

STRICKER DRAIN
Municipality of West Elgin



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London, Ontario
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STRICKER 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 the Stricker Municipal Drain serving parts of Lots 12 and 13, Concession 3 (geographic Aldborough) in the Municipality West Elgin. The total watershed area contains approximately 40 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 one of the affected landowners.

HISTORY

The Stricker Drain was last reconstructed pursuant to a report submitted by H.H. Todgham, P. Eng. dated July 29, 1960 and consisted of the construction of an outlet wall and approximately 122 lineal meters of open drain improvements in Concession 3, Lot 12.

EXISTING DRAINAGE CONDITIONS

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

- that the owners, W. Charlot Grains Ltd. (Roll No. 11-056), indicated that they wanted the existing Main Drain and Branch improved to today's standards
- that the other owners in the watershed indicated that the drain was no longer functioning properly

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

- that the existing drain is undersized for today's standards.



EXISTING DRAINAGE CONDITIONS (cont'd)

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 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 38mm per 24 hrs.

We would like to point out that there have been no indications of any adverse soil conditions. 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 the existing tile drain be replaced from its outlet in Concession 3, Lot 12, and head east through the lands of W. Charlot Grains Ltd. (Roll No. 11-056) and R. Hadash (Roll No. 11-058), across Henry Road to its head, just within the lands of K. and B. Okolisan (Roll. No. 11-060) for a total approximate linear length of 699 meters
- that the existing Branch 'A' be replaced from Sta. 0+461 (Main Drain) and head north-easterly across the lands of W. Charlot Grains Ltd. (Roll No. 11-056) across Henry Road to just within the lands of Gurchin Farms Ltd. (Roll No. 11-059) for a total approximate length of 187 lineal meters
- that sealed H.D.P.E. pipe be utilized through the wooded area in the lands of R. Hadash (Roll No. 11-058) to prevent tree roots from intruding into the drain.
- that a catchbasin and berm be installed just upstream of the tile out to help mitigate erosion from overland flows to the bank
- that catchbasins be installed along Henry Road to better collect roadside drainage.
- that the open portion downstream of the tile outlet for 30m be incorporated as part of this main drain report with no work is required at this time
- that the existing Stricker Drain be officially abandoned from municipal status pursuant to Section 19 of the Drainage Act



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 Stricker 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 30m lineal meter of open drain incorporation and 886 lineal meters of 300mm (12") to 450mm (18") diameter concrete field tile and H.D.P.E. sewer 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 \$130,500.00. 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. 223024, 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.



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 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.

For open ditches, the allowance provides for the loss of land due to the construction provided for in the report. The amounts granted are based on the value of the land, and the rate used was \$45,000.00/ha. When any buffer strip is incorporated and/or created, the allowance granted is for any land beyond a 1.8 meter width deemed to have always been part of the drain. For existing open ditches, the right-of-way to provide for the right to enter and restrictions imposed on those lands, is deemed to have already been granted.

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 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. Special Assessments were then extracted from each section.

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

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, outlet and for special assessments as shown in detail below and on Schedule 'C' - Assessment for Construction. The Special Assessments shall be levied as noted in the Section "Special Assessment".

SPECIAL ASSESSMENT

In accordance with Section 26 of the Drainage Act, Special Assessments have been made against the Municipality of West Elgin being the increased cost to the drainage work for installing H.D.P.E. pipe across their road allowance on the Main Drain and Branch "A", due to the construction and operation of Henry Road. The Special Assessments shall be made up of the actual cost of this work and both the final and estimated values of the Special Assessment are to be calculated as follows:

Drain	Cost of Work	Less Equivalent Drain Cost (Fixed)	Plus Administration Cost	Plus Interest & Net H.S.T.	Special Assessment
Main Drain 375mm dia.	\$6,900.00	\$880.00	\$2,400.00	\$210.00	\$8,630.00
Branch A 300m	\$6,600.00	\$800.00	\$2,400.00	\$210.00	\$8,410.00

The above special assessments shall not apply for future maintenance purposes.

If any additional work is required to the drainage works due to the existence of buried utilities such as gas pipelines, communications cables, etc. or if any of the utilities require relocation or repair, then, the extra costs incurred shall be borne by the utility involved in accordance with the provisions of Section 26 of the Drainage Act.



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.

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 entire Stricker Drain 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.

Special Assessments shall **not** be pro-rated for future maintenance purposes.

Repairs or improvements to any road culvert 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 Road Authority, entirely at their cost.

Respectfully submitted,

SPRIET ASSOCIATES LONDON LIMITED

JMS:ms



J.M. Spriet, P.Eng.



SCHEDULE 'A' - ALLOWANCES

STRICKER 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
MAIN DRAIN					
3	N½ 12	11-056 (W. Charlot Grains Ltd.)	\$ 3,840.00	\$ 2,950.00	\$ 6,790.00
3	SE¼ 12	11-058 (R. Hadash)	860.00	700.00	1,560.00
3	SW¼ 13	11-060 (K. & B. Okolisan)	40.00	30.00	70.00
Total Allowances			\$ 4,740.00	\$ 3,680.00	\$ 8,420.00

TOTAL ALLOWANCES ON THE MAIN DRAIN **\$ 8,420.00**

BRANCH "A"

3	N½ 12	11-056 (W. Charlot Grains Ltd.)	\$ 1,070.00	\$ 870.00	\$ 1,940.00
3	N½ 13	11-059 (Gurchin Farms Ltd.)	40.00	30.00	70.00
Total Allowances			\$ 1,110.00	\$ 900.00	\$ 2,010.00

TOTAL ALLOWANCES ON THE BRANCH "A" **\$ 2,010.00**

TOTAL ALLOWANCES ON THE STRICKER DRAIN **\$ 10,430.00**

STRICKER 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 450mm dia., H.D.P.E. plastic sewer pipe including rodent gate, quarry stone rip-rap protection around pipe and end of ditch and brushing as required for outlet.
(Approximately 6m³ quarry stone req'd)

Supply	\$	900.00
Installation	\$	700.00

Installation of the following H.D.P.E. sewer pipe and concrete tile, including supply and installation of geotextile around tile joints and bedding as required for sewer pipe. (Approx. 1000m geotextile req'd)

8 meters of 300mm dia. H.D.P.E. pipe	\$	300.00
75 meters of 350mm dia. concrete tile	\$	2,200.00
56 meters of 375mm dia. H.D.P.E. pipe	\$	2,500.00
83 meters of 400mm dia. concrete tile	\$	2,500.00
455 meters of 450mm dia. concrete tile	\$	13,700.00
Supply of the above listed tile / pipe	\$	25,300.00

16 meters of 375mm H.D.P.E. dia. Sewer pipe

Supply	\$	1,000.00
Installation under Henry Road by open cut	\$	5,900.00

Strip, stockpile and releve topsoil from tile trench and adjacent working area
(4m wide) specified on drawings (approx. 680m)

\$ 4,000.00

Supply and install one 900mm x 1200mm ditch inlet catchbasin and three 600mm x 600mm on-line ditch inlet catchbasin, including grates, berms, ditching, wyes and any required prefab fittings

\$ 9,750.00

Destroy existing drain in place

\$ 1,000.00

Exposing and locating existing tile drains and utilities

\$ 900.00

Tile connections and contingencies

\$ 3,400.00

Allowances under Sections 29 & 30 of the Drainage Act

\$ 8,420.00

STRICKER DRAIN
Municipality of West Elgin

BRANCH "A"

Installation of the following H.D.P.E. sewer pipe and concrete tile, including supply and installation of geotextile around tile joints. (Approx. 200m geotextile req'd)

8 meters of 300mm dia. H.D.P.E. pipe	\$ 300.00
163 meters of 300mm dia. concrete tile	\$ 4,700.00
Supply of the above listed tile / pipe	\$ 4,200.00

16 meters of 300mm H.D.P.E. dia. Sewer pipe

Supply \$ 700.00

Installation under Henry Road by open cut \$ 5,900.00

Strip, stockpile and releve topsoil from tile trench and adjacent working area (4m wide) specified on drawings (approx. 170m)

\$ 1,000.00

Supply and install two 600mm x 600mm on-line ditch inlet catchbasin, including grates, berms, ditching, wyes and any required prefab fittings

\$ 4,500.00

Destroy existing drain in place

\$ 500.00

Exposing and locating existing tile drains and utilities

\$ 300.00

Tile connections and contingencies

\$ 1,000.00

Allowances under Sections 29 & 30 of the Drainage Act

\$ 2,010.00

ADMINISTRATION

Interest and Net Harmonized Sales Tax

\$ 2,950.00

Survey, Plan and Final Report

\$ 15,900.00

Expenses

\$ 960.00

Supervision and Final Inspection

\$ 3,110.00

TOTAL ESTIMATED COST

\$ 130,500.00

CON.	LOT	HECTARES AFFECTED	ROLL No. (OWNER)	BENEFIT	OUTLET	TOTAL
MAIN DRAIN						
3	N½ 12	12.1	11-056 (W. Charlot Grains Ltd.)	\$ 38,010.00	\$ 5,577.00	\$ 43,587.00
3	SE¼ 12	4.0	11-058 (R. Hadash)	9,140.00	2,535.00	11,675.00
3	N½ 13	6.1	11-059 (Gurchin Farms Ltd.)		4,632.00	4,632.00
3	SW¼ 13	15.9	11-060 (K. & B. Okolisan)	1,930.00	17,285.00	19,215.00
3	Pt. 13	0.2	11-060-01 (R. Russell & K. Tompkins)		277.00	277.00
TOTAL ASSESSMENT ON LANDS				\$ 49,080.00	\$ 30,306.00	\$ 79,386.00
Henry Road				\$ 6,650.00	\$ 4,334.00	\$ 10,984.00
TOTAL ASSESSMENT ON ROADS				\$ 6,650.00	\$ 4,334.00	\$ 10,984.00
SPECIAL ASSESSMENT against the Municipality of West Elgin for the increased cost of installing a 375mm dia. H.D.P.E. subsurface pipe underneath Henry Road by Open Cut						\$ 8,630.00
TOTAL ASSESSMENT ON THE MAIN DRAIN						\$ 99,000.00
BRANCH "A"						
3	N½ 12	1.3	11-056 (W. Charlot Grains Ltd.)	\$ 7,730.00	\$ 366.00	\$ 8,096.00
3	N½ 13	6.1	11-059 (Gurchin Farms Ltd.)	1,840.00	4,295.00	6,135.00
TOTAL ASSESSMENT ON LANDS				\$ 9,570.00	\$ 4,661.00	\$ 14,231.00
Henry Road				\$ 6,380.00	\$ 2,479.00	\$ 8,859.00
TOTAL ASSESSMENT ON ROADS				\$ 6,380.00	\$ 2,479.00	\$ 8,859.00
SPECIAL ASSESSMENT against the Municipality of West Elgin for the increased cost of installing a 300mm dia. H.D.P.E. subsurface pipe underneath Henry Road by Open Cut						\$ 8,410.00
TOTAL ASSESSMENT ON THE BRANCH "A"						\$ 31,500.00
TOTAL ASSESSMENT ON THE STRICKER DRAIN						\$ 130,500.00

SCHEDULE 'D' - ASSESSMENT FOR MAINTENANCE

STRICKER DRAIN

Municipality of West Elgin

Job No. 223024

April 28, 2023

CON.	LOT	HECTARES AFFECTED	ROLL No. (OWNER)	PERCENTAGE OF MAINTENANCE COST
MAIN DRAIN				
3	N½ 12	12.1	11-056 (W. Charlot Grains Ltd.)	39.2 %
3	SE¼ 12	4.0	11-058 (R. Hadash)	11.4
3	N½ 13	6.1	11-059 (Gurchin Farms Ltd.)	7.4
3	SW¼ 13	15.9	11-060 (K. & B. Okolisan)	29.2
3	Pt. 13	0.2	11-060-01 (R. Russell & K. Tompkins)	0.4
				=====
TOTAL ASSESSMENT ON LANDS				87.6 %
				=====
Henry Road		1.1	Municipality of West Elgin	12.4 %
				=====
TOTAL ASSESSMENT ON ROADS				12.4 %
				=====
TOTAL ASSESSMENT FOR MAINTENANCE ON THE MAIN DRAIN				<u>100.0 %</u>
BRANCH "A"				
3	N½ 12	1.3	11-056 (W. Charlot Grains Ltd.)	28.0 %
3	N½ 13	6.1	11-059 (Gurchin Farms Ltd.)	34.5
				=====
TOTAL ASSESSMENT ON LANDS				62.5 %
				=====
Henry Road		0.4	Municipality of West Elgin	37.5 %
				=====
TOTAL ASSESSMENT ON ROADS				37.5 %
				=====
TOTAL ASSESSMENT FOR MAINTENANCE ON BRANCH 'A'				<u>100.0 %</u>

SCHEDULE OF NET ASSESSMENT

STRICKER DRAIN

Municipality of West Elgin

(FOR INFORMATION PURPOSES ONLY)

Job No. 223024

April 28, 2023

* = Non-agricultural

ROLL NUMBER (OWNER)	TOTAL ASSESSMENT	GRANT	ALLOWANCES	APPROX. NET
11-056 (W. Charlot Grains Ltd.)	\$ 51,683.00	\$ 17,228.00	\$ 8,730.00	\$ 25,725.00
11-058 (R. Hadash)	11,675.00	3,892.00	1,560.00	6,223.00
11-059 (Gurchin Farms Ltd.)	10,767.00	3,589.00	70.00	7,108.00
11-060 (K. & B. Okolisan)	19,215.00	6,405.00	70.00	12,740.00
11-060-01 (R. Russell & K. Tompkins)	277.00			277.00
Henry Road	19,843.00			19,843.00
Special Assessment	8,630.00			8,630.00
Special Assessment	8,410.00			8,410.00
TOTALS	\$ 130,500.00	\$ 31,114.00	\$ 10,430.00	\$ 88,956.00