

**KELLESTINE DRAIN NO. 2**

THE MUNICIPALITY OF NORTH MIDDLESEX  
TENDER for CONTRACT MD 01-2025



CLOSING DATE: January 29, 2025 @ 11 a.m.

**BID FORM**  
**KELLESTINE DRAIN NO. 2**  
**MUNICIPALITY OF NORTH MIDDLESEX**

**OWNER:** The Municipality of North Middlesex  
**CONTRACT ADMINISTRATOR:** R. Dobbin Engineering Inc.  
**LOCATION:** Lot 15, Concession 19 ECR in the Municipality of North Middlesex.

Bids will be received in sealed envelopes clearly marked "**Kellestine Drain No. 2**" at the  
Municipal office of:

**The Municipality of North Middlesex**  
**229 Parkhill Main Street**  
**Parkhill, ON**  
**NOM 2K0**

Your bid must be received at the above specified location no later than:

**Wednesday January 29, 2025**  
**11:00 a.m. LOCAL TIME**

Bid inquiries shall be submitted to Josh Warner, R. Dobbin Engineering Inc.:

Josh Warner, P. Eng.  
R. Dobbin Engineering Inc.  
4218 Oil Heritage Road  
Petrolia, Ontario  
(519)-882-0032 ext. 204

**Tender enquiries shall be accepted until January 24, 2025**

**SCHEDULE OF TENDER PRICES**

**TENDER PRICE**

A. **Offer by:** \_\_\_\_\_  
**Name:** \_\_\_\_\_  
**Address:** \_\_\_\_\_  
\_\_\_\_\_  
**HST #:** \_\_\_\_\_  
**Date:** \_\_\_\_\_  
**To:** The Municipality of North Middlesex \_\_\_\_\_

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**

<u>Item Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Cost (\$)</u>	<u>Total (\$)</u>
Pre-Construction Meeting	1	LS		
Brushing and Tree Removal	1	LS		
Strip and Place Topsoil (Station 0+150 to 0+284) in existing channel	134	m		
Strip and Place Topsoil (Station 0+150 to 0+343) along tile Route	193	m		
Locate and Decomission existing Tile	1	LS		
Remove existing DICB at Station 0+343 and 0+367	2	ea		
6m of 750mmØ HDPE Pipe c/w Rodent Grate	1	LS		
Excavation of Open Channel (Station 0+000 to 0+150)	150	m		
750mmØ Concrete Pipe (2000D) c/w Bedding to Springline and Backfill	187	m		
750mmØ HDPE Pipe c/w Bedding to 300mm above Pipe	24	m		
Ditch Inlet Catch Basin #1 (1200mm x 900mm) c/w Connections	1	LS		
Catch Basin #2 (1200mm x 900mm) c/w Connections	1	LS		
Rip Rap at Outlet	15	tonne		
Connect Existing Tiles to Proposed Tile	2	ea		
Re-Connect Drain to Open Channel	2	ea		

Item Description	Quantity	Unit	Unit Cost (\$)	Total (\$)
Fill in Open Channel with Material On-Site	1	LS		
Environmental Considerations	1	LS		
Restoration/Seeding	1	LS		
Contingency	1	LS	2,940	2,940

Sub Total

Tax (13%)

Total Tender Price

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OFFERED ON BEHALF  
OF THE CONTRACTOR

\_\_\_\_\_  
COMPANY NAME

\_\_\_\_\_  
SIGNATURE

CONTRACTOR'S SEAL  
(See Note Below)

\_\_\_\_\_  
SIGNATURE

\_\_\_\_\_  
WITNESS (See Note Below)

\_\_\_\_\_  
COMPANY STREET ADDRESS

\_\_\_\_\_  
CITY, PROVINCE, POSTAL CODE

\_\_\_\_\_  
DATE OF OFFER

The Contractor agrees to complete substantially the work included in the contract barring delays regarding strikes and acts of God beyond our control, within \_\_\_\_\_ working days from the time of starting construction.

**Note:** Contractor to have the necessary signatures to bind the company. If a Contractor's seal is used there is no need for the offer to be witnessed. If no Contractor's seal is used, then a witness signature is needed.

## CONDITIONS OF BID

1. The lowest or any bid will not necessarily be accepted by the Owner.
2. Contract Drawings 1 to 2 and the attached Specifications of Work for the Kellestine Drain No. 2 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. A Form of Agreement is required to be signed and returned within 10 days of the award of contract.
4. 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 (Municipality of North Middlesex) 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 or Bid Bond.

Upon being notified that the tender has been accepted, the Contractor shall execute copies of the Agreement, supply bonds and insurance documents as specified, and start Work as specified.

Failure to execute the copies of the Agreement, or to supply bonds and insurance documents, within one week of the date of acceptance of the tender, will automatically mean the forfeiture or enforcement of the tender deposit. Tender deposits of unsuccessful Tenderers will be returned not later than two weeks following Tender close. The tender deposit of the successful Tenderer will be returned once the Contract Security is in place.

5. CONTRACT SECURITY

The bid deposit of the successful Tender shall be retained by the Municipality of North Middlesex until the contract is completed and a completion certificate is issued by the Engineer. The successful Contractor shall have the option of furnishing the Municipality of North Middlesex with a Performance Bond in the amount of one hundred percent (100%) of the total tender price (not including HST). The Performance Bond shall ensure completion of the work and maintenance of the work for a period of one year after the date of the completion certificate.

## 6. SCHEDULE

- a) The Contract is to be completed on or before – **December 31, 2025. Construction shall not commence until August 15, 2025.**
- 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.

## 7. 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.

## 8. 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.

## 9. INSURANCE

- a) The successful Bidder will file with the Municipality within 10 calendar days of award of Contract, General Liability, Automobile and Property Damage Insurance coverage required by the Ontario Provincial Standard General Conditions.



## 10. WORKER'S SAFETY INSURANCE BOARD

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

## 11. TIME CONSTRAINTS

- a) All Work shall be completed within the times outlined in The Municipality of North Middlesex noise by-law regulations.
- b) No weekend Work is permitted without prior approval by The Municipality of North Middlesex.

## 12. GUARANTEE PERIOD

- a) The Contractor shall guarantee the Material and Work shall for a period of twelve (12) months from the acceptance date 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.

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.

- b) 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.
- c) 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.

- d) To cover the rectification costs during the guarantee period, the Municipality shall retain 3% of the value of Work done. This holdback will be retained for a period of twelve (12) months from the acceptance date.

### 13. PAYMENT

- a) Monthly draws for Work completed will be paid as needed. Payment will be subject to the 3% maintenance holdback and a 10% statutory holdback in accordance with the Construction Act. Payment at the unit priced bid for each item shall be full compensation for all labour, equipment, and materials required to do the Work.

### 14. EXTRA WORK

- a) Extra Work shall be undertaken as described in subsection GC3.10.02 of the General Conditions.
- 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.

### 15. 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.

### 16. DAMAGE

- a) Any damage to existing infrastructure and neighboring properties shall be repaired by the Contractor to the satisfaction of the Contract Administrator and be at the Contractors expense.

## 17. Liquidated Damages

Where the working days exceeds those identified in the contract the Contractor shall be responsible for the cost of the engineering inspection for the additional working days.

## 18. UTILITIES

- a) The Contractor shall secure locates at no extra cost to the Contract prior to any construction activities.

## 19. 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. in a digital format.
- 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.

## 20. 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.

## 21. SUBSTANTIAL PERFORMANCE

- a) The project will be considered substantially performed when all parts of the Contract are completed in accordance with the General Conditions of Contract – GC 1.05.

## 22. 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.ragsb.mto.gov.on.ca/techpubs/ops.nsf/OPSHomepage>

### **THE SUPPLEMENTAL SPECIFICATIONS APPLICABLE TO THIS PROJECT ARE AS FOLLOWS:**

#### **Operational Constraints**

The following operational constraints form part of the Contract. No additional costs will be made for completing Work within the operational constraints. Payment for Work associated with the operational constraints shall be included in the applicable unit price item.

1. The Contractor is responsible to complete the Contract within the schedule specified.
2. Safe and reasonable access must be provided to local vehicle traffic and to pedestrian traffic. The Contractor shall ensure traffic regulatory signs and 911 signs are in place and secure at all times.
3. The Contractor is responsible for securing locates and providing coordination with all utilities and agencies. In addition, the Contractor shall protect from damage all buried and aerial utility lines during construction.
4. If required, the Contractor is responsible for obtaining a Permit to Take Water (PTTW) for dewatering purposes.
5. Geotechnical investigation has not been undertaken within the project limits.
6. All conditions from the Department of Fisheries and Oceans (DFO) and Ausable Bayfield Conservation's (ABCA) approvals shall be adhered to.

**Estimate of Cost**

<u>Item Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Cost (\$)</u>	<u>Total (\$)</u>
Pre-Construction Meeting	1	LS	200	200
Brushing and Tree Removal	1	LS	1,000	1,000
Strip and Place Topsoil (Station 0+150 to 0+284) in existing channel	134	m	15	2,010
Strip and Place Topsoil (Station 0+150 to 0+343) along tile Route	193	m	8	1,544
Locate and Decommission existing Tile	1	LS	1,000	1,000
Remove existing DICB at Station 0+343 and 0+367	2	ea	800	1,600
750mmø HDPE Pipe c/w Rodent Grate	1	LS	2,500	2,500
Excavation of Open Channel (Station 0+000 to 0+150)	150	m	8	1,200
750mmø Concrete Pipe (2000D) c/w Bedding to Springline and Backfill	187	m	130	24,310
750mmø HDPE Pipe c/w Bedding to 300mm above Pipe	24	m	400	9,600
Ditch Inlet Catch Basin #1 (1200mm x 900mm) c/w Connections	1	LS	3,000	3,000
Catch Basin #2 (1200mm x 900mm) c/w Connections	1	LS	3,500	3,500
Rip Rap at Outlet	1	LS	1,500	1,500
Connect Existing Tiles to Proposed Tile	2	ea	100	200
Re-Connect Drain to Open Channel	2	ea	100	200
Fill in Open Channel with Material On-Site	1	LS	3,800	3,800
Environmental Considerations	1	LS	400	400
Restoration/Seeding	1	LS	800	<u>800</u>
		<b>Sub Total</b>		<b>58,364</b>

Kellestine Drain No.2  
Municipality of North Middlesex  
January 6, 2023

## **SPECIFICATION OF WORK**

### **1. Location**

The Kellestine Drain No. 2 is proposed to be improved in Lot 15, Concession 19 and 20 ECR in The Municipality of North Middlesex.

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

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

- Open channel excavation
- Open channel enclosure
- Supply and installation of concrete and HDPE tile
- Supply and installation of catch basins structures

### **3. General**

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

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

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

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

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

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

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

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

## **5. Health and Safety**

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

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

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

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

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

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

## **7. Traffic Control**

Access and driveways to private properties shall not be obstructed longer than the minimum time necessary for the work and shall be reinstated as soon as possible all to the satisfaction of the Engineer. The contractor shall schedule any obstruction of existing driveways with the owners at least two full working days in advance. Roads must be kept open to local traffic and all obstructions and diversions of traffic must be approved by the Engineer or Drainage Superintendent and Roads Superintendent at least two (2) full working days in advance.

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

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

Access to the work site for construction and future maintenance shall be from New Ontario Road along the west limit of Lot 15, Concession 19 ECR and along the length of the drainage works. 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 the construction of the proposed tile drain enclosure shall be restricted to a width of 30m normally centred on the proposed tile drain. The working area for the construction and future maintenance of the open channel shall be restricted to a width of 10m from the top of bank on both sides of the drainage works.

## **9. Removals**

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

## **10. Expose Existing Drain**

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



existing tile is exposed. The Contractor shall ensure that the drain between Station 0+343 and 0+367 be exposed and crushed in 3 locations.

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

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

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

Certain trees may be left in place at the direction of the Drainage Superintendent.

### **12. Strip and Place Topsoil**

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

### **13. Strip Existing Channel**

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

### **14. 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. **The HDPE Pipe under the old track ROW shall be installed with clear stone bedding to 300mm above the pipe.**

It is intended that the proposed tile drain **run beside or up the existing drain. The Contractor shall decommission the existing tile drain.** The tile drain runs from the CNR right of way southerly where it outlets into the open channel portion. The exact location of tile can be changed under the direction of the Drainage Superintendent or Engineer.

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

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

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

#### Wheel Machine

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

are responsible for stones after that. The material shall be left windrowed over the trench to allow for settlement.

### Excavator

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

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

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

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

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

Future replacements shall conform to these specifications.

### 15. Catch Basins

Structure	Station	Type (mm)	Inlet Elev. (m)	Outlet Pipe Elev. (m)	Inlet Pipe Elev. (m)
DICB #1	0+343	900x1200	232.62 N	231.63 (S) 750	231.66 (N) 750
CB #2	0+367	900x1200	233.80	231.68 (S) 750	231.70 (E) / 232.00 (N) 675 / 250

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

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

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

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

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

## **16. Subsurface Drainage**

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

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

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

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

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

## **17. Outlet Works**

The outlet works for the drain shall consist of 6m of HDPE smooth wall pipe as shown on the profile (320 kPa) with a manufactured rodent rotating grate. It shall be installed at the outlet to the open channel.

Erosion protection made up of rip rap and filter fabric shall be installed on the channel side slope from the bottom of the channel to the top of the bank and for a distance of 1m on either side of the outlet pipe. Rip rap shall be made up of 150mm to 300mm quarry stone or approved equal. The area to receive the rip rap shall first be graded to allow the placement of the rip rap to a depth of 400mm below finished grade. After grading, a layer of filter fabric (Mirafi P150 or approved equal) is to be placed with any joints overlapped a minimum of 600mm. Rip rap shall then be placed with the smaller pieces placed in the gaps and voids to give it a uniform appearance.

## **18. Excavation of Open Channel**

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.

For construction under this report the excavated material shall be utilized for filling in the open channel at the enclosure in addition to the existing material on site.

For future maintenance, the excavated material shall be cast on the working side of the channel 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. 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.

If a Landowner requests that excavated material be trucked off site, the cost of trucking shall be at the Landowners expense and will be outside of this contract.

## **19. Seeding/Restoration**

The side slopes of the channel and previous CN ROW, where disturbed by construction, shall be hand seeded on a daily basis or hydroseeded immediately following construction in accordance with the seed mixture, fertilizer and application rate as shown below. Spreading of the seed shall be by use of a mechanical spreader.

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

Seed mixture, fertilizer and application rates are as follows:

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

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

## **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 in areas regulated by the Conservation Authority or Ministry of Natural Resources.
- All granular and erosion control materials shall be stockpiled a minimum of 3.0m from the top of the bank or excavation. Material shall not be placed in surface water runs or open inlets that enter the channel.
- All activities, including maintenance procedures, shall be controlled to prevent the entry of petroleum products, debris, rubble, concrete, or other deleterious substances into the water. Vehicle and equipment refuelling and maintenance shall be conducted away from the channel, any surface water runs, or open inlets. All waste materials shall be stockpiled well back from the top of the bank and all surface water runs and open inlets that enter the drain.
- When possible, all construction within the open channel shall be carried out during periods of low flow or in dry conditions.
- The Contractor shall conduct regular inspections and maintain erosion and sediment control measures and structures during the course of construction.
- The Contractor shall repair erosion and sediment control measures and structures if damage occurs.
- The Contractor shall remove non-biodegradable erosion and sediment control materials once site is stabilized.
- Remove all construction materials from site upon project completion.

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

The light duty silt fencing shall be supplied and installed in accordance with OPSS 577 and OPSD 219.110. The light duty silt fencing shall be removed once construction is complete.



Fisheries and Oceans  
Canada

Ontario and Prairie Region  
Fish and Fish Habitat Protection Program  
867 Lakeshore Rd.  
Burlington, ON  
L7S 1A1

Pêches et Océans  
Canada

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

12 January 2023

*Your file* *Votre référence*

*Our file* *Notre référence*  
22-HCAA-02887

Municipality of North-Middlesex  
229 Parkhill Main Street  
Parkhill, ON  
N0M 2K0

**Subject: Drain Enclosure, Kellestine Drain No. 2, Parkhill87 (22-HCAA-02887) – Implementation of Measures to Avoid and Mitigate the Potential for Prohibited Effects to Fish and Fish Habitat**

Dear Municipality of North-Middlesex:

The Fish and Fish Habitat Protection Program (the Program) of Fisheries and Oceans Canada (DFO) received your proposal on 7 December 2022. We understand that you propose to:

- Enclose 134m and perform drain maintenance on 150m of an open channel Class F Drain;
- Install riprap at the tile outlet;
- Work in low flow or dry conditions; and
- Use erosion and sedimentation control measures to prevent sedimentation of the downstream.

Our review considered the following information:

- Request for Review form and associated documents submitted on 7 December 2022

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*
- 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 impacts 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 listed below:

- Conduct in-water undertakings and activities during periods of low flow
- Limit the duration of in-water works, undertakings and activities so that it does not diminish the ability of fish to carry out one or more of their life processes (spawning, rearing, feeding, migrating)
- Develop and implement an Sediment Control Plan to minimize sedimentation of the waterbody during all phases of the work, undertaking or activity
  - Conduct all in-water works, undertakings or activities in isolation of open or flowing water to reduce the introduction of sediment into the watercourse
  - Schedule work to avoid wet, windy and rainy periods (and heed weather advisories)
  - Inspect and maintain regularly the erosion and sediment control measures and structures during all phases of the project
  - Remove all exposed non-biodegradable sediment control materials once site has been stabilized
  - Monitor the watercourse to observe signs of sedimentation during all phases of the work, undertaking or activity and take corrective action
- Do not deposit any deleterious substances in the water course
- Develop and implement a response plan to avoid a spill of deleterious substances
  - Stop work, contain sediment-laden water and other deleterious substances and prevent their further migration into the watercourse
  - Keep an emergency spill kit on site during the work, undertaking or activity
  - Report any spills of sewage, oil, fuel or other deleterious material, whether near or directly into a water body
  - Clean-up and appropriately dispose of the sediment-laden water and deleterious substances
  - Maintain all machinery on site in a clean condition and free of fluid leaks
  - Wash, refuel and service machinery and store fuel and other materials for the machinery in such a way as to prevent any deleterious substances from entering the water
  - Dispose all construction, demolition or commercial logging materials waste above the high water mark of nearby waterbodies to prevent re-entry

Provided that you incorporate these measures into your plans, the Program is of the view that your proposal is not likely to result in the contravention of the above mentioned prohibitions and requirements.

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* and the *Species at Risk Act*.

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>).

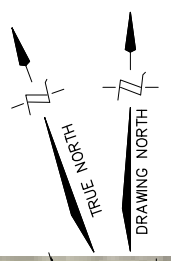
We recommend that you notify this office at least 10 days before starting your project and that a copy of this letter be kept on site while the work is in progress. It remains your responsibility to meet all other federal, territorial, provincial and municipal requirements that apply to your proposal ([DFO.OP.10DayNotification-Notification10Jours.OP.MPO@dfo-mpo.gc.ca](mailto:DFO.OP.10DayNotification-Notification10Jours.OP.MPO@dfo-mpo.gc.ca)).

If you have any questions with the content of this letter, please contact Sheeva Nakhaie at 905-315-5270, or by email at [Sheeva.Nakhaie@dfo-mpo.gc.ca](mailto:Sheeva.Nakhaie@dfo-mpo.gc.ca). Please refer to the file number referenced above when corresponding with the Program.

Yours sincerely,

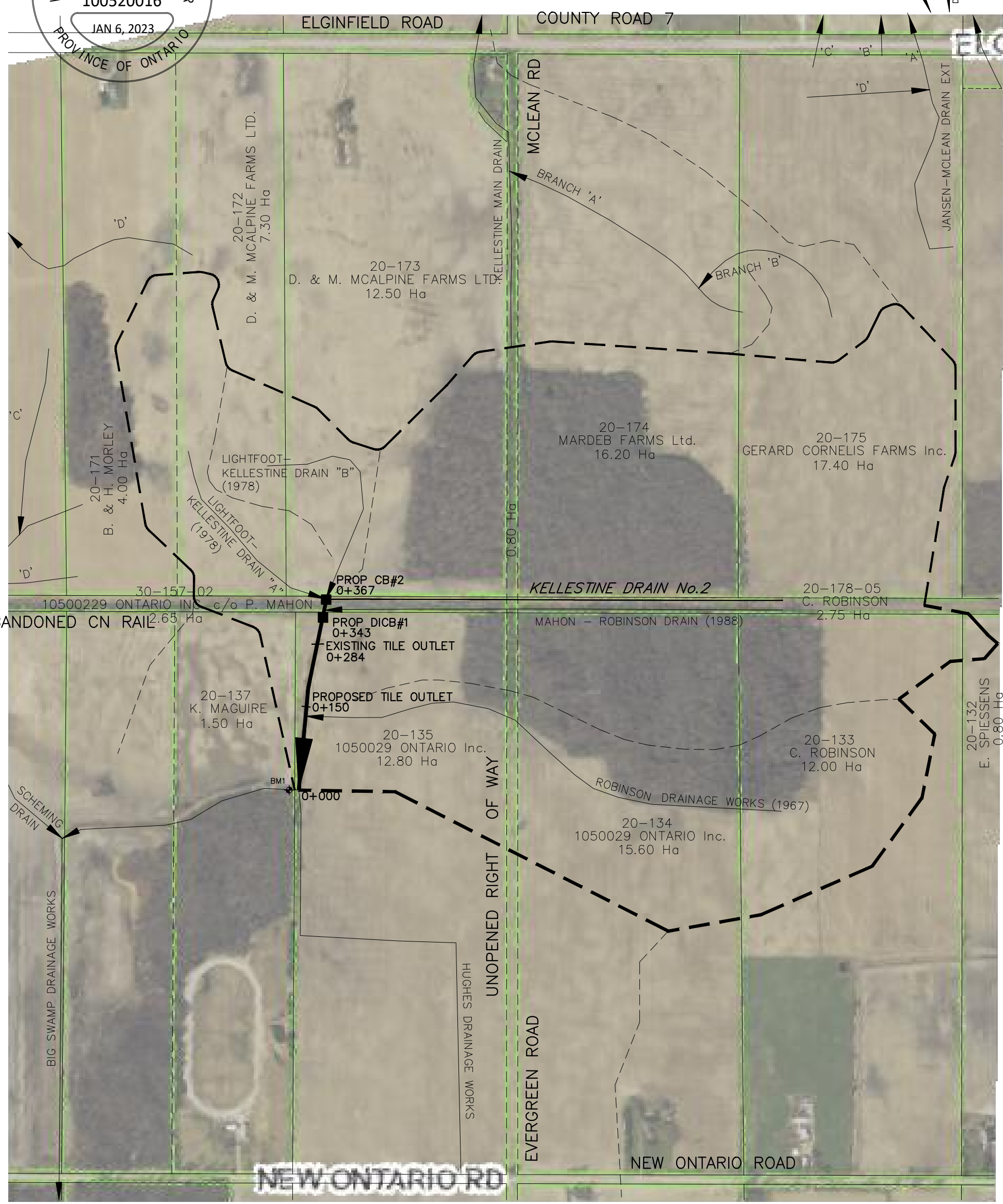
A handwritten signature in cursive script that reads "Sheeva Nakhaie". The ink is dark and the signature is written in a fluid, connected style.

Sheeva Nakhaie  
Biologist, Triage and Planning



CONC 20 EAST OF CENTRE ROAD

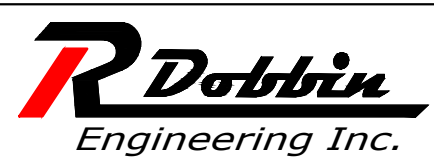
CONC 19 EAST OF CENTRE ROAD



LOT 13      LOT 14      LOT 15      LOT 16      LOT 17

**LEGEND**

- DRAINAGE AREA
- KELLESTINE DRAIN NO. 2
- MUNICIPAL DRAIN



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

DRAWING NAME:  
 Kellestine Drain No. 2 Plan

PROJECT No.  
 2022-1378

APPROVED	NO.	REVISIONS	DATE	BY
J. WARNER				
CHECKED	1	FINAL REPORT	JAN. 6, 2023	CS
J. WARNER				
DRAWN	SCALE: 1:7500			
C. SAUNDERS				

**MUNICIPALITY of NORTH-MIDDLESEX**

**KELLESTINE DRAIN NO. 2**

**PLAN**

**1**

**OF 2**

Last Updated: November 14, 2022

# GENERAL NOTES

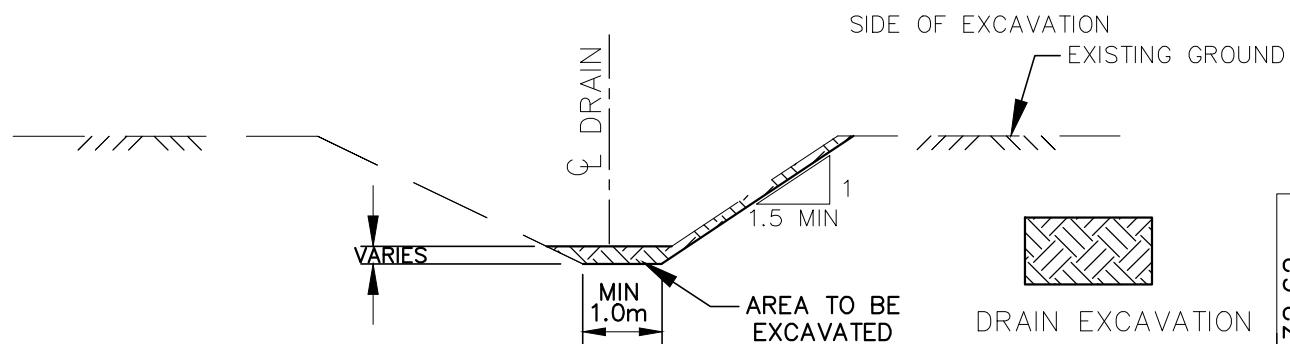
- BENCHMARK No.1 ELEV. 232.030  
TOP OF EAST END OF 1400Ø CSP  
ON THE HUGHES DRAINAGE WORKS  
STATION -0+014

## TILE SECTION

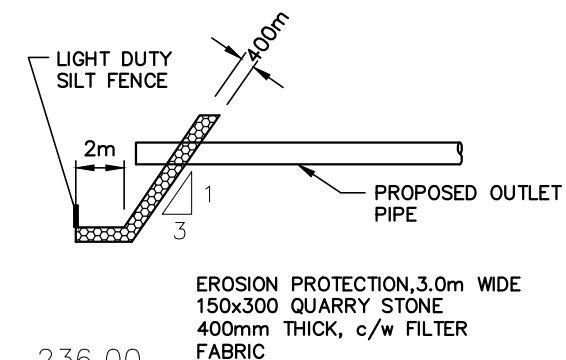
- NUMBERS ARE DEPTH FROM EXISTING GROUND  
TO THE INVERT OF THE PROPOSED TILE.

## CHANNEL SECTION

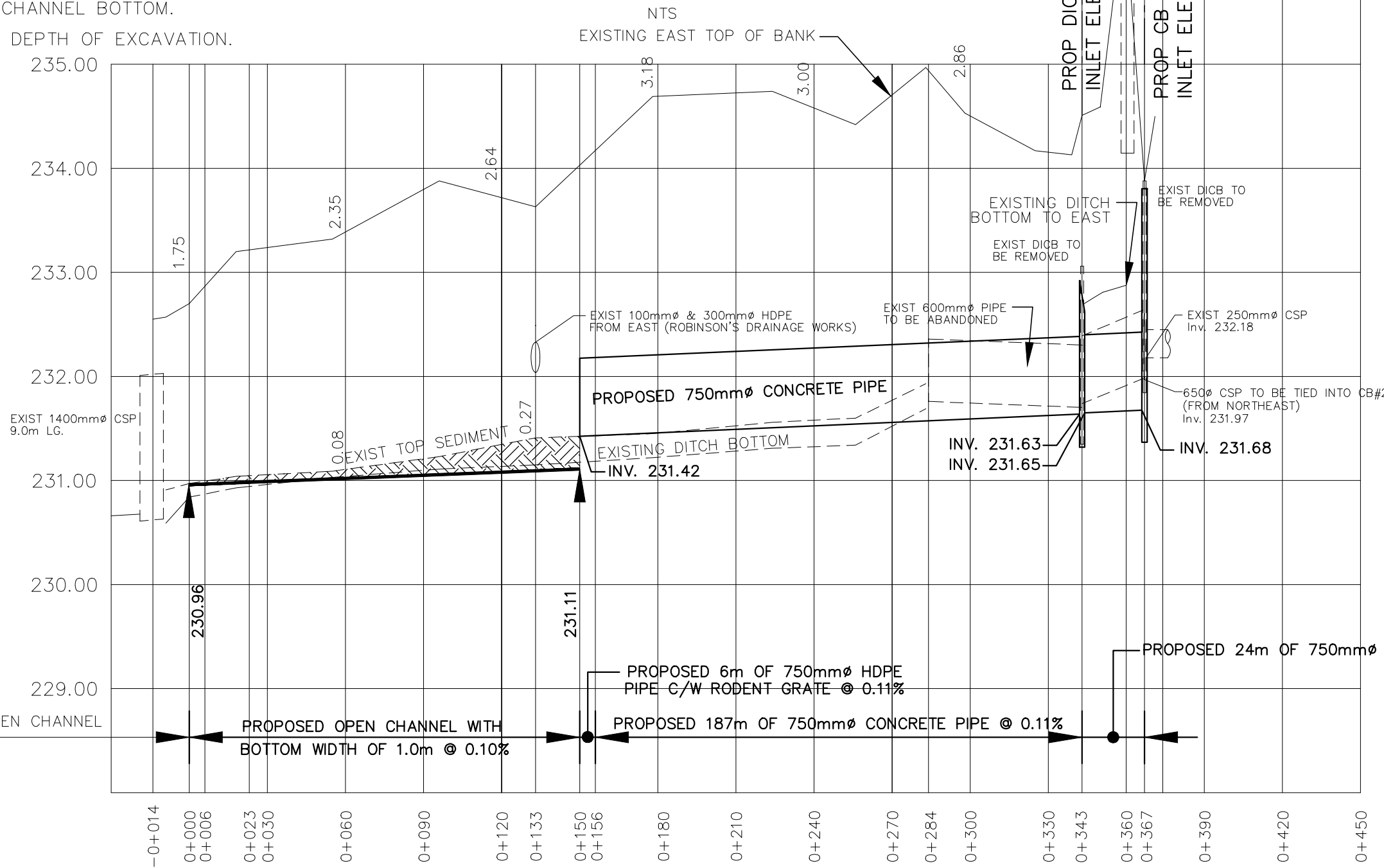
- UPPER NUMBERS ARE DEPTH FROM TOP OF  
BANK TO PROPOSED CHANNEL BOTTOM.
- LOWER NUMBERS ARE DEPTH OF EXCAVATION.



TYPICAL DRAIN CROSS SECTION



OUTLET DETAIL



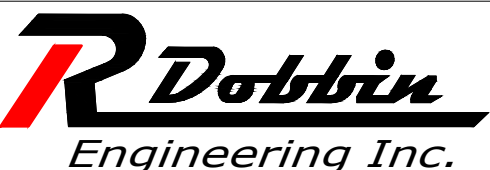
HUGHES DRAINAGE WORKS OPEN CHANNEL

PROPOSED OPEN CHANNEL WITH  
BOTTOM WIDTH OF 1.0m @ 0.10%

PROPOSED 187m OF 750mmØ CONCRETE PIPE @ 0.11%

PROPOSED 24m OF 750mmØ HDPE PIPE @ 0.11%

PROPOSED 6m OF 750mmØ HDPE  
PIPE C/W RODENT GRATE @ 0.11%



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

APPROVED	J. WARNER	NO.	REVISIONS	DATE	BY
CHECKED	J. WARNER	1	FINAL REPORT	JAN. 6, 2023	CS
DRAWN	C. SAUNDERS	SCALE: 1:2,000			
		0 20 40 60m			

MUNICIPALITY of NORTH MIDDLESEX  
KELLESTINE DRAIN No.2  
PROFILE

2  
OF 2

DRAWING NAME:  
Kellestine Drain Profile 1

PROJECT No.  
2022-1378

Last Updated: November 14, 2022