R Dobbin Engineering Inc.
4218 Oil Heritage Road
Petrolia, Ontario, N0N 1R0
Phone: (519) 882-0032 Fax: (519) 882-2233
www.dobbineng.com

November 13, 2024

The Mayor and Council
Town of Amherstburg
271 Sandwich Street South
Amherstburg, Ontario
N9V 2A5

Gentlemen and Mesdames:

Re: 4th Concession Road Drain (2024)

In accordance with your instructions, R. Dobbin Engineering has undertaken an examination with regards to improving the 4th Concession Road Drain in the Town of Amherstburg.

Authorization under the Drainage Act

This is an Engineer's Report that has been prepared under Section 78 of the Drainage Act. R. Dobbin Engineering Inc. was appointed by council on April 4th, 2024.

Section 78 of the Drainage Act states that, where, for the better use, maintenance or repair of any drainage works constructed under a bylaw passed under this Act, or of lands or roads, 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 Drainage

The drain commences in Lot 35, Concession 4 and extends northwesterly to the east side of Concession Road 4 South. The drain continues northerly along the east side of Concession Road 4 South to the north limit of Lot 37, Concession 4.

The last Engineer's Report on the 4th Concession Road Drain was prepared by H.P. Pearson and is dated June 5, 2013. Under this report, a culvert in the S ½ of Lot 37, Concession 4 was installed.

Under an Engineer's Report dated July 7, 1980, by W. J. Setterington, culverts were replaced, the drain was relocated in front of a property, the channel was improved with brushing, cleaning and a reduction of the drain slopes.

Drain Classification

The 4th Concession Road Drain is currently classified as a class "C" drain from its outlet to Station 0+318. Upstream of Station 0+318 the drain is currently classified as a class "F" drain. These classifications are according to the Department of Fisheries and Oceans (DFO) as presented by the Ontario Ministry of Agriculture, Food and Rural Affair's Agricultural Information Atlas.

Class "F" drains are intermittent or ephemeral (dry for more than two consecutive months).

Approvals

The drain will require approval from the Essex Region Conservation Authority and the Department of Fisheries and Oceans. Construction cannot commence without necessary approvals.

Site Meeting

A site meeting for this drain was held on June 12, 2024. The following were present:

- Josh Warner (R. Dobbin Engineering)
- Sam Paglia (Drainage Superintendent, Town of Amherstburg)
- Kim Brush (Landowner)
- Reg Brush (Landowner)
- Rick Hawkins (Landowner)
- Carol Miller (Landowner)
- Joel Brush (Landowner)
- Roger Wright (Landowner)

The following is a brief summary of the meeting:

- General discussion of the Drainage Act and Landowners rights under the Drainage Act.
- It was requested that the culverts along the length of the drainage works be investigated. Those in poor shape would be replaced under this report and the remainder would be specified for future replacement.
- Landowners were made aware that a 6m top width will be provided as a standard and at a shared cost. If a Landowner requests a longer culvert, the additional cost will be assessed to the requesting property.
- There were no concerns expressed with the current condition of the channel.
- No concerns were brought forward regarding the soil conditions.

Existing Conditions

Below is a summary of the condition of the existing culverts:

Culvert Number / Station	Location (Parcel Number)	Existing Culvert	Condition	Recommendation
1	County Road 20	2400mm Span Concrete Box Culvert	Good.	Leave and Specify for Future Replacement
2	6	1000mm dia. CSP	Very Poor – Bottom Collapsed.	Remove – Landowner does not Utilize Culvert.
3	7	Existing 900mm dia. CSP was in very poor shape and was replaced under Emergency Designation with 1050mm dia. Sanitite Pipe		
4	8	Existing 900mm dia. CSP was in very poor shape and was replaced under Emergency Designation with 1050mm dia. Sanitite Pipe		
5	9	900mm dia. CSP	Poor-Rust to spring line complete with holes	Replace
6	10	900mm dia. CSP	Poor-Rust to spring line complete with large number holes	Replace
7	11	900mm dia. CSP	Poor-Rust to spring line complete with large number of holes	Replace
8	12	900mm dia. CSP	Poor-Rust to spring line complete with large number of holes	Replace

Culvert Number / Station	Location (Parcel Number)	Existing Culvert	Condition	Recommendation
9	13	900mm dia. CSP	Good	Leave and Specify for Future Replacement
10	14	Existing 800mm dia. CSP was in very poor shape and was replaced under Emergency Designation with 900mm dia. HDPE Pipe		
11	16	800mm dia. CSP	Poor-Rust to spring line complete with holes	Replace
12	15	800mm dia. CSP	Good - Some Rust below spring line	Leave and Specify for Future Replacement
13	17	Existing 600mm dia. CSP was in very poor shape and was replaced under Emergency Designation with 750mm dia. HDPE Pipe		
14	17	600mm dia. CSP	Ok-Rust below spring line. Culvert above drains grade line	Remove – Landowner does not Utilize Culvert.
15	17	600mm dia. CSP	Ok-Rust below spring line	Leave and Specify for Future Replacement
16	18	600mm dia. CSP	Ok- Some Rust	Leave and Specify for Future Replacement

Draft Report

A draft report, dated October 4, 2024 was sent to all the affected Landowners and a meeting was held on November 12, 2024 to go over the report and address any questions and concerns related to the draft report. The following were present at the meeting:

- Josh Warner (R. Dobbin Engineering)
- Sam Paglia (Drainage Superintendent, Town of Amherstburg)
- Nicole Humber (Public Works Clerk, Town of Amherstburg)
- Kim Brush (Landowner)
- Reg Brush (Landowner)
- Elvin Bratt (Landowner)
- Carol Miller (Landowner)
- Mike Hamelin (Landowner)
- Chad Maynard (Landowner)
- Shane Stuebing (Landowner)

The following is a brief summary of the meeting:

- General discussion of the Drainage Act.
- Landowners expressed concerns with the overall cost of the project.
- Carol Miller provided a tile map for the property with Index Number 19
    - This increased the properties area within the watershed slightly.
- No other major concerns were brought forward.

Design

The proposed culverts have been designed to provide outlet for a 1 in 5-year storm event.

The road culvert has been designed to provide outlet for a 1 in 100-year storm event.

Recommendations

It is therefore recommended that the following work be carried out:

1. A maintenance schedule shall be developed for the open channel portion of the 4th Concession Road Drain.

2. Culvert #5, 6, 7, 8, and 11 shall be replaced. Culvert #3, 4, 10 and 13 that were replaced under Emergency Designation, shall be incorporated under this report. Culvert #2 and 14 shall be removed from the drainage works. Future specifications shall be developed for the remainder of the culverts.

Estimate of Cost

It is recommended that the work be carried out in accordance with the accompanying Specification of Work and Profile that forms part of this Report. There has been prepared an Estimate of Cost in the amount of $277,890.00, including preparation of the report, attending the Meeting to Consider the Report, attending the Court of Revision and estimates for tendering, construction inspection, permitting and contract administration. Appearances before appeal bodies have not been included in the cost estimate.

A Plan has been prepared showing the location of the work and the approximate drainage area. A Profile is included showing the depths and grades of the proposed work.

Assessment

As per Section 21 of the Drainage Act, the Engineer in his report shall assess for benefit and outlet for each parcel of land and road liable for assessment.

Lands, roads, buildings, utilities, or other structures that are increased in value or are more easily maintained as a result of the construction, improvement, maintenance, or repair of a drainage works may be assessed for benefit. (Section 22)

Lands and roads that use a drainage works as an outlet, or for which, when the drainage works is constructed or improved, an improved outlet is provided either directly or indirectly through the medium of any other drainage works or of a swale, ravine, creek, or watercourse may be assessed for outlet. The assessment for outlet shall be based on the volume and rate of flow of the water artificially caused to flow into the drainage works from the lands and roads liable for such assessments. (Section 23)

The Engineer may assess for special benefit any lands for which special benefits have been provided by the drainage works. (Section 24)

A Schedule of Assessment for the lands and roads affected by the work and therefore liable for the cost thereof will be prepared as per the Drainage Act. Also, assessments may be made against any public utility or road authority, as per Section 26 of the Drainage Act, for any increased cost for the removal or relocation of any of its facilities and plant that may be necessitated by the construction or maintenance of the drainage works. Items outside those identified in this report shall be assessed to the utility or road authority as per Section 26 of the Drainage Act plus a portion of the engineering (25% of the construction cost).

The cost of any fees for permits or approvals or any extra work required by any affected utility or road authority shall be assessed to that organization requiring the permit, approval, or extra work.

The proposed work has generally been assessed in the following manner, including all estimated fees, taxes and disbursements:

1. The additional cost to daylight and work around utilities has been assessed to the utility company as a special benefit assessment as per Section 26 of the Drainage Act. The special benefit assessment to the utilities shall be calculated as follows:

Telecom Utility Assessment = $2,681 (For Daylighting as part of Design and Working Around Utility Cost as part of Emergency Replacements) + Tendered Amount to Daylight and Work Around the Utility x 1.30 (For Engineering and Taxes)

Gas Utility Assessment = $5,362 (For Daylighting as part of Design and Working Around Utility Cost as part of Emergency Replacements) + Tendered Amount to Daylight and Work Around the Utility x 1.30 (For Engineering and Taxes)

Water Utility Assessment = $6,703 (For Daylighting as part of Design and Working Around Utility Cost as part of Emergency Replacements) + Tendered Amount to Daylight and Work Around the Utility x 1.30 (For Engineering and Taxes)

2. The engineering cost of Culvert #1 has been assessed to the road authority as a benefit assessment. This amount shall be prorated with the rest of the drainage works. The cost of traffic control has been assessed to the owner of Concession Road 4 South as a special benefit assessment as per Section 26 of the Drainage Act. The special benefit assessment to the road shall be calculated as follows:

   Owner of Concession Road 4 South = $2,541 (Traffic Control as part of Emergency Replacements) + Tendered Amount for Traffic Control x 1.30 (For Engineering and Taxes)

3. The engineering for Culvert #15 and the removal cost for Culvert #14 have been assessed as a special benefit assessment. These amounts shall be prorated with the remainder of the drainage works but will not be eligible for the OMAFRA grant ass they are secondary access culverts.

4. The replacement of culverts has been assessed based on the average cost to provide a culvert providing a 6m top width (standard culvert). This standard culvert and the engineering for future driveway and access culvert replacements has been assessed with 55% of the cost applied as benefit assessment to property, 15% of the cost applied as a benefit assessment to the adjacent road and the remainder of the cost assessed as an outlet assessment on upstream lands and roads based on equivalent hectares.

All final costs included in the cost estimate of this report shall be pro-rated based on the Schedule of Assessment unless otherwise outlined above. Any additional costs shall be assessed in a manner as determined by the Engineer.

Allowances

Under Section 29 of the Drainage Act, the Engineer in his report shall estimate and allow in money to the Owner of any land that it is necessary to use for the construction or improvement of a drainage works or for the disposal of material removed from drainage works. This shall be considered an allowance for right-of-way.

Under Section 30 of the Drainage Act, the Engineer shall determine the amount to be paid to persons entitled thereto for damage, if any, to ornamental trees, lawns, fences, land and crops occasioned by the disposal of material removed from a drainage works. This shall be considered an allowance for damages.

Allowances have been made, where appropriate, as per Section 29 of the Drainage Act for right-of-way for the potential re-sloping that would increase the area occupied by the drain and as per Section 30 of the Drainage Act for damages to lands and crops. Allowances for right of way are based on a land value of $50,000.00 per hectare (approximately $20,000.00 per acre). Allowances for crop loss are based on $2,000.00 per hectare for the first year and $1,000.00 for the second year ($3,000.00 per hectare total).

Access and Working Area

Access to the work site for construction and future maintenance of the drain shall be from adjacent roadways and along the length of the drainage works from the nearest culvert.

The working area for construction and future maintenance shall be restricted to a width of 12m from the top of bank where the work is taking place and 4m from the top of bank on the opposite side. Unless otherwise noted, the excavation shall generally be done from the east side, except across finished lawns. Across finished lawns the drain shall be cleaned from the road side with the excavated material being disposed offsite.

The working area at each culvert shall extend 10 metres from the bank on both sides and for 10 metres along the channel on either side of the culvert.

Any damage caused to gain access to the site shall be restored to its pre-construction state at the expense of the Contractor.

Restrictions

No trees and shrubs shall be planted nor shall permanent structures be erected within 6 metres of the proposed drain without prior written permission of Council.

Attention is also drawn to Sections 80 and 82 of the Drainage Act, which refer to the removal of obstructions in a drain and damage caused to a drain.

Agricultural Grant

If available, it is recommended that application for subsidy be made for eligible agricultural properties. Any assessments against non-agricultural properties are shown separately in the Schedule of Assessment.

Maintenance

The 4th Concession Road Drain shall be maintained and repaired with the specifications, drawings and Schedule of Maintenance contained in this Engineer's Report.

With the culverts shown on the profile, including rip rap end walls, they shall be assessed in the following manner:

Culvert Number	Road Authority	Benefiting Lands	Upstream Properties Based on Equivalent Hectares as Contained in SoM
1	100%		
3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 & 16	15%	55%	30%
15		100%	

If any owner requests an additional length of culvert beyond that required to have a 6m top width or an asphalt travel surface the extra cost shall be borne by the Landowner making the request including the future maintenance and repair. The location of the 6m top width shall be determined by the Drainage Superintendent and shall generally be in the primary access location.

The additional costs as a result of a road or utility shall be assessed to the owner of the road or utility as per Section 26 of the Drainage Act.

A secondary access on a property shall be constructed, maintained and repaired with 100% of the cost assessed to the benefitting property.

Properties that wish to have the excavated material trucked shall be assessed the cost of trucking (including any cost associated with testing and disposal of the material) less the cost of levelling. The cost of levelling will form part of the drain maintenance cost.

Yours truly,

Josh Warner, P. Eng.
R. Dobbin Engineering Inc.

4th Concession Road Drain
Town of Amherstburg
November 13, 2024

ALLOWANCES

Allowances have been made as per Sections 29 & 30 of the Drainage Act for Right of Way and damages to lands and crops.

Conc.	Lot or part	Parcel Number	Owner	Section 29 ($)	Section 30 ($)	Total ($)
4	Pt. Lot 36	6	G. & R. Vandenbrink		100	100
	Pt. Lot 36	7	B. Kollin		100	100
	Pt. Lot 36	8	R. & A. Brush		100	100
	Pt. Lot 36	9	J. Brush		100	100
	Pt. Lot 36	10	R. & S. Wright		100	100
	Pt. Lot 36	11	C. Mayrand & J. Atkinson		100	100
	Pt. Lot 37	12	M. Hamelin		100	100
	Pt. Lot 37	14	S. Stuebing		100	100
	Pt. Lot 37	16	E. Bratt		100	100
	Pt. Lot 37	17	Miller Cattle & Grain		200	200
			TOTAL ALLOWANCES	$0	$1,100	$1,100

Estimate of Cost

Item Description (Supply and Install New)	Quantity	Unit	Unit Cost ($)	Total ($)
Emergency Works Already Completed				
Pre-Construction Meeting	*1*	*LS*	*600*	*600*
Traffic Control	*1*	*LS*	*1,800*	*1,800*
Restoration/Seeding	*1*	*LS*	*2,800*	*2,800*
Silt Fence	*3*	*each*	*250*	*750*
Daylighting and Working Around Utilities	*1*	*LS*	*5,300*	*5,300*
Remove and Reinstall Signs	*1*	*LS*	*500*	*500*
Culvert #3 Repalcement at Parcel Number 7 (B. Kollin)	*1*	*LS*	*16,400*	*16,400*
Culvert #4 Repalcement at Parcel Number 8 (R. & A. Brush)	*1*	*LS*	*15,400*	*15,400*
Culvert #10 Repalcement at Parcel Number 14 (S. Stuebing)	*1*	*LS*	*15,000*	*15,000*
Culvert #13 Repalcement at Parcel Number 17 (Miller Cattle & Grain)	*1*	*LS*	*14,800*	*14,800*
Proposed Works				
Pre-Construction Meeting	1	LS	600	600
Traffic Control	1	LS	4,000	4,000
Resoration/Seeding	1	LS	5,000	5,000
Silt Fence	1	LS	500	500
Daylighting and Working Around Gas Main and Services	1	LS	3,000	3,000
Daylighting and Working Around Telecom Main and Services	1	LS	3,000	3,000
Daylighting and Working Around Water Main and Services	1	LS	3,000	3,000
Remove and Reinstall Signs	1	LS	800	800
Culvert #2 Removal (Parcel Number 6, G. & R. Vandenbrink), Disposal of Excess Material and Restoration of Channel	1	LS	2,000	2,000

Item Description (Supply and Install New)	Quantity	Unit	Unit Cost ($)	Total ($)
Culvert #5 Repalcement (Parcel Number 9, J. Brush)				
Removal of existing structure and excavated material	1.0	LS	1,000	1,000
Supply & install 1050mm dia. Sanitite c/w Bedding	13.0	m	700	9,100
Supply and install Granular 'B' Type II	100.0	tonne	35	3,500
Supply & install Granular 'A'	25.0	tonne	40	1,000
Supply & install rip rap endwalls	30.0	tonne	100	3,000
Culvert #6 Repalcement (Parcel Number 10, R. & S. Wright)				
Removal of existing structure and excavated material	1.0	LS	1,000	1,000
Supply & install 1050mm dia. Sanitite c/w Bedding	13.0	m	700	9,100
Supply and install Granular 'B' Type II	100.0	tonne	35	3,500
Supply & install Granular 'A'	25.0	tonne	40	1,000
Supply & install rip rap endwalls	30.0	tonne	100	3,000
Culvert #7 Repalcement (Parcel Number 11, C. Mayrand & J. Atkinson)				
Removal of existing structure and excavated material	1.0	LS	1,000	1,000
Supply & install 900mm dia. HDPE c/w Bedding	13.0	m	650	8,450
Supply and install Granular 'B' Type II	100.0	tonne	35	3,500
Supply & install Granular 'A'	25.0	tonne	40	1,000
Supply & install rip rap endwalls	30.0	tonne	100	3,000
Culvert #8 Repalcement (Parcel Number 12, M. Hamelin)				
Removal of existing structure and excavated material	1.0	LS	1,000	1,000
Supply & install 900mm dia. HDPE c/w Bedding	12.0	m	650	7,800
Supply and install Granular 'B' Type II	100.0	tonne	35	3,500
Supply & install Granular 'A'	25.0	tonne	40	1,000
Supply & install rip rap endwalls	30.0	tonne	100	3,000
Culvert #11 Repalcement (Parcel Number 16, E. Bratt)				
Removal of existing structure and excavated material	1.0	LS	1,000	1,000
Supply & install 900mm dia. HDPE c/w Bedding	12.0	m	650	7,800
Supply and install Granular 'B' Type II	100.0	tonne	35	3,500
Supply & install Granular 'A'	25.0	tonne	40	1,000
Supply & install rip rap endwalls	30.0	tonne	100	3,000
Culvert #14 Removal (Parcel Number 17, Miller Cattle & Gran), Disposal of Excess Material and Restoration of Channel	1	LS	2,000	2,000
Contingency				8,230

Sub Total	190,230
Allowances	1,100
Engineering	32,280
SofM and Profile Update	3,500
Daylighting and Surveying Utilities	14,500
Future Culvert Design	7,500
Completing AODA Compliant Document	1,500
Estimate for Tendering, Inspection and Contract Administration	22,000
SCRCA Fee	500
Total Estimate excluding HST	**273,110**
Non-Recoverable HST (1.76%)	4,780
Total Estimate	**$ 277,890**

SCHEDULE OF ASSESSMENT

As Revised by the Court of Revision (February 25, 2025)

Conc.	Lot or Part	Affected Hecatares	Parcel Number	Roll No.	Owner	Special Benefit ($)	Benefit ($)	Outlet ($)	Total ($)
Utilities									
	Gas Utility				Enbridge Gas	11,595	-	-	11,595
	Telecom Utility				Bell Telecom	8,958	-	-	8,958
	Water Utility				Town of Amherstburg	12,913	-	-	12,913
						33,466	-	-	33,466
Public Lands									
	Concession 4 S	3.40			Town of Amherstburg	7,802	34,476	11,459	53,737
	Essex County Road 20	0.43			County of Essex	-	1,500	-	1,500
						7,802	35,976	11,459	55,237
Non Agricultural Lands									
4	Pt. Lot 35 & 34		24	372954000000100	3007507 Nova Scotia		3	-	3
	Pt. Lot 36	0.36	1	372958000000500	J. Vickers		59	-	59
	Pt. Lot 36	0.20	2	372958000000600	M. Walsh		21	1	22
	Pt. Lot 36	0.28	3	372958000000700	J. Daley		-	1	1
	Pt. Lot 36	0.27	4	372958000000750	R. & J. Fournier		8	2	10
	Pt. Lot 36	0.81	5	372958000000760	R. Cote & J. Fournier		39	5	44
	Pt. Lot 36	0.18	7	372958000000800	B. Kollin		13,580	45	13,625
	Pt. Lot 36	0.85	8	372958000000900	R. & A. Brush		13,695	227	13,922
	Pt. Lot 36	0.46	9	372958000001000	J. Brush		13,635	371	14,006
	Pt. Lot 36	6.61	10	372958000001100	R. & S. Wright		13,580	2,985	16,565

Conc.	Lot or Part	Affected Hecatares	Parcel Number	Roll No.	Owner	Special Benefit ($)	Benefit ($)	Outlet ($)	Total ($)
4	Pt. Lot 36	0.38	11	372958000001150	C. Mayrand & J. Atkinson		13,599	594	14,193
	Pt. Lot 37	0.14	12	372958000001200	M. Hamelin		13,574	268	13,842
	Pt. Lot 37	0.28	13	372958000001201	K. & D. Brush		897	540	1,437
	Pt. Lot 37	0.14	14	372958000001300	S. Stuebing		13,580	318	13,898
	Pt. Lot 37	0.34	16	372958000001405	E. Bratt		13,587	914	14,501
	Pt. Lot 37	0.18	18	372958000001600	J. Jennings		873	601	1,474
3	Pt. Lot 33	1.50	20	372959000001300	T. & J. Cox		-	41	41
	Pt. Lot 32	1.50	21	372959000000810	G. & K. Olson		-	49	49
						-	110,730	6,962	117,692
Agricultural Lands									
4	Pt. Lot 36	8.09	6	372958000000400	G. & R. Vandenbrink		1,664	223	1,887
	Pt. Lot 37	7.20	15	372958000001400	M. & J. Rizza		1,006	11,398	12,404
	Pt. Lot 37	6.07	17	372958000001500	Miller Cattle & Grain	4,373	13,827	12,347	30,547
	Pt. Lot 38	11.20	19	372958000001601	C. Miller		60	23,571	23,631
	Pt. Lot 32	8.62	22	372959000000800	G. & R. Vandenbrink		-	2,596	2,596
	Pt. Lot 31	1.40	23	372959000000700	M. Struhar		-	430	430
						4,373	16,557	50,565	71,495

Total Public Utilities	33,466
Total Public Lands	55,237
Total Non Agricultural Lands	117,692
Total Agricultural Lands	71,495
Total Assessment	$277,890

Estimated Net Assessment

Net assessment subject to OMAFRA ADIP Policy and actual construction costs.

As Revised by the Court of Revision (February 25, 2025)

Conc.	Lot or Part	Affected Hecatares	Parcel Number	Owner	Total Assessment ($)	Estimated Grant ($)	Allowances ($)	Estimated Net Assessment ($)
Utilities								
Gas Utility				Enbridge Gas	11,595			11,595
Telecom Utility				Bell Telecom	8,958			8,958
Water Utility				Town of Amherstburg	12,913			12,913
Public Lands								
Concession 4 S		2.55		Town of Amherstburg	53,737			53,737
Essex County Road 20		0.43		County of Essex	1,500			1,500
Non Agricultural Lands								
4	Pt. Lot 35 & 34	0.00	24	3007507 Nova Scotia	3			3
	Pt. Lot 36	0.36	1	J. Vickers	59			59
	Pt. Lot 36	0.20	2	M. Walsh	22			22
	Pt. Lot 36	0.28	3	J. Daley	1			1
	Pt. Lot 36	0.27	4	R. & J. Fournier	10			10
	Pt. Lot 36	0.81	5	R. Cote & J. Fournier	44			44
	Pt. Lot 36	0.18	7	B. Kollin	13,625		100	13,525
	Pt. Lot 36	0.85	8	R. & A. Brush	13,922		100	13,822
	Pt. Lot 36	0.46	9	J. Brush	14,006		100	13,906
	Pt. Lot 36	6.61	10	R. & S. Wright	16,565		100	16,465
	Pt. Lot 36	0.38	11	C. Mayrand & J. Atkinson	14,193		100	14,093
	Pt. Lot 37	0.14	12	M. Hamelin	13,842		100	13,742
	Pt. Lot 37	0.28	13	K. & D. Brush	1,437			1,437
	Pt. Lot 37	0.14	14	S. Stuebing	13,898		100	13,798
	Pt. Lot 37	0.34	16	E. Bratt	14,501		100	14,401
	Pt. Lot 37	0.18	18	J. Jennings	1,474			1,474

As Revised by the Court of Revision (February 25, 2025)

Conc.	Lot or Part	Affected Hecatares	Parcel Number	Owner	Total Assessment ($)	Estimated Grant ($)	Allowances ($)	Estimated Net Assessment ($)
3	Pt. Lot 33	1.50	20	T. & J. Cox	41			41
	Pt. Lot 32	1.50	21	G. & K. Olson	49			49
Agricultural Lands								
	Pt. Lot 36	8.09	6	G. & R. Vandenbrink	1,887	629	100	1,158
	Pt. Lot 37	7.20	15	M. & J. Rizza	12,404	4,135		8,269
	Pt. Lot 37	6.07	17	Miller Cattle & Grain	30,547	8,725	200	21,622
	Pt. Lot 38	11.20	19	C. Miller	23,631	7,877		15,754
	Pt. Lot 32	8.62	22	G. & R. Vandenbrink	2,596	865		1,731
	Pt. Lot 31	1.40	23	M. Struhar	430	143		287
					277,890	22,374	1,100	254,416

SCHEDULE OF MAINTENANCE

To Maintain the Open Channel of the 4th Concession Road Drain

As Revised by the Court of Revision (February 25, 2025)

Conc.	Lot or Part	Affected Hecatares	Parcel Number	Roll No.	Owner	Benefit ($)	Outlet ($)	Total ($)	Equivalent Hectares
Public Lands									
	Concession 4 S	3.40			Town of Amherstburg	16.30	9.32	25.62	3.06
	Essex County Road 20	0.43			County of Essex	-	0.02	0.02	0.39
						16.30	9.34	25.64	
Non Agricultural Lands									
4	Pt. Lot 35 & 34	0.00	24	372954000000100	3007507 Nova Scotia	0.09	-	0.09	-
	Pt. Lot 36	0.36	1	372958000000500	J. Vickers	1.68	0.01	1.69	0.16
	Pt. Lot 36	0.20	2	372958000000600	M. Walsh	0.61	0.03	0.64	0.09
	Pt. Lot 36	0.28	3	372958000000700	J. Daley	-	0.01	0.01	0.13
	Pt. Lot 36	0.27	4	372958000000750	R. & J. Fournier	0.24	0.05	0.29	0.12
	Pt. Lot 36	0.81	5	372958000000760	R. Cote & J. Fournier	1.10	0.13	1.23	0.36
	Pt. Lot 36	0.18	7	372958000000800	B. Kollin	1.20	0.06	1.26	0.08
	Pt. Lot 36	0.85	8	372958000000900	R. & A. Brush	4.48	0.25	4.73	0.34
	Pt. Lot 36	0.46	9	372958000001000	J. Brush	2.75	0.20	2.95	0.21
	Pt. Lot 36	6.61	10	372958000001100	R. & S. Wright	1.20	2.33	3.53	2.16
	Pt. Lot 36	0.38	11	372958000001150	C. Mayrand & J. Atkinson	1.72	0.20	1.92	0.17
	Pt. Lot 37	0.14	12	372958000001200	M. Hamelin	1.03	0.08	1.11	0.06
	Pt. Lot 37	0.28	13	372958000001201	K. & D. Brush	2.07	0.18	2.25	0.13
	Pt. Lot 37	0.14	14	372958000001300	S. Stuebing	1.20	0.09	1.29	0.06
	Pt. Lot 37	0.34	16	372958000001405	E. Bratt	1.38	0.26	1.64	0.15
	Pt. Lot 37	0.18	18	372958000001600	J. Jennings	1.38	0.63	2.01	0.08

As Revised by the Court of Revision (February 25, 2025)

Conc.	Lot or Part	Affected Hecatares	Parcel Number	Roll No.	Owner	Benefit ($)	Outlet ($)	Total ($)	Equivalent Hectares
3	Pt. Lot 33	1.50	20	372959000001300	T. & J. Cox	-	0.24	0.24	0.45
	Pt. Lot 32	1.50	21	372959000000810	G. & K. Olson	-	0.28	0.28	0.53
						22.13	5.03	27.16	
Agricultural Lands									
4	Pt. Lot 36	8.09	6	372958000000400	G. & R. Vandenbrink	6.50	1.29	7.79	2.43
	Pt. Lot 37	7.20	15	372958000001400	M. & J. Rizza	5.16	3.98	9.14	2.16
	Pt. Lot 37	6.07	17	372958000001500	Miller Cattle & Grain	8.26	4.25	12.51	1.82
	Pt. Lot 38	11.20	19	372958000001601	C. Miller	1.72	12.56	14.28	3.28
	Pt. Lot 32	8.62	22	372959000000800	G. & R. Vandenbrink	-	2.79	2.79	2.59
	Pt. Lot 31	1.40	23	372959000000700	M. Struhar	-	0.69	0.69	0.42
						21.64	25.56	47.20	

Total Public Lands	25.64
Total Non Agricultural Lands	27.16
Total Agricultural Lands	47.20
Total Assessment	100.00

4th Concession Road Drain
Town of Amherstburg
November 13, 2024

SPECIFICATION OF WORK

1. Location

The location of the proposed and future work outlined in this specification is in Lots 35 to 38, Concession 4 in the Town of Amherstburg.

2. Scope of Work

The work to be included in this specification includes, but is not limited to, the following:

- Future Open Channel Improvements
- Culvert replacements

3. General

Each tenderer must inspect the site prior to submitting their tender and satisfy themselves by personal examination as to the local conditions that may be encountered during this project. The Contractor shall make allowance in their tender for any difficulties which they may encounter. 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 as to minor details but in no way decrease the proposed capacity of the drain.

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 to the Ontario Provincial Standard Specifications and Standard Drawings.

Any equivalents shall be approved in writing by the Engineer or Drainage Superintendent prior to ordering.

4. Health and Safety

The Contractor at all times shall be responsible for health and safety on the worksite including ensuring that all employees wear suitable personal protective equipment including safety boots and hard hats.

The Contractor shall be responsible for traffic control as per the Ontario Traffic Manual Book 7 – Temporary Conditions (latest revision) when working on public road allowances. A copy of a traffic control plan shall be submitted to the Engineer, Drainage Superintendent and kept on site at all times. The Contractor shall maintain suitable barricades, warning lights, and temporary traffic notices, at his expense, in their proper position to protect the public both day and night. Flagmen are the responsibility of the Contractor when working on the road allowance and when entering or exiting a worksite onto a roadway.

The Contractor shall be responsible to ensure that all procedures are followed under the Occupational Health and Safety Act to ensure that work sites are safe and that accidents are prevented. In the event of a serious or recurring problem, a notice of noncompliance 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 termination of the contract.

They shall also ensure that only competent workmen are employed onsite and that appropriate training and certification is supplied to all employees.

5. MNRF Drain Registration

The Contractor is advised that the Town of Amherstburg has conducted an "Endangered Species Act Review" and has registered it’s drainage activities with the Ministry of Natural Resources and Forestry.

The Town of Amherstburg, in pursuant to the Endangered Species Act Municipal Agreement, has identified the potential presence of certain species within the project area. 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. It is also the responsibility of the Contractor to make itself familiar with the following documents:

1. Town of Amherstburg – Complete Mitigation Documents

2. Town of Amherstburg - Additional Mitigation Measures for Snakes Species

3. Town of Amherstburg - Additional Mitigation Measures for Turtle Species

4. Snakes of Ontario Identifier Guide

5. Turtles of Ontario Identifier Guide

These documents will be provided to the successful bidder.

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

6. Utilities

The Contractor is responsible for organizing locates and exposing all the utilities along the length of the drainage works. If any utilities interfere with the proposed drainage works in a manner not shown on the accompanying Estimate of Cost or profile the Contractor shall notify the Drainage Superintendent and Engineer.

The Contractor is responsible for coordinating the replacement of additional utilities with the utility company if they interfere with the proposed drain. All costs for the utility to replace their services will be outside of this report and shall be borne by the utility as per Section 26 of the Drainage Act.

All additional costs to work around and organize replacement of the utilities not included in the estimate shall be tracked separately and the cost plus a portion of the engineering and taxes (30% of the cost) shall be borne by that utility.

7. Pre-Construction Meeting

There is a requirement for a pre-construction meeting to be held prior to any construction taking place. The meeting will be scheduled by the Contractor with notices sent out by the Town. The Contractor shall notify all parties at least two weeks prior to wanting to hold a pre-construction meeting.

8. Benchmarks

The benchmarks are based on geodetic elevations. Elevations are available at the locations shown on the profile drawings. Where these elevations are on existing structures to be replaced, they shall be transferred by the Contractor prior to the removal.

The Contractor is required to complete a benchmark loop prior to construction to verify the benchmarks. If discrepancies exist the Contractor must notify the Drainage Superintendent and Engineer prior to completing any work.

9. Traffic Control

Access and driveways to private properties shall not be obstructed longer than the minimum time necessary for the work and shall be reinstated as soon as possible all to the satisfaction of the Engineer. The Contractor shall schedule any obstruction of existing driveways and accesses with the owners at least two full working days in advance. The Traffic Plan must be approved by the Town prior to the commencement of any road closures.

a) The Contractor shall supply, erect and maintain all detour signs and special signs necessary for detours to divert traffic from the area under construction as directed by the Drainage Superintendent or Engineer. All this work shall be at the Contractor's expense.

b) The Contractor shall be responsible for supplying, erecting and maintaining all signs, supports, barricades, flashers, cones, etc. in the construction area and at the boundaries of the work as part of the above detours, all to the satisfaction of the Engineer or Drainage Superintendent. All this work shall be done by the Contractor at their own expense.

c) The Contractor shall not be allowed to proceed with construction activities unless proper signage and flagmen are present. Flagging procedures, signage and detours shall conform to the recommendations of Book 7, Temporary Conditions, Ontario Traffic Manual, issued by the Ministry of Transportation. Conformance shall be enforced by the Ministry of Labour Inspector.

10. Access and Working Area

Access to the work site for construction and future maintenance of the drain shall be from adjacent roadways and along the length of the drainage works from the nearest culvert.

The working area for construction and future maintenance shall be restricted to a width of 12m from the top of bank where the work is taking place and 4m from the top of bank on the opposite side. Unless otherwise noted, the excavation shall generally be done from the east side, except across finished lawns. Across finished lawns the drain shall be cleaned from the road side with the excavated material being disposed offsite.

The working area at each culvert shall extend 10 metres from the bank on both sides and for 10 metres along the channel on either side of the culvert.

Any damage caused to gain access to the site shall be restored to its pre-construction state at the expense of the Contractor.

11. Removals

The culverts and any native backfill material, when required, shall be removed in their entirety. The culvert, backfill and the concrete rubble shall be disposed offsite at the expense of the Contractor. Any broken concrete or rip rap (concrete bags) from the existing structures shall be disposed offsite at the expense of the Contractor unless determined re-usable by the Drainage Superintendent or Engineer.

The Contractor shall work around the existing fences and signs if they are able to. If the existing fences and signs are required to be removed, they shall be removed and re-installed in the same location with the existing materials. All work in connection with fences and signs shall be carried out in a careful manner so they are replaced in as good a condition as the existing materials permit.

Where the culverts are to be removed, the Contractor shall restore the channel in these sections with 2:1 side slopes, a 1.00m bottom and shall restore them in accordance with the restoration specification.

12. Brushing and Tree Removal

For construction and future maintenance of the drain, all brush, stumps, trees, vegetation, etc. within the working area, the drain bottom, along the bank where the work is taking place and on the opposite side where impeding the flow of the drain, as determined by the Drainage Superintendent or Engineer, shall be removed.

A mechanical grinder attached to an excavator shall be used for the removal of brush and trees. Any brush and trees too large to grind shall be close cut. The Contractor shall stockpile the trees and brush in a single pile on the property in which they were removed

or dispose of the trees and brush offsite. Where brush and trees are removed within a bush section of the drain the trees and brush shall be disposed of within the bush at the limits of the working area. The Contractor is responsible for the burning of the trees and brush not in the bush sections. The Contractor is responsible for obtaining all necessary permits for any disposal sites. Burning of the trees and brush is subject to local bylaws and guidelines of the Ministry of the Environment Conservation and Parks.

Certain trees may be left in place at the direction of the Drainage Superintendent or Engineer. Trees may be limbed and piled for firewood, instead of burned, at the request of a Landowner.

13. Excavation of Open Channel

For construction and future maintenance, the open channel shall be excavated and maintained to the depths and grades as per the profile and drawings as contained in this Engineers Report. The channel shall be excavated to the proper depth using a laser or similar approved device with a labourer onsite to ensure correctness of grade and to confirm location of tile ends.

The excavated material shall generally be cast on the side it is being excavated from, except across finished lawns where the excavated material shall be trucked. Excavated material shall be cast at least 1.5 metres clear of the bank. Excavated material shall not be placed in low runs or swales out letting surface water to the channel. The excavated material shall be levelled to a maximum depth of 150mm and left in a condition suitable for cultivation. This shall include the removal of any rocks larger then 10cm in diameter and any debris/wood that could damage or plug farm equipment. Leveling shall occur when the material is dry enough to do so as determined by the Drainage Superintendent or Engineer. All high spots above grade shall be removed. The sediment shall be removed leaving a rounded bottom with the intent not to undercut the existing side slopes. All material unfit for placing on farmlands shall be disposed of offsite by the Contractor.

It is R. Dobbin Engineering’s opinion that the drainage improvements for this project are exempt from Section 8 of O.Reg 406/19 as per Schedule 2, Item 3.6 of the Regulation.

The bottom width identified in the profile drawings represents the original design bottom width. The intent is to match this at a minimum where possible. If matching this width would cause undermining of the banks or road the drain bottom width shall be reduced at the discretion of the Engineer or Drainage Superintendent.

14. Installation of Culverts

The Contractor is required to notify the Landowner forty-eight (48) hours prior to the removal of a culvert.

The high-density polyethylene (HDPE) smooth wall pipe (320 kPa) shall be CSA Approved with bell and spigot joints.

Sanitite Pipe shall be SaniTite HP with 320kPa and bell and spigot joints or approved equivalent. The exposed ends of the SaniTite culverts shall be wrapped in filter cloth to prevent UV damage.

The culverts designated to be replaced in the future under this report shall be examined after any cleanout of the open channel as to its condition. If it is found to be in disrepair (i.e. there are holes corroded in the bottom or sides) it shall be replaced as per these specifications.

The culverts shall be installed generally in the same location or as approved by the Drainage Superintendent or Engineer. The culverts shall be installed with the invert 10% (minimum 150mm) below the original channel bottom elevation unless otherwise shown in order to achieve the minimum cover.

Any tile outlets extended as a result of a culvert shall be extended at the landowner's expense. The pipes that shall be extended upstream or downstream of the proposed culvert shall be done with non-perforated HDPE agricultural tubing with a manufactured coupling, elbow and rodent grate.

Access Culverts:

The bottom of the excavation shall be excavated to a minimum of 100mm below the proposed invert. The pipe shall be bedded with ¾" clear stone. When the pipe has been installed to the proper grade and depth, the excavation shall be backfilled with ¾" clear stone and wrapped in filter fabric from the bottom of the excavation to the spring line 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 access culverts shall be backfilled from the spring line to within 150mm of finished grade with Granular "B" Type II. Where no vehicular traffic is proposed to cross the culvert, the culvert may be backfilled with select native material. The top 150mm shall be backfilled with compacted 100% crushed granular "A" material to finished grade. In sections where no vehicular traffic is proposed to cross the culvert, the top 150mm shall be topsoil and seeded as per the restoration specification. If asphalt is proposed, the asphalt shall be HL3 and shall

match the existing thickness. In these cases, the compacted granular “A” shall occupy 150mm below the proposed asphalt.

Road Culverts:

The concrete box culvert shall be precast, shall be installed as per OPSS 422 and the contractor shall submit shop drawings to the engineer prior to ordering. In the event of a conflict between these specifications and those of the structural designer, the more stringent shall apply. The joints between precast sections shall have butyl tape and shall be wrapped with a minimum 600mm width of geotextile to prevent the migration of soil between the joints.

The bottom of the excavation shall be excavated to a minimum of 200mm below the proposed bottom of the box culvert. The pipe shall be backfilled above the clear stone with Granular “A”.

Asphalt Road: The sub-base shall consist of a minimum of 300mm of OPS 100% crushed Granular “A” and shall not be native material. The asphalt shall be HL4 and HL3 at depths to match the existing thickness.

Gravel Road: The sub-base shall consist of a minimum of 300mm of OPS Granular “A” and shall not be native material. The top 200mm shall be OPS Granular “M”, produced from 100% crushed dolomite, and shall be mechanically compacted to 100% modified standard proctor density.

All culverts included in the profile have been specified with rip rap end walls. Should the end wall specified change the culvert length shall be altered to accommodate the change.

If rip rap end walls are used, they shall consist of 150mm x 300mm quarry stone or approved equal. The area to receive the rip rap shall be graded to a depth of 400mm below finished grade. Filter fabric (Mirafi P150 or approved equal) shall then be placed with any joints overlapped a minimum 600mm. The quarry stone shall then be placed with the smaller pieces placed in the gaps and voids to give it a uniform appearance.

If concrete block end walls are used, they shall consist of concrete blocks with dimensions of approx. 600mm x 600mm x 1200mm, 600mm x 600mm x 2400mm or 300mm x 600mm x 1200mm as required. 600mm x 600mm x 2400mm concrete blocks will be paid at twice the unit price established per block, all others will be at a unit of 1. The top of the culvert shall govern block elevation. The correct block shall be set with the top of the block equal to the top of the culvert. 2400mm wide concrete blocks shall be used as the top block on arch and larger round pipes in order to span between the culvert

top and the supporting block. The blocks shall be set at each end of the culvert so that each row of blocks will be offset approx. 100mm from the row below. The bottom row shall consist of one block placed parallel to the culvert. The blocks shall be imbedded a minimum of 300mm into each bank and shall extend into the drain bottom to match the pipe invert or below. Erosion protection shall be placed on the banks next to the end walls. The erosion protection shall consist of 150mm x 300mm quarry stone over filter fabric (Mirafi P150 or approved equal). It shall extend 500mm upstream or downstream and from top of bank to top of bank at each end wall.

The blocks shall be placed over a layer of filter fabric (Mirafi P150 or approved equal). The culvert shall be backfilled in conjunction with the placement of the blocks. The gaps between the culvert and the blocks shall be filled with concrete cinder blocks/bricks and mortar to give the end wall a finished appearance.

It is the Contractors responsibility to ensure that adequate cover is obtained prior to crossing the culvert in accordance with the manufacturer's recommendations.

15. Maintenance

The Contractor shall be responsible for maintenance of the drain, including access culverts for a period of one year after their installation. This will include repairing any settlement areas on the travel surface with Asphalt, Granular "A" and/or topsoil and seed.

16. Subsurface Drainage

All existing subsurface drains encountered during construction of the open channel shall be reconnected or extended to the open channel unless otherwise noted on the drawings or as directed by the Drainage Superintendent or Engineer.

A suitable length of equivalent sized PE agricultural tubing shall be used to connect the drain to the open channel. Manufactured fittings shall connect the PE tile to the existing drain. The connections shall be carefully backfilled to ensure there is adequate support under the pipe and large clumps of clay do not displace the tile.

Tile outlets larger than 150mm in diameter, or as determined by the Drainage Superintendent or Engineer at the time of construction, require erosion protection and rodent grates. The erosion protection made up of rip rap and filter fabric shall be installed on the embankment slope from 0.3m above the tile obvert to the channel bottom. The erosion protection shall be 1.0m wide. Rip rap shall be made up of 150mm to 300mm quarry stone or approved equal to a depth of 400mm. The area to receive the rip rap shall first be graded to allow the placement of the rip below finished grade. After grading, a

layer of filter fabric (Mirafi P270 or approved equal) is to be placed with any joints overlapped a minimum of 600mm. Rip rap shall then be placed with the smaller pieces placed in the gaps and voids to give it a uniform appearance.

17. Seeding/Restoration

All areas disturbed by construction including accesses, side slopes, working areas, etc. shall be restored with 100mm of screened topsoil and hydroseed. Hydroseed on the side slopes of the channel shall be bonded fiber matrix mulch hydroseed.

18. Environmental Considerations

The Contractor shall take care to adhere to the following considerations.

- Operate machinery in a manner that minimizes disturbance to the banks of the watercourse.
- Erosion and sediment control measures must be installed prior to construction to prevent sediment from entering the water body.
- Material shall not be placed in areas regulated by the Conservation Authority or Ministry of Natural Resources.
- All granular and erosion control materials shall be stockpiled a minimum of 3.0m from the top of the bank or excavation. Material shall not be placed in surface water runs or open inlets that enter the channel.
- 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 and all surface water runs and open inlets that enter the drain.
- When possible, all construction within the open channel shall be carried out during periods of low flow or in dry conditions.
- The Contractor shall conduct regular inspections and maintain erosion and sediment control measures and structures during the course of construction.
- The Contractor shall repair erosion and sediment control measures and structures if damage occurs.
- The Contractor shall remove non-biodegradable erosion and sediment control materials once site is stabilized.
- Remove all construction materials from site upon project completion.

Light duty silt fencing shall be installed down-gradient of the work for the duration of construction.

The light duty silt fencing shall be supplied and installed in accordance with OPSS 805 and OPSD 219.110. The light duty silt fencing shall be removed once the disturbed area has been re-vegetated.

Best Management Practices – Culvert Replacements in Municipal Drains

This document describes the conditions on which one may proceed with a culvert replacement in a municipal drain without DFO approval/notification. All municipal, provincial, or federal legislation that applies to the work being proposed must be respected. If the conditions/requirements below cannot be met, please complete the drain notification form and submit it to the Fisheries Protection Program form review at: FisheriesProtection@dfo-mpo.gc.ca.

Potential Impacts to Fish Habitat

- Infilling fish habitat by encroachment of the water crossing footprint or channel realignment to accommodate culvert
- Harmful substrate alteration of fish habitat (e.g. blockage of groundwater upwellings, critical SAR habitat, spawning areas)
- Removal of riparian vegetation and cover along the banks of the municipal drain
- Removal of edge habitat (e.g. undercut bank, shallower areas with lower velocity, aquatic vegetation) creation of barriers to fish movement (e.g. perched crossings, velocity barriers, alteration of the natural stream gradient)
- Alteration of channel flow velocity and/or depth (e.g. oversized culvert resulting in insufficient depth for fish passage at low flow or undersized culvert resulting in a flow velocity barrier at high flow)
- Alteration of channel morphology and sediment transport processes caused by the physical structure of the crossing resulting in upstream and downstream sediment aggradation/erosion
- Re-entry of sediment that was removed/stockpiled into the watercourse
- Erosion downstream from sudden release of water due to the failure of site isolation
- Stranding of fish in isolated ponds following de-watering of the site
- Impingement or entrainment of fish when de-watering pumps are used
- Short term or chronic transport of deleterious substances, including sediment, into fish habitat from construction or road drainage

Requirements

The following requirements must be met:

- There are no aquatic Species at Risk present in the work zone or impact zone. To confirm there are no aquatic Species at Risk present, refer to the document, A Guide for Interpreting Fish and Mussel Species at Risk Maps in Ontario which can be found at: http://www.dfo-mpo.gc.ca/Library/356763.pdf. Links for Ontario Conservation Area specific fish and mussel maps that include critical habitat extents and a list of aquatic Species at Risk found within the conversation authority boundary can be found on Page 5 of A Guide for Interpreting Fish and Mussel Species at Risk Maps in Ontario.
- The culvert is embedded into the streambed and must allow for the free passage of fish.
- The work involves like-for-like replacements of existing road or private access culverts on all drain types without SAR.
- On C and F Drains only, this can also include replacements with extensions and end walls for the purposes of providing the property or road with safe access, but the project permanent footprint will not increase more than 250 m^2 below the high water mark.
- The project does not involve replacing a bridge or arch with one or more culverts installed in parallel or a larger-diameter culvert with more than one culvert installed in parallel.

- The project does not involve building more than one culvert installed in parallel on a single watercourse crossing site (e.g. twin culvert).
- The project does not involve temporarily narrowing the watercourse to an extent or for a duration that is likely to cause erosion, structural instability or fish passage problems.
- The municipal drain has no flow/low flow or is frozen to the bottom at the time of the replacement.
- In-water work is scheduled to respect timing windows (Tables 1 and 2) to protect fish, including their eggs, juveniles, spawning adults, and/or the organisms upon which they feed.
- The work can be conducted using the Culvert Removal Method described below and Standard Measures to Avoid Causing *Serious Harm to Fish* will be implemented when required.

Note: If your project must be conducted without delay in response to an emergency (e.g. the project is required to address an emergency that poses a risk to public health or safety or to the environment or property), you may apply for an Emergency Authorization (http://www.dfo-mpo.gc.ca/asp/forceDownload.asp?FilePath=/pnw-ppe/reviews-revues/Emergency-Authorizations-Autorisations-Urgences-eng.pdf).

Culvert Removal Methodology

- Plan/manage the work site in a manner that prevents sediment from entering the municipal drain by installing sediment and erosion control materials where required. Ensure that a sediment and erosion control plan is developed and modified as necessary for the site.
- Where required, install effective erosion and sediment control measures before starting work to prevent sediment from entering the municipal drain.
- Implement site isolation measures when in-water work is required.
    - Install an impervious barrier upstream of the work area (Figure 1). If possible, install a secondary barrier upstream of the work area for added protection.
    - Attempt to drive out the fish from the work area and then install the impervious barrier downstream of the work area. This may reduce or eliminate the need for a fish salvage.
    - When the drain is flowing, maintain downstream flows (e.g. bypass water around the work site using pumps or flume pipes; Figure 2). Provide temporary energy dissipation measures (e.g. rip-rap) at discharge point of the hose or temporary outlet pipe when required. Routinely inspect bypass pump and hose or pipe to ensure proper operation. Inspect discharge point for erosion and reposition hose/pipe or install additional temporary energy dissipation material as needed.
    - Dewater the isolated work area. The hose for a pump may discharge along the top of the bank into existing vegetation; however, the area should be monitored for signs of erosion. Reposition the hose or install additional temporary energy dissipation material as needed.
    - A fish screen with openings no larger than 2.54 mm (0.10 inches) should be equipped on any pump used during the operation. Note: Additional information regarding fish screens can be found in the DFO Freshwater Intake End-of-Pipe Fish Screen Guideline document (http://www.dfo-mpo.gc.ca/Library/223669.pdf).
    - Collect any fish present in the isolated work area and relocate them downstream.
    - Fish salvage operations must be conducted under a license issued by the Ontario Ministry of Natural Resources and Forestry (MNRF). The MNRF should be contacted well in advance of any work to obtain the required fish collection license.
- Install the culvert so that it is embedded into the streambed; ensure the culvert remains passable (e.g. does not become perched) by fish and wildlife.

- Decommission the site isolation in a manner that minimizes the introduction of sediment. The downstream isolation barrier shall gradually be removed first, to equalize water levels inside and outside of the isolated area and to allow suspended sediments to settle.
- Stabilize and remove waste from the site.
- Where required, maintain effective erosion and sediment control measures until complete re-vegetation of disturbed areas is achieved.

Figure 2. Isolation of Site

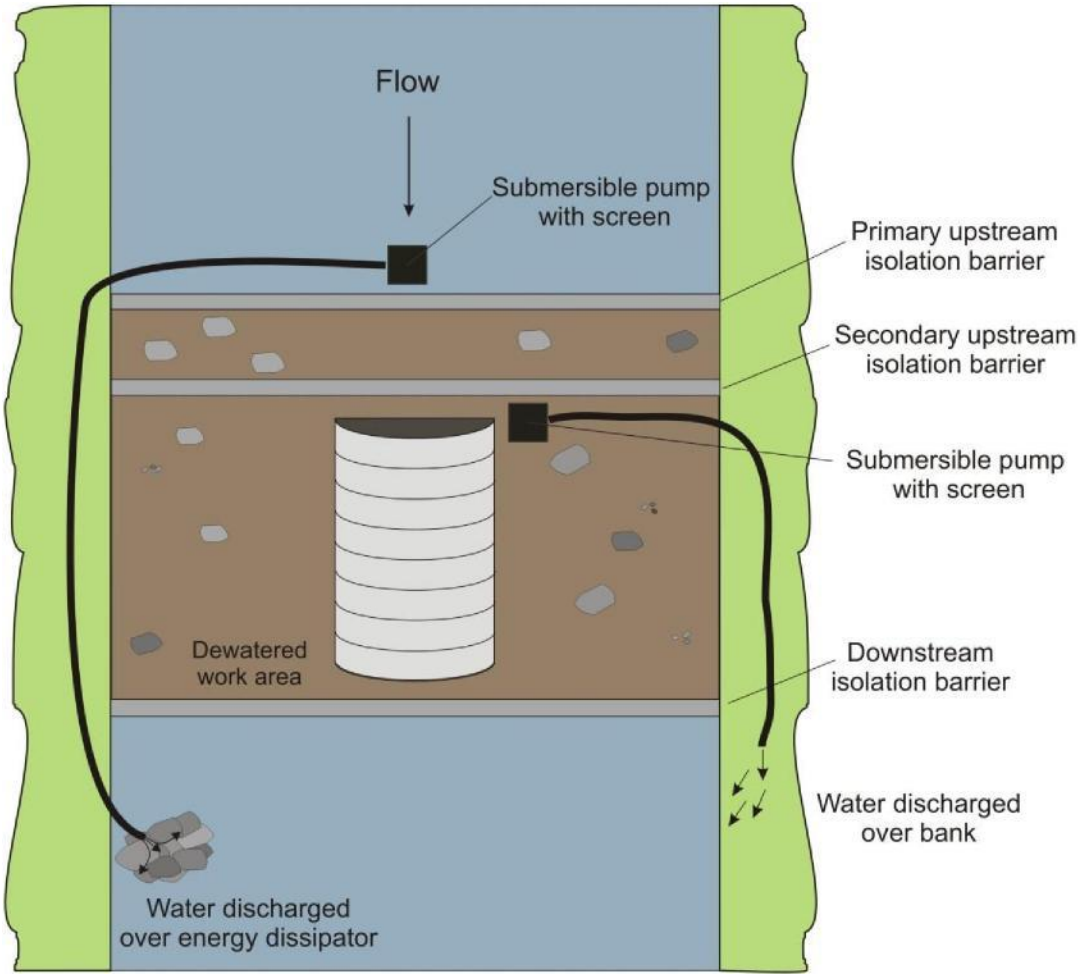


Figure 3. Isolation and Bypass Diversion when Working In-Water

Timing Windows

Figure 1 and Tables 1 and 2 can be used to determine the Restricted Activity period for the drain based on its classification. Note: Timing windows identified on Conservation Authority permits or Ministry of Natural Resources (Government of Ontario) work permits may differ and take precedence.

Figure 1. Ontario's Northern and Southern Region boundaries for determining application of restricted activity timing windows.

Table 1. Restricted Activity timing windows for the protection of spawning fish and developing eggs and fry in the Northern Region. Dates represent when work should be avoided.

DRAIN TYPE	RESTRICTED ACTIVITY PERIOD
A	SEPTEMBER 1 TO JULY 15
B	SEPTEMBER 1 TO JULY 15
C	APRIL 1 TO JULY 15
D	SEPTEMBER 1 TO JULY 15
E	APRIL 1 TO JULY 15

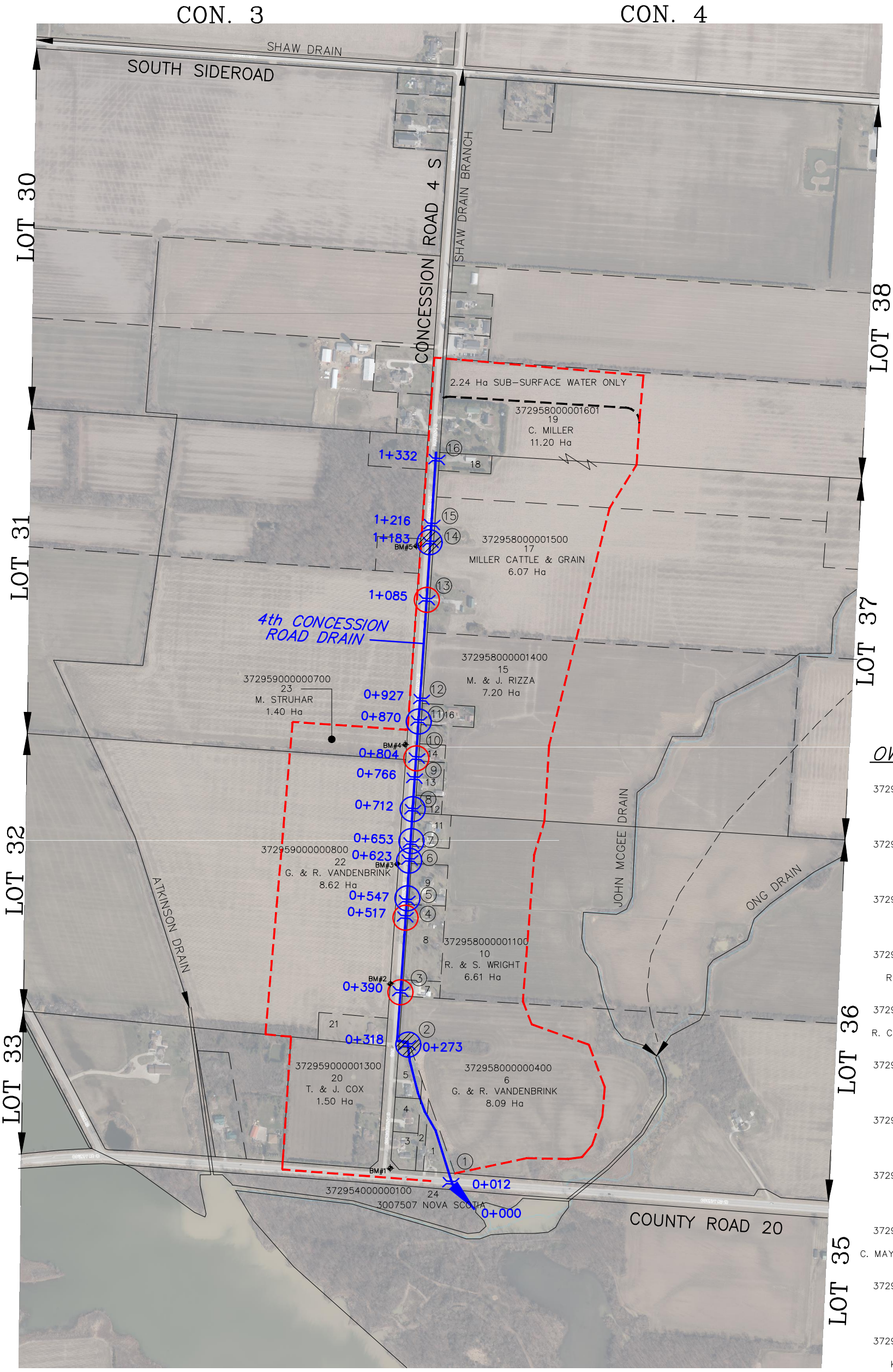
Table 2. Restricted Activity timing windows for the protection of spawning fish and developing eggs and fry in the Southern Region. Dates represent when work should be avoided.

DRAIN TYPE	RESTRICTED ACTIVITY PERIOD
A	SEPTEMBER 15 TO JULY 15
B	MARCH 15 TO JULY 15
C	MARCH 15 TO JULY 15
D	OCTOBER 1 TO JULY 15
E	MARCH 15 TO JULY 15

Standard Measures to Avoid Causing *Serious Harm to Fish*

When implementing a culvert removal project in a municipal drain, the *Fisheries Act* still requires an individual/company to ensure they avoid causing *serious harm to fish* during any activities in or near water. The following advice will help one avoid causing harm and comply with the *Act* (for additional information see http://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures/measures-mesures-eng.html).

1. Schedule work to avoid wet, windy and rainy periods that may increase erosion and sedimentation.
2. Whenever possible, operate machinery on land above the high water mark or on ice and in a manner that minimizes disturbance to the banks and bed of the municipal drain.
   - Ensure that machinery arrives on site in a clean condition and is maintained free of fluid leaks.
   - Limit machinery fording of the municipal drain to a one-time event (i.e., over and back), and only if no alternative crossing method is available. If repeated crossings of the municipal drain are required, construct a temporary crossing structure.
   - Wash, refuel and service machinery and store fuel and other materials for the machinery in such a way as to prevent any deleterious substances from entering the water.
   - Keep an emergency spill kit on site in case of fluid leaks or spills from machinery.
3. Install effective sediment and erosion control measures before starting work to prevent sediment from entering the municipal drain. Inspect them regularly during the course of construction and make all necessary repairs if any damage occurs.
4. Erosion and sediment control measures should be maintained until all disturbed ground has been permanently stabilized, suspended sediment has resettled to the bed of the municipal drain and runoff water is clear.
5. Undertake all in-water activities in isolation of open or flowing water while maintaining the natural flow of water downstream and avoid introducing sediment into the municipal drain.
6. Ensure applicable permits for relocating fish are obtained and relocate any fish that become trapped in isolated pools or stranded in newly flooded areas to the main channel of the watercourse.
7. Ensure that the water that is being pumped/diverted from the site is filtered (sediment remove) prior to being released (e.g. pumping/diversion of water to a vegetated area).
8. Implement measures for containing and stabilizing waste material (e.g. dredging spoils, construction waste and materials, commercial logging waste, uprooted or cut aquatic plants, accumulated debris) above the high water mark of nearby waterbodies to prevent re-entry.
9. Stabilize shoreline or banks disturbed by any activity associated with the project to prevent erosion and/or sedimentation, preferably through re-vegetation with native species suitable for the site.
10. If replacement rock reinforcement/armouring is required to stabilize eroding or exposed areas, then ensure that appropriately-sized, clean rock is used; and that rock is installed at a similar slope to maintain a uniform bank/shoreline and natural stream/shoreline alignment.
11. Remove all construction materials from site upon project completion.



LICENSED PROFESSIONAL ENGINEER
J. H. WARNER
100520016
NOV. 13, 2024
PROVINCE OF ONTARIO

OWNER INDEX NUMBER

372958000000500 1 J. VICKERS 0.36 Ha	372958000001300 14 S. STUEBING 0.14 Ha
372958000000600 2 M. WALSH 0.20 Ha	372958000001405 16 E. BRATT 0.34 Ha
372958000000700 3 J. DALEY 0.28 Ha	372958000001600 18 J. JENNINGS 0.28 Ha
372958000000750 4 R. & J. FOURNIER 0.27 Ha	372959000000810 21 G. & K. OLSON 1.5 Ha
372958000000760 5 R. COTE & J. FOURNIER 0.81 Ha	
372958000000800 7 B. KOLLIN 0.18 Ha	
372958000000900 8 R. & A. BRUSH 0.85 Ha	
372958000001000 9 J. BRUSH 0.46 Ha	
372958000001150 11 C. MAYRAND & J. ATKINSON 0.38 Ha	
372958000001200 12 M. HAMELIN 0.14 Ha	
372958000001201 13 K. & D. BRUSH 0.28 Ha	

LEGEND

- DRAINAGE AREA
- 4th CONCESSION ROAD DRAIN
- MUNICIPAL DRAIN
- (1) CULVERT NUMBER
- 1 PARCEL NUMBER
- EXISTING CULVERT
- CULVERT REPLACED UNDER EMERGENCY DESIGNATION
- CULVERT TO BE REPLACED
- CULVERT TO BE REMOVED

Dobbin Engineering Inc.
4218 Oil Heritage Road
Petrolia Ontario, N0N 1R0
Phone: (519) 882-0032 Fax: (519) 882-2233

DRAWING NAME: 4th Concession Road Drain Plan

PROJECT No. 2024-1611

NO.	REVISIONS	DATE	BY
2	AS REVISED BY COURT	FEB. 25, 2025	CS
1	FINAL REPORT	NOV. 13, 2024	CS

APPROVED J. WARNER
CHECKED B. VAN RUITENBURG
DRAWN C. SAUNDERS

SCALE: 1:7500
0 100 200 300m

TOWN of AMHERSTBURG

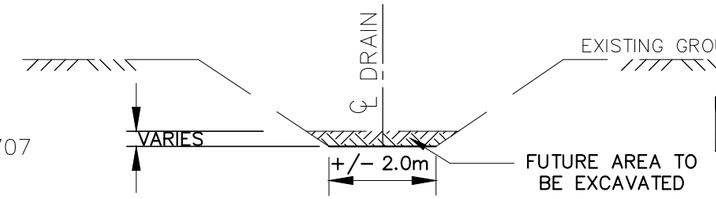
4th CONCESSION ROAD DRAIN PLAN

1 OF 5

Last Updated: February 25, 2025

GENERAL NOTES

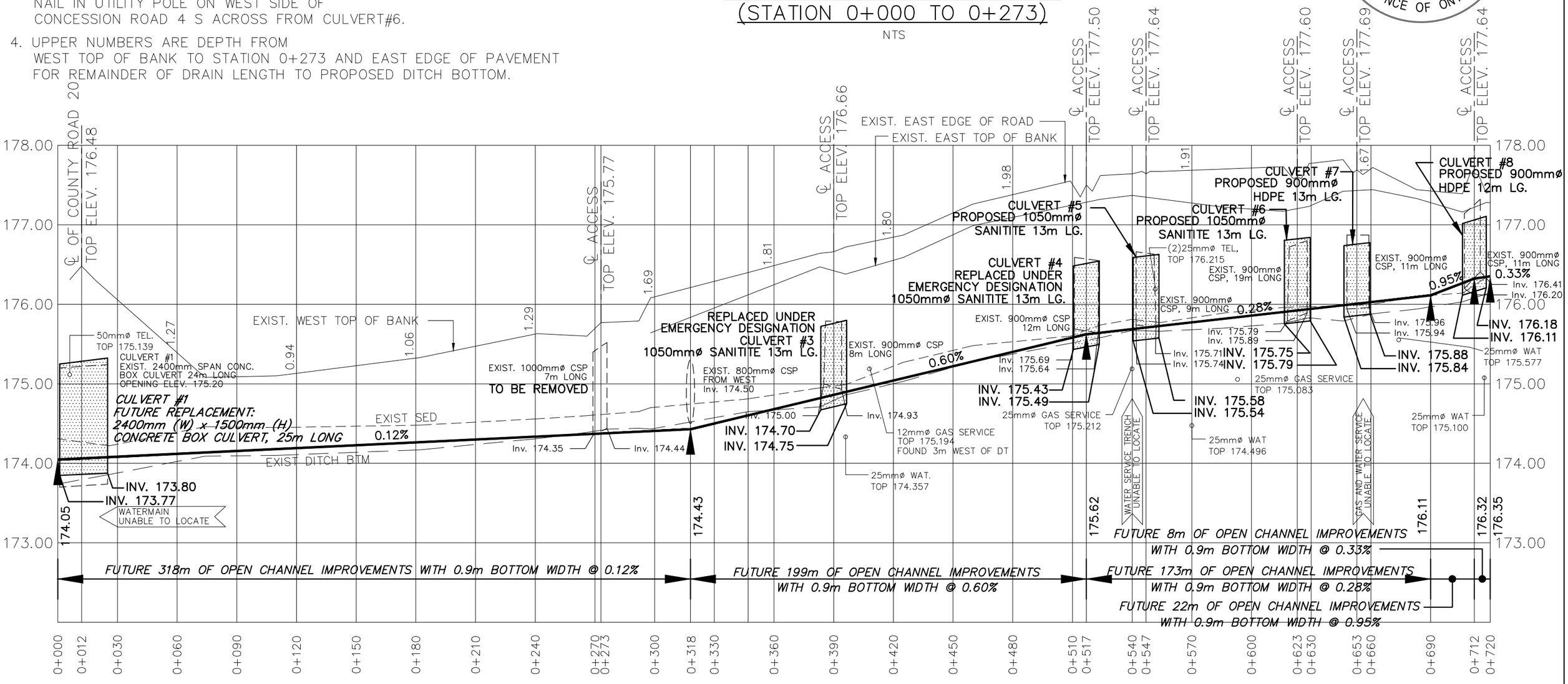
1. BENCHMARK No.1 ELEV. 177.032
   TOP SPINDLE OF FIRE HYDRANT AT CONCESSION ROAD 4 S AND COUNTY ROAD 20.
2. BENCHMARK No.2 ELEV. 176.302
   NAIL IN UTILITY POLE ON WEST SIDE OF CONCESSION ROAD 4 S ACROSS FROM MN#4707
3. BENCHMARK No.3 ELEV. 177.672
   NAIL IN UTILITY POLE ON WEST SIDE OF CONCESSION ROAD 4 S ACROSS FROM CULVERT#6.
4. UPPER NUMBERS ARE DEPTH FROM WEST TOP OF BANK TO STATION 0+273 AND EAST EDGE OF PAVEMENT FOR REMAINDER OF DRAIN LENGTH TO PROPOSED DITCH BOTTOM.



DRAIN EXCAVATION (FUTURE)

TYPICAL DRAIN CROSS SECTION (STATION 0+000 TO 0+273)

NTS



LICENSED PROFESSIONAL ENGINEER
J. H. WARNER
100520016
NOV. 13, 2024
PROVINCE OF ONTARIO

Dobbin Engineering Inc.
4218 Oil Heritage Road
Petrolia Ontario, N0N 1R0
Phone: (519) 882-0032 Fax: (519) 882-2233

DRAWING NAME: 4th Concession Road Drain Profile 1

PROJECT No. 2024-1611

APPROVED	NO.	REVISIONS	DATE	BY
J. WARNER				
CHECKED	1	FINAL REPORT	NOV. 13, 2024	CS
B. VAN RUITENBURG				
DRAWN				
C. SAUNDERS				

SCALE: 1:2,000
0 20 40 60m

TOWN of AMHERSTBURG

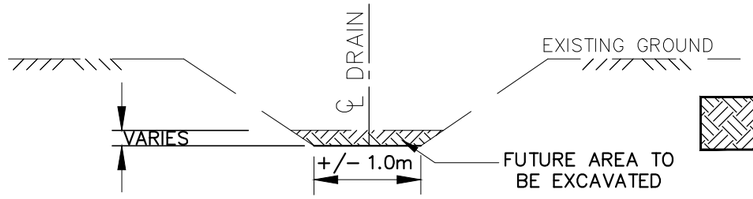
4TH CONCESSION ROAD DRAIN

PROFILE

Last Updated: November 13, 2024

GENERAL NOTES

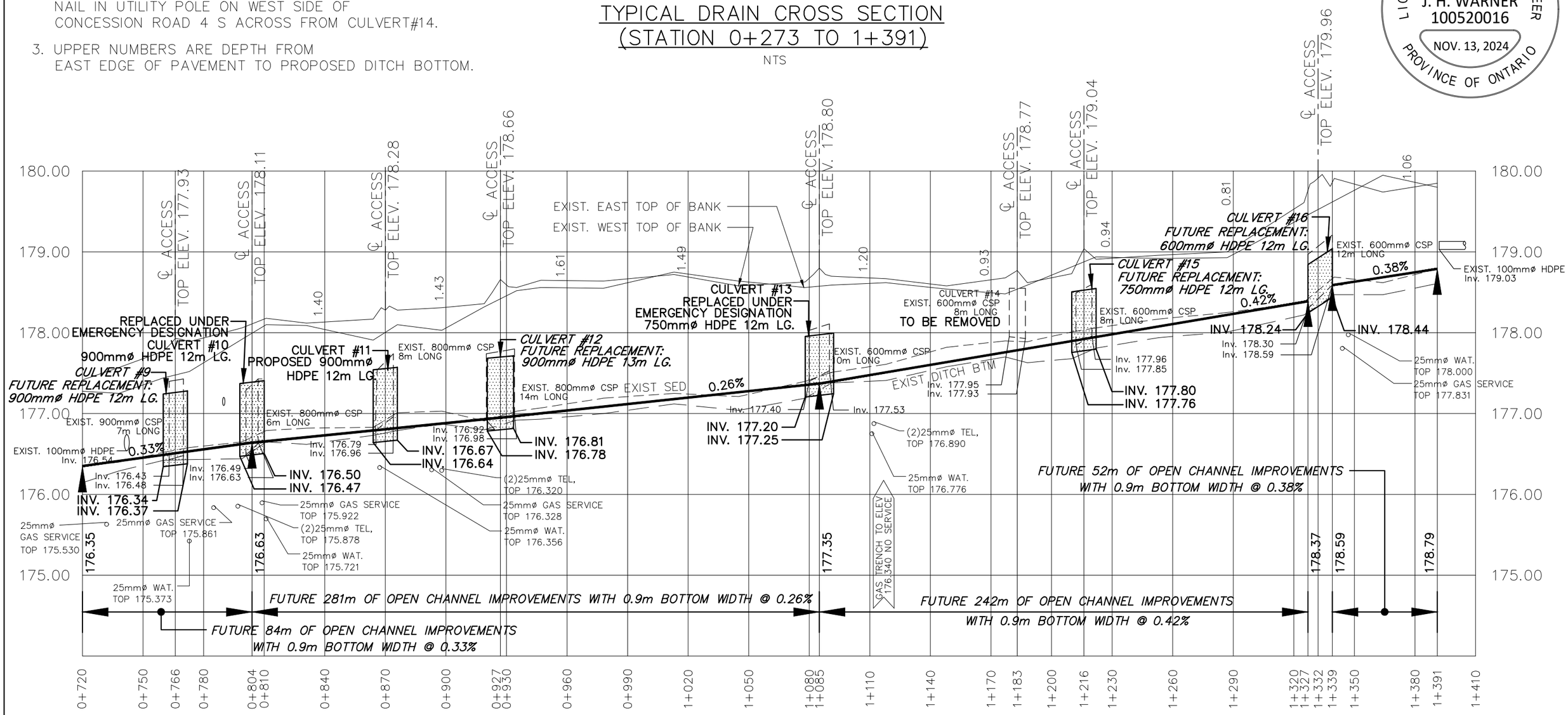
1. BENCHMARK No.4 ELEV. 178.585
   NAIL IN UTILITY POLE ON WEST SIDE OF CONCESSION ROAD 4 S ACROSS FROM MN#4653.
2. BENCHMARK No.5 ELEV. 179.050
   NAIL IN UTILITY POLE ON WEST SIDE OF CONCESSION ROAD 4 S ACROSS FROM CULVERT#14.
3. UPPER NUMBERS ARE DEPTH FROM EAST EDGE OF PAVEMENT TO PROPOSED DITCH BOTTOM.



TYPICAL DRAIN CROSS SECTION (STATION 0+273 TO 1+391)

NTS

LICENSED PROFESSIONAL ENGINEER
J. H. WARNER
100520016
NOV. 13, 2024
PROVINCE OF ONTARIO



Dobbin Engineering Inc.
4218 Oil Heritage Road
Petrolia Ontario, N0N 1R0
Phone: (519) 882-0032 Fax: (519) 882-2233

DRAWING NAME: 4th Concession Road Drain Profile 2

PROJECT No. 2024–1611

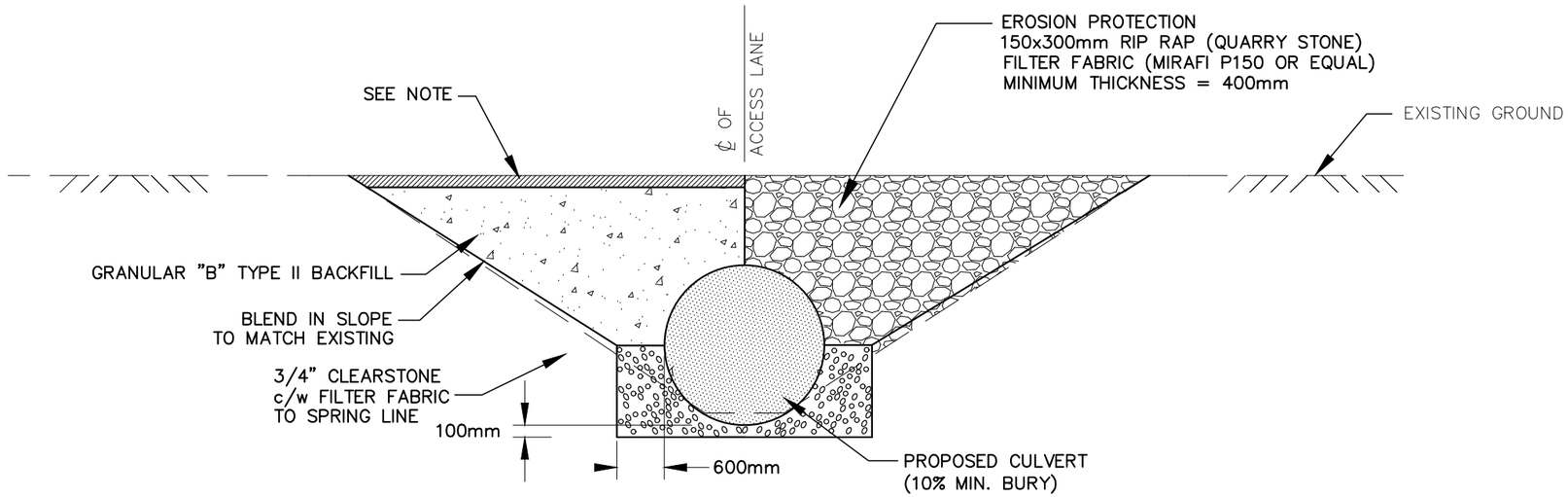
APPROVED	NO.	REVISIONS	DATE	BY
J. WARNER				
CHECKED	1	FINAL REPORT	NOV. 13, 2024	CS
B. VAN RUITENBURG				
DRAWN	SCALE: 1:2,000			
C. SAUNDERS	0 20 40 60m			

TOWN of AMHERSTBURG

4TH CONCESSION ROAD DRAIN

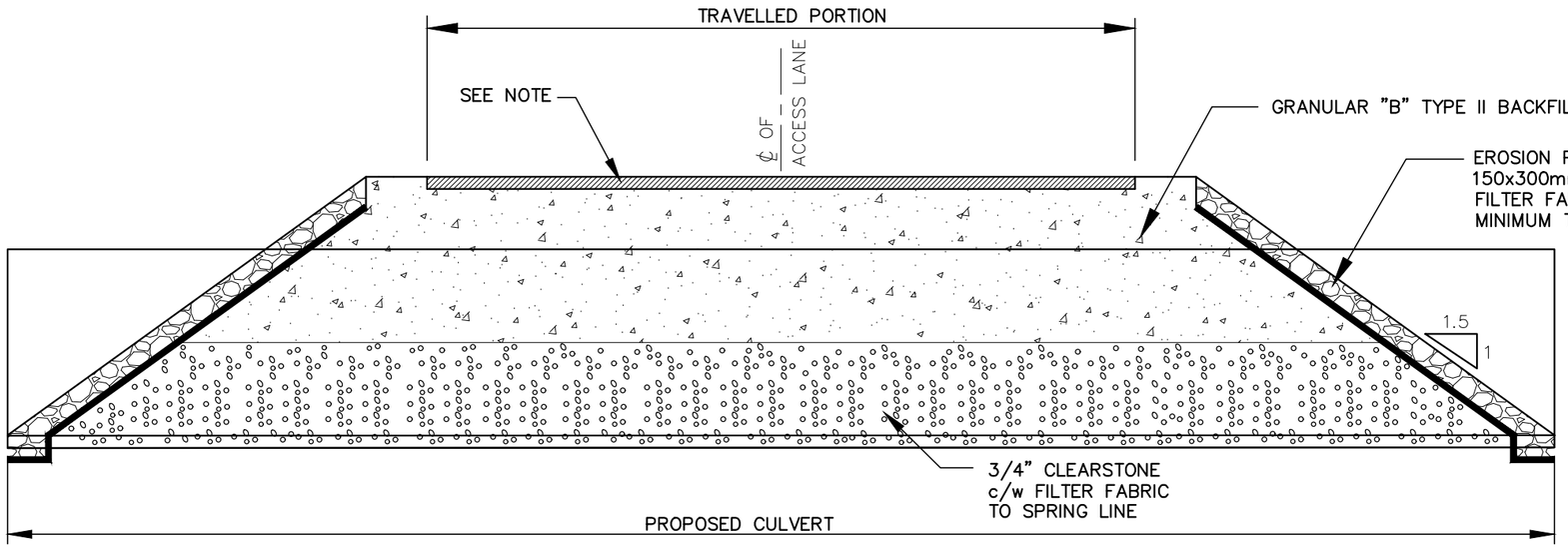
PROFILE

Last Updated: November 13, 2024



PROPOSED PIPE END SECTION

LICENSED PROFESSIONAL ENGINEER
J. H. WARNER
100520016
NOV. 13, 2024
PROVINCE OF ONTARIO



PROPOSED CROSS-SECTION

NOTES:

ALL BACKFILL COMPACTED
TO 95% MODIFIED PROCTOR DENSITY
CONTRACTOR SHALL ENSURE MINIMUM
COVER IS MET PRIOR TO CROSSING

ASPHALT ROAD

- HL3 AND HL4 TO MATCH EXISTING THICKNESS
- 300mm OF 100% CRUSHED GRAN "A"
  EXTENDING TO SHOULDER

GRAVEL ROAD

- 200mm OF OPS GRANULAR "M"
  (CRUSHED DOLOMITE SOURCE)
  TO MATCH EXISTING ROAD WIDTH

ACCESS CULVERT

- 150mm OF 100% CRUSHED GRANULAR "A"
- IF ASPHLAT: HL3 TO MATCH EXISTING THICKNESS

Dobbin Engineering Inc.
4218 Oil Heritage Road
Petrolia Ontario, N0N 1R0
Phone: (519) 882-0032 Fax: (519) 882-2233

DRAWING NAME:
4th Concession Road Drain Typical Culvert Detail

PROJECT No.
2024-1611

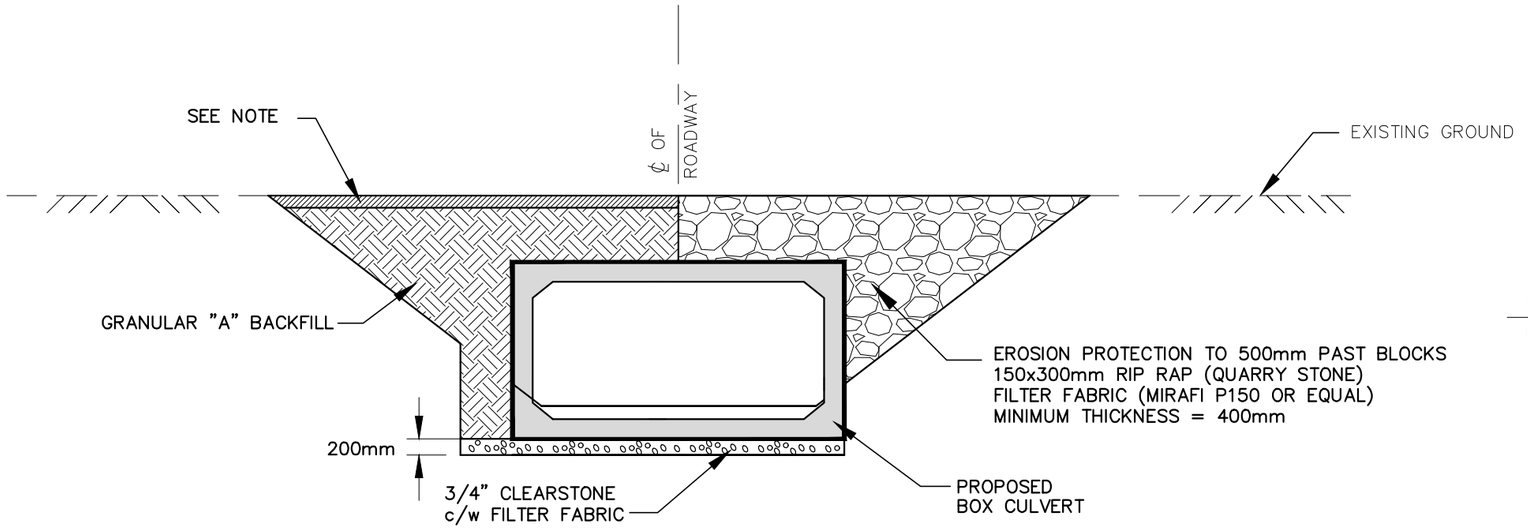
APPROVED	NO.	REVISIONS	DATE	BY
J. WARNER				
CHECKED	1	FINAL REPORT	NOV. 13, 2024	CS
B. VAN RUITENBURG				
DRAWN				
C. SAUNDERS				

SCALE 1:75
0 2m

TOWN of AMHERSTBURG

4TH CONCESSION ROAD DRAIN
TYPICAL CULVERT DETAIL

Last Updated: November 13, 2024



PROPOSED END SECTION

NOTE:

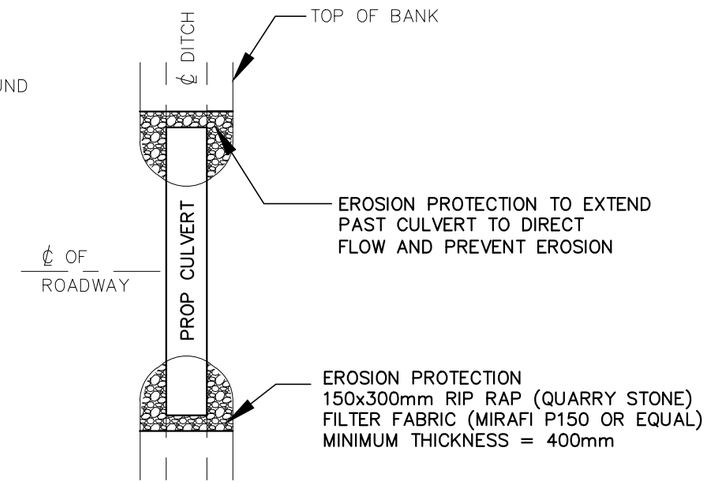
ALL BACKFILL COMPACTED
TO 95% MODIFIED PROCTOR DENSITY

ASPHALT ROAD

- HL3 AND HL4 TO MATCH EXISTING THICKNESS
- 300mm OF 100% CRUSHED GRAN "A"

GRAVEL ROAD

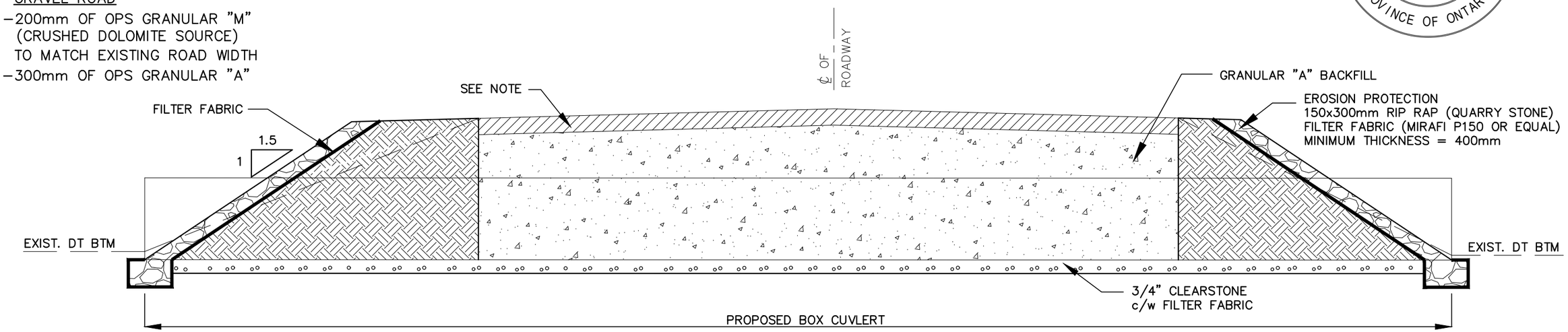
- 200mm OF OPS GRANULAR "M"
  (CRUSHED DOLOMITE SOURCE)
  TO MATCH EXISTING ROAD WIDTH
- 300mm OF OPS GRANULAR "A"



TYPICAL CULVERT PLAN

NTS

LICENSED PROFESSIONAL ENGINEER
J. H. WARNER
100520016
NOV. 13, 2024
PROVINCE OF ONTARIO



PROPOSED CROSS-SECTION

Dobbin Engineering Inc.
4218 Oil Heritage Road
Petrolia Ontario, N0N 1R0
Phone: (519) 882-0032 Fax: (519) 882-2233

DRAWING NAME:
4th Concession Road Drain Typical Concrete Box Road Culvert Detail

PROJECT No.
2024-1611

APPROVED
J. WARNER

CHECKED
B. VAN RUITENBURG

DRAWN
C. SAUNDERS

NO.	REVISIONS	DATE	BY
1	FINAL REPORT	NOV. 13, 2024	CS

SCALE 1:75
0 2m

TOWN of AMHERSTBURG

4TH CONCESSION ROAD DRAIN
TYPICAL CONCRETE BOX ROAD CULVERT DETAIL

5
OF 5

Last Updated: July 11, 2024