

THE CORPORATION OF THE TOWN OF AMHERSTBURG

BYLAW NO. 2006-28

**Being a Bylaw to provide for the Construction of a
Residential Access Culvert over the Albert McGee Drain (upper portion)**

WHEREAS Randal & Audrey Dufour have made a request for the replacement of a residential access bridge over the Albert McGee Drain (upper portion);

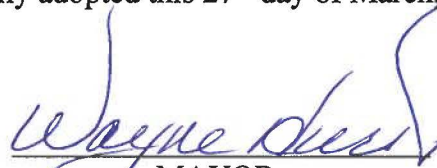
AND WHEREAS the Council of the Corporation of the Town of Amherstburg has authorized Bruce D. Crozier Engineering Inc. to prepare a report and said report dated January 9, 2006 is attached hereto and forms part of this bylaw;

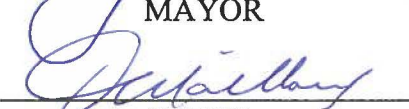
AND WHEREAS Council is of the opinion that the said replacement is appropriate.

**NOW THEREFORE THE COUNCIL OF THE CORPORATION
OF THE TOWN OF AMHERSTBURG ENACTS AS FOLLOWS:**

1. That the report of Bruce D. Crozier Inc. dated January 9, 2006 is hereby adopted and the drainage works therein shall be completed in accordance therewith.
2. That this Bylaw comes into force on the final passing thereof.

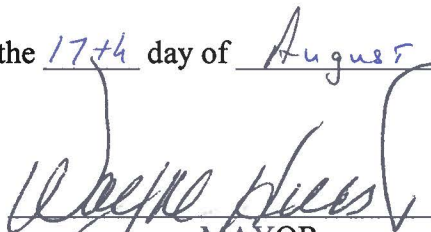
Read a first and second time and provisionally adopted this 27th day of March, 2006.

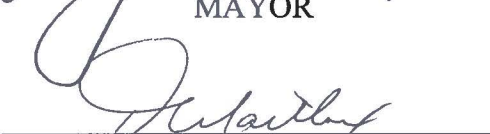


MAYOR


CLERK

Read a third time and finally passed the 17th day of August, 2006.



MAYOR


CLERK

**RESIDENTIAL ACCESS CULVERT
OVER THE ALBERT McGEE DRAIN (UPPER PORTION)**

OWNER: RANDAL & AUDREY DUFOUR

TOWN OF AMHERSTBURG

BRUCE D. CROZIER ENGINEERING INC.

CONSULTING ENGINEER

1940 DEER RUN ROAD

LEAMINGTON, ONTARIO

N8H 3V7

PROJECT REFERENCE BC-05-056

Date: January 9, 2006

January 9, 2006

Mayor and Municipal Council
Corporation of the Town of Amherstburg
P.O. Box 159
271 Sandwich Street South
Amherstburg, Ontario
N9V 2Z3

Mayor Hurst and Councillors

**SUBJECT: Residential Access Culvert
Over the Albert McGee Drain (Upper Portion)
Owner: Randal & Audrey Dufour
Town of Amherstburg
Our Project Reference BC-05-056**

1.0 Authorization

Pursuant to Section 78 of "The Drainage Act, 1990," the Corporation of the Town of Amherstburg received a request from Randal and Audrey Dufour for the repair or replacement of a residential access bridge over the Albert McGee Drain (Upper Portion). The firm of Bruce D. Crozier Engineering Inc., was subsequently appointed to prepare a report as provided for under the provisions of "The Drainage Act, 1990."

As requested by Council, we have made a survey and examination and have taken measurements and a cross section of the Albert McGee Drain (Upper Portion) at the location of the existing residential access bridge serving residential lands owned by Randal and Audrey Dufour, being Part Lot 68, Concession 6, in the Town of Amherstburg and we report thereon as follows.

2.0 Current Drainage Report

The latest drainage report on file for the Albert McGee Drain (Upper Portion) is one prepared by W.J. Settington, P. Eng., and dated May 9, 1973.

3.0 Site Meeting, Inspection and Survey

On November 9th, 2005 a site meeting was conducted with the affected landowners and others. Present at the meeting were Bruce D. Crozier, P. Eng., Town Drainage Superintendent Dwayne Grondin and landowners Randal Dufour, Jon Parks, Bob Crawford, David Bailey, Jerome Deslippe, and Kenneth McAlpine.

The undersigned explained the purpose for calling the site meeting and further explained applicable sections of the Drainage Act in regards to reconstruction of access bridges. Also described was the process for preparing a drainage report and the sequence of events that would be followed for the reconstruction of the residential access bridge.

Mr. Crozier further explained that the existing bridge cannot be repaired. Portions of the existing bridge are structurally inadequate, with a large hole in the concrete deck and the cost of repairing the structure to comply with current standards would likely be higher than the cost of replacing the existing structure.

Mr. Crozier explained that following the procedures of the Drainage Act the process would take a couple of months before construction. He further explained that costs would be assessed according to the municipalities standards. It was also noted that the upstream area was quite large and that actual assessments for a residential lot would be minimal so objections to assessments would hopefully not be encountered.

He further explained that a concrete filled jute bag headwalls would be included in the report for determining assessments as this is the most economical.

Mr. Crozier thanked all in attendance.

On November 14, 2005 we took measurements of the bridge and a cross section of the drain. We have determined that the centreline of the residential access culvert would be located approximately at Station 110+48 this being in reference to the above noted current drainage report and as illustrated on the accompanying drawing.

4.0 Existing Site Conditions

The existing bridge is situated in front of the subject residential lot consisting of 0.259 ha. The age of the existing bridge is unknown, however, it appears that it has been situated within the drain for at least 32 years.

The existing bridge consists of poured in place concrete abutment walls and deck. The abutment walls are round concrete pillars. The concrete deck is 4.87 m wide and has a large hole through the deck, which is covered by a sheet of plywood.

We found the existing bridge to be too narrow under the Town's current standards and to be in very poor condition.

In order to repair the existing concrete and steel beam bridge it would be necessary to install footings, replace the steel beams, extend the concrete abutments and extend the deck to a width of 6.0 m. We further find it would be possible to construct a new access bridge utilizing a corrugated steel pipe structure. The cost of constructing a new bridge with the corrugated steel pipe would be less costly than to attempt repairing and improving the existing concrete and steel beam bridge.

5.0 Recommendations

We would recommend that the existing bridge be removed and replaced with a new 2000 mm diameter Hel Cor corrugated steel pipe residential access culvert 7.9 metres long, complete with concrete filled jute bag headwalls, as provided for in this report and as described in the attached specifications at the above noted location.

We would further recommend that this work be carried out under the provisions of "The Drainage Act, 1990."

We would further recommend that the residential access bridge constructed under this report be hereinafter considered part of the Albert McGee Drain (Upper Portion).

6.0 Drawing and Specification

Attached to this report is Drawing No. BC-05-056 Sheets 1 & 2, which consist of a plan showing the location of the proposed bridge and the land affected by the work, together with the detail and cross sections of the recommended work. Specifications are included in this report which show the dimensions, grades, disposal of material, working areas for construction and future maintenance, and other particulars of the recommended work.

7.0 Estimate of Cost

Our estimate of the total cost of this work, including all incidental expenses, is the sum of Twenty-Two Thousand, Two Hundred and Eighty Dollars (\$22,280.00) made up as follows:

CONSTRUCTION

- | | | |
|----|--|-------------|
| 1) | Supply to site and set 7.9 metres 2000 mm diameter Hel-Cor corrugated steel pipe, 3.5 mm wall thickness, 68 x 13 mm corrugations, complete at \$ <u>570.00</u> per metre. | \$ 4,503.00 |
| 2) | Supply labour and equipment to excavate for and install specified pipe including all drain excavation, plus approximately 30 cubic metres of bank excavation, disposal of surplus material and all drain bank seeding and road restoration, complete at Lump Sum | \$ 2,500.00 |

3)	Supply and install granular material including approximately 9 tonnes of Granular "A" bedding and approximately 170 tonnes Granular "B" backfill for pipe and approximately 45 tonnes Granular "A" placed 300 mm thick as driveway extending to edge of granular road shoulder, complete at Lump Sum	\$ 3,800.00
4)	Supply and install concrete filled jute bag headwalls, single bag wall thickness, at each end of corrugated steel pipe structure as specified, including all materials, excavation and backfill, concrete footings and caps, compacted Granular "A" backfill to trench excavation into drain bank, requiring approximately 600 jute bags, complete at Lump Sum	\$ 3,600.00
5)	Remove existing steel bridge, including concrete deck and footings, along with disposing of materials off site, complete at Lump Sum	\$ 1,400.00
6)	Supplying, installation and maintaining silt fence erosion protection at downstream location from structure complete at Lump Sum	\$ 247.00
7)	Contractor to prepare traffic control plan for approval by the road authority having jurisdiction including all signage at the site in accordance with the latest revision of the Ontario Traffic Manual Book 7 Temporary Conditions at Lump Sum	\$ 500.00
	SUB TOTAL FOR CONSTRUCTION	\$ 16,550.00
	G.S.T. PAYABLE (Municipality receives 100% rebate)	\$ 0.00
	TOTAL FOR CONSTRUCTION	\$ 16,550.00

INCIDENTALS

Survey, report, estimate and specifications.	\$ 2,300.00
Assistants and expenses, typing report and preparing drawing.	\$ 2,200.00
Tender Documents	\$ 400.00
O.M.B. Fee (if required)	\$ 130.00
Construction Inspection (if required and by Town)	\$ 500.00
Contingency Allowance (if required)	\$ 200.00
TOTAL FOR INCIDENTALS	\$ 5,730.00
G.S.T. ON INCIDENTALS (Municipality receives 100% rebate)	\$ 0.00
TOTAL FOR CONSTRUCTION (brought forward)	\$ 16,550.00
TOTAL ESTIMATE	\$ 22,280.00

8.0 Assessment

We would recommend that the total cost of this work be assessed against the lands and roads affected in accordance with the accompanying Schedule of Assessment.

The above noted assessments are based upon the above described estimated costs. Upon completion of the construction work the final project cost will be determined by the Town Clerk

who would then apply for any applicable grant to agricultural lands. The clerk would then send a final assessment to each affected landowner in proportion to the above noted Schedule of Assessment.

9.0 Maintenance

We would recommend that the access culvert be kept up and maintained as part of the Albert McGree Drain at the expense of the lands and roads herein assessed for its improvement and in the proportions herein contained excluding any amounts assessed as Special Benefit or until otherwise determined under the provisions of the Drainage Act.

10.0 Grant

In accordance with the provisions of Section 85, 86 and 87 of "The Drainage Act, 1990," a grant possibly in the amount of 33 1/3% of the assessment eligible for a grant, may be made in respect to the assessment made in this report, upon privately owned lands used for agricultural purposes. We would further recommend that an application be made by the Town upon completion of this project, to the Ministry of Agriculture, Food and Rural Affairs in accordance with Section 88 of "The Drainage Act, 1990," for this grant, if applicable.

11.0 Drainage Act Procedure for Construction of Bridges and Culverts

The following is a summary of the general procedure the Town will follow to provide for reconstruction of an existing access bridge in the Municipal Drain. As this is only a summary additional details may be obtained from the Town Clerk or Engineer.

- a) Landowner signs request for repair and improvement of existing bridge.
- b) Council accepts request and appoints engineer.
- c) Engineer arranges for site meeting with Town Drainage Superintendent and others to discuss project. Engineer will take survey of bridge site upon conclusion of site meeting.
- d) Engineer designs bridge reconstruction or repair and improvements to appropriate standards and prepares drainage report including description of required bridge structure, breakdown of the construction items and quantities, estimate of cost, Schedule of Assessment, specifications and plans and tender documents for construction.
- e) Engineer provides copies of drainage report to the Town. The Town Clerk then sends copies of the report and notice of Council Meeting to consider the report to all affected and assessed landowners and others. The Town Clerk then arranges to have the drainage report considered by Town Council at a regular Council meeting.
- f) At the meeting for consideration the Town Council may adopt the report. If adopted the town Clerk prepares a Provisional By-Law for the new bridge and sends copies of the By-Law to affected parties and arranges a second meeting of Council for the Court of Revision.
- g) The Court of Revision is held 20 to 30 days after mailing of the Provisional By-Law and the purpose is to discuss issues of cost assessments. If there are no appeals to the Court of Revision Council may instruct that tenders be called from local Contractors to provide quotations for the bridge construction.
- h) The Town Drainage Superintendent will then request quotations from three or more reliable and insured Contractors having experience with Municipal Drainage and bridge construction.
- i) The Town Drainage Superintendent will arrange for the construction of the bridge with the selected Contractor. If there are no appeals to the Court of Revision within 21 days of the Courts decision then construction can commence approximately 30 to 35 days after the date of the Court of Revision. Inspection of the construction work would be provided by the Town Drainage Superintendent or by an inspector from the Engineering office.

- j) Upon completion of construction, the Town Clerk will finalize all applicable costs, submit grant applications to the Ministry of Agriculture, Food and Rural Affairs, if applicable, and the Clerk will then send a final assessment to the landowners.
- k) The Town will not normally permit a landowner to install their own bridge due to insurance liabilities and an obligation to upstream landowners to safe guard their drainage requirements. Should the landowner request a certain Contractor the Drainage Superintendent may include said Contractor among those Contractors requested to provide a quotation.

All of which is respectfully submitted.

**BRUCE D. CROZIER ENGINEERING INC.
CONSULTING ENGINEER
1940 DEER RUN ROAD
LEAMINGTON, ONTARIO
N8H 3V7**

Bruce D. Crozier, P. Eng.

BDC/kc

SPECIFICATIONSRESIDENTIAL ACCESS CULVERTOVER THE ALBERT MCGEE DRAIN (UPPER PORTION)OWNER: RANDAL & AUDREY DUFOURTOWN OF AMHERSTBURGPROJECT REFERENCE BC-05-056**1.0 PIPE MATERIAL**

The Contractor shall supply and install, new Hel-Cor corrugated steel pipe, having a dimension of 2000 mm and a wall thickness of 3.5 mm with 68 x 13 mm corrugations. The corrugated steel pipe shall have a length of 7.9 metres.

2.0 WORKING AREA

The Contractor shall restrict his equipment to the roadside of the drain and to within 6.0 m of the residential land side at the site.

3.0 DISPOSAL OF EXCAVATED MATERIAL

The Contractor shall dispose of all surplus excavated material, at a site to be determined by him and at his expense.

4.0 LOCATION AND ELEVATION OF CULVERT

The pipe shall be set in the centreline of the existing drain and the Contractor shall carry out all required excavation to install the pipe and specified concrete jute bag headwalls.

The centreline of the new access culvert is to be located at approximately Station 110+48, the stationing being as shown in the current report on this drain and as shown on the accompanying drawing, however, the final position of the culvert may be determined by the Commissioner in charge.

The invert (inside bottom) bottom of the pipe, shall be set according to the elevations shown on the accompanying plan. For the purpose of construction the bench mark indicated on the accompanying plan shall be used to determine the elevation of the proposed culvert.

5.0 PLACEMENT OF CULVERT

- a) The Contractor shall carefully unload, handle and place the specified pipe so as not to damage same. Damaged material or pipes distorted from improper installation will not be accepted.
- b) The Contractor shall carefully excavate for and install the specified pipe upon 150 mm of Granular "A" material bedding compacted to 95% Standard Proctor Dry Density.
- c) The Contractor shall provide Granular "B" backfill under the driveway, to within 300 mm of finish grade. The top 300 mm of the driveway surface shall be backfilled with Granular "A" material from the far top of bank to edge of granular road shoulder for the minimum driveway width and turning radius (if any) shown on the accompanying plans.
- d) The Contractor shall perform the excavation, placement of bedding, pipe and backfill in a dry condition and shall provide all required pumps and/or equipment to enable the work to proceed in the dry.
- e) The end protection to each end of the pipe structure shall be as specified in the tender item description and in accordance to the following applicable specifications.

6.0 BRIDGE BACKFILL

After the pipe has been set, the Contractor shall backfill the pipe with granular "B" material, O.P.S.S. Spec 1010 with the exception of the top 300 mm of the backfill over the pipe. The top 300 mm of the backfill for the full width of the excavated area (between each side slope of the drain) and for the top width of the driveway, shall be granular "A" material, O.P.S.S. Spec 1010. The backfill material shall be carefully placed so damage to or movement of the pipe is avoided and backfill materials shall be

placed in layers not exceeding 300 mm in thickness, loose measurement. Each layer shall be thoroughly compacted in place to a Standard Proctor Dry Density of 98% by means of mechanical compactors. The equipment and method of compacting the backfill material shall be to the full satisfaction of the Commissioner in charge.

7.0 BAGGED CONCRETE HEADWALLS

Where specified and after the Contractor has set in place the new pipe, and partially backfilled same he shall install new concrete filled jute bag headwalls at each end of the pipe. When constructing the concrete jute bag headwalls, the Contractor shall place the bags so that the completed headwall will have a slope inward from the bottom of the pipe to the top of the finished headwall, the slope of the headwall shall be one unit horizontal to five units vertical. The Contractor shall completely backfill in behind the new concrete jute bag headwalls with granular material, Granular "B" per O.P.S.S. 1010 and the granular material shall be compacted in place with a standard proctor density of 100%. The placing of the jute bag headwalls and the backfilling shall be performed in lifts simultaneously. The granular backfill shall be placed and compacted in lifts not to exceed 300 mm in thickness.

The concrete jute bag headwalls shall be constructed by filling jute bags with concrete. All concrete used to fill the jute bags shall have a minimum compressive strength of 20.7 MPa in 28 days and shall be provided and placed only as a wet mix, under no circumstance, shall the concrete to be used for filling the jute bags, be placed as a dry mix. The jute bags, before being filled with concrete, shall have a dimension of 460 mm × 660 mm. The jute bags shall be filled with concrete so that when they are laid flat, they will be approximately 100 mm thick, 300 mm to 380 mm wide and 460 mm long. The concrete jute bag headwall to be provided at the end of the pipe shall be of single bag wall construction or as specified otherwise. The concrete filled bags shall be laid so that the 460 mm dimension is parallel with the length of the new pipe. The concrete filled bags shall be laid on a footing of plain concrete being 460 mm wide or as otherwise specified, extending for the full length of the wall, and from 0.30 metres below the bottom of the corrugated pipe to the bottom of the culvert pipe. All concrete used for the footing shall have a minimum compressive strength of 20.7 MPa in 28 days. The completed jute bag headwalls shall be securely embedded a minimum of 0.50 metres into the side slopes of the drain. At the roadside of the bridge the Contractor shall flare outwards each headwall approximately to 1.5 metres as directed by the Commissioner in charge.

Upon completion of the jute bag headwall the Contractor shall cap the top row of concrete filled bags with a layer of plain concrete, 150 mm thick, and hand trowelled to obtain a pleasing appearance. The concrete cap shall be the same width as the bagged wall and excess concrete will not be allowed to be placed on the cap area. The concrete cap shall not overhang the bagged wall on the driveway side of the wall.

The Contractor shall fill all voids between the concrete filled jute bags and the corrugated steel pipe with concrete, particular care being taken underneath the pipe haunches to fill all voids.

8.0 ALIGNMENT

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

9.0 LOCATION OF STRUCTURES, ETC.

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

10.0 DAMAGE TO TRAVELLED PORTION OF MUNICIPAL ROAD

The Contractor will be responsible for any damage caused by him to any portion of the municipal road system, especially to the travelled portion. When excavation work is being carried out and the excavation equipment is placed on the travelled portion of a road, the travelled portion shall be protected by having the excavation equipment placed on satisfactory timber planks or timber pads. If any parts of the travelled portion of the road is damaged by the Contractor, the Municipality shall have the right to have the necessary repair work done by its employees and the cost of all labour and materials used to carry out the repair work shall be deducted from the Contractor's contract and credited to the Municipality.

11.0 CONSTRUCTION SAFETY

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

The Contractor shall exercise all possible precaution against injury to persons or property resulting from his work. The Contractor shall leave no trenches, pits, holes or excavations uncovered, without providing sufficient protection at all times. The Contractor shall install, erect and provide barricades, signs, traffic cones, flashers, lights, plates, warning and other devices, materials and personnel as may be required and at his own expense in order to provide for the safe passage and control of traffic and to ensure public safety. All traffic control shall be in accordance with the latest standards of the Ministry of Transportation.

12.0 CERTIFICATE OF CLEARANCE

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

13.0 PROGRESS ORDERS

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

14.0 CLEANING UP

The Contractor shall leave the whole of the site of the work in a neat, thorough and workmanlike appearance to the full satisfaction of the Commissioner. He shall haul away any excess earth from the site. He shall haul to the site, sufficient earth to fill any depressions caused by his work at his own expense. The site shall be left as close as possible in the same condition as it was prior to the commencement of the work.

15.0 MEASUREMENT AND PAYMENT

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

16.0 MAINTAINING FLOW

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

17.0 COMMISSIONER

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

The Commissioner will be permitted to make minor variations in the work so long as these variations will result in a more satisfactory project or a more economical one. These variations, however, must not be such as to change the intent of the work performed nor are they to reduce the standard of quality.

18.0 NOTIFICATION OF WORK

Prior to commencing any work of installing the new bridge or removing any existing structures, the Contractor shall inform the Town Drainage Superintendent of his intent to commence work at least 48 hours prior to commencing any work. The Owner or Contractor shall endeavour to install and complete the new structure without delay once he has commenced the work. If for any reason the work does not proceed continuously then the Owner or Contractor shall notify the Drainage Superintendent in advance of any backfilling operation or headwall construction so that he may schedule inspection of same. The completed work must be done to the satisfaction of the Town Drainage Superintendent and be approved by him.

19.0 MAINTENANCE

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

20.0 ENTRANCE PERMIT

If the proposed bridge or enclosure is to provide access from a county road under the jurisdiction of the County of Essex it will be necessary to obtain an entrance permit from the County of Essex Engineering Department. It will be the responsibility of the culvert owner to arrange for this permit and to pay for the partially refundable deposit.