

KOVACS DRAIN BRANCHES 2024

Municipality of Strathroy-Caradoc



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KOVACS DRAIN BRANCHES 2024

Municipality of Strathroy-Caradoc

To the Mayor and Council of
The Municipality of Strathroy-Caradoc

Mayor and Council:

We are pleased to present our report on the reconstruction of parts of the Bujnowski Branch and Toonen Branch of the Kovacs Municipal Drain serving parts of Lots 19 and 20, Concessions 3 and 4 (geographic Caradoc) in the Municipality of Strathroy-Caradoc. The total watershed area contains approximately 37.6 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 Enbridge Gas due to an elevation conflict with their gas line.

HISTORY

The Kovacs Drain was originally constructed pursuant to a report submitted by Graham, Berman and Associates Ltd., dated January 26, 1968 and consisted of approximately 1,677 lineal meters of 300 to 125mm tile and approximately 396 lineal meters of open ditch construction including 131 lineal meters of 450mm diameter culvert. This report included a Kovacs Branch, Toonen Branch, and Bujnowski Branch. The Toonen Branch began at the upstream end of Kovacs Drain and was installed south easterly to its head just north of Falconbridge Drive. The Bujnowski Branch is connected to the Toonen Branch approximately 44 meters north of the road where it continues southerly across Falconbridge to its head in the upstream farm.

The Main Drain of Kovacs Drain was extended in 1969 through a drawing prepared by Graham, Berman and Associates Ltd., which included approximately 664 lineal meters of 375mm and smaller tile.

A new gas line was installed by Enbridge Gas in 2021 which damaged the Bujnowski Branch due to an elevation conflict. A repair was completed to the Branch, however due to the elevation conflict, a siphon was installed, and the drain was not able to be repaired to the original specifications/design.



EXISTING DRAINAGE CONDITIONS

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

- that Enbridge has signed a request to have the Bujnowski Branch deepened so that there is no longer a conflict in elevations
- that the landowners requested that the Bujnowski Branch be brought up to today's standards as it would be relatively economical when lowering the pipe
- that a portion of the Toonen Branch will need to be replaced (deepened) to provide adequate depth for the Bujnowski Branch to be installed under the Enbridge Gas Line

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

- that the existing portions of the Bujnowski Branch and Toonen Branch are considerably undersized by today's standards but in working condition
- that the 450mm corrugated steel pipe immediately downstream of the Toonen Branch outlet appears to have been extended; however no request to investigate this extension was made by the landowners at this time

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.

- that the landowners use these lands to plant specialty crops which have a higher market value than traditional crops
- that the landowners requested that the entire Toonen Branch to be upgraded due to its age, limited capacity, and concern that the new tile would cause issues to the existing tile

DESIGN CRITERIA AND 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 indications of sandy 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 Toonen Branch be replaced with a new 450mm to 400mm concrete tile, including related appurtenances, and that the existing tile be destroyed where possible
- that the existing Bujnowski Branch from the connection to the Toonen Branch to the south side of Falconbridge Drive be replaced with new 400mm to 300mm concrete tile and sewer pipe including related appurtenances and that the existing tile be destroyed where possible

Our design includes the wrapping of tile joints with geotextile to prevent the incursion of fine soil particles into the drain. If areas of poor soil are encountered at the time of construction, it may become necessary to install the tile on crushed stone bedding wrapped with geotextile or substitute plastic filter tile through such areas. The additional costs of such work would be an extra to the project. These areas are typically identified at the time of construction but may only become apparent after construction is completed. In this case, the extra costs for removal and reinstallation on stone bedding would be an extra to the project and if already billed become a supplementary billing.

In accordance with the principals of Section 14(2) of the Drainage Act, the existing surface waterway along the route of the tile drain(s) shall be part of the drainage works for future maintenance. The width available for the waterway shall be equal to the maintenance working width as noted on the Contract Drawings.

We have reviewed the existing Schedules of Assessment for the Bujnowski Branch and Toonen Branch and found them to be out-of-date and unfair due to the watershed and drainage conditions. There should be an updated separate schedule for each branch in order to charge out future repair costs in accordance with the Drainage Act as it now exists.

It is recommended that basement, cellar, or crawlspace drains be directed to a sump and then discharged onto the ground surface well away from foundations and septic systems or should owners desire to connect these drains to the new outlet drain, then it is suggested that they not be directly connected to the drains. Rather it is suggested that such a connection be made by an indirect method such as by sump pump with an open-air connection such as a mini-catchbasin, crushed stone filled excavation connected to a storm P.D.C. and should include a check valve and be piped above foundation level. It is noted that there is still a risk of flooding even with indirect methods of connection and any/all responsibility shall be borne by the owner. Downspouts from eavestroughs should be directed onto the ground surface well away from foundations and septic systems and are **not** permitted to be connected to the Municipal Drain.

ENVIRONMENTAL CONSIDERATIONS AND MITIGATION MEASURES

Based on the information available, there are no significant wetlands, sensitive areas, or endangered species along the route of the drains. The proposed construction of the Bujnowski Branch and Toonen Branch includes surface inlets, which greatly help reduce the overland surface flows and any subsequent erosion.

SUMMARY OF PROPOSED WORK

The proposed work consists of approximately 597 lineal meters of 450mm to 300mm concrete tile and HDPE sewer pipe, including related appurtenances.

SCHEDULES

Three schedules are attached hereto and form part of this report, being Schedule 'A' - Allowances, Schedule 'B' - Cost Estimate, and Schedule 'C' - Assessment for Construction.

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 \$142,000.00. This estimate includes engineering and administrative costs associated with this project.

Schedule 'C' – 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. 223125 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

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 \$9,000.00/ha. through cropped lands. This value is multiplied by the hectares derived from the width granted for future maintenance and the applicable lengths.

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 \$28,400.00/ha for closed drains installed with a wheel machine. This amount is based on the value of specialty crops grown on the site and was agreed to by the assessed party and the landowner.

This base rate is multiplied by the hectares derived from the working widths shown on the plans 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 assessments are known as benefit, outlet liability and special benefit as set out under Sections 22 and 23 of the Act.

SECTION 22

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 water, or any other advantages relating to the betterment of lands, roads, buildings, or other structures.

SECTION 23

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

We assess the entire cost of this report to Enbridge Gas in accordance with their request. It is to be noted that the cost of this report is not eligible for the Provincial 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. This includes tree roots penetrating tiles from trees planted by owners or naturally occurring. For tiles through bush areas, we recommend the owner maintain the cleared space by either mowing (hay) or growing a crop over it. If no maintenance is completed over several years, we recommend the Municipality complete the mowing/clearing as part of maintenance at the discretion of the Drainage Superintendent.

After completion the entire Bujnowski Branch and Toonen Branch of the Kovacs Drain shall be maintained by the Municipality of Strathroy-Caradoc at the expense of all upstream lands and roads assessed in Schedule 'C' - 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 remaining upstream portions of the Toonen Branch and Bujnowski Branch shall be maintained by the Municipality of Strathroy-Caradoc in accordance with the dimensions and specifications in the January 26, 1968 plan and assessed to all upstream lands and roads as shown in Schedule 'C' – Assessment for Maintenance and in the same relative proportion until such a time as the assessment is changed under the Drainage Act

Special Assessments shall **not** be pro-rated for future maintenance purposes but shall be applied as an actual cost special if part of the maintenance. Special Benefit Assessments shall only be pro-rated for future maintenance purposes, if the work assessed for special benefit is part of the maintenance.

Repairs or improvements to any sub-surface road crossing shall be the responsibility of the applicable Road Authority, entirely at their cost.

Respectfully submitted,

SPRIET ASSOCIATES LONDON LIMITED


George. A. Vereyken, P. Eng.



GAV:ms



SCHEDULE 'A' - ALLOWANCES
KOVACS DRAIN BRANCHES 2024
Municipality of Strathroy-Caradoc

In accordance with Sections 29 and 30 of the Drainage Act, we determine the allowances payable to owners entitled thereto as follows:

CON.	LOT	ROLL NUMBER (Owner)	Section 29 Right-of-Way	Section 30 Damages	TOTALS
KOVACS DRAIN BRANCHES					
<i>Geographic Caradoc</i>					
3	NW¼20	014-070-169(J. Bujnowsji)	\$	\$ 260.00	\$ 260.00
4	Pt. SW¼20	014-070-119(Van Den Elzen Farms Limited)	5,200.00	20,360.00	25,560.00
Total Allowances			\$ 5,200.00	\$ 20,620.00	\$ 25,820.00
TOTAL ALLOWANCES ON THE KOVACS DRAIN BRANCHES					\$ <u>25,820.00</u>

SCHEDULE 'B' - COST ESTIMATE

KOVACS DRAIN BRANCHES 2024

Municipality of Strathroy-Caradoc

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

CONSTRUCTION

Mobilization of equipment		\$	1,000.00
Installation of the following concrete field tile including supply & installation of geotextile around tile joints			
398 meters of 400mm dia. concrete tile		\$	11,820.00
180 meters of 450mm dia. concrete tile		\$	5,620.00
Supply of the above listed tile/pipe		\$	19,920.00
Contingency amount for increased cost due to poor soil conditions:			
Installation of tile on crushed stone bedding with excavator (250 meters)		\$	9,000.00
Supply & delivery of 19mm crushed (Approx. 100 tonnes req'd)		\$	3,000.00
Contingency Allowance to install the new tile immediately adjacent to the existing tile and destroying the existing tile with a rubber tired backhoe afterwards (See General Notes on Drawings) (Approx. 578meters)		\$	2,020.00
Strip, stockpile and relevel topsoil from tile trench and adjacent working area (4m wide) specified on drawings (approx. 578m)		\$	3,470.00
19.0 meters of 300mm sewer pipe			
Supply		\$	1,140.00
Installation under Falconbridge Drive by open cut		\$	7,600.00
Restoration of Asphalt		\$	6,000.00
Supply and install two 600mm x 600mm standard catchbasins and one 1200mm x 900mm standard catchbasin, including grates, leads, removal and disposal of existing catchbasin.		\$	9,500.00
Exposing and locating existing tile drains	(report)	\$	790.00
	(construction)	\$	800.00
Exposing and locating existing utilities	(report)	\$	1,200.00
	(construction)	\$	1,200.00
Tile connections as noted on plan		\$	1,000.00

SCHEDULE 'B' - COST ESTIMATE (cont'd)

**KOVACS DRAIN BRANCHES 2024
Municipality of Strathroy-Caradoc****CONSTRUCTION (cont'd)**

Contract security financing	\$ 1,280.00
Tile connections and contingencies	\$ 2,000.00
Allowances under Sections 29 & 30 of the Drainage Act	\$ 25,820.00

ADMINISTRATION

Conservation Authority Review Fee	\$ 300.00
Interest and Net Harmonized Sales Tax	\$ 4,319.00
Survey, Plan and Final Report	\$ 16,754.00
Expenses	\$ 947.00
Supervision and Final Inspection	\$ <u>5,500.00</u>

TOTAL ESTIMATED COST	\$ <u><u>142,000.00</u></u>
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SCHEDULE 'C' - ASSESSMENT FOR MAINTENANCE

KOVACS DRAIN BRANCHES 2024

Municipality of Strathroy-Caradoc

Job No. 223125

August 27, 2024

* = Non-agricultural

CON.	LOT	HECTARES AFFECTED	ROLL No. (OWNER)	BENEFIT	OUTLET	TOTAL
TOONEN BRANCH						
<i>Geographic Caradoc</i>						
3	Pt. N½19	1.9	014-070-171(J. Bujnowski)	%	2.21 %	2.21 %
3	NW¼20	10.8	014-070-169(J. Bujnowsji)		12.54	12.54
3	NE¼20	3.5	014-070-172(Van Den Elzen Farms Limited)		4.06	4.06
4	Pt. SW¼20	16.3	014-070-119(Van Den Elzen Farms Limited)	47.50	13.25	60.75
4	Pt. SW¼20	0.4	014-070-119-10(Van Den Elzen Farms Limited)		0.74	0.74
* 4	Pt. SW¼20	0.2	014-070-119-05(S. Simon & S. Jose)		0.41	0.41
4	Pt. SE¼20	3.6	014-070-118(Van Den Elzen Farms Limited)	10.70	3.13	13.83
TOTAL ASSESSMENT ON LANDS				58.20 %	36.34 %	94.54 %
Falconbridge Drive		0.9	Municipality of Strathroy-Caradoc	1.80 %	3.66 %	5.46 %
TOTAL ASSESSMENT ON ROADS				1.80 %	3.66 %	5.46 %
TOTAL ASSESSMENT FOR MAINTENANCE ON THE TOONEN BRANCH						<u>100.00 %</u>
BUJNOWSKI BRANCH						
3	Pt. N½19	1.9	014-070-171(J. Bujnowski)	%	4.44 %	4.44 %
3	NW¼20	10.8	014-070-169(J. Bujnowsji)	41.30	25.23	66.53
3	NE¼20	3.5	014-070-172(Van Den Elzen Farms Limited)		8.18	8.18
4	Pt. SW¼20	0.4	014-070-119(Van Den Elzen Farms Limited)	5.00	0.47	5.47
TOTAL ASSESSMENT ON LANDS				46.30 %	38.32 %	84.62 %
Falconbridge Drive		0.9	Municipality of Strathroy-Caradoc	13.70 %	1.68 %	15.38 %
TOTAL ASSESSMENT ON ROADS				13.70 %	1.68 %	15.38 %
TOTAL ASSESSMENT FOR MAINTENANCE ON THE BUJNOWSKI BRANCH						<u>100.00 %</u>

SCHEDULE OF NET ASSESSMENT

KOVACS DRAIN BRANCHES 2024

Municipality of Strathroy-Caradoc

Job No. 223125

August 27, 2024

* = *Non-agricultural*

ROLL NUMBER (OWNER)	TOTAL GRANTABLE ASSESSMENT	GRANT	ALLOWANCES	APPROX. NET
* Enbridge Gas				
* Special Assessment	\$ 142,000.00	\$	\$	\$ 142,000.00
	\$ 142,000.00	\$	\$	\$ 142,000.00