

**CHYC DRAIN**  
**Municipality of Central Elgin**



**SPRIET  
ASSOCIATES**  
**ENGINEERS & ARCHITECTS**

155 York Street  
London, Ontario N6A 1A8  
Tel. (519) 672-4100  
Fax (519) 433-9351  
E-mail MAIL@SPRIET.ON.CA

London, Ontario  
February 12, 2024

**CHYC 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 Chyc Municipal Drain serving parts of Lots 25 to 27, Concessions 6 and 7 (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 the owners whose lands contain over 60 percent of the area requiring drainage.

**DRAINAGE AREA**

The total watershed area as described above contains approximately 40.5 hectares. The area requiring drainage is described as the lands in the southwest portion of Lot 26, Concession 7, known as the lands of E. Chyc (Roll No. 5-119).

**HISTORY**

This watershed is tributary to Bradley Creek in the Catfish Creek watershed and currently is served with a private tile.

**EXISTING DRAINAGE CONDITIONS**

A site meeting was held on February 8, 2024. with respect to the project and through later discussions the owners reported the following:

- that the owner, E. Chyc (Roll No. 5-119), indicated that he required an outlet for their lands adjacent to Southdale Line, on the west side of their property.
- that the Municipality of Central Elgin indicated that Southdale Line was reconstructed in 2000 with roadside drainage and surface pipes installed
- the Conservation Authority indicated that previous erosion works around bends and meanders was completed in the lands of Denniss Brook Farms Ltd. (Roll No. 5-077)

## EXISTING DRAINAGE CONDITIONS (cont'd)

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

- that the area could be served with a drain outletting into Catfish Creek to the south

Preliminary design, cost estimates, and assessments were prepared, circulated, and provided to the affected owners. 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 30mm per 24 hrs.

We would like to point out that there have been indications of sandy, unstable soil conditions. It should be noted that no formal soil investigation has been made.

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 be constructed, outletting at Catfish Creek, in the lands of Denniss Brook Farms Ltd. (Roll No. 5-077) and head north through those lands, northerly across Southdale Line, just into the lands of E. Chyc (Roll No. 5-119), for a total length of 123 lineal meters.
- that catchbasins be installed in the roadside ditch to collect roadside drainage.

## 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 Chyc 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 123 lineal meters of 450mm (18") diameter HDPE 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 \$56,500.00. 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. 224033, 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.

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 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 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, and outlet 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, a Special Assessment has been made against the Municipality of Central Elgin being the increased cost to the drainage work for installing an H.D.P.E. pipe across their road allowance on the Main Drain due to the construction and operation of Southdale Line. The Special Assessment 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:

**SPECIAL ASSESSMENT (cont'd)**

Main Drain	Cost of Work	Less Equivalent Drain Cost (Fixed)	Plus Administration Cost	Plus Interest & Net H.S.T.	Special Assessment
450mm pipe	\$12,200.00	\$2,160.00	\$2,900.00	\$320.00	\$13,260.00

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

If the Municipality of Central Elgin elects to perform the work themselves, the above Special Assessment shall be reduced by \$12,200.00. Otherwise, this portion of the work shall be included in the general contract.

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 Chyc 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.

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.



BW:bv

Respectfully submitted,

SPRIET ASSOCIATES LONDON LIMITED

B. Widner, P.Eng.

SCHEDULE 'A' - ALLOWANCES

CHYC 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
<b>MAIN DRAIN</b>					
6	25 & 26	5-077 (Denniss Brook Farms Ltd.)	\$ 650.00	\$ 530.00	\$ 1,180.00
7	26	5-119 (E. Chyc)	40.00	30.00	70.00
Total Allowances			\$ 690.00	\$ 560.00	\$ 1,250.00
<b>TOTAL ALLOWANCES ON THE MAIN DRAIN</b>					<b>\$ 1,250.00</b>

**CHYC 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**

Seeding of disturbed areas adjacent creek	\$	900.00
Supply and Installation of shot rock at outlet, creek bank and bend as per detail (Approximately 20m <sup>3</sup> shot rock req'd)	\$	3,500.00
Installation of the following H.D.P.E sewer pipe on crushed stone bedding, including supply and installation of rodent gate 107 meters of 450mm dia. H.D.P.E. pipe	\$	5,400.00
Supply of the above listed tile	\$	9,500.00
Supply & delivery of 19mm crushed stone (Approx. 50 tonnes req'd)	\$	2,000.00
Supply and install two 900mm x 1200mm ditch inlet catchbasin, including berms, ditching, and geotextile	\$	6,000.00
16 meters of 450mm H.D.P.E. dia. Sewer pipe		
Supply	\$	1,400.00
Installation under Southdale Line by open cut	\$	5,900.00
Restoration under Southdale Line with 100mm HL4	\$	4,900.00
Exposing and locating existing tile drains and utilities	\$	900.00
Tile connections and contingencies	\$	1,500.00
Allowances under Sections 29 and 30 of the Drainage Act	\$	1,250.00

**ADMINISTRATION**

Interest and Net Harmonized Sales Tax	\$	2,100.00
Survey, Plan and Final Report	\$	6,900.00
Expenses	\$	960.00
Supervision and Final Inspection	\$	<u>3,390.00</u>
<b>TOTAL ESTIMATED COST</b>	<b>\$</b>	<b><u><u>56,500.00</u></u></b>



SCHEDULE 'C' - ASSESSMENT FOR CONSTRUCTION

**CHYC DRAIN**

**Municipality of Central Elgin**

Job No. 224033

February 12, 2024

\* = Non-grantable

CON.	LOT	HECTARES AFFECTED	ROLL No. (OWNER)	BENEFIT	OUTLET	TOTAL
<b>MAIN DRAIN</b>						
6	25 & 26	1.0	5-077 (Denniss Brook Farms Ltd.)	\$ 16,360.00	\$ 242.00	\$ 16,602.00
7	25	2.7	5-117 (G. & A. Wells)		1,186.00	1,186.00
7	26	29.3	5-119 (E. Chyc)	2,980.00	12,485.00	15,465.00
7	26	0.6	5-120 (D. & S. Catt)		290.00	290.00
7	27	3.2	5-121 (Macvicar Farms Ltd.)		1,548.00	1,548.00
7	27	2.5	5-123 (Macvicar Farms Ltd.)		1,210.00	1,210.00
TOTAL ASSESSMENT ON LANDS				\$ 19,340.00	\$ 16,961.00	\$ 36,301.00
Southdale Line				\$ 4,970.00	\$ 953.00	\$ 5,923.00
Hobson Road					1,016.00	1,016.00
TOTAL ASSESSMENT ON ROADS				\$ 4,970.00	\$ 1,969.00	\$ 6,939.00
<b>SPECIAL ASSESSMENT</b> against the municipality of Central Elgin for the increased cost of installing a 450mm (18") dia. H.D.P.E. Sewer Pipe under Southdale Line by open cut.						\$ 13,260.00
<b>TOTAL ASSESSMENT ON MAIN DRAIN</b>						<b>\$ 56,500.00</b>

SCHEDULE 'D' - ASSESSMENT FOR MAINTENANCE

CHYC DRAIN

Municipality of Central Elgin

Job No. 224033

February 12, 2024

CON.	LOT	HECTARES AFFECTED	ROLL No. (OWNER)	PERCENTAGE OF MAINTENANCE COST
<b>MAIN DRAIN</b>				
6	25 & 26	1.0	5-077 (Denniss Brook Farms Ltd.)	27.1 %
7	25	2.7	5-117 (G. & A. Wells)	3.8
7	26	29.3	5-119 (E. Chyc)	45.0
7	26	0.6	5-120 (D. & S. Catt)	0.9
7	27	3.2	5-121 (Macvicar Farms Ltd.)	5.0
7	27	2.5	5-123 (Macvicar Farms Ltd.)	3.9
				=====
TOTAL ASSESSMENT ON LANDS				85.7 %
				=====
Southdale Line		0.6	Municipality of Central Elgin	11.0 %
Hobson Road		0.6	Municipality of Central Elgin	3.3
				=====
TOTAL ASSESSMENT ON ROADS				14.3 %
				=====
<b>TOTAL ASSESSMENT FOR MAINTENANCE OF THE MAIN DRAIN</b>				<b><u>100.0 %</u></b>

SCHEDULE OF NET ASSESSMENT

CHYC DRAIN

Municipality of Central Elgin

(FOR INFORMATION PURPOSES ONLY)

Job No. 224033

February 12, 2024

\* = Non-grantable

ROLL NUMBER (OWNER)	TOTAL ASSESSMENT	GRANT	ALLOWANCES	APPROX. NET
5-077 (Denniss Brook Farms Ltd.)	\$ 16,602.00	\$ 5,534.00	\$ 1,180.00	\$ 9,888.00
5-117 (G. & A. Wells)	1,186.00	395.00		791.00
5-119 (E. Chyc)	15,465.00	5,155.00	70.00	10,240.00
5-120 (D. & S. Catt)	290.00	97.00		193.00
5-121 (Macvicar Farms Ltd.)	1,548.00	516.00		1,032.00
5-123 (Macvicar Farms Ltd.)	1,210.00	403.00		807.00
* Southdale Line	\$ 5,923.00	\$	\$	\$ 5,923.00
* Special Assessment	13,260.00			13,260.00
* Hobson Road	1,016.00			1,016.00
<b>TOTALS</b>	<b>\$ 56,500.00</b>	<b>\$ 12,100.00</b>	<b>\$ 1,250.00</b>	<b>\$ 43,150.00</b>