

CORPORATION OF THE TOWN OF AMHERSTBURG

BY-LAW NO. 2004-38

Being a by-law to provide for the construction of a
New Farm Access Culvert over the Shaw Drain.

WHEREAS Jeanne Laframboise, owner of Part lot 1, Concession 4 has requested the installation of a new farm access culvert over the Shaw Drain;

AND WHEREAS Jeanne Laframboise will be responsible for one hundred per cent (100%) of the costs of the work plus engineering costs;

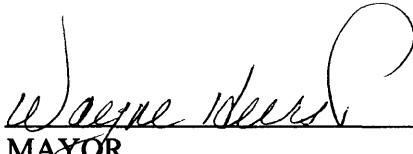
AND WHEREAS the Council of the Corporation of the Town of Amherstburg has authorized Bruce D. Crozier Engineering Inc. to prepare a report and said report dated March 4, 2004 is attached hereto and forms part of this by-law;

AND WHEREAS Council is of the opinion that the said new farm access culvert is desirable;

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

1. That the report of Bruce D. Crozier D. Crozier Engineering Inc. dated March 4, 2004 is hereby adopted and the drainage works therein shall be in accordance therewith.
2. That this by-law comes into force on the final passing thereof.

Read a first and second time and provisionally adopted this 3rd day of May, 2004.



MAYOR



CLERK

Read a third time and finally passed this 26th day of July 2004.

BRUCE D. CROZIER ENGINEERING INC.
CONSULTING ENGINEER
1940 DEER RUN ROAD, R.R. #4
LEAMINGTON, ONTARIO N8H 3V7
(519)326-6161 FAX(519)326-6162

March 5, 2004

Corporation of the Town of Amherstburg
271 Sandwich Street South
Amherstburg, Ontario
N9V 2Z3

ATTENTION: Mr. Lou Zarlenga, P. Eng.
Manager of Public Works

Dear Lou

SUBJECT: New Farm Access Culvert
Over the Shaw Drain
Owner: Mrs. Jeanne LaFramboise
In the Town of Amherstburg
Our File Reference BC-04-008

We have now had an opportunity to prepare a report for the proposed new farm access culvert over the Shaw Drain for Mrs. Jeanne LaFramboise.

We are enclosing two (2) copies of the drainage report with drawings along with two (2) copies of the Form of Tender documents and drawings, which are suitable for reproduction.

We have proposed to install a new 1050 mm diameter corrugated steel pipe, 13.7 metres in length, with sloped gabion stone end protection.

We have also noted in the report that all of the costs for this project are to be assessed to the property owned by Jeanne LaFramboise.

We have also noted in the report that there could be a grant available for this project since it is the first access to the property over the Shaw Drain from the 5th Concession Road.

We are also enclosing our account for our professional services rendered with regards to this project.

- 2 -

Trusting you will find the above and enclosed satisfactory, however, if you have any questions please contact the writer accordingly, I remain,

Sincerely,

BRUCE D. CROZIER ENGINEERING INC.


Bruce D. Crozier, P. Eng.

BDC/kc

NEW FARM ACCESS CULVERT

OVER THE SHAW DRAIN

OWNER: JEANNE LAFRAMBOISE

TOWN OF AMHERSTBURG

BRUCE D. CROZIER ENGINEERING INC.

CONSULTING ENGINEER

1940 DEER RUN ROAD, R. R. #4

LEAMINGTON, ONTARIO

N8H 3V7

PROJECT REFERENCE BC-04-008

March 4, 2004

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

Mayor Hurst and Councillors

**SUBJECT: New Farm Access Culvert
Over the Shaw Drain
Owner: Jeanne LaFramboise
In the Town of Amherstburg
Our Project Reference BC-04-008**

1.0 Authorization

Pursuant to Section 78 of "The Drainage Act, 1990," the Corporation of the Town of Amherstburg received a request from Jeanne LaFramboise for the installation of a new farm access culvert over the Shaw Drain. 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 Shaw Drain at the location where the new farm access culvert has been requested to be constructed, to serve agricultural lands owned by Jeanne LaFramboise, being Pt. Lot 11, Concession 4, in the Former Township of Anderdon and we report thereon as follows.

2.0 Current Drainage Report

The current drainage report on file for the Shaw Drain is one prepared by Gerard Rood, P. Eng. and Nick Peralta, P. Eng. and dated March 22, 1996.

3.0 Site Meeting

A site meeting was held on Friday, February 27th, 2004. In attendance at the meeting were Mr. Bob Crawford, Drainage Superintendent, Mr. Matt Souchereau who was acting as Mrs. LaFramboise's agent and Bruce D. Crozier, P. Eng.

Mr. Souchereau pointed out where the farm access culvert should be installed. Mr. Crozier stated to Mr. Souchereau that because this was a new farm access culvert, that all of the costs for its construction would be assessed to the property owned by Mr. LaFramboise.

However, since this was the first access culvert to service the LaFramboise agricultural property over the Shaw Drain along the 5th Concession Road, there would likely be 1/3 grant available.

Mr. Souchereau expressed his wishes that the access culvert be constructed as soon as possible as planting season is fast approaching.

4.0 Inspection and Survey

We attended the site to conduct our site survey of the property owned by Jeanne LaFramboise. Mrs. LaFramboise has requested that a farm access culvert be installed to obtain access to her property from the 5th Concession Road.

We determined that a corrugated steel pipe structure, with sloped end protection, would best serve these lands. Upon further inspecting the site, we found that the proposed access culvert would be situated along the east side of the 5th Concession Road. The roadway is comprised of tar and chip pavement with a 0.90 metre wide granular shoulder. A grass boulevard of approximately 4.1 metres in width further exists between the travelled roadway and the west bank of the Shaw Drain. We further found the drain banks at the location of the proposed culvert to be fairly stable and well grassed and there was relatively little sediment within the bottom of the drain at that location. We further found that the first downstream bridge is a corrugated steel pipe structure of approximately 1,050 mm (42") diameter. We further found that the proposed culvert would provide access over the Shaw Drain from 5th Concession Road to the owners agricultural lands.

5.0 Recommendations

We would recommend that a new 1050 mm (42 inch) diameter corrugated steel pipe farm access culvert be installed, complete with sloped quarried rock erosion protection, 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 farm access culvert constructed under this report be hereinafter considered a part of the Shaw Drain.

6.0 Drawing and Specification

Attached to this report is Drawing No. BC-04-008 Sheets 1 and 2, which consist of a plan showing the location of the proposed culvert 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 Ten Thousand, Five Hundred and Ninety dollars (\$ 10,590.00) made up as follows:

CONSTRUCTION

(a)	Supply and place approximately 13.7 metres (45 ft) of 1050 mm (42") diameter galvanized Hel-Cor corrugated steel pipe, 2.0 mm walls (14 gauge wall thickness), 68 mm x 13 mm (2-2/3" x 1/2") corrugations, complete, including excavating of topsoil and vegetation from bank slopes and bottom, where the pipe is to be constructed.	
	Approximately 13.7 metres at \$200.00 per metre.	\$ 2,740.00
(b)	Granular "A" material to be supplied, placed and compacted to 150 mm thick as pipe bedding and 300 mm thick for driveway restoration extending into gravel shoulder.	
	Approximately 100 tonnes at \$17.00 per tonne.	\$ 1,700.00
(c)	Granular "B" bedding and backfill to be supplied, placed and compacted complete.	
	Approximately 110 tonnes at \$11.00 per tonne.	\$ 1,210.00
(d)	Supply and place sloped quarried rock erosion protection at pipe ends including excavation and geotextile filter fabric, Terrafix 270R or equivalent, complete.	
	Approximately 24 square metres at \$40.00 per square metre.	\$ 960.00
(e)	Supply, install and maintain sediment and erosion control device comprised of 3 straw bales staked in place.	
	Complete at Lump Sum.	\$ 240.00
(f)	Contractor to prepare traffic plan for approval of the Municipality including all signage at site in accordance with the latest revision of the Ontario Traffic Manual Book 7 Temporary Conditions.	
	Complete at Lump Sum.	\$ 500.00

SUB TOTAL FOR CONSTRUCTION	----- \$ 7,350.00
G.S.T. PAYABLE (approximately 7% x 0.43 net)	\$ 220.00 -----
TOTAL FOR CONSTRUCTION (including G.S.T.)	\$ 7,570.00 -----
 INCIDENTALS	
Survey, design, drawing preparation, estimate of cost.	\$ 1,200.00
Report preparation, specifications, assistants and expenses.	\$ 800.00
Tender Documents	\$ 200.00
O.M.B. Fee (if required)	\$ 130.00
Construction Inspection (if required by Town)	\$ 400.00
Contingency Allowance (if required)	\$ 200.00
TOTAL FOR INCIDENTALS	\$ 2,930.00 -----
G.S.T. ON INCIDENTALS (approximately 7% x 0.43 net)	\$ 90.00
TOTAL FOR CONSTRUCTION (brought forward)	\$ 7,570.00
 TOTAL ESTIMATE	 \$ 10,590.00 -----

8.0 Assessment

We would recommend that the total cost of this work be assessed against the agricultural lands owned by Jeanne LaFramboise being Pt. Lot 11, Concession 4, situated within the Town of Amherstburg.

9.0 Maintenance

We would further recommend that the access culvert be kept up and maintained as part of the Shaw Drain at the expense subject property and all affected upstream owners, in the proportion of 50% to the owner and 50% to the cost of the drain or until otherwise determined under the provisions of "The Drainage Act, 1990".

10.0 Grant

As the subject lands are used for agricultural purposes a grant for this particular drainage work should be available from the Ministry of Agriculture, Food and Rural Affairs.

11.0 Drainage Act Procedure for Constructing New Culvert

The following is a summary of the general procedure the Town will follow to provide for the new culvert enclosure in the Municipal Drain. As this is only a summary additional details may be obtained from the Town Clerk or the Engineer.

- a) Landowner signs petition requesting new access culvert.
- b) Council accepts petition and appoints engineer.
- c) Engineer arranges for site meeting to discuss project and to take a survey of the culvert site.
- d) Engineer designs culvert to appropriate standards and prepares drainage report including description of required access, breakdown of the construction items and quantities, estimate of cost, 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 to the owner 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 there are no objections. If adopted the town Clerk prepares a Provisional By-Law for the new enclosure 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 enclosure construction.
- h) The Town Drainage Superintendent will then request quotations from three or more reliable and insured Contractors having experience with Municipal Drainage and culvert construction.
- i) The Town Drainage Superintendent will arrange for the construction of the enclosure with the selected Contractor and will also provide intermittent inspection of the Contractors work. 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.
-) 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 landowner.
- k) As described above the Drainage Act requires a minimum waiting period of approximately 60 to 65 days after report adoption before construction can start. The Town realizes that circumstances may arise where the landowner must obtain access to the lands within a shorter time period. In this regard the Town Council may accept a signed Waiver of Appeal Rights from the landowner where the landowner agrees with the conditions of the drainage report and the landowner agrees that he will not appeal the report or assessments. Should Council accept the signed Waiver the Town Drainage Superintendent would be instructed to obtain Contractor quotations soon after the drainage report is adopted and construction can then start as soon as a Contractor is selected.

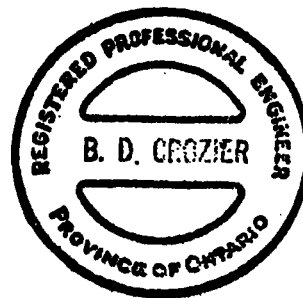
In this event the Town Clerk must still provide the necessary Provisional By-Laws and still arrange for Court of Revision as per normal Drainage Act procedures.

- l) The Town will not normally permit a landowner to install their own culvert 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, R.R. #4
LEAMINGTON, ONTARIO
N8H 3V7


Bruce D. Crozier, P. Eng.



SPECIFICATIONS**NEW FARM ACCESS CULVERT****OVER THE SHAW DRAIN****OWNER: JEANNE LAFRAMBOISE****TOWN OF AMHERSTBURG****PROJECT REFERENCE BC-04-008****1.0 PIPE MATERIAL**

The Contractor shall supply and install, new galvanized Hel-Cor corrugated steel pipe, having a diameter of 1050 mm (42") and a wall thickness of 2.0 mm (14 gauge) with 68 mm x 13 mm (2-2/3" x 1/2") corrugations. The corrugated steel pipe culvert shall have a length of 13.7 metres (45 ft).

2.0 WORKING AREA

The Contractor shall restrict his equipment to the roadside of the drain and to within 6 metres of the agricultural 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 corrugated steel pipe shall be set in the centreline of the existing drain and the Contractor shall carry out all required excavation to install the corrugated steel pipe and specified quarried rock end protection.

The centreline of the new access culvert is to be located at approximately 41.75 m south of the northwest corner of the agricultural lands, 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 (6") of Granular "A" stone bedding compacted to 95% Standard Proctor 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.
- 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 CULVERT BACKFILL

After the corrugated steel 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 (12") of the backfill over the corrugated steel 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 (12") in thickness, loose measurement. Each layer shall be thoroughly compacted in place to a Standard Proctor Density of 100% by means of mechanical compactors. The equipment and method of compacting the backfill material shall be to the full satisfaction of the Commissioner in charge.

7.0 BAGGED CONCRETE HEADWALLS (NOT APPLICABLE)

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 (12") 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 x 660 mm (18" x 26"). The jute bags shall be filled with concrete so that when they are laid flat, they will be approximately 100 mm (4") thick, 300 mm (12") to 380 mm (15") wide and 460 mm (18") 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 (18") 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 (18") wide or as otherwise specified, extending for the full length of the wall, and from 0.3 metres (1 ft.) 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 (20") 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 (5.0 ft.) 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 (6") thick, and hand trowelled to obtain a pleasing appearance. The concrete cap shall be the same width as the bagged wall and excess concrete will not be allowed to be placed on the cap area. The concrete cap shall not overhang the bagged wall on the driveway side of the wall.

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 GROUTED CONCRETE RIP RAP WALL (NOT APPLICABLE)

As an alternate to constructing a concrete filled jute bag headwall, the Contractor may construct a grouted concrete rip rap headwall. The specifications for the installation of a concrete filled jute bag headwall shall be followed with the exception that broken sections of concrete may be substituted for the jute bags. The concrete rip rap shall be approximately 18" square and four inches thick and shall have two flat parallel sides. The rip rap shall be fully mortared in place using a mixture composed of three parts of clean, sharp sand to one part of Portland Cement.

9.0 PRECAST CONCRETE HEADWALLS (NOT APPLICABLE)

Where specified as an alternative the Contractor may supply and install precast concrete headwalls. Said precast headwalls shall be a CUSTOM BRIDGES product, manufactured by West Lorne Precast.

The precast concrete headwall shall be of the shape, size and dimensions shown on the accompanying plan.

Excavation for the headwalls shall be in conformance with Ontario Provincial Standard Specification Section 902.

The supply and placement of concrete shall be in conformance with O.P.S.S. Section 904. All concrete shall have a strength of 33.0 MPa after 28 days. All concrete shall be air entrained to an air content of 6% ± 1.5% by volume for 19 mm maximum size of aggregate. Minimum cover for concrete shall be 40 mm (1½ inches).

The supply and placement of reinforcing steel shall be in conformance with O.P.S.S. Section 905. The reinforcing steel shall be grade 400 and shall be of the size and type as shown on the drawings.

The Contractor shall place the precast headwall so that it is straight and plumb. The method of backfilling the sideslope trenches shall be such that no voids remain under the haunches of the sloping concrete headwall. The Contractor's method of achieving this shall be approved prior to start of construction.

The Contractor shall provide a sufficient opening in the headwalls so that when the headwalls are set and plumb, the corrugated steel pipe may be inserted or adjusted to grade. The void between the corrugated steel pipe and opening in the headwall shall be fully mortared in place using a mixture composed of three parts of clean, sharp sand to one part of portland cement.

After the corrugated steel pipe has been set and partially backfilled with Granular "B" per O.P.S.S. 1010 and compacted to 100% Standard Proctor density, the Contractor shall supply and install the 10 mm (3/8") diameter stainless steel cable connectors. All fastening devices shall be stainless steel or galvanized or bituminously coated.

10.0 QUARRIED ROCK END PROTECTION

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

The backfill over the ends of the corrugated steel pipe shall be set on a slope of 1 1/2 metres horizontal to 1 metre vertical from the bottom of the corrugated steel pipe to the top of each side slope and between both side slopes. The top 300 mm (12") in thickness of the backfill over the ends of the corrugated steel pipe shall be quarried rock. The quarried rock shall be placed on a slope of 1 1/2 metres horizontal to 1 metre vertical from the bottom of the corrugated steel pipe to the top of each side slope of the drain and between both side slopes. The quarried rock shall have a minimum dimension of 100 mm (4") and a maximum dimension of 225 mm (9"). Prior to placing quarried rock end protection over the granular material, the Contractor shall lay a non woven geotextile filter fabric equal to a "Terrafix 270R" or approved equal. The geotextile filter fabric shall extend from the bottom of the corrugated steel pipe to the top of each side slope of the drain and between both side slopes of the drain. The Contractor shall take extreme care not to damage the geotextile filter fabric when placing the quarried rock on top of the filter fabric. The geotextile filter fabric and quarried rock shall be placed to the complete satisfaction of the Town Drainage Superintendent.

11.0 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.

12.0 LOCATION OF STRUCTURES, ETC.

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

13.0 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.

14.0 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.

15.0 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.

16.0 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.

17.0 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.

18.0 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.

19.0 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.

20.0 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.

21.0 NOTIFICATION OF WORK

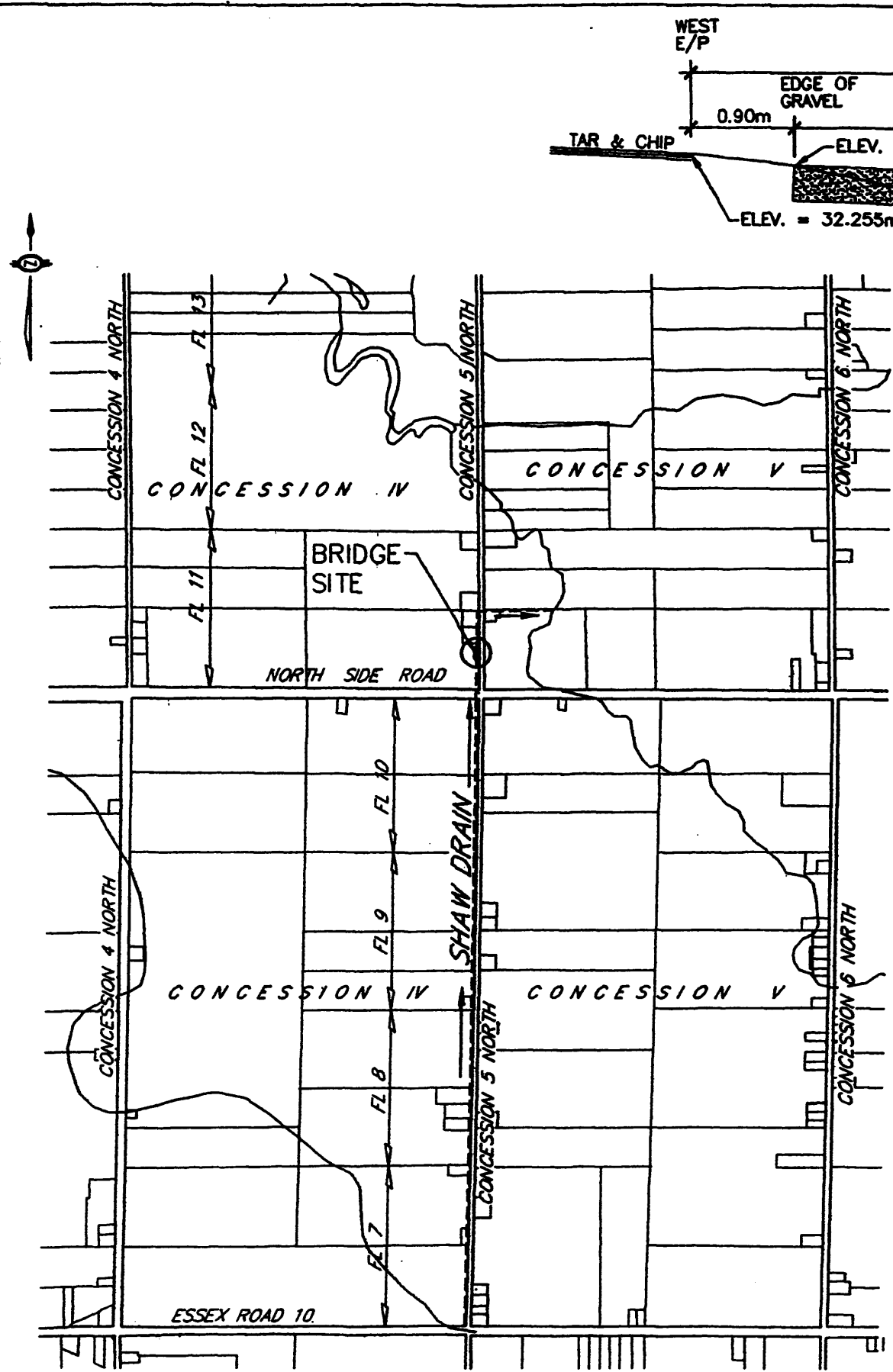
Prior to commencing any work of installing the new bridge or removing any existing structures, the Contractor shall inform the Drainage Superintendent of his intent to commence work at least 48 hours prior to commencing any work. The Owner or Contractor shall endeavour to install and complete the new 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.

22.0 MAINTENANCE

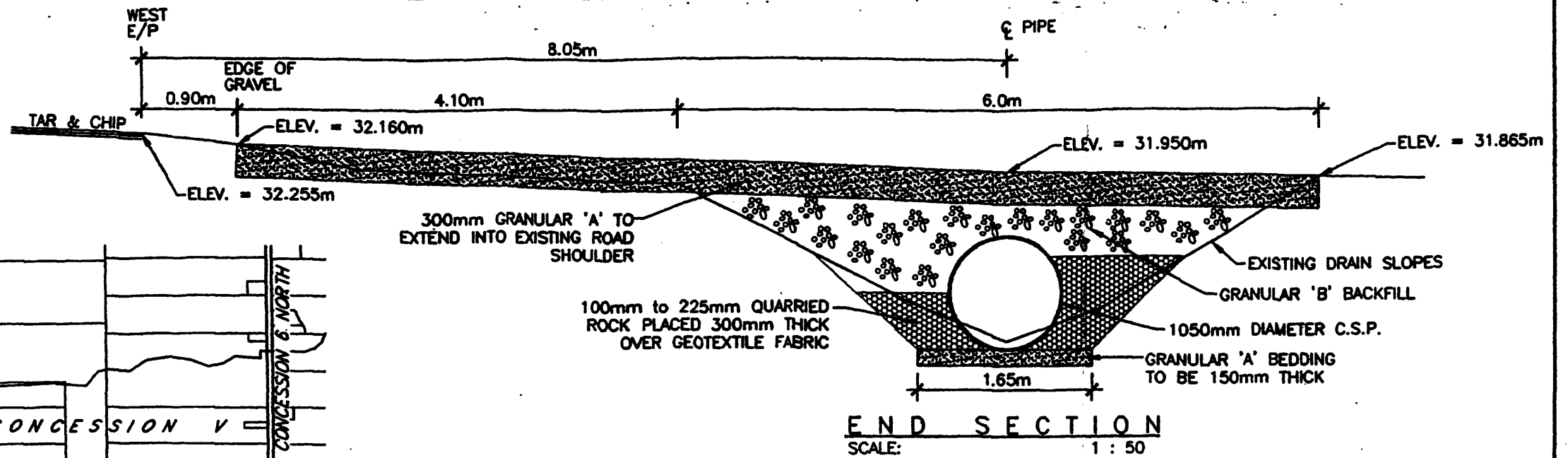
The Contractor shall repair and make good at his expense any damages or faults in the work that may appear within one year after its completion (as evidenced by the final inspection report), as the result of imperfect or defective work done or materials furnished. Nothing herein contained shall be construed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

23.0 ENTRANCE PERMIT

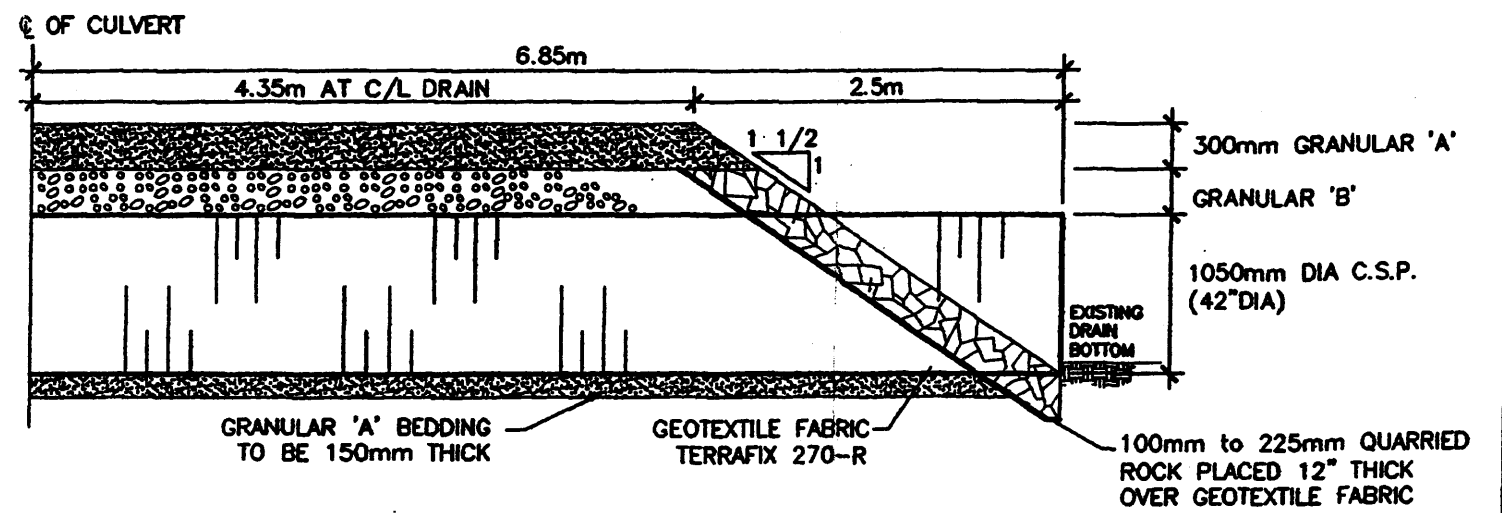
If the proposed culvert or enclosure is to provide access from a county road under the jurisdiction of the County of Essex it will be necessary to obtain an entrance permit from the County of Essex Engineering Department. It will be the responsibility of the culvert owner to arrange for this permit and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



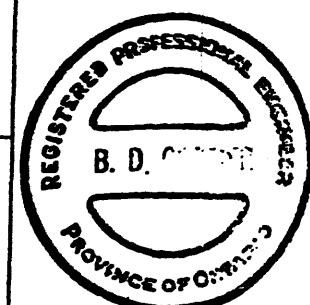
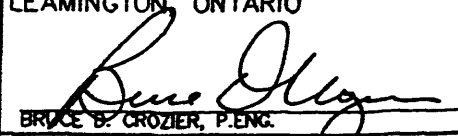
KEY PLAN
NOT TO SCALE



END SECTION
SCALE: 1 : 50



LONGITUDINAL SECTION
SCALE: N.T.S.

BENCH MARK ELEVATION: 32.510 metres		BENCH MARK LOCATION: NAIL IN THE NORTH FACE OF HYDRO POLE ON WEST SIDE OF 5th CONCESSION ROAD IN FRONT OF SUBJECT PROPERTY.			
PIPE SIZE	PIPE LENGTH	PIPE GAUGE	CORRUGATIONS	TYPE OF PIPE	PIPE INVERT ELEVATIONS
1050 mm DIA. (42" DIA.)	13.7 METRES (45 FT.)	2.0 mm (14 GA.)	68 x 13 mm (2 2/3" x 1/2")	CORRUGATED STEEL PIPE HEL-COR	UPSTREAM END: 30.260 metres DOWNSTREAM END: 30.205 metres
TITLE: FARM ACCESS CULVERT OVER THE SHAW DRAIN IN THE TOWN OF AMHERSTBURG					
OWNER: MRS. JEANNE LAFRAMBOISE PART LOT 11, CONCESSION 4 FORMERLY ANDERDON TOWNSHIP				BRUCE D. CROZIER ENGINEERING INC. 1940 DEER RUN ROAD, RR#4. LEAMINGTON, ONTARIO  BRUCE D. CROZIER, P. ENG.	
DRAWN BY: A.P.		SCALE: AS NOTED		DATE: MARCH 04/04	
CHK'D BY: B.D.C.		SHEET N°: 1 of 2		PROJECT N°: BC-04-008	



EAST EDGE OF PAVEMENT

5th CONCESSION ROAD

(TAR & CHIP)

C/L OF 5th CONCESSION

WEST EDGE OF PAVEMENT

WEST EDGE OF GRAVEL

EAST TOP OF BANK

EAST TOE OF BANK

C/L OF DRAIN

WEST TOE OF BANK

WEST TOP OF BANK

SLOPED QUARRIED
ROCK END PROTECTION

8.0m RADIUS

8.05m

8.0m RADIUS

15.7m

H.P.

4.35m

RADIUS POINT

RADIUS POINT

SHAW DRAIN

STRAW BALE SEDIMENT &
EROSION CONTROL MEASURE

8.7m

13.70m OF 1050mmØ C.S.P.
GRADE = 0.40%

C/L PROPOSED CULVERT

N ← → S

PLAN VIEW

SCALE: 1 : 200

NOTE: ANY EXISTING LATERAL TILES ARE TO BE CONNECTED INTO THE NEW CULVERT AS DIRECTED BY THE MUNICIPAL DRAINAGE SUPERINTENDENT.

NEW FARM ACCESS CULVERT FOR LAFRAMBOISE

PLAN SHOWING CULVERT
ALIGNMENT AND DRAIN

DRAWN BY:

A.P.

SCALE:

AS NOTED

DATE:

MARCH 04/04

CHK'D BY:

B.D.C.

SHEET NO.:

2 of 2

PROJECT NO.:

BC-04-008