

The Corporation of the City of Kawartha Lakes

Agenda

Drainage Board Meeting

DB2021-01 - Electronic Public Participation Meeting

Thursday, December 9, 2021

6:30 P.M.

Council Chambers

City Hall

26 Francis Street, Lindsay, Ontario K9V 5R8

Members:

Councillor Ron Ashmore

Councillor Andrew Veale

Charles Clarke

Jim Oriotis

Mike Verbik

Tim Willcox

Accessible formats and communication supports are available upon request. The City of Kawartha Lakes is committed to accessibility for persons with disabilities. Please contact AgendaItems@kawarthalakes.ca if you have an accessible accommodation request.

As City Hall remains closed to the public, the meeting will be livestreamed on the City's YouTube page: www.youtube.com/c/CityofKawarthaLakes

Any deputation requests must be received by Tuesday, December 7, at 12:00pm. Deputations will be conducted by Zoom video conferencing.

1.	Call to Order	
1.1.	Appointment of Chair and Vice-Chair	
	That the above appointed Chairperson and Vice-Chairperson retain their appointments until the end of the term of Council, being November 14, 2022.	
2.	Administrative Business	
2.1.	Adoption of Agenda	
2.2.	Declaration of Pecuniary Interest	
2.3.	Adoption of Minutes from Previous Meeting	
2.3.1.	DB2021-01.2.3	5 - 11
	November 24, 2020	
	Drainage Board Meeting Minutes	
3.	Deputations	
4.	New Business	
4.1.	Petition for Drainage Works by Owners - Michael Curtin	12 - 18
	Memorandum	
	Michael Farquhar Manager of Technical Services – Engineering & Corporate Assets	

That the Memorandum from M. Farquhar, Acting Drainage Superintendent - Engineering and Corporate Assets, December 9, 2021, regarding the Petition for Drainage Works by Owners of Concession 3, Part Lot 8, Geographic Township of Fenelon (being Michael Curtin) be received;

That Council proceed with the petition submitted by Michael Curtin for drainage works for Concession 3, Part Lot 8 Geographic Township of Fenelon to be known as the Curtin Municipal Drain and instruct the City Clerk to proceed with the notices required under Section 5 of the Drainage Act;

That Staff concurrently continue to pursue with the petitioners options for a mutual drain agreement as per the City Policy; and

That pursuant to Section 8(1) of the Drainage Act, R.S.O. 1990, Chapter D. 17, staff recommend to Council a Drainage Engineer for the examination of the area requiring drainage and proceed with the requirements of the proposed Curtin Municipal Drain.

5. Meeting to Consider - Ops 4 Municipal Drain

5.1. Presentation of Report - Ops 4 Municipal Drain (Section 78 Improvement)

19 - 33

Michael Gerrits, P. Eng.
M. Gerrits Consulting Inc.

5.2. Question and Answer Period

5.3. Opportunity to Add or Withdraw Signatures to the Petition

5.4. Recommendation of the Drainage Board to Council

That the City of Kawartha Lakes Drainage Board recommend that Council adopt the Ops 4 Municipal Drain Section 78 Report as prepared by M. Gerrits P. Eng, and instruct the Clerk to prepare the necessary by-law(s);

That as the City of Kawartha Lakes is the sole assessed property for the Section 78 improvement of the Ops 4 Municipal Drain, Council deems no further Court of Revision proceedings are required; and

That Council proceeds with the first second and third reading of a by-law to adopt the report.

6. Other Business

- 6.1. 2021 Maintenance Work Plan Updates
- 6.2. 2022 Proposed Maintenance Work Plan
- 6.3. Ongoing Petition Drain Updates
 - MacEachern-Brown Municipal Drain
 - Hugh Davidson Municipal Drain
 - Desroches Municipal Drain
 - Martin Municipal Drain
 - Waite Municipal Drain

7. Adjournment

The Corporation of the City of Kawartha Lakes
Minutes
Drainage Board Meeting

DB2020-04
Tuesday, November 24, 2020
7:00 P.M.
Council Chambers
City Hall
26 Francis Street, Lindsay, Ontario K9V 5R8

Members:
Councillor Ron Ashmore
Councillor Andrew Veale
Charles Clarke
Jim Oriotis
Mike Verbik

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1. Call to Order

Chair A. Veale called the meeting to order at 7:01 p.m. Drainage Board members Councillor R. Ashmore, C. Clarke, and M. Verbik were in attendance.

Drainage Superintendent L. Feitler, and Supervisor of Technical Services M. Farquhar were also in attendance.

Absent: J. Oriotis

DB2020-021

Moved By C. Clarke

Seconded By M. Verbik

That Jim Oriotis be excused for missing a third consecutive formal business meeting of the Drainage Board.

Carried

2. Administrative Business

2.1 Adoption of Agenda

DB2020-022

Moved By C. Clarke

Seconded By M. Verbik

That the agenda be adopted as circulated.

Carried

2.2 Declaration of Pecuniary Interest

There were no declarations of pecuniary interest disclosed.

2.3 Adoption of Minutes from Previous Meeting

September 3, 2020 Drainage Board Minutes

DB2020-023

Moved By C. Clarke

Seconded By Councillor Ashmore

That the minutes of the Drainage Board meeting held on September 3, 2020, be adopted as circulated.

Carried

3. Deputations

4. New Business

4.1 Petition for Drainage Works by Owner - Janette Desroches

Memorandum

Lucas Feitler, Drainage Superintendent

Drainage Superintendent L. Feitler presented an overview of the existing drainage infrastructure in the area and noted the areas of jurisdiction of Kawartha Conservation. He stated that attempts were made by the property owner for a mutual drain agreement, however after no success, a Petition for Drainage Works by Owners was filed and formally received by the Clerk's Office on November 10, 2020. He noted that the petitioners have until the meeting to consider, to remove their names from the petition. He responded to questions from the members of the Board.

DB2020-024

Moved By C. Clarke

Seconded By M. Verbik

That the Memorandum from the Drainage Superintendent - Engineering and Corporate Assets L. Feitler, dated November 24, 2020, regarding the Petition for Drainage Works by Owners of Concession 4, South ½ Lot 15, Geographic Township of Mariposa (being Janette Desroches) be received;

That Council proceed with the petition submitted by Janette Desroches for drainage works for Concession 4, South ½ Lot 15 Geographic Township of Mariposa to be known as the "Desroches Municipal Drain" and instruct the City Clerk to proceed with the notices required under Section 5 of the *Drainage Act*;

That Staff concurrently continue to pursue with the petitioners options for a mutual drain agreement as per the City Policy; and

That pursuant to Section 8(1) of the *Drainage Act, R.S.O. 1990, Chapter D. 17*, staff recommend to Council a Drainage Engineer for the examination of the area requiring drainage and proceed with the requirements of the proposed Desroches Municipal Drain.

Carried

4.2 Petition for Drainage Works by Owner - Adam Martin

Memorandum

Lucas Feitler, Drainage Superintendent

Drainage Superintendent L. Feitler presented an overview of the existing drainage infrastructure in the area and noted the areas of jurisdiction of Kawartha Conservation. He stated that attempts were made by the property owner for a mutual drain agreement with both the downstream property owner, and the City's Public Works division, however after no success, a Petition for Drainage Works by Owners was filed by Mr. Martin and formally received by the Clerk's Office on November 10, 2020. Mr. Feitler acknowledged the correspondence received in opposition of the proposed drain received from Diane Dilling and Paul Reid. He noted that the petitioners have until the meeting to consider, to remove their names from the petition. Mr. Feitler, Mr. Farquhar, and Mr. Watts responded to questions from the members of the Board.

DB2020-025

Moved By M. Verbik

Seconded By C. Clarke

That the Memorandum from the Drainage Superintendent - Engineering and Corporate Assets L. Feitler, dated November 24, 2020, regarding the Petition for Drainage Works by Owners of Concession 12, Part Lot 19, Geographic Township of Emily (being Adam Martin) be received;

That Council proceed with the petition submitted by Adam Martin for drainage works for Concession 12, Part Lot 19 Geographic Township of Emily to be known as the Martin Municipal Drain and instruct the City Clerk to proceed with the notices required under Section 5 of the *Drainage Act*;

That Staff concurrently continue to pursue with the petitioners options for a mutual drain agreement as per the City Policy; and

That pursuant to Section 8(1) of the *Drainage Act, R.S.O. 1990, Chapter D. 17*, staff recommend to Council a Drainage Engineer for the examination of the area requiring drainage and proceed with the requirements of the proposed Martin Municipal Drain.

Carried

4.3 Marco Municipal Drain Contravention

Lucas Feitler, Drainage Superintendent

Mike Farquhar, Supervisor of Technical Services - Engineering

(Verbal Update - No Action Required)

Mr. Feitler advised the Board that a portion of the Marco Municipal Drain was cleaned out by a landowner's contractor without prior approval. He stated that the clean out was the result of a miscommunication between the contractor and the landowner, and Mr. Feitler presented options to both parties to correct the deficiencies. They agreed to correct the deficiencies to bring the drain back into compliance with the Engineer's report, and no further action will be required. He responded to questions from the members of the Board.

Note to Minutes: The originally circulated agenda incorrectly labelled section 4.3 "Miller Municipal Drain Contravention". The minutes have been corrected.

DB2020-026

Moved By M. Verbik

Seconded By Councillor Ashmore

That the update from Drainage Superintendent L. Feitler, regarding the Marco Municipal Drain Contravention, be received.

Carried

5. Other Business (Verbal Updates)

5.1 2020 Maintenance Project Updates

Lucas Feitler, Drainage Superintendent

Mike Farquhar, Supervisor of Technical Services - Engineering

Mr. Feitler provided an overview of maintenance updates for the following municipal drains in Kawartha Lakes:

- Ops 5 Municipal Drain;
- Ops 1 Municipal Drain;
- Keivall Creek Municipal Drain;
- Miller Municipal Drain;
- Webster Municipal Drain; and
- Rogers Hancock Municipal Drain

He responded to questions from the members of the Board.

DB2020-027

Moved By M. Verbik

Seconded By Councillor Ashmore

That the update from Drainage Superintendent L. Feitler, regarding the 2020 Maintenance Project Updates, be received.

Carried

5.2 Hugh Davidson Municipal Drain Improvement Update

Lucas Feitler, Drainage Superintendent

Mike Farquhar, Supervisor of Technical Services - Engineering

Mr. Feitler provided an overview of the improvement application (initially requested by Ed Bagshaw) to enclose the portion of open drain on his property. He stated that a Section 9 on-site meeting was held of the area landowners, and no additional landowners wanted any further improvements to the drain. Mr. Feitler and Mr. Farquhar responded to questions from the members of the Board.

DB2020-028

Moved By M. Verbik

Seconded By C. Clarke

That the update from Drainage Superintendent L. Feitler, regarding the Hugh Davidson Municipal Drain Improvement, be received.

Carried

5.3 Waite Municipal Drain Update

Lucas Feitler, Drainage Superintendent

Mike Farquhar, Supervisor of Technical Services - Engineering

Mr. Farquhar provided an update to the Board regarding the Waite Municipal Drain and noted that the consultant is completing the geotechnical work for the proposed drain crossing of Highway 35. This report will be forwarded to the Ministry of Transportation for final approval before bringing the final design back to the Drainage Board and Council.

DB2020-029

Moved By Councillor Ashmore

Seconded By M. Verbik

That the update from Supervisor of Technical Services M. Farquhar, regarding the Waite Municipal Drain, be received.

Carried

6. **Adjournment**

DB2020-030

Moved By C. Clarke

Seconded By M. Verbik

That the Drainage Board Meeting adjourn at 8:09 p.m.

Carried



**The Corporation of the
City of Kawartha Lakes**
12 Peel Street P.O. Box 9000
Lindsay, ON K9V 5R8
Phone: 705-324-9411, Ext. 1156
Fax: 705-324-2982

Memorandum

Date: December 9, 2021
To: Drainage Board
From: Michael Farquhar Manager of Technical Services – Engineering & Corporate Assets
Re: Petition for Municipal Drainage
Curtin Petition
CC: Juan Rojas Director of Engineering and Corporate Assets

Recommendation:

That the Memorandum from the Drainage Superintendent - Engineering and Corporate Assets, December 9, 2021, regarding the Petition for Drainage Works by Owners of Concession 3, Part Lot 8, Geographic Township of Fenelon (being Michael Curtin) be received;

That Council proceed with the petition submitted by Michael Curtin for drainage works for Concession 3, Part Lot 8 Geographic Township of Fenelon to be known as the Curtin Municipal Drain and instruct the City Clerk to proceed with the notices required under Section 5 of the Drainage Act;

That Staff concurrently continue to pursue with the petitioners options for a mutual drain agreement as per the City Policy; and

That pursuant to Section 8(1) of the Drainage Act, R.S.O. 1990, Chapter D. 17, staff recommend to Council a Drainage Engineer for the examination of the area requiring drainage and proceed with the requirements of the proposed Curtin Municipal Drain.

Background:

The subject area/land is located at 168 Halls Road. It is bounded by Halls Road to the west (refer to appendix A) and Killarney Bay road to the east. There are no existing Municipal Drains within the vicinity. The area of the land identified in the petition is approximately 40 acres in size which fronts on Killarney Bay road.

The property is within the Kawartha Region Conservation Authority jurisdiction as defined under the Ontario Conservation Act and has an identified watercourse on the property (see Appendix B).

The Drainage Superintendent had been contacted in the past to assist the land owners in this area for information regarding obtaining an outlet for tile drainage. The land owners initial plan was to tile to the existing watercourse and to deepen and widen the watercourse downstream through the adjacent land owner's properties. Property owners of 168 and 140 Halls road both sought out to achieve a sufficient outlet for their drainage through the property known as 255 Killarney Bay road however were unable to come to terms with the land owner of 255 Killarney Bay road to come to agreement through a Mutual drain under the Ontario Drainage Act.

On December 2, 2021 the City of Kawartha Lakes Clerks Department formally received a Petition for Drainage Works within the subject area (Appendix A).

Alternatives:

As an option for required drainage the City firstly promotes the use of a Mutual Agreement through the City's policy for Agricultural Tile discharge to roadside ditches prior to pursuing a petition for a Municipal Drain under the Ontario Drainage Act. At this point in time with the information available, this option is not feasible due to topography and the natural watercourse. A pointed engineer can explore this option further. At this current time the petitioner wishes to carry on with the process under the Drainage Act for the petition. Staff will leave the door open for pursuing a mutual agreement up until the prescribed time the petitioner has under the Drainage Act for removing their names and abandoning the petition.

Recommendation for Appointment of a Drainage Engineer:

Currently the City has a pool of Drainage Engineers which include the following.

Burnside Engineering
Tulloch Engineering
K-Smart Engineering
R. D. Dobbin Engineering
DM Wills Engineering.

The Drainage Board may recommend a firm to Council directly today, or direct staff to recommend to Council a firm at the December 14, 2021 or January 25, 2022 Regular Council Meeting.

Attachments:

Appendix A – Map of area requiring Drainage

Appendix B – Map of KRCA regulated area

Appendix C – Petition for Drainage Works by Owners – Curtin



Appendix A Area
requiring drainage.



Appendix B KRCA
regulated area map.



Appendix C Form 1
Petition for Drainag



Appendix A
to
Report Curtin Drain petition
File No.

THIS MAP IS NOT TO BE USED FOR NAVIGATION
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This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

Date:



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Date:

Petition for Drainage Works by Owners Form 1

Drainage Act, R.S.O. 1990, c. D.17, clause 4(1)(a) or (b)

This form is to be used to petition municipal council for a new drainage works under the *Drainage Act*. It is not to be used to request the improvement or modification of an existing drainage works under the *Drainage Act*.

To: The Council of the Corporation of the

City of Kawartha Lakes

The area of land described below requires drainage (provide a description of the properties or the portions of properties that require drainage improvements)

Estimated 40 acres located on Part Lot 8,
concession 3 abutting Killarney Bay Rd.

In accordance with section 9(2) of the *Drainage Act*, the description of the area requiring drainage will be confirmed or modified by an engineer at the on-site meeting.

As owners of land within the above described area requiring drainage, we hereby petition council under subsection 4(1) of the *Drainage Act* for a drainage works. In accordance with sections 10(4), 43 and 59(1) of the *Drainage Act*, if names are withdrawn from the petition to the point that it is no longer a valid petition, we acknowledge responsibility for costs.

Purpose of the Petition (To be completed by one of the petitioners. Please type/print)

Contact Person (Last Name)

CURTIN

(First Name)

MICHAEL

Telephone Number

(705) 879-1043
ext.

Address

Road/Street Number

168

Road/Street Name

Hall's Rd

Location of Project

Lot

8

Concession

3

Municipality

Lindsay (CKL)

Former Municipality (if applicable)

Fenelon Twp.

What work do you require? (Check all appropriate boxes)

☐ Construction of new open channel

☒ Construction of new tile drain

☐ Deepening or widening of existing watercourse (not currently a municipal drain)

☐ Enclosure of existing watercourse (not currently a municipal drain)

☐ Other (provide description ▼)

Name of watercourse (if known)

Estimated length of project

General description of soils in the area

Clay Loam

What is the purpose of the proposed work? (Check appropriate box)

☒ Tile drainage only

☐ Surface water drainage only

☐ Both

Petition filed this

2

day of

DECEMBER, 2021

Name of Clerk (Last, first name)

WATTS, JOEL (DEPUTY CLERK)

Signature

[Signature]

- Your municipal property tax bill will provide the property description and parcel roll number.
- In rural areas, the property description should be in the form of (part) lot and concession and civic address.
- In urban areas, the property description should be in the form of street address and lot and plan number if available.
- If you have more than two properties, please take copy(ies) of this page and continue to list them all.

Number	Property Description
168	Hall's Rd Lindsay, Con 3 PT Lot 8
Ward or Geographic Township	Parcel Roll Number
Fenelon Twp	1651 210 01010400.0000

I hereby petition for drainage for the land described and acknowledge my financial obligations.

Ownership

☒ Sole Ownership

Owner Name (Last, First Name) (Type/Print)

CURTIN, MICHAEL

Signature

[Signature]

Date (yyyy/mm/dd)

2021/11/03

☐ Partnership (Each partner in the ownership of the property must sign the petition form)

Owner Name (Last, First Name) (Type/Print)

Signature

Date (yyyy/mm/dd)

☐ Corporation (The individual with authority to bind the corporation must sign the petition)

Name of Signing Officer (Last, First Name) (Type/Print)

Signature

Name of Corporation

I have the authority to bind the Corporation.

Position Title

Date (yyyy/mm/dd)

Number	Property Description
Ward or Geographic Township	Parcel Roll Number

I hereby petition for drainage for the land described and acknowledge my financial obligations.

Ownership

☐ Sole Ownership

Owner Name (Last, First Name) (Type/Print)

Signature

Date (yyyy/mm/dd)

☐ Partnership (Each partner in the ownership of the property must sign the petition form)

Owner Name (Last, First Name) (Type/Print)

Signature

Date (yyyy/mm/dd)

☐ Corporation (The individual with authority to bind the corporation must sign the petition)

Name of Signing Officer (Last, First Name) (Type/Print)

Signature

Name of Corporation

I have the authority to bind the Corporation.

Position Title

Date (yyyy/mm/dd)

☐ Check here if additional sheets are attached

Clerk initial

Petitioners become financially responsible as soon as they sign a petition.

- Once the petition is accepted by council, an engineer is appointed to respond to the petition. *Drainage Act*, R.S.O. 1990, c. D. 17 subs. 8(1).
- After the meeting to consider the preliminary report, if the petition does not comply with section 4, the project is terminated and the original petitioners are responsible in equal shares for the costs. *Drainage Act*, R.S.O. 1990, c. D. 17 subs. 10(4).
- After the meeting to consider the final report, if the petition does not comply with section 4, the project is terminated and the original petitioners are responsible for the costs in shares proportional to their assessment in the engineer's report. *Drainage Act*, R.S.O. 1990, c. D. 17 s. 43.
- If the project proceeds to completion, a share of the cost of the project will be assessed to the involved properties in relation to the assessment schedule in the engineer's report, as amended on appeal. *Drainage Act*, R.S.O. 1990, c. D. 17 s. 61.

Notice of Collection of Personal Information

Any personal information collected on this form is collected under the authority of the *Drainage Act*, R.S.O. 1990, c. D.17 and will be used for the purposes of administering the Act. Questions concerning the collection of personal information should be directed to: where the form is addressed to a municipality (municipality to complete)

July 28, 2021

The City of Kawartha Lakes
26 Francis Street
Lindsay, ON
K9V 5R8

Mayor, Council and Drainage Board,

Re: OPS 4 Drain - Eastern Branch

In accordance with your instructions, I have undertaken an examination of the OPS 4 Drain – Eastern Branch with regard to a failing Victoria Rail Trail culvert at Station 2+611 in Part of the NW ¼ of Lot 10, Concession 8, in the City of Kawartha Lakes.

The work includes preparing a new Section 78 Drain Report to address the culvert replacements complete with maintenance specifications.

Authorization under the Drainage Act

As per the request of an affected landowner, this Engineer's report has been prepared under Section 78 of the Drainage Act by M. Gerrits Consulting Inc.

Under Section 78 of the Drainage Act, Council may undertake and complete the maintenance or repair of any drainage works constructed under a bylaw passed under this Act or its predecessor. Section 78 is also to be used where it is considered expedient to change the course of the drainage works, or to make a new outlet for the whole or any part of the drainage works, or to construct a tile drain under the bed of the whole or any part of the drainage works as ancillary thereto, or to construct, reconstruct or extend embankments, walls, dykes, dams, reservoirs, bridges, pumping stations, or other protective works as ancillary to the drainage works, or to otherwise improve, extend to an outlet or alter the drainage works or to cover the whole or any part of it, or to consolidate two or more drainage works; the Council whose duty it is to maintain and repair the drainage works or any part thereof may, without a petition required under Section 4 but on the report of an Engineer appointed by it, undertake and complete the drainage works as set forth in such report.

Existing Conditions

Three reports have been authored on this drain. The first report was prepared by G. Smith in 1884, the second by D. Beauclerc in 1972 and the third by J. Kuntze in 1998.

The report G. Smith prepared was for work completed on the OPS 4 Drain between Lot 9 and Lot 14, Concession 7.

The report D. Beauclerc prepared was for incorporating private drains which were constructed outside of the Drainage Act into the OPS 4 Drain as branch drains. The report included improvements to the OPS 4 Drain and the branch drains.

The report prepared by J. Kuntze report was for work completed on the Malcom Branch and for updating maintenance schedules on all of the OPS 4 Drains. The report specified that the abandoned rail line culverts will become part of the drain. The report included specifications for routine maintenance and for maintenance related to the structural integrity of the culverts. Routine maintenance, such as cleaning shall be completed in accordance with the applicable Schedule of Maintenance and the maintenance required for the structural integrity of the culvert is the responsibility of the affected landowner.

M. Gerrits Consulting Inc. completed a site visit on April 20, 2021, and the following is a summary of the existing conditions:

- The Victoria Rail Trail culvert crossing on the OPS4 Drain - Eastern Branch consists of three culverts.
- Culvert 1 is a 1220mm (4') X 1220mm (4') concrete arch culvert and is 24m in length. The culvert was installed in 1911 and is perched. The bottom of this culvert is in poor condition and is in need of replacement.
- Culvert 2 is an 1830mm (6') X 1220mm (4') concrete box culvert and is 20m in length. The culvert was installed in 1912 and the inlet is perched. The culvert is failing and is in need of replacement.
- Culvert 3 is a 1930mm (80") X 1450mm (60") CSPA culvert and is 19m in length. The culvert was installed in 1972 and is perched. The 1972 report identified the culvert as an 80' 9" X 6' 5" CSPA which is slightly larger than the culvert that was installed.
- The channel banks, upstream and downstream of the culvert, appeared to be stable and the amount of sediment build up in the channel was minimal.

On Site Meeting

An onsite meeting was held on April 20, 2021 at the abandoned rail line crossing. The following attended the meeting:

Lucas Feitler, City of Kawartha Lakes Drainage Superintendent
Michael Gerrits, M. Gerrits Consulting Inc.

The following is a summary of the meeting:

- MG reviewed the abandoned rail line crossings with the City of Kawartha Lakes Drainage Superintendent.

Recommendations

It is recommended that a new report be prepared to address the proposed and future Victoria Rail Trail (Station 2+611) culvert replacements c/w specifications.

Approvals

The OPS 4 - Eastern Branch Drain and the OPS 4 downstream of the Eastern Branch Drain are both unrated. Stoney Creek is located approximately 3,350m downstream of the proposed culvert replacements. Approval from Kawartha Conservation was obtained prior to submitting this report.

The Department of Fisheries and Oceans has no objections to the proposed works. Approval from the Department of Fisheries and Oceans was obtained prior to submitting this report.

Design

The proposed culvert replacements shall be designed to maintain water levels in the channel at the culvert crossing (Station 2+611). The design will include a modified grade line which will ensure that water does not pond immediate upstream of Culvert 2. Culvert 1 and Culvert 3 will remain perched and will serve as overflow culverts.

Estimate of Cost

It is recommended that the work be carried out in accordance with the accompanying specification of work and profile which form a part of this report. An Estimate of Cost has been prepared in the amount of \$96,470, which includes engineering fees, but does not include work beyond the preparation of the report.

A plan has been prepared, which shows the location of the work and the approximate drainage area. A profile has been prepared, which shows the depths and grades of the proposed work.

Assessment

Under Section 26 of the Drainage Act, the cost of any approvals, permits or any extra work (beyond that specified in this report), which is required by any utility or road authority shall be assessed to that organization requiring the permit, approval, or extra work.

The estimated cost of the drainage works has been assessed with 100% of the costs of the culvert replacements being assessed to the property owner.

Access and Working Area

It is proposed to utilize the existing Victoria Rail Trail property (City of Kawartha Lakes Lands) for the working area. No work will be required beyond the Victoria Rail Trail property limits.

Access to the work site shall be gained from the Victoria Rail Trail lands and shall be restricted to a width of 6m.

Maintenance

Upon completion of the work, the drainage works shall be maintained by the affected landowner.

All of the above is submitted for your consideration.

Yours truly,


July 28, 2021

Michael Gerrits, P. Eng.
M. Gerrits Consulting Inc.

OPS 4 Drain - Eastern Branch
City of Kawartha Lakes
July 28, 2021

ESTIMATE OF COST

	Quantity	Unit	Material	Labour	Total
Complete Benchmark Loop and Verify Benchmarks	1	ea	-	250	250
Brush Access	720	sq.m.	360	360	720
Brush Rail Line Embankment (Station 2+611)	750	sq.m.	375	375	750
Strip Rail Line Embankment (Station 2+611)	720	sq.m.	0	3,600	3,600
Brush Rail Line Embankment (Spoils Area) - Provisional	300	sq.m.	600	600	1,200
Strip Rail Line Embankment (Spoils Area) - Provisional	300	sq.m.	-	1,500	1,500
Seed Rail Line Embankment (Spoils Area) - Provisional	300	sq.m.	225	225	450
Culvert 1 - (Station 2+611)					
Remove Existing 1220mm X 1220mm Concrete Arch Culvert and Stockpile Excavated Material	24	m	1,200	1,200	2,400
Supply & Install 1200mm dia. CSP Culvert	20	m	12,000	6,800	18,800
Supply & Install Granular Material	80	t	1,000	1,000	2,000
Place Backfill (Stockpiled Material)	220	cu.m.	1,100	1,100	2,200
Rip Rap c/w Geotextile	40	sq.m.	1,200	1,200	2,400
Granular 'A' Victoria Rail Trail Restoration	20	t	260	260	520
Restoration	423	sq.m.	423	423	846
Silt Fence	5	lm	250	250	500
Clear Stone (Provisional)	35	t	438	438	876
Culvert 2 - (Station 2+611)					
Remove Existing 1830mm X 1220mm Concrete Box Culvert and Stockpile Excavated Material	20	m	1,000	1,000	2,000
Supply & Install 2000mm dia. CSP Culvert	20	m	22,000	6,800	28,800
Supply & Install Granular Material	110	t	1,375	1,375	2,750
Place Backfill (Stockpiled Material)	200	cu.m.	1,000	1,000	2,000
Rip Rap c/w Geotextile	40	sq.m.	1,200	1,200	2,400
Granular 'A' Victoria Rail Trail Restoration	20	t	260	260	520
Restoration	443	sq.m.	443	443	886
Silt Fence	5	lm	250	250	500
Clear Stone (Provisional)	50	t	625	625	1,250
Channel Bank Stabilization - Excavation	30	sq.m.	-	900	900
Channel Bank Stabilization - Rip Rap	15	sq.m.	450	450	900
Low Flow Diversion (Provisional)	1	L.S.	1,500	1,500	3,000
Sub Total					84,918
Construction Contingency					6,369
Engineering					5,183
Total Estimate					\$ 96,470

OPS 4 Drain - Eastern Branch
City of Kawartha Lakes
July 28, 2021

SCHEDULE OF ASSESSMENT

Conc.	Lot or Part	Affected Hect.	Roll No.	Owner	Special Benefit (\$)	Benefit (\$)	Outlet (\$)	Total (\$)
<u>Public Lands</u>								
8	Pt Lot 10	1.91		City of Kawartha Lakes (Victoria Rail Trail)	-	96,470	-	96,470
					-	96,470	-	96,470
				Total Special Benefit	-			
				Total Benefit	96,470			
				Total Outlet	-			
				Total - Public Lands	\$ 96,470			
				Total - Public Lands	96,470			
				Total Assessment	\$ 96,470			

OPS 4 Drain – Eastern Branch
City of Kawartha Lakes
July 28, 2021

SPECIFICATION OF WORK

1. Scope of Work

The work is to be completed in Part of the NW ¼ of Lot 10, Concession 8, in the City of Kawartha Lakes. The work includes the following:

- Clearing and grubbing of the existing Victoria Rail Trail right of way, to facilitate access to the site and construction.
- Removing and disposing of an existing 1220mm X 1220mm concrete arch culvert and an 1830mm X 1220mm concrete box culvert at Station 2+611.
- Installing 24m of 1200mm dia. CSP culvert and 20m of 2000mm dia. CSP culvert c/w bedding and end protection.

2. General

Each tenderer must inspect the site prior to submitting their tender and satisfy themselves by personal examination of the local conditions that may be encountered during this project. The Contractor shall make allowance in their tender for any difficulties which may be encountered. Quantities or any information supplied by the Engineer is not guaranteed and is for reference only.

All work and materials shall be to the satisfaction of the Drainage Superintendent who may vary these specifications but in no way decrease the proposed capacity of the drain.

The Contractor will be responsible for the notification of all utilities prior to the start of construction.

Measurement For Payment Clauses have not been included in these specifications and will be a part of the construction document. If the construction document has not identified Measurement for Payment Clauses, the Contractor must notify the City of Kawartha Lakes and request clarification 2 days prior to the pricing of the project.

3. Plans and Specifications

These specifications shall apply and be a part of the Contract along with the General Specifications for Closed Drains and the General Specifications for Open Drains. This Specification of Work shall take precedence over all Plans and General Conditions pertaining to the Contract. The Contractor shall provide all labour, equipment, and supervision necessary to complete the work as shown in the Plans and described in these specifications. Any work not described in these specifications shall be completed according with the applicable Ontario Provincial Standard Specifications and Standard Drawings.

Any reference to the Owner contained in these Contract Documents shall refer to the City of Kawartha Lakes or the Engineer authorized by the City of Kawartha Lakes to act on their behalf.

4. Health and Safety

At all times, the Contractor shall be responsible for health and safety on the worksite, which includes ensuring that all employees wear suitable personal protective equipment.

The Contractor shall be responsible to ensure that all of the procedures are followed under the Occupational Health and Safety Act. In the event of a serious or recurring problem, a notice of non-compliance will be issued. The Contractor will be responsible for reacting immediately to any deficiency and correcting any potential health and safety risk. Continuous disregard for any requirement of the Occupational Health and Safety Act could be cause for the issuance of a stop work order or even the termination of the Contract.

The Contractor shall also ensure that only competent workers are employed onsite and that appropriate training and certification is supplied to all employees.

When applicable, the Contractor shall be responsible for traffic control as per the Ontario Traffic Manual Book 7 – Temporary Conditions (latest revision).

5. Workplace Safety and Insurance Board

The Contractor hereby certifies that all employees and officers working on the project are covered by benefits provided by the Contractor. The WSIB Clearance Certificate must be furnished prior to the execution of the Contract and updated every 90 days.

6. Geotechnical Investigation

A geotechnical investigation has not been undertaken within the project limits.

7. Access and Working Area

It is proposed to utilize the existing Victoria Rail Trail property (City of Kawartha Lakes Lands) for the working area. No work will be required beyond the Victoria Rail Trail property limits.

Access to the work site shall be gained from the Victoria Rail Trail lands and shall be restricted to a width of 6m.

It is proposed to utilize the existing Victoria Rail Trail property (City of Kawartha Lakes Lands) for the working area. No work will be required beyond the Victoria Rail Trail property limits.

Access to the work site shall be gained from the Victoria Rail Trail lands and shall be restricted to a width of 6m.

8. Benchmarks

The benchmarks are based on geodetic elevations (GVD28:78).

The primary benchmark for this project is a brass cap (256.455m). The brass cap is located at the northwest corner of Culvert 2. Elevations and secondary benchmarks are identified on the profile drawings.

The brass cap will be removed as part of this Contract and it is the responsibility of the Contractor to maintain their own control for the duration of construction.

Prior to construction, the Contractor is required to complete a benchmark loop to verify the secondary benchmark identified on the drawings. If discrepancies exist, the Contractor must notify the Drainage Superintendent and Engineer prior to completing any work.

9. Removals

The existing culvert shall be removed in their entirety and shall be disposed offsite at the expense of the Contractor. Suitable backfill shall be stockpiled adjacent to the site for reuse during installation of the proposed culverts. Any material not suitable for use shall be disposed of along the abandoned rail line embankment in a designated spoils disposal location. The spoil location shall be determined with the Drainage Superintendent or Engineer prior to construction. No spoils shall leave the site.

Removals shall be in accordance with OPSS 510.

10. Brushing and Tree Removal

All brush, trees, woody vegetation, etc., shall be removed from the side slopes of the existing rail line embankment within the working area and any spoil storage areas using a mechanical grinder mounted on an excavator. Larger trees, brush and stumps shall be burned onsite, subject to municipal bylaws and MOE guidelines. The Contractor shall be responsible for obtaining all necessary burning permits.

The Victoria Rail Trail is cleared; however, the Contractor may be required to remove additional trees to facilitate the mobilization of equipment and material to the working area.

Brushing and clearing shall be in accordance with OPSS MUNI 201.

11. Strip Existing Embankment

The existing embankment and any required spoil disposal areas shall be stripped of organic matter. Topsoil shall be stockpiled onsite, and the material must be used as apart of the final restoration.

Stripping shall be in accordance with OPSS 206.

12. Excavation

Excavation shall be to the depths and grades identified on the drawings which are contained in this drain report. The excavation shall be completed to the proper depth using a laser, or a similar approved device, with a labourer onsite to ensure the grade is correct.

All excavated materials which are excess to the requirements of the Contract, shall be leveled within the Victoria Rail Trail lands. Material is not permitted to be hauled off the lands. Suitable organic material can be used for restoration.

If contaminated soils are encountered during excavation of the abandoned rail line embankment, all work in the area should stop immediately and the Drainage Superintendent, Engineer, and Kawartha Regional Conservation Authority shall be contacted immediately.

Restoration shall be in accordance with the restoration specification.

Excavation shall be in accordance with OPSS 206.

13. Installation of Culverts

The Contractor shall supply, install, and backfill pipe culverts. Corrugated Steel Pipe (CSP) culverts shall be aluminized corrugated steel pipes with a minimum wall thickness of 2.8mm in all cases. All corrugation profiles shall be of helical lockseam manufacturing, using 125mm x 25mm corrugations. Future culvert replacements shall be to the same specifications.

The culvert lengths are based on the existing length, complete with rip rap end protection (1.5:1.0).

Culvert 1 shall be installed to the existing invert elevations. The culvert is perched and will serve as an overflow culvert. The location of the culvert will be in the general location of the existing culvert.

Culvert 2 shall be installed with the invert of 10% (minimum 150mm) below the original channel bottom. The location of the culvert will be in the general location of the existing culvert.

All granular bedding and backfill material shall be mechanically compacted to 95% standard proctor maximum dry density. The top 300mm of native backfill or imported Granular "B" material shall be mechanically compacted to 98% standard proctor maximum dry density, and the top 150mm of Granular "A" material shall be mechanically compacted to 100% standard proctor maximum dry density. The Contractor shall supply any extra backfill material required above the springline. Payment for the additional material shall be specified in the Contract Documents.

Pipe culverts will be constructed to the depths and grades as shown on the drawing. The bottom of the excavation shall be excavated to the required depth with any over excavation backfilled with compacted Granular "A" material or clear stone. When the pipe has been installed to the proper grade and depth, the excavation shall be backfilled with compacted Granular "A" or clear stone from the bottom of the excavation to the springline of the pipe. Care shall be taken to ensure that the backfill on either side of the culvert does not differ by more than 300mm, so that the pipe is not displaced.

The culverts shall be backfilled with native material, free of stones or with Granular "B" material from the top of the bedding to within 150mm of the finished grade. The top 150mm of the lane shall be restored with Granular "A" material for a distance of 5.5m on either side of the culvert.

End protection shall consist of rip rap. The rip rap shall consist of 100mm x 250mm quarry stone or an approved equal. The area to receive the rip rap shall be graded to a depth of 400mm below the finished grade. Filter fabric (Terrafix 250R or an approved equal) shall be placed with any joints overlapped at a minimum of 600mm. The quarry stone shall then be placed with the smaller pieces in the gaps and voids to give it a uniform appearance.

The outlet end protection at Culvert 2 shall extend to the west edge of Culvert 1 and will require excavation to create a 1.5H:1V backslope. Spoils generated from stabilizing the slope shall be disposed within the Victoria Rail Trail lands.

The Contractor shall maintain a dry working area during construction. The Contractor shall install a silt fence immediately downstream of the work area. After the completion

of construction, the temporary dams and any collected sediment will be removed. The final removal will be the silt fence.

CULVERTS TO BE REPLACED

Culvert 1 consists of 24m of a 1220mm X 1220mm concrete arch culvert with rip rap end protection. The culvert is in poor condition. It is to be replaced with a 24m, 1200mm dia. corrugated steel pipe culvert.

Culvert 2 consists of 20m of an 1830mm X 1220mm concrete box culvert with rip rap end protection. The culvert is failing. It is to be replaced under this report with a 20m, 2000mm dia. corrugated steel pipe culvert.

CULVERTS TO BE REPLACED IN THE FUTURE

Culvert 3 consists of a 19m of a 1930mm X 1450mm CSPA culvert with rip rap end protection. The culvert is in good condition. It is to be replaced in the future with a 19m, 1930mm X 1450mm CSPA culvert or an approved equal.

Restoration is in accordance with the restoration specification.

14. Silt Fence

Light duty silt fencing shall be installed immediately downstream of any channel works for the duration of construction. The silt fence shall consist of filter fabric, or a manufactured silt fence supported with posts.

Light duty silt fencing shall be in accordance with OPSS 577 and OPSD 219.110. The light duty silt fencing shall be removed once the disturbed area has been revegetated.

15. Restoration

Restoration shall be in accordance with the following:

The Victoria Rail Trail shall be restored with a gravel surface course. The alignment of the gravel portion of the trail may be shifted south to allow for a 2m (min) buffer between the northern edge of the trail and the top of the bank. The trail is 4m in width and will have a 150mm Granular 'A' cap for a distance of 5.5m either side of the culvert.

When the Contactor utilizes the Victoria Rail Trail embankment for the leveling of excess spoils, the spoils must be distributed in an even layer. The embankment slopes must be maintained to ensure that the slopes remain stable. The Contractor and Drainage Superintendent or Engineer will measure the amount to area required to spread the excess spoils. All of the disturbed areas are to be seeded.

Disturbed embankment and channel banks shall be restored with topsoil and seed. Topsoil will be native soil generated onsite.

The application rates are as follows:

- a. Primary seed (85 kg/ha.) consisting of 50% red fescue, 40% perennial ryegrass, and 5% white clover.
- b. Nurse crop consisting of Italian (annual) ryegrass at 25% total weight.
- c. Fertilizer (300 kg/ha.) consisting of 8-32-16.

The seed shall be hand spread on the affected areas on a daily basis with the seed mixture, fertilizer and application rate as shown above.

Excavation shall be in accordance with OPSS 206.

Compaction shall be in accordance with OPSS 501 (Prov.).

Topsoil shall be in accordance with OPSS 802.

Seed shall be in accordance with OPSS 804.

Granular shall be in accordance with OPSS 1010.

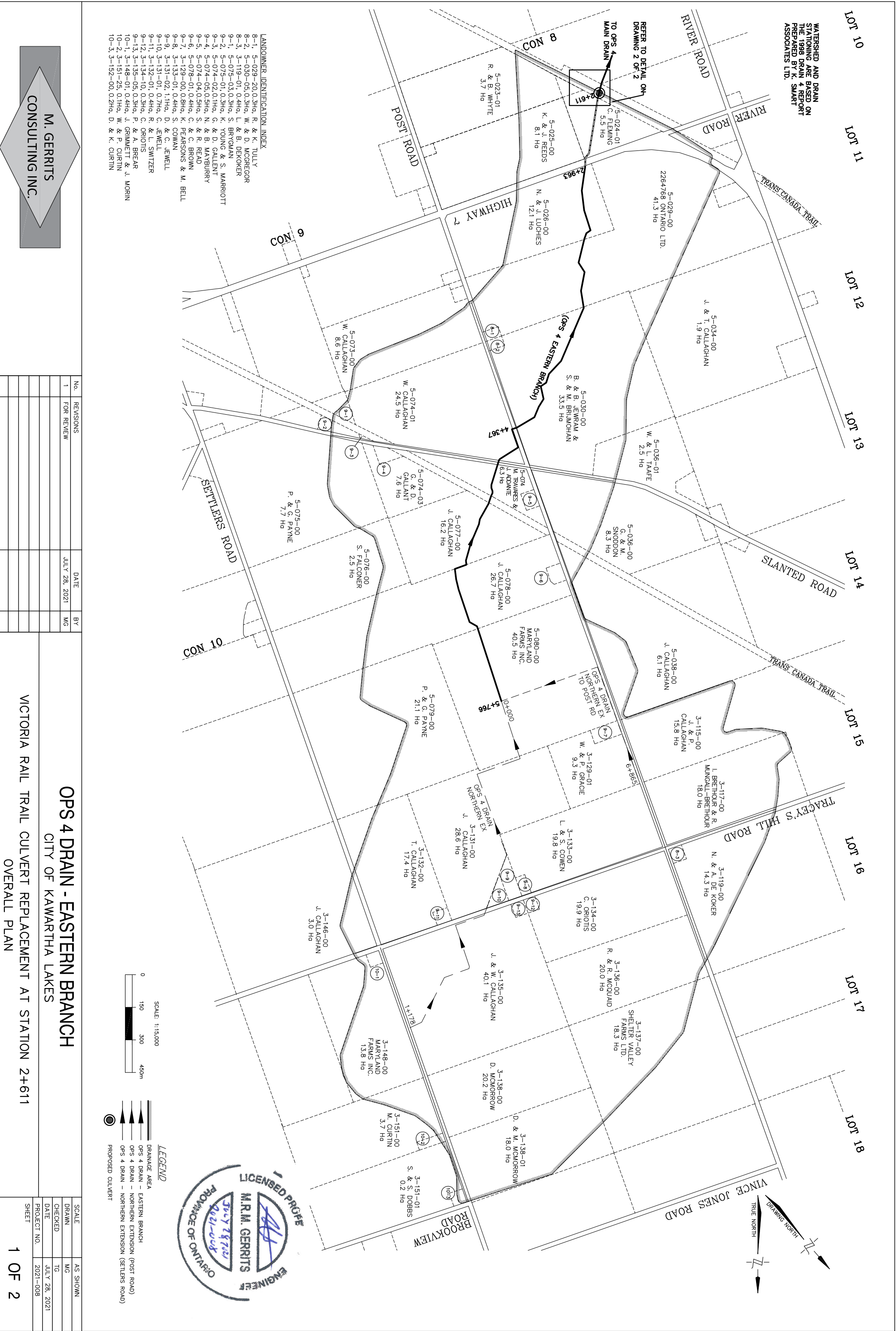
16. Environmental Considerations

The Contractor will adhere to the following considerations:

- All activities, including maintenance procedures, shall be controlled to prevent the entry of petroleum products, debris, rubble, concrete, or other deleterious substances into the water. Vehicle and equipment refuelling and maintenance shall be conducted away from the channel, any surface water runs, or open inlets. All waste materials shall be stockpiled well back from the top of the bank, all surface water runs and open inlets that enter the drain.
- When possible, the Contractor shall maintain a dry working area during construction.
- All construction in the channel shall be carried out during periods of low flow. If work cannot be carried out during a period of low flow the Contractor will be required to divert the drain flows through the remaining CSPA.

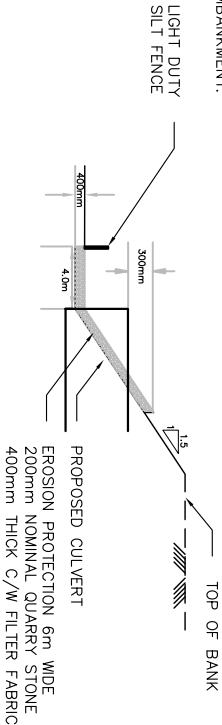
WATERSHED AND DRAIN
STATIONING ARE BASED ON
THE 1998 DRAIN 4 REPORT
PREPARED BY K. SMART
ASSOCIATES LTD.

- LANDOWNER IDENTIFICATION INDEX
- 8-1, 5-029-20,0.3Ha, R. & K. TULLY
 - 8-2, 5-030-05,0.3Ha, W. & D. MCGREGOR
 - 8-3, 3-119-01, 0.4Ha, L. & B. DEKOKER
 - 9-1, 5-075-03,0.3Ha, S. BRYGMAN
 - 9-2, 5-075-01,0.3Ha, K. YOUNG & S. MARRIOTT
 - 9-3, 5-074-02,0.1Ha, G. & D. GALLENT
 - 9-4, 5-074-05,0.5Ha, N. & B. MAYBURY
 - 9-5, 5-074-04,0.5Ha, S. & R. READ
 - 9-6, 3-078-01,0.4Ha, C. & C. BROWN
 - 9-7, 3-129-00,0.8Ha, K. PEARSONS & M. BELL
 - 9-8, 3-133-01, 0.4Ha, S. COWAN
 - 9-9, 3-131-02, 1.1Ha, D. & C. JEWELL
 - 9-10, 3-131-01, 0.7Ha, C. JEWELL
 - 9-11, 3-132-01, 0.4Ha, R. & L. SWITZER
 - 9-12, 3-134-10, 0.3Ha, C. ORIOTIS
 - 9-13, 3-135-05,0.3Ha, P. & A. BREAR
 - 10-1, 3-148-01, 0.4Ha, J. GRIMMETT & J. MORIN
 - 10-2, 3-151-25, 0.1Ha, W. & P. CURTIN
 - 10-3, 3-152-00, 0.2Ha, D. & K. CURTIN

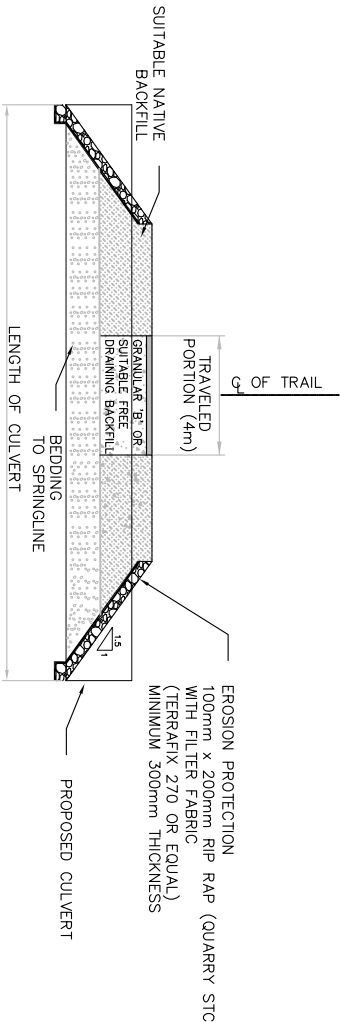


GENERAL NOTES

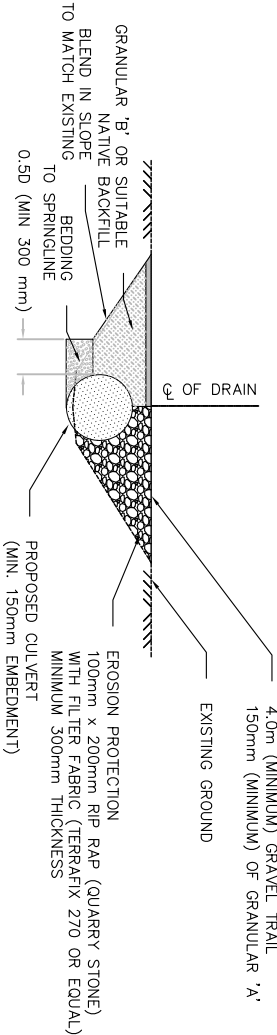
- BENCHMARK #1 ELEV. 256.46
BRASS CAP ON NW CORNER OF THE EXISTING VICTORIA RAIL TRAIL CONCRETE BOX CULVERT (CULVERT 2).
- BENCHMARK #2 ELEV. 256.14
OVERT OF THE CSPA (CULVERT 3) ON THE NORTH SIDE OF THE VICTORIA RAIL TRAIL EMBANKMENT.



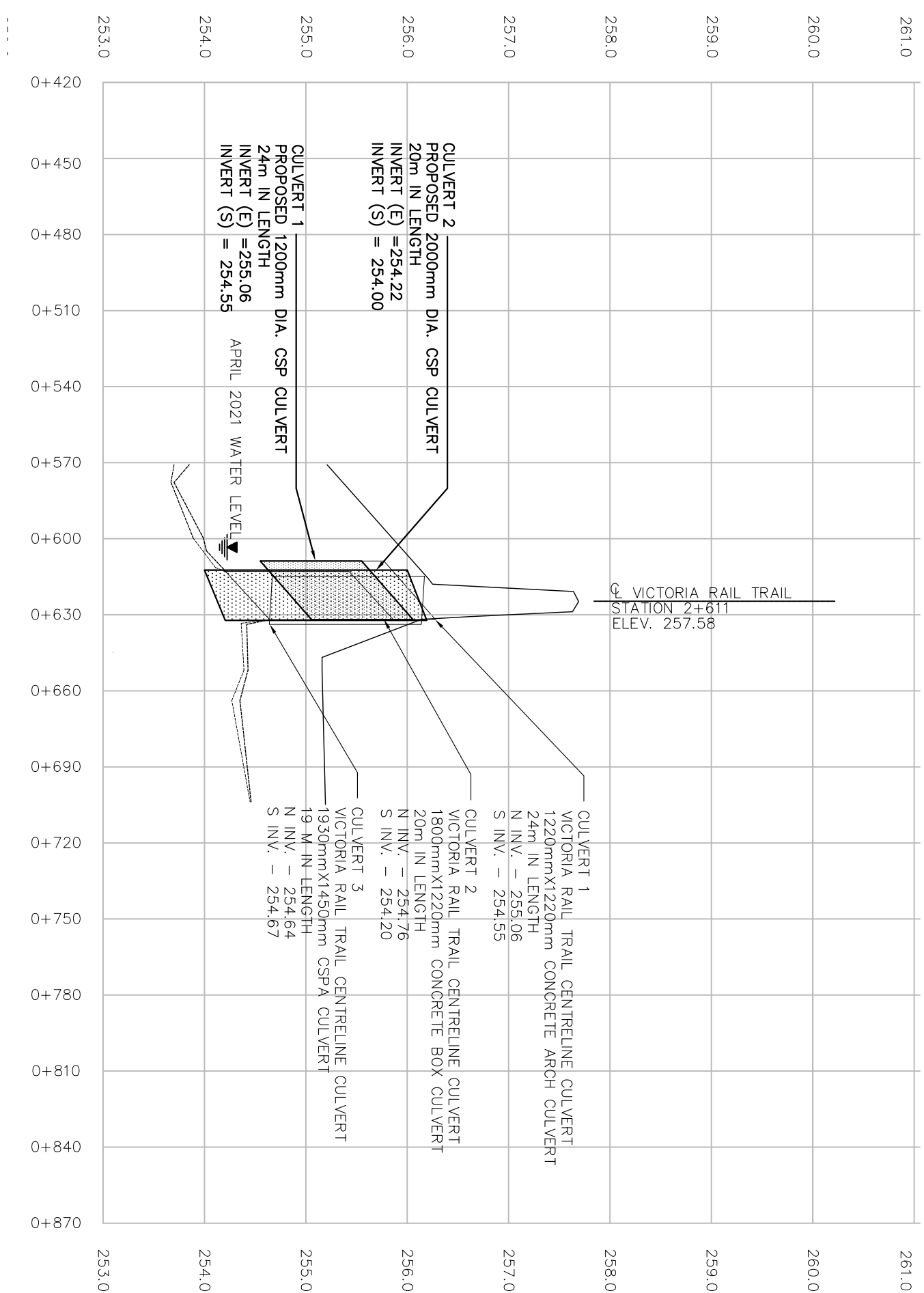
TYPICAL CULVERT END PROTECTION DETAIL
N.T.S.



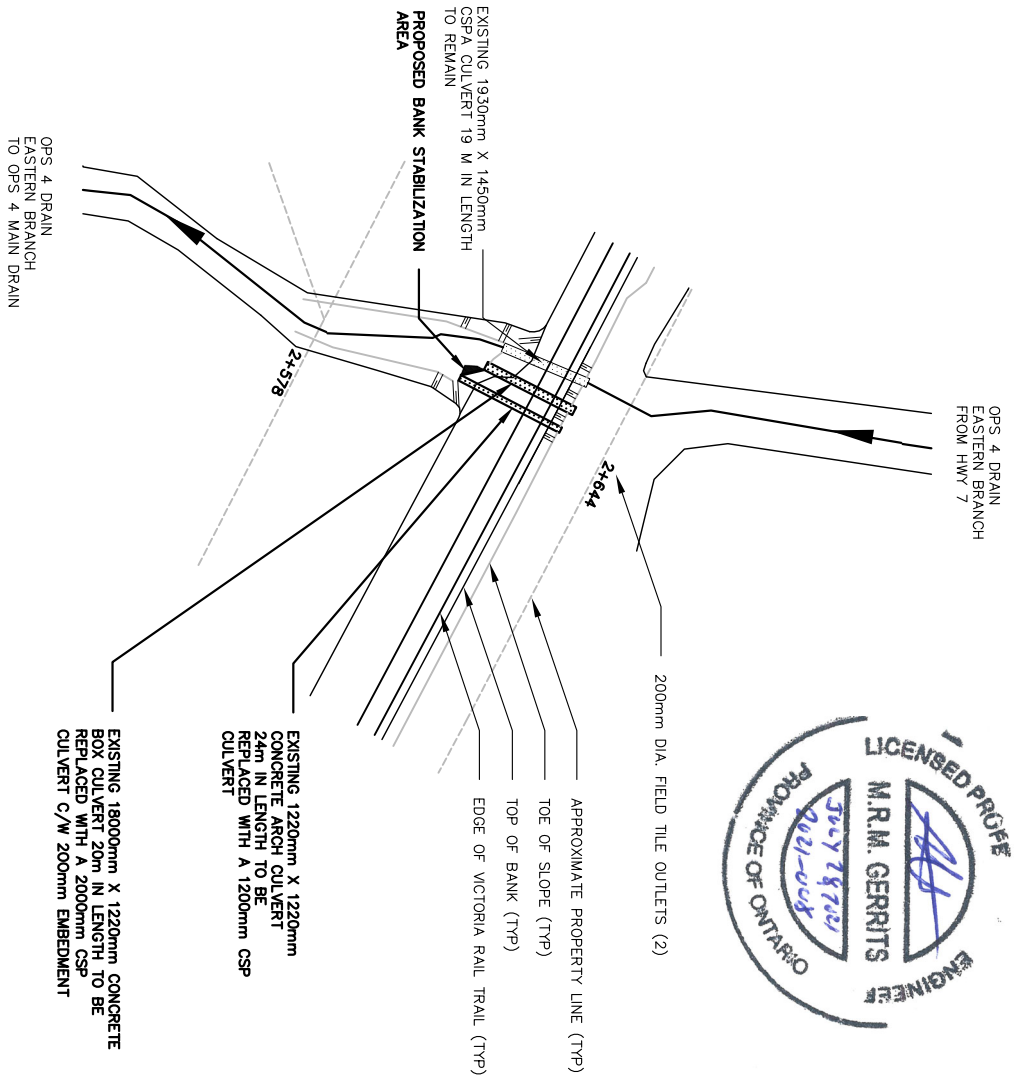
PROPOSED RIP RAP CROSS SECTION
TYPICAL CULVERT
N.T.S.



PROPOSED RIP RAP END SECTION
TYPICAL CULVERT
N.T.S.



VICTORIA RAIL TRAIL CULVERT REPLACEMENT AT STATION 2+611
N.T.S.



M. GERRITS CONSULTING INC.				OPS 4 DRAIN - EASTERN BRANCH CITY OF KAWARTHA LAKES			
				VICTORIA TRAIL CULVERT REPLACEMENT AT STATION 2+611			
				PROFILE AND DETAILS			
				2 OF 2			