

BROWN-ROSE DRAIN

THE MUNICIPALITY OF NORTH MIDDLESEX
TENDER for CONTRACT IO-09-2026



CLOSING DATE: September 2, 2026 @ 12 p.m. (Noon)

**BID FORM
BROWN DRAIN
MUNICIPALITY OF NORTH MIDDLESEX**

OWNER: The Municipality of North Middlesex
CONTRACT ADMINISTRATOR: R. Dobbin Engineering Inc.
LOCATION: Lot 12-14, Concession 2-4 in the Municipality of North Middlesex.

Bids will be received in sealed envelopes clearly marked “**Brown-Rose Drain**” at the Municipal office of:

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

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

**Wednesday September 2, 2026
12:00 p.m. (Noon) 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
josh@dobbineng.com
(519)-882-0032 ext. 204

Tender enquiries shall be accepted until August 28, 2026

SCHEDULE OF TENDER PRICES
TENDER PRICE

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.

2. DOMESTIC SUPPLY CHAIN

The Contractor shall complete Tables included under 7a and 7b in this tender document. The values in this table shall be used to calculate the Proportion of Ontario-Made Good and Services as a percentage:

$$\frac{\text{Value of Ontario Made Goods and Ontario Services (As per 7b)}}{\text{Total Bid Price}} \times 100 = \text{_____ \%}$$

If this section and the tables in Section 7a and 7b are not submitted with the tender submission the bid will be rejected.

TENDER TABLE

<u>Item Description (Supply and Install New)</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		
Branch "B"				
Locate and Abandon Existing Drain	1	LS		
Connect to Existing CB at Station B 0+302	1	LS		
Strip and Place Topsoil	848	m		
Supply and Install 450mmø Concrete Tile	148	m		
Supply and Install 350mmø Concrete Tile	300	m		
Supply and Install 300mmø Concrete Tile	292	m		
Supply and Install 200mmø Concrete Tile	108	m		
Catchbasin #8 (600mm x 600mm) @ B 1+150 c/w Berm	1	LS		
Restoration	1	LS		
Main Drain and Branch "C"				
Locate Existing Twinned Drain (Station 0+509 to 2+196)	1	LS		
Locate and Abandon Existing Drain (2+196 to 3+213 and C 0+000 to C 0+230)	1	LS		
Strip and Place Topsoil (Station 0+619 to 3+213 and C 0+000 to C 0+230)	2946	m		

<u>Item Description (Supply and Install New)</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Cost (\$)</u>	<u>Total (\$)</u>
<u>Station 0+509 to 0+619</u>				
Rip Rap at Outlet (Station 0+509) c/w Re-Grading	20	tonne		
Rodent Grate for 525mmø HDPE Pipe at Outlet (Center Drain)	1	LS		
Rodent Grate for 600mmø HDPE Pipe at Outlet (North Drain)	1	LS		
Remove and Dispose of Existing Drain as indicated on Detail Drawing (Station 0+509 to 0+551)	42	m		
Remove 6m of CSP Outlet Pipe and Supply and Install New 6m of 525mmø HDPE Pipe at Outlet c/w Rodent Grate (South Drain)	1	LS		
Supply and Install 525mmø HDPE Pipe (Station 0+509 to 0+619) for Center Drain	110	m		
Supply and Install 600mmø HDPE Pipe (0+509 to 0+551) c/w Connection for North Drain	42	m		
Supply and Install 525mmø HDPE 22.5 Degree Elbow	1	each		
Supply and Install 600mmø HDPE 22.5 Degree Elbow	1	each		
Granular "A" for Driveway Crossing	20	tonne		
Locate and Work Around Existing Water Service	1	LS		
Restoration of Lawn at #10615 Petty Street with Topsoil and Hydroseed	1	LS		
Supply and Install 525x525x375mmø Tee Complete with 3m of 375mmø Lead and Connection to existing DICB #1	1	LS		
Locate and Connect Existing Tiles	2	each		

<u>Item Description (Supply and Install New)</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Cost (\$)</u>	<u>Total (\$)</u>
<u>Station 0+619 to 3+213 and C 0+000 to C 0+230</u>				
Supply and Install 525mmØ Concrete Tile (Station 0+619 to 1+433)	814	m		
Supply and Install 450mmØ Concrete Tile (Station 1+433 to 2+196)	763	m		
Supply and Install 525mmØ Concrete Tile (Station 2+196 to 2+333) (Twinned)	274	m		
<u>Argyle Street Road Crossing</u>				
Traffic Control	1	LS		
Locate and Work Around Telecom Line	1	LS		
Remove Existing Tile and Dispose of Unsuitable Backfill Mate	1	LS		
750mmØ HDPE Smooth Wall Pipe (Open Cut) c/w Bedding	15	m		
Supply and Install Granular "A" Backfill	50	tonne		
Restoration and Ditch Grading	1	LS		
<u>Watermain Lowering</u>				
Cut and Cap Existing Watermain	2	each		
100mmØ PVC Watermain Pipe insatlled by Directional Drilling c/w tracer wire	12	m		
Hot tap existing watermain with 50mmØ corporation stop, c/w stainless steel saddle for supply during testing procedure. To be removed and corporation stop to be permanently closed upon completion	1	each		
Supply and install Couplers at connections	2	each		
Connect new 100mmØ watermain to existing. Both connections to be completed the same day	1	LS		
New watermain to undergo pressure testing, leakage testing and bacteriological testing as per Municipal Standards prior to connection	1	LS		
Remove and dispose offsite existing watermain	12	m		
Restoration	1	LS		
Supply and Install 600mmØ Concrete Tile (Station 2+348 to 2+640)	292	m		
Supply and Install 525mmØ Concrete Tile (Station 2+640 to 2+820)	180	m		
Supply and Install 400mmØ Concrete Tile (Station 2+820 to 3+005)	185	m		

<u>Item Description (Supply and Install New)</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Cost (\$)</u>	<u>Total (\$)</u>
Supply and Install 300mmø Concrete Tile (Station 3+005 to 3+213 and C 0+000 to C 0+230)	438	m		
Locate and Connect Existing Lead from DICB #2 to Proposed Drain	1	LS		
Locate and Connect Existing Tiles	2	each		
Remove Existing Basin at Station 1+375 and Grout Leads	1	LS		
Remove Existing Basin at Station 2+348	1	LS		
Connect Branch "C" to Main Drain	1	LS		
Proposed Catchbasin #3 (900mm x 1200mm) @ Station 1+433 c/w 9m of 400mm dia., Connections to Existing Mains and Berm	1	LS		
Proposed Junction Box #4 (1800mmx1200mm) at Station 2+196 c/w Connections	1	LS		
Remove Existing Basin at Station 2+196	1	LS		
Remove Existing Junction Box at Station 2+196	1	LS		
Remove and Dispose of Existing Pipes identified on Detail Plan	1	LS		
Extend Branch "B" to JB #4 with 450mmø Concrete Tile	7	m		
450mmø Concrete Tile from JB #4 to South Drain c/w Connections and Elbows	6	m		
400mmø Concrete Tile from JB #4 to North Drain c/w Connections and Elbows	8	m		
Connect 300mmø Tile to Branch "B"	1	LS		
Catchbasin #5 (900mm x 1200mm) @ Station 2+333 c/w Berm	1	LS		
Supply and Install 525mmø HDPE 45 Degree Elbow Out of CB #5	1	LS		
Catchbasin #6 (900mm x 1200mm) @ Station 2+348	1	LS		
Catchbasin #7 (900mm x 1200mm) @ Station 3+213 c/w Berm	1	LS		
Catchbasin #9 (900mm x 1200mm) @ Station C 0+230 c/w Berm	1	LS		

<u>Item Description (Supply and Install New)</u>		<u>Quantity</u>	<u>Unit</u>	<u>Unit Cost (\$)</u>	<u>Total (\$)</u>
Sil Fence Downstream of Work		1	LS		
Cross Connection of Existing Drains being Tripled with 350mm dia. Concrete Tile c/w Connections		40	m		
Contingency		1	LS	19,460	19,460

Sub Total

HST (13%)

Total Tender Price

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 11 and the attached Specifications of Work for the Brown-Rose 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. 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 as follows– **Branch “B” shall be completed before November 30, 2026 and the remainder of the project shall be completed in the dry with a completion date of September 30, 2027.**
- 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. DOMESTIC SUPPLY CHAIN

In accordance with the Province of Ontario’s Buy Ontario Act, 2025, Bidders must submit a Domestic Supply Chain Plan with their Tender submission indicating at a minimum the source of each Major Good and/or Service identified.

Bidders are to complete the tables included in “7a) Domestic Supply Chain Plan-Part 1” and “7b) Domestic Supply Chain Plan – Part 2” in accordance with its requirements.

Bids to this RFT will be scored in accordance with the following scoring criteria:

ITEM	SCORING CRITERIA	SCORING WEIGHING
1.	Compliance with all requirements as stipulated within this Tender and Addenda	Pass/Fail
2.	Lowest priced compliant Tender following application of Buy Ontario Act Domestic Supply Chain Evaluation Advantage (see description below)	100%
100%		

Domestic Supply Chain Plan Evaluation

In accordance with the Buy Ontario Act, 2025, following Stage 1 of the Evaluation Process the Municipality shall apply a ten percent 10% evaluation advantage to the Bidder with the highest scoring Domestic Supply Chain Plan (Section 7b).

A Bidder’s Domestic Supply Chain Plan evaluation score is adjusted based on how much of the bid consists of Ontario-Made Goods or Ontario Services compared to the total bid

amount (see example of formula below). The bidder with the highest proportion score receives a 10% reduction in price for evaluation purposes only (this does not change the actual contract price).

Calculation of proportion of Ontario-Made Goods and Ontario Services

$$\frac{\text{Value of Ontario Made Goods and Ontario Services}}{\text{Total Bid Price}} \times 100$$

Where two or more Bidders offer the same highest proportion of Ontario-Made Goods and Ontario Services, the ten percent (10%) evaluation advantage will be applied to both Bidder's base bid price.

No variation in Domestic Supply Chain Plan dollar values shall be permitted after the closing date for the Tender except, where the Municipality exercise its discretion to correct a mathematical error evident on the face of the Domestic Supply Chain Plan. The Municipality may, at its discretion, correct obvious mathematical errors on the part of the Bidder in computing any extended amounts, subtotals, or total dollar values. The Municipality is under no obligation to do so, which may result in no evaluation advantage being applied to the Bidder's Domestic Supply Chain Plan or rejection of the bid if completed incorrectly.

Furthermore, the Municipality reserves the right to not apply the price adjustment if the Domestic Supply Chain Plan is completed incorrectly for all Bids received.

Example

Bidder	Total Bid Price Submitted	Total value of the Ontario Made Goods and Ontario Services	Ontario-Made Good and Ontario Services proportion	Adjusted Price (10% reduction for highest proportion of Ontario-Made Good and Ontario Services in the Domestic Supply Chain Plan)
Bidder 1	\$100,000	\$25,000	25%	No adjustment to price
Bidder 2	\$95,000	\$9,500	10%	No adjustment to price
Bidder 3	\$105,000	\$42,000	40%	\$94,500

In this example, Bidder 3 has the highest proportion of Ontario Made goods and Ontario Service content (40%). As a result, the 10% evaluation advantage is applied to their bid. For evaluation purposes only, their bid is assessed at a price of \$94,500.

7.A) Domestic Supply Chain Plan – Part 1

Bidders must complete the Domestic Supply Chain Plan table below to identify the source and value of major Goods and Service required for the project, including those supplied by subcontractors. Indicate whether each listed major Goods and Service is Ontario-Made or from another jurisdiction (elsewhere).

Furthermore, the Bidder attests and confirms that the information provided within their submitted Domestic Supply Chain Plan is true, accurate, and complete to the best of their knowledge. The Bidder also acknowledges that failure to provide accurate and sufficient information within the Domestic Supply Chain Plan may result in the Municipality exercising any remedies available to it in accordance with this Tender.

Definitions

“Ontario-Made Goods” means a good that meets any one of the following criteria:

- it is wholly manufactured or originating in Ontario; or
- at least 51% of the total direct costs of producing or manufacturing the good have been incurred in Ontario.

“Ontario-Service” means a service wholly provided by individuals (natural persons) located in Ontario.

Major Good or Service	Item Description of Major Goods/Services	Origin (Ontario or elsewhere) *	Dollar Value \$CAD (Excluding Taxes) *
Major Good	Concrete Pipe		
Major Good	HDPE Pipe		
Major Good	Catch Basins, Junction Boxes and Grates		
Major Good	Rip Rap		
Major Good	Granular		
Major Good	PVC Pipe for Watermain		
Service	Servicing, Labour, equipment and restoration		

7.B) - DOMESTIC SUPPLY CHAIN PLAN – PART 2

For each item identified in 7a) - Domestic Supply Chain Plan - Part 1, Bidders must use the dollar values entered in Part 1 to calculate the total dollar values in the table below for:

1. Ontario-Made Goods & Ontario Services
2. Elsewhere Goods & Elsewhere Services

Totals must be in Canadian Dollars (\$CAD) and exclude HST.

Category	Total Dollar Value (Canadian, Excluding Taxes) *
Ontario-Made Goods & Ontario Services	
Elsewhere Goods & Services	

8. 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.

9. 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.

10. 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.

11. 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).

12. 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.

13. 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.

14. 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.

15. 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.

16. 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.

17. 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.

18. 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.

19. UTILITIES

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

20. 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.

21. 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.

22. 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.

23. 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.

Brown-Rose Drain (Branch "B")
Municipality of North Middlesex
July 9, 2026

1 of 1

ESTIMATE OF COST (BRANCH "B")

<u>Item Description (Supply and Install New)</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Cost (\$)</u>	<u>Total (\$)</u>
Locate and Abandon Existing Drain	1	LS	1,000	1,000
Connect to Existing CB at Station B 0+302	1	LS	200	200
Strip and Place Topsoil	848	m	6	5,088
Supply and Install 450mmø Concrete Tile	148	m	64	9,472
Supply and Install 350mmø Concrete Tile	300	m	48	14,400
Supply and Install 300mmø Concrete Tile	292	m	43	12,556
Supply and Install 200mmø Concrete Tile	108	m	38	4,104
Catchbasin #8 (600mm x 600mm) @ B 1+150 c/w Berm	1	LS	2,500	2,500
Restoration	1	LS	500	500
Contingency				<u>2,500</u>
Sub Total				52,320

ESTIMATE OF COST (MAIN DRAIN AND BRANCH "C")

38mm/24hrs for Main Drain and Branch "C" and Tripling Main Drain From the East Side of Petty Street to Branch "B"

<u>Item Description (Supply and Install New)</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Cost (\$)</u>	<u>Total (\$)</u>
Pre-Construction Meeting	1	LS	500	500
Brushing and Tree Removal	1	LS	2,000	2,000
Locate Existing Twinned Drain (Station 0+509 to 2+196)	1	LS	4,000	4,000
Locate and Abandon Existing Drain (2+196 to 3+213 and C 0+000 to C 0+230)	1	LS	2,000	2,000
Strip and Place Topsoil (Station 0+619 to 3+213 and C 0+000 to C 0+230)	2946	m	4	11,784
<u>Station 0+509 to 0+619</u>				
Rip Rap at Outlet (Station 0+509) c/w Re-Grading	20	tonne	150	3,000
Rodent Grate for 525mmø HDPE Pipe at Outlet (Center Drain)	1	LS	450	450
Rodent Grate for 600mmø HDPE Pipe at Outlet (North Drain)	1	LS	500	500
Remove and Dispose of Existing Drain as indicated on Detail Drawing (Station 0+509 to 0+551)	42	m	20	840
Remove 6m of CSP Outlet Pipe and Supply and Install New 6m of 525mmø HDPE Pipe at Outlet c/w Rodent Grate (South Drain)	1	LS	2,000	2,000
Supply and Install 525mmø HDPE Pipe (Station 0+509 to 0+619) for Center Drain	110	m	200	22,000
Supply and Install 600mmø HDPE Pipe (0+509 to 0+551) c/w Connection for North Drain	42	m	240	10,080
Supply and Install 525mmø HDPE 22.5 Degree Elbow	1	each	300	300
Supply and Install 600mmø HDPE 22.5 Degree Elbow	1	each	400	400
Granular "A" for Driveway Crossing	20	tonne	40	800
Locate and Work Around Existing Water Service	1	LS	800	800
Restoration of Lawn at #10615 Petty Street with Topsoil and Hydroseed	1	LS	3,500	3,500
Supply and Install 525x525x375mmø Tee Complete with 3m of 375mmø Lead and Connection to existing DICB #1	1	LS	1,200	1,200
Locate and Connect Existing Tiles	2	each	200	400

<u>Item Description (Supply and Install New)</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Cost (\$)</u>	<u>Total (\$)</u>
<u>Station 0+619 to 3+213 and C 0+000 to C 0+230</u>				
Supply and Install 525mmØ Concrete Tile (Station 0+619 to 1+433)	814	m	75	61,050
Supply and Install 450mmØ Concrete Tile (Station 1+433 to 2+196)	763	m	64	48,832
Supply and Install 525mmØ Concrete Tile (Station 2+196 to 2+333) (Twinned)	274	m	75	20,550
Argyle Street Road Crossing				
Traffic Control	1	LS	800	800
Locate and Work Around Telecom Line	1	LS	500	500
Remove Existing Tile and Dispose of Unsuitable Backfill Material	1	LS	600	600
750mmØ HDPE Smooth Wall Pipe (Open Cut) c/w Bedding	15	m	500	7,500
Supply and Install Granular "A" Backfill	50	tonne	40	2,000
Restoration and Ditch Grading	1	LS	800	800
<u>Watermain Lowering</u>				
Cut and Cap Existing Watermain	2	each	200	400
100mmØ PVC Watermain Pipe installed by Directional Drilling c/w tracer wire	12	m	800	9,600
Hot tap existing watermain with 50mmØ corporation stop, c/w stainless steel saddle for supply during testing procedure. To be removed and corporation stop to be permanently closed upon completion	1	each	1,000	1,000
Supply and install Couplers at connections	2	each	1,000	2,000
Connect new 100mmØ watermain to existing. Both connections to be completed the same day	1	LS	8,000	8,000
New watermain to undergo pressure testing, leakage testing and bacteriological testing as per Municipal Standards prior to connection	1	LS	2,000	2,000
Remove and dispose offsite existing watermain	12	m	60	720
Restoration	1	LS	500	500
Supply and Install 600mmØ Concrete Tile (Station 2+348 to 2+640)	292	m	84	24,528
Supply and Install 525mmØ Concrete Tile (Station 2+640 to 2+820)	180	m	75	13,500
Supply and Install 400mmØ Concrete Tile (Station 2+820 to 3+005)	185	m	54	9,990
Supply and Install 300mmØ Concrete Tile (Station 3+005 to 3+213 and C 0+000 to C 0+230)	438	m	43	18,834
Locate and Connect Existing Lead from DICB #2 to Proposed Drain	1	LS	200	200
Locate and Connect Existing Tiles	2	each	120	240
Remove Existing Basin at Station 1+375 and Grout Leads	1	LS	1,200	1,200
Remove Existing Basin at Station 2+348	1	LS	600	600
Connect Branch "C" to Main Drain	1	LS	300	300
Proposed Catchbasin #3 (900mm x 1200mm) @ Station 1+433 c/w 9m of 400mm dia., Connections to Existing Mains and Berm	1	LS	5,000	5,000

<u>Item Description (Supply and Install New)</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Cost (\$)</u>	<u>Total (\$)</u>
Proposed Junction Box #4 (1800mmx1200mm) at Station 2+196 c/w Connections	1	LS	6,000	6,000
Remove Existing Basin at Station 2+196	1	LS	1,200	1,200
Remove Existing Junction Box at Station 2+196	1	LS	1,200	1,200
Remove and Dispose of Existing Pipes identified on Detail Plan	1	LS	800	800
Extend Branch "B" to JB #4 with 450mmø Concrete Tile	7	m	80	560
450mmø Concrete Tile from JB #4 to South Drain c/w Connections and Elbows	6	m	80	480
400mmø Concrete Tile from JB #4 to North Drain c/w Connections and Elbows	8	m	70	560
Connect 300mmø Tile to Branch "B"	1	LS	250	250
Catchbasin #5 (900mm x 1200mm) @ Station 2+333 c/w Berm	1	LS	3,500	3,500
Supply and Install 525mmø HDPE 45 Degree Elbow Out of CB #5	1	LS	500	500
Catchbasin #6 (900mm x 1200mm) @ Station 2+348	1	LS	3,500	3,500
Catchbasin #7 (900mm x 1200mm) @ Station 3+213 c/w Berm	1	LS	3,500	3,500
Catchbasin #9 (900mm x 1200mm) @ Station C 0+230 c/w Berm	1	LS	3,500	3,500
Sil Fence Downstream of Work	1	LS	500	500
Cross Connection of Existing Drains being Tripled with 350mm dia. Concrete Tile c/w Connections	40	m	100	4,000
Contingency				<u>16,960</u>
Sub Total				354,808

Brown-Rose Drain
Municipality of North Middlesex
July 9, 2026

SPECIFICATION OF WORK

1. Location

The work in this specification is located in Lot 12, Concession 5, Lot 13, Concession 2 to 4 and Lot 14, Concession 2 in The Municipality of North Middlesex.

2. Scope of Work

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

- Brown-Rose Drain (Main Drain):
 - Future specifications for an open channel cleanout and Petty Street Culvert Replacement
 - Watermain lowering on Argyle Street
 - 2,983m of proposed tile drain c/w catch basins and includes:
 - Road Crossing on Argyle Street complete by open cut
- Brown Drain (Branch “B”):
 - 848m of proposed tile drain replacement c/w catch basin
- Brown Drain (Branch “C”):
 - 230m of proposed tile drain replacement c/w catch basin

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 and Engineer who may vary these specifications as to minor details but in no way decrease the proposed capacity of the drain.

All excess material shall be disposed offsite at the expense of the Contractor.

Branch “B” shall be completed before November 30, 2026. The remainder of the improvements shall be completed in the dry with a completion date of September 30, 2027.

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.

6. Utilities

The Contractor is responsible for organizing locates and exposing all the utilities along the length of the drainage works. The utilities shall be located prior to the installation of any tile. If any utilities interfere with the proposed drainage works in a manner not shown on the accompanying Estimate of Cost or profile the Contractor shall notify the Drainage Superintendent and Engineer.

The Contractor is responsible for coordinating the replacement of additional utilities with the utility company if they interfere with the proposed drain. All costs for the utility to replace their services will be outside of this report and shall be borne by the utility as per Section 26 of the Drainage Act.

All additional costs to work around and organize replacement of the utilities not included in the estimate shall be tracked separately and the cost plus a portion of the engineering (25% of the cost) shall be borne by that utility.

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. The Traffic Plan must be approved by the Municipality and County prior to the commencement of any road closures.

- a) The Contractor shall supply, erect and maintain all detour signs and special signs necessary for detours to divert traffic from the area under construction as directed by the 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.
- d) If work is being completed on a Road and or Road Allowance in North Middlesex, the Contractor is required to complete a Road Allowance Work Permit Application available on their website: <https://www.northmiddlesex.on.ca/media/591>. No fees are required.

8. 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 Municipality of North Middlesex shall be notified of the pre-construction meeting at least 48 hours prior.

9. Access and Working Area

Access to the work site for construction and future maintenance shall be from Petty Street and Argyle Street and along the length of the drainage works. Access shall generally be restricted to a width of 6 metres. For future maintenance, access may be along the property lines at the Drainage Superintendents discretion.

The working area for the construction and future maintenance of the tile drains shall be restricted to a width of 20m normally centred on the proposed tile drain. The working area for the open channel shall be from either side of the channel and shall be restricted to 15m past the top of bank. The working area shall extend 10m past the length of the drain to allow for vehicles to turn around. For work within the finished lawns the working area shall be restricted to 10m normally centered on the proposed tile drain.

10. 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. Once the Contractor has located the existing tile and a general alignment has been determined, R. Dobbin Engineering may add additional benchmarks along the length of the drainage works if requested by the Contractor.

11. Removals

The culverts, catch basins, hickenbottoms, outlet pipes, tile, unsuitable or not required excavated material, etc. shall be removed in their entirety and shall be disposed offsite at the expense of the Contractor. Tile under road crossings shall be removed in their entirety.

12. Brushing and Tree Removal

For the tile drain all brush, trees, woody vegetation, stumps etc. shall be removed within the working corridor as determined by the Engineer or Drainage Superintendent. For the open channel all brush, trees, woody vegetation, stumps etc. shall be removed within the channel cross-section and working area in order to facilitate construction or as determined by the Drainage Superintendent or Engineer.

A mechanical grinder attached to an excavator shall be used for the removal of brush and trees. Any brush and trees too large to grind shall be close cut. The Contractor shall stockpile the trees and brush in a single pile on the property in which they were removed or dispose of the trees and brush offsite. 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 discretion of the Drainage Superintendent or Engineer.

13. Excavation of Open Channel (Future)

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

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

Where, as determined by the Drainage Superintendent or Engineer, the banks are unstable the banks shall be re-sloped to 2:1.

14. Installation of Culvert (Future)

The minimum cover is not always adequate during construction and it is the Contractors responsibility to provide additional cover to avoid damage to the pipe.

It is the Contractors responsibility to ensure that the minimum covers are met at the completion of construction. The box culvert shall have a minimum earth cover of 600mm at the completion of construction. The concrete box culvert shall be precast and shall be installed as per OPSS 422. The contractor shall submit shop drawings to the engineer prior to ordering. In the event of a conflict between these specifications and those of the structural designer, the more stringent shall apply. The joints between precast sections shall have connection plates, butyl tape and shall be wrapped with a minimum 600mm width of geotextile to prevent the migration of soil between the joints. Connection plates shall be installed at the joint of each box culvert. The plates shall be 25mm thick on the top slab and 19mm thick on the side walls. The plates shall be placed at an 800mm spacing. The plates and any holes shall be sealed with CS 102 sealant tape, Sikaflex concrete fix sealant or approved equivalent.

The culvert may have concrete block or rip rap end walls. The culvert length is based on utilizing rip rap end walls.

The pipes that shall be extended upstream or downstream of the proposed culvert shall be done with non-perforated HDPE agricultural tubing with a manufactured coupling, elbow and rodent grate.

Road Culverts:

Where there is asphalt, the asphalt shall be sawcut and milled for a thickness of 45mm and 0.30m past the joint. The milled surface shall be tack coated as per OPSS.

The bottom of the excavation shall be excavated to a minimum of 200mm below the proposed bottom of the box culvert. The box culvert shall be bedded with a minimum of 200mm of $\frac{3}{4}$ " clear stone to the underside of the box culvert. The pipe shall be backfilled above the clear stone with Granular "A" in accordance with OPSS 1010, compacted in 300mm lifts. If asphalt is proposed the HL4 and HL3 shall match the existing thicknesses with a minimum thickness of 50mm.

If rip rap end walls are used, they shall consist of 150mm x 300mm quarry stone or approved equal. The area to receive the rip rap shall be graded to a depth of 400mm below finished grade. Filter fabric (Mirafi P150 or approved equal) shall then be placed with any joints overlapped a minimum 600mm. The quarry stone shall then be placed with the smaller pieces placed in the gaps and voids to give it a uniform appearance.

If concrete block end walls are used, they shall consist of concrete blocks with dimensions of approx. 600mm x 600mm x 1200mm, 600mm x 600mm x 2400mm or 300mm x 600mm x 1200mm as required. 600mm x 600mm x 2400mm concrete blocks will be paid at twice the unit price established per block, all others will be at a unit of 1. The top of the culvert shall govern block elevation. The correct block shall be set with the top of the block equal to the top of the culvert. 2400mm wide concrete blocks shall be used as the top block on arch and larger round pipes in order to span between the culvert top and the supporting block. The blocks shall be set at each end of the culvert so that each row of blocks will be offset approx. 100mm from the row below. The bottom row shall consist of one block placed parallel to the culvert. The blocks shall be imbedded a minimum of 300mm into each bank and shall extend into the drain bottom to match the pipe invert or below. Erosion protection shall be placed on the banks next to the end walls. The erosion protection shall consist of 150mm x 300mm quarry stone over filter fabric (Terrafix 270R or approved equal). It shall extend 500mm upstream or downstream and from top of bank to top of bank at each end wall.

The blocks shall be placed over a layer of filter fabric (Terrafix 270R or approved equal). The culvert shall be backfilled in conjunction with the placement of the blocks. The gaps between the culvert and the blocks shall be filled with concrete cinder blocks/bricks and mortar to give the end wall a finished appearance.

15. Locate and Abandon Existing Drain

The existing tile drain shall be exposed at the discretion of the Drainage Superintendent or Engineer and Contractor in order to adequately determine the proposed alignment. The existing north drain from Station 0+509 to 0+551 shall be removed with the south drain remaining in place. The existing twinned municipal drain from Station 0+551 to 2+196 shall remain in place. The existing drain from Station 2+196 to 3+213, B 0+302 to B 1+150 and C 0+000 to 0+230 shall be abandoned and crushed.

16. Strip and Place Topsoil

In farmers fields 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 its pre-construction condition.

17. 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, 2000D. Tile shall have a circular interior and exterior shape.

Where the concrete tile depth is greater than 2.5m the tile shall be bedded to the spring line with clear stone.

HDPE pipe 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. The pipe shall be backfilled with Granular "A" under driveways.

The proposed tile shall run in between the two existing tiles from Station 0+509 to 2+196 (with the relocation of the north drain from Station 0+509 to 0+551). The proposed tile for the remainder of the drainage works shall run in the low run and/or adjacent the existing. The exact location is to be determined at the time of construction.

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 (HDPE 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**. The bedding, except where the depth of the tile is greater than 2.5m, shall be included in the Contractors unit price for this item if being completed by excavator. 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, they will do so in one area.

The Landowners are also warned to minimize farm equipment crossing over the trench or along the length of the trench for 1 year after construction in order to protect the tile.

18. Outlet Works

The outlet works for the drain shall consist of HDPE smooth wall pipe as shown on the profile (320 kPa) and detailed plan with a manufactured rodent rotating grate on all outlets. 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 all outlets and to convey flow to the existing road culvert. Rip rap shall be made up of 150mm to 300mm quarry stone or approved equal. The area to receive the rip rap shall first be graded to allow the placement of the rip rap to a depth of 400mm below finished grade. After grading, a layer of filter fabric (Mirafi P150 or approved equal) is to be placed with any joints overlapped a minimum of 600mm. Rip rap shall then be placed with the smaller pieces placed in the gaps and voids to give it a uniform appearance. The erosion protection shall be placed in order align the flow from the three tiles into the existing road culvert.

19. Road Crossing: Argyle Street

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 pipe and culvert replacements shall be to the same specifications.

Where corrugated steel pipe (CSP) is specified, the Contractor shall supply, install, and backfill aluminized CSP with a minimum wall thickness of 3.5mm in all cases. All corrugation profiles shall be of helical lockseam manufacture using 68 x 13mm corrugations. Future culvert replacements shall be to the same specifications.

The proposed tile shall be installed in the same general location as the existing tile, unless otherwise stated on the drawings or in the specification. The location of the tile may be

moved a short distance if approved by the Engineer or Drainage Superintendent.

The bottom of the excavation shall extend 150mm below the bottom of the tile with any over excavation backfilled with $\frac{3}{4}$ " clear stone material. When the tile has been installed to the proper grade and depth, the excavation shall be backfilled with $\frac{3}{4}$ " clear stone from the bottom of the excavation to 300mm above the proposed tile. The clear stone shall be considered bedding. 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 to 150mm below finished grade with OPS Granular "A". Outside the road allowance excavated material can be used. Granular "A" shall be mechanically compacted to 100% modified standard proctor density.

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

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

20. Watermain Lowering

The watermain lowering shall be completed by Directional Drilling.

The existing watermain is 100mm dia. PVC. The existing watermain shall be removed at the discretion of the Engineer, Municipality and OCWA. The size and material of the watermain shall be verified by the Contractor prior to the ordering of any materials.

The Contractor shall be responsible for notifying the Municipality of North Middlesex, Ontario Clean Water Agency and the Engineer prior to the lowering of the watermain.

The watermain shall be installed in accordance with OPSS, local Municipal standards and with a minimum cover below the proposed tile of 500mm.

The proposed watermain shall be Certa-Lok PVC Pipe or approved equivalent.

Contractor shall confirm the line and grade of existing mains by means of excavation prior to commencing pipe installation. Physical ties are to be free from bends and elbows.

The distribution system shall be backflow protected and pressured tested to 1050 kPa for a period not less than two hours. All leaking joints, fitting and/ or appurtenances shall be tightened and all defective materials shall be removed and replaced. The maximum allowable leakage is 1.85L per day per mm of diameter, per km of length and all necessary steps to reduce the leakage to the allowable amount shall be taken. When the installation is completed and the leakage test and pressure test results are satisfactory, the system shall be

thoroughly swabbed and flushed to remove all debris and unwanted material. The system shall be disinfected using a chlorine solution maintained at a minimum concentration of 50mg/L throughout the length of the watermain. The residual concentration at the end of the 24 hours shall be a minimum of 25mg/L. If the test of the chlorine solution is satisfactory, the contents of the watermain shall be flushed out completely and recharged with municipal water. Water samples of the recharge water in the system shall be analyzed for contamination and the system shall not be put into operation until test results indicate no contamination. Disinfection procedures shall be repeated as necessary. All testing and disinfection shall be carried out by the Contractor in the presence of the Municipality's representative and in accordance with current provincial standards.

21. Catch Basins

Structure	Station	Size (mm)	Grate Elev. (m)	Outlet Pipe Elev. (m)	Inlet Pipe Elev. (m)
EXISTING O/S DICB #1	0+568	900x1200	Inlet 225.20	To Remain as Existing with New Lead to South	
EXISTING O/S DICB #2	0+632	900x1200	Inlet 225.38	To Remain as Existing	
CB #3 c/w Berm	1+433	900x1200	228.10	226.49 (W) / 226.55 (N) / 226.55 (S) 525 / 400 / 400	226.51 (E) 450
CB #5 c/w Berm	2+333	900x1200	230.67	229.30 (W) / 229.30 (S) 525 / 525	229.31 (E) 750
CB #6	2+348	900x1200	230.58	226.32 (W) 750	226.33 (E) 600
CB #7 c/w Berm	3+213	900x1200	234.92	233.59 (W) 300	233.60 (E) 250 k/o
CB #8 c/w Berm	B 1+150	600x600	236.10	234.40 (W) 200	234.45 (E) 200 k/o
CB #9 c/w Berm	C 0+230	900x1200	235.80	234.31 (W) 250	234.35 (E) 250 k/o

The catch basins shall be square precast concrete structures as noted above and shall have a birdcage type grate. The catch basins shall be located with the backside at the property line and at the locations 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. 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.

As part of this item the Contractor shall grade the area in the vicinity of the basin to ensure proper drainage.

Rip rap may be installed at the catch basins as determined by the Engineer or Drainage Superintendent.

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.

22. Junction Boxes

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

Structure	Station	Type (mm)	Top Elev. (m)	Outlet Pipe Elev. (m)	Inlet Pipe Elev. (m)
JB #4	2+196	1800x1200	229.90	229.10 (W) / 229.20 (W) / 229.20 (S) 450 / 400 / 450	229.16 (E) / 229.16 (E) 525 / 525

The junction boxes shall be square precast concrete structures as noted above.

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

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

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

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

23. Seeding/Restoration

All areas disturbed by construction shall be restored to their pre-construction state.

All grass areas disturbed by construction, shall be restored with 50mm of screened topsoil and hydroseeded. The timing of the seeding shall be approved by the Drainage Superintendent or Engineer. The side slopes of the open channel shall be restored with seed.

24. Subsurface Drainage

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

The existing drains shall be cross connected to the proposed drain with 350mm dia. tile at approximately Stations 0+800, 1+100, 1+600 and 1+850 or as directed by the Engineer.

A suitable length of equivalent sized PE agricultural tubing shall be used to connect the drain to the open channel and tile drain. 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.

25. Environmental Considerations

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

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

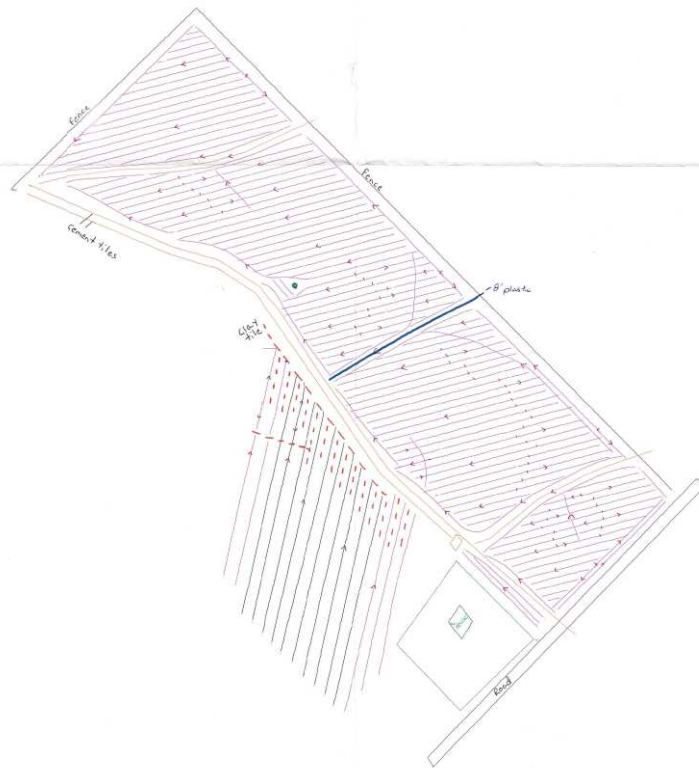


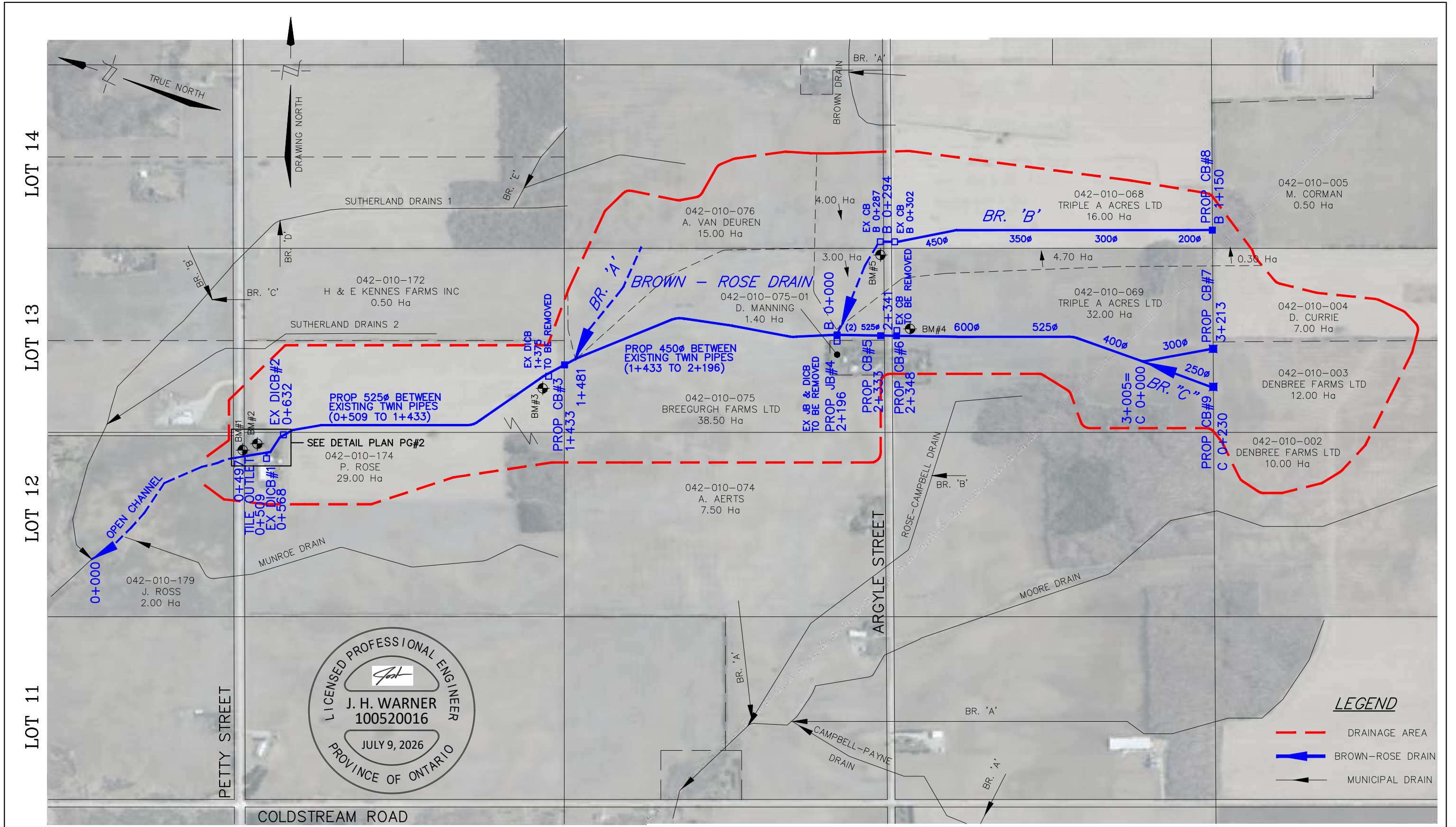
Willemse Drainage Inc.
2437 Glasgow St.
Strathroy, Ontario N7G 3H7
519 777 1778
willemse@rogers.com
LTD. 100% of the shares owned and
operated by Willemse Drainage Inc. & L.L.C. 100%
Owned by AGRIUM
Farm Name
Fid TONYARTS202.lla
-8133551 43054438
-81332788 43049796
North

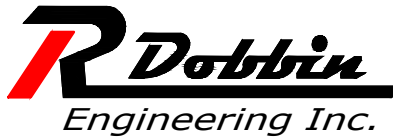
Tie Sizes Feet
2
4 62,500
8

PipeLine
Road
Boundary
Old Fence

1 inch = 258.16 Feet







4218 Oil Heritage Road
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PROJECT No.
2025-1757

DRAWING NAME:
Brown - Rose Drain Plan

APPROVED
J. WARNER

CHECKED
B. VAN RUITENBURG

DRAWN
C. SAUNDERS

NO.	REVISIONS	DATE	BY
1	FINAL REPORT	JULY 9, 2026	CS

SCALE: 1:10,000
0 150 300

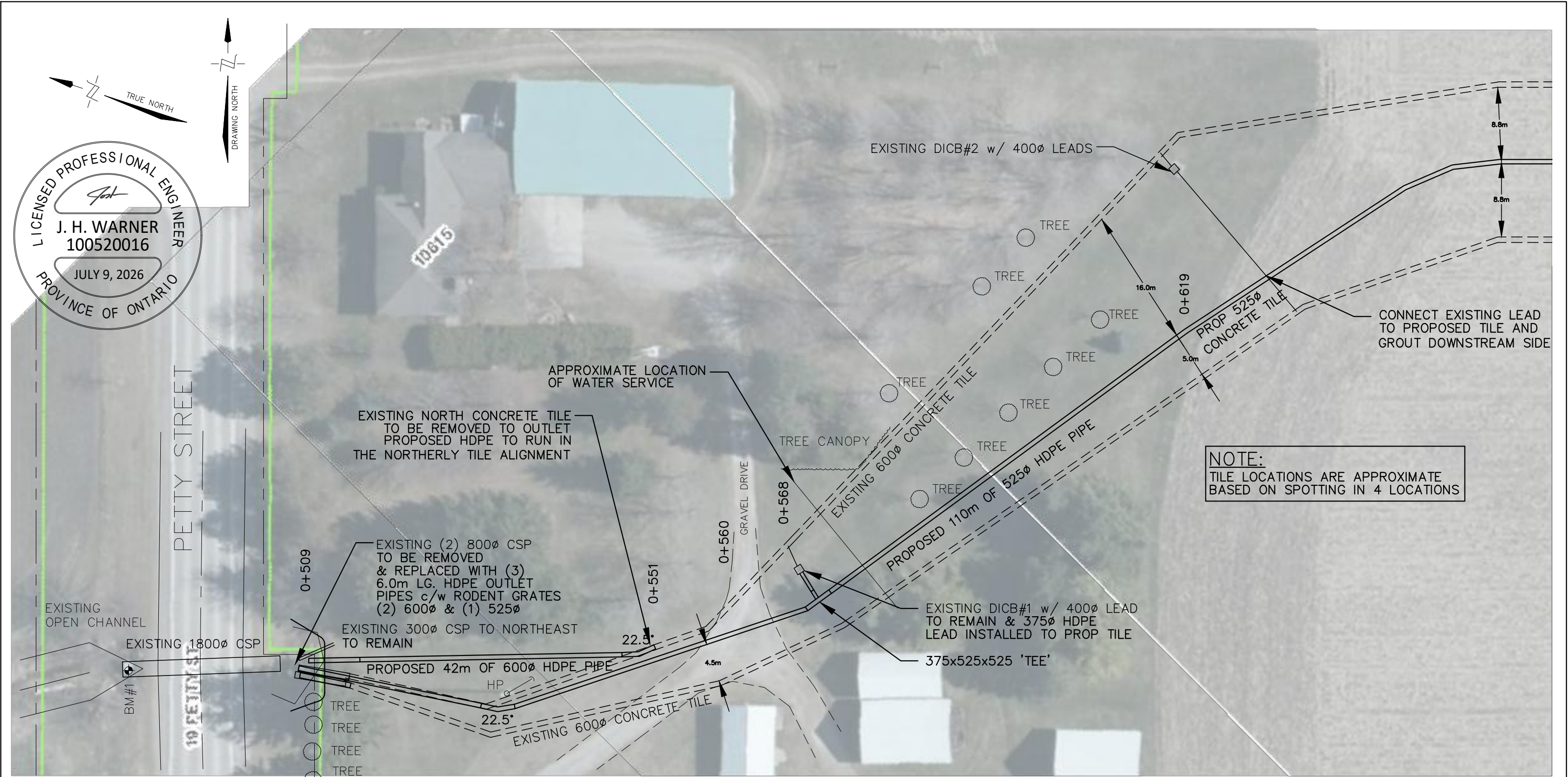
MUNICIPALITY of NORTH MIDDLESEX

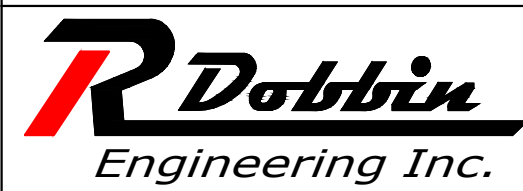
BROWN - ROSE DRAIN
PLAN

1

OF 11

Last Updated: May 18, 2026





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

DRAWING NAME:
Brown-Rose Drain Detail Plan

PROJECT No.
2025-1757

APPROVED J. WARNER	NO.	REVISIONS	DATE	BY
CHECKED D. MOORES	1	FINAL REPORT	JULY 9, 2026	CS
DRAWN C. SAUNDERS	SCALE: 1: 500 0 4 8 12m			

MUNICIPALITY of NORTH MIDDLESEX

BROWN - ROSE DRAIN
DETAIL PLAN

2
OF 11

GENERAL NOTES

1. BENCHMARK No.1 ELEV. 225.51

TOP OF EAST END OF EXISTING 1800ø CSP CROSSING PETTY STREET. CULVERT #1, ST. 0+497

BENCHMARK No.2 ELEV. 225.20

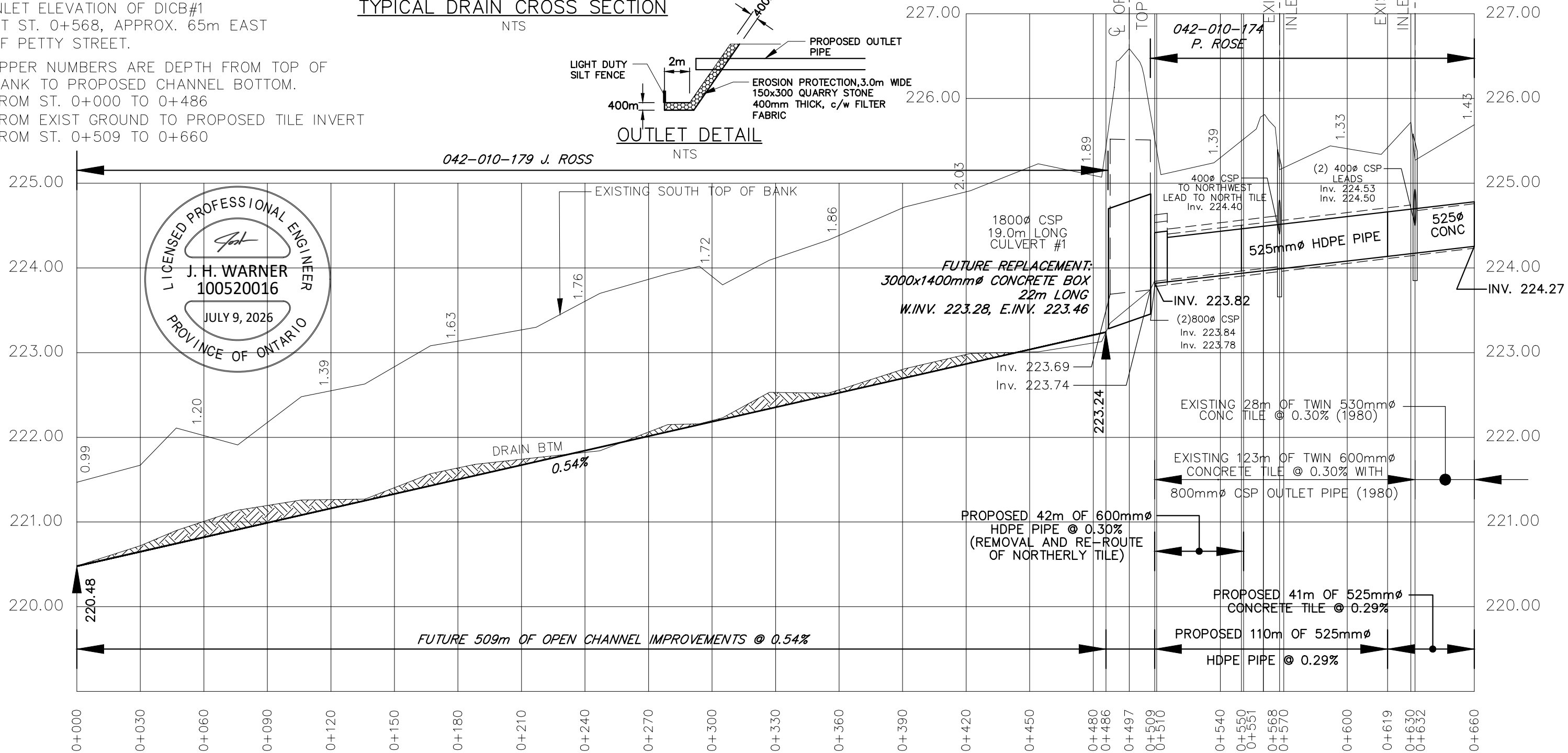
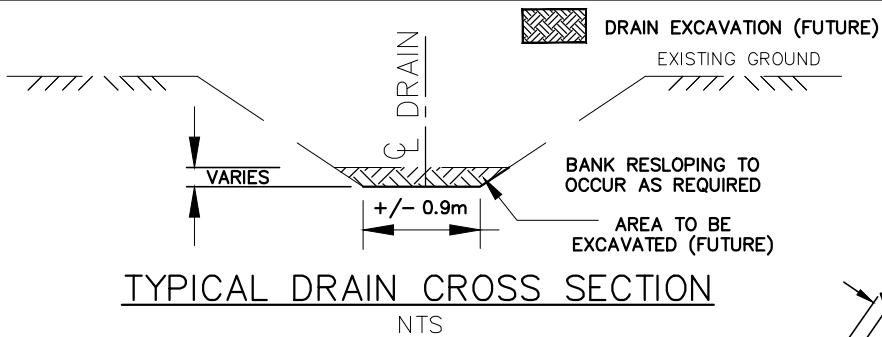
INLET ELEVATION OF DICB#1

AT ST. 0+568, APPROX. 65m EAST OF PETTY STREET.
2. UPPER NUMBERS ARE DEPTH FROM TOP OF BANK TO PROPOSED CHANNEL BOTTOM.

FROM ST. 0+000 TO 0+486

FROM EXIST GROUND TO PROPOSED TILE INVERT

FROM ST. 0+509 TO 0+660



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DRAWING NAME:
Brown-Rose Drain Profile 1

PROJECT No.
2025-1757

APPROVED	NO.	REVISIONS	DATE	BY
J. WARNER				
CHECKED	1	FINAL REPORT	JULY 9, 2026	CS
B. VAN RUITENBURG				
DRAWN				
C. SAUNDERS				

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

MUNICIPALITY of NORTH MIDDLESEX

BROWN - ROSE DRAIN

PROFILE

3

OF 11

GENERAL NOTES

1. BENCHMARK No.2 ELEV. 225.20

INLET ELEVATION OF DICB#1

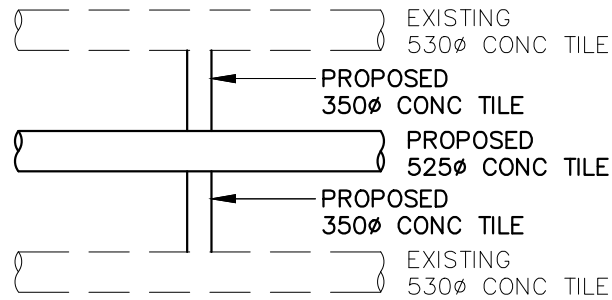
AT ST. 0+568, APPROX. 65m EAST

OF PETTY STREET.
2. CROSS CONNECTION BETWEEN 3 DRAINS TO BE

COMPLETED APPROXIMATELY AT STATIONS:

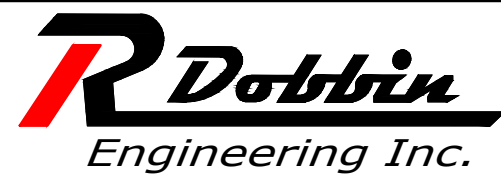
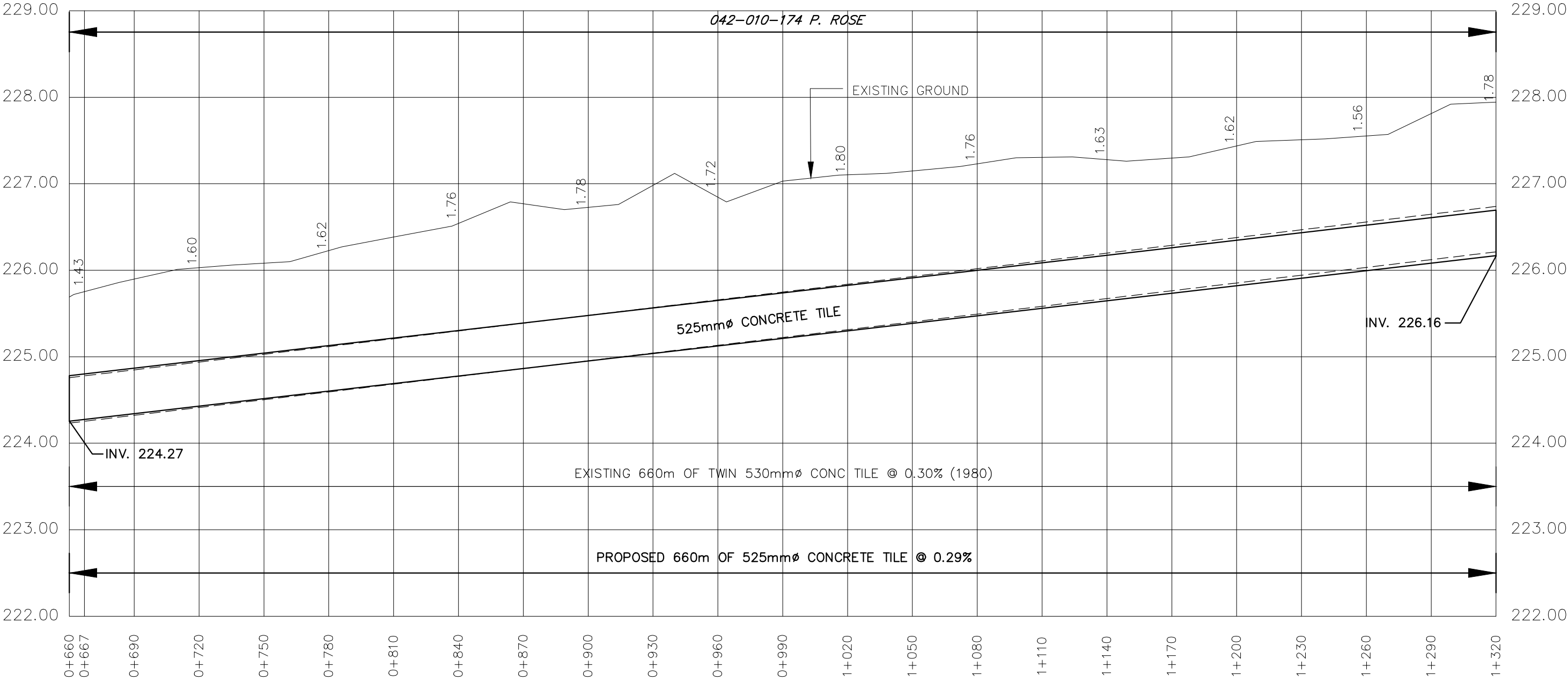
0+800, 1+100, 1+600, 1+850
3. UPPER NUMBERS ARE DEPTH FROM EXISTING

GROUND TO THE PROPOSED INVERT.



TYPICAL CROSS CONNECTION DETAIL

NTS



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DRAWING NAME:
Brown-Rose Drain Profile 2

PROJECT No.
2025-1757

APPROVED	NO.	REVISIONS	DATE	BY
J. WARNER				
CHECKED	1	FINAL REPORT	JULY 9, 2026	CS
B. VAN RUITENBURG				
DRAWN				
C. SAUNDERS				

SCALE: 1:2,000

0 20 40 60m

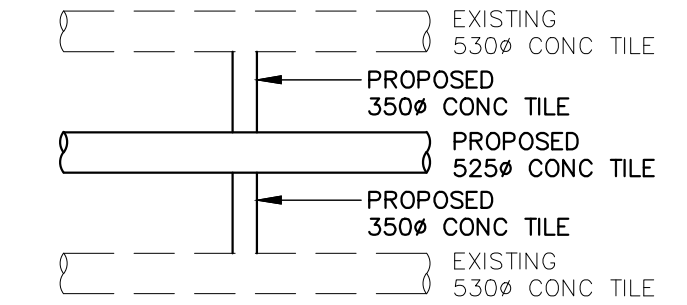
MUNICIPALITY of NORTH MIDDLESEX

BROWN - ROSE DRAIN

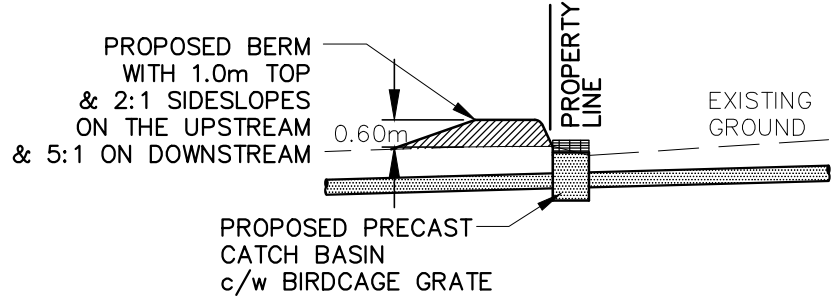
PROFILE

GENERAL NOTES

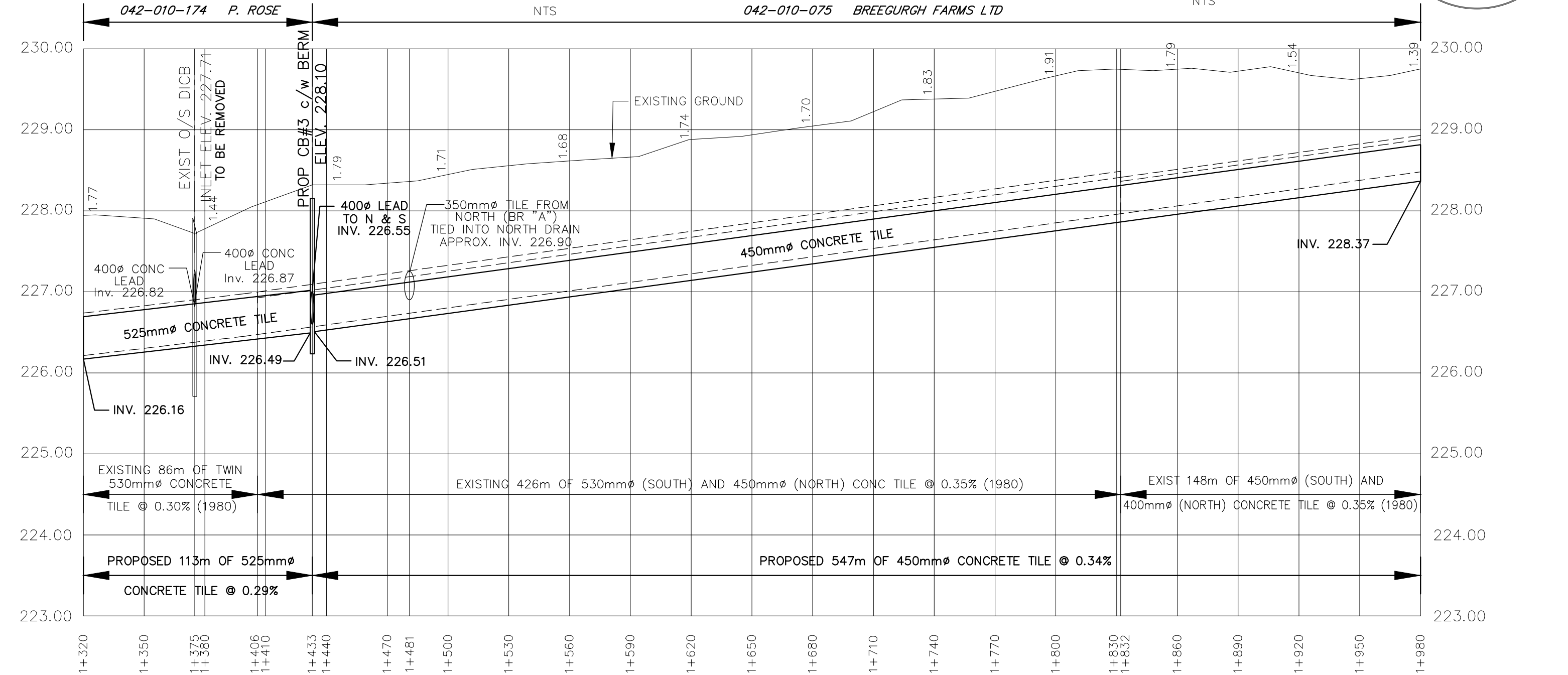
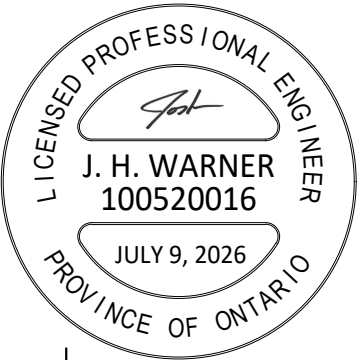
- 1. BENCHMARK No.3 ELEV. 227.71
INLET ELEVATION OF DICB#1
AT ST. 1+375
- 2. CROSS CONNECTION BETWEEN 3 DRAINS TO BE
COMPLETED APPROXIMATELY AT STATIONS:
0+800, 1+100, 1+600, 1+850



TYPICAL CROSS CONNECTION DETAIL



TYPICAL BERM DETAIL



DRAWING NAME:
Brown-Rose Drain Profile 3

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PROJECT No.
2025-1757

APPROVED
J. WARNER

CHECKED
B. VAN RUITENBURG

DRAWN
C. SAUNDERS

NO.	REVISIONS	DATE	BY
1	FINAL REPORT	JULY 9, 2026	CS

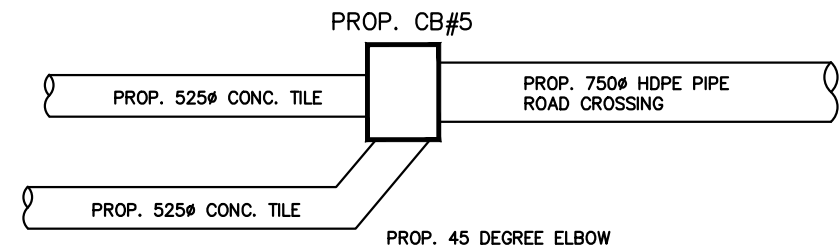
SCALE: 1:2,000
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MUNICIPALITY of NORTH MIDDLESEX
BROWN - ROSE DRAIN
PROFILE

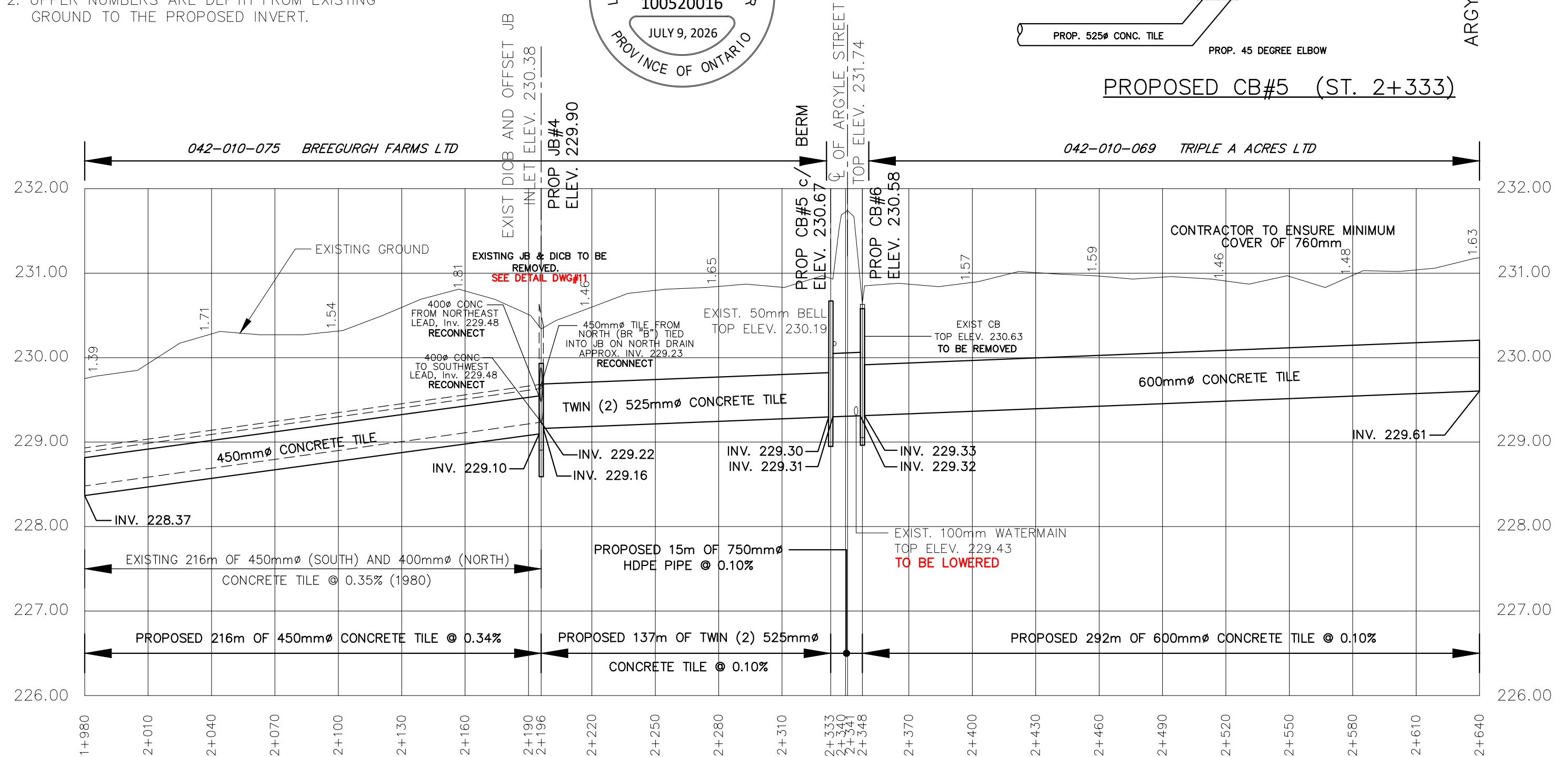
5
OF 11

GENERAL NOTES

- 1. BENCHMARK No.4 ELEV. 230.63
TOP OF EXISTING O/S CATCHBASIN
ON EAST SIDE OF ARGYLE STREET
ST. 2+348
- 2. UPPER NUMBERS ARE DEPTH FROM EXISTING
GROUND TO THE PROPOSED INVERT.



PROPOSED CB#5 (ST. 2+333)



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DRAWING NAME:
Brown-Rose Drain Profile 4

PROJECT No.
2025-1757

APPROVED
J. WARNER

CHECKED
B. VAN RUITENBURG

DRAWN
C. SAUNDERS

NO.	REVISIONS	DATE	BY
1	FINAL REPORT	JULY 9, 2026	CS
SCALE: 1:2,000			
0 20 40 60m			

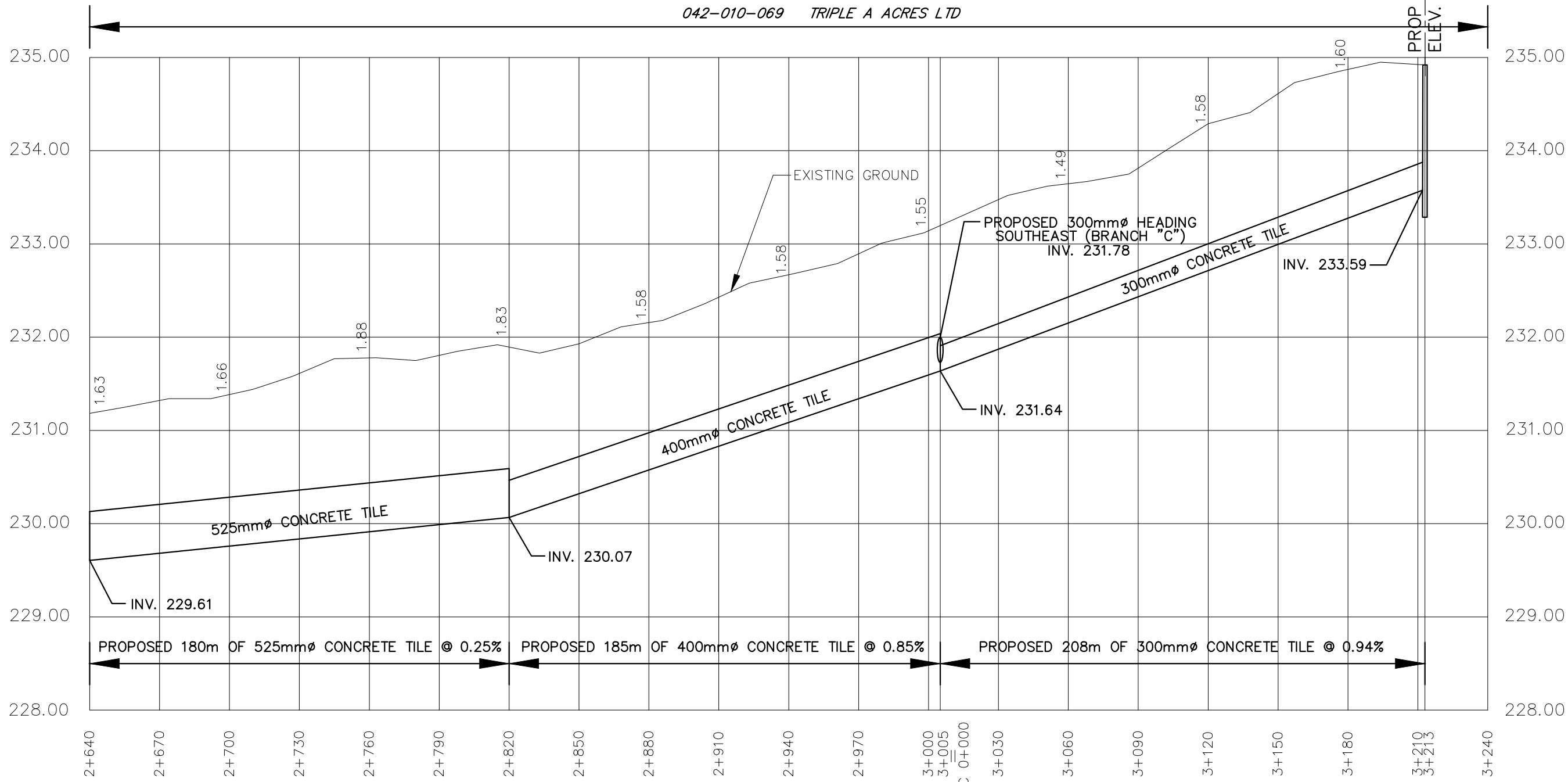
MUNICIPALITY of NORTH MIDDLESEX
BROWN - ROSE DRAIN
PROFILE

6
OF 11

Last Updated: May 18, 2026

GENERAL NOTES

- 1. BENCHMARK No.4 ELEV. 230.63
TOP OF EXISTING O/S CATCHBASIN
ON EAST SIDE OF ARGYLE STREET
ST. 2+348. TRANSFER PRIOR TO REMOVAL
- 2. UPPER NUMBERS ARE DEPTH FROM EXISTING
GROUND TO THE PROPOSED INVERT.



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DRAWING NAME:
Brown-Rose Drain Profile 5

PROJECT No.
2025-1757

APPROVED	NO.	REVISIONS	DATE	BY
J. WARNER				
CHECKED	1	FINAL REPORT	JULY 9, 2026	CS
B. VAN RUITENBURG				
DRAWN	SCALE: 1:2,000			
C. SAUNDERS	0 20 40 60m			

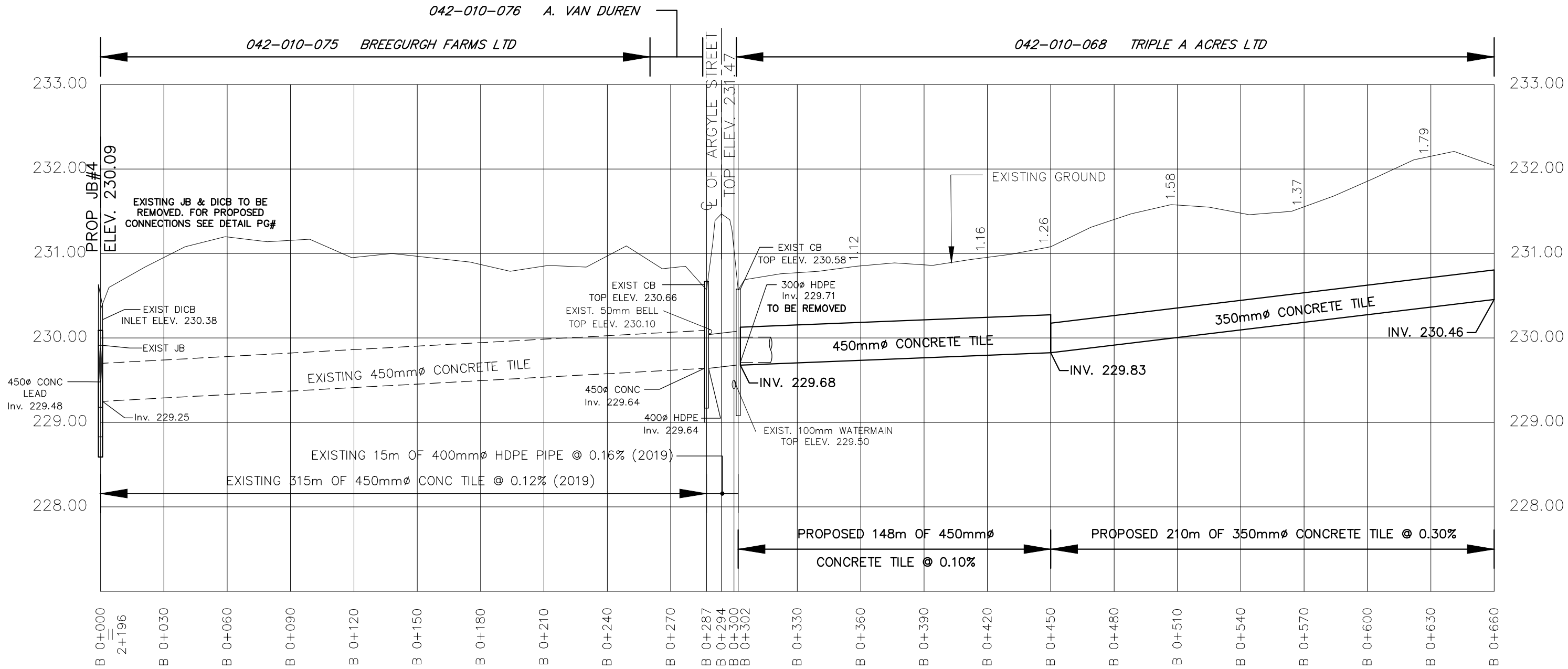
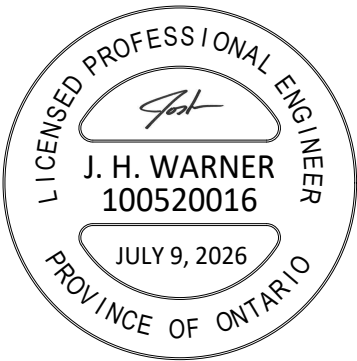
MUNICIPALITY of NORTH MIDDLESEX

BROWN - ROSE DRAIN

PROFILE

GENERAL NOTES

- 1. BENCHMARK No.5 ELEV. 230.66
NORTHEAST CORNER OF EXISTING CB ON
WEST SIDE OF ARGYLE STREET
STATION B 0+287
- 2. UPPER NUMBERS ARE DEPTH FROM EXISTING
GROUND TO THE PROPOSED INVERT.





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DRAWING NAME:
Brown-Rose Drain 'Branch B' Profile 1

PROJECT No.
2025-1757

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J. WARNER				
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B. VAN RUITENBURG				
DRAWN				
C. SAUNDERS				

SCALE: 1:2,000



MUNICIPALITY of NORTH MIDDLESEX

BROWN - ROSE DRAIN BRANCH 'B'

PROFILE

8

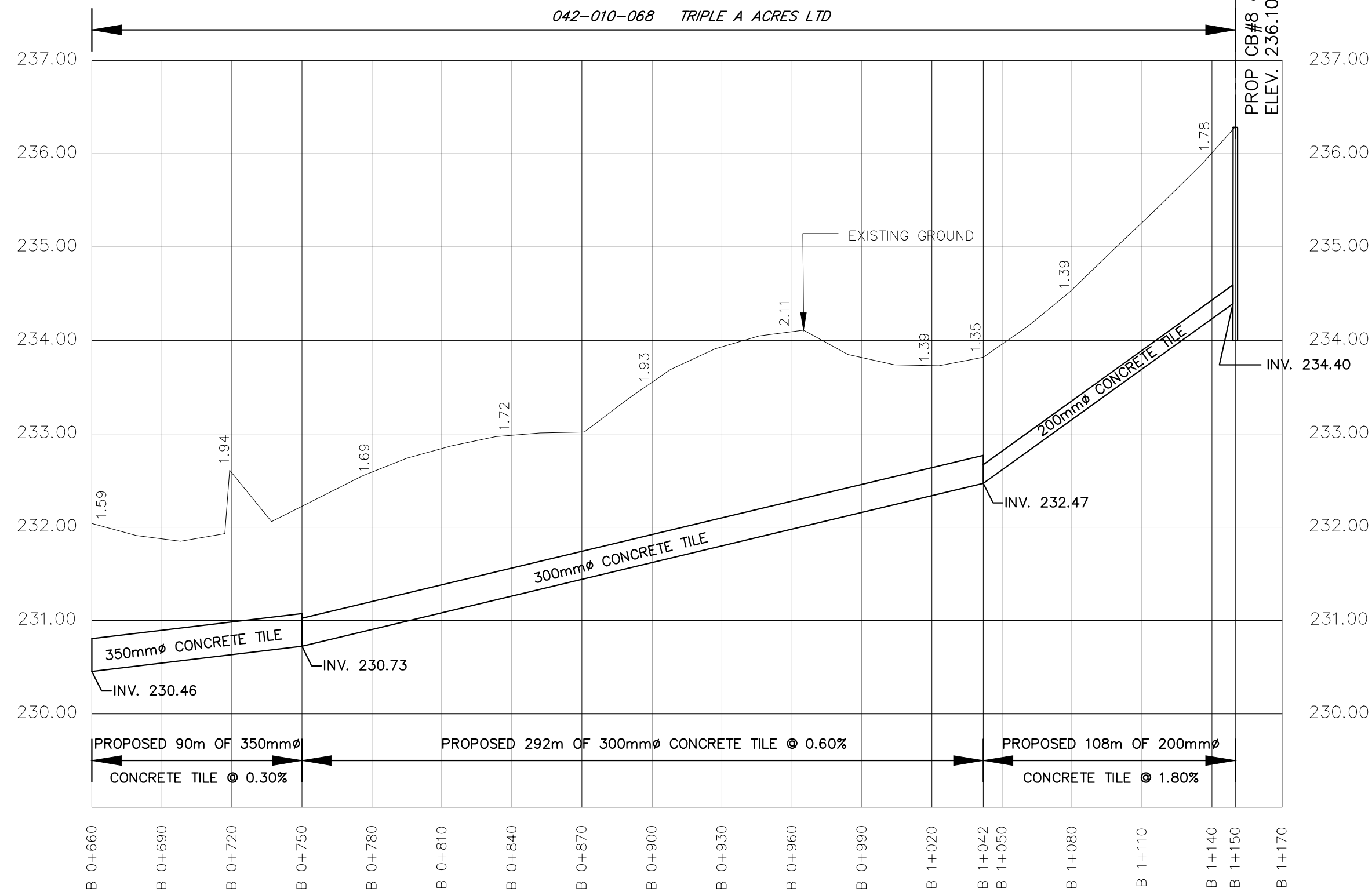
OF 11

Last Updated: May 18, 2026

GENERAL NOTES

1. BENCHMARK No.5 ELEV. 230.66
NORTHEAST CORNER OF EXISTING CB ON
WEST SIDE OF ARGYLE STREET
STATION B 0+287

2. UPPER NUMBERS ARE DEPTH FROM EXISTING
GROUND TO THE PROPOSED INVERT.



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DRAWING NAME:
Brown-Rose Drain 'Branch B' Profile 2

PROJECT No.
2025-1757

APPROVED J. WARNER	NO.	REVISIONS	DATE	BY
CHECKED B. VAN RUITENBURG	1	FINAL REPORT	JULY 9, 2026	CS
DRAWN C. SAUNDERS	SCALE: 1:2,000 0 20 40 60m			

MUNICIPALITY of NORTH MIDDLESEX

BROWN - ROSE DRAIN BRANCH 'B'

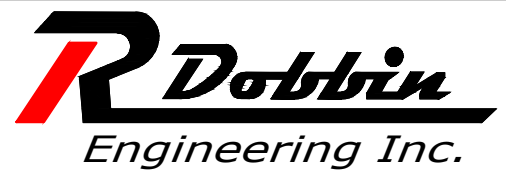
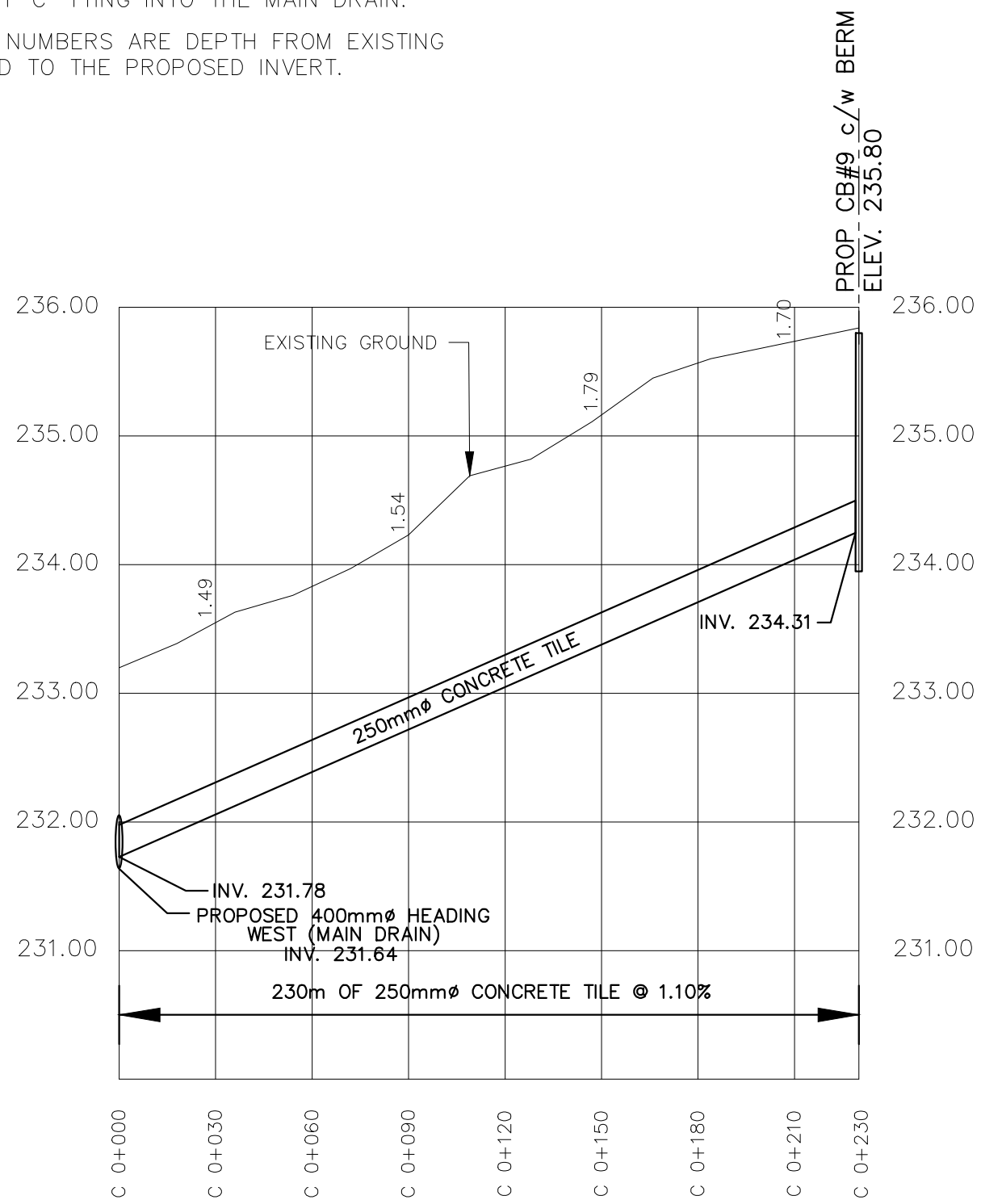
PROFILE

9
OF 11

Last Updated: May 18, 2026

GENERAL NOTES

1. BENCHMARK ELEV. TBD
- PRIOR TO CONSTRUCTION. R. DOBBIN ENGINEERING
TO PROVIDE A BENCHMARK IN THE LOCATION OF
BRANCH 'C' TYING INTO THE MAIN DRAIN.
2. UPPER NUMBERS ARE DEPTH FROM EXISTING
GROUND TO THE PROPOSED INVERT.



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DRAWING NAME: Brown-Rose Drain 'Branch C' Profile 1
PROJECT No. 2025-1757

APPROVED	NO.	REVISIONS	DATE	BY
J. WARNER				
CHECKED	1	FINAL REPORT	JULY 9, 2026	CS
B. VAN RUITENBURG				
DRAWN				
C. SAUNDERS				

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

MUNICIPALITY of NORTH MIDDLESEX

BROWN - ROSE DRAIN BRANCH 'C'

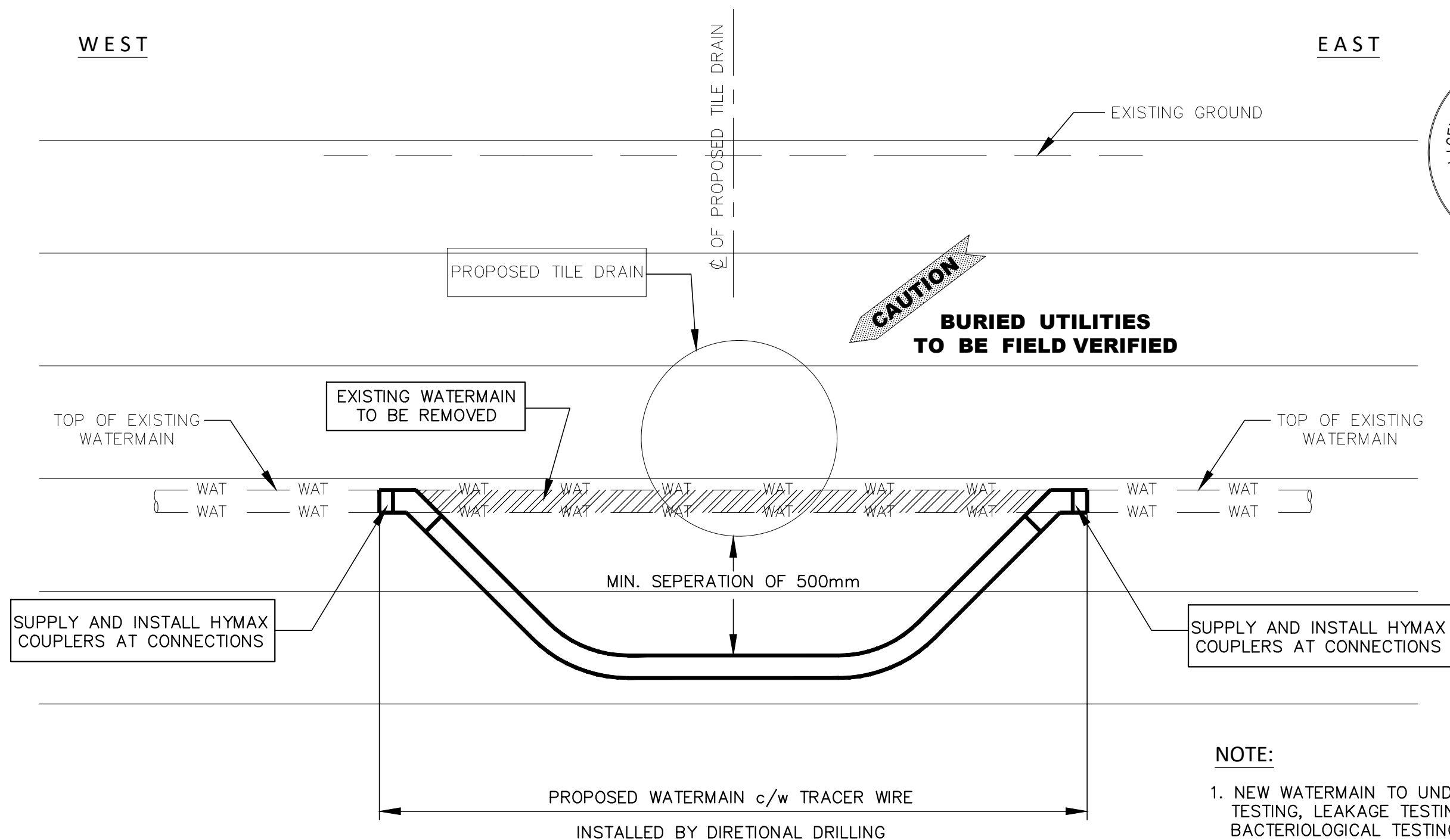
PROFILE



Last Updated: May 18, 2026

WEST

EAST

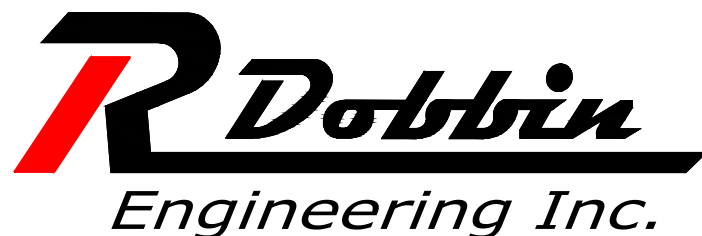


NOTE:

1. NEW WATERMAIN TO UNDERGO PRESSURE TESTING, LEAKAGE TESTING AND BACTERIOLOGICAL TESTING AS PER MUNICIPAL STANDARDS.
2. CONNECTIONS TO EXISTING WATERMAIN TO BE COMPLETED THE SAME DAY.

WATERMAIN LOWERING DETAIL

NTS



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