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April 9, 2026

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

Gentlemen and Mesdames:

Re: Brown Drain (2026)

In accordance with your instructions, R. Dobbin Engineering Inc. has undertaken an examination of the Brown Drain in the Municipality of North Middlesex.

Authorization under the Drainage Act

This Engineers Report that has been prepared under Section 78 of the Drainage Act as per a request from an affected Landowner.

R. Dobbin Engineering Inc. was appointed by council on July 16, 2025.

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

Existing Conditions

The Brown Drain commences as a 200mm dia. tile on the south (drawing south) side of Argyle Street in the property with Roll Number 042-010-068. The drain then crosses the roadway and travels in a northeasterly direction for approximately 70m before turning and heading in generally an easterly direction as a 250mm dia. tile for approximately 600m. The drain then crosses Nairn Road with an offset catch basin on both sides of the road. East of Nairn Road the

drain continues as a 300mm dia. tile to its outlet in the open channel portion of the Brown Drain. The open channel continues easterly for 30m where it then outlets into a watercourse on the north side of Nairn Road in the property with Roll Number 042-010-080.

Branch 'A' commences on the south side of Argyle Street, crosses the roadway and continues as a 150mm dia. tile in a northerly direction to its outlet in the main drain.

Background

Under an Engineer's report dated October 12, 1990 the Brown Drain and Branch 'A' was incorporated/constructed under a petition. At this time, the open channel from the natural watercourse to the tile outlet was deepened, the tile drain was replaced downstream of Nairn Road and the remainder of the infrastructure was incorporated. The report did not speak to the initial installation of the incorporated infrastructure.

Drain Classification

The Brown Drain & Branch 'A' are currently Not Rated according to the Department of Fisheries and Oceans (DFO) classification as presented by the Ontario Ministry of Agriculture, Food and Rural Affairs Agricultural Information Atlas.

Approvals

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

On-Site Meeting

A site meeting was held on August 7th, 2025.

The following were present at the meeting:

- Josh Warner (R. Dobbin Engineering)
- Joanne Sadler (Drainage Superintendent, Municipality of North Middlesex)
- Kristyn Wilson (Drainage Clerk, Municipality of North Middlesex)
- Amanda Van Duren (Landowner)
- Glen Rollings (Landowner)

The following is a brief summary of the meeting:

- General discussion of the Drainage Act and Landowners rights under the Drainage Act.
- Landowner discussed improving Branch 'A' along with the main drain.
- Landowners discussed the river level at the outlet affects the upstream lands.

- It was later requested that the drain be designed to the 50mm/ 24hr coefficient.
- No adverse soil conditions were noted at the site meeting.

Draft Report

A draft report, dated March 3, 2026 was sent to all the affected Landowners and a meeting was held on April 9, 2026 to go over the report and address any questions and concerns related to the draft report. The following were present at the meeting:

- Josh Warner (R. Dobbin Engineering)
- Joanne Sadler (Drainage Superintendent, Municipality of North Middlesex)
- Kristyn Wilson (Drainage Clerk, Municipality of North Middlesex)
- Rod Dupuis (Ontario Clean Water Agency)
- Craig Scott (Ontario Clean Water Agency)
- Kristyn Wilson (Drainage Clerk, Municipality of North Middlesex)
- Glenn Rollings (Landowner)
- John Van Deuren (Landowner)
- Anne Marie Van Deuren (Landowner)

The following is a brief summary of the meeting:

- Landowners requested that the drain be completed prior to November 30, 2026.
- No major concerns were brought forward.

Design

The proposed drain shall be designed to accommodate a drainage coefficient of 50mm / 24 hours. Tile design criteria includes a minimum tile depth of 760mm.

Recommendations

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

1. The open channel downstream of the tile outlet be cleaned to accommodate the proposed tile (Station 0+000 to 0+030).
2. The Brown Main Drain shall be replaced from Station 0+030 to 0+865. The existing tile drain shall be crushed and abandoned as part of the drainage works. The watermain on Nairn Road shall be lowered in order to support the proposed improvements.
3. The Brown Drain Branch "A" from the Main Drain (Station Br 0+000) to just south of Argyle Street (Station Br 0+113) shall be replaced and the existing drain shall be crushed and abandoned as part of the drainage works.

Estimate of Cost

It is recommended that the work be carried out in accordance with the accompanying Specification of Work and Profile that forms part of this Report. There has been prepared an Estimate of Cost in the amount of \$239,624, including engineering of the report, attending the Meeting to Consider the Report, attending the Court of Revision, and an estimate for tendering, contract administration and inspection. Appearances before appeal bodies have not been included in the cost estimate.

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

Assessment

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

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

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

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

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

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

1. As per Section 26 of the Drainage Act, the roads and utilities have been assessed the increased cost of the drainage works caused by the existence of the works of the public

utility or road. The road crossings, with the exception of the extra cost to locate and work around utilities, have been assessed with 100% of the estimated cost assessed as a special benefit assessment to the road authority. The utilities have been assessed with 100% of the estimated cost to work around that utility and the daylighting costs as a special benefit assessment to that utility. The road crossings and the cost to locate and work around utilities shall be tendered separately with the actual cost-plus engineering being assessed to the owner of the road authority or utility as a special benefit assessment. The special benefit assessments to roads and utilities shall be calculated as follows:

Telecom Special Benefit Assessment= $1.0176 \text{ (Net Tax)} \times \text{Tendered Cost to Locate and Work Around Telecom} \times 1.25 \text{ (For Engineering)} + \$825 \text{ (Daylighting and Surveying Utilities)}$

Watermain Special Benefit Assessment= $1.0176 \text{ (Net Tax)} \times \text{Tendered Cost to Locate and Work Around Watermain} \times 1.25 \text{ (For Engineering)} + 1.0176 \text{ (Net Tax)} \times \text{All costs as part of Watermain Lowering on Nairn Road} \times 1.20 \text{ (For Engineering)} + \$2,475 \text{ (Daylighting and Surveying Utilities)}$

Nairn Road Special Benefit Assessment= $1.0176 \text{ (Net Tax)} \times \text{Tendered Costs for all items under Crossing Replacement except the Utilities} \times 1.25 \text{ (For Engineering)}$

Argyle Street Special Benefit Assessment= $1.0176 \text{ (Net Tax)} \times \text{Tendered Costs for all items under Crossing Replacements except the Utilities} \times 1.25 \text{ (For Engineering)}$

2. Catch Basins have generally been assessed as a benefit assessment with 50% of the estimated cost assessed to the upstream property and 50% assessed to the downstream property.
3. The open channel works have been assessed with 10% of the cost applied as a benefit assessment and the remainder applied as outlet assessment to the upstream lands and roads based on equivalent hectares. The tile drain on the property with Roll Number 042-010-080 has been assessed with 40% of the cost applied as a benefit assessment and the remainder applied as outlet assessment to the upstream lands and roads based on equivalent hectares.
4. The additional cost to provide a drainage coefficient above the 38mm/24hrs has been assessed to the watershed, based on equivalent hectares. The cost has been applied as a special benefit to agricultural properties. These costs shall be pro-rated with the rest of the drainage works but will not be eligible for grant as per OMAFA ADIP Policies.

5. The remaining cost of the drainage works has generally been assessed with 50% of the cost applied as a benefit assessment and the remainder applied as outlet assessment to the upstream lands and roads based on equivalent hectares.

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

Allowances

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

Under Section 30 of the Drainage Act, the Engineer shall determine the amount to be paid to persons entitled thereto for damage, if any, to ornamental trees, lawns, fences, land and crops occasioned by the disposal of material removed from a drainage works. This shall be considered an allowance for damages.

Allowances have been made, where appropriate, as per Section 29 of the Drainage Act for right-of-way and as per Section 30 of the Drainage Act for damages to lands and crops. Allowances for right of way are based on a land value of \$50,000.00 per hectare (\$20,000.00 per acre). Allowances for crop loss are based on \$2,000.00 per hectare for the first year and \$1,000.00 for the second year (\$3,000.00 per hectare total).

Access and Working Area

Access to the work site for construction and future maintenance shall be from Nairn Road 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 proposed tile drain downstream of Nairn Road shall be restricted to a width of 10m normally centred on the proposed tile drain due to the number of trees. The working area for the construction and future maintenance of the remainder of the tile drain shall be restricted to a width of 22m normally centred on the proposed tile drain. The working area for the open channel shall be from the south side (road side) of the channel and shall be restricted to one lane. The working area shall extend 10m past the length of the drain to allow for vehicles to turn around.

Restrictions

No trees and shrubs shall be planted nor shall permanent structures be erected within 5m of either side of the proposed drain without prior written permission of Council.

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

Agricultural Grant

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

The cost to enclose the municipal drain and provide a tile drain above the design coefficient of 38mm/24hrs has been assessed as a special benefit assessment and will not be eligible for grant based on the current ADIP policies.

Maintenance

The Brown Drain (Main Drain) and Brown Drain Branch “A” shall be maintained and repaired in accordance with the specification and drawings contained in this report.

The Brown Drain (Main Drain) and Brown Drain Branch “A”, except for the road crossings, shall be maintained and repaired in the same proportions as contained in the applicable Schedule of Assessment, less special benefit assessments.

The additional costs as a result of a road or utility shall be assessed to the owner of the road or utility as per Section 26 of the Drainage Act. Therefore, the road crossings on Nairn Road (Station 0+096 to 0+121) & Argyle Street (Station 0+850 to 0+865) (Main Drain) and Station 0+099 to 0+113 (Branch “A”), excluding basins, shall be maintained and repaired at the expense of the road authority.

Yours truly,



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



Brown Drain
Municipality of North Middlesex
April 9, 2026

ALLOWANCES

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

Conc.	Lot or part	Roll No.	Owner	Section 29 (\$)	Section 30 (\$)	Total (\$)
2	Lot 14	042-010-068	Triple A Acres Ltd	-	200	200
3	Lot 14	042-010-076	A. Van Deuren	-	1,880	1,880
	Pt. Lot 14	042-010-076-02	N. Connolly		100	100
	W 1/2 Lot 15	042-010-077	C. Rollings	-	1,540	1,540
	E 1/2 Lot 15	042-010-078	C. Rollings	-	1,490	1,490
	Lot 16	042-010-080	E. Chapman	-	300	300
TOTAL ALLOWANCES				\$0	\$5,510	\$5,510

Estimate of Cost

<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	200	200
Brushing and Tree Removal	1	LS	2,500	2,500
Benchmark Loop	1	LS	500	500
Locate and Decommission Existing Tile	1	LS	3,000	3,000
Remove and Dispose Existing 400mmø CSP Outlet Pipe	1	LS	1,500	1,500
Restoration and Seeding	1	LS	1,000	1,000
Rip Rap at Catch Basins as Directed	10	tonne	150	1,500
Silt Fence	1	LS	200	200
<u>Brown Drain</u>				
Channel Excavation and Trucking	30	m	30	900
Strip and Place Topsoil for Tile Drain	789	m	6	4,734
525mmø HDPE Pipe	66	m	200	13,200
Rodent Grate at Outlet	1	ea	500	500
Rip Rap at Outlet	15	tonne	150	2,250
450mmø Concrete Tile	526	m	60	31,560
450mmø HDPE Pipe Under Driveway c/w Bedding	6	m	175	1,050
Granular "A" Backfill for Driveway	15	tonne	30	450
Remove and dispose of Existing Tile under Driveway	1	LS	100	100
300mmø Concrete Tile	197	m	48	9,456
Connect Existing DICB to Main Drain w/ 250mmø HDPE Pipe @ Station 0+624	6	m	100	600

<u>Item Description (Supply and Install New)</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Cost (\$)</u>	<u>Total (\$)</u>
Nairn Road Crossing				
Traffic Control	1	LS	800	800
Daylight and Work Around Telecom Utility	1	LS	800	800
Video & Grout Existing Tile under Roadway	1	LS	1,500	1,500
510mmØ Steel Casing Installed by Jack & Boring	25	m	700	17,500
Restoration and Ditch Grading	1	LS	800	800
<u>Watermain Lowering</u>				
Cut and Cap Existing Watermain	2	each	200	400
200mmØ PVC Watermain Pipe installed by Directional Drilling c/w tracer wire	15	m	1,400	21,000
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 200mmØ watermain to existing. Both connections to be completed the same day	1	LS	9,500	9,500
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	15	m	60	900
Restoration	1	LS	500	500
Argyle Street Road Crossing				
Traffic Control	1	LS	800	800
Daylight and Work Around Watermain	1	LS	1,500	1,500
Remove Existing Tile and Dispose of Unsuitable Backfill Material	1	LS	600	600
300mmØ HDPE Smooth Wall Pipe (Open Cut) c/w Bedding	15	m	150	2,250
Supply and Install Granular "A" Backfill	50	tonne	30	1,500
Supply and Install 100% Crushed Granular "M" Dolomite	20	tonne	35	700
Restoration and Ditch Grading	1	LS	800	800
Catchbasin #1 (900mm x 1200mm) c/w Connections	1	LS	3,000	3,000
Catchbasin #2 (900mm x 1200mm) c/w Connections	1	LS	3,000	3,000
Catchbasin #4 (900mm x 1200mm) c/w Connections	1	LS	3,000	3,000
Catchbasin #5 (900mm x 1200mm) c/w Connections	1	LS	3,000	3,000
Remove Existing Catch Basin and Lead at Station 0+096	1	LS	800	800
Remove Existing Catch Basin and Lead at Station 0+121	1	LS	800	800
Locate and Connect Existing Tile	50	ea	100	5,000

<u>Item Description (Supply and Install New)</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Cost (\$)</u>	<u>Total (\$)</u>
<u>Branch 'A'</u>				
Strip and Place Topsoil for Tile Drain	99	m	6	594
Connect to Existing 450mmø Tile at Station BR. 0+000	1	LS	200	200
Supply and Install 250mmø Concrete Tile	99	m	40	3,960
Argyle Street Road Crossing				
Traffic Control	1	LS	800	800
Daylight and Work Around Watermain	1	LS	1,500	1,500
Remove Existing Tile and Dispose of Unsuitable Backfill Material	1	LS	600	600
250mmø HDPE Smooth Wall Pipe (Open Cut) c/w Bedding	14	m	125	1,750
Supply and Install Granular "A" Backfill	50	tonne	30	1,500
Supply and Install 100% Crushed Granular "M" Dolomite	20	tonne	35	700
Restoration and Ditch Grading	1	LS	800	800
Catchbasin #6 (900mm x 1200mm) c/w Connections	1	LS	3,000	3,000
Catchbasin #7 (900mm x 1200mm) c/w Connections	1	LS	3,000	3,000
Locate and Connect Existing Tiles	5	each	100	500
Contingency	1	LS	50	9,070
Sub Total				188,624
Allowances				5,510
Engineering				26,200
Daylighting and Surveying Utilities				3,300
Estimate for Tendering, and Additional Inspection and Contract Administration				11,500
ABCA Fee				450
Total Estimate excluding HST				235,584
Non-Recoverable HST (1.76%)				4,040
Total Estimate				\$ 239,624

SCHEDULE OF ASSESSMENT (BRANCH "A")

Conc.	Lot or Part	Affected Hectares	Roll No.	Owner	Special Benefit (\$)	Benefit (\$)	Outlet (\$)	Total (\$)
Utilities								
	Watermain Utility			Municipality of North Middlesex	2,819	-	-	2,819
						-	-	2,819
Public Lands								
	Argyle Street	0.65		Municipality of North Middlesex	8,158	3,968	2,150	14,276
						8,158	3,968	14,276
Agricultural Lands								
2	Lot 14	1.72	042-010-068	Triple A Acres Ltd		1,984	1,422	3,406
	Lot 15	1.20	042-010-067	D. Van Deuren		-	992	992
3	Lot 14	0.68	042-010-076	A. Van Deuren		5,402	562	5,964
						-	7,386	10,362
Total Utilities					2,819			
Total Public Lands					14,276			
Total Agricultural Lands					10,362			
Total Assessment					\$27,457			

SCHEDULE OF ASSESSMENT (MAIN DRAIN)

Conc.	Lot or Part	Affected Hectares	Roll No.	Owner	Special Benefit (\$)	Benefit (\$)	Outlet (\$)	Total (\$)
Utilities								
	Watermain Utility			Municipality of North Middlesex	48,383	-	-	48,383
	Telecom Utility			Bell Telecom	1,883	-	-	1,883
					50,266	-	-	50,266
Public Lands								
	Nairn Road	0.60		County of Middlesex	27,264	5,024	1,361	33,649
	Argyle Street	1.70		Municipality of North Middlesex	8,810	3,967	12,829	25,606
					36,074	8,991	14,190	59,255
Non Agricultural Lands								
3	Pt. Lot 14	0.80	042-010-076-02	N. Connolly		2,986	2,471	5,457
					-	2,986	2,471	5,457
Agricultural Lands								
2	Lot 14	8.10	042-010-068	Triple A Acres Ltd	1,078	906	18,224	20,208
	Lot 15	1.20	042-010-067	D. Van Deuren	160	-	1,693	1,853
3	Lot 14	4.90	042-010-076	A. Van Deuren	652	10,842	9,029	20,523
	W 1/2 Lot 15	5.70	042-010-077	C. Rollings	758	13,750	8,591	23,099
	E 1/2 Lot 15	3.60	042-010-078	C. Rollings	479	15,666	3,580	19,725
	Lot 16	0.40	042-010-080	E. Chapman	53	11,501	227	11,781
					3,180	52,665	41,344	97,189
Total Utilities					50,266			
Total Public Lands					59,255			
Total Non Agricultural Lands					5,457			
Total Agricultural Lands					97,189			
Total Assessment					\$212,167			

COMPOSITE SCHEDULE OF ASSESSMENT (MAIN DRAIN AND BRANCH "A")

Conc.	Lot or Part	Affected Hectares	Roll No.	Owner	Special Benefit (\$)	Benefit (\$)	Outlet (\$)	Total (\$)
Utilities								
	Watermain Utility			Municipality of North Middlesex	51,202	-	-	51,202
	Telecom Utility			Bell Telecom	1,883	-	-	1,883
					53,085	-	-	53,085
Public Lands								
	Naim Road	0.60		County of Middlesex	27,264	5,024	1,361	33,649
	Argyle Street	1.70		Municipality of North Middlesex	16,968	7,935	14,979	39,882
					44,232	12,959	16,340	73,531
Non Agricultural Lands								
3	Pt. Lot 14	0.80	042-010-076-02	N. Connolly	-	2,986	2,471	5,457
					-	2,986	2,471	5,457
Agricultural Lands								
2	Lot 14	8.10	042-010-068	Triple A Acres Ltd	1,078	2,890	19,646	23,614
	Lot 15	1.20	042-010-067	D. Van Deuren	160	-	2,685	2,845
3	Lot 14	4.90	042-010-076	A. Van Deuren	652	16,244	9,591	26,487
	W 1/2 Lot 15	5.70	042-010-077	C. Rollings	758	13,750	8,591	23,099
	E 1/2 Lot 15	3.60	042-010-078	C. Rollings	479	15,666	3,580	19,725
	Lot 16	0.40	042-010-080	E. Chapman	53	11,501	227	11,781
					3,180	60,051	44,320	107,551
				Total Utilities	53,085			
				Total Public Lands	73,531			
				Total Non Agricultural Lands	5,457			
				Total Agricultural Lands	107,551			
				Total Assessment	\$239,624			

Estimated Net Assessment

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

Conc.	Lot or Part	Affected Hectares	Roll No.	Owner	Total Assessment (\$)	Estimated Grant (\$)	Allowances (\$)	Estimated Net Assessment (\$)
Utilities								
	Watermain Utility			Municipality of North Middlesex	51,202			51,202
	Telecom Utility			Bell Telecom	1,883			1,883
Public Lands								
	Nairn Road	0.60		County of Middlesex	33,649			33,649
	Argyle Street	1.70		Municipality of North Middlesex	39,882			39,882
Non Agricultural Lands								
3	Pt. Lot 14	0.80	042-010-076-02	N. Connolly	5,457		100	5,357
Agricultural Lands								
2	Lot 14	8.10	042-010-068	Triple A Acres Ltd	23,614	7,512	200	15,902
	Lot 15	1.20	042-010-067	D. Van Deuren	2,845	895		1,950
3	Lot 14	4.90	042-010-076	A. Van Deuren	26,487	8,612	1,880	15,995
	W 1/2 Lot 15	5.70	042-010-077	C. Rollings	23,099	7,447	1,540	14,112
	E 1/2 Lot 15	3.60	042-010-078	C. Rollings	19,725	6,415	1,490	11,820
	Lot 16	0.40	042-010-080	E. Chapman	11,781	3,909	300	7,572
					239,624	34,790	5,510	199,324

Brown Drain
Municipality of North Middlesex
April 9, 2026

SPECIFICATION OF WORK

1. Location

The work in this specification is located in Lot 14, 15 and 16, Concession 2 and 3, 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 Drain (Main Drain):
 - 30m of open channel deepening
 - Watermain lowering on Nairn Road
 - 835m of proposed tile drain replacement c/w catch basins and includes:
 - Road Crossing on Nairn Road complete by Jack and Bore
 - Road Crossing on Argyle Street complete by open cut
- Brown Drain (Branch “A”):
 - 113m of proposed tile drain replacement c/w catch basins and includes:
 - Road Crossing on Argyle Street complete by open cut

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.

The drain shall be completed prior to November 30, 2026 should there be no appeals.

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, Municipality of North Middlesex, and the County of 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 Nairn Road 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 proposed tile drain downstream of Nairn Road shall be restricted to a width of 10m normally centred on the proposed tile drain due to the number of trees. The working area for the construction and future maintenance of the remainder of the tile drain shall be restricted to a width of 22m normally centred on the proposed tile drain. The working area for the open channel shall be from the south side (road side) of the channel and shall be restricted to one lane. The working area shall extend 10m past the length of the drain to allow for vehicles to turn around.

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 will add additional benchmarks along the length of the drainage works if requested by the Contractor.

11. Removals

The culverts, catch basins, hickenbottoms, outlet pipe, 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. 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

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

The excavated material shall be trucked offsite.

14. 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 municipal drain shall be abandoned and crushed.

15. 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 its pre-construction condition.

16. Installation of Tile

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

Concrete tile shall conform to ASTM C412, 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.

It is intended that the proposed tile run in the low run and/or adjacent the existing tile. 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.

17. Outlet Works

The outlet works for the drain shall consist 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. 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. Road Crossings 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 2.0mm 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 ¾" clear stone material. When the tile has been installed to the proper grade and depth, the excavation shall be backfilled with ¾" 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 or culvert 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".

19. Watermain Lowering

The watermain lowering shall be completed by Directional Drilling.

The existing watermain is 200mm 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 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.

20. Nairn Road Culvert and Tile Replacement

The Contractor shall supply and install a steel pipe casing by boring and jacking to the depths and grades as shown on the Profile. The steel casing shall have a minimum thickness of 9.5mm. All work shall be completed in accordance with OPSS 416. Cathodic protection is not required.

21. Grout Existing Culvert and Tile Under Nairn Road

This item is to include videoing the existing tile prior to grouting to ensure all connections are rerouted and filling the existing tile under Nairn Road with grout.

The grout shall contain 25kg of type 10 Portland Cement per cubic metre. Portland cement shall conform to the requirements of CSA CAN3-A5M. The gradation shall conform to Table 1 of CSA Standard. The slump of unshrinkable fill shall be between 150mm and 200mm. The maximum 28 days compression strength shall not exceed 0.40 MPa, as measured in accordance with CAN-A23.2-9C. At no time will water be added to the concrete on site. Concrete which is unworkable or that is too stiff to produce a satisfactory product is to be discarded.

22. Catch Basins

Structure	Station	Size (mm)	Grate Elev. (m)	Outlet Pipe Elev. (m)	Inlet Pipe Elev. (m)
CB #1	0+096	900x1200	228.85	227.36 (E) 525 HDPE	227.39 (W) 510 Steel
CB #2	0+121	900x1200	228.97	227.45 (E) 510 Steel	227.50 (W) 450

CB #3	0+624	Existing Offset	230.09	To Be Re-Connected to Proposed Tile with 250mm Tile	
CB #4	0+850	900x1200	231.03	229.70 (N) 300	229.71 (S) 300
CB #5	0+865	900x1200	231.00	229.78 (N) 300	229.80 (S) 250 k/o
CB #6	BR. 0+099 (BR "A")	900x1200	230.72	229.45 (N) 250	229.46 (S) 250
CB #7	BR. 0+113 (BR "A")	900x1200	230.53	229.55 (W) 250	229.57 (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.

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 seeded. 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.

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.

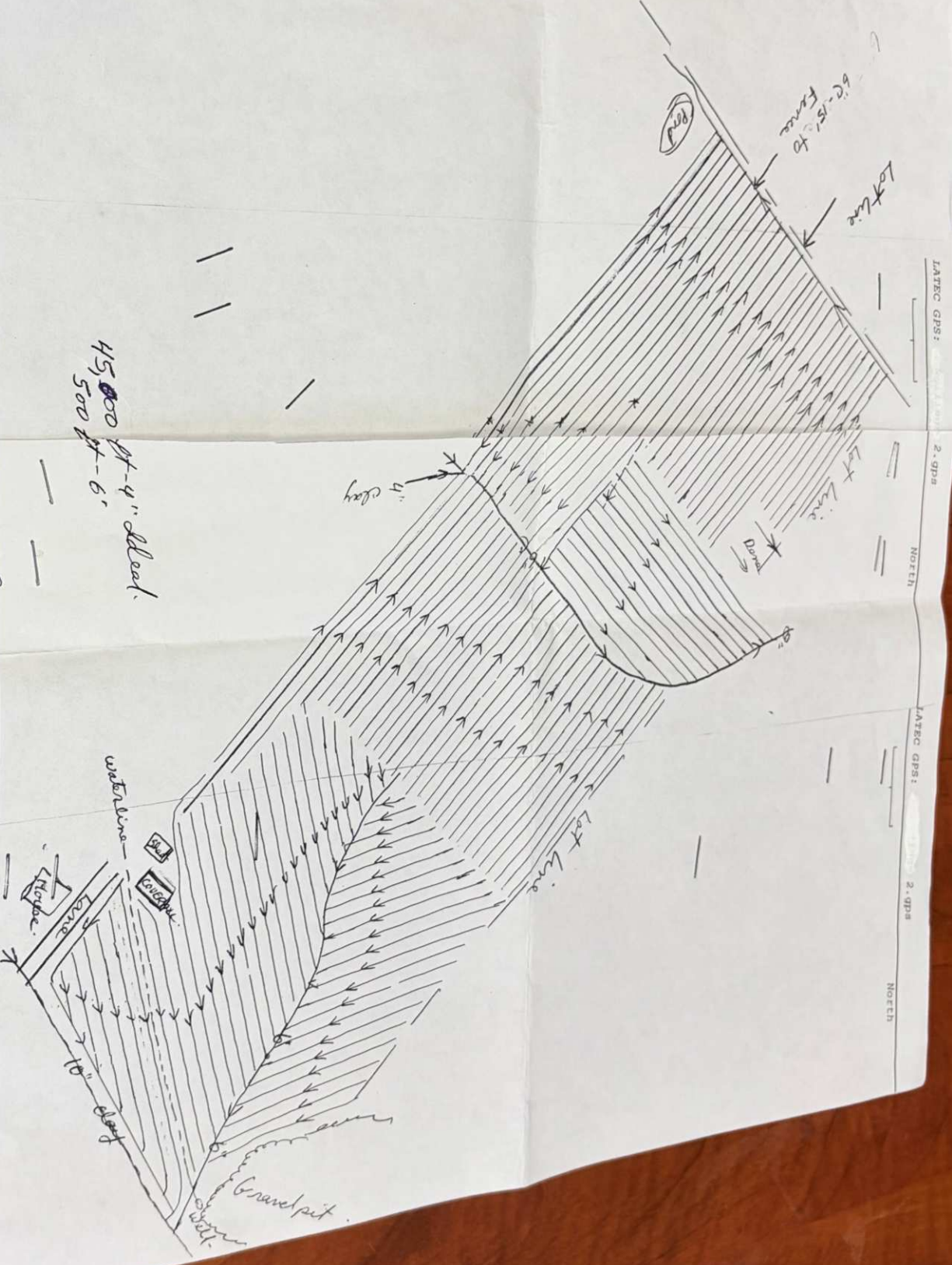
A light duty silt fencing shall be installed down-gradient of the work for the duration of construction.

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.

Customer: Margaret Brown
 Location: Lot 15 Con 3
 Scale: 200 feet
 Spacing: 4" Wms.
 C Robert Robinson Contracting Ltd

Customer: Margaret Brown
 Location: Lot 15 Con 3
 Scale: 200 feet
 Spacing: 4" Wms.
 C Robert Robinson Contracting Ltd

45,000 ft² 4" bleed.
 500 ft² - 6'



LOT 13

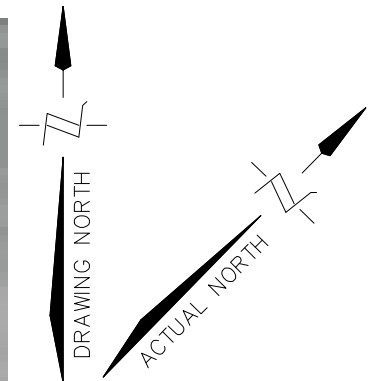
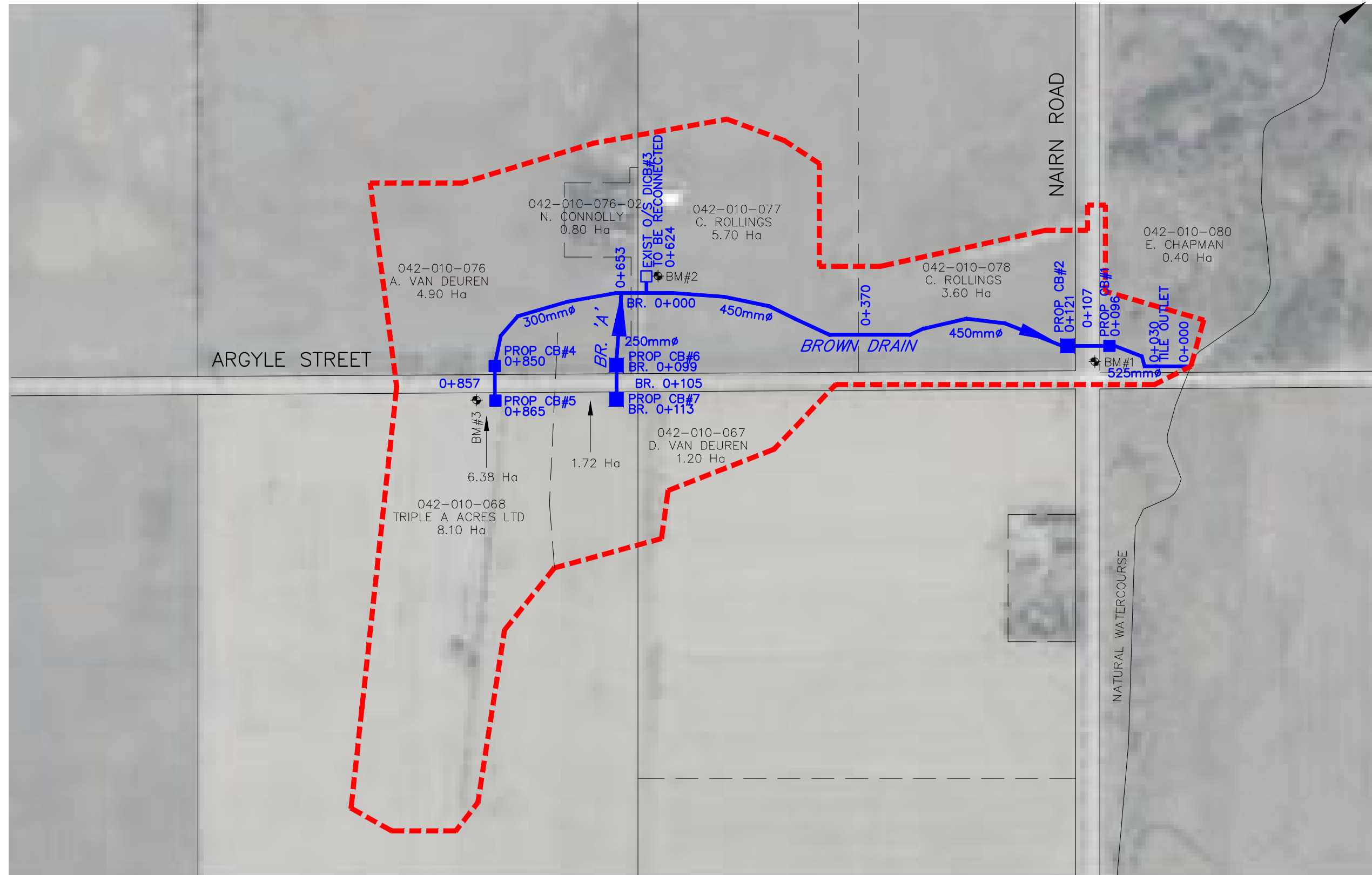
LOT 14

LOT 15

LOT 16

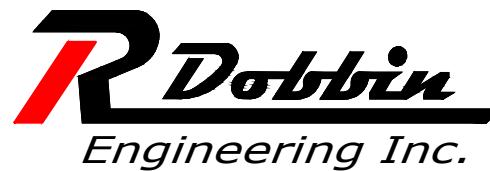
CONC 3

CONC 2



LEGEND

- DRAINAGE AREA
- BROWN DRAIN
- EXISTING WATERCOURSE



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

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

SCALE 1: 5,000

MUNICIPALITY of NORTH MIDDLESEX

BROWN DRAIN PLAN

1
OF 3

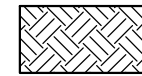
DRAWING NAME:
Brown Drain Plan

PROJECT No.
2025-1756

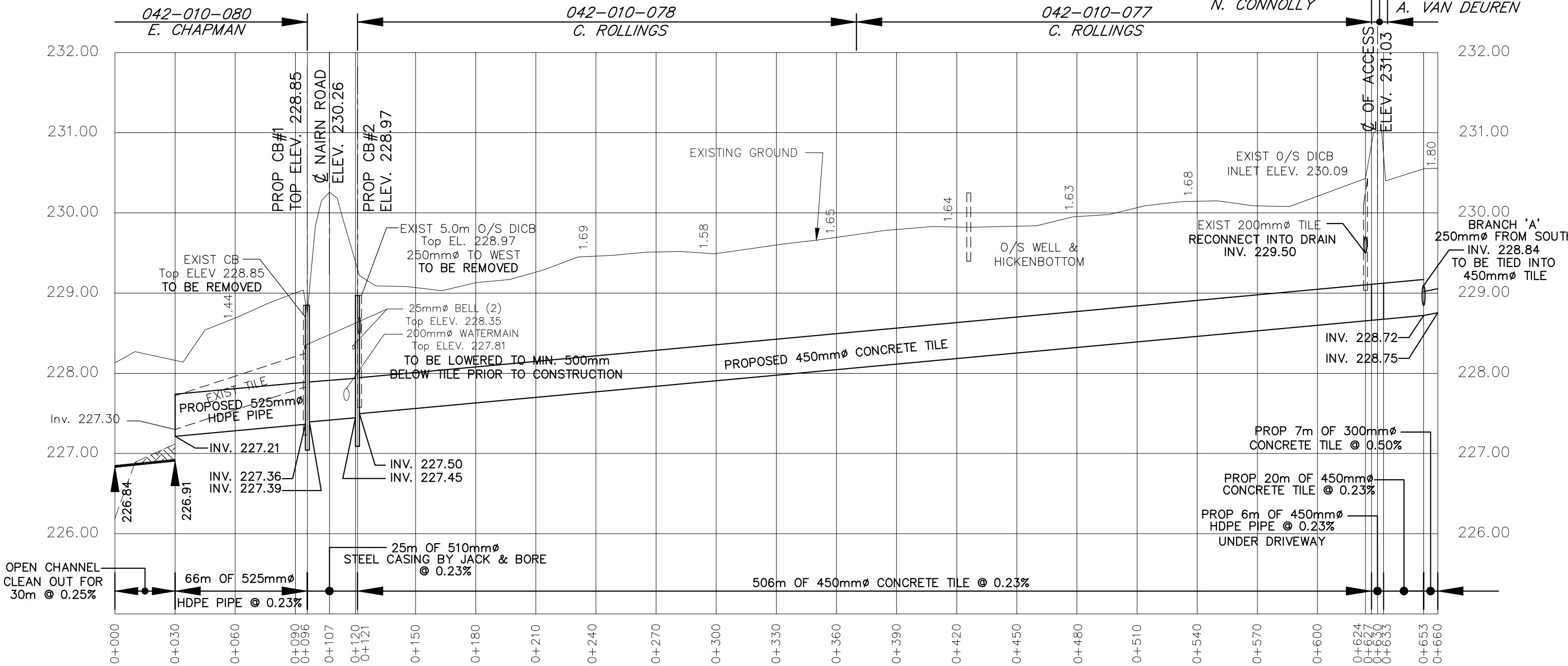
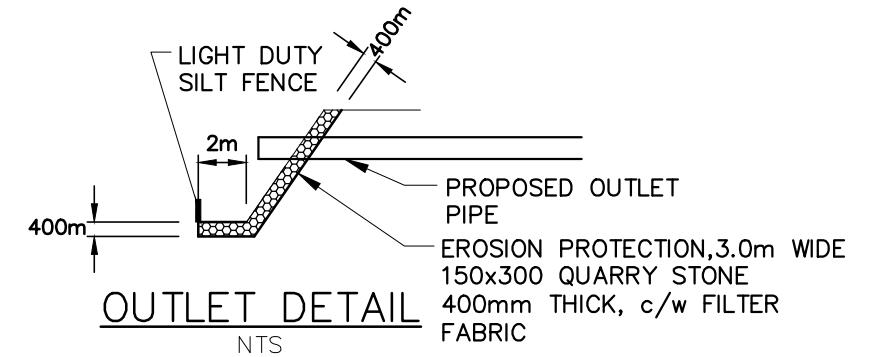
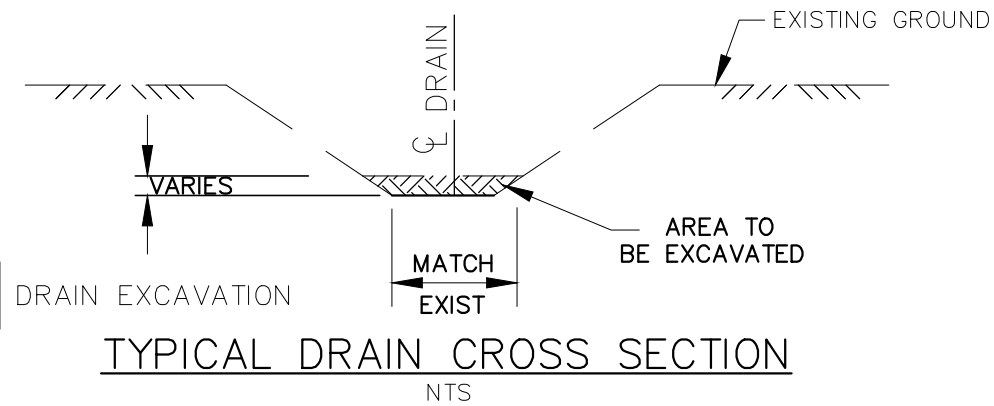
Last Updated: February 26, 2026

GENERAL NOTES

- BENCHMARK No.1 ELEV. 229.21
EXISTING TOP OF EAST END OF CSP
CROSSING NAIRN ROAD. APPROX. 10m
SOUTH OF PROPOSED CROSSING. ST. 0+107
 - BENCHMARK No.2 ELEV. 230.09
EXISTING INLET ELEVATION OF EXISTING
PRIVATE DICB LOCATED EAST OF DRIVEWAY
FOR MN# 10802. AT STATION 0+624
- UPPER NUMBERS ARE DEPTH FROM
GROUND TO INVERT OF CONCRETE TILE.



DRAIN EXCAVATION



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

DRAWING NAME:
Brown Drain Profile 1

PROJECT No.
2025-1756

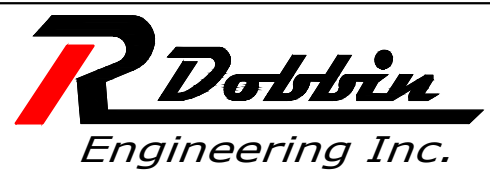
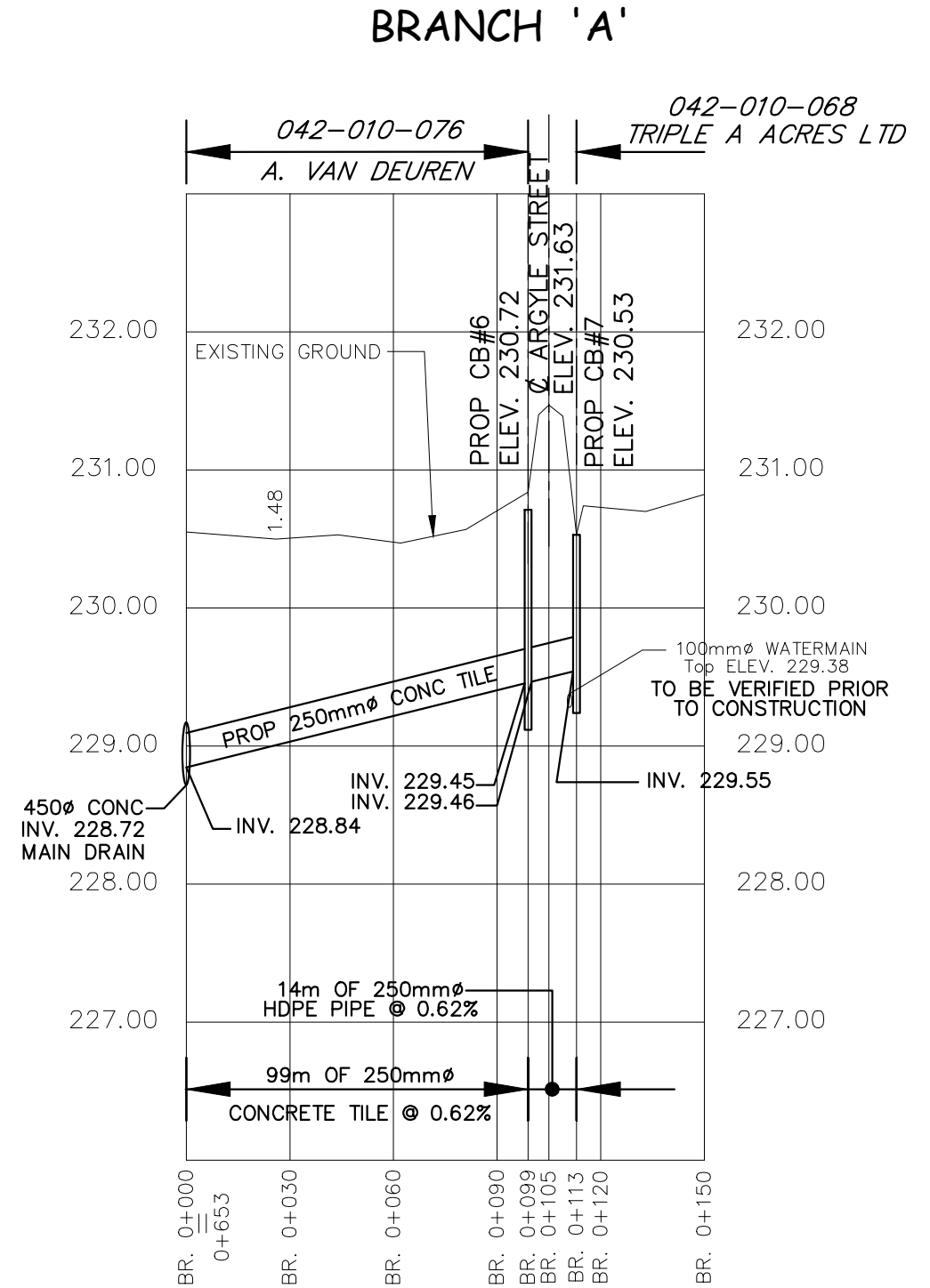
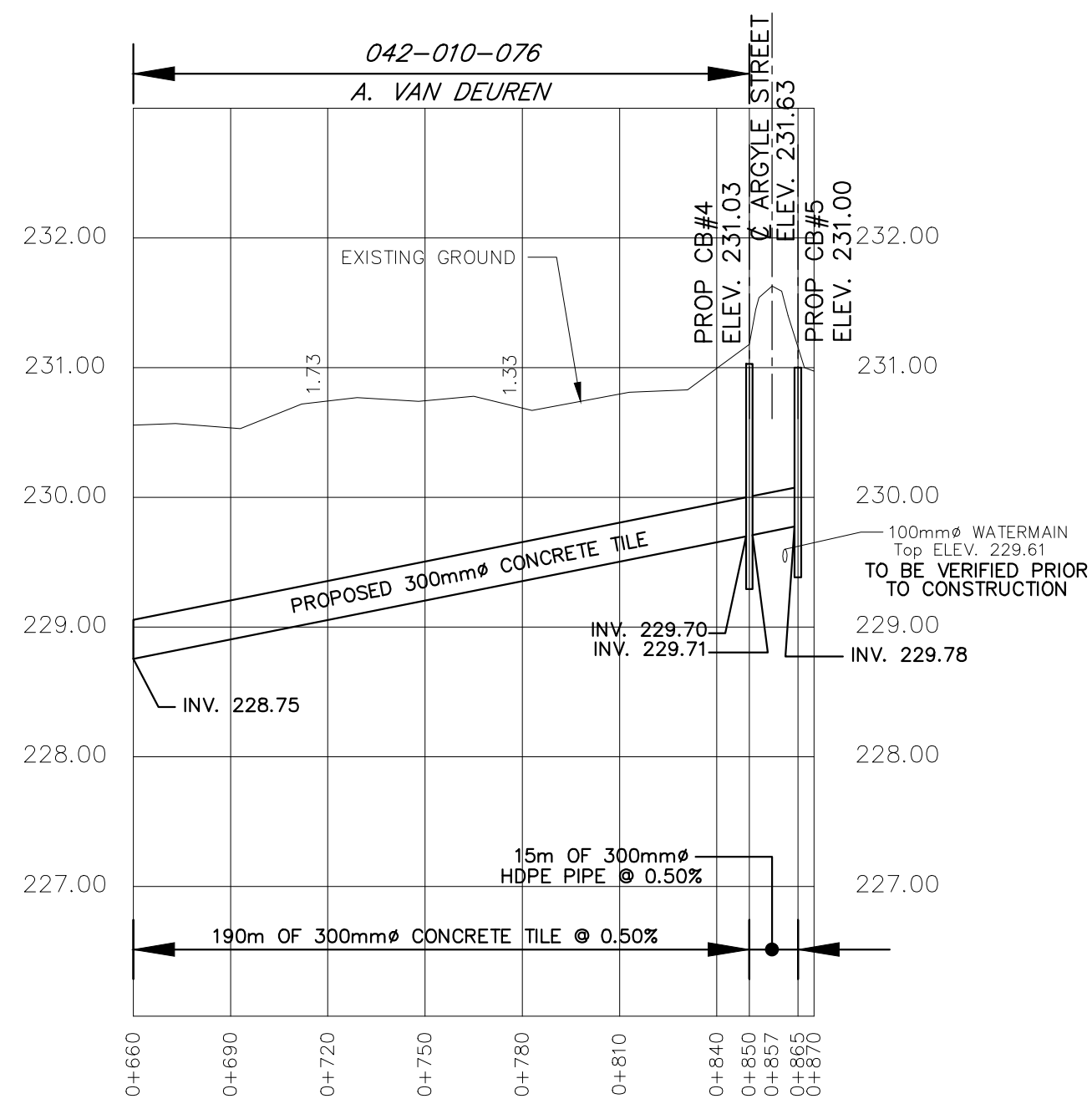
APPROVED	J. WARNER	NO.	REVISIONS	DATE	BY
CHECKED	B. VAN RUITENBURG	1	FINAL REPORT	APR. 9, 2026	CS
DRAWN	C. SAUNDERS	SCALE: 1:2,000			

MUNICIPALITY of NORTH MIDDLESEX

BROWN DRAIN
PROFILE

GENERAL NOTES

- BENCHMARK No.2 ELEV. 230.09
EXISTING INLET ELEVATION OF EXISTING PRIVATE DICB LOCATED EAST OF DRIVEWAY FOR MN# 10802. AT STATION 0+624
 - UPPER NUMBERS ARE DEPTH FROM GROUND TO INVERT OF CONCRETE TILE.
- BENCHMARK No.3 ELEV. 231.68
NAIL IN HYDRO POLE ON SOUTH SIDE OF ARGYLE STREET.
WEST OF PROPOSED CROSSING. ST. 0+865



4218 Oil Heritage Road
Petrolia Ontario, NON 1R0
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DRAWING NAME:
Brown Drain and Brown Drain Branch 'A' Profile

PROJECT No.
2025-1756

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

APPROVED
J. WARNER

CHECKED
B. VAN RUITENBURG

DRAWN
C. SAUNDERS

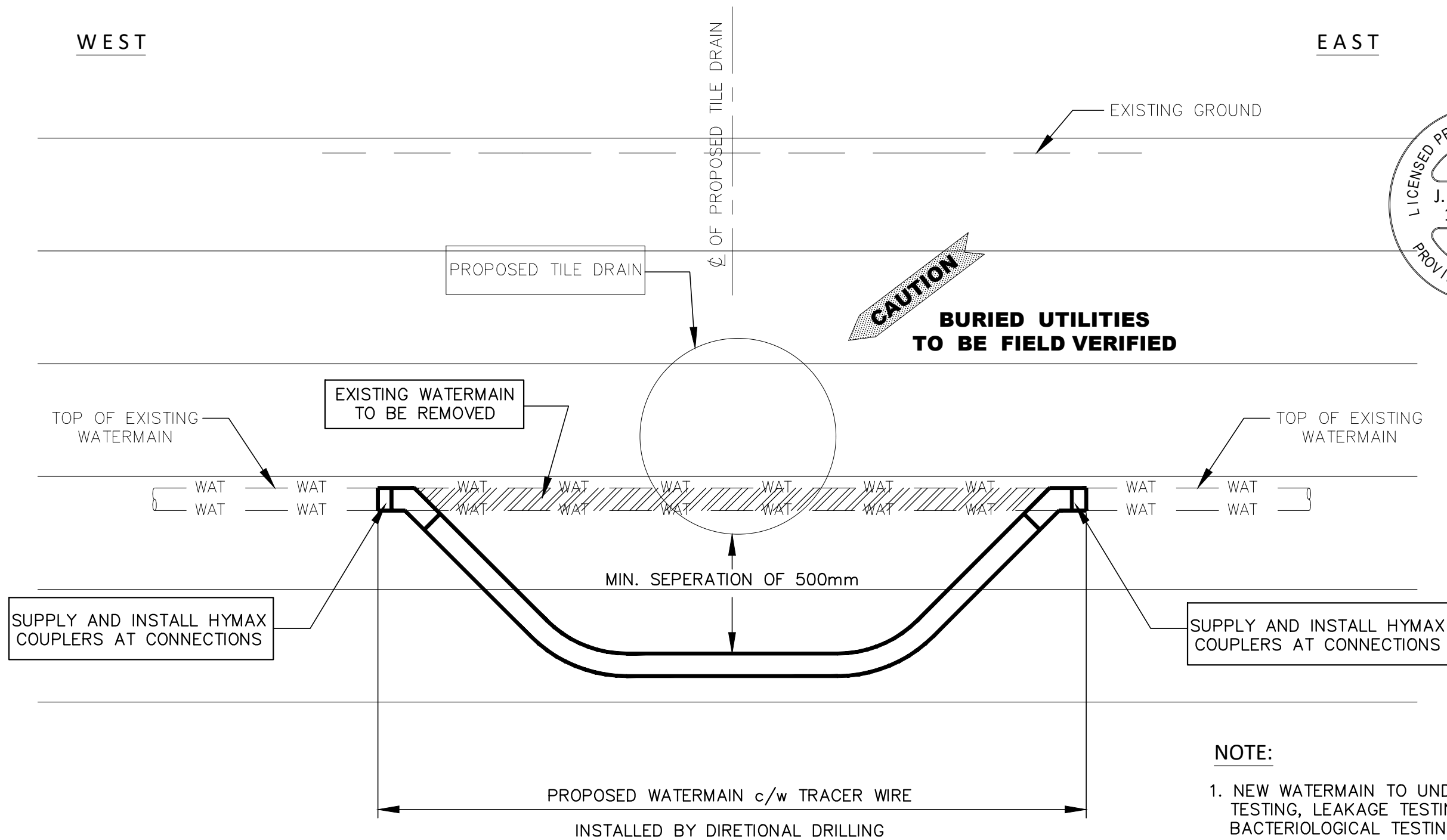
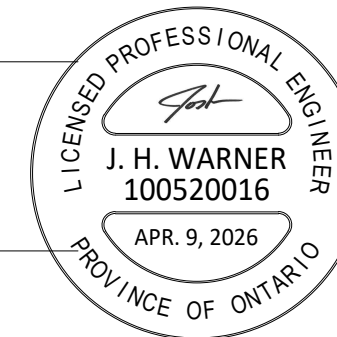
SCALE: 1:2,000
0 20 40 60m

MUNICIPALITY of NORTH MIDDLESEX
BROWN DRAIN & BROWN DRAIN BRANCH 'A'
PROFILE

3
OF 3

WEST

EAST

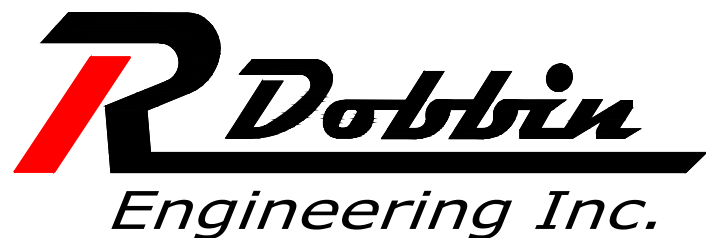


NOTE:

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



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