

THE CORPORATION OF THE TOWN OF AMHERSTBURG

BY-LAW NO. 2021 – 009

By-law to provide for the Bridges Over the Owen Bondy Drain based on the
Drainage Report by N.J. Peralta Engineering Ltd.

WHEREAS a request for improvement of the Owen Bondy Drain was received under section 78 of the Drainage Act;

WHEREAS Council of the Corporation of the Town of Amherstburg appointed an engineer for the purpose of preparation of an engineer's report for the improvements of the Owen Bondy Drain under section 78 of the Drainage Act;

WHEREAS Council of the Corporation of the Town of Amherstburg has authorized Tony Peralta, P. Eng., to prepare a report and said engineer's report dated December 22, 2020, can be referenced as Schedule A, as attached hereto;

WHEREAS \$56,056.00 is the estimated cost of improving the drainage works;

AND WHEREAS the report was considered by the Amherstburg Drainage Board at the meeting held on February 2, 2021.

NOW THEREFORE the Council of the Corporation of the Town of Amherstburg hereby enacts as follows:

1. AUTHORIZATION

The attached report is adopted and the drainage works is authorized and shall be completed as specified in the report

2. BORROWING

The Corporation of the Town of Amherstburg may borrow on the credit of the Corporation the amount of \$56,056.00 being the amount necessary for the improvements of the drainage works.

3. DEBENTURE(S)

The Corporation may issue debenture(s) for the amount borrowed less the total amount of:

- (a) Grants received under section 85 of the Drainage Act;
- (b) Monies paid as allowances;
- (c) Commuted payments made in respect of lands and roads assessed with the municipality;
- (d) Money paid under subsection 61(3) of the Drainage Act; and
- (e) Money assessed in and payable by another municipality.

4. PAYMENT

Such debenture(s) shall be made payable within 5 years from the date of the debenture(s) and shall bear interest at a rate not higher than 1% more than the municipal lending rates as posted by The Town of Amherstburg's Bank's Prime Lending Rate on the date of sale of such debenture(s).

(1) A special equal annual rate sufficient to redeem the principal and interest on the debenture(s) shall be levied upon the lands and roads and shall be collected in the same manner and at the same as other taxes are collected in each year for 5 years after the passing of this by-law.

(2) All assessments of \$1000.00 or less are payable in the first year in which the

assessments are imposed.

Read a first and second time and provisionally adopted this 8th day of February, 2021.



MAYOR - ALDO DICARLO




CLERK - PAULA PARKER

Read a third time and finally passed this 22 day of APR, 2021.



MAYOR - ALDO DICARLO



~~CLERK - PAULA PARKER~~
Deputy Clerk - Tammy Fowlkes

DRAINAGE REPORT

BRIDGES OVER THE OWEN BONDY DRAIN

**(for 1454410 Ontario Inc. (Parcel 1/360-01800),
Part of Lots 2 & 3, Concession 3)**

(Geographic Township of Anderdon)

TOWN OF AMHERSTBURG

N. J. Peralta Engineering Ltd.

Consulting Engineers

45 Division St. N., Kingsville, Ontario N9Y 1E1

Tel. (519) 733-6587

Project No. D-20-103

December 22nd, 2020

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N. J. Peralta Engineering Ltd.

Consulting Engineers

BRIDGES OVER OWEN BONDY DRAIN
(for 1454410 Ontario Inc. (Parcel 1/360-01800),
Part of Lots 2 & 3, Concession 3)

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N. J. Peralta Engineering Ltd.

Consulting Engineers

December 22nd, 2020

Mayor and Municipal Council
Corporation of the Town of Amherstburg
512 Sandwich Street South
Amherstburg, Ontario
N9V 3R2

Mayor DiCarlo and Members of Council:

PROJECT: **BRIDGES OVER THE OWEN BONDY DRAIN**
(Geographic Township of Anderdon)
Town of Amherstburg, County of Essex
Project No. D-20-103

I. INTRODUCTION

In accordance with the instructions received by letter on October 27th, 2020, from the Drainage Superintendent and Engineering Coordinator, Mr. Shane McVitty, P.Eng., we have completed the necessary survey, examinations, and investigations, etc. and have prepared the following report to provide for the installation of two (2) new access bridges, the removal of one (1) existing access bridge, along with establishing future maintenance provisions for all the access bridges within the Owen Bondy Drain and serving the lands currently owned by 1454410 Ontario Inc., identified within this report as Parcel 1/360-01800. These investigations were initiated by a resolution passed by Council for our firm to undertake the preparation of an Engineer's Report for the works within this Municipal Drain, and in accordance with provisions of the Drainage Act. The Owen Bondy Drain is generally an open drain with a number of access bridges, which were constructed under the auspices of the Drainage Act. A plan showing the alignment of the Owen Bondy Drain, the general location of the existing and proposed structures and adjacent to the identified parcel, and the details for the general improvements under this project are included herein as part of this report.

The initial request to provide an Engineer's Report to address improvements to the Owen Bondy Drain was submitted by Charles Stockwell on behalf of 1454410 Ontario Inc. (Parcel 1/360-01800).

Prior to the formal submission for the request for drainage improvements, the Owner of 1454410 Ontario Inc. had purchased the subject property and the adjacent property formerly known as Parcel 360-01700. A formal application to consolidate these two (2) parcels have been filed with the Land Registry Office. However, the consolidated property has yet to receive new parcel details. Therefore, for all intents and purposes, this consolidated property is identified within this report as Parcel 1/360-01800, currently owned by 1454410 Ontario Inc.

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The request for drainage improvements was initiated for the installation of two (2) new access bridges for the subject lands to facilitate the proposed greenhouse development. Through the progression of this project and subsequent to reviewing the details of the approved Site Plan and governing reports, it was determined that it would be prudent to review the status of all of the current access bridges which serve the lands currently owned by 1454410 Ontario Inc. (Parcel 1/360-01800), within the Owen Bondy Drain. Therefore, as part of this review, the report shall provide our recommendations, together with providing future maintenance provisions for each structure adjacent to the subject property.

Our appointment and the works relative to the Owen Bondy Drain proposed under this report, are being conducted in accordance with Section 78 of the "Drainage Act, R.S.O. 1990, Chapter D.17, as amended in 2020". We have performed all of the necessary survey, investigations, etc., for the existing and proposed bridges, as well as the Owen Bondy Drain, and we report thereon as follows.

II. BACKGROUND AND DRAINAGE HISTORY

At present, 1454410 Ontario Inc. is in the process of developing its lands to accommodate the development of its greenhouse facilities within Parcel 1/360-01800, Part of Lots 2 & 3, Concession 3. Heide Mikkelsen, P.Eng., of our firm, was retained and instructed by Mr. Charles Stockwell, Owner of 1454410 Ontario Inc., to provide a Site Plan, Stormwater Management (S.W.M.) design, and a site grading plan to accommodate the proposed greenhouse development.

A review of the Town of Amherstburg's drainage records indicate that the Owen Bondy Drain is an existing Municipal Drain that has been repaired and improved on a number of previous occasions through the auspicious of the Drainage Act. The Owen Bondy Drain is generally an open drain located on the east side of Concession 3 North with the watershed divided into two (2) separate outlets. The southern reach of the Owen Bondy Drain extends from the midpoint of Lot 2, Concession 3, southerly and downstream for approximately 580.00 metres to its outlet into the Darrah Drain. The northern reach of the Owen Bondy Drain extends from the midpoint of Lot 2, Concession 3, northerly and downstream for approximately 758.00 metres and terminates at its outlet into the Whalen Drain.

From our review of the Town's files, we have found various Engineer's Reports prepared through the provisions of the Drainage Act for the Owen Bondy Drain. However, we have outlined the following relevant Engineer's Reports that we utilized as a reference for carrying out this project:

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- a) **February 10th, 1961** Engineer's Report for the "Owen Bondy Drain", prepared by C.G.R. Armstrong, P.Eng., was carried out under Anderdon Drainage By-law. The works conducted under this report generally provided for the relocation of the drain easterly onto private lands along the east side of Concession 3 North. This Engineer's Report also provided for the installation of new access bridges along the entire course of the drain as a result of the drain relocation. The structures identified within this report include **Bridge ②** and **Bridge ④**.
- b) **December 16th, 1969** Engineer's Report for the "Owen Bondy Drain", prepared by C.G.R. Armstrong, P.Eng., was carried out under Anderdon Drainage By-law No. 1946 which provided for the latest major works of repair and improvements carried out in the Owen Bondy Drain. The works conducted under this report generally provided for the deepening and widening of the entire length of the Municipal Drain. This Engineer's Report also provided for repairs and improvements to existing access bridges within the Owen Bondy Drain. The structures identified within this report include **Bridge ②** and **Bridge ④**.

From our detailed research of the above-noted Engineer's Reports, we have found that the 1969 report serves as the governing By-Law for the entire length of the Owen Bondy Drain. Based on our review, the subject property is adjacent to the northern reach of the Owen Bondy Drain and utilizes the Whalen Drain as its outlet. Based on our review, existing **Bridge ②** and **Bridge ④** were constructed and/or identified within the above-mentioned By-laws. As a result, these identified structures would be considered legal entities with respect to the Owen Bondy Drain. At the time of these reports, **Bridge ②** and **Bridge ④** served as primary accesses to their respective properties. With the proposed consolidation of the subject properties, the status of these access bridges will be re-evaluated to suit the development's needs.

Furthermore, we have used the above-mentioned reports to establish the size parameters for the drain and details to be utilized in establishing the proposed access culvert installations. We have specifically utilized the 1969 Engineer's Report to establish the drain profile grades and to assist in establishing the design grade for the subject bridge installations.

III. PRELIMINARY INVESTIGATIONS AND ON-SITE MEETING

After reviewing all of the drainage information provided by the Town of Amherstburg, we arranged for a virtual meeting conducted through videoconference technology and scheduled on November 16th, 2020. The following people were in attendance at this meeting:

Charles Stockwell (Landowner - 265 Concession 3 North)
 Shane McVitty, P.Eng. (Drainage Superintendent)
 Kory Snelgrove E.I.T. (N.J. Peralta Engineering Ltd.)
 William LeBel, P.Eng. (N.J. Peralta Engineering Ltd.)
 Tony Peralta, P.Eng. (N.J. Peralta Engineering Ltd.)

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At the onset of this meeting, Mr. McVitty made introductions to the project. It was generally discussed that written notice has been submitted by Mr. Charles Stockwell for the subject property identified as 1454410 Ontario Inc. (Parcel 1/360-01800) to provide new access bridges over the Owen Bondy Drain. These new access bridges are being provided to facilitate the proposed greenhouse development on the subject property, in accordance with the Site Plan, approved by the Town of Amherstburg.

Upon review of the governing drainage By-Laws, each of the original properties, now being consolidated as one (1) parcel, currently have existing accesses within the Owen Bondy Drain. It was discussed that the site layout will require the reconfiguration of the accesses adjacent to the site, to best facilitate the greenhouse operations. The approved Site Plan identified that a total of three (3) accesses are required to facilitate the development. As a result, the existing access bridge at the north end of the site, identified herein as **Bridge ②**, will be removed and abandoned. The existing access bridge at the south end of the site, identified as **Bridge ④**, will remain with the development. Therefore, two (2) new access bridges will be required and further identified as **Bridge ①** and **Bridge ③**. These accesses shall be installed and/or improved (if required) to provide safe access to the property to satisfy the Ontario Ministry of Transportation (M.T.O.) Commercial Site Access Policy and Standard Designs for an Entrance to Small Business (C.S.A.S.-31).

With the consolidation of the subject property, the status of the existing access bridges will need to be re-evaluated as they are no longer serving the lands as originally intended. As such, it was discussed that the status of each access bridge to be utilized for the subject property will need to be re-established and future maintenance provisions be provided for each.

Mr. McVitty questioned the condition of existing **Bridge ④** and whether it shall be extended or replaced to achieve the required driveway top width (if required). Mr. McVitty expressed his concerns with extending the existing culvert if it is found to be in unsatisfactory condition. He identified that if this culvert was found to be in less than fair condition, then there should be consideration of replacement of this structure in its entirety. Based on our preliminary investigations of the governing reports, the existing bridge appears to have been installed before the 1980s, which would suggest the need for replacement. Mr. Peralta explained that this existing structure will be inspected to confirm its condition, grade and capacity. Based on this evaluation, it will be determined whether the existing bridge will be extended or fully replaced.

There were discussions regarding the options of sloped quarried limestone end treatments versus a vertical headwall. It was further established that due to the overall length required to facilitate large truck traffic, the final design length of culverts may govern the style of end treatments, based on general recommendations of the Department of Fisheries and Oceans (D.F.O.). We further discussed the various options for end

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treatments and established that once a preliminary design has been completed, we can review the various end treatment options. Mr. Stockwell confirmed that he had no preference on end treatment options.

Mr. McVitty confirmed that the Town will require an asphalt apron for all driveways used for commercial use in accordance with the approved Site Plan agreement. He further confirmed that that minimum protection, such as standard granular materials used for backfilling and driveway surfaces, shall be sufficient under this report. Any asphalt works being completed afterwards will be in accordance with the Site Plan agreement.

Mr. Stockwell was reminded that the costs associated to the installations and improvements of these access bridges, will be assessed entirely to the subject property for the construction, together with all associated engineering and incidental fees. Mr. Stockwell indicated that he was aware of these conditions and understood that 100% of the costs are to be borne by the property.

Mr. Stockwell was advised that the new access bridge installations would be subject to further approvals and mitigation measures of the D.F.O, Essex Region Conservation Authority (E.R.C.A), and the Ministry of the Environment, Conservation and Parks (M.E.C.P.).

The overall Drainage Report, future maintenance processes and general grant eligibility were reviewed. We also discussed general timelines for construction. The Owner had advised that they would like to have the new access bridges installed as soon as practical, following the passing of the By-Law for the report.

At the conclusion of our discussions, we advised Mr. Stockwell that we would contact him prior to the preparation of our Engineer's Report, to review the end treatment alternatives, along with details of the new access bridge installations. In addition to the requested access bridges, general discussions regarding drain maintenance on the north reach were held between Mr. Stockwell and Mr. McVitty.

On this note, the On-Site Meeting had concluded.

IV. FIELD SURVEY AND INVESTIGATIONS

Following our On-Site Meeting, we arranged for our survey crew to attend the site to perform a topographic survey, including taking all necessary levels and details, of the northern reach of the Owen Bondy Drain to establish the design parameters for the installation of the two (2) new access bridge structures, removal of one (1) existing access bridge, and any necessary repairs or improvements to an existing access bridge.

Benchmarks were looped from previous work carried out on the drain and were utilized in establishing a relative site Benchmark near the locations of the access bridge sites. We also surveyed the

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drain for a considerable distance both upstream and downstream of the existing and proposed access bridge sites in order to establish a design grade profile for the installation of same. We also took cross-sections of the Owen Bondy Drain at the general location of the access bridge sites, as necessary, for us to complete our design calculations, estimates and specifications.

The Ministry of Environment, Conservation and Parks (M.E.C.P.) currently regulates the Endangered Species Act, 2007. New regulation provisions under Ontario Regulation 242/08, Section 23.9 allows the Township to conduct repairs, maintenance, and improvements, within existing Municipal Drains, under the Drainage Act and these works are exempt from Section 9 and 10 of the Endangered Species Act, so long as the rules in the regulation are followed. If eligible, the regulatory provision allows Townships to give notice to the Ministry by registering their drainage activities through an online registry system.

For the purposes of establishing the watershed area upstream of the proposed access bridges, and determining the pipe sizes required for same, we investigated and reviewed the past Engineer's Reports on the Owen Bondy Drain. We also carried out a review of the watershed limits utilizing the most recent Stormwater Management Report and Plans for the greenhouse development and conducted a review of the adjacent lands to verify the contributing watershed area into the Owen Bondy Drain.

Prior to our appointment to this project, the Town of Amherstburg provided the Essex Region Conservation Authority (E.R.C.A.) with a notice advising of the proposed drainage works, as required under Section 78(2) of the Drainage Act. Based on their comments, we engaged in further correspondence with the E.R.C.A., regarding specific requirements for the approval of the proposed bridge designs.

V. FINDINGS AND RECOMMENDATIONS

E.R.C.A., D.F.O. and M.E.C.P. Considerations

During the course of our investigations, this drainage project was discussed and reviewed in detail with Ms. Ashley Gyori, of the E.R.C.A., to deal with any E.R.C.A. issues and comments related to this Municipal Drain. The Owen Bondy Drain is located within the regulated area and is under the jurisdiction of E.R.C.A., and therefore an E.R.C.A. Permit is required for the construction and/or improvements of the existing and proposed access bridge structures. Further to the above, E.R.C.A. provided us with their comments and concerns through email correspondence, and said correspondence is included herein as **Appendix "A"**.

As outlined in our discussions with the E.R.C.A., and with respect to the Department of Fisheries and Oceans (D.F.O.) concerns and comments, the proposed works within this Municipal Drain was "self-assessed" by the Engineer, through the D.F.O. website and the utilization of the "Guidance for Maintaining and Repairing Municipal

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Drain in Ontario" to determine whether this project shall be reviewed by the D.F.O. The section of the Owen Bondy Drain where the access bridges will be installed has been established as Class 'F' by the D.F.O. Based on the D.F.O. Self-Assessment website and the guidance document, we have determined that the project activities would not require a D.F.O. review for the works proposed under this project, so long as standard measures for fish habitat and migration are implemented.

The Ministry of Natural Resources and Forestry (M.N.R.F.) have transitioned responsibilities of the Species at Risk Provincial Legislation to the Ministry of Environment, Conservation and Parks (M.E.C.P.). Section 23.9 of the Endangered Species Act, 2007 allows the Town to conduct eligible repair, maintenance, and improvement work under the Drainage Act that exempts these works from Sections 9 and 10 of this Act, so long as they follow the rules within Ontario Regulation 242/08.

In recognition of the impacts that these species may experience as a result of the subject works, the Town of Amherstburg shall provide comprehensive mitigation measures as well as species identification guides for reference. These references shall be provided to the successful Tenderer and shall be available for viewing at the Municipal Office for those interested.

Through correspondence with Ashley Gyori, of the E.R.C.A., the self-assessment through D.F.O., and the mitigation measures through the Endangered Species Act, we have provided for all of the E.R.C.A., D.F.O., and M.E.C.P. concerns and issues in our design and recommend that these drainage works be constructed in total compliance with all of the above.

ACCESS BRIDGE STRUCTURES

Further to our discussions and instructions established at the On-Site Meeting, we have reviewed all of the structures within the Owen Bondy Drain which pertain to the subject property currently owned by 1454410 Ontario Inc. (Parcel 1/360-01800). Prior to the completion of our Engineer's Report for this project, we had discussions with the Owner, Mr. Charles Stockwell, to discuss and review the particulars of each structure, in detail. They are as follows:

Bridge ① - 1454410 Ontario Inc. (Parcel 1/360-01800)

Based on our investigations and the information provided, a new access bridge has been requested to serve as a secondary access to the subject agricultural lands of 1454410 Ontario Inc. (Parcel 1360-01800) within Lot 3, Concession 3, and has been identified within this report as **Bridge ①**.

Mr. Stockwell confirmed that the new access bridge shall be positioned as shown within the approved Site Plan and that this new access will be utilized as an access to the proposed bunkhouses, in addition to being used for daily farming operations for this property. As such, he confirmed that this access bridge shall be

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installed to facilitate a standard 6.10 metre (20.00 ft.) driveway top width having a 9.00 metre turning radii to allow for safe access for standard vehicles.

Based on our preliminary design, we find that the proposed access bridge shall require approximately 13.00 metres of 600mm diameter 320kPa Smoothwall High Density Polyethylene (H.D.P.E.) pipe together with sloped quarried limestone end treatments resulting in a driveway top width of approximately 6.56 metres (21.52 ft.). Mr. Stockwell was reminded that all of the construction and incidental costs associated with this new access bridge will be assessed 100% to their property. He was reminded that, as a secondary access to the property, he would be responsible for any future maintenance costs associated to the repair or improvements to this access bridge through the Town of Amherstburg. Furthermore, as a secondary access to the property, Mr. Stockwell was reminded that this new access bridge installation would not be eligible for a grant through the Ontario Ministry of Agricultural Food and Rural Affairs (O.M.A.F.R.A.). Mr. Stockwell confirmed his understanding of the above information and he accepted our recommendations with respect to this access bridge installation. The details of this new access bridge installation and the works proposed herein has been prepared on that basis.

Based on our detailed survey, investigations, examinations, and discussions with the affected property Owner, we recommend that the new access bridge be constructed between Station 1+095.1 and Station 1+108.1 within the Owen Bondy Drain, and at the location and to the general parameters as established in our design drawings attached herein. This new access bridge shall serve as the secondary access to the subject property and shall be installed as part of this report and identified herein as **Bridge ①**.

Bridge ② - 1454410 Ontario Inc. (Parcel 1/360-01800)

The existing access bridge extending from Station 1+042.7 to Station 1+049.4, previously served as the primary access to the original agricultural parcel to the north, prior to its recent consolidation (formerly known as Parcel 360-01700 at 349 Concession 3 North) within Lot 3, Concession 3. This access bridge was reconstructed and improved as part of the Engineer's Report dated December 16th, 1969, prepared by C.G.R. Armstrong, P.Eng., and is currently a legal entity with respect to the Owen Bondy Drain. The existing access bridge consists of 6.70 metres of 750mm corrugated steel pipe with stacked concrete rubble headwalls. We find the existing access structure to be in poor physical condition and has reached the end of its service life. This structure has further been labelled herein as **Bridge ②**.

As outlined within the approved Site Plan, this access bridge will no longer be required as it will become redundant with the addition of the proposed accesses to best serve the development layout. As such, the existing **Bridge ②** within the Owen Bondy Drain shall be removed and abandoned. The details of this bridge removal and the works proposed herein has been prepared on that basis.

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Based on the above information, we recommend that the existing access bridge between Station 1+042.7 to Station 1+049.4, which currently serves the agricultural lands of 1454410 Ontario Inc. (Parcel 1/360-01800), be completely removed and abandoned as outlined and details within this report and pursuant to Section 19 of the "Drainage Act, R.S.O. 1990, Chapter D.17, as amended in 2020".

Bridge ③ - 1454410 Ontario Inc. (Parcel 1/360-01800)

Based on our investigations and the information provided, a new access bridge has been requested to serve as a secondary access to the subject agricultural lands of 1454410 Ontario Inc. (Parcel 1/360-01800) within Lot 3, Concession 3, and has been identified within this report as **Bridge ③**.

Mr. Stockwell confirmed that the new access shall be positioned as shown within the approved Site Plan and further confirmed that its use is intended to be utilized for larger truck traffic.

Based on our preliminary design, we find that the proposed access bridge shall require approximately 20.00 metres of 600mm diameter 320kPa Smoothwall H.D.P.E. pipe together with sloped quarried limestone end treatments. With the new bridge structure required to facilitate large truck traffic, this structure shall be designed per the M.T.O. Commercial Site Access Policy and Standard Design for an Entrance to Small Business (C.S.A.S.-31). The resulting travelled portion of driveway top width shall be 14.20 metres (46.59 ft.), to accommodate for the intended truck traffic. Mr. Stockwell was reminded that all of the construction and incidental costs associated with this new access bridge shall be assessed 100% to the subject property. He was reminded that, as a secondary access to the property, he would be responsible for any future maintenance costs associated to the repair or improvements to this access bridge through the Town of Amherstburg. Furthermore, as a second access to the property, Mr. Stockwell was reminded that this new access bridge installation would not be eligible for a grant through the Ontario Ministry of Agricultural Food and Rural Affairs (O.M.A.F.R.A.). Mr. Stockwell confirmed his understanding of the above information and he accepted our recommendations with respect to this access bridge installation. The details of this new access bridge installation and the works proposed herein has been prepared on that basis.

Based on our detailed survey, investigations, examinations, and discussions with the affected property Owner, we recommend that the new access bridge be constructed between Station 0+958.8 and Station 0+978.8 within the Owen Bondy Drain, and at the location and to the general parameters as established in our design drawings attached herein. This new access bridge shall serve as the secondary access to the subject property and shall be installed as part of this report and identified herein as **Bridge ③**.

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Bridge ④ - 1454410 Ontario Inc. (Parcel 1/360-01800)

The existing access bridge extending from Station 0+687.1 to Station 0+709.6 previously served as the primary access to the original agricultural parcel to the south, prior to its recent consolidation (formerly known as Parcel 360-01800 at 265 Concession 3 North) within Lot 2, Concession 3. This access bridge was installed as part of the Engineer's Report dated February 10th, 1961, prepared by C.G.R. Armstrong, P.Eng., and new end treatments were installed as part of the December 16th, 1969 report prepared by C.G.R. Armstrong, P.Eng. As a result, this access bridge is currently a legal entity with respect to the Owen Bondy Drain. At the time of the original report, this access bridge was constructed utilizing 6.10 metres (20.00 ft.) of 600mm (24") corrugated steel pipe with rubble stone headwalls. The existing access bridge appears to have been replaced since it was last installed and currently consists of approximately 22.3 metres of 600mm High Density Polyethelene plastic pipe (H.D.P.E.) with sloped quarried limestone end treatments, which provides approximately 17.20 metres (56.43 ft.) of travelled top width. We find the existing access structure to be adequately sized with respect to the minimum 1:5-year storm event and is in good physical condition with years of service life remaining. Furthermore, the access bridge meets the requirements of the M.T.O. Commercial Site Access Policy and Standard Design for an Entrance to Small Business (C.S.A.S.-31) standards, to accommodate for the intended truck traffic. Based on our evaluation, we recommend that no improvements are required to this structure as part of this report. This structure has further been labelled herein as **Bridge ④**.

Although the existing access bridge is in good physical condition, the existing structure differs from the governing By-law. With this structure being installed with appropriate materials, to the current construction standards, and with no improvements required to this structure at this time, the current structure details shall supersede those outlined within the governing Engineer's Report. As a result, when future maintenance is required to this structure, we recommend that it be replaced in its entirety utilizing the same pipe grade, together with equivalent materials, length, culvert size and end treatments. We would further recommend that the future maintenance costs associated with the standard 6.10 metres (20.00 ft.) top width of this structure shall be shared with the abutting property, together with all affected upstream lands and roads within the drain's watershed. The additional costs for providing a top width wider than the standard 6.10 metres (20.00 ft.), shall be assessed 100% to the abutting property. All provisions for future maintenance have been included as part of this report.

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VI. ALLOWANCES AND COMPENSATION

All of the work under this project shall be carried out along the east limit of Concession 3 North. All areas disturbed by this work are specified for full restoration; therefore, these works shall not result in any loss of production of agricultural property, or any indirect damages to the non-agricultural areas. Therefore, no allowances or compensation has been provided under this report.

VII. ESTIMATE OF COST

Our estimate of the total cost of this work, including all incidental expenses, is the sum of **FIFTY-SIX THOUSAND FIFTY-SIX DOLLARS (\$56,056.00)** made up as follows:

CONSTRUCTION

- Item 1) **Bridge ① (Station 1+095.1 to Station 1+108.1)**; Provide all labour, equipment and materials to construct a new access bridge consisting of 13.00 metres (42.65 ft.) of 600mm diameter, 320kPa smoothwall H.D.P.E. plastic pipe, including sloped quarried limestone end treatments, installation of floatation anchors, granular bedding and backfill, granular driveway approach and transition, excavation, compaction, topsoil, seeding and mulch, cleanup and restoration, complete. Lump-Sum \$ 13,800.00
- Item 2) **Bridge ② (Station 1+031.7 to Station 1+051.6)**; Provide all labour, equipment and materials to completely remove and dispose of the existing culvert pipe, end treatments, and existing steel gate with concrete blocks; restore the drain banks to its original drain configuration; Provide topsoil, seeding and mulch, cleanup and restoration, complete. Lump-Sum \$ 2,300.00
- Item 3) **Bridge ③ (Station 0+958.8 to Station 0+978.8)**; Provide all labour, equipment and materials to construct a new access bridge consisting of 20.00 metres (65.62 ft.) of 600mm diameter, 320kPa smoothwall H.D.P.E. plastic pipe, including sloped quarried limestone end treatments, installation of floatation anchors, granular bedding and backfill, granular driveway approach and transition, excavation, compaction, topsoil, seeding and mulch, cleanup and restoration, complete. Lump-Sum \$ 21,800.00

Report - Bridges Over the Owen Bondy Drain
 (Geographic Township of Anderdon)
 Town of Amherstburg - D-20-103

Item 4) Net H.S.T. on above item. (1.76%) \$ 667.00

TOTAL FOR CONSTRUCTION **\$ 38,567.00**

INCIDENTALS

1) Report, Estimate, and Specifications \$ 6,400.00

2) Survey, Assistants, Expenses, and Drawings \$ 5,200.00

3) Duplication Costs of Drawings and Report \$ 600.00

4) Estimated Cost of preparing Tender Documents for use by the Town for Letting of the Contract on an invitation basis \$ 1,200.00

5) Estimated Cost of providing Supervision and Full-Time Inspection during Construction (based on a 3-day duration) \$ 3,000.0

6) Net H.S.T. on above items (1.76%) \$ 289.00

7) Estimated Cost for E.R.C.A. Permit \$ 800.00

TOTAL FOR INCIDENTALS **\$ 17,489.00**

TOTAL FOR CONSTRUCTION (brought forward) **\$ 38,567.00**

TOTAL ESTIMATE **\$ 56,056.00**

VIII. DRAWINGS AND SPECIFICATIONS

As part of this report, we have attached the design drawing for the construction of these access bridges over the Owen Bondy Drain. The design drawings show the alignment of the Owen Bondy Drain, and the approximate locations of the subject access bridges within this Municipal Drain. The drawings also illustrate the affected landowners and the details associated to the proposed new access bridge installations. The design drawing is attached to the back of this report and is labelled herein as **Appendix "C"**. These drawings have been reduced in size and the scale therefore varies. However, full-scale drawings can be viewed at the Town of Amherstburg Municipal Office, if required.

We have prepared Specifications which set out the required construction details for the various aspects of the works to be conducted under this report. We have also included Standard Specifications related to the construction of access bridge structures, labelled herein as **Appendix "B"**.

Report - Bridges Over the Owen Bondy Drain
(Geographic Township of Anderdon)
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IX. COST DISTRIBUTION & CONSTRUCTION ASSESSMENT RATIONALE

We would recommend that all of the costs associated with the construction of the new access bridges, as identified and detailed herein as **Bridge ①**, **Bridge ③**, and the removal of **Bridge ②** be totally assessed against the adjoining agricultural lands currently owned by 1454410 Ontario Inc. (Parcel 1/360-01800), and in accordance with the attached **Construction Schedule of Assessment**.

The Ontario Ministry of Agriculture, Food, and Rural Affairs (O.M.A.F.R.A.) have issued administrative policies for Agricultural Drainage Infrastructure Program (A.D.I.P.) to provide financial assistance for assessments to agricultural lands pursuant to the Drainage Act. We understand that the subject agricultural lands may be eligible to be classified with the "Farm Tax Classification".

Since the proposed **Bridge ①** and **Bridge ③** are considered secondary accesses to the subject lands, it is anticipated that all costs associated with these secondary access bridges will **not** be eligible for such grant due to the following provision within the A.D.I.P. policies through O.M.A.F.R.A.:

1. **Policy 2.3.i(i)** - For every drain, every agricultural property is entitled to one drain crossing. Any additional crossing on this property will not be eligible for grant.

Therefore, the assessments related to the construction of the secondary access bridges to this property, shall be shown in the attached Construction Schedule of Assessment under the subheading **"5. Privately Owned - Agricultural Lands (non-grantable)"**.

During construction it may become necessary to temporarily or permanently relocate existing utilities that may conflict with the works outlined within this report. Under these circumstances, the relocation of these utilities shall be assessed any relocation costs against the public utility having jurisdiction in accordance with Section 26 of the Drainage Act. In accordance with Section 69 of the Drainage Act, the utility company is allowed the option to carry out this work utilizing their own forces and at their own cost. However, should they not exercise this option within a reasonable time, the Municipality may arrange to have this work completed and the costs for same shall be charged to the appropriate public utility. Furthermore, any unforeseen construction costs directly related to the Section 26 works shall be assessed entirely, as an extra, to the applicable Road Authority or Utility.

Report - Bridges Over the Owen Bondy Drain
(Geographic Township of Anderdon)
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X. FUTURE MAINTENANCE

It should be noted that a mechanism should be provided herein so that the Town of Amherstburg can undertake future maintenance works on the access bridges identified within this report, so that the future maintenance costs for same can be properly assessed to the affected landowners. We would therefore recommend that these structures within the Owen Bondy Drain, for which future maintenance costs are to be shared with upstream lands and roads within the watershed, be maintained by the Town.

Should any works of maintenance be required in the future to the structures identified within this report, the following provisions with respect to cost-sharing for each of same, shall be shared by the abutting landowner and upstream affected lands and roads in accordance with the following table:

Bridge No.	Parcel Number	Owners	Standard Bridge Benefit Share (Primary)	BLENDED COST-SHARING	
				% to Abutting Owner	% to Upstream Lands & Roads
1.	Parcel 1 360-01800	1455510 Ontario Inc.	--	100.0%	0.0%
3.	Parcel 1 360-01800	1455510 Ontario Inc.	--	100.0%	0.0%
4.	Parcel 1 360-01800	1455510 Ontario Inc.	87.8%	92.5%	7.5%

The sharing percentages between the abutting Owner and the upstream lands and roads affected by said structures have been established on the basis of where it is located relative to the entire reach of the drain. The percentages to the abutting Owner shall be assessed as a Benefit Assessment.

The percentage to the upstream lands and roads as established above shall be assessed as an Outlet Liability towards the lands and roads within the Owen Bondy Drain watershed lying upstream of said structures. These Outlet Assessments shall be shared in the same proportions as the outlet assessment established within the December 16th, 1969, Engineer's Report prepared by C.G.R. Armstrong, or per subsequent amendments made thereto under the Drainage Act. The percentages above account for the bridge user share of the increased pipe length beyond the standard length available to provide the standard 6.10 metres (20.0 ft.) minimum driveway top width.

The future maintenance costs for each affected structure within the drain shall be levied pro-rata on only the affected lands and roads that are situated upstream of the particular structure for which future maintenance works has been carried out.

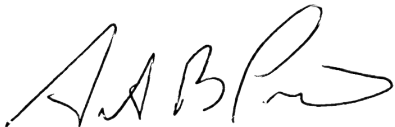
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Said maintenance work would include works to the structure, bedding and backfill, end treatment and other ancillary work. Should concrete or asphalt driveway surfaces over these access bridge driveways require removal as part of the maintenance work, these surfaces should be repaired or replaced as part of the work. 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 structure 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, of any special features, if necessary, shall be totally assessed to the benefiting adjoining Owner served by said access bridge.

All of the above provisions for future maintenance of the above listed bridge structures under this report shall remain as aforesaid until otherwise determined under the provisions of the "Drainage Act, R.S.O. 1990, Chapter, D.17, as amended 2020".

All of which is respectfully submitted.

N. J. PERALTA ENGINEERING LTD.



Antonio B. Peralta, P.Eng.

ABP/amm



N.J. PERALTA ENGINEERING LTD.

Consulting Engineers
 45 Division Street North
 Kingsville, Ontario
 N9Y1E1

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CONSTRUCTION SCHEDULE OF ASSESSMENT

BRIDGES OVER THE OWEN BONDY DRAIN

(for 1454410 Ontario Inc. (Parcel 1/360-01800), Part of Lots 2 & 3, Concession 3)

(Former Township of Anderdon)

TOWN OF AMHERSTBURG

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

<u>Parcel Number</u>	<u>Tax Roll Number</u>	<u>Con. or Plan Number</u>	<u>Lot or Part of Lot</u>	<u>Acres Affected</u>	<u>Hectares Affected</u>	<u>Owner's Name</u>	<u>Value of Benefit</u>	<u>Value of Outlet</u>	<u>Value of Special Benefit</u>	<u>TOTAL VALUE</u>
1	360-01800	3	2 & 3	106.76	43.205	1454410 Ontario Inc.	\$ 56,056.00	\$ -	\$ -	\$ 56,056.00
Total on Privately Owned - Agricultural Lands (non-grantable).....							\$ 56,056.00	\$ -	\$ -	\$ 56,056.00
TOTAL ASSESSMENT							\$ 56,056.00	\$ -	\$ -	\$ 56,056.00

1 Hectare = 2.471 Acres
 Project No. D-20-103
 December 22nd, 2020

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SPECIFICATIONS

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N. J. Peralta Engineering Ltd.

Consulting Engineers

BRIDGES OVER THE OWEN BONDY DRAIN
(for 1454410 Ontario Inc. (Parcel 1/360-01800)
Part Of Lots 2 & 3 Concession 3)

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N. J. Peralta Engineering Ltd.

Consulting Engineers

SPECIFICATIONS

BRIDGES OVER THE OWEN BONDY DRAIN

**(for 1454410 Ontario Inc. (Parcel 1/360-01800),
Part of Lots 2 & 3, Concession 3)**

TOWN OF AMHERSTBURG

I. GENERAL SCOPE OF WORK

The Contractor is advised that the work proposed under this project consists of the removal of one (1) existing access bridge and the installation of two (2) new access bridges within the Owen Bondy Drain, serving the lands of 1454410 Ontario Inc. (Parcel 1/360-01800).

For **Bridge ① and Bridge ③**, the Contractor shall provide all material, labour, and equipment to construct two (2) new access bridges consisting of smoothwall H.D.P.E. plastic pipe, granular bedding and backfill, sloped quarried limestone end protection, and all other ancillary work. All works under this project shall provide us with a complete and satisfactory job.

Furthermore, for **Bridge ②**, the Contractor shall provide all material, labour, and equipment to remove the existing access bridge and end treatments and restore the drain to its original open drain configuration.

The location of the new access bridges shall be the exact designated location as shown on the plan unless otherwise directed by the Property Owner in conjunction with the Town Drainage Superintendent, prior to the construction of same. Any changes to the location of the new access bridges must be approved in writing by the Consulting Engineer.

All work shall be carried out in accordance with these specifications and shall comply in all regards with **Appendix "A"**, as well as the Standard Specifications included in **Appendix "B"**. The works shall be carried out in accordance with the plan labelled herein as **Appendix "C"**. The structure shall be of the size, type, depth, etc., as is shown in the accompanying drawings, as determined from the **Benchmark**, and as may be further laid out at the site at the time of construction. All work carried out under this project shall be completed to the full satisfaction of the Town Drainage Superintendent and/or the Consulting Engineer.

Specifications - Bridges Over The Owen Bondy Drain
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II. E.R.C.A. AND D.F.O. CONSIDERATIONS

The Contractor shall be required to implement stringent erosion and sedimentation controls during the course of the work to minimize the amount of silt and sediment being carried downstream into the Whelan Drain. It is intended that work on this project be carried out during relatively dry weather to ensure proper site and drain conditions and to avoid conflicts with sediment being deposited into the outlet drainage systems. All disturbed areas shall be restored as quickly as possible with grass seeding and mulching installed to ensure a protective cover and to minimize any erosion from the work site subsequent to construction. The Contractor may be required to provide temporary silt fencing and straw bales as outlined further 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 shall be provided, if available. The Contractor is advised that no work shall be carried out in the existing drain from March 15th to June 30th, of any given year.

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

- a) As per standard requirements, work shall not be conducted at times when flows in the drain are elevated due to local rain events, storms, or seasonal floods. Work shall be done in the dry.
- b) 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.
- c) 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 related Ontario Provincial Standards. It is incumbent on the proponent and its contractors to ensure that sediment and erosion control measures are functioning properly and are maintained/upgraded as required.
- d) Silt or sand accumulated in the barrier traps must be removed and stabilized on land once the site is stabilized.

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- e) 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.

Not only shall the Contractor comply with all of the above, it shall also be required to further comply with any mitigation measures included within the email correspondence with the E.R.C.A. All of which are included within these specifications and labelled herein as Appendix "A".

III. M.E.C.P. CONSIDERATIONS

Under the Species at Risk Provincial Legislation, set in place with the Ministry of Environment, Conservation and Parks (M.E.C.P.), Section 23.9 of the Endangered Species Act, 2007, allows the Town to conduct eligible repair, maintenance, and improvement work under the Drainage Act that exempts these works from Sections 9 and 10 of this Act, so long as they follow the rules within Ontario Regulation 242/08.

Prior to commencing work, the Town of Amherstburg will complete an "Endangered Species Act Review" for the Owen Bondy Drain and will provide the Contractor with the results of said review, including Town documents for the purpose of identification of known species at risk within the project area and mitigation measures for species and habitat protection. It is the responsibility of the Contractor to make certain that necessary provisions are undertaken to ensure the protection of all species at risk and their habitats throughout the course of construction.

The Contractor will be responsible for providing the necessary equipment and materials required by the mitigation plans and shall contact the Town of Amherstburg Drainage Superintendent immediately if any endangered species are encountered during construction.

IV. ACCESS TO WORK AND TRAFFIC CONTROL

The Contractor is advised that all the work to be carried out on this project extends along the east side of Concession 3 North. The Contractor shall have access for the full width of the roadway abutting the proposed drainage works. The Contractor may use the entire width of Concession 3 North right-of-way necessary to permit the completion of all the work required to be completed for this project.

The Contractor shall ensure that the travelling public is always protected while utilizing the roadway for its access. The Contractor shall be required to carry out all 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 travelling

Specifications - Bridges Over The Owen Bondy Drain
(Geographic Township of Anderdon)
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public. The Contractor shall be required to submit a Traffic Control Plan to the Consulting Engineer for approval from the governing Road Authorities. The Traffic Control Plan shall be carried out in accordance with the requirements of the Ontario Traffic Manual's Book 7 for Temporary Conditions. Should the Contractor have to close Concession 3 North for the proposed works, it shall arrange to obtain the necessary authorizations from the Town of Amherstburg and the County of Essex Roads Departments and distribute notification of detours around the site. The Contractor shall also ensure that all emergency services, school bus companies, etc. 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 Town and County Roads Department.

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. Due to the extent of the work and the area for carrying out the work, the Contractor shall 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 travelling public. Any accesses or areas used in carrying out the works are to be fully restored to their original conditions by the Contractor, including topsoil placement and lawn restoration as directed by the Town Drainage Superintendent and/or the Consulting Engineer. Restoration shall include but not be limited to all necessary levelling, grading, shaping, topsoil, seeding and mulching, and granular placement required to make good any damage caused.

The Contractor shall note that any deviation from the above-mentioned access for the construction of the access bridges without the explicit approval of the adjacent landowners and the Town Drainage Superintendent could result in the Contractor being liable for damages sustained. The value for such damage shall be determined by the Town Drainage Superintendent and the Consulting Engineer, and be subsequently deducted from the Contract Price.

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 access, all such brush, trees or rubbish shall be close cut and grubbed out, and the whole shall be 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 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 the 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 and cooperate with them in the carrying out of any work. The

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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.

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 handwork 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 and any such materials located in the bridge culverts 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 shall be required to exercise extreme care in the removal of any fencing so as to cause a minimum of damage to same. The Contractor shall be required to replace any fence that is taken down in order to proceed with the work, and the fence shall be replaced in a neat and workmanlike manner. The Contractor shall not be required to procure any new materials for rebuilding the fence provided that it has used reasonable care in the removal and replacing 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 BRIDGE WORK

The Contractor shall provide all material, labour and equipment for the installation of two (2) new access bridges, together with the removal of one (1) existing access bridge for 1454410 Ontario Inc. (Parcel 1/360-01800), in the Owen Bondy Drain as follows:

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Bridge ① - 1454410 Ontario Inc. (Parcel 1/360-01800)

The Contractor shall supply and install a new access bridge as set out in the chart forming part of the details for **Bridge ①** on the plans. The Contractor shall provide sloped quarried limestone on filter cloth end protection at each end of the new culvert installation. All work shall be carried out in accordance with these specifications and the requirements in **Appendix "C"**.

When complete, the access bridge along the centreline of the new culvert shall have total top width, including the top width of the sloped quarried limestone end treatments, of approximately 7.51 metres (24.64 ft.) and a travelled driveway width of 6.41 metres (21.03 ft.). The quarried limestone end treatments shall be installed on a slope no steeper than 1.50 horizontal to 1.00 vertical and shall extend from the end of the new smoothwall H.D.P.E. pipe to the top elevation of the driveway.

The culvert installation on this project shall be set to the grades as shown on the plans or as otherwise established herein and the Town Drainage Superintendent or the Consulting Engineer 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 "**Standard Specifications For Access Bridge Construction Including Endwall Treatment, Backfilling And Installation Procedures**" attached to the Specifications and labelled **Appendix "B"**.

Bridge ② - 1454410 Ontario Inc. (Parcel 1/360-01800)

The Contractor shall completely remove the existing corrugated steel pipe and all end protection, together with the existing steel gate and concrete blocks and dispose of same as outlined in these specifications. The Contractor shall then restore the drain to its original configuration and provide topsoil, seed, and mulch. All work shall be carried out in accordance with these specifications and the requirements in **Appendix "C"**.

Bridge ③ - 1454410 Ontario Inc. (Parcel 1/360-01800)

The Contractor shall supply and install a new access bridge as set out in the chart forming part of the details for **Bridge ③** on the plans. The Contractor shall provide sloped quarried limestone on filter cloth end protection at each end of the new culvert installation. All work shall be carried out in accordance with these specifications and the requirements in **Appendix "C"**.

When complete, the access bridge along the centreline of the new culvert shall have total top width, including the top width of the sloped quarried limestone end treatments, of approximately 15.25 metres (50.03 ft.) and a travelled driveway width of 14.15 metres (46.42 ft.). The quarried limestone end treatments shall be installed on a slope no steeper than 1.50 horizontal to 1.00 vertical and shall extend from the end of the new smoothwall H.D.P.E. pipe to the top elevation of the driveway.

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The culvert installation on this project shall be set to the grades as shown on the plans or as otherwise established herein and the Town Drainage Superintendent or the Consulting Engineer 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 "**Standard Specifications For Access Bridge Construction Including Endwall Treatment, Backfilling And Installation Procedures**" attached to the Specifications and labelled Appendix "B".

VIII. H.D.P.E. PIPE INSTALLATION

All new 320kPa smoothwall H.D.P.E. culvert pipe(s) shall be set in the general alignment and to the grade elevations established in the accompanying drawings.

The new H.D.P.E. plastic pipe for this project shall be supplied as no more than three (3) lengths of pipe for **Bridge ①** and four (4) lengths for **Bridge ③** all of which are to be joined together with the use of a water-tight bell and gasket joining system, secured in accordance with the Manufacturer's recommendations. The minimum length of a continuous pipe section shall be no less than 3.00 metres (9.87 ft.). The H.D.P.E. plastic pipe for this installation must be of the length, size, and thickness identified in the Plans and approved by the Drainage Superintendent and the Consulting Engineer, prior to its placement in the drain.

For new smoothwall H.D.P.E. culvert pipes that are shown on the plans to have sloped quarried limestone erosion protection at their ends, both ends of the pipe shall be securely anchored against floatation utilizing two (2) steel T-bar fence posts having a minimum length of 1.30 metres (4.00 ft.) or approved equal, on each side of the pipe, together with heavy steel galvanized wire secured between them across the top of the pipe. The top of each post shall be set no higher than the top of the proposed culvert. Pipe anchors shall be installed in accordance with the "**Floatation Anchor Details**" outlined within the accompanying drawings.

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 and/or Consulting Engineer. The installation of the complete length of the new culvert pipe, including all appurtenances, shall be completely inspected by the Town Drainage Superintendent and/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 replacement culvert pipe without the site presence of the Town Drainage Superintendent and/or the Consulting Engineer's Inspector to inspect and approve said installation. The Contractor shall provide a minimum of forty-eight (48) hours notice to the Town Drainage Superintendent and/or the Consulting Engineer prior to commencement of the work. The installation of the replacement culvert structure is to be performed during normal working hours of the Town Drainage

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Superintendent and/or the Consulting Engineer from Monday to Friday unless written authorization is provided by them to amend said working hours.

The bottom of the trenches must be carefully excavated and trimmed to the elevation and shape of the bottom of the pipe. The bottom of the trenches shall be recessed to receive the pipe in order to allow the pipe to be uniformly supported for its' entire length. Corrections in depth of excavation caused by the Contractor excavating to an extent greater than that required for the elevation of the pipe shall be made by bedding the pipe with 20mm (3/4") clear stone granular material placed at the time that the pipes are being installed, at the Contractors expense.

The Contractor should note that, because the culvert is being installed with an excavator, it is expected that they will provide approximately 150mm (6") of either compacted M.T.O. Granular "A", Granular "B" (Type II) or 20mm (3/4") clear stone bedding material, as outlined within O.P.S.S. Form 1010, to the spring line of the proposed pipe, at a minimum, and throughout the entire length of the culvert. The Contractor shall ensure that a good firm base is provided under the drain pipe, and they shall provide for this item as part of their tender price.

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 plan. The placement of the culvert shall be on an even grade and 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 and/or Consulting Engineer.

IX. BRIDGE CONSTRUCTION

Once the new H.D.P.E smoothwall pipe 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, the full top width of the drain, and the approach to the west and transitions to the east shall be M.T.O. Type "A" O.P.S.S. Form 1010, or local approved equivalent. The backfilling of the H.D.P.E. pipe shall be provided in total compliance with the Standard Specifications included in **Appendix "B"**.

All granular backfill for the bridge installations shall be satisfactorily compacted in place to a minimum Standard Proctor Density of 98% by means of mechanical compaction equipment. 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.

Specifications - Bridges Over The Owen Bondy Drain
(Geographic Township of Anderdon)
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The new H.D.P.E. smoothwall pipes for these installations are to be provided with a minimum depth of cover measured from the top of the pipe of 305mm (12"). 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 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 and enclosures 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 culvert design grade elevations should be confirmed before commencing to the next stage of the access bridge installation. The Contractor is also to check that the pipe invert grades are correct by referencing the Benchmark.

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 check dam in the drain bottom immediately downstream of each culvert site during the time of construction. The straw bale 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 straw bales may be reused at each site subject to their condition. All costs associated with the supply and installation of this straw bale check dam shall be included within the construction items for this project.

X. EXCAVATION, REMOVALS AND DISPOSAL

For **Bridge ②**, the Contractor shall be required to excavate and completely remove the existing culvert and headwalls in their entirety, as well as any other deleterious materials that may be encountered in removing same. The Contractor shall also be required to completely dispose of all of same to a site to be obtained by it at its own expense.

The Contractor shall note that the existing access bridge is to be removed and the drain banks shaped to an open channel configuration. The design parameters of the Owen Bondy Drain at the location for the full width of access **Bridge ②** consists of a 0.91 metre (3.00 ft.) bottom width, and 1.50 horizontal to 1.00 vertical side slopes. Drain side slopes and the bottom width shall be cut to these parameters and all excavated and disturbed areas shall be covered with topsoil, seeded and mulched.

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During the course of its excavation operations, the Contractor will be required to salvage all available topsoil. Where necessary, this material shall be stockpiled by the Contractor in order to avoid contamination and shall be utilized in carrying out the 100mm thick topsoil placement along all specified newly excavated and filled or disturbed areas, in preparation for the seeding and mulching operation to be carried out as part of the restoration works.

All unsuitable or deleterious materials from the excavation and removal of the existing culvert and drain shall be hauled away and disposed of by the Contractor to a site to be obtained by it at its own expense. Likewise, where indicated in the plans, or in the Schedule of Items, or in the Specifications, the Contractor shall remove the existing culvert pipe and dispose of all of same at a site to be obtained by it at its own expense. In all cases, the disposal of any trucked material will be the responsibility of the Contractor and it shall ensure that any permits required for fill disposal are obtained from the appropriate authority. The Contractor will be responsible for keeping all private and public roadways free and clear of mud and debris resulting from its use of same for access and hauling purposes.

As part of the work, the Contractor shall be required to excavate, transition and clean the drain bottom for a distance of 3.05 metres (10.00 ft.) both upstream and downstream of the access bridge pipes at each bridge structure installation site. The sediment material from this excavation shall under no circumstance be utilized for the backfilling of any of the enclosure pipe, and same must be totally trucked away and disposed of at a site to be obtained by it at its own expense.

When carrying out the excavation and backfilling work, the Contractor shall satisfy itself as to the exact location, nature, and extent of any existing structures, utility, or other object which it may encounter during the course of the work. The Contractor is advised that it is to coordinate any work on the utilities with the utility company. The Contractor shall ensure that it protects all of the underground utility works against damage during the course of its operations, and especially those noted on the drawings.

All roadways, driveways and access bridges, or any other means of access onto the job site shall be fully restored to their former condition at the Contractor's expense. Before authorizing Final Payment, the Town Drainage Superintendent or the Consulting Engineering 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 Consulting Engineer shall order such cleanup to be carried out by others and the cost of same to be deducted from any monies owing to the Contractor.

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

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XI. SLOPED QUARRIED LIMESTONE EROSION PROTECTION

Once the smoothwall H.D.P.E. pipe has been set in place, the Contractor shall install sloped quarried limestone end protection at both ends of the access on a slope no steeper than 1.50 horizontal to 1.00 vertical and shall extend from the end of the new pipe to the top elevation of the driveway. The top 305mm (12") of backfill material over the ends of the H.D.P.E. pipe, from the invert of said pipe to the top of the driveway elevation of the access bridge, shall be quarried limestone. The quarried limestone shall be provided as shown and detailed on the plan or as indicated in the Standard Specifications in **Appendix "B"** 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 the access bridge 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. All work shall be completed to the full satisfaction of the Town Drainage Superintendent and/or the Consulting Engineer.

The quarried limestone shall be provided as is shown and detailed and shall vary in size from a minimum of 100mm (4") to a maximum of 250mm (10"). The quarried limestone pieces shall be carefully tamped into place with the use of a shovel bucket so that, when complete, the quarried limestone erosion protection shall be consistent, uniform, and tightly laid in place. Prior to placing the quarried limestone, the Contractor shall place non-woven geotextile filter fabric "GMN160" conforming to O.P.S.S. 1860 Class 1 or approved equal, as an underlay. The Contractor shall take extreme care not to damage the geotextile filter fabric when placing the quarried limestone. The placement of the geotextile filter fabric and the quarried limestone, and the completion of the quarried limestone erosion protection shall be conducted to the full satisfaction of the Town Drainage Superintendent and/or 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 Including Endwall Treatment, Backfilling And Installation Procedures**". These are attached to the back of these specifications and labelled **Appendix "B"**. The Contractor shall comply in all respects with the General Conditions included in Item 4 and the "**Typical Quarried Limestone End Protection**" detail illustrated within the plan.

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XII. BENCHMARKS

For use by the Contractor, we have established a Benchmark near the location of the new access bridge structures.

The plans include details illustrating the work to be completed for the new bridges together with the bridge removal. For the bridge details, Benchmarks have been indicated and the elevations have been shown and may be utilized by the Contractor in carrying out its work. The Contractor shall note that a specific design elevation grade has been provided for the invert at each end of the pipes in the tables accompanying the details. The tables also set out the pipe size, materials, and other requirements relative to the installation of the bridge structures. In all cases, the Contractor is to utilize the specified drain slope to set any new pipe installation. The Contractor shall ensure that it takes note of the direction of flow and sets the pipe to assure that the grade flows from south to north 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 same to be set approximately 10% of their diameter below the existing drain bottom or the design grade of the drain, whichever is lower.

XIII. ANCILLARY WORK

During the course of any repair or improvements, the Contractor will be required to protect or extend any existing tile ends or swales to maintain the drainage from the adjacent lands. All existing tiles shall be extended utilizing Boss 1000 or equal plastic pipe of the same diameter as the existing tile and shall be installed in accordance with the "**Standard Lateral Tile Detail**" as shown in the details included in **Appendix "B"** unless otherwise noted. Connections shall be made using a Manufacturer's coupling wherever possible. Openings into new pipes shall be neatly saw cut to the satisfaction of the Town Drainage Superintendent or the Consulting Engineer. 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. 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 shall also be required as part of the bridge installations to excavate and widen the drain bottom where required to fit the new bridge culvert pipes in order to provide a smooth transition between the new bridge culvert installations and the existing drain.

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XIV. TOPSOIL, SEED AND MULCH

The Contractor shall be required to restore all existing grassed areas and drain side slopes damaged by the structure installation, and place topsoil, seed, and mulch over said areas including any specific areas noted on the plans. The Contractor shall be required to use the scavenged topsoil stripped from the drain banks. The balance of the topsoil required shall be obtained by the Contractor at its own expense. The Contractor shall provide all the material to cover the above-mentioned surface areas 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 all topsoil shall be carefully carried out according to Ontario Provincial Standard Specifications, Form 570, dated November 2007, or as subsequently amended or as amended by these Specifications. Once the topsoil has been properly placed and fine graded, the Contractor shall seed and mulch the area. Seeding and mulching operations shall be carried out according to Ontario Provincial Standard Specifications, Form 572, dated November 2003, or as subsequently amended or as amended by these Specifications. The seeding mixture shall be OSECO Seed Mixture Canada No. 1, as available from Morse Growers Supply in Leamington, or approved equal. As part of the seeding and mulching operation, the Contractor shall be required to provide either a hydraulic mulch mix or a spread straw mulch with an adhesive binder in accordance with O.P.S.S. 1103.05.03 dated November 2007, or as subsequently amended, to ensure that the grass seed shall be protected during germination and provide a thick, uniform cover to protect against erosion, where necessary.

All of the work relative to the placement of topsoil and the seeding and mulching operation shall be meticulously done and completed in a good and workmanlike manner all to the full satisfaction of the Town Drainage Superintendent and Consulting Engineer.

XV. GENERAL CONDITIONS

- a) The Town Drainage Superintendent or Consulting 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 Amherstburg and the Consulting Engineer and its' representatives for any damages which it may cause or sustain during the progress of the work. It shall not hold the Town of Amherstburg or the Consulting Engineer liable for any legal action arising out of any claims brought about by such damage caused by it.

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- c) The Contractor shall provide a sufficient number of layout stakes and grade points so that the Drainage Superintendent and Consulting Engineer can review same and check that the work shall generally conform with the design and project intent.
- d) The Contractor shall be responsible for any damage caused by it to any portion of the Municipal road system, especially to the travelled portion. When excavation work is being carried out and the excavation equipment is placed on the travelled portion of 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, etc., 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. A Traffic Control Plan is required for this project. The Traffic Control Plan is to comply with the Ontario Traffic Manual's Book 7 for Temporary Conditions. A suitable Traffic Control Plan must be submitted to the Consulting Engineer, the Town and/or the County of Essex for approval, where applicable.
- 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 Consulting 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 Consulting 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.

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- i) The Contractor shall 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 shall 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 Owner unless otherwise established within the Tender Documents. 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 Owner in every way and shall guarantee faithful performance of the Contract during the period of the Contract, including the period of guaranteed maintenance which shall 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 shall 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 unless otherwise established in the Tender Documents, and shall name the Town of Amherstburg and its' officials, and the Consulting 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 Consulting Engineer prior to the commencement of work.
- l) Monthly progress orders for payment shall be furnished to 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% shall 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

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iii) a Statutory Declaration, in a form satisfactory to the Consulting 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 Consulting 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.) shall govern and be used to establish the requirements of the work.

APPENDIX "A"

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From: Kory Snelgrove
Sent: December 18, 2020 5:11 PM
To: AGyori@erca.org
Cc: tony@peraltaengineering.com; Shane McVitty; nnumber@amherstburg.ca
Subject: RE: Notification of Request for Drainage Works - Owen Bondy Drain
Attachments: 201218 - PRELIMINARY - Bridges over the Owen Bondy Drain.pdf

Good afternoon Ashley,

Further to the correspondence from ERCA and Town of Amherstburg Staff below, our office was appointed under Section 78 of the Drainage Act for the installation of two new access bridges over the Owen Bondy Drain for 1454410 Ontario Inc. ("Parcel 1"), along Concession 3 North. The Owen Bondy Drain watershed is divided into two separate outlets with the top end of the drain located near the south property line of the subject parcel. It shall be noted that all of the drainage works included within our report is located within the north reach of the Owen Bondy Drain.

Following discussions with the owner and Town staff, these new accesses are required as a result of the proposed greenhouse development. It should be noted that the watershed boundaries have been changed due to the greenhouse development discharging into the upstream end of the Whalen Drain.

The initial scope of work was intended to include for the installation of two new access bridges. However, based on the information outlined below, and as discussed at the virtual on-site meeting for this project we have provided for the removal of one additional access bridge.

In accordance with your request for a preliminary design proposal for this project, attached you will find the preliminary design drawings for your review. Based on our preliminary design, we have determined the following details:

- **Bridge No. 1** – The proposed new access bridge shall consist of approximately 13.0m of 600mm diameter 320 kPa smoothwall H.D.P.E. pipe with sloped quarried limestone end treatments, together with 60mm of pipe embedment below the designed drain bottom. This access bridge is intended to provide a top width of 6.41m (21.0') for standard vehicle access.
- **Bridge No. 2** – represents an existing access bridge for 1454410 Ontario Inc, at M.N. 265 (formerly M.N. 349), Concession 3 North. The existing access bridge consists of approximately 6.70m of 750mm diameter corrugated steel pipe with vegetation and broken concrete end treatments. This access bridge is found to be in poor shape and no longer required for this development. Therefore, this access is intended to be removed with full restoration of the drain.
- **Bridge No. 3** – The proposed new access bridge shall consist of approximately 20.0m of 600mm diameter 320 kPa smoothwall H.D.P.E. pipe with sloped quarried limestone end treatments, together with 60mm of pipe embedment below the designed drain bottom. This access bridge is intended to provide a top width of 14.15m (46.4') to provide for a minimum 15.00 metre radius from approximately the edge of the asphalt roadway to the edge of the new driveway in accordance with the Ministry of Transportation Ontario, CSAS – 31 "Entrance to Small Business for Rural Areas" which is intended for larger truck traffic.
- **Bridge No. 4** – represents an existing access bridge for 1454410 Ontario Inc, at M.N. 265 Concession 3 North. The existing bridge consists of approximately 22.3m of 600mm diameter High Density Polyethylene pipe with sloped quarried limestone end treatments. No work is being completed to this access within this report.

All bridges have been design to have the capacity to handle a 1 in 5 year storm event. There are no access bridges upstream of **Bridge No. 4** within the north reach of the Drain. Approximately 130.0 metres downstream of the proposed access **Bridge No. 1** is a 900mm dia. smoothwall H.D.P.E. pipe having a total length of 12.2m in length with sloped quarried limestone end treatments which serves the E.R.C.A. greenway trail.

We have reviewed the DFO website as it relates to the Fisheries Act and have performed a "Self Assessment" for this project. Also, as it relates the Endangered Species Act, we have contacted the Town of Amherstburg to ensure that this project is covered under the new ESA Regulation 242/08.

We trust that this information is satisfactory. However, if you have any concerns or require additional information, please feel free to contact us at your earliest opportunity as we intend on finalizing this report as soon as practical.

Kindest Regards,

Kory Snelgrove

N.J. Peralta Engineering Ltd.
45 Division Street North
Kingsville, ON
N9Y 1E1
(519)733-6587 office
(519)733-6588 fax
www.peraltaengineering.com

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From: Ashley Gyori <AGyori@erca.org>
Sent: October 6, 2020 12:30 PM
To: Shane McVitty <smcvitty@amherstburg.ca>
Cc: tony@peraltaengineering.com
Subject: RE: Notification of Request for Drainage Works - Owen Bondy Drain

Good afternoon Shane,

This office acknowledges receipt of the Notice of Request for Repairs and Improvements to the Owen Bondy Drain.

A review of our floodplain mapping for the Owen Bondy Drain indicates that it is located within an area that is under the jurisdiction of the Essex Region Conservation Authority (ERCA) (Section 28 of the *Conservation Authorities Act*). Prior to undertaking works, a permit is required from this office.

At this time, we do not expect that there will be any extraneous comments or concerns with respect to this project; however, we cannot be more specific in this regard without an actual proposal to review.

With respect to Department of Fisheries and Oceans (DFO) concerns and comments, the proposed works to the drain will need to be self-assessed by you, the proponent, through the DFO website at <http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html>. Through the self-assessment process, you will be able to determine if these works require a formal authorization under the *Fisheries Act*.

If further information or clarification is required, please do not hesitate to contact me.

Kind regards,



ASHLEY GYORI
Regulations Analyst
Essex Region Conservation Authority
360 Fairview Avenue West, Suite 311 • Essex, Ontario • N8M 1Y6
agyori@erca.org • essexregionconservation.ca

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****NOTE: As per public health guidelines, our offices are closed to the public, but staff are working remotely to provide responses to inquiries and review applications as efficiently as possible. Your patience and understanding is greatly appreciated at this time. ****

From: Shane McVitty <smcvitty@amherstburg.ca>
Sent: Monday, September 21, 2020 8:06 AM
To: Ashley Gyori <AGyori@erca.org>
Cc: Dan Jenner <DJenner@erca.org>; Tim Byrne <TByrne@erca.org>; 'tony@peraltaengineering.com' <tony@peraltaengineering.com>
Subject: Notification of Request for Drainage Works - Owen Bondy Drain

Good Morning Ashley,

Please find attached a letter notifying the Essex Region Conservation Authority of a request that the Town of Amherstburg has received a request for improvement to the Owen Bondy, located along the east side of Concession Road 3N, south of Texas Road, in the former Geographic Township of Anderdon. In general, the property owner will be developing a new greenhouse (Cecelia Acres) and will required two (2) new access bridges across the drain.

If you have any questions or concerns, please do not hesitate to contact myself directly.

Regards,
Shane

Shane McVitty
Drainage Superintendent / Engineering Coordinator
Town of Amherstburg
512 Sandwich St. South, Amherstburg, ON, N9V 3R2
Tel: 519-736-3664 Fax: 519-736-7080 TTY: 519-736-9860



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APPENDIX "B"

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STANDARD SPECIFICATIONS FOR ACCESS BRIDGE CONSTRUCTION INCLUDING ENDWALL TREATMENT, BACKFILLING AND INSTALLATION PROCEDURES

1. CONCRETE FILLED JUTE BAG HEADWALLS

After the Contractor has set in place the new pipe, it shall completely backfill the same and install new concrete jute bag headwalls at the locations and parameters indicated on the drawing. When constructing the concrete jute bag headwalls, the Contractor shall place the bags so that the completed headwall will have a slope inward from the bottom of the pipe to the top of the finished headwall. The slope of the headwall shall be one unit horizontal to five units vertical. The Contractor shall completely backfill behind the new concrete 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 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 21 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 of a single bag wall construction. 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, extending for the full length of the wall, and from 305mm (12") below the bottom of the culvert pipe to the bottom of the culvert pipe.

All concrete used for the footing, cap and bags shall have a minimum compressive strength of 21 Mpa in 28 days and 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 a minimum of 500mm (20") 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 sections 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 Town Drainage Superintendent.

2. QUARRIED LIMESTONE ENDWALLS

The backfill over the ends of the corrugated steel pipe shall be set on a slope of 1-½ metres horizontal to 1 metre vertical from the bottom of the corrugated steel pipe to the top of each sideslope and between drain sideslopes. 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 metres horizontal to 1 metre vertical from the bottom of the corrugated steel pipe to the top of each sideslope of the drain and between both sideslopes. The quarried limestone shall have a minimum dimension of 100mm (4") and a maximum dimension of 250mm (10"). It 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, 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 sideslope of the drain and between both sideslopes of the drain.

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 sideslope 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 Town Drainage Superintendent.

4. GENERAL

Prior to the work commencing, the Town Drainage Superintendent must be notified, and under no circumstances shall work begin without the Superintendent being at the site. Furthermore, the grade setting of the pipe must be checked, confirmed, and approved by the Superintendent 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, the Town Drainage Superintendent and the Engineer for 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.

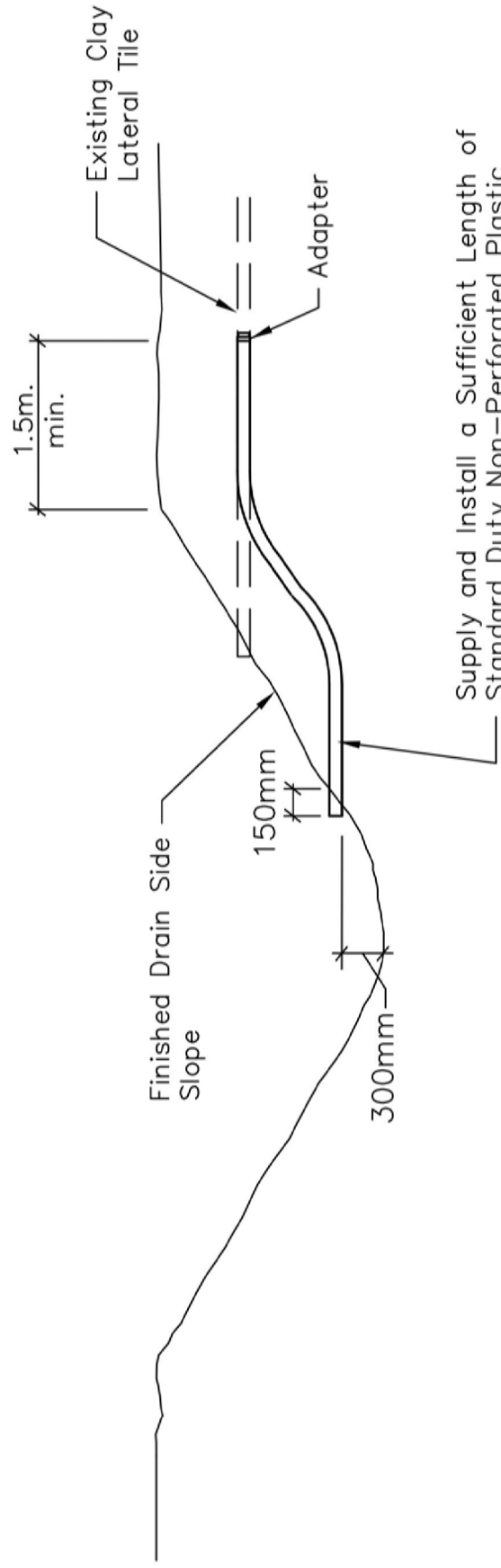
Where applicable, the Contractor and/or landowner constructing the new bridge shall be responsible for any damage caused by them to any portion of the Town road right-of-way. They shall take whatever precautions are necessary to cause a minimum of damage to same and must restore the roadway to its' original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

When working along a municipal roadway, the Contractor shall provide all necessary lights, signs, barricades and flagmen, 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.

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 under this sub-heading, are to be carried out and performed to the full satisfaction of the Town Drainage Superintendent.



Supply and Install a Sufficient Length of Standard Duty Non-Perforated Plastic Tile Extension with Rodent Grates

NOTE: If Existing Lateral Tile is Plastic Utilize a Plastic Insert Coupling in Place of Adapter.

STANDARD LATERAL TILE DETAIL

SCALE = N.T.S.

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APPENDIX "C"

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PLANS & DETAILS

BRIDGES OVER THE OWEN BONDY DRAIN

(For 1454410 Ontario Inc. (Parcel 1/ 360-01800), Part of Lots 2 & 3, Concession 3)

IN THE TOWN OF AMHERSTBURG (Geographic Township of Anderson)

COUNTY OF ESSEX • ONTARIO



A.B. PERALTA ENGINEERING LTD.

45 DIVISION STREET NORTH
KINGSVILLE, ONTARIO
N9Y 1E1

DATE: DECEMBER 22nd, 2020

TOWN OF AMHERSTBURG

MAJOR: ALDO DICARLO
CLERK: PAULA PARKER
DRAINAGE SUPERINTENDENT: SHANE McVITTY P.Eng.

BENCHMARKS:

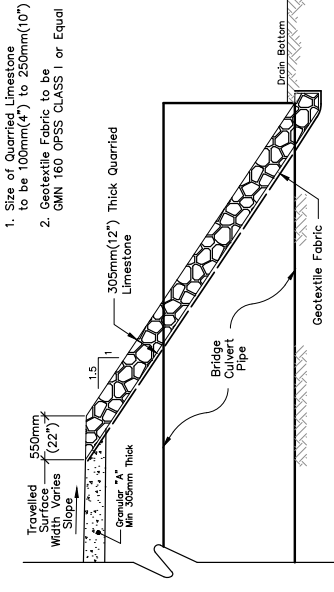
- TOP OF NAIL SET IN EAST FACE OF EXISTING HYDRO POLE LOCATED ON THE WEST SIDE OF CONCESSION 3 NORTH IN FRONT OF M.N. 265 AND APPROXIMATELY 4.5m SOUTH OF PROPOSED BRIDGE ①.
ELEV. 183.652m
- TOP OF NAIL SET IN THE EAST FACE OF EXISTING HYDRO POLE LOCATED ON THE WEST SIDE OF CONCESSION 3 NORTH IN FROM OF M.N. 265 AND APPROXIMATELY 167.0m SOUTH OF PROPOSED BRIDGE ②.
ELEV. 183.574m

GENERAL NOTES:

- THE ACCURACY OF THE UTILITIES SHOWN ON THESE DRAWINGS ARE NOT GUARANTEED BY THE OWNER OR N. J. PERALTA ENGINEERING LTD. OTHER UTILITIES MAY BE PRESENT OR THE UTILITIES SHOWN MAY DIFFER IN SIZE OR LOCATION SHOWN.
- ALL DIMENSIONS SHOWN IN METERS UNLESS NOTED OTHERWISE. PROPERTY LINES ARE APPROXIMATE AND ARE BASED ON THE TOWN OF AMHERSTBURG GIS AND FIELD INFORMATION.
- THE ENTRANCE LOCATION IS BASED ON THE SITE PLAN APPROVED BY THE TOWN OF AMHERSTBURG. THE ENTRANCE HAS BEEN DESIGNED TO SATISFY THE M.T.O. REQUIREMENTS FOR THE ESSEX REGION CONSERVATION AUTHORITY AND TO SMALL BUSINESS (C.S.A.S.-3).
- THE CONTRACTOR IS RESPONSIBLE TO RECEIVE ALL NECESSARY PERMITS AND APPROVALS FROM THE ESSEX REGION CONSERVATION AUTHORITY AND THE TOWN OF AMHERSTBURG.
- CONTRACTOR IS TO PROVIDE FULL DEPTH GRANULAR BACKFILL AND GRANULAR DRIVEWAY APPROACH.
- ALTHOUGH A BARED DRIVEWAY APRON DOES NOT FORM PART OF THIS PROJECT, THE OWNER SHALL COORDINATE AND INSTALL SAME AS PART OF THEIR SITE PLAN AGREEMENT WITH THE TOWN OF AMHERSTBURG.
- THE OWNER SHALL BE RESPONSIBLE FOR THE GRANULAR ACCESS AND LOT GRADING BEYOND THE LIMITS SHOWN.

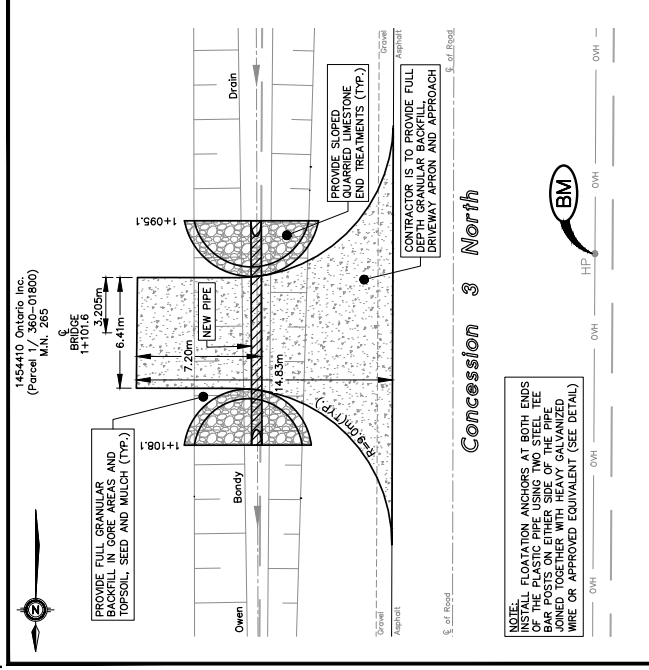
NOTE:

- Size of Quarried Limestone to be 100mm(4") to 250mm(10")
- Ceotextile Fabric to be GMM 160 OFSS CLASS 1 or Equal



TYPICAL QUARRIED LIMESTONE END PROTECTION

N.T.S.

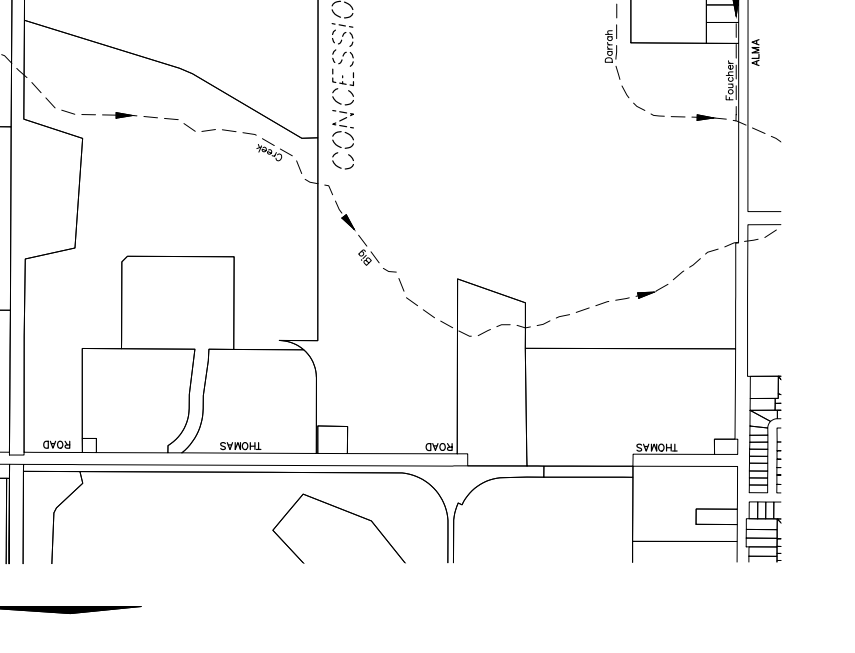


BRIDGE ① PLAN

Scale = 1:200

NEW BRIDGE INSTALLATION

BENCHMARK: TOP OF NAIL SET IN EAST FACE OF EXISTING HYDRO POLE LOCATED ON THE WEST SIDE OF CONCESSION 3 NORTH IN FRONT OF M.N. 265 AND APPROXIMATELY 4.5m SOUTH OF PROPOSED BRIDGE ①	ELEV. = 183.652m
PIPE SIZE: 600mm	TYPE OF PIPE: H.D.P.E.
PIPE LENGTH: 13.0m (42.65 FT.)	PIPE GAUGE: 320 IPG
CORROUGATIONS: SMOOTHWALL INTERIOR	

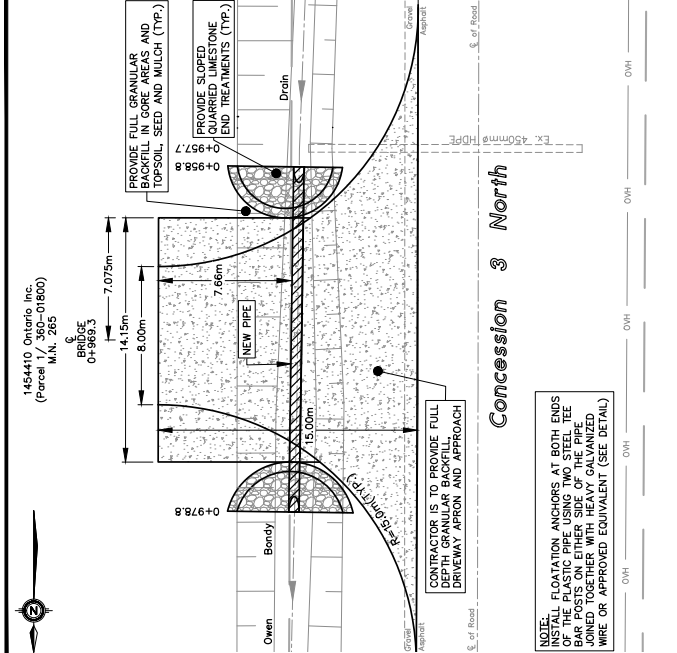


BRIDGE ② PLAN

Scale = 1:200

NEW BRIDGE INSTALLATION

BENCHMARK: TOP OF NAIL SET IN EAST FACE OF EXISTING HYDRO POLE LOCATED ON THE WEST SIDE OF CONCESSION 3 NORTH IN FRONT OF M.N. 265 AND APPROXIMATELY 4.5m SOUTH OF PROPOSED BRIDGE ②	ELEV. = 183.574m
PIPE SIZE: 600mm	TYPE OF PIPE: H.D.P.E.
PIPE LENGTH: 20.0m (65.62 FT.)	PIPE GAUGE: 320 IPG
CORROUGATIONS: SMOOTHWALL INTERIOR	

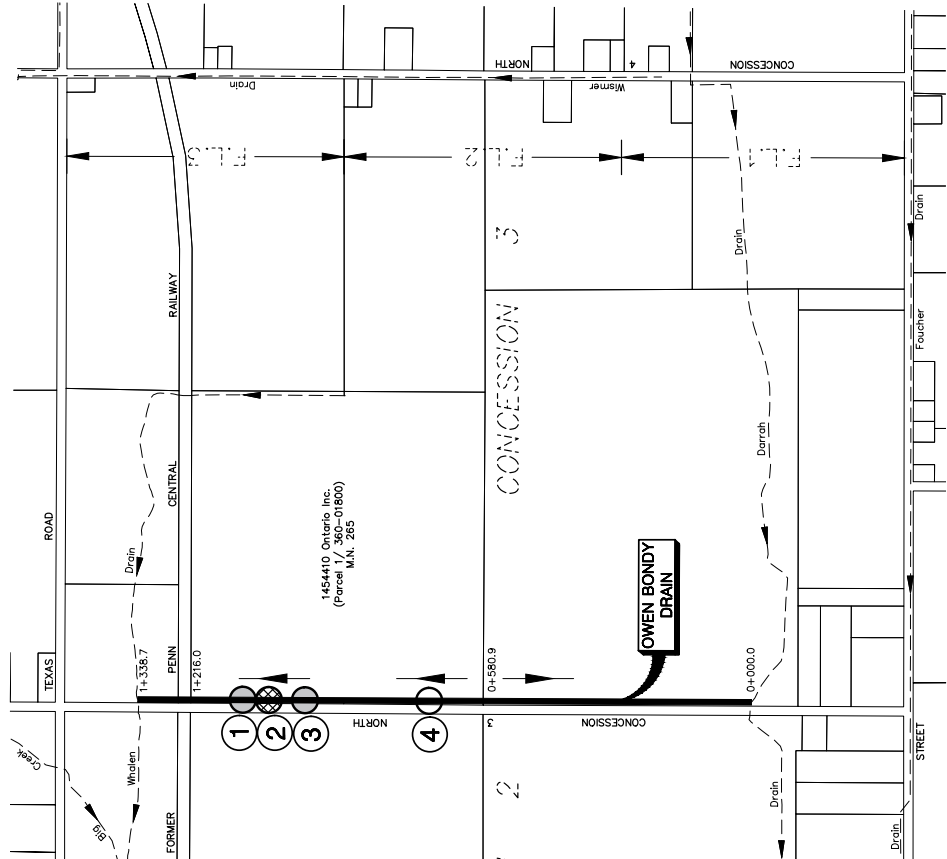


BRIDGE ③ PLAN

Scale = 1:200

NEW BRIDGE INSTALLATION

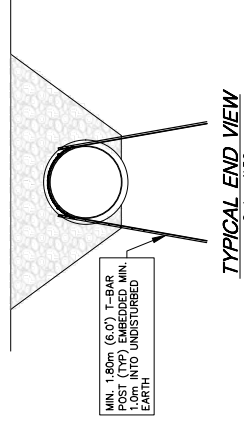
BENCHMARK: TOP OF NAIL SET IN EAST FACE OF EXISTING HYDRO POLE LOCATED ON THE WEST SIDE OF CONCESSION 3 NORTH IN FRONT OF M.N. 265 AND APPROXIMATELY 4.5m SOUTH OF PROPOSED BRIDGE ③	ELEV. = 183.574m
PIPE SIZE: 600mm	TYPE OF PIPE: H.D.P.E.
PIPE LENGTH: 20.0m (65.62 FT.)	PIPE GAUGE: 320 IPG
CORROUGATIONS: SMOOTHWALL INTERIOR	



KEY PLAN

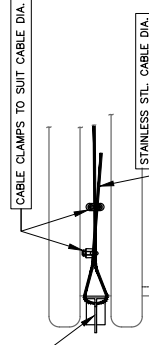
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- DENOTES COMPLETE BRIDGE REPLACEMENT
- ⊗ DENOTES BRIDGE REMOVAL
- DENOTES EXISTING BRIDGE



TYPICAL END VIEW

Scale = N.T.S.



PIPE ANCHOR DETAIL

Scale = N.T.S.

TYPICAL TOP VIEW

Scale = N.T.S.

FLotation ANCHOR DETAILS

THESE DRAWINGS HAVE BEEN REDUCED IN SIZE AND FULL SCALE DRAWINGS CAN BE VIEWED AT THE MUNICIPAL OFFICES IF REQUIRED.

DRAWN BY: K.D.S.
PLOT CODE: 1:1
COMPUTER FILE: D20200351.dwg
FILE NO.: D20-103

SHEET NO.: 1 OF 1