ENGINEER'S REPORT

(Drainage Act, RSO 1990, c. D.17)

PROJECT **Bridge Over the Renaud Line Drain**
For Toad Five Real Estate Inc. (190-44210)
Part of 1 & 2 Block A, Registered Plan 1516
(Geographic Township of Maidstone)
Municipality of Lakeshore, County of Essex
Project No. D23-095

October 2, 2024

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Peralta Engineering

PREAMBLE

MUNICIPAL DRAINS AND THE DRAINAGE ACT

The "Drainage Act" is one of the oldest pieces of legislation in Ontario, passed in 1859. It provides a democratic procedure for the construction, improvement and maintenance of drainage works. A procedure whereby the Municipality may assist in providing a legal drainage outlet for surface and subsurface waters not attainable under common law. Accordingly, provides much-needed assistance to facilitate the problems of obtaining a legal drainage outlet, engineering and cost distribution.

The Drainage Act provides a legal procedure by which an "area requiring drainage" may receive an outlet drain constructed to dispose of excess stormwater runoff to a sufficient outlet. This drainage infrastructure is otherwise known as a "Municipal Drain". Municipal Drains are identified by Municipal By-Law that adopts an Engineer's Report. The drainage engineer has the obligation to prepare an unbiased Engineer's Report based on information presented in written form, orally, and from visual inspection; in accordance with currently accepted design criteria. These reports form the legal basis for construction and management of the Municipal Drain. As such, an Engineer's Report shall contain specific details such as plans, profiles, and specifications that define the location, size and depth of the drainage infrastructure, together with establishing how costs are shared amongst all stakeholders.

Through the democratic procedure, the Engineer's Report is presented to all Stakeholders in front of Municipal Council (or a Drainage Board appointed by Council) for consideration. The Drainage Act provides an appeal process to address various aspects of Municipal Drains. These appeal bodies are the Court of Revision, the Ontario Drainage Tribunal and the Drainage Referee.

For additional information, Fact Sheets, and reference materials regarding the Drainage Act and Municipal Drains, please visit: **https://www.ontario.ca/page/ministry-agriculture-food-and-agribusiness-and-ministry-rural-affairs**

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PROJECT **Bridge Over the Renaud Line Drain**
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Part of 1 & 2 Block A, Registered Plan 1516
(Geographic Township of Maidstone)
Municipality of Lakeshore, County of Essex
Project No. D23-095

October 2, 2024

Mayor and Municipal Council
Corporation of the Town of Lakeshore
419 Notre Dame Street, P.O. Box 580
Belle River, Ontario N0R 1A0

I. INTRODUCTION

In accordance with the instructions received by email on September 14, 2023, from the Municipality of Lakeshore's Drainage Department, we have completed the necessary survey, examinations, investigations, etc. and have prepared the following report that provides for the installation of a new access bridge within the Renaud Line Drain. The proposed access bridge is intended to serve as the primary access for the lands of Toad Five Real Estate Inc. (190-44210), in Part of 1 & 2 Block A, Registered Plan 1516, in the Geographic Township of Maidstone. 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, in accordance with provisions of the Drainage Act. A plan showing the alignment of the Renaud Line Drain, the general location of the proposed access bridge within the Municipal Drain, and details for the general improvements under this project are included herein as part of this report.

Our appointment and the works relative to the Renaud Line Drain proposed under this report, are being conducted in accordance with Section 78 of the "Drainage Act, RSO 1990, Chapter D.17, as amended in 2021". We have performed all of the necessary survey, investigations, etc., for the proposed bridge, as well as the Renaud Line Drain, and we report thereon as follows.

II. BACKGROUND AND DRAINAGE HISTORY

Background

As part of the initial request for drainage improvements, the Owner of Toad Five Real Estate Inc. (190-44210) is in the process of developing their lands to accommodate the proposed commercial and residential development. The Owner has retained separate consultants to provide a Site Plan, Stormwater Management (SWM) design, and site grading plan to accommodate the proposed development. In order to facilitate the

most efficient layout for the development, it was established that the property would require the installation of a new access bridge over a Muncipal Drain (known as the Renaud Line Drain) to the subject property.

Drainage History

From our review of the Municipality's drainage files, we have determined that the Renaud Line Drain is totally located within the former Township of Maidstone and extends from its upper end opposite approximately the middle of Lot 14, Concession 3, in a northerly direction along the west side of Lakeshore Road 113/Renaud Line Road crossing County Road 42, the Canadian Pacific Railway, County Road 22, and Via Rail Canada Railway to its outlet into Lake St. Clair by way of the Renaud Line Pumping Station and Outlet Works.

The latest Engineer's Reports currently in place as the governing By-Laws relative to the Renaud Line Drain are as follows:

a) **March 11th, 1977** Reconsidered Engineer's Report for the "Renaud Line Drain – North of County Road 42", prepared by H.E. Regts, P.Eng., was carried out under the Township of Maidstone Drainage By-Law No. 2857. This report provided for improvements to the open channel of the Renaud Line Drain from County Road 42 northerly to its outlet in Lake St. Clair.

b) **September 30th, 1977** Engineer's Report for the "Renaud Line Pump", prepared by H.E. Regts, P.Eng., was carried out under the Township of Maidstone Drainage By-Law No. 3154. This report provided for the installation of a new drainage pump and pumping station at the mouth of the drain, together with the installation of a sheet pile wall, erosion protection mats, outlet culverts and gates, berm construction, etc.

c) **June 19th, 1986** Engineer's Report for the "Renaud Line Drain Outlet Repair Work", prepared by H.E. Regts, P.Eng., was carried out under Township of Maidstone Drainage By-Law No. 3444-D. This report generally provided improvements to the pump outlet including enclosing of the drain from the north end of the existing Via Rail Canada culvert northerly to the pumping station, constructing a pump by-pass structure consisting of sheet pile walls with concrete floor and cover grating, and constructing a retaining wall along the west side and a retaining wall and lake front wall along the east side of the Renaud Line Drain, as well as all related ancillary work.

d) **October 12th, 2006** Engineer's Report for the "New Maintenance Schedules of Assessment for the Renaud Line Drain and Outlet Works and the Renaud Line Drain Pumping Scheme", prepared by Nick J. Peralta, P.Eng., was carried out under the Municipality of Lakeshore By-Law No. 111-2006. This report generally provides for the reassessment of costs for the Renaud Line Drain, so that costs for future maintenance works on this drain may be fairly assessed. Furthermore, this report reviewed all existing access bridges within the subject drain and provided for future cost sharing provisions for each.

Based on our review of the Renaud Line Drain drainage records, we have determined that generally speaking, the March 11th, 1977 Report serves as the current governing By-law for the design parameters of the Renaud Line Drain, where the subject access structure is intended to be located. We have utilized the above-mentioned 1977 report to establish the sizing parameters and grades of the drain, together with

the necessary details to be utilized in establishing the proposed access installations. We further note that the 2006 report shall be used as a guide for establishing cost-sharing provisions for future maintenance of the proposed access bridge structures.

III. PRELIMINARY INVESTIGATIONS AND ON-SITE MEETING

After reviewing all the available drainage information and documentation provided by the Drainage Superintendent, we arranged to schedule an On-Site Meeting for October 24, 2023. The following people attended this meeting:

Name	Affiliation
Kurt Barr	Representative of the Toad Five Real Estate Inc.
Joe Belovic	Landowner – 174 Renaud Line Road
Victor Neves	Landowner – 176 Renaud Line Road
Dylan Kana	Landowner – 173 Renaud Line Road
Shawn Sauve	Landowner – 1702 County Road 22
Rajbir Brar	Landowner – 1302 County Road 22
Mark Fishleigh	County of Essex
Jill Fiorito	Lakeshore's Drainage Superintendent
Kiara Kirkland	N.J. Peralta Engineering Ltd.
Tony Peralta, P.Eng.	N.J. Peralta Engineering Ltd.

Upon introductions, it was generally discussed that a written notice had been submitted by Toad Five Real Estate Inc. (190-44210), to provide a new access bridge over the Renaud Line Drain. This new access bridge is being requested to serve a proposed development within the subject property, that is currently without access from Renaud Line Road. Kurt Barr confirmed that the initial intent was to provide an access for the proposed development.

Tony Peralta provided a brief history of the drainage system and outlined its status as a Municipal Drain, through the provisions of the Drainage Act. Tony Peralta further explained that a Municipal Drain is a communally accepted drain and that all landowners within the watershed are considered stakeholders. Tony Peralta outlined that the purpose of this "On-Site Meeting" is to provide a general introduction to the project while initiating dialogue with the affected stakeholders to establish and confirm the general scope of work for the project. Tony Peralta encouraged landowners to provide as much input as possible to ensure that all applicable details are included within his investigations.

As part of the development on the property, it was confirmed that the general details of new access bridge location shall be established per the Site Plan submitted to the Municipality of Lakeshore for their approvals. The Site Plan details shall include the general location and access width required to facilitate the development of a commercial and residential property. Tony Peralta provided a general overview of the project details, process, and specifics of the new access bridge. Tony identified that the minimum standard top width of the driveway is 6.10 metres (20.00 ft.). Furthermore, if the Owner requires a top width wider than the standard 6.10 metres (20.00 ft.), the additional cost for providing a top width wider than the standard shall be assessed 100% to the abutting Owner for both the initial construction and future maintenance. Based on the nature of the drainage system and requirements for nearby access bridges recently installed within this Municipal Drain, it is anticipated that a concrete span bridge will likely be required for this application.

The Owner was reminded that as a new access bridge to the parcel, all costs associated with the construction shall be assessed 100% to the subject property. All present were advised that the new access bridge installation would be subject to the approvals and mitigation measures of the Department of Fisheries and Oceans (DFO), Essex Region Conservation Authority (ERCA), Ministry of Natural Resources and Forestry (MNRF), and the Ministry of Environment, Conservation and Parks (MECP).

Tony Peralta reviewed the general process through the Drainage Act for the new bridge installation. The overall drainage report and future maintenance processes, general timelines, and grant eligibility were generally reviewed. We also discussed general timelines for construction. The Owner was also advised that it would be likely that the works in this drain were not to be undertaken between March 15 and July 15, unless otherwise permitted by DFO, ERCA, MNRF, and the MECP.

Tony Peralta encouraged the landowners present to provide any information and/or comments related to the Municipal Drain and the proposed works. Based on a general discussion regarding the potential bridge location, Victor Neves expressed concern with the bridge potentially being located across from his property and the general distance from the roadway intersection. Dylan Kana, who lives immediately north of the proposed development requested clarification on setback distances. Tony Peralta identified that the new bridge location and details of the development would be subject to Site Plan control, through the Municipality of Lakeshore's planning department. It was suggested that these matters be brought forward through the Site Plan review process. Further discussion ensued regarding the existing access to the property and why a new access is required when the property already has access to County Road 22. Mark Fishleigh advised that a new access on Renaud Line Road may be required as the existing access on County Road 22 is in close proximity to the intersection.

At the conclusion of our discussions, it was apparent that various matters related to Site Plan control needed to be addressed prior to finalizing any details of the new access bridge. Tony Peralta advised that preliminary investigations and analysis could commence. However, based on the lack of pertinent details available, he would not proceed with the design details until a time when a bridge location and minimum access width details have been approved by the Municipality of Lakeshore, through the Site Plan control process. Kurt Barr recognized that these details are vital to the bridge design and will be working with the Municipality to address these matters. Once these details have been addressed, Tony Peralta advised that he would contact the Owner prior to the preparation of our Engineer's Report, to review the details of the new access bridge installation.

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 Renaud Line Drain to establish the design parameters for the installation of the new access bridge structure. Benchmarks were established from previous work carried out on the drain and were utilized in establishing a relative site benchmark near the location of the access bridge site. We also surveyed the drain for a considerable distance both upstream and downstream of the proposed access bridge site to establish a design grade profile for the new bridge

installation. We also took cross-sections of the Renaud Line Drain at the general location of the access bridge site, as necessary, for us to complete our design calculations, estimates and specifications.

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

Prior to our appointment to this project, we understand that the Municipality of Lakeshore provided the Essex Region Conservation Authority (ERCA) 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 ERCA, regarding specific requirements for the approval of the proposed bridge design.

Following the On-Site Meeting, we engaged in various communication with the Owner and their representatives, together with reprsentatives of the Municipality of Lakeshore towards establishing and confirming the pertinent Site Plan details, as it relates to the new access bridge installation. Upon various correspondence and discussions, we received final details of the bridge location, access width requirements, and general requirements from the Municipality of Lakeshore on September 20, 2024. A copy of the reference plans provided to our office are included in **Appendix "B."** Upon receiving this information, this report and the works proposed herein have been prepared on that basis.

V. FINDINGS AND RECOMMENDATIONS

Based on our topographic survey, detailed investigations, information derived from the On-Site Meeting and subsequent discussions and review with the Owner and the Municipality, together with the review and correspondence with the ERCA and other environmental government agencies; we have proceeded to establish the required details to adequately address the specified improvements within the Renaud Line Drain. Our findings and recommendations are outlined in the following paragraphs.

ERCA, DFO, and MECP Considerations

During the course of our investigations, the project details were reviewed with Summer Locknick of the ERCA, to deal with any ERCA concerns and comments related to this Municipal Drain. The Renaud Line Drain is located within the regulated area and is under the jurisdiction of ERCA. Therefore, an ERCA Permit is required for the construction and/or improvements to the proposed access bridge structure. Further to the initial comments from ERCA, we engaged in further discussions regarding the general requirements for the new access bridge. Based on previous access bridges installed within this section of the Renaud Line Drain, ERCA confirmed that since the access bridge is near the outlet of a pumped drainage system and impacted by the raw 1:100 year Lake St. Clair flood elevation, the new structure shall require a "level of service" like or better to those in close proximity to the subject property. The ERCA further requested that the structure shall be clearly delineated to ensure access during flood events. Further to the above, the ERCA provided us with their comments and concerns through email correspondence, and said correspondence is included herein as **Appendix "A"**.

With respect to the Department of Fisheries and Oceans (DFO) concerns and comments, the proposed works within this Municipal Drain were "self-assessed" by the Engineer, through the DFO website and the utilization of the "Guidance for Maintaining and Repairing Municipal Drain in Ontario" to determine whether this project shall be reviewed by the DFO. The Renaud Line Drain has been established as 'Not Rated' by the DFO. Through our research and with the proposed drainage system not having any status or drain classification with the DFO, a request for review was submitted to the DFO for their evaluation. A copy of the DFO Request for Review submission is included in **Appendix "A"**.

The Ministry of Natural Resources and Forestry (MNRF) has transitioned the responsibilities of the Species at Risk Provincial Legislation to the Ministry of Environment, Conservation and Parks (MECP). Section 23.9 of the Endangered Species Act, 2007 allows the Municipality 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 Municipality of Lakeshore 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 ERCA, self-assessment through DFO, and the mitigation measures through the Endangered Species Act, we have provided for all of the ERCA, DFO, and MECP concerns and issues in our design and recommend that these drainage works be constructed in total compliance with all of the above.

Access Bridge Structure

Prior to the completion of our Engineer's Report on this project, we had contacted the developer and their representatives, together with the Municipality of Lakeshore to gather pertinent information regarding the requirements for the new access bridge, as set out within the Site Plan for the development. The approved site plan details identify that the new access bridge shall be located near the north limit of the development property. In order to satisfy the site requirements for vehicular access, it was established that the new access bridge for the subject development shall require a minimum driveway top width at the road edge of 16.00 metres (52.49 ft.) (from inside curb to curb), and a top width of 11.00 metres (36.09 ft.) at the right-of-way limit to accommodate the vehicular turning radius for the development. As part of the commercial development, the new access bridge structure shall also include vehicular and pedestrian safety measures.

Based on our detailed survey, investigations, examinations, and discussions with the Owner, we recommend that a new concrete span bridge shall be installed, consisting of a total of fourteen (14) 1220mm wide concrete planks on concrete abutments, resulting in a total top width of approximately 17.08 metres (56.49 ft.), located near the north limit of the subject property, between Station 0+219.5 and Station 0+236.6. This structure shall include two (2) concrete curbs on both sides of the structure, safety pedestrian railings, and all other ancillary works as outlined within the design plans and accompanying specifications.

Based on our detailed survey, investigations, examinations, and discussions with the associated parties, we recommend that a new access bridge be constructed in the Renaud Line Drain to serve as the primary access to the proposed development for Toad Five Real Estate Inc. (190-44210), in Part of 1 & 2 Block A, Registered

Plan 1516, in accordance with this report, the attached specifications and the accompanying drawings. All works associated with these drainage improvements shall be carried out in accordance with Section 78 of the "Drainage Act, RSO 1990, Chapter D.17, as amended 2021".

VI. ALLOWANCES AND COMPENSATION

All of the work carried out under this project is located alongside and within the Renaud Line Road right-of-way. Furthermore, all areas disturbed by this work are specified for full restoration. Therefore, these works shall not require land to be taken, nor result in any loss of production of agricultural property or any indirect damages to the non-agricultural areas. Therefore, no allowances or compensation shall be provided for under Sections 29 and 30 of the "Drainage Act, RSO 1990, Chapter D.17, as amended 2021".

VII. ESTIMATE OF COST

Our estimate of the total cost of this work, including all incidental expenses, is the sum of **FOUR HUNDRED THREE THOUSAND ONE HUNDRED SIXTY FOUR ($403,164.00)** made up as follows:

CONSTRUCTION ITEMS					
Item	Description	Est Qty	Unit	Unit Price	Total
1.	Provide all labour, tools, equipment and materials to excavate 1000mm wide trench footings located at the top of both drain banks; Provide the necessary forming required to install poured concrete trench footings together with the accompanying reinforcements and connections; Install 14 - 1220mm wide, precast concrete planks with shear keys, waterproofing and concrete topper, together with curbs, safety railings, and all ancillary works associated with the new structure, including asphalt pavement and padding, granular driveway apron and fill radius, all necessary excavation and installation of quarried limestone erosion protection along the existing drain banks, topsoil, seeding and mulch, cleanup and restoration, complete.	1.0	Lump Sum	$ 320,000.00	$ 320,000.00
2.	Net HST for the above construction items (1.76%)				$ 5,632.00
				TOTAL FOR CONSTRUCTION =	**$ 325,632.00**

INCIDENTALS		
Item	Description	Total
1.	Report, Estimates and Specifications	$ 21,700.00
2.	Survey, Assistants, Expenses and Drawings	$ 40,300.00
3.	Duplication Costs of Report and Drawings	$ 600.00
4.	Estimated Cost of Letting the Contract including preparation of Tender Documents and Tender Review	$ 1,800.00
5.	Estimated Cost of providing supervision and Full-Time Inspection during Construction (approx. 2-week duration)	$ 11,300.00
6.	Net HST on the above items (1.76%)	$ 1,332.00
7.	Estimate Cost for ERCA Permit	$ 500.00
	TOTAL FOR INCIDENTALS =	**$ 77,532.00**
	TOTAL FOR CONSTRUCTION (brought forward) =	**$ 325,632.00**
	TOTAL ESTIMATE =	**$ 403,164.00**

VIII. DRAWINGS AND SPECIFICATIONS

As part of this report, we have attached the design drawings for the construction of the new access bridge over the Renaud Line Drain. The design drawings show the alignment of the Renaud Line Drain and the approximate location of the proposed access bridge within this Municipal Drain. The design drawings also illustrate the affected landowners and the details associated with the proposed new access bridge installation. The design drawings are attached to the back of this report and are labelled herein as **Appendix "B".**

We have prepared Standard Specifications and Special Provisions that set out the required construction details for the various aspects of the works to be conducted under this report.

IX. CONSTRUCTION SCHEDULE OF ASSESSMENT DETAILS

Construction Schedule Of Assessment

We would recommend that all of the costs associated with the details identified herein be totally assessed against the lands of Toad Five Real Estate Inc. (190-44210) and in accordance with the attached

It shall be noted that the attached Construction Schedule of Assessment is to be utilized for the distribution of costs related to the construction works being provided for under this report and this Construction Schedule of Assessment shall not be utilized for the sharing of any future maintenance works conducted to same.

Distribution of Unforeseen Costs (Special Assessments Section 26)

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 for 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 this work 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.

X. FUTURE MAINTENANCE

Following the completion of the works outlined within this report, the subject access bridge shall be maintained in the future by the Municipality of Lakeshore.

If any maintenance work is required in the future to this access bridge, we wish to establish that **71.0%** of the future maintenance costs be assessed as a Benefit to the abutting property being served by this access bridge, which is currently owned by Toad Five Real Estate Inc. (190-44210), in Part of Lot 17, Concession 8. The remaining **29.0%** of the future maintenance costs shall be assessed as an Outlet Liability against the lands and roads lying upstream of the bridge site, within the drain's watershed. The percentages above account for the bridge user share of the increased structure length beyond the length available to provide the standard 6.10 metres (20.00 ft.) minimum driveway top width. The assessment to upstream lands and roads shall be assessed in the same proportions as the Outlet assessment charges shown in the most current governing Schedule of Assessment for the "New Maintenance Schedules of Assessment for the Renaud Line Drain and Outlet Works and the Renaud Line Drain Pumping Scheme" Engineer's Report prepared by Nick J. Peralta, P.Eng., dated October 12th, 2006, or as per subsequent amendments made thereto under the Drainage Act.

We recommend that the new access bridge structure as identified herein, be maintained in the future as part of the drainage works. We would also recommend that this newly constructed legal access bridge in the drain, for which the maintenance costs are to be shared with the upstream lands and roads within the watershed, be maintained by the Municipality and that said maintenance would include works to the concrete abutments, precast concrete deck planks, connections, and quarried limestone erosion protection. Should additional concrete, asphalt or other decorative driveway surfaces over these bridge strucutre require removal as part of the maintenance works, these surfaces should also be repaired or replaced as part of the works. Likewise, if any fencing, gate, decorative walls, guard rails, pedestrian railing, or other special features exist that will be impacted by the maintenance work, they are also to be removed and restored or replaced as part of the bridge maintenance work. However, the cost of the supply and installation of any surface materials, guardrails, or any special features, shall be totally assessed to the benefiting adjoining Owner served by said access bridge.

The above provisions for the future maintenance of this new access bridge, being constructed 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 2021".

All of which is respectfully submitted,

N.J. PERALTA ENGINEERING LTD.

Antonio B. Peralta, P.Eng.

ABP/kk

CONSTRUCTION SCHEDULE OF ASSESSMENT

4. PRIVATELY OWNED - NON-AGRICULTURAL LANDS:

Tax Roll Number	Con. or Plan Number	Lot or Part of Lot	Acres Owned	Acres Affected	Hectares Affected	Owner's Name	Value of Benefit	Value of Outlet	TOTAL VALUE
190-44210	1516	Pt. 1 & 2	0.98	0.98	0.397	Toad Five Real Estate Inc.	$ 403,164.00	$ -	$ 403,164.00
Total on Privately Owned - Non-Agricultural Lands.....							**$ 403,164.00**	**$ -**	**$ 403,164.00**
TOTAL ASSESSMENT				**0.98**	**0.397**		**$ 403,164.00**	**$ -**	**$ 403,164.00**

1 Hectare = 2.471 Acres

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SPECIFICATIONS

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Peralta Engineering

STANDARD SPECIFICATIONS

General

(Revised January 2024)

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I. GENERAL CONDITIONS FOR SPECIFICATIONS

The specifications, together with the accompanying drawings and appendices, delineate the furnishing of all labour, equipment, materials, and supplies required for the performance of all operations relating to the construction and/or improvements of a Municipal Drain under the most recent revision of the Drainage Act and/or amendments made thereto. These specifications serve to supplement and/or amend the current Ontario Provincial Standard Specifications and Standard Drawings, adopted by the Ontario Municipal Engineers Association. "Special Provisions" are included as part of the overall document and shall be read in conjunction with these standard specifications. Where a discrepancy occurs between the requirements of the Standard Specifications and the Special Provisions, the Special Provisions shall govern. 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 (CCDC) shall govern and be used to establish the requirements of the work.

Any reference to "Drainage Superintendent" and/or "Consulting Engineer" within this document shall refer to the person (or persons) appointed by the Council of the Municipality having jurisdiction over the drainage works.

All work shall be done in a first-class and workmanlike manner, complete in all respects and including all items specified herein, or as necessary for the accomplishment of a complete, satisfactory, and approved installation.

II. REVIEW OF SITE, PLANS, AND SPECIFICATIONS

As part of the Tender process, each tenderer shall visit the site(s) and review all documentation associated with the project prior to their tender submission and satisfy themselves with the full extent of the scope of work and conditions to complete the project. The Contractor may request, at any time prior to the closing of the tender, to examine any associated information available from the Drainage Superintendent and/or Consulting Engineer. Claims that there are any misunderstandings of the terms and conditions of the Contract related to site conditions will not be permitted.

The quantities identified within the Construction Items, Drawings and/or Specifications are estimates only and are intended for the sole purpose of identifying the general extent of the proposed work. The tenderer shall be responsible to verify the quantities for accuracy prior to submitting their tender.

III. MAINTENANCE PERIOD

The successful tenderer shall guarantee and warrant the work for a period of twelve (12) months from the time that substantial completion is issued. Upon the expiry of the maintenance period, with ordinary wear and tear, the work shall remain in such condition as will meet with the approval of the Consulting Engineer, and it will be responsible for rectification in a manner satisfactory to the Consulting Engineer. The cost thereof, of any imperfect work due to or arising from materials, equipment or plant incorporated into or used in the construction thereof, or due to or arising from workmanship or methods of construction, that is discovered by any means at any time prior to the issuance of the Final Certificate. The Consulting Engineer shall decide as to the nature, extent, cause of, and responsibility for imperfect work and the necessity for and the method of rectification thereof. In the event that the Contractor fails to comply with the above and address any deficiencies, the Municipality may complete these deficiencies, with the guidance of the Consulting Engineer, to make such repairs or complete such works, and the whole costs, charges and/or expenses so incurred may be deducted from any amount due or collected from the Contractor.

IV. LIABILITY OF THE CONTRACTOR

The Contractor, its agents, workforce and/or sub-contractors, shall satisfy itself as to the exact location, nature and extent of any existing structure, utility or other objects that it may encounter during the course of the work. The Contractor will be responsible for any damage caused by it to any person, property, public utilities, and/or municipal infrastructure. The Contractor shall indemnify and save harmless, the Municipality and the Consulting Engineer for any damages which it may cause or sustain during the progress of the work. The Contractor shall not hold the Municipality or the Consulting Engineer liable for any legal action arising out of any claims brought about by such damage caused by it.

V. GENERAL COORDINATION

The Contractor shall be responsible for the coordination with other organizations, agencies, and utility companies in connection with the works. The Contractor shall not take action against the Municipality or the Engineer for delays caused by the site being unavailable to them by the Municipality or Consulting Engineer because of the acts, omissions, conduct or misconduct of other organizations or utility companies engaged in other work.

VI. LEGAL SURVEY BARS AND MONUMENTS

The Contractor is to note that legal survey bars may exist within the work site, and it shall take whatever steps necessary to protect these features. If any iron bar or monument is damaged or removed by the Contractor, it shall arrange for an Ontario Land Surveyor licensed in the Province of Ontario to restore same, all at the Contractor's expense.

VII. MAINTAINING CONVEYANCE

The drainage works 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 completed during times when the drain is dry or frozen.

When performing excavation work, care should be taken not to interfere with, plug up, or damage any existing surface drains, swales, and lateral or main tile ends. The Contractor shall be responsible to maintain permanent flow at all times. Temporary damming of flow is permitted to conduct the necessary works. However, the Contractor is responsible to monitor and ensure no damage occurs as a result of its actions. Under no circumstances shall temporary damming be permitted for an extended period (ie. overnight, etc.) without a suitable water control plan approved by the Drainage Superintendent, Consulting Engineer and/or the Conservation Authority.

VIII. APPROVALS, PERMITTING, AND INSPECTION

The works proposed under this project is subject to the approval, inspection, regulations, and by-laws of all Municipal, Provincial, and Federal entity, or any other agency having jurisdiction associated with the drainage works established herein. The Contractor shall ensure that all applicable permits and approvals are procured from all affected authorities prior to carrying out any of the prescribed works identified within the Contract, or in the vicinity of any public utility, railway and/or road authority.

The drainage works forming part of this project, including all appurtenances, shall be completely inspected by the Town Drainage Superintendent and/or the Consulting Engineer's Inspector prior to its completion. Under no circumstance shall the Contractor commence the construction or backfill of any underground feature without the site presence of the 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 Drainage Superintendent and/or the Consulting Engineer prior to the commencement of the work. All works shall be performed during normal working hours of the Drainage Superintendent and/or the Consulting Engineer from Monday to Friday unless written authorization is provided by them to amend these working hours.

Upon completion of the works and prior to the demobilization and removal of all equipment and materials from the site, the Contractor shall notify the Drainage Superintendent and/or Consulting Engineer to arrange a final inspection of the works. The final inspection is intended to ensure that all aspects of the drainage work are satisfactorily completed and/or identify any outstanding deficiencies. Any outstanding deficiencies shall be addressed expeditiously as weather permits.

IX. TRAFFIC CONTROL

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 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 any roads for the proposed works, it shall arrange to obtain the necessary authorizations from the Municipality, County, or Provincial Roads Departments (if applicable) 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 Municipality and County Roads Department (if applicable).

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 the 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 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 specified access for the construction of the culvert without the explicit approval of the adjacent landowners and the Drainage Superintendent could result in the Contractor being liable for damages sustained. The value for such damage shall be determined by the Drainage Superintendent and the Consulting Engineer and be subsequently deducted from the Contract Price. Where applicable, the Contractor shall be responsible for any damage caused by them to any portion of the road right-of-way. They shall take whatever precautions are necessary to avoid damage to the roadway. Any damage to the roadway must be restored to its' original condition upon completion of the works.

X. FENCING AND/OR STRUCTURES

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

XI. BENCHMARKS

For use by the Contractor, Benchmarks have been established along the course of the work. The plans include details illustrating the available Benchmarks and the work to be carried out. Benchmarks have been indicated and the Elevations have been shown and shall be utilized by the Contractor in carrying out its work. The Contractor shall note that specific design elevations and grades have been provided for the proposed works. The plans also set out side slopes, bottom width, and other requirements relative to its installation. In all cases, the Contractor is to utilize the specified Benchmarks to establish the identified elevations and grades. The Contractor shall ensure that it takes note of the direction of flow and sets all grades to match the direction of flow within the drain.

XII. ENVIRONMENTAL CONSIDERATIONS

Prior to commencing work, the Contractor must familiarize themselves with all associated environmental approvals and mitigations. The Contractor shall review the results of any environmental reviews performed for the project, including 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 any mitigation plans and shall contact the Drainage Superintendent immediately if any Endangered Species are encountered during construction.

XIII. FINAL CLEANUP AND RESTORATION

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. 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 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.

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 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. Any damages caused, resulting from non-compliance with the above-noted provisions, shall be restored by the Contractor to its original condition, at the Contractor's expense. 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. 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.

XIV. GENERAL CONDITIONS

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

b) 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 will generally conform with the design and project intent.

c) The Contractor will 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 Municipality shall have the right to have the necessary repair work done by its employees and the cost of all labour and materials used to carry out the repair work shall be deducted from the Contractor's contract and credited to the Municipality. 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.

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

e) 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 will be in effect for twelve (12) months after substantial completion of the works.

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

f) 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 Municipality 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 Municipal Clerk and the Consulting Engineer prior to the commencement of work.

g) Monthly progress orders for payment shall be furnished the Contractor by the Drainage Superintendent. Said orders shall be for not more than 90% of the value of the work done and the materials furnished on the site. The paying of the full 90% does not imply that any portion of the work has been accepted. The remaining 10% will be paid 60 days after the final acceptance and completion of the work and payment shall not be authorized until the Contractor provides the following:

i) a Certificate of Clearance for the project from the Workplace Safety and Insurance Board
ii) proof of advertising
iii) a Statutory Declaration, in a form satisfactory to the Consulting Engineer and the Municipality, 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 Municipality 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.

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SPECIAL PROVISIONS

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Peralta Engineering

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PROJECT | **Bridge Over the Renaud Line Drain**
For Toad Five Real Estate Inc. (190-44210)
Part of 1 & 2 Block A, Registered Plan 1516
(Geographic Township of Maidstone)
Municipality of Lakeshore, County of Essex
Project No. D23-095

I. GENERAL SCOPE OF WORK

These specifications, along with the Report, Appendices, Standard Specifications and the accompanying drawings, consider the furnishings of all labour, equipment and materials required for the performance of all operations related to the installation of a new access bridge within the Renaud Line Drain for Toad Five Real Estate Inc. (190-44210), in Part of 1 & 2 Block A, Registered Plan 1516, in the Geographic Township of Maidstone. The Renaud Line Drain is an open Municipal Drain that extends from its upper end opposite approximately the middle of Lot 14, Concession 3, in a northerly direction along the west side of Lakeshore Road 113/Renaud Line Road, crossing County Road 42, the Canadian Pacific Railway, County Road 22, and the Via Rail Canada Railway to its outlet into Lake St. Clair by way of the Renaud Line Pumping Station and Outlet Works.

The Contractor shall provide all labour, equipment and materials for the excavation and installation of poured concrete trench abutments connected to solid precast concrete deck slabs, concrete wheel guards, aluminum pedestrian railings, asphalt transition padding, granular driveway apron, and fill radius, together with sloped quarried limestone erosion protection on a non-woven geotextile fabric. These works shall include the removal of all vegetation, the scavenging of available topsoil, the restoration of the drain and all other ancillary related thereto.

All work shall be carried out in accordance with these Special Provisions and Standard Specifications that serve to supplement and/or amend the current Ontario Provincial Standard Specifications and Standard Drawings, adopted by the Ontario Municipal Engineers Association. The Contractor shall review the information outlined within **Appendix "A"** and **Appendix "B"**. The works shall be further carried out in accordance with the accompanying drawings labelled herein as **Appendix "C"**. The new access bridge 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 satisfaction of the Drainage Superintendent or the Consulting Engineer.

II. CONSERVATION AUTHORITY AND DFO 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. It is intended that work on this project be carried out during relatively dry weather to ensure the 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 Conservation Authority or the Department of Fisheries and Oceans (DFO), 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 15 to July 15, 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 than 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.

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 refueling and maintenance should be conducted away from the water.

Not only shall the Contractor comply with all of the above, but it shall also be required to further comply with notes included within the correspondence with the ERCA and the Letter of Advice provided by the DFO. Both of these documents are included in **Appendix "A"**.

III. MECP CONSIDERATIONS

Under the Species at Risk Provincial Legislation, set in place with the Ministry of Environment, Conservation and Parks (MECP), Section 23.9 of the Endangered Species Act, 2007, allows the Municipality 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 Municipality will complete an "Endangered Species Act Review" for the subject drain and will provide the Contractor with the results of said review, including 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 Drainage Superintendent immediately if any Endangered Species are encountered during construction.

IV. ACCESS TO WORK

The Contractor is advised that all of the work to be carried out on this project extends along the west side of Renaud Line Road. The Contractor shall have access to the full length of the roadway abutting the proposed drainage works. The Contractor may use the entire width of the right-of-way as necessary to permit the completion of the work required to be carried out for this project. Furthermore, in order to perform the necessary work identified within this project, the Contractor shall have access to the subject private lands west of the Renaud Line Road right-of-way limit for a distance of 8.00 metres. Under no circumstances shall the Contractor utilize other private lands.

V. REMOVAL OF BRUSH, TREES, AND DEBRIS

Prior to constructing the new access bridge between Station 0+218.0 and Station 0+238.0, the Contractor shall prepare the area for this operation. The Contractor is to excavate and completely remove all existing brush, trees and tree stumps which exist within the drain alignment. Brush, trees, and tree stumps removed may either be put into piles by the Contractor at locations where they can be safely burned, or they shall be trucked away and disposed of off-site. If the materials are intended to be burned on-site, the Contractor shall, prior to and during the burning operations, comply with the guidelines prepared by the Air Quality Branch of the Ministry of Environment and shall ensure that the Environmental Protection Act is not violated. The Contractor shall be required to notify the Municipality and advise them of their burning operations. The Contractor shall also be required to contact the local Fire Chief and notify them of these operations to avoid any false alarms.

Also, as part of their cleanup work, the Contractor shall be required to load up and haul away and dispose of all deleterious materials along the course of the drainage works. All overhanging branches and limbs shall be neatly cut and pruned, taking care to protect trees where they can be preserved. All such removed material shall be disposed of as noted above.

VI. DETAILS OF BRIDGE WORK

The Contractor shall provide all labour, equipment, and materials to install a new access bridge for Toad Five Real Estate Inc. (190-44210), within the Renaud Line Drain, according to the Drawings, the Schedule of Items, and in these Specifications stated below. The Drainage Superintendent and/or the Consulting Engineer shall have the authority to carry out minor changes to the work where such changes do not lessen the efficiency of the work.

Bridge Specifications	
Bridge Type:	Concrete Span Bridge
Bridge Length:	17.08m (56.04 ft.)
Bridge Width:	8.00m (26.25 ft.)
Abutment Width:	1.00m (3.28 ft.)
Access Width (at Road Edge):	16.00m (52.49 ft.)
Access Width (at ROW Limit):	11.00m (36.09 ft.)
℄ of Driveway Elev. at Pavement Edge:	176.586m
℄ of Driveway Elev. at ROW Limit:	176.695m

Drain Specifications	
Flow Direction:	South to North
Drain Grade:	0.16%
Bottom Width:	1.219m (4.0 ft.)
Drain Bottom Relative to Design Grade:	Above design Grade
Side Slopes:	1.5 Horizontal to 1.0 Vertical
Driveway Crossfall Grade	2.00%

VII. PRECAST CONCRETE SLABS

The precast concrete manufacturing plant shall be certified by the Prestressed Concrete Institute (PCI) Plant Certification Program prior to the start of production. The manufacturer shall retain a registered structural engineer to certify that manufacturing is in accordance with design requirements.

Shop and Erection Drawings shall be submitted to the Consulting Engineer for review, locating and defining all solid slabs furnished by the manufacturer, with all major openings shown. The drawings shall provide sections and details showing connections, weld plates, edge conditions and support conditions of the solid slab units. Clearly listing all dead, live and other applicable loads used in the design. **All drawings submitted shall be signed and sealed by a Professional Structural Engineer registered in the Province of Ontario**.

VIII. CONCRETE BRIDGE INSTALLATION

The installation of the new access bridge shall be completely inspected by the Town Drainage Superintendent or the Consulting Engineer's Inspector. The Contractor shall provide a minimum of forty-eight (48) hours notice to the Town Drainage Superintendent or the Consulting Engineer prior to the commencement of any work. The installation of the new access bridge structure is to be performed during normal working hours of the Town Drainage Superintendent and the Consulting Engineer from Monday to Friday unless they provide written authorization to amend said working hours.

The alignment of the new precast concrete span bridge shall be set to the full satisfaction of the Municipality of Lakeshore's Drainage Inspector, and the whole of the work shall be done in a neat, thorough and workmanlike manner to the full satisfaction of the Town Drainage Superintendent or Consulting Engineer.

The Contractor shall be responsible for providing true and level-bearing surfaces for all field-placed members. The new access bridge structure shall be of Precast Concrete Slab type. The new concrete bridge structure shall conform to the latest version of the Canadian Highway Bridge Design Code (CHBDC) for Truck Loading. The installation of the concrete structure shall comply with OPSS 904, together with any other applicable references identified within these Special Provisions and Specifications.

The proposed structure shall include all appropriate appurtenances including, but not limited to, poured concrete trench abutments with rebar caging, precast concrete slabs with shear keys, a concrete topper, waterproofing, asphalt, concrete wheel guards, pedestrian railings, entrance apron, etc. or any additional appurtenances that may be deemed necessary by the structure fabricator. Generally speaking, the following materials shall be utilized for the installation of said bridge structure, and the installation of same shall comply with the manufacturer's recommendations:

Reinforcing Bars: CSA G30.18M, Grade 400R new deformed bars of billet steel. Refer to O.P.S.S. 1440 for material specifications.

Waterproofing Membrane: MEL-ROL, rolled, self-adhering membrane. The protection board for the waterproof membrane shall be PC-3 heavy-duty asphalt board. Both of which are manufactured by W.R. Meadows Canada or approved equal.

Bonding Agent: Intralok as manufactured by W.R. Meadows Canada, or Sikadur 32ES as manufactured by Sika Canada Inc.

Curing Compound: CS-309 acrylic curing and sealing compound as manufactured by W.R. Meadows Canada or approved equal.

Dowel Adhesive: Meadows Rezi-Weld Gel-Paste Cartridge System, Hilti-Hit HY150 System, Sikadur Injection Gel, Powers Acrylic – 100 System or approved equal.

Penetrating Sealer: Sikagard SN40 silane sealer as manufactured by Sika Canada Inc. or approved equal. The application shall be two (2) coats at a coverage of 3.8 sq.m./L per coat.

Joint Sealant: Sikaflex 2C NS for horizontal and vertical surfaces as manufactured by Sika Canada Inc.

The Contractor shall ensure that all aspects of the bridge structure adhere to the lines, levels, and grades as shown in the accompanying drawings or as may be laid out and established by the Engineer prior to the time of construction. Prior to installation, the Contractor shall notify the Engineer for field verification of the layout. The Contractor will be held responsible for said lines, levels and grades of the structure, and should the Engineer determine that the Contractor has not satisfactorily adhered to such lines, levels and grades, it may direct the Contractor to remove and re-install any portion of the bridge which does not conform to such lines, levels and grades.

The Contractor will also be responsible for excavating the necessary trench to install the reinforced concrete abutments at each end of the new access bridge. The Contractor shall note that the casting of the abutments for the new access bridge shall be performed totally in the dry, and they shall be prepared to take whatever steps are necessary to ensure same, all to the full satisfaction of the Town and the Consulting Engineer. The abutments shall be to the size, type, depth, etc., including the necessary reinforcement, as shown and detailed in the accompanying drawings. All concrete utilized for the abutments, precast concrete slabs, concrete topper and concrete wheel guards shall adhere to CSA type GU cement and comprise of a minimum 35 MPa concrete strength at 28 days with a water-cement ratio not to exceed 0.4 with 6% (±1%) air entrainment. Concrete compression strength tests shall conform to CSA-A23.1-M requirements, and the results of the test shall be submitted to the consulting engineer for their records.

The Contractor shall arrange for the Supplier to provide full shop drawings outlining all details of the fabrication, assembly, and installation of the proposed Precast Span Bridge to the Consulting Engineer for approval prior to proceeding with fabrication and assembly of same. **The shop drawings shall bear the seal and signature of an Engineer certifying that the design meets the minimum design standards and includes fabrication details, hardware, reinforcing schedules, etc.** All assembly installation shall be carried out to avoid any damage to the structure and shall follow the Supplier's recommendation in every respect to ensure a proper and safe installation.

The precast concrete Erector shall be PCI Qualified and regularly engaged for at least 5 years in the erection of precast structural concrete similar to the requirements of this project. Members shall be lifted with slings at points determined by the manufacturer. Bearing strips shall be set where required. Shear keys shall be set and grout keys shall be filled. Grout shall be a mixture of not less than one part Portland Cement to three parts

fine sand, and the consistency shall be such that joints can be completely filled but without seepage over adjacent surfaces. The grout shall achieve a minimum 28-day compressive strength of 2,000 psi. Any grout that seeps from the joint shall be completely removed.

The Contractor shall be responsible for the safe and proper handling of the precast concrete bridge slabs and shall inspect all slabs to ensure that no cracks, chips or defects exist in the slabs prior to placement on the abutments. Should the Contractor permit damaged slabs or materials to be installed in the drain line, it shall be responsible for the removal and replacement of same at its own expense, should the Engineer require such removal and replacement.

The Contractor shall be responsible for the removal of rubbish and debris resulting from the precast concrete slab work from the premises upon completion. The Contractor will provide and maintain all safety barricades, rebar caps and opening covers required for the slabs in accordance with current industry safety standards.

IX. PEDESTRIAN HANDRAILS

The Contractor shall supply and install aluminum pedestrian handrails on each end of the span bridge as shown and detailed in the plans. The handrails and its installation shall be in accordance with the Ontario Building Code O. Reg. 332/12. The works shall include the supply and installation of all rails, posts, brackets, and appurtenances.

The Contractor shall arrange for the Supplier to provide full shop drawings outlining all appropriate details including connection details and loading calculations to the Consulting Engineer for approval prior to proceeding with the fabrication and assembly of same. **The shop drawings shall bear the seal and signature of an Engineer certifying that the design meets the minimum design standards**.

X. SLOPED QUARRIED LIMESTONE EROSION PROTECTION

The Contractor shall also provide, as part of this project, sloped quarried limestone erosion protection where identified within the accompanying drawings. Specifically, along the drain banks, at the general locations, and to the widths shown in the details included therein.

The sloped quarried limestone erosion protection shall be embedded into the side slopes of the drain at a minimum thickness of 305mm and shall be underlain in all cases with a synthetic filter mat. The filter mat shall not only be laid along the flat portion of the erosion protection but also contoured to the exterior limits of the quarried limestone and the unprotected slope. The width and slope of the general erosion protection shall be as established in the accompanying drawing or as otherwise directed by the Drainage Superintendent and/or the Consulting Engineer during construction. In placing the erosion protection, the Contractor shall carefully tamp the quarried limestone pieces into place with the use of a shovel bucket so that the erosion protection, when completed, will be consistent, uniform and tightly laid. In no instance shall the quarried limestone protrude beyond the exterior contour of the unprotected drain side slopes along either side of said protection.

The synthetic filter mat to be used shall be **non-woven** geotextile MacTex MX 140 conforming to OPSS 1860 Class I, as available from Armtec Construction Products, or approved equal. The quarried limestone

to be used shall be graded in size from a minimum of 100mm (4") to a maximum of 250mm (10") and is available from Walker Aggregates in Amherstburg, Ontario, or approved equal.

XI. ANCILLARY WORK

As part of the work, the Contractor will be required to clean out the drain, including the removal of all topsoil and deleterious material, along the full length of the new access bridge and clean the drain bottom for a distance of 6.0m upstream and downstream of the work area. The Contractor shall dispose of all excavated and deleterious materials to a site to be obtained by it at its expense. Upon completion, the Contractor shall ensure that there is no ponding of water adjacent to the access bridge.

It shall be noted that an existing road crossing culvert exists at the north end of the proposed access bridge. This road crossing culvert shall be protected throughout the duration of the project. Furthermore, the proposed erosion protection at the north end of the bridge installation shall be extended to further protect the road crossing culvert for future erosion, as outlined within the accompanying drawings. Where the access bridge installation interferes with the discharge of an existing swale, the Contractor shall re-grade the existing swales to allow for the surface flows to enter the drain freely. With the proposed development works intended to commence concurrently with the new access bridge installation, any existing tiles encountered within the bridge site that outlet into the Reaume Drain, from the development property, shall not be reconnected to the open drain and be subsequently abandoned. Any disturbed grass areas shall be fully restored with topsoil, seed, and mulch.

The Contractor shall be required to provide all labour, equipment, and material to install compacted granular driveway transition and fill radius adjacent to the west end of the new concrete span bridge as is shown and detailed in the design drawings for this bridge installation. This transition is required as a temporary measure until a time when the site is developed. The transition and fill radius shall be provided on a slope no steeper than 10.0 horizontal to 1.0 vertical and shall be placed so that positive drainage is maintained off the driveway and into the open drain. The transition and fill radius are to be constructed using the MTO Type "A" OPSS Form 1010.

The Contractor shall also provide an asphalt padding from the existing edge of Renaud Line Road pavement to the east edge of the new concrete span bridge. Furthermore, new asphalt topping shall be installed over the entire structure, the edge of the proposed padding to the right-of-way limit. Any asphalt works required as part of the development work shall be the responsibility of the Owner to complete. The Contractor shall place a minimum of 90mm thick Type HL-3 hot mix asphalt, or approved equivalent, supplied and placed in two (2) approximately equal lifts compacted to a value ranging from 92% to 96% of maximum relative density as per OPSS 310. The Contractor will be responsible for restoring any damage caused to the roadway at its cost. All damaged hard surface roadway areas shall be neatly saw cut, and the damaged materials shall be removed and disposed of by the Contractor prior to carrying out any asphalt work.

The Contractor shall also provide sloped quarried limestone along the existing drain banks continuously through and along the new concrete span bridge from Station 0+218.0 to Station 0+238.0. The sloped quarried limestone shall be installed according to the preceding "**X. SLOPED QUARRIED LIMESTONE**

EROSION PROTECTION" heading. All sloped quarried limestone erosion protection work shall be completed prior to the erection of the proposed concrete span bridge.

All drain side slopes shall be cut to a slope no steeper than 1.50 horizontal to 1.00 vertical, and all excavated and disturbed areas not slated for quarried limestone erosion protection shall be covered with topsoil, seeded and mulched. All of the above shall be provided to the full satisfaction of the Drainage Superintendent and/or the Consulting Engineer.

XII. TOPSOIL, SEED AND MULCH

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. The topsoil shall be utilized during the placement of topsoil along all specified newly excavated, filled or disturbed areas, in preparation for the seeding and mulching operation to be carried out as part of the restoration works. 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 be required to restore all existing grassed areas and drain side slopes damaged or disturbed by the structure installation and/or removal, and place topsoil and seed and mulch over said areas including any specific areas noted on the Drawings. The Contractor shall be required to provide all the material and 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 Contractor is to note that prior to fine grading the topsoil over the backfilled areas, positive drainage is to be provided off of these areas and into the swales, and the Contractor shall also be required to make minor changes where necessary to ensure same. The Contractor shall be required to restore all existing grassed areas and roadway boulevard areas damaged by the enclosure/covered drain work and shall provide topsoil and seed and mulch over all of these areas. The placing and grading of all topsoil shall be carefully carried out according to Ontario Provincial Standard Specifications, Form 802, dated November 2010, 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 equal. As part of the seeding and mulching operation, the Contractor will be required to provide either a hydraulic mulch mix or a spread straw mulch with an adhesive binder in accordance with OPSS 1103.05.03 dated November 2016, or as subsequently amended, to ensure that the grass seed will be protected during germination and provide a thick, uniform cover to protect against erosion, where necessary. All work shall be completed to the satisfaction of the Drainage Superintendent or the Consulting Engineer.

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 satisfaction of the Drainage Superintendent or Consulting Engineer.

XIII. FINAL CLEANUP AND RESTORATION

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.

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 Drainage Superintendent or 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 to be deducted from any monies owing to the Contractor.

APPENDIX "A"

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APPENDIX A-1

Essex Region Conservation Authority Correspondence

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Kiara Kirkland

From: Tony Peralta
Sent: September 30, 2024 4:47 PM
To: Summer Locknick
Cc: Jill Fiorito; Hannah Waldt; Spencer Westerberg
Subject: RE: ERCA Notification - New Access Structure Over the Renaud Line Drain North Part
Attachments: 20240930 - D23095D1 - PRELIMINARY for ERCA Review.pdf; 20240509 Site Plan.pdf

Good afternoon Summer;

Further to the correspondence outlined below, we have been appointed by the Municipality of Lakeshore, under Section 78 of the Drainage Act, to provide an Engineer's Report to provide a new access bridge over the Renaud Line Drain to facilitate the development of the lands currently owned by Toad Five Real Estate Inc. (190-44210), in Part of 1 & 2 Block A, Registered Plan 1516. The subject site is currently proceeding through Municipal Site Plan Control, where site details and parameters shall dictate the location and top width of the new structure. We've attached the latest version of the Site Plan for reference.

Currently, the subject property does not have access to the Renaud Line Drain. However, our office has been involved in preparing Engineer's Reports for the existing span bridge located immediately downstream (north) of the subject property. We have attached a preliminary copy of the design proposal (less the structural concrete connection details) for your review and consideration.

Based on your comments below, and further to our telephone discussions, we wish to provide you with the following information:

1. The proposed structure will be an open-span structure similar to that provided immediately downstream under our D15-006 and D-88-002m projects. This will ensure continuity of flow conveyance and minimize the loss in storage capacity of the Renaud Line Pump.
2. The top centre of the proposed bridge deck shall be set to 176.640m, compared to the Lake St. Clair flood elevation of 176.400m.
3. The proposed bridge shall be constructed with 0.20m (8") high concrete curbs and pedestrian railings on both sides of the structure. As a result, these features shall delineate the location of the structure during flood water levels.

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 to the Endangered Species Act, we have contacted the Municipality of Lakeshore to ensure that this project is covered under the ESA Regulation 242/08.

We trust that this information is satisfactory. However, if you have any concerns or require additional information, please contact us at your earliest opportunity, as we intend to finalize this report shortly.

Regards,

Peralta Engineering

Tony Peralta, P.Eng.
tony@peraltaengineering.com | 519-733-6587 x 122
N.J. Peralta Engineering Ltd. - Consulting Engineers
45 Division St. N., Kingsville ON N9Y 1E1
peraltaengineering.com

From: Summer Locknick <SLocknick@erca.org>
Sent: Friday, August 4, 2023 1:12 PM
To: Anne-Marie Moniz <amoniz@lakeshore.ca>
Cc: Jill Fiorito <jfiorito@lakeshore.ca>; Sydnee Botham (Rivest) <srivest@lakeshore.ca>
Subject: RE: ERCA Notification - New Access Structure Over the Renaud Line Drain North Part

Good afternoon Anne-Marie,

Thank you for providing the Section 78 Notice for the Renaud Line Drain North Part. I've reviewed the information and the location of the proposed works and can provide the following information:

A review of our floodplain mapping for the Renaud Line Drain North Part indicates that this drain 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, the engineering report should confirm that the proposed works do not result in any adverse impacts to the level of service of the drain and that there are no negative impacts upstream or downstream. We cannot be more specific in this regard without an actual proposal to review.

Prior to the appointed engineer moving forward with the final design for any proposed works, we kindly request that they provide this office with the opportunity to review the proposed design so that any ERCA comments can be addressed

Please note that ERCA does not review applications on behalf of external agencies (i.e. DFO, MECP, MNRF). It is the proponent's responsibility to ensure that all applicable legislation is adhered to and that all authorizations have been obtained.

If you have any questions, please do not hesitate to contact me.

Kind regards,

Essex Region Conservation Authority
sustaining the place for life

SUMMER LOCKNICK
Regulations Analyst
Essex Region Conservation Authority
360 Fairview Avenue West, Suite 311 • Essex, Ontario • N8M 1Y6
P. 519-776-5209 ext.349 • C. 519-791-5789
slocknick@erca.org essexregionconservation.ca

From: Anne-Marie Moniz <amoniz@lakeshore.ca>
Sent: Monday, July 24, 2023 1:09 PM
To: Drainage <drainage@ERCA.org>
Cc: Jill Fiorito <jfiorito@lakeshore.ca>; Sydnee Botham (Rivest) <srivest@lakeshore.ca>
Subject: ERCA Notification - New Access Structure Over the Renaud Line Drain North Part

Good afternoon Summer,

Please be advised that we received a request for the installation of a new access structure over the Renaud Line Drain North Part in the Municipality of Lakeshore. As such, we would like to provide you with formal notification for the works, as required, under Section 78(2) of the Drainage Act.

We ask that you please provide us with acknowledgment of this notification, together with any initial comments you may have regarding this request.

Should you require anything further, please do not hesitate to contact us.

Thank you.

Anne-Marie Moniz
Assistant Drainage Superintendent
Municipality of Lakeshore | Operations - Drainage
419 Notre Dame Street, Belle River, ON, N0R 1A0
T: tel:+15197281975;ext=627
Connect with us online at Lakeshore.ca/Connect

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APPENDIX A-2

DFO Request for Review Submission

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Kiara Kirkland

From: Kiara Kirkland
Sent: August 27, 2024 1:10 PM
To: FPP. CA / PPP. CA (DFO/MPO) (fisheriesprotection@dfo-mpo.gc.ca)
Cc: Tony Peralta; Jill Fiorito; Hannah Waldt
Subject: DFO Request for Review - Bridge Over the Renaud Line Drain (D23-095)
Attachments: 1 - DFO Request for Review Form (Signed).pdf; 2 - Appendix A - Supporting Documents.pdf; 3 - Appendix B - Photo Book.pdf

Hello,

Our office has been appointed by the Municipality of Lakeshore to provide an Engineer's Report, under Section 78 of the Drainage Act, for the installation of a new span bridge over the Renaud Line Drain. This span bridge has been requested to facilitate access to a commercial property.

The Renaud Line Drain is an open drain with a pumped outlet to Lake St. Clair and is currently unrated by the DFO. Additionally, we have also reviewed the DFO Aquatic Species at Risk maps which display the potential for having Northern Madtom (Endangered) and Silver Lamprey (Special Concern) species at risk within Lake St. Clair. It should be noted that no works are intended to be completed in Lake St. Clair where the species at risk are potentially located.

The subject parcel is located in the northwest corner of the intersection of County Road 22 and Renaud Line Road. The new span bridge will be installed along the eastern portion of the property along Renaud Line Road.

We have been working in close consultation with the Municipality of Lakeshore, the Essex Region Conservation Authority (ERCA) and other consultants to continue with the development. At this time, we are seeking input from the DFO to address any comments and concerns as they relate to the Fisheries Act and/or SAR.

Based on the DFO Self-Assessment website, we would kindly request a review of this project.

Please find attached the following documents:

1. "Request for Review" form
2. “Appendix A” - Maps illustrating the project site and location
3. “Appendix B" - Photos of the site and drain

I trust that this information is satisfactory in order to conduct your review. However, we understand that you may have questions and/or concerns. If so, please feel free to contact us.

We look forward to your response.

Regards,

Peralta Engineering

Kiara Kirkland, Drainage Technician
kiara@peraltaengineering.com | 519-733-6587 x 126
N.J. Peralta Engineering Ltd. - Consulting Engineers
45 Division St. N., Kingsville ON N9Y 1E1
peraltaengineering.com

Request for Review

Please note that Guidance on Submitting a Request for Review is available at the end of this form. This guidance explains the requirements for a Request for Review by DFO under the fish and fish habitat protection provisions of the *Fisheries Act*. All information requested must be provided. If you attach documents to your application with additional information, you must still provide appropriate summaries in the spaces provided on the application document or your application will be considered incomplete.

A) Contact information

Name of Business/Company:

Municipality of Lakeshore

Name of Proponent:

Jill Fiorito, Drainage Superintendent

Mailing address:

419 Notre Dame Street

City/Town:

Belle River

Province/Territory:

Ontario

Postal Code:

N0R 1A0

Tel. No. :

519-728-1975

Fax No.:

Email:

jfiorito@lakeshore.ca

Select additional contact:
Contractor/Agency/Consultant *(if applicable):*

Tony Peralta (N.J.Peralta Engineering)

Mailing address:

45 Division Street North

City/Town:

Kingsville

Province/Territory:

Ontario

Postal Code:

N9Y 1E1

Tel. No. :

519-733-6587

Fax No.:

Email:

tony@peraltaengineering.com

Is the Proponent the main/primary contact? ○ Yes ◉ No

If no, please enter information for the primary contact or any additional contact.

Tony Peralta (N. J. Peralta Engineering)

**All definitions are provided in Section G of the Guidance on Submitting a Request for Review*

Tony Peralta (N.J. Peralta Engineering)

B) Description of Project

If your project has a title, please provide it.

Bridge Over the Renaud Line Drain

Is the project in response to an emergency circumstance*? ○ Yes ◉ No

Does your project involve work in water? ○ Yes ◉ No

If yes, is the work below the High Water Mark*? ○ Yes ○ No

What are you planning to do? Briefly describe all project components you are proposing in or near water.

Installation of a span bridge to be used as an access for a commercial property. The bridge will have a span of approximately 8m over the cross-section of the Renaud Line Drain and will have a maximum width of approximately 16m. This new access will be constructed under Section 78 of the Drainage Act. (Please see Appendix 'A' Figure 1 - Site Location & Figure 2 - Proposed Covered Drain Location).

How are you planning to do it? Briefly describe the construction materials, methods and equipment that you plan to use.

The bridge will be a 16m wide concrete span bridge sized to convey flows to the current design standards. Work will be completed during dry weather. This site shall be restored to its previous condition.

Include a site plan (figure/drawing) showing all project components in and near water.

Are details attached? ◉ Yes ○ No

Identify which work categories apply to your project.

- ☐ Aquaculture Operations
- ☒ Aquatic Vegetation Removal
- ☐ Beaches
- ☐ Berms
- ☐ Blasting / Explosives
- ☐ Boat Houses
- ☐ Boat Launches / Ramps
- ☐ Breakwaters
- ☒ Bridges
- ☐ Cable Crossings
- ☐ Causeways
- ☐ Culverts
- ☐ Dams
- ☐ Dewatering / Pumping
- ☐ Docks
- ☒ Dredging / Excavation
- ☐ Dykes
- ☐ Fishways / Ladders
- ☐ Flow Modification (hydro)
- ☐ Log Handling / Dumps
- ☐ Log Removal
- ☐ Moorings
- ☐ Open Water Disposal
- ☐ Piers
- ☒ Riparian Vegetation Removal
- ☐ Seismic Work
- ☐ Shoreline Protection
- ☐ Stormwater Management Facilities
- ☐ Surface Water Taking
- ☐ Tailings Impoundment Areas
- ☐ Temporary Structures
- ☐ Turbines
- ☐ Water Control Structures
- ☐ Water Intakes / Fish Screens
- ☐ Water Outfalls
- ☐ Watercourse Realignment
- ☐ Weirs
- ☐ Wharves

All definitions are provided in Section G of the Guidance on Submitting a Request for Review

- [ ] Groundwater Extraction
- [ ] Groynes
- [ ] Habitat Restoration
- [ ] Ice Bridges
- [ ] Wind Power Structures
- [x] Other — Please Specify: Municipal Drain - Span Bridge

Was your project submitted for review to another federal or provincial department or agency? (•) Yes ( ) No

If yes, indicate to whom and associated file number(s).

The project was initially submitted to the Essex Region Conservation Authority at the onset of the project, as a regulatory requirement through the Drainage Act, for initial comments.

C) Location of the Project

Coordinates of the proposed project Latitude: 42.29717 N Longitude: 82.75107 W

OR UTM zone: ; Easting:

Northing:

Include a map clearly indicating the location of the project as well as surrounding features.

Name of Nearest Community (City, Town, Village): Belle River

Municipality, District, Township, County, Province: Municiaplity of Lakeshore, County of Essex, Ontario

Name of watershed (if applicable): Lake St. Clair

Name of watercourse(s) or waterbody(ies) near the proposed project: Renaud Line Drain, Lake St. Clair

Provide detailed directions to access the project site:

From London
Merge onto ON-401 W toward Windsor
Take exit 56 for Essex Road 42 toward Tilbury
Turn right onto County Road 42/Essex 42
Turn right onto Renaud Line Road for approximately 150 m to the project site on your left

D) Description of the Aquatic Environment

Identify the predominant type of aquatic habitat where the project will take place.

- ( ) Estuary (Estuarine)
- ( ) Lake (Lacustrine)
- ( ) On the bank/shore at the interface between land and water (Riparian)
- (•) River or stream (Riverine)
- ( ) Salt water (Marine)
- ( ) Wetlands (Palustrine)

All definitions are provided in Section G of the Guidance on Submitting a Request for Review

Provide a detailed description of biological and physical characteristics of the proposed project site. This description should include information on aquatic species at risk* (https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry.html), their residence* and critical habitat* if found in the area. An overview of the distribution of aquatic species at risk and the presence of their critical habitat within Canadian waters can be found here http://dfo-mpo.gc.ca/species-especes/sara-lep/map-carte/index-eng.html

The Renaud Line Drain, over which the proposed span bridge will cross, is currently unrated by the DFO. In this area, the Renaud Line Drain is an open drain with a pumped outlet into Lake St. Clair. Further to our site investigations, the drain appears to be a watercourse with permanent flow. There are no records of aquatic species at risk or critical habitat within the location of the drain where the proposed works will occur. However, the DFO aquatic species at risk mapping confirms that there may be northern madtom (endangered) and silver lamprey (special concern) species at risk within Lake St. Clair. Additionally, see photos in Appendix "B," which shows photos of the affected area both upstream and downstream of the proposed span bridge installation site.

Include representative photos of affected area (including upstream and downstream area) and clearly identify the location of the project.

E) Potential Effects of the Proposed Project

Have you reviewed the Pathways of Effects (PoE) diagrams (http://www.dfo-mpo.gc.ca/pnw-ppe/pathways-sequences/index-eng.html) that describe the type of cause-effect relationships that apply to your project?

(●) Yes ( ) No

If yes, select the PoEs that apply to your project.

- [x] Addition or removal of aquatic vegetation
- [ ] Change in timing, duration and frequency of flow
- [ ] Cleaning or maintenance of bridges or other structures
- [ ] Dredging
- [x] Excavation
- [ ] Fish passage issues
- [x] Grading
- [ ] Marine seismic surveys
- [ ] Organic debris management
- [ ] Placement of marine finfish aquaculture site
- [ ] Placement of material or structures in water
- [ ] Riparian Planting
- [ ] Streamside livestock grazing
- [ ] Structure removal
- [ ] Use of explosives
- [x] Use of industrial equipment
- [ ] Vegetation Clearing
- [ ] Wastewater management
- [ ] Water extraction

Will there be changes (i.e., alteration) in the fish habitat*? ( ) Yes (●) No ( ) Unknown

If yes, provide a description.

Is there likely to be a harmful alteration, disruption or destruction of habitat used by fish? ( ) Yes (●) No ( ) Unknown

Is there likely to be destruction or loss of habitat used by fish? ( ) Yes (●) No ( ) Unknown

What is the footprint (area in square meters) of your project that will take place below the high water mark*?

0 sq. m

Is your project likely to change water flows or water levels? ( ) Yes (●) No ( ) Unknown

If your project includes withdrawing water, provide source, volume, rate and duration.

N/A

If your project includes a water control structure, provide the % of flow reduction.

N/A

All definitions are provided in Section G of the Guidance on Submitting a Request for Review

If your project includes discharge of water, provide source, volume and rate.

N/A

Will your project cause death of fish? ○ Yes ◉ No ○ Unknown

If yes, how many fish will be killed (for multi-year project, provide average)? What species and lifestages?

What is the time frame of your project?

The construction will start on 10/01/2024 and end by 12/31/2024

If applicable, the operation will start on MM/DD/YYYY and end by MM/DD/YYYY

If applicable, provide schedule for the maintenance

If applicable, provide schedule for decommissioning

Are there additional effects to fish and fish habitat that will occur outside of the time periods identified above? ○ Yes ◉ No

(If yes, provide details)

Can you follow appropriate Timing Windows (http://www.dfo-mpo.gc.ca/pnw-ppe/timing-periodes/index-eng.html) for all your project activities below the High Water Mark*? ◉ Yes ○ No

(If no, provide explanations.)

Have you considered and incorporated all options for redesigning and relocating your project to avoid negative effects to fish and fish habitat?

◉ Yes ○ No

If yes, describe.

From our investigations, it was determined that a span bridge structure was required in order to maintain a similar level of service with no reduction in floodplain/pump storage.

Have you consulted DFO's Fish and Fish Habitat Protection Measures Habitat (https://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures-eng.html) to determine which measures apply to your project? ◉ Yes ○ No

Will you be incorporating applicable measures into your project? ◉ Yes ○ No

If yes, identify which ones. If No, identify which ones and provide reasons.

Timing (fisheries window, duration, seasonal flow), containment and spill management (procedures and materials on hand to contain and clean up spills), erosion and sediment control (isolation of work areas during enclosure) and operation of machinery (best practice regarding cleanliness, inspection, maintenance and operation)

Have you considered whether DFO standards and codes of practice apply to your project? ◉ No ○ Yes

If Yes, include a list.

Determined that the Code of Practice could not be used due to the potential for endangered species in Lake St. Clair

All definitions are provided in Section G of the Guidance on Submitting a Request for Review

Determined that the Code of Practice could not be used due to the potential for endangered species in Lake St. Clair.

Have you considered other avoidance and mitigation measures? ○ Yes ◉ No

If Yes, include a list.

Are there any relevant measures that you are unable to incorporate? ○ Yes ◉ No

(If yes, identify which ones.)

What harmful effects to fish and fish habitat do you foresee after taking into account the avoidance and mitigation measures described above?

No residual effects are anticipated. No work will be completed within Lake St. Clair, where the species at risk are potentially located.

Do these include effects on aquatic species at risk*? ○ Yes ◉ No

If yes, please describe, including how many individuals will be harmed, harassed, or otherwise affected by the project, and how?

Do these include effects on areas identified as their residence or critical habitat? ○ Yes ◉ No

If yes, please describe

Are there any aquatic invasive species in the vicinity of your project area? ○ Yes ◉ No

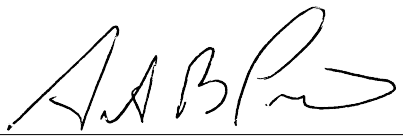
(If yes, identify which ones.)

Does your project aim to, or will it be likely to, effect any of these aquatic invasive species? ○ Yes ◉ No

If yes, how?

F) Signature

I, Tony Peralta (print name) certify that the information given on this form is to the best of my knowledge, correct and completed.



Signature

27/08/2024
Date

Information about the above-noted proposed work or undertaking is collected by DFO under the authority of the *Fisheries Act* for the purpose of administering the Fish and Fish Habitat protection provisions of the *Fisheries Act*. Personal information will be protected under the provisions of the *Privacy Act* and will be stored in the Personal Information Bank DFO-PPU-680. Under the *Privacy Act*, Individuals have a right to, and on request shall be given access to any personal information about them contained in a personal information bank. Instructions for obtaining personal information are contained in the Government of Canada's Info Source publications available at www.infosource.gc.ca or in Government of Canada offices. Information other than "personal" information may be accessible or protected as required by the provision of the *Access to Information Act*.

**All definitions are provided in Section G of the Guidance on Submitting a Request for Review*

Guidance on Submitting a Request for Review

This document explains the requirements for a Request for Review by DFO under the fish and fish habitat protection provisions of the *Fisheries Act*. To determine whether you should request a review, visit DFO's Projects Near Water webpage (http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html).

Incomplete Requests for Review will be returned to the applicant without review by DFO. All information requested must be provided. If you attach documents to your application with additional information, you must still provide appropriate summaries in the spaces provided on the application document or your application will be considered incomplete.

Section A: Contact Information

Provide the full legal name of the proponent and primary mailing address for the proponent. When the proponent is a company, identify the full legal registered name of the company.

If applicable, also provide the contact information of the duly authorized representative of the proponent. Please note that a copy of correspondence to Contractor/Agency/Consultant will also be sent to the Proponent.

Section B: Description of Project

This information is meant to provide background about the proposed project. All components of the proposed project in or near water, must be described.

Proponents should provide information about all appropriate phases of the project, i.e., the construction, operation, maintenance and closure phases for the proposed project.

All details about the construction methods to be used, associated infrastructure, permanent and temporary structure, structure type (e.g. corrugated steel pipe vs box culvert), structures dimension, building materials to be used, machinery and equipment to be used must also be provided. For example, the construction of p**ermanent structures** may require the construction of temporary structures such as temporary dikes, in conjunction with other associated activities like the withdrawal of water, land clearing, excavation, grading, infilling, blasting, dredging, installing structures, draining or removing debris from water. Similarly, the equipment and materials to be used may include hand tools, backhoes, gravel, blocks or armor stone (provide the average diameter), concrete (indicate if pre-cast or poured in-water), steel beams or wood.

When physical structures in or near water are proposed, provide the plan and specifications of those works which would require a review.

Section C: Location of the Project

The purpose for this information is to describe and illustrate the location of the proposed project, and to provide geographical and spatial context. The information should also facilitate an understanding of how the project will be situated in relation to existing structures.

The details to be provided must include:

- Coordinates of the project (e.g., Latitude and Longitude or Universal Transverse Mercator Grid coordinates);
- A map(s), site plan, or diagrams indicating the high water mark and the location, size and nature of proposed and existing structures (e.g., floating or fixed), landmarks and proposed activities. In a marine setting, it may be helpful to depict the approximate location of the proposed development on a nautical chart or showing the relation of the site to sea marks or other navigational aids. These plans, maps or diagrams should be at an appropriate scale to help determine the relative size of the proposed structures and activities, the proximity to the watercourse or waterbody and the distance from existing structures;
- The community nearest to the location of the proposal as means to provide a general reference point. When possible, proponents should use geographical names recognized by the Geographical Names Board of Canada (http://www.nrcan.gc.ca/earth-sciences/geography-boundary/geographical-name/11680).
- If available, provide aerial photographs or satellite imagery of the water source(s) and waterbody(ies);
- Names of the watershed(s), water source(s) and/or waterbody(ies) likely to be affected by the proposal; and
- Brief directions to access the proposed project site.

**All definitions are provided in Section G of the Guidance on Submitting a Request for Review*

Section D: Description of the Aquatic Environment

Proponents must describe the environmental context and aquatic resources present at the proposed site. The information must identify the current state of the fish and fish habitat prior to the carrying on of the project.

It is important to include information about the fish species present, the biological, chemical, physical features present (habitat characteristics), and the fish life-cycle functions (fish characteristics).

The spatial scope for assessing fish and fish habitat should encompass the direct physical footprint of the project, and the upstream and downstream areas affected.

As an example, the following is a non-exhaustive and non-prescriptive list of some common attributes which may characterize the aquatic environment:

- Type of water source or watercourse (groundwater, river, lake, marine, estuary, etc.);
- Characteristics of the water source or waterbody could include:
  - Substrate characterization - describe the types of substrate (e.g., bedrock, boulder, cobble, gravel etc.), identify the predominant substrate type (e.g., 80% cobble, 20% gravel etc.) and provide maps of the substrate;
  - Aquatic and riparian vegetation characterization - identify the prevalent types of vegetation (e.g. rooted, submerged, emergent, etc.), identify the relative abundance of the vegetation (e.g., 10% cattails, 80% grass, 10% sedge) , indicate the predominant vegetation (e.g., by species or types) and identify the vegetation densities (e.g., type of vegetation/ area);
  - Flow characterization - specify if the flow is controlled or if it is natural, identify if the flow is permanent or intermittent, identify the current and tide (marine environment) etc.;
  - Physical waterbody characterization - identify the average depth of water for water bodies, identify bathymetry of water bodies, provide bathymetric maps where available, channel width (determine the width of the channel from the high water mark), slope ;
  - Water quality characterization - (e.g., annual or average pH, salinity, alkalinity, total dissolved solids, turbidity, temperature etc.);
  - Biological water quality characterization - (e.g., benthic macro-invertebrates, zooplankton, phytoplankton, etc.)
- Fish species characterization - identify the fish species (including molluscs, crustaceans, etc.) known or suspected to be in the area, predator prey relationships etc. Identify what source of information was used to determine the presence of fish in that area; and
- Estimate the fish abundance - estimate the number of fish present, estimate the year class for each species etc.

There are many different methods and attributes available to characterize fish and fish habitat. Proponents must describe all sources of information used, all fish and environment sampling techniques used, all modelling techniques used and all other approaches used to define the fish and fish habitat. Proponents are encouraged to use recognized fisheries inventory methods such as those approved by DFO or provinces and territories, and/or scientifically defensible methodologies and techniques whenever possible.

Whenever possible, proponents should support descriptions of the aquatic environment with the use of detailed drawings, such as plans or maps and photographs of the habitat features. In an offshore marine setting, photos may not be useful to depict the proposed development site. Instead describe and/or sketch the specific features of the sea floor which may include the presence of submarine features such as canyons, cliffs, caverns, etc.

Section E: Potential Effects of the Proposed Project

The objective of this section is to identify all anticipated effects on fish and fish habitat likely to be caused by the project. Proponents should consider all mitigation or avoidance techniques.

The description must include qualitative and/or quantitative information about the predicted/potential effects to fish species and fish habitat. Some examples of likely effects may include mortality to fish, area of habitat loss, change to flow, changes to habitat function, reduction in prey availability etc.

The spatial scope of the aquatic effects assessment would include the direct physical "footprint" of the proposed project, and any areas

y affected, such as downstream or upstream areas. The footprint of each component of the project below the higher water mark should be provided individually. This may also include areas in or on the water, on the shoreline, coast or bank(s) (i.e., in the riparian zone).

The assessment must include the following attributes:

- Identification of all fish species affected by the proposed project as well as their life stages (e.g., juvenile, yearling, adult, etc.);
- Identification of the type of fish habitat affected (e.g., spawning habitat - gravel and cobble, feeding and rearing areas - side channel slough, small tributaries, etc.), estimate of the affected area (e.g., square meters or hectares);
- Description of the effect (e.g., mortality to fish from entrapment, delayed migration of spawning adults, reduction in prey availability, etc.)
- Probability of the effect - this is the likelihood of the effect occurring (e.g., probability of fish strike from turbines for specific fish sizes, probability of sediment plume within a distance from source, etc., or qualitative assessment: low, medium, high)
- Magnitude of the effect - this is the intensity or severity of the effect (e.g., total number of fish affected, or qualitatively assessment: low, medium, high).
- Geographic extent of the effect - this is the spatial range of the effect (e.g., localized to 100m from the work, channel reach or lake region, entire watershed etc.); and
- Duration of the effect - this is the temporal period for which the effect will persist (e.g., duration of delay to fish migration in hours, days, months or years).

The information to be provided must also describe the methods and techniques used to conduct the assessment. As much as possible, methods and techniques used should be scientifically defensible.

The schedule should, at minimum, identify the proposed start and end dates for carrying out each proposed activity, and where applicable, identify the respective phase of the proposal; i.e., the construction, operation, maintenance and closure phases. In some cases, in order to provide additional context, it may be relevant to identify other information such as the expected life span of permanent and temporary structures.

Proponents must provide comprehensive information about all available measures that are proposed to avoid or mitigate potential harmful alteration, disruption or destruction of fish habitat, or death of fish (e.g., in standards or codes of practice).

Residual harmful impacts that remain after the application of such measures.

It is important to clearly describe and quantify harmful impacts because DFO will use this information as part of its decision making on whether harmful alteration, disruption or destruction of fish habitat or death of fish is likely and an authorization is required under subsection 35(2)(*b*) or 34.4(2)(b) of the *Fisheries Act*.

Section F: Submission and Signature

The proponent must sign their application. A signed original of the Request for Review must be provided to the regional DFO office (http://www.dfo-mpo.gc.ca/pnw-ppe/contact-eng.html), even if an electronic copy was sent by email. Should the review of your project indicate that harmful alteration, disruption or destruction of fish habitat or death of fish is likely, the information provided in the Request for Review document can be referred to in the subsequent application for an authorization under Paragraphs 35(2)(*b*) or 34.4 of the *Fisheries Act*.

Section G: Definitions

Aquatic Species at Risk: an extirpated, endangered, threatened species, or a species of special concern. A non-exhaustive list of aquatic species at risk found in Canadian waters can be found here (http://www.dfo-mpo.gc.ca/species-especes/sara-lep/identify-eng.html).

Aquatic Species at Risk Critical Habitat
the habitat that is necessary for the survival or recovery of a listed wildlife species and that is identified as the species critical habitat in the recovery strategy or in an action plan for the species.

**All definitions are provided in Section G of the Guidance on Submitting a Request for Review*

Aquatic Species at Risk Residence: the specific dwelling place, such as a den, nest or other similar area or a place that is occupied or habitually occupied by one or more individuals during all or part of their life cycles, including breeding, rearing, staging, wintering, feeding, or hibernating.

Aquatic invasive species: are fish, invertebrate or plant species that have been introduced into a new aquatic environment, outside of their natural range. Once introduced, aquatic invasive species populations can grow quickly because they don't have natural predators in their new environment. As a result, they can outcompete and harm native species. They can even alter habitats to make them inhospitable for the native species. A non-exhaustive list of aquatic invasive species can be found here (http://www.dfo-mpo.gc.ca/species-especes/ais-eae/identify-eng.html).

Emergency circumstance: If your project must be conducted in response to an emergency, you may apply for an Emergency Authorization. The emergency situations are:

- The project is required as a matter of national security
- The project is being conducted in response to a national emergency where special temporary measures are being taken under the federal *Emergencies Act*
- The project is required to address an emergency that poses a risk to public health or safety or to the environment or property.

Fish habitat: means habitat that can directly or indirectly support life processes. This includes but is not limited to: spawning grounds, nursery, rearing, food supply and migration areas.

Harmful alteration, disruption or destruction means any temporary or permanent change to fish habitat that directly or indirectly impairs the habitat's capacity to support one or more life processes of fish.

High Water Mark: The usual or average level to which a body of water rises at its highest point and remains for sufficient time so as to leave a mark on the land.

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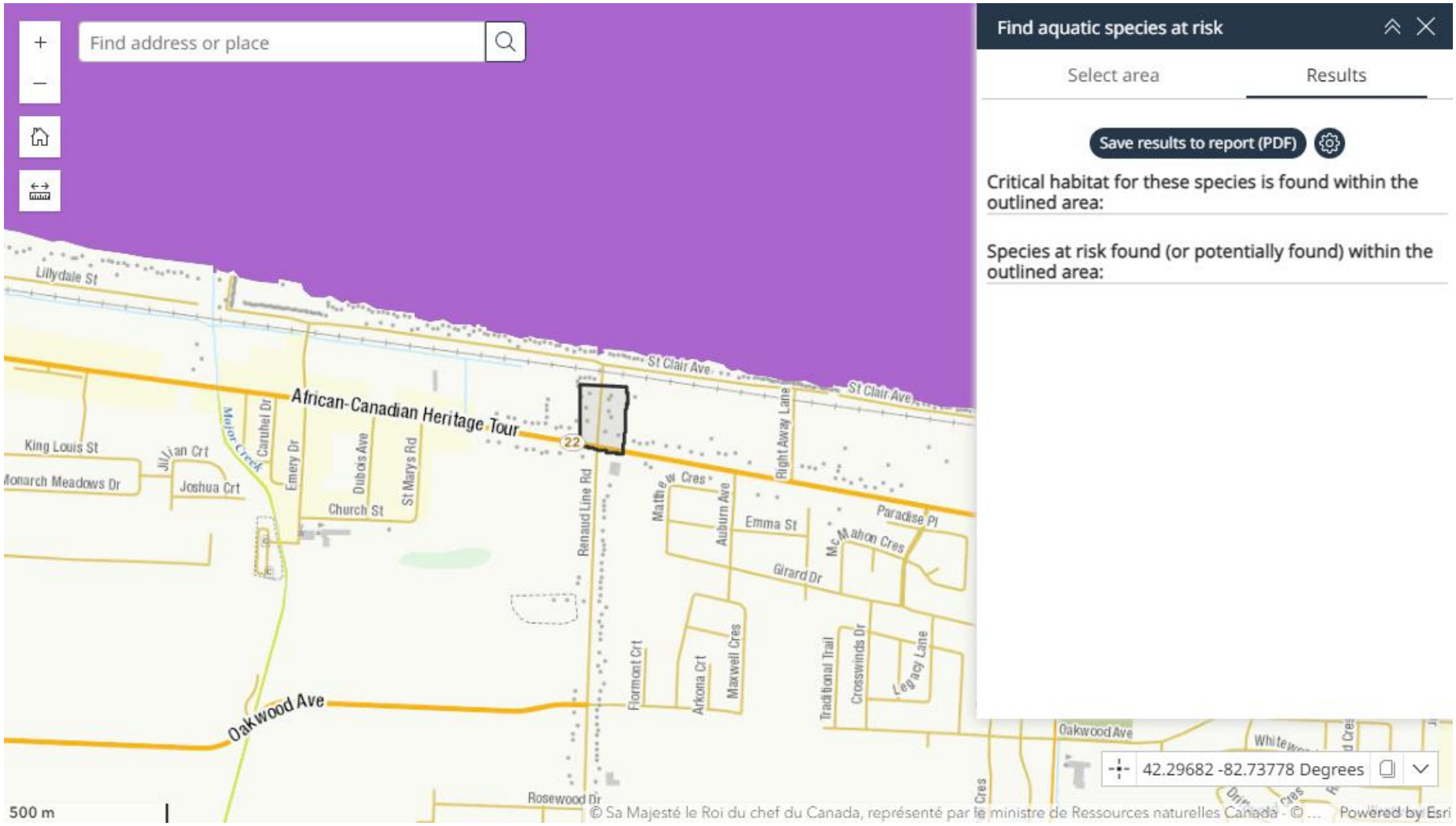
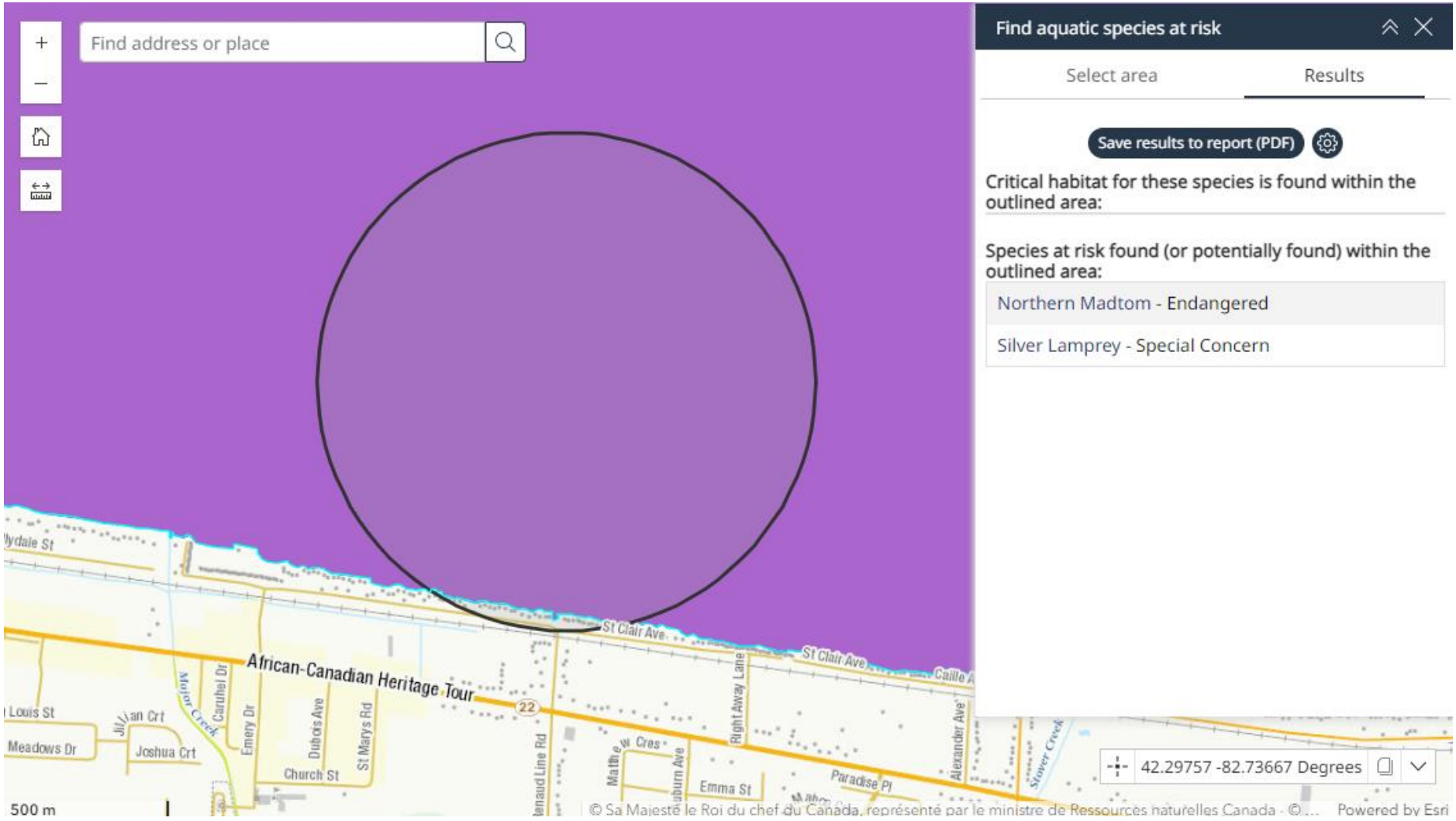
Appendix "A" - Figure 1 – Site Location

Appendix "A" - Figure 2 – Proposed New Bridge Location

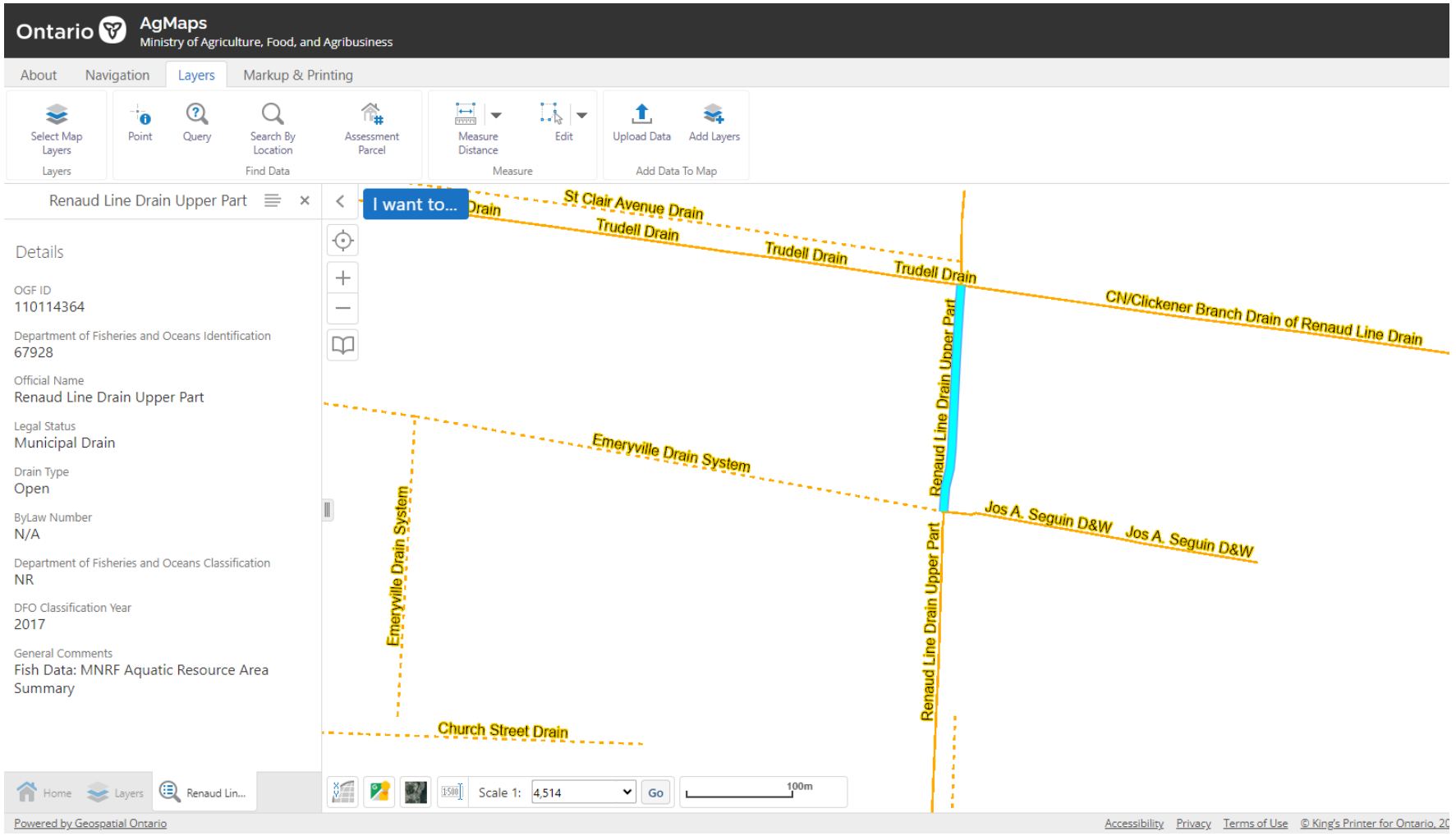
Appendix "A" - Figure 3 – DFO Aquatic Species at Risk Map and Critical Habitat Map



Appendix "A" - Figure 4 – DFO Aquatic Species at Risk Map and Critical Habitat Map



Appendix "A" - Figure 5 – DFO Drain Classification

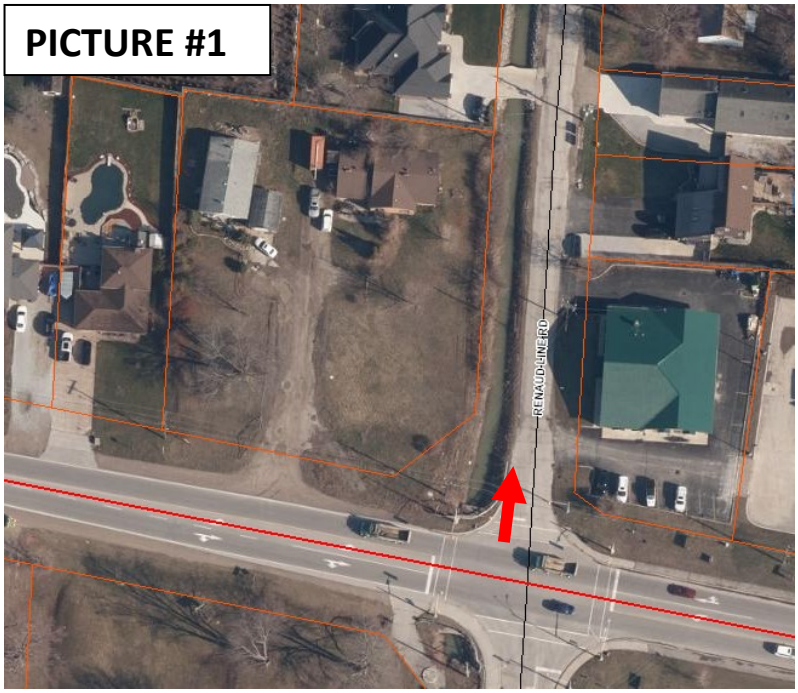


Picture #1

Approx. Photo Location Coordinates:	Lat: 42.29676◦ N Lon: 82.75106◦ W
Description:	Looking north, from the intersection of County Road 22 and Renaud Line Road. Picture depicts an overview of the site where the proposed span bridge will be installed.
Date of Photo:	July 24th, 2024

Looking north, from intersection of County Road 22 and Renaud Line Road

PICTURE #1

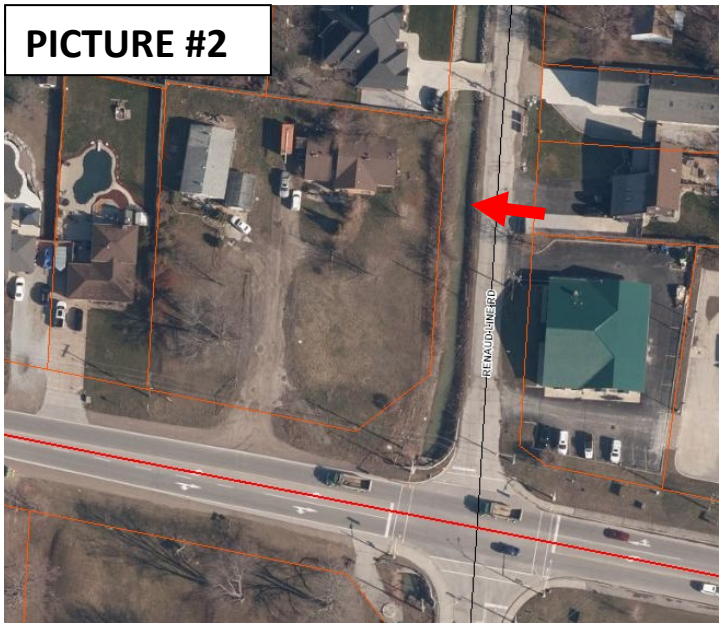


Picture #2

Approx. Photo Location Coordinates:	Lat: 42.29713◦ N Lon: 82.75107◦ W
Description:	Picture depicts a view of the Renaud Line Drain in the approximate area where the proposed span bridge will be installed
Date of Photo:	July 24th, 2024

View of the Renaud Line Drain

PICTURE #2

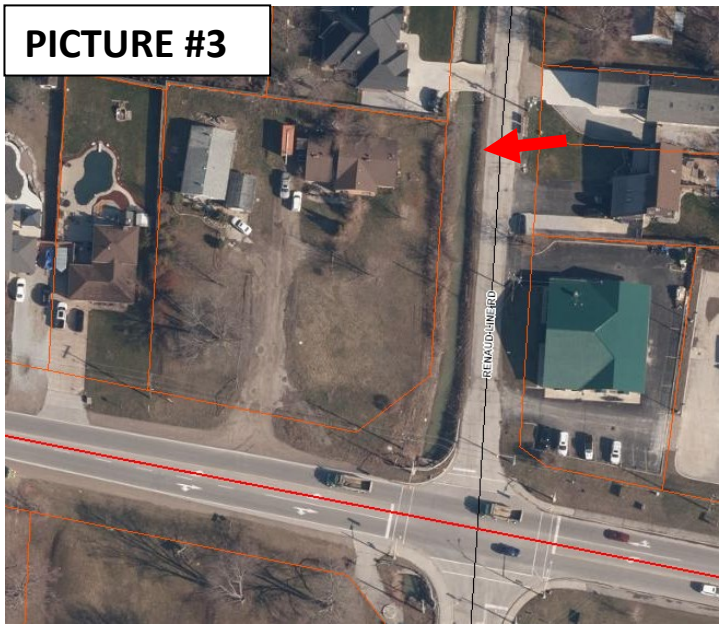


Picture #3

Approx. Photo Location Coordinates:	Lat: 42.29648◦ N Lon: 82.63946◦ W
Description:	Looking southwest over the Renaud Line Drain from Renaud Line Road, at the approximate location where the proposed span bridge will be installed.
Date of Photo:	July 24th, 2024

Looking southwest over the Renaud Line Drain from Renaud Line Road

PICTURE #3

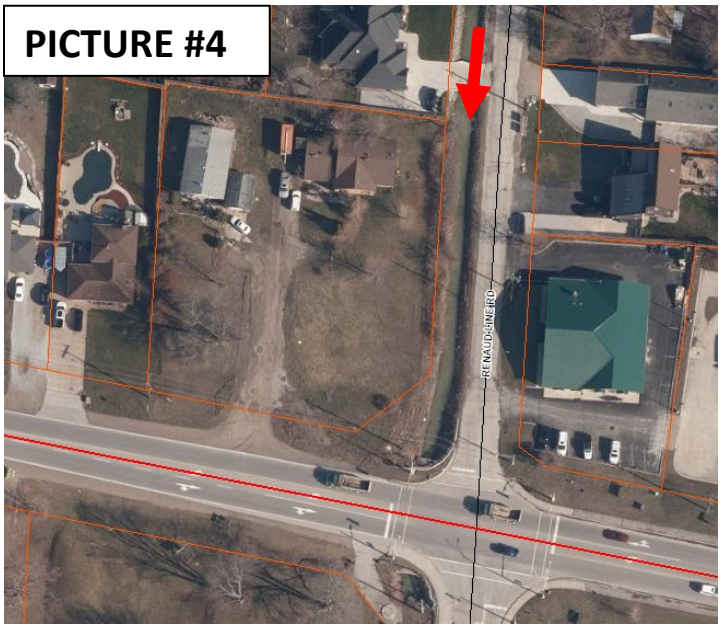


Picture #4

Approx. Photo Location Coordinates:	Lat: 42.29733◦ N Lon: 82.75102◦ W
Description:	Looking downstream in a southerly direction at the Renaud Line Drain, at the approximate location where the proposed span bridge will be installed.
Date of Photo:	July 24th, 2024

Looking downstream in a southerly direction at the Renaud Line Drain

PICTURE #4

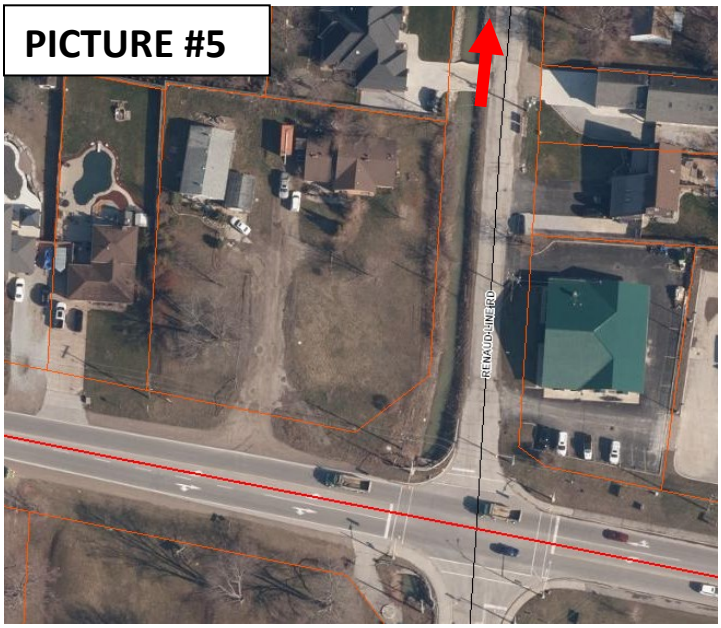


Picture #5

Approx. Photo Location Coordinates:	Lat: 42.29749◦ N Lon: 82.75102◦ W
Description:	Looking upstream in a northerly direction at the Renaud Line Drain.
Date of Photo:	July 24th, 2024

Looking upstream in a northerly direction at the Renaud Line Drain

PICTURE #5



APPENDIX "B"

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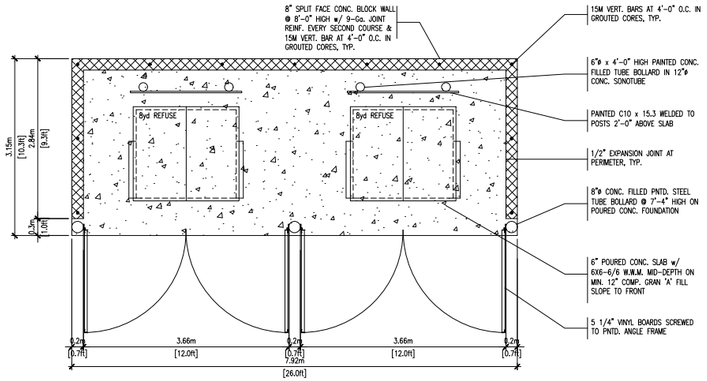
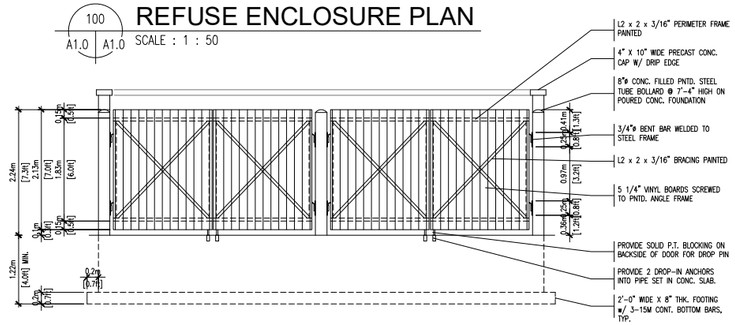


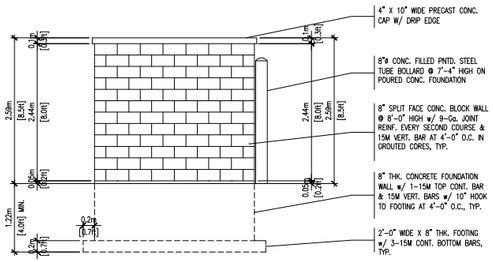
REFUSE ENCLOSURE PLAN

100 A1.0 A1.0 SCALE : 1 : 50



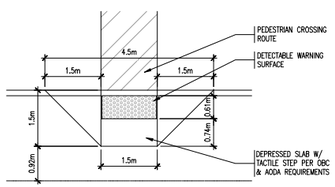
REFUSE GATE FRONT ELEVATION

SCALE : 1 : 50



REFUSE GATE SIDE ELEVATION

SCALE : 1 : 50



TYPICAL CURB RAMP PLAN

SCALE : 1 : 75

KEY PLAN

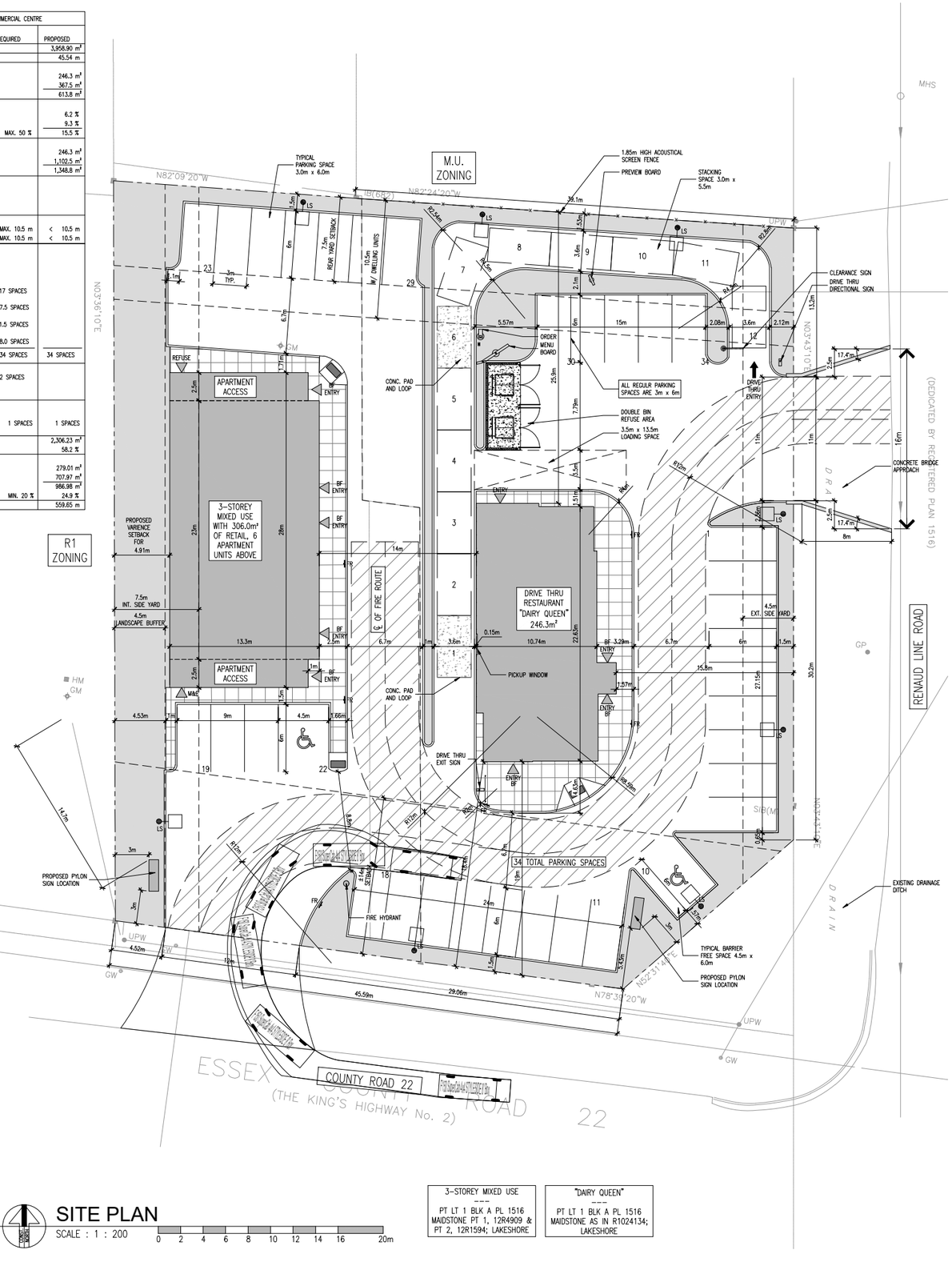
NOT TO SCALE

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

SITE DATA – SITE ZONING MU – MULTI-USE AND MINOR COMMERCIAL CENTRE

	ZONING BYLAW PREVISIONS	REQUIRED	PROPOSED
a.	LOT AREA		3,958.90 m²
b.	LOT FRONTAGE		45.54 m
c.	BUILDING AREA		
	DRIVE THRU RESTAURANT		246.3 m²
	RETAIL/ MULTI USE RESIDENTIAL BUILDING		367.5 m²
	TOTAL		613.8 m²
d.	BUILDING LOT COVERAGE (%)		
	DRIVE THRU RESTAURANT		6.2 %
	RETAIL/ MULTI USE RESIDENTIAL BUILDING		9.3 %
	TOTAL	MAX. 50 %	15.5 %
e.	BUILDING GROSS FLOOR AREA (G.F.A.)		
	DRIVE THRU RESTAURANT		246.3 m²
	RETAIL/ MULTI USE RESIDENTIAL BUILDING		1,102.5 m²
	TOTAL		1,348.8 m²
f.	RESIDENTIAL APARTMENTS		
	4 – 2 BEDROOM UNITS (100.3 m²)		
	2 – 1 BEDROOM UNITS (81.6 m²)		
	6 UNITS TOTAL		
g.	BUILDING HEIGHT		
	DRIVE THRU RESTAURANT	MAX. 10.5 m	< 10.5 m
	RETAIL/ MULTI USE RESIDENTIAL BUILDING	MAX. 10.5 m	< 10.5 m
h.	NO. OF PARKING SPACES (INCLUDES HANDICAPPED SPACES)		
	RETAIL/ MULTI USE RESIDENTIAL BUILDING		
	RETAIL		
	1.0 PARKING SPACES PER 18m² OF RETAIL FLOOR AREA	17 SPACES	
	MULTI USE RESIDENTIAL		
	1.25 SPACES PER UNIT	7.5 SPACES	
	MULTI USE RESIDENTIAL VISITOR PARKING		
	0.25 SPACES PER UNIT	1.5 SPACES	
	DRIVE THRU RESTAURANT		
	1.0 PARKING SPACES FOR EVERY 5 SEATS	8.0 SPACES	
		34 SPACES	34 SPACES
i.	NO. OF BARRIER FREE PARKING SPACES	2 SPACES	
j.	NO. OF LOADING SPACES (1 LOADING SPACE REQ'D FOR GFA GREATER THAN 300m²) NEW BLDGS GFA = 1134.84m²)	1 SPACES	1 SPACES
k.	PAVED AREA		2,306.23 m²
	COVERAGE		58.2 %
l.	LANDSCAPED AREA		
	HARD		279.01 m²
	SOFT		707.97 m²
	TOTAL		986.98 m²
	COVERAGE	MIN. 20 %	24.9 %
m.	LINEAR CONCRETE CURB		559.65 m

R1 ZONING



SITE PLAN

SCALE : 1 : 200

0 2 4 6 8 10 12 14 16 20m

3-STOREY MIXED USE	"DAIRY QUEEN"
PT LT 1 BLK A PL 1516 MAIDSTONE PT 1, 12R4909 & PT 2, 12R1594; LAKESHORE	PT LT 1 BLK A PL 1516 MAIDSTONE AS IN R1024134; LAKESHORE

date (yyy/mm/dd):	issued for:
2024/05/09	SPC RESUB.
2024/04/23	SPC RESUB.
2024/03/20	SPC RESUB.
2024/03/18	REVIEW
2024/02/14	PRICING
2023/12/20	COORDINATION
2023/12/06	SPC APPLICATION
2023/10/04	SPC REVIEW
2023/09/26	ZONING BYLAW APPLICATION

general notes:

1. THIS PRINT IS AN INSTRUMENT OF SERVICE ONLY AND IS THE PROPERTY OF THE ARCHITECT.
2. DRAWINGS SHALL NOT BE SCALED.
3. CONTRACTORS SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB AND THIS OFFICE MUST BE NOTIFIED OF ANY VARIATIONS FROM THE DIMENSIONS AND CONDITIONS SHOWN BY THESE DRAWINGS.
4. ATTENTION IS DIRECTED TO PROVISIONS IN THE GENERAL CONDITIONS REGARDING CONTRACTOR'S RESPONSIBILITIES IN REGARD TO SUBMISSION OF SHOP DRAWINGS.
5. IN THE EVENT THE ARCHITECT IS RETAINED TO REVIEW SHOP DRAWINGS, SUCH REVIEW IS ONLY TO CHECK FOR CONFORMANCE WITH DESIGN CONCEPT AND WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS.
6. CONTRACTORS SHALL PROMPTLY NOTIFY THE ARCHITECT IN WRITING OF THE EXISTENCE OF ANY OBSERVED VARIATIONS BETWEEN THE CONTRACT DOCUMENTS AND ANY APPLICABLE CODES OR BY-LAWS.
7. THE ARCHITECT IS NOT RESPONSIBLE FOR THE CONTRACTOR'S MEANS, METHODS AND OR TECHNIQUES IN THE CONSTRUCTION OF THIS FACILITY.

stamp:

architectural design associates inc. architect
1670 mercer street
windsor ontario canada n8x 3p7
ph 519.254.3430 fax 519.254.3642
email - info@ada-architect.ca www.ada-architect.ca

project:
PROPOSED DQ & MIXED USE BLDG, BELLE RIVER, ON
1294 &1298 COUNTY RD 22

client:
TOAD FIVE REAL ESTATE
1199 SURF CLUB DRIVE
ST. JOACHIM, N0R 1S0
517-410-3013

title:
SITE PLAN

scale: AS SHOWN
drawn by: DM / TK
checked by: SMB
date: MARCH 2023
comm. no.: 2023-035
sheet no.:

A1.1

SITE WORK GENERAL NOTES:

1. ALL WORK SHALL CONFORM TO THE LATEST TOWN OF LAKESHORE STANDARDS, THE ONTARIO BUILDING CODE, OPSS AND OPSD STANDARDS AS APPLICABLE.
2. PRIOR TO COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS AND FIELD CONDITIONS, IN THE EVENT THAT DIMENSIONS, ELEVATIONS OR FIELD CONDITIONS VARY FROM DESIGN DRAWINGS, THE ENGINEER SHALL BE NOTIFIED.
3. PRIOR TO COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR SHALL FIELD VERIFY HORIZONTAL AND VERTICAL LOCATIONS OF ALL EXISTING SEWERS AND UTILITIES TO BE CONNECTED TO PRIOR TO CONSTRUCTION STAKING. IF NEED BE, THE ENGINEER SHALL BE NOTIFIED AND THE PLANS SHALL BE ADJUSTED ACCORDINGLY.
4. PRIOR TO COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR SHALL REVIEW AND COORDINATE ALL PROPOSED GRADES, SEWER PIPE INVERTS, AND STORM AND SANITARY STRUCTURE RIM ELEVATIONS. IN THE EVENT OF ANY DISCREPANCIES THE ENGINEER SHALL BE NOTIFIED AND THE PLANS SHALL BE ADJUSTED ACCORDINGLY.
5. THE CONTRACTOR AND HIS WORKERS SHALL UNDERTAKE ALL WORK ON THIS PROJECT IN COMPLIANCE WITH THE "OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS", ONTARIO REGULATION 213/91 AS AMENDED.
6. THE LOCATIONS OF EXISTING UTILITIES ARE APPROXIMATE ONLY. THE CONTRACTOR IS RESPONSIBLE FOR ACCURATELY LOCATING UTILITIES PRIOR TO CONSTRUCTION AND FOR ADEQUATELY PROTECTING EXISTING UTILITIES DURING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE.
7. EXCAVATE TO THE DEPTH OF THE FINAL SUB-GRADE ELEVATION TO ALLOW FOR GRADE CHANGES AND THE PLACEMENT OF THE RECOMMENDED PAVEMENT SYSTEM.
8. TRENCH BACKFILLING UNDER THE PAVEMENT AREAS AND WITHIN 0.90m OF PAVEMENT AREAS SHALL BE GRANULAR "B" TYPE 1, MATERIAL COMPACTED TO 98% S.P.M.D.D. ALL GRANULAR "A" BASE TO BE COMPACTED TO 100% S.P.M.D.D. ALL NATIVE MATERIAL COMPACTED TO 95% S.P.M.D.D.
9. REMOVE ROOTS, SOFT SOIL AND REPLACE WITH GRANULAR "B" TYPE 1, MATERIAL COMPACTED TO 98% S.P.M.D.D.
10. RESTORE BOULEVARD TO MATCH EXISTING OR BETTER.
11. ALL EXISTING GRASS AREAS DISTURBED DURING CONSTRUCTION SHALL BE RESTORED WITH A MINIMUM OF 100mm OF CLEAN TOPSOIL, GRASS SEED AND HYDRO MULCH.
12. ALL PVC STORM AND SANITARY SEWER PIPE SHALL HAVE RUBBER GASKET JOINTS AND CONFORM TO ASTM D-3034.
13. STORM AND SANITARY SEWERS LOCATED PARALLEL TO WATERMAINS SHALL BE CONSTRUCTED IN SEPARATE TRENCHES MAINTAINING A MINIMUM CLEAR HORIZONTAL SEPARATION OF 2.5m.
14. PROVIDE A MINIMUM OF 0.5m VERTICAL SEPARATION BETWEEN STORM AND SANITARY SEWERS PASSING OVER WATERMAINS. THE LENGTH OF THE WATER PIPE SHALL BE CENTERED AT THE POINT OF CROSSING SO THAT THE JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE SEWER. PROVIDE ADEQUATE STRUCTURAL SUPPORT FOR THE SEWER TO PREVENT EXCESSIVE DEFLECTION OF JOINTS AND SETTLING.
15. 600mmX600mm STANDARD PRECAST CATCH BASINS SHALL HAVE 600mm SUMPS.
16. SUB-DRAINS FOR CATCH BASINS SHALL BE 100mm DIA. BIG "O" WRAPPED WITH FILTER SOCK X 2.5m LONG AT 1.0% EMBEDDED IN 20mm CLEAR STONE ON TWO OPPOSING SIDES OF CATCH BASIN.
17. ALL DIMENSIONS SHOWN ARE TO EDGE OF ASPHALT. ALL ELEVATIONS INDICATED ARE AT THE EDGE OF ASPHALT U.N.O.
18. ALL MANHOLES SHOWN SHALL BE 1200mm DIAMETER U.N.O.
19. ALL MANHOLES SHALL HAVE A MINIMUM OF TWO(2) CONCRETE RINGS TO ADJUST THE RIM ELEVATION TO THE FINAL GRADE. MANHOLE RIMS SHALL BE SET AT AN ELEVATION RELATIVE TO FINISHED PAVEMENT ELEVATION.
20. STORM MANHOLES SHALL HAVE A 600mm DEEP SUMP.
21. CATCHBASIN MANHOLES SHALL HAVE CATCHBASIN GRATES AND FRAME TYP.
22. CATCH BASIN LEADS SHALL BE 150mm DIA. PVC SDR 28 AT 1.0% SLOPE MIN. U.N.O.
23. THE LENGTH OF SEWER LINES IS THE DISTANCE BETWEEN FROM INSIDE FACE TO INSIDE FACE OF MANHOLES AND/OR CATCHBASINS. THE DISTANCES INDICATED ON THE PLANS AREA APPROXIMATE AND CAN VARY DUE TO ALIGNMENT.
24. WATERMAIN PIPE SHALL BE PVC DR 18 WITH FITTINGS CERTIFIED TO CSA B137.2. WATERMAIN SHALL BE INSTALLED WITH 1.5m MIN. CLEAR COVER.
25. EXCAVATION FOR REMOVAL OF CBS, MHS, AND OTHER EX. STRUCTURES IS TO BE BACKFILLED W/ GRANULAR 'A' TO THE UNDERSIDE OF THE PROPOSED SUB-GRADE COMPACTED IN 200mm LIFTS AT 100% SPMDD FOR THE FULL DEPTH OF THE EXCAVATION.
26. CONTRACTOR SHALL OBTAIN A RIGHT-OF-WAY PERMIT PRIOR TO COMMENCING ANY WORK WITHIN THE CITY RIGHT-OF-WAY.

EROSION AND SEDIMENT CONTROL NOTES:

1. INSTALL SILT FENCE AND STRAW BALE CHECK DAMS AS REQUIRED TO CONTROL SEDIMENT DURING CONSTRUCTION.
2. PROTECT ALL EXPOSED SURFACES AND CONTROL RUNOFF DURING CONSTRUCTION.
3. ALL EROSION CONTROL MEASURES ARE TO BE IN PLACE BEFORE STARTING CONSTRUCTION AND REMAIN IN PLACE UNTIL RESTORATION IS COMPLETE.
4. MAINTAIN EROSION CONTROL MEASURES DURING CONSTRUCTION.
5. ALL COLLECTED SEDIMENT MUST BE DISPOSED OFF AT AN APPROVED LOCATION.
6. MINIMIZE THE AREA DISTURBED DURING CONSTRUCTION.
7. ALL DEWATERING MUST BE DISPOSED OF IN AN APPROVED SEDIMENTATION BASIN.
8. PROTECT ALL CATCH BASINS, MAINTENANCE HOLES AND PIPE ENDS FROM SEDIMENT INTRUSION WITH GEOTEXTILE (TERRAFIX 270R OR EQUAL).
9. KEEP ALL SUMPS CLEAN DURING CONSTRUCTION.
10. PREVENT WIND-BLOWN DUST.
11. ALL SILT FENCING AND DETAILS ARE AT THE MINIMUM TO BE CONSTRUCTED IN ACCORDANCE WITH THE MINISTRY OF NATURAL RESOURCES GUIDELINES ON EROSION AND SEDIMENT CONTROL FOR URBAN CONSTRUCTION SITES.
12. ALL OF THE ABOVE NOTES AND ANY SEDIMENT AND EROSION CONTROL MEASURES ARE AT THE MINIMUM TO BE IN ACCORDANCE WITH THE MINISTRY OF NATURAL RESOURCES GUIDELINES ON EROSION AND SEDIMENT CONTROL FOR URBAN CONSTRUCTION SITES.

OPS FOR STORM & SANITARY STRUCTURES:

1. CATCH BASINS SHALL BE PRECAST CONCRETE AND SHALL CONFORM TO OPSD 705.01 U.N.O
2. CATCH BASIN FRAMES AND GRATES SHALL CONFORM TO OPSD 400.02.
3. MANHOLES SHALL BE PRECAST CONCRETE AND SHALL CONFORM TO OPSD 701.01 & 701.03
4. MANHOLE FRAMES AND COVERS SHALL CONFORM TO OPSD 401.01.

CURB & SIDEWALK NOTES:

1. SIDEWALKS SHALL HAVE BAYS SPACING EQUAL TO ITS WIDTH AND EXPANSION JOINTS EVERY SIXTH BAY.
2. BAY JOINTS SHALL BE SAWCUT, THE DEPTH OF THE JOINT SHALL BE t/3 AND THE WIDTH SHALL BE 25mm.
3. EXPANSION JOINTS SHALL BE 50mm THICK FULL DEPTH FOAM JOINT FILLER.
4. INSTALL 50mm THICK FOAM JOINT FILLER BETWEEN SIDEWALK AND CONCRETE CURBS.
5. ALL SIDEWALK EDGES INCLUDING TOOLED AND EXPANSION JOINTS SHALL BE FINISHED WITH A 25mm RADIUS.
6. CONCRETE BARRIER CURBS SHALL BE OPSD-600.110 FOR THE PARKING LOT.
7. CONCRETE FOR CURBS SHALL HAVE A MIN. COMPRESSIVE STRENGTH OF 32 MPa AT 28 DAYS AND CONTAIN 6 TO 8% AIR ENTRAINMENT. CONSTRUCTION JOINTS SHALL BE SAWCUTS AT 5m FOR STRAIGHT SECTIONS AND AT 3m FOR CURVED SECTIONS WITH A RADIUS LESS THAN 9m.

PAVEMENT LEGEND:

NEW ASPHALT PAVEMENT:
STRIP ALL GRASS AND TOPSOIL AS REQUIRED.
EXCAVATE TO SUB-GRADE AS REQUIRED AND PROOF ROLL.
SUPPLY, PLACE & COMPACT 250mm MIN. OF GRANULAR 'B' TYPE 2 SUB-BASE TO 98% SPMDD (250 mm MAX. LOOSE LIFTS)
SUPPLY, PLACE & COMPACT 100mm OF GRANULAR 'A' BASE TO 100% SPMDD
SUPPLY, PLACE & COMPACT 50mm HL-4 BASE COURSE ASPHALT & 40mm HL-3 SURFACE COURSE ASPHALT

CONCRETE SIDEWALKS:
100mm CONCRETE (32 MPa W/ 6% TO 8% AIR ENTRAINMENT)
w/ 152X152 MW18.7 X MW18.7 AT MID-DEPTH ON
150mm MIN. GRANULAR 'A' BASE COMPACTED TO 100% SPMDD ON
COMPACTED AND APPROVED SUBGRADE

FROST SLABS AT ALL DOORS (1.5 m x 1.5 m):
100mm CONCRETE (32 MPa W/ 6% TO 8% AIR ENTRAINMENT)
w/ 152X152 MW18.7 X MW18.7 AT MID-DEPTH ON
2-38mm LAYERS OF R-10 RIGID INSULATION ON
150mm MIN. GRANULAR 'A' BASE COMPACTED TO 100% SPMDD ON
COMPACTED AND APPROVED SUBGRADE

CONCRETE SLAB AT REFUSE AREA & DRIVE THROUGH PADS:
STRIP ALL GRASS AND TOPSOIL AS REQUIRED.
EXCAVATE TO SUB-GRADE AS REQUIRED AND PROOF ROLL.
200mm CONCRETE (32 MPa W/ 6% TO 8% AIR ENTRAINMENT)
w/ 152X152 MW18.7 X MW18.7 AT MID-DEPTHON
200mm MIN. GRANULAR 'A' BASE COMPACTED TO 100% SPMDD

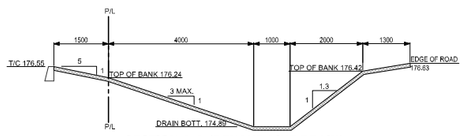
CONCRETE DRIVEWAY APPROACH:
150mm CONCRETE (32 MPa W/ 6% TO 8% AIR ENTRAINMENT) ON
300mm MIN. GRANULAR 'A' BASE COMPACTED TO 100% SPMDD ON
COMPACTED AND APPROVED SUBGRADE.

REFER TO TOWN OF LAKESHORE STANDARD FOR INDUSTRIAL DRIVEWAY ENTRANCE (FIGURE D-2)

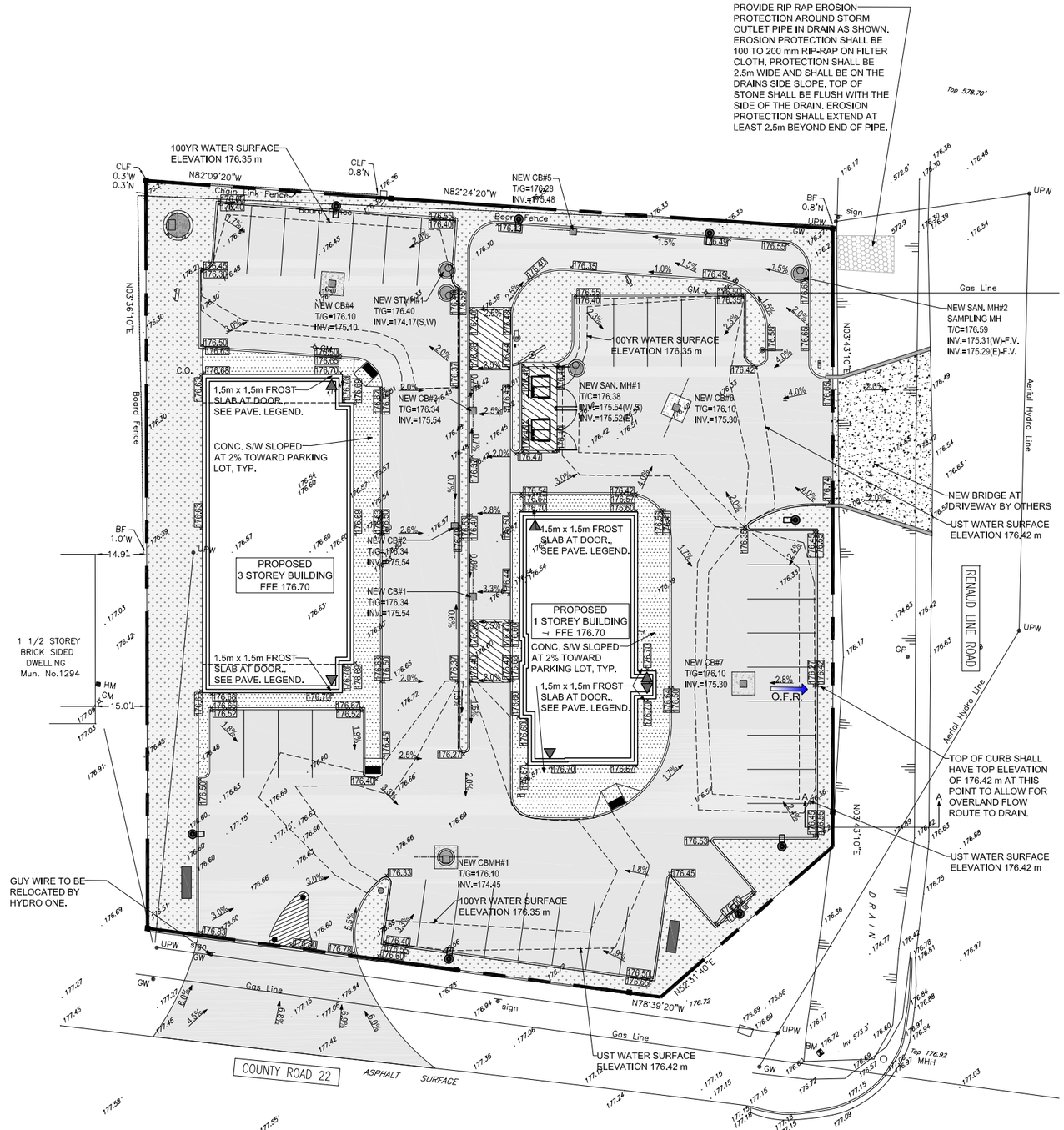
LANDSCAPED AREA:
MAINTAIN 100 mm THK. MIN. TOPSOIL
REFER TO ARCHITECTURAL DRAWINGS / LANDSCAPE DRAWINGS FOR LANDSCAPE REQUIREMENTS.

LEGEND:

- PROPERTY LINE
- PROPOSED BARRIER CURB OPSD 600.11
- PROPOSED CURB AND GUTTER OPSD 600.04
- EXISTING CURB
- ×176.50 INDICATED EXISTING ELEVATION (METERS)
- ×176.50 INDICATED PROPOSED ELEVATION (METERS)
- PROPOSED DOOR



SECTION A-A (RENAUD LINE DRAIN)
SCALE: 1:75



GRADING & PAVEMENT PLAN
SCALE: 1:200

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

2024/07/23	PERMIT
2024/07/19	ERCA REVIEW
2024/07/17	TOWN REVIEW
2024/07/05	ERCA REVIEW
2024/06/12	ERCA REVIEW
2024/05/31	SPC REVIEW
2023/12/06	SPC REVIEW

date (yyy/mm/dd): issued for:

general notes:

1. THIS PRINT IS AN INSTRUMENT OF SERVICE ONLY AND IS THE PROPERTY OF THE ENGINEER.
2. DRAWINGS SHALL NOT BE SCALED.
3. CONTRACTORS SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB AND THIS OFFICE MUST BE NOTIFIED OF ANY VARIATIONS FROM THE DIMENSIONS AND CONDITIONS SHOWN BY THESE DRAWINGS.
4. ATTENTION IS DIRECTED TO PROVISIONS IN THE GENERAL CONDITIONS REGARDING CONTRACTOR'S RESPONSIBILITIES IN REGARD TO SUBMISSION OF SHOP DRAWINGS.
5. IN THE EVENT THE ENGINEER IS RETAINED TO REVIEW SHOP DRAWINGS, SUCH REVIEW IS ONLY TO CHECK FOR CONFORMANCE WITH DESIGN CONCEPT AND WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS.
6. CONTRACTORS SHALL PROMPTLY NOTIFY THE ENGINEER IN WRITING OF THE EXISTENCE OF ANY OBSERVED VARIATIONS BETWEEN THE CONTRACT DOCUMENTS AND ANY APPLICABLE CODES OR BY-LAWS.
7. THE ENGINEER IS NOT RESPONSIBLE FOR THE CONTRACTOR'S MEANS, METHODS AND OR TECHNIQUES IN THE CONSTRUCTION OF THIS FACILITY.

stamp:

REGISTERED PROFESSIONAL ENGINEER
2024.07.23
J.P. ALEO
100189809
PROVINCE OF ONTARIO

ALEO ASSOCIATES INC.
CONSULTING ENGINEERS
325 DEVONSHIRE RD. SUITE 500, WINDSOR, ON. CANADA N8Y 2L3
TELEPHONE (519) 254-7928 FACSIMILE (519) 254-0895

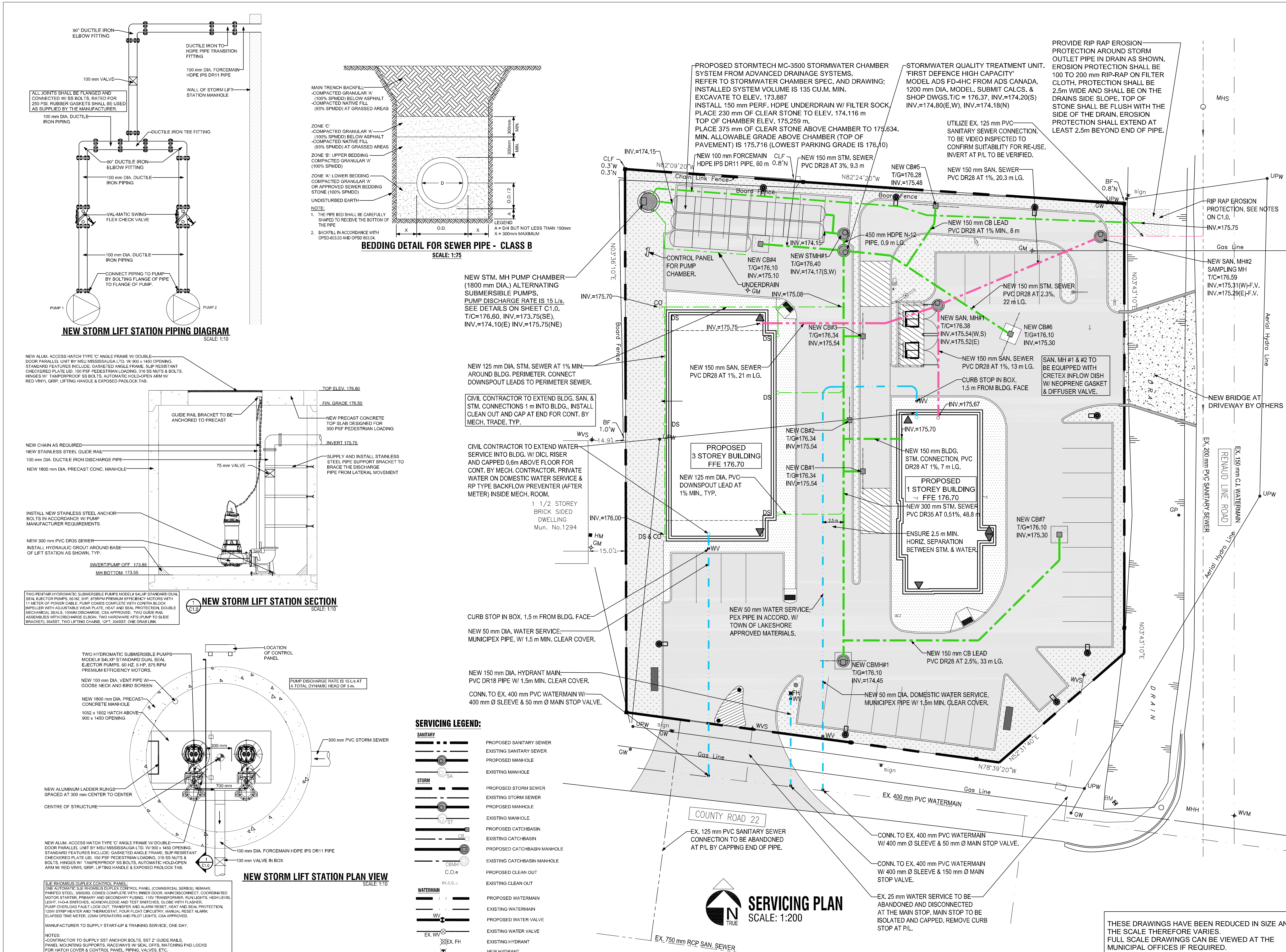
project:
DAIRY QUEEN MIXED USE - BELLERIVER

client:
TOAD SIX REAL ESTATE

title:
GRADING & PAVEMENT PLAN

scale: AS SHOWN
drawn by: JPA
checked by: JPA / PAA
date: NOVEMBER 2023
proj. no.: 8583
sheet no.:

C1.0



date (yyyy/mm/dd):	issued for:
2024/07/23	PERMIT
2024/07/19	ERCA REVIEW
2024/07/17	TOWN REVIEW
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stamp:

REGISTERED PROFESSIONAL ENGINEER 2024.07.23 J.P. ALEO 100189809 PROVINCE OF ONTARIO

ALEO ASSOCIATES INC.
CONSULTING ENGINEERS
325 DEVONSHIRE RD. SUITE 500, WINDSOR, ON, CANADA N8Y 2L3
TELEPHONE (519) 254-7926 FACSIMILE (519) 254-0895

project: DAIRY QUEEN MIXED USE - BELLERIVER

client: TOAD SIX REAL ESTATE

title: SERVICING PLAN

scale: AS SHOWN

drawn by: JPA

checked by: JPA / PAA

date: NOVEMBER 2023

proj. no.: 8583

sheet no.: C1.1

APPENDIX "C"

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PLANS & DETAILS

OF THE

BRIDGE OVER THE RENAUD LINE DRAIN

(For Toad Five Real Estate Inc. (190-44210), Part of Lots 1 & 2 Block A, R.P. 1516)

IN THE

MUNICIPALITY OF LAKESHORE (Geographic Township of Maidstone)

IN THE

COUNTY OF ESSEX • ONTARIO

MUNICIPALITY OF LAKESHORE

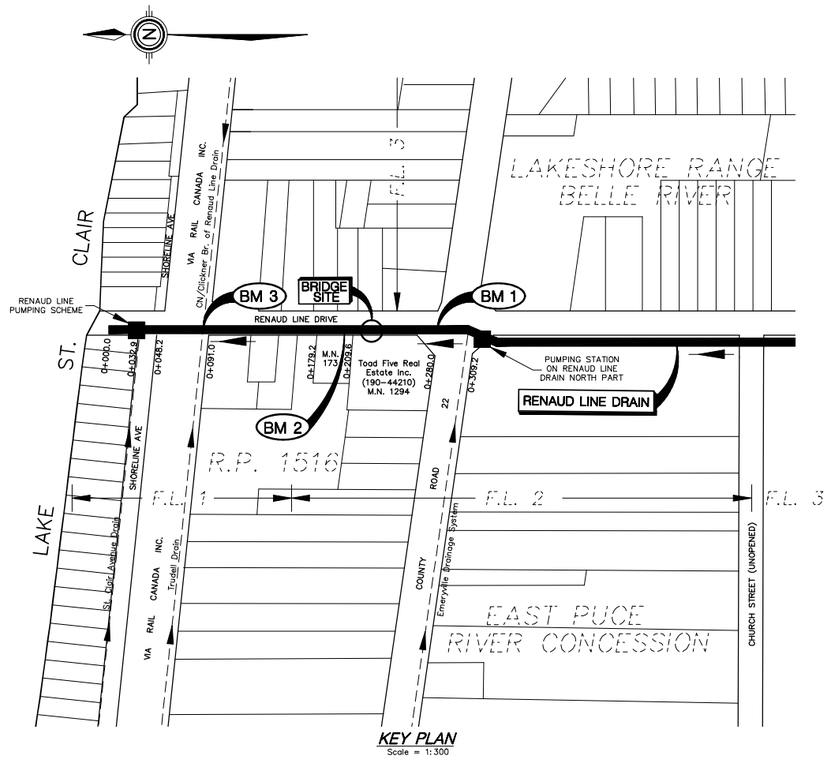
MAYOR: TRACEY BAILEY
CLERK: KRISTEN NEWMAN
DRAINAGE SUPERINTENDENT: JILL FIORITO

BENCHMARKS:

1) BRASS PLAQUE LOCATED ON THE NORTH END OF CONCRETE BOX CULVERT UNDER COUNTY ROAD 22 AT INTERSECTION OF RENAUD LINE AND COUNTY ROAD 22 (720988).
ELEV. 176.739m

2) TOP CENTRE OF EXISTING BRIDGE DECK LOCATED IMMEDIATELY NORTH OF PROPOSED BRIDGE ℄ STA 0+199.7 (M.N. 173).
ELEV. 176.523m

3) BRASS PLAQUE LOCATED ON THE SOUTH END OF CONCRETE CULVERT PIPE UNDER VIA RAILWAY (60R160-3038).
ELEV. 176.525m



KEY PLAN
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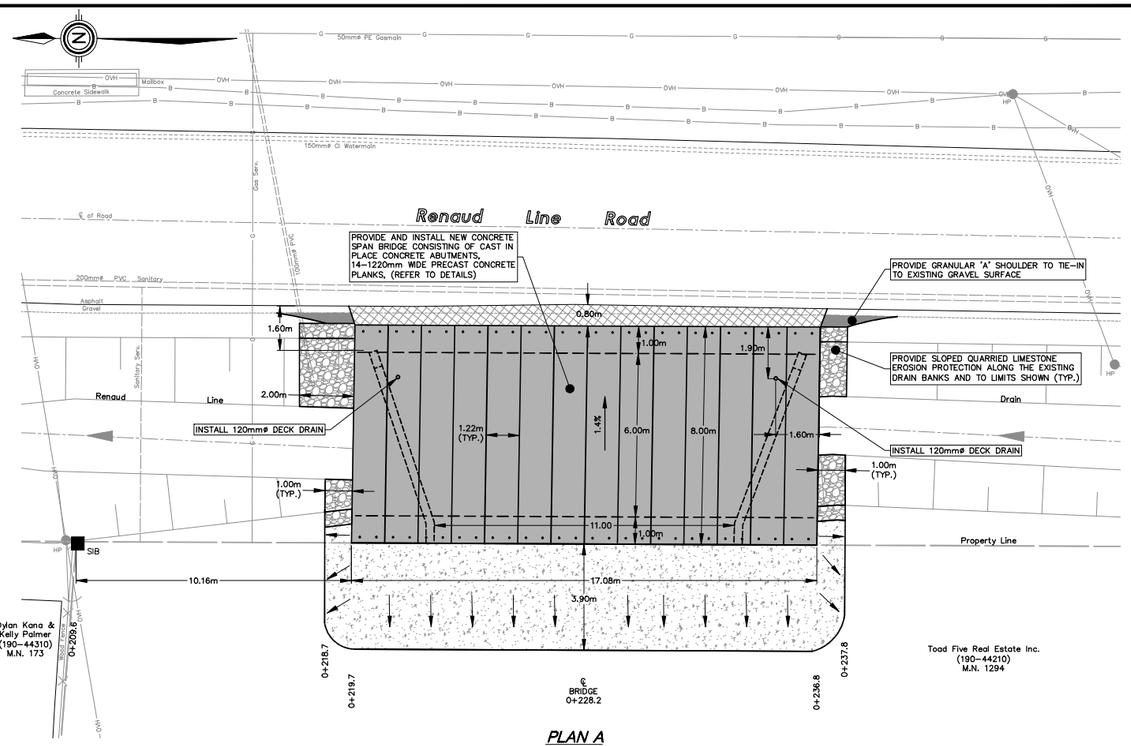

PLAN A
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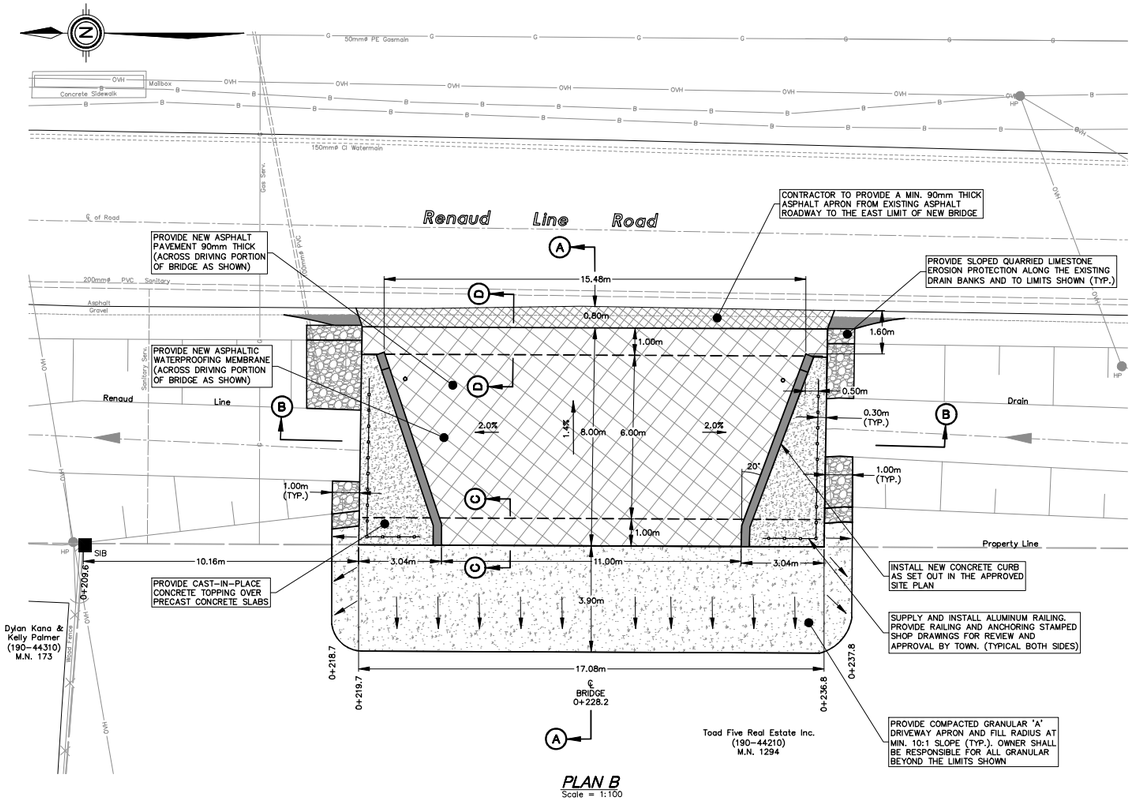

PLAN B
Scale = 1:100

BRIDGE STRUCTURE NOTES:

1. 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 AND/OR LOCATION SHOWN.
2. ALL DIMENSIONS SHOWN IN METRES UNLESS NOTED OTHERWISE. PROPERTY LINES ARE APPROXIMATE AND ARE BASED ON THE TOWN OF LAKESHORE GIS AND FIELD SURVEY INFORMATION.
3. DRAIN STATIONS ARE RELATIVE TO THE GOVERNING 1977 ENGINEER'S REPORT.
4. THE NEW PRECAST CONCRETE SPAN ACCESS BRIDGE ELEVATIONS HAVE BEEN SET TO MEET THE PARAMETERS OF THE SUBMITTED GRADING PLAN FOR THE PROPOSED DEVELOPMENT.
5. QUARRIED LIMESTONE EROSION PROTECTION SHALL BE INSTALLED ALONG THE DRAIN SIDE SLOPES AT THE LOCATION OF THE NEW CONCRETE SPAN ACCESS BRIDGE AND EXTEND APPROXIMATELY 1.0m BEYOND THE NEW BRIDGE LIMITS.
6. THE CONTRACTOR SHALL PROVIDE A TEMPORARY GRANULAR TRANISTION AND FILL RADIUS AT A SLOPE OF NO GREATER THAN 10.0 HORIZONTAL TO 1.0 VERTICAL TO MATCH THE EXISTING GROUND ELEVATION WEST OF THE NEW BRIDGE LIMIT.
7. BRIDGE DESIGN BASED ON S6-19 CANADIAN HIGHWAY BRIDGE DESIGN CODE.
8. DESIGN LOAD SHALL INCLUDE FOR CONCRETE TOPPING AS SHOWN AND 90mm THICK ASPHALT.
9. ABUTMENT WALL CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 20 MPa (3000 psi).
10. MINIMUM SOIL BEARING CAPACITY OF 144 KPa (3000 psf) FOR ABUTMENTS.
11. PRECAST CONCRETE PLANKS SHALL BE 250mm THICK PRESTRESSED CONCRETE DESIGNED FOR NORMAL CL-W TRAFFIC LOADING.
12. TOP OF PLANKS SHALL RECEIVE BROOM FINISH FOR SLIP RESISTANCE.

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

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Kingsville, ON
N9Y 1E1 Canada
P: 519-733-6587
F: 519-733-6588
peraltaengineering.com

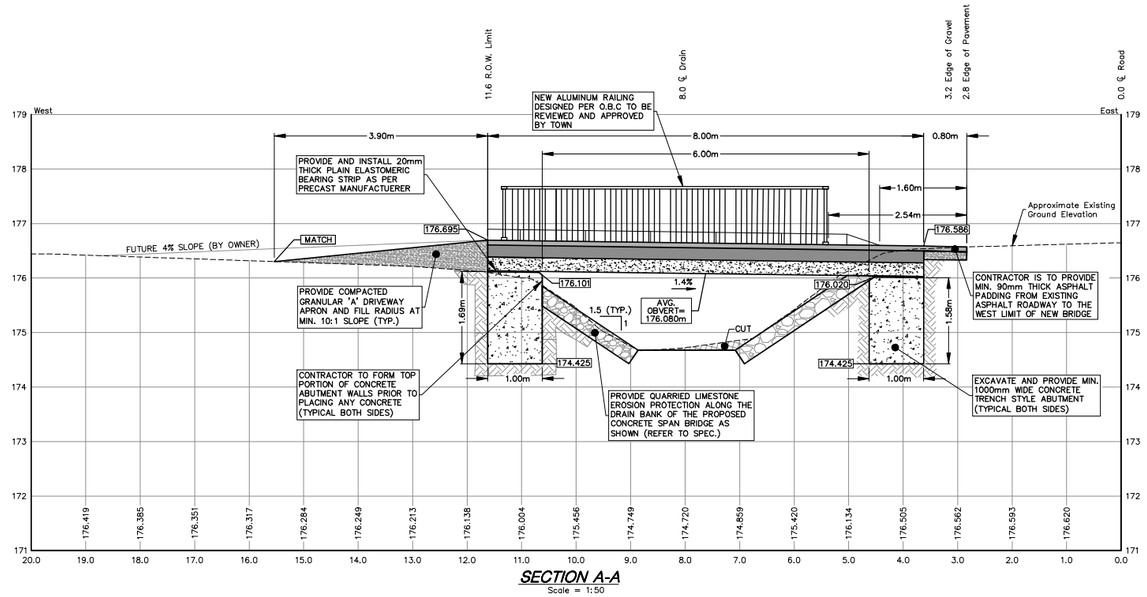
ENGINEER'S SEAL:

LICENSED PROFESSIONAL ENGINEER
W. L. LEBEL
100117904
2024-10-02
PROVINCE OF ONTARIO

DATE: October 02, 2024

DESIGNED BY:	DRAWN BY:	CHECKED BY:
W.L.L.	N.D.H.	W.L.L.

PROJECT No.:	SHEET No.:
D23-095	1 OF 2



SECTION A-A
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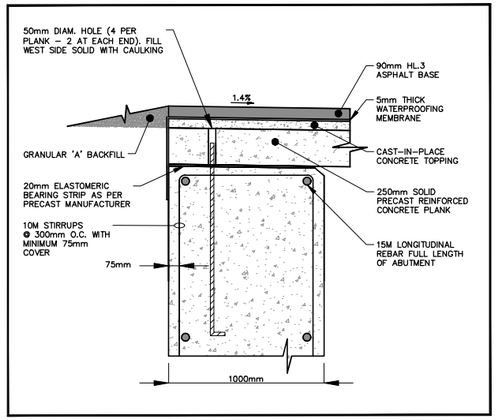

WEST CONNECTION DETAIL C-C
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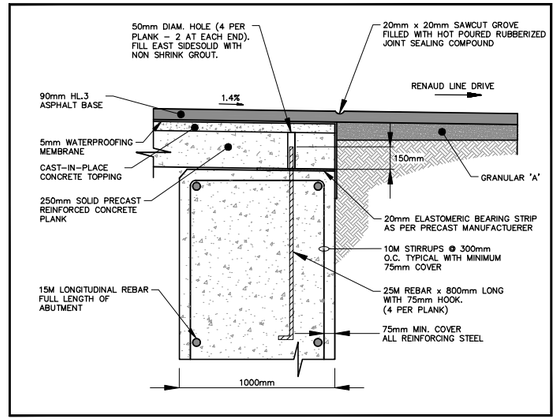

EAST CONNECTION DETAIL D-D
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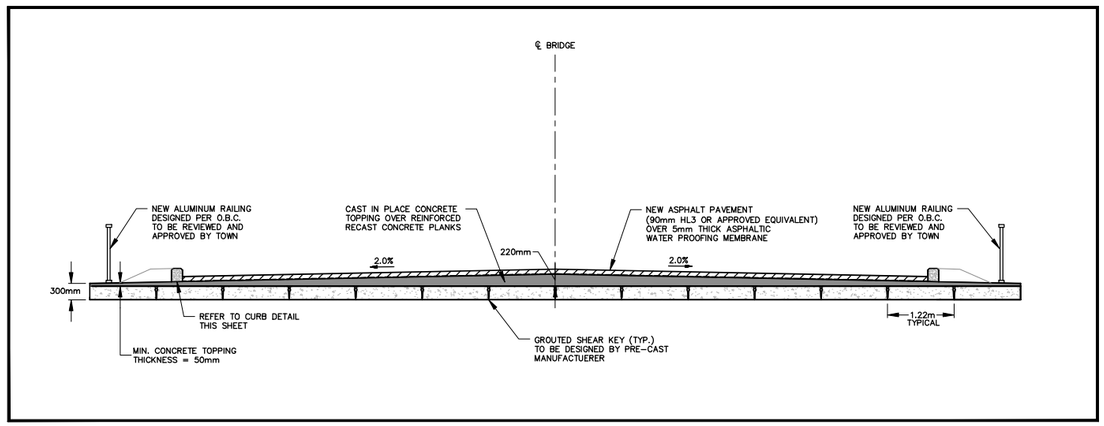

DETAIL B-B
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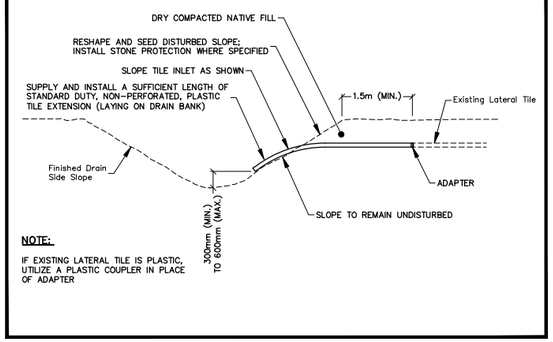

STANDARD LATERAL TILE DETAIL
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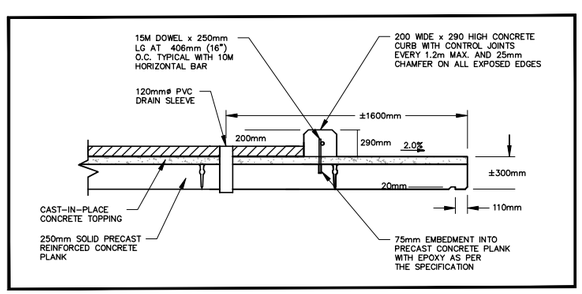

CURB ANCHOR DETAIL
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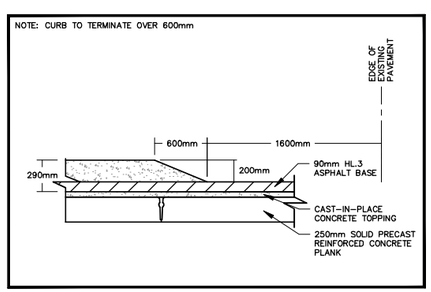

CURB TERMINATION DETAIL
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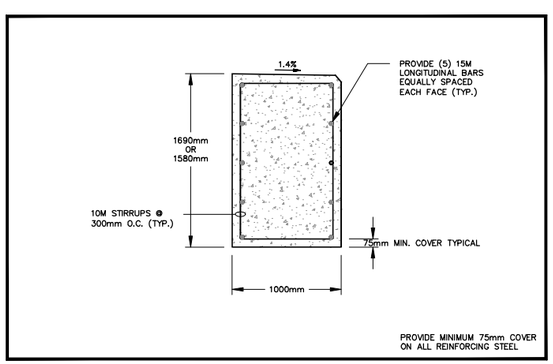

TYPICAL REINFORCING DETAIL
Scale = 1:25

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D23-095	2 OF 2