



SPRIET ASSOCIATES
CONSULTING ENGINEERS
LONDON - SUDBURY

PARKER DRAIN 1998
#1625
Township of Caradoc



SPRIET ASSOCIATES

London, Ontario
November 30, 1998

PARKER DRAIN 1998

Township of Caradoc

To the Reeve and Council
of the Township of Caradoc

Reeve and Council:

We are pleased to present our report on the reconstruction of the Parker Municipal Drain serving parts of Lots 7 to 12, Concessions 3 to 5 in the Township of Caradoc. The total watershed area contains approximately 382 hectares.

AUTHORIZATION

This report was prepared pursuant to Section 78 of the Drainage Act in accordance with instructions received from your Clerk with respect to a motion of the Township Council. The work was initiated by a request signed by an affected landowner.

HISTORY

The Parker Drain presently consists of a main drain open ditch extending from the south side of Olde Drive in Lot 7, easterly across Lots 7 and 8 and Sutherland Road at the mid-point of Concession 5; from there it continues easterly and south-easterly across Lots 9 and 10, Concession 4 to the Canadian Pacific Railway near the centre point of Lot 10, Concession 4 where it becomes a closed drain. This closed part of the main drain extends easterly to its head at the half lot line, mid-way across Lot 11, Concession 4.

Branch "A" consists of an open ditch and extends from its outlet in the main drain, in the south half of Lot 9, Concession 5, easterly across Lots 9 and 10 to its head about one-half of the way across the north-east quarter of Lot 11, Concession 4.

The portion of the Parker Drain upstream of Sutherland Road was last reconstructed pursuant to a report submitted by A.J. DeVos, P. Eng. dated October 17, 1975.

The portion downstream of Sutherland Road was last reconstructed pursuant to a report submitted by C.P. Corbett, P. Eng. dated May 15, 1962.

EXISTING DRAINAGE CONDITIONS AND DESIGN CONSIDERATIONS

At the site meeting with respect to the project, some of the affected owners indicated there was water ponding in the ditch at Sutherland Road and for a distance upstream. They requested that the ditch downstream of this point be cleaned out.

A field investigation and survey was completed and upon reviewing our findings, we note the following:

- that the portion of the ditch through the bush downstream of Sutherland Road has silted up considerably and is restricted by brush and debris
- that the ditch in the lower part of Lot 8 and Lot 7, Concession 5, is shallow and no longer provides a proper surface of subsurface outlet
- that an existing farm culvert in Lot 8 is in poor condition

An informal public meeting was held with the affected landowners to review our findings and preliminary proposals. Further input and requests were provided from some of the owners. The proposal was then revised to include a cleanout of the ditch downstream to Olde Drive and the replacement of the farm culvert in Lot 8. The revised proposal was then reviewed with the affected owners at a second informal meeting.

We would like to point out that there have been indications of some sandy and mucky soil conditions, but no formal soil investigation has been made.

RECOMMENDATIONS

We are therefore recommending the following:

- that the lower portion of the main drain from Olde Drive up to the east side of Sutherland Road be cleaned out and reconstructed
- that the farm culvert in Lot 8 be replaced with a new pipe of proper size and length

The proposed work consists of approximately 1135 lineal meters of open ditch cleanout and reconstruction including bank seeding, construction of a farm culvert and sediment basin.

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.

ENVIRONMENTAL DESIGN CONSIDERATIONS

We are also recommending that the following erosion and sediment control measures be included as part of our reconstruction proposal to help mitigate any potential adverse impacts of the proposed drainage works on water quality and fishery habitat:

- various sediment traps are to be constructed along the course of the drain at the locations specified on the plan and these basins are to be maintained by the Township of Caradoc
- a temporary flow check of straw bales or silt fencing is to be installed for the duration of the construction at the bottom end of the ditch reconstruction
- 3 meter wide grassed buffer strips between the top of the bank and any adjacent cultivated lands on both sides of the ditch are to be constructed and incorporated in accordance with the attached plans
- some existing tile outlets along the course of the drain are to be repaired using an outlet pipe with a rodent gate with quarry stone rip-rap protection

It is to be noted that both the existing and newly vegetated banks as well as the existing natural and newly created buffer strips along each side of the ditch are permanent parts of the Parker Municipal Drain 1998 and shall not be disturbed or destroyed.

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 \$23,900.00. This estimate includes engineering and administrative costs associated with this project, including the net Goods and Services Tax.

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.

Drawing No. 1, Job No. 98005 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.

For those areas where there is limited disturbance of the soil such as tile drains, the amounts granted are based on \$1,250.00/ha. For those areas where the topsoil is to be stripped and relevelled upon completion, or substantial disturbance of the soil(excluding areas used for grassed waterways), the amounts granted are based on \$1,500.00/ha. For those areas which have excavated material levelled on them, the amounts granted are based on \$2,250.00/ha. These base rates are 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 20% of value of the land designated for future maintenance. Therefore, the amounts granted are based on \$1,250.00/ha. and are 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 \$6,200.00/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 liability, outlet liability and special benefit liability as set out under Sections 22,23,24 and 26 of the Act.

ASSESSMENT DEFINITIONS (cont'd)

Benefit liability 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 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.

Special benefit liability is assessed to lands for which some additional work or feature has been included in the construction repair or improvement of a drainage works that has no effect on the functioning of the drainage works.

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 actual cost of the work involving this report is to be assessed on a pro-rata basis against the lands and roads liable for assessment for benefit, special benefit and outlet as shown in detail below and on Schedule 'C' - Assessment for Construction.

Due to the different relative runoff rates and anticipated use of the proposed drain, forested lands have been assessed at lower rates than cleared lands.

SPECIAL BENEFIT ASSESSMENTS

In accordance with Section 24 of the Drainage Act, Special Benefit Assessments have been made against the following properties for their portion of the cost of various special works provided to them as detailed below:

<i>Property Roll Number</i>	<i>Owner</i>	<i>Type of Work</i>	<i>Special Benefit Assessment (Estimate)</i>
40-056	(J. & A. Fisher)	Outlet pipe	\$ 350.00
		Farm Culvert	\$ 1,900.00

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. Section 88 of the Drainage Act directs the Township to make application for this grant upon certification of completion of this drain. The Township will then deduct the grant from the assessments prior to collecting the final assessments.

ROAD CULVERTS

Repairs or improvements to any road culvert or bridge required by the performance of this work shall be made by the road authority responsible for the structure.

MAINTENANCE

Upon completion of construction, all owners are hereby made aware of Sections 80, 82 and 83 of the Drainage Act which forbid the obstruction of, damage or injury to, and pollution of a municipal drain.

After completion, the Parker Drain 1998 shall be maintained by the Township of Caradoc at the expense of all upstream lands and roads assessed in Schedule 'C' - Assessment for Construction and in the same relative proportions, with the exception that all benefit assessments are to be reduced by 50 percent, until such time as the assessment is changed under the Drainage Act.

Special Benefit Assessments shall only apply for future maintenance purposes, if the work assessed for special benefit is part of the maintenance.

Respectfully submitted,

SPRIET ASSOCIATES LONDON LIMITED



M. P. DeVos, P. Eng.

SCHEDULE 'A' – ALLOWANCES

PARKER DRAIN 1998

Township of Caradoc

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 29 Right-of-Way</u>	<u>Section 30 Damages</u>	<u>TOTALS</u>
5	N½ 7	40-055(J. Francis Estate)	\$	\$ 730.00	\$ 730.00
5	Pt. 8	40-071(T. & G. Aitken)	80.00	620.00	700.00
5	NPt. 8	40-056(J. & A. Fisher)	580.00	2,300.00	2,880.00
Total Allowances			\$ 660.00	\$ 3,650.00	\$ 4,310.00

Total Allowances under Sections 29 and 30 of the Drainage Act \$ 4,310.00

SCHEDULE 'B' - COST ESTIMATE

PARKER DRAIN 1998**Township of Caradoc**

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

CONSTRUCTION

1135 meters of open ditch cleanout and reconstruction (Approx. 1000m ³)	\$	3,000.00
Levelling of excavated material	\$	550.00
Hydro seeding of ditch banks and buffer strips (Approx. 3800m ²)	\$	1,400.00
Clearing and grubbing	\$	2,700.00
One 6 meter length of 250mm dia., 1.6mm thickness riveted outlet pipes (with rodent gates)		
Supply	\$	150.00
Installation on end of existing tile outlet as noted on plan with quarry stone rip-rap protection (Approx. 2m ³ quarry stone required)	\$	175.00
Repair of road culvert under Sutherland Road	\$	250.00
One 11 meter length of 1400mm dia., 2.0mm thickness helical corrugated metal pipe with 125mm x 25mm corrugations		
Supply	\$	1,000.00
Installation as new farm culvert including supply and installation of quarry stone rip-rap protection at each end of pipe, removal of existing pipe culvert, supply and compaction of bedding and backfill materials (Approx. 12m ³ quarry stone required)	\$	1,700.00
Contingencies	\$	750.00
Allowances under Sections 29 and 30 of the Drainage Act	\$	4,310.00

ADMINISTRATION

Interest and net Goods and Services Tax	\$	1,090.00
Survey, Plan and Report	\$	4,486.00
Assistance and Expenses	\$	889.00
Supervision and Final Inspection	\$	1,450.00
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TOTAL ESTIMATED COST	\$	23,900.00
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SCHEDULE 'C' - ASSESSMENT FOR CONSTRUCTION

PARKER DRAIN 1998

Township of Caradoc

Job No. 98005

November 30, 1998

CON.	LOT	HECTARES AFFECTED	ROLL No. (OWNER)	SPECIAL BENEFIT	BENEFIT	OUTLET	TOTAL
3	N½ 11	6.1	40-146(Cuddy International Corp.)	\$	\$	\$ 266.00	\$ 266.00
3	N½ 12	8.0	40-147(J. & E. Gough)			348.00	348.00
4	S½ 9	4.4	40-114(S. Thomas)			192.00	192.00
4	NW¼ 9	2.0	40-103-20(L. Matthys)			87.00	87.00
*	4	Pt.N½ 9	1.2	40-103-01(G. & F. Whitney)		65.00	65.00
4	NE¼ 9	21.6	40-103(A. & L. Matthys)			908.00	908.00
4	SW¼ 10	12.1	40-113(M. & A. Duch)			527.00	527.00
4	SE¼ 10	12.9	40-112(O. Sutherland)			538.00	538.00
4	N½ 10	40.5	40-104(Normville Farms Ltd.)			1,651.00	1,651.00
4	SW¼ 11	19.4	40-111(G. & G. Plaine)			845.00	845.00
4	SE¼ 11	19.4	40-110(B. & H. Plaine)			845.00	845.00
4	NW¼ 11	19.0	40-105(J. Ballantine)			792.00	792.00
4	NE¼ 11	12.5	40-106(E. & D. Pattyn)			464.00	464.00
4	S½ 12	16.2	40-109-01(J. & A. Piskorowski)			627.00	627.00
4	N½ 12	0.8	40-107(J. Ballantine)			35.00	35.00
5	N½ 7	6.9	40-055(J. Francis Estate)		1,130.00	30.00	1,160.00
5	SE¼ 8	17.4	40-070(J. & P. Pierce)			395.00	395.00
5	Pt. 8	15.8	40-071(T. & G. Aitken)		1,260.00	191.00	1,451.00
5	NPt. 8	32.4	40-056(J. & A. Fisher)	2,250.00	5,370.00	344.00	7,964.00
5	W½ 9	39.1	40-069(D. Skinner)			1,073.00	1,073.00
*	5	Pt.W½ 9	0.8	40-069-01(D. Murray & S. Janes)		44.00	44.00
5	SE¼ 9	18.2	40-068(D. Skinner)			597.00	597.00
5	NE¼ 9	15.4	40-057(P. & S. Evans)			262.00	262.00
5	N½ 10	4.0	40-058(P. Jarochowicz)			70.00	70.00
5	SW¼ 10	14.2	40-067(D. Skinner)			618.00	618.00
5	SE¼ 10	12.1	40-066(P. Jarochowicz)			527.00	527.00
5	SW¼ 11	2.0	40-065(P. Jarochowicz)			87.00	87.00
*	Right-of-Way	2.9	Canadian Pacific Railway			126.00	126.00
TOTAL ASSESSMENT ON ROADS				\$ 2,250.00	\$ 7,760.00	\$ 12,554.00	\$ 22,564.00
Falconbridge Drive	1.2	Township of Caradoc	\$	\$	\$ 131.00	\$ 131.00	
Century Drive	2.4	Township of Caradoc			261.00	261.00	
Sutherland Road	1.6	Township of Caradoc	270.00	500.00	174.00	944.00	
TOTAL ASSESSMENT ON ROADS				\$ 270.00	\$ 500.00	\$ 566.00	\$ 1,336.00
TOTAL ASSESSMENT ON THE PARKER DRAIN 1998						\$ 23,900.00	

NOTE: All of the above lands, with the exception of those noted with an asterisk, are classified as agricultural.