

SHERMAN DRAIN
Municipality of West Elgin



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London, Ontario
March 14, 2024

SHERMAN 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 reconstruction of parts of the Sherman Municipal Drain serving parts of Lots 2 and 3, Concessions 10 and 11 in the Municipality of West Elgin. The total watershed area as described above contains approximately 133 hectares.

AUTHORIZATION

This report was prepared pursuant to Section 78 of the Drainage Act. Instructions were received from your Municipality with respect to a motion of Council. The work was initiated by a request signed by some of the affected landowners.

HISTORY

The Sherman Drain was last reconstructed pursuant to a report submitted by H.H. Todgham, P. Eng. dated February 23, 1983, and consisted of improvements around the existing pond in Lot 3, Concession 11. Prior to that the open drain was reconstructed pursuant to a report by H.H. Todgham, P. Eng. in 1959 and consisted of 1,981 lineal meters of open drain improvements.

EXISTING DRAINAGE CONDITIONS

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

- that the landowner, Samterra Inc. (Roll No. 40-010), inquired as to the possibility of enclosing the open drain through their lands to improve the workability of them

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

- that the existing open drain contains an upstream watershed area of manageable size to permit an enclosure



EXISTING DRAINAGE CONDITIONS (cont'd)

- that enclosure of the drain would greatly improve the workability of the requesting lands

Preliminary design, cost estimates, and assessments were prepared, and informal consultations were 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.

DESIGN CONSIDERATIONS

The proposed drain was designed, with respect to capacity, using the Drainage Coefficient method contained in the "DRAINAGE GUIDE FOR ONTARIO", Publication 29 by the Ontario Ministry of Agriculture, Food, and Rural Affairs. 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 for the Main Drain was 38mm per 24 hrs.

We would like to point out that there have been no indications of any adverse soil conditions, but no formal soil investigation has been made.

All of the proposed work has been generally designed and shall be constructed in accordance with the DESIGN AND CONSTRUCTION GUIDELINES FOR WORK UNDER THE DRAINAGE ACT.

RECOMMENDATIONS

We are therefore recommending the following:

- that the Sherman Drain be enclosed, commencing at the tile outlet at the half-lot line in Lot 2, Concession 11, and travel northerly through the lands of Samaterra Inc. (Roll No. 40-010). The enclosure will then continue northerly to the lands of A. Sacher (Roll No. 40-012) for a total length of 286 lineal meters
- that catchbasins be installed at the top end to provide an outlet for the pond and the upstream tile

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 Sherman 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 286 lineal meters of 525mm (21") to 600mm (24") 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 Section 30 of the Drainage Act, allowances are provided for 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 \$70,000.00. 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. 223251, 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. Under this report no allowance for right-of-way has been given as the area gained by the enclosing of the open drain is deemed sufficient and transferable to the closed drain.

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.



ASSESSMENT DEFINITIONS (cont'd)

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

The entire costs of the open ditch enclosure are assessed to the benefitting landowner as shown on Schedule 'C' – Assessment for Construction.

A modified "Todgham Method" was used to calculate the assessments shown on Schedule 'D' – Assessment for Maintenance. 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 fates. Due to their different relative run-off rates, road, and residential properties have been assessed for outlet at higher rates than farmlands.

GRANTS

It should be noted that the proposed enclosure is not eligible for the agricultural 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 Sherman Drain, enclosed in this report, shall be maintained by the Municipality of West 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.



Respectfully submitted,

SPRIET ASSOCIATES LONDON LIMITED

B. Widner, P.Eng.



SCHEDULE 'A' - ALLOWANCES

SHERMAN 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:

<u>CONCESSION</u>	<u>LOT</u>	<u>ROLL NUMBER (Owner)</u>	<u>Section 30 Damages</u>	<u>TOTALS</u>
MAIN DRAIN				
11	Pt. 2	40-011-01 (Waldorf Farms Ltd)	\$ 60.00	\$ 60.00
11	Pt. 2	40-010 (Samaterra Inc.)	1,520.00	1,520.00
			=====	=====
		Total Allowances	\$ 1,580.00	\$ 1,580.00
			=====	=====
		TOTAL ALLOWANCES ON THE MAIN DRAIN		\$ <u>1,580.00</u>

SHERMAN DRAIN**Municipality of West 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 600mm dia., H.D.P.E. plastic sewer pipe including rodent gate,
quarry stone rip-rap protection around pipe and bank of ditch
(Approximately 6m³ quarry stone req'd)

Supply	\$	1,300.00
Installation	\$	1,300.00

Installation of the following concrete field tile/ H.D.P.E. pipe on crushed stone
bedding, including supply and installation of geotextile around tile joints

14 meters of 200mm dia. HDPE pipe (lead)	\$	700.00
20 meters of 375mm dia. HDPE pipe (lead)	\$	1,000.00
171 meters of 525mm dia. concrete tile	\$	6,000.00
109 meters of 600mm dia. concrete tile	\$	3,800.00
Supply of the above listed tile / pipe	\$	18,100.00

Strip, stockpile and relevel topsoil from tile trench and adjacent working area
(4m wide) specified on drawings (approx. 286m)

	\$	1,700.00
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Supply & delivery of 19mm crushed stone (Approx. 120 tonnes req'd)

	\$	4,800.00
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Supply and install one 900mm x 1200mm side inlet catchbasin with sloped top
including grate, grading & any pre-fab fitting required for tile connection

	\$	3,000.00
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Backfilling and regrading of existing open ditch using on-site materials from
ditch banks and removal of existing 1000mm csp culvert

	\$	9,400.00
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Exposing and locating existing tile drains and utilities

	\$	900.00
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Tile connections and contingencies

	\$	2,600.00
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Allowances under Sections 29 & 30 of the Drainage Act

	\$	1,580.00
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ADMINISTRATION

Interest and Net Harmonized Sales Tax

	\$	2,000.00
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Survey, Plan and Final Report

	\$	7,900.00
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Expenses

	\$	950.00
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Supervision and Final Inspection

	\$	2,970.00
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TOTAL ESTIMATED COST

	\$	<u>70,000.00</u>
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SCHEDULE 'C' - ASSESSMENT FOR CONSTRUCTION

SHERMAN DRAIN

Municipality of West Elgin

Job No. 223251

March 14, 2024

ROLL No. (OWNER)

TOTAL

MAIN DRAIN

We assess the entire cost of this report to roll number: 40-010 (Samaterra Inc.)

\$ 70,000.00

SCHEDULE 'D' - ASSESSMENT FOR MAINTENANCE

SHERMAN DRAIN

Municipality of West Elgin

Job No. 223251

March 14, 2024

CON.	LOT	HECTARES AFFECTED	ROLL No. (OWNER)	PERCENTAGE OF MAINTENANCE COST
MAIN DRAIN				
10	Pt. 2	2.0	30-137 (2652622 Ontario Inc.)	0.6 %
10	Pt. 2	8.0	30-138 (R. & M. Hadash)	2.4
10	Pt. 2	9.0	30-135-02 (A. Sacher)	2.7
10	Pt. 2 &	3 48.8	30-139 (M. Sacher)	23.8
10	Pt. 3	14.0	30-140 (A. Sacher)	6.8
11	Pt. 2	19.8	40-010 (Samaterra Inc.)	43.1
11	Pt. 2	0.8	40-010-20 (D. & S. Raes)	0.2
11	Pt. 3	28.5	40-012 (A. Sacher)	17.4
				=====
TOTAL ASSESSMENT ON LANDS				97.0 %
				=====
Thomson Line		1.7	Municipality of West Elgin	3.0 %
				=====
TOTAL ASSESSMENT ON ROADS				3.0 %
				=====
TOTAL ASSESSMENT FOR MAINTENANCE ON THE MAIN DRAIN				<u>100.0 %</u>