

7th AVENUE 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
April 30, 2024

7th AVENUE 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 7th Avenue Municipal Drain serving parts of Lots 1 and 2, Concessions 6 and 7 (geographic Westminster) 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 Road Authority.

DRAINAGE AREA

The total watershed area as described above contains approximately 22.7 hectares. The area requiring drainage for the 7th Avenue Drain is described as the road allowance of 7th Avenue located in Lot 2, just west of Snyders Avenue.

EXISTING DRAINAGE CONDITIONS

A site meeting was held on September 27, 2023 with respect to the project and through later discussions the owners reported the following:

- that the Drainage Superintendent for the Municipality of Central Elgin indicated that the Municipality required an outlet for future road improvement on 7th Avenue at the location of the existing surface culvert just west of Snyders Avenue
- that the representative from the Thames Valley District School Board (TVDSB) (Roll No 3-024-02) indicated that they were intending to develop their site for construction of a new school
- that the representative from Craigholme Estates Ltd. (Roll No. 3-024) indicated that their lands were in the design process and receiving approvals for development of a new subdivision on their lands. They also indicated that their current proposed design could accommodate their lands and roads and the school block to their stormwater management facility to the south



EXISTING DRAINAGE CONDITIONS (cont'd)

- that the representatives from the Perl Family Farms Ltd. (Roll No. 3-050) indicated that, if a drain was constructed, they should receive an outlet for their lands that would be adequate for future improvements on the property.
- that the representatives from 2687905 Ontario Inc. (Roll No. 3-025) indicated that, with all the new developments, they expect to not receive additional surface water on their lands

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

- that the area requiring drainage on 7th Avenue has approximately 12 hectares draining towards it and is conveyed south across 7th Avenue which then naturally flows in a south-westerly direction across the lands of the TVDSB (Roll No. 3-024-02), Craigholme Estates Ltd. (Roll No. 3-024), and 2687905 Ontario Ltd. (Roll No. 3-025), to a tributary of Kettle Creek
- that, based on the proposed preliminary site plan for the T.V.D.S.B. property (Roll No. 3-024-02), the best route for the drain was adjacent to the north and west property lines
- that, based on the proposed site plan from Craigholme Estates Ltd. (Roll No. 3-024), the best route for the drain followed the proposed storm easement and future road allowances and the rear of the proposed townhouse block

Preliminary design, cost estimates, and assessments were prepared, and two informal public meetings were 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

This drain was designed to convey a 2-year storm which results in the following flows from the listed properties:

- | | |
|--|----------------------|
| • Craigholme Estates (Roll No. 3-024) | Sta. 0+317 – 25 l/s |
| • Craigholme Estates (Roll No. 3-024) | Sta. 0+468 – 55 l/s |
| • T.V.D.S.B (Roll No 3-024-02) | Sta. 0+522 – 110 l/s |
| • Perl Family Farms Ltd. (Roll No 3-050) | – 300 l/s |

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 a new drain, to be referred to as the 7th Avenue Drain, be constructed from the tributary of Kettle Creek in the lands of 2687905 Ontario Inc. (Roll No. 3-025) and head north-westerly through those lands into the property of Craigholme Estates Ltd. (Roll No. 3-024), then into the lands of the TVDSB (Roll No. 3-024-02), heading north in that property parallel to the westerly property line and then east, parallel to 7th Avenue, then north across 7th Avenue, to just within the lands of Perl Family Farms Ltd. (Roll No. 3-050). This drain shall consist of approximately 50 lineal meters of open ditch and approximately 690 lineal meters of 525mm diameter to 600mm diameter sewer pipe and concrete farm tile
- that the drain through the lands of Craigholme Estates Ltd. (Roll No. 3-024) be constructed with sewer pipe and manholes to accommodate the proposed subdivision plan and be designed to accept a portion of flows from rear yards in two locations once fully developed
- that the drain through the lands of the T.V.D.S.B. property (Roll No. 3-024-20) also be constructed with sewer pipe and manholes to accommodate their proposed development
- that the work on 7th Avenue be completed by open cut and that a new surface pipe be installed and catchbasins be installed at the property line to accommodate urbanization of the street

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 7th Avenue 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 50 lineal meters of open ditch construction including quarry stone rip-rap bank protection, rock chutes, bank seeding, and sediment basins; approximately 690 lineal meters of 525mm (21") and 600mm (24") 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.



SCHEDULES (cont'd)

Schedule 'B' - Cost Estimate. This schedule provides for a detailed cost estimate of the proposed work which is in the amount of \$437,000.00. 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. 223169, 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 amounts granted are based on \$6,670.00/ha. through agricultural lands and \$200,000.00/ha through the Craigholme Estates Properties and T.V.D.S.B lands. These values 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 \$33,360.00/ha.



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, roads, residential properties, and institutional 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 installing a new 525mm subsurface and 600mm surface culvert across their road allowance on the Main Drain due to the construction and operation of 7th Avenue. 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)

Drain	Cost of Work	Less Equivalent Drain Cost (Fixed)	Plus Administration Cost	Plus Interest & Net H.S.T.	Special Assessment
525mm H.D.P.E (Subsurface) 600mm H.D.P.E. (Surface)	\$25,500.00	\$2,000.00	\$6,400.00	\$900.00	\$30,800.00

In accordance with Section 26 of the Drainage Act, a Special Assessment has been made against Epcor Gas for the cost of locating and determining the elevation of their gas mains on 7th Avenue, 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.

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 7th Avenue 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. We recommend that once the subdivision is developed a new schedule be completed under Section 76 of the Drainage Act.

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



MAINTENANCE (cont'd)

Repairs or improvements to any road culvert or bridge 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

7th AVENUE 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
MAIN DRAIN - OPEN PORTION					
7	2	3-025 (2687905 Ontario Inc.)	\$ 200.00	\$ 350.00	\$ 550.00
Total Allowances			\$ 200.00	\$ 350.00	\$ 550.00
TOTAL ALLOWANCES ON THE MAIN DRAIN - OPEN PORTION					\$ 550.00
MAIN DRAIN - CLOSED PORTION					
6	1 & 2	3-050 (Perl Family Farms Ltd.)	\$ 40.00	\$ 30.00	\$ 70.00
7	2	3-024 (Craigholme Estates Ltd.)	18,720.00	850.00	19,570.00
7	2	3-024-02 (T.V.D.S.B)	28,920.00	1,310.00	30,230.00
7	2	3-025 (2687905 Ontario Inc.)	1,770.00	1,440.00	3,210.00
Total Allowances			\$ 49,450.00	\$ 3,630.00	\$ 53,080.00
TOTAL ALLOWANCES ON THE MAIN DRAIN - CLOSED PORTION					\$ 53,080.00
TOTAL ALLOWANCES ON THE 7th AVENUE DRAIN					\$ 53,630.00

7th AVENUE 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 - OPEN PORTION

Mechanical brushing & clearing of trees on one side for excavation work (Approx. 50m)	\$ 1,500.00
50 meters of open ditch construction	\$ 1,500.00
Levelling of excavated material beside ditch (where specified) (Approx. 50m)	\$ 1,000.00
Seeding of ditch banks and buffer strips (Approx 250m ²)	\$ 500.00

MAIN DRAIN - CLOSED PORTION

6 meters of 600mm dia., H.D.P.E. plastic sewer pipe including rodent gate, quarry stone rip-rap protection around pipe and end of ditch (Approximately 6m ³ quarry stone req'd)	
Supply	\$ 1,100.00
Installation	\$ 1,300.00
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	
195 meters of 525mm dia. H.D.P.E. pipe	\$ 26,300.00
205 meters of 600mm dia. H.D.P.E. pipe	\$ 27,700.00
261 meters of 600mm dia. Concrete Tile	\$ 15,700.00
Supply of the above listed tile / pipe	\$ 72,200.00
Strip, stockpile and relevel topsoil from tile trench and adjacent working area (4m wide) specified on drawings (approx. 667m)	\$ 4,100.00
23 meters of 525mm dia., H.D.P.E. pipe (subsurface)	
18 meters of 600mm dia., H.D.P.E. pipe (surface)	
Supply	\$ 7,400.00
Installation under 7th Ave by open cut	\$ 12,200.00
Restoration of 7th Ave with 50mm HL8 and 50mm HL3	\$ 5,900.00
Supply and installation of the following catchbasins and manholes including grates, berms, cross connectors, leads, ditching, and removal of existing basins	
Sta. 0+317 900mm x 1200mm ditch in-let catchbasin	\$ 3,500.00
Sta. 0+360 1500mm manhole	\$ 11,900.00
Sta. 0+378 1500mm manhole	\$ 11,900.00
Sta. 0+427 1500mm manhole	\$ 11,200.00
Sta. 0+468 1500mm manhole	\$ 8,600.00
Sta. 0+474 1500mm manhole	\$ 8,600.00
Sta. 0+522 1500mm manhole	\$ 8,600.00
Sta. 0+611 1500mm manhole	\$ 11,200.00
Sta. 0+711 900mm x 1200mm ditch in-let catchbasin	\$ 3,600.00
Sta. 0+721 1500mm manhole	\$ 9,800.00
Sta. 0+734 900mm x 1200mm catchbasin	\$ 3,600.00

**7th AVENUE DRAIN
Municipality of Central Elgin****MAIN DRAIN - CLOSED PORTION (CONT'D)**

Exposing and locating existing tile drains and utilities	Preconstruction	\$	700.00
	Construction	\$	2,500.00
Construction layout by land surveyor		\$	10,000.00
Tile connections and contingencies		\$	14,100.00
Allowances under Sections 29 & 30 of the Drainage Act		\$	53,630.00

ADMINISTRATION

Interest and Net Harmonized Sales Tax	\$	11,160.00
Survey, Plan and Final Report	\$	59,700.00
Expenses	\$	1,620.00
Supervision and Final Inspection	\$	<u>12,690.00</u>
TOTAL ESTIMATED COST	\$	<u><u>437,000.00</u></u>

SCHEDULE 'C' - ASSESSMENT FOR CONSTRUCTION

7th AVENUE DRAIN

Municipality of Central Elgin

Job No. 223169

April 30, 2024

* = Non-agricultural

CON.	LOT	HECTARES AFFECTED	ROLL No. (OWNER)	BENEFIT	OUTLET	TOTAL
MAIN DRAIN - OPEN PORTION						
6	1 & 2	12.1	3-050 (Perl Family Farms Ltd.)	\$	\$ 2,263.00	\$ 2,263.00
7	2	2.3	3-024 (Craigholme Estates Ltd.)		430.00	430.00
* 7	2	2.7	3-024-02 (T.V.D.S.B)		505.00	505.00
* 7	2	4.2	3-025 (2687905 Ontario Inc.)	2,100.00	785.00	2,885.00
TOTAL ASSESSMENT ON LANDS				\$ 2,100.00	\$ 3,983.00	\$ 6,083.00
7th Ave		1.4	Municipality of Central Elgin		\$ 917.00	\$ 917.00
TOTAL ASSESSMENT ON ROADS				\$	\$ 917.00	\$ 917.00
TOTAL ASSESSMENT ON THE MAIN DRAIN - OPEN PORTION						\$ 7,000.00

MAIN DRAIN - CLOSED PORTION

6	1 & 2	12.1	3-050 (Perl Family Farms Ltd.)	\$ 1,090.00	\$ 29,641.00	\$ 30,731.00
*			***Non-grantable	12,772.00		12,772.00
* 7	2	2.3	3-024 (Craigholme Estates Ltd.)	131,870.00	3,914.00	135,784.00
* 7	2	2.7	3-024-02 (T.V.D.S.B)	160,920.00	5,413.00	166,333.00
7	2	4.2	3-025 (2687905 Ontario Inc.)	23,090.00	3,174.00	26,264.00
TOTAL ASSESSMENT ON LANDS				\$ 329,742.00	\$ 42,142.00	\$ 371,884.00
* 7th Ave		1.4	Municipality of Central Elgin	\$ 15,410.00	\$ 10,976.00	\$ 26,386.00
TOTAL ASSESSMENT ON ROADS				\$ 15,410.00	\$ 10,976.00	\$ 26,386.00

SPECIAL ASSESSMENT against Municipality of Central Elgin for the increased cost of installing a 525mm H.D.P.E. pipe (Subsurface) and 600mm H.D.P.E. pipe (Surface) under 7th Ave by open cut. \$ 30,800.00

SPECIAL ASSESSMENT against Epcor Gas for the increased cost of locating and determining the elevation of their Gasmain prior to construction \$ 930.00

TOTAL ASSESSMENT ON THE MAIN DRAIN - CLOSED PORTION **\$ 430,000.00**

TOTAL ASSESSMENT ON THE 7th AVENUE DRAIN **\$ 437,000.00**

SCHEDULE 'D' - ASSESSMENT FOR MAINTENANCE

7th AVENUE DRAIN

Municipality of Central Elgin

Job No. 223169

April 30, 2024

CON.	LOT	HECTARES AFFECTED	ROLL No. (OWNER)	PERCENTAGE OF MAINTENANCE COST
MAIN DRAIN - OPEN PORTION				
6	1 & 2	12.1	3-050 (Perl Family Farms Ltd.)	38.0 %
7	2	2.3	3-024 (Craigholme Estates Ltd.)	7.2
7	2	2.7	3-024-02 (T.V.D.S.B)	8.5
7	2	4.2	3-025 (2687905 Ontario Inc.)	30.8
				=====
TOTAL ASSESSMENT ON LANDS				84.5 %
				=====
7th Ave		1.4	Municipality of Central Elgin	15.5 %
				=====
TOTAL ASSESSMENT ON ROADS				15.5 %
				=====
TOTAL ASSESSMENT FOR MAINTENANCE OF THE MAIN DRAIN - OPEN PORTION				<u>100.0 %</u>
MAIN DRAIN - CLOSED PORTION				
6	1 & 2	12.1	3-050 (Perl Family Farms Ltd.)	13.8 %
7	2	2.3	3-024 (Craigholme Estates Ltd.)	31.8
7	2	2.7	3-024-02 (T.V.D.S.B)	39.2
7	2	4.2	3-025 (2687905 Ontario Inc.)	6.7
				=====
TOTAL ASSESSMENT ON LANDS				91.5 %
				=====
7th Ave		1.4	Municipality of Central Elgin	8.5 %
				=====
TOTAL ASSESSMENT ON ROADS				8.5 %
				=====
TOTAL ASSESSMENT FOR MAINTENANCE OF THE MAIN DRAIN - CLOSED PORTION				<u>100.0 %</u>

SCHEDULE OF NET ASSESSMENT

7th AVENUE DRAIN

Municipality of Central Elgin

(FOR INFORMATION PURPOSES ONLY)

Job No. 223169

April 30, 2024

* = Non-agricultural

ROLL NUMBER (OWNER)	TOTAL ASSESSMENT	GRANT	ALLOWANCES	APPROX. NET
3-050 (Perl Family Farms Ltd.)	\$ 32,994.00	\$ 10,998.00	\$ 70.00	\$ 21,926.00
* ***Non-grantable	12,772.00			12,772.00
* 3-024 (Craigholme Estates Ltd.)	136,214.00		19,570.00	116,644.00
* 3-024-02 (T.V.D.S.B)	166,838.00		30,230.00	136,608.00
3-025 (2687905 Ontario Inc.)	29,149.00	9,716.00	3,760.00	15,673.00
* 7th Ave	\$ 27,303.00	\$	\$	\$ 27,303.00
* Special Assessment	30,800.00			30,800.00
* Special Assessment (Epcor)	930.00			930.00
TOTALS	\$ 437,000.00	\$ 20,714.00	\$ 53,630.00	\$ 362,656.00