

Court of Revision Agenda

Tuesday, October 28, 2025, 6:30 pm Tecumseh Town Hall - Council Chambers 917 Lesperance Road Tecumseh, Ontario N8N 1W9

Pages

- A. Roll Call
- B. Call to Order
- C. Land Acknowledgement

We acknowledge that we are on land and surrounded by water, originally inhabited by Indigenous Peoples who have travelled this area since time immemorial. This territory is within the lands honoured by the Wampum Treaties; agreements between the Anishinaabe, Haudenosaunee, Lenni Lenape and allied Nations to peacefully share and care for the resources around the Great Lakes. Specifically, we would like to acknowledge the presence of the Three Fires Confederacy Ojibwe, Odawa, Potawatomi and Huron/Wendat Peoples. We are dedicated to honouring Indigenous history and culture while remaining committed to moving forward respectfully with all First Nations, Inuit and Métis.

- D. Disclosure of Pecuniary Interest
- E. North 12th Concession Drain
 - 1. Introduction and Purpose of Meeting

Chair Statement:

The purpose of the meeting is to hear from any affected land owner who wishes to appeal his/her or any part thereof as set out in the Drainage Report prepared by Josh Warner, P.Eng., of R Dobbin Engineering Inc., dated June 10, 2025.

- 2. Delegations
 - a. Drainage Superintendent, Matthew Shiha and Drainage Engineer, Josh Warner, P.Eng

b. Appeals from Landowners (Written and/or Late)

Chair Statement:

The purpose of this Court of Revision is to hear appeals regarding the Schedule of Assessment only.

This Court does not have the authority to make any changes to the technical aspects of the Drainage Report. If you have concerns on the technical aspects to the proposed drainage works, the Drainage Superintendent can provide you with the information to apply for an appeal.

The Schedule of Assessment is the total cost for the proposed drainage works. If the Court decides to change an individual assessment, the difference will be reallocated to the assessments of the other affected land owners.

The Clerk has confirmed that no written appeal notices have been received in accordance with Drainage Act timelines or if any written appeals were received they are now appended to this published Agenda.

Pursuant to s. 52(2) of the Drainage Act, this Court upon resolution will now hear any late verbal appeals from Landowners present at this meeting who wish to speak to the Schedule of Assessment.

If any appeals are received or presented then this Court shall render a decision on such appeal(s).

Recommendation	
Moved by	
Seconded by	
that the Appeal(s) from Landowner	be dismissed or
accepted with the following amendmer	nts to be noted and made
int he Schedule of Assessment.	

F. Communications

1. Public Notice dated October 1, 2025

4 - 7

2. PWES-2025-53 Request to Consider Engineer's Report - North 12th Concession Drain

8 - 67

3. By-Law 2025-104 North 12th Concession Drain

G.

Recommendation
Moved by
Seconded by
That Communications - For Information A and B as listed on the October 28, 2025 Court of Revision Agenda, be received ;
And that the Drainage Report for the North 12th Concession Drain as prepared by Josh Warner, P.Eng, Dillon Consulting Limited, dated June 10, 2025 be approved and that the assessments herein be as (presented/amended);
And further that By-Law 2025-104 be recommended for third and final reading upon expiry of the appellants appeal period.
Adjournment
Recommendation
Moved by
Seconded by
That there being no further business, the Tuesday, October 28, 2025 Court of
Revision be adjourned at pm.



NOTICE OF COURT OF REVISION MEETING

October 1, 2025

RE: Notice of Court of Revision Meeting – North 12th Concession Drain

Dear Affected Stakeholders,

Please be advised that on Tuesday, September 23, 2025, Council of the Town of Tecumseh provisionally adopted the Engineer's Report prepared by Josh Warner, P.Eng., of R Dobbin Engineering Inc., dated Tuesday, June 10, 2025, for the repair and improvements of the North 12th Concession Drain under provisional By-Law No. 2025-104, which is attached herein exclusive of the Engineers Report. A copy of the Engineer's Report is available for your review at our website tecumseh.ca/live-work-and-explore/municipal-drains/.

A meeting to hold the Court of Revision with respect to the Drainage Report will be held as follows:

Date: Tuesday, October 28, 2025

Time: 6:30 pm - 7:00 pm

Place: **Tecumseh Town Hall, Council Chambers** (917 Lesperance Road, Tecumseh)

The purpose of the Court of Revision is to hear appeals on assessments. A landowner who has been assessed for drainage works may appeal to the Court of Revision on any of the following grounds:

- Any land or road has been assessed an amount that is too high or too low;
- Any land or road that should have been assessed has not been assessed; and/or
- Due consideration has not been given to the use being made of the land.

All notices of appeal to the Court shall be given to the Clerk by Saturday, October 18, 2025 (ten [10] days prior to the first sitting of the Court) and shall state the grounds of appeal. Should you wish to submit an appeal to the Court, please contact the Drainage Superintendent or Clerk to obtain the paperwork to file an appeal.

If you wish to appear before the Court, contact the Clerk, Robert Auger, at rauger@tecumseh.ca or alternatively, submit a delegation request form online through the Town's website at form.tecumseh.ca/Legislative-Services/Request-to-Appear-as-a-Delegate by 12:00 pm the day prior to the meeting. By registering as a delegate, persons are consenting to their image, voice, and comments being recorded and available for public viewing on the Town's website.





NOTICE OF COURT OF REVISION MEETING

Should you have additional concerns with respect to the drainage project or require a copy of the report in an alternative format, please contact the Town's Drainage Department using the contact information provided below.

Matthew Shiha, EIT
Drainage Superintendent
Public Works & Engineering Services
(519) 735-2184 x 105
mshiha@tecumseh.ca

Anne-Marie Moniz, C.Tech Assistant Drainage Superintendent Public Works & Engineering Services (519) 735-2184 x 138 amoniz@tecumseh.ca

Sincerely,

Robert Auger

Director, Legislative Services & Clerk

The Corporation of the Town of Tecumseh By-Law Number 2025 - 104

Being a by-law to provide for the repair and improvements to the North 12th Concession Drain

Whereas the Council of The Corporation of the Town of Tecumseh (hereinafter the "Town") has been requested to provide for the repair and improvement of the North 12th Concession Drain;

And Whereas the Town procured a Drainage Report for the North 12th Concession Drain and specifications from the consulting engineering firm of R Dobbin Engineering Inc., dated June 10, 2025 (hereinafter the "Drainage Report");

And Whereas notice of a Public Meeting to hear comments from the affected property owners was given on Friday, August 15, 2025;

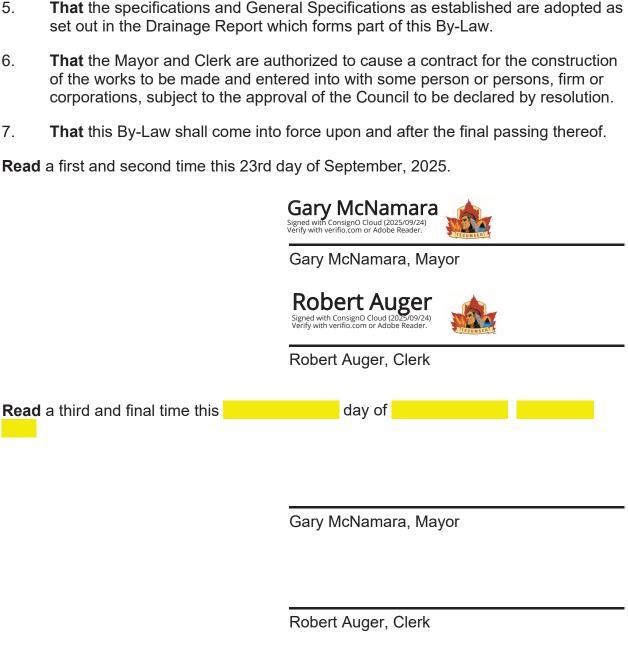
And Whereas a Public Meeting of Council was held on Tuesday, September 23, 2025, at 5:00 pm to hear from any affected property owners on the Drainage Report;

And Whereas the Council of The Corporation of the Town of Tecumseh is of the opinion that the repair and improvement of the North 12th Concession Drain is desirable.

Now Therefore the Council of The Corporation of The Town of Tecumseh Enacts as follows:

- 1. **That** the Drainage Report providing for the repair and improvement of the North 12th Concession Drain, dated June 10, 2025, as prepared by the consulting engineering firm R Dobbin Engineering Inc., and attached hereto as Schedule "A" to this By-Law, is hereby adopted and the drainage works as therein indicated and set forth are hereby approved and shall be completed in accordance therewith.
- 2. **That** the Treasurer, subject to the approval of Council, may agree with any bank or person for temporary advances of money to meet the costs of construction pending the completion of the drain and grants and computed payments are received.
- 3. **That** the Town may issue debentures for the amount borrowed and the amount of such debentures shall be reduced to the total amount of:
 - a) Grants received under Section 85 of the *Drainage Act*, R.S.O., 1990;
 - b) Commuted payments made in respect of land and roads assessed.

- 4. **That** such debentures shall be made payable within five (5) years from the date of the debenture and shall bear interest at a rate as approved by resolution of Council.
- That the specifications and General Specifications as established are adopted as set out in the Drainage Report which forms part of this By-Law.





The Corporation of the Town of Tecumseh

Public Works & Engineering Services

To: Mayor and Members of Council

From: Phil Bartnik, Director Public Works & Engineering Services

Date to Council: September 23, 2025

Report Number: PWES-2025-53

Subject: Request to Consider Engineer's Report – North 12th Concession Drain

Recommendations

It is recommended:

That the Report and Specifications for the North 12th Concession Drain (Drain) as prepared by Josh Warner, P.Eng., of R Dobbin Engineering Inc., dated June 10, 2025 (Drainage Report) **be received**;

And that consideration **be given** to the first and second readings of a provisional by-law to adopt the Drainage Report in accordance with Section 42 of the *Drainage Act* (Act);

And further that notice be given to all affected landowners of the Court of Revision to be held on October 28, 2025, at 6:30 pm in accordance with Section 46(1) of the Act, subject to the adoption of the provisional by-law.

Background

The purpose of this report is to provide a summary of the background and other information to assist Council in giving consideration to the Drainage Report for the North 12th Concession Drain in accordance with the Act.

On May 9, 2023, Council accepted the recommendation by the Director Public Works & Engineering Services through Report PWES-2023-38 and passed resolution (Motion: RCM 139/23) as follows:

That Josh Warner, P.Eng., of R. Dobbin Engineering Inc. **be appointed** Drainage Engineer to make an examination of the North 12th Concession Drain drainage area as submitted by the landowner (Roll No. 510000002000000) in the "Notice of Request for Drainage Improvement" dated April 5, 2023;

And that a Drainage Report **be prepared** in accordance with Section 78 of the Drainage Act (Act), including provisions for future maintenance.

An on-site meeting was held on May 24, 2023. A summary of this meeting is found within pages 2 and 3 of the Drainage Report, included as Attachment 1.

On June 13, 2023, Emergency Designation, under Section 124 of the Act, was received from the then Minister of the Ontario Ministry of Agriculture, Food and Rural Affairs, Lisa Thompson, for the immediate replacement of a culvert over the Drain given its deteriorated condition. This replacement work was completed and is noted within the Drainage Report.

The Town received a draft report dated August 7, 2024, for discussion at a Public Information Centre (PIC). Invitations were sent to landowners and PIC was held on Tuesday, November 26, 2024, at Town Hall to discuss the content of the draft report.

On August 13, 2025, Josh Warner, P.Eng., filed a report dated June 10, 2025 for the repair and improvement to the Drain in accordance with Section 41 of the Act. On August 15, 2025, invitations were sent to all affected landowners and agencies that the Public Council Meeting to consider the Engineer's Report would be held on Tuesday, September 23, 2025 at 5:00 pm.

This Drainage Report provides for the replacement of existing access culverts that are in poor condition. It also provides future maintenance provisions for access culverts that have existing service life as well as for the cleaning of the open drain, which is not necessary currently. Provisions for a buffer strip have also been provided along the farmlands where one has not yet previously been installed. The inclusion of buffer strips aligns with the Town's Official Plan and was included as a Best Management Practice for Farming by the Ontario Ministry of Agriculture, Food and Rural Affairs, now the Ontario Ministry of Agriculture, Food and Agribusiness, and other associations.

During the tendering of this drainage project, provisional works will be included for the improvement of the roadside ditch along the east side of 12th Concession Road given discussions had in the PIC. This work is to remain separate from the recommendations of this report and will not form part of the Municipal Drain.

Comments

The sections of the Act referenced within this report are attached to this Council Report as Attachment 2.

Consideration by Council

Subject to the discretion of Council, the Drainage Report may be:

- a. Referred back to the Drainage Engineer for reconsideration if it appears that there are, or may be errors in the report or for any other reason the report should be reconsidered; or
- b. Provisionally approved by giving first and second readings to a Provisional By-law.

Following provisional adoption of the By-law, a meeting of the Court of Revision shall be scheduled to allow any affected owner of land assessed for the drainage works to appeal their assessed costs subject to the following:

- Any land or road has been assessed too high or too low; or
- b. Any land or road that should have been assessed has not been assessed; or
- c. Due consideration has not been given as to type of land use.

Approvals

Regulatory Approvals have been reviewed for the North 12th Concession Drain and consist of:

- 1) Essex Region Conservation Authority (ERCA) Conservation Authorities Act A permit from ERCA will be required prior to construction.
- 2) Department of Fisheries & Oceans (DFO) *Fisheries Act*A review of the Drain classification has been undertaken. Correspondence with the DFO will occur prior to the tendering of the project. Best management practices will be implemented during construction to minimize any potential for adverse impacts to fish and/or fish habitat.
- 3) Ministry of Environment, Conservation & Parks (MECP) Endangered Species Act
 The Town's Species-At-Risk Mitigation Plan continues to comply with the
 Endangered Species Act. The recommendations of the Mitigation Plan will be
 implemented, and the Town and Contractor will gather information on
 encountered species and/or mitigation plans implemented prior to and throughout
 construction.

Consultations

Financial Services
R Dobbin Engineering Inc.

Financial Implications

Per the Drainage Report, the total estimated cost for the improvement work is \$393,415 including HST, which is assessed to the watershed as depicted in page 1 of 15 of the drawing set included in Attachment 1. The Town's affected lands include 5.24 Ha. (12.95 Ac.) of 12th Concession Road.

Other than costs to administer the project, the cost of constructing the project is 100% recoverable by assessed lands as detailed in the Assessment Schedule included in the Drainage Report. The Town will utilize the Drainage Lifecycle Reserve to pay for the Town's drainage assessment, estimated at \$57,218. Additionally, the Drainage Report includes an Assessment Schedule for future maintenance that includes lands/roads owned by the Town.

For assessments in excess of \$5,000 the Town offers landowners the option of paying the balance plus interest over a five (5) year period; the annual payments are added as a special charge on their taxes.

Link to Strategic Priorities

Applicable	2023-2026 Strategic Priorities
\boxtimes	Sustainable Growth: Achieve prosperity and a livable community through sustainable growth.
	Community Health and Inclusion: Integrate community health and inclusion into our places and spaces and everything we do.
	Service Experience: Enhance the experience of Team Tecumseh and our citizens through responsive and respectful service.

Communications

Not applicable	\boxtimes		
Website □	Social Media □	News Release □	Local Newspaper

This report has been reviewed by Senior Administration as indicated below and recommended for submission by the Chief Administrative Officer.

Prepared by:

Matthew Shiha, E.I.T. Drainage Superintendent

Reviewed by:

John Henderson, P.Eng. Manager Engineering Services

Reviewed by:

Tom Kitsos, CPA, CMA, BComm Director Financial Services & Chief Financial Officer

Reviewed by:

Phil Bartnik, P.Eng.
Director Public Works & Engineering Services

Recommended by:

Margaret Misek-Evans, MCIP, RPP Chief Administrative Officer

Attachment Number	Attachment Name
1	Drainage Report dated June 10, 2025, by Josh Warner, P.Eng., of R Dobbin Engineering Inc.
2	Drainage Act Excerpts



4218 Oil Heritage Road Petrolia, Ontario, NON 1R0 Phone: (519) 882-0032 Fax: (519) 882-2233 www.dobbineng.com

June 10, 2025

The Mayor and Council The Town of Tecumseh 917 Lesperance Road Tecumseh, Ontario N8N 1W9

Gentlemen and Mesdames:

Re: North 12th Concession Drain

In accordance with your instructions, R. Dobbin Engineering has undertaken an examination with regards to improving the North 12th Concession Drain in the Town of Tecumseh.

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 May 9, 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 North 12th Concession Drain outlets into the West Townline and Mooney Creek Drain in Lot 14, Concession 12 on the east side of Concession Road 12 (unopened

portion). It continues across Concession Road 12 and heads southerly along the west side of Concession Road 12 to the north side of North Talbot Road (County Road 46).

Under an Engineer's Report dated July 29th, 1958 the drain was moved off the road, and new culverts were installed.

Under an Engineer's Report dated November 27th, 1980 a culvert was removed, a culvert was moved and lengthened and the drain was cleaned.

Under an Engineer's Report dated January 27th, 1998 two culverts were replaced and the drain was cleaned.

Drain Classification

The North 12th Concession Drain is currently classified as a "Class F" drain. The West Townline and Mooney Creek Drain is currently classified as a "Class C" drain. This is 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).

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

A draft copy of the report was sent to the Essex Region Conservation Authority on January 8, 2024. On January 16, 2024 their office responded that they were generally supportive of the proposed design. The Town of Tecumseh will be responsible for providing the ERCA with a final report in order to obtain their approval.

Site Meeting

A site meeting for this drain was held on May 24th, 2023. The following were present:

- Josh Warner (R. Dobbin Engineering)
- Alessia Mussio (Drainage Superintendent, Town of Tecumseh)
- Mark Fishleigh (Field Service Engineer, County of Essex)
- Samantha Merret (Landowner at #4955 12th Concession Road)

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 12th Concession Drain for a culvert replacement.
- Landowners mentioned that they would like to proceed with the culvert replacement on their property as soon as possible.
- Josh Warner stated that the Town's position is to incorporate buffer strips into Engineer's Report.
- Remaining culverts on the drain to be investigated for replacement. Future specifications to be developed for culverts not being replaced.
- Town requested an updated profile for the drain.

Discussion

Following the site meeting, the culvert at #4955 12th Concession Road was determined to need immediate replacement. Therefore, an Emergency Designation under Section 124 was received in order to have this completed prior to the finalization of the Engineer's Report. The application and approval from the Minister are included in Appendix A of this report.

Existing Conditions

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

Culvert Number / Station	Location	Existing Culvert Size	Last Report Replaceme nt Date	Condition	Recommendation
1 (0+008)	Unopened portion of 12th Concession Road north of 401	1200mm dia. CSP	1998	Poor – Bottom Rotted	Replace
2 (0+154)	510-00002200	1200mm dia. CSP	1958	Poor – Rusted, Holes	Replace
3 (0+471)	510-00002200	1200mm dia. CSP	1980- Reinstalled and Lengthened	Poor – Rusted and holes in original length	Replace
4 (0+804)	МТО	Concrete Box Culvert	Unknown	Okay	Leave

5 (0+894)	510-000100	1050mm dia. CSP	1958. Has been replaced since.	Poor-Rust throughout. Small holes found.	Replace
6 (0+922)	510-000150	1050mm dia. CSP	1958	Poor – Rust below spring line. Some holes found.	Replace
7 (1+026)	510-000200	1050mm dia. Sanitite	2022	Good	Leave
8 (1+303)	510-000201	1050mm dia. CSP	1958	Poor – Rusted, Holes	Replace
9 (1+529)	510-000300	900mm dia. CSP	Unknown	Poor – Rust, but no holes found. Poor joint with soiling coming in.	Replace
10 (1+717)	510-000300	1000mm dia. CSP	1958	Poor – Rusted, Holes	Replace
11 (2+228)	500-001250	900mm dia. CSP	1998	Ok - Rust below spring line but no holes found (could not see bottom)	Leave
12 (2+573)	510-000400	900mm dia. CSP	1958	Ok - Rust below spring line but no holes found (could not see bottom)	Leave
13 (2+826)	510-000500	900mm dia. CSP	1958	Poor – Rusted, Holes, Bottom Rotted, Dented in Center	Replace

Generally, the drain had water laying in the channel and culverts. This made it difficult to inspect the bottom of many of the culverts. In the future, all culverts shall be inspected by the Drainage Superintendent after any cleanout to determine if they should be replaced.

An effort was made to contact all Landowners on the drain prior to sending out the draft reports for the Public Information Centre (PIC). This included sending out calling cards to the residences that we were unable to contact. Landowners that we were unable to contact or did not respond to the calling cards were never communicated with directly. The following is a brief summary of the Landowner comments regarding their culverts (NAC=Not Able to Contact):

Culvert Number / Station	Location	Travel Surface	Proposed Top Width	Location on Property
1 (0+008)	Unopened portion of 12th Concession Road north of 401	Gravel	7m	Keep Existing
2 (0+154)	374451000002200	Grass	NAC. 6m	NAC. Maintain Existing
*3 (0+471)	374451000002200	Gravel	NAC. 6m	NAC. Maintain Existing
4 (0+804)	МТО	Asphalt	Maintain Existing	Keep Existing
5 (0+894)	374451000000100	Gravel	NAC. 6m	NAC. Maintain Existing
6 (0+922)	374451000000150	Gravel	NAC. 6m	NAC. Maintain Existing
7 (1+026)	374451000000200	Gravel	6m	Held North Limit of Culvert for Emergency Replacement
8 (1+303)	374451000000201	Gravel	NAC. 6m	NAC. Maintain Existing
*9 (1+529)	374451000000300	Gravel	NAC. 6m	NAC. Maintain Existing
10 (1+717)	374451000000300	Asphalt	NAC. 6m	NAC. Maintain Existing
11 (2+228)	374450000001250	Asphalt	Maintain Existing. 9m	Maintain Existing
12 (2+573)	374451000000400	Gravel	Maintain Existing. 9m	NAC. Maintain Existing
13 (2+826)	374451000000500	Grass	NAC. 6m	NAC. Maintain Existing

^{*}Denotes culverts deemed to be secondary access culverts.

Accesses will be restored with 150mm of Granular "A" as part of the project costs, any costs for other surfaces will be assessed back to the Landowner as a special benefit assessment.

Design

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

Recommendations

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

- 1. Culverts No. 1, 2, 3, 5, 6, 8, 9, 10 and 13 shall be replaced. The emergency replacement of Culvert No. 7 shall be incorporated under this report. Future specifications shall be developed for the replacement of Culverts No. 4, 11 and 12.
- 2. A 1.5m buffer strip shall be established along the west bank of the drain.
- 3. Future specifications shall be developed for maintenance and repair of the channel so that excavation of the drain can occur when it is required. At this time, excavation of the drain bottom is not necessary.

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 \$393,415.00, including engineering 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 (20% of the construction cost).

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

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

- 1. The additional cost to daylight and work around utilities has been assessed to the utility company as per Section 26 of the Drainage Act.
- 2. The replacement and engineering cost of Culvert No. 1 and No. 4, respectively, has been assessed to the road authority as per Section 26 of the Drainage Act.
- 3. The cost of asphalt driveways has been assessed to the benefitting property as a special benefit assessment.
- 4. The culverts have generally been assessed based on the average culvert cost to provide a 6m access width. This base culvert has been assessed with 50% of the cost applied as benefit assessment to the abutting property and the remainder assessed as an outlet assessment to upstream lands and roads based on equivalent hectares. Any culvert requested to be longer has been assessed with the extra length as a benefit assessment to the Landowner. The cost to have a second access culvert on a single property has been assessed as a special benefit to the Landowner. The cost of a secondary access will not be eligible for grant based on the current Agricultural Drainage Infrastructure Program (ADIP) policy.
- 5. The incorporation and installation of a buffer strip has been assessed with 10% of the cost applied as a benefit assessment to the abutting road authority, 45% applied as

benefit assessment to the abutting property, and the remainder of the cost assessed as an outlet assessment to 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. Compensation under Section 29 of the Drain Act has been provided to lands where the buffer strip is proposed.

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 (\$12,140.00 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 shall be from 12th Concession Road. Access shall be restricted to a width of 6m and shall generally be along the edge of the drainage works and across existing culverts.

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

The working area for the construction and future maintenance of the channel shall be restricted to a width of 12m from the top of bank that the working is taking place from. The excavation shall generally be done from the west (field) side of the channel except across finished lawns. Across finished lawns the excavation shall generally be done from the east (road) side with the excavated material being trucked and disposed off site or levelled in the adjacent farm fields.

Restrictions

No trees and shrubs shall be planted nor shall permanent structures be erected within 8m plus the depth of the drain to a maximum of 15m 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 open channel shall be maintained and repaired in the same relative portions as contained in the channel portion of the enclosed Schedule of Assessment less any special benefit assessments. Maintenance shall be done in accordance with the enclosed specifications and profiles unless otherwise altered under provisions of the Drainage Act. For future maintenance and repair of the open channel, the excavated material across finished lawns shall be trucked and disposed offsite or spread on adjacent farm fields by the Contractor. The cost of trucking across finished lawns less the equivalent cost of levelling, shall be assessed to the individual property. Agricultural properties that wish to have the excavated material trucked will be assessed the cost of trucking less the cost of levelling. The cost of levelling will form part of the drain maintenance cost.

The buffer strips are to extend 1.5 metres from the top of the bank on the west side of the channel. If the buffer strip extends less than this due to encroaching cropping practices, the buffer strip shall be maintained with 100% of the cost assessed to the property. Otherwise, the buffer strip shall be maintained and repaired in the same relative portions as contained in the channel portion of the enclosed Schedule of Assessment less any special benefit assessments.

The culverts shall be maintained and repaired as follows:

Culvert Number	Abutting Property (Benefit)	Road Authority	Upstream Based on Equivalent Hectares as Contained in SofA (Outlet)
2, 5, 6, 7, 8, 10 & 13	50%		50%
11 & 12	60%		40%
1 & 4		100%	
3 & 9	100%		

If an owner requests an additional length of culvert beyond the top width achieved by the lengths shown on the profile with rip rap end walls 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 top width shall be determined by the Drainage Superintendent and shall generally be in the primary access location and shall include any headwalls.

Each property is allowed one access culvert for each municipal drain with any second culvert on the property maintained and repaired 100% by the owner, coordinated with the Drainage Superintendent.

The drain shall be maintained as per the specifications and grades as shown on the Profile contained in this Engineer's Report.

Any additional cost as a result of a utility shall be assessed to that utility as per Section 26 of the Drainage Act.

Yours truly,

Josh Warner, P. Eng.

R. Dobbin Engineering Inc.

North 12th Concession Drain Town of Tecumseh June 10, 2025

ALLOWANCES

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

Conc.	Lot or part	Roll No.	Owner	Section 29	Section 30	Total
	•					
11	Pt. Lot 9	510-000500	W. & M. O'Neil	2,100	350	2,450
	E 1/2 Lot 10	510-000400	Edward Chittle Farm Ltd	2,040	240	2,280
	Pt. E 1/2 Lot 10	510-000410	P. & M. Boretski	210	30	240
	E 1/2 Lot 11	510-000300	A. & E. Sirizzotti	2,250	470	2,720
	Pt. Lot 12	510-000201	K. Wallis	1,140	240	1,380
	Pt. Lot 12	510-000200	C. Colenutt & S. Merrett	230	130	360
	Pt. Lot 12	510-000150	W. & D. O'Neil	350	140	490
	Pt. Lot 12	510-000100	C. McGuire	230	130	360
	Pt. Lot 13 & Pt. Lot 14	510-002200	W. & E. O'Neil	2,830	540	3,370
			TOTAL ALLOWANCES	\$11,380	\$2,270	\$13,650

Estimate of Cost

	Quantity	<u>Unit</u>	<u>Unit Cost</u>	<u>Total</u>
Pre-Construction Meeting	1	LS	400	400
Benchmark Loop	1	LS	800	800
Traffic Control	1	LS	3,000	3,000
Brushing	1	LS	2,000	2,000
Culvert No.1				
Removal of existing structure	1.0	LS	1,000	1,000
Supply & install 1200mm dia. Sanitite c/w Bedding	14.0	m	1,300	18,200
Place backfill	1.0	LS	1,200	1,200
Supply & install Granular 'A'	35.0	tonne	35	1,225
Supply & install rip rap endwalls	40.0	tonne	110	4,400
Provisional: Supply additional Granular "B" Type II and dispose of unsuitable material	80.0	tonne	50	4,000
Culvert No.2				
Removal of existing structure and excavated material	1.0	LS	2,000	2,000
Supply & install 1200mm dia. Sanitite c/w Bedding	12.0	m	1,300	15,600
Supply and install Granular 'B' Type II	100.0	tonne	35	3,500
Supply & install Granular 'A'	30.0	tonne	40	1,200
Supply & install rip rap endwalls	30.0	tonne	110	3,300
Culvert No.3				
Removal of existing structure and excavated material	1.0	LS	2,000	2,000
Supply & install 1200mm dia. Sanitite c/w Bedding	12.0	m	1,300	15,600
Supply and install Granular 'B' Type II	100.0	tonne	35	3,500
Supply & install Granular 'A'	30.0	tonne	40	1,200
Supply & install rip rap endwalls	30.0	tonne	110	3,300
Culvert No.5				
Removal of existing structure and excavated material	1.0	LS	2,000	2,000
Supply & install 1050mm dia. Sanitite c/w Bedding	12.0	m	1,200	14,400
Supply and install Granular 'B' Type II	100.0	tonne	35	3,500
Supply & install Granular 'A'	30.0	tonne	40	1,200
Supply & install rip rap endwalls	30.0	tonne	110	3,300

Estimate of Cost (Continued)

Page 2 of 2

	Quantity	<u>Unit</u>	<u>Unit Cost</u>	<u>Total</u>
Culvert No.6				
Removal of existing structure and excavated material Supply & install 1050mm dia. Sanitite c/w Bedding	1.0 12.0	LS	2,000 1,200	2,000 14,400
Supply and install Granular 'B' Type II	100.0	m tonne	35	3,500
Supply & install Granular 'A'	30.0	tonne	40	1,200
Supply & install rip rap endwalls	30.0	tonne	110	3,300
Supply & instant tip tap chawans	30.0	tomic	110	3,300
Completed Construction Cost for Emergency Designation: Replacement of Culvert No. 7	1.0	LS	14,000	14,000
Culvert No.8				
Removal of existing structure and excavated material	1.0	LS	2,000	2,000
Supply & install 1050mm dia. Sanitite c/w Bedding	12.0	m	1,200	14,400
Supply and install Granular 'B' Type II	110.0	tonne	35	3,850
Supply & install Granular 'A'	30.0	tonne	40	1,200
Supply & install rip rap endwalls	30.0	tonne	110	3,300
Locate and Work Around Telecom	1.0	LS	500	500
Locate and Work Around Telecom	1.0	LS	200	300
Culvert No.9				
Removal of existing structure and excavated material	1.0	LS	2,000	2,000
Supply & install 900mm dia. HDPE c/w Bedding	12.0	m	1,100	13,200
Supply and install Granular 'B' Type II	140.0	tonne	35	4,900
Supply & install Granular 'A'	30.0	tonne	40	1,200
Supply & install rip rap endwalls	30.0	tonne	110	3,300
Culvert No.10				
Removal of existing structure and excavated material	1.0	LS	2,000	2,000
Supply & install 900mm dia. HDPE c/w Bedding	13.0	m	1,100	14,300
Supply and install Granular 'B' Type II	160.0	tonne	35	5,600
Supply & install Granular 'A'	30.0	tonne	40	1,200
Supply & install rip rap endwalls	30.0	tonne	110	3,300
Supply and Install HL3 Aphalt	35.0	sq.m	100	3,500
Locate and Work Around Telecom	1.0	ĹS	500	500
Culvert No.13			• • • •	• • • •
Removal of existing structure and excavated material	1.0	LS	2,000	2,000
Supply & install 900mm dia. HDPE c/w Bedding	12.0	m	1,100	13,200
Supply and install Granular 'B' Type II	120.0	tonne	35	4,200
Supply & install Granular 'A'	30.0	tonne	40	1,200
Supply & install rip rap endwalls	30.0	tonne	110	3,300
Restoration / Seeding	1.0	LS	8,000	8,000
Buffer Strip	4370	m^2	5	21,850
Enviornmental Considerations including Silt Fence	1.0	LS	500	500
Contingency				11,000
- •	Sub Total		-	295,725
	Allowances	3		13,650
	Engineering			48,090
	Future Culvert Design			3,600
			urvey Utilities	4,000
	Tendering and Inspection (Estimate for Part Time Inspection) ERCA Fee Total Estimate excluding HST			21,000
				800
				386,865
	Non-Recov	6,550		
	Total Estin			\$393,415

ESTIMED NET ASSESSMENT

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

Conc	. Lot or Part	Affected Hecatares	Roll No.	Owner	Total Assessment (\$)	Estimated Grant (\$)	Allowances (\$)	Estimated Net Assessment (\$)
Muni	cipal Lands							
	King's Highway 401	2.80		Ministry of Transportation	3,052			3,052
	Pt. Lot 13	0.08	510-002210	Ministry of Transportation	40			40
	Pt. Lot 12	0.07	510-001400	Ministry of Transportation	35			35
	North Talbot Road (CR 46)	0.92		County of Essex	5,507			5,507
	12th Concession Road	5.24		Town of Tecumseh	57,218			57,218
Non-A	Agricultural Lands							
11	Pt. E 1/2 Lot 10	0.51	510-000410	P. & M. Boretski	1,441		240	1,201
	E 1/2 Lot 11	6.07	510-000300	A. & E. Sirizzotti	63,135		2,720	60,415
	Pt. Lot 12	0.48	510-000200	C. Colenutt & S. Merrett	17,170		360	16,810
12	Pt. Lot 9	11.68	500-001800	O. & A. Rizzo	23,309			23,309
	Pt. Lot 9	3.23	500-001700	E. Lys & M. Kawala-Lys & O. Vanes	8,594			8,594
	Pt. Lot 9	0.78	500-001805	A. & L. Mitchell	1,245			1,245
	Pt. Lot 9	0.78	500-001810	M. & J. Barkey	1,245			1,245
	Pt. Lot 10	0.36	500-001900	P. & L. Eyraud	546			546
	Pt. Lot 10	1.12	500-001350	A. & J. Mifflin	1,670			1,670
	Pt. Lot 10	0.40	500-002000	P. & C. Eyraud	671			671
	Pt. Lot 11	0.50	500-001105	M. Ciellza	784			784
	Pt. Lot 11	0.40	500-002500	D. McGuire & E. Bondy	614			614
	Pt. Lot 11 & Pt. Lot 12	8.09	500-000500	2829555 Ontario Inc	5,983			5,983
Agric	ultural Lands (Eligible for Avail	able Grants)						
11	Pt. Lot 9	8.09	510-000500	W. & M. O'Neil	32,592	10,864	2,450	19,278
	E 1/2 Lot 10	17.47	510-000400	Edward Chittle Farm Ltd	22,529	7,510	2,280	12,739
	Pt. Lot 12	12.14	510-000201	K. Wallis	26,043	8,681	1,380	15,982
	Pt. Lot 12	5.59	510-000150	W. & D. O'Neil	19,954	6,651	490	12,813
	Pt. Lot 12	1.21	510-000100	C. McGuire	17,261	5,754	360	11,147
	Pt. Lot 13 & Pt. Lot 14	18.10	510-002200	W. & E. O'Neil	58,311	7,520	3,370	47,421
12	Pt. Lot 10	6.20	500-001300	R. Eyraud & E. Ayers	6,932	2,311		4,621
	Pt. Lot 10	5.26	500-001200	L. Daniher	5,726	1,909		3,817
	Pt. Lot 11	6.38	500-001100	D. & D. McGuire	6,528	2,176		4,352
Utiliti	ies							
	Telecom Utility			Bell	3,280			3,280
	Gas Utility			Enbridge Gas	2,000			2,000
				Total	393,415	53,376	13,650	326,389

North 12th Concession Drain Town of Tecumseh June 10, 2025

SCHEDULE OF ASSESSMENT

						Culverts				Channel			
Conc	. Lot or	Hectares	Affected	Roll	Owner	Special	Benefit	Outlet	Special	Benefit	Outlet	Total	Equivalent
cone	Part		Hecatares	No.	o wher	Benefit (\$)	(\$)	(\$)	Benefit (\$)	(\$)	(\$)	10141	На
-	1	0	11000000	1,0,		Belletit (¢)	(4)	(Ψ)	Deliette (4)	(Ψ)	(4)		-
Muni	cipal Lands												
	King's Highway 401		2.80		Ministry of Transportation		1,200	1,135		432	285	3,052	2.52
	Pt. Lot 13		0.08	510-002210	Ministry of Transportation		-	32		-	8	40	0.07
	Pt. Lot 12		0.07	510-001400	Ministry of Transportation		-	28		_	7	35	0.06
	North Talbot Road (CR 46)		0.92		County of Essex		-	4,714		_	793	5,507	0.83
	12th Concession Road		5.24		Town of Tecumseh		42,989	8,628		3,757	1,844	57,218	4.72
					Total Municipal Lands	-	44,189	14,537	-	4,189	2,937	65,852	
Non-	Agricultural Lands												
11	Pt. E 1/2 Lot 10	0.51	0.51	510-000410	P. & M. Boretski		600	646		106	89	1,441	0.20
	E 1/2 Lot 11	27.60	6.07	510-000300	A. & E. Sirizzotti	37,972	16,713	4,631		3,440	379	63,135	1.82
	Pt. Lot 12	0.48	0.48	510-000200	C. Colenutt & S. Merrett	<i></i>	16,713	313		117	27	17,170	0.19
12	Pt. Lot 9	11.68	11.68	500-001800	O. & A. Rizzo		_	19,951		_	3,358	23,309	3.50
	Pt. Lot 9	16.24	3.23	500-001700	E. Lys & M. Kawala-Lys & O. V	/anes	_	7,356		_	1,238	8,594	1.29
	Pt. Lot 9	0.78	0.78	500-001805	A. & L. Mitchell		-	1,008		-	237	1,245	0.31
	Pt. Lot 9	0.78	0.78	500-001810	M. & J. Barkey		_	1,008		_	237	1,245	0.31
	Pt. Lot 10	0.36	0.36	500-001900	P. & L. Eyraud		-	465		-	81	546	0.14
	Pt. Lot 10	1.12	1.12	500-001350	A. & J. Mifflin		-	1,419		-	251	1,670	0.45
	Pt. Lot 10	0.40	0.40	500-002000	P. & C. Eyraud		-	570		_	101	671	0.18
	Pt. Lot 11	0.50	0.50	500-001105	M. Ciellza		-	703		-	81	784	0.23
	Pt. Lot 11	0.40	0.40	500-002500	D. McGuire & E. Bondy		-	563		-	51	614	0.18
	Pt. Lot 11 & Pt. Lot 12	27.58	8.09	500-000500	2829555 Ontario Inc		-	5,464		-	519	5,983	2.43
					Total Non-Agricultural Lands	37,972	34,026	44,097	-	3,663	6,649	126,407	

Schedule of Assessment (Continued)

Page 2 of 2

						Culverts		Channel					
Conc.	Lot or	Hectares	Affected	Roll	Owner	Special	Benefit	Outlet	Special	Benefit	Outlet	Total	Equivalent
	Part	Owned	Hecatares	No.		Benefit (\$)	(\$)	(\$)	Benefit (\$)	(\$)	(\$)		На
Agricultural Lands (Eligible for Available Grants)													
11	Pt. Lot 9	12.20	8.09	510-000500	W. & M. O'Neil		16,713	10,831		3,205	1,843	32,592	2.43
	E 1/2 Lot 10	27.37	17.47	510-000400	Edward Chittle Farm Ltd		600	16,490		3,113	2,326	22,529	5.24
	Pt. Lot 12	17.08	12.14	510-000201	K. Wallis		16,713	7,073		1,734	523	26,043	3.64
	Pt. Lot 12	10.12	5.59	510-000150	W. & D. O'Neil		16,713	2,507		527	207	19,954	1.68
	Pt. Lot 12	3.46	1.21	510-000100	C. McGuire		16,713	164		343	41	17,261	0.36
	Pt. Lot 13 & Pt. Lot 14	40.96	18.10	510-002200	W. & E. O'Neil	35,752	16,713	1,957		3,889	-	58,311	5.43
12	Pt. Lot 10	28.12	6.20	500-001300	R. Eyraud & E. Ayers		-	5,889		-	1,043	6,932	1.86
	Pt. Lot 10	14.28	5.26	500-001200	L. Daniher		-	4,933		-	793	5,726	1.58
	Pt. Lot 11	20.79	6.38	500-001100	D. & D. McGuire		-	5,984		-	544	6,528	1.91
					Total Agricultural Lands	35,752	84,165	55,828	-	12,811	7,320	195,876	
Utiliti	es												
	Telecom Utility Gas Utility				Bell Enbridge Gas		3,280	-	2,000	-	-	3,280 2,000	_
					Total - Utilities	-	3,280	-	2,000	-	-	5,280	
					Total - Utilities Total Municipal Lands Total Non-Agricultural Lands Total Agricultural Lands	5,280 65,852 126,407 195,876			Cl l		4 I C	: 1 D 64	27.5(0.00
					Total Assessment	Channel Assessment Less Special Benefit: 3					37,569.00		

North 12th Concession Drain Town of Tecumseh June 10, 2025

SPECIFICATION OF WORK

1. Location

The location of the proposed and future work outlined in this specification is along the length of the North 12th Concession Drain in Lot 9 to 14, Concession 11 in the Town of Tecumseh.

2. Scope of Work

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

- Future open channel maintenance
- Establishment and maintenance of a 1.5m buffer strip
- 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.

All equivalents shall be requested to the Contract Administrator in writing prior to ordering any material.

Estimated quantities have been included in the Estimate of Cost in this Engineer's Report. If the items are tendered as lump sum items, the quantities in the estimate shall not form the basis for payment. It is up to the Contractor to determine the quantities that will be required for each item when bidding.

All property bars and survey monuments are to be flagged and protected by the Contractor. Any disturbed, damaged or removed bars and monuments shall be the responsibility of the Contractor to have an OLS reinstate the same.

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.

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.

The Contractor shall submit their traffic control plan within 10 working days of notice of award. Road closures will not be permitted on this project without the approval of the Town of Tecumseh.

5. Workplace Safety and Insurance Board

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

6. 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 (20% of the cost) shall be borne by that utility.

7. Pre-Construction Meeting

There is a requirement for a pre-construction meeting to be held prior to any construction taking place. The meeting will be scheduled by the Contractor. Contact information will be provided to the Contractor by the Engineer. The affected Landowners, Engineer, County of Essex, MTO and the Town of Tecumseh shall be invited. The Contractor shall notify all parties at least one week prior to wanting to hold a pre-construction meeting.

8. Benchmarks

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

9. Traffic Control

Access and driveways to private properties shall not be obstructed longer than the minimum time necessary for the work and shall be reinstated as soon as possible all to the satisfaction of the Engineer. The Contractor shall schedule any obstruction of existing driveways and accesses with the owners at least two full working days in advance. Should the access to a residential property extend beyond 24 hours, the Contractor shall be responsible for providing a walking access across the drain to that property. The

Traffic Plan must be approved by the Town prior to the commencement of any construction.

- a) The Contractor shall supply, erect and maintain all detour signs and special signs necessary for detours to divert traffic from the area under construction as directed by the Drainage Superintendent or Engineer. All this work shall be at the Contractor's expense.
- b) The Contractor shall be responsible for supplying, erecting and maintaining all signs, supports, barricades, flashers, cones, etc. in the construction area and at the boundaries of the work as part of the above detours, all to the satisfaction of the Engineer or Drainage Superintendent. All this work shall be done by the Contractor at their own expense.
- c) The Contractor shall not be allowed to proceed with construction activities unless proper signage and flagmen are present. Flagging procedures, signage and detours shall conform to the recommendations of Book 7, Temporary Conditions, Ontario Traffic Manual, issued by the Ministry of Transportation. Conformance shall be enforced by the Ministry of Labour Inspector.

10. Access and Working Area

Access to the work site for construction and future maintenance shall be from 12th Concession Road. Access shall be restricted to a width of 6m and shall generally be along the edge of the drainage works and across existing culverts.

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

The working area for the construction and future maintenance of the channel shall be restricted to a width of 12m from the top of bank that the working is taking place from. The excavation shall generally be done from the west (field) side of the channel except across finished lawns. Across finished lawns the excavation shall generally be done from the east (road) side with the excavated material being trucked and disposed off site or levelled in the adjacent farm fields.

11. Removals

The culverts and any native backfill material, when required, shall be removed in their entirety. The culvert, backfill and the concrete rubble shall be disposed offsite at the

expense of the Contractor. Native backfill shall not be reused in the culvert installation unless determined re-usable by the Contract Administrator. 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 Contract Administrator.

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 reinstalled 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 not being replaced the Contractor shall restore the channel in these sections to match the adjacent side slopes and shall restore them with straw matting and seed.

12. Brushing and Tree Removal

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

A mechanical grinder attached to an excavator shall be used for the removal of brush and trees. Any brush and trees too large to grind shall be close cut. The Contractor shall stockpile the trees and brush in a single pile on the property in which they were removed or dispose of the trees and brush offsite. Where brush and trees are removed within a bush section of the drain the trees and brush shall be disposed of within the bush at the limits of the working area. The Contractor is responsible for the burning of the trees and brush not in the bush sections. The Contractor is responsible for obtaining all necessary permits for any disposal sites. Burning of the trees and brush is subject to local bylaws and guidelines of the Ministry of the Environment Conservation and Parks.

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

The Contractor is required to submit a Burn Permit Application to the Fire Department including detailed information on the burn process, extinguishing method, map of burn piles as well as a signature from the landowner acknowledging burning will occur on their property. The Contractor shall in no

way be guaranteed to burn except with the explicit permission from the Fire Department. Please refer to By-Law 2021-50 for more information.

13. Excavation of Open Channel and Levelling (Future)

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

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

At the discretion of the Drainage Superintendent or request of the Landowner, the excavated material may be trucked. The additional cost for trucking shall be assessed to the individual property and will not be eligible for grant.

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

14. Rip Rap (Future)

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. The filter cloth shall be cut and trimmed so that none is visible above the level of the rip rap.

15. Installation of Culverts

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

Sanitite Pipe shall be SaniTite HP Dual Wall Pipe with 320kPa and bell and spigot joints or approved equivalent. HDPE shall be CSA approved 320 kPa with bell and spigot joints or approved equivalent.

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 Contract Administrator. 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 lengths on the drawings are based on utilized rip rap end walls. If block end walls are used the lengths shall be reduced accordingly. The access culverts shall be assessed, as per the report, to provide an 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 downstream at the landowner's expense. The pipes that shall be extended upstream or downstream of the proposed culvert shall be done with non-perforated HDPE agricultural tubing with a manufactured coupling, elbow and rodent grate.

Access Culverts:

The bottom of the excavation shall be excavated to a minimum of 100mm below the proposed invert. The pipe shall be bedded with ³/₄" clear stone. When the pipe has been installed to the proper grade and depth, the excavation shall be backfilled with ³/₄" 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 HL3 and shall match the existing thickness. In these cases, the compacted Granular "A" shall occupy 150mm below the proposed asphalt.

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. The culvert lengths contained in the profile are based on utilizing rip rap end walls.

If concrete block end walls are used, they shall consist of concrete blocks with dimensions of approx. 600mm x 600mm x 1200mm, 600mm x 600mm x 2400mm or 300mm x 600mm x 1200mm as required. 600mm x 600mm x 2400mm concrete blocks will be paid at twice the unit price established per block, all others will be at a unit of 1. The top of the culvert shall govern block elevation. The correct block shall be set with the top of the block equal to the top of the culvert. 2400mm wide concrete blocks shall be used as the top block on arch and larger round pipes in order to span between the culvert top and the supporting block. The blocks shall be set at each end of the culvert so that each row of blocks will be offset approx. 100mm from the row below. The bottom row shall consist of one block placed parallel to the culvert. The blocks shall be imbedded a minimum of 300mm into each bank and shall extend into the drain bottom to match the pipe invert or below. Erosion protection shall be placed on the banks next to the end walls. The erosion protection shall consist of 150mm x 300mm quarry stone over filter fabric (Mirafi P150 or approved equal). It shall extend 500mm upstream or downstream and from top of bank to top of bank at each end wall.

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

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

16. Maintenance

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

If the Contractor cannot perform the work. The Town will hold the money against the tender or collect it from the tenderer.

17. 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.

18. Buffer Strip

A grassed buffer strip shall be incorporated into the drainage works. The buffer strip shall extend 1.5 metres from the top of the bank on the west side. The seed mixture shall be as specified in the Seeding/Restoration specification.

19. Seeding/Restoration

The side slopes of the channel, road right of way, buffer strip, finished lawns, and all areas disturbed by construction, shall be topped with 100mm of topsoil and hydroseeded in the spring or fall following construction. The time of application shall be approved by the Drainage Superintendent or Engineer.

Hydraulic seed and mulch in accordance with OPSS 804. Seed mixture, fertilizer and application rates are as follows:

- Primary seed (85 kg/ha.) consisting of 50% red fescue, 40% perennial rye-grass and 5% white clover.
- Nurse crop consisting of Italian (annual) rye-grass at 25% of total weight.
- Fertilizer (300 kg/ha.) consisting of 8-32-16.
- Hydraulic mulch (2,999 kg/ha.) type "B" and water (52,700 litres/ha.).

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

It is the Contractors responsibility to ensure that the grass is grown and established. If areas require to be re-hydroseeded, at the discretion of the Drainage Superintendent or Engineer, it shall be done at the expense of the Contractor.

20. 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.

APPENDIX A

Emergency Designation Request and Approval



4218 Oil Heritage Road, P.O. Box 1928 Petrolia, Ontario, NON 1R0 Phone: (519) 882-0032 Fax: (519) 882-2233 www.dobbineng.com

June 7, 2023

The Honourable Lisa Thompson Minister of Agriculture, Food and Rural Affairs Public Archives Building 77 Grenville St., 11th Floor Toronto, Ontario M7A 1B3

Re: Emergency Designation Request for Culvert Replacement on the North 12th Concession Drain –#4955 12th Concession Road, Town of Tecumseh

We are requesting an Emergency Designation under section 124 of the Drainage Act, R.S.O., 1990, to perform a culvert replacement on the North 12th Concession Drain (a municipal drainage works), at #4955 12th Concession Road in the Town of Tecumseh.

On May 9th, 2023, R. Dobbin Engineering was appointed under section 78 of the Drainage Act to investigate and make the necessary improvements to the North 12th Concession Drain. On May 24th, 2023 a site meeting was held and the Landowner expressed concern with the condition of the current culvert. After investigation of the culvert on June 7th, 2023 it was determined that the culvert must be replaced as soon as possible as shown in the Appendix on this report. The culvert has no bottom, is seeing further deterioration and presents a safety hazard in its current state. The work cannot be done under maintenance as the previous reports for the North 12th Concession Drain do not provide a means of assessing the work that is required.

Because of the time required to complete the report, obtain approvals and proceed through the Drainage Act process, the Town will be unable to complete the Drainage Act process in time.

In summary, I am asking your Ministry for approval for Emergency Designation to replace the existing culvert servicing #4955 12th Concession Road. As this matter is of urgency to the general public, we would appreciate your earliest reply. Thank you and should you require any further information regarding this matter, please do not hesitate to contact the undersigned.

Yours truly,

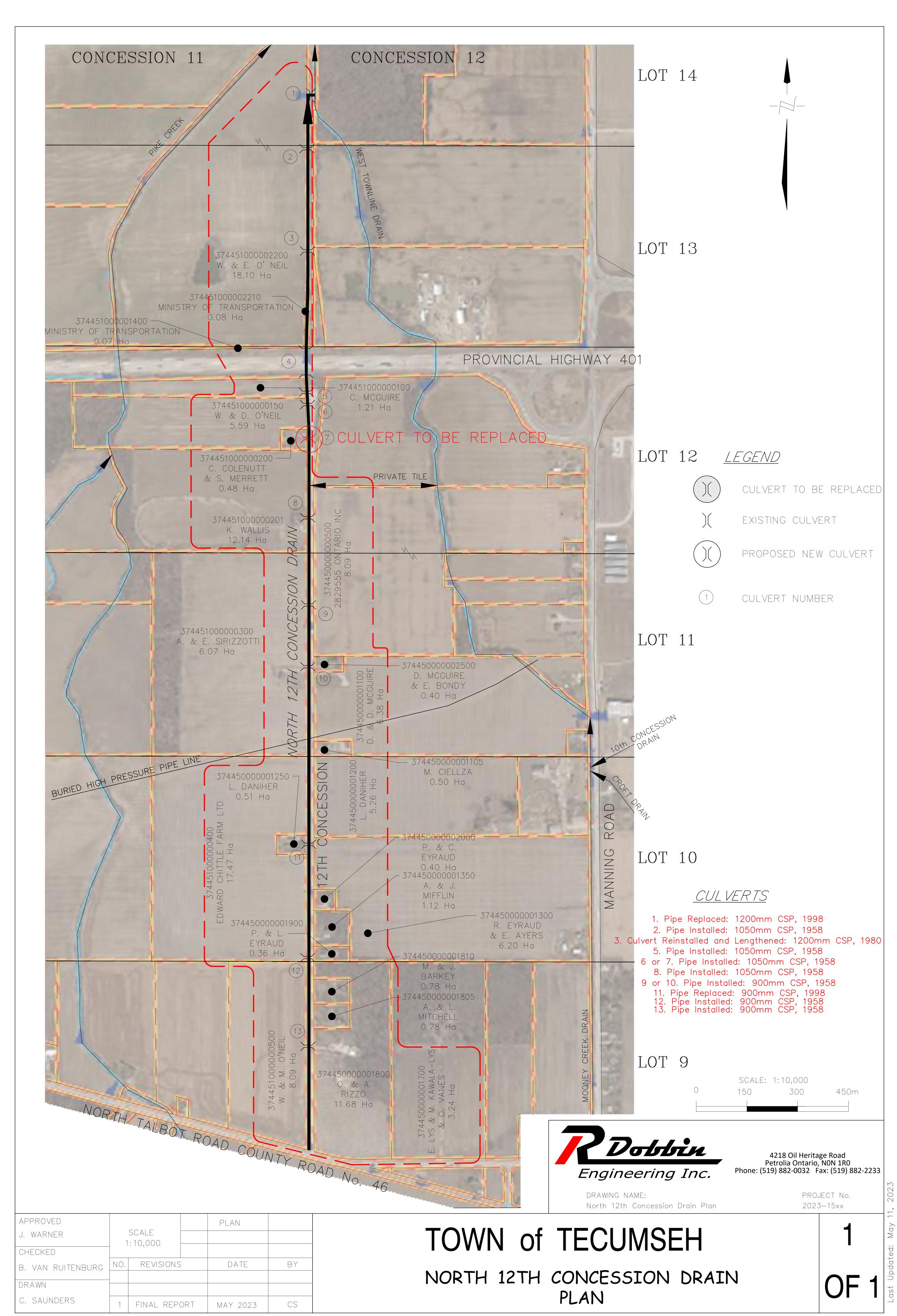
Josh Warner, P. Eng. Drainage Engineer Appendix: Photos of the pipe and Culvert Location Plan

cc. Tim Brook, Drainage Coordinator, Ministry of Agriculture and Food and Rural Affairs Alessia Mussio, Drainage Superintendent, Town of Tecumseh

<u>Appendix</u>







Ministry of Agriculture, Food and Rural Affairs

Office of the Minister

77 Grenville Street, 11th Floor Toronto, Ontario M7A 1B3 Tel: 416-326-3074 www.ontario.ca/OMAFRA Ministère de l'Agriculture, de l'Alimentation et des Affaires rurales

Bureau du ministre

77, rue Grenville, 11e étage Toronto (Ontario) M7A 1B3 Tél.: 416 326-3074 www.ontario.ca/MAAARO



June 13,2023

Josh Warner, P. Eng Drainage Engineer R. Dobbin Engineering Inc. josh@dobbineng.com

Dear Mr. Warner:

Thank you for your letter dated June 7, 2023, requesting an emergency designation under Section 124 of the <u>Drainage Act</u> for a culvert replacement on the North 12th Concession Drain servicing #4955 12th Concession Road in the Town of Tecumseh.

Your letter and the accompanying photographs demonstrate that the access culvert has no bottom, is further deteriorating and presents a safety hazard in its current state. You indicate that you have inspected the culvert and determined that the culvert has failed throughout and is unsafe to cross. As the culvert is the only access to the property, the culvert needs to be replaced as soon as possible.

You also indicate that a request was made to the municipality to replace the culvert by the owner. However, the drainage reports do not provide for culvert replacements and therefore, this culvert cannot be replaced under maintenance.

You indicate that R. Dobbin Engineering Inc. has been appointed as the Drainage Engineer, to investigate and make the necessary improvement on the North 12th Concession Drain servicing #4955 12th Concession Road in the Town of Tecumseh recommending the full replacement of the crossing in accordance with Section 78 of the Drainage Act.

After considering this information, I hereby designate the replacement of a culvert on the North 12th Concession Drain servicing #4955 12th Concession Road in the Town of Tecumseh to be an emergency within the meaning of Section 124 of the Drainage Act.





This designation is granted on the condition that the replacement is made under the supervision of R. Dobbin Engineering Inc., appointed by council under Section 78 of the Drainage Act. Any additional drain improvements will need to progress through the normal *Drainage Act* process. Since the total project cost is unknown at this time, all involved property owners must be given an opportunity to appeal their share of the project cost to the appeal bodies established under the act.

Please note that this emergency designation does not exempt you and your municipality from any approvals that may be required from other agencies including the local conservation authority and Fisheries and Oceans Canada.

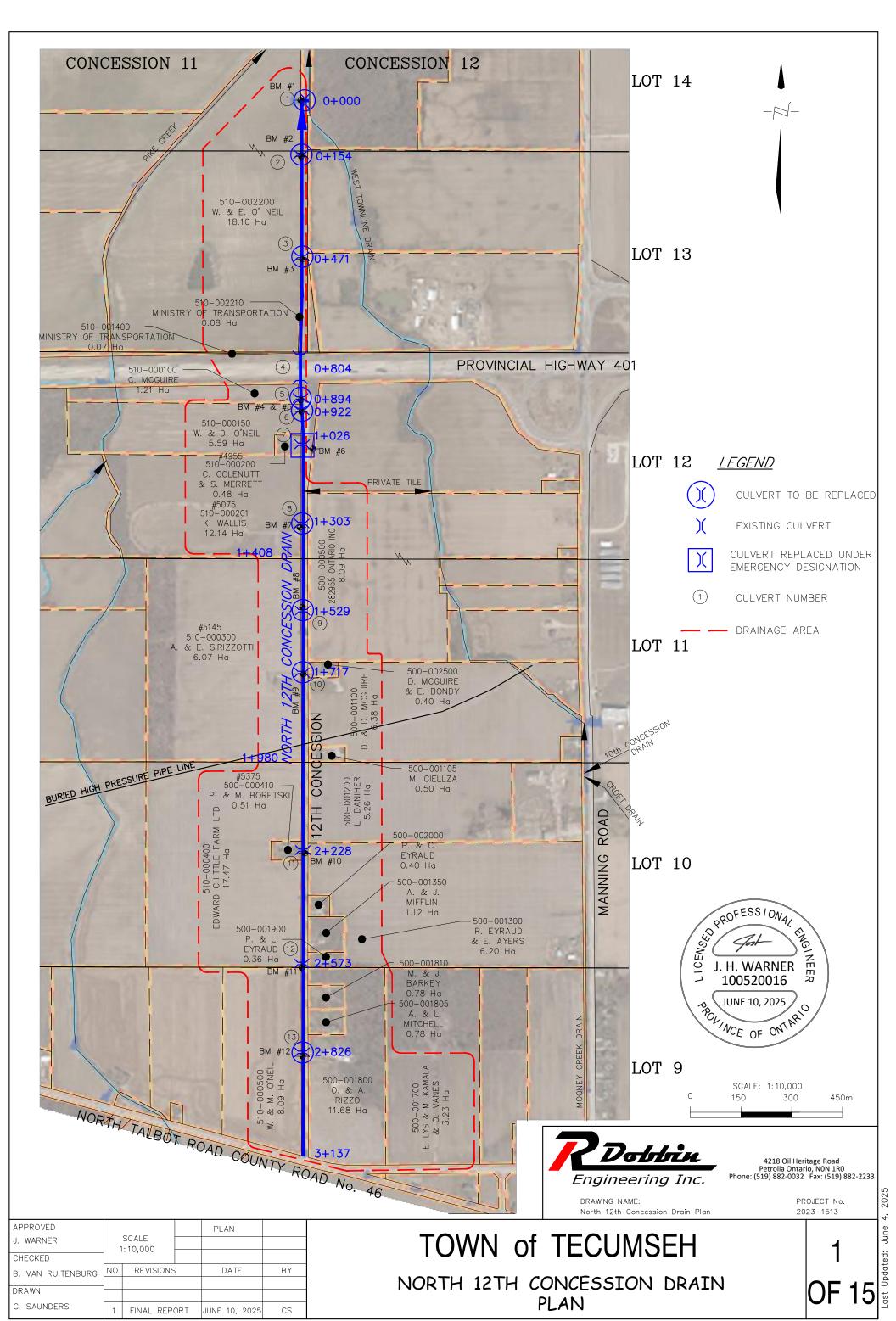
Sincerely,

Lisa M. Thompson

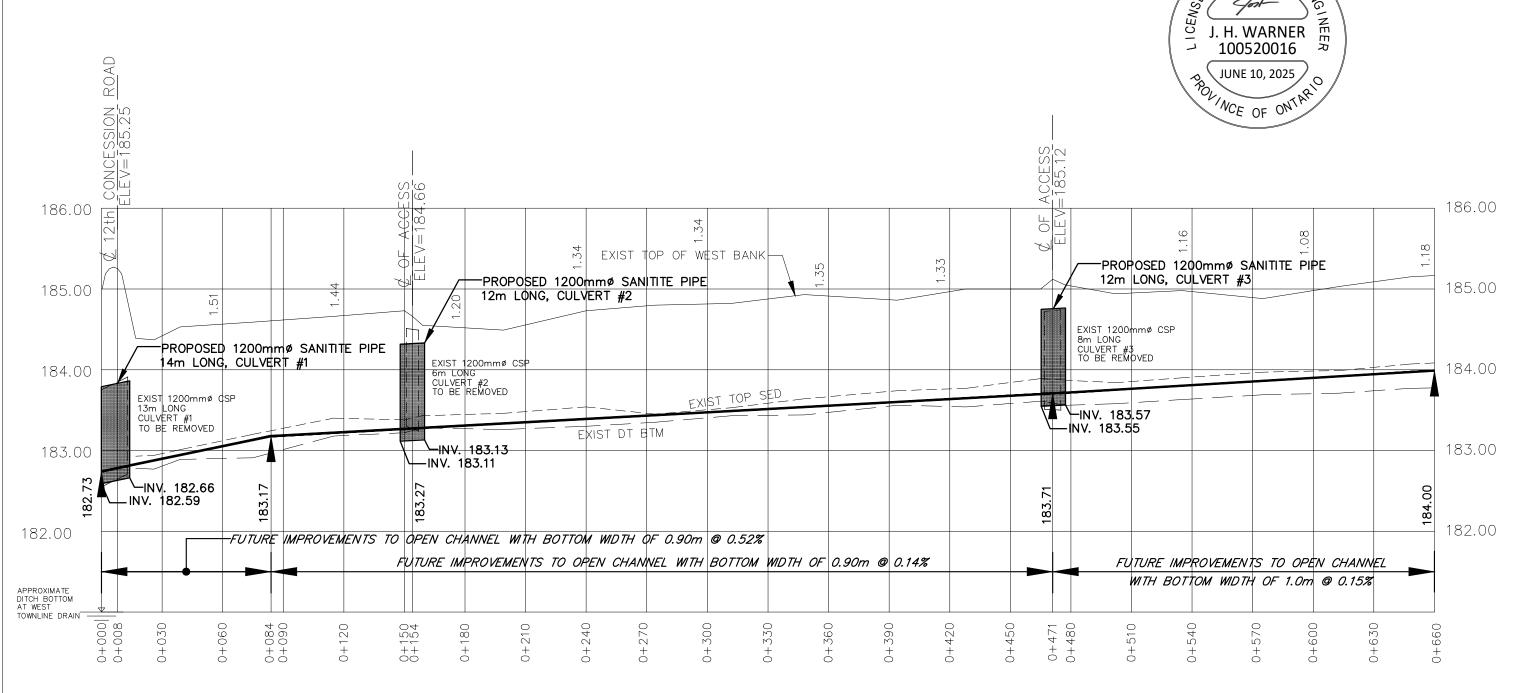
Minister of Agriculture, Food and Rural Affairs

Did you know about the Farmers' Wellness Initiative?

- Your mental health is important! If you're a farmer or a member of a farm family and in need of mental health support, please call 1-866-267-6255 and arrange to speak with a professional today.
- For additional resources visit: https://farmerwellnessinitiative.ca/.



- 1. BENCHMARK No.1 ELEV. 183.91
 TOP OF WEST END OF EXISTING
 1200mmø CSP, STATION 0+008
 BENCHMARK No.2 ELEV. 184.49
 TOP OF SOUTH END OF EXISTING
 1200mmø CSP, STATION 0+154
 BENCHMARK No.3 ELEV. 184.74
 TOP OF SOUTH END OF EXISTING
 1200mmø CSP, STATION 0+471
- 2. UPPER NUMBERS ARE DEPTH FROM THE WEST TOP OF BANK TO BOTTOM OF NEW CHANNEL.





North 12th Concession Drain Profile 1

DRAWING NAME:

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

> PROJECT No. 2023-1513

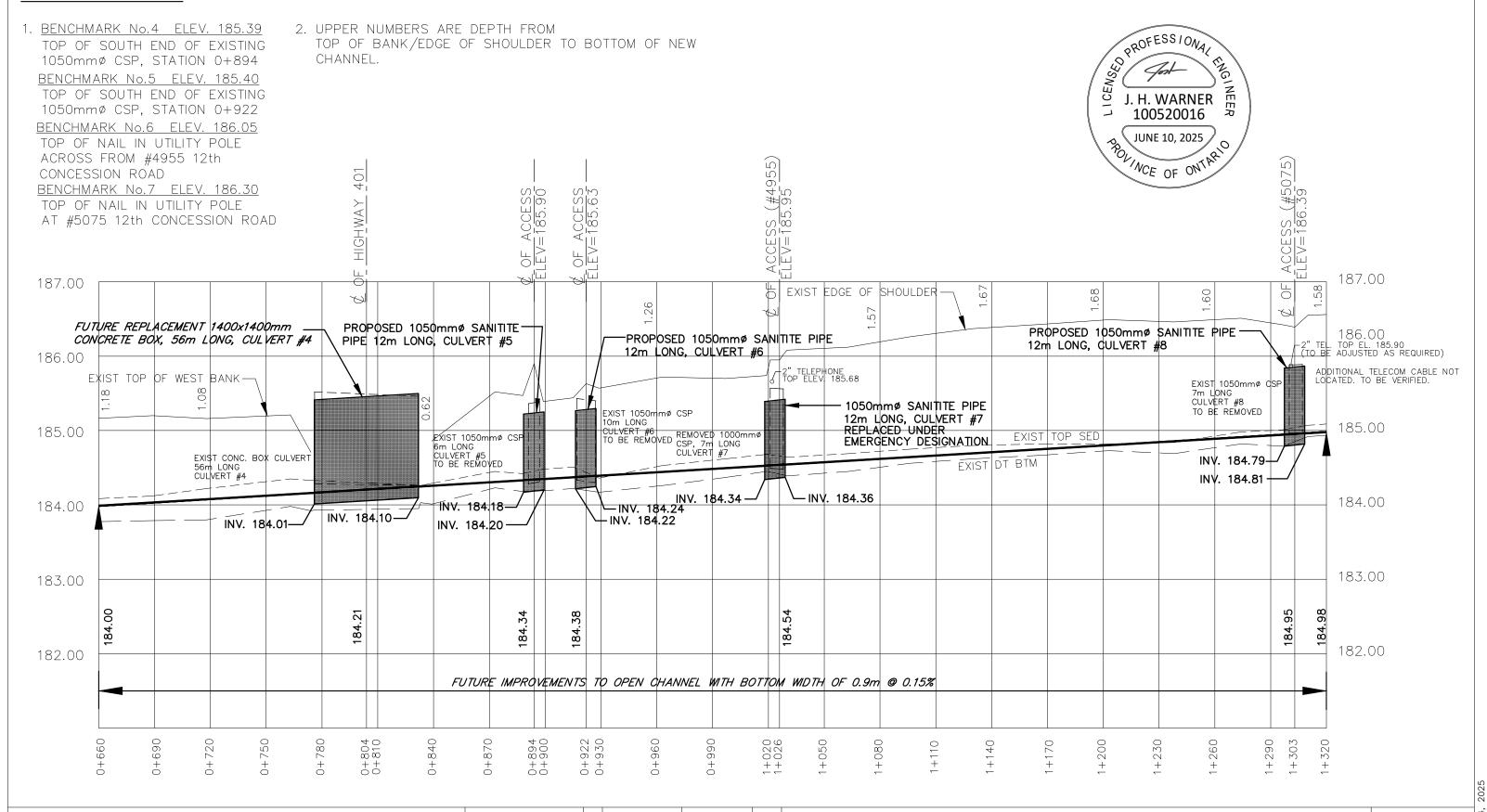
APPROVED	NO.	REVISIONS	DATE	BY	
J. WARNER					
CHECKED	1	FINAL REPORT	JUNE 10, 2025	JW	
B. VAN RUITENBURG		SCALE:	,		
DRAWN		0 20	40 6 48		
J. WARNER					

TOWN of TECUMSEH

NORTH 12TH CONCESSION DRAIN PROFILE

PROFESSIONAL

2 OF 15





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

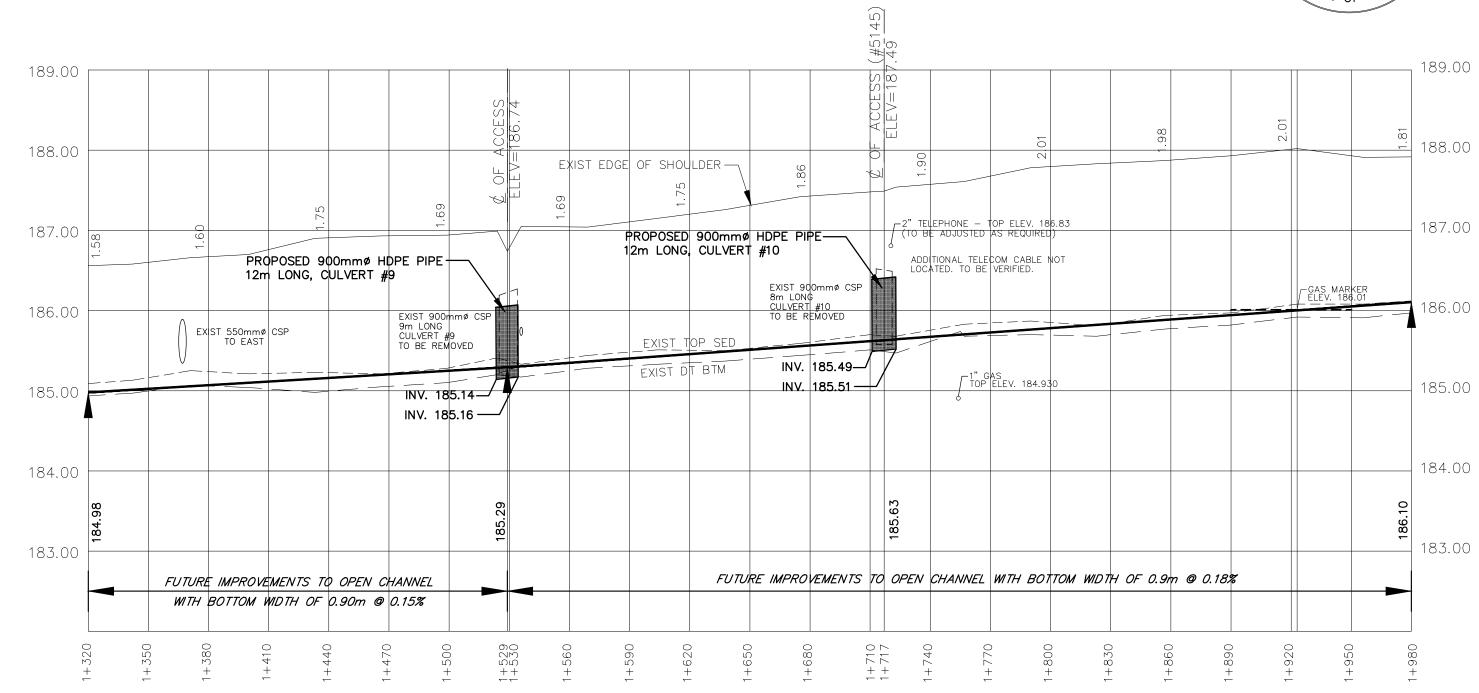
APPROVED	NO.	REVISIONS	DATE	BY
J. WARNER				
CHECKED	1	FINAL REPORT	JUNE 10, 2025	JW
B. VAN RUITENBURG		SCALE:	1: 2,000	
DRAWN		0 20	40 6 219	
J. WARNER				

TOWN of TECUMSEH

NORTH 12TH CONCESSION DRAIN **PROFILE**

- 1. <u>BENCHMARK No.8 ELEV. 186.19</u>
 TOP OF NORTH END OF EXISTING 900mmø CSP, STATION 1+529
 <u>BENCHMARK No.9 ELEV. 186.49</u>
 TOP OF SOUTH END OF EXISTING 900mmø CSP, STATION 1+717
- 2. UPPER NUMBERS ARE DEPTH FROM EAST EDGE OF SHOULDER TO BOTTOM OF NEW CHANNEL.





DATE

BY



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

J. WARNER				
CHECKED	1	FINAL REPORT	JUNE 10, 2025	JW
B. VAN RUITENBURG		SCALE:	1: 2,000	
DRAWN		0 20	40 6 5 0)
J. WARNER				

NO. REVISIONS

APPROVED

TOWN of TECUMSEH

NORTH 12TH CONCESSION DRAIN PROFILE

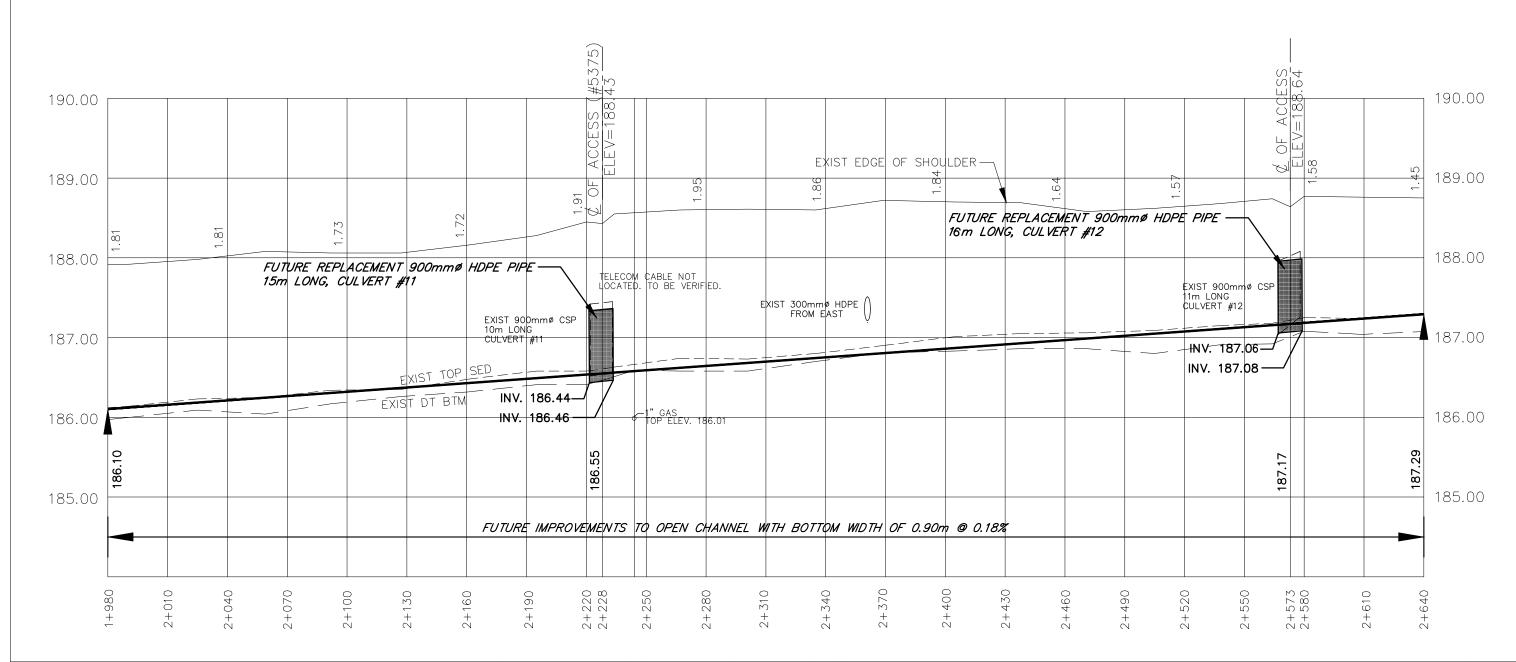
4 OF 15

DRAWING NAME: North 12th Concession Drain Profile 3

PROJECT No. 2023-1513

- 1. BENCHMARK No.10 ELEV. 187.45 TOP OF SOUTH END OF EXISTING 900mmø CSP, STATION 2+228 BENCHMARK No.11 ELEV. 188.08 TOP OF SOUTH END OF EXISTING 900mmø CSP, STATION 2+573
- 2. UPPER NUMBERS ARE DEPTH FROM EAST EDGE OF SHOULDER TO BOTTOM OF NEW CHANNEL.





Dobbin Engineering Inc.

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

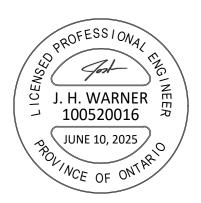
APPROVED REVISIONS DATE J. WARNER CHECKED FINAL REPORT JUNE 10, 2025 B. VAN RUITENBURG SCALE: 1:2,000 20 40 DRAWN J. WARNER

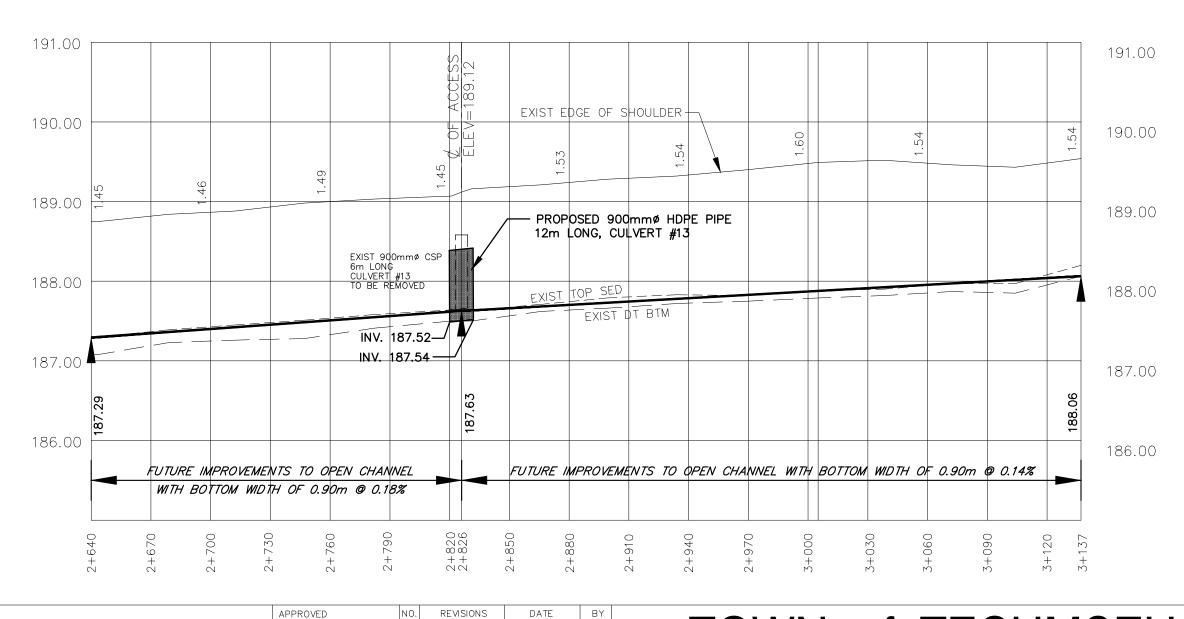
TOWN of TECUMSEH

NORTH 12TH CONCESSION DRAIN **PROFILE**

DRAWING NAME: North 12th Concession Drain Profile 4 PROJECT No. 2023-1513

- 1. BENCHMARK No.12 ELEV. 188.58 TOP OF SOUTH END OF EXISTING 900mmø CSP, STATION 2+826
- 2. UPPER NUMBERS ARE DEPTH FROM EAST EDGE OF SHOULDER TO BOTTOM OF NEW CHANNEL.







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

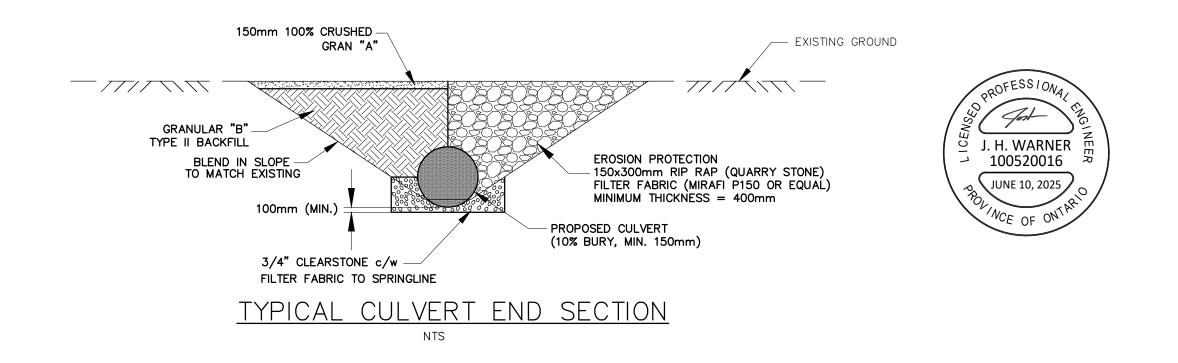
J. WARNER CHECKED JUNE 10, 2025 FINAL REPORT B. VAN RUITENBURG SCALE: 1:2,000 20 40 DRAWN J. WARNER

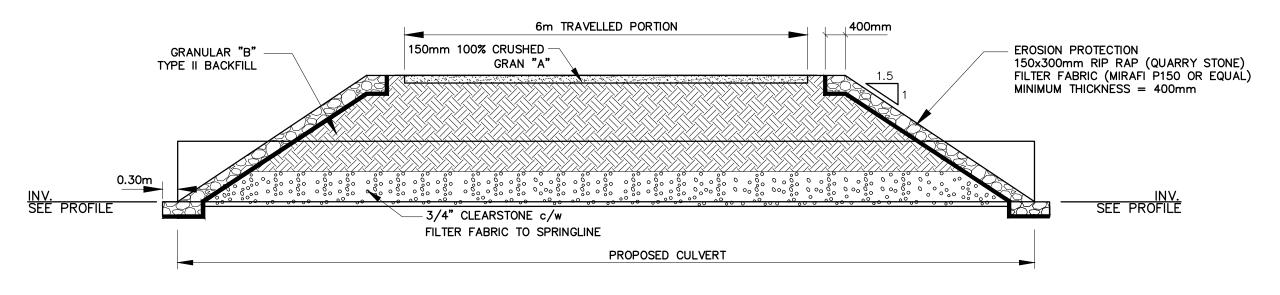
APPROVED

TOWN of TECUMSEH

NORTH 12TH CONCESSION DRAIN **PROFILE**

6





TYPICAL CROSS-SECTION

NTS

NOTE:
ALL GRANULARS COMPACTED
TO 98% MODIFIED PROCTOR DENSITY

Dobbin
Engineering Inc.

North 12th Concession Drain Culvert Detail

DRAWING NAME:

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

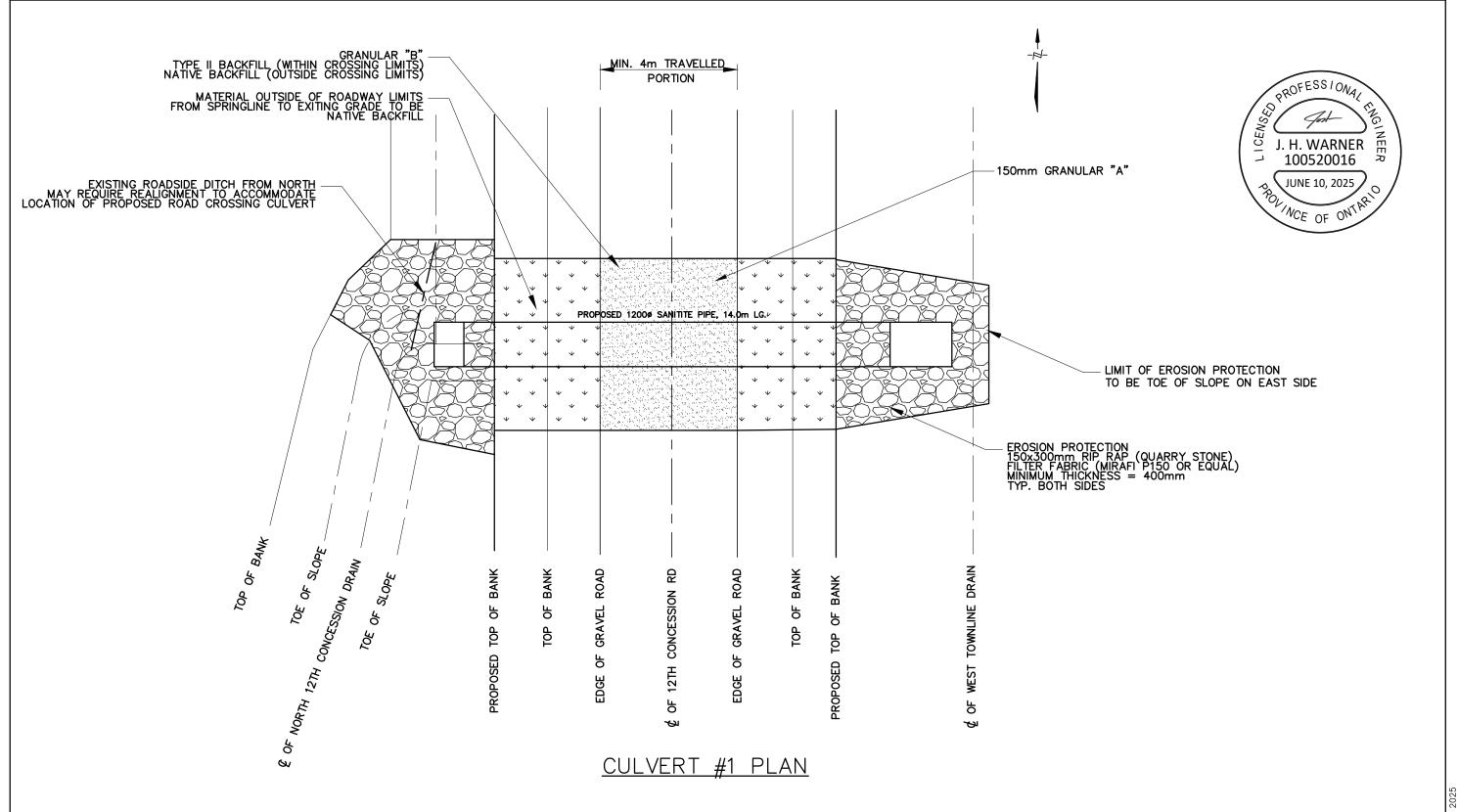
> PROJECT No. 2023-1513

APPROVED	NO.	REVISIONS	DATE	BY
J. WARNER				
CHECKED	1	FINAL REPORT	JUNE 10, 2025	JW
B. VAN RUITENBURG		SCALE		
DRAWN	i	0	2m	_
J. WARNER				53

TOWN of TECUMSEH

NORTH 12TH CONCESSION DRAIN TYPICAL ACCESS CULVERT DETAIL 7 F 1

OF 15





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

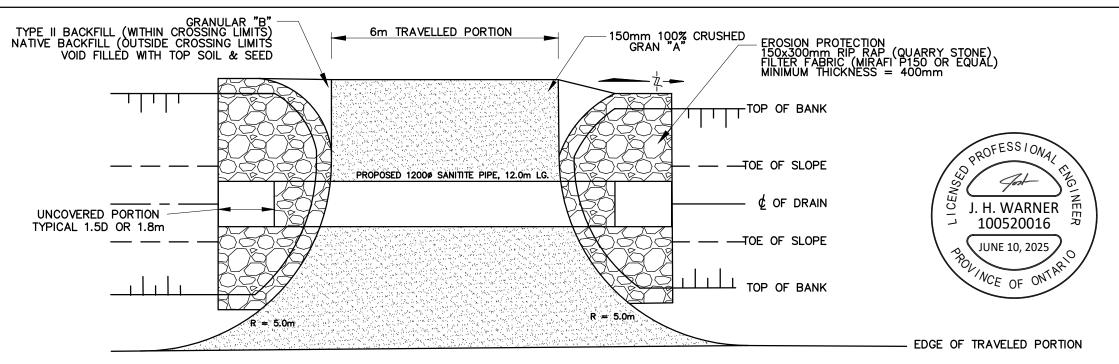
PROJECT No. North 12th Concession Drain Culvert Plans 1 2023-1513

	APPROVED	NO.	REVISIONS	DATE	BY	
	J. WARNER					
	CHECKED	1	FINAL REPORT	JUNE 10, 2025	cs	
	B. VAN RUITENBURG		SCALE:			
	DRAWN		0 1	2 3m		
	C. SAUNDERS					
_						_

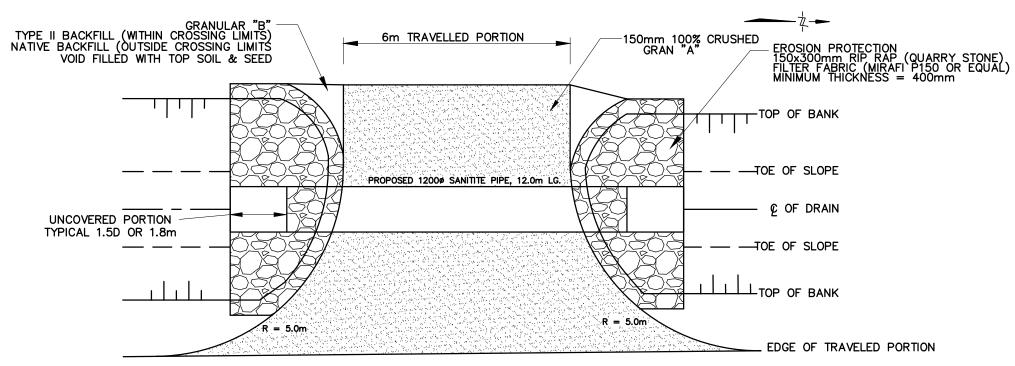
TOWN of TECUMSEH

NORTH 12TH CONCESSION DRAIN CULVERT PLANS

8



CULVERT #2 PLAN



CULVERT #3 PLAN



North 12th Concession Drain Culvert Plans 2

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

> PROJECT No. 2023—1513

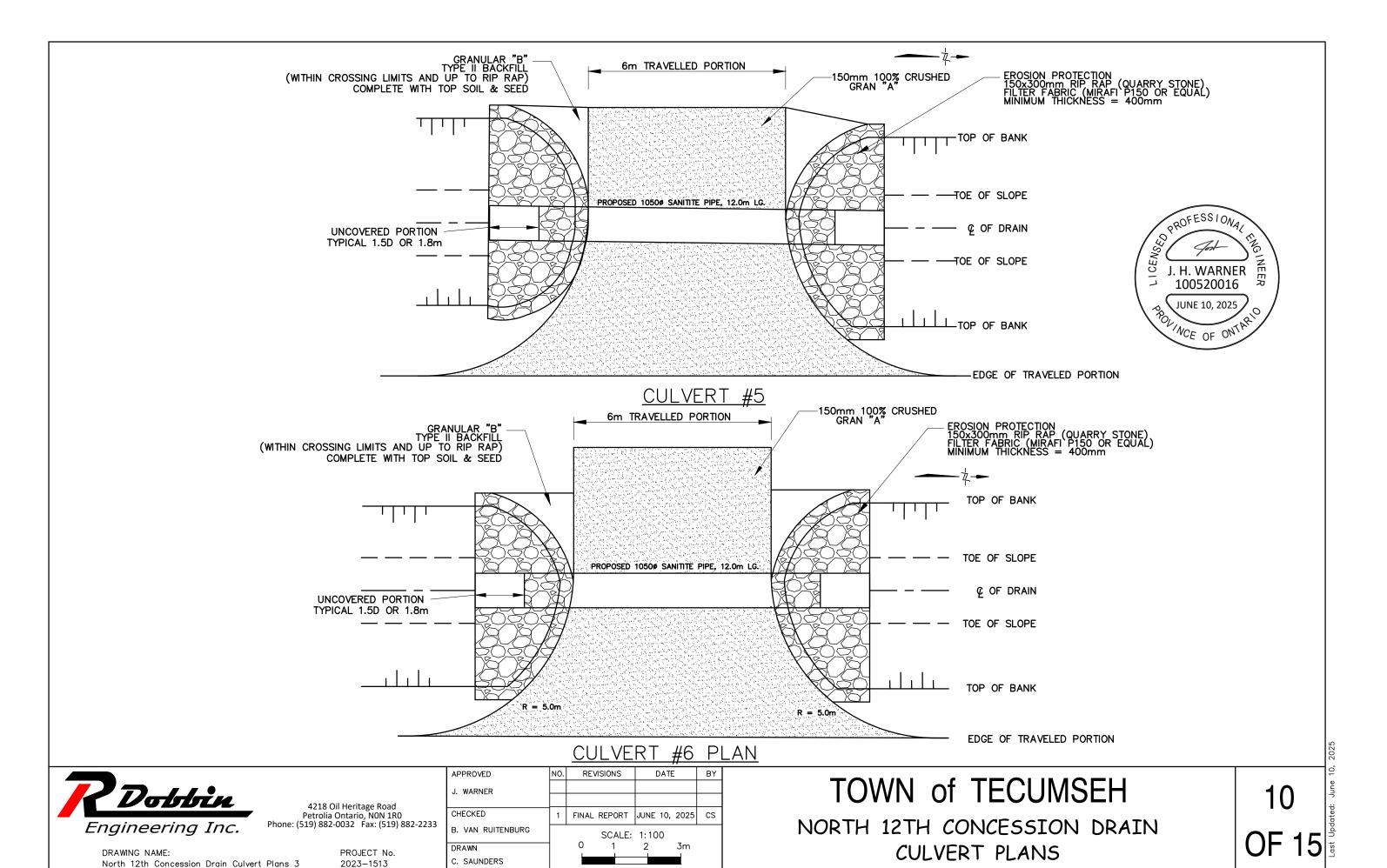
APPROVED	NO.	REVISIONS	DATE	BY	
J. WARNER					
0. W/W/I					
CHECKED	1	FINAL REPORT	JUNE 10, 2025	cs	
B. VAN RUITENBURG		SCALE:	1:100		
DRAWN	1	0 1	2 3m		
C. SAUNDERS					

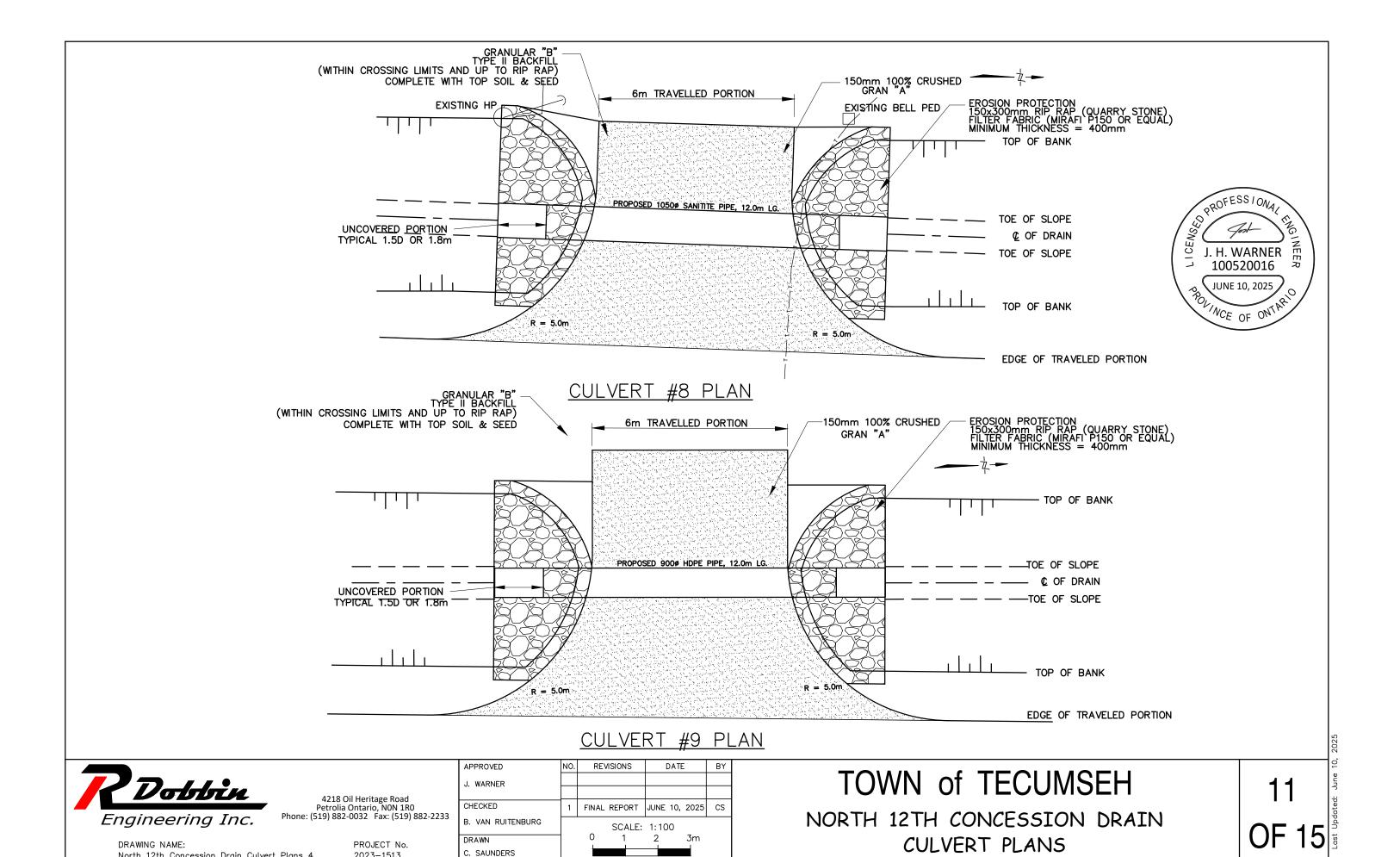
TOWN of TECUMSEH

NORTH 12TH CONCESSION DRAIN CULVERT PLANS

9 F 1

OF 15

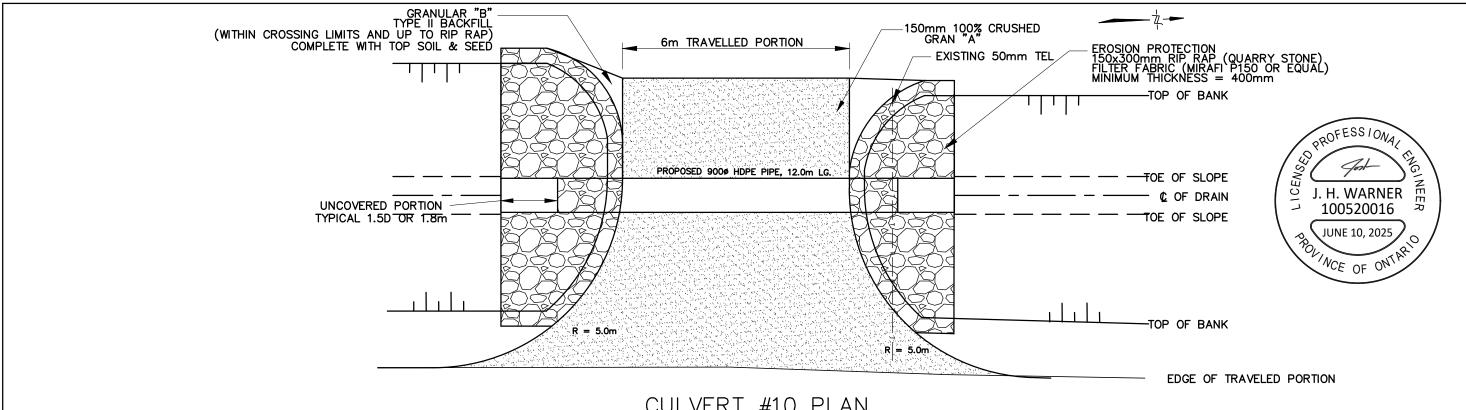




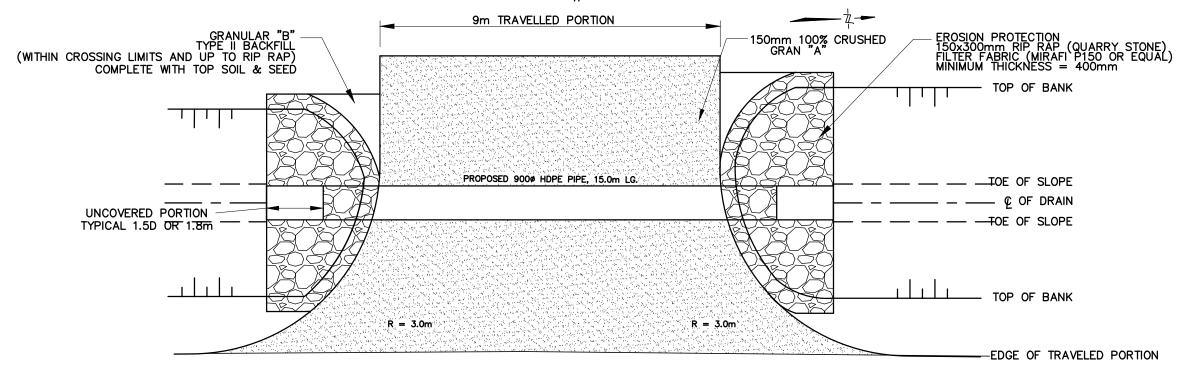
57

North 12th Concession Drain Culvert Plans 4

2023-1513



CULVERT #10 PLAN



CULVERT #11 PLAN (FUTURE)



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

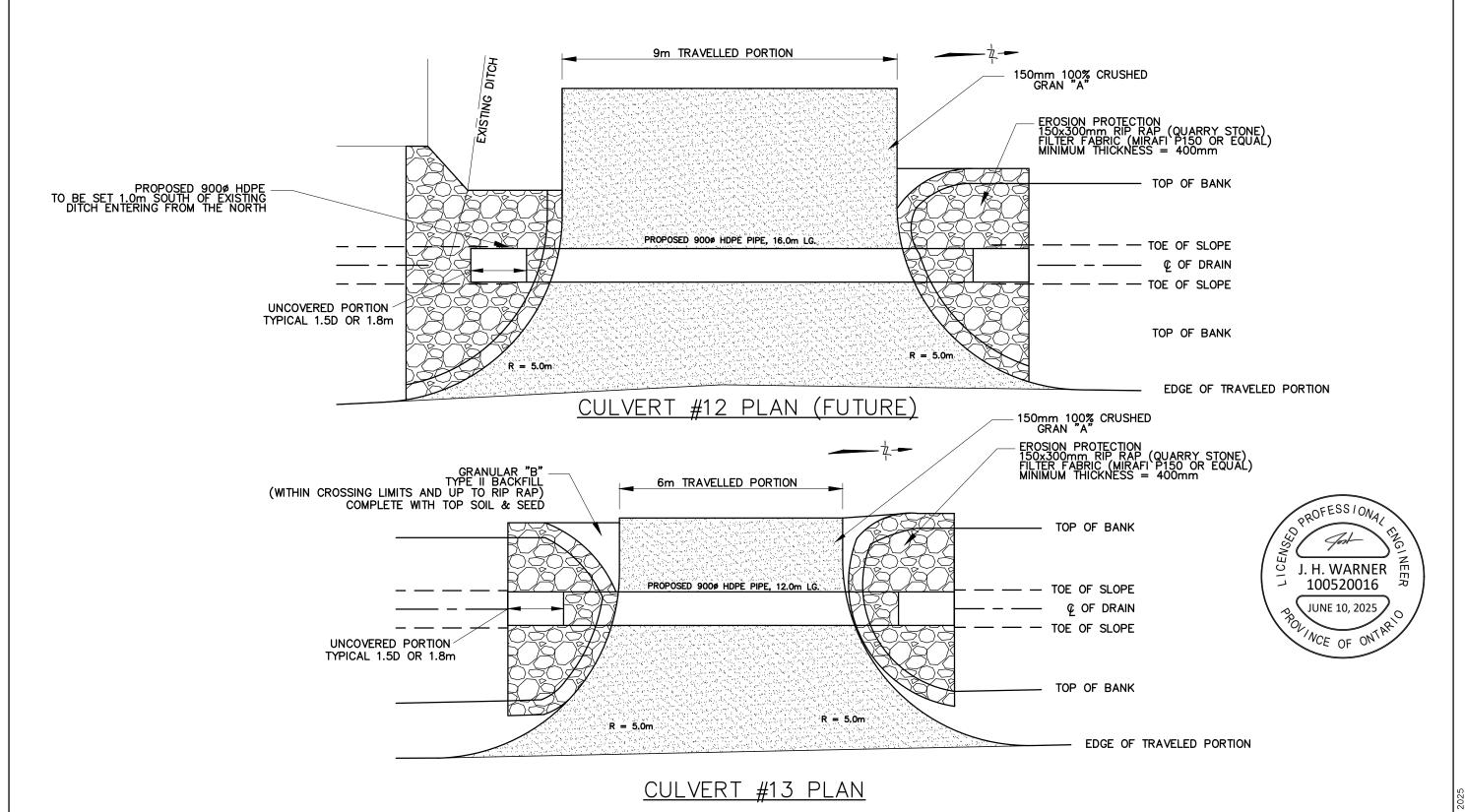
DRAWING NAME: North 12th Concession Drain Culvert Plans 5

PROJECT No. 2023-1513

APPROVED	NO.	REVISIONS	DATE	BY	
J. WARNER					
J. 11/11/12/1					
CHECKED	1	FINAL REPORT	JUNE 10, 2025	cs	
B. VAN RUITENBURG		SCALE:	1:100		
DRAWN		0 1	2 3m		
C. SAUNDERS					

TOWN of TECUMSEH

NORTH 12TH CONCESSION DRAIN CULVERT PLANS





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

APPROVED REVISIONS DATE J. WARNER CHECKED FINAL REPORT JUNE 10, 2025 CS B. VAN RUITENBURG DRAWN C. SAUNDERS

TOWN of TECUMSEH

NORTH 12TH CONCESSION DRAIN CULVERT PLANS

13

TABLE - ACCESS BRIDGE DESIGN INFORMATION	FUTUR	E REPLA	REPLACEMENT PROPOSED REPLACEMENT										
DESCRIPTION	CULVERT No.4	CULVERT No.11	CULVERT No.12	CULVERT No.1	CULVERT No.2	CULVERT No.3	CULVERT No.5	CULVERT No.6	CULVERT No.7	CULVERT No.8	CULVERT No.9	CULVERT No.10	CULVERT No.13
BRIDGE & LOCATION (STATION)	0+804	2+228	2+573	0+008	0+154	0+471	0+894	0+922	1+026	1+303	1+529	1+717	2+826
BRIDGE TYPE	ROAD	DRIVEWAY	FARM	ROAD	FARM	FARM	FARM	FARM	DRIVEWAY	DRIVEWAY	FARM	DRIVEWAY	FARM
PIPE INVERT ELEV. U/S SIDE	184.10	186.46	187.08	182.66	183.13	183.57	184.20	184.24	184.36	184.81	185.16	185.51	187.54
PIPE INVERT ELEV. D/S SIDE	184.01	186.44	187.06	182.59	183.11	183.55	184.18	184.22	184.34	184.79	185.14	185.49	185.52
TOP OF ¢ DRIVEWAY SURFACE ELEV.	KEEP EXISTING	188.43	188.64	185.25	184.66	185.12	185.90	185.63	185.95	186.39	186.74	187.49	189.12
DRAIN BOTTOM (DESIGN) (AT CENTRELINE OF CULVERT)	184.21	186.55	187.17	182.78	183.27	183.71	184.34	184.38	184.54	184.95	185.29	185.63	187.63
MIN. TOP WIDTH OF DRIVEWAY	KEEP EXISTING	9.0m	9.0m	6.0m	6.0m								
MIN. CULVERT GRADE (%)	0.16	0.13	0.13	0.50	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
CULVERT MATERIAL	CONCRETE	HDPE	HDPE	SANITITE	HDPE	HDPE	HDPE						
CULVERT LENGTH	56.0m	15.0m	16.0m	14.0m	12.0m	12.0m							
CULVERT STRENGTH		320kPa	320kPa	320kPa	320kPa	320kPa	320kPa	320kPa	320kPa	320kPa	320kPa	320kPa	320kPa
PIPE SIZE	1400mm X 1400mm	900mmø	900mmø	1200mmø	1200mmø	1200mmø	1050mmø	1050mmø	1050mmø	1050mmø	900mmø	900mmø	900mmø
CULVERT ENDWALL TYPE		RIP RAP	RIP RAP	RIP RAP	RIP RAP	RIP RAP	RIP RAP	RIP RAP	RIP RAP	RIP RAP	RIP RAP	RIP RAP	RIP RAP



North 12th Concession Drain Culvert Plans 1

DRAWING NAME:

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

PROJECT No. 2023-1513

APPROVED	NO.	REVISIONS	DATE	BY
J. WARNER				
o. Willer				
CHECKED	1	FINAL REPORT	JUNE 10, 2025	CS
B. VAN RUITENBURG		SCALE:	1:100	
DRAWN		0 1	2 3m	
C. SAUNDERS				

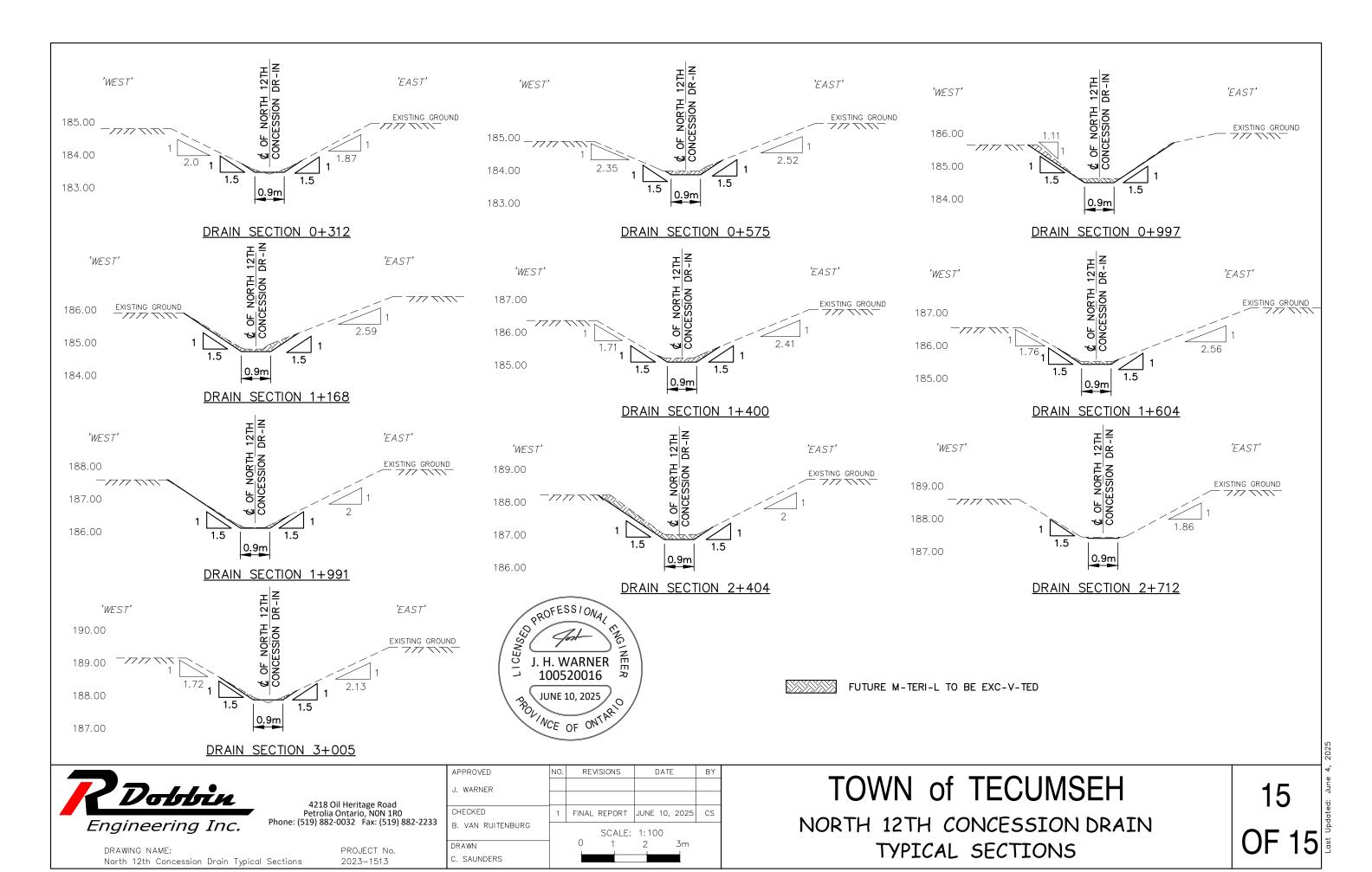
TOWN of TECUMSEH

NORTH 12TH CONCESSION DRAIN CULVERT PLANS

14

J. H. WARNER 100520016

100520016 JUNE 10, 2025 JUNE 10, 2025 VIVCE OF ONTHE



Legislation

Petition

- 4 (1) 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).

Form of petition

(2) A petition under subsection (1) shall be in the form prescribed by the regulations and, where it is filed by an owner or owners under clause (1) (a) or (b), shall be signed by such owner or owners. R.S.O. 1990, c. D.17, s. 4 (2).

Petition where area lies on each side of boundary line

(3) Where it is desired to construct a drainage works for the drainage of an area composed of lands or roads lying on each side of a boundary line between two or more local municipalities, the council of any of them may proceed upon a petition as required by this Act in all respects, including the sending of notices, as if such area were entirely within the limits of the municipality. R.S.O. 1990, c. D.17, s. 4 (3).

Person deemed owner

(4) Where a person who is the owner of land, but does not appear by the last revised assessment roll of the municipality to be the owner, is a petitioner, the person shall be deemed an owner if the person's ownership is proved to the satisfaction of the clerk, and, if the person who appears by the assessment roll to be the owner is a petitioner, the person's name shall be disregarded in determining the sufficiency of the petition. R.S.O. 1990, c. D.17, s. 4 (4).

Persons jointly assessed

(5) Where two or more persons are jointly assessed for a property, in determining the sufficiency of a petition, they shall be deemed to be one owner. R.S.O. 1990, c. D.17, s. 4 (5).

Section 25(1) – Engineer may assess a block, etc.

The council of the local municipality may direct the engineer to assess as a block, a built-up area designated by the council, and the sum assessed therefor may be levied against all the ratable properties in the designated area proportionately on the

basis of the assessed value of the land and buildings.

Section 25(2) – Assessments to be charged against public roads

Where the engineer makes a block assessment under subsection (1), the engineer shall designate the proportion of the assessment to be charged against the public roads in the designated area.

Section 26 – Increased cost, how borne

In addition to all other sums lawfully assessed against the property of a public utility or road authority under this Act, and despite the fact that the public utility or road authority is not otherwise assessable under this Act, the public utility or road authority shall be assessed for and shall pay all the increase of cost of such drainage works caused by the existence of the works of the public utility or road authority.

Section 41(1) – Notice of drainage works

Upon the filing of the engineer's report, the council of the initiating municipality, if it intends to proceed with the drainage works, shall, within thirty days of the filing of the report, cause the clerk of the initiating municipality to send a copy of the report and a notice stating,

- 1) the date of the filing of the report;
- 2) the name or other designation of the drainage works; and
- 3) the date of the council meeting at which the report will be considered, to;
 - a) the owners, in the initiating municipality, as shown by the last revised assessment roll to be the owners of lands and roads assessed for the drainage works or for which compensation or other allowances have been provided in the report;
 - the clerk of every other local municipality in which any land or road that is assessed for the drainage works or for which compensation or other allowances have been provided in the report is situate;
 - c) the secretary-treasurer of each conservation authority that has jurisdiction over any land affected by the report;
 - d) any railway company, public utility or road authority affected by the report, other than by way of assessment;
 - e) the Minister of Natural Resources where land under his or her jurisdiction may be affected by the report; and
 - f) the Director.

Section 41(3) – Copy of report not required

Despite subsections (1) and (2), where a block assessment is made, the notice to the owners of the lands so assessed need not be accompanied by a copy of the report.

Section 41(3.1) – Same

Despite subsections (1) and (2), the council of a local municipality is not required to send a copy of the report to owners of lands and roads assessed for a sum of less than \$100.

Section 42 – Consideration of report

The council of the initiating municipality at the meeting mentioned in section 41 shall consider the report, and, where the drainage works is requested on petition, shall give an opportunity to any person who has signed the petition to withdraw from it by filing a signed withdrawal with the clerk and shall also give those present owning lands within the area requiring drainage who have not signed the petition an opportunity to do so, and should any of the lands or roads owned by the municipality within the area requiring drainage as described in the petition be assessed, the council may by resolution authorize the head of the municipality to sign the petition for the municipality, and such signature counts as that of one person in favour of the petition.

Section 65(1) – Subsequent subdivision of land

If, after the final revision of an engineer's assessment of land for a drainage works, the land is divided by a change in ownership of any part, the clerk of the local municipality in which the land is situate shall instruct an engineer in writing to apportion the assessment among the parts into which the land was divided, taking into account the part of the land affected by the drainage works.

Section 65(2) - Agreement on share of assessment

If the owners of the subdivided land mutually agree on the share of the drainage assessment that each should pay, they may enter into a written agreement and file it

with the clerk of the local municipality and, if the agreement is approved by the council by resolution, no engineer need be instructed under subsection (1).

Section 76(1) - Varying original assessments for maintenance

The Council of any local municipality liable for contribution to a drainage works in connection with which conditions have changed or circumstances have arisen such as to justify a variation of the assessment for maintenance and repair of the drainage works may make an application to the Tribunal, of which notice has been given to the head of every other municipality affected by the drainage works, for permission to procure a report of an engineer to vary the assessment, and, in the event of such permission being given, such council may appoint an engineer for such purpose and may adopt the report but, if all the lands and roads assessed or intended to be assessed lie within the limits of one local municipality, the council of that municipality may procure and adopt such report without such permission.

Section 76(2) - Proceedings on report of engineer

The proceedings upon such report, excepting appeals, shall be the same, as nearly as may be, as upon the report for construction of the drainage works.

Section 76(3) – Appeal from report of engineer

Any council served with a copy of such report may, within 45 days of such service, appeal to the Tribunal from the finding of the engineer as to the portion of the cost of the drainage works for which the municipality is liable.

Section 76(4) – Appeal from assessment

Any owner of land assessed for maintenance or repair may appeal from the assessment in the report on the grounds and in the manner provided by Section 52 in the case of the construction of the drainage works.

Section 76(5) – Basis of future assessments

An assessment determined under this section shall thereafter, until it is further varied, form the basis of any assessment for maintenance or repair of the drainage works affected thereby.

Section 78(1) – Improving, upon examination and report of engineer

If a drainage works has been constructed under a by-law passed under this Act or any predecessor of this Act, and the council of the municipality that is responsible for maintaining and repairing the drainage works considers it appropriate to undertake one or more of the major improvement projects listed in subsection (1.1) for the better use, maintenance or repair of the drainage works or of lands or roads, the municipality may undertake and complete the project in accordance with the report of an engineer appointed by it and without the petition required by section 4. 2010, c.16, Sched. 1, s. 2 (27); 2020, c. 18, Sched. 4, s. 9 (1).

Section 78(1.1) - Projects

The projects referred to in subsections (1) are:

- 1) 1. Changing the course of the drainage works.
- 2) 2. Making a new outlet for the whole or any part of the drainage works.
- 3) 3. Constructing a tile drain under the bed of the whole or any part of the drainage works.
- 4) 4. Constructing, reconstructing or extending embankments, walls, dykes, dams, reservoirs, bridges, pumping stations or other protective works in connection with the drainage works.
- 5) 5. Extending the drainage works to an outlet.
- 6) 5.1 Improving or altering the drainage works if the drainage works is located on more than one property.
- 7) 6. Covering all or part of the drainage works.
- 8) 7. Consolidating two or more drainage works.
- 9) 8. Any other activity to improve the drainage works, other than an activity prescribed by the Minister as a minor improvement. 2010, c. 16, Sched. 1, s. 2 (27); 2020, c. 18, Sched. 4, s. 9 (2-4).

Section 78(2) - Notice to conservation authority

- 2) An engineer shall not be appointed under subsection (1) until 30 days after a notice has been sent to the following persons advising them of the municipality's intent to undertake the major improvement project:
- 1. The secretary-treasurer of each conservation authority that has jurisdiction over any lands that would be affected by the project.
- 2. The prescribed persons. 2020, c. 18, Sched. 4, s. 9 (5).

Section 78(3) – Powers and duties of engineer

(3) The engineer has all the powers and shall perform all the duties of an engineer appointed with respect to the construction of a drainage works under this Act. R.S.O. 1990, c. D.17, s. 78 (3).

Section 78(4) - Proceedings

(4) All proceedings, including appeals, under this section shall be the same as on a report for the construction of a drainage works. R.S.O. 1990, c. D.17, s. 78(4).

Minor improvements to drainage works

(5) Despite subsections (2) to (4), the Minister may prescribe the process for approving minor improvements to a drainage works mentioned in paragraph 8 of subsection (1.1). 2020, c. 18, Sched. 4, s. 9 (6).

AMENDMENTS TO ENGINEER'S REPORT

84.1 (1) This section applies with respect to engineer's reports that are prepared for

the purpose of a petition under section 4 or for the purpose of section 78 and that are adopted by a municipal by-law. 2020, c. 18, Sched. 4, s. 10.

Approval process

(2) The Minister may, by regulation, set out the process by which the engineer's report may be amended and the process by which those amendments are to be approved. 2020, c. 18, Sched. 4, s. 10.

Section Amendments with date in force (28/09/2021)

The Corporation of the Town of Tecumseh By-Law Number 2025 - 104

Being a by-law to provide for the repair and improvements to the North 12th Concession Drain

Whereas the Council of The Corporation of the Town of Tecumseh (hereinafter the "Town") has been requested to provide for the repair and improvement of the North 12th Concession Drain;

And Whereas the Town procured a Drainage Report for the North 12th Concession Drain and specifications from the consulting engineering firm of R Dobbin Engineering Inc., dated June 10, 2025 (hereinafter the "Drainage Report");

And Whereas notice of a Public Meeting to hear comments from the affected property owners was given on Friday, August 15, 2025;

And Whereas a Public Meeting of Council was held on Tuesday, September 23, 2025, at 5:00 pm to hear from any affected property owners on the Drainage Report;

And Whereas the Council of The Corporation of the Town of Tecumseh is of the opinion that the repair and improvement of the North 12th Concession Drain is desirable.

Now Therefore the Council of The Corporation of The Town of Tecumseh Enacts as follows:

- 1. That the Drainage Report providing for the repair and improvement of the North 12th Concession Drain, dated June 10, 2025, as prepared by the consulting engineering firm R Dobbin Engineering Inc., and attached hereto as Schedule "A" to this By-Law, is hereby adopted and the drainage works as therein indicated and set forth are hereby approved and shall be completed in accordance therewith.
- 2. **That** the Treasurer, subject to the approval of Council, may agree with any bank or person for temporary advances of money to meet the costs of construction pending the completion of the drain and grants and computed payments are received.
- 3. **That** the Town may issue debentures for the amount borrowed and the amount of such debentures shall be reduced to the total amount of:
 - a) Grants received under Section 85 of the *Drainage Act*, R.S.O., 1990;
 - b) Commuted payments made in respect of land and roads assessed.

- 4. **That** such debentures shall be made payable within five (5) years from the date of the debenture and shall bear interest at a rate as approved by resolution of Council.
- 5. **That** the specifications and General Specifications as established are adopted as set out in the Drainage Report which forms part of this By-Law.
- 6. **That** the Mayor and Clerk are authorized to cause a contract for the construction of the works to be made and entered into with some person or persons, firm or corporations, subject to the approval of the Council to be declared by resolution.
- 7. **That** this By-Law shall come into force upon and after the final passing thereof.

Read a first and second time this 23rd day of September, 2025.

	Gary McNamara, Mayor
	Robert Auger, Clerk
Read a third and final time this	day of
	Gary McNamara, Mayor
	Robert Auger, Clerk



4218 Oil Heritage Road Petrolia, Ontario, NON 1R0 Phone: (519) 882-0032 Fax: (519) 882-2233 www.dobbineng.com

June 10, 2025

The Mayor and Council The Town of Tecumseh 917 Lesperance Road Tecumseh, Ontario N8N 1W9

Gentlemen and Mesdames:

Re: North 12th Concession Drain

In accordance with your instructions, R. Dobbin Engineering has undertaken an examination with regards to improving the North 12th Concession Drain in the Town of Tecumseh.

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 May 9, 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 North 12th Concession Drain outlets into the West Townline and Mooney Creek Drain in Lot 14, Concession 12 on the east side of Concession Road 12 (unopened

portion). It continues across Concession Road 12 and heads southerly along the west side of Concession Road 12 to the north side of North Talbot Road (County Road 46).

Under an Engineer's Report dated July 29th, 1958 the drain was moved off the road, and new culverts were installed.

Under an Engineer's Report dated November 27th, 1980 a culvert was removed, a culvert was moved and lengthened and the drain was cleaned.

Under an Engineer's Report dated January 27th, 1998 two culverts were replaced and the drain was cleaned.

Drain Classification

The North 12th Concession Drain is currently classified as a "Class F" drain. The West Townline and Mooney Creek Drain is currently classified as a "Class C" drain. This is 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).

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

A draft copy of the report was sent to the Essex Region Conservation Authority on January 8, 2024. On January 16, 2024 their office responded that they were generally supportive of the proposed design. The Town of Tecumseh will be responsible for providing the ERCA with a final report in order to obtain their approval.

Site Meeting

A site meeting for this drain was held on May 24th, 2023. The following were present:

- Josh Warner (R. Dobbin Engineering)
- Alessia Mussio (Drainage Superintendent, Town of Tecumseh)
- Mark Fishleigh (Field Service Engineer, County of Essex)
- Samantha Merret (Landowner at #4955 12th Concession Road)

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 12th Concession Drain for a culvert replacement.
- Landowners mentioned that they would like to proceed with the culvert replacement on their property as soon as possible.
- Josh Warner stated that the Town's position is to incorporate buffer strips into Engineer's Report.
- Remaining culverts on the drain to be investigated for replacement. Future specifications to be developed for culverts not being replaced.
- Town requested an updated profile for the drain.

Discussion

Following the site meeting, the culvert at #4955 12th Concession Road was determined to need immediate replacement. Therefore, an Emergency Designation under Section 124 was received in order to have this completed prior to the finalization of the Engineer's Report. The application and approval from the Minister are included in Appendix A of this report.

Existing Conditions

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

Culvert Number / Station	Location	Existing Culvert Size	Last Report Replaceme nt Date	Condition	Recommendation
1 (0+008)	Unopened portion of 12th Concession Road north of 401	1200mm dia. CSP	1998	Poor – Bottom Rotted	Replace
2 (0+154)	510-00002200	1200mm dia. CSP	1958	Poor – Rusted, Holes	Replace
3 (0+471)	510-00002200	1200mm dia. CSP	1980- Reinstalled and Lengthened	Poor – Rusted and holes in original length	Replace
4 (0+804)	МТО	Concrete Box Culvert	Unknown	Okay	Leave

5 (0+894)	510-000100	1050mm dia. CSP	1958. Has been replaced since.	Poor-Rust throughout. Small holes found.	Replace
6 (0+922)	510-000150	1050mm dia. CSP	1958	Poor – Rust below spring line. Some holes found.	Replace
7 (1+026)	510-000200	1050mm dia. Sanitite	2022	Good	Leave
8 (1+303)	510-000201	1050mm dia. CSP	1958	Poor – Rusted, Holes	Replace
9 (1+529)	510-000300	900mm dia. CSP	Unknown	Poor – Rust, but no holes found. Poor joint with soiling coming in.	Replace
10 (1+717)	510-000300	1000mm dia. CSP	1958	Poor – Rusted, Holes	Replace
11 (2+228)	500-001250	900mm dia. CSP	1998	Ok - Rust below spring line but no holes found (could not see bottom)	Leave
12 (2+573)	510-000400	900mm dia. CSP	1958	Ok - Rust below spring line but no holes found (could not see bottom)	Leave
13 (2+826)	510-000500	900mm dia. CSP	1958	Poor – Rusted, Holes, Bottom Rotted, Dented in Center	Replace

Generally, the drain had water laying in the channel and culverts. This made it difficult to inspect the bottom of many of the culverts. In the future, all culverts shall be inspected by the Drainage Superintendent after any cleanout to determine if they should be replaced.

An effort was made to contact all Landowners on the drain prior to sending out the draft reports for the Public Information Centre (PIC). This included sending out calling cards to the residences that we were unable to contact. Landowners that we were unable to contact or did not respond to the calling cards were never communicated with directly. The following is a brief summary of the Landowner comments regarding their culverts (NAC=Not Able to Contact):

Culvert Number / Station	Location	Travel Surface	Proposed Top Width	Location on Property
1 (0+008)	Unopened portion of 12th Concession Road north of 401	Gravel	7m	Keep Existing
2 (0+154)	374451000002200	Grass	NAC. 6m	NAC. Maintain Existing
*3 (0+471)	374451000002200	Gravel	NAC. 6m	NAC. Maintain Existing
4 (0+804)	МТО	Asphalt	Maintain Existing	Keep Existing
5 (0+894)	374451000000100	Gravel	NAC. 6m	NAC. Maintain Existing
6 (0+922)	374451000000150	Gravel	NAC. 6m	NAC. Maintain Existing
7 (1+026)	374451000000200	Gravel	6m	Held North Limit of Culvert for Emergency Replacement
8 (1+303)	374451000000201	Gravel	NAC. 6m	NAC. Maintain Existing
*9 (1+529)	374451000000300	Gravel	NAC. 6m	NAC. Maintain Existing
10 (1+717)	374451000000300	Asphalt	NAC. 6m	NAC. Maintain Existing
11 (2+228)	374450000001250	Asphalt	Maintain Existing. 9m	Maintain Existing
12 (2+573)	374451000000400	Gravel	Maintain Existing. 9m	NAC. Maintain Existing
13 (2+826)	374451000000500	Grass	NAC. 6m	NAC. Maintain Existing

^{*}Denotes culverts deemed to be secondary access culverts.

Accesses will be restored with 150mm of Granular "A" as part of the project costs, any costs for other surfaces will be assessed back to the Landowner as a special benefit assessment.

Design

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

Recommendations

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

- 1. Culverts No. 1, 2, 3, 5, 6, 8, 9, 10 and 13 shall be replaced. The emergency replacement of Culvert No. 7 shall be incorporated under this report. Future specifications shall be developed for the replacement of Culverts No. 4, 11 and 12.
- 2. A 1.5m buffer strip shall be established along the west bank of the drain.
- 3. Future specifications shall be developed for maintenance and repair of the channel so that excavation of the drain can occur when it is required. At this time, excavation of the drain bottom is not necessary.

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 \$393,415.00, including engineering 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 (20% of the construction cost).

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

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

- 1. The additional cost to daylight and work around utilities has been assessed to the utility company as per Section 26 of the Drainage Act.
- 2. The replacement and engineering cost of Culvert No. 1 and No. 4, respectively, has been assessed to the road authority as per Section 26 of the Drainage Act.
- 3. The cost of asphalt driveways has been assessed to the benefitting property as a special benefit assessment.
- 4. The culverts have generally been assessed based on the average culvert cost to provide a 6m access width. This base culvert has been assessed with 50% of the cost applied as benefit assessment to the abutting property and the remainder assessed as an outlet assessment to upstream lands and roads based on equivalent hectares. Any culvert requested to be longer has been assessed with the extra length as a benefit assessment to the Landowner. The cost to have a second access culvert on a single property has been assessed as a special benefit to the Landowner. The cost of a secondary access will not be eligible for grant based on the current Agricultural Drainage Infrastructure Program (ADIP) policy.
- 5. The incorporation and installation of a buffer strip has been assessed with 10% of the cost applied as a benefit assessment to the abutting road authority, 45% applied as

benefit assessment to the abutting property, and the remainder of the cost assessed as an outlet assessment to 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. Compensation under Section 29 of the Drain Act has been provided to lands where the buffer strip is proposed.

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 (\$12,140.00 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 shall be from 12th Concession Road. Access shall be restricted to a width of 6m and shall generally be along the edge of the drainage works and across existing culverts.

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

The working area for the construction and future maintenance of the channel shall be restricted to a width of 12m from the top of bank that the working is taking place from. The excavation shall generally be done from the west (field) side of the channel except across finished lawns. Across finished lawns the excavation shall generally be done from the east (road) side with the excavated material being trucked and disposed off site or levelled in the adjacent farm fields.

Restrictions

No trees and shrubs shall be planted nor shall permanent structures be erected within 8m plus the depth of the drain to a maximum of 15m 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 open channel shall be maintained and repaired in the same relative portions as contained in the channel portion of the enclosed Schedule of Assessment less any special benefit assessments. Maintenance shall be done in accordance with the enclosed specifications and profiles unless otherwise altered under provisions of the Drainage Act. For future maintenance and repair of the open channel, the excavated material across finished lawns shall be trucked and disposed offsite or spread on adjacent farm fields by the Contractor. The cost of trucking across finished lawns less the equivalent cost of levelling, shall be assessed to the individual property. Agricultural properties that wish to have the excavated material trucked will be assessed the cost of trucking less the cost of levelling. The cost of levelling will form part of the drain maintenance cost.

The buffer strips are to extend 1.5 metres from the top of the bank on the west side of the channel. If the buffer strip extends less than this due to encroaching cropping practices, the buffer strip shall be maintained with 100% of the cost assessed to the property. Otherwise, the buffer strip shall be maintained and repaired in the same relative portions as contained in the channel portion of the enclosed Schedule of Assessment less any special benefit assessments.

The culverts shall be maintained and repaired as follows:

Culvert Number	Abutting Property (Benefit)	Road Authority	Upstream Based on Equivalent Hectares as Contained in SofA (Outlet)
2, 5, 6, 7, 8, 10 & 13	50%		50%
11 & 12	60%		40%
1 & 4		100%	
3 & 9	100%		

If an owner requests an additional length of culvert beyond the top width achieved by the lengths shown on the profile with rip rap end walls 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 top width shall be determined by the Drainage Superintendent and shall generally be in the primary access location and shall include any headwalls.

Each property is allowed one access culvert for each municipal drain with any second culvert on the property maintained and repaired 100% by the owner, coordinated with the Drainage Superintendent.

The drain shall be maintained as per the specifications and grades as shown on the Profile contained in this Engineer's Report.

Any additional cost as a result of a utility shall be assessed to that utility as per Section 26 of the Drainage Act.

Yours truly,

Josh Warner, P. Eng.

R. Dobbin Engineering Inc.

North 12th Concession Drain Town of Tecumseh June 10, 2025

ALLOWANCES

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

Conc.	Lot or part	Roll No.	Owner	Section 29	Section 30	Total
11	Pt. Lot 9	510-000500	W. & M. O'Neil	2,100	350	2,450
	E 1/2 Lot 10	510-000400	Edward Chittle Farm Ltd	2,040	240	2,280
	Pt. E 1/2 Lot 10	510-000410	P. & M. Boretski	210	30	240
	E 1/2 Lot 11	510-000300	A. & E. Sirizzotti	2,250	470	2,720
	Pt. Lot 12	510-000201	K. Wallis	1,140	240	1,380
	Pt. Lot 12	510-000200	C. Colenutt & S. Merrett	230	130	360
	Pt. Lot 12	510-000150	W. & D. O'Neil	350	140	490
	Pt. Lot 12	510-000100	C. McGuire	230	130	360
	Pt. Lot 13 & Pt. Lot 14	510-002200	W. & E. O'Neil	2,830	540	3,370
			TOTAL ALLOWANCES	\$11,380	\$2,270	\$13,650

Estimate of Cost

	Quantity	<u>Unit</u>	<u>Unit Cost</u>	<u>Total</u>
Pre-Construction Meeting	1	LS	400	400
Benchmark Loop	1	LS	800	800
Traffic Control	1	LS	3,000	3,000
Brushing	1	LS	2,000	2,000
Culvert No.1				
Removal of existing structure	1.0	LS	1,000	1,000
Supply & install 1200mm dia. Sanitite c/w Bedding	14.0	m	1,300	18,200
Place backfill	1.0	LS	1,200	1,200
Supply & install Granular 'A'	35.0	tonne	35	1,225
Supply & install rip rap endwalls	40.0	tonne	110	4,400
Provisional: Supply additional Granular "B" Type II and dispose of unsuitable material	80.0	tonne	50	4,000
Culvert No.2				
Removal of existing structure and excavated material	1.0	LS	2,000	2,000
Supply & install 1200mm dia. Sanitite c/w Bedding	12.0	m	1,300	15,600
Supply and install Granular 'B' Type II	100.0	tonne	35	3,500
Supply & install Granular 'A'	30.0	tonne	40	1,200
Supply & install rip rap endwalls	30.0	tonne	110	3,300
Culvert No.3				
Removal of existing structure and excavated material	1.0	LS	2,000	2,000
Supply & install 1200mm dia. Sanitite c/w Bedding	12.0	m	1,300	15,600
Supply and install Granular 'B' Type II	100.0	tonne	35	3,500
Supply & install Granular 'A'	30.0	tonne	40	1,200
Supply & install rip rap endwalls	30.0	tonne	110	3,300
Culvert No.5				
Removal of existing structure and excavated material	1.0	LS	2,000	2,000
Supply & install 1050mm dia. Sanitite c/w Bedding	12.0	m	1,200	14,400
Supply and install Granular 'B' Type II	100.0	tonne	35	3,500
Supply & install Granular 'A'	30.0	tonne	40	1,200
Supply & install rip rap endwalls	30.0	tonne	110	3,300

Estimate of Cost (Continued)

Page 2 of 2

	Quantity	<u>Unit</u>	<u>Unit Cost</u>	<u>Total</u>			
Culvert No.6							
Removal of existing structure and excavated material	1.0	LS	2,000	2,000			
Supply & install 1050mm dia. Sanitite c/w Bedding	12.0	m	1,200	14,400			
Supply and install Granular 'B' Type II	100.0	tonne	35	3,500			
Supply & install Granular 'A'	30.0	tonne	40	1,200			
Supply & install rip rap endwalls	30.0	tonne	110	3,300			
Supply & instant up tap endwans	30.0	tomic	110	3,300			
Completed Construction Cost for Emergency Designation: Replacement of Culvert No. 7	1.0	LS	14,000	14,000			
Culvert No.8							
	1.0	LS	2,000	2,000			
Removal of existing structure and excavated material Supply & install 1050mm dia. Sanitite c/w Bedding	1.0		1,200	14,400			
Supply and install Granular 'B' Type II	110.0	m tonne	35	3,850			
Supply & install Granular 'A'	30.0	tonne	40	1,200			
Supply & install rip rap endwalls	30.0	tonne	110	3,300			
Locate and Work Around Telecom	1.0	LS	500	500			
Locate and Work Around Telecom	1.0	LS	300	300			
Culvert No.9							
Removal of existing structure and excavated material	1.0	LS	2,000	2,000			
Supply & install 900mm dia. HDPE c/w Bedding	12.0	m	1,100	13,200			
Supply and install Granular 'B' Type II	140.0	tonne	35	4,900			
Supply & install Granular 'A'	30.0	tonne	40	1,200			
Supply & install rip rap endwalls	30.0	tonne	110	3,300			
Suppry & mstan rip rap chuwans	30.0	tomic	110	3,300			
Culvert No.10							
Removal of existing structure and excavated material	1.0	LS	2,000	2,000			
Supply & install 900mm dia. HDPE c/w Bedding	13.0	m	1,100	14,300			
Supply and install Granular 'B' Type II	160.0	tonne	35	5,600			
Supply & install Granular 'A'	30.0	tonne	40	1,200			
Supply & install rip rap endwalls	30.0	tonne	110	3,300			
Supply and Install HL3 Aphalt	35.0	sq.m	100	3,500			
Locate and Work Around Telecom	1.0	LS	500	500			
Locate and Work Prioding Telecom	1.0	Lo	300	300			
Culvert No.13							
Removal of existing structure and excavated material	1.0	LS	2,000	2,000			
Supply & install 900mm dia. HDPE c/w Bedding	12.0	m	1,100	13,200			
Supply and install Granular 'B' Type II	120.0	tonne	35	4,200			
Supply & install Granular 'A'	30.0	tonne	40	1,200			
Supply & install rip rap endwalls	30.0	tonne	110	3,300			
				2,200			
Restoration / Seeding	1.0	LS	8,000	8,000			
Buffer Strip	4370	m^2	5	21,850			
Enviornmental Considerations including Silt Fence	1.0	LS	500	500			
Contingency				11,000			
	Sub Total		_	295,725			
	Allowances	3		13,650			
	Engineering	g		48,090			
			n	3,600			
		Future Culvert Design Locate, Expose and Survey Utilities Tendering and Inspection (Estimate					
	Tendering a						
	for Part Tin	ne Inspect	ion)	21,000			
	ERCA Fee		<u> </u>	800			
	Total Estir			386,865			
	Non-Recov		T (1.76%)	6,550			
	Total Estir	nate		\$393,415			

ESTIMED NET ASSESSMENT

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

Conc	. Lot or Part	Affected Hecatares	Roll No.	Owner	Total Assessment (\$)	Estimated Grant (\$)	Allowances (\$)	Estimated Net Assessment (\$)
Muni	cipal Lands							
	King's Highway 401	2.80		Ministry of Transportation	3,052			3,052
	Pt. Lot 13	0.08	510-002210	Ministry of Transportation	40			40
	Pt. Lot 12	0.07	510-001400	Ministry of Transportation	35			35
	North Talbot Road (CR 46)	0.92		County of Essex	5,507			5,507
	12th Concession Road	5.24		Town of Tecumseh	57,218			57,218
Non-A	Agricultural Lands							
11	Pt. E 1/2 Lot 10	0.51	510-000410	P. & M. Boretski	1,441		240	1,201
	E 1/2 Lot 11	6.07	510-000300	A. & E. Sirizzotti	63,135		2,720	60,415
	Pt. Lot 12	0.48	510-000200	C. Colenutt & S. Merrett	17,170		360	16,810
12	Pt. Lot 9	11.68	500-001800	O. & A. Rizzo	23,309			23,309
	Pt. Lot 9	3.23	500-001700	E. Lys & M. Kawala-Lys & O. Vanes	8,594			8,594
	Pt. Lot 9	0.78	500-001805	A. & L. Mitchell	1,245			1,245
	Pt. Lot 9	0.78	500-001810	M. & J. Barkey	1,245			1,245
	Pt. Lot 10	0.36	500-001900	P. & L. Eyraud	546			546
	Pt. Lot 10	1.12	500-001350	A. & J. Mifflin	1,670			1,670
	Pt. Lot 10	0.40	500-002000	P. & C. Eyraud	671			671
	Pt. Lot 11	0.50	500-001105	M. Ciellza	784			784
	Pt. Lot 11	0.40	500-002500	D. McGuire & E. Bondy	614			614
	Pt. Lot 11 & Pt. Lot 12	8.09	500-000500	2829555 Ontario Inc	5,983			5,983
Agric	ultural Lands (Eligible for Avail	able Grants)						
11	Pt. Lot 9	8.09	510-000500	W. & M. O'Neil	32,592	10,864	2,450	19,278
	E 1/2 Lot 10	17.47	510-000400	Edward Chittle Farm Ltd	22,529	7,510	2,280	12,739
	Pt. Lot 12	12.14	510-000201	K. Wallis	26,043	8,681	1,380	15,982
	Pt. Lot 12	5.59	510-000150	W. & D. O'Neil	19,954	6,651	490	12,813
	Pt. Lot 12	1.21	510-000100	C. McGuire	17,261	5,754	360	11,147
	Pt. Lot 13 & Pt. Lot 14	18.10	510-002200	W. & E. O'Neil	58,311	7,520	3,370	47,421
12	Pt. Lot 10	6.20	500-001300	R. Eyraud & E. Ayers	6,932	2,311		4,621
	Pt. Lot 10	5.26	500-001200	L. Daniher	5,726	1,909		3,817
	Pt. Lot 11	6.38	500-001100	D. & D. McGuire	6,528	2,176		4,352
Utiliti	ies							
	Telecom Utility			Bell	3,280			3,280
	Gas Utility			Enbridge Gas	2,000			2,000
				Total	393,415	53,376	13,650	326,389

North 12th Concession Drain Town of Tecumseh June 10, 2025

SCHEDULE OF ASSESSMENT

							Culverts			Channel			
Conc	. Lot or	Hectares	Affected	Roll	Owner	Special	Benefit	Outlet	Special	Benefit	Outlet	Total	Equivalent
	Part	Owned	Hecatares	No.		Benefit (\$)	(\$)	(\$)	Benefit (\$)	(\$)	(\$)		На
Muni	cipal Lands					•							_
	King's Highway 401		2.80		Ministry of Transportation		1,200	1,135		432	285	3,052	2.52
	Pt. Lot 13		0.08	510-002210	Ministry of Transportation		-	32		-	8	40	0.07
	Pt. Lot 12		0.07	510-001400	Ministry of Transportation		-	28		-	7	35	0.06
	North Talbot Road (CR 46))	0.92		County of Essex		-	4,714		-	793	5,507	0.83
	12th Concession Road		5.24		Town of Tecumseh		42,989	8,628		3,757	1,844	57,218	4.72
					Total Municipal Lands	-	44,189	14,537	-	4,189	2,937	65,852	
Non-A	Agricultural Lands												
11	Pt. E 1/2 Lot 10	0.51	0.51	510-000410	P. & M. Boretski		600	646		106	89	1,441	0.20
	E 1/2 Lot 11	27.60	6.07	510-000300	A. & E. Sirizzotti	37,972	16,713	4,631		3,440	379	63,135	1.82
	Pt. Lot 12	0.48	0.48	510-000200	C. Colenutt & S. Merrett		16,713	313		117	27	17,170	0.19
12	Pt. Lot 9	11.68	11.68	500-001800	O. & A. Rizzo		-	19,951		_	3,358	23,309	3.50
	Pt. Lot 9	16.24	3.23	500-001700	E. Lys & M. Kawala-Lys & O. V	/anes	-	7,356		_	1,238	8,594	1.29
	Pt. Lot 9	0.78	0.78	500-001805	A. & L. Mitchell		-	1,008		-	237	1,245	0.31
	Pt. Lot 9	0.78	0.78	500-001810	M. & J. Barkey		-	1,008		_	237	1,245	0.31
	Pt. Lot 10	0.36	0.36	500-001900	P. & L. Eyraud		-	465		_	81	546	0.14
	Pt. Lot 10	1.12	1.12	500-001350	A. & J. Mifflin		-	1,419		-	251	1,670	0.45
	Pt. Lot 10	0.40	0.40	500-002000	P. & C. Eyraud		-	570		-	101	671	0.18
	Pt. Lot 11	0.50	0.50	500-001105	M. Ciellza		-	703		_	81	784	0.23
	Pt. Lot 11	0.40	0.40	500-002500	D. McGuire & E. Bondy		-	563		-	51	614	0.18
	Pt. Lot 11 & Pt. Lot 12	27.58	8.09	500-000500	2829555 Ontario Inc			5,464			519	5,983	2.43
					Total Non-Agricultural Lands	37,972	34,026	44,097	-	3,663	6,649	126,407	

Schedule of Assessment (Continued)

Page 2 of 2

						Culverts		Culverts Channel					
Conc.	Lot or	Hectares	Affected	Roll	Owner	Special	Benefit	Outlet	Special	Benefit	Outlet	Total	Equivalent
	Part	Owned	Hecatares	No.		Benefit (\$)	(\$)	(\$)	Benefit (\$)	(\$)	(\$)		На
Agricu	ıltural Lands (Eligible for	· Available (Grants)										
11	Pt. Lot 9	12.20	8.09	510-000500	W. & M. O'Neil		16,713	10,831		3,205	1,843	32,592	2.43
	E 1/2 Lot 10	27.37	17.47	510-000400	Edward Chittle Farm Ltd		600	16,490		3,113	2,326	22,529	5.24
	Pt. Lot 12	17.08	12.14	510-000201	K. Wallis		16,713	7,073		1,734	523	26,043	3.64
	Pt. Lot 12	10.12	5.59	510-000150	W. & D. O'Neil		16,713	2,507		527	207	19,954	1.68
	Pt. Lot 12	3.46	1.21	510-000100	C. McGuire		16,713	164		343	41	17,261	0.36
	Pt. Lot 13 & Pt. Lot 14	40.96	18.10	510-002200	W. & E. O'Neil	35,752	16,713	1,957		3,889	-	58,311	5.43
12	Pt. Lot 10	28.12	6.20	500-001300	R. Eyraud & E. Ayers		-	5,889		-	1,043	6,932	1.86
	Pt. Lot 10	14.28	5.26	500-001200	L. Daniher		-	4,933		-	793	5,726	1.58
	Pt. Lot 11	20.79	6.38	500-001100	D. & D. McGuire		-	5,984		-	544	6,528	1.91
		Total Agricultural Lands		Total Agricultural Lands	35,752	84,165	55,828	-	12,811	7,320	195,876		
Utilitie	es												
	Telecom Utility Gas Utility				Bell Enbridge Gas		3,280	- -	2,000	-	- -	3,280 2,000	_
					Total - Utilities	-	3,280	-	2,000	-	-	5,280	
			Total - Utilities Total Municipal Lands Total Non-Agricultural Lands Total Agricultural Lands	5,280 65,852 126,407 195,876			Channel 4	Assessmen	t I ess Sne	oial Benefit:	37,569.00		
					Total Assessment	\$393,415			211111111111111111111111111111111111111	Channel Assessment Less Special Benefit:			37,007.00

North 12th Concession Drain Town of Tecumseh June 10, 2025

SPECIFICATION OF WORK

1. Location

The location of the proposed and future work outlined in this specification is along the length of the North 12th Concession Drain in Lot 9 to 14, Concession 11 in the Town of Tecumseh.

2. Scope of Work

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

- Future open channel maintenance
- Establishment and maintenance of a 1.5m buffer strip
- 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.

All equivalents shall be requested to the Contract Administrator in writing prior to ordering any material.

Estimated quantities have been included in the Estimate of Cost in this Engineer's Report. If the items are tendered as lump sum items, the quantities in the estimate shall not form the basis for payment. It is up to the Contractor to determine the quantities that will be required for each item when bidding.

All property bars and survey monuments are to be flagged and protected by the Contractor. Any disturbed, damaged or removed bars and monuments shall be the responsibility of the Contractor to have an OLS reinstate the same.

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.

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.

The Contractor shall submit their traffic control plan within 10 working days of notice of award. Road closures will not be permitted on this project without the approval of the Town of Tecumseh.

5. Workplace Safety and Insurance Board

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

6. 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 (20% of the cost) shall be borne by that utility.

7. Pre-Construction Meeting

There is a requirement for a pre-construction meeting to be held prior to any construction taking place. The meeting will be scheduled by the Contractor. Contact information will be provided to the Contractor by the Engineer. The affected Landowners, Engineer, County of Essex, MTO and the Town of Tecumseh shall be invited. The Contractor shall notify all parties at least one week prior to wanting to hold a pre-construction meeting.

8. Benchmarks

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

9. Traffic Control

Access and driveways to private properties shall not be obstructed longer than the minimum time necessary for the work and shall be reinstated as soon as possible all to the satisfaction of the Engineer. The Contractor shall schedule any obstruction of existing driveways and accesses with the owners at least two full working days in advance. Should the access to a residential property extend beyond 24 hours, the Contractor shall be responsible for providing a walking access across the drain to that property. The

Traffic Plan must be approved by the Town prior to the commencement of any construction.

- a) The Contractor shall supply, erect and maintain all detour signs and special signs necessary for detours to divert traffic from the area under construction as directed by the Drainage Superintendent or Engineer. All this work shall be at the Contractor's expense.
- b) The Contractor shall be responsible for supplying, erecting and maintaining all signs, supports, barricades, flashers, cones, etc. in the construction area and at the boundaries of the work as part of the above detours, all to the satisfaction of the Engineer or Drainage Superintendent. All this work shall be done by the Contractor at their own expense.
- c) The Contractor shall not be allowed to proceed with construction activities unless proper signage and flagmen are present. Flagging procedures, signage and detours shall conform to the recommendations of Book 7, Temporary Conditions, Ontario Traffic Manual, issued by the Ministry of Transportation. Conformance shall be enforced by the Ministry of Labour Inspector.

10. Access and Working Area

Access to the work site for construction and future maintenance shall be from 12th Concession Road. Access shall be restricted to a width of 6m and shall generally be along the edge of the drainage works and across existing culverts.

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

The working area for the construction and future maintenance of the channel shall be restricted to a width of 12m from the top of bank that the working is taking place from. The excavation shall generally be done from the west (field) side of the channel except across finished lawns. Across finished lawns the excavation shall generally be done from the east (road) side with the excavated material being trucked and disposed off site or levelled in the adjacent farm fields.

11. Removals

The culverts and any native backfill material, when required, shall be removed in their entirety. The culvert, backfill and the concrete rubble shall be disposed offsite at the

expense of the Contractor. Native backfill shall not be reused in the culvert installation unless determined re-usable by the Contract Administrator. 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 Contract Administrator.

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 reinstalled 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 not being replaced the Contractor shall restore the channel in these sections to match the adjacent side slopes and shall restore them with straw matting and seed.

12. Brushing and Tree Removal

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

A mechanical grinder attached to an excavator shall be used for the removal of brush and trees. Any brush and trees too large to grind shall be close cut. The Contractor shall stockpile the trees and brush in a single pile on the property in which they were removed or dispose of the trees and brush offsite. Where brush and trees are removed within a bush section of the drain the trees and brush shall be disposed of within the bush at the limits of the working area. The Contractor is responsible for the burning of the trees and brush not in the bush sections. The Contractor is responsible for obtaining all necessary permits for any disposal sites. Burning of the trees and brush is subject to local bylaws and guidelines of the Ministry of the Environment Conservation and Parks.

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

The Contractor is required to submit a Burn Permit Application to the Fire Department including detailed information on the burn process, extinguishing method, map of burn piles as well as a signature from the landowner acknowledging burning will occur on their property. The Contractor shall in no

way be guaranteed to burn except with the explicit permission from the Fire Department. Please refer to By-Law 2021-50 for more information.

13. Excavation of Open Channel and Levelling (Future)

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

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

At the discretion of the Drainage Superintendent or request of the Landowner, the excavated material may be trucked. The additional cost for trucking shall be assessed to the individual property and will not be eligible for grant.

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

14. Rip Rap (Future)

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. The filter cloth shall be cut and trimmed so that none is visible above the level of the rip rap.

15. Installation of Culverts

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

Sanitite Pipe shall be SaniTite HP Dual Wall Pipe with 320kPa and bell and spigot joints or approved equivalent. HDPE shall be CSA approved 320 kPa with bell and spigot joints or approved equivalent.

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 Contract Administrator. 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 lengths on the drawings are based on utilized rip rap end walls. If block end walls are used the lengths shall be reduced accordingly. The access culverts shall be assessed, as per the report, to provide an 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 downstream at the landowner's expense. The pipes that shall be extended upstream or downstream of the proposed culvert shall be done with non-perforated HDPE agricultural tubing with a manufactured coupling, elbow and rodent grate.

Access Culverts:

The bottom of the excavation shall be excavated to a minimum of 100mm below the proposed invert. The pipe shall be bedded with ³/₄" clear stone. When the pipe has been installed to the proper grade and depth, the excavation shall be backfilled with ³/₄" 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 HL3 and shall match the existing thickness. In these cases, the compacted Granular "A" shall occupy 150mm below the proposed asphalt.

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. The culvert lengths contained in the profile are based on utilizing rip rap end walls.

If concrete block end walls are used, they shall consist of concrete blocks with dimensions of approx. 600mm x 600mm x 1200mm, 600mm x 600mm x 2400mm or 300mm x 600mm x 1200mm as required. 600mm x 600mm x 2400mm concrete blocks will be paid at twice the unit price established per block, all others will be at a unit of 1. The top of the culvert shall govern block elevation. The correct block shall be set with the top of the block equal to the top of the culvert. 2400mm wide concrete blocks shall be used as the top block on arch and larger round pipes in order to span between the culvert top and the supporting block. The blocks shall be set at each end of the culvert so that each row of blocks will be offset approx. 100mm from the row below. The bottom row shall consist of one block placed parallel to the culvert. The blocks shall be imbedded a minimum of 300mm into each bank and shall extend into the drain bottom to match the pipe invert or below. Erosion protection shall be placed on the banks next to the end walls. The erosion protection shall consist of 150mm x 300mm quarry stone over filter fabric (Mirafi P150 or approved equal). It shall extend 500mm upstream or downstream and from top of bank to top of bank at each end wall.

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

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

16. Maintenance

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

If the Contractor cannot perform the work. The Town will hold the money against the tender or collect it from the tenderer.

17. 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.

18. Buffer Strip

A grassed buffer strip shall be incorporated into the drainage works. The buffer strip shall extend 1.5 metres from the top of the bank on the west side. The seed mixture shall be as specified in the Seeding/Restoration specification.

19. Seeding/Restoration

The side slopes of the channel, road right of way, buffer strip, finished lawns, and all areas disturbed by construction, shall be topped with 100mm of topsoil and hydroseeded in the spring or fall following construction. The time of application shall be approved by the Drainage Superintendent or Engineer.

Hydraulic seed and mulch in accordance with OPSS 804. Seed mixture, fertilizer and application rates are as follows:

- Primary seed (85 kg/ha.) consisting of 50% red fescue, 40% perennial rye-grass and 5% white clover.
- Nurse crop consisting of Italian (annual) rye-grass at 25% of total weight.
- Fertilizer (300 kg/ha.) consisting of 8-32-16.
- Hydraulic mulch (2,999 kg/ha.) type "B" and water (52,700 litres/ha.).

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

It is the Contractors responsibility to ensure that the grass is grown and established. If areas require to be re-hydroseeded, at the discretion of the Drainage Superintendent or Engineer, it shall be done at the expense of the Contractor.

20. 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.

APPENDIX A

Emergency Designation Request and Approval



4218 Oil Heritage Road, P.O. Box 1928 Petrolia, Ontario, NON 1R0 Phone: (519) 882-0032 Fax: (519) 882-2233 www.dobbineng.com

June 7, 2023

The Honourable Lisa Thompson Minister of Agriculture, Food and Rural Affairs Public Archives Building 77 Grenville St., 11th Floor Toronto, Ontario M7A 1B3

Re: Emergency Designation Request for Culvert Replacement on the North 12th Concession Drain –#4955 12th Concession Road, Town of Tecumseh

We are requesting an Emergency Designation under section 124 of the Drainage Act, R.S.O., 1990, to perform a culvert replacement on the North 12th Concession Drain (a municipal drainage works), at #4955 12th Concession Road in the Town of Tecumseh.

On May 9th, 2023, R. Dobbin Engineering was appointed under section 78 of the Drainage Act to investigate and make the necessary improvements to the North 12th Concession Drain. On May 24th, 2023 a site meeting was held and the Landowner expressed concern with the condition of the current culvert. After investigation of the culvert on June 7th, 2023 it was determined that the culvert must be replaced as soon as possible as shown in the Appendix on this report. The culvert has no bottom, is seeing further deterioration and presents a safety hazard in its current state. The work cannot be done under maintenance as the previous reports for the North 12th Concession Drain do not provide a means of assessing the work that is required.

Because of the time required to complete the report, obtain approvals and proceed through the Drainage Act process, the Town will be unable to complete the Drainage Act process in time.

In summary, I am asking your Ministry for approval for Emergency Designation to replace the existing culvert servicing #4955 12th Concession Road. As this matter is of urgency to the general public, we would appreciate your earliest reply. Thank you and should you require any further information regarding this matter, please do not hesitate to contact the undersigned.

Yours truly,

Josh Warner, P. Eng. Drainage Engineer

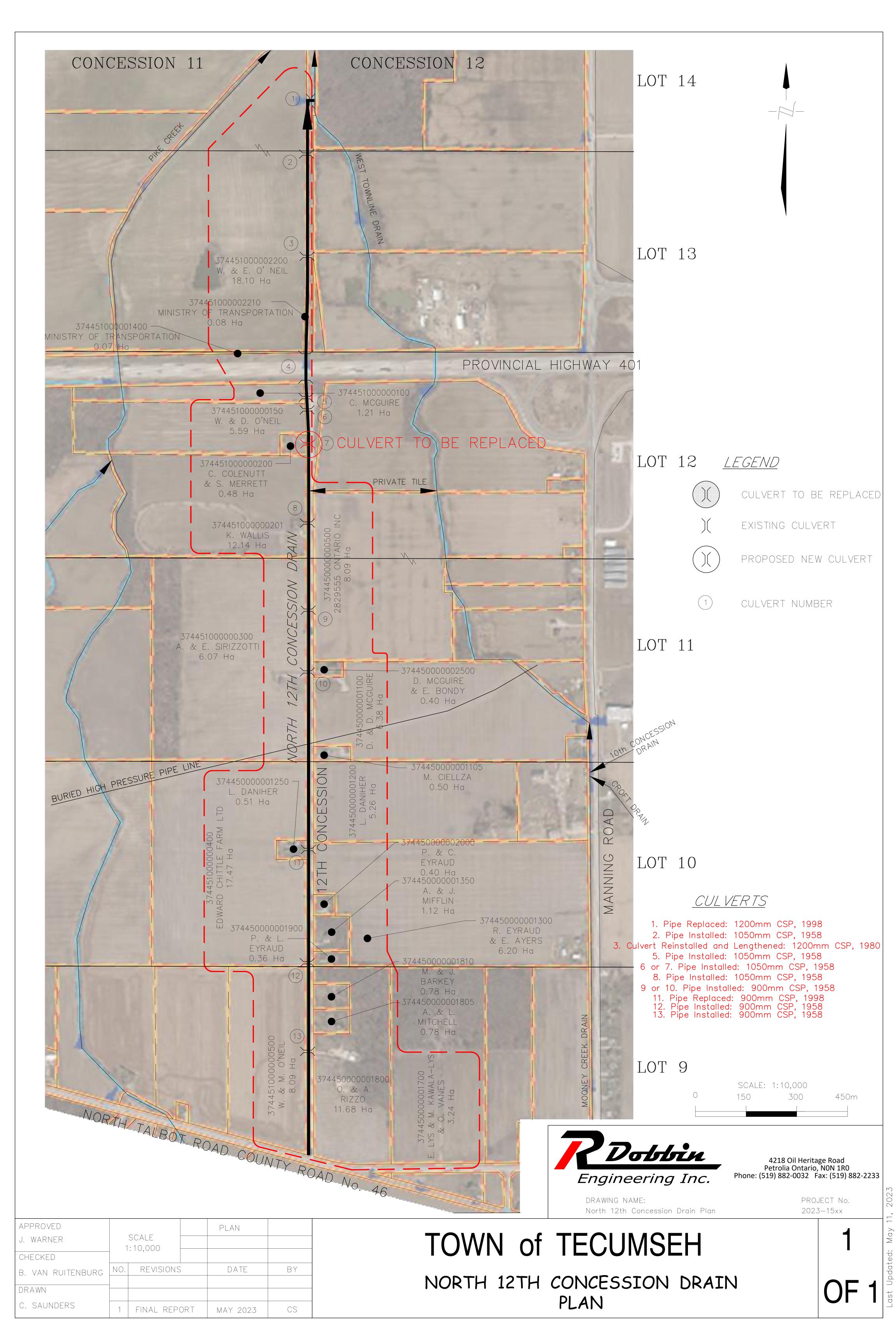
Appendix: Photos of the pipe and Culvert Location Plan

cc. Tim Brook, Drainage Coordinator, Ministry of Agriculture and Food and Rural Affairs Alessia Mussio, Drainage Superintendent, Town of Tecumseh

<u>Appendix</u>







Ministry of Agriculture, Food and Rural Affairs

Office of the Minister

77 Grenville Street, 11th Floor Toronto, Ontario M7A 1B3 Tel: 416-326-3074 www.ontario.ca/OMAFRA Ministère de l'Agriculture, de l'Alimentation et des Affaires rurales

Bureau du ministre

77, rue Grenville, 11e étage Toronto (Ontario) M7A 1B3 Tél.: 416 326-3074 www.ontario.ca/MAAARO



June 13,2023

Josh Warner, P. Eng Drainage Engineer R. Dobbin Engineering Inc. josh@dobbineng.com

Dear Mr. Warner:

Thank you for your letter dated June 7, 2023, requesting an emergency designation under Section 124 of the <u>Drainage Act</u> for a culvert replacement on the North 12th Concession Drain servicing #4955 12th Concession Road in the Town of Tecumseh.

Your letter and the accompanying photographs demonstrate that the access culvert has no bottom, is further deteriorating and presents a safety hazard in its current state. You indicate that you have inspected the culvert and determined that the culvert has failed throughout and is unsafe to cross. As the culvert is the only access to the property, the culvert needs to be replaced as soon as possible.

You also indicate that a request was made to the municipality to replace the culvert by the owner. However, the drainage reports do not provide for culvert replacements and therefore, this culvert cannot be replaced under maintenance.

You indicate that R. Dobbin Engineering Inc. has been appointed as the Drainage Engineer, to investigate and make the necessary improvement on the North 12th Concession Drain servicing #4955 12th Concession Road in the Town of Tecumseh recommending the full replacement of the crossing in accordance with Section 78 of the Drainage Act.

After considering this information, I hereby designate the replacement of a culvert on the North 12th Concession Drain servicing #4955 12th Concession Road in the Town of Tecumseh to be an emergency within the meaning of Section 124 of the Drainage Act.





This designation is granted on the condition that the replacement is made under the supervision of R. Dobbin Engineering Inc., appointed by council under Section 78 of the Drainage Act. Any additional drain improvements will need to progress through the normal *Drainage Act* process. Since the total project cost is unknown at this time, all involved property owners must be given an opportunity to appeal their share of the project cost to the appeal bodies established under the act.

Please note that this emergency designation does not exempt you and your municipality from any approvals that may be required from other agencies including the local conservation authority and Fisheries and Oceans Canada.

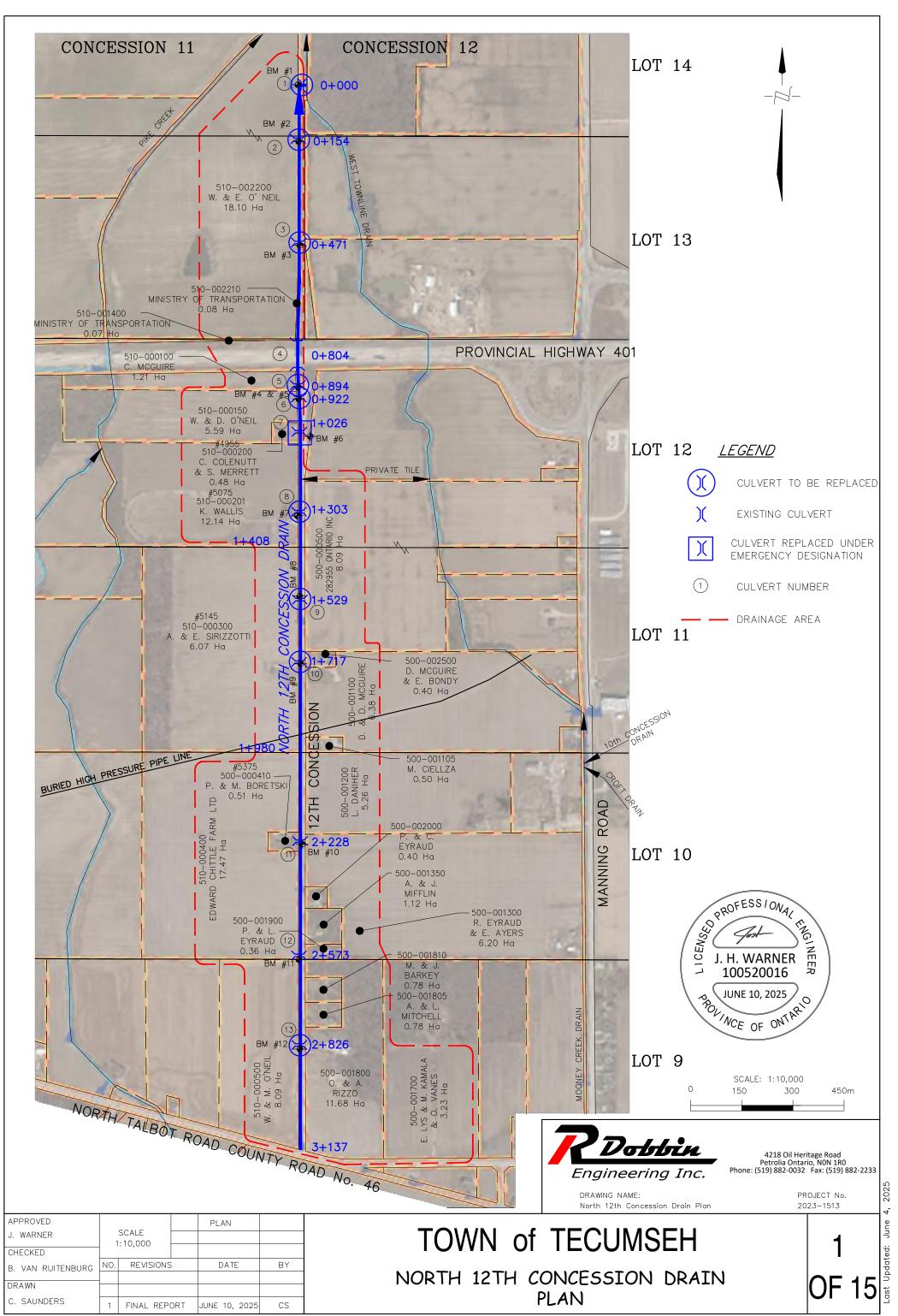
Sincerely,

Lisa M. Thompson

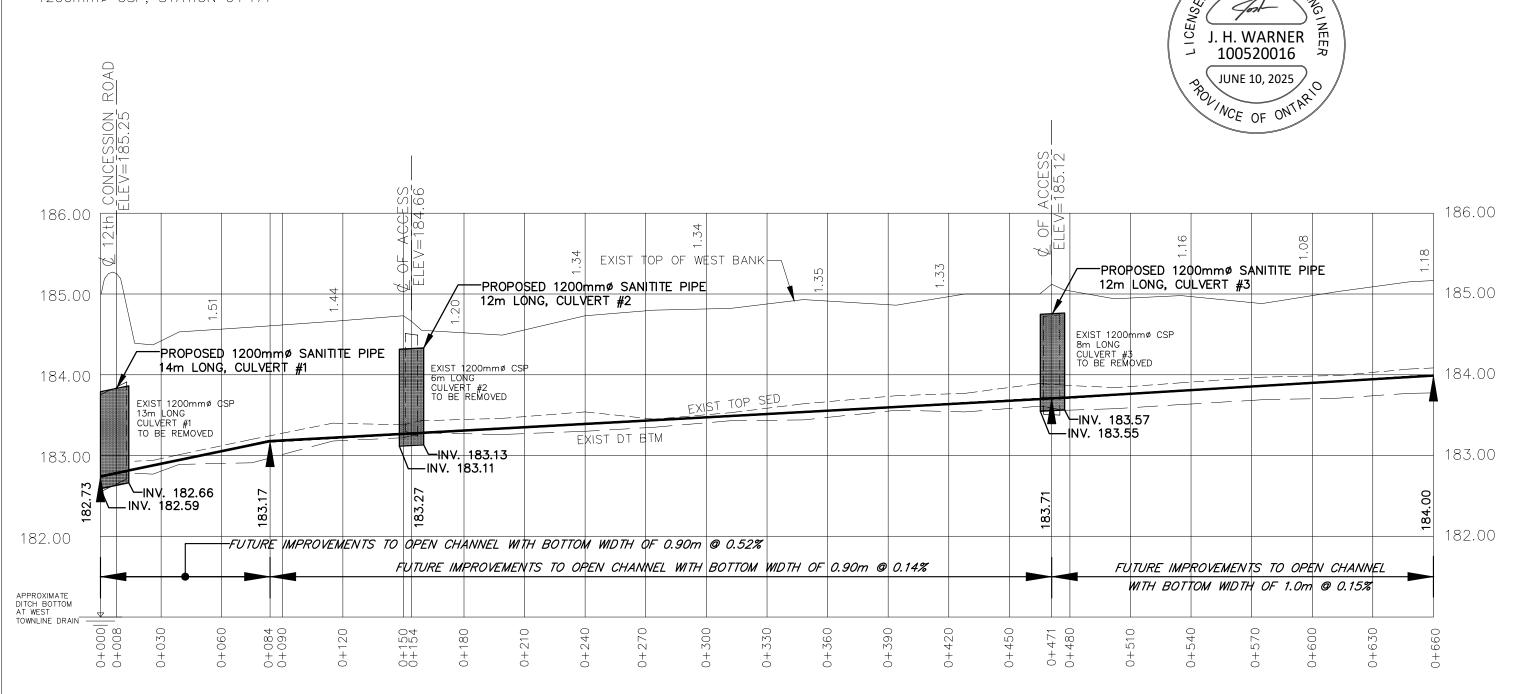
Minister of Agriculture, Food and Rural Affairs

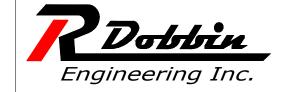
Did you know about the Farmers' Wellness Initiative?

- Your mental health is important! If you're a farmer or a member of a farm family and in need of mental health support, please call 1-866-267-6255 and arrange to speak with a professional today.
- For additional resources visit: https://farmerwellnessinitiative.ca/.



- 1. BENCHMARK No.1 ELEV. 183.91
 TOP OF WEST END OF EXISTING
 1200mmø CSP, STATION 0+008
 BENCHMARK No.2 ELEV. 184.49
 TOP OF SOUTH END OF EXISTING
 1200mmø CSP, STATION 0+154
 BENCHMARK No.3 ELEV. 184.74
 TOP OF SOUTH END OF EXISTING
 1200mmø CSP, STATION 0+471
- 2. UPPER NUMBERS ARE DEPTH FROM THE WEST TOP OF BANK TO BOTTOM OF NEW CHANNEL.





North 12th Concession Drain Profile 1

DRAWING NAME:

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

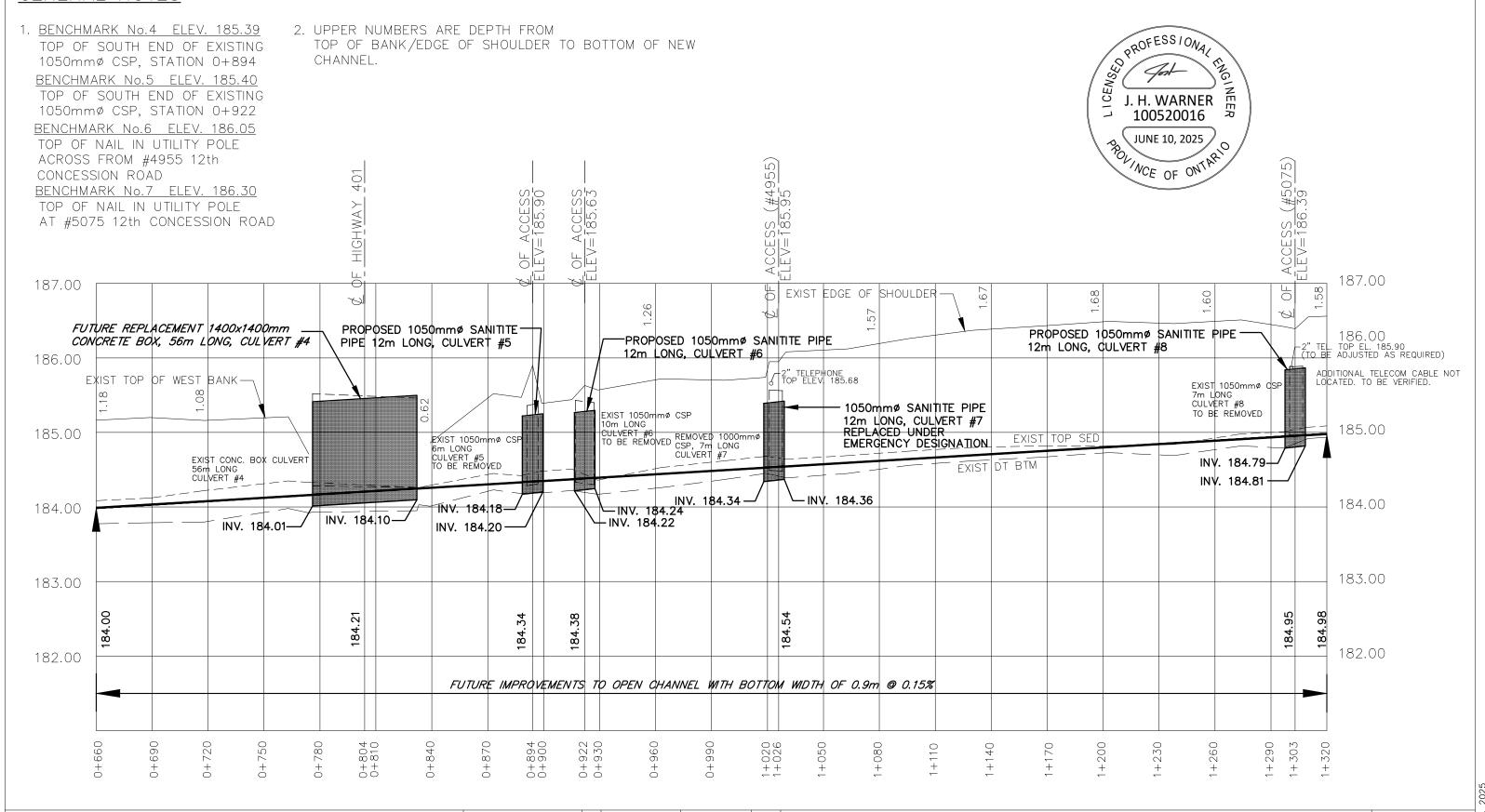
> PROJECT No. 2023–1513

APPROVED	NO.	REVISIONS	DATE	BY	
J. WARNER					
CHECKED	1	FINAL REPORT	JUNE 10, 2025	JW	
B. VAN RUITENBURG		SCALE:			
DRAWN		0 20	40 1005	5	
J. WARNER					

TOWN of TECUMSEH

NORTH 12TH CONCESSION DRAIN PROFILE

PROFESS 10NAZ





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

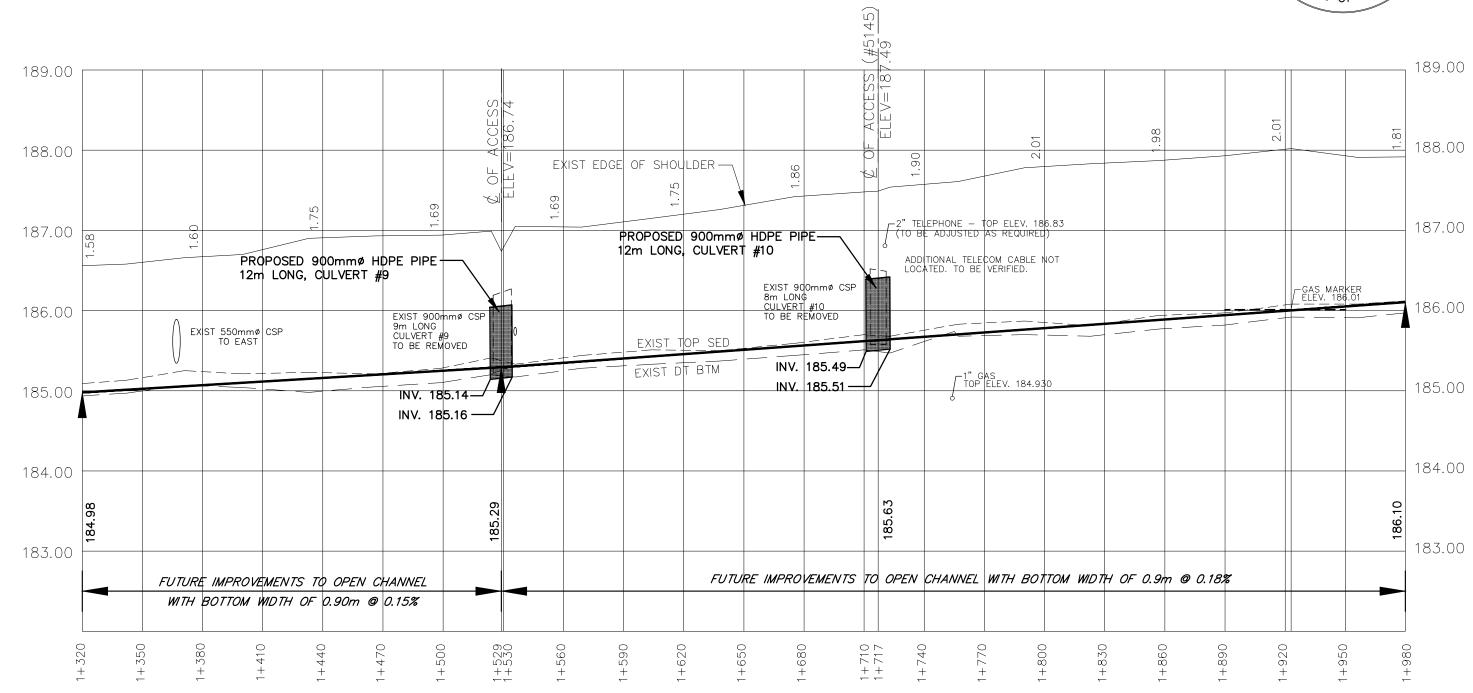
APPROVED	NO.	REVI	SIONS		DATE	=	BY
J. WARNER							
CHECKED	1	FINAL I	REPORT	1UL	NE 10,	2025	JW
B. VAN RUITENBURG		5	SCALE:	1: 2	2,000		
DRAWN		0	20	4	-0	600	3
J WARNER							-

TOWN of TECUMSEH

NORTH 12TH CONCESSION DRAIN **PROFILE**

- 1. <u>BENCHMARK No.8 ELEV. 186.19</u>
 TOP OF NORTH END OF EXISTING 900mmø CSP, STATION 1+529
 <u>BENCHMARK No.9 ELEV. 186.49</u>
 TOP OF SOUTH END OF EXISTING 900mmø CSP, STATION 1+717
- 2. UPPER NUMBERS ARE DEPTH FROM EAST EDGE OF SHOULDER TO BOTTOM OF NEW CHANNEL.







North 12th Concession Drain Profile 3

DRAWING NAME:

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

PROJECT No. 2023-1513

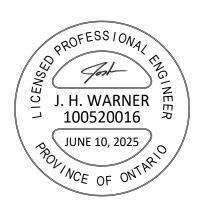
APPROVED	NO.	REVISIONS	DATE	BY	
J. WARNER					
CHECKED	1	FINAL REPORT	JUNE 10, 2025	JW	
B. VAN RUITENBURG		SCALE:	1: 2,000		
DRAWN		0 20	40 6 0 07	7	
J. WARNER					

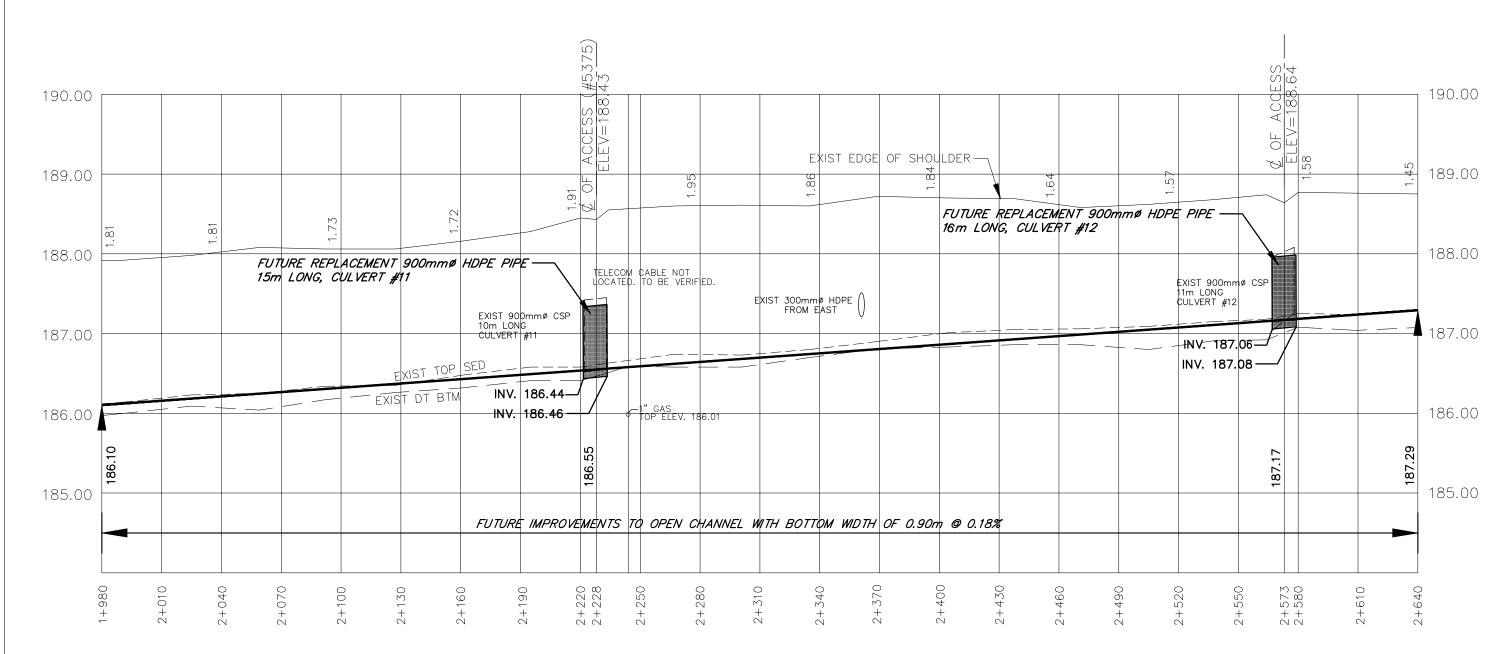
TOWN of TECUMSEH

NORTH 12TH CONCESSION DRAIN PROFILE

4)F 15

- 1. BENCHMARK No.10 ELEV. 187.45 TOP OF SOUTH END OF EXISTING 900mmø CSP, STATION 2+228 BENCHMARK No.11 ELEV. 188.08 TOP OF SOUTH END OF EXISTING 900mmø CSP, STATION 2+573
- 2. UPPER NUMBERS ARE DEPTH FROM EAST EDGE OF SHOULDER TO BOTTOM OF NEW CHANNEL.







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

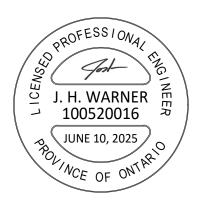
APPROVED	NO.	REVISIONS	DATE	BY
J. WARNER				
CHECKED	1	FINAL REPORT	JUNE 10, 2025	JW
B. VAN RUITENBURG		SCALE:	,	
DRAWN		0 20	40 fb8	.
J WARNER				

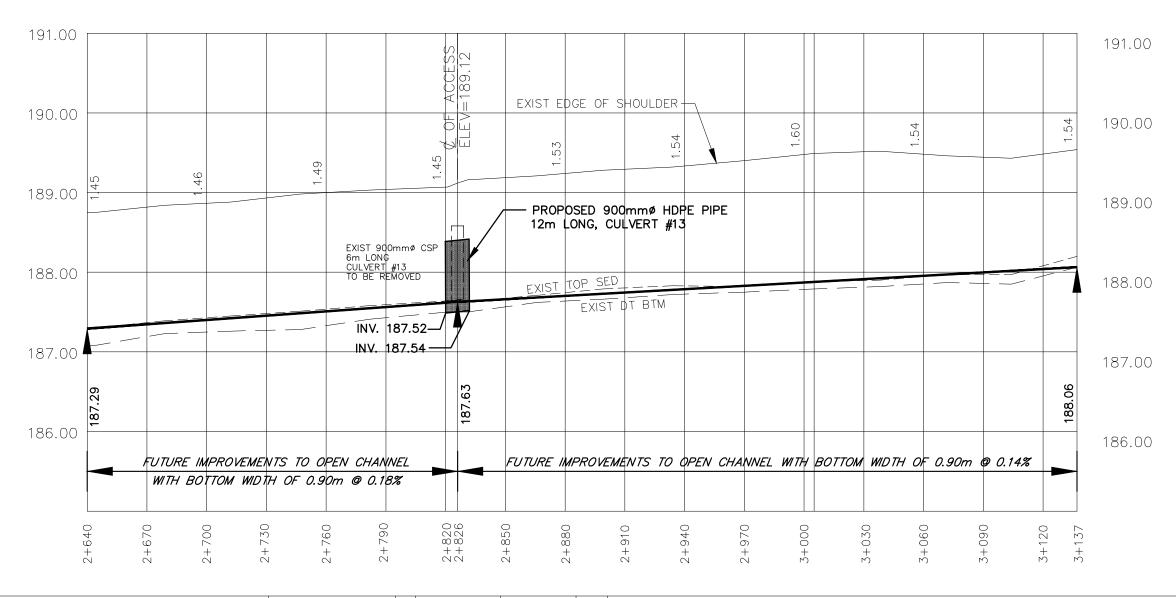
TOWN of TECUMSEH

NORTH 12TH CONCESSION DRAIN **PROFILE**

DRAWING NAME: North 12th Concession Drain Profile 4 PROJECT No. 2023-1513

- 1. <u>BENCHMARK No.12 ELEV. 188.58</u> TOP OF SOUTH END OF EXISTING 900mmø CSP, STATION 2+826
- 2. UPPER NUMBERS ARE DEPTH FROM EAST EDGE OF SHOULDER TO BOTTOM OF NEW CHANNEL.







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

J. WARNER			
CHECKED	1	FINAL REPORT	JUNE 10, 2025
B. VAN RUITENBURG		SCALE:	1: 2,000
DRAWN		0 20	40 69m
J. WARNER			

REVISIONS

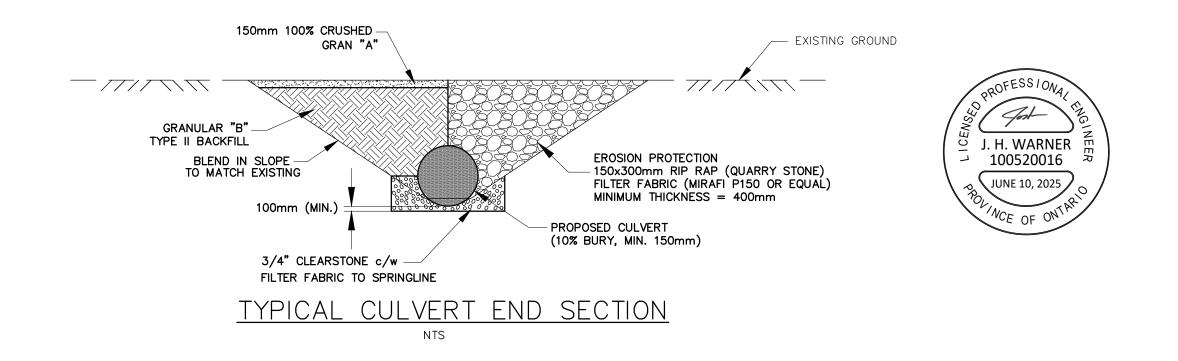
DATE

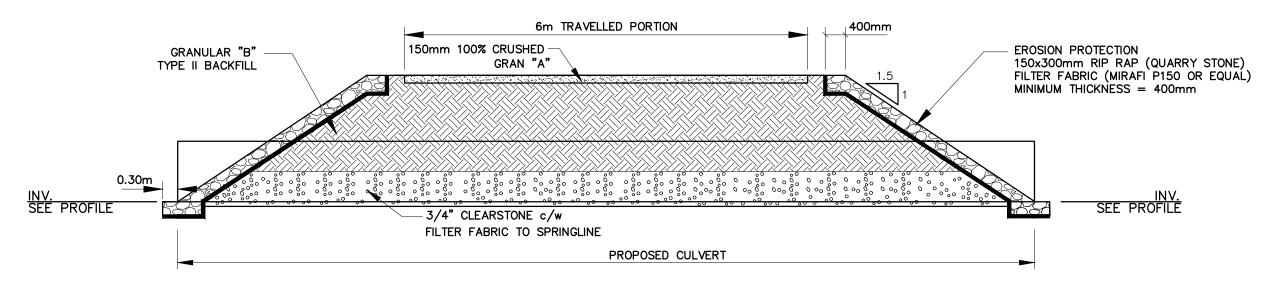
JW

APPROVED

TOWN of TECUMSEH

NORTH 12TH CONCESSION DRAIN PROFILE





TYPICAL CROSS-SECTION

NTS

NOTE:
ALL GRANULARS COMPACTED
TO 98% MODIFIED PROCTOR DENSITY

	Dobbin
_	Engineering Inc.

North 12th Concession Drain Culvert Detail

DRAWING NAME:

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

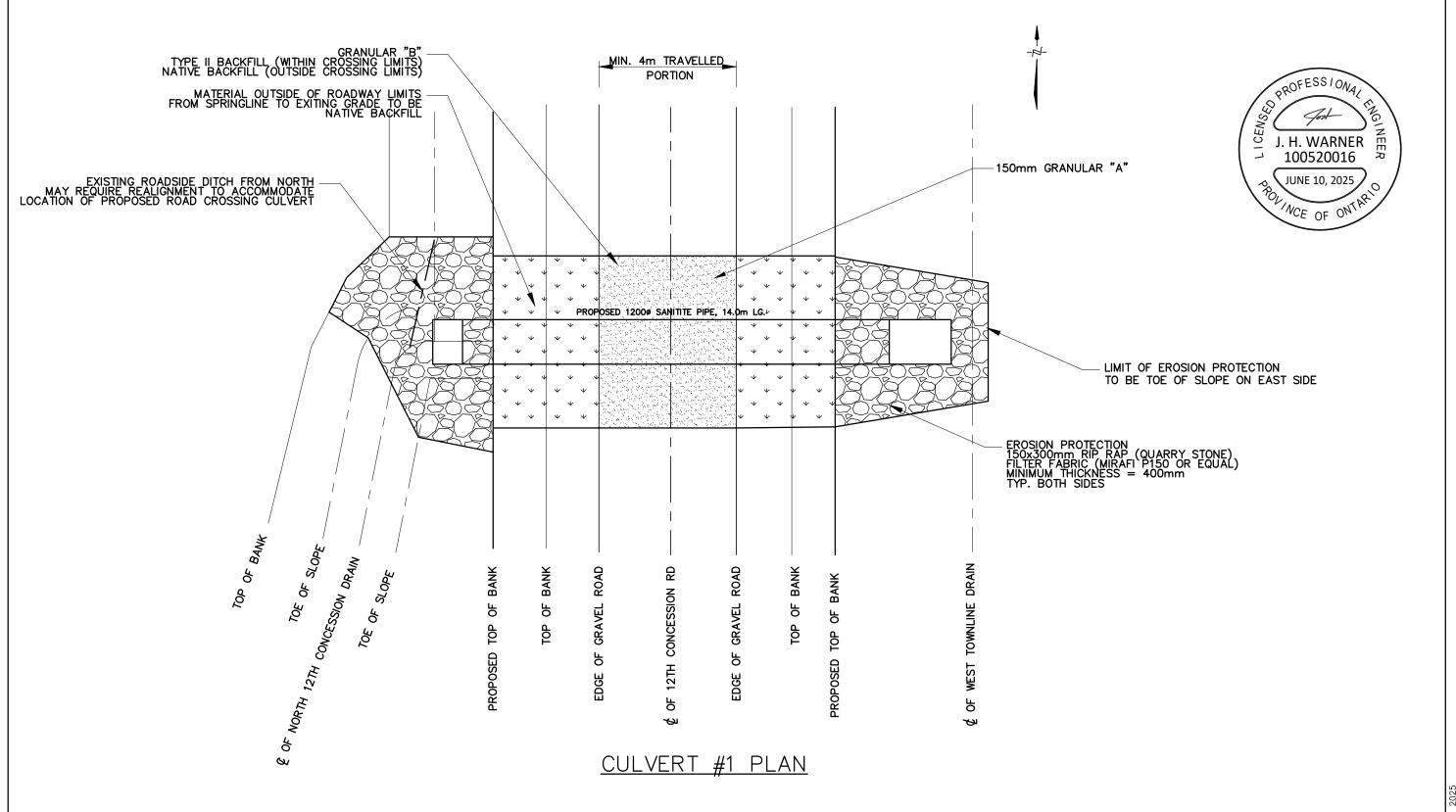
> PROJECT No. 2023-1513

APPROVED	NO.	REVISIONS	DATE	BY
J. WARNER				
CHECKED	1	FINAL REPORT	JUNE 10, 2025	JW
B. VAN RUITENBURG		SCALE	1: 75	
DRAWN J. WARNER		0	2m 1	10
·				

TOWN of TECUMSEH

NORTH 12TH CONCESSION DRAIN TYPICAL ACCESS CULVERT DETAIL 7 F 1

OF 15





North 12th Concession Drain Culvert Plans 1

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

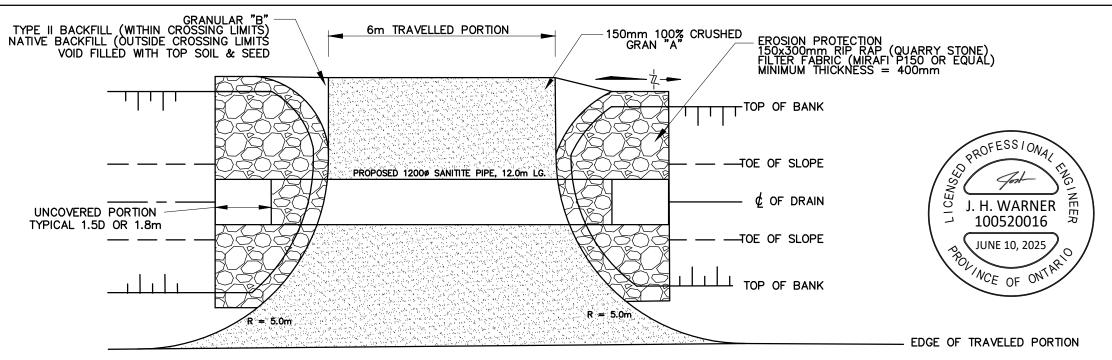
PROJECT No. 2023-1513

APPROVED	NO.	REVISIONS	DATE	BY	
J. WARNER					
CHECKED	1	FINAL REPORT	JUNE 10, 2025	cs	
B. VAN RUITENBURG		SCALE:	1:100		
DRAWN	1	0 1	2 3m		
C. SAUNDERS					

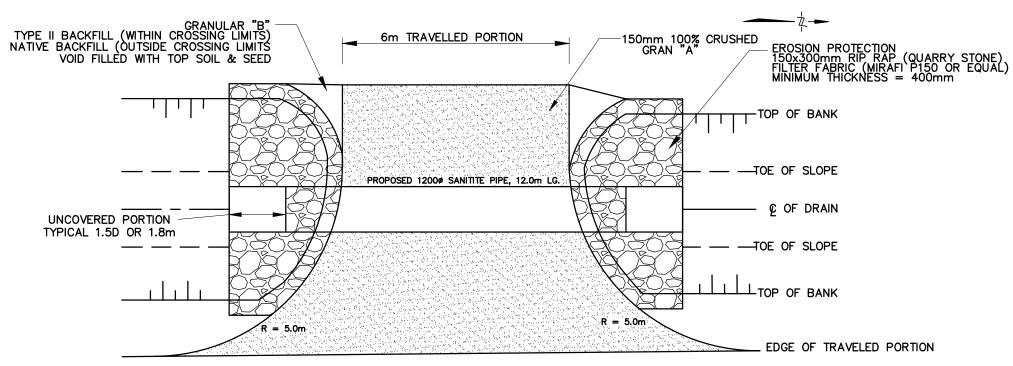
TOWN of TECUMSEH

NORTH 12TH CONCESSION DRAIN CULVERT PLANS

8



CULVERT #2 PLAN



CULVERT #3 PLAN



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

DRAWING NAME: PROJECT No. North 12th Concession Drain Culvert Plans 2 2023-1513

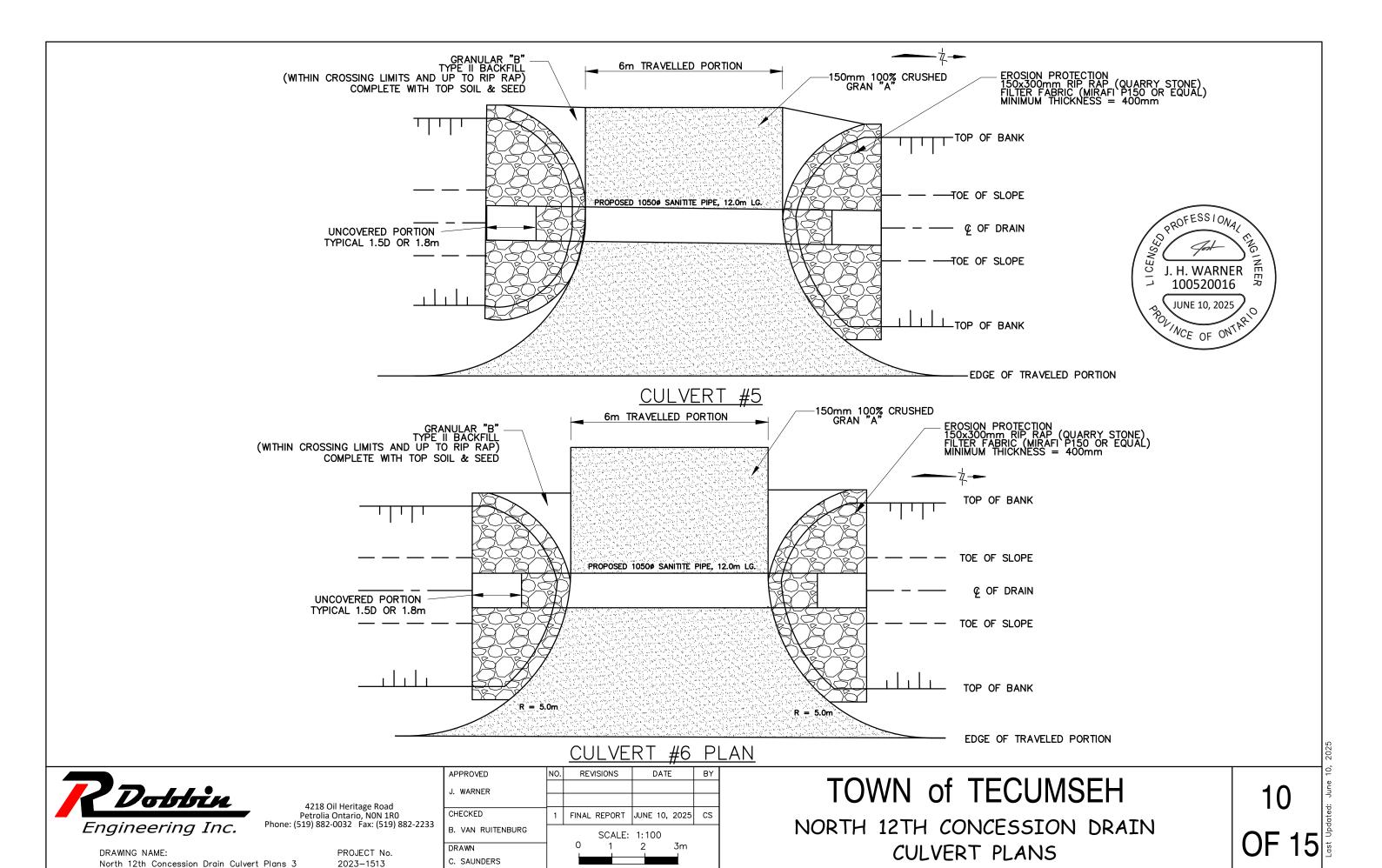
APPROVED	NO.	REVISIONS	DATE	BY	
J. WARNER					
0. W/W/I					
CHECKED	1	FINAL REPORT	JUNE 10, 2025	cs	
B. VAN RUITENBURG		SCALE:	1:100		
DRAWN	1	0 1	2 3m		
C. SAUNDERS					

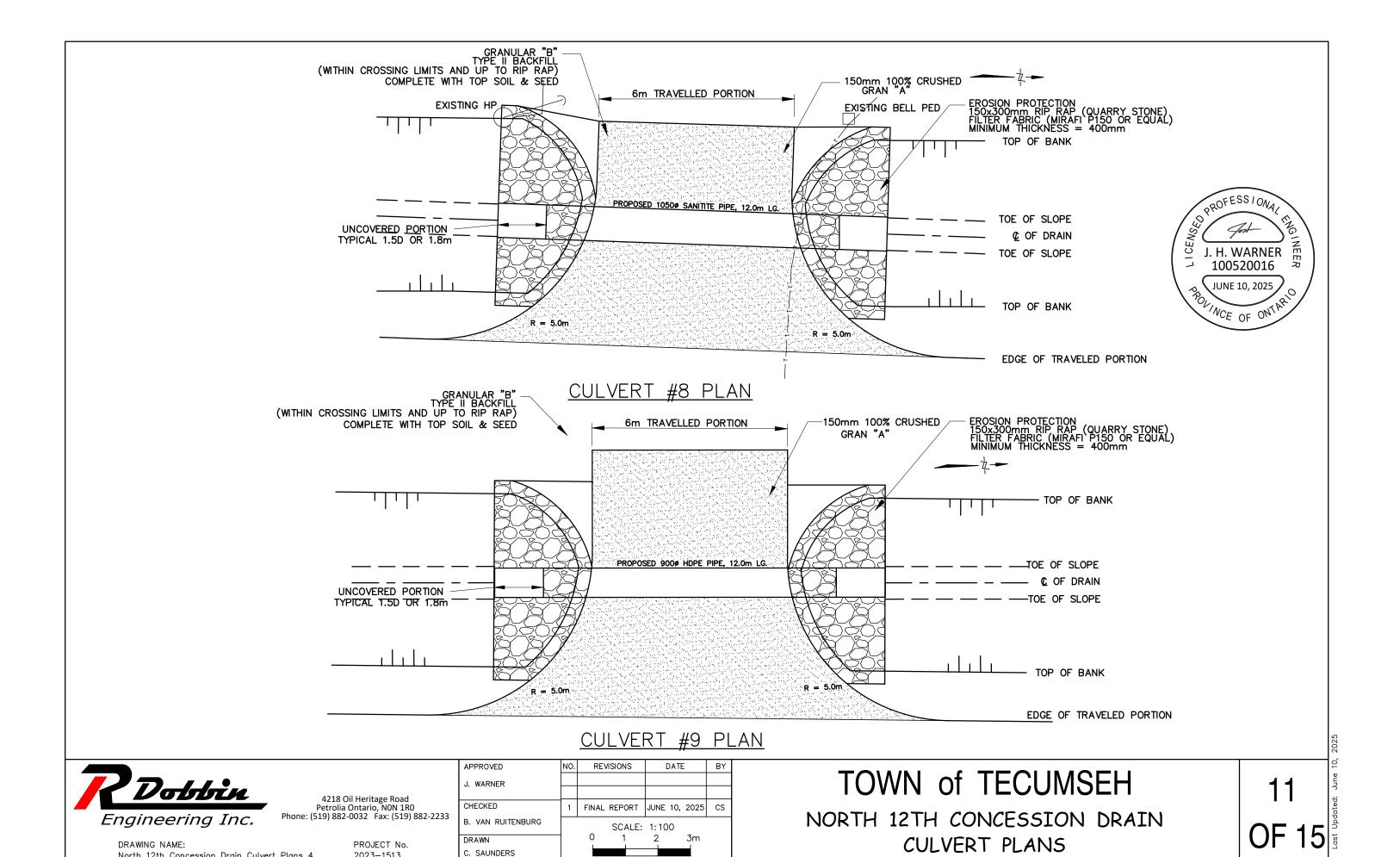
TOWN of TECUMSEH

NORTH 12TH CONCESSION DRAIN CULVERT PLANS

9 F 1

OF 15

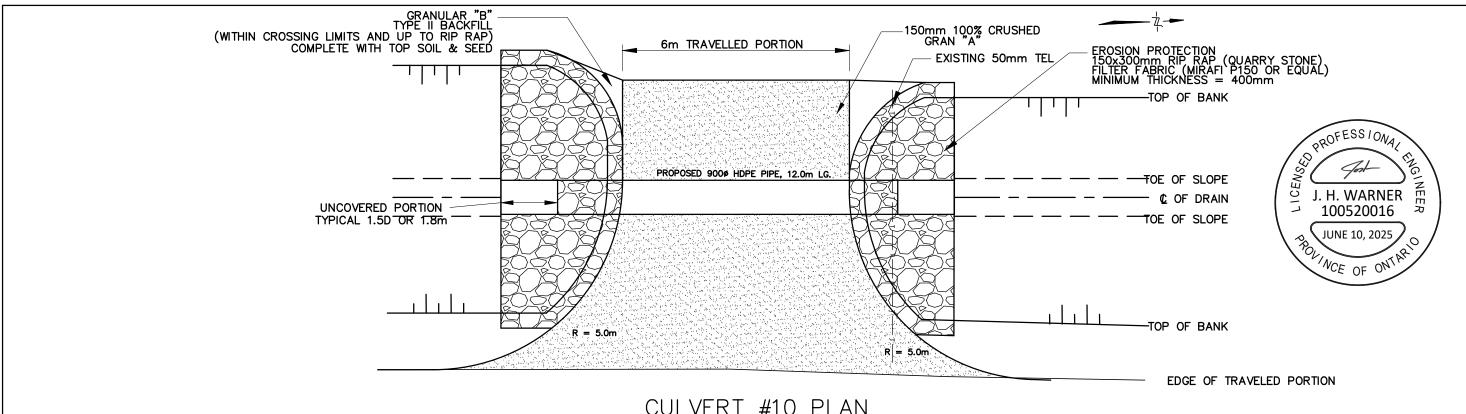


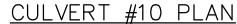


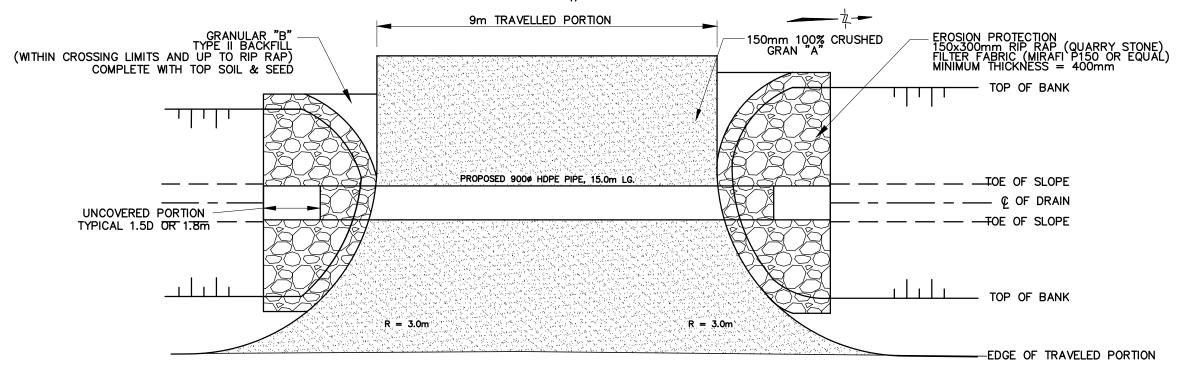
114

North 12th Concession Drain Culvert Plans 4

2023-1513







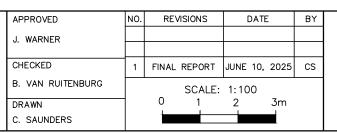
CULVERT #11 PLAN (FUTURE)



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

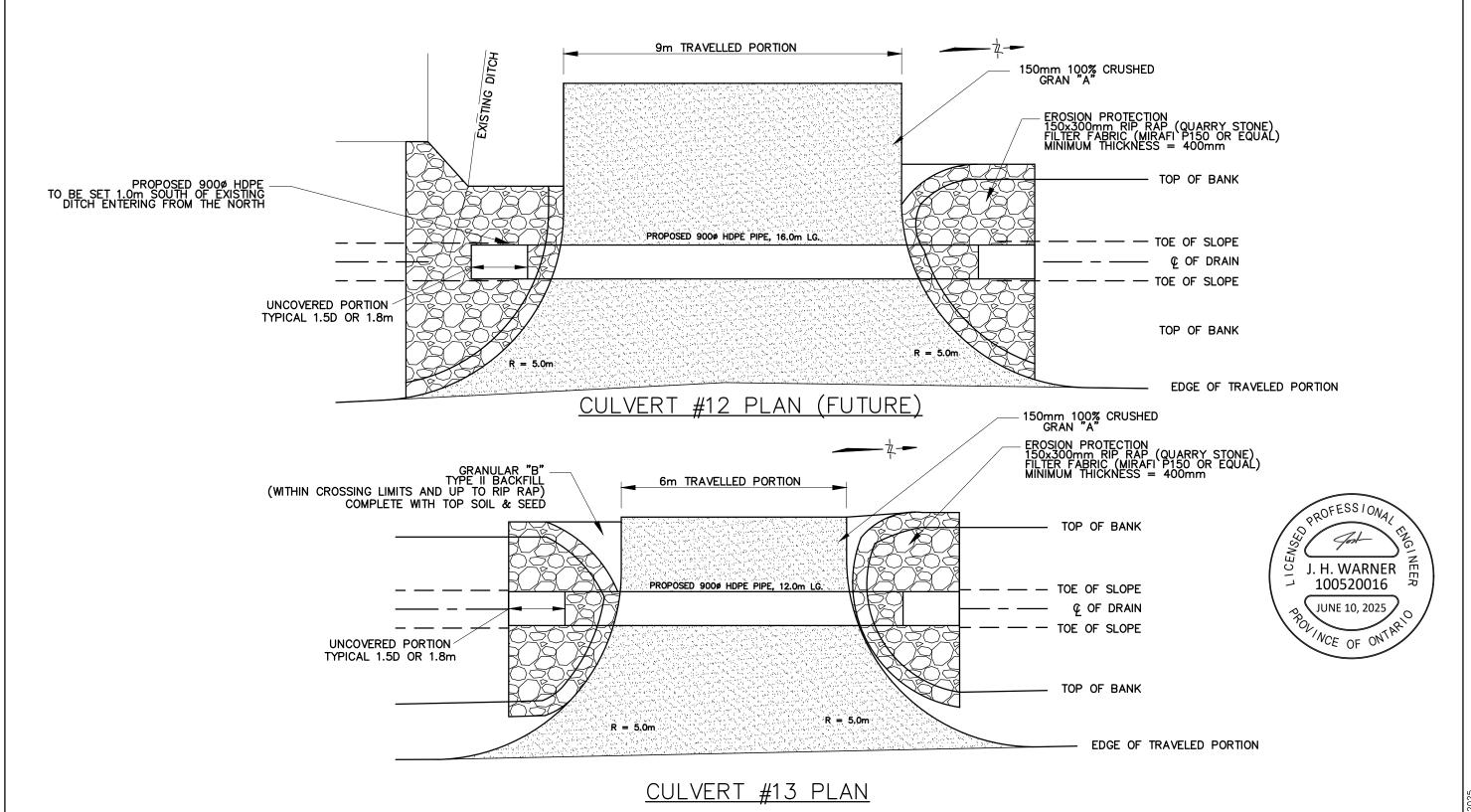
DRAWING NAME: North 12th Concession Drain Culvert Plans 5

PROJECT No. 2023-1513



TOWN of TECUMSEH

NORTH 12TH CONCESSION DRAIN CULVERT PLANS





North 12th Concession Drain Culvert Plans 6

DRAWING NAME:

4218 Oil Heritage Road Petrolia Ontario, NON 1R0 Phone: (519) 882-0032 Fax: (519) 882-2233 PROJECT No. 2023-1513

APPROVED	NO.	REVISIONS	DATE	BY	Г
J. WARNER					
o. William					1
CHECKED	1	FINAL REPORT	JUNE 10, 2025	CS	
B. VAN RUITENBURG		SCALE:			1
DRAWN	1	0 1	2 3m		
C. SAUNDERS					

TOWN of TECUMSEH

NORTH 12TH CONCESSION DRAIN CULVERT PLANS

13

TABLE - ACCESS BRIDGE DESIGN INFORMATION	FUTUR	E REPLA	CEMENT				PROI	POSED RI	EPLACEM	ENT			
DESCRIPTION	CULVERT No.4	CULVERT No.11	CULVERT No.12	CULVERT No.1	CULVERT No.2	CULVERT No.3	CULVERT No.5	CULVERT No.6	CULVERT No.7	CULVERT No.8	CULVERT No.9	CULVERT No.10	CULVERT No.13
BRIDGE & LOCATION (STATION)	0+804	2+228	2+573	0+008	0+154	0+471	0+894	0+922	1+026	1+303	1+529	1+717	2+826
BRIDGE TYPE	ROAD	DRIVEWAY	FARM	ROAD	FARM	FARM	FARM	FARM	DRIVEWAY	DRIVEWAY	FARM	DRIVEWAY	FARM
PIPE INVERT ELEV. U/S SIDE	184.10	186.46	187.08	182.66	183.13	183.57	184.20	184.24	184.36	184.81	185.16	185.51	187.54
PIPE INVERT ELEV. D/S SIDE	184.01	186.44	187.06	182.59	183.11	183.55	184.18	184.22	184.34	184.79	185.14	185.49	185.52
TOP OF ¢ DRIVEWAY SURFACE ELEV.	KEEP EXISTING	188.43	188.64	185.25	184.66	185.12	185.90	185.63	185.95	186.39	186.74	187.49	189.12
DRAIN BOTTOM (DESIGN) (AT CENTRELINE OF CULVERT)	184.21	186.55	187.17	182.78	183.27	183.71	184.34	184.38	184.54	184.95	185.29	185.63	187.63
MIN. TOP WIDTH OF DRIVEWAY	KEEP EXISTING	9.0m	9.0m	6.0m	6.0m								
MIN. CULVERT GRADE (%)	0.16	0.13	0.13	0.50	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
CULVERT MATERIAL	CONCRETE	HDPE	HDPE	SANITITE	HDPE	HDPE	HDPE						
CULVERT LENGTH	56.0m	15.0m	16.0m	14.0m	12.0m	12.0m							
CULVERT STRENGTH		320kPa	320kPa	320kPa	320kPa	320kPa	320kPa	320kPa	320kPa	320kPa	320kPa	320kPa	320kPa
PIPE SIZE	1400mm X 1400mm	900mmø	900mmø	1200mmø	1200mmø	1200mmø	1050mmø	1050mmø	1050mmø	1050mmø	900mmø	900mmø	900mmø
CULVERT ENDWALL TYPE		RIP RAP	RIP RAP	RIP RAP	RIP RAP	RIP RAP	RIP RAP	RIP RAP	RIP RAP	RIP RAP	RIP RAP	RIP RAP	RIP RAP



North 12th Concession Drain Culvert Plans 1

DRAWING NAME:

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

PROJECT No. 2023-1513

APPROVED	NO.	REVISIONS	DATE	BY
J. WARNER				
CHECKED	1	FINAL REPORT	JUNE 10, 2025	CS
B. VAN RUITENBURG		SCALE:		
DRAWN		0 1	2 3m	
C. SAUNDERS				

TOWN of TECUMSEH

NORTH 12TH CONCESSION DRAIN CULVERT PLANS

14

J. H. WARNER 100520016

100520016 JUNE 10, 2025 JUNE 10, 2025 VIVCE OF ONTHE

