

CORPORATION OF THE TOWN OF AMHERSTBURG

BY-LAW NO. 2001-05

**A by-law to provide for the construction of a
culvert over the Matte-Beneteau Drain.**

WHEREAS Kevin and Michelle Renaud, owners of Part Lot 7, Concession 2, have requested the installation of a New Access Bridge over the Matte-Beneteau Drain;

AND WHEREAS Kevin and Michelle Renaud will be responsible for one hundred (100%) percent of the costs of the work plus engineering costs;

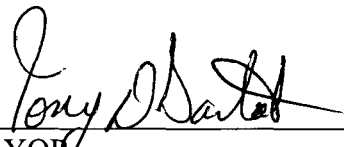
AND WHEREAS the Council of the Corporation of the Town of Amherstburg has authorized Bruce D. Crozier Engineering Inc. to prepare a report and said report dated January 16, 2001 is attached hereto and forms part of this by-law;

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

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

1. That the report of Bruce D. Crozier Engineering Inc. dated January 16, 2001 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 12th day of February, 2001.



MAYOR



CLERK

Read a third time and finally passed this 26 day of March, 2001.



NEW RESIDENTIAL ACCESS BRIDGE

OVER THE MATTE-BENETEAU DRAIN

OWNER: KEVIN & MICHELLE RENAUD

TOWN OF AMHERSTBURG

BRUCE D. CROZIER ENGINEERING INC.

CONSULTING ENGINEERS

209 ERIE STREET SOUTH

LEAMINGTON, ONTARIO

N8H 3C1

January 16, 2001

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

Mayor DiBartolomeo and Councillors

**SUBJECT: New Residential Access Bridge
Over the Matte-Beneteau West Drain
Owner: Kevin & Michelle Renaud
Town of Amherstburg
Our Project Reference BC-01-004**

1.0 Authorization

Pursuant to Section 78 of "The Drainage Act, 1990," the Corporation of the Town of Amherstburg received a request from Kevin Renaud for the installation of a new residential access bridge Over the Matte-Beneteau 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 Matte-Beneateau Drain at the location where the new residential access bridge has been requested to be constructed, to serve residential lands owned by Kevin & Michelle Renaud, being Part Lot 7, Concession 2, in the Former Township of Anderdon and we report thereon as follows.

2.0 Current Drainage Report

The latest drainage report on file for the Matte-Beneteau Drain is one prepared by D.A. Averill, P. Eng., and dated January, 1981.

3.0 Inspection and Survey

We met at the site on January 11, 2001 with Bob Crawford, Drainage Superintendent for the Town of Amherstburg, where we took measurements and ground elevations. We have determined that the centreline of the new residential access bridge would be located approximately at Station 0+025 this being in reference to the above noted current drainage report and as illustrated on the accompanying drawing.

Mr. Crawford explained that Mr. & Mrs. Renaud had recently purchased a previously severed lot and are now considering to build a new home. Mr. Crawford further explained that a new access bridge over the Matte-Beneteau Drain is required to access the residential lot from the 2nd Concession Road.

We further informed Mr. Crawford that in addition to the Matte-Beneteau Drain situated along the west boundary of the Renaud Lot there are two additional Municipal Drains situated on the Renaud Lot. These two drains are the Ouellette Drain East and the South Branch Drain both of which will require relocation in order to construct the new home. This work should be undertaken in accordance to the Towns policy regarding Municipal Drains.

We would further recommend that the residential access bridge constructed under this report be hereinafter considered a part of the Matte-Beneteau Drain.

5.0 Drawing and Specification

Attached to this report is Drawing No. BC-01-004 Sheet 1, which consists 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.

6.0 Estimate of Cost

Our estimate of the total cost of this work, including all incidental expenses, is the sum of Six Thousand, Nine Hundred Thirty dollars (\$ 6,930.00) made up as follows:

CONSTRUCTION

(a)	Supply to site 12.00 metres (40 ft) of 900 mm (36") diameter Hel-Cor corrugated steel pipe, 2.0 mm (14 gauge), 68 x 13 mm (2-2/3" x 1/2") corrugations, complete at Lump Sum	\$ 1,360.00
(b)	Supply labour and equipment to excavate for and install specified pipe including all drain excavation, disposal of surplus material and all drain bank and road restoration, complete at Lump Sum	\$ 750.00
(c)	Supply and install granular material including approximately 110 ton Granular "B" backfill to pipe and approximately 30 ton Granular "A" placed 300mm (12") thick to driveway extending to edge of granular road shoulder, complete at Lump Sum	\$ 1,800.00
(d)	Supply and install a total of approximately 21 square metres (25 sq. yards) of sloped quarried rock erosion protection at pipe ends including excavation and geotextile filter fabric, complete at Lump Sum	\$ 750.00
		=====
	SUB TOTAL FOR CONSTRUCTION	\$ 4,660.00
	G.S.T. PAYABLE (approximately 7% × 0.43 net)	\$ 140.00
		=====
	TOTAL FOR CONSTRUCTION (including G.S.T.)	\$ 4,800.00
		=====

INCIDENTALS

Survey, report, estimate and specifications.	\$ 800.00
Assistants and expenses, typing report and preparing drawing.	\$ 400.00
Tender Documents	\$ 200.00
O.M.B. Fee (if required)	\$ 130.00

7.0 Assessment

We would recommend that the total cost of this work be assessed against the residential lands owned by Kevin & Michelle Renaud being Part Lot 7, Concession 2, Roll No. 460-05500 and being approximately 0.356 hectares in area and situated within the Town of Amherstburg.

8.0 Maintenance

We would further recommend that the access bridge be kept up and maintained as part of the Matte-Beneteau Drain at the expense of the owner assessed herein for its construction and all affected upstream owners, in the proportion of 50% to the owner and 50% to the affected upstream landowners, or until otherwise determined under the provisions of the Drainage Act.

9.0 Grant

In accordance with the provisions of Section 85, 86 and 97 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.

As the subject lands are for residential purposes a grant for this particular access bridge would not be available.

10.0 Drainage Act Procedure for Construction of New Bridge

The following is a summary of the general procedure the Town will follow to provide for a new 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 petition requesting new bridge.
- b) Council accepts petition and appoints engineer.
- c) Engineer arranges for site meeting with Town Drainage Superintendent and others to discuss project and will take survey of bridge site.
- d) Engineer designs bridge to appropriate standards and prepares drainage report including description of required bridge, 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 bridge 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 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


- 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 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 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 ENGINEERS
209 ERIE STREET SOUTH
LEAMINGTON, ONTARIO
N8H 3C1**



Lou Zarlenga, P.Eng.

LZ/kc



SPECIFICATIONSNEW RESIDENTIAL ACCESS BRIDGEOVER THE MATTE-BENETEAU DRAINOWNER: KEVIN & MICHELLE RENAUDTOWN OF AMHERSTBURGPROJECT REFERENCE BC-01-0041.0 PIPE MATERIAL

The Contractor shall supply and install, new Hel-Cor corrugated steel pipe, having a diameter of 900 mm (36") and a wall thickness of 2.0 mm (14 gauge) with 68 x 13 mm (2-2/3" x 1/2") corrugations. The corrugated steel pipe shall have a length of 12.00 metres (40 ft).

2.0 WORKING AREA

The Contractor shall restrict his equipment to the roadside of the drain and to within 20 feet 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 BRIDGE

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 quarried rock end protection.

The centreline of the new access bridge is to be located at approximately Station 0+025, 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 bridge 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 bridge.

5.0 PLACEMENT OF BRIDGE

- 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 100 mm (4") of Granular "A" stone bedding compacted to 95% Standard Proctor Density.
- c) The Contractor shall provide Granular "B" backfill under the driveway, to within 12 inches of finish grade. The top 12" of the driveway surface shall be backfilled with Granular "A" material

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 30 cm (12") of the backfill over the pipe. The top 30 cm 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 inches) 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 (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 .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 .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.

7.1 BAGGED CONCRETE HEADWALLS (DOUBLE BAG WALL THICKNESS)(NOT APPLICABLE)

All above noted specifications for single bag wall thickness are to be used with the following exceptions:

- a) Dimensions are to be as shown on the accompanying drawings.

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 $6\% \pm 1.5\%$ 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 pipe has been set and backfilled the Contractor shall install quarried rock erosion protection at each end of the pipe.

The backfill over the ends of the pipe shall be set on a slope of 1½ metres horizontal to 1 metre vertical from the bottom of the corrugated steel pipe to the top of each side slope and between both side slopes. The top 30 cm (12") in thickness of the backfill over the ends of the pipe shall be quarried rock. The quarried rock shall be placed on a slope of 1½ metres horizontal to 1 metre vertical from the bottom of the pipe to the top of each side slope of the drain and between both side slopes. The quarried rock shall have a minimum dimension of 100 mm (4") and a maximum dimension of 225 mm (9"). Prior to placing quarried rock end protection over the granular material, the Contractor shall lay a non woven geotextile filter fabric equal to a "Terrafix 270R" or approved equal. The geotextile filter fabric shall extend from the bottom of the pipe to the top of each side slope of the drain and between both side slopes of the drain.

The Contractor shall take extreme care not to damage the geotextile filter fabric when placing the quarried rock on top of the filter fabric. The geotextile filter fabric and quarried rock shall be placed to the complete satisfaction of the Town Drainage Superintendent.

11.0 ALIGNMENT

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.

21.0 NOTIFICATION OF WORK

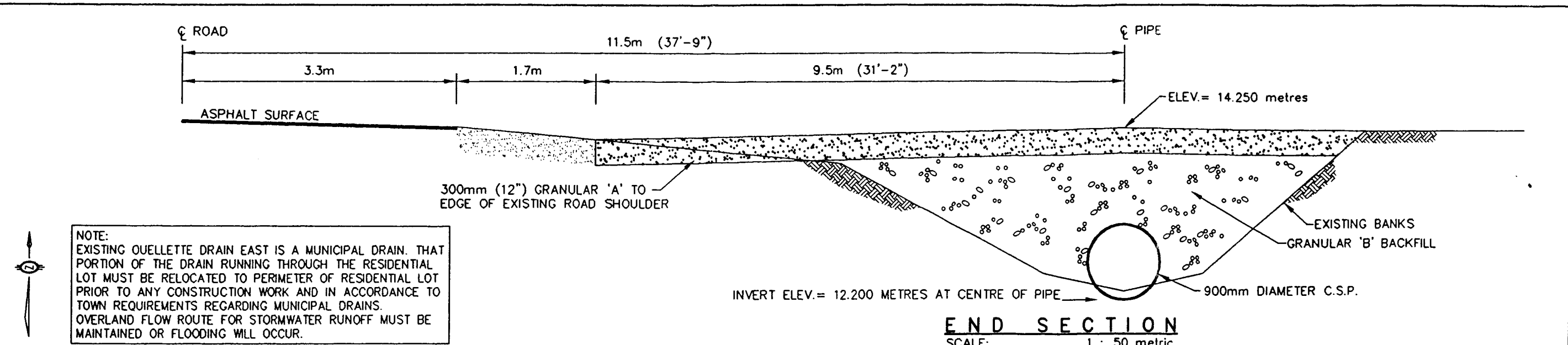
Prior to commencing any work of installing the new bridge or removing any existing structures, the Contractor shall inform the Town Drainage Superintendent of his intent to commence work at least 48 hours prior to commencing any work. The Owner or Contractor shall endeavour to install and complete the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

22.0 MAINTENANCE

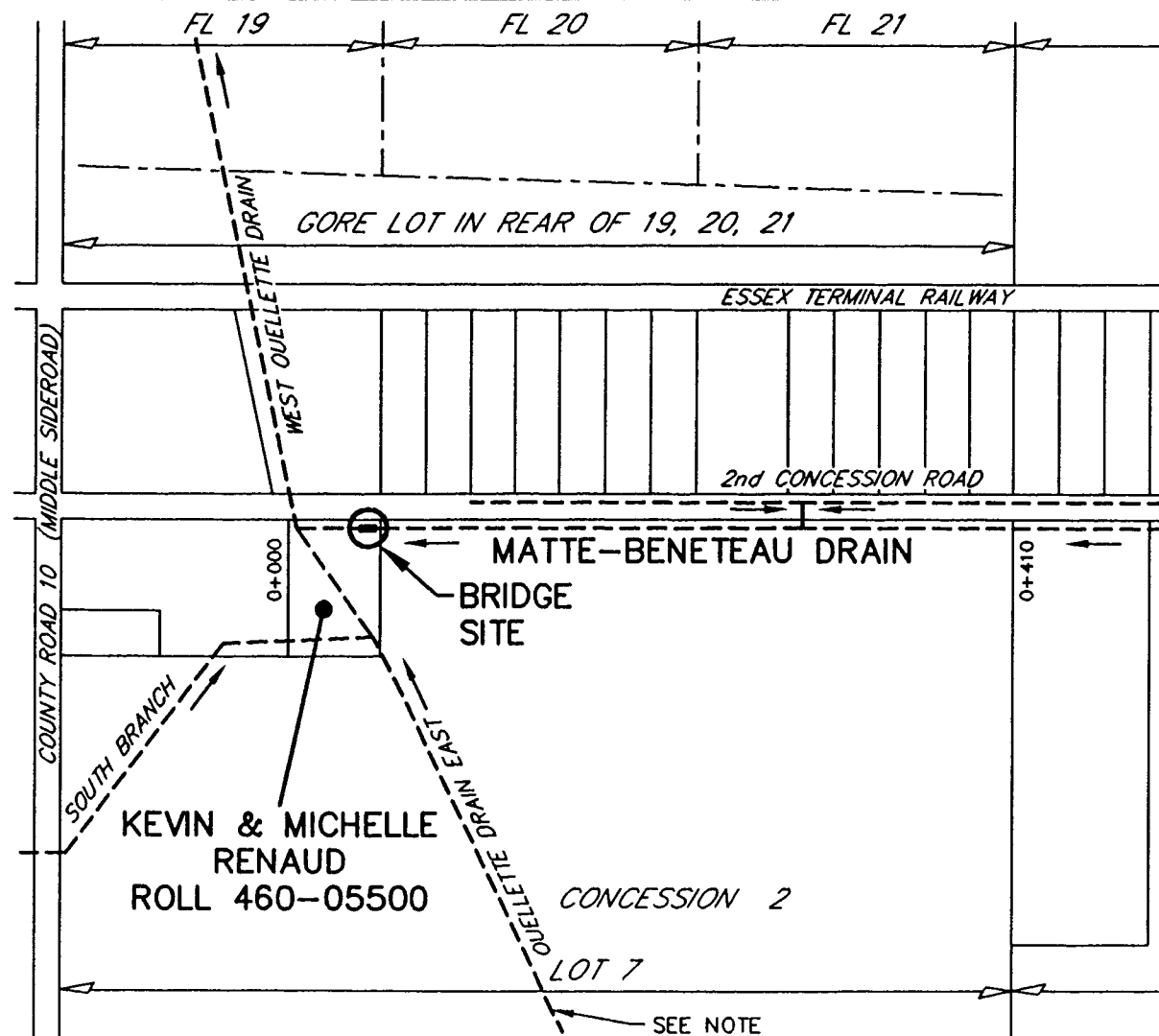
The Contractor shall repair and make good at his expense any damages or faults in the work that may appear within one year after its completion (as evidenced by the final inspection report), as the result of imperfect or defective work done or materials furnished. Nothing herein contained shall be construed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

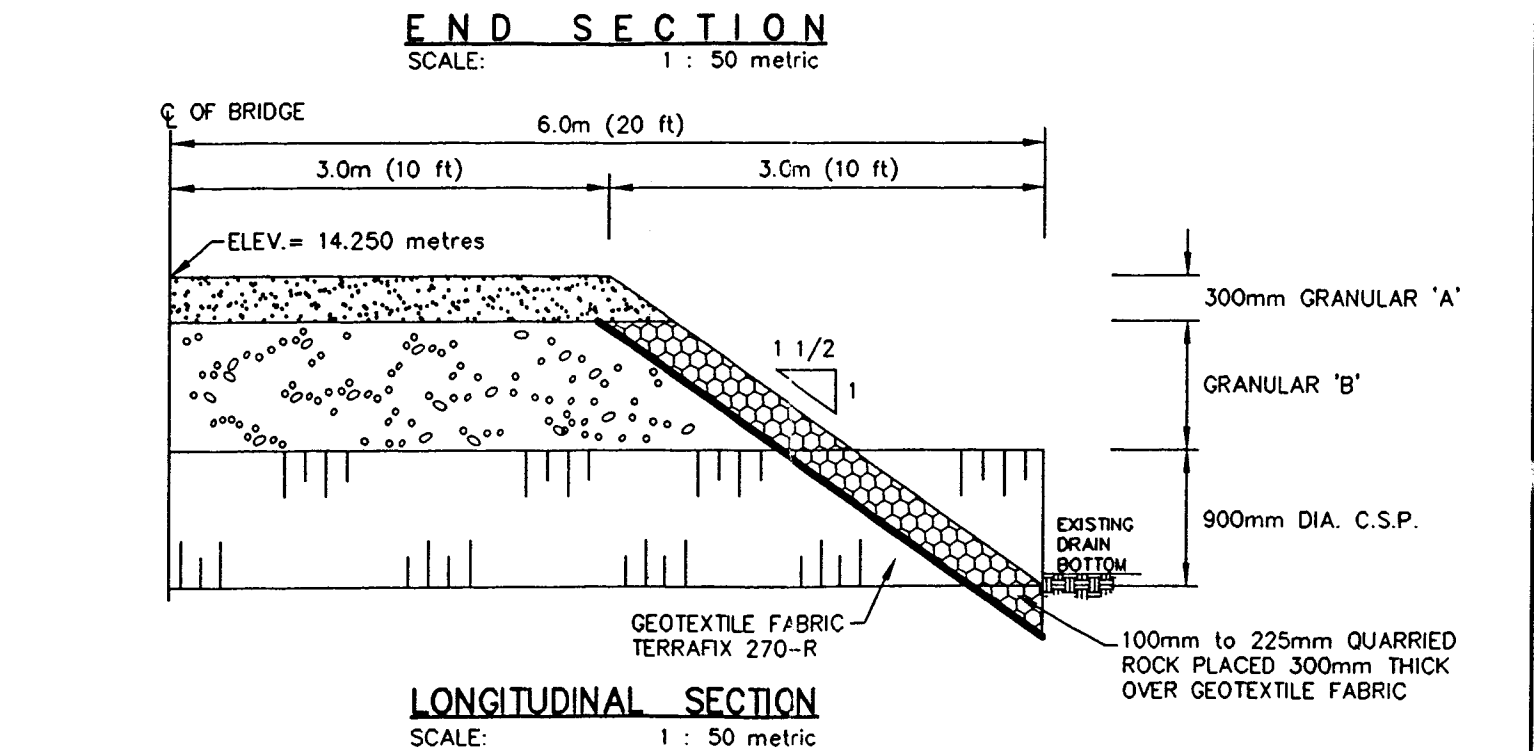
If the proposed bridge or enclosure is to provide access from a county road under the jurisdiction of the County of Essex it will be necessary to obtain an entrance permit from the County of Essex Engineering Department. It will be the responsibility of the bridge owner to arrange for this permit and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



NOTE:
 EXISTING OUELLETTE DRAIN EAST IS A MUNICIPAL DRAIN. THAT PORTION OF THE DRAIN RUNNING THROUGH THE RESIDENTIAL LOT MUST BE RELOCATED TO PERIMETER OF RESIDENTIAL LOT PRIOR TO ANY CONSTRUCTION WORK AND IN ACCORDANCE TO TOWN REQUIREMENTS REGARDING MUNICIPAL DRAINS. OVERLAND FLOW ROUTE FOR STORMWATER RUNOFF MUST BE MAINTAINED OR FLOODING WILL OCCUR.



KEY PLAN
 NOT TO SCALE



BENCH MARK ELEVATION: 14.665 metres
 BENCH MARK LOCATION: SQUARE NAIL IN WEST FACE OF HYDRO POLE No. 11390 ON EAST SIDE 2nd CONCESSION ROAD 10 METRES NORTH OF PROPOSED BRIDGE.

PIPE SIZE	PIPE LENGTH	PIPE GAUGE	CORRUGATIONS	TYPE OF PIPE	PIPE INVERT ELEVATIONS
900 mm DIA. (36" DIA.)	12.0 METRES (40 FT.)	2.0 mm (14 GA.)	68 x 13 mm (2 2/3" x 1/2")	CORRUGATED STEEL PIPE HEL-COR	UPSTREAM END: 12.210 metres DOWNSTREAM END: 12.190 metres

TITLE:
 RESIDENTIAL ACCESS BRIDGE OVER THE MATTE-BENETEAU DRAIN IN THE TOWN OF AMHERSTBURG

OWNER:
 KEVIN & MICHELLE RENAUD
 PART LOT 7, CONCESSION 2
 FORMERLY ANDERDON TOWNSHIP



BRUCE D. CROZIER ENGINEERING INC.
 CONSULTING ENGINEERS
 209 ERIE STREET SOUTH
 LEAMINGTON, ONTARIO

L. Zarlenga
 LOU ZARLENGA, P.ENG.

DRAWN BY:	SCALE:	DATE:
M.L.	AS NOTED	JAN. 16, 2001
CHK'D BY:	SHEET NO.:	PROJECT NO.:
L.Z.	1 of 1	BC-01-004