# Court of Revision Agenda

County of Essex Council Chambers

360 Fairview Ave. W., Essex, Ontario

Tuesday, August 6, 2019 – 4:30 PM

**The purpose of the meeting is to hold the Court of Revision for:**
**West Townline Drain New Bridge for Union Gas (Part Lot 1, Con. 3) and**
**Updated Maintenance Schedule of Assessment,**
**Geographic Township of Colchester South, Project REI 2016D061,**
**Town of Essex, County of Essex**

This is pursuant to the report prepared by Gerard Rood, Professional Engineer, Rood Engineering Inc. dated April 26th, 2019 which was considered and adopted by at a Consideration Meeting held June 17, 2019 and pursuant to By-Law 1837 which received two readings by Council at its regular meeting held July 15, 2019.

This sitting of the Court of Revision was duly appointed by Council on July 15, 2019.

Section 54 (1) of The Drainage Act provides that the decision of the Court of Revision can be appealed to the Drainage Tribunal within twenty-one (21) days from the date of the Court of Revision. The final day for appeal is August 27, 2019. At the first Council meeting after this date the third reading to By-Law Number 1837 will be given.

## 1. Roll Call

| | |
|---|---|
| Present: | Dan Boudreau |
| | Percy Dufour |
| | Felix Weigt-Bienzle |
| Regrets: | None |
| Also Present: | Chris Nepszy, Chief Administrative Officer |
| | Rob Auger, Town Solicitor/Clerk |
| | Shelley Brown, Deputy Clerk |
| | Norm Nussio, Manager, Operations and Drainage |
| | Tanya Tuzlova, Operations/Drainage Clerk |
| | Gerard Rood, Professional Engineer, Rood Engineering Inc. |
| | Kory Snelgrove, E.I.T., Rood Engineering Inc. |
| | Drainage Board Member from the Town of Amherstburg |

General Public: Per attached Sign-in Sheet

The Clerk to confirm having administered the Oaths to the Members of the Court of Revision.

The Clerk to confirm that all notices have been sent in accordance with The Drainage Act.

## 2. Declarations of Conflict of Interest

## 3. Adoption of Published Agenda

Court of Revision Meeting Agenda

Moved by
Seconded by
**That** the published agenda for the August 6, 2019 Court of Revision be adopted as presented.

## 4. Adoption of Minutes

i) Court of Revision for Sydenham Street Drain (East Side) & Bagot Street Drain (West Side), Petition for Drainage held on July 2, 2019.

Moved by
Seconded By

**That** the minutes of the Court of Revision for Sydenham Street Drain (East Side) & Bagot Street Drain (West Side) held on July 2, 2019, be adopted as circulated.

## 5. Appeals from Landowners

The Chair will advise that the purpose of the Court of Revision is to hear appeals regarding the Schedule of assessment only. The Schedule of Assessment may be altered but the total assessment must remain the same. If one assessment is reduced then another must be increased to balance.

## 6. List of Written Appeals of Assessment Received by the Clerk

i) Raja Shehadi, Letter: 2019.07.22, APPEAL_ COURT OF REVISION (via email)
ii) Raja Shehadi, Attachment A: WEST TOWNLINE DRAIN NOTICE (via email)
iii) Raja Shehadi, Attachment B: WEST TOWNLINE DRAIN APPENDICES (via email)
iv) Raja Shehadi, Attachment C: 2019.05.28, LETTER TO AUGER (via email)

v) Raja Shehadi, Attachment D: 2019.06.10, West Townline Dr signed response to Shehadi Itr. (via email)
vi) Raja Shehadi, Attachment E: 2019.06.11, TO ROOD_ Objection to Assessment (via email)
vii) Raja Shehadi, Attachment F: 2019.06.11, TO ROOD_ EXHIBIT A, ELEVATION MAP_ GOOGLE EARTH (via email)
viii) Raja Shehadi, Attachment G: 2019.06.11, TO ROOD_ EXHIBIT B, 210405, Pigeon Drain (via email)
ix) Raja Shehadi, Attachment H: 2019.06.11, FROM ROOD_ Objection (via email)
x) Raja Shehadi, Attachment I: 2019.06.13, LETTER TO MR. ROOD (via email)
xi) Raja Shehadi, Attachment J: 2019.06.13, EMAIL FROM ROOD: ELEVATION MAP (via email)
xii) Raja Shehadi, Attachment K: 2017.04.27, APPEAL, 210505-789-8, 956.28 (via email)

## 7. Engineer to provide a Background on the Drain and the Proposed Project (if required)

Gerard Rood, Professional Engineer, Rood Engineering Inc.

## 8. Questions from Landowners

## 9. Court of Revision Decision

Moved by
Seconded by

That the assessments contained in the report for the West Townline Drain New Bridge for Union Gas (Part Lot 1, Con. 3) and Updated Maintenance Schedule of Assessment, Geographic Township of Colchester South, Project REI 2016D061, Town of Essex, County of Essex, as prepared by Gerard Rood, Professional Engineer, Rood Engineering Inc. dated April 26, 2019, be confirmed.

## 10. Adjournment

Moved by
Seconded by
That the meeting be adjourned at _____.

The Court of Revision,
C/o Robert W Auger, Town Clerk,
Municipality of the Town of Essex,
33 Talbot Street South, Essex, Ontario N8M 1A8,
Telephone: (519) 776-7336 x1132;
Email: rauger@essex.ca

July 22, 2019

Dear Sirs of the Court of Revision,

This is an appeal to the Court of Revision regarding the assessment of the total value (Benefit and Outlet values), and the "affected acres" that are assigned to my property with tax roll number "750-03000" belonging to 1741094 Ontario Limited Corporation.

My objection is to the Municipality of Essex notice dated May 7, 2019, regarding the West Townline Drain (WTD): "***New Bridge for Union Gas (Part Lot 1, Con. 3} and Updated Maintenance Schedule of Assessment."***

Please note the following points:

1. Assessments to my "750-03000" property has long been unfair, biased, and based on age-old assessment from the 1980s, that lacked transparency. As an example, I include as an attachment, my appeal and complaint to the Municipality of Essex as presented in Exhibit K. This complaint provided no direct or transparent responses and revealed several breaches by the Ontario Drainage Act by the Drainage Superintendent then, Mr. Dan Boudreaux.

2. News regarding an "Updated Maintenance Schedule of Assessment" was, therefore, welcome. But to my surprise, Mr. Gerard Rood of Rood's Engineering, who reviewed the assessment, prided himself in copying and pasting the old assessment schedule from the 1980s. Mr. Rood wrote, "*the new maintenance schedule was derived from the 1985 Peralta report schedule*." Item #3, page 1, Exhibit H.

3. My concern remains to be what I wrote to Engineer, Mr. Rood on June 13, 2019, "*Despite all of your correspondence, until to date, you have not produced any genuine and reasonable basis for your calculations. That is to ask, what is the basic equation or formula that you have used to arrive to the figures that you have included as benefit and outlet values in your report? Without an objective equation by which the benefit and outlet values can be objectively fairly calculated to all the landowners, there is always grounds for error whether that is intended or not. Cutting and pasting faithfully from previous reports is unacceptable and renders your report redundant and useless. Moreover, there must some reasonably objective basis upon which the previous evaluations were calculated. Please check it out and explain it.*

*For this request, you have not yet provided any reasonable response*." Exhibit I. As of to date, I have not yet received a response to this inquiry.

4. Reasonable calculations and sensible equations and formulas are the least one expects from engineers. However, I have never received any response to my above-stated inquiry. I, therefore, conclude that Mr. Rood does not know how these assessment figures were obtained, other than he has faithfully copied them from a 34-year-old report. Mr. Rood's defense was that copying and pasting from prior reports, in this case a 34-year-old report, was the "*standard practice and follows the Drainage Act requirement in Section 34 to take prior assessments into consideration*." Exhibit H. Therefore, Mr. Rood has breached the Ontario Drainage Act by copying and pasting from the old engineer's report, rather than taking this prior assessment into consideration as is required by the Ontario Drainage Act.

5. Moreover, when I compared my assessment with my neighbors across the Third Concession and figured out what is a fair total assessment value of $355, down from the grossly over estimated value of 405. (Exhibit C). Mr. Rood vehemently defended the $405 figure by conveniently comparing it with properties that were several miles away from mine, and certainly did not compare well with my farm.

6. Mr. Rood insisted that all of my farm drains directly into the West Townline Drain (WTD). (Exhibit D). Even when I proved to him that that was not the case, because:

    a. A significant portion of my farm in the east end is lower in altitude than its middle portion and therefore water cannot climb uphill to reach the WTD, as I showed him on Google Earth Altitude Map (Exhibit F). He did not agree, and he sent to me an altitude map from the Town of Essex Interactive Mapping, which is unavailable to the public. His map was in agreement with mine that the eastern portion of the farm was lower in altitude than its center. Thus, disproving his claim that all of the farm drains directly into the WTD.

    b. In addition, the eastern portion of the farm drains into and is assessed into the Pigeon Drain and, therefore, does not have direct access to the WTD. (Exhibit G)

7. I am appealing to the Court of Revisions to consider my case and to review the attachments. In this appeal, I am contesting the above-named Engineer's Report and I am requesting that you would kindly approve the following:

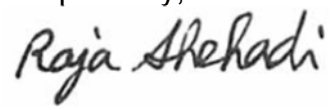
    a. Please reduce the total assessment that is assigned to my farm at 750-03000, from the over estimated value of $405 to the more reasonable value of $355, in accordance with my argument as presented in Exhibit C and the other attachments.

    b. Please reduce the total number of "affected acres" on my property 750-03000 in regards to the WTD, from 98.36 to no more than 68.36 acres. The

remaining acres of the farm are to be correctly assessed to the Pigeon drain where the natural topography of the eastern 1/3rd of my farm drains. This will help in reducing the Total Assessment because of the fact that not all of my farm's acres drain directly into the WTD. (Exhibit C).

Please note that I am currently in Texas and, therefore, I shall not be able to attend the meeting of the Court of Revision. On August 6, 2019, I have a busy day at work, I will not be available by phone during business hours on that date but I shall certainly respond to all your questions if you email these to me. I am hoping that this letter and its attachments are ample for a favorable outcome.

Respectfully,



Raja Shehadi, MD
President 1741094 Ontario Limited
Mailing Address: PO Box 903, Temple, TX, 76503
Tel: 321-698-2043
Email: reshehadi@yahoo.com

Attachments:

A. A. WEST TOWNLINE DRAIN NOTICE
B. B. WEST TOWNLINE DRAIN APPENDICES
C. C. 2019.05.28, LETTER TO AUGER
D. D. 2019.06.10, West Townline Dr signed response to Shehadi
E. E. 2019.06.11, TO ROOD Objection to Assessment
F. F. 2019.06.11, TO ROOD_EXHIBIT A, ELEVATION MAP_GOOGLE EARTH
G. G. 2019.06.11, TO ROOD_EXHIBIT B, 210405, Pigeon Drain
H. H. 2019.06.11, FROM ROOD Objection
I. I. 2019.06.13, LETTER TO MR. ROOD
J. J. 2019.06.13, EMAIL FROM ROOD_ELEVATION MAP
K. K. 2017.04.27, APPEAL, 210505-789-8,956.28

essex

**Notice of Meeting**

**Consideration of Report**

**West Townline Drain**

**New Bridge for Union Gas (Part Lot 1, Con. 3) and**

**Updated Maintenance Schedule of Assessment**

**Geographic Township of Colchester South, Town of Essex, County of Essex, Project REI2016D061**

Enclosed, please find the report from Rood Engineering Inc. dated April 26th, 2019 for the above referenced drainage works.

As per Section 41(3.1) of The Drainage Act, R.S.O. 1990, the Council of a local municipality is not required to send a copy of the report to owners of lands and roads assessed for a sum of less than $100. If you have received a Notice of the Consideration Meeting, but not a copy of the report, it is available for viewing at the Municipal Office, 33 Talbot St. S., Essex, Ontario or at the Drainage Office, 2610 County Road 12, Essex, Ontario.

In accordance with The Drainage Act, R.S.O. 1990, the Council of the Town of Essex will consider this report **at a meeting to be held at the County of Essex Civic Centre Council Chambers, 360 Fairview Avenue West, Essex, Ontario, on Monday, June 17th, 2019 at the hour of 5:00 pm.**

The purpose of the above meeting is to address any questions or comments with respect to the report and the proposed drainage works. Any inconsistencies as to the acreage assessed, value of benefit, or value of outlet liability, will be dealt with at a Court of Revision to be held at a later date, of which you as an assessed owner in the land drainage area will be informed by prepaid mail within the statutory time allotted by the Municipal Drainage Act.

**Robert W Auger**, Clerk, Town of Essex

**Date of Notice: May 7, 2019**

# WEST TOWNLINE DRAIN

**New Bridge for Union Gas**

***(Part Lot 1, Con. 3)***

**and**

**Updated Maintenance Schedule of Assessment**

***Geographic Twp. of Colchester South***


***TOWN OF ESSEX***
***33 Talbot Street South***
***ESSEX, Ontario N8M 1A8***
***519-776-7336***

***Rood Engineering Inc.***
***Consulting Engineers***
***9 Nelson Street***
***Leamington, Ontario N8H 1G6***
***519-322-1621***



*REI Project 2016D061*
*April 26th, 2019*

***Rood***
***Engineering***
***Inc.***

*Consulting Engineers*

April 26th, 2019

Mayor and Municipal Council
Corporation of the Town of Essex
33 Talbot Street South
Essex, Ontario
N8M 1A8

Mayor Snively and Members of Council:

**WEST TOWNLINE DRAIN**
**Bridge for Union Gas (Part of Lot 1, Concession 3) and**
**Updated Maintenance Schedule of Assessment**
**Geographic Twp. of Colchester South**
***Project REI2016D061***
**Town of Essex, County of Essex**

## I. INTRODUCTION

In accordance with the instructions received from you by letter of October 19th, 2016, from your Manager, Legislative Services (Clerk), Robert Auger, we have prepared the following report that provides for the construction of a new access bridge in the West Townline Drain and an updated Maintenance Schedule of Assessment for the drainage works. This proposed new bridge is intended to provide a safe access to serve Parcel 750-02100 being the Union Gas lands in Part of Lot 1, Concession 3, in the former Geographic Township of Colchester South. The West Townline Drain is primarily an open drain with a number of access bridges located along the east side of County Road 20 between the 3rd Concession Road and 4th Concession Road, and proceeds southerly along the easterly side of County Road 41 (Meadows Road) to its outlet into Lake Erie. The drain was constructed pursuant to the Drainage Act. A plan showing the West Townline Drain alignment, as well as the general location of the above-mentioned bridge, is included herein as part of the report.

Our appointment and the works related to the construction of the above-mentioned new access bridge in the West Townline Drain, proposed under this report, and preparation of the updated Maintenance Schedule of Assessment is in accordance with Section 78 of the "Drainage Act, R.S.O. 1990, Chapter D.17 as amended 2010". We have performed all of the necessary survey, investigations, etcetera for the proposed new bridge and Maintenance Schedule for the West Townline Drain, and we report thereon as follows.

## II. BACKGROUND

From our review of the Town's drainage files, we have determined that the West Townline Drain portion encompassing the affected bridge was last repaired under an Engineer's Report dated May 20th, 1971 by M. Armstrong, P.Eng. The works included in said report consisted of repair and improvement of the drain, and bridge improvements. The report also provided an assessment schedule for proper allocation of the construction costs. We have reviewed the report plans and assessment schedule to confirm the watershed limits of the drain and to form a basis for the updated Maintenance Schedule of Assessment.

We have also utilized the plan and profile within the Armstrong report to establish the size parameters for the drain and the details to be used in establishing the new bridge culvert installation. We have also used this Engineer's report to confirm the drain profile grades, and to assist us in establishing the design grade for the subject new bridge culvert installation. The Armstrong report was used to check the upstream watershed limits for confirming flows and the required bridge size and creating the construction Schedule of Assessment for the new bridge work.

## III. PRELIMINARY EXAMINATION AND ON-SITE MEETING

After reviewing all of the available drainage information and documentation organized in the town files, we arranged with Town staff to schedule an on-site meeting for June 14th, 2017. The following people were in attendance at said meeting: Dean Martin, Joe Gorski, Joe Kozera, Morley McLean, Leland McLean, Marvin Marontate, Maurice Hutchins, Roger Demars, Stephanie Demakos, Bill Bruce, Norm Nussio (Town of Essex Assistant Drainage Superintendent), and Gerard Rood (Rood Engineering).

Details of the proposed bridge work were reviewed. It was confirmed that the new bridge should be located north of the property line of parcel 750-03000, Pt. Lot 1, Con 3.

Union Gas advised us that the parcel requires a new bridge to access the existing parcel. Mr. Rood advised that a new maintenance schedule will be completed to use for assessing the cost of future drain maintenance and improvements that are planned.

We advised the owner that the minimum standard top width for an access bridge is 6.10 metres (20 ft.). After some discussions, it was established that the owner was satisfied with this width and preferred using the most economical end treatment so that cost is kept down. We went on to discuss that sloped quarried limestone on filter cloth ends for the installation was expected to be the most economical end treatment. A standard 5 metre turning radius will be provided at the gravel shoulder to enhance access across the bridge and the entrance will be graded no steeper than 6%. Union Gas was also advised that because the bridge is a new bridge, the cost of the new access bridge construction, as well as all the cost for the preparation of the Engineer's Report would be borne completely by the parcel owner. Any cost for additional top width will be borne by the owner. We went on to discuss that concrete filled jute bag ends or precast concrete blocks for the installation, like those on some other newer bridges, would be checked and the Engineer would contact the owner to review the engineering cost estimates if costs were comparable.

The overall drainage report procedure, future maintenance processes and grant eligibility were generally reviewed with the owners. They were also advised that the works will be subject to the approval of the Department of Fisheries and Oceans (D.F.O.), the Ministry of Natural Resources & Forestry (M.N.R.F.), and the Essex Region Conservation Authority (E.R.C.A.). We further discussed bridge maintenance, sizing, and material of the proposed bridge, suggesting that a corrugated aluminized steel pipe will likely be employed similar to the bridges a short distance upstream and downstream. It was further discussed that the current 1971 report is quite old and there have been several severances, so that the drain requires an updated maintenance schedule to properly assess future maintenance, and this will be included as part of the drainage report.

## IV. FIELD SURVEY AND INVESTIGATIONS

Following the on-site meeting we arranged for our survey crew to attend at the site and perform a topographic survey, including taking the necessary levels and details to establish the design parameters for the installation of this new access bridge.

A bench mark was looped from previous work carried out on the drain and was utilized in establishing a site bench mark near the location of the bridge. We surveyed the drain both upstream and downstream of the proposed new access bridge. We also took cross-sections of the West Townline Drain at the general location of the proposed new bridge, as necessary for us to complete our design calculations, estimates and specifications.

A Ministry of Natural Resources & Forestry (M.N.R.F.) Species at Risk review of the former Town agreement with M.N.R.F. pursuant to the Endangered Species Act, 2007 was carried out for this project. We reviewed the E.R.C.A. and D.F.O. Species at Risk mapping for fish and mussels and submitted a request to E.R.C.A. for review and comment.

For the purposes of establishing the watershed area upstream of the proposed bridge, and determining the bridge size required, we investigated and reviewed the Engineer's Report dated May 20th, 1971 as prepared by M. Armstrong, P.Eng. The report provided for repair and improvements on the West Townline Drain and included the required Schedule of Assessment.

## V. FINDINGS AND RECOMMENDATIONS

Prior to the preparation of our report, we reviewed the details of the bridge installation including the end treatment options based on the regulatory restrictions and the cost estimates that we were to review. From our investigations, it was determined that the sloped quarried limestone on filter cloth endwall option was the most cost effective and we have proceeded with this option, along with H.D.P.E. smooth wall plastic pipe instead of using aluminized corrugated steel pipe (C.S.P.), as discussed at the on-site meeting. The pipe sizing is based on minimum conveyance of a 1:2 year storm event corresponding to the full flow capacity of the upstream and downstream pipe culverts in the drain, plus an allowance for embedment of the pipe, and conforms to the grade requirements set out in the 1971 report.

Based on our detailed survey, investigations, examinations, and discussions with the affected property owner, we would recommend that a new access bridge be constructed in the West Townline Drain at the location and to the general parameters as established in our design drawings attached herein. It was also established that the covered portion of the drain would be impacted by the site works and provisions were made to deflect the drain around the work area as shown on the attached plans and we recommend that the section replaced with the deflected covered drain be abandoned pursuant to Section 19 of the Drainage Act.

During the course of our investigations, this drainage project was discussed and reviewed with E.R.C.A., to deal with any Authority and D.F.O. issues and comments related to this Municipal drain. To prevent flooding and adverse impacts upstream, the new structure needs to provide an equivalent level of service to the adjacent structures upstream and downstream and, as set out below, we have therefore used the same diameter for the current work. The Town will be required to obtain an E.R.C.A. permit for the work. In the interest of fish habitat and migration, D.F.O. requires that the invert of any new bridge be embedded below the design or existing bottom of the drain a minimum of 10% of the bridge opening height to ensure a continued path for fish migration through the access bridge culverts. Therefore, based on this, we have made provisions to set the invert of the proposed H.D.P.E. culvert required for this bridge installation, at 10% of its diameter below the existing or design drain bottom, whichever is lower at the time

of construction. The D.F.O. Species at Risk screening maps confirm that there are no Species at Risk Fish or Mussels identified in this area. The West Townline Drain is located within the Regulated Area and is under the jurisdiction of the E.R.C.A., and therefore all work has to comply with the current mitigation provisions of the E.R.C.A. and D.F.O. Details of these mitigation measures are included in the Specifications and **Appendix "REI-A"** forming part of this report.

As is now required under the new "Endangered Species Act, 2007" Provincial Legislation, we have arranged a review of the former M.N.R.F. agreement with the Town. The M.N.R.F. mapping has confirmed that there are no foreseen impacts to natural heritage features or endangered or threatened species on this project, except for snakes; therefore a permit or agreement under the E.S.A. 2007 is not necessary at this time. Because turtles and snakes are mobile and snakes are indicated as sensitive in the area, we have included herein a copy of the M.N.R.F. mitigation requirements for them in **Appendix "REI-B"**.

Based on all of the above, we recommend that the new access bridge be constructed in the West Townline Drain to serve the lands of Union Gas in Part of Lot 1, Concession 3, in accordance with this report, the attached specifications and the accompanying drawings, and that all works associated with same be carried out in accordance with Section 78 of the "Drainage Act, R.S.O. 1990, Chapter D.17 as amended 2010".

## VI. ESTIMATE OF COST

Our estimate of the total cost of this bridge work including all incidental expenses is the sum of **SEVENTEEN THOUSAND TWO HUNDRED DOLLARS ($17,200.00),** made up as follows:

### CONSTRUCTION

| | | | |
|---|---|---|---|
| Item 1) | Provide all labour, equipment and material to construct a new access bridge consisting of 11.0 metres (36.1 ft.) of 525mm diameter, 320 kPa H.D.P.E. smooth wall pipe with wrap couplers; including sloped quarried limestone on filter cloth end protection, excavation, granular bedding and backfill, granular approaches, compaction, hauling, tile diversion, culvert protection, cleanup and restoration, complete. Lump Sum | $ | 8,000.00 |
| | Estimated Net H.S.T. (1.76%) | $ | 140.00 |
| **TOTAL FOR CONSTRUCTION** | | **$** | **8,140.00** |

### INCIDENTALS

| | | | |
|---|---|---|---|
| 1) | Report, Estimate, and Specifications | $ | 2,250.00 |
| 2) | Survey, Assistants, Expenses, Drawings, | $ | 3,500.00 |
| 3) | Duplication Cost of Report and Drawings, | $ | 900.00 |

| | | | |
|---|---|---|---|
| 4) | Estimated Cost of Preparing Tender Documents | $ | 900.00 |
| 5) | Estimated Cost of Construction Supervision and Inspection (based on 1 day) | $ | 1,000.00 |
| 6) | Net H.S.T. on Items Above (1.76%) | $ | 150.00 |
| 7) | Estimated Cost of E.R.C.A. permit | $ | 150.00 |
| 8) | Estimated Contingency Allowance | $ | 210.00 |
| | **TOTAL FOR INCIDENTALS** | **$** | **9,060.00** |
| | **TOTAL FOR CONSTRUCTION (brought forward)** | **$** | **8,140.00** |
| | **TOTAL ESTIMATE FOR BRIDGE CONSTRUCTION** | **$** | **17,200.00** |
| | **TOTAL COST FOR MAINTENANCE SCHEDULE** | **$** | **3,400.00** |

## VII. DRAWINGS AND SPECIFICATIONS

As part of this report, we have attached design drawings for the construction of this new access bridge. The design drawings show the subject bridge location and the details of the access bridge installation. The design drawings are attached to the back of this report and are labelled **Appendix "REI-E"**.

Also attached, we have prepared Specifications which set out the required construction details for the proposed bridge installation, which also includes Standard Specifications within **Appendix "REI-C"**.

## VIII. SCHEDULE OF ASSESSMENT

We would recommend that all of the costs associated with the construction of this new access bridge, and the share of construction incidentals for preparation of this Engineer's report, be assessed against the lands of Union Gas (750-02100), in Part of Lot 1, Concession 3. A construction Schedule of Assessment has been prepared and included herein to indicate the lands and roads assessed for this new access bridge installation. A Schedule of Assessment has been prepared and included herein to indicate the lands and roads assessed for the new maintenance schedule.

It has been clearly established that this new access bridge is being provided to serve as the access from County Road 20 to a new parcel. Pursuant to the current Agricultural Drainage Infrastructure Program (A.D.I.P.) Policies that are in place, the full cost of the bridge construction and incidental costs shall be borne by the owner.

We recommend that the Engineering cost of preparing the Maintenance Schedule of Assessment for this drain be assessed in accordance with the attached Maintenance Schedule of Assessment. In accordance with current A.D.I.P. policies, it is expected that the cost to lands designated as Farm Property Tax Class will be eligible for a grant from the Ontario Ministry of Agriculture, Food and Rural Affairs (O.M.A.F.R.A.) in the amount of 1/3 of their total assessment for the preparation of this schedule, and for the sharing of future maintenance costs to the drain and bridges on a pro-rata basis with the values in this Maintenance Schedule of Assessment.

## IX. FUTURE MAINTENANCE

After the completion of the construction of this new access bridge, all of same shall be maintained in the future by the Town of Essex.

Furthermore, if any maintenance work is required to this access bridge in the future, we recommend that 100% of the future maintenance costs shall be assessed as a Benefit against the abutting property (Parcel 780-02100) being served by the access bridge, which is currently owned by the utility Union Gas, in Part of Lot 1, Concession 3, pursuant to Section 26 of the Drainage Act.

We recommend that the new bridge structure as identified herein, be maintained in the future as part of the drainage works. We would also recommend that this legal access bridge constructed in the drain, for which the future maintenance costs are to be borne by the abutting affected landowner be maintained by the Town and that said maintenance would include works to the bridge culvert, bedding, backfill and end treatment. Should concrete, asphalt or other decorative driveway surfaces over this bridge culvert require removal as part of the maintenance works, these surfaces should also be repaired or replaced as part of the works. Likewise, if any fencing, gate, decorative walls, guard rails or other special features exist that will be impacted by the maintenance work, they are also to be removed and restored or replaced as part of the bridge maintenance work. However, the cost of the supply and installation of any surface material other than Granular "A" material, and the cost of removal and restoration or replacement, if necessary, of any special features, shall be totally assessed to the benefiting adjoining owner served by said access bridge.

When maintenance work is carried out on any bridges in the future, we recommend that part of the cost be assessed as a Benefit to the abutting parcel served by the access bridge, and the remainder shall be assessed to the upstream lands and roads based on their affected area and Outlet Liability assessments as set out in the attached Maintenance Schedule of Assessment. The share for Benefit and Outlet Liability shall be as set out in the Bridge Cost Sharing table below.

**WEST TOWNLINE DRAIN**
**BRIDGE COST SHARING**

| Bridge | Owners | Benefit to Owner | Outlet Upstream |
|---|---|---|---|
| 1 | Town of Essex, Erie Blue Drive | 98.0% | 2.0% |
| 2 | County of Essex, Road 50, | 98.0% | 2.0% |

| | | | |
|---|---|---|---|
| 3 | John Ciotoli,<br>(670-02000), | 41.0% | 59.0% |
| 4 | Jean-Paul Lesperance &<br>Marilyn Filiault,<br>(670-01902), | 46.0% | 54.0% |
| 5 | Town of Essex,<br>(2nd Concession Road), | 98.0% | 2.0% |
| 6 | Lightpath Utilities Inc.,<br>(750-01000), | 70.3% | 29.7% |
| 7 | Bruce & Daniela Smith,<br>(750-01100), | 62.0% | 38.0% |
| 8 | Town of Essex,<br>(Collison Sideroad), | 98.0% | 2.0% |
| 9 | Bruce & Daniela Smith,<br>(750-01200), | 62.8% | 37.2% |
| 10 | County of Essex,<br>(Road 50), | 98.0% | 2.0% |
| 11 | Morley, Rosemarie & Calvin<br>McLean,<br>(750-01400), | 73.5% | 26.5% |
| 12 | Ronald Renaud,<br>(750-01500), | 66.5% | 33.5% |
| 13 | Nancy & Ronald Renaud,<br>(750-01600), | 66.5% | 33.5% |
| 14 | Richard & Janet Geffs,<br>(750-01700), | 84.0% | 16.0% |
| 15 | Matthew & Breanne<br>Renaud,<br>(750-01800), | 66.5% | 33.5% |
| 16 | John St. Louis,<br>(750-01900), | 66.5% | 33.5% |
| 17 | Town of Essex,<br>(3rd Concession Road), | 98.0% | 2.0% |
| 18 | Union Gas Ltd.,<br>(750-02102), | 100.0% | 0.0% |

| | | | |
|---|---|---|---|
| 19 | John Zavaros, (750-02100), | 84.0% | 16.0% |

We recommend that the bridge structures as identified herein, be maintained in the future as part of the drainage works. We would also recommend that the access bridges in the drain, for which the future maintenance costs are to be borne by the abutting affected landowners and upstream lands and roads, be maintained by the Town and that said maintenance would include works to the bridge culvert, bedding, backfill and end treatment. Where concrete, asphalt or other decorative driveway surfaces over the bridge culverts require removal as part of the maintenance works, these surfaces should also be repaired or replaced as part of the works. Likewise, if any fencing, gate, decorative walls, guard rails or other special features exist that will be impacted by the maintenance work, they are also to be removed and restored or replaced as part of the bridge maintenance work. However, the cost of the supply and installation of any surface material other than Granular "A" material, and the cost of removal and restoration or replacement, if necessary, of any special features, shall be totally assessed to the benefiting adjoining parcel served by said access bridge.

When any maintenance work is carried out in the future on the open portions of the West Townline Drain, we recommend that the costs for same be shared on a pro-rata basis with the Benefit and Outlet Liability assessments shown in the new attached Maintenance Schedule of Assessment. When any maintenance work is required to the bridges along the course of the West Townline Drain, we recommend that the costs be shared as set out in the Table above. The future cost sharing for all works to Bridge 18 will be borne 100% by the utility Union Gas Ltd. pursuant to Section 26 of the Drainage Act.

The above provisions for the future maintenance of this new access bridge, being constructed under this report, and for the sharing of the cost for any future maintenance work on the other bridges and open drain shall remain as aforesaid until otherwise determined under the provisions of the "Drainage Act, R.S.O. 1990, Chapter D.17 as amended 2010".

All of which is respectfully submitted.


*Rood Engineering Inc.*

Gerard Rood

Gerard Rood, P.Eng.

tr

att.

***ROOD ENGINEERING INC.***
Consulting Engineers
9 Nelson street
LEAMINGTON, Ontario N8H 1G6

**SCHEDULE OF ASSESSMENT**
**WEST TOWNLINE DRAIN**
**(Bridge for Union Gas)**
**TOWN OF ESSEX**

**4. PRIVATELY OWNED - NON-AGRICULTURAL LANDS:**

| Tax Roll No. | Con. or Plan No. | Lot or Part of Lot | Acres Afft'd | Hectares Afft'd | Owner's Name | Value of Benefit | Value of Outlet | Value of Special Benefit | TOTAL VALUE |
|---|---|---|---|---|---|---|---|---|---|
| 750-02102 | 3 | 1 | 0.05 | 0.020 | Union Gas | $ 17,200.00 | $ - | $ - | $ 17,200.00 |
| **Total on Privately Owned - Non-Agricultural Lands** | | | | | | **$ 17,200.00** | **$ -** | **$ -** | **$ 17,200.00** |
| **TOTAL ASSESSMENT** | | | 0.05 | 0.020 | | **$ 17,200.00** | **$ -** | **$ -** | **$ 17,200.00** |

1 Hectare = 2.471 Acres
Project No. REI2016D061
April 26th, 2019

## MAINTENANCE SCHEDULE OF ASSESSMENT
## WEST TOWNLINE DRAIN
## Town of Essex

### 3. MUNICIPAL LANDS:

| Tax Roll No. | Con. or Plan No. | Lot or Part of Lot | Acres Afft'd | Hectares Afft'd | Owner's Name | Value of Benefit | Value of Outlet | TOTAL VALUE |
|---|---|---|---|---|---|---|---|---|
| Malden-Colchester Townline Rd. | | | 1.42 | 0.58 | Town of Essex | $ 4.00 | $ 3.00 | $ 7.00 |
| County Road 41 | | | 5.48 | 2.22 | County of Essex | $ 19.00 | $ 26.00 | $ 45.00 |
| County Road 50 | | | 2.83 | 1.14 | County of Essex | $ 7.00 | $ 7.00 | $ 14.00 |
| County Road 20 | | | 16.96 | 6.86 | County of Essex | $ 49.00 | $ 200.00 | $ 249.00 |
| Collison Road | | | 0.27 | 0.11 | Town of Essex | $ 1.00 | $ 2.00 | $ 3.00 |
| Gore Road | | | 9.15 | 3.70 | Town of Essex | $ - | $ 24.00 | $ 24.00 |
| 2nd Concession Road | | | 1.78 | 0.72 | Town of Essex | $ 7.00 | $ 12.00 | $ 19.00 |
| 3rd Concession Road | | | 5.63 | 2.28 | Town of Essex | $ 10.00 | $ 47.00 | $ 57.00 |
| Smith Road | | | 2.72 | 1.10 | Town of Essex | $ - | $ 10.00 | $ 10.00 |
| | | | | | | **$ 97.00** | **$ 331.00** | **$ 428.00** |

### 4. PRIVATELY OWNED - NON-AGRICULTURAL LANDS:

| Tax Roll No. | Con. or Plan No. | Lot or Part of Lot | Acres Afft'd | Hectares Afft'd | Owner's Name | Value of Benefit | Value of Outlet | TOTAL VALUE |
|---|---|---|---|---|---|---|---|---|
| 670-00250 | Gore | 5 | 1.46 | 0.592 | John & Suzanne Toner | $ - | $ 4.00 | $ 4.00 |
| 670-00300 | Gore | 5 | 1.00 | 0.406 | Murray & Lynda Pigeon | $ - | $ 3.00 | $ 3.00 |
| 670-00350 | Gore | 5 | 0.41 | 0.167 | James & Karrie Stuart | $ - | $ 1.00 | $ 1.00 |

| Tax Roll No. | Con. or Plan No. | Lot or Part of Lot | Acres Afft'd | Hectares Afft'd | Owner's Name | Value of Benefit | Value of Outlet | TOTAL VALUE |
|---|---|---|---|---|---|---|---|---|
| 670-00360 | Gore | 5 | 0.63 | 0.255 | Miroslaw & Grazyna Nowak | $ - | $ 2.00 | $ 2.00 |
| 670-00365 | Gore | 5 | 0.54 | 0.220 | Dennis & June Grayer | $ - | $ 1.00 | $ 1.00 |
| 670-00370 | Gore | 5 | 0.62 | 0.251 | Lyle Grayer | $ - | $ 2.00 | $ 2.00 |
| 670-00375 | Gore | 5 | 0.73 | 0.297 | Robert Grayer | $ - | $ 2.00 | $ 2.00 |
| 670-00900 | Gore | 5 | 1.03 | 0.418 | James & Victoria Lypps | $ - | $ 3.00 | $ 3.00 |
| 670-01001 | Gore | 5 | 0.71 | 0.287 | George & Janet Ellenberger | $ - | $ 2.00 | $ 2.00 |
| 670-01003 | Gore | 5 | 1.07 | 0.435 | Hydro One Networks Inc. | $ - | $ 3.00 | $ 3.00 |
| 670-01100 | 1 | 93 | 0.76 | 0.309 | John Middleton | $ - | $ 2.00 | $ 2.00 |
| 670-01200 | 1 | 93 | 1.12 | 0.454 | Athena Pollard | $ - | $ 3.00 | $ 3.00 |
| 670-01300 | 1 | 94 | 0.54 | 0.220 | Peter & Karen Livingston | $ - | $ 2.00 | $ 2.00 |
| 670-01400 | 1 | 94 | 0.99 | 0.402 | Matthew & Carolann Langlois | $ - | $ 3.00 | $ 3.00 |
| 670-01401 | 1 | 94 | 1.12 | 0.454 | Kim & Patrick Dumeah | $ - | $ 3.00 | $ 3.00 |
| 670-01500 | 1 | 95 | 0.46 | 0.186 | James & Carrie Butt | $ - | $ 1.00 | $ 1.00 |
| 670-01610 | 1 | 95 | 0.48 | 0.194 | 2614469 Ontario Inc. | $ - | $ 1.00 | $ 1.00 |
| 670-01800 | 1 | 96 | 2.00 | 0.810 | Dianne & Dale Wright | $ - | $ 4.00 | $ 4.00 |
| 670-01810 | 1 | 97 | 1.24 | 0.502 | Amanda Tomkins | $ - | $ 3.00 | $ 3.00 |
| 670-01902 | 1 | 97 | 3.03 | 1.226 | Marilyn Filiault & Jean-Paul Lesperance | $ - | $ 6.00 | $ 6.00 |
| 670-02000 | 1 | 97 | 0.22 | 0.089 | John Ciotoli | $ 1.00 | $ 1.00 | $ 2.00 |
| 670-02100 | 1 | 97 | 0.06 | 0.024 | Hydro One Networks Inc. | $ 1.00 | $ 1.00 | $ 2.00 |
| 740-00950 | 2 | 4 | 1.18 | 0.476 | Robert Smyth & William & Linda Deans | $ - | $ 3.00 | $ 3.00 |
| 750-00100 | 2 | 3 | 1.58 | 0.639 | Larry & Barbara Freeswick | $ - | $ 6.00 | $ 6.00 |
| 750-00150 | 2 | 3 | 0.69 | 0.279 | Debbi Little | $ - | $ 2.00 | $ 2.00 |
| 750-00310 | 2 | 2 | 0.88 | 0.356 | Christopher & Diane McQueen | $ 36.00 | $ 2.00 | $ 38.00 |

| Tax Roll No. | Con. or Plan No. | Lot or Part of Lot | Acres Afft'd | Hectares Afft'd | Owner's Name | Value of Benefit | Value of Outlet | TOTAL VALUE |
|---|---|---|---|---|---|---|---|---|
| 750-00501 | 2 | 1 | 3.34 | 1.352 | William Bruce & Sherri Lauzon | $ 6.00 | $ 6.00 | $ 12.00 |
| 750-00700 | 2 | 1 | 2.69 | 1.087 | John Blackmore | $ 10.00 | $ 6.00 | $ 16.00 |
| 750-00800 | 2 | 1 | 1.87 | 0.757 | Michael Adam | $ 7.00 | $ 4.00 | $ 11.00 |
| 750-00900 | 2 | 1 | 0.64 | 0.261 | Jeremy Rollo | $ 2.00 | $ 2.00 | $ 4.00 |
| 750-01000 | 2 | 1 | 7.67 | 3.105 | Lightpath Utilities Inc. | $ 28.00 | $ 17.00 | $ 45.00 |
| 750-01100 | 2 | 1 | 0.69 | 0.278 | Bruce & Daniela Smith | $ 3.00 | $ 3.00 | $ 6.00 |
| 750-01200 | 2 | 1 | 0.60 | 0.242 | Bruce & Daniela Smith | $ 3.00 | $ 3.00 | $ 6.00 |
| 750-01300 | 2 | 1 | 1.93 | 0.781 | John Sawatzky & Jenney Crowder | $ 7.00 | $ 5.00 | $ 12.00 |
| 750-01600 | 2 | 1 | 0.45 | 0.182 | Nancy & Ronald Renaud | $ 2.00 | $ 2.00 | $ 4.00 |
| 750-01700 | 2 | 1 | 0.45 | 0.182 | Richard & Janet Geffs | $ 2.00 | $ 2.00 | $ 4.00 |
| 750-01800 | 2 | 1 | 1.39 | 0.564 | Matthew & Breanne Renaud | $ 5.00 | $ 4.00 | $ 9.00 |
| 750-01900 | 2 | 1 | 9.20 | 3.723 | John St.Louis | $ 33.00 | $ 12.00 | $ 45.00 |
| 750-02002 | 2 | 1 | 2.01 | 0.813 | Rodney & Michelle Ferriss | $ 7.00 | $ 3.00 | $ 10.00 |
| 750-02102 | 2 | 1 | 0.05 | 0.021 | Union Gas Ltd. | $ 1.00 | $ 1.00 | $ 2.00 |
| 750-03100 | 2 | 1 | 0.87 | 0.353 | David & Lou Greenham | $ 3.00 | $ 3.00 | $ 6.00 |
| 750-03201 | 2 | 1 | 0.51 | 0.205 | Morley & Rosemarie McLean | $ 1.00 | $ 2.00 | $ 3.00 |
| **Total on Privately Owned - Non-Agricultural Lands.....** | | | | | | **$ 158.00** | **$ 141.00** | **$ 299.00** |

**5. PRIVATELY OWNED - AGRICULTURAL LANDS (grantable):**

| Tax Roll No. | Con. or Plan No. | Lot or Part of Lot | Acres Afft'd | Hectares Afft'd | Owner's Name | Value of Benefit | Value of Outlet | TOTAL VALUE |
|---|---|---|---|---|---|---|---|---|
| 670-00200 | Gore | 5 | 63.42 | 25.664 | Thomas Lypps | $ - | $ 68.00 | $ 68.00 |

| Tax Roll No. | Con. or Plan No. | Lot or Part of Lot | Acres Afft'd | Hectares Afft'd | Owner's Name | Value of Benefit | Value of Outlet | TOTAL VALUE |
|---|---|---|---|---|---|---|---|---|
| 670-00400 | Gore | 5 | 4.99 | 2.020 | Karen Fox | $ - | $ 5.00 | $ 5.00 |
| 670-00600 | Gore | 5 | 33.72 | 13.645 | 1741094 Ontario Limited | $ - | $ 30.00 | $ 30.00 |
| 670-00800 | Gore | 5 | 35.01 | 14.170 | Christopher & Maureen Gillan | $ - | $ 37.00 | $ 37.00 |
| 670-00805 | Gore | 5 | 44.80 | 18.131 | Ronald Renaud | $ - | $ 47.00 | $ 47.00 |
| 670-01000 | Gore | 5 | 33.23 | 13.449 | Miller Cattle & Grain Ltd. | $ - | $ 37.00 | $ 37.00 |
| 670-01050 | 1 | 93 | 3.36 | 1.360 | Dean & Rosemarie Martin | $ - | $ 4.00 | $ 4.00 |
| 670-01101 | 1 | 93 | 0.52 | 0.210 | Rosemarie Martin | $ - | $ 2.00 | $ 2.00 |
| 670-01550 | 1 | 95 | 8.15 | 3.300 | 1849784 Ontario Limited | $ - | $ 9.00 | $ 9.00 |
| 670-01600 | 1 | 95 | 26.35 | 10.662 | Cedar Branches Farms Inc. | $ - | $ 28.00 | $ 28.00 |
| 670-01900 | 1 | 97 | 66.21 | 26.794 | Bonnefield Farmlands Ontario | $ 246.00 | $ 61.00 | $ 307.00 |
| 670-02200 | 1 | 97 | 40.75 | 16.493 | Marvin Marontate | $ 142.00 | $ 25.00 | $ 167.00 |
| 670-02700 | 2 | 94 | 0.22 | 0.090 | Gyori Farms Inc. | $ - | $ 1.00 | $ 1.00 |
| 670-35100 | 1 | 97 | 1.75 | 0.710 | Marvin Marontate | $ 6.00 | $ 1.00 | $ 7.00 |
| 670-35200 | 1 | 97 | 4.27 | 1.730 | Marvin Marontate | $ 15.00 | $ 2.00 | $ 17.00 |
| 670-35300 | 1 | 97 | 3.98 | 1.610 | Marvin Marontate | $ 14.00 | $ 2.00 | $ 16.00 |
| 740-00900 | 2 | PT. 3 & 4 | 36.83 | 14.904 | Martin Gorski & Suzanne Dajczak | $ - | $ 40.00 | $ 40.00 |
| 750-00170 | 2 | PT. 2 & 3 | 70.14 | 28.385 | Dean & Rosemarie Martin | $ - | $ 73.00 | $ 73.00 |
| 750-00200 | 2 | 2 | 58.32 | 23.600 | Hugh & Dean Martin Trustee | $ - | $ 66.00 | $ 66.00 |
| 750-00300 | 2 | 2 | 40.54 | 16.407 | Rosemarie Martin & Antonio Drommi | $ - | $ 48.00 | $ 48.00 |
| 750-00400 | 2 | 2 | 62.13 | 25.142 | Gorski Land Holdings Inc. | $ - | $ 66.00 | $ 66.00 |
| 750-00500 | 2 | 1 | 45.41 | 18.379 | Morley, Calvin & Rosemarie McLean | $ 82.00 | $ 48.00 | $ 130.00 |
| 750-00600 | 2 | 1 | 19.85 | 8.035 | William & Alice Borland | $ 72.00 | $ 23.00 | $ 95.00 |

| Tax Roll No. | Con. or Plan No. | Lot or Part of Lot | Acres Afft'd | Hectares Afft'd | Owner's Name | Value of Benefit | Value of Outlet | TOTAL VALUE |
|---|---|---|---|---|---|---|---|---|
| 750-01400 | 2 | 1 | 24.92 | 10.086 | Morley, Calvin & Rosemarie McLean | $ 91.00 | $ 30.00 | $ 121.00 |
| 750-01500 | 2 | 1 | 20.39 | 8.252 | Ronald Renaud | $ 75.00 | $ 27.00 | $ 102.00 |
| 750-01801 | 2 | 1 | 3.34 | 1.350 | Matthew & Breanne Renaud | $ 12.00 | $ 7.00 | $ 19.00 |
| 750-02100 | 2 | 1 | 22.95 | 9.289 | John Zavaros | $ 83.00 | $ 36.00 | $ 119.00 |
| 750-02900 | 2 | 2 | 35.01 | 14.170 | Leland McLean | $ - | $ 48.00 | $ 48.00 |
| 750-03000 | 2 | 1 | 98.36 | 39.804 | 1741094 Ontario Limited | $ 264.00 | $ 141.00 | $ 405.00 |
| 750-03200 | 2 | 1 | 50.60 | 20.477 | Morley, Calvin & Merna McLean | $ 90.00 | $ 54.00 | $ 144.00 |
| 750-03600 | 2 | 3 | 37.02 | 14.980 | Rosemarie & Dean Martin | $ - | $ 39.00 | $ 39.00 |
| **Total on Privately Owned - Agricultural Lands (grantable).....** | | | | | | **$ 1,192.00** | **$ 1,105.00** | **$ 2,297.00** |

**5. PRIVATELY OWNED - AGRICULTURAL LANDS (non-grantable):**

| Tax Roll No. | Con. or Plan No. | Lot or Part of Lot | Acres Afft'd | Hectares Afft'd | Owner's Name | Value of Benefit | Value of Outlet | TOTAL VALUE |
|---|---|---|---|---|---|---|---|---|
| 670-01700 | 1 | 96 | 31.78 | 12.860 | Irene Cappelli | $ - | $ 34.00 | $ 34.00 |
| 750-02000 | 2 | 1 | 1.99 | 0.807 | Maurice & Linda Hutchins | $ 7.00 | $ 3.00 | $ 10.00 |
| **Total on Privately Owned - Agricultural Lands (non-grantable).....** | | | | | | **$ 7.00** | **$ 37.00** | **$ 44.00** |
| **ESSEX TOTAL ASSESSMENT** | | | 1135.50 | 459.53 | | **$ 1,454.00** | **$ 1,614.00** | **$ 3,068.00** |

| Tax Roll No. | Con. or Plan No. | Lot or Part of Lot | Acres Afft'd | Hectares Afft'd | Owner's Name | Value of Benefit | Value of Outlet | TOTAL VALUE |
|---|---|---|---|---|---|---|---|---|

**MAINTENANCE SCHEDULE OF ASSESSMENT**
**WEST TOWNLINE DRAIN**
**Town of Amherstburg**

**3. MUNICIPAL LANDS:**

| Tax Roll No. | Con. or Plan No. | Lot or Part of Lot | Acres Afft'd | Hectares Afft'd | Owner's Name | Value of Benefit | Value of Outlet | TOTAL VALUE |
|---|---|---|---|---|---|---|---|---|
| County Road 50 | | | 0.44 | 0.180 | County of Essex | $ 2.00 | $ 7.00 | $ 9.00 |
| Malden-Colchester Townline Rd. | | | 1.42 | 0.576 | Town of Amherstburg | $ 3.00 | $ 4.00 | $ 7.00 |
| Meadows Lane | | | 1.73 | 0.700 | Town of Amherstburg | $ 2.00 | $ 6.00 | $ 8.00 |
| County Road 41 | | | 6.90 | 2.792 | County of Essex | $ 8.00 | $ 38.00 | $ 46.00 |
| County Road 20 | | | 3.91 | 1.582 | County of Essex | $ 11.00 | $ 66.00 | $ 77.00 |
| **Total on Municipal Lands** | | | | | | **$ 26.00** | **$ 121.00** | **$ 147.00** |

**4. PRIVATELY OWNED - NON-AGRICULTURAL LANDS:**

| Tax Roll No. | Con. or Plan No. | Lot or Part of Lot | Acres Afft'd | Hectares Afft'd | Owner's Name | Value of Benefit | Value of Outlet | TOTAL VALUE |
|---|---|---|---|---|---|---|---|---|
| 510-00100 | 1292 | LOTS 1 TO 5 | 0.50 | 0.203 | 1954923 Ontario Inc. | $ 1.00 | $ 1.00 | $ 2.00 |

| Tax Roll No. | Con. or Plan No. | Lot or Part of Lot | Acres Afft'd | Hectares Afft'd | Owner's Name | Value of Benefit | Value of Outlet | TOTAL VALUE |
|---|---|---|---|---|---|---|---|---|
| 510-00200 | 1292 | LOTS 5 TO 7 | 0.32 | 0.129 | Darren & Christina Nantais | $ 1.00 | $ 1.00 | $ 2.00 |
| 510-00300 | 1292 | LOTS 8 TO 10 | 0.38 | 0.155 | Allan & Evy Ruish | $ 1.00 | $ 1.00 | $ 2.00 |
| 510-00500 | 1292 | LOTS 11 TO 12 | 0.26 | 0.104 | Ernest Kovosi & Trisha Labonte | $ 1.00 | $ 1.00 | $ 2.00 |
| 510-00600 | 1292 | LOTS 13 AND 14 | 0.26 | 0.104 | Town of Amherstburg | $ 1.00 | $ 1.00 | $ 2.00 |
| 510-00800 | 1292 | LOTS 15 TO 16 | 0.26 | 0.104 | William & Nancy Dent | $ 1.00 | $ 1.00 | $ 2.00 |
| 510-00900 | 1292 | LOTS 17 TO 18 | 0.25 | 0.103 | William & Nancy Dent | $ 1.00 | $ 1.00 | $ 2.00 |
| 510-01000 | 1292 | LOT 19 | 0.13 | 0.052 | William & Nancy Dent | $ 1.00 | $ 1.00 | $ 2.00 |
| 510-01001 | 1292 | LOT 20 | 0.13 | 0.052 | Richard & Diana King | $ 1.00 | $ 1.00 | $ 2.00 |
| 510-01100 | 1292 | LOTS 21 TO 22 | 0.25 | 0.103 | Richard & Diana King | $ 1.00 | $ 1.00 | $ 2.00 |
| 510-01200 | 1292 | LOTS 23 TO 26 | 0.51 | 0.207 | Martin & Lydia McCloskey | $ 1.00 | $ 1.00 | $ 2.00 |
| 510-01400 | 1292 | LOTS 27 TO 28 | 0.25 | 0.103 | Justin Kelly | $ 1.00 | $ 1.00 | $ 2.00 |
| 510-01450 | 7 | PT LOT 60 | 0.73 | 0.296 | Raymond Guilbeault | $ 1.00 | $ 2.00 | $ 3.00 |
| 510-01500 | 1292 | LOT 29 | 0.13 | 0.052 | Justin Kelly | $ 1.00 | $ 1.00 | $ 2.00 |
| 510-01600 | 1292 | LOTS 30 TO 32 | 0.38 | 0.155 | Mitchell Sinasac | $ 1.00 | $ 1.00 | $ 2.00 |
| 510-01800 | 1292 | LOTS 33 TO 35 | 0.38 | 0.155 | David & Carley Carr | $ 1.00 | $ 1.00 | $ 2.00 |
| 510-01900 | 1292 | LOTS 36 TO 37 | 0.26 | 0.104 | Debra Smith | $ 1.00 | $ 1.00 | $ 2.00 |
| 510-02000 | 1292 | LOTS 38 TO 40 | 0.38 | 0.155 | Trevor & Paige Ferriss | $ 1.00 | $ 1.00 | $ 2.00 |

| Tax Roll No. | Con. or Plan No. | Lot or Part of Lot | Acres Afft'd | Hectares Afft'd | Owner's Name | Value of Benefit | Value of Outlet | TOTAL VALUE |
|---|---|---|---|---|---|---|---|---|
| 510-02200 | 1292 | LOTS 41 TO 43 | 0.39 | 0.156 | Kenneth Matte | $ 1.00 | $ 1.00 | $ 2.00 |
| 510-02300 | 1292 | LOTS 44 TO 46 | 0.39 | 0.156 | Constance Scott | $ 1.00 | $ 1.00 | $ 2.00 |
| 510-02400 | 1292 | LOTS 47 & 48 | 0.26 | 0.104 | David Craig | $ 1.00 | $ 1.00 | $ 2.00 |
| 510-02600 | 1292 | LOTS 49 TO 51 & PT LOT 52 | 0.45 | 0.182 | Brandon Roelens & Elizabeth Parent | $ 1.00 | $ 1.00 | $ 2.00 |
| 510-02700 | 1292 | LOT 53 & PT LOT 52 | 0.23 | 0.094 | Wayne Jahn | $ 1.00 | $ 1.00 | $ 2.00 |
| 510-02800 | 1292 | LOT 54 TO LOT 56 | 0.41 | 0.165 | Liuzhi Yu & Haihua Guan | $ 1.00 | $ 1.00 | $ 2.00 |
| 510-02900 | 1292 | LOTS 57 TO 58 | 0.26 | 0.104 | Liuzhi Yu & Haihua Guan | $ 1.00 | $ 1.00 | $ 2.00 |
| 510-03000 | 1292 | LOTS 59 TO 61 | 0.38 | 0.155 | Nelson & Chantale Quesnel & Lloyed Ayotte | $ 1.00 | $ 1.00 | $ 2.00 |
| 510-03100 | 1292 | LOTS 62 TO 64 | 0.38 | 0.155 | Xian Zhang | $ 1.00 | $ 1.00 | $ 2.00 |
| 510-03200 | 1292 | LOTS 65 TO 67 | 0.38 | 0.155 | Lloyd & Marjorie Miller | $ 1.00 | $ 1.00 | $ 2.00 |
| 510-03300 | 1292 | LOTS 68 TO 69 | 0.25 | 0.103 | Timothy Girard | $ 1.00 | $ 1.00 | $ 2.00 |
| 510-03400 | 1292 | LOTS 70 & 71 | 0.25 | 0.103 | Stephen Gignac | $ 1.00 | $ 2.00 | $ 3.00 |
| 510-03500 | 1292 | LOTS 72 TO 75 | 0.27 | 0.110 | Stephen Gignac | $ 1.00 | $ 1.00 | $ 2.00 |
| 510-03600 | 7 | PT LOT 60 | 6.79 | 2.747 | Kristin Copf | $ 8.00 | $ 7.00 | $ 15.00 |
| 510-03900 | 7 | PT LOT 61 | 0.32 | 0.130 | Hydro One Networks Inc. | $ 1.00 | $ 1.00 | $ 2.00 |

| Tax Roll No. | Con. or Plan No. | Lot or Part of Lot | Acres Afft'd | Hectares Afft'd | Owner's Name | Value of Benefit | Value of Outlet | TOTAL VALUE |
|---|---|---|---|---|---|---|---|---|
| 510-04000 | 7 | PT LOT 61 | 0.99 | 0.400 | Gary & Kathleen Talbot | $ 1.00 | $ 2.00 | $ 3.00 |
| 520-04010 | 7 | PT LOT 65 | 1.44 | 0.581 | Tristan Anderson | $ - | $ 2.00 | $ 2.00 |
| **Total on Privately Owned - Non-Agricultural Lands.....** | | | | | | **$ 41.00** | **$ 45.00** | **$ 86.00** |

**5. PRIVATELY OWNED - AGRICULTURAL LANDS (grantable):**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 510-03700 | 7 | PT LOT 61 | 8.99 | 3.640 | Gregory & Maria Underwood | $ 10.00 | $ 9.00 | $ 19.00 |
| 520-04020 | 7 | PT. LOT 65 | 0.99 | 0.400 | Harry & Helen Schwab | $ - | $ 2.00 | $ 2.00 |
| 520-04000 | 7 | PT LOT 65 | 8.99 | 3.640 | Helen Schwab & Janet Edwards | $ 10.00 | $ 17.00 | $ 27.00 |
| **Total on Privately Owned - Agricultural Lands (grantable).....** | | | | | | **$ 20.00** | **$ 28.00** | **$ 48.00** |

**5. PRIVATELY OWNED - AGRICULTURAL LANDS (non-grantable):**

| Tax Roll No. | Con. or Plan No. | Lot or Part of Lot | Acres Afft'd | Hectares Afft'd | Owner's Name | Value of Benefit | Value of Outlet | TOTAL VALUE |
|---|---|---|---|---|---|---|---|---|
| 510-03800 | 7 | PT LOT 61 | 19.00 | 7.690 | Everton Morris | $ 22.00 | $ 23.00 | $ 45.00 |
| 520-03700 | 7 | PT LOT 66 | 0.99 | 0.400 | CTV Limited | $ 1.00 | $ 5.00 | $ 6.00 |
| **Total on Privately Owned - Agricultural Lands (non-grantable).....** | | | | | | **$ 23.00** | **$ 28.00** | **$ 51.00** |

| Tax Roll No. | Con. or Plan No. | Lot or Part of Lot | Acres Afft'd | Hectares Afft'd | Owner's Name | Value of Benefit | Value of Outlet | TOTAL VALUE |
|---|---|---|---|---|---|---|---|---|
| **AMHERSTBURG TOTAL ASSESSMENT** | | | | | | **$ 110.00** | **$ 222.00** | **$ 332.00** |
| Amherstburg Total Area | | | 72.99 | 29.537 | | | | |
| **ESSEX TOTAL ASSESSMENT** | | | | | **(brought forward)** | **$ 1,454.00** | **$ 1,614.00** | **$ 3,068.00** |
| Essex Total Area | | | 1135.50 | 459.53 | (brought forward) | | | |
| **PROJECT TOTAL ASSESSMENT** | | | **1208.48** | **489.067** | | **$ 1,564.00** | **$ 1,836.00** | **$ 3,400.00** |

1 Hectare = 2.471 Acres
Project No.REI2016D061
April 26th, 2019

**SPECIFICATIONS**

**WEST TOWNLINE DRAIN**

**Bridge for Union Gas, Parcel 750-02102**

**Part of Lot 1, Concession 3 and**

**Future Drain Maintenance**

**Geographic Twp. of Colchester South**

**TOWN OF ESSEX**

## I. GENERAL SCOPE OF WORK

The Contractor shall provide all material, labour, and equipment to construct a new access bridge for Union Gas consisting of 11.0 metres (36.1 ft.) of 525mm diameter, smooth wall 320 kPa High Density Poly Ethylene (H.D.P.E.) pipe in the West Townline Drain. The new access bridge shall be constructed so that the centre of the pipe is set slightly north of Parcel 750-03000, and in accordance with the layout as shown on the plans in **Appendix "REI-E"**. This location shall be the exact designated location of this new access bridge culvert unless otherwise directed by the property owner and the Town Drainage Superintendent, prior to the construction of same. Any changes to the location of the new access bridge must be approved in writing by the Engineer. The general layout of the access bridge and other ancillary work shall be provided as shown and detailed in the accompanying drawing attached within **Appendix "REI-E"**. A Bench Mark has been set near this proposed access bridge so that same can be utilized for the setting of the new bridge culvert grades. The **Bench Mark** is the *"top of nail on west face of hydro pole located on the south side of the proposed bridge and the east side of County Road 20"*, with same being **Elevation 190.588 metres.**

## II. E.R.C.A. AND D.F.O. CONSIDERATIONS

Silt and sediment control is a key component of the work on this project. The Contractor shall provide temporary control measures in accordance with O.P.S.S. 805 dated November 2010 or as subsequently amended or as otherwise provided for in these specifications. All of the work shall be carried out in accordance with any permits or authorizations issued by the Essex Region Conservation Authority (E.R.C.A.) or the Department of Fisheries and Oceans (D.F.O.), copies of which will be provided, if available. The standard mitigation response received from E.R.C.A. shall be followed and a copy of same is included within **Appendix "REI-A"**.

The Contractor is to review **Appendix "REI-A"** in detail and is required to comply in all regards with the contents of said E.R.C.A. and D.F.O. measures, and follow the special requirements therein included during construction. The work shall be carried out in the dry and silt and sediment control shall be a key consideration during the course of the work. All silt and sediment controls shall be provided in accordance with O.P.S.S. and O.P.S.D. requirements for same. Controls shall be cleaned out as necessary during the course of the installation, and once the site has been stabilized, shall be completely removed and disposed of by the Contractor.

## III. M.N.R.F. CONSIDERATIONS

The Contractor is to note that the Ministry of Natural Resources and Forestry (M.N.R.F.) screening process by way of a Species at Risk (S.A.R.) review of the M.N.R.F. "Endangered Species Act, 2007" (E.S.A.) will be completed as a self-assessment by the Town pursuant to Section 23.9 of the E.S.A. prior to construction. This Section allows the Town to conduct eligible works of repair, maintenance and improvement to existing municipal drains under the Drainage Act, and exemptions from Sections 9 and 10 of the E.S.A., provided that the requirements are followed in accordance with Ontario Regulation 242/08. The results of the review will be provided to the Contractor and copies of the mitigation measures, habitat protection and identification sheets will be included within **Appendix "REI-B"**.

The Contractor is to review **Appendix "REI-B"** in detail and is required to comply in all regards with the contents of said M.N.R.F. measures, and follow the special requirements therein included during construction. Throughout the course of construction the Contractor will be responsible to ensure that all necessary provisions are undertaken to protect all species at risk and their habitats. If a threatened or sensitive species is encountered, the Contractor shall notify the Town and M.N.R.F. and provide all the equipment and materials stipulated by the mitigation requirements for handling the species and cooperate fully with the Town and M.N.R.F. staff in the handling of the species.

## IV. ACCESS TO WORK

The Contractor is advised that the majority of the work to be carried out on this project for the new Union Gas bridge extends along the east side of County Road 20. Future maintenance on other bridges will be along the east sides of County Road 20, County Road 41, and the Malden-Colchester Townline Road, along with road crossings at County Road 50, 2nd Concession Road, Collison Road, County Road 20 and the 3rd Concession Road. The Contractor shall have access for the full width of the roadway abutting the proposed drainage works. The Contractor may utilize the right-of-way as necessary, to permit the completion of all of the work required to be carried out for this project. The Contractor shall also have access into the driveways as necessary to carry out the construction of the new access bridge, as set out on the plans and in these specifications, along with a sufficient area in the vicinity of the bridge to carry out all ancillary work.

The Contractor shall ensure that the traveling public is protected at all times while utilizing the roadway for its access. The Contractor shall provide traffic control, including flag persons when required. Should the Contractor have to close any roadways for the proposed works, it shall obtain the permission of the Town Drainage Superintendent or Consulting Engineer and arrange to provide the necessary notification of detours around the site. The Contractor shall also ensure that all emergency services, school bus companies, etcetera are contacted about the disruption to access at least 48 hours in advance of same. All detour routes shall be established in consultation with the County and Town of Essex Works Departments.

Throughout the course of the work it is imperative that the Contractor protect as much landscaping and vegetation as possible when accessing along the drain. This will be of particular concern along the lawn areas of residential properties. Due to the extent of the work and the area for carrying out the work, the Contractor will be required to carry out all of the necessary steps to direct traffic and provide temporary diversion of traffic around work sites, including provision of all lights, signs, flag persons, and barricades required to protect the safety of the traveling public. Any accesses or areas used in carrying out the works are to be fully restored to their original conditions by the Contractor at its cost, including topsoil placement and lawn restoration as directed by the Town Drainage Superintendent and the Consulting Engineer.

Restoration shall include but not be limited to all necessary levelling, grading, shaping, topsoil, seeding, mulching, granular placement and asphalt required to make good any damage caused.

## V. REMOVAL OF BRUSH, TREES AND RUBBISH

Where there is any brush, trees or rubbish along the course of the drainage works, including the full width of the work access, all such brush, trees or rubbish shall be close cut and grubbed out, and the whole shall be chipped up for recycling, burned or otherwise satisfactorily disposed of by the Contractor. The brush and trees removed along the course of the work are to be put into piles by the Contractor in locations where they can be safely chipped and disposed of, or burned by it, or hauled away and disposed of by the Contractor to a site to be obtained by it at its expense. Prior to and during the course of any burning operations, the Contractor shall comply with the guidelines prepared by the Air Quality Branch of the Ontario Ministry of the Environment, and shall ensure that the Environmental Protection Act is not violated. The Contractor will be required to notify the local fire authorities to obtain any permits and co-operate with them in the carrying out of any work. The removal of brush and trees shall be carried out in close consultation with the Town Drainage Superintendent or Consulting Engineer to ensure that no decorative trees or shrubs are disturbed by the operations of the Contractor that can be saved. It is the intent of this project to save as many trees and bushes as practical within the roadway allowances and on private lands. Where decorative trees or shrubs are located directly over drainage pipes, the Contractor shall carefully extract same and turn them over to the Owner when requested to do so, and shall cooperate with the Owner in the reinstallation of same if required.

The Contractor shall protect all other trees, bushes, and shrubs located along the length of the drainage works except for those trees that are established, in consultation with the Town Drainage Superintendent, the Consulting Engineer, and the Owners, to be removed as part of the works. The Contractor shall note that protecting and saving the trees may require the Contractor to carry out hand work around the trees, bushes, and shrubs to complete the necessary final site grading and restoration.

Following the completion of the work, the Contractor is to trim up any broken or damaged limbs on trees which are to remain standing, and it shall dispose of said branches along with other brush, thus leaving the trees in a neat and tidy condition.

The Contractor shall remove all deleterious materials and rubbish along the course of the open drain in the location of the work areas and any such materials located in the bridge culverts and enclosures while carrying out its cleaning of same. All such deleterious materials and rubbish shall be loaded up and hauled away by the Contractor to a site to be obtained by it at its cost.

## VI. FENCING

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

## VII. DETAILS OF OPEN DRAIN WORK

The open drain shall be excavated to the lines, levels, grades and cross-sections as shown on the accompanying drawings, or as may be further established by the Town Drainage Superintendent or the Engineer at the time of the work. The drain shall be carefully excavated so as not to disturb the existing banks, rock protection and vegetation, except for those portions of the drain where widening or restoration of a stable drain bank configuration is required. The bottom width of the drain and the sideslopes of the excavation shall conform to the dimensions given on the drawings.

The drain shall be of the size, type, depth, etcetera as shown on the accompanying drawings that may be provided. When completed, the drain shall have a uniform and even bottom and in no case shall such bottom project above the grade line, as shown on the accompanying drawings, and as determined from the Bench Marks. The finished side slopes of the drain shall be 1.5 metres horizontal to 1.0 metre vertical and the bottom width shall be 0.9 metres.

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

Where the drain crosses any lawn, garden, orchard, roadway or driveway, etcetera, the excavated material for the full width of the above-mentioned areas shall be hauled away by the Contractor and disposed of to a site to be obtained by the Contractor at its expense. All work at the disposal site shall be established between the Contractor and the site owner. The Contractor shall be responsible for any permits required and shall provide copies of same to the Town and Consulting Engineer when requested.

Where there is any brush or rubbish in the course of the drain, including both side slopes of the drain, all such brush or rubbish shall be close cut and grubbed out. Where there is any brush or rubbish where the earth is to be spread, or on that strip of land between where the earth is to be spread and the edge of the drain, all such brush or rubbish shall be close cut and grubbed out. The whole is to be burned, chipped or otherwise satisfactorily disposed of by the Contractor as outlined above.

## VIII. BRIDGE CONSTRUCTION

When completed, the new access bridge to serve the Union Gas parcel along the centreline of the new culvert shall have a total top width, including the top width of the quarried limestone on filter cloth end walls, of approximately 7.9 metres (25.9 ft.) and a travelled driveway width of 6.8 metres (22.3 ft.). The quarried limestone on filter cloth end wall protection shall be installed on a slope no steeper than 1.5 horizontal to 1.0 vertical, and shall extend from the end of the new H.D.P.E. pipe to the top elevation of the driveway.

The 320 kPa smooth wall heavy duty H.D.P.E. plastic pipe to be provided for this project is to be supplied as no more than two (2) approximately equal lengths of pipe for the bridge, which are to be coupled together with the use of a wrap coupler, secured in accordance with the manufacturer's recommendations. Under no circumstance shall the access culvert for the bridge be provided with more than two (2) lengths of pipe. The high density polyethylene pipe to be utilized for this bridge installation must be approved by the Town Drainage Superintendent or Engineer, prior to its placement in the drain.

The Contractor shall also note that the placement of the new access bridge culvert is to be performed totally in the dry, and it shall be prepared to take whatever steps are necessary to ensure same, all to the full satisfaction of the Town Drainage Superintendent or Engineer. As part of the work, the Contractor will be required to clean out the drain along the full length of the bridge pipe and for a distance of 3.05 metres (10.0 ft.) both upstream and downstream of said pipe. The design parameters of the West Townline Drain at the location of this new access bridge installation consists of a 0.9m (3 ft.) bottom width, 0.15% grade, and 1.5 horizontal to 1.0 vertical sideslopes. The Contractor shall be required to cut any brush and strip the existing drain sideslopes of any vegetation as part of the grubbing operation. The Contractor shall also be required to dispose of all excavated and deleterious materials, as well as any grubbed out materials, to a site to be obtained by it at its own expense. The Contractor shall note that the survey indicates that the existing drain bottom is slightly above the design grade. The Contractor shall be required to provide any and all labour, material and equipment to set the pipe to the required design grades. The Contractor shall also be required to supply, if necessary for a solid base, a minimum thickness of 150mm (6") of 20mm (3/4") clear stone bedding underneath the culvert pipe, extending from the bottom of the excavation to the culvert invert grade, all to the full satisfaction of the Town Drainage Superintendent or Engineer.

The installation of the complete length of the new access bridge culvert, including all appurtenances, shall be completely inspected by the Town Drainage Superintendent or Engineer prior to backfilling any portions of same. Under no circumstance shall the Contractor backfill same until the Town Drainage Superintendent or Engineer inspects and approves said pipe installation. The Contractor shall provide a minimum notice of 2 working days to the Town Drainage Superintendent or Engineer prior to the commencement of this work. The installation of this new access bridge is to be performed during the normal working hours from Monday to Friday of the Town Drainage Superintendent or Engineer.

Once the 320 kPa smooth wall heavy duty H.D.P.E. plastic pipe has been satisfactorily set in place at the site, the Contractor shall completely backfill same with granular material M.T.O. Type "B" O.P.S.S. (Ontario Provincial Standard Specification) Form 1010, with the exception of the top 305mm (12") of the backfill material for the full top width of the drain and the access bridge, which shall be granular material M.T.O. Type "A" O.P.S.S. Form 1010. The end slopes of the backfill material over the 320 kPa smooth wall heavy duty H.D.P.E. plastic pipe from the invert of said pipe to the top of driveway elevation shall be quarried limestone on filter cloth erosion protection. The end walls shall be extended around onto the drain banks in line with the end of the bridge culvert pipe, all as shown on the plans included in Appendix "REI-E".

The Contractor shall also perform the necessary excavation to extend the width of the driveway southerly from the north top of bank to the south top of bank on the drain. This driveway approach from the north top of bank to approximately the south top of bank shall consist of a minimum of 305mm (12") of granular material M.T.O. Type "A" satisfactorily compacted in place. The gravel apron shall extend for the full width of the access culvert top, as shown on the plans. The gravel backfill shall also extend across the pipe to approximately 1.0m beyond the north and south top of banks as shown on the plans. The pipe shall have a minimum of 800mm of cover, and be uniformly graded down to the south top of bank from the existing north top of bank.

Once the new 320 kPa smooth wall heavy duty H.D.P.E. plastic pipe has been set in place at the required location, the Contractor shall completely backfill same with granular material, and install the quarried limestone on filter cloth protection on both ends of the bridge. The installation of the endwalls, as well as the backfilling of the pipe where applicable, shall be provided in compliance with Items 2), 3), and 4) of the **"Standard Specifications for Access Bridge Construction"** attached within **Appendix "REI-C"** and in total compliance and in all respects with the General Conditions included in Item 4) of said Appendix. The Contractor, in all cases, shall comply with these specifications and upon completion of the sloped quarried

limestone end protection installation shall restore the adjacent areas to their original conditions.

The 320 kPa smooth wall heavy duty H.D.P.E. plastic pipe for this installation shall be provided with a depth of cover measured from the top of the 320 kPa smooth wall heavy duty H.D.P.E. plastic pipe to the top of the granular backfill of approximately 0.400m (16.0") for the new bridge and if the culvert is placed at its proper elevations, this should be easily achieved. If the Contractor finds that the specified cover is not being met, they shall notify the Drainage Superintendent and the Engineer immediately so that steps can be taken to rectify the condition prior to the placement of any backfill. The cover requirement is critical and must be attained. In order for this new access bridge culvert to properly fit the channel parameters, all of the design grade elevations provided below must be strictly adhered to.

Also, for use by the Contractor, we have established a Bench Mark near the site. This **Bench Mark** is the "top of nail in west face of hydro pole on the south side of the proposed bridge and east side of County Road", with same being **Elevation 190.588 metres**. The new pipe culvert and the backfilling are to be placed on the following basis:

a) The **north (upstream) invert** of the proposed bridge culvert is to be set at **Elevation 189.175 metres.**

b) The **south (downstream) invert** of the proposed bridge culvert is to be set at **Elevation 189.158 metres.**

The centreline of driveway for this bridge installation shall be set to approximately Elevation **190.250 metres** at approximately 1.0 west of the west top of bank, Elevation **190.177 metres** at the culvert pipe centreline, and Elevation **190.100 metres** at approximately 1.0 metre east of the east top of bank to match to the existing field grade. The access bridge driveway, in all cases, shall be graded with a cross-fall from the centreline of the driveway to the outer edges of the driveway at an approximate grade of 1.50%.

As a check, all of the above design grade elevations should be confirmed before commencing to the next stage of the new access bridge installation. The Contractor is also to check that the pipe invert grades are correct by referencing the Bench Mark provided for the site.

The Contractor shall also be required to provide all labour, equipment and material to provide granular fill to all gore areas at the corners as noted on the plans and protect any existing landscape features during the course of the work. All plastic pipe ends shall be secured against flotation, to the satisfaction of the Town Drainage Superintendent or Engineer. Previously used methods include driving a rod with a tee head through the bottom of the pipe just inside the pipe end, with the rod sufficiently long enough to anchor the pipe end and resist all flotation forces. A second method is installation of rods on each side of the pipe near the outlet ends with a steel strap or heavy gauge wiring across the top of the pipe and secured tightly to the rods. Rods may be T-bar fence posts or steel re-bar minimum 15M size with sufficient length embedded into the soil to prevent any risk of pipe end flotation.

As part of the work provided for the construction of the access bridge, the Contractor shall be required to protect or extend any existing lateral tile ends which conflict with the bridge installation. All existing lateral tile drains, where required, shall be diverted and extended to the ends of the new access bridge culvert and shall be extended and installed in accordance with the **"Standard Lateral Tile Detail"** as shown in **Appendix "REI-C"**, unless otherwise noted. Connections shall be made using manufacturer's couplers wherever possible. All other connections shall be completely sealed with concrete grout around the full exterior perimeter of each joint.

For the Union Gas bridge, the Contractor shall divert the existing covered portion of the West Townline Drain westerly around the new infrastructure being installed as shown and detailed

on the plans in **Appendix "REI-E"**. The existing clay tile shall be replaced with 200mm diameter Boss 2000 smooth wall pipe or equal, including 45 degree bends. Connections shall be made using manufacturer's couplers wherever possible. All other connections shall be completely sealed with concrete grout around the full exterior perimeter of each joint.

The Contractor is to note that the granular driveway approaches extending from the east edge of pavement to the R.O.W. limit east of the east top of bank of the drain shall consist of granular material M.T.O. Type "A" O.P.S.S. Form 1010 and is to be provided to a minimum depth of 305mm (12"), and be satisfactorily compacted in place. The Contractor is to also note that all granular material being placed as backfill for this bridge installation shall be compacted in place to a minimum Standard Proctor Density of 98%, and that all native fill material to be used for the construction shall be compacted in place to a minimum Standard Proctor Density of 95%.

All of the granular backfill, native fill, and the compaction levels for same shall be provided to the full satisfaction of the Town Drainage Superintendent or the Engineer. The Contractor shall also note that any sediment being removed from the drain bottom as previously specified herein, shall not be utilized for the construction of the driveway, and shall be disposed of by the Contractor to a site to be obtained by it at its own expense.

The Contractor shall be required to restore any and all drain sideslopes damaged by the access bridge installation, utilizing the available scavenged topsoil, and shall seed and mulch over all of said areas.

The placing and grading of any topsoil shall be carefully and meticulously carried out in accordance with Ontario Provincial Standard Specifications, Form 802 dated November 2010, or as subsequently amended, or as amended by these specifications and be readied for the seeding and mulching process. The seeding and mulching of all of the above mentioned areas shall comply in all regards to Ontario Provincial Standard Specifications, Form 803 dated November 2010 and Form 804, dated November 2013, or as subsequently amended, or as amended by these specifications. The seeding mixture shall be the Standard Roadside Mix (Canada No. 1 Lawn Grass Seed Mixture) as set out in O.P.S.S. 804. All cleanup and restoration work shall be performed to the full satisfaction of the Town Drainage Superintendent or Engineer.

When all of the work for this installation has been completed, the Contractor shall ensure that positive drainage is provided to all areas, and shall ensure that the site is left in a neat and workmanlike manner, all to the full satisfaction of the Town Drainage Superintendent or Engineer.

## IX. DETAILS OF BRIDGE WORK

The Contractor shall provide all material, labour and equipment to repair and improve the existing access bridges in the West Townline Drain requiring work, along with endwall repairs and other improvements as noted.

The existing concrete bridges slated to be removed may be replaced with new aluminized steel Type II Hel-Cor pipe or precast concrete box structures that include the standard 10% embedment and equivalent capacity. Any other new or replacement access bridge installations shall comprise of aluminized steel Type II helical pipe. All piping sections shall be connected by the use of 9 corrugation (9-C) bolted couplers installed around the complete circumference of the pipe in accordance with the manufacturer's recommendation. Each coupler shall be wrapped in filter cloth material around the complete circumference to ensure that there will be no soil migration through the joints and into the pipe through said connections.

The culvert pipe and bridge replacements and new bridge installations on this drain shall be set to the grades as shown on the plans that are provided or as otherwise established by the Town Drainage Superintendent or the Consulting Engineer and they may make minor changes to the bridge alignment as they deem necessary to suit the site conditions. All work shall be carried out in general accordance with the items in the **"STANDARD SPECIFICATIONS FOR ACCESS BRIDGE CONSTRUCTION"** attached to this report and labelled **Appendix "REI-C"**. Any plastic pipes shall be installed in accordance with the specifications noted above for the Union Gas bridge. Plastic pipe segments shall have a minimum length of 2 metres, with standard 6 metre full length segments comprising the end sections of each installation. Steel pipes shall be installed as noted below.

## X. CORRUGATED STEEL PIPE AND PRECAST CONCRETE BOX INSTALLATION

Any new corrugated steel pipe (CSP) to be installed on this drain is required to be provided in the longest lengths that are available and shall not be less than 3.0 metres. Where the overall access pipe length exceeds the standard pipe lengths, the Contractor shall connect the pipe sections together by use of a manufactured 9-C bolted coupler installed in accordance with the manufacturer's recommendations. All coupler joints shall be wrapped with a layer of filter cloth around the complete circumference so that it extends a minimum of 100mm beyond the coupler on each end, to ensure a positive seal against soil migration through the joints.

Each precast concrete box unit segment shall have a minimum length of 2.44m (8'). The Contractor shall provide manufacturer's shop drawings stamped by a Professional Engineer for the design of the box sections. The bridge sections shall be designed for less than 600mm (2') cover and be capable of handling the Ontario Highway Bridge Design Code loading. Each bridge shall be installed on a minimum 300mm (12") thick bed of Granular 'A' compacted to 100% of Standard Proctor Density. All joints shall be mortared and wrapped in filter cloth.

The Contractor shall note that the placement of any new culvert pipe shall be performed totally in the dry and it shall be prepared to take whatever steps are necessary to ensure same, all to the full satisfaction of the Town Drainage Superintendent or the Consulting Engineer. As part of the work, the Contractor will be required to clean out the drain along the full length of the pipe and for a distance of 3.05 metres (10 ft.) upstream and downstream of the pipe. The Contractor shall note that the pipe inverts are set at least 10% of the pipe diameter (or the pipe rise) below the drain bottom to provide the embedment required by E.R.C.A. and D.F.O. and to meet the minimum cover requirements for the pipe.

The installation of the complete length of the new culvert pipe, including all appurtenances, shall be completely inspected by the Town Drainage Superintendent or the Consulting Engineer's Inspector prior to backfilling any portions of same. Under no circumstance shall the Contractor commence the construction or backfill of the new culvert pipe without the site presence of the Town Drainage Superintendent or the Consulting Engineer's Inspector to inspect and approve said installation. The Contractor shall provide a minimum of two (2) working days' notice to the Town Drainage Superintendent or the Consulting Engineer prior to commencement of the work. The installation of the new culvert structure is to be performed during normal working hours of the Town Drainage Superintendent and the Consulting Engineer from Monday to Friday unless written authorization is provided by them to amend said working hours.

For the access bridge installation, once the new aluminized steel type II corrugated pipe or the precast concrete box structure has been satisfactorily set in place, the Contractor shall completely backfill same with granular material M.T.O. Type "B" O.P.S.S. Form 1010 with the following exception. The top 305mm (12") of the backfill material for the full top width of the access, and the full top width of the drain or the excavated trench, and any approaches to the south and transitions to the north shall be granular material M.T.O. Type "A" O.P.S.S. Form 1010. All of the driveway approach areas extending from the Municipal roadway to the west

face of the new bridge culvert shall be backfilled with compacted granular material M.T.O. Type "A" O.P.S.S. Form 1010, but only after all topsoil material has been completely removed and disposed of, and the minimum thickness of this granular material shall be 305mm (12"). All areas outside of the access driveway shall be backfilled with native material compacted to 96% of Standard Proctor Density and topped with a minimum of 50mm of topsoil, and shall be seeded and mulched.

For hard surface roadway and driveway crossings, the top 305mm (12") of the backfill over the pipe below the hard surface treatment shall comprise granular material M.T.O. Type "A" O.P.S.S. Form 1010 compacted to a minimum of 100% Standard Proctor Density. The Contractor shall at all times be very careful when performing its backfilling and compaction operations so that no damage is caused to the pipe. To ensure that no damage is caused to the proposed pipe, alternative methods of achieving the required backfill compaction shall be submitted to the Consulting Engineer or the Town Drainage Superintendent for their approval prior to the commencement of this work. The Contractor shall restore the asphalt surface by placing a minimum of the existing thickness or a 90mm minimum thickness of Type HL-4 or Superpave base course hot mix asphalt. The asphalt shall be supplied and placed in two (2) approximately equal lifts compacted to a value ranging from 92% to 96% of maximum relative density as per O.P.S.S. 310. On County roadways the Contractor will be required to provide a stepped joint that will require grinding down the existing surface asphalt on each side of the road cut to allow the new surface course of asphalt to overlap the existing base asphalt by a minimum of 300mm or as otherwise required by the County of Essex engineering department.

For existing concrete driveways, the Contractor shall carefully remove the concrete to the nearest expansion joint. The concrete driveway shall be restored to the original length and width that was removed and include 150mm thick, 30mPa concrete, with 6% ±1% air entrainment and 6x6-6/6 welded wire fabric reinforcing installed at the midpoint of the slab. All slab surfaces shall be finished to provide an appearance approximating the finish on the existing concrete driveway abutting the replacement.

The Contractor will be responsible to restore any damage caused to the roadways at its cost. All damaged hard surface roadway areas shall be neatly saw cut and the damaged materials removed and disposed of by the Contractor prior to carrying out any restoration work. The extent of the repairs shall be established in consultation with the Town Drainage Superintendent, the Road Authority, and the Consulting Engineer and the repairs shall be completed to their full satisfaction.

The Contractor is to note that any intercepted pipes or tiles along the length of the proposed culvert are to be extended and connected at its cost to the open drain at the end of the new culvert unless otherwise noted in the accompanying drawings.

The Contractor shall also note that the placing of the new access bridge culvert shall be completed so that it totally complies with the parameters established and noted in the Bridge Details and Tables for the culvert replacement. The culvert shall be set on an even grade and the placement shall be performed totally in the dry, and the Contractor should be prepared to take whatever steps are necessary to ensure same, all to the full satisfaction of the Town Drainage Superintendent or the Consulting Engineer. The Contractor shall also be required to supply a minimum of 100mm (4") of 20mm (3/4") clear stone bedding underneath the culvert pipe extending from the bottom of the drain to the culvert invert grade, all to the full satisfaction of the Town Drainage Superintendent or the Consulting Engineer. Furthermore, if an unsound base is encountered, it must be removed and replaced with 20mm (3/4") clear stone satisfactorily compacted in place to the full satisfaction of the Town Drainage Superintendent or the Consulting Engineer. The Contractor is to note that when replacing an access bridge or enclosure culvert, it shall be required to excavate a trench having a width not less than the new pipe outside diameter or dimension plus a 600mm working width on both sides of the new pipe to allow for proper installation of granular backfill and compaction of same. The Contractor shall also note that all culvert pipe installations are to be carried out with

a minimum of 10% of their diameter or rise embedded below the drain design bottom, as shown and noted on the plan for each of the access bridge installations.

## XI. REMOVALS

Where existing access bridges and enclosures are to be completely removed and replaced, the Contractor shall be required to excavate and completely extract the existing concrete structure or culvert pipe and the existing endwalls in their entirety, as well as any other deleterious materials that may be encountered in removing same, excluding poured concrete headwalls that are to be reused. The Contractor shall neatly saw cut any concrete or asphalt surfaces over the pipes for a sufficient width to allow for the safe removal of same or go to the nearest expansion joint panel of the concrete driveways. The Contractor shall also be required to completely dispose of all removed materials to a site to be obtained by it at its own expense. The Contractor shall note that when headwalls are shown to be left in place, the Contractor shall protect same and carry out its work for the pipe replacement as noted above and dispose of any debris resulting from the work.

All unsuitable and deleterious materials from the excavation and removal of the existing bridge and enclosure culverts and drain cleaning shall be hauled away and disposed of by the Contractor to a site to be obtained by it at its expense. Likewise, any material excavated to allow for the granular approaches to the bridge, driveway transitions, or installation of new headwalls shall also be hauled away and disposed of by the Contractor.

## XII. CONCRETE FILLED JUTE BAG, PRECAST BLOCK OR SLOPED END PROTECTION

Unless otherwise shown or noted, the Contractor is to provide new concrete filled jute bag headwalls, precast concrete block or sloped quarried limestone on non-woven filter cloth end protection for the access bridges and enclosures being replaced or constructed on this drain.

The concrete filled jute bags are to be provided and laid out as is shown and detailed in the accompanying drawings and as noted in the Standard Specifications in **Appendix "REI-C"**. In all cases, the concrete filled jute bag headwalls shall be topped with a minimum 100mm (4") thick continuous concrete cap for the entire length of the headwalls. The headwalls shall be installed on an inward batter to be not less than 1 horizontal to 5 vertical, and under no circumstances shall this batter, which is measured from the top of the headwall to the projection of the end of the pipe, be less than 305mm (12"). From the midpoint of the pipe height down to the concrete footing, the wall shall be a double concrete filled jute bag installation. On the road side the walls shall be deflected as shown to provide daylighting and a better approach across the new or replacement bridge.

The installation of the concrete filled jute bag headwalls, unless otherwise specified, shall be provided in total compliance with the Items 1, 3, and 4 included in the **"STANDARD SPECIFICATIONS FOR ACCESS BRIDGE CONSTRUCTION".** These are attached to the back of this report and labelled **Appendix "REI-C"**. The Contractor shall comply in all respects with the General Conditions included in Item 4 and the **"Typical Concrete Filled Jute Bag Headwall End Protection"** detail also shown therein.

The Contractor shall install interlocking precast concrete blocks with filter cloth backing for walls on both ends of the bridges or enclosures requiring same. The blocks shall be minimum 600X600X1200mm in size as available from Underground Specialties - Wolseley, Windsor, Ontario, or equal, and installed as set out in **Appendix "REI-C"**. Vertical joints shall be staggered by use of half blocks where needed and wingwall deflections when required shall employ 45-degree angled blocks. Voids between the blocks and the pipe shall be grouted with 30mPa concrete having 6% ±1% air entrainment and extend for the full thickness of the wall, and have a smooth uniform finish on the face that blends with the precast blocks. The

installation of the endwalls, as well as the backfilling of the pipe where applicable, shall be provided in compliance with Items 1), 3), and 4) of the "Standard Specifications for Access Bridge Construction" attached within **Appendix "REI-C"** and in total compliance and in all respects with the General Conditions included in said Appendix. The Contractor shall submit shop drawings for approval of the wall installation that includes details for a minimum 300mm thick concrete footing that extends from the pipe invert downward. The footing shall extend into the drain banks each side for the required embedment of the blocks and be constructed to ensure that the completed wall will be completely vertical or tipped slightly back towards the driveway. Where the block walls extend more than 1.8 metres in height, the supplier shall provide the Contractor with uni-axial geogrid (SG350 or equivalent) reinforcement for installation to tie the wall back into the granular backfill. The Contractor, in all cases, shall comply with these specifications and upon completion of the stacked precast concrete end protection installation shall restore the adjacent areas to their original conditions. The Contractor shall supply quarried limestone on filter cloth rock protection adjacent to the headwalls at each corner of the bridge. All rock protection shall be 1.0 metres wide and 305mm (12") thick, installed on non-woven filter cloth, and shall be installed in accordance with Item 2) of the "Standard Specifications for Access Bridge Construction". The synthetic filter mat to be used shall be non-woven geotextile GMN160 conforming to O.P.S.S. 1860 Class I, as available from Armtec Construction Products through Underground Specialties - Wolseley in Windsor, Ontario or equal. The quarried limestone to be used shall be graded in size from a minimum of 100mm to a maximum of 250mm, and is available from Walker Industries Amherst Quarries, in Amherstburg, Ontario, or equal.

Where sloped end protection is specified, the top 305mm (12") of backfill material over the ends of the access pipe, from the invert of said pipe to the top of the driveway elevation of the access bridge or enclosure, shall be quarried limestone. The quarried limestone shall be provided as shown and detailed on the plans or as indicated in the Standard Specifications in **Appendix "REI-C"** and shall be graded in size from a minimum of 100mm (4") to a maximum of 250mm (10"). The quarried limestone to be placed on the sloped ends of an access bridge or enclosure shall be underlain with a synthetic **non-woven** geotextile filter fabric. The sloped quarried limestone protection is to be rounded as shown on the plan details and shall also extend along the drain side slopes to a point directly in line with the ends of the culvert pipe. The road side approach to the entrance shall be provided with a minimum 5.0m radius at each end of the driveway entrance. All work shall be completed to the full satisfaction of the Town Drainage Superintendent or the Consulting Engineer.

The installation of the sloped quarried limestone end protection, unless otherwise specified herein, shall be provided in total compliance with Item 2, Item 3, and Item 4 of the **"STANDARD SPECIFICATIONS FOR ACCESS BRIDGE CONSTRUCTION".** These are attached to the back of these specifications and labelled **Appendix "REI-C"**. The Contractor shall comply in all respects with the General Conditions included in Item 4 and the **"Typical Quarried Limestone End Protection Detail"** also in **Appendix "REI-C".**

The quarried limestone erosion protection shall be embedded into the sideslopes of the drain a minimum thickness of 305mm and shall be underlain in all cases with non-woven synthetic filter mat. The filter mat shall not only be laid along the flat portion of the erosion protection, but also contoured to the exterior limits of the quarried limestone and the unprotected slope. The width of the erosion protection shall be as established in the accompanying drawings or as otherwise directed by the Town Drainage Superintendent or the Consulting Engineer during construction. In placing the erosion protection, the Contractor shall carefully tamp the quarried limestone pieces into place with the use of the excavator bucket so that the erosion protection when completed will be consistent, uniform and tightly laid. In no instance shall the quarried limestone protrude beyond the exterior contour of the unprotected drain sideslopes along either side of said protection. The synthetic filter mat fabric to be used shall be non-woven geotextile GMN160 conforming to O.P.S.S. 1860 Class I, as available from Armtec Construction Products, or equal. The quarried limestone to be used shall be graded in size from a minimum

of 100mm to a maximum of 250mm, and is available from Walker Aggregates Amherst Quarries, in Amherstburg, Ontario, or equal.

## XIII. BENCH MARKS

Also, for use by the Contractor, we have established Bench Marks along the course of the work and especially at the locations where existing access bridges are being replaced or new bridges are being constructed.

For each of the bridge replacements and new bridges, the plans include details illustrating the work to be carried out. For each bridge detail a Bench Mark has been indicated and the Elevation has been shown and may be utilized by the Contractor in carrying out its work. The Contractor shall note that in each case a specific design elevation grade has been provided for the invert at each end of the pipe in the table accompanying each detail. The table also sets out the pipe size, materials, and other requirements relative to the installation of the culvert structure. In all cases, the Contractor is to utilize the specified drain grade to set any new pipe installation. The Contractor shall ensure that it takes note of the direction of flow and sets all pipes to assure that all grades flow from north to south to match the direction of flow within the drain. The Contractor's attention is drawn to the fact that the pipe invert grades established herein provide for the pipes to be set at least 10% of their diameter or pipe rise below the existing drain bottom or the design grade of the drain, whichever is lower.

## XIV. ANCILLARY WORK

During the course of any work to the bridges and enclosures along the length of the project, the Contractor will be required to protect or extend any existing tile ends, culverts or swales and connect them to the drainage works to maintain the drainage from the adjacent lands. All existing tiles shall be extended utilizing solid Big 'O' "standard tile ends" or equal plastic pipe of the same diameter as the existing tile and shall be installed in accordance with the **"Standard Lateral Tile Detail"** included in the plans or appendices, unless otherwise noted. Connections shall be made using a manufacturer's coupling where possible. Wherever possible, tiles shall be extended to outlet beyond the end of any access culverts. When required, openings into new pipes shall be neatly bored, saw cut or burned with a torch to the satisfaction of the Town Drainage Superintendent or the Consulting Engineer. All cuts to steel pipes shall be touched up with a thick coat of zinc rich paint (Galvicon or equal) in accordance with the manufacturer's recommendations. For other connections, the Contractor shall utilize a grouted connection. Grouted mortar joints shall be composed of three (3) parts of clean, sharp sand to one (1) part of Portland cement with just sufficient water added to provide a stiff plastic mix, and the mortar connection shall be performed to the full satisfaction of the Town Drainage Superintendent or the Consulting Engineer. The mortar joint shall be of a sufficient mass around the full circumference of the joint on the exterior side to ensure a tight, solid seal. The Contractor is to note that any intercepted pipes along the length of the existing culverts and enclosures are to be extended and connected to the open drain unless otherwise noted in the accompanying drawings.

Where the bridge or enclosure installation interferes with the discharge of an existing culvert or swale, the Contractor shall extend the culvert using similar material to the existing pipe and a bolted coupler, or re-grade the existing swales to allow for the surface flows to freely enter the drain. Any disturbed grass areas shall be fully restored with topsoil, seed and mulch.

All granular backfill for the bridge and enclosure installations shall be satisfactorily compacted in place to a minimum Standard Proctor Density of 98% by means of mechanical compaction equipment. All other good, clean, native fill material or topsoil to be utilized, where applicable, shall be compacted in place to a minimum Standard Proctor Density of 95%. All of the backfill material, equipment used, and method of compacting the backfill material shall be provided

and performed to the full satisfaction of the Town Drainage Superintendent or Consulting Engineer.

Where the Contractor removes concrete or asphalt hard surfaces over the pipes, the Contractor shall restore the hard surfaces as previously outlined. The Contractor will be responsible to restore any damage caused to these driveways at its cost. All damaged hard surface driveway areas shall be neatly saw cut and the damaged materials removed and disposed of by the Contractor prior to carrying out any restoration work.

The new corrugated aluminized steel type II pipes for these installations are to be provided with a minimum depth of cover measured from the top of the pipe of 305mm (12") for a round pipe and 500mm for a pipe arch. If the bridge culvert pipes are placed at their proper elevations, same should be achieved. If the Contractor finds that the minimum cover is not being met, they shall notify the Town Drainage Superintendent and the Consulting Engineer immediately so that steps can be taken to rectify the condition prior to the placement of any backfill. The minimum cover requirement is **critical** and must be attained. In order for these new access bridge culverts to properly fit the channel parameters, **all of the design grade elevations must be strictly adhered to**.

As a check, all of the above access bridge and enclosure culvert design grade elevations should be confirmed before commencing to the next stage of the access bridge or enclosure installation. The Contractor is also to check that the pipe invert grades are correct by referencing the Bench Mark.

Although it is anticipated that the culvert installation at each site shall be undertaken in the dry, the Contractor shall supply and install a temporary straw bale or silt curtain check dam in the drain bottom immediately downstream of each culvert site during the time of construction. The straw bale or silt curtain check dam shall be to the satisfaction of the Town Drainage Superintendent or Consulting Engineer and must be removed upon completion of the construction. The check dam materials may be reused at each site subject to their condition. All costs associated with the supply and installation of this straw bale or silt curtain check dam shall be included in the cost bid for the bridge replacements.

## XV. TOPSOIL, SEED AND MULCH

The Contractor shall be required to restore all existing grassed areas and drain side slopes damaged by the structure replacements, construction or cutting of the drain cross section, by placing topsoil, and then seed and mulch over said areas including any specific areas noted on the bridge details. The Contractor shall be required to provide all the material and to cover the above mentioned surfaces with approximately 50mm of good, clean, dry topsoil on slopes and 100mm of good, clean, dry topsoil on horizontal surfaces, fine graded and spread in place ready for seeding and mulching. The placing and grading of any topsoil shall be carefully and meticulously carried out in accordance with Ontario Provincial Standard Specifications, Form 802 dated November 2010, or as subsequently amended, or as amended by these specifications and be readied for the seeding and mulching process. The seeding and mulching of all of the above mentioned areas shall comply in all regards to Ontario Provincial Standard Specifications, Form 803 dated November 2010 and Form 804, dated November 2013, or as subsequently amended, or as amended by these specifications. The seeding mixture shall be the Standard Roadside Mix (Canada No. 1 Lawn Grass Seed Mixture) as set out in O.P.S.S. 804. All cleanup and restoration work shall be performed to the full satisfaction of the Town Drainage Superintendent or Engineer.

When all of the work for this installation has been completed, the Contractor shall ensure that positive drainage is provided to all areas, and shall ensure that the site is left in a neat and

workmanlike manner, all to the full satisfaction of the Town Drainage Superintendent or Engineer.

## XVI. GENERAL EROSION PROTECTION

At the locations indicated on the plans and as further noted in these specifications, the Contractor shall protect the drain banks utilizing general erosion protection. Once the Contractor has cut and shaped the drain banks, the Contractor shall supply all material and labour to place general erosion protection on the banks where protection is required for surface water outlet or bank stabilization using quarried limestone on non-woven synthetic filter mat, as determined by the Town Drainage Superintendent or the Engineer during construction. The general erosion protection on the bank shall extend from the slope bottom up along the slope to the top of the outlet pipe or drain bank and beyond as required and as shown and detailed on any plan cross sections and profiles.

Along the bank of the drain, the general erosion protection is to be embedded into the sideslope of the bank a minimum thickness of 305mm (12") and same shall be underlain in all cases with a non-woven synthetic filter mat. The synthetic filter mat shall not only be laid along the flat portions of the quarried limestone protection, but is also to be contoured to the exterior limits of same between the quarried limestone and the unprotected drain side slope. The Contractor, in placing the general erosion protection, shall carefully tamp the quarried limestone pieces into place with the use of the excavator bucket so that said protection, when completed, will be consistent, uniform, and tightly laid. The general erosion protection shall be installed so that it extends up on the drain side slope as shown and detailed on the plans. The synthetic filter mat to be used shall be non-woven, Geotextile GMN 160 conforming to O.P.S.S. 1860 Class I, as available from Armtec Construction Products, or equal. The quarried limestone to be used shall be graded in size from a minimum of 100mm (4") to a maximum of 250mm (10") on the 305mm thick areas. Said rock is available from Walker Aggregates Amherst Quarries in Amherstburg, Ontario, or equal.

The Contractor shall provide 305mm thick erosion protection of the drain banks and these shall be placed at the locations as further established by the Drainage Superintendent or Engineer at the time of construction.

## XVII. GENERAL CONDITIONS

a) The Town Drainage Superintendent or Engineer shall have authority to carry out minor changes to the work where such changes do not lessen the efficiency of the work.

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

c) The Contractor shall provide a sufficient number of layout stakes and grade points so that the Drainage Superintendent and Engineer can review same and check that the work will generally conform to the design and project intent.

d) The Contractor will be responsible for any damage caused by it to any portion of the Town or County 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 the road, the travelled portion shall be protected by having the excavation equipment placed on satisfactory timber planks or timber pads. If any part of the travelled portion of the road is damaged by the Contractor, the Town 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 Town. The Contractor, upon completing the works, shall clean all debris and junk, etcetera, from the roadside of the drain, and leave the site in a neat and workmanlike manner. The Contractor shall be responsible for keeping all public roadways utilized for hauling materials free and clear of mud and debris.

e) The Contractor shall provide all necessary lights, signs, and barricades to protect the public. All work shall be carried out in accordance with the requirements of the Occupational Health and Safety Act, and latest amendments thereto. If traffic control is required on this project, signing is to comply with the M.T.O. Manual of Uniform Traffic Control Devices (M.U.T.C.D.) for Roadway Work Operations and Ontario Traffic Manual Book 7.

f) Following the completion of the work, the Contractor is to trim up any broken or damaged limbs on trees which are to remain standing, and it shall dispose of said branches along with other brush, thus leaving the trees in a neat and tidy condition.

g) The whole of the work shall be satisfactorily cleaned up, and during the course of the construction, no work shall be left in any untidy or incomplete state before subsequent portions are undertaken.

h) All driveways, laneways and access bridges, or any other means of access on to the job site shall be fully restored to their former condition at the Contractor's expense. Before authorizing Final Payment, the Town Drainage Superintendent and the Engineer shall inspect the work in order to be sure that the proper restoration has been performed. In the event that the Contractor fails to satisfactorily clean up any portion of these accesses, the Engineer shall order such cleanup to be carried out by others and the cost of same be deducted from any monies owing to the Contractor.

i) The Contractor will be required to submit to the Town a Certificate of Good Standing from the Workplace Safety and Insurance Board prior to the commencement of the work, and the Contractor will be required to submit to the Town a Certificate of Clearance for the project from the Workplace Safety and Insurance Board before Final Payment is made to the Contractor.

j) The Contractor shall furnish a Performance and Maintenance Bond along with a separate Labour and Material Payment Bond within ten (10) days after notification of the execution of the Agreement by the Town. One copy of said bonds shall be bound into each of the executed sets of the Contract. Each Performance and Maintenance Bond and Labour and Material Payment Bond shall be in the amount of 100% of the total Tender Price. All Bonds shall be executed under corporate seal by the Contractor and a surety company, authorized by law to carry out business in the Province of Ontario. The Bonds shall be acceptable to the Town in every way and shall guarantee faithful performance of the contract during the period of the contract, including the period of guaranteed maintenance which will be in effect for twelve (12) months after substantial completion of the works.

The Tenderer shall include the cost of bonds in the unit price of the Tender items as no additional payment will be made in this regard.

k) The Contractor shall be required, as part of this Contract, to provide Comprehensive Liability Insurance coverage for not less than $5,000,000.00 on this project, and shall name the Town of Essex and its officials and staff, the County of Essex and its officials and staff and the Engineer and its staff as additional insured under the policy. The Contractor must submit a copy of this policy to both the Town Clerk and the Engineer prior to the commencement of work.

l) Monthly progress orders for payment shall be furnished the Contractor by the Town Drainage Superintendent. Said orders shall be for not 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 60 days after the final acceptance and completion of the work and payment shall not be authorized until the Contractor provides the following:

i) a Certificate of Clearance for the project from the Workplace Safety and Insurance Board

ii) proof of advertising

iii) a Statutory Declaration, in a form satisfactory to the Engineer and the Town, that all liabilities incurred by the Contractor and its Sub-Contractors in carrying out the Contract have been discharged and that all liens in respect of the Contract and Sub-Contracts thereunder have expired or have been satisfied, discharged or provided for by payment into Court.

The Contractor shall satisfy the Engineer or Town that there are no liens or claims against the work and that all of the requirements as per the Construction Act, 2018 and its subsequent amendments have been adhered to by the Contractor.

m) In the event that the Specifications, Information to Tenderers, or the Form of Agreement do not apply to a specific condition or circumstance with respect to this project, the applicable section or sections from the Canadian Construction Documents Committee C.C.D.C.2 shall govern and be used to establish the requirements of the work.

# APPENDIX "REI-A"

## STANDARD E.R.C.A. AND D.F.O. MITIGATION REQUIREMENTS

As part of its work, the Contractor will implement the following measures that will ensure that any potential adverse effects on fish and fish habitat will be mitigated:

1. As per standard requirements, work will not be conducted at times when flows in the drain are elevated due to local rain events, storms, or seasonal floods. Work will be done in the dry.

2. All disturbed soils on the drain banks and within the channel, including spoil, must be stabilized immediately upon completion of work. The restoration of the site must be completed to a like or better condition to what existed prior to the works. The spoil material must be hauled away and disposed of at a suitable site, or spread an appropriate distance from the top of the drain bank to ensure that it is not washed back into the drain.

3. To prevent sediment entry into the drain in the event of an unexpected rainfall, silt barriers and/or traps must be placed in the channel during the works and until the site has been stabilized. All sediment and erosion control measures are to be in accordance with the related Ontario Provincial Standards. It is incumbent on the proponent and Contractors to ensure that sediment and erosion control measures are functioning properly and maintained/upgraded as required.

4. Silt or sand accumulated in the barrier traps must be removed and stabilized on land once the site is stabilized.

5. All activities including maintenance procedures should be controlled to prevent the entry of petroleum products, debris, rubble, concrete, or other deleterious substances into the water. Vehicular refuelling and maintenance should be conducted away from the water.

6. Any drain banks trimmed outside of the July 1st to September 15th timing window will require erosion control blankets to be installed to promote re-vegetation and to protect the slope from erosion in the interim.

# Measures to Avoid Causing Harm to Fish and Fish Habitat

If you are conducting a project near water, it is your responsibility to ensure you avoid causing serious harm to fish in compliance with the *Fisheries Act*. The following advice will help you avoid causing harm and comply with the *Act*.

**PLEASE NOTE**: This advice applies to all project types and replaces all "Operational Statements" previously produced by DFO for different project types in all regions.

## Measures

- Time work in water to respect timing windows to protect fish, including their eggs, juveniles, spawning adults and/or the organisms upon which they feed.
- Minimize duration of in-water work.
- Conduct instream work during periods of low flow, or at low tide, to further reduce the risk to fish and their habitat or to allow work in water to be isolated from flows.
- Schedule work to avoid wet, windy and rainy periods that may increase erosion and sedimentation.

- Design and plan activities and works in waterbody such that loss or disturbance to aquatic habitat is minimized and sensitive spawning habitats are avoided.
- Design and construct approaches to the waterbody such that they are perpendicular to the watercourse to minimize loss or disturbance to riparian vegetation.
- Avoid building structures on meander bends, braided streams, alluvial fans, active floodplains or any other area that is inherently unstable and may result in erosion and scouring of the stream bed or the built structures.
- Undertake all instream activities in isolation of open or flowing water to maintain the natural flow of water downstream and avoid introducing sediment into the watercourse.

- Plan activities near water such that materials such as paint, primers, blasting abrasives, rust solvents, degreasers, grout, or other chemicals do not enter the watercourse.
- Develop a response plan that is to be implemented immediately in the event of a sediment release or spill of a deleterious substance and keep an emergency spill kit on site.
- Ensure that building material used in a watercourse has been handled and treated in a manner to prevent the release or leaching of substances into the water that may be deleterious to fish.

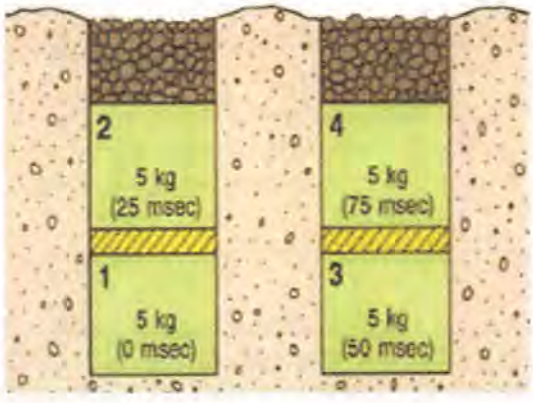
- Develop and implement an Erosion and Sediment Control Plan for the site that minimizes risk of sedimentation of the waterbody during all phases of the project. Erosion and sediment control measures should be maintained until all disturbed ground has been permanently stabilized, suspended sediment has resettled to the bed of the waterbody or settling basin and runoff water is clear. The plan should, where applicable, include:
    - Installation of effective erosion and sediment control measures before starting work to prevent sediment from entering the water body.
    - Measures for managing water flowing onto the site, as well as water being pumped/diverted from the site such that sediment is filtered out prior to the water entering a waterbody. For example, pumping/diversion of water to a vegetated area, construction of a settling basin or other filtration system.
    - Site isolation measures (e.g., silt boom or silt curtain) for containing suspended sediment where in-water work is required (e.g., dredging, underwater cable installation).
    - Measures for containing and stabilizing waste material (e.g., dredging spoils, construction waste and materials, commercial logging waste, uprooted or cut aquatic plants, accumulated debris) above the high water mark of nearby waterbodies to prevent re-entry.
    - Regular inspection and maintenance of erosion and sediment control measures and structures during the course of construction.
    - Repairs to erosion and sediment control measures and structures if damage occurs.
    - Removal of non-biodegradable erosion and sediment control materials once site is stabilized.

- Clearing of riparian vegetation should be kept to a minimum: use existing trails, roads or cut lines wherever possible to avoid disturbance to the riparian vegetation and prevent soil compaction. When practicable, prune or top the vegetation instead of grubbing/uprooting.
- Minimize the removal of natural woody debris, rocks, sand or other materials from the banks, the shoreline or the bed of the waterbody below the ordinary high water mark. If material is removed from the waterbody, set it aside and return it to the original location once construction activities are completed.
- Immediately stabilize shoreline or banks disturbed by any activity associated with the project to prevent erosion and/or sedimentation, preferably through re-vegetation with native species suitable for the site.
- Restore bed and banks of the waterbody to their original contour and gradient; if the original gradient cannot be restored due to instability, a stable gradient that does not obstruct fish passage should be restored.
- If replacement rock reinforcement/armouring is required to stabilize eroding or exposed areas, then ensure that appropriately-sized, clean rock is used; and that rock is installed at a similar slope to maintain a uniform bank/shoreline and natural stream/shoreline alignment.
- Remove all construction materials from site upon project completion.

- Ensure that all in-water activities, or associated in-water structures, do not interfere with fish passage, constrict the channel width, or reduce flows.
- Retain a qualified environmental professional to ensure applicable permits for relocating fish are obtained and to capture any fish trapped within an isolated/enclosed area at the work site and safely relocate them to an appropriate location in the same waters. Fish may need to be relocated again, should flooding occur on the site.
- Screen any water intakes or outlet pipes to prevent entrainment or impingement of fish. Entrainment occurs when a fish is drawn into a water intake and cannot escape. Impingement occurs when an entrapped fish is held in contact with the intake screen and is unable to free itself.
    - In freshwater, follow these measures for design and installation of intake end of pipe fish screens to protect fish where water is extracted from fish-bearing waters:
        - Screens should be located in areas and depths of water with low concentrations of fish throughout the year.
        - Screens should be located away from natural or artificial structures that may attract fish that are migrating, spawning, or in rearing habitat.
        - The screen face should be oriented in the same direction as the flow.
        - Ensure openings in the guides and seals are less than the opening criteria to make "fish tight".
        - Screens should be located a minimum of 300 mm (12 in.) above the bottom of the watercourse to prevent entrainment of sediment and aquatic organisms associated with the bottom area.
        - Structural support should be provided to the screen panels to prevent sagging and collapse of the screen.
        - Large cylindrical and box-type screens should have a manifold installed in them to ensure even water velocity distribution across the screen surface. The ends of the structure should be made out of solid materials and the end of the manifold capped.
        - Heavier cages or trash racks can be fabricated out of bar or grating to protect the finer fish screen, especially where there is debris loading (woody material, leaves, algae mats, etc.). A 150 mm (6 in.) spacing between bars is typical.
        - Provision should be made for the removal, inspection, and cleaning of screens.
        - Ensure regular maintenance and repair of cleaning apparatus, seals, and screens is carried out to prevent debris-fouling and impingement of fish.
        - Pumps should be shut down when fish screens are removed for inspection and cleaning.
- Avoid using explosives in or near water. Use of explosives in or near water produces shock waves that can damage a fish swim bladder and rupture internal organs. Blasting vibrations may also kill or damage fish eggs or larvae.
    - If explosives are required as part of a project (e.g., removal of structures such as piers, pilings, footings; removal of obstructions such as beaver dams; or preparation of a river or lake bottom for installation of a structure such as a dam or water intake), the potential for impacts to fish and fish habitat should be minimized by implementing the following measures:

- Time in-water work requiring the use of explosives to prevent disruption of vulnerable fish life stages, including eggs and larvae, by adhering to appropriate fisheries timing windows.
- Isolate the work site to exclude fish from within the blast area by using bubble/air curtains (i.e., a column of bubbled water extending from the substrate to the water surface as generated by forcing large volumes of air through a perforated pipe/hose), cofferdams or aquadams.
- Remove any fish trapped within the isolated area and release unharmed beyond the blast area prior to initiating blasting
- Minimize blast charge weights used and subdivide each charge into a series of smaller charges in blast holes (i.e., decking) with a minimum 25 millisecond (1/1000 seconds) delay between charge detonations (see Figure 1).
- Back-fill blast holes (stemmed) with sand or gravel to grade or to streambed/water interface to confine the blast.
- Place blasting mats over top of holes to minimize scattering of blast debris around the area.
- Do not use ammonium nitrate based explosives in or near water due to the production of toxic by-products.
- Remove all blasting debris and other associated equipment/products from the blast area.

**Figure 1: Sample Blasting Arrangement**




Per Fig. 1: 20 kg total weight of charge; 25 msecs delay between charges and blast holes; and decking of charges within holes.

- Ensure that machinery arrives on site in a clean condition and is maintained free of fluid leaks, invasive species and noxious weeds.

- Whenever possible, operate machinery on land above the high water mark, on ice, or from a floating barge in a manner that minimizes disturbance to the banks and bed of the waterbody.
- Limit machinery fording of the watercourse to a one-time event (i.e., over and back), and only if no alternative crossing method is available. If repeated crossings of the watercourse are required, construct a temporary crossing structure.
- Use temporary crossing structures or other practices to cross streams or waterbodies with steep and highly erodible (e.g., dominated by organic materials and silts) banks and beds. For fording equipment without a temporary crossing structure, use stream bank and bed protection methods (e.g., swamp mats, pads) if minor rutting is likely to occur during fording.
- Wash, refuel and service machinery and store fuel and other materials for the machinery in such a way as to prevent any deleterious substances from entering the water.

Date modified:
2013-11-25

# APPENDIX "REI-B"

## SCHEDULE C

## MITIGATION PLAN

The Mitigation Plan shall be in effect until June 30, 2015.

The Municipality shall undertake measures to minimize adverse effects on species at risk in accordance with the general conditions described in Part B and taxa-specific conditions described in Part C, and the monitoring and reporting requirements described in Part D of this Mitigation Plan.

### PART A. DEFINITIONS

**1. Definitions**:

1.1. In this Schedule, the following words shall have the following meanings:

"DFO" means Fisheries and Oceans Canada;

"MNR" means the Aylmer District Office of the Ministry of Natural Resources;

"Contact" means to contact the MNR in accordance with the notification/contact schedule provided to the Municipality by the MNR Designated Representative from time to time;

"Holding Tub" means a large, light-coloured container fitted with a non-airtight latchable lid approved by the MNR for the temporary storage of captured snakes, turtles, amphibians, birds or eggs;

"Interagency Notification Form" means the form issued by DFO, available at www.dfo-mpo.gc.ca, which is required to be completed when a drain is being maintained or constructed;

"Monitoring and Reporting Form" means the document that must be completed by the Municipality in accordance with Part D to this Schedule and will be provided to the Municipality;

"Ontario Operational Statement" means one of the documents issued by DFO, available at www.dfo-mpo.gc.ca, that sets out the conditions and measures to be incorporated into a project in order to avoid negative impacts to fish and fish habitat in Ontario, as modified from time to time;

"Process Charts" means the charts attached as Part E to this Schedule which describe the steps set out in this Mitigation Plan;

"Seasonal Timing Windows Chart" means the chart attached as Part G to this schedule which describes the Sensitive Periods applicable to each Taxonomic Group;

"Sensitive Area" means a geographic area in the Municipality where additional mitigation measures are required to be undertaken for one or more Taxonomic Groups;

"Sensitive Areas Map" means any one of the maps attached as Part F to this schedule which sets out the applicable Sensitive Areas;

"Sensitive Period" means a time of year set out in the Seasonal Timing Windows Chart during which taxa-specific mitigation measures are required to be undertaken for a Taxonomic Group because of ambient air/water temperatures, water-levels or important life-history stages;

"Taxonomic Group" means the distinct group comprising one or more Species based on their taxonomic relationship and common approaches to mitigating adverse effects (i.e., fish, mussels, turtles, snakes, amphibians, birds or plants); and

"Work Zone" means the geographic area in the Municipality where an Activity in respect of one of the Drainage Works is being conducted.

1.2. For greater certainty, any defined terms that are not defined in section 1.1 have the same meanings as in the Agreement.

## PART B. GENERAL MEASURES TO MINIMIZE ADVERSE EFFECTS

### 2. Process Charts

2.1. The general steps set out in this Part B are visually described in the Process Charts (Part E).

### 3. Review of Documentation

3.1. Prior to conducting any Activities in respect of the Drainage Works the Municipality shall determine if conditions apply to the place, time or manner in which the Municipality wishes to pursue them by reviewing:

(a) the Sensitive Areas Maps (Part F) to determine if the Work Zone for the proposed Activities will occur within a Sensitive Area;

(b) the DFO Reference Guide for Fish and Mussel Species at Risk Distribution Maps: A Referral Review Tool for Projects Affecting Aquatic Species at Risk;

(c) the Seasonal Timing Windows Chart (Part G) to determine if the proposed Activities will occur during a Sensitive Period for one or more of the Taxonomic Groups; and

(d) the Process Charts to determine if prior notification is required;

(e) the mitigation measures for each applicable Taxonomic Group in Part C to determine what additional site-specific mitigation measures, if any, are required.

3.2. The Municipality shall document the results of the review undertaken in accordance with section 3.1 using the Monitoring and Reporting Form.

### 4. Sensitive Areas Maps

4.1. The Sensitive Areas Maps contain sensitive information about the distribution of species at risk, are provided for the sole purpose of informing this Agreement and are not to be copied or distributed for any other purposes or to any other party without the prior written authorization of the MNR Designated Representative.

### 5. Prior Notification to Seek Direction

5.1. If, after completing the review of documents described in section 3.1, the Municipality determines that the proposed Activities will be undertaken:

(a) in a place;

(b) at a time; or

(c) in a manner,

that requires prior notification in accordance with the Process Charts, the Municipality shall provide prior notification to the MNR in order for the MNR to determine if the Municipality must undertake additional site-specific or Species-specific mitigation

measures to minimize adverse effects on the Species and, if applicable, to identify such measures.

5.2. The prior notification under section 5.1 shall include a completed Interagency Notification Form:

(a) in respect of maintenance/repair where the proposed Activities are being undertaken pursuant to subsection 3(18) or section 74 of the *Drainage Act*; or

(b) in respect of construction/improvement where the proposed Activities are being undertaken pursuant to section 77 or 78 of the *Drainage Act*.

5.3. Where an Activity is undertaken in accordance with section 124 of the *Drainage Act* and would otherwise have required prior notification under section 5.1, the Municipality shall Contact the MNR by email prior to the commencement of the Activity, and complete and submit the applicable Interagency Notification Form within one week of the Activity's completion, unless otherwise directed in writing by the MNR Designated Representative.

**6. General Mitigation Measures**

6.1. Notwithstanding that prior notification or additional mitigation measures may be required in accordance with this schedule, in undertaking any Activity at any time in respect of the Drainage Works the Municipality shall:

(a) undertake the mitigation measures for sediment control and for erosion control and bank stabilization set out in The Drain Primer (Cliff Evanitski 2008) published by DFO (ISBN 978-0-662-48027-3), unless otherwise authorized in writing by the MNR Designated Representative;

(b) use net free, 100% biodegradable erosion control blanket for all erosion control or bank stabilization done in conjunction with their Activities or, if authorized in writing by the MNR Designated Representative, alternative erosion control blankets that provide equal or greater protection to individual Species; and

(c) where applicable, follow the guidelines set out in the following Ontario Operational Statements:

(i) Beaver Dam Removal;

(ii) Bridge Maintenance;

(iii) Culvert Maintenance;

(iv) Isolated Pond Construction;

(v) Maintenance of Riparian Vegetation in Existing Right of Ways; and

(vi) Temporary Stream Crossing.

## PART C. TAXA-SPECIFIC MEASURES TO MINIMIZE ADVERSE EFFECTS

### ADDITIONAL MITIGATION MEASURES FOR MUSSEL SPECIES

**7. Activities undertaken in Sensitive Areas for Mussels**

7.1. Subject to section 7.2, where a proposed Activity will occur in a Sensitive Area for a mussel Species, the Municipality shall Contact the MNR to seek further direction.

7.2. Section 7.1 does not apply where the applicable Drainage Works are:

(a) in a naturally dry condition;

(b) classified as a Class F drain in DFO's *Class Authorization System for the Maintenance of Agricultural Municipal Drains in Ontario* (ISBN 0-662-72748-7); or

(c) a closed drain.

### ADDITIONAL MITIGATION MEASURES FOR TURTLE SPECIES

**8. Training and Required On Site Materials for Turtles**

8.1. The Municipality will ensure any person:

(a) involved in the capture, temporary holding, transfer and release of any turtle Species has received training in proper turtle handling procedures; and

(b) who undertakes an Activity has a minimum of two Holding Tubs and cotton sacks on site at all times.

**9. Activities undertaken in Sensitive Areas and Sensitive Periods for Turtles**

9.1. Subject to section 9.2, where a proposed Activity will occur in a Sensitive Area for any turtle Species and during a Sensitive Period for that Species, the Municipality shall:

(a) not undertake any Activities that include the excavation of sediment or disturbance to banks during the applicable Sensitive Period unless otherwise authorized;

(b) undertake Activities in accordance with any additional site-specific measures provided in writing by the MNR Designated Representative;

(c) avoid draw-down and de-watering of the Sensitive Area during the applicable Sensitive Period; and

(d) if authorized by the MNR Designated Representative under (a) above to undertake Activities that include excavation of sediment or disturbance of banks, in addition to any other measures required under (b) above, ensure any person undertaking an Activity has at least two Holding Tubs on site at all times.

9.2. Section 9.1 does not apply where the applicable Drainage Works are:

(a) in a naturally dry condition;

(b) classified as a Class F drain in DFO's *Class Authorization System for the Maintenance of Agricultural Municipal Drains in Ontario* (ISBN 0-662-72748-7); or

(c) a closed drain.

## 10. Measures for Encounters with Turtles During a Sensitive Period

10.1. Where one or more individuals belonging to a turtle Species is encountered in the undertaking of an Activity in any part of a Work Zone (including, but not limited to, a Sensitive Area) during a Sensitive Period for that Species, the Municipality shall:

(a) capture and transfer all uninjured individuals of that Species into a Holding Tub;

(b) capture and transfer all individuals injured as a result of the Activities into a Holding Tub separate from any Holding Tub containing uninjured individuals;

(c) ensure that the Holding Tubs with the captured individuals are stored at a cool temperature to prevent freezing until the individuals can be transferred; and

(d) immediately Contact the MNR to seek direction and to arrange for the transfer of the individual turtles.

## 11. Measures for Encounters with Turtles Laying Eggs or Nest Sites

11.1. Where one or more individuals belonging to a turtle Species laying eggs, or an active nest site of any turtle Species, is encountered in undertaking an Activity in a Work Zone, the Municipality shall:

(a) not disturb a turtle encountered laying eggs and not conduct any Activities within 20 metres of the turtle while it is laying eggs;

(b) collect any displaced or damaged eggs and capture any injured dispersing juveniles and transfer them to a Holding Tub;

(c) store all captured injured individuals and collected eggs out of direct sunlight;

(d) immediately Contact the MNR to seek direction and to arrange for the transfer of any injured individuals and eggs;

(e) immediately stop any disturbance to the nest site and recover exposed portions with soil or organic material to protect the integrity of the remaining individuals;

(f) not drive any equipment over the nest site or conduct any Activities within 5 metres of the nest site;

(g) not place any dredged materials removed from the Drainage Works on top of the nest site;

(h) mark out the physical location of the nest site for the duration of the project but not by any means that might increase the susceptibility of the nest to predation or poaching; and

(i) where there are no collected eggs or captured individuals, record relevant information and Contact the MNR within 72 hours to provide information on the location of the nest site.

## 12. Measures for Encounters with Turtles Outside of a Sensitive Period

12.1. Where one or more individuals belonging to a turtle Species is encountered while undertaking an Activity in any part of a Work Zone (including, but not limited to, a Sensitive Area) but outside of any Sensitive Period for that Species, the Municipality shall:

(a) briefly stop the Activity for a reasonable period of time to allow any uninjured individual turtles of that Species to leave the Work Zone;

(b) where individuals do not leave the Work Zone after the Activity is briefly stopped in accordance with (a) above, capture all uninjured individuals and release them in accordance with section 13.1;

(c) where circumstances do not allow for their immediate release, transfer captured uninjured individuals for a maximum of 24 hours into a Holding Tub which shall be stored out of direct sunlight and then release them in accordance with section 13.1;

(d) capture and transfer any individuals that have been injured into a Holding Tub separate from any Holding Tub containing uninjured individuals; and

(e) store all captured injured individuals out of direct sunlight and immediately Contact the MNR to seek direction and to arrange for their transfer.

**13. Release of Captured Individuals Outside of a Sensitive Period**

13.1. Where uninjured individuals are captured under section 12.1, they shall be released:

(a) within 24 hours of capture;

(b) in an area immediately adjacent to the Drainage Works;

(c) in an area that will not be further impacted by the undertaking of any Activity; and

(d) not more than 250 metres from the capture site.

13.2. Following a release under section 13.1, the Municipality shall Contact the MNR within 72 hours of the release to provide information on the name of the Drainage Works, the location of the encounter and the location of the release site.

**14. Measures for Dead Turtles**

14.1. Where one or more individuals of a turtle Species is killed as a result of an Activity in a Work Zone, or if a person undertaking an Activity finds a deceased individual of a turtle Species within the Work Zone, the Municipality shall:

(a) place any dead turtles in a Holding Tub outside of direct sunlight; and

(b) Contact the MNR within 72 hours to seek direction and to arrange for the transfer of the dead individuals.

## ADDITIONAL MITIGATION MEASURES FOR SNAKE SPECIES

**15. Training and Required On Site Materials for Snakes**

15.1. The Municipality will ensure any person:

(a) involved in the capture, temporary holding, transfer and release of any snake Species has received training in proper snake handling procedures; and

(b) who undertakes an Activity has a minimum of two Holding Tubs and cotton sacks on site at all times.

**16. Activities undertaken in Sensitive Areas and Sensitive Periods for Snakes**

16.1. Where a proposed Activity involves physical infrastructure (e.g., culverts, pump houses, etc.) and will occur in a Sensitive Area for any snake Species and during a *Sensitive Period – Hibernation* for that Species, the Municipality shall undertake the Activity outside of the Sensitive Period, unless otherwise authorized by and in accordance with any site-specific measures provided in writing by the MNR Designated Representative.

16.2. Where a proposed Activity will occur at or adjacent to a known hibernacula (as identified by the MNR) for any snake Species and during a *Sensitive Period – Staging* for that Species, the Municipality shall:

(a) erect effective temporary snake barriers approved by the MNR that will not pose a risk of entanglement for snakes and that shall be secured so that individual snakes may not pass over or under the barrier or between any openings to enter or re-enter the Work Zone;

(b) inspect the temporary snake barriers daily during periods when snakes are active, capture any individuals incidentally encountered within the area bounded by the snake barrier and release the captured individuals in accordance with section 20.1; and

(c) remove the temporary snake barriers immediately upon completion of the Activity.

16.3. Where a proposed Activity that does not involve physical infrastructure will occur in a Sensitive Area for any snake Species and during a *Sensitive Period – Staging* for that Species, the Municipality shall undertake the Activity outside of the Sensitive Period, unless otherwise authorized by and in accordance with any site-specific measures provided in writing by the MNR Designated Representative.

**17. Measures for Encounters with Snakes During a Sensitive Period**

17.1. Where one or more individuals belonging to a snake Species is encountered, or should an active hibernacula be uncovered, while conducting an Activity in any part of a Work Zone (including, but not limited to, a Sensitive Area) during a Sensitive Period for that Species, the Municipality shall:

(a) capture and transfer all injured and uninjured individual snakes of that Species into individual light-coloured, drawstring cotton sacks;

(b) place all cotton sacks filled with the captured individuals into a Holding Tub;

(c) ensure that the Holding Tub with the captured individuals is stored at a cool temperature to protect the snakes from freezing until the individuals can be retrieved or transferred;

(d) if an active hibernacula is uncovered, cease all Activities at the hibernacula site; and

(e) immediately Contact the MNR to seek direction and to arrange for the transfer and/or retrieval.

**18. Measures for Encounters with Snake Nests**

18.1. Where an active nest of any of the snake Species is encountered and disturbed while undertaking an Activity in any part of a Work Zone, the Municipality shall:

(a) collect any displaced or damaged eggs and transfer them to a Holding Tub;

(b) capture and transfer all injured dispersing juveniles of that Species into a light-coloured drawstring cotton sack;

(c) place all cotton sacks with the captured injured individuals into a Holding Tub;

(d) ensure that the Holding Tub with the captured injured individuals is stored out of direct sunlight;

(e) immediately Contact the MNR to seek direction and to arrange for the transfer of the injured individuals;

(f) immediately stop any disturbance to the nest site and loosely cover exposed portions with soil or organic material to protect the integrity of the remaining individuals;

(g) not drive any equipment over the nest site or conduct any Activities within 5 metres of the nest site;

(h) not place any dredged materials removed from the Drainage Works on top of the nest site;

(i) mark out the physical location of the nest site but not by any means that might increase the susceptibility of the nest to predation or poaching; and

(j) where there are no collected eggs or captured individuals, Contact the MNR within 72 hours to provide information on the location of the nest site.

**19. Measures for Encounters with Snakes Outside of a Sensitive Period**

19.1. Where one or more individuals belonging to a snake Species is encountered while undertaking an Activity in any part of a Work Zone (including, but not limited to, a Sensitive Area) but outside of any Sensitive Period for that Species, the Municipality shall:

(a) follow the requirements in section 15;

(b) briefly stop the Activity for a reasonable period of time to allow any uninjured individual snakes of that Species to leave the Work Zone;

(c) if the individuals do not leave the Work Zone after the Activity is briefly stopped in accordance with (b) above, capture all uninjured individuals and release them in accordance with section 20.1;

(d) where circumstances do not allow for the immediate release of captured uninjured individuals, they may be transferred into individual, light-coloured, drawstring cotton sacks before placing them in a Holding Tub which shall be stored out of direct sunlight for a maximum of 24 hours before releasing them in accordance with section 20.1;

(e) capture and transfer any individuals injured as a result of conducting the Activities into a Holding Tub separate from any Holding Tub containing uninjured individuals; and

(f) store all captured injured individuals out of direct sunlight and immediately Contact the MNR to seek direction and to arrange for their transfer.

**20. Release of Captured Individuals Outside of a Sensitive Period**

20.1. Where uninjured individuals are captured under section 19.1, they shall be released:

(a) within 24 hours of capture;

(b) in an area immediately adjacent to the Drainage Works where there is natural vegetation cover;

(c) in an area that will not be further impacted by the undertaking of any Activity; and

(d) not more than 250 metres from the capture site.

20.2. Following a release under section 20.1, the Municipality shall Contact the MNR within 72 hours of the release to provide information on the name of the Drainage Works, the location of the encounter and the location of the release site.

**21. Measures for Dead Snakes**

21.1. Where one or more individuals belonging to a snake Species is killed as a result of an Activity in a Work Zone, or if a person undertaking an Activity finds a deceased individual of a snake Species within the Work Zone, the Municipality shall:

(a) collect and transfer any dead individuals into a Holding Tub outside of direct sunlight; and

(b) Contact the MNR within 72 hours to seek direction and to arrange for the transfer of the carcasses of the dead individuals.

## ADDITIONAL MITIGATION MEASURES FOR HERBACEOUS PLANTS

### 22. Activities Undertaken in Sensitive Areas for Herbaceous Plants

22.1. Where a proposed Activity will occur that involves physical disturbance to vegetated banks or the killing and/or removal of vegetation through chemical or mechanical means in a Sensitive Area for any herbaceous plant Species, the Municipality shall:

(a) undertake the Activity outside of the Sensitive Period, unless otherwise authorized;

(b) limit equipment access and operations to the side of the Drainage Works that will minimize disturbances where any of the plant Species occur;

(c) locate temporary storage sites for excavated sediments or bank materials on areas of open soil away from where any of the plant Species are likely to occur;

(d) not use any broad spectrum herbicides in Sensitive Areas; and

(e) undertake Activities in accordance with any additional site-specific measures provided in writing by the MNR Designated Representative.

## ADDITIONAL MITIGATION MEASURES FOR TREE SPECIES

### 23. Additional Measures for Butternut

23.1. Where Butternuts may exist in a Work Zone and may be affected by an Activity, the Municipality shall:

(a) identify and mark as retainable trees all individual Butternut trees within the Work Zone during work planning site visits unless the individual Butternut has been assessed as a non-retainable tree due to infection by Butternut canker by a person designated by the Minister as a Butternut Health Assessor;

(b) retain and avoid disturbance to all individuals identified under (a) above that have been identified as retainable trees or that have not been assessed, unless otherwise authorized in writing by the MNR Designated Representative;

(c) conduct Activities by:

(i) limiting equipment access and operations to the side of the Drainage Works that will minimize disturbance to where any of the individual Butternut trees occur,

(ii) working around trees,

(iii) avoiding compacting and/or disturbing the soil by keeping excavation and other heavy equipment a minimum of 2 metres away from the main stem of retained individuals to avoid damaging roots and stems,

(iv) placing excavated materials on areas not within 2 metres of the main stem of retained individuals; and

(v) where branches are required to be removed to allow for safe operation of equipment, removing them using appropriate equipment, such as pruning saws, chain saws or lopping shears, in accordance with good forestry practices.

### 24. Measures for Other Trees

24.1. Where Kentucky Coffee-tree, Common Hoptree, Eastern Flowering Dogwood and American Chestnut may exist in a Work Zone and may be affected by an Activity, the Municipality shall:

(a) identify and mark all individual Kentucky Coffee-tree, Common Hoptree, Eastern Flowering Dogwood and American Chestnut within the Work Zone during work planning site visits;

(b) avoid disturbance to all individuals identified under (a) above, unless otherwise authorized in writing by the MNR Designated Representative;

(c) conduct Activities by:

(i) limiting equipment access and operations to the side of the Drainage Works that will minimize disturbance where any of the individuals occur,

(ii) working around trees,

(iii) avoiding compacting and/or disturbing the soil by keeping excavation and other heavy equipment a minimum of 2 metres away from the main stem of retained individuals to avoid damaging roots and stems, and

(iv) placing excavated materials on areas not within 2 metres of the main stem of retained individuals; and

(d) where branches are required to be removed to allow for safe operation of equipment, remove them using appropriate equipment, such as pruning saws, chain saws or lopping shears, in accordance with good forestry practices.

## PART D. MONITORING AND REPORTING REQUIREMENTS

### 25. Compliance Monitoring.

25.1. The Municipality shall inspect the undertaking of the Activities at the locations described in Part F of this Schedule C, and shall record the results of the inspections in the Monitoring and Reporting Form.

25.2. The Municipality shall record all encounters with Species and the resulting mitigation measures taken by the Municipality in the Monitoring and Reporting Form.

### 26. Reporting

26.1. Prior to March 31 of each year the Mitigation Plan is in effect, the Municipality shall submit a completed Monitoring and Reporting Form containing all of the information collected under sections 25.1 and 25.2 during the previous twelve months to the MNR Designated Representative.

### 27. Review

27.1. Within six months of the expiry of this Mitigation Plan but no later than three months from the time of its expiry, the Parties shall meet to review the measures and actions taken and the Activities undertaken during its term and to discuss the terms and conditions of the next Mitigation Plan.

# APPENDIX "REI-C"

# STANDARD SPECIFICATIONS
# FOR ACCESS BRIDGE CONSTRUCTION

## 1. PRECAST CONCRETE BLOCK & CONCRETE FILLED JUTE BAG HEADWALLS

After the Contractor has set the endwall foundations and the new pipe in place, it shall completely backfill same and install new precast concrete blocks or concrete filled jute bag headwalls at the locations and parameters indicated on the drawing. All concrete used for headwalls shall be a minimum of 30 mPa at 28 days and include 6% +/- 1% air entrainment.

Precast concrete blocks shall be interlocking and have a minimum size of 600mmX600mmX1200mm. Half blocks shall be used to offset vertical joints. Cap blocks shall be a minimum of 300mm thick. A foundation comprising minimum 300mm thick poured concrete or precast blocks the depth of the wall and the full bottom width of the drain plus 450mm embedment into each drain bank shall be provided and placed on a firm foundation as noted below. The Contractor shall provide a levelling course comprising a minimum thickness of 150mm Granular "A" compacted to 100% Standard Proctor Density or 20mm clear stone, or a lean concrete as the base for the foundation. The base shall be constructed level and flat to improve the speed of installation. Equipment shall be provided as required and recommended by the block supplier for placing the blocks such as a swift lift device for the blocks and a 75mm eye bolt to place the concrete caps,. The headwall shall extend a minimum of 150mm below the invert of the access bridge culvert with the top of the headwall set to match the finished driveway grade, unless a 150mm high curb is specified at the edge of the driveway. To achieve the required top elevation, the bottom course of blocks and footing may require additional embedment into the drain bottom. The Contractor shall provide shop drawings of the proposed wall for approval by the Drainage Superintendent or Engineer prior to construction.

Blocks shall be placed so that all vertical joints are staggered. Excavation voids on the ends of each block course shall be backfilled with 20mm clear stone to support the next course of blocks above. Walls that are more than 3 courses in height shall be battered a minimum of 1 unit horizontal for every 5 units of vertical height. The batter shall be achieved by careful grading of the footing and foundation base, or use of pre-battered base course blocks. Filter cloth as specified below shall be placed behind the blocks to prevent the migration of any fill material through the joints. Backfill material shall be granular as specified below. Where the wall height exceeds 1.8 metres in height, a uni-axial geogrid SG350 or equivalent shall be used to tie back the walls and be installed in accordance with the manufacturer's recommendations. The wall face shall not extend beyond the end of the access bridge pipe. Non-shrink grout shall be used to fill any gaps between the blocks and the access bridge pipe for the full depth of the wall. The grout face shall be finished to match the precast concrete block walls as closely as possible.

When constructing the concrete filled 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 behind the new concrete filled jute bag headwalls with Granular "B" and Granular "A" material as per O.P.S.S. Form 1010 and the granular material shall be compacted in place to 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 305mm (12") in thickness.

The concrete filled 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 25 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 460mm (18") x 660mm (26"). The jute bags shall be filled with concrete so that when they are laid flat, they will be approximately 100mm (4") thick, 305mm (12") to 380mm (15") wide and 460mm (18") long.

The concrete jute bag headwall to be provided at the end of the bridge pipe shall be a single or double bag wall construction as set out in the specifications. The concrete filled bags shall be laid so that the 460mm (18") dimension is parallel with the length of the new pipe. The concrete filled jute bags shall be laid on a footing of plain concrete being 460mm (18") wide, and extending for the full length of the wall, and 305mm (12") thick extending below the bottom of the culvert pipe.

All concrete used for the footing, cap and bags shall have a minimum compressive strength of 30 mPa at 28 days and shall include 6% ± 1% air entrainment.

Upon completion of the jute bag headwall the Contractor shall cap the top row of concrete filled bags with a layer of plain concrete, minimum 100mm (4") thick, and hand trowelled to obtain a pleasing appearance. If the cap is made more than 100mm thick, the Contractor shall provide two (2) continuous 15M reinforcing bars set at mid-depth and equally spaced in

the cap. 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.

The completed jute bag headwalls shall be securely embedded into the drain bank a minimum of 450mm (18") measured perpendicular to the sideslopes of the drain.

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 pieces of concrete may be substituted for the jute bags. The concrete rip rap shall be approximately 460mm (18") square and 100mm (4") thick and shall have two (2) flat parallel sides. The concrete rip rap shall be fully mortared in place using a mixture composed of three (3) parts of clean sharp sand and one (1) part of Portland cement.

The complete placement and backfilling of the headwalls shall be performed to the full satisfaction of the Drainage Superintendent and the Engineer.

## 2. QUARRIED LIMESTONE ENDWALLS

The backfill over the ends of the corrugated steel pipe shall be set on a slope of 1-½ units horizontal to 1 unit vertical from the bottom of the corrugated steel pipe to the top of each end slope and between the drain banks. The top 305mm (12") in thickness of the backfill over the ends of the corrugated steel pipe shall be quarried limestone. The quarried limestone shall also be placed on a slope of 1-½ units horizontal to 1 unit vertical from the bottom of the corrugated steel pipe to the top of each bank of the drain adjacent each end slope. The quarried limestone shall have a minimum dimension of 100mm (4") and a maximum dimension of 250mm (10"). The end slope protection shall be placed with the quarried limestone pieces carefully tamped into place with the use of a shovel bucket so that, when complete, the end protection shall be consistent, uniform, and tightly laid in place.

Prior to placing the quarried limestone end protection over the granular backfill and on the drain banks, the Contractor shall lay non-woven geotextile filter fabric "GMN160" conforming to O.P.S.S. 1860 Class I or approved equal. The geotextile filter fabric shall extend from the bottom of the corrugated steel pipe to the top of each end slope of the bridge and along both banks of the drain to a point opposite the ends of the pipe.

The Contractor shall take extreme care not to damage the geotextile filter fabric when placing the quarried limestone on top of the filter fabric.

## 3. BRIDGE BACKFILL

After the corrugated steel pipe has been set in place, the Contractor shall backfill the pipe with Granular "B" material, O.P.S.S. Form 1010 with the exception of the top 305mm (12") of the backfill. The top 305mm (12") of the backfill for the full width of the excavated area (between each bank of the drain) and for the top width of the driveway, shall be Granular "A" material, O.P.S.S. Form 1010. The granular backfill shall be compacted in place to a Standard Proctor Density of 100% by means of mechanical compactors. All of the backfill material, equipment used, and method of compacting the backfill material shall be inspected and approved and meet with the full satisfaction of the Drainage Superintendent and Engineer.

## 4. GENERAL

Prior to the work commencing, the Drainage Superintendent and Engineer must be notified, and under no circumstances shall work begin without one of them being at the site. Furthermore, the grade setting of the pipe must be checked, confirmed, and approved by the Drainage Superintendent or Engineer prior to continuing on with the bridge installation.

The alignment of the new bridge culvert pipe shall be in the centreline of the existing drain, and the placing of same must be performed totally in the dry.

Prior to the installation of the new access bridge culvert, the existing sediment build-up in the drain bottom must be excavated and completely removed. This must be done not only along the drain where the bridge culvert pipe is to be installed, but also for a distance of 3.05 metres (10 ft.) both upstream and downstream of said new access bridge culvert. When setting the new bridge culvert pipe in place it must be founded on a good undisturbed base. If unsound soil is encountered, it must be totally removed and replaced with 20mm (3/4") clear stone, satisfactorily compacted in place.

When doing the excavation work or any other portion of the work relative to the bridge installation, care should be taken not to interfere with, plug up, or damage any existing surface drains, swales, and lateral or main tile ends. Where damage is encountered, repairs to correct same must be performed immediately as part of the work.

The Contractor and/or landowner performing the bridge installation shall satisfy themselves as to the exact location, nature and extent of any existing structure, utility or other object that they may encounter during the course of the work. The Contractor shall indemnify and save harmless the Town, or the Municipality, the Engineer, and their staff from any damages which it may cause or sustain during the progress of the work. It shall not hold them liable for any legal action arising out of any claims brought about by such damage caused by it.

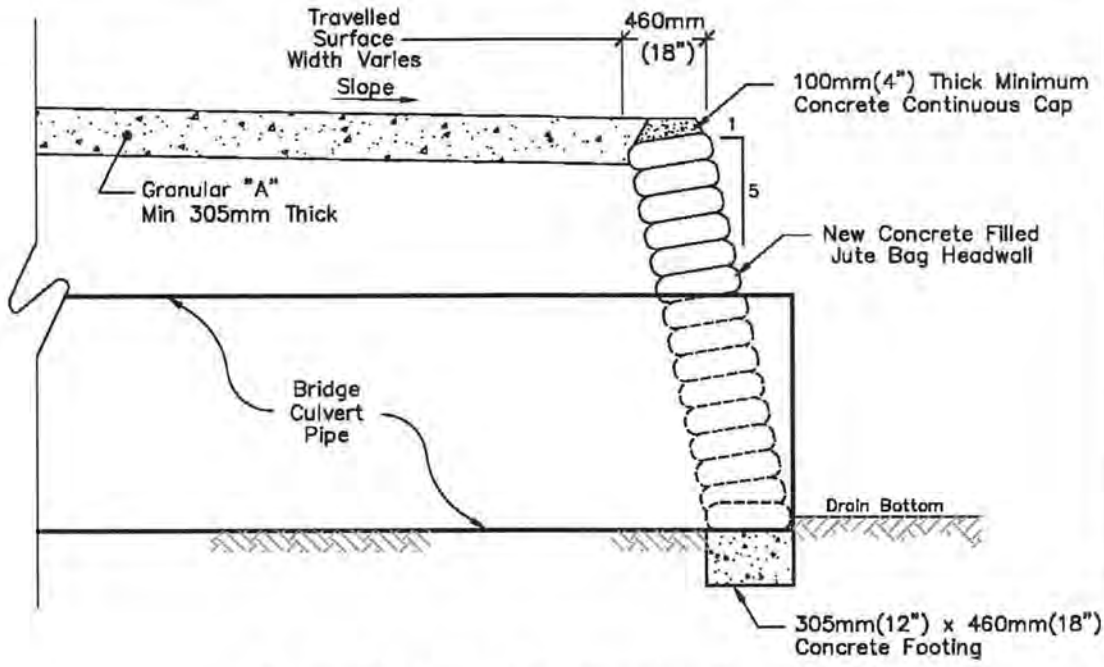
Where applicable, the Contractor and/or landowner constructing the new bridge shall be responsible for any damage caused by them to any portion of the Town road right-of-way. They shall take whatever precautions are necessary to cause a minimum of damage to same and must restore the roadway to its original condition upon completion of the works.

When working along a municipal roadway, the Contractor shall provide all necessary lights, signs, barricades and flagpersons as required to protect the public. All work shall be carried out in accordance with the requirements of the Occupational Health and Safety Act, and latest amendments thereto. If traffic control is required on this project, it is to comply with the M.T.O. Traffic Control Manual for Roadway Work Operations and Ontario Traffic Manual Book 7.

Once the bridge installation has been completed, the drain sideslopes directly adjacent the new headwalls and/or endwalls are to be completely restored including revegetation, where necessary.

All of the work required towards the installation of the bridge shall be performed in a neat and workmanlike manner. The general site shall be restored to its' original condition, and the general area shall be cleaned of all debris and junk, etc. caused by the work

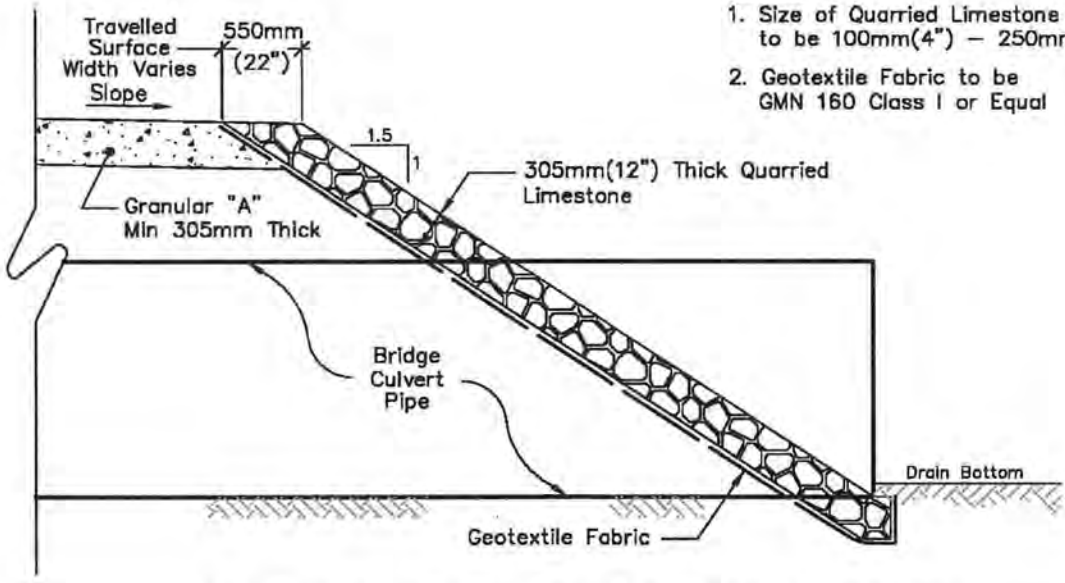
All of the excavation, installation procedures, and parameters as above mentioned are to be carried out and performed to the full satisfaction of the Drainage Superintendent and Engineer.




## Typical Jute Bag Headwall

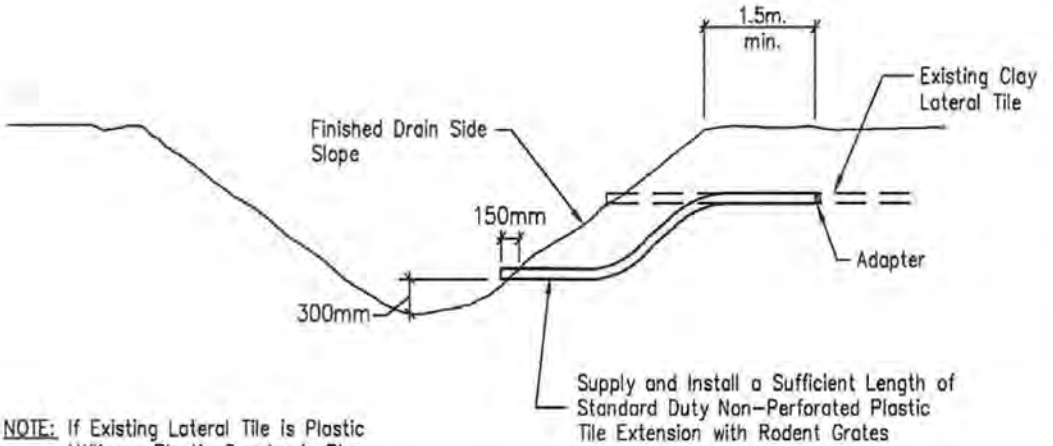
**NOTE:**

1. Size of Quarried Limestone to be 100mm(4") – 250mm(10")
2. Geotextile Fabric to be GMN 160 Class I or Equal



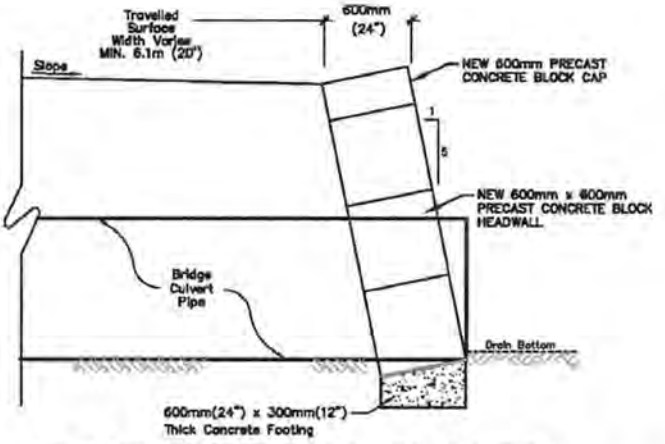

## Typical Quarried Limestone End Protection

**Rood Engineering Inc.**
*Consulting Engineers*
*9 Nelson Street*
*Leamington, Ontario N8H 1G6*
*519-322-1621*

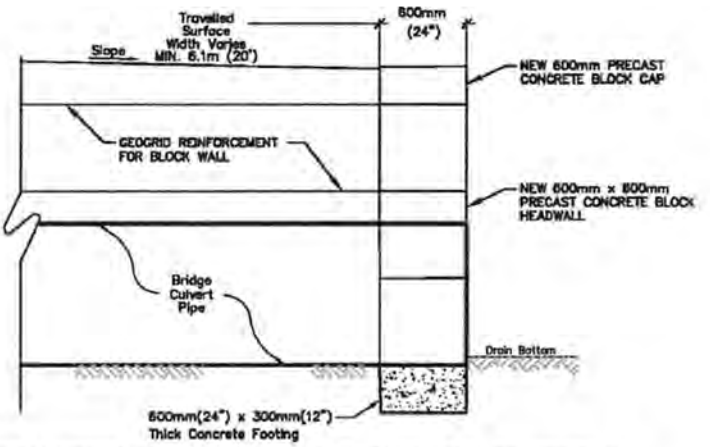



## STANDARD LATERAL TILE DETAIL

N.T.S.




**TYPICAL PRECAST CONCRETE BLOCK END PROTECTION**
Scale = N.T.S.




**TYPICAL VERTICAL PRECAST CONCRETE BLOCK END PROTECTION**
Scale = N.T.S.

# APPENDIX "REI-D"

Appendix D – General Conditions and Specifications not required.

# APPENDIX "REI-E"

# APPENDIX "REI-E"

North

WATERSHED AND NEW BRIDGE

FOR THE

# WEST TOWNLINE DRAIN

IN THE FORMER

## TOWNSHIP OF COLCHESTER SOUTH

IN THE

## TOWN OF ESSEX

IN THE

## COUNTY OF ESSEX • ONTARIO


GERARD ROOD, P.ENG.

*ROOD ENGINEERING INC.*

9 NELSON STREET
LEAMINGTON, ONTARIO
N8H 1G6


REGISTERED PROFESSIONAL ENGINEER
G.ROOD
2019-04-26
PROVINCE OF ONTARIO

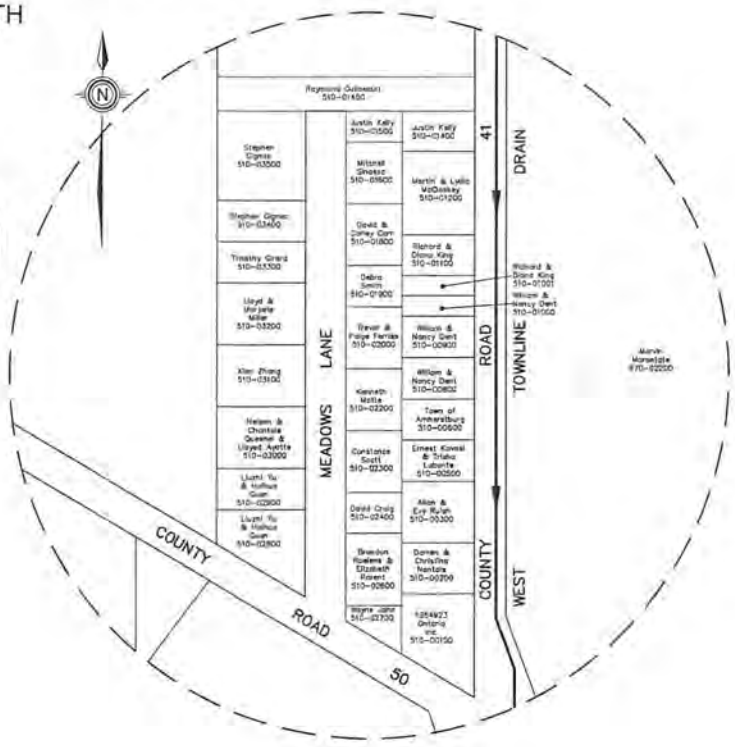
DATE: APRIL 26th, 2019

### TOWN OF ESSEX

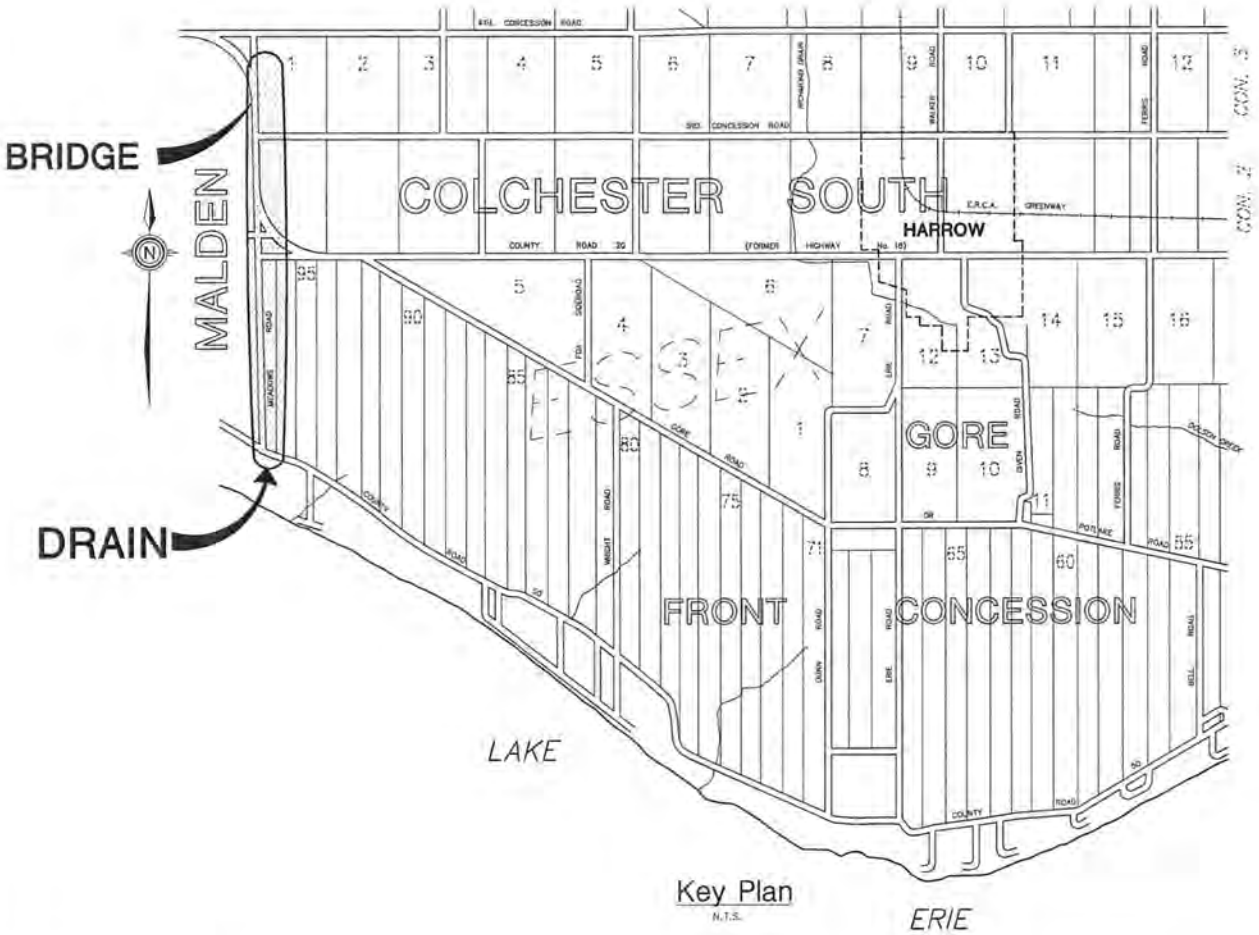
MAYOR: LARRY SNIVELY
ADMINISTRATOR: ROBERT AUGER
DRAINAGE
SUPERINTENDENT: NORMAN NUSSIO

### BENCHMARK:

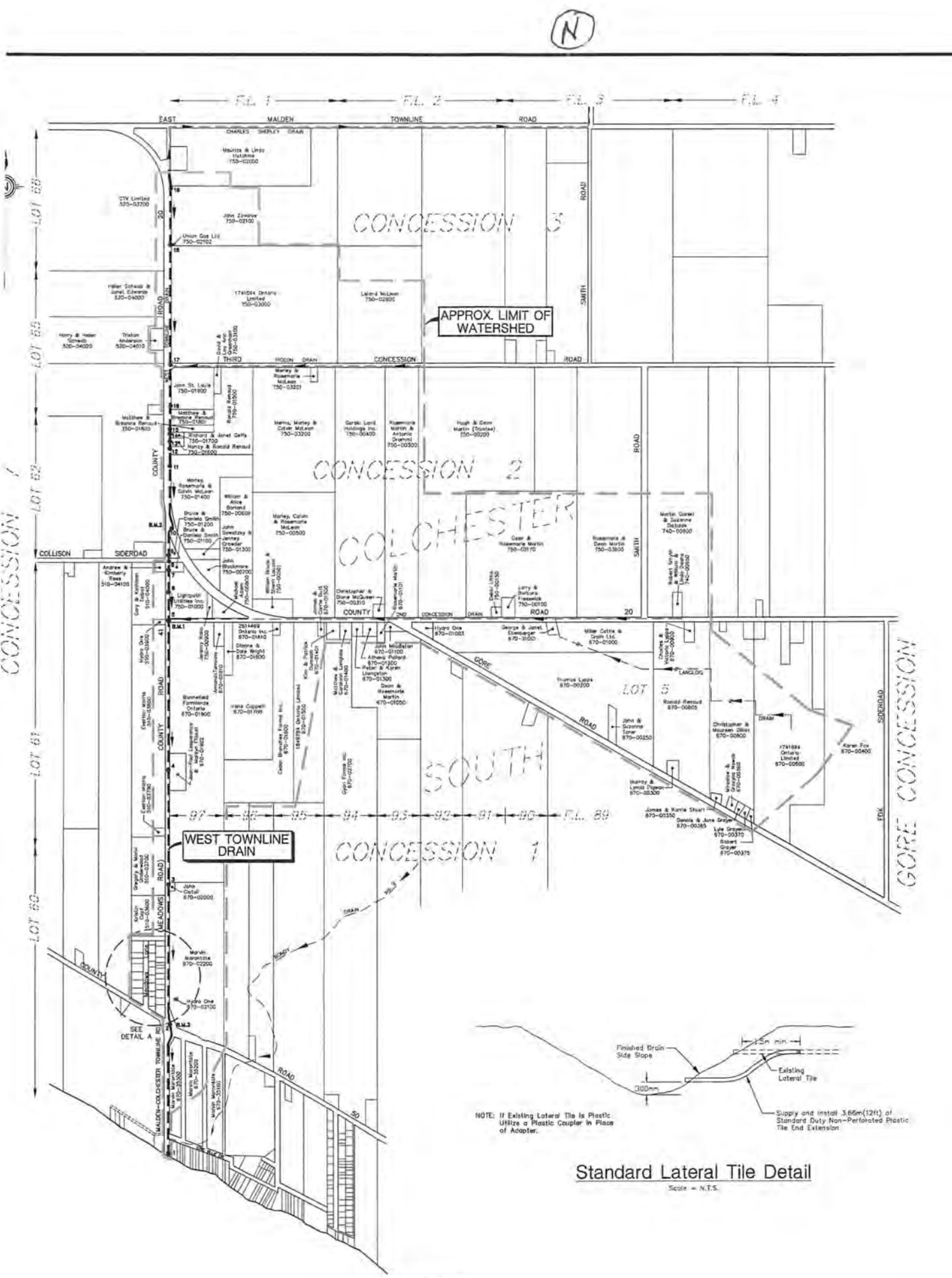
1. TOP CENTRELINE OF NORTH CURB OF SECOND CONCESSION ROAD BRIDGE.
   ELEV.= 184.404m
2. TOP CENTERLINE OF HEADWALL ON TWIN 915mm DIA PIPES UNDER COUNTY ROAD 20
   ELEV. = 184.944m
3. TOP CENTERLINE OF NORTH END OF 3.88mX2.69m C.S.P. ARCH CULVERT UNDER COUNTY ROAD 50.
   ELEV. = 178.047m




DETAIL A
Scale = 1:2000




Key Plan
N.T.S.




## Standard Lateral Tile Detail

Scale = N.T.S.

## Plan

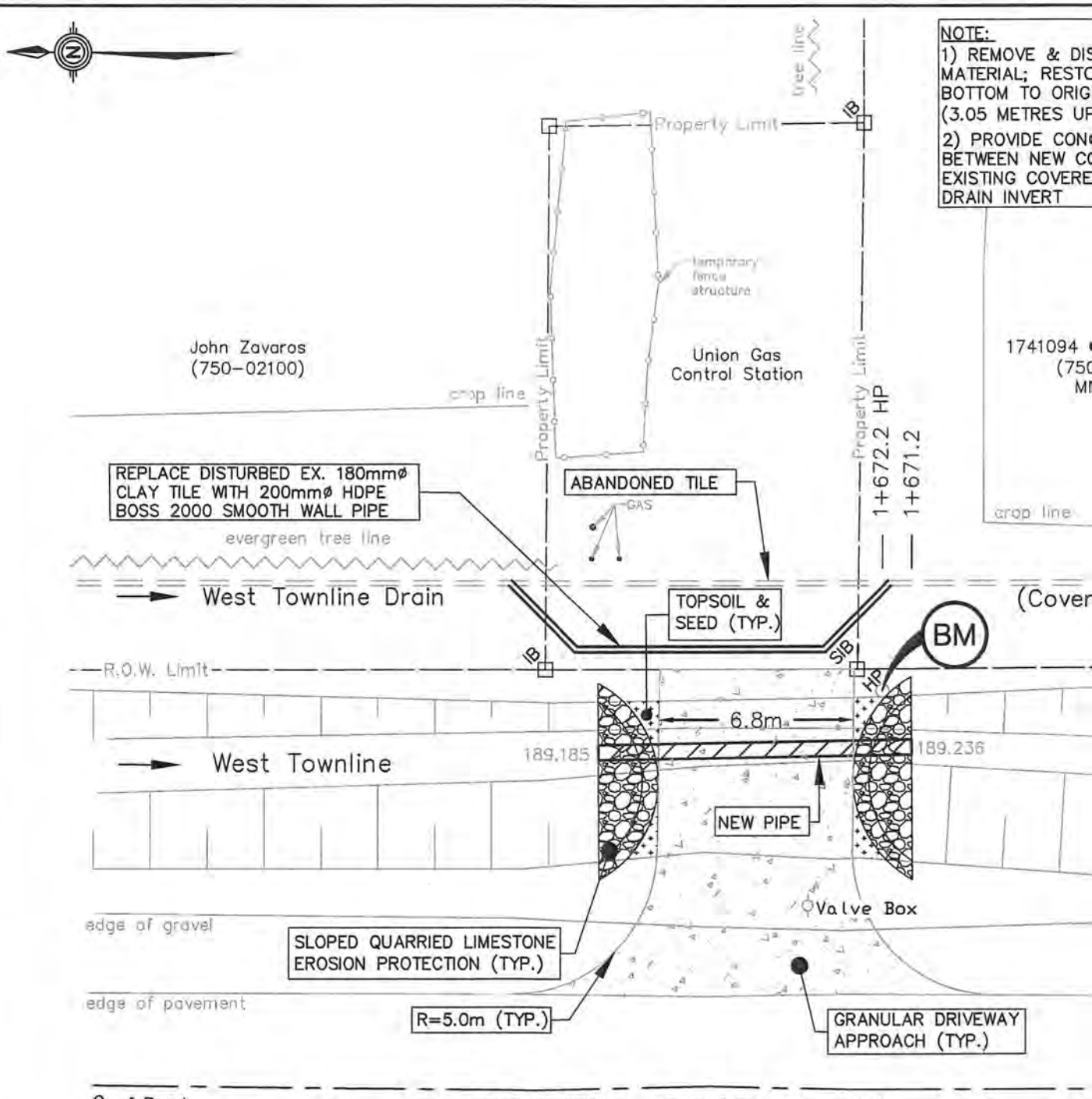
Scale = 1:10000

THESE PLANS HAVE BEEN REDUCED AND THE SCALE THEREFORE VARIES. FULL SCALE PLANS MAY BE VIEWED AT THE MUNICIPAL OFFICE.

DRAWN BY: G.R. & T.M.
PLOT CODE: 1:10
COMPUTER FILE: REI2016D061

FILE No.: REI2016D061

SHEET No 1 OF




## BRIDGE PLAN

SCALE = 1:200

BENCHMARK:

TOP OF NAIL ON WEST FACE OF HYDRO POLE LOCATED ON THE SOUTH SIDE OF PROPOSED BRIDGE AND EAST SIDE OF COUNTY ROAD 20

ELEV. = 190.588m

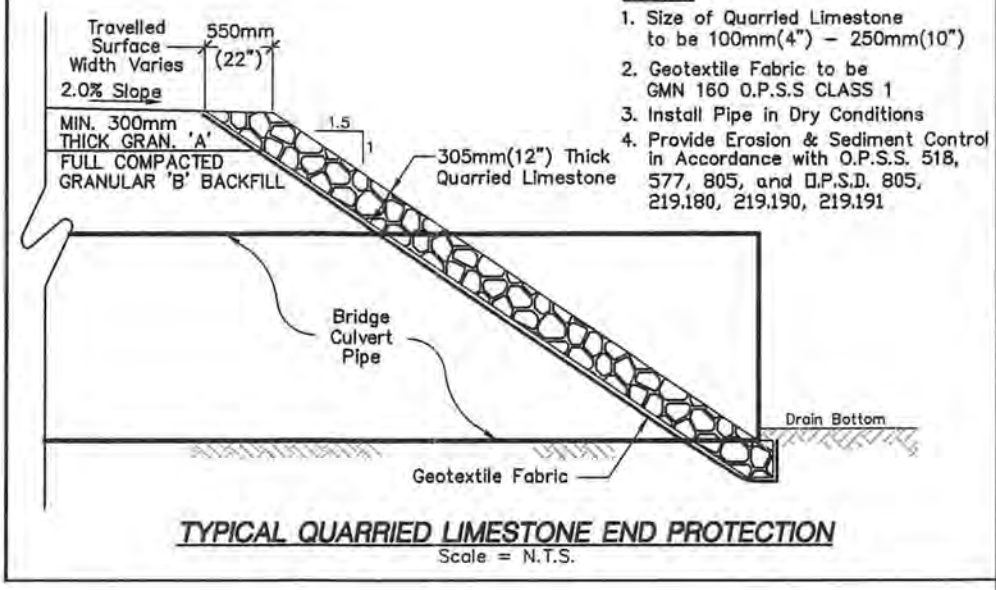
| PIPE SIZE: | PIPE LENGTH: | PIPE GAUGE: | CORRUGATIONS: | TYPE OF PIPE: | DESIGN ELEVATIONS: |
|---|---|---|---|---|---|
| 525mmø | 11.0m (36.09 FT.) | 320 kPa | STANDARD | SMOOTH WALL H.D.P.E. PIPE | UPSTREAM INV. (N) = 189.175m<br>DOWNSTREAM INV. (S) = 189.158m<br>℄ TOP OF DRIVEWAY = 190.177m<br>DRAIN GRADE = 0.15% |

# WEST TOWNLINE D

BRIDGE FOR UNION GAS PRESSURE
(GEOGRAPHIC TOWNSHIP OF COLCH
IN THE
TOWN OF ESSEX
IN THE
COUNTY OF ESSEX • (

POSE OF DELETERIOUS
RE DRAIN BANKS AND
NAL GRADE CONDITIONS
STREAM AND DOWNSTREAM)
CRETE GROUT CONNECTIONS
VERED DRAIN PIPE AND
D DRAIN; MATCH COVERED

ntario Limited
-03000)
3008




**NOTE:**

1. Size of Quarried Limestone to be 100mm(4") – 250mm(10")
2. Geotextile Fabric to be GMN 160 O.P.S.S CLASS 1
3. Install Pipe in Dry Conditions
4. Provide Erosion & Sediment Control in Accordance with O.P.S.S. 518, 577, 805, and O.P.S.D. 805, 219.180, 219.190, 219.191

***TYPICAL QUARRIED LIMESTONE END PROTECTION***
Scale = N.T.S.

ed Portion)

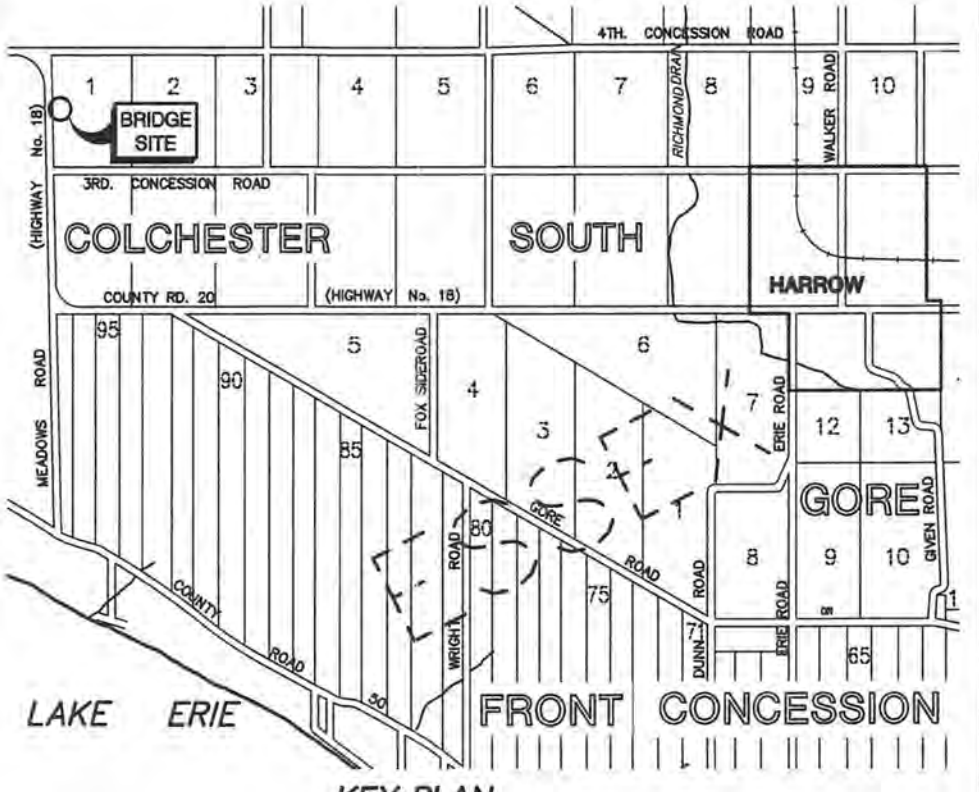
R.O.W. Limit

Drain

edge of gravel

edge of pavement

℄ of Road




***KEY PLAN***
Scale = 1:20,000

RAIN
ONTROL STATION
STER SOUTH)

NTARIO

REGISTERED PROFESSIONAL ENGINEER
G.ROOD
2019-04-26
PROVINCE OF ONTARIO


*ROOD ENGINEERING INC.*
*CONSULTING ENGINEERS*
Leamington, Ontario
519-322-1621


DATE: 2019-04-26

| FILE No.: | DRAWN BY: K.S. PLOT CODE: 1:1 FILE: REI2016D061.DWG | APPENDIX 'E' |
|---|---|---|
| REI2016D061 | | |

Robert W Auger, Clerk, Town of Essex
(519) 776-7336 x1132;
rauger@essex.ca

Chris Nepczy, supervisor,
(519) 776-7336 x1114
cnepczy@essex.ca

Norman Nussio, Drainage Superintendent,
(519) 776-7336 x1405
nnussio@essex.ca

This is an objection regarding your assessment of the “total value” and the “affected acres” that are assigned to the property with tax roll number 750-03000 belonging to 1741094 Ontario Limited.

In regards to your notice dated May 7, 2019, West Townline Drain (WTD):

> “New Bridge for Union Gas (Part Lot 1, Con. 3} and
> Updated Maintenance Schedule of Assessment.”

May 28, 2019

Dear Sirs,

In this letter I am objecting and contesting the inconsistencies that are presented in your schedule of value liability (Total Value = value of benefit + value of outlet liability) that are assigned to my property tax roll number 750-03000, that belongs to 1741094 Ontario Limited corporation. I am also objecting and contesting to calculated “affected area” of the same farm that are included within the watershed area of the WTD.

To prove the inconsistencies in the presented schedules of the said notice, I have considered the neighboring properties and compared the “Total Value” that is assessed against these properties with mine. It is quite clear that my property is unfairly assessed at a higher value than my neighbors.

Please note the following points:

1. Comparing the presented assessed value schedules in your notice with the map in APPENDIX "REI-E," we note that the closer a property is to the WTD drain, the higher is the assessed “Total Value” per affected acre. The further away the property is from the WTD, the lower is the assessed value per affected acre.

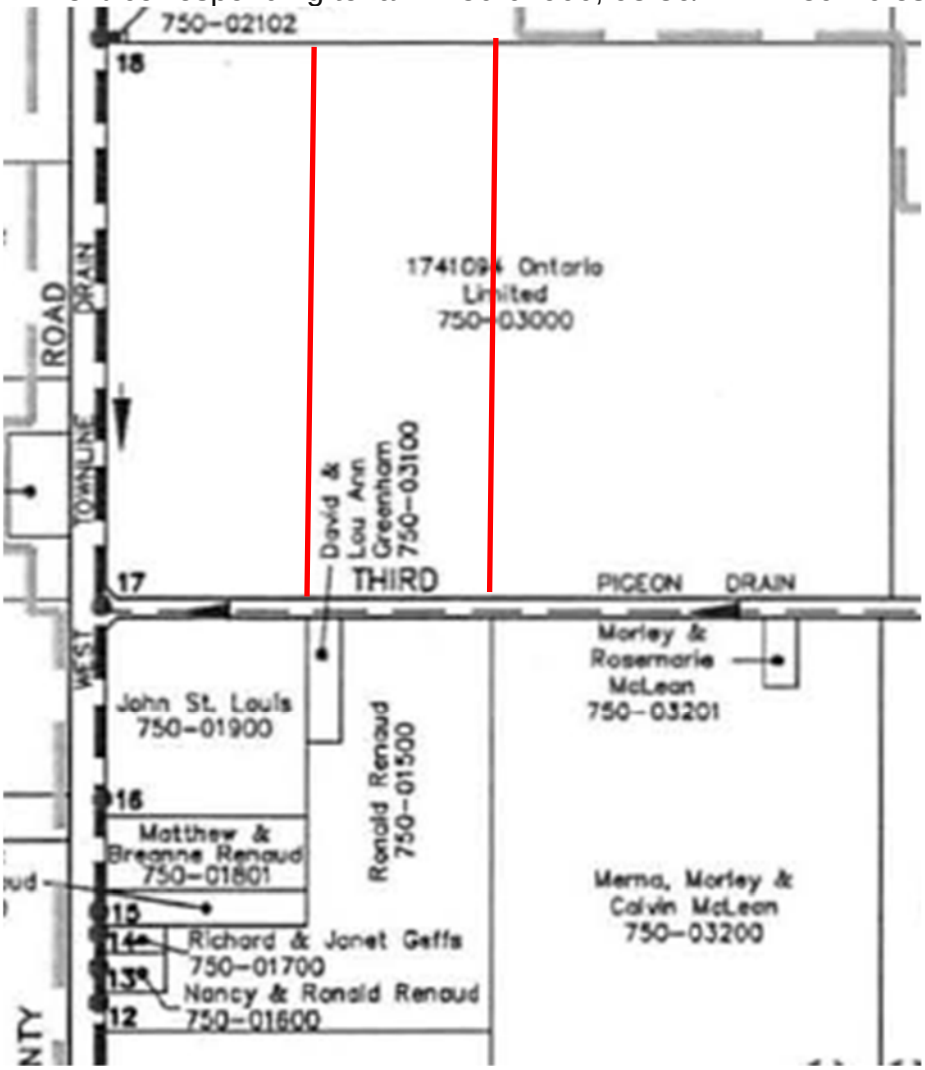
2. The affected acres on my property at 750-03000 extend eastward away from the WTD. Their contiguity to the WTD corresponds fairly well to three farms across the

Third Concession Road. Namely, the following properties: 750-03200, 750-01500, and 750-01900, listed from further to more proximal to the WTD.

3. These three farms across the Third Concession Road carry different assessed value liability per affected acre that corresponds to their contiguity to the WTD.

4. Similarly, the affected acres of my property at 750-3000 should carry assessed values that are similar to the corresponding affected acres of the above-named properties across the Third Concession Road.

5. Please consider the following map from APPENDIX "REI-E". If you extend the property lines of the above-mentioned three farms northward into the 750-03000 property, you can see that they divide this property into three sections that are roughly about:
    a. ~50% corresponding to farm 750-03200; 98.36/2 = 49.18 Acres.
    b. ~25% corresponding to farm 750-01500; 98.36/4 = 24.59 Acres.
    c. ~25% corresponding to farm 750-01900; 98.36/4 = 24.59 Acres.



6. The percentages above are fair enough as they also correspond to the County of Essex Interactive mapping at http://maps.countyofessex.on.ca/?viewer=http%3A%2F%2Fgisweb.countyofessex.ca%2Fhtmlcounty2101%2FIndex.html%3FconfigBase%3Dhttp%3A%2F%2Fgisweb.countyofessex.ca%2FGeocortex%2FEssentials%2FCounty%2FREST%2Fsites%2FCounty_of_Essex__Public%2Fviewers%2Fhtmlpublic%2Fvirtualdirectory%2FResources%2FConfig%2FDefault%26extent%3D313436.05%2C4695451.23%2C395580.67%2C4640491.63&image.x=45&image.y=20

7. Please consider the following table that compares my property 750-03000 with the above-mentioned neighboring properties across the Third Concession Road that drain into the West Townline Drain (WTD). The values are obtained from the schedules in your notice.

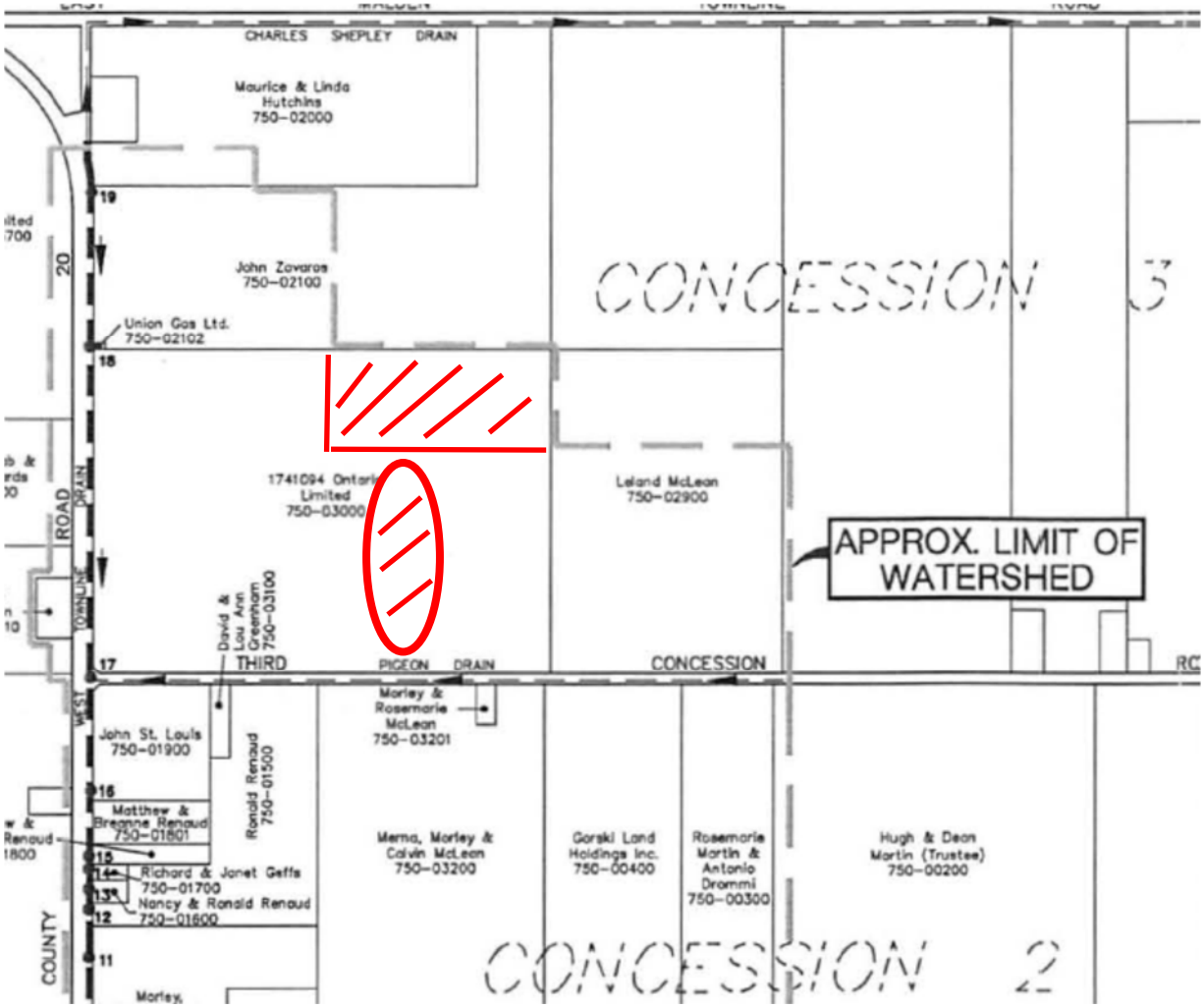
| Property Tax Roll Number | Affected Acreage | Total Value | Value per Affected Acre | Comment |
|---|---|---|---|---|
| 750-03000 | 98.36 | 405 | 4.12 | |
| | | | | |
| 750-03200 | 50.60 | 144 | 2.85 | This property corresponds to ~50% of the acres on the property 750-03000 |
| 750-01500 | 20.39 | 102 | 5.00 Adjusted to 3.87 | This property corresponds to ~25% of the acres on the property 750-03000. However, the assessed value cannot be a fair comparison to the corresponding acres on 750-03000, because the southern part of this property drains directly into the WTD. Because it lays between 750-03200 and 750-1900, its northern portion that corresponds to ~25% of my property may be assigned an average value between its surrounding properties, namely 750-03200 and 750-01900. That is: 2.85 + 4.89 = 7.74. Dividing by 2 we obtain an adjusted value of 3.87 per affected acre for the northern portion of this property that properly corresponds to the ~25% of my property. |
| 750-01900 | 9.20 | 45 | 4.89 | This property corresponds to ~25% of the acres on the property 750-03000 |

8. Apportioning the affected acres of 750-03000 to the corresponding properties across the third concession, we obtain the following table of values:

| Corresponding Tax Roll Number | Percentage of 750-03000 | Affected Acreage of 750-03000 | Corresponding value per acre from the table above | Product of last two columns in $ |
|---|---|---|---|---|
| 750-03000 | Total | 98.36 | | |
| | | | | |
| 750-03200 | ~50% | 49.18 | 2.85 | 140.16 |
| 750-01500 | ~25% | 24.59 | 3.87 | 95.16 |
| 750-01900 | ~25% | 24.59 | 4.89 | 120.25 |
| | | | | |
| | | | | 355.57 |

9. From your listed schedules of values, the total value that is assessed to my property at 750-03000 is 405. This figure is grossly over estimated. From the table above we see that the total value ought to be 355 when compared with neighbors with similar outlay of their properties. This is if we consider that all of the acres of this farm are “affected acres.”

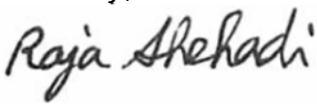
10. I am also contesting the unnatural perfect stepwise distribution of the watershed area of the WTD as presented in your map. This is clearly intended to include all of the acres of my property as “affected acres,” while my neighbors to the east and north have only portions of their farms included as “affected acres.” We know for fact that the eastern 40% of 750-0300 including the pond and beyond is not tiled and the rest of the farm is poorly tiled with very old clay tiles most of which are not currently functioning. I am requesting that at least 30 acres of the north-eastern portion of my farm 75-03000 be not considered as affected acres. I am requesting that the total “affected acres” of my property be reduced to no more than 98.36 -30 = 68.36 acres.



11. I am requesting that you would kindly:
    a. Reduce the total number of “affected acres” on my property 750-03000 from 98.36 to no more than 68.36 acres.
    b. Reduce my assessed values by the corresponding amounts to fairly match the above-named properties across the Third Concession Road.
    c. Explain clearly and in detail how you calculated the benefit and outlet values that sum up to the total value of 405 for my property at 750-03000.

Please let me know if there are any special forms that I ought to fill for objecting and contesting this evaluation and list for me the steps that I have to take in my grievance to achieve a fair ruling in my case.

Sincerely,



Raja Shehadi,
For 174-1094 Ontario Limited.
Telephone: 321-698-2043
Email: reshehadi@yahoo.com
Current Mailing Address: PO Box 903, Temple Texas 76503, USA

***Rood Engineering Inc.***

***Consulting Engineers***

June 10th, 2019

Mayor and Municipal Council
Corporation of the Town of Essex
33 Talbot Street South
Essex, Ontario
N8M 1A8

Mayor Snively and Members of Council:

**WEST TOWNLINE DRAIN**
**Bridge for Union Gas (Part of Lot 1, Concession 3) and**
**Updated Maintenance Schedule of Assessment**
**Geographic Twp. of Colchester South**
***Project REI2016D061***
**Town of Essex, County of Essex**

Town administration has received a letter dated May 28, 2019 from Raja Shehadi regarding his parcel 750-03000 that belongs to 1741094 Ontario Limited. Mr. Shehadi expresses concerns with the assessed values shown in the Maintenance Schedule of Assessment included in our April 26th, 2019 report that was submitted to the Town and the affected area that was shown.

With regards to the objection regarding the affected area, we note that lands in this area of the Town of Essex and the County of Essex in general, tend to slope from northeast downwards in a southwesterly direction. This is indicated by the direction of the drains in the area and contour shading that is available through the online mapping. The natural contour of the lands suggests that all of the Parcel 750-03000 drainage will flow towards the West Townline Drain. The March 11th, 2019 roll information from the Town indicates that the parcel has a current total area of 98.36 acres, as shown in our drainage report schedule. This corresponds to 39.804 hectares. A review of the 1985 report by N.J. Peralta with updated maintenance schedule indicates 39.26 hectares affected, which appears to be the entire parcel and is essentially the same as our value shown with a minor update in the area having been established. We find that the 1958 drainage report by Armstrong showed all 97 acres of the parcel as being assessed, which calculates as 39.255 hectares. Based on same, we find that there is no apparent reason to amend the affected area of the parcel.

The following notes in quotes and italics are the comments extracted from the Shehadi letter and our response to each is provided immediately following same for consideration by the owner and the Town.

1. *Item 1: "Comparing the presented assessed value schedules in your notice with the map in APPENDIX "REI-E," we note that the closer a property is to the WTD drain, the higher is the assessed "Total Value" per affected acre. The further away the property is from the WTD, the lower is the assessed value per affected acre."*
   Response: this is typical for Drainage Act assessments.
2. *Item 2: "The affected acres on my property at 750-03000 extend eastward away from the WTD. Their contiguity to the WTD corresponds fairly well to three farms across the Third Concession Road. Namely, the following properties: 750-03200,*

*750-01500, and 750-01900, listed from further to more proximal to the WTD"* Response: The entire Shehadi parcel 750-0300 that belongs to 1741094 Ontario Limited has direct access to the West Townline Drain. Parcels 750-03200 and 750-01500 have no direct access to the drain. They have some use of the Pigeon Drain and south portions of these parcels will flow southwesterly to get to the West Townline Drain, well downstream of the Shehadi parcel outlet to the West Townline Drain.

3. *Item 3: "These three farms across the Third Concession Road carry different assessed value liability per affected acre that corresponds to their contiguity to the WTD"* Response: The values shown for these three farms reflect the past drainage reports on the drain and follow Section 34 of the Drainage Act that requires prior assessments to be taken into consideration.
4. Item 4: "Similarly, the affected acres of my property at 750-3000 should carry assessed values that are similar to the corresponding affected acres of the above-named properties across the Third Concession Road." Response: This is not a correct assumption by Mr. Shehadi. Two of the parcels he refers to have no direct access to the West Townline Drain. Their discharge is also further downstream along the drain than the flows from the Shehadi parcel. Lands in closer proximity of the drain and directly abutting it are assessed a higher Benefit rate per acre than lands that are more remote. Likewise, lands that enter the drain further upstream have higher Outlet Liability rates per acre than lands that are further downstream and use less of the overall length of the drain. This basis of assessment is standard practice pursuant to the Drainage Act, and it is therefore incorrect to compare assessment rates for lands that are not positioned the same along the drain and do not outlet flows at the same point along the drain.
5. Items 5, 6, 7, and 8: in the Shehadi letter that is attached in **Appendix "REI-A"** of this report, he attempts to correlate his lands on the north side of the Third Concession Road to the lands on the south side of the road using tables and direct comparisons. As noted above, such a direct comparison of lands that are located along different sections of the West Townline Drain is not in accordance with the Drainage Act requirements. Rates for Benefit assessment are higher for lands that directly abut a municipal drain and have the ability to take all their flows directly to the drain. Furthermore, rates are higher for Outlet Liability if a parcel is located further upstream and has its flow utilizing more of the drain length to get to a sufficient outlet.
6. *Item 9: "From your listed schedules of values, the total value that is assessed to my property at 750-03000 is 405. This figure is grossly over estimated. From the table above we see that the total value ought to be 355 when compared with neighbors with similar outlay of their properties. This is if we consider that all of the acres of this farm are "affected acres.""* Response: When consideration is given to the entire Shehadi parcel being located directly adjacent to the West Townline Drain and having its flows enter the drain upstream of the lands on the south side of the road that he is trying to compare his assessments to, the total value of $405.00 shown in our drainage report assessment schedule versus his calculated value of $355.00 appears to be correct and fair.
7. *Item 10:* "I am also contesting the unnatural perfect stepwise distribution of the watershed area of the WTD as presented in your map. This is clearly intended to include all of the acres of my property as "affected acres," while my neighbors to the east and north have only portions of their farms included as "affected acres." We know for fact that the eastern 40% of 750-0300 including the pond and beyond is not tiled and the rest of the farm is poorly tiled with very old clay tiles most of which are not currently functioning. I am requesting that at least 30 acres of the northeastern portion of my farm 75-03000 be not

considered as affected acres. I am requesting that the total "affected acres" of my property be reduced to no more than 98.36 -30 = 68.36 acres." Response: As noted on the plan, the watershed line is approximate. It was set to encompass the past affected areas of each parcel and reflects the current practice of organized drainage systems and patterns. If information is provided to us that is more accurate for the boundary, the line can be adjusted, but the affected areas will remain as per the past drainage reports unless valid information is provided on changes to the drainage in the area. The 30 acres at the northeast corner of the Shehadi parcel are not assessed to any other drainage system that we are aware of. All lands within the topographic watershed need to be assessed for drainage and cannot be excluded. Drainage assessments consider both subsurface and surface flows, particularly during frozen ground conditions, and the contouring in this area and past assessments indicate that the flows from the 30 acres go to the West Townline Drain for their outlet. Municipal drains provide outlets for the affected lands. Having that outlet is a benefit to the lands and gives the lands the opportunity to use the drain for enhancing their drainage of the lands. Regardless of whether the owner chooses to repair or enhance his tile or surface drainage, the benefit to the parcel is there to use at any time and the lands need to be assessed for their ability to have enhanced drainage and productivity, in accordance with standard assessment practice pursuant to the Drainage Act. Therefore we cannot recommend any adjustment to the affected area of the Shehadi parcel.

We trust that the information provided addresses all of the matters and concerns that were mentioned by Mr. Shehadi. Should there be any further questions or concerns, they can be provided to us and we will do our best to address them. Clarification can also be provided at the Consideration meeting and Court of Revision meeting for the drainage report if needed.

All of which is respectfully submitted.

***R**ood **E**ngineering **I**nc.*

Gerard Rood

Gerard Rood, P.Eng.

att.

***ROOD ENGINEERING INC.***
Consulting Engineers
9 Nelson street
LEAMINGTON, Ontario N8H 1G6

# APPENDIX “REI-A”

Robert W Auger, Clerk, Town of Essex
(519) 776-7336 x1132;
rauger@essex.ca

Chris Nepczy, supervisor,
(519) 776-7336 x1114
cnepczy@essex.ca

Norman Nussio, Drainage Superintendent,
(519) 776-7336 x1405
nnussio@essex.ca

This is an objection regarding your assessment of the “total value” and the “affected acres” that are assigned to the property with tax roll number 750-03000 belonging to 1741094 Ontario Limited.

In regards to your notice dated May 7, 2019, West Townline Drain (WTD):

> “New Bridge for Union Gas (Part Lot 1, Con. 3} and
> Updated Maintenance Schedule of Assessment.”

May 28, 2019

Dear Sirs,

In this letter I am objecting and contesting the inconsistencies that are presented in your schedule of value liability (Total Value = value of benefit + value of outlet liability) that are assigned to my property tax roll number 750-03000, that belongs to 1741094 Ontario Limited corporation. I am also objecting and contesting to calculated “affected area” of the same farm that are included within the watershed area of the WTD.

To prove the inconsistencies in the presented schedules of the said notice, I have considered the neighboring properties and compared the “Total Value” that is assessed against these properties with mine. It is quite clear that my property is unfairly assessed at a higher value than my neighbors.

Please note the following points:

1. Comparing the presented assessed value schedules in your notice with the map in APPENDIX "REI-E," we note that the closer a property is to the WTD drain, the higher is the assessed “Total Value” per affected acre. The further away the property is from the WTD, the lower is the assessed value per affected acre.

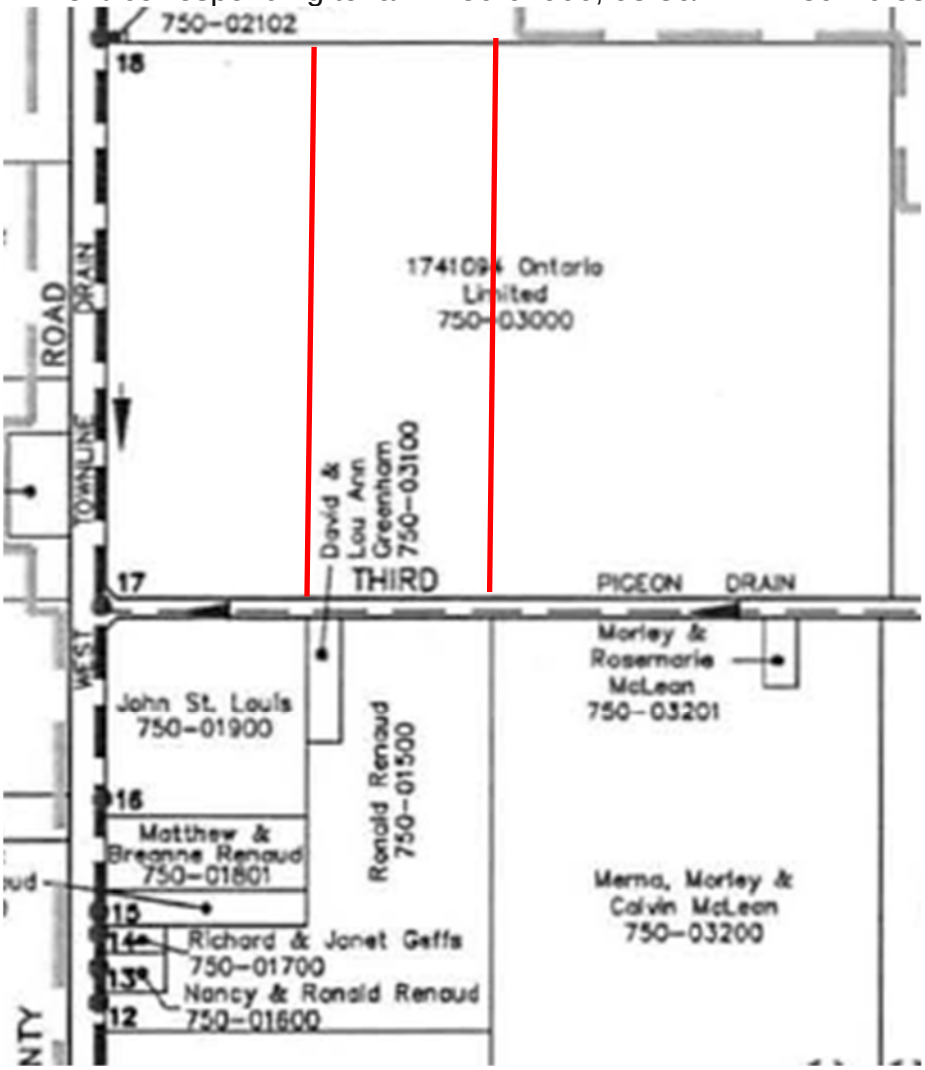
2. The affected acres on my property at 750-03000 extend eastward away from the WTD. Their contiguity to the WTD corresponds fairly well to three farms across the

Third Concession Road. Namely, the following properties: 750-03200, 750-01500, and 750-01900, listed from further to more proximal to the WTD.

3. These three farms across the Third Concession Road carry different assessed value liability per affected acre that corresponds to their contiguity to the WTD.

4. Similarly, the affected acres of my property at 750-3000 should carry assessed values that are similar to the corresponding affected acres of the above-named properties across the Third Concession Road.

5. Please consider the following map from APPENDIX "REI-E". If you extend the property lines of the above-mentioned three farms northward into the 750-03000 property, you can see that they divide this property into three sections that are roughly about:
    a. ~50% corresponding to farm 750-03200; 98.36/2 = 49.18 Acres.
    b. ~25% corresponding to farm 750-01500; 98.36/4 = 24.59 Acres.
    c. ~25% corresponding to farm 750-01900; 98.36/4 = 24.59 Acres.



6. The percentages above are fair enough as they also correspond to the County of Essex Interactive mapping at http://maps.countyofessex.on.ca/?viewer=http%3A%2F%2Fgisweb.countyofessex.ca%2Fhtmlcounty2101%2FIndex.html%3FconfigBase%3Dhttp%3A%2F%2Fgisweb.countyofessex.ca%2FGeocortex%2FEssentials%2FCounty%2FREST%2Fsites%2FCounty_of_Essex__Public%2Fviewers%2Fhtmlpublic%2Fvirtualdirectory%2FResources%2FConfig%2FDefault%26extent%3D313436.05%2C4695451.23%2C395580.67%2C4640491.63&image.x=45&image.y=20

7. Please consider the following table that compares my property 750-03000 with the above-mentioned neighboring properties across the Third Concession Road that drain into the West Townline Drain (WTD). The values are obtained from the schedules in your notice.

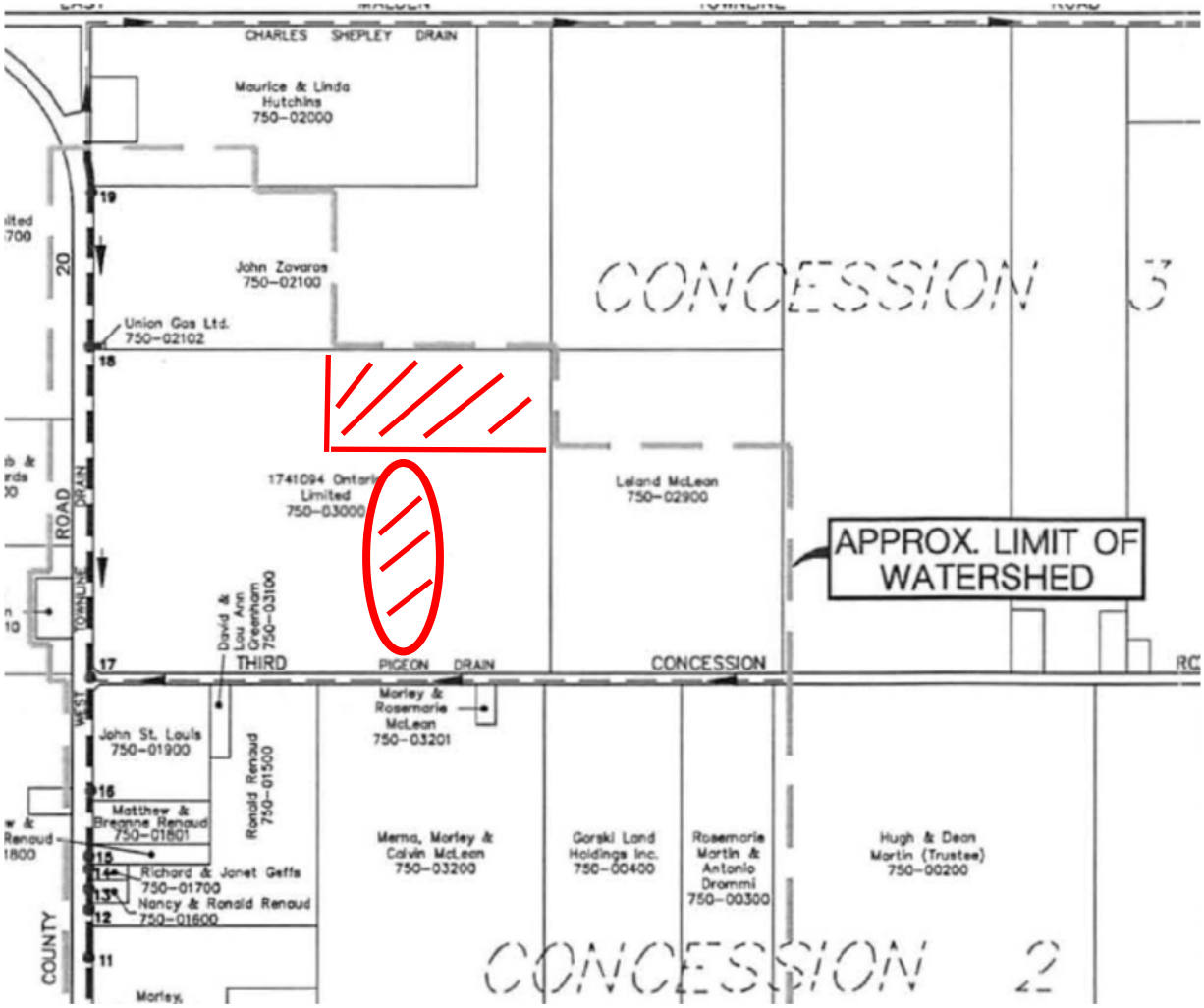
| Property Tax Roll Number | Affected Acreage | Total Value | Value per Affected Acre | Comment |
|---|---|---|---|---|
| 750-03000 | 98.36 | 405 | 4.12 | |
| | | | | |
| 750-03200 | 50.60 | 144 | 2.85 | This property corresponds to ~50% of the acres on the property 750-03000 |
| 750-01500 | 20.39 | 102 | 5.00 Adjusted to 3.87 | This property corresponds to ~25% of the acres on the property 750-03000. However, the assessed value cannot be a fair comparison to the corresponding acres on 750-03000, because the southern part of this property drains directly into the WTD. Because it lays between 750-03200 and 750-1900, its northern portion that corresponds to ~25% of my property may be assigned an average value between its surrounding properties, namely 750-03200 and 750-01900. That is: 2.85 + 4.89 = 7.74. Dividing by 2 we obtain an adjusted value of 3.87 per affected acre for the northern portion of this property that properly corresponds to the ~25% of my property. |
| 750-01900 | 9.20 | 45 | 4.89 | This property corresponds to ~25% of the acres on the property 750-03000 |

8. Apportioning the affected acres of 750-03000 to the corresponding properties across the third concession, we obtain the following table of values:

| Corresponding Tax Roll Number | Percentage of 750-03000 | Affected Acreage of 750-03000 | Corresponding value per acre from the table above | Product of last two columns in $ |
|---|---|---|---|---|
| 750-03000 | Total | 98.36 | | |
| | | | | |
| 750-03200 | ~50% | 49.18 | 2.85 | 140.16 |
| 750-01500 | ~25% | 24.59 | 3.87 | 95.16 |
| 750-01900 | ~25% | 24.59 | 4.89 | 120.25 |
| | | | | |
| | | | | 355.57 |

9. From your listed schedules of values, the total value that is assessed to my property at 750-03000 is 405. This figure is grossly over estimated. From the table above we see that the total value ought to be 355 when compared with neighbors with similar outlay of their properties. This is if we consider that all of the acres of this farm are “affected acres.”

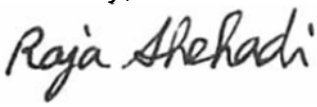
10. I am also contesting the unnatural perfect stepwise distribution of the watershed area of the WTD as presented in your map. This is clearly intended to include all of the acres of my property as “affected acres,” while my neighbors to the east and north have only portions of their farms included as “affected acres.” We know for fact that the eastern 40% of 750-0300 including the pond and beyond is not tiled and the rest of the farm is poorly tiled with very old clay tiles most of which are not currently functioning. I am requesting that at least 30 acres of the north-eastern portion of my farm 75-03000 be not considered as affected acres. I am requesting that the total “affected acres” of my property be reduced to no more than 98.36 -30 = 68.36 acres.



11. I am requesting that you would kindly:
    a. Reduce the total number of “affected acres” on my property 750-03000 from 98.36 to no more than 68.36 acres.
    b. Reduce my assessed values by the corresponding amounts to fairly match the above-named properties across the Third Concession Road.
    c. Explain clearly and in detail how you calculated the benefit and outlet values that sum up to the total value of 405 for my property at 750-03000.

Please let me know if there are any special forms that I ought to fill for objecting and contesting this evaluation and list for me the steps that I have to take in my grievance to achieve a fair ruling in my case.

Sincerely,



Raja Shehadi,
For 174-1094 Ontario Limited.
Telephone: 321-698-2043
Email: reshehadi@yahoo.com
Current Mailing Address: PO Box 903, Temple Texas 76503, USA

## Raja

**From:** Raja Shehadi <reshehadi@gmail.com>
**Sent:** Tuesday, June 11, 2019 5:32 AM
**To:** lsnively@essex.ca; rauger@essex.ca; cnepczy@essex.ca; nnussio@essex.ca; ttuzlova@essex.ca
**Cc:** gerard@roodengineering.ca; karlgmelinz@cogeco.net
**Subject:** Objection to Engineer's Report for the WTD
**Attachments:** 2019.06.10, WTD, SHEHADI RESPONSE TO ROOD.pdf; EXHIBIT A, ELEVATION MAP_GOOGLE EARTH.pdf; EXHIBIT B, 210405, Pigeon Drain.pdf

June 11, 2019
To Mayor Snively, Mr. Auger, Mr. Nepczy, Mr. Nussio, and members of the council,
-
This is in reference to my letter to you dated May 28, 2019 and Mr. Rood's response dated June 10, 2019. I have included my comments in the highlighted texts. My comments will show if you pass the mouse over the highlighted text.
-
The idea of including the whole farm 750-03000 as draining directly into the West Townline Drain (WTD) is incorrect. Portions of this farm drain into the Pigeon Drain (Exhibit B). The most important question that I request an answer to is, how the engineer arrived to the figures listed in his schedule of assessments? What is the basis of his calculations? There must be a mathematical formula and basis for these value assessments, otherwise, these figures in the report are incorrect and corrupt.
In his response, Mr. Rood never attempted to explain how he arrived at the outlet and benefit values that he has assessed to my property 750-03000, and he bluntly rejected any comparison with neighboring properties.
-
To use the argument that these numbers are based on prior Engineers' Reports is improper. There must be a basis for these calculations. Please understand and help us understand how the prior engineer arrived to these figures that you have copied and pasted into your report. These figures are not biblical truths and ought to be clearly explained, otherwise, contested and changed. Mr. Rood quotes older reports like he is quoting the Bible. He may come up with his own figures that he can explain.
-
To reject the idea of comparison with adjacent similar properties and to have no basis that you can explain regarding the numbers that you have assigned to my property, makes grounds for discrimination, and hides incompetence.
Sincerely,
Raja Shehadi
Attachments:
Response to Mr. Roods letter of 06/10/2019 and
EXHIBIT A, ELEVATION MAP_GOOGLE EARTH
EXHIBIT B, 210405, Pigeon Drain

**Rood Engineering Inc.**

June 10th, 2019

Mayor and Municipal Council
Corporation of the Town of Essex
33 Talbot Street South
Essex, Ontario
N8M 1A8

Mayor Snively and Members of Co

**WEST TOWNLINE DRAIN**
**Bridge for Union Gas (Part of Lot**
**Updated Maintenance Schedule o**
**Geographic Twp. of Colchester So**
***Project REI2016D061***
**Town of Essex, County of Essex**

June 11, 2019
To Mayor Snively, Mr. Auger, Mr. Nepczy, Mr. Nussio, and members of the council,
-
This is in reference to my letter to you dated May 28, 2019 and Mr. Rood's response dated June 10, 2019. I have included my comments in the highlighted texts. My comments will show if you pass the mouse over the highlighted text.
-
The idea of including the whole farm 750-03000 as draining directly into the West Townline Drain (WTD) is incorrect. Portions of this farm drain into the Pigeon Drain (Exhibit B). The most important question that I request an answer to is, how the engineer arrived to the figures listed in his schedule of assessments? What is the basis of his calculations? There must be a mathematical formula and basis for these value assessments, otherwise, these figures in the report are incorrect and corrupt. In his response, Mr. Rood never attempted to explain how he arrived at the outlet and benefit values that he has assessed to my property 750-03000, and he bluntly rejected any comparison with neighboring properties.
-
To use the argument that these numbers are based on prior Engineers' Reports is improper. There must be a basis for these calculations. Please understand and help us understand how the prior engineer arrived to these figures that you have copied and pasted into your report. These figures are not biblical truths and ought to be clearly explained, otherwise, contested and changed. Mr. Rood quotes older reports like he is quoting the Bible. He may come up with his own figures that he can explain.
-
To reject the idea of comparison with adjacent similar properties and to have no basis that you can explain regarding the numbers that you have assigned to my property, makes grounds for discrimination, and hides incompetence.
Sincerely,
Raja Shehadi
Attachments:
1. EXHIBIT A, ELEVATION MAP_GOOGLE EARTH
2. EXHIBIT B, 210405, Pigeon Drain

Town administration has received a letter dated May 28, 2019 from Raja Shehadi regarding his parcel 750-03000 that belongs to 1741094 Ontario Limited. Mr. Shehadi expresses concerns with the assessed values shown in the Maintenance Schedule of Assessment included in our April 26th, 2019 report that was submitted to the Town and the affected area that was shown.

With regards to the objection regarding the affected area, we note that lands in this area of the Town of Essex and the County of Essex in general, tend to slope from northeast downwards in a southwesterly direction. This is indicated by the direction of the drains in the area and contour shading that is available through the online mapping. The natural contour of the lands suggests that all of the Parcel 750-03000 drainage will flow towards the West Townline Drain. The March 11th, 2019 roll information from the Town indicates that the parcel has a current total area of 98.36 acres, as shown in our drainage report schedule. This corresponds to 39.804 hectares. A review of the 1985 report by N.J. Peralta with updated maintenance schedule indicates 39.26 hectares affected, which appears to be the entire parcel and is essentially the same as our value shown with a minor update in the area having been established. We find that the 1958 drainage report by Armstrong showed all 97 acres of the parcel as being assessed, which calculates as 39.255 hectares. Based on same, we find that there is no apparent reason to amend the affected area of the parcel.

The following notes in quotes and italics are the comments extracted from the Shehadi letter and our response to each is provided immediately following same for consideration by the owner and the Town.

1. *Item 1: "Comparing the presented assessed value schedules in your notice with the map in APPENDIX "REI-E," we note that the closer a property is to the WTD drain, the higher is the assessed "Total Value" per affected acre. The further away the property is from the WTD, the lower is the assessed value per affected acre."*
   Response: this is typical for Drainage Act assessments.
2. *Item 2: "The affected acres on my property at 750-03000 extend eastward away from the WTD. Their contiguity to the WTD corresponds fairly well to three farms across the Third Concession Road. Namely, the following properties: 750-03200,*

*750-01500, and 750-01900, listed from further to more proximal to the WTD"* Response: The entire Shehadi parcel 750-0300 that belongs to 1741094 Ontario Limited has direct access to the West Townline Drain. Parcels 750-03200 and 750-01500 have no direct access to the drain. They have some use of the Pigeon Drain and south portions of these parcels will flow southwesterly to get to the West Townline Drain, well downstream of the Shehadi parcel outlet to the West Townline Drain.

3. *Item 3: "These three farms across the Third Concession Road carry different assessed value liability per affected acre that corresponds to their contiguity to the WTD"* Response: The values shown for these three farms reflect the past drainage reports on the drain and follow Section 34 of the Drainage Act that requires prior assessments to be taken into consideration.
4. Item 4: "Similarly, the affected acres of my property at 750-3000 should carry assessed values that are similar to the corresponding affected acres of the above-named properties across the Third Concession Road." Response: This is not a correct assumption by Mr. Shehadi. Two of the parcels he refers to have no direct access to the West Townline Drain. Their discharge is also further downstream along the drain than the flows from the Shehadi parcel. Lands in closer proximity of the drain and directly abutting it are assessed a higher Benefit rate per acre than lands that are more remote. Likewise, lands that enter the drain further upstream have higher Outlet Liability rates per acre than lands that are further downstream and use less of the overall length of the drain. This basis of assessment is standard practice pursuant to the Drainage Act, and it is therefore incorrect to compare assessment rates for lands that are not positioned the same along the drain and do not outlet flows at the same point along the drain.
5. Items 5, 6, 7, and 8: in the Shehadi letter that is attached in **Appendix "REI-A"** of this report, he attempts to correlate his lands on the north side of the Third Concession Road to the lands on the south side of the road using tables and direct comparisons. As noted above, such a direct comparison of lands that are located along different sections of the West Townline Drain is not in accordance with the Drainage Act requirements. Rates for Benefit assessment are higher for lands that directly abut a municipal drain and have the ability to take all their flows directly to the drain. Furthermore, rates are higher for Outlet Liability if a parcel is located further upstream and has its flow utilizing more of the drain length to get to a sufficient outlet.
6. *Item 9: "From your listed schedules of values, the total value that is assessed to my property at 750-03000 is 405. This figure is grossly over estimated. From the table above we see that the total value ought to be 355 when compared with neighbors with similar outlay of their properties. This is if we consider that all of the acres of this farm are "affected acres.""* Response: When consideration is given to the entire Shehadi parcel being located directly adjacent to the West Townline Drain and having its flows enter the drain upstream of the lands on the south side of the road that he is trying to compare his assessments to, the total value of $405.00 shown in our drainage report assessment schedule versus his calculated value of $355.00 appears to be correct and fair.
7. *Item 10:* "I am also contesting the unnatural perfect stepwise distribution of the watershed area of the WTD as presented in your map. This is clearly intended to include all of the acres of my property as "affected acres," while my neighbors to the east and north have only portions of their farms included as "affected acres." We know for fact that the eastern 40% of 750-0300 including the pond and beyond is not tiled and the rest of the farm is poorly tiled with very old clay tiles most of which are not currently functioning. I am requesting that at least 30 acres of the northeastern portion of my farm 75-03000 be not

considered as affected acres. I am requesting that the total "affected acres" of my property be reduced to no more than 98.36 -30 = 68.36 acres." Response: As noted on the plan, the watershed line is approximate. It was set to encompass the past affected areas of each parcel and reflects the current practice of organized drainage systems and patterns. If information is provided to us that is more accurate for the boundary, the line can be adjusted, but the affected areas will remain as per the past drainage reports unless valid information is provided on changes to the drainage in the area. The 30 acres at the northeast corner of the Shehadi parcel are not assessed to any other drainage system that we are aware of. All lands within the topographic watershed need to be assessed for drainage and cannot be excluded. Drainage assessments consider both subsurface and surface flows, particularly during frozen ground conditions, and the contouring in this area and past assessments indicate that the flows from the 30 acres go to the West Townline Drain for their outlet. Municipal drains provide outlets for the affected lands. Having that outlet is a benefit to the lands and gives the lands the opportunity to use the drain for enhancing their drainage of the lands. Regardless of whether the owner chooses to repair or enhance his tile or surface drainage, the benefit to the parcel is there to use at any time and the lands need to be assessed for their ability to have enhanced drainage and productivity, in accordance with standard assessment practice pursuant to the Drainage Act. Therefore we cannot recommend any adjustment to the affected area of the Shehadi parcel.

We trust that the information provided addresses all of the matters and concerns that were mentioned by Mr. Shehadi. Should there be any further questions or concerns, they can be provided to us and we will do our best to address them. Clarification can also be provided at the Consideration meeting and Court of Revision meeting for the drainage report if needed.

All of which is respectfully submitted.

***R**ood **E**ngineering **I**nc.*

Gerard Rood

Gerard Rood, P.Eng.

att.

***ROOD ENGINEERING INC.***
Consulting Engineers
9 Nelson street
LEAMINGTON, Ontario N8H 1G6

# APPENDIX “REI-A”

Robert W Auger, Clerk, Town of Essex
(519) 776-7336 x1132;
rauger@essex.ca

Chris Nepczy, supervisor,
(519) 776-7336 x1114
cnepczy@essex.ca

Norman Nussio, Drainage Superintendent,
(519) 776-7336 x1405
nnussio@essex.ca

This is an objection regarding your assessment of the “total value” and the “affected acres” that are assigned to the property with tax roll number 750-03000 belonging to 1741094 Ontario Limited.

In regards to your notice dated May 7, 2019, West Townline Drain (WTD):

> “New Bridge for Union Gas (Part Lot 1, Con. 3} and
> Updated Maintenance Schedule of Assessment.”

May 28, 2019

Dear Sirs,

In this letter I am objecting and contesting the inconsistencies that are presented in your schedule of value liability (Total Value = value of benefit + value of outlet liability) that are assigned to my property tax roll number 750-03000, that belongs to 1741094 Ontario Limited corporation. I am also objecting and contesting to calculated “affected area” of the same farm that are included within the watershed area of the WTD.

To prove the inconsistencies in the presented schedules of the said notice, I have considered the neighboring properties and compared the “Total Value” that is assessed against these properties with mine. It is quite clear that my property is unfairly assessed at a higher value than my neighbors.

Please note the following points:

1. Comparing the presented assessed value schedules in your notice with the map in APPENDIX "REI-E," we note that the closer a property is to the WTD drain, the higher is the assessed “Total Value” per affected acre. The further away the property is from the WTD, the lower is the assessed value per affected acre.

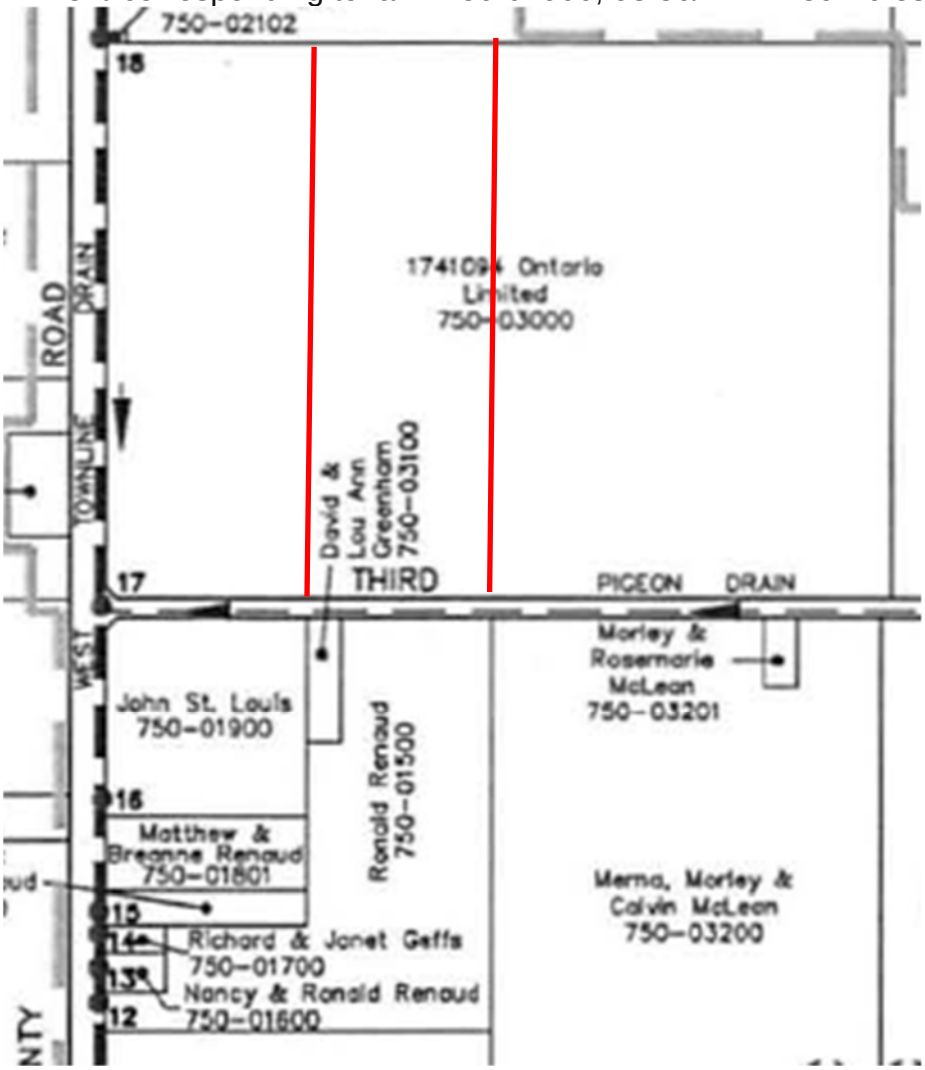
2. The affected acres on my property at 750-03000 extend eastward away from the WTD. Their contiguity to the WTD corresponds fairly well to three farms across the

Third Concession Road. Namely, the following properties: 750-03200, 750-01500, and 750-01900, listed from further to more proximal to the WTD.

3. These three farms across the Third Concession Road carry different assessed value liability per affected acre that corresponds to their contiguity to the WTD.

4. Similarly, the affected acres of my property at 750-3000 should carry assessed values that are similar to the corresponding affected acres of the above-named properties across the Third Concession Road.

5. Please consider the following map from APPENDIX "REI-E". If you extend the property lines of the above-mentioned three farms northward into the 750-03000 property, you can see that they divide this property into three sections that are roughly about:
    a. ~50% corresponding to farm 750-03200; 98.36/2 = 49.18 Acres.
    b. ~25% corresponding to farm 750-01500; 98.36/4 = 24.59 Acres.
    c. ~25% corresponding to farm 750-01900; 98.36/4 = 24.59 Acres.



6. The percentages above are fair enough as they also correspond to the County of Essex Interactive mapping at http://maps.countyofessex.on.ca/?viewer=http%3A%2F%2Fgisweb.countyofessex.ca%2Fhtmlcounty2101%2FIndex.html%3FconfigBase%3Dhttp%3A%2F%2Fgisweb.countyofessex.ca%2FGeocortex%2FEssentials%2FCounty%2FREST%2Fsites%2FCounty_of_Essex__Public%2Fviewers%2Fhtmlpublic%2Fvirtualdirectory%2FResources%2FConfig%2FDefault%26extent%3D313436.05%2C4695451.23%2C395580.67%2C4640491.63&image.x=45&image.y=20

7. Please consider the following table that compares my property 750-03000 with the above-mentioned neighboring properties across the Third Concession Road that drain into the West Townline Drain (WTD). The values are obtained from the schedules in your notice.

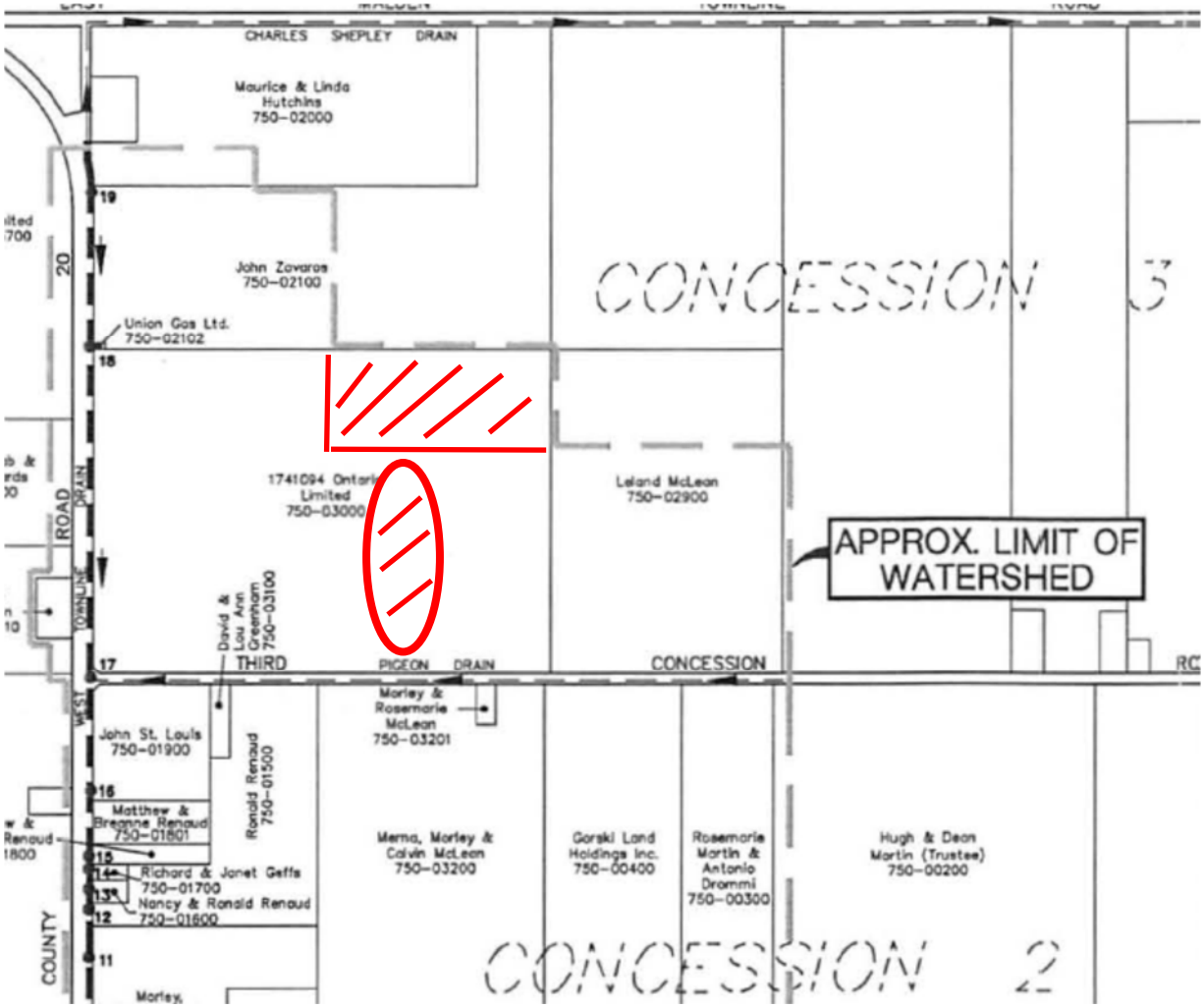
| Property Tax Roll Number | Affected Acreage | Total Value | Value per Affected Acre | Comment |
|---|---|---|---|---|
| 750-03000 | 98.36 | 405 | 4.12 | |
| | | | | |
| 750-03200 | 50.60 | 144 | 2.85 | This property corresponds to ~50% of the acres on the property 750-03000 |
| 750-01500 | 20.39 | 102 | 5.00 Adjusted to 3.87 | This property corresponds to ~25% of the acres on the property 750-03000. However, the assessed value cannot be a fair comparison to the corresponding acres on 750-03000, because the southern part of this property drains directly into the WTD. Because it lays between 750-03200 and 750-1900, its northern portion that corresponds to ~25% of my property may be assigned an average value between its surrounding properties, namely 750-03200 and 750-01900. That is: 2.85 + 4.89 = 7.74. Dividing by 2 we obtain an adjusted value of 3.87 per affected acre for the northern portion of this property that properly corresponds to the ~25% of my property. |
| 750-01900 | 9.20 | 45 | 4.89 | This property corresponds to ~25% of the acres on the property 750-03000 |

8. Apportioning the affected acres of 750-03000 to the corresponding properties across the third concession, we obtain the following table of values:

| Corresponding Tax Roll Number | Percentage of 750-03000 | Affected Acreage of 750-03000 | Corresponding value per acre from the table above | Product of last two columns in $ |
|---|---|---|---|---|
| 750-03000 | Total | 98.36 | | |
| | | | | |
| 750-03200 | ~50% | 49.18 | 2.85 | 140.16 |
| 750-01500 | ~25% | 24.59 | 3.87 | 95.16 |
| 750-01900 | ~25% | 24.59 | 4.89 | 120.25 |
| | | | | |
| | | | | 355.57 |

9. From your listed schedules of values, the total value that is assessed to my property at 750-03000 is 405. This figure is grossly over estimated. From the table above we see that the total value ought to be 355 when compared with neighbors with similar outlay of their properties. This is if we consider that all of the acres of this farm are “affected acres.”

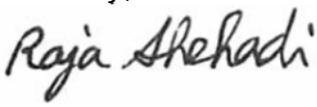
10. I am also contesting the unnatural perfect stepwise distribution of the watershed area of the WTD as presented in your map. This is clearly intended to include all of the acres of my property as “affected acres,” while my neighbors to the east and north have only portions of their farms included as “affected acres.” We know for fact that the eastern 40% of 750-0300 including the pond and beyond is not tiled and the rest of the farm is poorly tiled with very old clay tiles most of which are not currently functioning. I am requesting that at least 30 acres of the north-eastern portion of my farm 75-03000 be not considered as affected acres. I am requesting that the total “affected acres” of my property be reduced to no more than 98.36 -30 = 68.36 acres.



11. I am requesting that you would kindly:
    a. Reduce the total number of “affected acres” on my property 750-03000 from 98.36 to no more than 68.36 acres.
    b. Reduce my assessed values by the corresponding amounts to fairly match the above-named properties across the Third Concession Road.
    c. Explain clearly and in detail how you calculated the benefit and outlet values that sum up to the total value of 405 for my property at 750-03000.

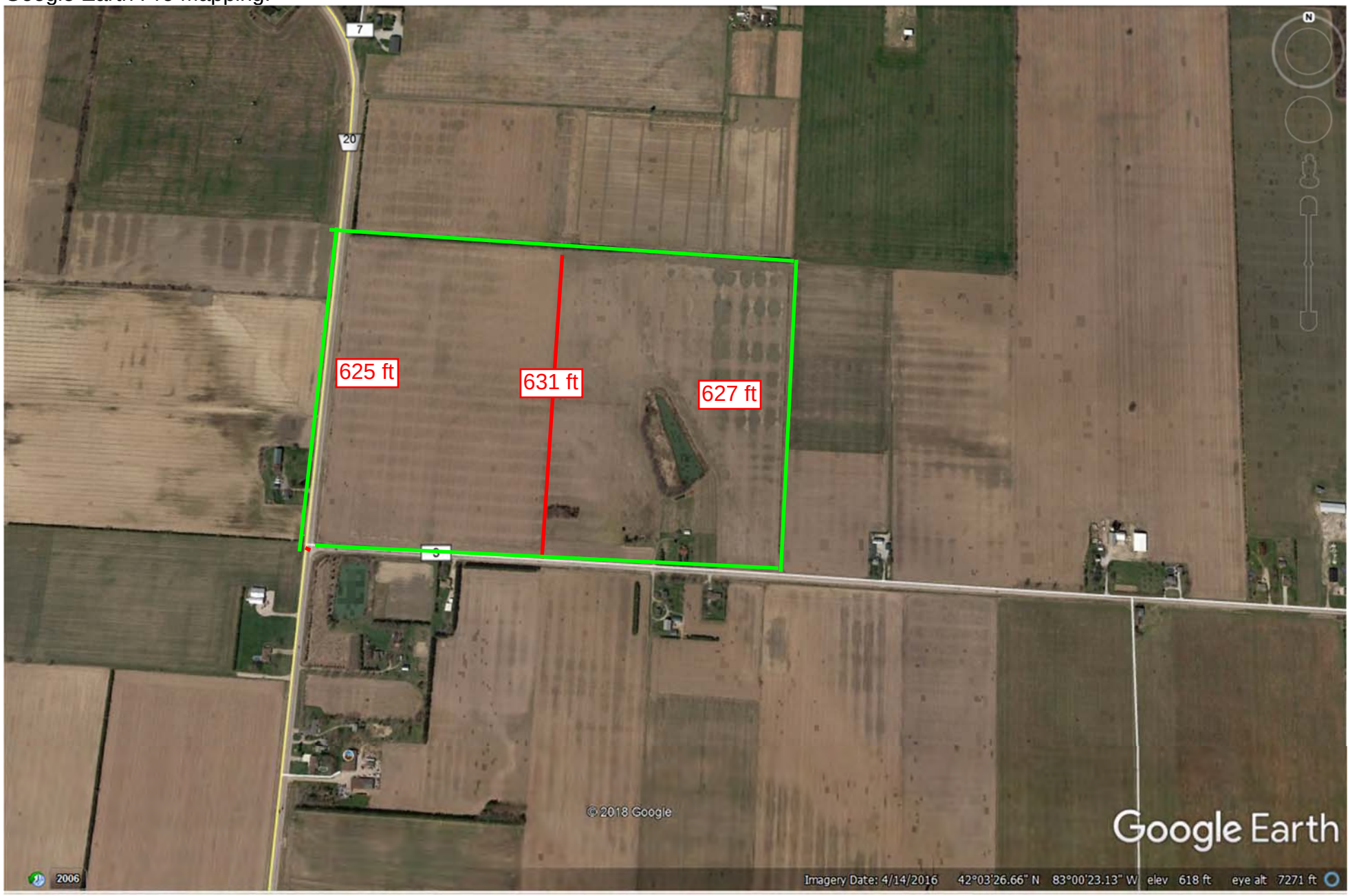
Please let me know if there are any special forms that I ought to fill for objecting and contesting this evaluation and list for me the steps that I have to take in my grievance to achieve a fair ruling in my case.

Sincerely,



Raja Shehadi,
For 174-1094 Ontario Limited.
Telephone: 321-698-2043
Email: reshehadi@yahoo.com
Current Mailing Address: PO Box 903, Temple Texas 76503, USA

Google Earth Pro Mapping:



13) 210405-4p

TOWNSHIP OF COLCHESTER SOUTH

BY-LAW NUMBER 1700

BEING a by-law of the Corporation of the Township of Colchester South to provide for the repair and improvement of the Pigeon Drain in the Township of Colchester South in accordance with the provisions of Section 74 of the Drainage Act R.S.O. 1980.

WHEREAS the Council of the Corporation of the Township of Colchester South has received a complaint from several assessed owners in the drainage area that the said Pigeon Drain is in need of improvement and repair;

AND WHEREAS the Council of the Township of Colchester South has procured a report made by Nick J. Peralta Engineering and the report is attached to and forms a part of this by-law;

AND WHEREAS the council of the Township of Colchester South is of the opinion that the repair and improvement of the Pigeon Drain is desirable;

THEREFORE the Council of the Township of Colchester South pursuant to The Drainage Act, 1980, R.S.O. Chapter 126, enacts as follows:

1. The Report dated October 17, 1984, and attached hereto is hereby adopted and the repair and improvement of the Drainage works as therein adopted and set forth is hereby authorized and shall be completed in accordance therewith.

2. (1) The Corporation of the Township of Colchester South may borrow on the credit of the Corporation the amount of $10,700.00, being the amount necessary for the construction of the said drainage works.

   (2) The Corporation may issue debentures for the amount borrowed less the total amount of:

      (a) grants received under section 85 (a) of the Act;

      (b) commuted payments made in respect of lands and roads assessed within the municipality;

      (c) moneys paid under section 61 (3) of the Act.

   and such debentures shall be made payable within five years from the date of the debenture and shall bear interest at a rate not higher than the rate charged by The Ontario Municipal Improvement Corporation on the date of the sale of the debenture.

   (3) A special equal annual rate sufficient to redeem the principal and interest of the debentures shall be levied upon the lands and roads as set forth in the Schedule to be collected in the same manner and at the same time as other taxes are collected in each year for five years after the passing of this by-law.

   (4) All assessments of $50.00 or less are payable in the first year in which the assessment is imposed.

   (5) This by-law comes into force and effect on the passing thereof and may be cited as Pigeon Drain 1984.

READ a first and second time and provisionally adopted

this 18th day of December 1984

Nancy Baumgartner
REEVE

CLERK

READ a third time and adopted this of

REEVE

CLERK

Report - Pigeon Drain
Township of Colchester South - ED-84-013

INCIDENTALS

| | |
|---|---|
| Survey, report, estimate and specifications | $ 1,025.00 |
| Assistants and expenses, and drawings | 775.00 |
| Duplication costs of Plans & Report | 75.00 |
| O.M.B. Fee | 50.00 |
| Estimated Cost of Interim Financing | 400.00 |
| Estimated Cost of Letting Contract | 250.00 |
| Estimated Cost of Re-Staking (if necessary) | 275.00 |
| Contigency Allowance | 300.00 |
| TOTAL FOR INCIDENTALS | $ 3,150.00 |
| TOTAL FOR CONSTRUCTION (Brought Forward) | 6,050.00 |
| TOTAL ESTIMATE | $ 9,200.00 |

This amount I have assessed against the lands and road affected in accordance with the accompanying Schedule of Assessment.

I would recommend that this drainage work be kept up and maintained at the expense of the lands and road herein assessed for it's repair and improvement and in the proportions herein contained, excluding the assessment amounts shown as Special Benefit, or until otherwise determined under the provisions of "The Drainage Act, 1975".

All of which is respectfully submitted.

Nick J. Peralta

Nick J. Peralta, P. Eng.

NICK J. PERALTA ENGINEERING
Consulting Engineers
1502 Kenyon Pt. Road
KINGSVILLE, Ontario
N9Y 3N4

REGISTERED PROFESSIONAL ENGINEER
N. J. PERALTA
PROVINCE OF ONTARIO

## SCHEDULE OF ASSESSMENT

## PIDGEON DRAIN

## TOWNSHIP OF COLCHESTER SOUTH

| Con. or Plan No. | Lot or Part of Lot | Tax Roll No. | Owner's Name | Hectares Afft'd | Value of Benefit | Value of Outlet | Value of Special Benefit | TOTAL VALUE |
|---|---|---|---|---|---|---|---|---|
| Con. 2 | Pt. N. Pt. Lot 1 | 15-019 | Ray Church & Maureen Root | * 0.81 | $ 128.00 | $ 28.00 | $ 550.00 | $ 706.00 |
| " | Pt. N. Pt. Lot 1 | 15-031 | David & Lou Ann Greenham | 0.35 | 112.00 | 43.00 | | 155.00 |
| " | Pt. N. Pt. Lot 1 | 15-015 | Ronald Renaud | * 3.64 | 361.00 | 162.00 | | 523.00 |
| " | Pt. NE ¼ Lot 1 | 15-032 | Ray & Merna McLean | * 3.04 | 301.00 | 202.00 | | 503.00 |
| " | Pt. NE ¼ Lot 1 | 15-032-01 | Morley & Rosemarie McLean | 0.21 | 66.00 | 47.00 | | 113.00 |
| " | Pt. W. Pt. Lot 2 | 15-004 | Maria Arner | * 4.05 | 401.00 | 380.00 | | 781.00 |
| " | Pt. W. Pt. Lot 2 | 15-003 | Ina Richardson | * 7.49 | 594.00 | 767.00 | | 1,361.00 |
| " | Pt. Lot 2 & Lot 3 | 15-002 | Douglas Martin | * 5.67 | 449.00 | 658.00 | | 1,107.00 |
| Con. 3 | Pt. Lot 1 | 15-030 | Ivor Brush | * 4.65 | 277.00 | 254.00 | 75.00 | 606.00 |
| " | Pt. Lot 2 | 15-029 | Leland McLean | *11.94 | 710.00 | 1,142.00 | 75.00 | 1,927.00 |
| | TOTAL ON LANDS | | | | $ 3,399.00 | $ 3,683.00 | $ 700.00 | $ 7,782.00 |

Schedule of Assessment - Pidgeon Drain
Township of Colchester South - ED-84-013

| Con. or Plan No. | Lot or Part of Lot | Tax Roll No. | Owner's Name | Hectares Afft'd | Value of Benefit | Value of Outlet | Value of Special Benefit | TOTAL VALUE |
|---|---|---|---|---|---|---|---|---|
| | TOTAL ON LANDS (Brought Forward) | | | | $ 3,399.00 | $ 3,683.00 | $ 700.00 | $ 7,782.00 |
| | 3rd Concession Road | | Township of Colchester South | | $ 577.00 | $ 691.00 | $ 150.00 | $ 1,418.00 |
| | TOTAL ON ROADS | | | | $ 577.00 | $ 691.00 | $ 150.00 | $ 1,418.00 |
| | | | TOTAL ASSESSMENT | | $ 3,976.00 | $ 4,374.00 | $ 850.00 | $ 9,200.00 |

* Denotes lands used for agricultural purposes

File Reference No. ED-84-013

Revised November 26th, 1984

## Raja

**From:** Gerard Rood <gerard@roodengineering.ca>
**Sent:** Tuesday, June 11, 2019 9:31 AM
**To:** Raja Shehadi
**Cc:** lsnively@essex.ca; Robert W. Auger; cnepczy@essex.ca; Norman Nussio; Tanya Tuzlova; karlgmelinz@cogeco.net
**Subject:** Re: Objection to Engineer's Report for the WTD
**Attachments:** 2019-06-11 Essex Digital Elevation Model plan.pdf

Good morning Mr. Shehadi:

Further to your message below and the attachments that you provided, we offer the following responses and clarifications:

1. All of your farm drains into the West Townline Drain. We recognize that there are 4.65 hectares of the total 39.8 hectares of the farm that are assessed to the Pigeon Drain. This drain outlets directly to the West Townline Drain. The area to the Pigeon Drain is not significant as you have stated since it is only approximately 11.7% of the overall area and we believe that this was accounted for in the past drainage reports that were accepted by the owners at that time.
2. the maintenance schedule in our drainage report is based on a future estimated cost of $3,400.00. The actual cost of future maintenance to the drain will be pro-rated to the values shown in the report schedule
3. the new maintenance schedule was derived from the 1985 Peralta report schedule. This is standard practice and follows the Drainage Act requirement in Section 34 to take prior assessments into consideration. Adjustments were made for new severed parcels and the lands affected by same, with updates to owner names. The original values and adjusted values were pro-rated to the estimated total assessment value shown in our new drainage report
4. the overall charge to your lands in the schedule is $4.12/acre, which can be found to be comparable to parcel 670-01900 at $4.64/acre and parcel 670-02200 at $4.10/acre which both abut the drain as do your lands. This suggests that the values shown for assessment to your parcel are not unreasonable
5. the values in the past reports would be based on the proximity of the lands to the drain with regards to Benefit and the location of the lands along the length of the drain and their discharge point with regards to Outlet Liability. This was explained in Item 5 of our letter report sent out yesterday
6. attached is a print out of the Digital Elevation Model for the area from the Town online mapping that confirms the general slope of the lands from northeast to flow in a southwesterly direction. The lower area of your lands appears to be the portion assessed to the West Townline Drain through its connection to the Pigeon Drain. All lands that can drain directly to a municipal drain and all lands that drain to said drain through tributary drains and sub-watersheds are liable to assessment
7. we affirm that there is no bias or prejudice in the drainage report. All our reports are prepared in accordance with Section 11 of the Drainage Act so that they are defensible if appealed to the Tribunal or Referee:

**Duties of engineer**

**11.** The engineer shall, to the best of the engineer's skill, knowledge, judgment and ability, honestly and faithfully, and without fear of, favour to or prejudice against any person, perform the duty assigned to the engineer in connection with any drainage works and make a true report thereon. R.S.O. 1990, c. D.17, s. 11.

8. although we endeavor to explain things to owners as best as we can, we have sometimes found that an owner can get a clearer understanding of the Drainage Act process and requirements by speaking with the Drainage Superintendent for the Town and suggest that perhaps this is something that you can explore

We hope that the information provided above helps to clarify matters and will further address your concerns. Another alternative that you can explore is to contact a qualified drainage engineer familiar with the Ontario Drainage Act to do a review for you and any recommendations that the engineer provides to you can be submitted to the Town Drainage Board for consideration and deliberation. The Drainage Board Court of Revision can make recommendations to change the assessment schedule that was provided in the drainage report that we submitted, and Town Council can instruct the Town Clerk to adjust the assessment schedule accordingly pursuant to the Drainage Act.

Thank you for your time and attention to this.

Regards,

Gerard Rood, P.Eng.

***ROOD ENGINEERING INC.***
9 Nelson Street
Leamington, Ontario
N8H 1G6

Phone: 519-322-1621
Fax: 519-322-1979

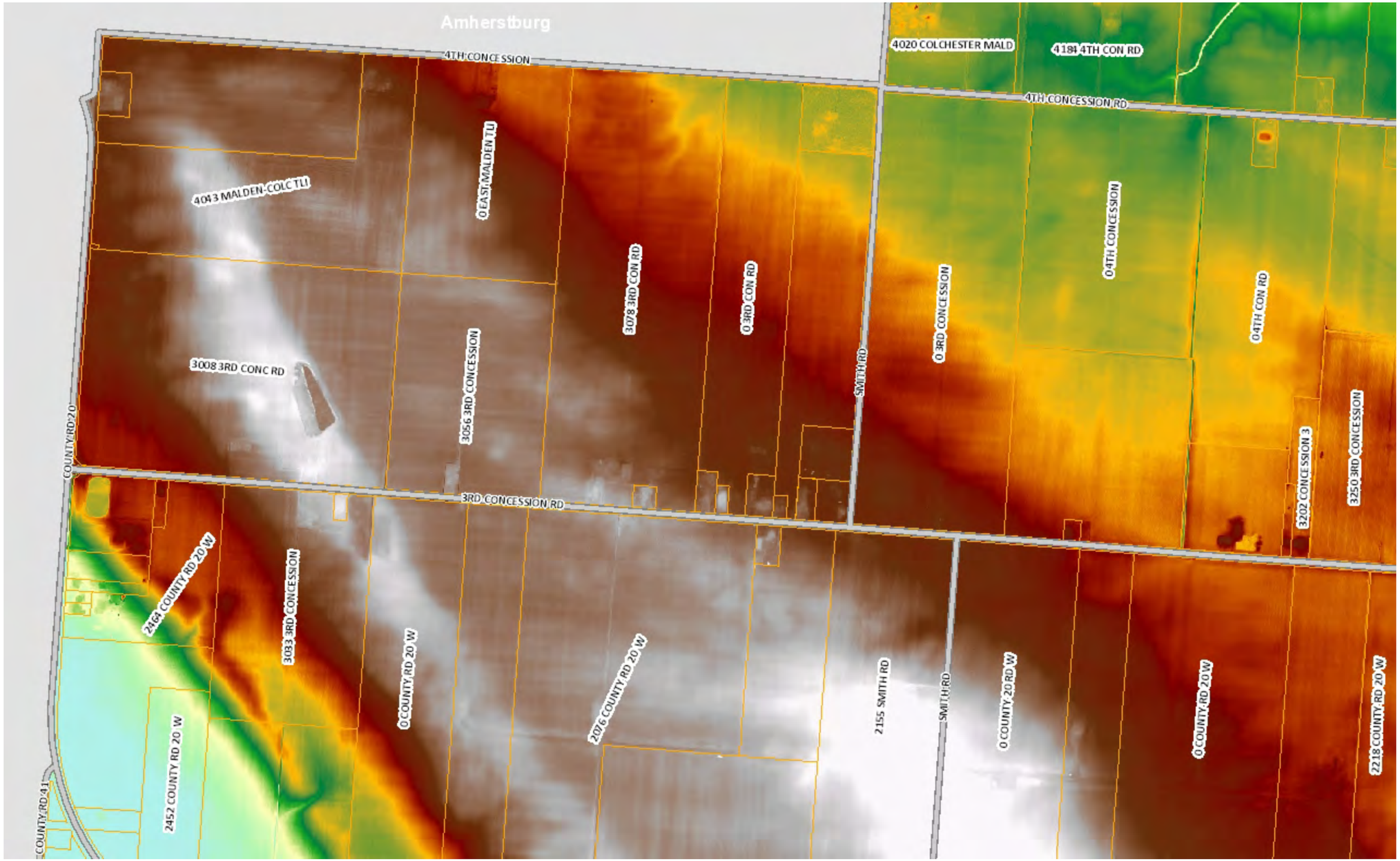


On Tue, Jun 11, 2019 at 6:32 AM Raja Shehadi <reshehadi@gmail.com> wrote:

> June 11, 2019
> To Mayor Snively, Mr. Auger, Mr. Nepczy, Mr. Nussio, and members of the council,
> -
> This is in reference to my letter to you dated May 28, 2019 and Mr. Rood's response dated June 10, 2019. I have included my comments in the highlighted texts. My comments will show if you pass the mouse over the highlighted text.
> -
> The idea of including the whole farm 750-03000 as draining directly into the West Townline Drain (WTD) is incorrect. Portions of this farm drain into the Pigeon Drain (Exhibit B). The most important question that I request an answer to is, how the engineer arrived to the figures listed in his schedule of assessments? What is the basis of his calculations? There must be a mathematical formula and basis for these value assessments, otherwise, these figures in the report are incorrect and corrupt.
> In his response, Mr. Rood never attempted to explain how he arrived at the outlet and benefit values that he has assessed to my property 750-03000, and he bluntly rejected any comparison with neighboring properties.
> -
> To use the argument that these numbers are based on prior Engineers' Reports is improper. There must be a basis for these calculations. Please understand and help us understand how the prior engineer arrived to these figures that you have copied and pasted into your report. These figures are not biblical truths and ought to be clearly explained, otherwise, contested and changed. Mr. Rood quotes older reports like he is quoting the Bible. He may come up with his own figures that he can explain.
> -
> To reject the idea of comparison with adjacent similar properties and to have no basis that you can explain regarding

the numbers that you have assigned to my property, makes grounds for discrimination, and hides incompetence.
Sincerely,
Raja Shehadi
Attachments:
Response to Mr. Roods letter of 06/10/2019 and
EXHIBIT A, ELEVATION MAP_GOOGLE EARTH
EXHIBIT B, 210405, Pigeon Drain

# West Townline Drain





**Legend**

- Roads
  - County Roads
  - Municipal
  - Private
  - Provincial
- Essex Assessment
- Water
- Essex County Municipalities

0 166.69 333.4 Meters

1: 10,000 6/11/2019

**Notes**

Land Slope
REI2016D061

Gerard Rood, P.Eng.
ROOD ENGINEERING INC.
9 Nelson Street, Leamington,
Ontario, N8H 1G6

June 13, 2019

Dear Mr. Rood,

Thank you for your email and attachment. Please provide me with the reference or link to the “Essex Digital Elevation Model plan” that you have attached to your email. The legend on the map does not interpret the different colors. I would like to get it for myself if you would kindly provide me with this reference.

Respectfully, your statements in your email of June 11, 2019 are contradictory to your statements in your letter dated June 10, 2019. It appears that you intend to defend the flaws in your report without consideration to the stakeholder’s legitimate plea.

Consider the following:

1. In your letter you mention, “*The entire Shehadi parcel 750 0300 that belongs to 1741094 Ontario Limited has direct access to the West Townline Drain*.” In your email of June 11, 2019, you admit that a portion of the farm drains to the Pigeon Drain, i.e. indirect access to the WTD. That is to say, also, that my comparison with the lands across the third concession that also drain into the Pigeon Drain holds true (My letter dated May 28, 2019) and your rejection to this comparison in your letter of June 10, 2019, is invalid.

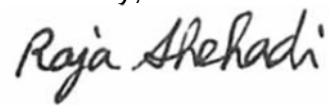
2. I find it unreasonable for you to compare my parcel 750-03000 with both parcels 670-01900 and 670-02200 that are much further away from my farm (Your email of June 11, 2019) while you adamantly reject my comparison with my neighboring parcels across the Third concession Road (My letter dated May 28, 2019 and your letter of June 10, 2019). It appears that you have conveniently chosen any two parcels with similar per acre evaluation and made the comparison, while you bypassed all other more neighboring parcels with absolutely no consideration to the distance between my parcel and the comparison ones, or the spread of the parcels away from the WTD as compared to mine.

3. **Despite all of your correspondence, until to date, you have not produced any genuine and reasonable basis for your calculations. That is to ask, what is the basic equation or formula that you have used to arrive to the figures that you have included as benefit and outlet values in your report? Without an objective equation by which the benefit and outlet values can be objectively fairly calculated to all the landowners, there is always grounds for error whether that is intended or not. Cutting and pasting faithfully from previous reports is unacceptable and renders your report redundant and useless.**

**Moreover, there must some reasonably objective basis upon which the previous evaluations were calculated. Please check it out and explain it. For this request, you have not yet provided any reasonable response.**

I am still objecting to your report and I am requesting that it would be reviewed and corrected.

Sincerely,



Raja Shehadi,
For 174-1094 Ontario Limited.
Telephone: 321-698-2043
Email: reshehadi@yahoo.com
Current Mailing Address: PO Box 903, Temple Texas 76503, USA

CC:
Mayor Larry Snively
519-890-2381
lsnively@essex.ca o

Robert W Auger, Clerk, Town of Essex
(519) 776-7336 x1132;
rauger@essex.ca

Chris Nepczy, supervisor,
(519) 776-7336 x1114
cnepczy@essex.ca

Norman Nussio, Drainage Superintendent,
(519) 776-7336 x1405
nnussio@essex.ca

Tanya Tuzlova
ttuzlova@essex.ca
(519) 776-6476 x1407

## Raja

**From:** Gerard Rood <gerard@roodengineering.ca>
**Sent:** Thursday, June 13, 2019 12:48 PM
**To:** Raja
**Cc:** lsnively@essex.ca; Robert W. Auger; cnepczy@essex.ca; Norman Nussio; Tanya Tuzlova
**Subject:** Re: Objection to Engineer's Report for the WTD
**Attachments:** 2019-06-13 Essex mapping DEM screen shot.docx

Good afternoon Mr. Shehadi:

As requested in your letter with the email below, we have investigated the Digital Elevation Model (DEM) access. We initially log in to the Town mapping website at "maps.essex.ca"; however it appears that the DEM layer is not available on the public website but only on the secured website. Please find attached a document with a screen shot of the DEM mapping web site. We were unable to locate a legend for the colouring but know from previous works that the dark red band is a high area and the green and lighter colours are the lower areas of topography. Perhaps you can contact the Town GIS consultant for more information.

Thanks for your time and attention to this.

Regards,

Gerard Rood, P.Eng.

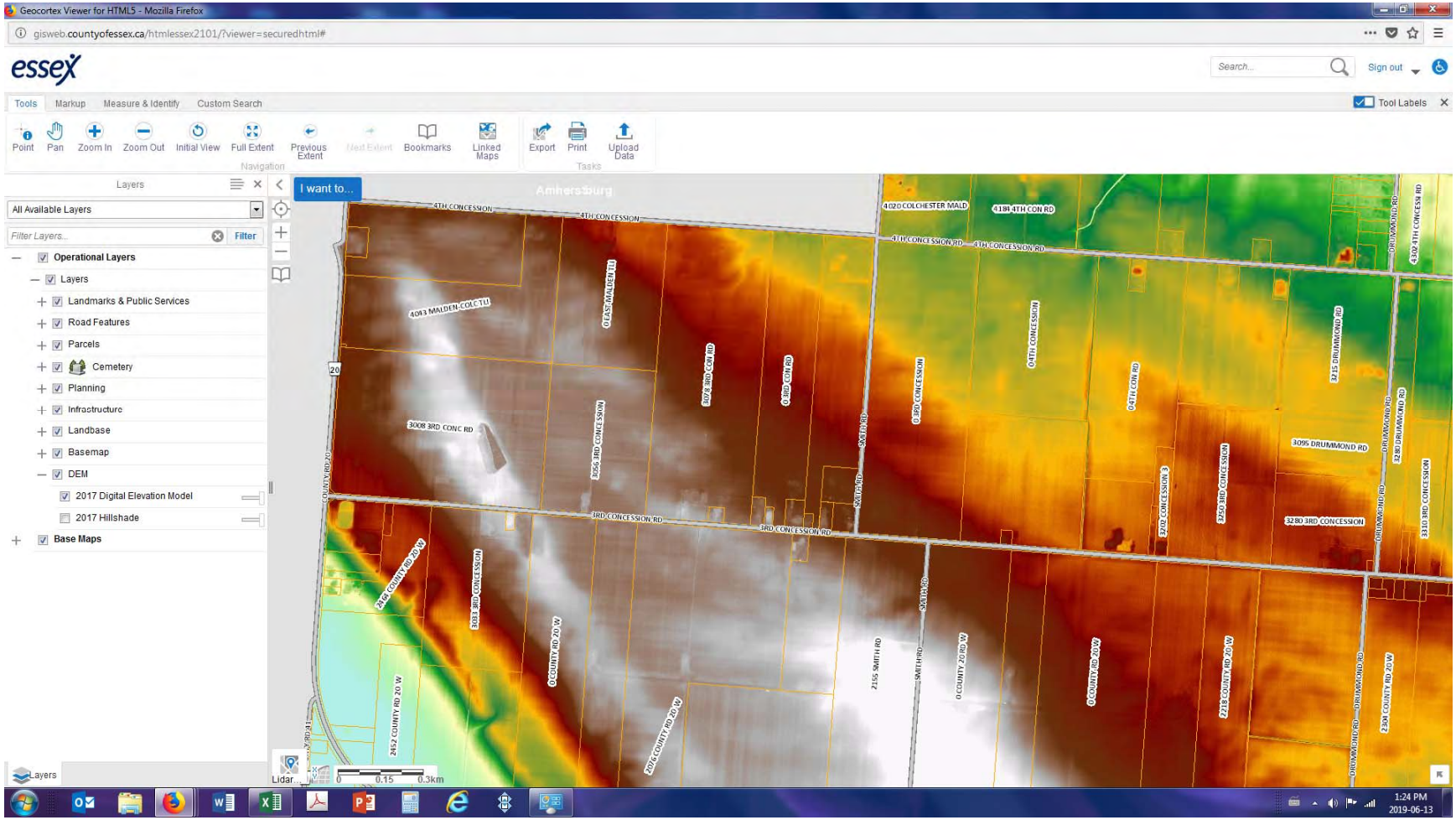
***ROOD ENGINEERING INC.***
9 Nelson Street
Leamington, Ontario
N8H 1G6

Phone: 519-322-1621
Fax: 519-322-1979



On Thu, Jun 13, 2019 at 5:14 AM Raja <reshehadi@gmail.com> wrote:

> Good Morning Mr. Rood,
>
> I attach my response to your email as a letter to you. Please read.
>
> Sincerely,
>
> Raja Shehadi


Geocortex Viewer for HTML5 - Mozilla Firefox
gisweb.countyofessex.ca/htmlessex2101/?viewer=securedhtml#
essex
Search...
Sign out
Tools
Markup
Measure & Identify
Custom Search
Tool Labels
Point
Pan
Zoom In
Zoom Out
Initial View
Full Extent
Previous Extent
Next Extent
Bookmarks
Linked Maps
Navigation
Export
Print
Upload Data
Tasks
Layers
All Available Layers
Filter Layers...
Filter
Operational Layers
Layers
Landmarks & Public Services
Road Features
Parcels
Cemetery
Planning
Infrastructure
Landbase
Basemap
DEM
2017 Digital Elevation Model
2017 Hillshade
Base Maps
I want to...
Amherstburg
4TH CONCESSION
4TH CONCESSION
4020 COLCHESTER MALD
4181 4TH CON RD
4TH CONCESSION RD
4TH CONCESSION RD
4302 4TH CONCESSI RD
4083 MALDEN-COLC TLI
0 EAST MALDEN TLI
3073 3RD CON RD
0 3RD CON RD
3008 3RD CONC RD
3056 3RD CONCESSION
0 3RD CONCESSION
0 4TH CONCESSION
0 4TH CON RD
3215 DRUMMOND RD
3095 DRUMMOND RD
3200 DRUMMOND RD
3310 3RD CONCESSION
3250 3RD CONCESSION
3280 3RD CONCESSION
3200 CONCESSION 3
SIXTH RD
SIXTH RD
3RD CONCESSION RD
3RD CONCESSION RD
2468 COUNTY RD 20 W
2093 3RD CONCESSION
0 COUNTY RD 20 W
2452 COUNTY RD 20 W
2076 COUNTY RD 20 W
2155 SMITH RD
SMITH RD
0 COUNTY RD 20 W
0 COUNTY RD 20 W
2218 COUNTY RD 20 W
2304 COUNTY RD 20 W
DRUMMOND RD
Lidar
0
0.15
0.3km
1:24 PM
2019-06-13

REFERENCE 789-8,956.28

**Original Bill:**

# Municipal Drain Bill

Town of Essex
33 Talbot Street South
Essex, Ontario
N8M 1A8
(519) 776-7336

Date: 4/1/2017
Reference: 789
Property: 3008 3RD CON RD
Drain: 210505
WEST TOWNLINE DRAIN

Account: 1741000001
1741094 ONTARIO LIMITED
c/o Shehadi
BOX 903
TEMPLE, TX 76503-0903
750000030000000

| | Amount |
|---|---|
| Gross Amount: | $8,956.28 |
| Less Grant Eligible: | $2,982.44 |
| Amount Due: | $5,973.84 |

Due By: 5/15/2017

Description

The Town of Essex undertook repairing bridge by Reg Clark Trucking Ltd. to the above noted drain in 2015. In accordance with the *Drainage Act*, costs are assessed to residents in the drainage area as determined by the most recent Engineer's report and affected property owners of agricultural land are eligible for a 1/3 grant.

In the event that a grant is **not** approved, you will be invoiced for the disallowed portion of the related grant at that time.

The **Due Date** is **May 15, 2017.** Any invoices that are unpaid paid after the due date will be added to the tax roll.

**Payment Options:**

- Cash, Cheque, Debit or Credit: In person at Essex Municipal Office during regular business hours. Credit card payments can also be processed over the phone.
- Drop Box: Payment can be deposited in the box located at the front of the Harrow OPP Station or Essex Municipal Office.
- By Mail: Payment may be sent to the address noted above.

Payments through Telephone Banking, Online Banking, or at your Financial Institution cannot be processed, and will be directly applied against your property tax account and not this invoice.

If you have any questions about what drainage works were completed, please call the Drainage Department at 519-776-6476. A copy of the assessment schedule is available upon request.

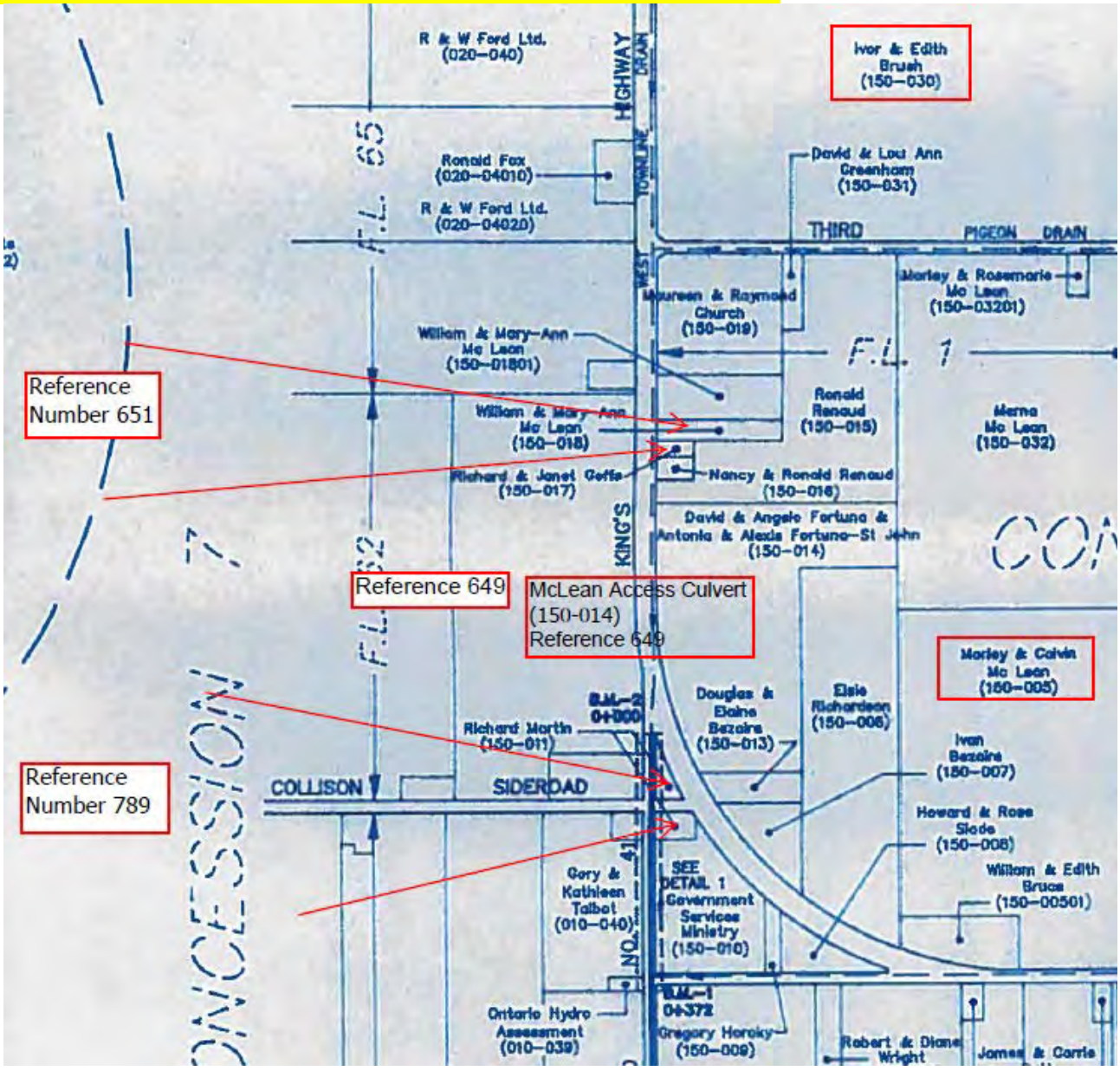
**What Mr. Boudreau wrote in Page 1/8 of his letter dated April 19, 2017:**

Reference 789: 210505 West Townline Drain, Amount Due: $5,973.84 (total 2 pages)

1. Work done: repairing bridges: at 990 County Rd 41 & 984 County Rd 41 and cleaning bottom of the drain. Work was done by Reg Clark Trucking Ltd, materials supplied by: Underground Specialties, Walker Aggregates Inc. and Tilbury Concrete.
2. Attached: Map with the work location
3. Attached: Cost Allocation Pre-List. This is the list of properties assigned to this project. Therefore the assessing base for this project is $4,102.00. Total Cost of the project is $34,399.49. The net share of roll#750-030 in this project is $5,973.84.

++++++++++++++++++++++++++++++++++++++++++++++++++

**Map of the construction work done on the West Townline Drain:**



Map reconstruction from the Town of Essex Interactive Mapping with data from OMAFRA site and other References:
PART 1:

PART 2:


Address: 3013
37547500000310000000
Address: 2490
37547500000190000000
OLD: 150-019
RAY CHURCH
2490
3013
3041
Address: 3041
37547500000320100000
Address: 2476
37547500000180000000
OLD: 150-018
WILLIAM & MARY-ANN MCLEAN
Address:
37547500000180100000
OLD: 150-018-1
WILLIAM & MARY-ANN MCLEAN
Address: 2464
37547500000150000000
OLD: 150-015
NANCY & RONALD RENAUD
2464
Address: 3033
37547500000320000000
2476
2470
2466
Address:2470
37547500000170000000
OLD; 150-017
EUGENE & RUBYDECAIRE
3033
Address: 2466
37547500000160000000
OLD: 150-016
NANCY & RONALD RENAUD

PART 3:


Address:
37547500000140000000
OLD: 150-014
GEORGE MCLEAN
LOT 1
Address: 2452
37547500000060000000

PART 4:


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

**Table on Page 6/8 of Mr. Boudreau's letter dated April 19, 2017:**

Town of Essex
Cost Allocation Pre-List

Date 3/16/2017
Time 10:40:11 AM
Page 1

Drain Code: 210505
Document ID: 789 Document Type: Maintenance

| Property Reference | Description | Customer | Assessing Base | Gross | Grant | NET |
|---|---|---|---|---|---|---|
| 750000011000000 | PLAN 1500 LOTS 2 TO 3 | CHORD00003 | $16.00 | $134.18 | $0.00 | $134.18 |
| 750000012000000 | PLAN 1500 LOT 1 | CHORD00003 | $16.00 | $134.18 | $0.00 | $134.18 |
| 750000013000000 | CON 2 PT LOT 1 | SAWAT00003 | $33.00 | $276.74 | $0.00 | $276.74 |
| 750000014000000 | CON 2 PT LOT 1 | MCLEA00007 | $292.00 | $2,448.72 | $815.42 | $1,633.30 |
| 750000015000000 | CON 2 PT LOT 1 | RENAU00034 | $253.00 | $2,121.66 | $706.51 | $1,415.15 |
| 750000016000000 | CON 2 PT LOT 1 | RENAU00035 | $10.00 | $83.86 | $0.00 | $83.86 |
| 750000017000000 | CON 2 PART LOT 1 | GEFFS00001 | $10.00 | $83.85 | $0.00 | $83.85 |
| 750000018000000 | CON 2 PT LOT 1 | RENAU00081 | $26.00 | $218.04 | $0.00 | $218.04 |
| 750000018010000 | CON 2 PT LOT 1 RP 12R5481 | RENAU00081 | $50.00 | $419.30 | $0.00 | $419.30 |
| 750000019000000 | CON 2 PT LOT 1 | ST LO00006 | $113.00 | $947.62 | $0.00 | $947.62 |
| 750000020000000 | CON 3 PT LOT 1 | FERRI00032 | $54.00 | $452.85 | $150.80 | $302.05 |
| 750000021000000 | CON 3 PT LOT 1 | ZAVAR00002 | $304.00 | $2,549.35 | $848.93 | $1,700.42 |
| 750000029000000 | CON 3 PT LOT 2 | MC LE00017 | $193.00 | $1,618.50 | $538.96 | $1,079.54 |
| 750000030000000 | CON 3 PT LOT 1 | 1741000001 | $1,068.00 | $8,956.28 | $2,982.44 | $5,973.84 |
| 750000031000000 | CON 2 PT LOT 1 | GREEN00007 | $20.00 | $167.72 | $0.00 | $167.72 |
| 750000032010000 | CON 2 PT LOT 1 | MC LE00019 | $11.00 | $92.25 | $0.00 | $92.25 |
| 000000000000001 | THIRD CONCESSION ROAD | TOW005 | $208.00 | $1,744.29 | $0.00 | $1,744.29 |
| 000000000000008 | COUNTY ROAD NO. 41 | COU005 | $142.00 | $1,190.82 | $0.00 | $1,190.82 |
| 000000000000009 | COUNTY ROAD 20 | COU005 | $896.00 | $7,513.88 | $0.00 | $7,513.88 |
| 000000000000011 | COUNTY ROAD NO. 41 | COU005 | $142.00 | $1,190.82 | $0.00 | $1,190.82 |
| 000000000000012 | COUNTY ROAD 20 | COU005 | $245.00 | $2,054.58 | $0.00 | $2,054.58 |
| | | | $4,102.00 | $34,399.49 | $6,043.06 | $28,356.43 |

Table Reconstructed in Word Document:

**REFERENCE 789: 8,956.28**

| Property Reference | Description | Customer | Assessing Base | Gross | Grant | NET |
|---|---|---|---|---|---|---|
| 750000011000000 | PLAN 1500 LOTS 2&3 | CHORD00003 | $16.00 | $134.18 | $0.00 | $134.18 |
| 750000012000000 | PLAN 1500 LOT 1 | CHORD00003 | $16.00 | $134.18 | $0.00 | $134.18 |
| 750000013000000 | CON 2 PT LOT 1 | SAWAT00003 | $33.00 | $276.74 | $0.00 | $276.74 |
| 750000014000000 | CON 2 PT LOT 1 | MCLEA00007 | $292.00 | $2,448.72 | $615.42 | $1,633.30 |
| 750000015000000 | CON 2 PT LOT 1 | RENAU00034 | $253.00 | $2,121.66 | $706.51 | $1,415.15 |
| 750000016000000 | CON 2 PT LOT 1 | RENAU00035 | $10.00 | $83.86 | $0.00 | $83.86 |
| 750000017000000 | CON 2 PART LOT 1 | GEFFS00001 | $10.00 | $83.85 | $0.00 | $83.85 |
| 750000018000000 | CON 2 PT LOT 1 | RENAU00081 | $26.00 | $218.04 | $0.00 | $218.04 |
| 750000018010000 | CON 2 PT LOT 1 RP 12R5481 | RENAU00081 | $50.00 | $419.30 | $0.00 | $419.30 |
| 750000019000000 | CON 2 PT LOT 1 | ST L000006 | $113.00 | $947.62 | $0.00 | $947.62 |
| 750000020000000 | CON 3 PT LOT 1 | FERRI00032 | $54.00 | $452.85 | $150.80 | $302.05 |
| 750000021000000 | CON 3 PT LOT 1 | ZAVAR00002 | $304.00 | $2,549.35 | $848.93 | $1,700.42 |
| 750000029000000 | CON 3 PT LOT 2 | MC LE00017 | $193.00 | $1,618.50 | $536.96 | $1,079.54 |
| 750000030000000 | CON 3 PT LOT 1 | 1741000001 | $1,066.00 | $8,956.28 | $2,982.44 | $5,973.84 |
| 750000031000000 | CON 2 PT LOT 1 | GREEN00007 | $20.00 | $167.72 | $0.00 | $167.72 |
| 750000032010000 | CON 2 PT LOT 1 | MC LE00019 | $11 .00 | $92.25 | $0.00 | $92.25 |
| 000000000000001 | THIRD CONCESSION RD | TOW005 | $208.00 | $1,744.29 | $0.00 | $1,744.29 |
| 000000000000008 | COUNTY ROAD NO. 41 | COU005 | $142.00 | $1,190.82 | $0.00 | $1,190.82 |
| 000000000000009 | COUNTY ROAD 20 | COU005 | $896.00 | $7,513.88 | $0.00 | $7,513.88 |
| 000000000000011 | COUNTY ROAD NO. 41 | COU005 | $142.00 | $1,190.62 | $0.00 | $1, 190.82 |
| 000000000000012 | COUNTY ROAD 20 | COU005 | $245.00 | $2,054.58 | $0.00 | $2,054.56 |
| TOTAL: | | | $4,102.00 | $34,399.49 | $6,043.06 | $28,356.43 |

Please note the following:
The beneficiaries of this project are highlighted in Blue.
My tax Roll number is highlighted in yellow.

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

## Cost Allocation List reflecting charges per Acre of Property:
## Acreage measured on the Town of Essex Interactive Mapping:

| TAX ROLL NUMBER: | ADDRESS: | ACRES | ALLOCATION | ALLOCATION PER ACRE |
|---|---|---|---|---|
| | | | | |
| 37547500000200000000 | 3300 County Road 20 W | 39 | 452.85 | 11.61 |
| 37547500000210000000 | 4043 4th Concession Rd. | 57 | 2,549.35 | 44.73 |
| 37547500000300000000 | 3008/3014 3rd Concession Rd. | 98 | 8,958.28 | 91.41 |
| 37547500000290000000 | 3056 3rd Concession Rd. | 50 | 1,618.50 | 32.37 |
| 37547500000150000000 | 2464 County Road 20 W | 21 | 2,121.66 | 101.03 |
| 37547500000320000000 | 3033 3rd Concession Rd. | 51 | 0 | 0 |
| 37547500000140000000 | George McLean Farm | 25 | 2,448.72 | 97.95 |

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

## Comments on Reference 789:

**Mr. Boudreau mentions that, "*Work repairing bridges: at 990 County Rd 41 & 984 County Rd 41 and cleaning bottom of the drain. Work was done by Reg Clark Trucking Ltd, materials supplied by: Underground Specialties, Walker Aggregates Inc. and Tilbury Concrete*."**

1. **I am requesting transparency in all aspects of this project. Supply a detailed list of all the expenses incurred by the listed vendors and workers, *"Underground Specialties, Walker Aggregates Inc. and Tilbury Concrete*.", and all other operators in this project.**

2. **Where is the law, *Ontario Drainage Act*, is it allowed that the beneficiaries of these private bridges pay only $134.18, while I get allocated the charge of $8,958.28 for their private bridges that are miles away from my property? Where in the Drainage Act is this mentioned and allowed?**

3. **Was this expensive project ever put up for bids? Prove it. Who were the bidders? What were the suggested costs for this project?**

4. **Where is the engineer's report calling for repairs for these bridges? Where is the official and legal document that indicated that these bridges needed this expensive repair? This expensive project must have a genuine basis; show me the proof.**

5. **Why are there missing tax roll numbers from the list of charges? Tax Roll Numbers that are missing from the Allocation of Charges list include:**

    a. **Upstream from the project: Farm at 3033 Concession 3 with Tax Roll Number: 37547500000320000000 is excluded from the list of charges while the house at 3041 Concession 3 with Tax Roll Number: 37547500000320100000 that is further away from the drain is included!?!?**

    b. **Upstream from the project: Many missing tax roll numbers from the original Engineer's Report that lists many more tax roll numbers on the West Townline Drain. Four pages are copied at the end of this document.**

6. **Where are the allocations of charges to the properties on the West side of the West Townline Drain and County Road 20 that drain into the same drain?**

    a. **Was the project ever discussed with the Drainage Department of the Town of Amherstburg? If not, why not?**

    b. **Did the Drainage Department of the Town of Amherstburg reject this project? Why?**

7. **Please avoid generalities and nonspecific references to the law. Please refer to the law as stated in the *Ontario Drainage Act* with specific quotations and references.**

**++++++++++++++++++++++++++++++++++++++++++++++++**

**From the "*CONSOLIDATED MAINTENANCE SCHEDULE WEST TOWNUNE DRAIN TOWNSHIP OF COLCHESTER SOUTH - MAY 9, 1997*"**

CONSOLIDATED MAINTENANCE SCHEDULE OF ASSESSMENT
WEST TOWNLINE DRAIN
TOWNSHIP OF COLCHESTER SOUTH
PROJECT REFERENCE BC-96-125



MAY 9, 1997

| Con. or Plan | Lot | Roll No. | Name of Owner | | Hectares Affected | Value of Benefit | Value of Outlet | Total |
|---|---|---|---|---|---|---|---|---|
| ASSESSMENTS FOR TOWNSHIP OF COLCHESTER SOUTH | | | | | | | | |
| CON. 3 | PT. LOT 1 | 150-020 | MAURICE & LINDA HUTCHENS | * | 1.620 | $27.71 | $25.73 | $53.45 |
| CON. 3 | PT. LOT 1 | 150-021 | JOHN ZAVAROS | * | 9.310 | 157.38 | 143.52 | 300.90 |
| CON. 3 | PT. LOT 1 | 150-030 | IVOR & EDITH BRUSH | * | 39.260 | 497.87 | 559.24 | 1,057.11 |
| CON. 3 | PT. LOT 2 | 150-029 | LELAND & DORIS McLEAN | * | 14.170 | 0.00 | 191.03 | 191.03 |
| CON. 2 | PT. LOT 1 | 150-019 | RAY CHURCH | * | 3.710 | 62.36 | 49.49 | 111.85 |
| CON. 2 | PT. LOT 1 | 150-018-01 | WILLIAM & MARY-ANN McLEAN | | 1.350 | 22.77 | 26.72 | 49.49 |
| CON. 2 | PT. LOT 1 | 150-018 | WILLIAM & MARY-ANN McLEAN | | 0.610 | 9.90 | 15.84 | 25.73 |
| CON. 2 | PT. LOT 1 | 150-017 | EUGENE & RUBY DECAIRE | | 0.180 | 2.97 | 6.93 | 9.90 |
| CON. 2 | PT. LOT 1 | 150-016 | NANCY & RONALD RENAUD | | 0.180 | 2.97 | 6.93 | 9.90 |
| CON. 2 | PT. LOT 1 | 150-015 | RONALD & NANCY RENAUD | * | 8.380 | 141.54 | 108.88 | 250.42 |
| CON. 2 | PT. LOT 1 | 150-031 | DAVID & LOU ANN GREENHAM | | 0.350 | 5.94 | 13.86 | 19.80 |
| CON. 2 | PT. LOT 1 | 150-014 | GEORGE McLEAN | * | 10.120 | 171.24 | 117.79 | 289.02 |
| CON. 2 | PT. LOT 1 | 150-013 | DOUGLAS & ELAINE BEZAIRE | | 0.810 | 13.86 | 18.81 | 32.66 |
| CON. 2 | PT. LOT 1 | 150-012 | RUSSELL & ANN WARREN | | 0.260 | 4.95 | 10.89 | 15.84 |
| CON. 2 | PT. LOT 1 | 150-011 | RUSSELL & ANN WARREN | | 0.280 | 4.95 | 10.89 | 15.84 |
| CON. 2 | PT. LOT 1 | 150-010 | GOVERNMENT SERVICES MINISTRY | | 3.100 | 52.46 | 66.32 | 118.78 |
| CON. 2 | PT. LOT 1 | 150-009 | PHILIP FELTHAM | | 0.250 | 3.96 | 7.92 | 11.88 |
| CON. 2 | PT. LOT 1 | 150-008 | HOWARD SLADE | | 0.810 | 13.86 | 16.83 | 30.68 |
| CON. 2 | PT. LOT 1 | 150-007 | IVAN & MADELINE BEZAIRE | | 1.170 | 19.80 | 22.77 | 42.56 |
| CON. 2 | PT. LOT 1 | 150-006 | LLOYD & ELSIE RICHARDSON | * | 8.090 | 136.59 | 90.07 | 226.67 |
| CON. 2 | PT. LOT 1 | 150-005-01 | WILLIAM & EDITH BRUCE | | 1.320 | 10.89 | 23.76 | 34.64 |
| CON. 2 | PT. LOT 1 | 150-005 | JOHN & ANDREW HLOZAN | * | 18.390 | 155.40 | 189.05 | 344.45 |
| CON. 2 | PT. LOT 1 | 150-032 | MERNA McLEAN | * | 20.030 | 169.26 | 214.79 | 384.04 |
| CON. 2 | PT. LOT 1 | 150-032-01 | MORLEY & ROSEMARIE McLEAN | | 0.210 | 1.98 | 8.91 | 10.89 |
| CON. 2 | PT. LOT 2 | 150-004 | JOHN, ANDREW JR. & MARTIN HLOZAN | * | 24.280 | 0.00 | 262.30 | 262.30 |
| CON. 2 | PT. LOT 2 | 150-003 | INA RICHARDSON | * | 16.190 | 0.00 | 192.02 | 192.02 |
| CON. 2 | PT. LOTS 2 & 3 | 150-002 | DOUGLAS & LENORE MARTIN | * | 23.600 | 0.00 | 260.32 | 260.32 |
| CON. 2 | PT. LOTS 2 & 3 | 150-001 | WARDEN & NINA LANGLOIS | * | 28.330 | 0.00 | 291.00 | 291.00 |
| CON. 2 | PT. LOT 3 | 150-036 | DARWIN STOLTE | * | 14.980 | 0.00 | 155.40 | 155.40 |
| CON. 2 | PT LOTS 3 & 4 | 140-009 | KEITH & FAYE MARTIN | * | 15.380 | 0.00 | 159.36 | 159.36 |
| CON. 1 | PT LOT 97 | 070-019 | EMILY HUBBELL & MARILYN SHAY | * | 27.520 | 465.21 | 242.50 | 707.71 |
| CON. 1 | PT LOT 97 | 070-020 | ANTONETTE MORREALE | | 0.009 | 1.98 | 2.97 | 4.95 |
| CON. 1 | PT LOT 97 | 070-021 | ONTARIO HYDRO | | 0.024 | 0.99 | 0.99 | 1.98 |
| CON. 1 | PT LOT 97 | 070-022 | GORDON MARONTATE | * | 39.240 | 268.24 | 100.96 | 369.20 |
| CON. 1 | PT LOT 97 | 070-351, 070-352 & 070-353 | GORDON MARONTATE | * | 4.050 | 68.30 | 21.78 | 90.07 |
| CON. 1 | PT LOT 96 | 070-018 | ROBERT & DIANNE WRIGHT | | 0.810 | 0.00 | 16.83 | 16.83 |
| CON. 1 | PT LOT 96 | 070-017 | MARIA SIMOES | * | 12.860 | 0.00 | 133.62 | 133.62 |
| CON. 1 | PT LOTS 95 & 96 | 070-016 | MARY WRIGHT | * | 13.190 | 0.00 | 136.59 | 136.59 |
| CON. 1 | PT LOT 95 | 070-016-01 | ROBERT & DIANNE WRIGHT | | 0.190 | 0.00 | 5.94 | 5.94 |
| CON. 1 | PT LOT 95 | 070-015 | GARNET & GLORIA WRIGHT | | 0.190 | 0.00 | 5.94 | 5.94 |
| CON. 1 | PT LOT 94 | 070-014-01 | RICHARD & KAREN HRBAK | | 0.450 | 0.00 | 10.89 | 10.89 |
| CON. 1 | PT LOT 94 | 070-014 | PAUL & JOYCE CANTLON | | 0.400 | 0.00 | 10.89 | 10.89 |
| CON. 1 | PT LOT 94 | 070-013 | PETER & JOANNE QUIMBY | | 0.220 | 0.00 | 6.93 | 6.93 |
| CON. 1 | PT LOTS 94 & 93 | 070-012 | INA RICHARDSON | * | 1.360 | 0.00 | 14.85 | 14.85 |
| CON. 1 | PT LOT 93 | 070-011 | GARRY & KATHERINE ILER | | 0.320 | 0.00 | 8.91 | 8.91 |
| CON. 1 | PT LOT 93 | 070-011-01 | MARCIA POLLARD | | 0.210 | 0.00 | 6.93 | 6.93 |

CONSOLIDATED MAINTENANCE SCHEDULE OF ASSESSMENT
WEST TOWNLINE DRAIN
TOWNSHIP OF COLCHESTER SOUTH
PROJECT REFERENCE BC-96-125

MAY 9, 1997

| Con. or Plan | Lot | Roll No. | Name of Owner | | Hectares Affected | Value of Benefit | Value of Outlet | Total |
|---|---|---|---|---|---|---|---|---|
| GORE CON. | PT G.L.S | 070-010-01 | TERRY ELLENBERGER | | 0.280 | $0.00 | $8.91 | $8.91 |
| GORE CON. | PT G.L.S | 070-010 | GEORGE & JULIA ELLENBERGER | * | 14.080 | 0.00 | 145.50 | 145.50 |
| GORE CON. | PT G.L.S | 070-009 | JAMES LYPPS | | 0.420 | 0.00 | 10.89 | 10.89 |
| GORE CON. | PT G.L.S | 070-008-05 | GEORGE McLEAN | * | 18.150 | 0.00 | 188.06 | 188.06 |
| GORE CON. | PT G.L.S | 070-008 | GERALD & RUTH GRAYER | * | 14.170 | 0.00 | 146.49 | 146.49 |
| GORE CON. | PT G.L.S | 070-007 | GEORGE KUBINEC | * | 8.090 | 0.00 | 84.13 | 84.13 |
| GORE CON. | PT G.L.S | 070-006 | GARLAND DAVIS | * | 3.460 | 0.00 | 35.63 | 35.63 |
| GORE CON. | PT G.L.S | 070-004 | MERVYN & ELAENE FOX | * | 2.020 | 0.00 | 20.79 | 20.79 |
| GORE CON. | PT G.L.S | 070-003 | MURRAY & LYNDA PIGEON | | 0.400 | 0.00 | 10.89 | 10.89 |
| GORE CON. | PT G.L.S | 070-002 | ANDREW HLOZAN JR. | * | 26.150 | 0.00 | 268.24 | 268.24 |
| | | | TOTAL ON LANDS | | | $2,495.30 | $4,914.38 | $7,409.68 |
| | THIRD CONCESSION ROAD | | TOWNSHIP OF COLCHESTER SOUTH | | | $18.81 | $187.07 | $205.88 |
| | SMITH ROAD | | TOWNSHIP OF COLCHESTER SOUTH | | | 0.00 | 41.57 | 41.57 |
| | GORE ROAD | | TOWNSHIP OF COLCHESTER SOUTH | | | 0.00 | 97.00 | 97.00 |
| | SECOND CONCESSION ROAD | | TOWNSHIP OF COLCHESTER SOUTH | | | 13.86 | 47.51 | 61.37 |
| | MEADOWS ROAD | | TOWNSHIP OF COLCHESTER SOUTH | | | 15.84 | 23.76 | 39.59 |
| | COLLISON SIDEROAD | | TOWNSHIP OF COLCHESTER SOUTH | | | 1.98 | 6.93 | 8.91 |
| | COUNTY ROAD NO. 50 | | COUNTY OF ESSEX | | | 13.86 | 26.72 | 40.58 |
| | COUNTY ROAD NO. 41 | | COUNTY OF ESSEX | | | 36.62 | 103.93 | 140.55 |
| | KING'S HIGHWAY NO. 18 | | PROVINCE OF ONTARIO | | | 89.08 | 797.78 | 886.87 |
| | | | TOTAL ON ROADS | | | $190.04 | $1,332.28 | $1,522.32 |
| | | | TOTAL ASSESSMENT FOR COLCHESTER SOUTH | | | $2,685.34 | $6,246.66 | $8,932.00 |

* DENOTES LANDS USED FOR AGRICULTURAL PURPOSES

| Con. or Plan | Lot | Roll No. | Name of Owner | | Hectares Affected | Value of Benefit | Value of Outlet | Total |
|---|---|---|---|---|---|---|---|---|
| ASSESSMENTS FOR TOWNSHIP OF MALDEN | | | | | | | | |
| CON. 7 | PT LOT 66 | 020-039 | AMICUS COMMUNICATIONS INC. | | 0.400 | $3.96 | $15.84 | $19.80 |
| CON. 7 | PT LOT 65 | 020-040 | R. & W. FORD LTD. | * | 3.640 | 30.68 | 50.48 | 81.16 |
| CON. 7 | PT LOT 61 | 010-040 | JOHNSTON HEATON | * | 0.400 | 3.96 | 4.95 | 8.91 |
| CON. 7 | PT LOT 61 | 010-039 | ONTARIO HYDRO | | 0.100 | 1.98 | 3.96 | 5.94 |
| CON. 7 | PT LOT 61 | 010-038 | KATHERINE HLOZAN | * | 7.690 | 65.33 | 69.29 | 134.61 |
| CON. 7 | PT LOT 61 | 010-037 | WILLIAM & FRANCES MURRARY | * | 3.640 | 30.68 | 27.71 | 58.40 |
| CON. 7 | PT LOT 61 | 010-036 | JOHN & YVONNE MINOGUE | * | 2.750 | 23.76 | 19.80 | 43.55 |
| CON. 7 | PT LOT 61 | 010-014-50 | JOSEPH & PAULETTE McGRAW | | 0.300 | 2.97 | 5.94 | 8.91 |
| CON. 7 | PT LT 60 & 61 | 010-064 | JOSEPH GOODCHILD | * | 0.530 | 3.96 | 1.98 | 5.94 S |
| CON. 7 | PT LT 60 | 010-065-50 | ERNEST & SANDRA FEARMAN | | 0.465 | 5.94 | 9.90 | 15.84 S |
| CON. 7 | PT LT 60 | 010-066 | WILDA MARONTATE | | 0.526 | 6.93 | 10.89 | 17.82 S |
| CON. 7 | PT LT 60 & 61 | 010-066-50 | MARVIN & LINDA MARONTATE | * | 4.027 | 27.71 | 10.89 | 38.60 S |
| R.P. 1292 | LOTS 74 & 75 | 010-035 | MARVIN & GAYLE REAUME | | 0.110 | 1.98 | 2.97 | 4.95 |
| R.P. 1292 | LOTS 70 TO 73 | 010-034 | MARVIN & GAYLE REAUME | | 0.210 | 1.98 | 4.95 | 6.93 |
| R.P. 1292 | LOTS 68 & 69 | 010-033 | WILFRED & LILLIE RICHARDSON | | 0.110 | 1.98 | 2.97 | 4.95 |
| R.P. 1292 | LOTS 65 TO 70 | 010-032 | MARGUERITE CORNWALL | | 0.150 | 1.98 | 3.96 | 5.94 |
| R.P. 1292 | LOTS 62 TO 64 | 010-031 | LARRY FREESWICK | | 0.150 | 1.98 | 3.96 | 5.94 |
| R.P. 1292 | LOTS 59 TO 61 | 010-030 | FRANK TRIOLET | | 0.150 | 1.98 | 3.96 | 5.94 |
| R.P. 1292 | LOTS 57 & 58 | 010-029 | MARGARET CORNWALL | | 0.110 | 1.98 | 2.97 | 4.95 |
| R.P. 1292 | LOTS 54 TO 56 | 010-028 | MARGARET CORNWALL | | 0.170 | 1.98 | 3.96 | 5.94 |
| R.P. 1292 | PT LOT 52 & LOT 53 | 010-027 | LARRY FREESWICK | | 0.090 | 1.98 | 2.97 | 4.95 |
| R.P. 1292 | LOT 50 & 52 & PT LOT 52 | 010-026 | JOHN HARELKIN | | 0.130 | 1.98 | 2.97 | 4.95 |
| R.P. 1292 | LOTS 48 & 49 | 010-025 | JOHN HARELKIN | | 0.110 | 1.98 | 2.97 | 4.95 |
| R.P. 1292 | LOT 47 | 010-024 | JOHN HARELKIN | | 0.050 | 1.98 | 1.98 | 3.96 |
| R.P. 1292 | LOTS 44 TO 46 | 010-023 | HUSSEIN & SIHAM OSMAN | | 0.150 | 1.98 | 3.96 | 5.94 |
| R.P. 1292 | LOTS 41 TO 43 | 010-022 | ROBERT & PAMELA BURRELL | | 0.150 | 1.98 | 3.96 | 5.94 |
| R.P. 1292 | LOTS 38 TO 40 | 010-020 | JAMES LEACH & DEBRA CLARK | | 0.150 | 1.98 | 3.96 | 5.94 |
| R.P. 1292 | LOTS 36 & 37 | 010-019 | WILLIAM IRVINE | | 0.110 | 1.98 | 2.97 | 4.95 |
| R.P. 1292 | LOTS 33 TO 35 | 010-018 | THOMAS & SUZANNE HART | | 0.150 | 1.98 | 3.96 | 5.94 |
| R.P. 1292 | LOTS 30 TO 32 | 010-016 | LIVAIN & PAULETTE McGRAW | | 0.150 | 1.98 | 3.96 | 5.94 |
| R.P. 1292 | LOT 29 | 010-015 | DAVID DENT | | 0.050 | 1.98 | 1.98 | 3.96 |
| R.P. 1292 | LOTS 27 & 28 | 010-014 | DAVID DENT | | 0.110 | 1.98 | 2.97 | 4.95 |
| R.P. 1292 | LOTS 25 & 26 | 010-013 | JEFFREY & JANE KING | | 0.110 | 1.98 | 2.97 | 4.95 |
| R.P. 1292 | LOTS 23 & 24 | 010-012 | JEFFREY & JANE KING | | 0.110 | 1.98 | 2.97 | 4.95 |
| R.P. 1292 | LOTS 21 & 22 | 010-011 | RICHARD & DIANA KING | | 0.110 | 1.98 | 2.97 | 4.95 |
| R.P. 1292 | LOT 20 | 010-010-01 | RICHARD & DIANA KING | | 0.050 | 1.98 | 1.98 | 3.96 |
| R.P. 1292 | LOT 19 | 010-010 | WILLIAM IRVINE | | 0.050 | 1.98 | 1.98 | 3.96 |
| R.P. 1292 | LOTS 17 & 18 | 010-009 | GENE & ALICE CHIKAZ | | 0.110 | 1.98 | 2.97 | 4.95 |
| R.P. 1292 | LOTS 15 & 16 | 010-008 | WILLIAM & NANCY DENT | | 0.110 | 1.98 | 2.97 | 4.95 |
| R.P. 1292 | LOT 14 | 010-007 | STEVE & ELIZABETH CSIKASZ | | 0.050 | 1.98 | 1.98 | 3.96 |
| R.P. 1292 | LOT 13 | 010-006 | SIMON BOLUS ESTATE c/o CROWN TRUST | | 0.050 | 1.98 | 1.98 | 3.96 |
| R.P. 1292 | LOTS 11 & 12 | 010-005 | OSCAR & LEONA MANNERS | | 0.110 | 1.98 | 2.97 | 4.95 |
| R.P. 1292 | LOTS 8 TO 10 | 010-003 | LEONARD & SHERLEY HANNAN | | 0.150 | 1.98 | 3.96 | 5.94 |
| R.P. 1292 | PT LOT 5, LOTS 6 & 7 | 010-002 | HOWARD & HELHA HALL | | 0.130 | 1.98 | 2.97 | 4.95 |
| R.P. 1292 | PT LOT 5, LOTS 1 TO 4 | 010-001 | JOSEPH MARTLIN | | 0.200 | 1.98 | 3.96 | 5.94 |
| | | | TOTAL ON LANDS | | | $273.19 | $336.53 | $609.72 |

CONSOLIDATED MAINTENANCE SCHEDULE OF ASSESSMENT

WEST TOWNLINE DRAIN

TOWNSHIP OF COLCHESTER SOUTH

PROJECT REFERENCE BC-96-125



MAY 9, 1997

| Con. or Plan | Lot | Roll No. | Name of Owner | Hectares Affected | Value of Benefit | Value of Outlet | Total |
|---|---|---|---|---|---|---|---|
| | | | COUNTY OF ESSEX | | $10.89 | $40.58 | $51.47 A |
| | | | COUNTY OF ESSEX | | 36.62 | 103.93 | 140.55 |
| | | | PROVINCE OF ONTARIO | | 44.54 | 197.96 | 242.50 |
| | | | TOWNSHIP OF MALDEN | | 4.95 | 18.81 | 23.76 |
| | | | TOTAL ON ROADS | | $97.00 | $361.28 | $458.28 |
| | | | TOTAL ASSESSMENT FOR MALDEN | | $370.19 | $697.81 | $1,068.00 |

SUMMARY

| | | | |
|---|---|---|---|
| TOTAL ASSESSMENT FOR COLCHESTER SOUTH | $2,685.34 | $6,246.66 | $8,932.00 |
| TOTAL ASSESSMENT FOR MALDEN | 370.19 | 697.81 | 1,068.00 |
| TOTAL ASSESSMENT | $3,055.53 | $6,944.47 | $10,000.00 |

* DENOTES LANDS USED FOR AGRICULTURAL PURPOSES

"S" DENOTES LANDS SUBSEQUENTLY CONNECTED MAY 1997

"A" DENOTES EXTENT OF AFFECTED ROADWAY INCREASED DUE TO SUBSEQUENT CONNECTION MAY 1997.

1 HECTARE = 2.4707 ACRES

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

END OF DOCUMENT