

BACHNER DRAIN EXTENSION

Municipality of Central Elgin



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London, Ontario
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BACHNER DRAIN EXTENSION

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 reconstruction of parts of the Bachner Municipal Drain Extension serving parts of Lots 9 to 11, Concessions 4 and 5, (geographic Yarmouth) in the Municipality of Central Elgin.

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 the one of the affected landowners.

HISTORY

The Bachner Drain Extension was originally constructed pursuant to a report submitted by J.R. Spriet, P. Eng., dated September 10, 1987, and consisted of 140 lineal meters of open ditch and 1,108 lineal meters of 300mm plastic tile, including a branch consisting of 116 meters of 200mm solid plastic tile.

EXISTING DRAINAGE CONDITIONS

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

- that the existing tile is in poor condition and has had frequent repairs in the past, with this information being provided by the Drainage Superintendent
- additionally, the owner, R. & K. Kline (Roll No. 4-083), indicated that the drain frequently surcharges causing flooding on their lands

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



EXISTING DRAINAGE CONDITIONS (cont'd)

- that the drain is undersized for today's standards and that the area has been further improved since the last report

Preliminary design, cost estimates, and assessments were prepared, and informal public meetings were held on October 28, 2025 and November 5, 2025 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 "DRAINAGE GUIDE FOR ONTARIO", Publication 29 by the Ontario Ministry of Agriculture, Food, and Agribusiness (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 hours.

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" OMAFA Publication 852.

RECOMMENDATIONS

We are therefore recommending the following:

- that the drain be reconstructed from the open portion at the west property line of Y. Marot (Roll No. 1-288) and run north-easterly through those lands, north across Fruit Ridge Line, then east across the lands of G. & B. Watson (Roll No. 4-081), D. & K. Maclean (Roll No. 4-082) and R. & K. Kline (Roll No. 4-083), to just within the lands of N. & E. Stevens (Roll No. 4-084) for a total linear length of 439 meters
- that the drain utilize sealed sewer pipe through lawn areas to prevent roots from entering the drain
- that the drain generally follows its original route, except in the lands of D. & K. Maclean (Roll No. 4-082) where the drain will go south around their septic system, and the lands of R. & K. Kline (Roll No. 4-083) where the drain will be located further north to minimize removal of trees
- that the existing 1987 Bachner Drain be officially abandoned from municipal status pursuant to Section 19 of the Drainage Act where it is being improved



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 Bachner Drain Extension 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 439 lineal meters of 300mm (12") to 450mm (18") diameter concrete field tile and 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 \$240,000.00. 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.'s 1 and 2, Job No. 225116, 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. 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. No right-of-way has been paid as it was paid under the last report in 1987.



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, increased crop production, improved appearance, 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 was 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, a Special Assessment has been made against the Municipality of Central Elgin being the increased cost to the drainage work for boring a smooth wall steel pipe across their road allowance on the Main Drain, due to the construction and operation of Fruit Ridge 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:

Drain	Cost of Work	Less Equivalent Drain Cost (Fixed)	Plus Administration Cost	Plus Interest & Net H.S.T.	Special Assessment
508mm smooth wall steel pipe	\$28,600.00	\$4,900.00	\$5,900.00	\$890.00	\$30,490.00

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

In accordance with Section 26 of the Drainage Act, a Special Assessment has been made against Elgin Area Primary Water for the cost of locating and working around their watermain on the Main Drain, being the increased cost to the drainage works due to the construction and operation of their utilities. The Special Assessment shall be as shown on Schedule 'C' and shall **not** apply when pro-rating future maintenance costs.

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. The cost to upsize the drains to the 50mm coefficient design was assessed to the road authority as benefit

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 Bachner Drain Extension repaired under this report 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.



MAINTENANCE (cont'd)

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 of J.R. Spriet, P.Eng., dated August 27, 1987.

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:

Respectfully submitted,

SPRIET ASSOCIATES LONDON LIMITED

B. Widner, P.Eng.



SCHEDULE 'A' - ALLOWANCES

BACHNER DRAIN EXTENSION

Municipality of Central Elgin

In accordance with Section 30 of the Drainage Act, we determine the allowances payable to owners entitled thereto as follows:

CONCESSION	LOT	ROLL NUMBER (Owner)	Section 30 Damages	TOTALS
MAIN DRAIN				
4	Pt. 9 & 10	1-288 (Y. Marot)	\$ 1,220.00	\$ 1,220.00
5	Pt. 9	4-081 (G. & B. Watson)	130.00	130.00
5	Pt. 9	4-082 (D. & K. Maclean)	700.00	700.00
5	Pt. 9	4-083 (R. & K. Kline)	480.00	480.00
5	Pt. 10	4-084 (N. & E. Stevens)	90.00	90.00
Total Allowances			\$ 2,620.00	\$ 2,620.00
TOTAL ALLOWANCES ON THE BACHNER DRAIN EXTENSION			\$ 2,620.00	

BACHNER DRAIN EXTENSION**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

14 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
(Approximately 6m³ quarry stone req'd)

Supply	\$	1,600.00
Installation	\$	1,500.00

Installation of the following H.D.P.E. pipe and concrete field tile, including supply and
installation of geotextile around tile joints and supply & installation of backfill and bedding

6 meters of 450mm dia. H.D.P.E. pipe	\$	400.00
181 meters of 450mm dia. H.D.P.E. pipe	\$	32,600.00
214 meters of 450mm dia. concrete tile (installed on crushed stone)	\$	12,800.00
Supply of the above listed tile / pipe	\$	23,000.00

Supply & delivery of 19mm crushed stone (Approx. 200 tonnes req'd)	\$	8,000.00
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Strip, stockpile and releve topsoil from tile trench and adjacent working area (4m wide) specified on drawings (approx. 414m)	\$	4,000.00
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24 meters of 406.4mm dia. (16"), 7.9mm thickness smooth wall steel pipe		
Supply	\$	7,900.00
Installation under Fruit Ridge Line by boring	\$	18,900.00
Grout existing subsurface pipe	\$	1,800.00

Supply and install four 600mm x 600mm ditch inlet catchbasins including berms and ditching and one 1200mm dia. Manhole.	\$	19,000.00
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12 meters of 450mm dia., surface H.D.P.E. pipe		
12 meters of 450mm dia., surface H.D.P.E. pipe		
Supply of above listed pipes	\$	1,200.00
Installation under Laneways by Open Cut	\$	5,900.00
Restoration of gravel driveway consisting of 300mm of granular 'A'	\$	2,900.00

Restoration of driveway at Sta. 0+000	\$	3,900.00
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SCHEDULE 'B' - COST ESTIMATE (cont'd)

BACHNER DRAIN EXTENSION
Municipality of Central Elgin**MAIN DRAIN (cont'd)**

Restoration of asphalt driveway with 50mm of HL3	\$ 5,900.00
Trimming of trees on drain path	\$ 3,900.00
Removal and trees and stumps as noted on drawings	\$ 3,900.00
Restoration of lawn areas with imported topsoil and hydroseed, regrade to orig. conditions (Approx. 2000m ²)	\$ 8,900.00
Removal of wooden and chain link fences (owner to restore) (Sta. 0+399 & 0+427)	\$ 1,900.00
Supporting hydro pole during construction	\$ 5,000.00
Exposing and locating existing tile drains and utilities	\$ 6,000.00
Tile connections and contingencies	\$ 14,500.00
Allowances under Sections 29 & 30 of the Drainage Act	\$ 2,620.00

ADMINISTRATION

Interest and Net Harmonized Sales Tax	\$ 6,290.00
Survey, Plan and Final Report	\$ 26,900.00
Expenses	\$ 1,230.00
Supervision and Final Inspection	\$ 7,560.00

TOTAL ESTIMATED COST**\$ 240,000.00**

SCHEDULE 'C' - ASSESSMENT FOR CONSTRUCTION

BACHNER DRAIN EXTENSION**Municipality of Central Elgin**

Job No. 225116

November 24, 2025

* = Non-agricultural

CON.	LOT	HECTARES AFFECTED	ROLL No. (OWNER)	BENEFIT	OUTLET	TOTAL
MAIN DRAIN						
* 4	Pt. 9	0.02	1-272-05 (Municipality of Central Elgin)	\$	33.00	\$ 33.00
4	Pt. 9 & 10	12.58	1-288 (Y. Marot)	22,160.00	4,090.00	26,250.00
* 4	Pt. 11	0.50	1-294 (T. & S. Admans)		1,864.00	1,864.00
* 4	Pt. 11	0.17	1-295 (M. & J. Mills)		845.00	845.00
4	Pt. 11	4.60	1-296 (J. Campbell)		11,227.00	11,227.00
* 4	Pt. 11	0.31	1-296-01 (G. & M. Direnzo)		1,541.00	1,541.00
4	Pt. 11	3.90	1-297 (D. & V. McNeil)		9,694.00	9,694.00
5	Pt. 9	2.00	4-077 (M., M., & D. Bond)		1,853.00	1,853.00
* 5	Pt. 9	0.20	4-077-20 (Elgin Area Primary Water)		371.00	371.00
* 5	Pt. 9	0.60	4-081 (G. & B. Watson)	4,250.00	1,259.00	5,509.00
* 5	Pt. 9	0.52	4-082 (D. & K. Maclean)	18,550.00	1,772.00	20,322.00
* 5	Pt. 9	0.16	4-083 (R. & K. Kline)	18,100.00	754.00	18,854.00
* 5	Pt. 10	2.20	4-084 (N. & E. Stevens)	1,840.00	5,469.00	7,309.00
* 5	Pt. 10	0.35	4-085 (A. & J. Russell)		1,317.00	1,317.00
* 5	Pt. 10	2.53	4-086 (K. & P. Lang)		6,289.00	6,289.00
5	Pt. 10	1.40	4-087-02 (F. & S. Axford)		3,481.00	3,481.00
5	Pt. 11	6.90	4-090 (F., S., & D. Axford)		17,152.00	17,152.00
5	Pt. 11	0.10	4-091 (D. Ryckman)		248.00	248.00
TOTAL ASSESSMENT ON LANDS				\$ 64,900.00	\$ 69,259.00	\$ 134,159.00
Fruit Ridge Line				\$ 41,710.00	\$ 15,150.00	\$ 56,860.00
Centennial Road					8,701.00	8,701.00
TOTAL ASSESSMENT ON ROADS				\$ 41,710.00	\$ 23,851.00	\$ 65,561.00
SPECIAL ASSESSMENT against the municipality of Central Elgin for the increased cost of installing a 508mm (20") dia. Smooth Wall Steel Pipe under Fruit Ridge Line by boring					\$	<u>30,490.00</u>
SPECIAL ASSESSMENT against the Elgin Area Primary Water for the increased cost of locating and installing in close proximity to their Primary Transmission Line					\$	<u>9,790.00</u>
TOTAL ASSESSMENT ON THE BACHNER DRAIN EXTENSION					\$	<u>240,000.00</u>

SCHEDULE 'D' - ASSESSMENT FOR MAINTENANCE

BACHNER DRAIN EXTENSION**Municipality of Central Elgin**

Job No. 225116

November 24, 2025

CON.	LOT	HECTARES AFFECTED	ROLL No. (OWNER)	PERCENTAGE OF MAINTENANCE COST
MAIN DRAIN				
4	Pt. 9	0.02	1-272-05 (Municipality of Central Elgin)	0.02 %
4	Pt. 9 & 10	12.58	1-288 (Y. Marot)	10.36
4	Pt. 11	0.50	1-294 (T. & S. Admans)	1.27
4	Pt. 11	0.17	1-295 (M. & J. Mills)	0.58
4	Pt. 11	4.60	1-296 (J. Campbell)	7.67
4	Pt. 11	0.31	1-296-01 (G. & M. Drenzo)	1.05
4	Pt. 11	3.90	1-297 (D. & V. McNeil)	6.62
5	Pt. 9	2.00	4-077 (M., M., & D. Bond)	1.27
5	Pt. 9	0.20	4-077-20 (Elgin Area Primary Water)	0.25
5	Pt. 9	0.60	4-081 (G. & B. Watson)	2.31
5	Pt. 9	0.52	4-082 (D. & K. Maclean)	7.54
5	Pt. 9	0.16	4-083 (R. & K. Kline)	6.70
5	Pt. 10	2.20	4-084 (N. & E. Stevens)	4.36
5	Pt. 10	0.35	4-085 (A. & J. Russell)	0.90
5	Pt. 10	2.53	4-086 (K. & P. Lang)	4.30
5	Pt. 10	1.40	4-087-02 (F. & S. Axford)	2.38
5	Pt. 11	6.90	4-090 (F., S., & D. Axford)	11.71
5	Pt. 11	0.10	4-091 (D. Ryckman)	0.17
				=====
TOTAL ASSESSMENT ON LANDS				69.46 %
				=====
Fruit Ridge Line		2.40	Municipality of Central Elgin	24.59 %
Centennial Road		1.00	Municipality of Central Elgin	5.95
				=====
TOTAL ASSESSMENT ON ROADS				30.54 %
				=====
TOTAL ASSESSMENT FOR MAINTENANCE OF THE MAIN DRAIN				<u>100.00 %</u>

SCHEDULE OF NET ASSESSMENT

BACHNER DRAIN EXTENSION

Municipality of Central Elgin

(FOR INFORMATION PURPOSES ONLY)

Job No. 225116

November 24, 2025

* = Non-agricultural

	ROLL NUMBER (OWNER)	TOTAL ASSESSMENT	GRANT	ALLOWANCES	APPROX. NET
* 1-272-05 (Municipality of Central Elgin)		\$ 33.00	\$	\$	\$ 33.00
1-288 (Y. Marot)		26,250.00	8,750.00	1,220.00	16,280.00
* 1-294 (T. & S. Admans)		1,864.00			1,864.00
* 1-295 (M. & J. Mills)		845.00			845.00
1-296 (J. Campbell)		11,227.00	3,742.00		7,485.00
* 1-296-01 (G. & M. Direnzo)		1,541.00			1,541.00
1-297 (D. & V. McNeil)		9,694.00	3,231.00		6,463.00
4-077 (M., M., & D. Bond)		1,853.00	618.00		1,235.00
* 4-077-20 (Elgin Area Primary Water)		371.00			371.00
* 4-081 (G. & B. Watson)		5,509.00		130.00	5,379.00
* 4-082 (D. & K. Maclean)		20,322.00		700.00	19,622.00
* 4-083 (R. & K. Kline)		18,854.00		480.00	18,374.00
* 4-084 (N. & E. Stevens)		7,309.00		90.00	7,219.00
* 4-085 (A. & J. Russell)		1,317.00			1,317.00
* 4-086 (K. & P. Lang)		6,289.00			6,289.00
4-087-02 (F. & S. Axford)		3,481.00	1,160.00		2,321.00
4-090 (F., S., & D. Axford)		17,152.00	5,717.00		11,435.00
4-091 (D. Ryckman)		248.00	83.00		165.00
* Fruit Ridge Line		\$ 56,860.00	\$	\$	\$ 56,860.00
* Special Assessment - Bore		30,490.00			30,490.00
* Centennial Road		8,701.00			8,701.00
* Special Assessment - Elgin Area Primary Water		9,790.00			9,790.00
TOTALS		\$ 240,000.00	\$ 23,301.00	\$ 2,620.00	\$ 214,079.00