

**LOCHER-HEAMAN DRAIN  
TENDER**

TOWNSHIP OF ADELAIDE-METCALFE  
TENDER for CONTRACT 2023-1577

CLOSING DATE: July 22, 2025 @ 1 p.m.



## **BID FORM**

### **LOCHER-HEAMAN DRAIN**

### **TOWNSHIP OF ADELAIDE-METCALFE**

**OWNER:** Township of Adelaide-Metcalfe

**CONTRACT ADMINISTRATOR:** R. Dobbin Engineering Inc.

**LOCATION:** Lots 24-25, Concessions 2 NER in the Township of Adeliade-Metcalfe upstream and downstream of Newell Road.

Bids will be received in sealed envelopes clearly marked "**Locher-Heaman Drain**" at the Town office of:

**Township of Adelaide-Metcalfe  
2340 Egremont Drive – RR #5  
Strathroy, ON  
N7G 3H6**

Your bid must be received at the above specified location no later than:  
**Tuesday, July 22<sup>nd</sup>, 2025  
1:00 P.M. LOCAL TIME**

This will be a Public Tender Opening. Contractors may attend the opening. Results will be emailed out to all Bidders.

Bid inquiries shall be submitted as stated below:

David Moores  
R. Dobbin Engineering Inc.  
4218 Oil Heritage Road  
Petrolia, Ontario  
(519)-882-0032, ext. 203  
(519) 331-3675  
[david@dobbineng.com](mailto:david@dobbineng.com)

**Tender enquiries shall be accepted until**  
**Thursday, July 17, 2025**

## SCHEDULE OF TENDER PRICES

### TENDER PRICE

A. **Offer by:** \_\_\_\_\_

**Name:** \_\_\_\_\_

**Address:** \_\_\_\_\_

\_\_\_\_\_

**HST #:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**To:** The Township of Adelaide-Metcalfe

We, the undersigned, having examined the site of the Work, having carefully investigated the conditions pertaining to the Work and having secured all the information necessary to enable us to submit a bid, and having inspected all the Contract Documents and Drawings, hereby agree to enter into a Contract and perform all the Work in accordance with the Contract Documents and Drawings to the satisfaction of the Contract Administrator for the total bid price **INCLUDING HST** of:

\_\_\_\_\_  
\_\_\_\_\_ ( \$ \_\_\_\_\_ )

#### 1. **ADDENDA**

We agree that we have received addenda \_\_\_\_ to \_\_\_\_ inclusive, and the bid price includes the provisions set out in such addenda.

## TENDER TABLE

Item No.	Item Description	Quantity	Unit	Unit Cost (\$)	Total (\$)
1.0	Pre-Construction Meeting	1	LS		
	Benchmark Loop	1	LS		
				1.0 Total	
2.0	<u>Channel Work: Station 0+396 to 0+815</u>				
	Brushing	419	m		
	Open Channel Excavation c/w Bank Resloping	419	m		
	Strip and Level Topsoil	419	m		
	Level Excavated Material	419	m		
	Reconnect Existing Tile Drains	15	ea		
	S. & I. Straw Matting and Grass Seed	1500	sq.m		
	S. & I. Stone Erosion Protection (P)	20	t		
	Environmental Considerations (Silt Fence)	1	LS		
				2.0 Total	
3.0	<u>Tile Drain Work: Station 0+836 to 1+251</u>				
	Brushing	1	LS		
	Strip and Place Topsoil	415	m		
	S. & I. 750mmø Concrete Tile	415	m		
	S. & I. Catch Basin #1 (900mm x 1200mm) c/w Rip Rap	1	LS		
	S. & I. Catch Basin #2 (900mm x 1200mm) c/w Berm & Rip Rap	1	LS		
	Reconnect Existing Tile Drains (P)	10	ea		
	Environmental Considerations (Silt Fence)	1	LS		
				3.0 Total	

Item No.	Item Description	Quantity	Unit	Unit Cost (\$)	Total (\$)
4.0	<u>Newell Road (Section 26)</u>				
	Remove Existing Culverts	2	ea		
	750mmø HDPE Pipe (Open Cut)	21	m		
	900mmø HDPE Pipe (Open Cut)	18	m		
	S. & I. Drainage Stone Bedding	20	tonne		
	S. & I. Granular 'A' Backfill	500	tonne		
	S. & I. 100% Crushed Granular 'A' or 'M'	40	tonne		
	S. & I. Rip Rap Endwalls	40	tonne		
	Extend 400mmø Pipe at SW Corner of Newell Road	1	LS		
	Daylight and Work Around Existing Utilities	1	LS		
	Traffic Control	1	LS		
	Restoration/Seeding and Ditch Grading	1	LS		
				4.0 Total	
5.0	Contingency			5.0 Total	8,400.00
		Subtotal 1.0 + 2.0 + 3.0 + 4.0 + 5.0			
		HST (13%)			
		Total Tender			

Tender Deposit in the form of a certified cheque or bid bond in the amount of 10% of the total tender price payable to the **Township of Adelaide-Metcalf** is enclosed.

Work will begin on or before \_\_\_\_\_

Work will be completed on or before \_\_\_\_\_

The Contractor shall fill in the above starting and completion date. Failure to do so may render the tender invalid and subject to rejection by the Township.

OFFERED ON BEHALF OF THE  
CONTRACTOR

Name \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_

.....

Date \_\_\_\_\_

ACCEPTED ON BEHALF OF THE  
TOWNSHIP

Mayor \_\_\_\_\_

Clerk \_\_\_\_\_

Date \_\_\_\_\_ -

This Form of Tender, when signed and completely filled in by both the Contractor and the Municipality, shall constitute a formal contract.

## **CONDITIONS OF BID**

1. The lowest or any bid will not necessarily be accepted by the Owner.
2. Contract Drawing No. 1 to 4 and the attached Specifications of Work for the Locher-Heaman Drain are made part of this Contract Bid. The Contractor is to complete construction in accordance with the Drawings and the conditions indicated within this Bid Document.

### **3. TENDER DEPOSIT**

The tender shall be accompanied by a tender deposit in the form of a certified cheque or a Bid Bond payable to the Owner (Township of Adelaide-Metcalf) in the amount of 10% of the value of the tender price.

The Tenderers shall keep their tenders open for acceptance for 45 days after the closing date. Withdrawal during this period will result in forfeiture or enforcement of the tender deposit.

### **4. CONTRACT SECURITY**

There are two (2) options:

**Bonding:** The Contractor shall furnish the Township of Adelaide-Metcalf with a 100% Performance Bond and 100% Labour and Material Payment Bond. The Performance and Labour and Material Payment Bonds shall include a maintenance clause for 100% of the Tender price extending for a twelve (12) month period from the date of substantial completion. If bonding is used then the tender deposit will be returned once the contract security is in place.

OR

**10% Certified Cheque:** The certified cheque submitted as the tender deposit will be held until the date of substantial performance, as determined by the Engineer.

## 5. SCHEDULE AND LIQUIDATED DAMAGES

- a) The Contract shall be completed by **December 31, 2025, but no later than March 14, 2026.**
- b) If the time limit above is not sufficient to permit completion by the Contractor working a normal number of hours, the Contractor shall make changes to permit the Work to be completed by the above date. Additional costs incurred shall be deemed to be included in the price bid for the Works.

## 6. EXAMINATION

- a) Upon receipt of Documents, verify that they are complete; notify the Contract Administrator should the Documents be incomplete.
- b) Each firm submitting a Tender shall carefully examine the Documents for discrepancies or omissions, and immediately notify the Consultant upon finding discrepancies or omissions, at least four (4) days prior to the date specified for closing.
- c) All firms submitting Tenders will acknowledge receipt of Addenda in the space provided in the Tender Form. If no Addenda are received, insert the word "None" in the space provided.

## 7. EXAMINATION OF SITE

- a) The Tenderers shall visit the site of the Work before submitting their Tender and shall by personal examination satisfy themselves as to the local conditions that may be encountered during construction of the Work. They shall make their own estimate of the facilities and difficulties that may be encountered and the nature of the subsurface materials and conditions.
- b) The Tenderer shall not claim at any time after submission of their Tender that there was any misunderstanding of the terms and conditions of the Contract relating to site conditions.



## 8. INSURANCE

- a) The successful Bidder shall file with the Town within 10 calendar days of award of Contract – \$5 million General Liability, Automobile and Property Damage Insurance coverage.

## 9. WORKER'S SAFETY INSURANCE BOARD

- a) The successful Bidder will file with the Township within 10 calendar days of award of Contract, a current Certificate of good standing from the Worker's Safety Insurance Board (WSIB).

## 10. TIME CONSTRAINTS

- a) All Work shall be completed within the times outlined in the Town of Plympton-Wyoming noise by-law regulations.
- b) No weekend Work is permitted without prior approval by the Town of Plympton-Wyoming.

## 11. PAYMENT & SUBSTANTIAL PERFORMANCE

- a) The project will be considered substantially performed when all parts of the Contract are completed in accordance with the Contract for the **Locher-Heaman Drain** as outlined in the General Conditions of Ontario Provincial Standards GC 105 and Section 11.c below.
- b) The Contractor shall be entitled to receive monthly payments at the rate of 87% of the work completed and materials in place according to the Contract, less all stipulated forfeitures and deductions. These payments shall be made on progress payment certificates.
- c) The contract shall be deemed Substantial Performance, as defined by the Construction Act, a Certificate of Substantial Performance will be issued by the Engineer to the Contractor. The Contractor shall advertise the project is substantial complete in the Daily Commercial News. The Contractor is required to provide to the Engineer with the following:

- i) The certified copy of the publication of the Certificate of Substantial Performance in a construction trade newspaper;
  - ii) A statutory declaration in a form satisfactory to the Engineer, that all liabilities incurred by the Contractor, their subcontractors, and suppliers in carrying out the Contract have been paid and that there are no liens, garnishes, attachments, or claims relating to the work; and
  - iii) A satisfactory WSIB Clearance Certificate.
- d) The publication date begins the construction sixty (60) day holdback period. After this date, or as soon as possible thereafter, the 10% holdback for work done shall be paid to the Contractor, with the 3% remaining held as a Guaranteed Maintenance.
- e) The Contractor shall be entitled to receive monthly payments for work remaining to be done after the date of Substantial performance at the rate of 97% of the work done and materials supplied as explained in paragraph (a) above. When all this remaining work has been completed, the process for completion, as stated in Section 12.b will be followed and the 3% will be paid.

## 12. GUARANTEE MAINTENANCE PERIOD

- a) The Contractor shall guarantee the Material and Work for a period of 2-years from the date of publication of the certificate of substantial performance remain in such condition as will meet the Contract Administrator's approval, and that they will make good in a permanent manner, satisfactory to the Contract Administrator, any imperfections due to materials or workmanship used in the construction and any damage caused by such imperfections. The decision of the Contract Administrator shall be final as to the nature and cause of such imperfections and the necessity for remedying them.
- b) On the expiration of the 2-year maintenance period from the date of substantial performance, as set out on the Certificate of Substantial Performance, and after all imperfect work has been rectified in accordance with the Contract and to the satisfaction of the Engineer, the Engineer will issue a "Completion Certificate" for the contract.

The completion certificate will deem that the Engineer is satisfied that the Contractor has discharged all their obligations under the Contract. At this point, the 3% guarantee maintenance can be released to the Contractor.

- c) It is the desire of the Owner that all work, including payable and non-payable items of the tender, all cleanup and deficiencies, be finished and that all claims be resolved by the Date of Completion. Deductions from the Completion Payment Certificate will be made for any unfinished work or unresolved claims at the Date of Completion.
- d) Should the Contractor fail to comply with the directions of the Contract Administrator, the Contract Administrator may, after giving the Contractor forty-eight (48) hours written notice, perform the necessary Work, and the cost may be deducted, or collected by the Owner as provided in the Contract.
- e) Notwithstanding the provision of the subsection (a) of this clause, the Contract Administrator may, in cases of danger or public safety, make such immediate arrangements for repairs as he/she sees fit, and the Contract Administrator will inform the Contractor of such action. The cost of such emergency Work shall be borne by the Contractor.
- f) If the Contract Administrator notifies the Contractor, in writing, of imperfections prior to the termination of the guarantee period, the Contractor shall make good the imperfections as required in subsection (a) above, notwithstanding that such Work of making good may commence after or extend beyond the end of the guarantee period.

### 13. EXTRA WORK

- a) Extra Work shall be undertaken as described in subsection GC3.10.02 of the General Conditions listed in the OPSS.
- b) If applicable tender items are provided in other parts of the Contract, extra Work shall be performed using the appropriate unit prices from these parts.
- c) Extra Work shall be paid under the Contingency Allowance.

#### 14. QUANTITY OVERUNS AND UNDERUNS

- a) Compensation for quantity over runs and under runs shall be as described in GC 8.01.02 of the General Conditions listed in the OPSS.

#### 15. DAMAGE

- a) Any damage to existing infrastructure and neighboring properties shall be repaired by the Contractor to the satisfaction of the Contract Administrator. Any costs associated with the damage shall be borne by the Contractor.

#### 16. UTILITIES

- a) The Contractor shall secure locates at no extra cost to the Contract prior to any construction activities.
- b) If applicable, the Contractor shall follow the requirements for working with mechanical equipment in the vicinity of any active pipelines when undertaking work within the distances specified by Utility Company.

#### 17. CONSTRUCTION LAYOUT

- a) The Contractor will be responsible for the layout of all lines and grades from the plans at no extra cost to the Contract. Control information will be provided to the successful Bidder by R. Dobbin Engineering Inc.
- b) All discrepancies are to be reported to the Contract Administrator prior to proceeding with the work. The Contract Administrator will review the layout in the field prior to construction.

18. INCLEMENT WEATHER

- a) There will be no compensation for inclement weather other than consideration of an extension for lost time at the end of the Contract that will be at the discretion of the Contract Administrator.

19. ONTARIO PROVINCIAL STANDARDS

- a) GENERAL CONDITIONS OF CONTRACT (OPSS.MUNI 100), November 2006 apply to this Contract.
- b) THE ONTARIO PROVINCIAL STANDARD SPECIFICATIONS (OPSS) and DRAWINGS (OPSD) apply to this contract. All required OPS Specifications can be downloaded at:

<http://www.raqsb.mto.gov.on.ca/techpubs/ops.nsf/OPSHomepage>

## **SPECIAL SPECIFICATIONS:**

The following Special Specifications form part of the Contract. No additional costs will be made for completing work within these specifications. Payment for work associated with these specifications shall be included in the applicable unit price item.

1. The Contractor shall supply all material, labour, and equipment required to complete the job to the satisfaction of R. Dobbin Engineering Project Manager.
2. R. Dobbin Engineering shall be notified at least **3 days in advance** of arriving onsite to commence construction so that inspection can be arranged. Please Contact David Moores, Project Manager at 519-331-3675.
3. Lake Huron Primary Water Supply System shall be notified at least **7 days in advance** to commencing any work across or near their pipelines. All excavation within 1 meter of the pipeline shall be vacuum excavated or hand dug. Please contact Dave Scott at 519-630-7050.
4. Geotechnical investigation has not been undertaken within the project limits.
5. The Contractor is responsible to complete the Contract within the schedule specified, completed by December 31, 2025 but no later than March 14, 2026.
6. If the successful contractor chooses bonding as contract security, then the cost of bonding must form part of the overall tender amount.
7. Environmental requirements set out in the Locher-Heaman specifications, the attached ABCA letter, and the Fisheries and Oceans Authorization must be adhered to.

March 11, 2025

The Mayor and Council  
Township of Adelaide Metcalfe  
2340 Egremont Drive – RR #5  
Strathroy, ON  
N7G 3H6

Gentlemen and Mesdames:

**Re: Locher-Heaman Drain**

In accordance with your instructions, R. Dobbin Engineering has undertaken an examination with regards to providing a municipal drain to service the property with Roll Number 20-106 in the Township of Adelaide Metcalfe.

Authorization under the Drainage Act

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

R. Dobbin Engineering Inc. was appointed by council on November 6<sup>th</sup>, 2023.

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

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

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

### Existing Conditions

An Engineer's Report on the Lewis Drain Extension dated December 15, 1975 was prepared by A.J. DeVos, P.Eng. Under this report, 335 meters of open drain was cleaned and 2194 meters of tile drain was installed in Lot 24, Concession 2, NER. The Lewis Drain Extension outlets to a private open channel that drains north to Crathie Road.

An Engineer's Report on the Lewis Drain Extension dated September 26, 1994 was prepared by A.J. DeVos, P.Eng. Under this report, a grass waterway above the tile drain portion that was installed by the property owner was incorporated as part of the drain.

Lands in Lot 25, 26, and 27 of Concession 1 & 2, NER currently drain in a north west direction and outlet at Newell Road. From this point, water drains through two road crossing pipes and a private open channel eventually to the outlet of the Lewis Drain Extension. This open channel is not a municipal drain.

### On-Site Meeting

A site meeting was held on February 8<sup>th</sup>, 2024.

The following were present at the meeting:

- Josh Warner (R. Dobbin Engineering)
- David Moores (R. Dobbin Engineering)
- Andrew Neely (Township of Adelaide Metcalf)
- Jim Milligan (Landowner)
- Florian Locher (Landowner)

The following is a brief summary of the meeting:

- General discussion of the Drainage Act and Landowners rights under the Drainage Act.
- Landowners were made aware that a petition was received from the property with Roll Number 20-106.
- The Landowner of the property with Roll Number 20-106 petitioned for an underground drain to convey water through outlet as upstream lands currently drain through the property.
- The Landowner of Roll Number 20-106 was interested in a tile drain through the property with a catchbasin at the east property line for upstream lands water.
- Discussion was held about lowering and/or replacing the road crossing and possibly deepening the open channel downstream as required for sufficient outlet.

No adverse soil conditions were noted at the site meeting.



### Discussion

Following the site meeting, the Township notified the affected lands within the proposed watershed who did not attend the meeting with a drainage plan showing the proposed watershed and possible proposed work. The Township asked if there was any additional work. No other requests were received.

### Public Consultation Meeting

A public consultation meeting was held on December 10<sup>th</sup>, 2024.

The following were present at the meeting:

- Josh Warner (R. Dobbin Engineering)
- David Moores (R. Dobbin Engineering)
- Andrew Neely (Township of Adelaide Metcalf)
- Jim Milligan (Landowner)
- Florian Locher (Landowner)
- Murray Van Grinsven (Landowner)
- Bruce Locke (Landowner)
- Ron Heaman (Landowner)
- Karen & Mackenzie Rombouts (Landowner)

The following is a brief summary of the meeting:

- General discussion of the Drainage Act and Landowners rights under the Drainage Act.
- The draft report dated November 11, 2024 was presented to those in attendance discussion in detail the proposed work and estimated costs.
- Landowner for roll no. 20-079, 20-080, and 20-082 asked about the possibility of extending the drain further upstream and asked for sometime to think about this. We gave him until after the beginning of January 2025 to decide.
- Following this meeting a copy of the draft report and Form 1 Petition was emailed to each of the landowners.

On January 9, 2025 an email was sent again to landowners asking if there would be any additional requests for work. To this date no other requests have been received.

### Meeting to Consider

A Meeting to Consider the report was held on February 3<sup>rd</sup>, 2025. At this meeting, the Owner of roll no. 20-102 notified Council that they never received any information related to the project. It was compared that this property was not notified through the drainage process. The Owner requested 30-days to decided if they would like to extend the proposed tile drain upstream. Therefore, Council deferred passing a Provisional Bylaw and instructed the Engineer to review any additional work with the Owner. Over

the course of 30-days, the Engineer had phone calls and emails with the Owner regarding this potential work. In the end, the Owner decided not to have the tile extended upstream. The Owner was made aware that at any time in the future they can petition to have the drain extended upstream.

### Drain Classification

The Lewis Drain Extension is currently classified as a class “F” drain according to the Department of Fisheries and Oceans (DFO) classification as presented by the Ontario Ministry of Agriculture, Food and Agribusiness Information Atlas. Class “F” drains are intermittent or ephemeral (dry for more than two consecutive months).

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

### Approvals

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

### Design

The proposed tile drain shall be designed to accommodate a drainage coefficient of 38mm in 24 hours in accordance with the Drainage Guide for Ontario (Publication 29). Tile design criteria includes a minimum tile depth of 760mm and a minimum freeboard of 300mm at the outlet.

### Recommendations

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

1. The private open channel in Lot 24, Concession 2 NER from Station 0+396 to 0+815 shall be incorporated as a municipal drain.
2. A new tile drain shall be installed with sufficient capacity for both surface and subsurface drainage in Lot 25, Concession 2 NER from Station 0+815 to 1+251.
3. The open channel drain shall be deepened to accommodate 300mm freeboard for the installation of the tile portion.
4. The road crossing pipes under Newell Road shall be replaced.
5. Catchbasins shall be installed on the tile drain portion.
6. The open channel and tile drain shall be called the “Locher-Heaman Drain”.

### 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 \$232,107.00 including engineering of the report, attending the Meeting to Consider the Report, attending the Court of Revision. An estimate for tendering, contract administration and inspection as been provided. Appearances before appeal bodies have not been included in the cost estimate.

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

### Assessment

As per Section 21 of the Drainage Act, the Engineer in their Report shall assess for benefit and outlet for each parcel of land and road liable for assessment. Lands, roads, buildings, utilities, or other structures that are increased in value or are more easily maintained as a result of the construction, improvement, maintenance, or repair of a drainage works may be assessed for benefit. (Section 22)

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

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

A Schedule of Assessment for the lands and roads affected by the work and therefore liable for the cost thereof will be prepared as per the Drainage Act. Also, assessments may be made against any public utility or road authority, as per Section 26 of the Drainage Act, for any increased cost for the removal or relocation of any of its facilities and plant that may be necessitated by the construction or maintenance of the drainage works.

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

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

1. The open channel works has been assessed using the equivalent cost of a cleanout including the incorporation of the channel as a municipal drain with 50% of the cost applied as benefit to Roll Number 20-108 and the remainder applied as outlet

assessment to the upstream lands and roads based on equivalent hectares. The additional costs to deepen and widen the open channel to accommodate the tile drain has been assessed with 10% of the cost applied as benefit assessment to the property with Roll Number 20-106 and the remainder applied as an outlet assessment to the upstream lands and roads based on equivalent hectares.

2. The tile drain works has generally been assessed with 50% of the cost applied as benefit assessment to the property with Roll Number 20-106 and the remainder applied as outlet assessment to the upstream lands based on equivalent hectares.
3. Catchbasin No.1 has been assessed with 50% applied as benefit assessment to Roll Number 20-106 and 50% applied as benefit to the Road Authority for Newell Road.
4. Catchbasin No.2 has been assessed with 100% applied as outlet assessment to upstream lands based on equivalent hectares.
5. As per Section 26 of the Drainage Act, the roads and utilities have been assessed the increased cost of the drainage works caused by the existence of the works of the public utility or road. The road crossings, with the exception of the extra cost to locate and work around utilities, has been assessed with 100% of the estimated cost assessed as a special benefit assessment to the road authority. The utilities have been assessed 100% of the estimated cost to work around that utility as a special benefit assessment to that utility. These items shall be tendered separately with the actual cost plus a portion of the engineering (20% of the construction cost) being assessed to the owner of the utility or road. The additional costs as a result of the utilities (such as a daylighting and surveying) that are not to be tendered separately have been assessed to the utility as a benefit assessment and shall be pro-rated with the remainder of the drainage works.
6. The remaining cost of the drainage works has generally been assessed with 100% of the cost applied as outlet assessment to the upstream lands and roads based on equivalent hectares.

All final costs included in the cost estimate of this report, except as identified above, shall be pro-rated based on the Schedule of Assessment. Any additional costs shall be assessed in a manner as determined by the Engineer in accordance with the Drainage Act.

#### Allowances

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

Under Section 30 of the Drainage Act, the Engineer shall determine the amount to be paid to persons entitled thereto for damage, if any, to ornamental trees, lawns, fences,

land and crops occasioned by the disposal of material removed from a drainage works. This shall be considered an allowance for damages.

Allowances have been made, where appropriate, as per Section 29 of the Drainage Act for right-of-way and as per Section 30 of the Drainage Act for damages to lands and crops. Allowances for right of way are based on \$9,000.00 per hectare derived by multiplying this value by the working corridor width for future maintenance and the applicable length of drain. Allowances for crop loss are based on \$5,500.00 per hectare for closed drains and \$7,513.00 per hectare for open drains.

#### Access and Working Area

Access to the work site for construction and future maintenance shall be from Newell Road, along the length of the drainage works or as approved by the Drainage Superintendent or Engineer Designate. Access shall generally be restricted to a width of 6 metres.

The working area for the construction and future maintenance of the proposed tile drain shall be restricted to a width of 20m along the length of the drainage works normally centred on the proposed tile drain.

The working area for construction and future maintenance of the open channel shall be the east and north side of the drain and restricted to 20m measured from the top of the east bank.

#### Restrictions

No trees and shrubs shall be planted nor shall permanent structures be erected within 10m of either side of the proposed drain without prior written permission of Council.

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

#### Agricultural Grant

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

#### Existing Private Drainage

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

### Maintenance

Upon completion of the work, the drainage works shall be repaired and maintained as per the specifications contained within this report and assessed out using the applicable Schedule of Maintenance, unless otherwise altered under provisions of the Drainage Act or as outlined below.

Catchbasin No.1 shall be repaired and maintained with the costs split 50/50 to the Road Authority for Newell Road and Roll Number 20-106.

Catchbasin No.2 shall be repaired and maintained with costs assessed out with 100% applied as outlet assessment to upstream lands located in E1/2 Lot 25, Lot 26 and Lot 27 based on equivalent hectares contained within Schedule of Maintenance No.2.

The road culverts are to be maintained and repaired at the expense of the Road Authority as per section 26 of the Drainage Act.

Any extra cost as a result of the location of underground utilities shall be assessed to the utility as per section 26 of the Drainage Act.

All of the above is submitted for your consideration.

Yours truly,



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



**Estimate of Cost**

<u>Item Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Cost (\$)</u>	<u>Total (\$)</u>
Pre-Construction Meeting	1	LS	500.00	500.00
Benchmark Loop	1	LS	500.00	500.00
<u>Channel Work: Station 0+396 to 0+815</u>				
Brushing	419	m	5.00	2,095.00
Open Channel Excavation c/w Bank Resloping	419	m	10.00	4,190.00
Strip and Level Topsoil	419	m	8.00	3,352.00
Level Excavated Material	419	m	2.00	838.00
Reconnect Existing Tile Drains	15	ea	200.00	3,000.00
S. & I. Straw Matting and Grass Seed	1500	sq.m	3.50	5,250.00
S. & I. Stone Erosion Protection (P)	20	t	125.00	2,500.00
Environmental Considerations (Silt Fence)	1	LS	200.00	200.00
				<u>21,425.00</u>
<u>Tile Drain Work: Station 0+836 to 1+251</u>				
Brushing	1	LS	5,000.00	5,000.00
Strip and Place Topsoil	415	m	8.00	3,320.00
S. & I. 750mmØ Concrete Tile	415	m	150.00	62,250.00
S. & I. Catch Basin #1 (900mm x 1200mm) c/w Rip Rap	1	LS	2,500.00	2,500.00
S. & I. Catch Basin #2 (900mm x 1200mm) c/w Berm & Rip Rap	1	LS	3,000.00	3,000.00
Reconnect Existing Tile Drains (P)	10	ea	100.00	1,000.00
Environmental Considerations (Silt Fence)	1	LS	200.00	200.00
				<u>77,270.00</u>
<u>Newell Road (Section 26)</u>				
Remove Existing Culverts	2	ea	1,000.00	2,000.00
750mmØ HDPE Pipe (Open Cut)	21	m	700.00	14,700.00
900mmØ HDPE Pipe (Open Cut)	18	m	900.00	16,200.00
S. & I. Drainage Stone Bedding	20	tonne	35.00	700.00
S. & I. Granular 'A' Backfill	500	tonne	40.00	20,000.00
S. & I. 100% Crushed Granular 'A' or 'M'	40	tonne	50.00	2,000.00
S. & I. Rip Rap Endwalls	40	tonne	125.00	5,000.00
Extend 400mmØ Pipe at SW Corner of Newell Road	1	LS	100.00	100.00
Daylight and Work Around Existing Utilities	1	LS	3,500.00	3,500.00
Traffic Control	1	LS	1,000.00	1,000.00
Restoration/Seeding and Ditch Grading	1	LS	1,500.00	1,500.00
				<u>66,700.00</u>
Contingency				<u>8,360.00</u>
Sub Total				174,755.00
Allowances				25,882.00
Engineering				19,000.00
Supervision and Inspection				4,400.00
Survey and Daylight Existing Utilities				4,500.00
<b>Total Estimate excluding HST</b>				<b><u>228,537.00</u></b>
Non-Recoverable HST (1.76%)				<u>3,570.00</u>
<b>Total Estimate</b>				<b><u>232,107.00</u></b>





Locher-Heaman Drain  
Township of Adelaide Metcalf  
March 11, 2025

## **SPECIFICATION OF WORK**

### **1. Location**

The Locher-Heaman Drain is located in Lots 24 & 25, Concession 2 NER in the Township of Adelaide Metcalf.

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

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

- Road culvert replacements
- Open channel brushing, deepening, widening, and resloping
- Supply and installation of concrete tile
- Supply and installation of catch basins

### **3. General**

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

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

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

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

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

This Specification of Work shall take precedence over all plans and general conditions pertaining to the Contract. The Contractor shall provide all labour, equipment, and

supervision necessary to complete the work as shown in the Plans and described in these specifications. Any work not described in these specifications shall be completed according to the Ontario Provincial Standard Specifications and Standard Drawings.

## **5. Health and Safety**

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

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

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

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

Newell Road shall be closed for the duration of the road crossing work. The contractor shall work with the Engineer and Township for closure notification and submit a traffic control plan one week prior to commencing work.

## **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 shall be scheduled by the Contractor. The Landowners, Engineer, and the Township of Adelaide Metcalf shall be notified of the pre-construction meeting at least 48 hours prior.

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

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

## **10. Access and Working Area**

Access to the work site for construction and future maintenance shall be from Newell Road, along the length of the drainage works or as approved by the Drainage Superintendent or Engineer Designate. Access shall generally be restricted to a width of 6 metres.

The working area for the construction and future maintenance of the proposed tile drain shall be restricted to a width of 20m along the length of the drainage works normally centred on the proposed tile drain.

The working area for construction and future maintenance of the open channel shall be the east and north side of the drain and restricted to 20m measured from the top of the east bank.

## **11. Brushing and Tree Removal**

A mechanical grinder attached to an excavator shall be used for brush and tree removal.

Any brush and trees too large to grind shall be close cut. The Contractor shall stockpile the trees and brush in a single pile on the property in which they were removed or dispose of the trees and brush offsite. The Contractor is responsible for the burning of the trees and brush. The Contractor is responsible for obtaining all necessary permits for any disposal sites. Burning of the trees and brush is subject to local bylaws and guidelines of the Ministry of the Environment Conservation and Parks.

For the open channel from Station 0+396 to 0+836 all brush, trees, woody vegetation, cattails, phragmites, etc. shall be removed from the sideslopes of the existing channel and within 1.5 metres of the top of the bank. Other brush and trees may be removed from the side the equipment is operating to allow access for the equipment. Trees and brush in the channel bottom shall be removed in their entirety including stumps and disposed offsite. Trees and brush on the sideslopes shall be close cut.

For the tile drain section from Station 0+836 to 1+251 all brush, trees, woody vegetation, etc. shall be removed for a width of 20 metres along the proposed tile drain. Trees shall be removed in their entirety including stumps.

Certain trees may be left in place at the direction of the Drainage Superintendent or Engineer Designate. Any trees to be salvaged by the individual landowners shall be removed by the landowners with all resulting brush and branches cleaned up prior to the start of construction. If the Contractor agrees to remove any trees and set them aside for a landowner, the landowner will be responsible for any cleanup as above.

The drain in the future may be sprayed on an annual basis as brush and phragmite control or as determined by the Drainage Superintendent.

## **12. Excavation of Open Channel**

The open channel downstream of Newell Road to the Lewis Drain Extension shall excavated to the grade line and elevations shown on the drawings. Deepening and widening shall be carried out from the north and east side of the channel on private lands. The side opposite the widening shall be left undisturbed. The north and east sideslope shall be sloped to 2:1.

The channel shall be excavated to the proper depth using a laser or similar approved device with a labourer onsite to ensure correctness of grade and to confirm location of tile ends.

The excavated material shall be cast at least 1.5 metres clear of the top of the bank within the working area on private lands north and east of the channel. The topsoil shall be stripped from the working area and stockpiled at the edge of the working area. Any sediment from the channel shall be excavated separately and placed with the topsoil. The excavated material shall be spread within the working area to a maximum depth of 200 mm. After the excavated material has been spread, the topsoil shall be spread to its original depth. The topsoil shall be left in a condition suitable for cultivation. Excavated material shall not be placed in low runs or swales outletting surface water to the channel. Stones and large branches shall be removed and disposed offsite and shall not be buried when the excavated material is spread.

The drain banks shall be hand seeded and covered with double straw erosion control matting installed as per manufactured specifications. Matting is to be secured to the bank with steel U shaped staples.

The open channel shall be maintained in the future to the depths and grades as per the profile and drawings enclosed with this Report.

For future maintenance and repair, the excavated material shall be cast on private lands adjacent to the channel at least 1.5 metres clear of the bank. Excavated material shall not be placed in low runs or swales outletting surface water to the channel. The excavated material shall be levelled to a maximum depth of 100mm and left in a condition suitable for cultivation. 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 sideslopes.

## **13. Installation of Tile**

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

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

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

HDPE shall be CSA Approved smooth wall gasketed pipe with bell and spigot joints (320 kPa) and shall include clear stone bedding to the spring line under gravel driveways and accesses. Under roadways the road crossing specification shall be used.

The Contractor shall strip the topsoil for a width of 6m normally centered on the proposed drain. The topsoil shall be stockpiled at the edge of the working allowance for the duration of the tile installation. Once the tile is installed, the Contractor shall level the topsoil over the drain to their pre-construction condition ensuring a minimum of 760mm cover.

The tile drain shall run in the low runs at property lines in order to maximize the surface water captured by the in-line catch basins with berms. The exact location of tile can be changed under the direction of the Drainage Superintendent or Engineer. The drain shall run along the south and west side of the bush area.

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

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

Laser control shall be used to ensure proper grades. The grades calculated on the Profile are to the invert of the tile and pipe with allowances to be made by the Contractor for the wall thickness of the tile and pipe. The depths shown and figured are from ground level to the invert of the pipe along the line of the proposed drain. Should an error appear in the figured depth at any station or stations, the grade shall be made to correspond with that shown on the Profile without extra charge.

#### Wheel Machine

A wheel machine shall be used to excavate the trench to allow for a round bottom. Prior to backfilling, the tile shall be covered manually to a depth of approx. 100mm over the pipe to ensure that the tile and pipe are not displaced by large clumps of earth. The trench shall be backfilled with excavated material free of stones, broken tile or other deleterious

material. All stones larger than 100mm in diameter evident immediately after construction shall be picked up by the Contractor and disposed offsite. The Landowners are responsible for stones after that. The material shall be left windrowed over the trench to allow for settlement.

### Excavator

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

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

All areas disturbed by construction, except the material windrowed over the trench, shall be left in a condition suitable for cultivation.

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

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

Future replacements shall conform to these specifications.

#### 14. Catch Basins

Structure	Station	Type (mm)	Top Elev. (m)	Outlet Pipe Elev. (m)	Inlet Pipe Elev. (m)
CB #1	0+836	900x1200	242.10	241.11 (W) 750	241.12 (E) 750
CB #2 c/w Berm	1+251	900x1200	244.10	242.54 (W) 750	

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

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

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

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

As part of this item the Contractor shall grade the area in the vicinity of the basin to ensure proper drainage as directed by the Engineer or Drainage Superintendent. Rip rap shall be installed around the basins. The rip rap shall be 150mmx300mm c/w filter fabric. 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 Drainage Superintendent or Engineer Designate may change a birdcage type grate on a catch basin to a concrete lid or sloped birdcage grate at the request of a Landowner.

## **15. Subsurface Drainage**

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

For 100mm and 150mm subsurface drains, the upstream end of the subsurface drain shall be connected to the tile drain at a 45-degree angle. A suitable length of equivalent sized PE agricultural tubing shall be used to connect the drains. Manufactured fittings shall connect the PE tile to the existing drain and to the concrete tile. The connections shall be carefully backfilled to ensure there is adequate support under the pipe and large clumps of clay do not displace the tile. It is recommended that clear stone be used under the connections at the tile drain.

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

All existing subsurface drains encountered during construction of the open drain shall be extended to the open channel using PE agricultural tubing, contain a rodent grate and rip rap shall be installed under the tile to the bottom of the channel.

## **16. Installation of Road Culvert Crossings**

The existing culverts and catch basins, where specified, shall be removed in their entirety. The culvert and the concrete rubble shall be disposed offsite at the expense of the Contractor. Suitable backfill shall be stockpiled adjacent to the site for reuse during installation of the proposed culvert. Any broken concrete or rip rap (concrete bags) from the existing structures shall be disposed offsite at the expense of the Contractor.

Where High Density Polyethylene Pipe is specified, the Contractor shall supply, install, and backfill the HPDE smooth wall gasketed pipe with bell and spigot joints (320 KPa) or approved equivalent under road crossings. Future culvert replacements shall be to the same specifications.

The proposed culverts shall be installed in the same general location as the existing culverts, unless otherwise stated on the drawings or in the specification. The location of the culvert may be moved a short distance if approved by the Engineer or Drainage

Superintendent.

The bottom of the excavation for both the culvert and tile shall be excavated to the required depth with any over excavation backfilled with drainage stone. When the tile has been installed to the proper grade and depth, the excavation shall be backfilled with drainage stone from the bottom of the excavation to the spring line of the tile. Care shall be taken to ensure that the backfill on either side of the pipe does not differ by more than 300mm so that the pipe is not displaced. Within the road allowance the pipe shall be backfilled above the spring line to 200mm below finished grade with OPS Granular “A”. Outside the road allowance excavated material can be used. The top 200mm within the road shall be 100% crushed Granular “A” or Granular “M” to match existing. Granular material shall be mechanically compacted to 100% modified standard proctor density and filter fabric shall be placed between the changes in bedding and backfill in all cases.

The 400mm diameter CSP pipe located at the south west corner shall be extended downstream to the new channel using a 450mm HDPE pipe. A 45-degree elbow may be required to direct the pipe within the channel. The connection to the existing pipe shall be completed by sliding the 450mm HDPE over the 400mm CSP, wrapped with filter cloth and cemented.

The rip rap end walls shall consist of 150mm x 300mm quarry stone or approved equal. The area to receive the rip rap shall be graded to a depth of 400mm below finished grade. Filter fabric (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 rip rap shall be extended to include around the 450mm pipe as directed by the Engineer or Drainage Superintendent.

It is the Contractors responsibility to locate and expose any utilities prior to the installation of any tile. If there is a conflict with the tile elevation the Contractor is required to notify the Engineer. Any permits that are required by the Road Authority are the responsibility of the Contractor.

The ditches shall be graded to ensure the surface water is collected to the catch basins and culverts on all road crossings.

The Contractor shall be responsible for maintenance of the culverts for a period of one year after their installation. This will include repairing any settlement areas on the travel surface with granular “A” or “M”.

## **17. Seeding/Restoration**

All areas disturbed by construction as directed by the Engineer of Drainage Superintendent shall be returned to their pre-constructions state. Within the road right of way all areas where disturbed by construction, shall be topped with 100mm of screened

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

Through the open drain section, the reshaped drain banks shall be hand seeded and covered with double straw erosion control blanket secured to the banks with steel staples as per manufactured specifications.

No seeding required over the new tile drain section.

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

Seed mixture, fertilizer and application rates are as follows:

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

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

## **18. Environmental Considerations**

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

- Operate machinery in a manner that minimizes disturbance to the banks of the watercourse.
- Erosion and sediment control measures must be installed prior to construction to prevent sediment from entering the water body.
- Material shall not be 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

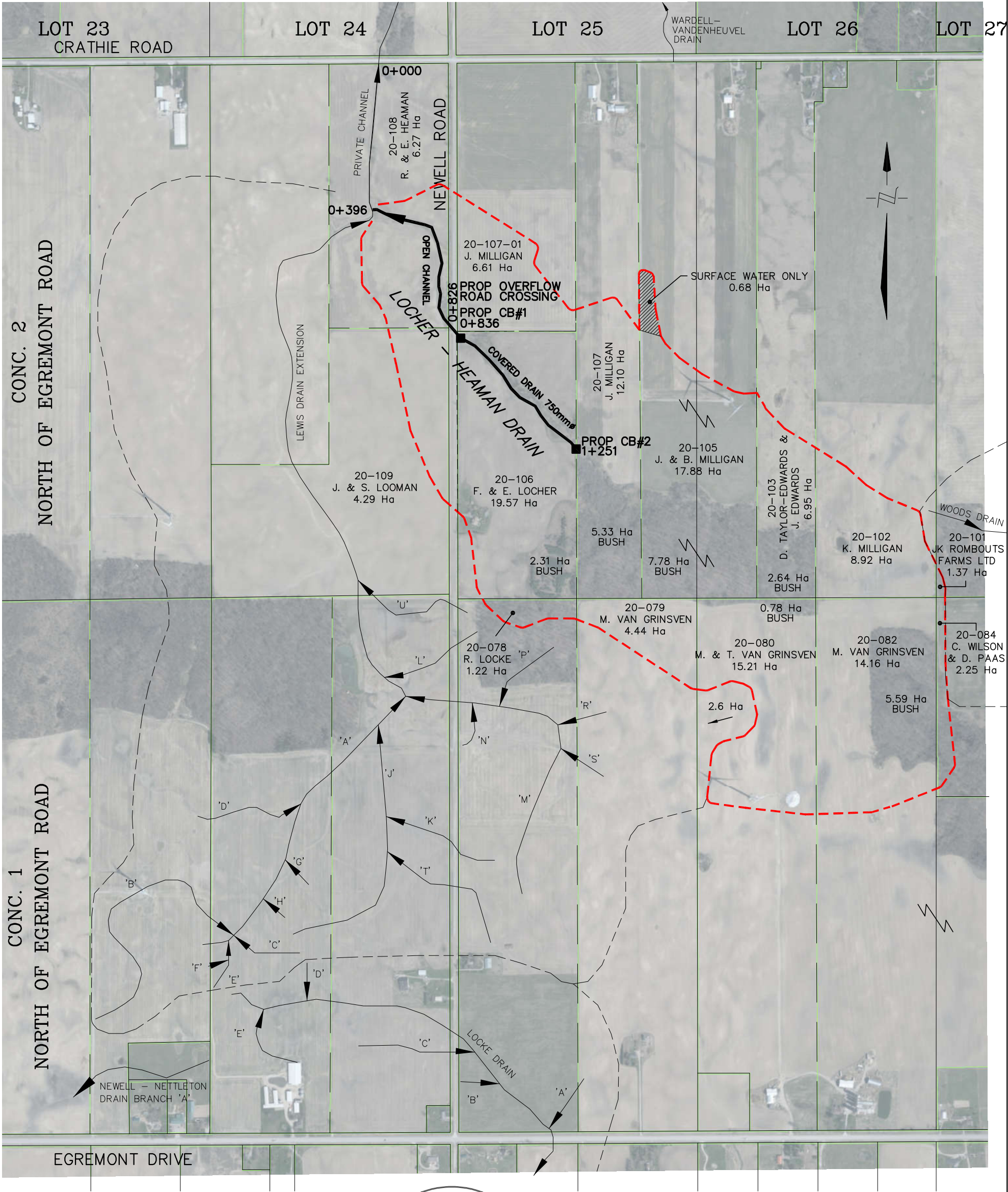
shall be stockpiled well back from the top of the bank and all surface water runs and open inlets that enter the drain.

- 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.

## **19. Silt Fence**

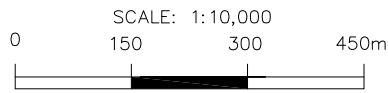
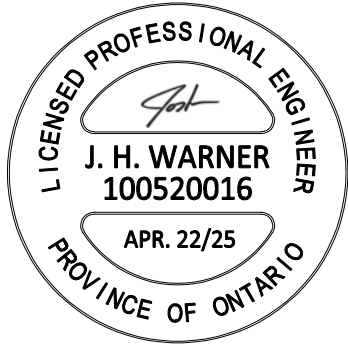
Light duty silt fencing shall be installed down-gradient of the work for the duration of construction.

The light duty silt fencing shall be supplied and installed in accordance with OPSS 577 and OPSD 219.110. The light duty silt fencing shall be removed once the disturbed area has been re-vegetated.



**LEGEND**

- DRAINAGE AREA
- LOCHER - HEAMAN DRAIN
- MUNICIPAL DRAIN



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

DRAWING NAME:  
Locher - Heaman Drain Plan

PROJECT No.  
2023-1577

APPROVED	NO.	REVISIONS	DATE	BY
J. WARNER				
CHECKED				
D. MOORES				
DRAWN				
C. SAUNDERS	2	REVISED FOR COR	APR. 22, 2025	DM
	1	FINAL REPORT	MAR. 11, 2025	DM

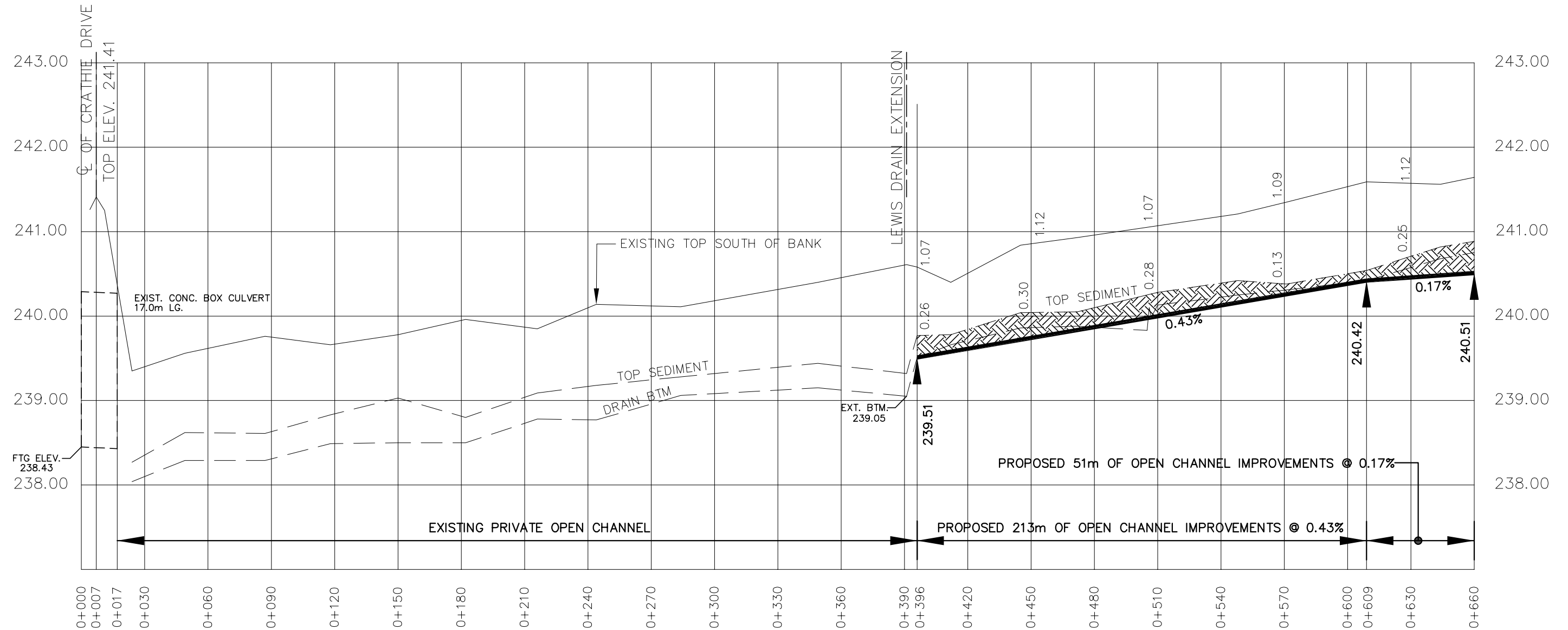
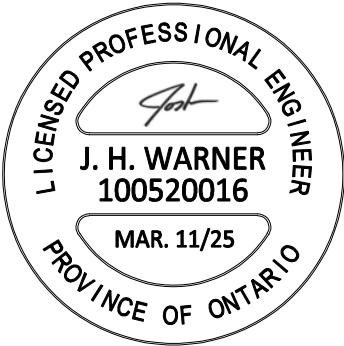
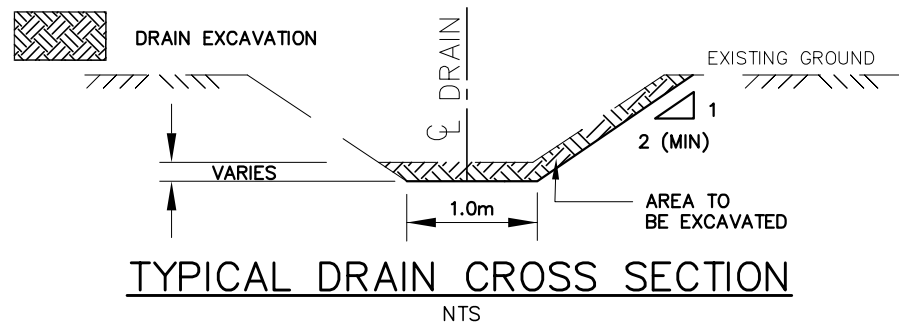
**TOWNSHIP of ADELAIDE METCALFE**  
**LOCHER - HEAMAN DRAIN PLAN**

**1**  
**OF 4**

Last Updated: April 22, 2025

GENERAL NOTES

- 1. BENCHMARK No.1 ELEV. 240.29  
TOP SPINDLE OF NORTH END OF  
EXISTING CONCRETE BOX CULVERT  
CROSSING CRATHIE DRIVE.
- 2. UPPER NUMBERS ARE DEPTH FROM TOP OF BANK  
TO PROPOSED CHANNEL BOTTOM
- 3. LOWER NUMBERS ARE DEPTH FROM EXISTING  
TOP OF SEDIMENT TO PROPOSED GRADE



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

DRAWING NAME:  
Locher-Heaman Drain Profile 1

PROJECT No.  
2023-1577

APPROVED J. WARNER	NO.	REVISIONS	DATE	BY
CHECKED D. MOORES	1	FINAL REPORT	MAR. 11, 2025	DM
DRAWN C. SAUNDERS	SCALE: 1:2,000 0 20 40 60m			

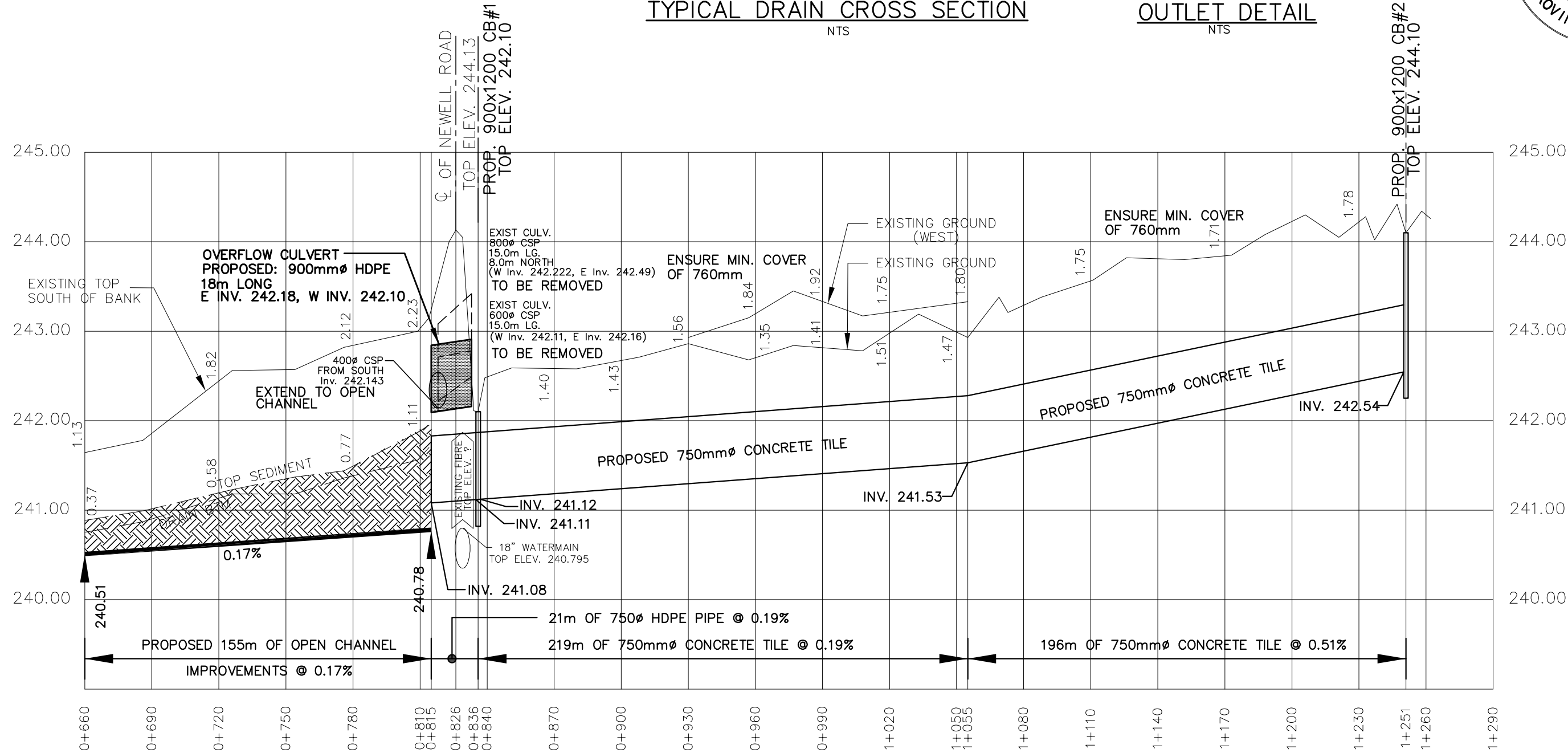
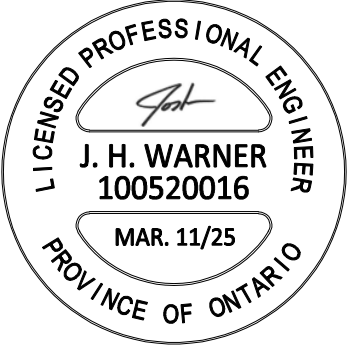
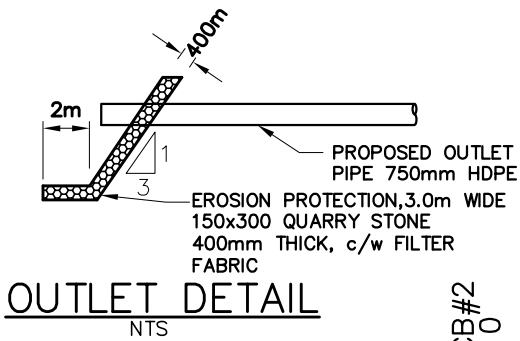
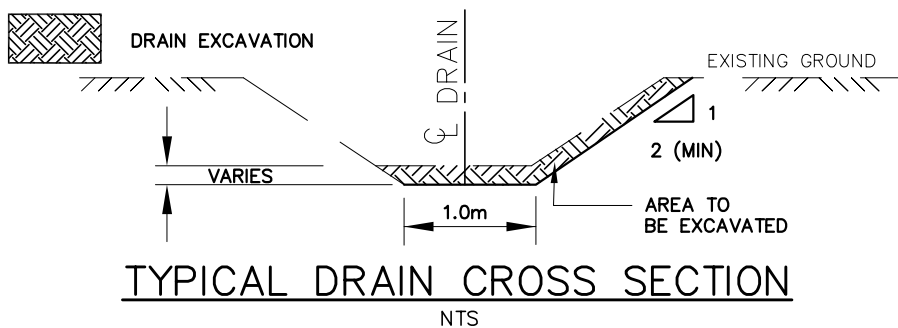
TOWNSHIP of ADELAIDE - METCALFE  
LOCHER - HEAMAN DRAIN  
PROFILE

2  
OF 4



GENERAL NOTES

- 1. BENCHMARK No.2 ELEV. 243.087  
TOP OF WEST END OF EXISTING  
1000mmØ CSP CROSSING NEWELL ROAD.
- 2. UPPER NUMBERS ARE DEPTH FROM TOP OF BANK  
TO PROPOSED CHANNEL BOTTOM & PROPOSED TILE INVERT
- 3. LOWER NUMBERS ARE DEPTH FROM EXISTING  
TOP OF SEDIMENT TO PROPOSED GRADE



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

APPROVED  
J. WARNER

CHECKED  
D. MOORES

DRAWN  
C. SAUNDERS

NO.	REVISIONS	DATE	BY
1	FINAL REPORT	MAR. 11, 2025	DM

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

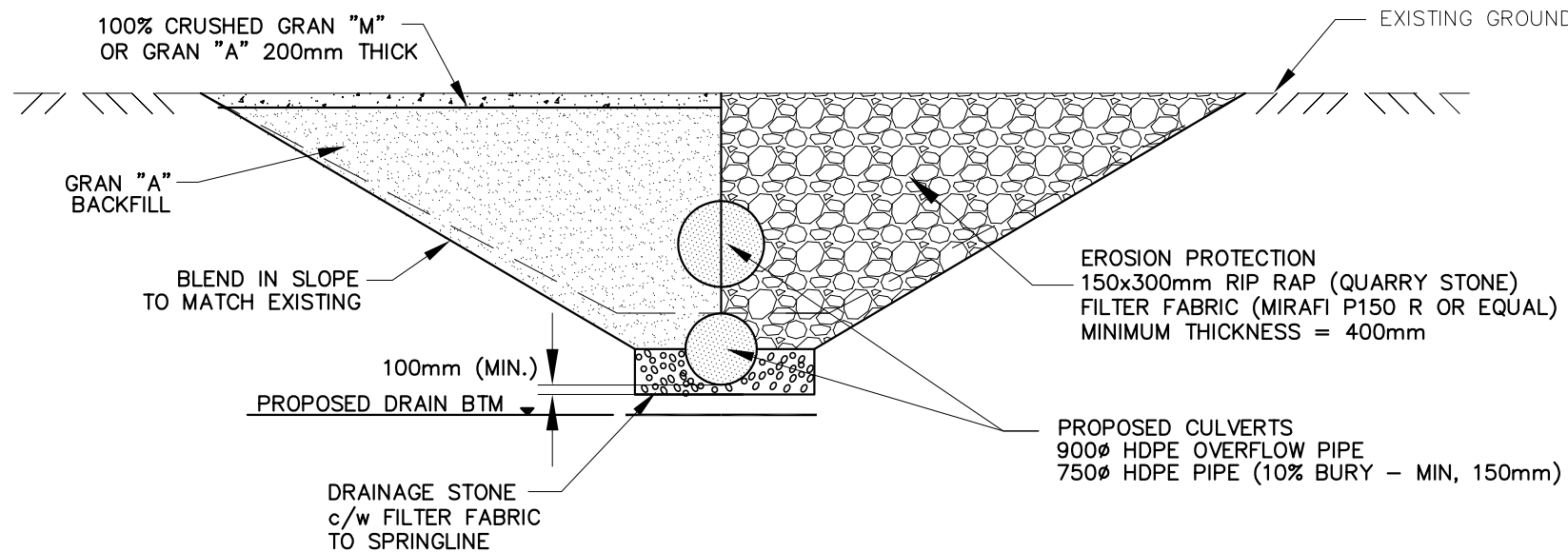
TOWNSHIP of ADELAIDE - METCALFE  
LOCHER - HEAMAN DRAIN  
PROFILE

3  
OF 4

DRAWING NAME:  
Locher-Heaman Drain Profile 2

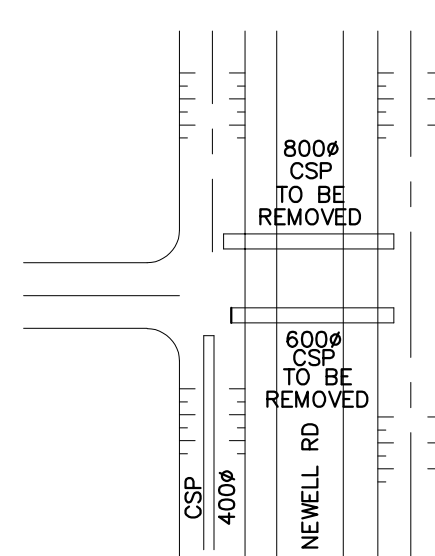
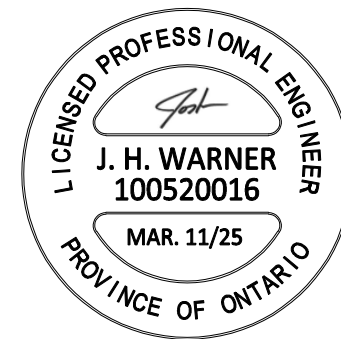
PROJECT No.  
2023-1577

Last Updated: January 13, 2025

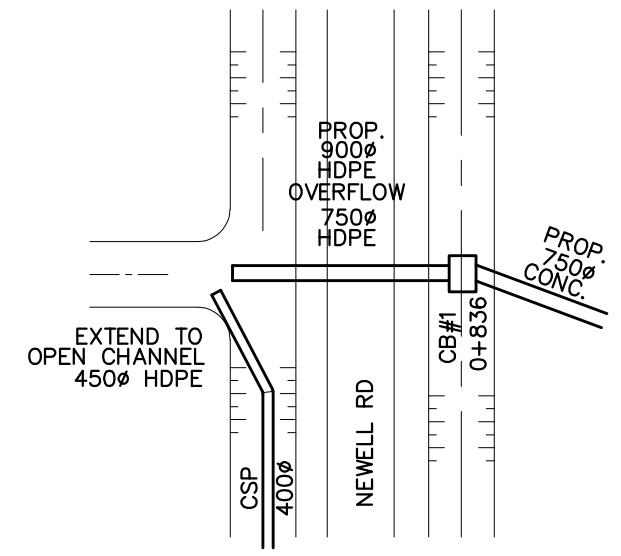


NEWELL ROAD CROSSING END SECTION

NTS



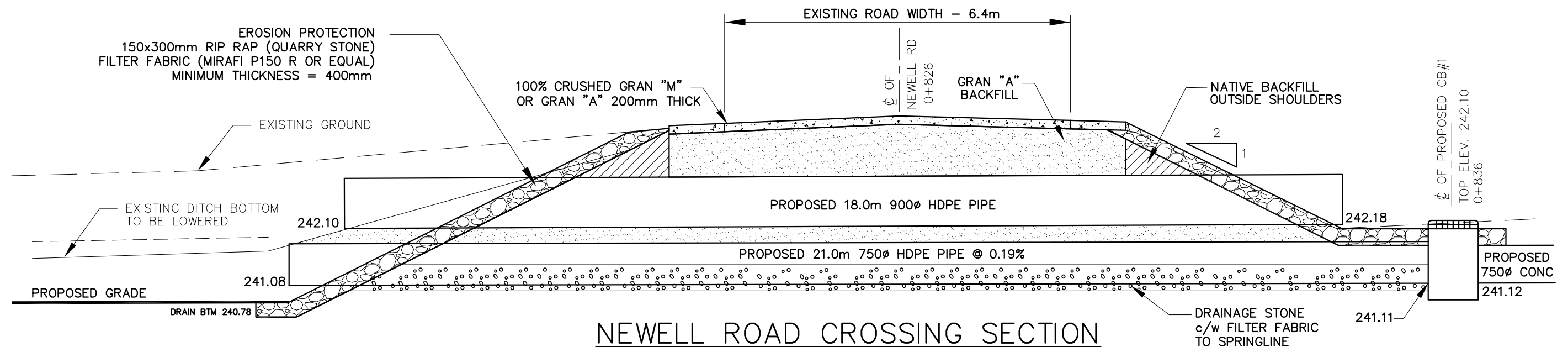
EXISTING



PROPOSED

NEWELL ROAD DETAIL PLAN

NTS



NEWELL ROAD CROSSING SECTION


NTS



DRAWING NAME:  
Locher-Hearman Drain Road Crossing Culvert Detail

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

PROJECT No.  
2023-1577

APPROVED	NO.	REVISIONS	DATE	BY
J. WARNER				
CHECKED	1	FINAL REPORT	MAR. 11, 2025	DM
D. MOORES	SCALE 1:75			
DRAWN	0 2m			
C. SAUNDERS				

TOWNSHIP of ADELAIDE METCALF

LOCHER - HEAMAN DRAIN  
NEWELL ROAD CULVERT DETAIL

4  
OF 4

Last Updated: January 13, 2025





January 17, 2025

File: L.2.11.

Adelaide Metcalfe

Bluewater

Central Huron

Huron East

Lambton Shores

Lucan Biddulph

Middlesex Centre

North Middlesex

Perth South

South Huron

Warwick

West Perth

Municipality of Adelaide Metcalfe  
Attn: Andrew Neely; Drainage Superintendent  
2340 Egermont Drive – RR #5  
Strathroy, ON  
N7G 3H6

Dear Mr. Neely:

**Re: Final Report for the Locher-Heaman Drain  
PT Lot 24, Concession 2 NER E to PT Lot 25, Concession 2 NER W and  
PT Lot 25, Concession 2 NER E  
Municipality of Adelaide Metcalfe (former township of Adelaide)**

We acknowledge receipt of your correspondence regarding the above-noted matter, and we advise the following comments:

On April 1, 2024, *Ontario Regulation 41/24: Prohibited Activities, Exemptions and Permits* and Part VI of the *Conservation Authorities Act* came into effect. This regulation replaces the Ausable Bayfield Conservation Authority's previous regulation, *Ontario Regulation 147/06: Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses*.

**Ontario Regulation 41/24 (Prohibited Activities, Exemptions and Permits)**

We have no concerns with the scope of the work as presented in the report submitted to this office concerning Ontario Regulation 41/24. We respectfully remind you that the ABCA has been charging a review fee of \$450 for reviews under Section 28 of the Conservation Authorities Act pertaining to new Municipal Drainage Reports since November 17<sup>th</sup>, 2022. An invoice regarding this review will follow.

As we understand, the petitioned Locher-Heaman Drain works were designed to accommodate a drainage coefficient of 38 mm in 24 hours. Components of the petitioned drainage works include the proposed CB#2 at the furthest upstream Station 1+251, followed by 415.0 metres of 750 mm Concrete Tile from Station 1+251 to 0+836. Two (2) existing 15.0 metre-long, 600- & 800-mm diameter CSP culverts from Station 0+815 to 0+836 at the Newell Road Crossing will be removed and replaced by a 21.0 metre-long 750 mm HDPE

.../2

**Section 35: Federal Fisheries Act**

This ABCA advice shall not be construed as any form of review or advice regarding compliance with requirements under the Federal Fisheries Act. Please refer to the following links regarding the requirements of the Federal Fisheries Act or Self-Assessment process for project proponents.

<http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html>  
[fisheriesprotection@dfo-mpo.gc.ca](mailto:fisheriesprotection@dfo-mpo.gc.ca)  
Phone: 1-855-852-8320

Further, this correspondence does not release the proponent of the responsibility for obtaining any other permits that may be required under federal, provincial, or municipal legislation. Please be advised that Endangered Species could be present in this area and are protected under the *Endangered Species Act* (ESA 2007). Contact your local Ontario Ministry of the Environment, Conservation, and Parks office to ensure your proposal does not contravene the ESA 2007. Additional information on species at risk can be found at: <https://www.ontario.ca/page/species-risk>

I trust this information is clear. However, if you have any questions regarding the above, please do not hesitate to contact the undersigned at our office.

Yours truly,

**AUSABLE BAYFIELD CONSERVATION AUTHORITY**

Erik Strahl

ES:es

cc. R. Dobbin Engineering, Attn: Josh Warner, P. Eng



Fisheries and Oceans  
Canada

Pêches et Océans  
Canada

Ontario and Prairies Region  
Fish and Fish Habitat  
Protection Program  
867 Lakeshore Road  
Burlington, ON L7S 1A1

Région de l'Ontario et des Prairies  
Programme de la protection  
du poisson et de son habitat  
867 Lakeshore Road  
Burlington, ON L7S 1A1

February 17, 2025

*Our file*      *Notre référence*

24-HCAA-02692

Township of Adelaide-Metcalf  
ATTENTION: Andrew Neely  
2340 Egremont Drive  
Strathroy, ON, N7G 3H6

**Subject: Drain Improvements, Locher-Heaman Drain, Class Unrated, Township of Adelaide-Metcalf – Implementation of Measures to Avoid and Mitigate the Potential for Prohibited Effects to Fish and Fish Habitat**

Dear Andrew Neely:

The Fish and Fish Habitat Protection Program (the Program) of Fisheries and Oceans Canada (DFO) received your proposal on November 11, 2024. We understand that you propose the following:

- Deepen, widen, and re-slope one or both banks for 419m in Locher-Heaman Drain downstream of Newell Road; and
- Replace the culvert under Newell Road.

Our review considered the following information:

- Request for review form and supporting documents submitted to DFO on November 11, 2024;

Your proposal has been reviewed to determine whether it is likely to result in:

- the death of fish by means other than fishing and the harmful alteration, disruption or destruction of fish habitat which are prohibited under subsections 34.4(1) and 35(1) of the *Fisheries Act*; and
- effects to listed aquatic species at risk, any part of their critical habitat or the residences of their individuals in a manner which is prohibited under sections 32, 33 and subsection 58(1) of the *Species at Risk Act*.

The aforementioned outcomes are prohibited unless authorized under their respective legislation and regulations.

To avoid and mitigate the potential for prohibited effects to fish and fish habitat (as listed above), we recommend implementing the measures outlined in your plan, in addition to the following listed below:

Canada

- Plan in-water work, undertaking or activity to respect timing windows (i.e. NO in-water work between March 15 – July 15);
- Develop and implement an Erosion and Sediment Control Plan to avoid the introduction of sediment into any waterbody during all phases of the work, undertaking or activity;
  - Work in the dry;
  - Schedule work to avoid wet, windy, and rainy periods that may increase erosion and sedimentation;
- Aquatic invasive species are introduced and spread through transporting sands and sediments and using contaminated construction equipment. To prevent the spread of aquatic invasive species during construction in aquatic environments:
  - Clean, drain and dry any equipment used in the water; and,
  - Never move organisms or water from one body of water to another.

Provided that you incorporate these measures into your plans, the Program is of the view that your proposal will not require an authorization under the *Fisheries Act* or permit under the *Species at Risk Act*.

Should your plans change or if you have omitted some information in your proposal, further review by the Program may be required. Consult our website (<http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html>) or consult with a qualified environmental consultant to determine if further review may be necessary. It remains your responsibility to remain in compliance with the *Fisheries Act*, the *Species at Risk Act* and the *Aquatic Invasive Species Regulations*.

It is also your *Duty to Notify* DFO if you have caused, or are about to cause, the death of fish by means other than fishing and/or the harmful alteration, disruption or destruction of fish habitat. Such notifications should be directed to (<http://www.dfo-mpo.gc.ca/pnw-ppe/contact-eng.html>).

Notify this office at least 10 days before starting any in-water works. Send your notification to Colby Nolan ([Colby.Nolan@dfo-mpo.gc.ca](mailto:Colby.Nolan@dfo-mpo.gc.ca)) and the DFO 10 notification mailbox: [DFO.OPHabitat.MPO@dfo-mpo.gc.ca](mailto:DFO.OPHabitat.MPO@dfo-mpo.gc.ca). A copy of this letter should be kept on site while the work is in progress. It remains your responsibility to meet all other federal, territorial, provincial and municipal requirements that apply to your proposal.

If you have any questions with the content of this letter, please contact Colby Nolan at our Burlington office by phone at (416) 919-4615 or by email at [Colby.Nolan@dfo-mpo.gc.ca](mailto:Colby.Nolan@dfo-mpo.gc.ca). Please refer to the file number referenced above when corresponding with the Program.

Yours sincerely,

A handwritten signature in cursive script that reads "Emily Morton".

Emily Morton  
Senior Biologist

Copy: David Moores (Dobbin Engineering)