burned, and to be burned by the Contractor after obtaining the necessary permits, as required. If, in the opinion of the Drainage Superintendent, any of the piles are too wet or green to be burned, he shall so advise the Contractor to haul away the unburned materials to an approved dump site. Prior to, and during the course of burning operations, the Contractor shall comply with the current guidelines prepared by the Air Quality Branch of the Ontario Ministry of Environment and shall ensure that the Environmental Protection Act is not violated. Since the trees and brush that are cut off flush with the earth surface may sprout new growth later, it is strongly recommended that the Municipality make arrangements for spraying this new growth at the appropriate time so as to kill the trees and brush.

As part of this work, the Contractor shall remove any loose timber, logs, stumps, large stones or other debris from the drain bottom and from the side slopes. **Timber, logs, stumps, large stones or other debris shall be disposed of off-site.**

6.0 EXCAVATION AND LEVELLING OF EXCAVATED MATERIALS

6.1 Excavation of Existing Drain Channel

In all cases, the Contractor shall use the benchmarks to establish the proposed grade. However, for convenience, the drawings provide the approximate depth from the surface of the ground and from the existing drain bottom to the proposed grades. **THE CONTRACTOR SHALL NOT EXCAVATE DEEPER THAN THE GRADELINES SHOWN ON THE DRAWINGS.** Should over-excavation of the drain bank occur, the Contractor will not be permitted to repair with native material packed into place by the excavator and reshaped. Should over-excavation occur, the Contractor will be required to have a bank repair detail engineered by a Professional Engineer (hired by the Contractor), to ensure long term stability of the bank is maintained. Such repairs shall be subject to approval by the Engineer and will be at no extra cost to the item.

All excavated material shall be handled as specified in Section 6.2. Materials deposited on the farmlands shall be within the working corridors, at least 1.0 m from the top of the drain bank, or as specified on the drawings. Upon allowing drying of excavated materials (if necessary) and as approved by the Drainage Superintendent, the Contractor shall level excavated materials in accordance with Section 6.3. Excavated material shall not be placed on dykes, in ditches, tiles or depressions intended to conduct water into the drain.

Seeding of the disturbed drain banks shall be completed immediately following drain construction and as specified in Section 9.0.

All excavation work shall be done in such a manner as to not harm any vegetation or trees, not identified in this report or by the Drainage Superintendent for clearing. Any damages to trees or vegetation caused by the Contractors work shall be rectified to the satisfaction of the Drainage Superintendent.

The Contractor shall exercise caution around existing tile inlets and shall confirm with the property owners that all tiles have been located and tile ends repaired as specified.

6.2 Levelling of Excavated Materials

Excavation of the drain bottom shall be completed as specified in Section 6.1, above and also as specified below and as shown on the drawings.

Excavated drain materials shall be spread to a depth not to exceed 300 mm, unless specified otherwise on the drawings. The material shall be sufficiently levelled to allow further working by agricultural implements. All stones and other debris removed from the drain, which may interfere with agricultural implements, shall be disposed of off-site. Excavated material shall not be placed on dykes, in ditches, tiles or depressions intended to conduct water into the drain.

6.3 Trucking of Excavated Materials

Excavated materials are the property of the Contractor and trucking of excavated materials to off-site disposal site to be arranged by Contractor for all residential properties.

The Contractor shall be solely responsible for acquiring any and all permits and approvals required prior to hauling and disposal of materials off-site. The Contractor shall restore any such areas which are damaged by his operations, to original or better condition. The Contractor will be held liable for damages to roads, sodded areas and gardens, resulting from his non-compliance with these Specifications.

7.0 GRASS BUFFER STRIPS

A 1 metre wide grass buffer shall be established and preserved immediately adjacent to the bank of the new open channel. Grass buffer strips are to be established as indicated in Section 2.0 'Description of Work'. Establishment of grass buffer strips shall be executed using the same seeding methods as described in Section 9.0.

8.0 STONE EROSION PROTECTION (SEP)

The Contractor shall supply and install the required quantities of graded stone rip-rap erosion protection materials where specified. All stone to be used for erosion protection shall be 125 - 250 mm clear **quarried rock** or OPSS 1001 placed over a non-woven filter fabric Terrafix 270R or approved equivalent. **Concrete rip-rap will not be permitted.**

The minimum thickness requirement of the erosion stone layer is 300 mm with no portion of the filter fabric to be exposed.

9.0 HYDRAULIC SEEDING OF DRAIN BANKS

All existing grassed areas disturbed by construction shall be hydraulic mulch seeded as specified herein. The existing ground surface to be seeded shall be loosened to a depth of 25 mm and shall be rendered uniformly loose for that 25 mm depth. The surface shall be predominantly fine and free from weeds and other unwanted vegetation. All other loose surface litter shall be removed and disposed of.

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

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

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

Grass seed shall be Canada No. 1 grass seed mixture meeting the requirements of a Waterway Slough Mixture as supplied by Growmark or approved equal, as follows:

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

Bags shall bear the label of the supplier indicating the content by species, grade and mass. Seed shall be applied at a rate of 200 kg per 10,000 m².

Fertilizer shall be 8-32-16 applied at 350 kg per 10,000 m². It shall be in granular form, dry, free from lumps and in bags bearing the label of the manufacturer, indicating mass and analysis.

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

10.0 SEEDING OF GRASS BUFFER STRIPS, LAWNS & GRASSED AREAS

All existing lawns and grassed areas disturbed by construction or as identified as new or existing grass buffers shall be seeded as specified herein. The existing ground surface to be seeded shall be loosened to a depth of 25 mm and shall be rendered uniformly loose for that 25 mm depth. The surface shall be predominantly fine and free from weeds and other unwanted vegetation. All other loose surface litter shall be removed and disposed of. If mulching is required, it shall be carried out by the contractor as part of the item's tendered price.

Grass seed shall be Canada No. 1 grass seed mixture meeting the requirements of a Waterway Slough Mixture as supplied by Growmark or approved equal, as follows:

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

Bags shall bear the label of the supplier indicating the content by species, grade and mass. Seed shall be applied at a rate of 200 kg per 10,000 m².

Fertilizer shall be 8-32-16 applied at 350 kg per 10,000 m². It shall be in granular form, dry, free from lumps and in bags bearing the label of the manufacturer, indicating mass and analysis.

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

11.0 CLEANING OF ACCESS CULVERTS

At the locations listed below, the Contractor shall clean the existing pipes or culverts to their full capacity and cross section or width. The operation may be carried out by mechanical means or by flushing. Any damage resulting from the Contractor's operation shall be rectified at his expense. All material removed from the pipes or culverts shall be transported to a dump site arranged by the Contractor. The Contractor shall be solely responsible for acquiring all permits required for the dump site. The Contractor shall take precautions during the construction period to avoid re-sedimentation of the pipes and culverts. Any sediment deposited as a result of construction activities shall be removed at the Contractor's expense.

- Bridge No. 1 - Station 0+321, 9.5 m long, 1600 mm diameter corrugated steel pipe (CSP) culvert.
- Bridge No. 2 – Station 0+403, 11 m long, 1600 mm diameter corrugated steel pipe (CSP) culvert.
- Bridge No. 4 – Station 0+755.5, 11 m long, 1400 mm diameter corrugated steel pipe (CSP) culvert.

12.0 ACCESS BRIDGE WORK

12.1 Location of New Culvert

The new culvert shall be installed as shown on the drawings attached hereto. The centreline of the new culvert shall be located to align itself with the existing drain centreline.

12.2 Removal of Existing Culverts

The Contractor shall exercise caution when removing these materials as to minimize damage to the drain banks. Any damage to the drain shall be restored to original conditions at the expense of the Contractor. The removed materials (existing culvert debris and end wall materials) shall be hauled away and disposed at an approved dump site.

12.3 Materials

Culvert Pipe

Bridge Number 3 - Station 0+424.5: New 9.0 m long, 1600 mm diameter aluminized Type II corrugated steel pipe (CSP) wall thickness of 2.8 mm and 125 mm x 25 mm corrugations with rerolled ends.

Bridge Number 5 - Station 0+874.5: New 132 m long, 1780 mm x 1360 mm polymer laminated, aluminized Type II corrugated steel pipe arch (CSPA) wall thickness of 2.8 mm and 125 mm x 25 mm corrugations with rerolled ends.

Note: All new corrugated steel pipe culvert shall be joined with annular aluminized corrugated wide bolt and angle couplers (minimum of 8 corrugation overlap and 2.8 mm wall thickness) and no single pipe less than 6.0 m in length. All pipes connected with couplers shall abut to each other with no more than a 25 mm gap between pipes prior to installation of the coupler and wrapped with filter fabric.

<i>Pipe Bedding Below Pipe</i>	20-25 mm clear stone conforming to OPSS Division 10.
<i>Backfill up to Pipe Culvert Springline (Arch Pipe)</i>	20-25 mm clear stone conforming to OPSS Division 10.
<i>Backfill up to Pipe Culvert Springline (Round pipe)</i>	Granular 'B' conforming to OPSS Division 10.
<i>Backfill Above Pipe Springline up to Bottom of Driveway</i>	<p><u>Farm bridge</u> Dry native material free of topsoil, organic matter, broken concrete, steel, wood and deleterious substances. Alternatively, Granular 'A' or 'B' conforming to OPSS Division 10.</p> <p><u>Residential bridge</u> Granular 'A' made from crushed limestone conforming to OPSS Division 10</p>
Surface Materials	
<i>Driveway Surface</i>	Granular 'A' made from crushed limestone conforming to OPSS Division 10. Minimum 200 mm thickness for farm access bridges.
<i>Erosion Stone</i>	All stone to be used for erosion protection shall be 125 - 250 mm clear quarried rock or OPSS 1004, minimum 300 mm thickness.
<i>Buffer Strips</i>	Dry native material free of topsoil, organic matter, broken concrete, steel, wood and deleterious substances.
<i>Filter Fabric</i>	"Non-Woven" geotextile filter fabric with a minimum strength equal to or greater than Terrafix 270R, Amoco 4546, Mirafi 140NC or approved equivalent.

12.4 Culvert Installation

Suitable dykes shall be constructed in the drain so that the installation of the pipe can be accomplished in the dry. The drain bottom shall be cleaned, prepared, shaped and compacted to suit the new culvert configuration, as shown on the drawings. Granular materials shall be compacted to 100% of their maximum dry density; imported clean native materials shall be supplied, placed and compacted to 95% of their maximum dry density.

12.5 Sloping Stone End Walls

End walls shall be constructed of quarry stone rip-rap, as specified herein. Each end wall shall extend from the invert of the new culvert to the top of the proposed lane. The end walls shall be sloped 1 vertical to 1.5 horizontal with a filter fabric underlay surrounding the pipe and spanning across the entire width of the drain and wrapping around the drain banks to align with the ends of the new pipe culvert. The minimum thickness requirement of the erosion stone layer is 300 mm with no portion of the filter fabric to be exposed to sunlight.

12.6 Concrete Block End Walls

The interlocking concrete blocks, shall consist of 600 mm x 600 mm x 1200 mm size as supplied by Underground Specialties or approved equal. The block rows shall be placed with staggered joints and stacked at a 5:1 batter to form the headwall across the drain on a compacted Granular 'A' or 20-25 mm sized clear stone foundation at a minimum 300 mm thickness. The drawings contained herein provide a general configuration, dimensions, elevations and quantity of interlocking concrete blocks.

12.7 Granular 'A' Driveway

The Contractor shall construct the driveway with a maximum 3% longitudinal grade approach over the new culvert providing a minimum 300 mm cover. This work includes the installation of a minimum 200 mm thickness of compacted Granular 'A' (crushed limestone) surface. The minimum top width of the driveway shall be as shown on the drawings.

12.8 Native Materials

Native materials suitable for use as backfill, as defined under Section 12.2, shall be salvaged from the existing bridge site, as required to complete the work as shown on the drawings, (**Native Backfill Zone only**). Where there is an insufficient amount of native fill materials for backfilling the culvert, the Contractor may elect to import additional dry native materials or alternatively use Granular 'B' at his/her own expense.

12.9 Lateral Tile Drains

Should the Contractor encounter any lateral tiles within the proposed culvert limits not shown on attached drawings, the Contractor shall re-route the outlet tile drain(s) in consultation with the Drainage Superintendent, as required, to accommodate the new culvert. **Tile drain outlets through the wall of the new culvert pipe will not be permitted.** All costs associated with re-routing lateral tile drains (if any) shall be at the Contractor's expense.

Care must be taken in handling plastic drain pipe in cold weather to avoid causing damage.

Plastic drain pipe shall be held in position on planned grade immediately after installation by careful placement of backfill material.

13.0 ROAD CROSSING WORK

13.1 Location of Bridge Replacements

The bridge replacements shall be located and installed as shown on the drawings.

Materials

Materials shall be as follows:

<i>Culvert Pipe</i>	Bridge Number 1B - Station 0+015B 0+044B: <i>New 29 m long, 900 mm diameter solid (non-perforated) corrugated high density polyethylene (HDPE) smooth wall interior (Boss Polytite or approved equal) unless otherwise specified conforming to the following specifications: ASTM D3350, CSA B182.6 and OPSS 1840. The pipe is to provide a minimum pipe stiffness of 320 kPa. Pipe to be joined using (water tight) "bell & spigot gasket" joining system manufactured by Armtec Limited or approved equal), supplied by the pipe manufacturer and conforming to ASTM D3350, CSA 182.6.</i>
<i>Pipe Bedding Below Pipe</i>	<i>20-25 mm clear stone conforming to OPSS Division 10.</i>
<i>Backfill up to Pipe Culvert Springline</i>	<i>Granular 'A' conforming to OPSS Division 10.</i>
<i>Beneath Road Surface, Backfill Above Pipe Springline</i>	<i>Full Granular 'A' backfill conforming to OPSS Division 10.</i>
<i>Beyond Road Surface, Backfill Above Pipe Springline</i>	<i>Dry native material free of topsoil, organic matter, broken concrete, steel, wood and deleterious substances. Alternatively, Granular 'A' or 'B' conforming to OPSS Division 10.</i>
<i>Road Shoulders</i>	<i>Granular 'A' made from crushed limestone conforming to OPSS Division 10. Minimum 300 mm thickness.</i>
<i>Erosion Stone</i>	<i>All stone to be used for erosion protection shall be 125 - 250 mm clear quarried rock or OPSS 1004, minimum 300 mm thickness.</i>
<i>Filter Fabric</i>	<i>"Non-Woven" geotextile filter fabric with a minimum strength equal to or greater than Terrafix 270R, Amoco 4546, Mirafi 140NC or approved equivalent.</i>

13.2 Road Crossing Installation (Station 0+015B And 0+044B)

The Contractor shall remove all of the existing 900 mm CSP crossing as well as the concrete catch basin on the north side of the road. The materials shall be disposed of off-site. The cost of this part of the work shall be included in the cost bid for removals.

The Contractor shall supply and install a new pipe across County Road No. 10 at Station 0+015B to its outlet into the Branch B open drain at Station 0+044B. The pipe materials to be used on the road crossing shall consist of a 29 m length of 900 mm smooth interior wall, high density polyethylene pipe, 320 kPa (Armtec Boss Polytite or approved equal). The pipe shall be installed on the alignment of the existing crossing at County Road No. 10. The exact location and alignment shall be established in the field by the contractor and confirmed by the Drainage Superintendent and the Road Superintendent prior to commencement of construction.

On the alignment of the new road crossing, the excavation shall be true to line and grade and shall produce a clearance of 300 mm on each side of the pipe to be installed. The joining of the existing 900 mm diameter concrete pipe under the ERCF lands to the new 900 mm diameter high density polyethylene pipe (HDPE) under County Road No. 10 shall be made with the bell end of the HDPE pipe overlapping the concrete pipe including filter cloth wrap 1 m wide.

The Contractor shall supply and install minimum 150 mm thickness of 20-25 mm sized clear stone material for bedding at the culvert sites. The excavation of the trench bottom shall be shaped to receive the lower 10% of the pipe diameter. After pipe placement, the Granular 'A' backfill shall be placed and compacted throughout its entire length up to the pipe springline. For the culvert portion under County Road No. 10 the backfill shall consist of full Granular 'A' material placed and compacted in maximum 300 mm lifts up to the road sub-base layer. The road surface shall be reconstructed using a 300 mm layer of Granular 'A' for the full driving width of the road, plus shoulders. Select native backfill shall be placed and compacted in maximum 300 mm lifts to fill the trench beyond these road limits. Each layer of granular materials shall be compacted to 100% Standard Proctor Density. Each layer of native materials shall be compacted to 95% Standard Proctor Density.

The Contractor shall then supply and install 120 mm of hot mix asphalt composed of two (2) base course lifts of HL4 (80 mm) plus a final lift of HL3 (40 mm) to match the existing road surface. The adjoining pavement must be saw-cut to the satisfaction of the Drainage Superintendent prior to asphalt placement. Prior to placing the top lift of asphalt, the contractor shall mill the existing road surface located immediately beyond the east and west edges of the road cut to a 40 mm depth for an additional 300 mm width on both sides. The final course of asphalt shall extend across the full driving surface of the roadway. The contractor shall perform the road reconstruction in accordance with OPSS 310 - Hot Mix Asphalt and OPSS 532 - Pavement Markings.

13.3 Site Cleanup and Restoration

As part of the work and upon completion, the Contractor shall remove and dispose of, off-site any loose timber, logs, stumps, large stones, rubber tires, cinder blocks or other debris from the drain bottom and from the side slopes. Where the construction works cross a lawn, the Contractor shall take extreme care to avoid damaging the lawn, shrubs and trees encountered. Upon completion of the work, the Contractor shall completely restore the area by the placement and fine grading of topsoil and seeding or sodding the area as specified by the Engineer or Drainage Superintendent.

14.0 PRECAST CONCRETE CHAMBERS

The Contractor shall supply and install precast concrete chambers at the locations and elevations as shown on the General Details and Profiles.

The Contractor shall install all precast structures plumb and true to line and grade. Precast bases shall be set to the specified grade, shall be level, and shall have uniform overall contact with the underlying soil. All structures installed shall meet the dimensions and locations outlined on the drawings. Precast concrete catch basins shall conform to Ontario Provincial Standard Drawings (OPSD). The floor elevation shall be at least 300 mm below the invert of the lowest outlet pipe in the wall of the chamber.

Pipe placed in the walls for inlet and outlet connections shall extend through the wall a sufficient distance to allow for connections and shall be securely sealed into place using non shrink concrete grout. The chamber access shall be supplied with heavy duty galvanized ladder rungs and a standard cast iron maintenance hold access cover as per OPSD 401.01.

Alternatively, the precast concrete chamber may be substituted with an equivalent sized round precast concrete maintenance hole in accordance with OPSD 701 specified herein.

15.0 YARD CATCH BASINS

The Contractor shall supply and install 450 mm diameter solid corrugated high density polyethylene (HDPE) smooth wall 320 kPa pipe (Boss 2000 or approved equal) yard catch basin complete with a 450 mm diameter cast iron grate and 150 mm diameter solid corrugated high density polyethylene (HDPE) smooth wall 320 kPa pipe (Boss 2000 or approved equal) connection to the catch basin using prefabricated 450 mm x 150 mm HDPE tee. The base of the yard catch basin shall consist of a minimum 300 mm layer of 19 mm size free draining clear stone material with no bottom within catch basin. The base elevation shall be at least 600 mm below the invert of the lowest outlet pipe in the wall of the catch basin.

Yard catch basins shall be backfilled with clean native materials in maximum 300 mm lifts and compacted to 98% of the maximum standard proctor density.

16.0 CSP RISER TEE CATCH BASIN

The Contractor shall supply and install 600 mm diameter polymer laminated corrugated steel pipe riser tee catch basins complete with a 600 mm diameter cast iron grate. The riser tee fittings are to be fabricated as part of main culvert in accordance with the pipe manufacturer's specifications.

Lateral connections to the main culvert riser tee shall be permitted only where specified using an "Inserta Tee" fitting or approved equal.

17.0 DRIVEWAY RESTORATION

The Contractor shall restore to original conditions or better the roads, driveways and laneways disturbed by construction of the new drainage works including asphalt work and new Granular 'A' materials complete with fine grading and compaction. For existing gravel driveways the minimum width shall be 6.0 m constructed.

Asphalt driveways shall be constructed as follows:

Residential:	40 mm HL3 surface asphalt 40 mm HL3 base asphalt
Roads:	40 mm HL3 surface asphalt 80 mm HL3 base asphalt (two lifts)

Gravel driveways shall be constructed as follows:

Residential:	Minimum 200 mm Granular 'A'
Farm:	Minimum 200 mm Granular 'A'

GENERAL SPECIFICATIONS

1.0 AGREEMENT AND GENERAL CONDITIONS

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.

Where the word "Drainage Superintendent" is used in this specification, it shall mean the person or persons appointed by the Council of the Municipality having jurisdiction to superintend the work.

Tenders will be received and contracts awarded only in the form of a lump sum contract for the completion of the whole work or of specified sections thereof. The Tenderer agrees to enter into a formal contract with the Municipality upon acceptance of the tender. The General Conditions of the contract and Form of Agreement shall be those of the Stipulated Price Contract CCDC2-Engineers, 1994 or the most recent revision of this document.

2.0 EXAMINATION OF SITE, PLANS AND SPECIFICATIONS

Each tenderer must visit the site and review the plans and specifications before submitting his/her tender and must satisfy himself/herself as to the extent of the work and local conditions to be met during the construction. Claims made at any time after submission of his/her tender that there was any misunderstanding of the terms and conditions of the contract relating to site conditions, will not be allowed. The Contractor will be at liberty, before bidding to examine any data in the possession of the Municipality or of the Engineer.

The quantities shown or indicated on the drawings or in the report are estimates only and are for the sole purpose of indicating to the tenderers the general magnitude of the work. The tenderer is responsible for checking the quantities for accuracy prior to submitting his/her tender.

3.0 MAINTENANCE PERIOD

The successful Tenderer shall guarantee the work for a period of one (1) year from the date of acceptance thereof from deficiencies that, in the opinion of the Engineer, were caused by faulty workmanship or materials. The successful Tenderer shall, at his/her own expense, make good and repair deficiencies and every part thereof, all to the satisfaction of the Engineer. Should the successful Tenderer for any cause, fail to do so, then the Municipality may do so and employ such other person or persons as the Engineer may deem proper to make such repairs or do such work, and the whole costs, charges and expense so incurred may be deducted from any amount due to the Tenderer or may be collected otherwise by the Municipality from the Tenderer.

4.0 GENERAL CO-ORDINATION

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

5.0 RESPONSIBILITY FOR DAMAGES TO UTILITIES

The Contractor shall note that overhead and underground utilities such as hydro, gas, telephone and water are not necessarily shown on the drawings. It is the Contractor's responsibility to contact utility companies for information regarding utilities, to exercise the necessary care in construction operations and to take other precautions to safeguard the utilities from damage. All work on or adjacent to any utility, pipeline, railway, etc., is to be carried out in accordance with the requirements of the utility, pipeline, railway, or other, as the case may be, and its specifications for such work are to be followed as if they were part of this specification. The Contractor will be liable for any damage to utilities.

6.0 CONTRACTOR'S LIABILITY

The Contractor, his/her agents and all workmen or persons under his/her control including sub-contractors, shall use due care that no person or property is injured and that no rights are infringed in the prosecution of the work. The Contractor shall be solely responsible for all damages, by whomsoever claimable, in respect to any injury to persons or property of whatever description and in respect of any infringement of any right, privilege or easement whatever, occasioned in the carrying on of the work, or by any neglect on the Contractor's part.

The Contractor, shall indemnify and hold harmless the Municipality and the Engineer, their agents and employees from and against claims, demands, losses, costs, damages, actions, suits, or proceedings arising out of or attributable to the Contractor's performance of the contract.

7.0 PROPERTY BARS AND SURVEY MONUMENTS

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

8.0 MAINTENANCE OF FLOW

The Contractor shall, at his/her own cost and expense, permanently provide for and maintain the flow of all drains, ditches and water courses that may be encountered during the progress of the work.

9.0 ONTARIO PROVINCIAL STANDARDS

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

10.0 APPROVALS, PERMITS AND NOTICES

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

11.0 SUBLETTING

The Contractor shall keep the work under his/her personal control, and shall not assign, transfer, or sublet any portion without first obtaining the written consent of the Municipality.

12.0 TIME OF COMPLETION

The Contractor shall complete all work on or before the date fixed at the time of tendering. The Contractor will be held liable for any damages or expenses occasioned by his/her failure to complete the work on time and for any expenses of inspection, superintending, re-tendering or re-surveying, due to their neglect or failure to carry out the work in a timely manner.

13.0 TRAFFIC CONTROL

The Contractor will be required to control vehicular and pedestrian traffic along roads at all times and shall, at his/her own expense, provide for placing and maintaining such barricades, signs, flags, lights and flag persons as may be required to ensure public safety. The Contractor will be solely responsible for controlling traffic and shall appoint a representative to maintain the signs and warning lights at night, on weekends and holidays and at all other times that work is not in progress. All traffic control

during construction shall be strictly in accordance with the **Occupational Health and Safety Act** and the current version of the **Ontario Traffic Manuals**. Access to the electronic version of the **Ontario Traffic Manual** is available online through the MTO website, free of charge to all users. To access the electronic standards on the Web go to <http://www.mto.gov.on.ca/english/transrd/>, click on "Library Catalogue," under the "Title," enter "Ontario Traffic Manual" as the search. Open the applicable "Manual(s)" by choosing the "Access Key," once open look for the "Attachment," click the pdf file. Users require Adobe Acrobat to view all pdf files.

Contractors are reminded of the requirements of the Occupational Health and Safety Act pertaining to Traffic Protection Plans for workers and Traffic Control Plan for Public Safety.

14.0 SITE CLEANUP AND RESTORATION

As part of the work and upon completion, the Contractor shall remove and dispose of, off-site any loose timber, logs, stumps, large stones, rubber tires, cinder blocks or other debris from the drain bottom and from the side slopes. Where the construction works cross a lawn, the Contractor shall take extreme care to avoid damaging the lawn, shrubs and trees encountered. Upon completion of the work, the Contractor shall completely restore the area by the placement and fine grading of topsoil and seeding or sodding the area as specified by the Engineer or Drainage Superintendent.

15.0 UTILITY RELOCATION WORKS

In accordance with Section 26 of the Drainage Act, if utilities are encountered during the installation of the drainage works that conflict with the placement of the new culvert, the operating utility company shall relocate the utility at their own costs. The Contractor however will be responsible to co-ordinate these required relocations (if any) and their co-ordination work shall be considered incidental to the drainage works.

16.0 FINAL INSPECTION

All work shall be carried out to the satisfaction of the Drainage Superintendent for the Municipality, in compliance with the specifications, drawings and the Drainage Act. Upon completion of the project, the work will be inspected by the Engineer and the Drainage Superintendent. Any deficiencies noted during the final inspection shall be immediately rectified by the Contractor.

Final inspection will be made by the Engineer within 20 days after the Drainage Superintendent has received notice in writing from the Contractor that the work is completed, or as soon thereafter as weather conditions permit.

17.0 FISHERIES CONCERNS

Standard practices to be followed to minimize disruption to fish habitat include embedment of the culvert a minimum 10% below grade, constructing the work 'in the dry' and cutting only trees necessary to do the work (no clear-cutting). No in-water work is to occur during the timing window unless otherwise approved by the appropriate authorities.