

BRANCHES 'A' AND 'E' OF THE BARONS DRAIN

Municipality of Central Elgin



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Our Job No. 221304

December 15, 2021

London, Ontario
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BRANCHES 'A' AND 'E' OF THE BARONS DRAIN

Municipality of Central Elgin

To the Mayor and Council of
the Municipality of Central Elgin

Mayor and Council:

We are pleased to present our report on the incorporation of Branches 'A' and 'E' of the Barons Municipal Drain serving parts of Lot 24, Concession 7 (geographic South Dorchester) in the Municipality of Central Elgin and parts of Lot 23, Concession 7 (geographic South Dorchester) in the Township of Malahide.

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 Municipality.

DRAINAGE AREA

The total watershed area as described above contains approximately 11 hectares. The area requiring drainage for Branch 'E' of the Barons Drain is described as the lands owned by the Municipality of Central Elgin (Roll No. 1-051). It should be noted some of these lands were previously served by Branch 'A' of the Barons Drain.

HISTORY

The Barons Drain was originally constructed pursuant to a report submitted by James A. Bell, O.L.S. dated June 28, 1918, and consisted of a Main Drain which measured 1,500 feet of 8" diameter tile and 2,228 feet of 10" diameter tile. The Main Drain started at a point in the N½ Lot 24, Concession 7 in the former Township of South Dorchester and proceeded southwest in Lot 24, crossing the Townline into Lot 17, Concession 15 of the former Township of Yarmouth. It proceeded southwest to an outlet into the Bartley Municipal Drain open ditch in N½ Lot 17, Concession 14 in the former Township of Yarmouth.

Branch 'A' Drain consisted of 775 feet of 5" diameter tile and 1,245 feet of 6" diameter tile. The Branch 'A' tile started at the lot line between Lots 23 and 24 in Concession 7, 450 feet north of the Canadian Pacific Railway (CPR) in the former Township of South Dorchester and proceeded west, crossing the CPR and running westerly to outlet into the Main Drain 108 feet south of the CPR tracks.



HISTORY (cont'd)

The Main Drain was more recently reconstructed with several branches, pursuant to a report submitted by J.R. Spriet, P. Eng., dated April 12, 2006. This report consisted of approximately 1,364 lineal meters of 200mm (8") diameter – 600mm (24") diameter concrete field tile and H.D.P.E. sewer pipe and related appurtenances. It should be noted the entire drain was replaced this time excluding Branch 'A'.

EXISTING DRAINAGE CONDITIONS

A site meeting was held on December 6, 2021, with respect to the project and through later discussions the owners reported the following:

- that the Drainage Superintendent indicated that in 2019 there was drainage work completed by the Municipality to address drain concerns in the east portion of the property to facilitate construction of a soccer field and parking lot. At that time, they decided to drain their lands to the more recent Branch 'D' Drain, constructed in 2006, and not to the existing Branch 'A' constructed in 1918.
- the owners, J.& D. & R. Buchanan (Roll No. 20-023), indicated that they wanted the existing drain connections in the northerly part of their lands to remain Municipal, and they also indicated that they would petition for the existing drain in the south end of their lands to be incorporated as part of the works.
- representatives for Belmont Farm Supply Inc. (Roll No. 1-046-01) requested that the existing Branch 'A' be abandoned in their lands, but they still would like to maintain the legal outlet. They also requested maintenance work of the existing drain be completed as water was ponding along the railway lands, adjacent to their property

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

- that the existing Branch 'A' drain, north of the Belmont Farm Supply Inc. lands (Roll No. 1-046-01), has been intercepted by drainage installed by the Municipality and these lands now drain directly to Branch 'D'
- the Buchanan lands (Roll No. 20-023) require an outlet for the north and south portion of their lands, both of which are currently connected to the drainage installed by the Municipality
- the existing Branch 'A' needs maintenance work completed south of the railway tracks

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 report.



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 of the existing drain was found to be 19mm.

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 branch be incorporated in the lands of the Municipality of Central Elgin (Roll No. 1-051), from the top end of the existing Branch 'D' of the Barons Drain and head east, parallel to the south property line, to the east property line, just within the Buchanan lands (Roll No. 20-023). It should also travel north from that location to the head of the existing Branch 'A', to just within the Buchanan lands (Roll No. 20-023). This new branch shall be referred to as Branch 'E'
- that Branch 'A' of the Barons Drain, upstream of the south limit of the Belmont Farm Supply lands (Roll No. 1-046-01), be officially abandoned from municipal status pursuant to Section 19 of the Drainage Act. Belmont Farm Supply (Roll No. 1-046-01) shall maintain their legal outlet.

We have reviewed the existing Schedules of Assessment for Branch 'A' of the Barons Drain and found it to be out-of-date. We therefore recommend that Branch 'A' be included as part of this report for future maintenance purposes.

SUMMARY OF PROPOSED WORK

The proposed work consists of the incorporation of 632 lineal meters of 150mm (6") diameter to 250mm (10") diameter pipe.

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 \$7,200.00. This estimate includes engineering and administrative costs associated with this project. The assessed cost in the Municipality of Central Elgin is \$6,210.00 and the assessed cost in the Township of Malahide is \$990.00.



SCHEDULES (cont'd)

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. 221304, 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

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 amounts granted are based on \$6,670.00/ha. through 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 or increased crop production or improved appearance or 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.

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.



ASSESSMENT (cont'd)

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 roads and residential properties have been assessed for outlet at higher rates than cleared farmlands.

The actual cost of the work involving this report 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. Assessments to agricultural lands are based on an agricultural 19mm design. 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.

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 portion of the Branch 'E' of the Barons Drain, including the existing 1918 Branch 'A', located within the Municipality of Central Elgin shall be maintained by the Municipality of Central Elgin, and the portion of the Branch 'E' of the Barons Drain, including the existing 1918 Branch 'A', located within the Township of Malahide shall be maintained by the Township of Malahide at the expense of all upstream lands and roads assessed in Schedule 'D' - Assessment for Maintenance and in the same relative proportions until such time as the assessment is changed under the Drainage Act.

The above existing portions of the drain shall be maintained in accordance with the grades and dimensions set out in the plans and specifications contained in the report submitted by J.A. Bell dated June 1918.

Repairs or improvements to any railway culvert or sub-surface crossing required by the performance of this work and for future repair and/or replacement, shall be the responsibility of the applicable Railway Authority, entirely at their cost.



Respectfully submitted,

SPRIET ASSOCIATES LONDON LIMITED

B. Widner, P.Eng.



SPRIET ASSOCIATES
engineers & architects

SCHEDULE 'A' - ALLOWANCES

BRANCHES 'A' AND 'E' OF THE BARONS DRAIN

Municipality of Central Elgin

In accordance with Sections 29 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	TOTALS
BRANCH 'E'				
MUNICIPALITY OF CENTRAL ELGIN				
7	24	1-051 (Municipality of Central Elgin)	\$ 2,070.00	\$ 2,070.00
Total Allowances			\$ 2,070.00	\$ 2,070.00
TOTAL ALLOWANCES IN THE MUNICIPALITY OF CENTRAL ELGIN				\$ 2,070.00
TOWNSHIP OF MALAHIDE				
7	23	20-023 (J. & D. & R. Buchanan)	\$ 40.00	\$ 40.00
Total Allowances			\$ 40.00	\$ 40.00
TOTAL ALLOWANCES IN THE TOWNSHIP OF MALAHIDE				\$ 40.00
TOTAL ALLOWANCES ON BRANCH 'E'				\$ 2,110.00

BRANCHES 'A' AND 'E' OF THE BARONS DRAIN**Municipality of Central Elgin**

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

BRANCH 'E'

Allowances under Sections 29 of the Drainage Act	\$ 2,110.00
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ADMINISTRATION

Interest and Net Harmonized Sales Tax	\$ 120.00
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Survey, Plan and Final Report	\$ 4,500.00
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Expenses	\$ <u>470.00</u>
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TOTAL ESTIMATED COST	\$ <u><u>7,200.00</u></u>
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SCHEDULE 'C' - ASSESSMENT FOR CONSTRUCTION

BRANCHES 'A' AND 'E' OF THE BARONS DRAIN

Municipality of Central Elgin

Job No. 221304

December 15, 2021

CON.	LOT	HECTARES AFFECTED	ROLL No. (OWNER)	BENEFIT	OUTLET	TOTAL
BRANCH 'E'						
MUNICIPALITY OF CENTRAL ELGIN						
7	24	0.10	1-060-33 (Municipality of Central Elgin)	\$	46.00	\$ 46.00
7	24	0.45	1-176-01 (L. Easton)		130.00	130.00
7	24	0.45	1-176 (Karwood Ontario Ltd)		130.00	130.00
7	24	1.00	1-177 (B. Archer)		292.00	292.00
7	24	6.70	1-051 (Municipality of Central Elgin)	3,900.00	1,712.00	5,612.00
TOTAL ASSESSMENT ON LANDS				\$ 3,900.00	\$ 2,310.00	\$ 6,210.00
TOTAL ASSESSMENT IN THE MUNICIPALITY OF CENTRAL ELGIN					\$	<u>6,210.00</u>
TOWNSHIP OF MALAHIDE						
7	23	0.10	20-024 (K. & L. Clark)	\$	31.00	\$ 31.00
7	23	2.10	20-023 (J. & D. & R. Buchanan)	420.00	539.00	959.00
TOTAL ASSESSMENT ON LANDS				\$ 420.00	\$ 570.00	\$ 990.00
TOTAL ASSESSMENT IN THE TOWNSHIP OF MALAHIDE					\$	<u>990.00</u>
TOTAL ASSESSMENT ON BRANCH 'E'					\$	<u><u>7,200.00</u></u>

SCHEDULE 'D' - ASSESSMENT FOR MAINTENANCE

BRANCHES 'A' AND 'E' OF THE BARONS DRAIN

Municipality of Central Elgin

Job No. 221304

December 15, 2021

CON.	LOT	HECTARES AFFECTED	ROLL No. (OWNER)	PERCENTAGE OF MAINTENANCE COST
BRANCH 'E'				
MUNICIPALITY OF CENTRAL ELGIN				
7	24	0.10	1-060-33 (Municipality of Central Elgin)	0.5 %
7	24	0.45	1-176-01 (L. Easton)	1.5
7	24	0.45	1-176 (Karwood Ontario Ltd)	1.5
7	24	1.00	1-177 (B. Archer)	3.3
7	24	6.70	1-051 (Municipality of Central Elgin)	86.6
				=====
TOTAL ASSESSMENT ON LANDS				93.4 %
				=====
TOTAL ASSESSMENT FOR MAINTENANCE IN THE MUNICIPALITY OF CENTRAL ELGIN				93.4 %
TOWNSHIP OF MALAHIDE				
7	23	0.1	20-024 (K. & L. Clark)	0.4 %
7	23	2.1	20-023 (J. & D. & R. Buchanan)	6.2
				=====
TOTAL ASSESSMENT ON LANDS				6.6 %
				=====
TOTAL ASSESSMENT FOR MAINTENANCE IN THE TOWNSHIP OF MALAHIDE				6.6 %
TOTAL ASSESSMENT FOR MAINTENANCE OF BRANCH 'E' OF THE BARONS DRAIN				100.0 %
BRANCH "A"				
MUNICIPALITY OF CENTRAL ELGIN				
7	24	1.30	1-046-01 (Belmont Farm Supply Inc)	29.8 %
7	24	1.10	2-004 (Canadian Pacific Railway)	34.5
				=====
TOTAL ASSESSMENT ON LANDS				64.3 %
				=====
TOTAL ASSESSMENT FOR MAINTENANCE IN THE MUNICIPALITY OF CENTRAL ELGIN				64.3 %
TOWNSHIP OF MALAHIDE				
7	24	2.3	20-025 (I. Cousins)	35.7 %
				=====
TOTAL ASSESSMENT ON LANDS				35.7 %
				=====
TOTAL ASSESSMENT FOR MAINTENANCE IN THE TOWNSHIP OF MALAHIDE				35.7 %
TOTAL ASSESSMENT FOR MAINTENANCE OF BRANCH 'A' OF THE BARONS DRAIN				100.0 %

SCHEDULE OF NET ASSESSMENT

BRANCHES 'A' AND 'E' OF THE BARONS DRAIN

Municipality of Central Elgin

(FOR INFORMATION PURPOSES ONLY)

Job No. 221304

December 15, 2021

* = Non-agricultural

	ROLL NUMBER (OWNER)	TOTAL ASSESSMENT	GRANT	ALLOWANCES	APPROX. NET
MUNICIPALITY OF CENTRAL ELGIN					
*	1-060-33 (Municipality of Central Elgin)	\$ 46.00	\$	\$	46.00
*	1-176-01 (L. Easton)	130.00			130.00
*	1-176 (Karwood Ontario Ltd)	130.00			130.00
*	1-177 (B. Archer)	292.00			292.00
*	1-051 (Municipality of Central Elgin)	5,612.00		2,070.00	3,542.00
TOWNSHIP OF MALAHIDE					
*	20-024 (K. & L. Clark)	31.00			31.00
	20-023 (J. & D. & R. Buchanan)	959.00	320.00	40.00	599.00
TOTALS					
		\$ 7,200.00	\$ 320.00	\$ 2,110.00	\$ 4,770.00