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January 14, 2025

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

Gentlemen and Mesdames:

Re: Amended Jeths Drain (2024)

The Jeths Drain Report, originally dated May 7, 2024, is proposed to be amended as a result of a landowner changing their request from a road design access culvert to a standard access culvert. The Landowner also requested that the new culvert be installed at the westerly limit of their property. It is therefore proposed to be combined with the adjacent access culvert. All costs associated with this work will be assessed to property requesting the change and will not be assessed to the Landowners in the watershed. This report highlights the proposed changes in "italics" and "red" font.

In accordance with your instructions, R. Dobbin Engineering has undertaken an examination with regards to improving the Jeths 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 June 5th, 2023.

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 the south part of the lot with the Landowner Index Number (L.I.N.) 2, and the drain extends 1,160m west through Lot 10, Concession 1 to an outlet in the Detroit River. The drain is closed from Station 0+000 to Station 0+120. At Station 0+120 the drain outlets to an open channel. The open channel extends 922m west where it outlets to a closed drain on the east side of County Road 20. The closed drain extends 118m west where the drain outlets to the Detroit River.

The last Engineer's Report on the Jeths Drain was prepared by M.R.M. Gerrits and is dated August 12, 2022. Under this report the Jeths Branch Drain was constructed, channel improvements were completed on the property with L.I.N. 25 and future specifications were developed for the remainder of the drainage works.

Drain Classification

The Jeths Drain is currently classified as a class "F" drain according to the Department of Fisheries and Oceans (DFO) classification 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 October 10th, 2023. The following were present:

- Josh Warner (R. Dobbin Engineering)
- Sam Paglia (Drainage Superintendent, Town of Amherstburg)
- Frank Simone (Landowner)
- John Hindi (Landowner)
- Lorraine Bortolin (Landowner)
- Adam Thompson (Landowner)

- Nick Martin (Landowner)
- Graeme Fawcett (Landowner)
- Casey Martin (Landowner)
- Sarah McLellan (Landowner)
- Mike McLellan (Landowner)

The following is a brief summary of the meeting:

- General discussion of the Drainage Act and Landowners rights under the Drainage Act.
- Landowners were made aware that there has been a request for improvements on the Jeth Drain to close the channel in the property with L.I.N. 9A.
    - As a result of this request the project will need to be brought to a sufficient outlet
    - With the current state of the drain this will involve channel improvements and culvert replacements that were originally a part of the 2022 Jeths Drain report, but were removed following the Meeting to Consider the Report.
- It was requested that the existing closed section of the drain at the upper end be videoed to see its condition.

Video of Storm Sewer (December 2023)

A video was completed of the existing storm sewer portion of the Jeths Drain to evaluate if any work should be completed under this report. Below is a summary of the findings:

MH2-MH1: Point Repair Patch at 0+011
Point Repair Patch at 0+013
MH2-MH3: Good
MH3-Outlet: Good. Debris near outlet.

Based on the above, R. Dobbin Engineering Inc. recommends that following the completion of the channel improvements, the storm sewer portion of the Jeths Drain be cleaned near the outlet to ensure the sediment is moved downstream once an improved outlet is achieved.

Existing Conditions of Culverts

The culverts within the upstream portion of the drainage works are generally ½ to ¾ full of sediment. We were therefore unable to investigate the condition of the culverts. In

order to provide freeboard for the upstream tile drain and extended enclosure the pipes require to be lowered and/or increased in size, with the exception of Culvert ~~#3~~*2*.

Discussion

Following the site meeting, surveying and preliminary design work, the Landowners with culverts were contacted to discuss the particulars of their culvert.

The Landowner with L.I.N. 13 (Culvert No. 1) requested that their culvert be sized and lengthened in order to support a road standard design and that the location be near the east limit of the property. *As outlined above this request was rescinded and the culvert has been requested to be a standard access culvert and near the west limit of the property.*

The Landowner with L.I.N. 14 (Culvert No. ~~2~~ *Now combined as Culvert No. 1)* requested that their culvert be reduced in length to provide a 6m top width and that it be located at the easterly edge of their property. It was discussed that the Landowner will have the electrical wire relocated once the culvert is removed.

The Landowner with L.I.N. 15 (Culvert No. ~~3~~ *2*) requested that their culvert be removed if it is determined to be in poor shape once it is flushed.

The Landowner with L.I.N. 19 ~~(Culvert No. 4)~~ requested that their existing culvert be removed.

Draft Report

A draft report, dated April 11, 2024 was sent to all the affected Landowners and a meeting was held on April 30, 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)
- John Hindi (Landowner)
- Frank Simone (Landowner)
- Adam Thompson (Landowner)
- Laura Simons (Landowner)
- Lorraine Bortolin (Landowner)
- Nick Martin (Landowner)
- Rick Meloche (Landowner)

The following is a brief summary of the meeting:

- General discussion of the Drainage Act.
- Landowners had questions regarding the past report and when it would be invoiced.
- No major concerns were brought forward.

Design

The proposed culverts have been designed to provide outlet for a 1 in 2-year storm event.

~~Culvert No. 1 has been designed to provide outlet for a 1 in 25-year storm event as it will potentially serve as a road culvert in the future.~~

Recommendations

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

1. The Jeths Drain shall be enclosed from Station 0+120 to 0+143.

2. The Jeths Drain shall be cleaned from Station 0+143 to 0+486 in order to provide a sufficient outlet for the upstream watershed.

3. *The two culverts adjacent proposed Culvert No. 1 shall be replaced with a single culvert.* ~~Culvert No. 1 and 2 shall be replaced. Culvert No. 1 shall be relocated to the east side of the property and shall be designed to a road standard.~~ Culvert No. ~~3~~ *2* shall be cleaned and if determined to be in poor shape shall be removed. The culverts at Station 0+315 and 0+341 shall be removed from the drainage works.

4. After the completion of construction, the lower end of the tile drain shall be flushed from Station 0+105 to 0+120.

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 $~~206,340.00~~ *161,760,* 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, beyond a standard cleanout, to enclose the drain on the property with L.I.N. 9A has been assessed to the requesting property as a benefit assessment. These costs shall be pro-rated with the remainder of the drainage works.

2. The open channel cleanout from Station 0+143 and 0+486 has been assessed in accordance with Section 2 of the Schedule of Maintenance contained in the Engineer's Report dated August 12th, 2022 with some revisions for severances and the reduction in length.

3. The installation/replacement of Culverts has been assessed based on the culvert length required to provide a 6m top width to a 2-year design standard (standard culvert). This standard culvert has been assessed with 50% of the cost applied as benefit assessment to property and the remainder of the cost assessed as an outlet assessment on upstream lands and roads based on equivalent hectares. The additional cost to provide a wider or increased size access has been assessed to the requesting property as a benefit assessment. The additional cost to work around the electrical wire on Culvert No. ~~2~~ *1* has been assessed to the property with L.I.N. 14.

4. The cost of removing the culvert at Station 0+315 has been assessed to the property as a benefit assessment as it is a secondary access.

5. *All cost associated with amending the report due to changes in the request for the culvert on the property with L.I.N. 13 has been assessed to that property as a benefit assessment.*

6. The remaining cost has generally been assessed with approx. 50% of the estimated cost assessed as a benefit assessment and the remainder assessed as outlet assessment to the 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. 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 roadways. From Station 0+105 to 0+486 access shall be from Easy Street and through the property with L.I.N. 9B and 9A or from Marsh Court and through the property with L.I.N. 9A. Access may also be gained through the property with L.I.N. 15 from Texas Road. All accesses shall be restricted to a width of 6m.

Access to the work site for future maintenance of the drain from Station 0+000 to 0+105 shall be from Marsh Court and through the individual properties on which the drain is located. All accesses shall be restricted to a width of 6m.

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

The working area for the construction and future maintenance of the tile portion of the Jeths Drain (Station 0+000 to 0+143) shall be restricted to a width of 10m along the length of the drainage works normally centred on the proposed tile drain. The working area for the channel (Station 0+143 to 0+486) shall be 10m wide and shall generally be along the north side of the channel. For construction only, the working area shall extend 10m past the banks of the channel on both sides from Station 0+120 to 0+143.

The remainder of the drainage works shall be maintained in accordance with the Engineer's Report dated August 12th, 2022

Restrictions

No trees and shrubs shall be planted nor shall permanent structures be erected within 10 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 Jeths Drain from Station 0+120 to 0+486 shall be maintained and repaired with the specifications and drawings contained in this Engineer's Report. The drain from Station 0+000 to 0+120 shall be maintained and repaired in accordance with the specifications and drawings contained in the 1993 Engineer's Report.

The Jeths Drain from Station 0+000 to 0+486 shall be maintained and repaired in the same relative portions as contained in the applicable Schedule of Maintenance contained in this report.

The culverts shall be maintained and repaired with a culvert length required to have a 6m top width and designed to a 2-year storm event. With the culverts shown on the profile, including rip rap end walls for ~~Culvert No. 2 and concrete blocks for~~ Culvert No. 1, they shall be assessed in the following manner:

Culvert Number	Benefiting Lands	Upstream Properties Based on Equivalent Hectares as Contained in SoA
1	~~79%~~ *25% to LIN 13* *25% to LIN 14*	~~21%~~ *50%*
~~2~~	~~50%~~	~~50%~~

If in the future Culvert No. ~~3~~ *2* is deemed to require replacement, at the discretion of the Engineer or Drainage Superintendent, it shall be removed from the drainage works and the costs shall be assessed to the abutting property (L.I.N. 15).

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.

The remainder of the drainage works shall be maintained in accordance with the Engineer's Report dated August 12th, 2022

Yours truly,

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

Jeths Drain

Town of Amherstburg

January 14, 2025

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	Landowner Index Number	Owner	Section 29 ($)	Section 30 ($)	Total ($)
1	Pt. Lot 10	9A	F. & A. Simone	200	400	600
	Pt. Lot 10 & Lot 11	9B	C. & N. Martin	200	600	800
	Pt. Lot 10 & Lot 11	13	P. McAllister	900	700	1,600
	Pt. Lot 10 & Lot 11	14	S. Reaume	300	200	500
	Pt. Lot 10 & Lot 11	15	J. & K. Hindi	400	300	700
	Pt. Lot 10 & Lot 11	19	N. & E. Martin	1,800	1,400	3,200
			TOTAL ALLOWANCES	$3,800	$3,600	$7,400

Town of Amherstburg
January 14, 2025

Estimate of Cost

Item Description (Supply and Install New)	Quantity	Unit	Unit Cost ($)	Total ($)
Pre-Construction Meeting	1	LS	200	200
Brushing and Tree Removal (Station 0+143 to 0+486)	1	LS	12,000	12,000
Open Channel Excavation (Station 0+143 to 0+486, Less Culverts)	282	m	40	11,280
Trucking of Excess Excavated Material	282	m	20	5,640
Restoration/Seeding	1	LS	10,000	10,000
Flushing Existing Storm Sewer From Station 0+120 to 0+105	1	LS	800	800
Reconnect Existing Tiles to Open Channel	5	each	150	750
Provisional: Additional Rip Rap as required	20	tonne	100	2,000
Silt Fence	1	LS	300	300
Enlcosure of Open Channel (Station 0+120 to 0+143)				
Brushing and Tree Removal	1.0	LS	2,000	2,000
Stripping Topsoil in Channel	23.0	m	20	460
Manufactured Coupling to Existing 375mmØ PVC	1.0	m	300	300
Supply and install 375mmØ PVC SDR 35 c/w Bedding	23.0	m	300	6,900
Fill in Open Channel with Excavated Material	1.0	LS	5,000	5,000
Rodent Grate at Outlet	1.0	LS	500	500
Rip Rap at Outlet	15.0	tonne	100	1,500
Restoration/Seeding	1.0	LS	2,000	2,000
Culvert ~~#1~~ (O.I.N. 13, McAllister)				
Removal of existing structure and excavated material at Station 0+240	1.0	LS	1,000	1,000
~~Restore Channel at Removed Culvert at Station 0+240~~		m		-
~~Supply & install 900mmØ Concrete Pipe c/w Bedding at Station 0+208~~		m		-
~~Supply and install Granular 'B' Type II~~		tonne		-
~~Supply & install Granular 'A'~~		tonne		-
~~Supply & install Concrete Block Endwalls~~		LS		-
~~Supply & install Rip Rap~~		tonne		-

Item Description (Supply and Install New)	Quantity	Unit	Unit Cost ($)	Total ($)
Culvert #~~2~~ *1* (*O.I.N. 13, McAllister &* O.I.N. 14, Reaume)				
Removal of existing structure and excavated material	1.0	LS	3,000	3,000
Restore Channel at Removed Culvert	18.0	m	60	1,080
Locate and Work Around Electrical Line	1.0	LS	300	300
Supply & install 600mmØ HDPE Pipe c/w Bedding	~~*10*~~ *18*	m	600	10,800
Supply and install Granular 'B' Type II	~~*70*~~ *100*	tonne	35	3,500
Supply & install Granular 'A'	~~*30*~~ *60*	tonne	40	2,400
Supply & install rip rap endwalls	25.0	tonne	110	2,750
Culvert #~~3~~ *2* (O.I.N. 15, Hindi)				
Flush and Clean Existing Culvert	1.0	LS	1,500	1,500
Remove Existing Culvert, Excess Material and Restore Channel at Station 0+315	1.0	LS	2,000	2,000
Remove Existing Culvert, Excess Material and Restore Channel at Station 0+341	1.0	LS	2,000	2,000
Contingency				13,860

Sub Total	*105,820*
Allowances	7,400
Engineering	26,280
Additional Engineering to Amend Report	*2,600*
Completing AODA Compliant Document	1,500
Video Storm Sewer	1,200
Estimate for Tendering, Inspection and Contract Administration	13,800
ERCA Fee	500
Total Estimate excluding HST	***159,100***
Non-Recoverable HST (1.76%)	*2,660*
Total Estimate	***$ 161,760***

SCHEDULE OF ASSESSMENT *(AMENDED)*

Conc.	Lot or Part	Affected Hectares	Landowner Index Number	Owner	Culverts/Enclosure Benefit ($)	Culverts/Enclosure Outlet ($)	Channel Benefit ($)	Channel Outlet ($)	Total ($)	Equivalent Hectares
Public Lands										
County Road 20		0.00		County of Essex	-	-	-	-	-	0.00
					-	-	-	-	-	
Agricultural Lands										
1	Pt. Lot 10	0.00	25	1109152 Ontario Limited	-	-	-	-	-	0.00
					-	-	-	-	-	
Non Agricultural Lands										
1	Pt. Lot 10	0.21	1	J. & A. Hilton	-	834	-	1,546	2,380	0.32
	Pt. Lot 10	0.11	2	J. Brown & D. Landry	-	437	-	1,080	1,517	0.17
	Pt. Lot 10	0.22	3	J. & K. Kearley	-	874	-	1,621	2,495	0.33
	Pt. Lot 10	0.11	4	T. & A. Tarte	-	437	-	1,080	1,517	0.17
	Pt. Lot 10	0.29	5	G. & A. Dethomasis	-	1,152	-	2,136	3,288	0.44
	Pt. Lot 10	0.13	6	K. Desormeaux	-	689	-	1,275	1,964	0.26
	Pt. Lot 10	0.29	7	R. & S. Meloche	-	1,152	-	2,136	3,288	0.44
	Pt. Lot 10	0.31	8	V. Lackovic	-	1,232	-	2,282	3,514	0.47
	Pt. Lot 10	0.60	9A	F. & A. Simone	25,573	1,697	-	3,549	30,819	0.90
	Pt. Lot 10 & Lot 11	0.55	9B	C. & N. Martin	-	1,556	1,633	3,253	6,442	0.83
	Pt. Lot 10	0.13	10	J. Litalien	-	689	-	1,275	1,964	0.26
	Pt. Lot 10	0.47	11	T. Laporte	-	1,330	951	2,329	4,610	0.71
	Pt. Lot 10	0.29	12	J. Di Pierdomenico	-	820	1,006	1,190	3,016	0.44

Conc.	Lot or Part	Affected Hectares	Landowner Index Number	Owner	Culverts/Enclosure Benefit ($)	Culverts/Enclosure Outlet ($)	Channel Benefit ($)	Channel Outlet ($)	Total ($)	Equivalent Hectares
	Pt. Lot 10 & Lot 11	1.91	13	P. McAllister	~~71,666~~ *27,086*	3,162	6,757	4,470	*41,475*	1.91
	Pt. Lot 10 & Lot 11	0.75	14	S. Reaume	13,481	231	2,601	2,048	18,361	1.13
	Pt. Lot 10 & Lot 11	1.08	15	J. & K. Hindi	1,314	170	3,178	2,362	7,024	1.62
	Pt. Lot 10	0.23	16	Winstar Homes & 2831035 Ontario Ltd	-	36	-	504	540	0.35
	Pt. Lot 10	0.05	17A	J. & R. Muresan	-	-	-	131	131	0.10
	Pt. Lot 10	0.05	17B	S. Gambeta & R. Booth	-	-	-	131	131	0.10
	Pt. Lot 10	0.06	18	C. Martin	-	-	-	175	175	0.09
	Pt. Lot 10 & Lot 11	2.20	19	N. & E. Martin	4,526	1,610	13,214	1,827	21,177	3.30
	Pt. Lot 10	0.37	20	C. & C. Blunt	-	-	1,351	307	1,658	0.56
	Pt. Lot 10	0.39	21	L. Bortolin	-	-	1,351	191	1,542	0.51
	Pt. Lot 10	0.32	22	G. Fawcett & K. Sullivan	-	-	1,351	81	1,432	0.48
	Pt. Lot 10	0.28	23	B. & P. Pare	-	-	1,300	-	1,300	0.42
	Pt. Lot 10	0.00	24	A. Martin & A. Chauvin	-	-	-	-	-	0.00
	Pt. Lot 10 & Lot 11	0.00	26	A. Thompson	-	-	-	-	-	0.00
	Pt. Lot 10	0.00	29	D. & J. Hay	-	-	-	-	-	0.00
	Pt. Lot 10	0.00	30	G. & M. Johns	-	-	-	-	-	0.00
	Pt. Lot 10	0.00	31	J. & D. Rawlins	-	-	-	-	-	0.00
	Pt. Lot 10	0.00	32	J. & J. Farmer	-	-	-	-	-	0.00
	Pt. Lot 10	0.00	33	L. Durocher & J. Gagnon	-	-	-	-	-	0.00
	Pt. Lot 10	0.00	34	P. & K. Tough	-	-	-	-	-	0.00
	Pt. Lot 11	0.00	27	A. Kojok & A. Ahmed	-	-	-	-	-	0.00
	Pt. Lot 11	0.00	28	D. & P. Kellam	-	-	-	-	-	0.00
	Pt. Lot 11	0.00	35	Phillip Fernades Designs	-	-	-	-	-	0.00
	Pt. Lot 11	0.00	36	J. & L. Simmons	-	-	-	-	-	0.00
					70,760	18,108	34,693	36,979	*161,760*	
					161,760					
					-					
					-					
					$161,760					

Estimated Net Assessment

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

Conc.	Lot or Part	Affected Hecatares	Landowner Index Number	Owner	Total Assessment ($)	Estimated Grant ($)	Allowances ($)	Estimated Net Assessment ($)
Public Lands								
County Road 20				County of Essex	-			-
Agricultural Lands								
1	Pt. Lot 10		25	1109152 Ontario Limited	-			-
Non Agricultural Lands								
1	Pt. Lot 10	0.21	1	J. & A. Hilton	2,380			2,380
	Pt. Lot 10	0.11	2	J. Brown & D. Landry	1,517			1,517
	Pt. Lot 10	0.22	3	J. & K. Kearley	2,495			2,495
	Pt. Lot 10	0.11	4	T. & A. Tarte	1,517			1,517
	Pt. Lot 10	0.29	5	G. & A. Dethomasis	3,288			3,288
	Pt. Lot 10	0.13	6	K. Desormeaux	1,964			1,964
	Pt. Lot 10	0.29	7	R. & S. Meloche	3,288			3,288
	Pt. Lot 10	0.31	8	V. Lackovic	3,514			3,514
	Pt. Lot 10	0.60	9A	F. & A. Simone	30,819		600	30,219
	Pt. Lot 10 & Lot 11	0.55	9B	C. & N. Martin	6,442		800	5,642
	Pt. Lot 10	0.13	10	J. Litalien	1,964			1,964
	Pt. Lot 10	0.47	11	T. Laporte	4,610			4,610
	Pt. Lot 10	0.29	12	J. Di Pierdomenico	3,016			3,016

Conc.	Lot or Part	Affected Hecatares	Landowner Index Number	Owner	Total Assessment ($)	Estimated Grant ($)	Allowances ($)	Estimated Net Assessment ($)
	Pt. Lot 10 & Lot 11	1.91	13	P. McAllister	*41,475*		1,600	*39,875*
	Pt. Lot 10 & Lot 11	0.75	14	S. Reaume	18,361		500	17,861
	Pt. Lot 10 & Lot 11	1.08	15	J. & K. Hindi	7,024		700	6,324
	Pt. Lot 10	0.23	16	Winstar Homes & 2831035 Ontario Ltd	540			540
	Pt. Lot 10	0.05	17A	J. & R. Muresan	131			131
	Pt. Lot 10	0.05	17B	S. Gambeta & R. Booth	131			131
	Pt. Lot 10	0.06	18	C. Martin	175			175
	Pt. Lot 10 & Lot 11	2.20	19	N. & E. Martin	21,177		3,200	17,977
	Pt. Lot 10	0.37	20	C. & C. Blunt	1,658			1,658
	Pt. Lot 10	0.39	21	L. Bortolin	1,542			1,542
	Pt. Lot 10	0.32	22	G. Fawcett & K. Sullivan	1,432			1,432
	Pt. Lot 10	0.28	23	B. & P. Pare	1,300			1,300
	Pt. Lot 10	0.00	24	A. Martin & A. Chauvin	-			-
	Pt. Lot 10 & Lot 11	0.00	26	A. Thompson	-			-
	Pt. Lot 10	0.00	29	D. & J. Hay	-			-
	Pt. Lot 10	0.00	30	G. & M. Johns	-			-
	Pt. Lot 10	0.00	31	J. & D. Rawlins	-			-
	Pt. Lot 10	0.00	32	J. & J. Farmer	-			-
	Pt. Lot 10	0.00	33	L. Durocher & J. Gagnon	-			-
	Pt. Lot 10	0.00	34	P. & K. Tough	-			-
	Pt. Lot 11	0.00	27	A. Kojok & A. Ahmed	-			-
	Pt. Lot 11	0.00	28	D. & P. Kellam	-			-
	Pt. Lot 11	0.00	35	Phillip Fernades Designs	-			-
	Pt. Lot 11	0.00	36	J. & L. Simmons	-			-
					161,760	-	7,400	154,360

SCHEDULE OF MAINTENANCE NO. 1

To Maintain the Jeths Drain from Station 0+143 to 0+486

Conc.	Lot or Part	Affected Hecatares	Landowner Index Number	Owner	Benefit ($)	Outlet ($)	Total ($)
Non Agricultural Lands							
1	Pt. Lot 10	0.21	1	J. & A. Hilton	-	216	216
	Pt. Lot 10	0.11	2	J. Brown & D. Landry	-	151	151
	Pt. Lot 10	0.22	3	J. & K. Kearley	-	226	226
	Pt. Lot 10	0.11	4	T. & A. Tarte	-	151	151
	Pt. Lot 10	0.29	5	G. & A. Dethomasis	-	298	298
	Pt. Lot 10	0.13	6	K. Desormeaux	-	178	178
	Pt. Lot 10	0.29	7	R. & S. Meloche	-	298	298
	Pt. Lot 10	0.31	8	V. Lackovic	-	318	318
	Pt. Lot 10	0.60	9A	F. & A. Simone	-	495	495
	Pt. Lot 10 & Lot 11	0.55	9B	C. & N. Martin	229	454	683
	Pt. Lot 10	0.13	10	J. Litalien	-	178	178
	Pt. Lot 10	0.47	11	T. Laporte	134	325	459
	Pt. Lot 10	0.29	12	J. Di Pierdomenico	140	166	306
	Pt. Lot 10 & Lot 11	1.91	13	P. McAllister	943	624	1,567
	Pt. Lot 10 & Lot 11	0.75	14	S. Reaume	363	286	649
	Pt. Lot 10 & Lot 11	1.08	15	J. & K. Hindi	443	330	773
	Pt. Lot 10	0.23	16	Winstar Homes & 2831035 Ontario Ltd	-	70	70
	Pt. Lot 10	0.05	17A	J. & R. Muresan	-	18	18
	Pt. Lot 10	0.05	17B	S. Gambeta & R. Booth	-	18	18
	Pt. Lot 10	0.06	18	C. Martin	-	24	24
	Pt. Lot 10 & Lot 11	2.20	19	N. & E. Martin	1,843	255	2,098
	Pt. Lot 10	0.37	20	C. & C. Blunt	188	43	231

Conc.	Lot or Part	Affected Hecatares	Landowner Index Number	Owner	Benefit ($)	Outlet ($)	Total ($)
	Pt. Lot 10	0.39	21	L. Bortolin	188	27	215
	Pt. Lot 10	0.32	22	G. Fawcett & K. Sullivan	188	11	199
	Pt. Lot 10	0.28	23	B. & P. Pare	181	-	181
					4,840	5,160	10,000
				Total Assessment	$10,000		

SCHEDULE OF MAINTENANCE NO. 2

To Maintain the Jeths Drain from Station 0+000 to 0+143

Conc.	Lot or Part	Affected Hecatares	Landowner Index Number	Owner	Benefit ($)	Outlet ($)	Total ($)
Non Agricultural Lands							
1	Pt. Lot 10	0.21	1	J. & A. Hilton	25	227	252
	Pt. Lot 10	0.11	2	J. Brown & D. Landry	105	103	208
	Pt. Lot 10	0.22	3	J. & K. Kearley	105	153	258
	Pt. Lot 10	0.11	4	T. & A. Tarte	105	103	208
	Pt. Lot 10	0.29	5	G. & A. Dethomasis	56	157	213
	Pt. Lot 10	0.13	6	K. Desormeaux	56	94	150
	Pt. Lot 10	0.29	7	R. & S. Meloche	86	94	180
	Pt. Lot 10	0.31	8	V. Lackovic	41	48	89
	Pt. Lot 10	0.6	9A	F. & A. Simone	249	34	283
	Pt. Lot 10	0.13	10	J. Litalien	-	9	9
					828	1,022	1,850
				Total Assessment	$1,850		

Jeths Drain
Town of Amherstburg
January 14, 2025

SPECIFICATION OF WORK

1. Location

The location of the proposed and future work outlined in this specification is in Lot 10 Concession 1 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:

- Open Channel Improvements
- Channel Enclosure
- 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. Workplace Safety and Insurance Board

Upon award of the contract and prior to commencement of work, the Contractor shall furnish the Town of Amherstburg with a satisfactory Certificate of Insurance (COI) containing the information below, for the period of the execution of the work:

i. A Commercial General Liability (CGL) policy that shall be not less than 5 million dollars per occurrence.

ii. The CGL policy shall include bodily injury including death, personal injury, property damage, tenants legal liability, non-owned automobile and contain a cross liability/severability of interest clause. The certificate must also include acknowledgement that coverage under the policy specifically extends to the

works in question. The COI shall name the Town of Amherstburg, County of Essex and R. Dobbin Engineering Inc. as additional insured to the policy.

iii. The CGL policy shall not contain any exclusion or limitation in respect to shoring, underpinning, raising or demolition of any building or structure, pile driving, caisson work, collapse of any structure or subsidence of any property, structure or land from any cause.

iv. The Contractor shall note that where construction works are performed within lands owned by the County of Essex or Ministry of Transportation, the CGL policy shall also name the County of Essex and/or the Ministry of Transportation as additional insured to the policy.

v. The liability insurance shall be endorsed to provide that the policy shall not be altered, cancelled or allowed to lapse without 30 days prior written notice to the Town of Amherstburg.

6. 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.

7. 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 (25% of the cost) shall be borne by that utility.

The electrical wire at Culvert No. ~~2~~ *1* will be relocated by the property owner following the completion of construction.

8. 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.

9. Benchmarks

The benchmarks are based on geodetic elevations. Elevations are available at the locations shown on the Profile drawing. 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.

10. 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.

11. Access and Working Area

Access to the work site for construction and future maintenance of the drain shall be from roadways. From Station 0+105 to 0+486 access shall be from Easy Street and through the property with L.I.N. 9B and 9A or from Marsh Court and through the property with L.I.N. 9A. Access may also be gained through the property with L.I.N. 15 from Texas Road. All accesses shall be restricted to a width of 6m.

Access to the work site for future maintenance of the drain from Station 0+000 to 0+105 shall be from Marsh Court and through the individual properties on which the drain is located. All accesses shall be restricted to a width of 6m.

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

The working area for the construction and future maintenance of the tile portion of the Jeths Drain (Station 0+000 to 0+143) shall be restricted to a width of 10m along the length of the drainage works normally centred on the proposed tile drain. The working area for the channel (Station 0+143 to 0+486) shall be 10m wide and shall generally be along the north side of the channel. For construction only, the working area shall extend 10m past the banks of the channel on both sides from Station 0+120 to 0+143.

The remainder of the drainage works shall be maintained in accordance with the Engineer's Report dated August 12th, 2022

12. 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 0.90m bottom and shall restore them in accordance with the restoration specification.

13. 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.

14. Strip Existing Channel

The existing channel that is being enclosed shall be stripped. The topsoil shall be stockpiled at the edge of the working allowance. Once the channel is filled and graded to the Contractor shall level the topsoil over the swale.

15. 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 be trucked offsite or utilized to fill in the channel between Station 0+120 and 0+143. The material shall be removed leaving a rounded bottom with the intent not to undercut the existing side slopes.

The north bank shall be re-sloped to 2:1 from Station 0+143 to 0+486.

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 1 of the Regulation.

16. Flushing / Cleaning of Culvert and Tile Drain

Culvert No. ~~3~~ *2* and the existing drain from Station 0+105 to 0+120 shall be cleaned/flushed. The drain from Station 0+105 to 0+120 shall be flushed after the downstream channel has been dug. If, after cleaning or in the future, Culvert No. ~~3~~ *2* is determined to be in poor shape, at the discretion of the Drainage Superintendent or Engineer, it shall be removed from the drainage works and the banks on both sides shall

be re-sloped to 2:1 and it shall be restored in accordance with the restoration specification.

17. Outlet Works at Station 0+143 (Rodent Grate and Rip Rap)

The outlet pipe at Station 0+143 shall have a manufactured rodent rotating grate. It shall be installed at the outlet to the open channel.

Erosion protection made up of rip rap and filter fabric shall be installed on the channel side slope from the bottom of the channel to the top of the bank and for a distance of 1m on either side of the outlet. Rip rap shall be made up of 150mm to 300mm quarry stone or approved equal. The area to receive the rip rap shall first be graded to allow the placement of the rip rap to a depth of 400mm below finished grade. After grading, a layer of filter fabric (Mirafi P150 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.

18. Installation of Culverts

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

The Contractor shall supply, install and backfill CSA Approved high density polyethylene (HDPE) smooth wall pipe (320 kPa) with bell and spigot joints. The Contractor shall supply, install and backfill 65-D reinforced concrete pipe with rubber gasket joints. Both shall be installed in accordance with the below specification and OPSS 410.

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. It is the Contractors responsibility to ensure that the minimum cover is achieved when backfilling the culverts.

All culverts may have concrete block or rip rap end walls. The access culverts shall be assessed, as per the report, to provide a 6m access width. If an owner requests a longer culvert than that required to achieve an 6m top width, please refer to the report.

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.

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. The top 150mm shall be backfilled with compacted 100% crushed Granular "A" material to finished grade. If asphalt is proposed, the asphalt shall be HL4 and shall match the existing thickness. In these cases, the compacted Granular "A" shall occupy 150mm below the proposed asphalt. Native backfill is not permitted.

~~The length of Culvert No. 2 is based on utilizing rip rap end walls. If concrete block end walls are proposed the culvert shall be decreased in length accordingly (a 8m culvert with concrete block end walls will provide an 6m top width).~~

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

19. Rip Rap End Walls

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.

~~**20. Block End Wall (Culvert No. 1)**~~

~~A concrete block end wall shall be utilized for Culvert No. 1 and shall be as outlined below:~~

1. ~~A swift lift device will be required to place the blocks. A 75mm eye bolt will be required to place the caps.~~
2. ~~The bottom course of blocks shall be founded on a firm solid base. The contractor shall provide a minimum levelling course of 150mm of compacted 3/4" Clear Stone, or a 100% compacted granular A, or lean concrete as a foundation base.~~
3. ~~Ensure that the base is level and flat as this will greatly improve speed of installation.~~
4. ~~On new culverts a minimum of 150mm of block wall will extend below the culvert to prevent scouring under the culvert.~~
5. ~~The bottom course of blocks shall be embedded into the drain bottom to achieve the desired top elevation of the wall.~~
6. ~~Blocks shall extend from the pipe invert across the full height and width of the drain and be imbedded a minimum of 300mm into the drain banks. Where possible the top of the block wall will match the height of the completed driveway.~~
7. ~~Blocks shall be placed such that all joints are staggered.~~
8. ~~Any excavation voids on the ends of block walls below subsequent block layers shall be filled with 3/4" Clear Stone.~~
9. ~~Where block walls extend beyond three blocks in height, they should be battered a minimum of 1 unit horizontal for every 10 units vertical throughout the wall's full height and width. This can be achieved using pre-battered base blocks, or by careful preparation of the base.~~
10. ~~Filter cloth (270R or equivalent) should be placed behind the wall to prevent the migration of fill material through the joints.~~
11. ~~The walls should be backfilled with a free draining granular fill.~~
12. ~~A uni-axial geogrid (5G350 or equivalent) should be used to tie back the headwalls where walls extend beyond 1.8m in height.~~
13. ~~The face of the block wall shall not extend beyond the end of the pipe culvert.~~
14. ~~Any gaps between the blocks and culvert shall be sealed with non-shrink grout for the full depth of the block.~~

~~Erosion protection shall be placed on the channel bottom and banks next to the end walls for Culvert No. 1. The erosion protection shall consist of 150mm x 300mm quarry stone over filter fabric (Terrafix 270R or approved equal). It shall extend 1m from the end walls from top of bank to top of bank at the end wall.~~

~~The culvert shall be backfilled in conjunction with the placement of the blocks. The gaps between the culvert and the blocks and the blocks and the retaining wall shall be filled with concrete cinder blocks/bricks and mortar to give the end wall a finished appearance.~~

~~The concrete blocks shall be Easy Block by Underground Specialties or an approved equivalent. The outlet end wall shall have a precast concrete structure surrounding the pipe. The precast structure shall allow for a lock block installation. Approved equivalents must be approved in writing by the Engineer or Drainage Superintendent prior to purchasing the blocks.~~

~~Shop drawings for the outlet headwall shall be provided to the Engineer prior to construction commencing and ordering of the blocks.~~

21. Culvert Maintenance

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

22. 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. 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.

23. Pipe to Enclose Open Channel

The pipe between Station 0+120 and 0+143 shall be PVC SDR 35. The pipe shall be attached to the existing PVC pipe with a manufactured coupling approved by the Engineer. The pipe shall be installed in the approximate location of the channel and shall be bedded with OPS Granular "A" to 300mm above the pipe. Fill from the excavated channel shall be used as backfill to fill in the channel. The material shall be compacted in no greater then 300mm lifts and shall be compacted to 98% SPMDD.

24. Seeding/Restoration

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

25. 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

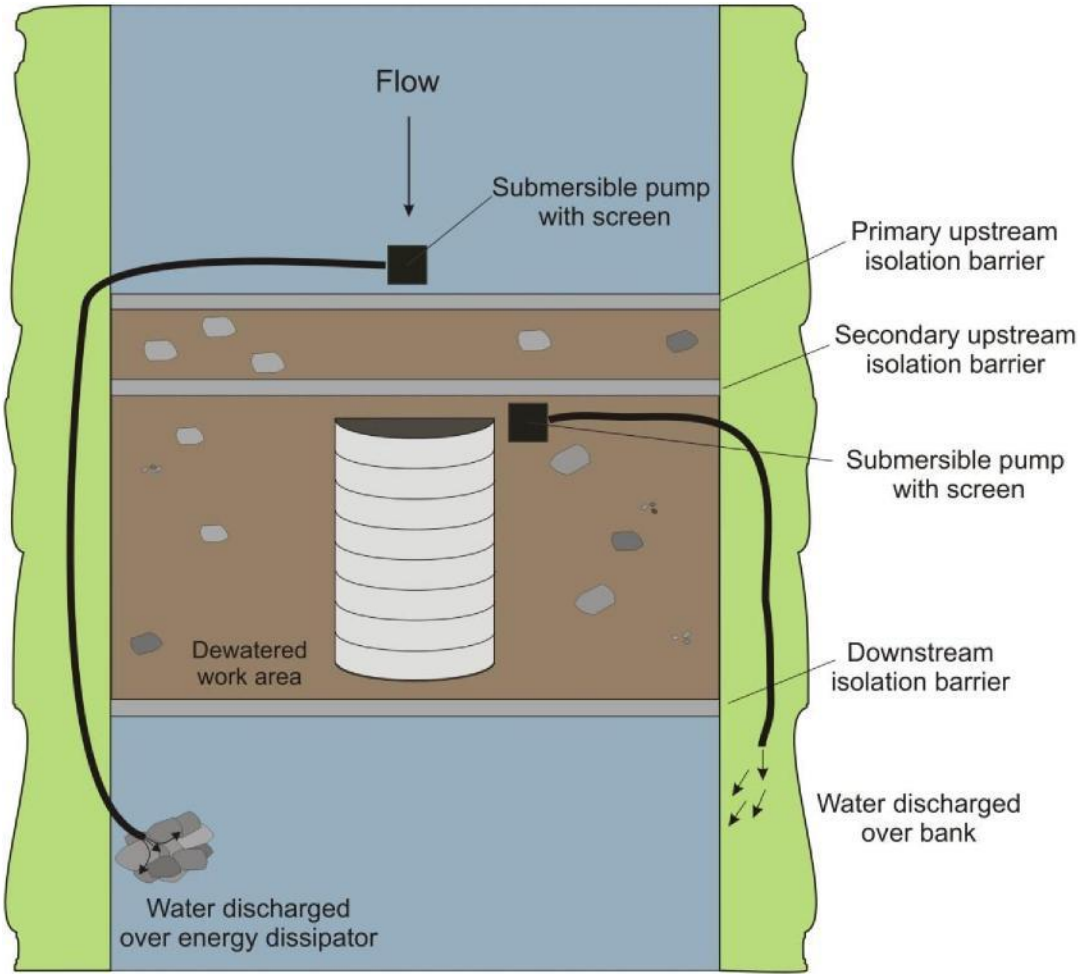


Figure 3. Isolation and Bypass Diversion when Working In-Water

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.

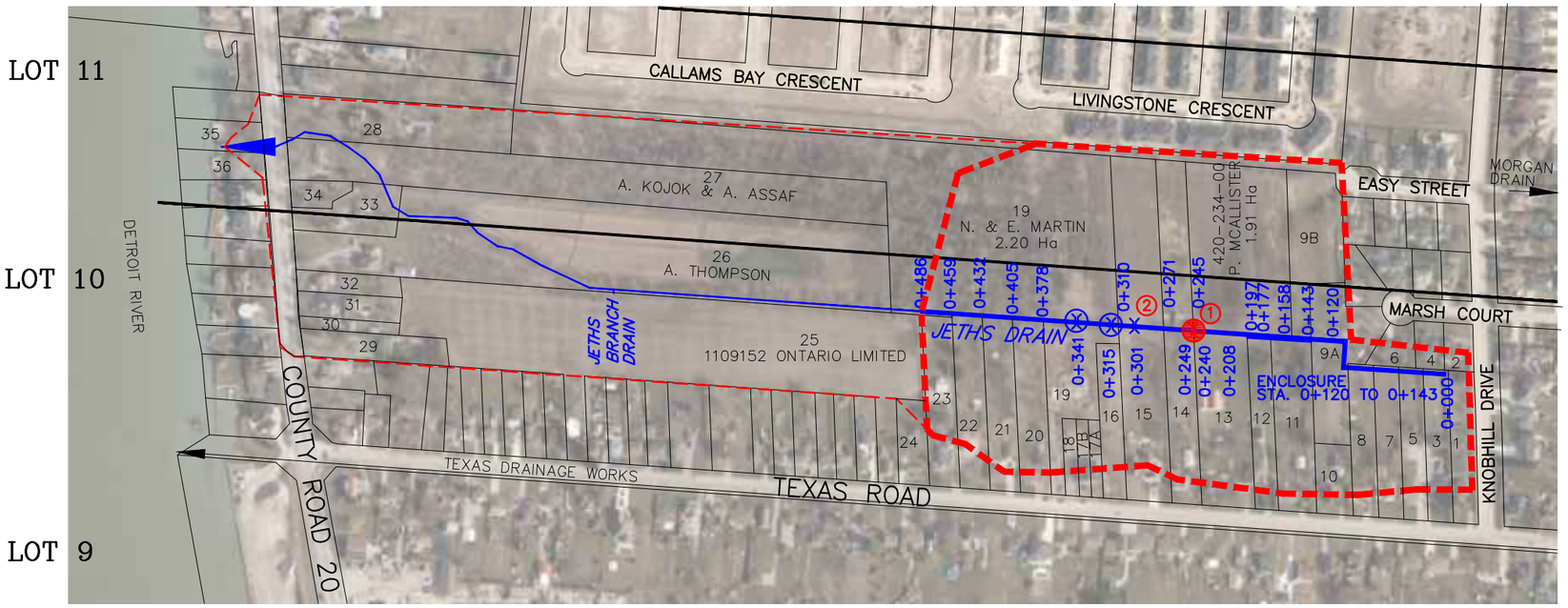
Drain Type	Restricted Activity Period
A	September 15 to July 15
B	March 15 to July 15
C	March 15 to July 15
D	October 1 to July 15
E	March 15 to July 15

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.

CONC 1



LANDOWNER IDENTIFICATION NUMBER

1. 0.21 Ha J. & A. Hilton
2. 0.11 Ha J. Brown & D. Landry
3. 0.22 Ha J. & K. Kearley
4. 0.11 Ha T. & A. Tarte
5. 0.29 Ha G. & A. Dethomasis
6. 0.13 Ha K. Desormeaux
7. 0.29 Ha R. & S. Meloche
8. 0.31 Ha V. Lackovic
9A. 0.60 Ha F. & A. Simone
9B. 0.55 Ha C. & N. Martin
10. 0.13 Ha J. Litalien
11. 0.47 Ha T. LaPorte
12. 0.27 Ha J. Di Pierdomenico
13. 1.91 Ha P. McAllister
14. 0.75 Ha S. Reaume
15. 1.08 Ha J. & K. Hindi
16. 0.23 Ha WINSTAR HOMES & 2831035 ONTARIO LTD
17A. 0.05 Ha J. & R. Muresan
17B. 0.05 Ha S. Gambeta & R. Booth
18. 0.06 Ha C. Martin
19. 2.20 Ha N. & E. Martin
20. 0.37 Ha C. & C. Blunt
21. 0.39 Ha L. Bortolin
22. 0.32 Ha G. Fawcett & K. Sullivan
23. 0.28 Ha B. & P. Pare
24. 0.00 Ha A. Martin & A. Chauvin
25. 0.00 Ha 1109152 Ont. Ltd.
26. 0.00 Ha A. Thompson
27. 0.00 Ha A. Kojok & A. Ahmed
28. 0.00 Ha D. & P. Kellam
29. 0.00 Ha D. & J. Hay
30. 0.00 Ha G. & M. Johns
31. 0.00 Ha J. & D. Rawlins
32. 0.00 Ha J. & J. Farmer
33. 0.00 Ha L. Durocher & J. Gagnon
34. 0.00 Ha P. & K. Tough
35. 0.00 Ha Phillip Fernandes Designs
36. 0.00 Ha J. & L. Simons

LICENSED PROFESSIONAL ENGINEER
J. H. WARNER
100520016
JAN. 14, 2025
PROVINCE OF ONTARIO

LEGEND

- DRAINAGE AREA
- JETHS DRAIN
- MUNICIPAL DRAIN
- EXISTING CULVERT
- CULVERT NUMBER
- EXISTING CULVERT TO BE REPLACED
- EXISTING 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: Jeths Drain Plan

PROJECT No. 2023-1527

APPROVED J. WARNER

CHECKED B. VAN RUITENBURG

DRAWN C. SAUNDERS

NO.	REVISIONS	DATE	BY
2	AMENDED REPORT	JAN. 14, 2025	CS
1	FINAL REPORT	MAY 7, 2024	CS

SCALE 1:5,000
0 40 80 120m

TOWN of AMHERSTBURG
JETHS DRAIN
PLAN

1 OF 3

Last Updated: January 14, 2025

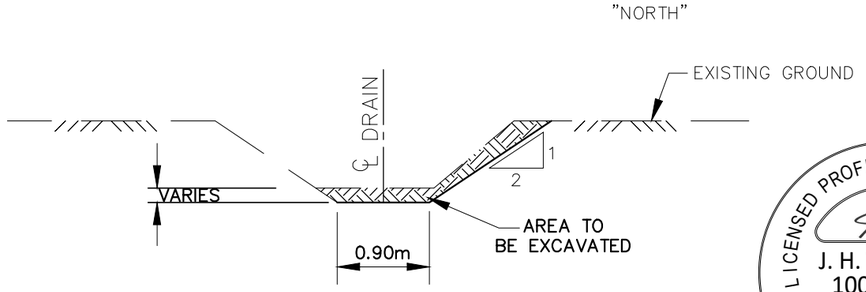
GENERAL NOTES

1. BENCHMARK No.1 ELEV. 183.70
   TOP OF LID OF MANHOLE #1
   AT STATION 0+000

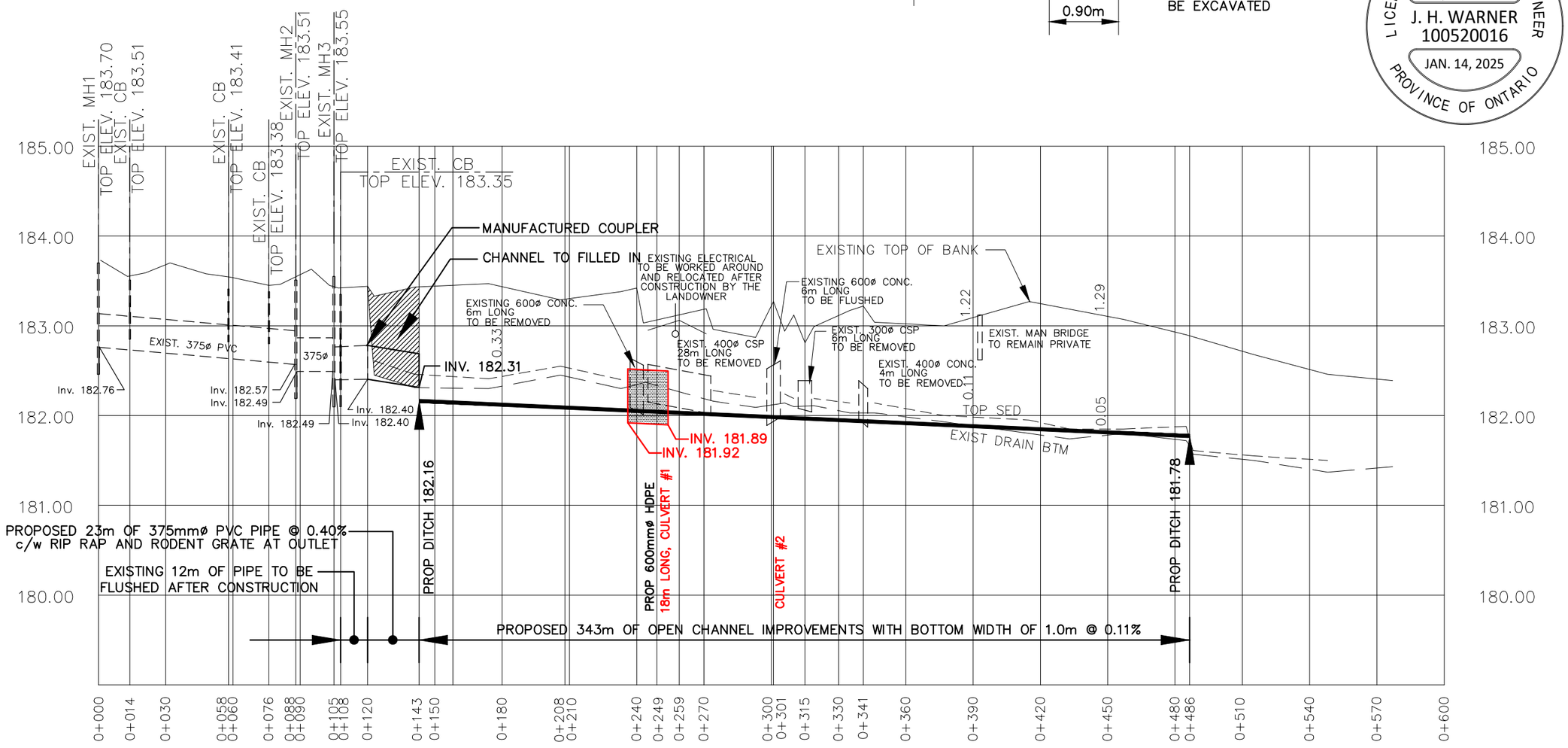
   BENCHMARK No.2 ELEV. 182.189
   TOP OF SQUARE IRON BAR ON
   SOUTH SIDE OF DRAIN AT ST. 0+487

2. UPPER NUMBERS ARE DEPTH FROM TOP OF BANK TO BOTTOM OF NEW CHANNEL.

3. LOWER NUMBERS ARE DEPTH OF PROPOSED CHANNEL EXCAVATION.



LICENSED PROFESSIONAL ENGINEER
J. H. WARNER
100520016
JAN. 14, 2025
PROVINCE OF ONTARIO



Dobbin Engineering Inc.

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

DRAWING NAME: Jeths Drain Profile

PROJECT No. 2023-1527

APPROVED J. WARNER

CHECKED B. VAN RUITENBURG

DRAWN C. SAUNDERS

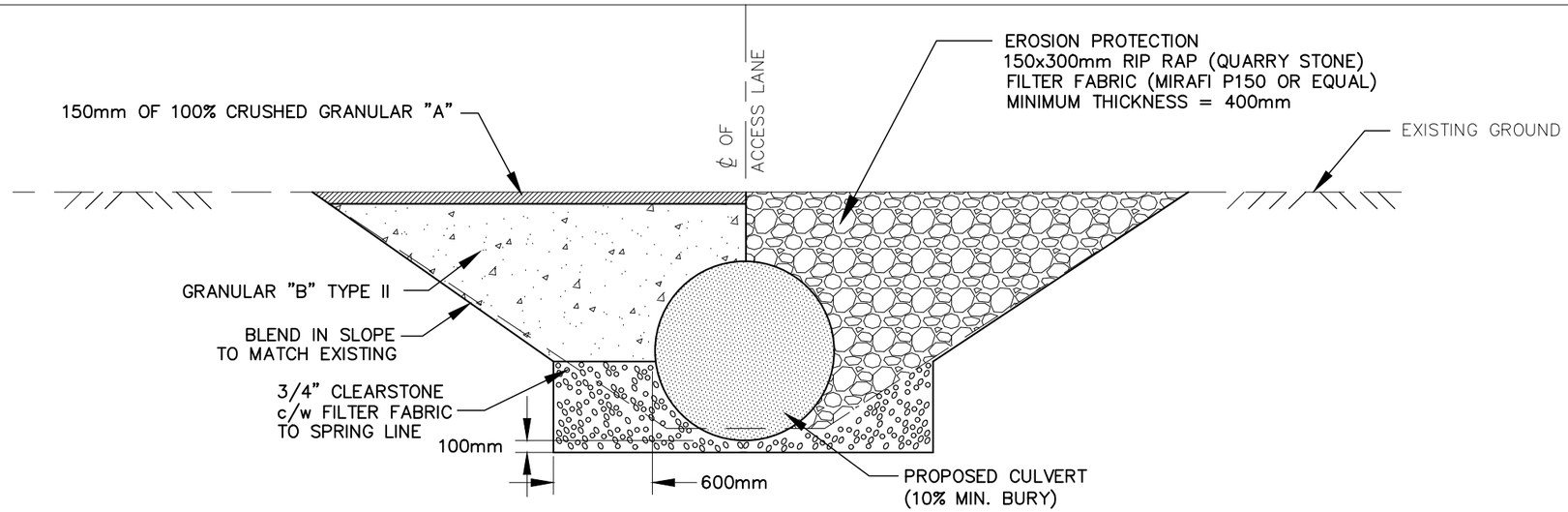
NO.	REVISIONS	DATE	BY
2	AMENDED REPORT	JAN. 14, 2025	CS
1	FINAL REPORT	MAY 7, 2024	CS

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

TOWN of AMHERSTBURG

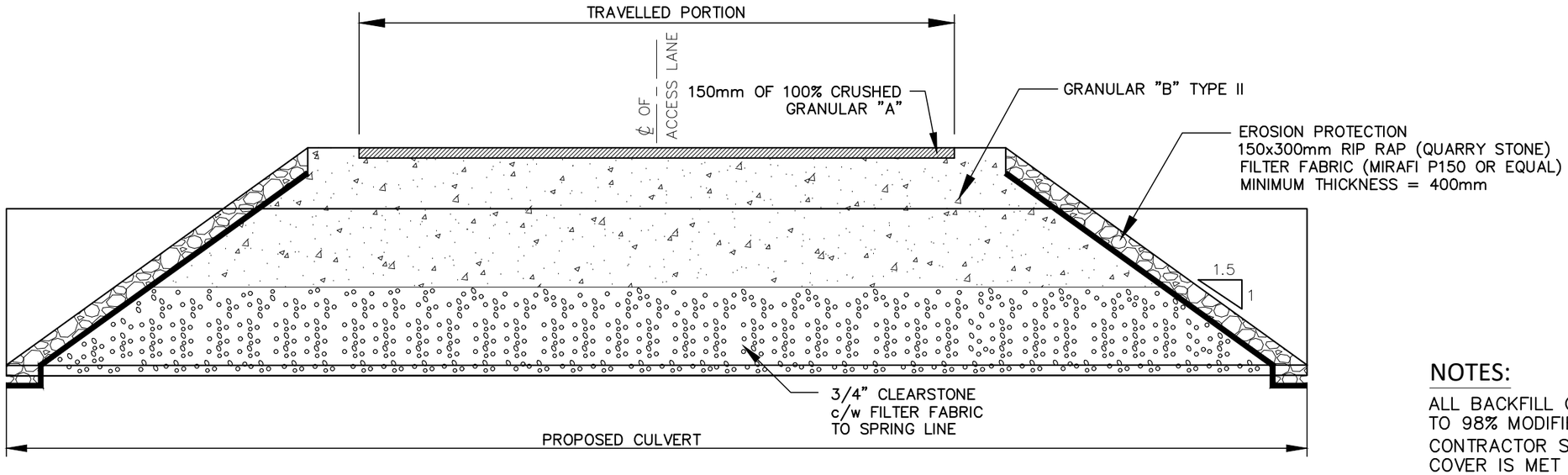
JETHS DRAIN
PROFILE

Last Updated: January 14, 2025



PROPOSED PIPE END SECTION

LICENSED PROFESSIONAL ENGINEER
J. H. WARNER
100520016
JAN. 14, 2025
PROVINCE OF ONTARIO



PROPOSED CROSS-SECTION

NOTES:

ALL BACKFILL COMPACTED
TO 98% MODIFIED PROCTOR DENSITY

CONTRACTOR SHALL ENSURE MINIMUM
COVER IS MET PRIOR TO CROSSING

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

DRAWING NAME:
Jeths Drain Culvert Detail

PROJECT No.
2023-1527

APPROVED	NO.	REVISIONS	DATE	BY
J. WARNER				
	2	AMNED. REPORT	JAN. 14, 2025	JW
CHECKED	1	FINAL REPORT	MAY 7, 2024	JW
B. VAN RUITENBURG				
DRAWN	SCALE 1:75			
J. WARNER	0 2m			

TOWN of AMHERSTBURG

JETHS DRAIN
TYPICAL SLOPED END WALL CULVERT DETAIL

Last Updated: May 7, 2024