

April 20, 2023

The Mayor and Council  
Municipality of North Middlesex  
229 Parkhill Main Street  
Parkhill, ON  
N0M 2K0

Gentlemen and Mesdames:

**Re: Stebbins Drain Branch 'C' and Pascoe Branch**

In accordance with your instructions, R. Dobbin Engineering has undertaken an examination of the Stebbins Drain and associated branches in The Municipality of North Middlesex.

Authorization under the Drainage Act

This Engineers Report that has been prepared under Sections 4 and 78 of the Drainage Act as per a petition and request from affected Landowners.

As per a petition received by the Municipality of North Middlesex. Section 4 (1) of the Drainage Act states:

A petition for the drainage by means of a drainage works of an area requiring drainage as described in the petition may be filed with the Clerk of the local Municipality in which the area is situate by,

- (a) the majority in number of the owners, as shown by the last revised assessment roll of lands in the area, including the owners of any roads in the area;
- (b) the owner or owners, as shown by the last revised assessment roll, of lands in the area representing at least 60 per cent of the hectarage in the area;
- (c) where a drainage works is required for a road or part thereof, the engineer, road superintendent or person having jurisdiction over such road or part, despite subsection 61(5);
- (d) where a drainage works is required for the drainage of lands used for agricultural purposes, the Director. R.S.O. 1990, c.D.17, s.4(1).

The petition was determined to be valid based on Section 4 (1) (a) and (b).

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

#### Existing Conditions

The Stebbins Drain outlets into Parkhill Creek in Pt. of Lot 10, Concession 28. It continues generally southerly and consists of Branches "A", "B", "C", "D", "E", "F", "G", Pascoe and Vernon as shown by the plan included in this report. Branch "A" is an open channel along its length, the lower end of the Pascoe and Vernon Branches are open, and the remainder are tile drains.

Under an Engineer's Report dated May 1, 1971 the Stebbins Drain Branch "A", "B", "C" and the Vernon Branch were constructed. Branch "A" extended to the north side of Parkhill Drive, Branch "B" extended as currently shown on the plan included in this report, Branch "C" extended to the east limit of Lot 24, and the Vernon Branch extended from the south limit of Lot 24, Concession 21 to the center of Lot 25, Concession 20.

Under an Engineer's Report dated June 24, 1977 Branch "A" was extended to the south limit of Lot 25, Concession 20 and Branches "D", "E", "F" and "G" were constructed as shown on the plan included in this report.

Under an Engineer's Report dated March 17, 1987 the Branch "A" open channel was improved.

Under an Engineer's Report dated September 18, 1997 the Pascoe Branch Drain was constructed and the Vernon Branch Drain was extended downstream.

### On-Site Meeting

A site meeting was held on July 21<sup>st</sup>, 2022.

The following were present at the meeting:

- Josh Warner (R. Dobbin Engineering)
- Vance Czerwinski (Municipality of North Middlesex)
- Ryan Hillinger (Middlesex County)
- Henry Peters (Landowner)
- Cor Verheyen (Landowner)
- Dana S. (Landowner)
- Joris Masschelein (Landowner)
- Mark Stevens (Landowner)

The following is a brief summary of the meeting:

- General discussion of the Drainage Act and Landowners rights under the Drainage Act.
- With the notice, Landowners were given a plan with a preliminary drainage area. It was mentioned that should Landowners have any concerns with the drainage area as presented they should bring it up to the engineer. No Landowners expressed any concerns with the drainage area as presented.
- A petition had been submitted to extend Branch “C” to Parkhill Drive as well as replace the existing municipal drain.
- The Landowner of the property with Roll Number 40-077 requested that the Pascoe Branch be enclosed to the Vernon Branch. The Landowner was made aware that this would not be eligible for any grants and a large portion of the costs would be assessed to the property.
- Landowners were asked if improvements were required in any other sections of the Stebbins Drain. No Landowners expressed any concerns with the remainder of the drainage works.
- No adverse soil conditions were noted at the site meeting.

### Draft Report

A draft report, dated March 9, 2023 was sent to all the affected Landowners and a meeting was held on April 20, 2023 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)
- Joanne Sadler (Municipality of North Middlesex)
- Corne Verheyen (Landowner)
- Joris Masschelein (Landowner)
- Ron McEachen (Landowner)

The following is a brief summary of the meeting:

- Discussion that maintenance should be done on the channel to improve the outlet for the proposed drains.
- General discussion of the Drainage Act and Landowners rights.

### Discussion

Apart of our survey for the Pascoe Branch of the Stebbins Drain we found that the culvert under Parkhill Drive was in very poor shape. As a result of this and discussion with Middlesex County staff, it is proposed to be replaced under this report.

### Drain Classification

The Stebbins Drain and associated Branches are all currently classified as class “F” drains according to the Department of Fisheries and Oceans (DFO) classification as presented by the Ontario Ministry of Agriculture, Food and Rural Affairs Agricultural Information Atlas.

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

The proposed work shall be carried out during low flows in the channel. The work area is to be maintained in a dry condition during construction by the Contractor.

### Approvals

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

### Design

The proposed tile drain shall be designed to accommodate a drainage coefficient of 38mm/24hrs. Tile design criteria includes a minimum tile depth of 760mm.

### Recommendations

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

1. Branch "C" of the Stebbins Drain be replaced and extended to the north side of Parkhill Drive. The existing tile drain shall be abandoned and will no longer be maintained by the Municipality at the expense of the drainage works.
2. The tile portion of the Pascoe Branch shall be extended downstream in order to enclose the channel to the Vernon Branch.
3. The Parkhill Drive culvert on the Pascoe Branch shall be replaced.

### 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 \$292,168, including engineering of the report, attending the Meeting to Consider the Report, attending the Court of Revision, and an estimate for tendering, contract administration and inspection. 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 their 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 to be assessed under Section 26 for road crossings and locating and working around utilities shall be tendered separately with the actual cost plus a portion of the engineering (25% of the construction cost) being assessed to the owner of the road or public utility.

The cost of any approvals, permits or any extra work, beyond that specified in this Report that is required by any utility, government ministry or organization (federal or provincial), or road authority shall be assessed to that organization requiring the permit, approval, or extra work.

The estimated cost of the drainage works has been assessed in the following manner:

1. As per Section 26 of the Drainage Act the roads and utilities have been assessed the increased cost of the drainage works caused by the existence of the works of the public utility or road. The road crossings, with the exception of the extra cost to locate and work around utilities, has been assessed with 100% of the estimated cost assessed as a special benefit assessment to the road authority. The utilities have been assessed 100% of the estimated cost to work around that utility as a special benefit assessment to that utility. These items shall be tendered separately with the actual cost plus a portion of the engineering (25% of the construction cost) being assessed to the owner of the utility or road. The additional costs as a result of the utilities (such as a daylighting and surveying) that are not to be tendered separately have been assessed to the utility as a benefit assessment and shall be pro-rated with the remainder of the drainage works.
2. Catch Basins have generally been assessed as a benefit assessment with 50% of the estimated cost assessed to the immediate upstream property and 50% assessed to the immediate downstream property.
3. Where the enclosure of the Pascoe Branch is proposed, 50% of a standard cleanout has been assessed as an outlet assessment to upstream lands and roads based on equivalent hectares. The remaining cost of enclosing the open channel in Lot 25, Concession 20 has been assessed with 100% of the estimated cost assessed to the property as a special benefit assessment. This cost will be pro-rated with the rest of the drainage works but will not be eligible for grant as per OMAFRA ADIP Policies.

4. The remaining cost has generally been assessed with approx. 55% 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.

#### Allowances

Under Section 29 of the Drainage Act, the Engineer in his Report shall estimate and allow in money to the Landowner 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 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 \$30,000.00 per hectare. Allowances for crop loss are based on \$2,000.00 per hectare for the first year, \$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 shall be from Parkhill Drive and along the length of Branch "C" and the Pascoe Branch. Access shall generally be restricted to a width of 6 metres.

The working area for the construction and future maintenance of the proposed tile drains shall be restricted to a width of 20m along the length of the drainage works normally centred on the proposed tile drain. The working area for the construction of the proposed tile drain enclosure shall be restricted to a width of 30m normally centred on the proposed tile drain. The working area for the Parkhill Drive culvert replacement shall extend 10m upstream and downstream of the culvert.

#### Restrictions

No trees and shrubs shall be planted nor shall permanent structures be erected within 20m of either side 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.

### Existing Private Drainage

All existing subsurface drainage encountered during the construction of the proposed tile drain shall be reconnected to the proposed tile drain. Any drains cut off by the proposed drainage works shall be plugged and sealed to the satisfaction of the Drainage Superintendent.

### Maintenance

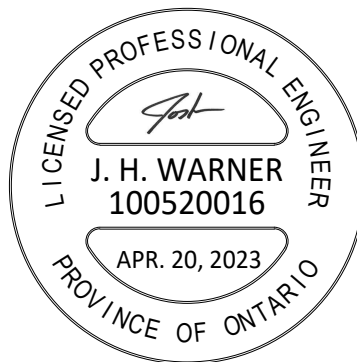
Upon completion of the work, Branch "C", including catch basins, shall be repaired and maintained as per the Schedule of Maintenance, specifications and drawings included in this report.

Upon completion of the work, the Pascoe Branch from Station 1+289 to 1+434 shall be repaired and maintained in accordance with the specifications and drawings included in this report. The Parkhill Drive culvert on the Pascoe Branch shall be maintained and repaired at the expense of the road authority. The entirety of the Pascoe Branch, except the road crossings, shall continue to be maintained in the proportions outlined in the Stebbins Drain Report dated September 18, 1997.

Yours truly,



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





Stebbins Drain Branch "C" and Pascoe Branch  
Municipality of North Middlesex  
April 20, 2023

**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	Roll No.	Owner	Section 29 (\$)	Section 30 (\$)	Total (\$)
20	N 1/2 Lot 25	40-077	Cornita Farms Ltd c/o C. Verheyen	-	2,880	2,880
	N 1/2 Lot 24	40-079	Cornita Farms Ltd	-	80	80
5	Lot 24	60-040	West Corner Farms c/o J. Masschelein	-	2,300	2,300
	W 1/2 Lot 23	60-039	M. & S. Masschelein	2,380	1,980	4,360
<b>TOTAL ALLOWANCES</b>				<b>\$2,380</b>	<b>\$7,240</b>	<b>\$9,620</b>



**Estimate of Cost**

<u>Item Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Cost (\$)</u>	<u>Total (\$)</u>
Pre-Construction Meeting	1	LS	200	200
Brushing and Tree Removal	1	LS	800	800
Enviornmental Considerations	1	LS	800	800
<u>Branch 'C'</u>				
Strip and Place Topsoil (Station 0+000 to 0+570) along tile Route	570	m	8	4,560
Locate and Decomission existing Tile	1	LS	1,500	1,500
Remove existing CB at Station 0+570	1	LS	800	800
6m of 600mmø HDPE Pipe c/w Rodent Grate	1	LS	800	800
600mmø Concrete Pipe	300	m	73	21,900
525mmø Concrete Pipe	264	m	65	17,160
Catch Basin #1 (1200mm x 900mm) c/w Connections	1	LS	3,200	3,200
Catch Basin #2 (1200mm x 900mm) c/w Connections and Berm	1	LS	3,200	3,200
Rip Rap at Outlet	15	tonne	180	2,700
Connect Existing Tiles to Proposed Drain	20	ea	100	2,000
<u>Pascoe Branch</u>				
Strip and Place Topsoil (Station 1+289 to 1+434) in existing channel	145	m	12	1,740
Strip and Place Topsoil (Station 1+289 to 1+440) along tile Route	151	m	8	1,208
Remove 6m Length of CSP at Outlet	1	LS	400	400
Junction Box #3 (1200mm x 900mm) c/w Connections	1	LS	2,800	2,800
6m of 750mmø HDPE Pipe c/w Rodent Grate	1	LS	800	800
675mmø Concrete Pipe	145	m	80	11,600
Rip Rap at Outlet	15	tonne	180	2,700

<u>Item Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Cost (\$)</u>	<u>Total (\$)</u>
Connect Existing Tiles to Proposed Drain	3	ea	150	450
Fill in Open Channel with Existing Material and Create Overflow Route	1	LS	3,000	3,000
<b>Parkhill Drive Culvert</b>				
Traffic Control	1	LS	8,000	8,000
Removal of existing structure and Milling	1	LS	4,500	4,500
Supply & install 2700mm dia. CSP c/w Bedding and Backfill to 300mm Above top of Culvert	29	m	3,000	87,000
Place Backfill	1	LS	1,200	1,200
Provisional: Supply Granular 'B'	200	tonne	30	6,000
Supply & Install Granular 'A'	50	tonne	35	1,750
Supply and Install HL4 Asphalt	15.0	tonne	200	3,000
Supply and Install HL3 Asphalt	15.0	tonne	250	3,750
Supply and Install Rip Rap Endwalls	40.0	tonne	180	7,200
Locate and Work Around Watermain	1.0	LS	600	600
Restoration	1.0	LS	800	800
				<hr/>
	Sub Total			208,118
	Contingency			16,600
	Allowances			9,620
	Engineering			37,910
	Estimate for Tendering, Inspection and Contract Administration			12,500
	Daylighting and Surveying of the Utilities			1,800
	ABCA Fee			750
	<b>Total Estimate excluding HST</b>			<hr/> <b>287,298</b>
	Non-Recoverable HST (1.76%)			4,870
	<b>Total Estimate</b>			<hr/> <b>\$ 292,168</b>

**SCHEDULE OF ASSESSMENT**

Conc.	Lot or Part	Affected Hectares	Roll No.	Owner	Special Benefit	Benefit	Outlet	Total
<b>Public Lands</b>								
	Sylvan Road	0.80		Municipality of North Middlesex		-	51	51
	Elliot Drive	-		Municipality of North Middlesex		-	-	-
	Parkhill Drive	2.40		County of Middlesex	164,069	2,130	4,721	170,920
					164,069	2,130	4,772	170,971
<b>Utilities</b>								
	Watermain			OCWA	750	1,800	-	2,550
					750	1,800	-	2,550
<b>Agricultural Lands</b>								
21	E 1/2 Lot 20	-	40-101-01	Henry J Peters Farms Ltd.		-	-	-
	W 1/2 Lot 21	-	40-100	H. & H. Stevens		-	-	-
	E 1/2 Lot 21	-	40-101	M. Peters		-	-	-
	W 1/2 Lot 22	-	40-099	S. Austin		-	-	-
	E 1/2 Lot 22	-	40-098	R. Hodgins		-	-	-
	Pt. Lot 23	-	40-097	Henry J Peters Farms Ltd.		-	-	-
	Pt. Lot 23	-	40-096	Henry J Peters Farms Ltd.		-	-	-
	Lot 24	-	40-095	T. & D. Glen Estate		-	-	-
	Lot 25	17.60	40-093	W. & H. Peters		-	373	373
	S 1/2 Lot 26	17.20	40-092-01	M. & L. Schepers		-	365	365
	N 1/2 Lot 26	15.92	40-092	Bootside Farms Inc.		-	338	338
17	N Pt. Lot 23	-	40-053	Henry J Peters Farms Ltd.		-	-	-
	Lot 22	-	40-050	K. Rombouts/837190 Ontario Limited		-	-	-
18	Lot 24	-	40-054	Henry J Peters Farms Ltd.		-	-	-
	Lot 23	-	40-055	837190 Ontario Limited c/o K. & J. Rombouts		-	-	-
	Lot 22	-	40-056	Peters Sylvan Poultry Farms		-	-	-
	Lot 21	-	40-058	A. & B. Dixon		-	-	-
19	Pt. Lot 24 & Lot 23	-	40-072	Henry J Peters Farms Ltd.		-	-	-
	Pt. Lot 24	-	40-074	Henry J Peters Farms Ltd.		-	-	-
	Lot 22	-	40-071	Henry J Peters Farms Ltd.		-	-	-

Conc.	Lot or Part	Affected Hectares	Roll No.	Owner	Special Benefit	Benefit	Outlet	Total
	Lot 21	-	40-070	D. & J. O'Neil		-	-	-
20	N 1/2 Lot 25	17.80	40-077	Cornita Farms Ltd c/o C. Verheyen	33,518	-	-	33,518
	S 1/2 Lot 25	-	40-076	Cornita Farms Ltd c/o A. Verheyen		-	-	-
	N 1/2 Lot 24	-	40-079	Cornita Farms Ltd		-	-	-
	S 1/2 Lot 24	-	40-078	Cornita Farms Ltd		-	-	-
	Lot 23	9.70	40-080	R. & K. McEachen		-	4,769	4,769
	Lot 22	9.70	40-081	Cornita Farms Ltd		-	4,769	4,769
	S 1/2 Lot 21	4.50	40-082	Cornita Farms Ltd		-	2,213	2,213
5	E 1/2 Lot 25	-	60-041	M. Jamieson		-	-	-
	Lot 24	8.10	60-040	West Corner Farms c/o J. Masschelein		24,881	672	25,553
	W 1/2 Lot 23	16.20	60-039	M. & S. Masschelein		26,802	4,967	31,769
	E 1/2 Lot 23	16.20	60-038	R. & K. McEachen		-	7,965	7,965
	Lot 22	14.20	60-037	John P Masschelein Holstein		-	6,982	6,982
6	Lot 10	-	60-127	Henry J Peters Farms Ltd.		-	-	-
	Pt. Lot 9	-	60-128	Hugh J Dietrich Farms Ltd.		-	-	-
Non-Agricultural Lands					33,518	51,683	33,413	118,614
21	Pt. Lot 22	-	40-098-01	H. Hodgins		-	-	-
	Pt. Lot 24	-	40-094	A. Cornelissen & K. Irwin		-	-	-
	Pt. Lot 25	0.10	40-093-01	S. & P. Cornelissen		-	4	4
	Pt. Lot 26	0.68	40-092-02	S. & N. Ince		-	29	29
20	Pt. Lot 25	-	40-075	D. Melvin & L. Chounard		-	-	-
	Pt. Lot 24	-	40-079-10	Cornita Farms Ltd		-	-	-
					-	-	33	33
Total - Public Lands					170,971			
Total - Utilities					2,550			
Total - Non Agricultural Lands					33			
Total Agricultural Lands					118,614			
Total Assessment					\$292,168			

**Estimated Net Assessment**

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

Conc.	Lot or Part	Affected Hectares	Roll No.	Owner	Total Assessment (\$)	Estimated Grant (\$)	Allowances (\$)	Estimated Net Assessment (\$)
<b>Public Lands</b>								
	Sylvan Road	0.80		Municipality of North Middlesex	51			51
	Elliot Drive	-		Municipality of North Middlesex	-			-
	Parkhill Drive	2.40		County of Middlesex	170,920			170,920
<b>Utilities</b>								
	Watermain			OCWA	2,550			2,550
<b>Agricultural Lands</b>								
21	E 1/2 Lot 20	-	40-101-01	Henry J Peters Farms Ltd.	-	-		-
	W 1/2 Lot 21	-	40-100	H. & H. Stevens	-	-		-
	E 1/2 Lot 21	-	40-101	M. Peters	-	-		-
	W 1/2 Lot 22	-	40-099	S. Austin	-	-		-
	E 1/2 Lot 22	-	40-098	R. Hodgins	-	-		-
	Pt. Lot 23	-	40-097	Henry J Peters Farms Ltd.	-	-		-
	Pt. Lot 23	-	40-096	Henry J Peters Farms Ltd.	-	-		-
	Lot 24	-	40-095	T. & D. Glen Estate	-	-		-
	Lot 25	17.60	40-093	W. & H. Peters	373	124		249
	S 1/2 Lot 26	17.20	40-092-01	M. & L. Schepers	365	122		243
	N 1/2 Lot 26	15.92	40-092	Bootside Farms Inc.	338	113		225
17	N Pt. Lot 23	-	40-053	Henry J Peters Farms Ltd.	-	-		-
	Lot 22	-	40-050	K. Rombouts/837190 Ontario Limited	-	-		-
18	Lot 24	-	40-054	Henry J Peters Farms Ltd.	-	-		-
	Lot 23	-	40-055	837190 Ontario Limited c/o K. & J. Rombouts	-	-		-
	Lot 22	-	40-056	Peters Sylvan Poultry Farms	-	-		-
	Lot 21	-	40-058	A. & B. Dixon	-	-		-

Conc.	Lot or Part	Affected Hectares	Roll No.	Owner	Total Assessment (\$)	Estimated Grant (\$)	Allowances (\$)	Estimated Net Assessment (\$)
19	Pt. Lot 24 & Lot 23	-	40-072	Henry J Peters Farms Ltd.	-	-		-
	Pt. Lot 24	-	40-074	Henry J Peters Farms Ltd.	-	-		-
	Lot 22	-	40-071	Henry J Peters Farms Ltd.	-	-		-
	Lot 21	-	40-070	D. & J. O'Neil	-	-		-
20	N 1/2 Lot 25	17.80	40-077	Cornita Farms Ltd c/o C. Verheyen	33,518	-	2,880	30,638
	S 1/2 Lot 25	-	40-076	Cornita Farms Ltd c/o A. Verheyen	-	-		-
	N 1/2 Lot 24	-	40-079	Cornita Farms Ltd	-	-	80	(80)
	S 1/2 Lot 24	-	40-078	Cornita Farms Ltd	-	-		-
	Lot 23	9.70	40-080	R. & K. McEachen	4,769	1,590		3,179
	Lot 22	9.70	40-081	Cornita Farms Ltd	4,769	1,590		3,179
	S 1/2 Lot 21	4.50	40-082	Cornita Farms Ltd	2,213	738		1,475
5	E 1/2 Lot 25	-	60-041	M. Jamieson	-	-		-
	Lot 24	8.10	60-040	West Corner Farms c/o J. Masschelein	25,553	8,518	2,300	14,735
	W 1/2 Lot 23	16.20	60-039	M. & S. Masschelein	31,769	10,590	4,360	16,819
	E 1/2 Lot 23	16.20	60-038	R. & K. McEachen	7,965	2,655		5,310
	Lot 22	14.20	60-037	John P Masschelein Holstein	6,982	2,327		4,655
6	Lot 10	-	60-127	Henry J Peters Farms Ltd.	-	-		-
	Pt. Lot 9	-	60-128	Hugh J Dietrich Farms Ltd.	-	-		-
Non-Agricultural Lands								
21	Pt. Lot 22	-	40-098-01	H. Hodgins	-	-		-
	Pt. Lot 24	-	40-094	A. Cornelissen & K. Irwin	-	-		-
	Pt. Lot 25	0.10	40-093-01	S. & P. Cornelissen	4			4
	Pt. Lot 26	0.68	40-092-02	S. & N. Ince	29			29
20	Pt. Lot 25	-	40-075	D. Melvin & L. Chounard	-	-		-
	Pt. Lot 24	-	40-079-10	Cornita Farms Ltd	-	-		-
					292,168	28,367	9,620	254,181



**SCHEDULE OF MAINTENANCE**  
To Maintain the Stebbins Drain Branch 'C' (Station 0+000 to 0+570)

Conc.	Lot or Part	Affected Hectares	Roll No.	Owner	Benefit	Outlet	Total
<b>Public Lands</b>							
	Parkhill Drive	2.40		County of Middlesex	-	574	574
					-	574	574
<b>Agricultural Lands</b>							
	Lot 23	9.70	40-080	R. & K. McEachen	-	579	579
	Lot 22	9.70	40-081	Cornita Farms Ltd	-	579	579
	S 1/2 Lot 21	4.50	40-082	Cornita Farms Ltd	-	269	269
5	Lot 24	8.10	60-040	West Corner Farms c/o J. Masschelein	2,762	82	2,844
	W 1/2 Lot 23	16.20	60-039	M. & S. Masschelein	2,737	603	3,340
	E 1/2 Lot 23	16.20	60-038	R. & K. McEachen	-	967	967
	Lot 22	14.20	60-037	John P Masschelein Holstein	-	848	848
					5,499	3,927	9,426
				Total - Public Lands	574		
				Total Agricultural Lands	9,426		
				Total Assessment	10,000		



Stebbins Drain Branch “C” and Pascoe Branch  
Municipality of North Middlesex  
April 20, 2023

## **SPECIFICATION OF WORK**

### **1. Location**

The Stebbins Drain Branch “C” and Pascoe Branch are proposed to be improved in Lots 23 and 24, Concession 5, Lot 25, Concession 20 and at the Parkhill Drive road crossing in The Municipality of North Middlesex.

### **2. Scope of Work**

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

- Open channel enclosure
- Supply and installation of concrete tile
- Supply and installation of catch basins structures
- Road Culvert Replacement at Parkhill Drive

### **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 be responsible for the notification of all utilities prior to the start of construction.

Measurement for Payment Clauses have not been included in these specifications and will be part of the Construction document. If the Construction document has not identified Measurement for Payment Clauses, the Contractor must notify the Municipality of North Middlesex and request clarification 2 days prior to pricing the project.

#### **4. Plans and Specifications**

This Specification of Work shall take precedence over all plans and general conditions pertaining to the Contract. The Contractor shall provide all labour, equipment, and supervision necessary to complete the work as shown in the Plans and described in these specifications. Any work not described in these specifications shall be completed according to the Ontario Provincial Standard Specifications and Standard Drawings.

Any reference to the Owner contained in these Contract Documents shall refer to The Municipality of North Middlesex or the Engineer authorized by The Municipality of North Middlesex to act on its behalf.

#### **5. 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.

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

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 non-compliance will be issued. The Contractor will be responsible for reacting immediately to any deficiency and correcting any potential health and safety risk. Continuous disregard for any requirement of the Occupational Health and Safety Act could be cause for the issuance of a stop work order or even termination of the Contract.

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

#### **6. Pre-Construction Meeting**

There is a requirement for a pre-construction meeting to be held prior to any construction taking place. The meeting shall be scheduled by the Contractor. The Landowners, Engineer, Middlesex County and the Municipality of North-Middlesex shall be notified of the pre-construction meeting at least 48 hours prior.

#### **7. 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 with the owners at least two full working days in advance. Roads must be

kept open to local traffic and all obstructions and diversions of traffic must be approved by the Engineer or Drainage Superintendent and Roads Superintendent at least two (2) full working days in advance.

- 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 Road 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.

## **8. Access and Working Area**

Access to the work site for construction and future maintenance shall be from Parkhill Drive and along the length of Branch "C" and the Pascoe Branch. Access shall generally be restricted to a width of 6 metres.

The working area for the construction and future maintenance of the proposed tile drains shall be restricted to a width of 20m along the length of the drainage works normally centred on the proposed tile drain. The working area for the construction of the proposed tile drain enclosure shall be restricted to a width of 30m normally centred on the proposed tile drain. The working area for the Parkhill Drive culvert replacement shall extend 10m upstream and downstream of the culvert.

## **9. Benchmarks**

The benchmarks are based on geodetic elevations. Elevations are available at the locations shown on the Plan and 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.

## **10. Removals**

The existing catch basins and culverts along the length of the improvements and as identified in the estimate of cost and tender shall be removed in their entirety and shall be disposed offsite at the expense of the Contractor.

## **11. Expose Existing Drain**

The existing tile drains shall be exposed and crushed at the discretion of the Drainage Superintendent or Engineer and Contractor in order to adequately determine the proposed alignment. The proposed tile drain shall generally run beside or up the existing main. The side the new tile runs on shall be determined by the Drainage Superintendent once the existing tile is exposed.

## **12. Brushing and Tree Removal**

All brush, trees, woody vegetation, stumps etc. shall be removed for a width of 20 metres along the tile drain. They shall be removed in their entirety including stumps. Removal of all brush, trees, woody vegetation, stumps etc. in order to facilitate the excavation of the open channel shall be removed at the discretion of the Drainage Superintendent or Engineer and shall be included as part of this item.

It is recommended that a mechanical grinder attached to an excavator 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. The Contractor is responsible for the burning of the trees and brush. 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.

For future maintenance it is recommended that, if necessary, appropriate spray be applied to the stumps, brush, and after-growth for two years following construction to maintain brush control.

## **13. Strip and Place Topsoil**

The Contractor shall strip the topsoil for a width of 6m normally centered on the proposed drain. The topsoil shall be stockpiled at the edge of the working allowance for the duration of the tile installation. Once the tile is installed, the Contractor shall level the topsoil over the drain to their pre-construction condition.

#### **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 the Contractor shall level the topsoil over the swale.

#### **15. Fill in Open Channel with Material On-Site and Create Overflow Swale**

The Landowner will be bringing the required material on site to fill in the open channel, beyond the excess from the tile installation. The Contractor will be responsible for levelling the material into the channel and creation of the overflow swale.

#### **16. Installation of Tile**

The Contractor shall supply, install, and backfill the specified sizes of tile and pipe to the depths and grades as shown on the drawings.

Concrete tile shall conform to ASTM C412, extra quality. Tile shall have a circular interior and exterior shape.

Where the concrete tile depth is greater than 2.5m the tile shall be 2000D concrete tile and shall be bedded to the spring line with clear stone. The estimated length of 2000D concrete tile required has been shown as a separate item. Clear stone bedding to the spring line shall be included as part of this item.

It is intended that the proposed tile drain **run beside or up the existing drain. The Contractor shall decommission the existing tile drain.** The exact location of tile can be changed under the direction of the Drainage Superintendent or Engineer.

The trenching and laying of the concrete tile shall be done by wheel machine. An excavator must be used in areas of soil instability, unless approved by the Engineer. All tile joints shall be wrapped with a minimum 300mm width of Mirafi P150 (or approved equal) filter fabric. The filter fabric shall be overlapped by 450mm at the top of the tile. The tile shall be laid in straight lines or on smooth gradual curves with a minimum radius or 25m.

Where approved by the Engineer (or specified) concrete tile may be laid in tighter curves by saw cutting joints. The maximum deflection of one concrete tile joint shall be 22 degrees. Turns of greater than 22 degrees shall require the use of manufactured bends (PE smooth wall).

Laser control shall be used to ensure proper grades. The grades calculated on the Profile are to the invert of the tile and pipe with allowances to be made by the Contractor for the wall thickness of the tile and pipe. The depths shown and figured are from ground level to the invert of the pipe along the line of the proposed drain. Should an error appear in the

figured depth at any station or stations, the grade shall be made to correspond with that shown on the Profile without extra charge.

#### Wheel Machine

A wheel machine shall be used to excavate the trench to allow for a round bottom. Prior to backfilling, the tile shall be covered manually to a depth of approx. 100mm over the pipe to ensure that the tile and pipe are not displaced by large clumps of earth. The trench shall be backfilled with excavated material free of stones, broken tile or other deleterious material. All stones larger than 100mm in diameter evident immediately after construction shall be picked up by the Contractor and disposed offsite. The Landowners are responsible for stones after that. The material shall be left windrowed over the trench to allow for settlement.

#### Excavator

When concrete tile is installed with an excavator, the tile must be installed as per the manufacturer's recommendations **complete with bedding to the spring line**. Prior to backfilling, the tile shall be covered manually to a depth of approx. 100mm over the pipe to ensure that the tile and pipe are not displaced by large clumps of earth. The trench shall be backfilled with excavated material free of stones, broken tile or other deleterious material. All stones larger than 100mm in diameter evident immediately after construction shall be picked up by the Contractor and disposed offsite. The Landowners are responsible for stones after that. The material shall be left windrowed over the trench to allow for settlement.

If the land level must be lowered in order to carry out trenching operations, then it is up to the Contractor to determine if it is necessary and include any extra cost involved. They shall first strip the topsoil to its full depth and stockpile it along one side of the working width and then grade the area to allow the trenching to be carried out. All excavated material shall be windrowed on the side opposite the trench that the topsoil is stockpiled. After trenching and backfilling operations are complete, the topsoil shall be spread to its original depth.

All areas disturbed by construction, except the material windrowed over the trench, shall be left in a condition suitable for cultivation. Final levelling or the removal of excess material shall be the responsibility of the Landowner.

The Contractor shall not operate any trenching or backfill equipment, delivery trucks or equipment, pickup trucks or other vehicles along or over the trench during or after construction. The Contractor shall be responsible for any damage caused by any equipment or vehicles operated over the trench. If the Contractor must cross the trench, he will do so in one area.



The Landowners are also warned not to operate farm equipment over the trench or along the length of the trench for 1 year after construction in order to protect the tile.

The Contractor shall create an overflow route towards the downstream open channel of the Pascoe Branch enclosure. This shall generally be located at the location of the existing channel. The Contractor shall bring in the required fill material to ensure a minimum of 750mm of cover is achieved over the installed tile.

Future replacements shall conform to these specifications.

### 17. Catch Basins

Structure	Station	Type (mm)	Inlet Elev. (m)	Outlet Pipe Elev. (m)	Inlet Pipe Elev. (m)
CB #1	0+306	900x1200	182.00	180.46 (NW) 600	180.49 (SE) 525
CB #2 c/w Berm	0+570	900x1200	183.50	181.63 (NW) 525	181.70 (SE) 450

The catch basins shall be square precast concrete structures as noted above and shall have a birdcage type grate. The ditch inlet catch basins shall have a 2:1 sloped top. The direction in the inlet elevation column denotes the direction the low side of the ditch inlet catch basins shall face. The catch basins shall be located with the backside at the property line and at the locations identified on the Plans. The catch basin elevations shall be 50mm above grade. When specified the catch basins shall have a berm constructed on the downstream property. The top of the berm shall be 0.60m above the inlet elevation. The berm shall have a 2:1 front slope and 5:1 back slope with a 1m wide top. The height and back slopes can be increased under the direction of the Drainage Superintendent in order to reduce erosion and facilitate farming. Care shall be taken to ensure this does not negatively impact upstream lands. The berms shall be constructed using excess materials on site. If more material is required it shall be supplied at the expense of the drainage works.

The catch basins shall be made with the top sections separate from the base sections in order to allow riser sections to be installed or removed as necessary (i.e. the base section shall not extend for more than 150mm above the top of the highest opening in the base section). The wall thickness of all structures shall be 115mm and each shall have a 300mm sump. Birdcage grates shall be manufactured with a bar spacing no larger than 50mm.

The catch basins shall be set at the final elevations as directed by the Drainage Superintendent. The catch basins shall be set on a layer of clear stone. The clear stone shall be extended up to the spring line of the inlet and outlet pipe connections.

The tile at the connection to the catch basins shall be concreted on both the inside and outside prior to backfilling. Any pipe or tile shall not protrude more than 50mm inside the wall.

The Drainage Superintendent or Engineer may change a birdcage type grate on a catch basin to a concrete lid or sloped birdcage grate at the request of a Landowner.

### 18. Junction Boxes

The junction boxes shall be installed to the elevations and in the locations shown on the drawings as follows:

Structure	Station	Type (mm)	Top Elev. (m)	Outlet Pipe Elev. (m)	Inlet Pipe Elev. (m)
JB #3	1+440	900x1200	181.90	180.81 (E) 675	180.94 (W) 450

The junction boxes shall be square precast concrete structures as noted above. The box shall be built in order to minimize the depth from the top of the tile to the lid.

The junction boxes shall be made with the top sections separate from the base sections in order to allow riser sections to be installed or removed as necessary (i.e. the base section shall not extend for more than 150mm above the top of the highest opening in the base section). The wall thickness of all structures shall be 115mm and each shall have a 300mm sump. The top of junction boxes shall be set a minimum of 600mm below grade to accommodate farm tillage practices.

The junction boxes shall be set on a layer of clear stone. The clear stone shall be extended up to the top of the inlet and outlet pipe connections

The tile at the connection to the junction boxes shall be concreted on both the inside and outside prior to backfilling. Any pipe or tile shall not protrude more than 50mm inside the wall.

The Drainage Superintendent may change a concrete lid on a junction box to a birdcage type grate creating a catch basin at the request of a Landowner.

## **19. Subsurface Drainage**

All existing subsurface drains encountered during construction of the tile drain shall be connected to the proposed tile drain unless otherwise noted on the drawings or as directed by the Drainage Superintendent. The downstream end shall be plugged to the satisfaction of the Drainage Superintendent.

For 100mm and 150mm subsurface drains, the upstream end of the subsurface drain shall be connected to the tile drain at a 45-degree angle. A suitable length of equivalent sized PE agricultural tubing shall be used to connect the drains. Manufactured fittings shall connect the PE tile to the existing drain and to the concrete tile. 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. It is recommended that clear stone be used under the connections at the tile drain.

Where an existing subsurface drain needs to cross the existing open channel to tie into the proposed tile the open channel shall be excavated to its hard bottom. Drainage stone shall be used to bed the pipe from the bottom of the channel to the spring line of the tile.

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

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 and to the concrete tile. 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.

## **20. Outlet Works**

The outlet works for the drain shall consist of 6m of HDPE smooth wall pipe as shown on the profile (320 kPa) with 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 pipe. 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 (Terrafix 270R 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.

## **21. Parkhill Drive Culvert Replacement**

The Contractor is required to have a County approved traffic control plan prior to any work commencing. The culvert replacement shall conform to both the County's specifications and those outlined in this report. If conflicts exist between the specifications, the more stringent shall apply.

The culvert shall be removed in its entirety and disposed offsite at the expense of the Contractor. The asphalt shall be sawcut and milled for a thickness of 45mm and 0.30m past the joint. The milled surface shall be tack coated as per OPSS.

The Contractor shall supply, install, and backfill aluminized corrugated steel pipe (CSP) as specified. CSP shall have a minimum wall thickness of 2.8mm in all cases and 125 x 25mm corrugations. Future culvert replacements shall be to these same specifications.

The culverts shall be installed generally in the same location or as approved by the Drainage Superintendent. The culverts shall be installed with the invert 10% (minimum 100mm) below the proposed channel bottom and as specified on the profile.

The culvert length is based on using rip rap ends. If concrete block ends are to be utilized, the culverts shall be shortened proportionate to the sloped ends (1.5:1.0).

All backfill shall be free from deleterious material. All granular bedding and backfill material shall be mechanically compacted to 98% modified standard proctor density.

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 300mm above the pipe. The bedding material shall not be native material. 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. Within the road allowance, the pipe shall be backfilled above the clear stone with Granular "B" or suitable reused granular material at the discretion of the Drainage Superintendent or Engineer. Outside the road allowance, excavated material can be used. If, at the discretion of the Drainage Superintendent, the existing material on site is not sufficient for backfill, payment for imported fill shall be at the unit price specified in the Contract documents. The sub-base shall consist of a minimum of 150mm of 100% crushed OPS Granular "A". The sub-base material shall not be native material. The asphalt shall be HL4 and HL3 at depths to match the existing thickness, with a minimum of 50mm of HL4 and 45mm of HL3. Lifts shall not be greater than 50mm. If the existing material is stable a 1:1 slope for the frost taper will be utilized, rather than as specified on the county's drawings. This shall be determined at the discretion of the County and the Engineer at the time of construction.

Rip rap end walls 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 (Terrafix 250R 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. For rip rap end walls, the clay material shall generally be used close to the end walls with gravel material being used for the center drive area.

If concrete blocks 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. Payment for 600mm x 600mm x 1200mm and 300mm x 600mm x 1200mm blocks shall be at the unit price in the contract documents while the 600mm x 600mm x 2400mm blocks shall be counted as two blocks. The blocks shall extend as determined by the Drainage Superintendent. The backfill behind the blocks shall consist of Granular "B" and shall be included in the unit price specified in the Contract documents.

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. 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.

The blocks shall be placed over a layer of filter fabric (Terrafix 270R 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.

The future culvert replacements shall be to the following sizes, at a minimum, and may be replaced with an equivalent sized arch or round pipe or box culvert at the discretion of the Drainage Superintendent.

## **22. Seeding/Restoration**

All grass areas disturbed by construction, shall be hand seeded on a daily basis or hydroseeded immediately following construction in accordance with the seed mixture, fertilizer and application rate as shown below. Spreading of the seed shall be by use of a mechanical spreader.

If the hand seed or hydroseed has not germinated, at the discretion of the Engineer or Drainage Superintendent, prior to the one-year maintenance period, 100mm of screened topsoil shall be placed on all grass areas disturbed by the construction, and shall be hydroseeded in accordance with the seed mixture, fertilizer and application rate as shown below.

Seed mixture, fertilizer and application rates are as follows:

- Canada Wild Rye (*Elymus Canadensis*), Virginia Wild Rye (*Elymus virginicus*), or Indian grass (*Sorghastrum nutans*)
- Fertilizer (300 kg/ha.) consisting of 8-32-16.
- Hydraulic mulch (2,999 kg/ha.) type “B” and water (52,700 litres/ha.) in accordance with OPSS 572 (hydroseed).

The above seed mixture shall apply unless otherwise approved by the Drainage Superintendent or Engineer.

### **23. 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 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.

A 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 577 and OPSD 219.110. The light duty silt fencing shall be removed once construction is complete.

## PERMIT

Pursuant to Ontario Regulation 147/06 Development, Interference with Wetlands & Alterations to Shorelines & Watercourses Regulation

### SCHEDULE 1 OF 2

THIS PERMIT MUST BE SIGNED BY THE APPLICANT AND AN OFFICIAL OF THE ABCA TO BE VALID.

ISSUED FOR APPLICANT'S SIGNATURE ON: **March 29, 2023**

THIS PERMIT EXPIRES ON: **March 28, 2024**

**Permit to:** Alteration to a watercourse in accordance with Ontario Regulation 147/06 and amendments thereto.

**Applicant:** Municipality of North Middlesex  
229 Main Street  
Parkhill, ON. N0M 2K0

**For the following works:** to allow a Section 78 (Drainage Act) Drain Improvement per R. Dobbin Eng.

**Subject Property:** Lot 23, 24 Con. 5 McGillivray / Lot 24, 25 Con 20 W. Williams

**Part Lot:**                      **Concession:**

**Municipality:** North Middlesex

**During the period:** March 29, 2023 to March 28, 2024

**SUBJECT TO THE FOLLOWING SPECIFIC AND GENERAL CONDITIONS:**

*(Read conditions carefully before signing at bottom of permit form)*

**SPECIFIC CONDITIONS:** Refer to conditions on Schedule 2

**GENERAL CONDITIONS:** See reverse side of this form. Read carefully before signing.

**DECLARATION:**

- I agree to carry out or cause to be carried out the work(s) indicated above in compliance with the conditions set out herein and in accordance with the information in the application and any accompanying plans.
- I realize that this permit may be revoked if the conditions of the permit are not complied with.
- I also realize that the permit is valid only for the time period specified and I agree to request an extension from the Authority prior to the expiration of this period should an extension be required.
- I recognize and accept that the information in this permit is a public record and some or all of it may be released.
- I agree to allow authorized representatives of the ABCA to enter onto the property to inspect for compliance with the conditions of this permit.

Signature of Applicant

X *Joanne Sadler*

Signature of Agent/Contractor (if applicable)

X

DO NOT WRITE IN THIS SPACE

Authority Official \_\_\_\_\_

Title \_\_\_\_\_

- ABCA     Agent/Contractor     Municipality     Applicant



# GENERAL CONDITIONS

The applicant, by acceptance and in consideration of the issuance of this permit, agrees to the following conditions:

1. This permit does not preclude any other legislation, federal or provincial, or necessary approvals from the local municipality. Further, this permit does not include permission for any other program offered by the ABCA unless specifically noted in Schedule 2.
2. Authorized representatives of the Ausable Bayfield Conservation Authority may, at any time, enter onto the lands which are described herein in order to make surveys, examinations, investigations or inspections which are required for the purposes of ensuring that the work(s) authorized by this permit are being carried out according to the terms of this permit.
3. The applicant agrees:
  - (a) that this permit issued herein is based upon the plans or sketches submitted to the Ausable Bayfield Conservation Authority and the accuracy of the matters contained in the application to the Authority.
  - (b) that this permit shall not release the applicant from any legal liability or obligation and remains in force subject to all limitations, requirements and liabilities imposed by law;
  - (c) that all complaints arising from the execution of the works authorized under this permit shall be reported prior to the expiration of this permit by the applicant to the Ausable Bayfield Conservation Authority. The applicant shall indicate any action which has been taken, or is planned to be taken, if any, with regard to each complaint.
4. This permit is not transferable without prior written permission from the Ausable Bayfield Conservation Authority.
5. The applicant acknowledges that this permit is based upon the review of the application in relation to the Flood Plain Management and/or Hazard Land Policies of the Province of Ontario and the Ausable Bayfield Conservation Authority. The standards set out in these policies may be exceeded and therefore flooding and/or slope instability may still occur.
6. The applicant acknowledges that should the works be carried out contrary to the terms of this permit, the applicant may be in violation of the Development, Interference with Wetlands & Alteration to Shorelines & Watercourses Regulation of the Ausable Bayfield Conservation Authority, and subject to the penalties under the *CONSERVATION AUTHORITIES ACT*.

This permit is a public record which is accessible upon request.  
The information in this permit is collected under the authority of the  
*CONSERVATION AUTHORITIES ACT*.

Initials

JS

**PERMIT**  
**SCHEDULE 2 OF 2**

**Applicant:** Municipality of North Middlesex per R. Dobbin Engineering

**SPECIFIC CONDITIONS: continued from Schedule 1**

- (i) that development shall be in accordance with the following plans and specifications;
  - a) Site Location Plan (Attached)
  - b) Specifications and Drawings 1 through 4 for the Stebbins Drain Branch C and Pascoe Branch, per R. Dobbin Eng. Report, January 20, 2023 (16 pgs);
- (ii) that the work shall be undertaken so as to minimize flooding upstream and downstream;
- (iii) that in locations where alteration to open channel occurs, the work shall be completed such that channel width is restored to original specifications or as directed by the drainage engineer;
- (iv) that the work shall be scheduled during periods of no / low flow conditions to minimize sediment movement and *erosion*. Avoid work after recent precipitation or snow melt;
- (v) that equipment shall be chosen, suitable for site conditions in order to minimize site disturbance by equipment (e.g. frozen or dry soil conditions or the use of load distributing machines or mats). ;
- (vi) that brush, debris and sediment shall be managed such that these materials shall not re-enter the watercourse;
- (vii) that appropriate control measures shall be in place before work begins and maintained until all disturbed areas are stabilized in order to minimize erosion;
- (viii) that, with the exception of cultivated lands, any areas of disturbed or bare soil around the drain should be seeded with native, non-invasive herbaceous material while the ground is moist and conditions are appropriate for germination.;
- (ix) that there shall be no encroachment onto lands not owned by the Applicant without written consent from any affected landowner(s);
- (x) that design details and work plan associated with the Parkhill Drive culvert replacement shall be subject to the approval of the road authority;
- (xi) that it is the expectation of ABCA that all approvals, federal, provincial or municipal, as may be required have been obtained by the Applicant;

**It is the applicant's responsibility to insure that the works described in the attached permit take place in accordance to the Government of Ontario's emergency response to COVID-19**

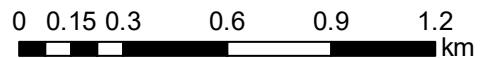
**THIS IS SCHEDULE 2 OF 2**

Initials

JS



## Site Location File 23916



This map has been compiled from various sources and is for information purposes only. The ABCA takes no responsibility for, nor guarantees, the accuracy of all the information contained within the map.

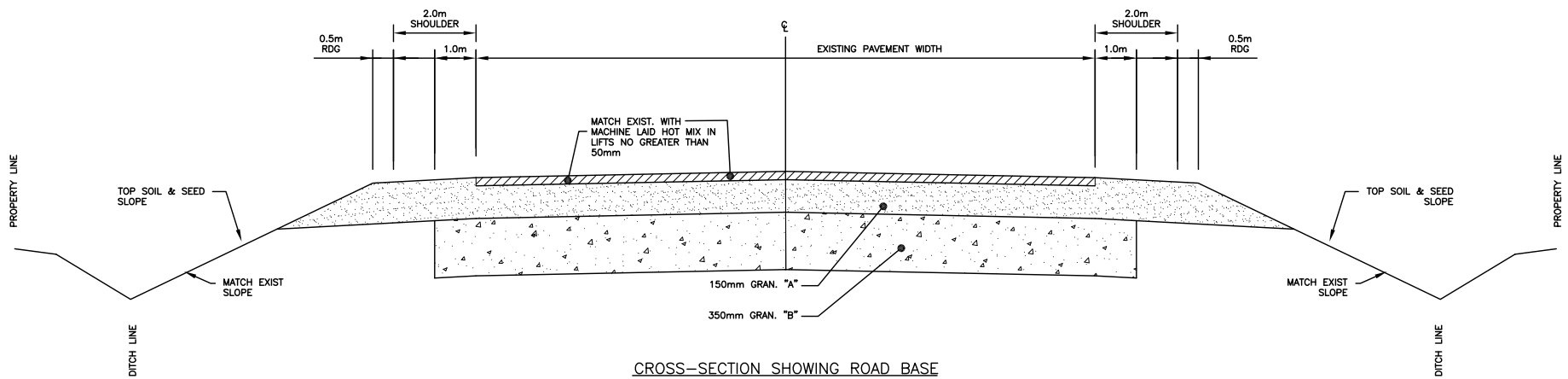
"The map is provided "as is" without any guarantee, representation, condition or warranty of any kind, either expressed, implied or statutory, including but not limited to the implied warranties and representations of merchantability and fitness for a particular purpose. The ABCA, its directors, employees and agents are not liable to the user of the data for any direct, indirect, special, consequential or exemplary damages, or damages of any nature."

The Regulation Limit was prepared for use in conjunction with Ontario Regulation 147/06 and was determined from available studies, information and mapping. Please refer to the text of the regulation for a full legal description of all regulated lands. In case of conflict the description of the regulation limit in Ontario Regulation 147/06 shall prevail over that shown on this map. The Regulation Limit depicted on this map is subject to change.

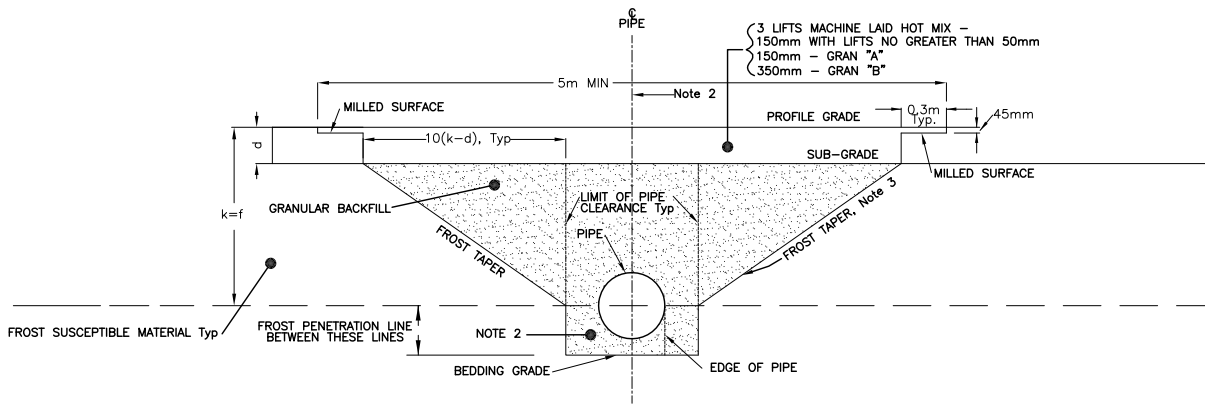
Flood limits are representative only. Please refer to flood study to determine flood elevation.  
 Property boundaries are a representation only and are not a legal survey.  
 Air Photo flown July 2020. Copyright © Queen's Printer.

Author: ABCA Staff member  
 Date: 3/29/2023  
 Time: 10:35:38 AM





CROSS-SECTION SHOWING ROAD BASE  
N.T.S.



CROSS-SECTION PERPENDICULAR TO PIPE  
N.T.S.

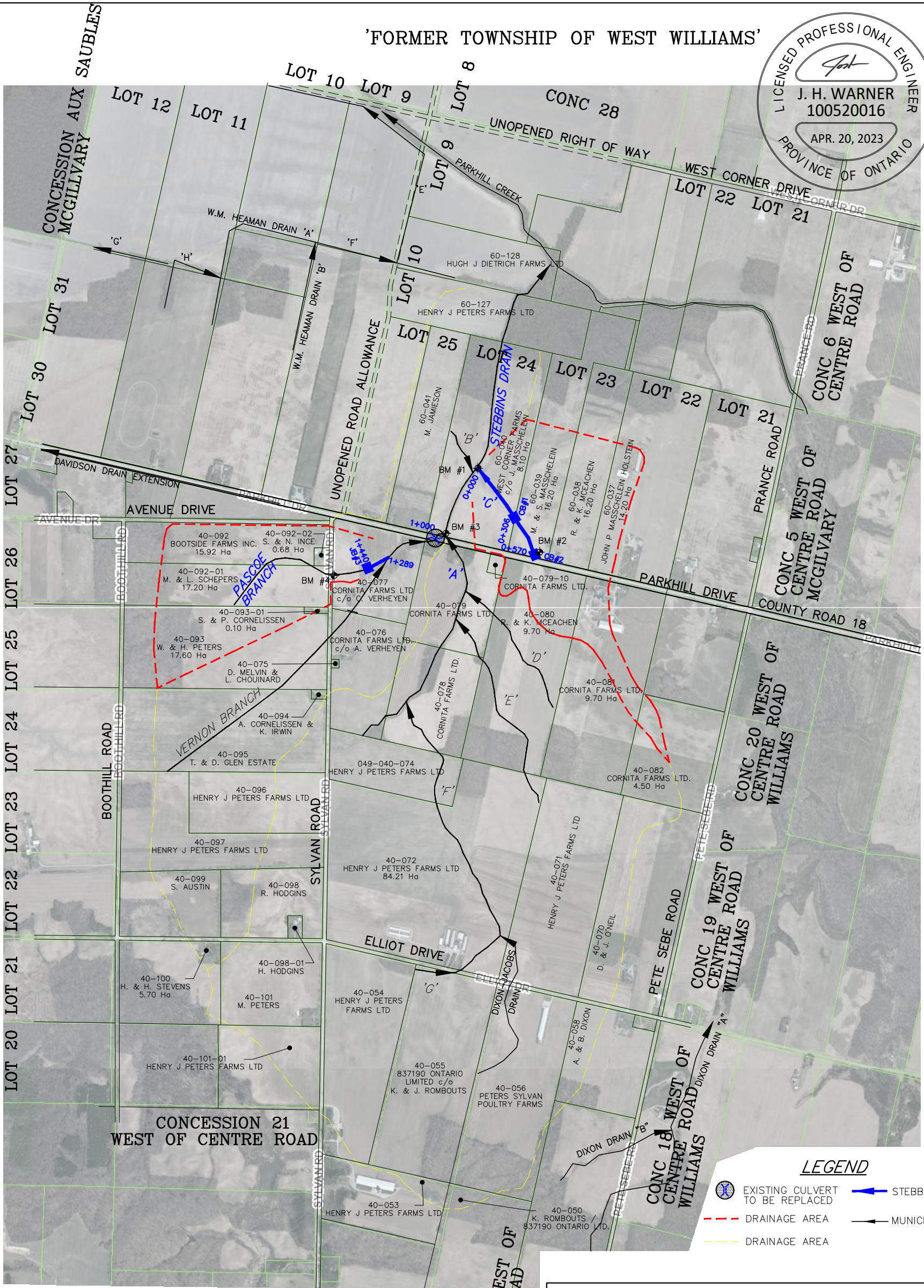
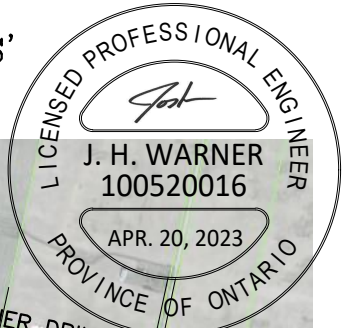
- NOTES:
- 1 PIPE EMBEDMENT OR BEDDING COVER, AND BACKFILL SHALL BE ACCORDING TO:
    - OPSD Standards 802.030, 802.031, 802.032, 802.033, 802.034, 802.050, 802.051, 802.052, 802.053, & 802.054.
  - 2 CONDITION OF FROST TREATMENT SYMMETRICAL ABOUT CENTRELINE OF PIPE.
  - 3 FROST TAPERS SHALL START AT THE INTERSECTION OF THE PIPE CLEARANCE AND THE 2H:1V SLOPE
  - 4 GRANULAR BACKFILL TO BE COMPACTED TO 98%.
  - 5 MILLED SURFACES TO BE TACK COATED.

LEGEND:  
 d - depth of roadbed granular  
 k - depth of frost treatment below profile grade  
 f - depth of frost penetration below profile grade

FULL WIDTH REPAIR DETAIL	
COUNTY OF MIDDLESEX	
DATE: JUNE, 2018	SCALE NTS

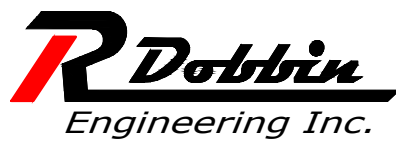


'FORMER TOWNSHIP OF WEST WILLIAMS'



**LEGEND**

- EXISTING CULVERT TO BE REPLACED
- DRAINAGE AREA
- DRAINAGE AREA
- STEBBINS DRAIN
- MUNICIPAL DRAIN



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

DRAWING NAME: Stebbins Branch 'C' Drain and Pascoe Branch

PROJECT No. 2022-1407

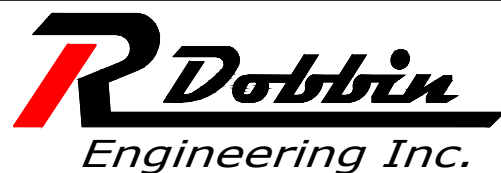
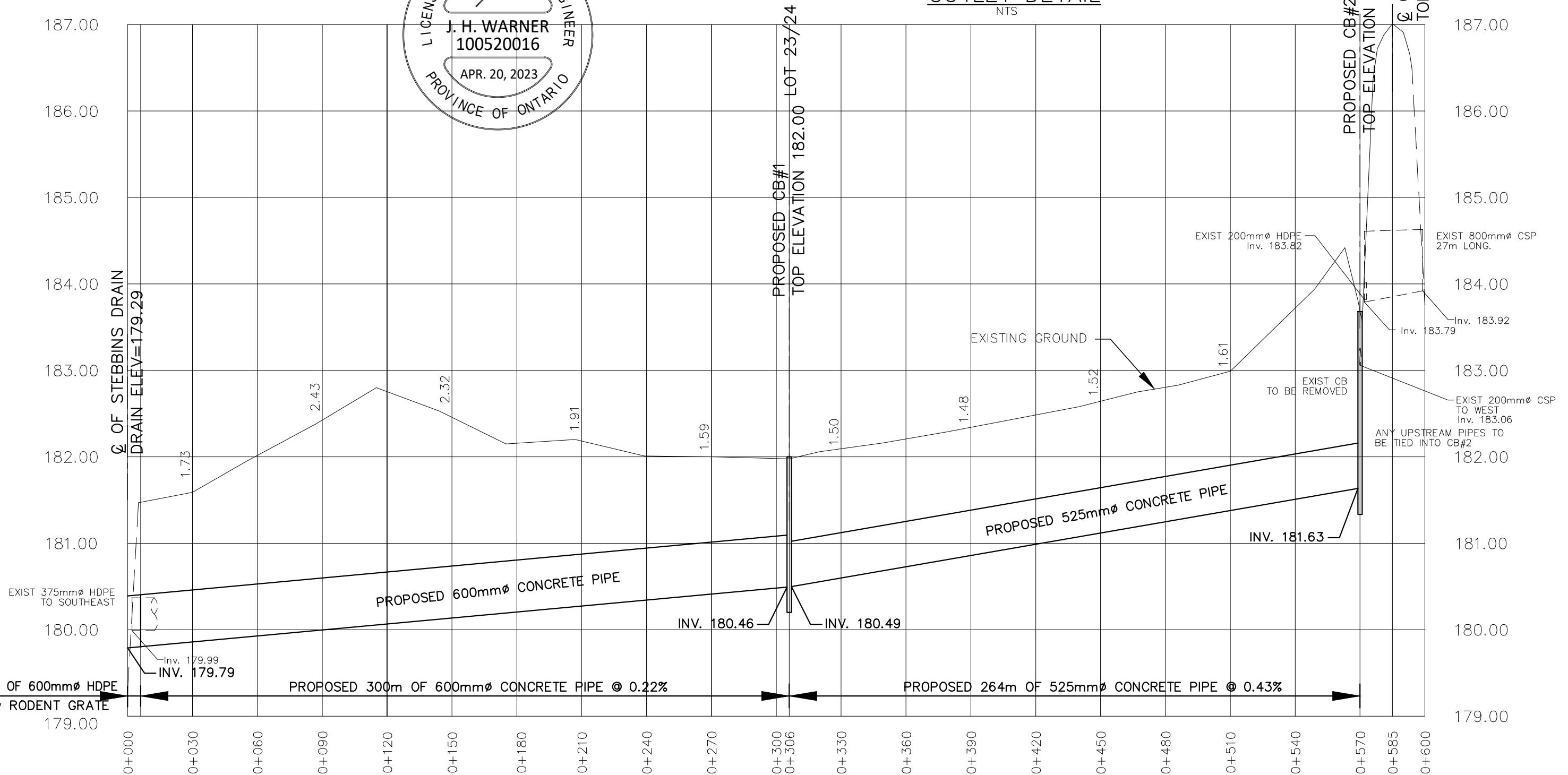
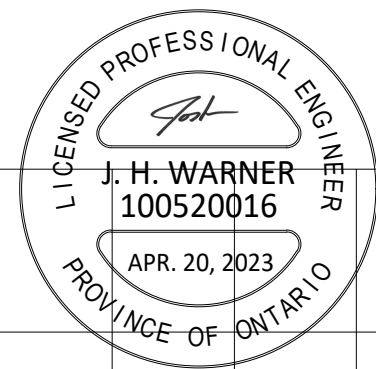
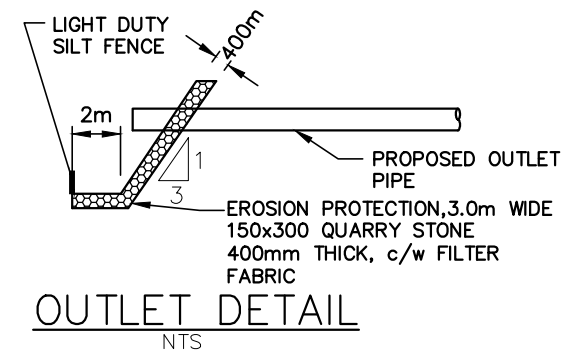
APPROVED	NO.	REVISIONS	DATE	BY
J. WARNER				
CHECKED	1	FINAL REPORT	APR. 20, 2023	CS
DRAWN	SCALE: 1:20,000			
C. SAUNDERS				

**MUNICIPALITY of NORTH-MIDDLESEX**  
**STEBBINS BRANCH 'C' DRAIN AND PASCOE BRANCH**  
**PLAN**

**1**  
**OF 4**

# GENERAL NOTES

- BENCHMARK No.1 ELEV. 180.37  
TOP OF EXISTING 375 $\phi$  HDPE PIPE  
AT STATION 0+000 ON BRANCH 'C'
  - BENCHMARK No.2 ELEV. 184.61  
TOP OF NORTH END OF 800 $\phi$  CSP  
CROSSING PARKHILL DRIVE, STA 0+585
- NUMBERS ARE DEPTH FROM EXISTING GROUND  
TO THE INVERT OF THE PROPOSED TILE.



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

DRAWING NAME:  
Stebbins Drain - Branch 'C' Profile

PROJECT No.  
2022-1407

APPROVED	NO.	REVISIONS	DATE	BY
J. WARNER				
CHECKED	1	FINAL REPORT	APR. 20, 2023	CS
B. VAN RUITENBURG				
DRAWN				
C. SAUNDERS				

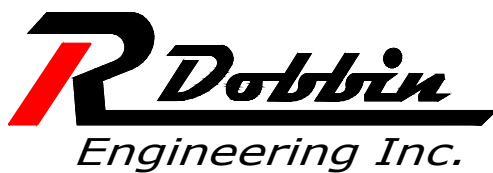
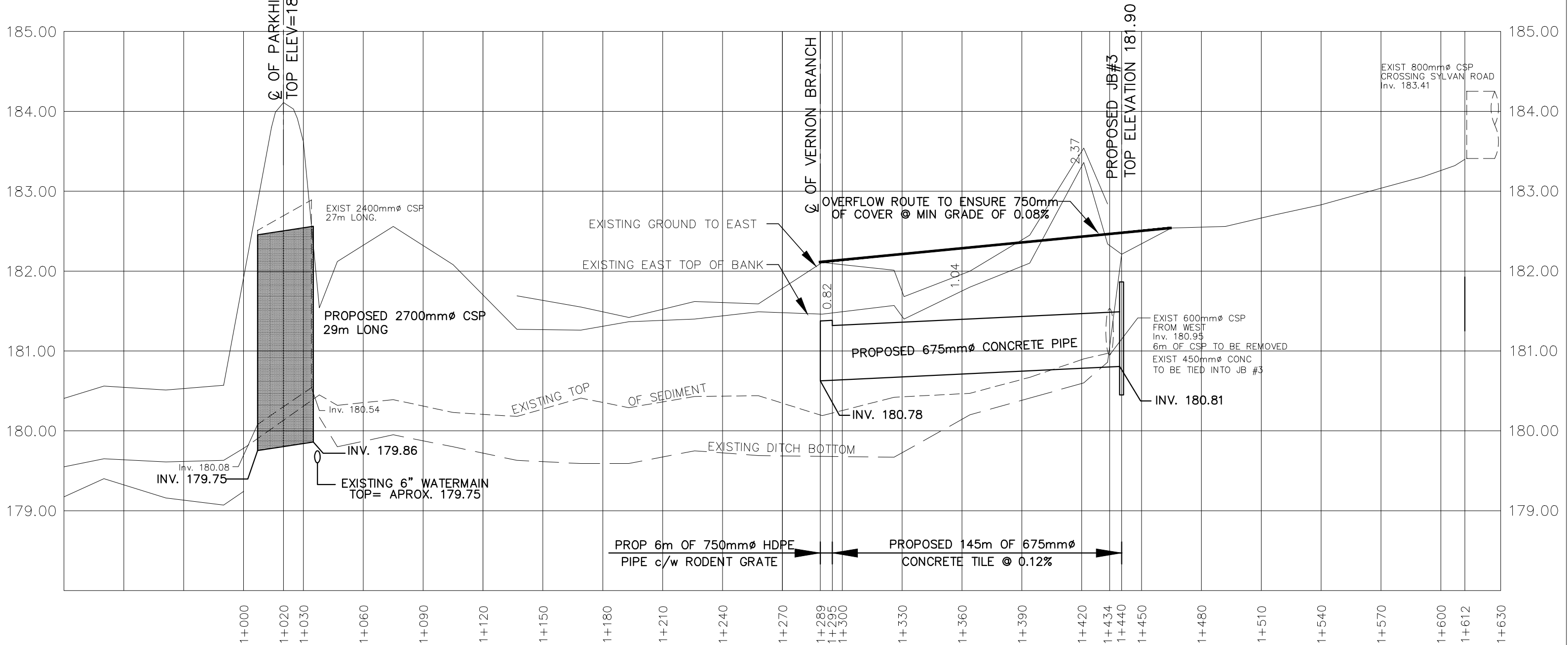
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0 20 40 60m

MUNICIPALITY of NORTH MIDDLESEX  
STEBBINS DRAIN - BRANCH 'C'  
PROFILE

2  
OF 4

# GENERAL NOTES

- BENCHMARK No.3 ELEV. 182.51  
TOP OF NORTH END OF 2400 $\phi$  CSP  
CROSSING PARKHILL DRIVE, (STA 1+020)
- BENCHMARK No.4 ELEV. 184.25  
TOP OF EAST END OF 800 $\phi$  CSP  
CROSSING SYLVAN ROAD.
- NUMBERS ARE DEPTH FROM EXISTING GROUND  
TO THE INVERT OF THE PROPOSED TILE.



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Petrolia Ontario, N0N 1R0  
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DRAWING NAME:  
Stebbins Drain - Pascoe Branch Profile

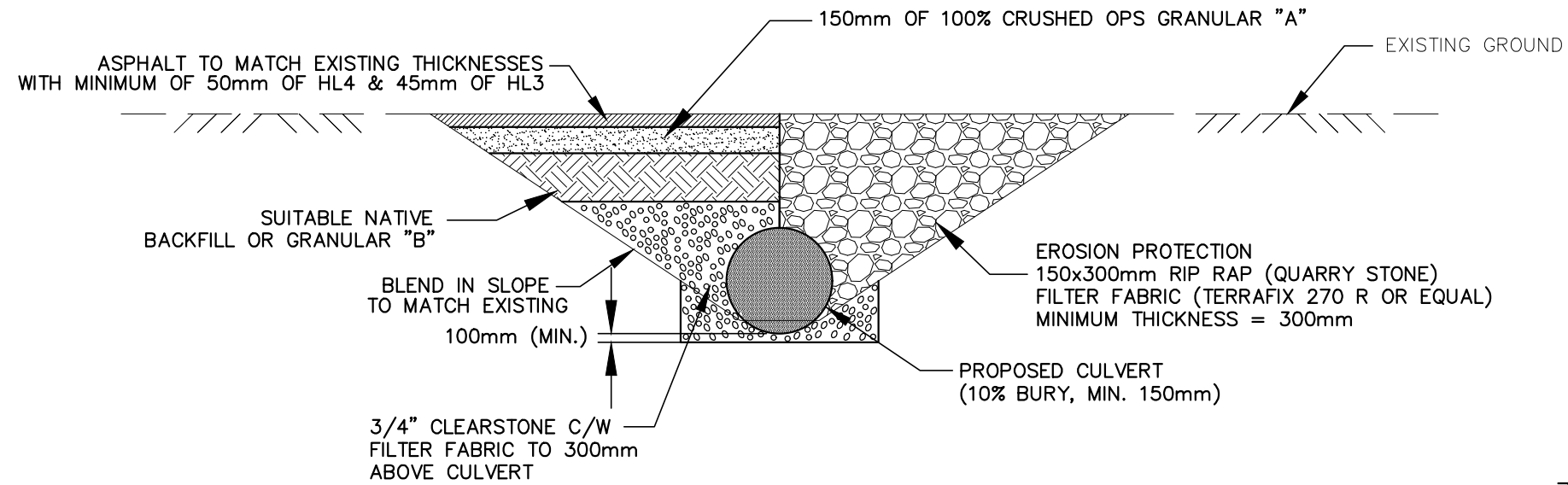
PROJECT No.  
2022-1407

APPROVED	NO.	REVISIONS	DATE	BY
J. WARNER				
CHECKED	1	FINAL REPORT	APR. 20, 2023	CS
B. VAN RUITENBURG				
DRAWN				
C. SAUNDERS				

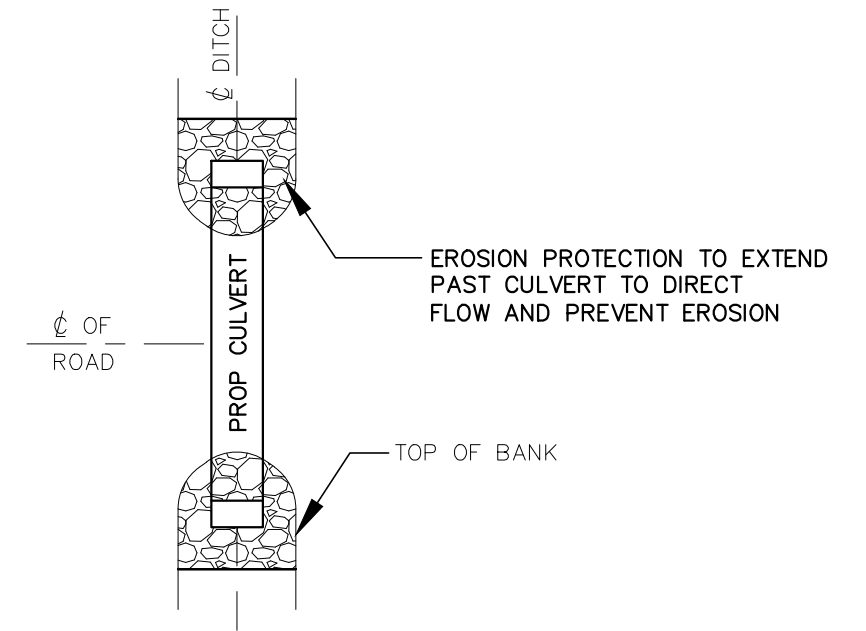
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## MUNICIPALITY of NORTH MIDDLESEX STEBBINS DRAIN - PASCOE BRANCH PROFILE

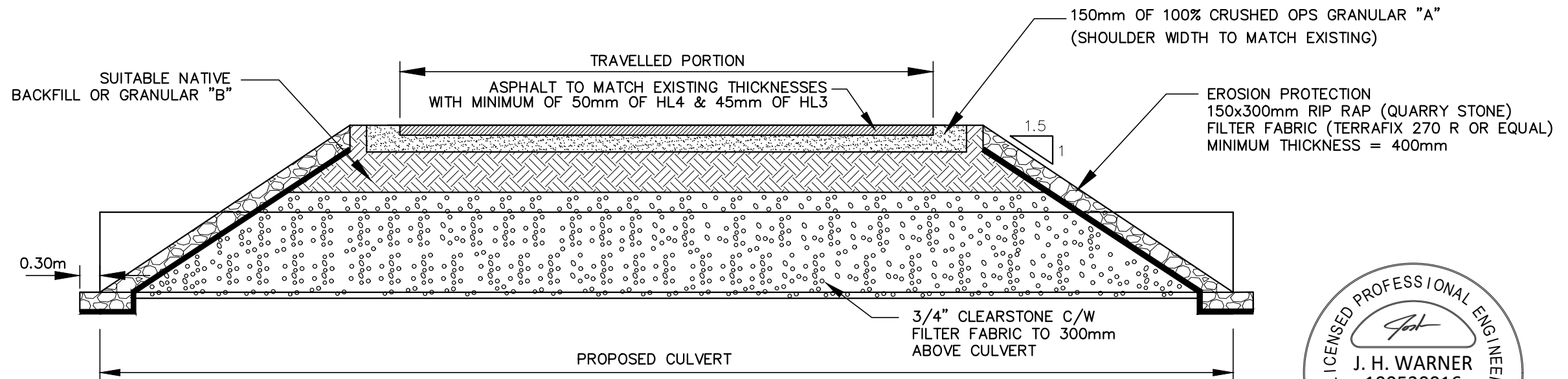
3  
OF 4



TYPICAL ASPHALT ROAD CULVERT END SECTION  
NTS

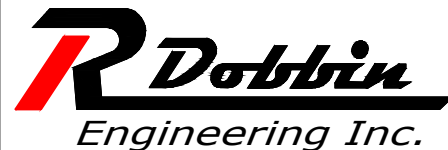


TYPICAL ROAD CULVERT PLAN  
NTS



TYPICAL ASPHALT ROAD CROSS-SECTION  
NTS

NOTE:  
ALL GRANULARS COMPACTED  
TO 98% MODIFIED PROCTOR DENSITY



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

DRAWING NAME:  
Stebbins Drain Road Culvert Detail

PROJECT No.  
2021-1407

APPROVED	NO.	REVISIONS	DATE	BY
J. WARNER				
CHECKED B. VAN RUITENBURG	1	FINAL REPORT	APR. 20, 2023	JW
DRAWN J. WARNER				

MUNICIPALITY of NORTH - MIDDLESEX  
STEBBINS DRAIN  
ROAD CULVERT DETAIL

4  
OF 4