

COLLINS DRAIN
Municipality of Central Elgin



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London, Ontario
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COLLINS 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 construction of the Collins Municipal Drain serving parts of Lots 16 and 17, Range 1 S.E.R and Lot 19 and 20, Concessions 9 (geographic Yarmouth) in the Municipality of Central 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 some of the affected landowners.

DRAINAGE AREA

The total watershed area as described above contains approximately 32 hectares. The area requiring drainage for the Collins Drain is described as the lands of M. Collins (Roll No. 7-113 Severed portion North of the Railway) in Concession 9, Lot 19 in the former Township of Yarmouth.

HISTORY

The Norton Drain was originally constructed pursuant to a report submitted by J.A. Bell, O.L.S. dated March 21, 1914, is located adjacent to the proposed Collins Drain and outlets at the same location as this proposed drain.

EXISTING DRAINAGE CONDITIONS

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

- that the owner, M. Collins (Roll No. 7-113 Severed portion North of the Railway) indicated that there was an existing private drain in part of his land which is in poor condition with numerous failures. He also indicated that he was planning to systematically tile drain his lands in the future and required a new drain to deal with surface flows from the North



EXISTING DRAINAGE CONDITIONS (cont'd)

- that the owner, Bonnefield Farmland Ontario (Roll No.'s 7-115 and 7-179) indicated that they were not requiring anything at this time
- that the owner, J.& V. Davis (Roll No. 7-176-50) indicated their lands were going to be subsurface drained north.

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

- that the area requiring drainage drains south to the same location as the outlet of the Norton Drain on the upstream side of the existing Canadian National Railway

Further input and requests were provided by the affected owners at that time and at later dates

- the owner, M. Collins (Roll No. 7-113 Severed portion North of the Railway), asked that the drain be upsized to a 50mm design

Preliminary design, cost estimates and assessments were prepared, and an informal public meeting was held to review the findings and preliminary proposals. 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 used to design this drain with respect to capacity was 50mm per 24 hrs.

We would like to point out that there have been no indications of any adverse soil conditions. 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, to be referred to as the Collins Drain, be constructed commencing at the upstream end of the existing railway culvert crossing in Lot 19, Concession 9, and head north through the lands of M. Collins (Roll No. 7-113 severed portion North of the Railway) to just within the lands of Bonnefield Farmland Ontario (Roll No. 1-115) for a total length of 464 lineal meters
- that a catchbasin and overflow berm installed at the upstream property line to alleviate surface flows
- that the drain be upsized to a 50mm design, based on the request from M. Collins



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 Collins 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 464 lineal meters of 450mm (18") - 525mm (21") diameter concrete field tile and H.D.P.E. pipe, 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 \$65,000.00. 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. 222129, 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 amount granted is based on \$3,613.00/ha. for closed drain installed with wheel machine. This base rate is multiplied by the hectares derived from the working widths shown on the plans and the applicable lengths.

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.



ALLOWANCES (cont'd)

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 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 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.

In addition, a Public Utility or Railway 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 Railway. 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. Also, roads have been assessed for outlet at higher rates than cleared farmlands.



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. It should be noted that all costs to increase the design standard for the portion of the Main Drain above 38mm is assessed separately and shown not to receive grant.

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 Collins Drain shall be maintained by the Municipality of Central Elgin 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.

Repairs or improvements to any railway culvert or bridge or sub-surface road 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.



BW:

Respectfully submitted,

SPRIET ASSOCIATES LONDON LIMITED

B. Widner, P.Eng.



SCHEDULE 'A' - ALLOWANCES

COLLINS DRAIN

Municipality of Central 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
MAIN DRAIN					
9	19	7-113 (M.Collins-Severed Portion)	\$ 3,000.00	\$ 2,440.00	\$ 5,440.00
9	19 & 20	7-115 (Bonfield Farmland Ontario)	40.00	30.00	70.00
R.O.W.		11-035 (Canadian National Railway)	50.00	40.00	90.00
			=====		
Total Allowances			\$ 3,090.00	\$ 2,510.00	\$ 5,600.00
			=====		
TOTAL ALLOWANCES ON THE MAIN DRAIN					\$ 5,600.00
					=====
TOTAL ALLOWANCES ON THE COLLINS DRAIN					\$ 5,600.00
					=====

COLLINS DRAIN**Municipality of Central Elgin**

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

MAIN DRAIN

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 6m³ quarry stone req'd)

Supply	\$ 800.00
Installation	\$ 1,600.00

Installation of the following concrete field tile / H.D.P.E. pipe including supply
& installation of geotextile around tile joints (approx. 1850m req'd)

6 meters of 450mm dia.H.D.P.E. pipe	\$ 200.00
452 meters of 525mm dia. concrete tile	13,600.00
Supply of the above listed tile / pipe	\$ 20,500.00

Strip, stockpile and relevel topsoil from tile trench and adjacent working area (4m wide) specified on drawings (approx. 458m)	\$ 2,700.00
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Supply and install one 900mm x 1200mm ditch inlet catchbasin, including grate and berm	\$ 2,900.00
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Exposing and locating existing tile drains and utilities	\$ 1,000.00
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Tile connections and contingencies	\$ 2,500.00
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Allowances under Sections 29 & 30 of the Drainage Act	\$ 5,600.00
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ADMINISTRATION

Interest and Net Harmonized Sales Tax	\$ 1,450.00
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Survey, Plan and Final Report	\$ 7,700.00
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Expenses	\$ 960.00
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Supervision and Final Inspection	\$ 3,490.00
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TOTAL ESTIMATED COST	\$ 65,000.00
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CON.	LOT	HECTARES AFFECTED	ROLL No. (OWNER)	BENEFIT	OUTLET	TOTAL
MAIN DRAIN						
1 S.E.R.	16	2.50	7-176-50 (J. & V. Davis)	\$	\$ 1,318.00	\$ 1,318.00
1 S.E.R.	17	11.30	7-179 (Bonnefield Farmland Ontario)		11,915.00	11,915.00
9	19	4.40	7-113 (M.Collins-Severed Portion)	28,000.00	2,994.00	30,994.00
			7-113 ***Non-Grantable***	4,200.00		4,200.00
9	19 & 20	14.00	7-115 (Bonnefield Farmland Ontario)	3,920.00	12,653.00	16,573.00
TOTAL ASSESSMENT ON LANDS				\$ 36,120.00	\$ 28,880.00	\$ 65,000.00
TOTAL ASSESSMENT ON THE MAIN DRAIN						<u>\$ 65,000.00</u>
TOTAL ASSESSMENT ON THE COLLINS DRAIN						<u>\$ 65,000.00</u>

SCHEDULE 'D' - ASSESSMENT FOR MAINTENANCE

COLLINS DRAIN

Municipality of Central Elgin

Job No. 222129

June 29, 2022

CON.	LOT	HECTARES AFFECTED	ROLL No. (OWNER)	PERCENTAGE OF MAINTENANCE COST
MAIN DRAIN				
1 S.E.R.	16	2.5	7-176-50 (J. & V. Davis)	2.9 %
1 S.E.R.	17	11.3	7-179 (Bonfield Farmland Ontario)	26.6
9	19	4.4	7-113 (M.Collins-Severed Portion)	37.9
9	19 & 20	14.0	7-115 (Bonfield Farmland Ontario)	32.6
				=====
TOTAL ASSESSMENT ON LANDS				100.0 %
				=====
TOTAL ASSESSMENT FOR MAINTENANCE OF THE MAIN DRAIN				<u>100.0 %</u>
TOTAL ASSESSMENT FOR MAINTENANCE ON THE COLLINS DRAIN				<u>100.0 %</u>

SCHEDULE OF NET ASSESSMENT

COLLINS DRAIN

Municipality of Central Elgin

(FOR INFORMATION PURPOSES ONLY)

Job No. 222129

June 29, 2022

* = Non-agricultural

ROLL NUMBER (OWNER)	TOTAL ASSESSMENT	GRANT	ALLOWANCES	APPROX. NET
7-176-50 (J. & V. Davis)	\$ 1,318.00	\$ 439.00	\$	\$ 879.00
7-179 (Bonneyfield Farmland Ontario)	11,915.00	3,972.00		7,943.00
7-115 (Bonneyfield Farmland Ontario)	16,573.00	5,524.00	70.00	10,979.00
7-113 (M.Collins-Severed Portion)	30,994.00	10,331.00	5,440.00	15,223.00
7-113 ***Non-Grantable***	4,200.00			4,200.00
11-035 (Canadian National Railway)			90.00	-90.00
TOTALS	\$ 65,000.00	\$ 20,266.00	\$ 5,510.00	\$ 39,224.00