

**McGILL BRANCHES OF THE
McMILLIAN DRAIN**

Municipality of West Elgin



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McGILL BRANCHES OF THE McMILLIAN DRAIN

Municipality of West Elgin

To the Mayor and Council of
the Municipality of West Elgin

Mayor and Council:

We are pleased to present our report on the construction of the McGill Branches of the McMillian Municipal Drain serving parts of Lots 24 and Y, Concession 3 in the Municipality of West Elgin.

AUTHORIZATION

This report was prepared pursuant to Section 4 of the Drainage Act. Instructions were received from your Municipality with respect to a motion of Council. The work was initiated by a petition signed by the owners whose lands contain over 60 percent of the area requiring drainage.

DRAINAGE AREA

The total watershed area as described above contains approximately 29 hectares. The area requiring drainage for the McGill Branches is described as the lands contained within Lots 24 and Y, Concession 3, south-half, owned by B. McGill (Roll No.'s 70-047 and 70-049). The lands are just north of the watershed boundaries of the McGill Drain 2008 and the McAllister Drain.

EXISTING DRAINAGE CONDITIONS

A site meeting held with respect to the project and through later discussions the owners reported the following:

- that the landowner, B. McGill (Roll No.'s 70-047 and 70-049), indicated that his lands are tributary to the McMillian Drain and they require drainage. He stated that the lands are currently draining through a private tile, installed some time ago, that drain to the McMillian Drain. This drain is undersized by today's standards and, as a result, he experiences excess water on his lands
- that the landowner's representative for L. McCallum (Roll No. 70-046) indicated that a portion of their lands would also benefit from surface drainage if a new drain was constructed



EXISTING DRAINAGE CONDITIONS (cont'd)

A field investigation and survey were completed. Upon reviewing our findings we note the following:

- that the lands owned by B. McGill (Roll No.'s 70-047 and 70-049) require drainage as the existing private tile is undersized
- that the existing culvert on the McMillian Drain in the L. McCallum (Roll No. 70-046) lands will require lowering to allow for the proposed drain to be installed with sufficient cover of the drain

Preliminary design, cost estimates, and assessments were prepared and an informal public meeting was held to review the findings and preliminary proposals. Further input and requests were provided by the affected owners at that time and at later dates. Based on the proposed design it was decided to proceed with the petition.

DESIGN CONSIDERATIONS

The Drainage Coefficient method contained in the "DRAINAGE GUIDE FOR ONTARIO", Publication 29 by the Ontario Ministry of Agriculture, Food, and Rural Affairs (OMAFRA) is typically used to design municipal drains. The Drainage Coefficient defines a depth of water that can be removed in a 24-hour period and is expressed in millimetres per 24 hours. The coefficient used to design the Branches with respect to capacity was 50mm per 24 hours.

We would like to point out that there have been no indications of any adverse soil conditions, but this region is known to have stones present. It should be noted that no formal soil investigation has been made, with this information being provided by the owners.

The proposed design and report have been generally completed using the "GUIDE FOR ENGINEERS WORKING UNDER THE DRAINAGE ACT IN ONTARIO" OMAFRA Publication 852.

RECOMMENDATIONS

We are therefore recommending the following:

- that a new drain works, to be referred to as the McGill Drain Branches of the McMillian Drain, be constructed as a closed drain. Branch A will commence at the existing McMillian Drain and run south-easterly through the lands of L. McCallum (Roll No. 70-046), into and through the lands of B. McGill (Roll No. 70-047), to its head just within the lands of B. McGill (Roll No. 70-049), for a total length of 570 lineal meters
- that Branch B will also be constructed as a closed drain, commencing at Branch A, within the lands of L. McCallum (Roll No. 70-046) and run southerly through these lands to just within the lands of B. McGill (Roll No. 70-047), for a total length of 131 lineal meters
- that the McMillian Open Drain be cleaned out downstream, for a distance of 200 meters, to allow for the proposed drain to be constructed with sufficient depth
- that the drain be upsized to a 50mm design coefficient at the request of the landowner B. McGill (Roll No.'s 70-047 and 70-049)
- that catchbasins be installed along the course of the drain to alleviate surface flows



ENVIRONMENTAL CONSIDERATIONS AND MITIGATION MEASURES

There are no significant wetlands or sensitive areas within the affected watershed area or along the route of the drains. The proposed construction of the McGill Branches of the McMillian Drain includes quarry stone outlet protection and surface inlets which greatly help reduce the overland surface flows and any subsequent erosion. A temporary flow check of silt fencing is to be installed in the ditch downstream of the tile outlet for the duration of the construction.

SUMMARY OF PROPOSED WORK

The proposed work consists of approximately 200 lineal meters of open ditch cleanout, reconstruction of a farm culvert; approximately 701 lineal meters of 250mm (10") to 525mm (21") diameter concrete field tile, including related appurtenances.

SCHEDULES

Four schedules are attached hereto and form part of this report, being Schedule 'A' - Allowances, Schedule 'B' - Cost Estimate, Schedule 'C' - Assessment for Construction, and Schedule 'D' - Assessment for Maintenance.

Schedule 'A' - Allowances. In accordance with Sections 29 and 30 of the Drainage Act, allowances are provided for right-of-way and damages to lands and crops along the route of the drain as defined below.

Schedule 'B' - Cost Estimate. This schedule provides for a detailed cost estimate of the proposed work which is in the amount of \$120,000.00. This estimate includes engineering and administrative costs associated with this project.

Schedule 'C' - Assessment for Construction. This schedule outlines the distribution of the total estimated cost of construction over the roads and lands which are involved.

Schedule 'D' - Assessment for Maintenance. In accordance with Section 38 of the Drainage Act, this schedule outlines the distribution of future repair and/or maintenance costs for portions of, or the entire drainage works.

Drawing No. 1, Job No. 224262, and specifications form part of this report. They show and describe in detail the location and extent of the work to be done and the lands which are affected.

ALLOWANCES

DAMAGES: Section 30 of the Drainage Act provides for the compensation to landowners along the drain for damages to lands and crops caused by the construction of the drain.

The amounts granted are based on the following:

- a) for closed drain installed with wheel machine - \$3,613.00/ha.
- b) for open ditch work with excavated material levelled adjacent to drain - \$4,647.00/ha.

This base rate is multiplied by the hectares derived from the working widths shown on the plans and the applicable lengths.



ALLOWANCES (cont'd)

RIGHT-OF-WAY Section 29 of the Drainage Act provides for an allowance to the owners whose land must be used for the construction, repair, or future maintenance of a drainage works.

For tile drains where the owners will be able to continue to use the land, the allowance provides for the right to enter upon such lands, and at various times for the purpose of inspecting such drain, removing obstructions, and making repairs. Also, the allowance provides for the restrictions imposed on those lands to protect the right-of-way from obstruction or derogation. The amounts granted for right-of-way on tile drains is based on a percentage of the value of the land designated for future maintenance. Therefore, the amount granted is based on \$6,670.00/ha. through cropped lands. This value is multiplied by the hectares derived from the width granted for future maintenance and the applicable lengths.

ASSESSMENT DEFINITIONS

In accordance with the Drainage Act, lands that make use of a drainage works are liable for assessment for part of the cost of constructing and maintaining the system. These liabilities are known as benefit, outlet liability and special benefit liability as set out under Sections 22, 23, 24 and 26 of the Act.

BENEFIT as defined in the Drainage Act means the advantages to any lands, roads, buildings or other structures from the construction, improvement, repair, or maintenance of a drainage works such as will result in a higher market value, increased crop production, improved appearance, better control of surface or sub-surface water, or any other advantages relating to the betterment of lands, roads, buildings, or other structures.

OUTLET liability is assessed to lands or roads that may make use of a drainage works as an outlet either directly or indirectly through the medium of any other drainage works or of a swale, ravine, creek, or watercourse.

In addition, a Public Utility or Road Authority shall be assessed for and pay all the increased cost to a drainage works due to the construction and operation of the Public Utility or Road Authority. This may be shown as either benefit or special assessment.

ASSESSMENT

A modified "Todgham Method" was used to calculate the assessments shown on Schedule 'C'- Assessment for Construction. This entailed breaking down the costs of the drain into sections along its route.

The remainder is then separated into Benefit and Outlet costs. The Benefit cost is distributed to those properties receiving benefit as defined under "Assessment Definitions", with such properties usually being located along or close to the route of the drain. The Outlet Costs are distributed to all properties within the watershed area of that section on an adjusted basis. The areas are adjusted for location along that section, and relative run-off rates. Due to their different relative run-off rates forested lands have been assessed for outlet at lower rates than cleared lands.



ASSESSMENT (cont'd)

The actual cost of the work involving this report, with the exception of Special Assessments, is to be assessed on a pro-rata basis against the lands and roads liable for assessment for benefit and outlet as shown in detail below and on Schedule 'C' - Assessment for Construction.

GRANTS

In accordance with the provisions of Section 85 of the Drainage Act, a grant **may** be available for assessments against privately owned parcels of land which are used for agricultural purposes and eligible for the Farm Property Class Tax rate. Section 88 of the Drainage Act directs the Municipality to make application for this grant upon certification of completion of this drain. The Municipality will then deduct the grant from the assessments prior to collecting the final assessments. The increased costs to the drainage works for the 50mm design are directly assessed to the requesting landowner, B. McGill (Roll No.'s 70-047 and 70-049), and are non-grantable.

MAINTENANCE

Upon completion of construction, all owners are hereby made aware of Sections 80 and 82 of the Drainage Act which forbid the obstruction of or damage or injury to a municipal drain.


After completion the McGill Branches of the McMillian Drain shall be maintained by the Municipality of West Elgin at the expense of all upstream lands Schedule 'D' - Assessment for Maintenance and in the same relative proportions until such time as the assessment is changed under the Drainage Act.

Respectfully submitted,

SPRIET ASSOCIATES LONDON LIMITED



JMS:bv


J.M. Spriet, P.Eng.



SCHEDULE 'A' - ALLOWANCES

McGILL BRANCHES OF THE McMILLIAN DRAIN**Municipality of West Elgin**

In accordance with Sections 29 and 30 of the Drainage Act, we determine the allowances payable to owners entitled thereto as follows:

CONCESSION	LOT	ROLL NUMBER (Owner)	Section 29 Right-of-Way	Section 30 Damages	TOTALS
McMILLIAN DRAIN					
3	Pt. 24 &	Y 70-045 (R. & A. Tait)	\$ 100.00	\$ 170.00	\$ 270.00
3	NE $\frac{3}{4}$	Y 70-046 (L. McCallum)	710.00	1,230.00	1,940.00
Total Allowances			\$ 810.00	\$ 1,400.00	\$ 2,210.00

TOTAL ALLOWANCES ON THE McMILLIAN DRAIN **\$ 2,210.00**

McGILL BRANCH A

3	NE $\frac{3}{4}$	Y 70-046 (L. McCallum)	\$ 2,620.00	\$ 2,130.00	\$ 4,750.00
3	SE $\frac{1}{4}$	Y 70-047 (B. McGill)	1,090.00	890.00	1,980.00
3	SW $\frac{1}{4}$ Y & S	Z 70-049 (B. McGill)	90.00	70.00	160.00
Total Allowances			\$ 3,800.00	\$ 3,090.00	\$ 6,890.00

TOTAL ALLOWANCES ON THE McGill BRANCH A **\$ 6,890.00**

McGILL BRANCH B

3	NE $\frac{3}{4}$	Y 70-046 (L. McCallum)	\$ 830.00	\$ 680.00	\$ 1,510.00
3	W $\frac{1}{4}$ Y & S	Y 70-047 (B. McGill)	40.00	30.00	70.00
Total Allowances			\$ 870.00	\$ 710.00	\$ 1,580.00

TOTAL ALLOWANCES ON THE McGill BRANCH B **\$ 1,580.00**

TOTAL ALLOWANCES ON THE McGill BRANCHES OF THE McMILLIAN DRAIN **\$ 10,680.00**

McGILL BRANCHES OF THE McMILLIAN DRAIN**Municipality of West Elgin**

We have made an estimate of the cost of the proposed work which is outlined in detail as follows:

McMILLIAN DRAIN

200 meters of open ditch reconstruction	\$	2,000.00
Levelling of excavated material	\$	900.00
Seeding ditch banks and buffer strips (Approx 1000 sq.m)	\$	500.00
Sta. -0+039 - Sta. -0+053		
Remove, reinstall & extend existing 10m - 1600mm dia.	\$	2,400.00
Supply & delivery of 4m - 1600mm dia, 2.8mm thick, 125mm x 25mm cor.	\$	2,600.00
Installation of pipe including supply and installation of bedding and backfill materials and disposal of any unacceptable materials including couplers	\$	5,900.00
Supply and installation of quarry stone riprap (Approx. 12m ³ Q.S. required)	\$	1,900.00
Exposing and locating existing tile drains and utilities	\$	500.00
Contingencies	\$	1,000.00
Allowances under Sections 29 & 30 of the Drainage Act	\$	2,210.00

McGILL BRANCH A

6 meters of 525mm dia., H.D.P.E. plastic sewer pipe including rodent gate, quarry stone rip-rap protection around pipe and end of ditch (Approximately 6m ³ quarry stone req'd)		
Supply	\$	900.00
Installation	\$	1,200.00
Installation of the following concrete field tile including supply & installation of geotextile around tile joints (approx. 850m req'd)		
564 meters of 525mm dia. concrete tile	\$	16,400.00
Supply of the above listed tile	\$	28,200.00
Strip, stockpile and releve topsoil from tile trench and adjacent working area (4m wide) specified on drawings (approx. 570m)	\$	3,400.00
Supply and install two 900mm x 1200mm standard catchbasin including birdcage grates, ditching, any required prefabricated fittings, removal and disposal of ex. catchbasins	\$	5,500.00
Exposing and locating existing tile drains and utilities	\$	1,000.00
Tile connections and contingencies	\$	2,400.00
Allowances under Sections 29 & 30 of the Drainage Act	\$	6,890.00

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McGILL BRANCH B

Installation of the following concrete field tile including supply & installation of geotextile around tile joints (approx. 200m req'd)	
131 meters of 250mm dia. concrete tile	\$ 3,800.00
Supply of the above listed tile	\$ 2,600.00
Strip, stockpile and releve topsoil from tile trench and adjacent working area (4m wide) specified on drawings (approx. 131m)	\$ 800.00
Supply and install one 600mm x 600mm standard catchbasin including birdcage grates, ditching and any required prefabricated fittings	\$ 2,500.00
Exposing and locating existing tile drains and utilities	\$ 500.00
Tile connections and contingencies	\$ 500.00
Allowances under Sections 29 & 30 of the Drainage Act	\$ 1,580.00

ADMINISTRATION

Interest and Net Harmonized Sales Tax	\$ 2,700.00
Survey, Plan and Final Report	\$ 13,900.00
Expenses	\$ 950.00
Supervision and Final Inspection	\$ 4,370.00
TOTAL ESTIMATED COST	\$ 120,000.00

TOTAL ASSESSMENT ON THE MCGILL BRANCHES OF THE McMILLIAN DRAIN	\$ 120,000.00
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SCHEDULE 'D' - ASSESSMENT FOR MAINTENANCE

McGILL BRANCHES OF THE McMILLIAN DRAIN**Municipality of West Elgin**

Job No. 224262

April 10, 2025

CON.	LOT	HECTARES AFFECTED	ROLL No. (OWNER)	PERCENTAGE OF MAINTENANCE COST
McGILL BRANCH A				
3	NE $\frac{3}{4}$ Y	5.8	70-046 (L. McCallum)	30.4 %
3	SE $\frac{1}{4}$ Y	9.3	70-047 (B. McGill)	30.7
3	SW $\frac{1}{4}$ Y & S $\frac{1}{2}$ Z	13.4	70-049 (B. McGill)	38.9
				=====
		TOTAL ASSESSMENT ON LANDS		100.0 %
				=====
TOTAL ASSESSMENT FOR MAINTENANCE OF THE McGILL BRANCH A				<u>100.0 %</u>
McGILL BRANCH B				
3	NE $\frac{3}{4}$ Y	0.5	70-046 (L. McCallum)	30.1 %
3	SW $\frac{1}{4}$ Y & S $\frac{1}{2}$ Y	3.0	70-047 (B. McGill)	69.9
				=====
		TOTAL ASSESSMENT ON LANDS		100.0 %
				=====
TOTAL ASSESSMENT FOR MAINTENANCE OF THE McGILL BRANCH B				<u>100.0 %</u>

SCHEDULE OF NET ASSESSMENT

McGILL BRANCHES OF THE McMILLIAN DRAIN

Municipality of West Elgin

(FOR INFORMATION PURPOSES ONLY)

Job No. 224262

April 10, 2025

* = Non-agricultural

ROLL NUMBER (OWNER)	TOTAL ASSESSMENT	GRANT	ALLOWANCES	APPROX. NET
70-045 (R. & A. Tait)	\$	\$	\$ 270.00	\$ -270.00
70-046 (L. McCallum)	43,102.00	14,367.00	8,200.00	20,535.00
70-047 (B. McGill)	37,857.00	12,619.00	2,050.00	23,188.00
* **Non-Grantable**	3,240.00			3,240.00
70-049 (B. McGill)	32,541.00	10,847.00	160.00	21,534.00
* **Non-Grantable**	3,260.00			3,260.00
TOTALS	\$ 120,000.00	\$ 37,833.00	\$ 10,680.00	\$ 71,487.00