FLEUREN DRAIN

Municipality of West Elgin

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Our Job No. 223253

May 29th, 2024
Resubmitted December 16, 2024

London, Ontario
May 29, 2024
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FLEUREN DRAIN

Municipality of West Elgin

To the Mayor and Council of
the Municipality of West Elgin

Mayor and Council:

We are pleased to present our report on the construction of the Fleuren Municipal Drain serving parts of Lots 24, Y, and X, Concessions 2 and 3 (geographic Aldoborough) in the Municipality of West 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 owner whose lands contain over 60 percent of the area requiring drainage.

DRAINAGE AREA

The total watershed area as described above contains approximately 28.1 hectares. The area requiring drainage is described as the west half of Lot 24, Concession 2, adjacent Stalker Line.

HISTORY

This drain is tributary to the McMillan Drain which was last reconstructed pursuant to a report submitted by J.M. Spriet, P. Eng., dated April 24, 2018 and consisted of 1,095 lineal meters of open drain reconstruction.

EXISTING DRAINAGE CONDITIONS

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

- that the owner, P. & I. Fleuren (Roll No. 70-020-10), indicated that excess surface water was coming from Stalker Line and upstream lands which is running across their lands
- that other upstream owners were present but did not request any additional work at this time

EXISTING DRAINAGE CONDITIONS (cont'd)

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

- that the McMillan Drain is an adequate outlet for the requesting lands with the petitioning landowner's area of concern currently being served by a private tile
- that the upstream landowners, B. McGill (Roll No. 70-047, & Roll No.70-049) and L. McCallum (Roll No. 70-046) have petitioned for a new drain to be constructed to drain their lands directly north to the McMillian Drain.
- that landowner Brian McGill Farms Ltd. (Roll No. 70-041) indicated that they had surface water draining towards the drain and requested the watershed be updated indicting this.

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. Based on the proposed design it was decided to proceed with the petition.

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 38.1mm per 24 hrs.

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 constructed and referred to as the Fleuren Drain, outletting at the McMillan Drain, in the lands of P. & I. Fleuren (Roll No. 70-020-10) and head south to just within the road allowance of Stalker Line, for a total length of 153 lineal meters
- that a catchbasin and berm be installed at the top end of the drain to allow surface water into the tile

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 Fleuren 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 153 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 $40,000.00. 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. 1, Job No. 223253, 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.

ALLOWANCES (cont'd)

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, 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.

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.

ASSESSMENT (cont'd)

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 and outlet as shown in detail below and on Schedule 'C' - Assessment for Construction.

SPECIAL ASSESSMENT

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 Fleuren Drain shall be maintained by the Municipality of West 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.

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.

Respectfully submitted,

SPRIET ASSOCIATES LONDON LIMITED

J.M. Spriet, P.Eng.

JMS:ms

SCHEDULE 'A' - ALLOWANCES

FLEUREN DRAIN

Muncipality of West 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					
3 Pt.	24	70-020-10 (P. & I. Fleuren)	$ 1,010.00	$ 820.00	$ 1,830.00
		Total Allowances	$ 1,010.00	$ 820.00	$ 1,830.00
		TOTAL ALLOWANCES ON THE MAIN DRAIN			**$ 1,830.00**

FLEUREN DRAIN

Muncipality of West Elgin

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

MAIN DRAIN

Quarry stone rip-rap protection around pipe and end of ditch and installation of rodent gate, (Approximately 6m³ quarry stone req'd)		
Supply	$	600.00
Installation	$	1,600.00
Installation of the following H.D.P.E. pipe including supply and installation of sand bedding		
153 meters of 375mm dia. HDPE pipe	$	8,900.00
Supply of the above listed tile/pipe	$	9,900.00
Strip, stockpile and relevel topsoil from tile trench and adjacent working area (4m wide) specified on drawings (approx. 153m)	$	900.00
Supply and install one 900mm x 1200mm ditch inlet catchbasins including grates, berms, ditching, and removal of existing basin,	$	3,000.00
Exposing and locating existing tile drains and utilities	$	500.00
Tile connections and contingencies	$	1,300.00
Allowances under Sections 29 & 30 of the Drainage Act	$	1,830.00

ADMINISTRATION

Interest and Net Harmonized Sales Tax	$	1,470.00
Survey, Plan and Final Report	$	7,500.00
Expenses	$	750.00
Supervision and Final Inspection	$	1,750.00
TOTAL ESTIMATED COST	**$**	**40,000.00**

SCHEDULE 'C' - ASSESSMENT FOR CONSTRUCTION

FLEUREN DRAIN

Muncipality of West Elgin

Job No. 223253

May 29th, 2024
Resubmitted Dec 16th, 2024

* = *Non-agricultural*

CON.	LOT	HECTARES AFFECTED	ROLL No. (OWNER)	BENEFIT	OUTLET	TOTAL
MAIN DRAIN						
2	Pt. 24	1.3	70-020-10 (P. & I. Fleuren)	$ 17,040.00	$ 674.00	$ 17,714.00
3	Pt. X	2.4	70-041 (Brian McGill Farms Ltd.)		778.00	778.00
3	Pt. 24	1.3	70-044 (R. Jamieson)		843.00	843.00
3	Pt. 24 & Y	20.7	70-045 (R. & A. Tait)		12,804.00	12,804.00
			TOTAL ASSESSMENT ON LANDS	$ 17,040.00	$ 15,099.00	$ 32,139.00
County Road 9		0.6	County of Elgin	$ 6,350.00	$ 1,511.00	$ 7,861.00
			TOTAL ASSESSMENT ON ROADS	$ 6,350.00	$ 1,511.00	$ 7,861.00
			TOTAL ASSESSMENT ON THE FLEUREN DRAIN			**$ 40,000.00**

SCHEDULE 'D' - ASSESSMENT FOR MAINTENANCE

FLEUREN DRAIN

Muncipality of West Elgin

Job No. 223253

May 29th, 2024
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CON.	LOT	HECTARES AFFECTED	ROLL No. (OWNER)	PERCENTAGE OF MAINTENANCE COST
MAIN DRAIN				
2	Pt. 24	1.3	70-020-10 (P. & I. Fleuren)	32.5 %
3	Pt. X	2.4	70-041 (Brian McGill Farms Ltd.)	2.7
3	Pt. 24	1.3	70-044 (R. Jamieson)	3.0
3	Pt. 24 & Y	20.7	70-045 (R. & A. Tait)	45.2
				=======
			TOTAL ASSESSMENT ON LANDS	83.4 %
				=======
County Road 9		0.6	County of Elgin	16.6 %
				=======
			TOTAL ASSESSMENT ON ROADS	16.6 %
				=======
			TOTAL ASSESSMENT FOR MAINTENANCE OF THE FLEUREN DRAIN	**100.0 %**

SCHEDULE OF NET ASSESSMENT

FLEUREN DRAIN

Muncipality of West Elgin

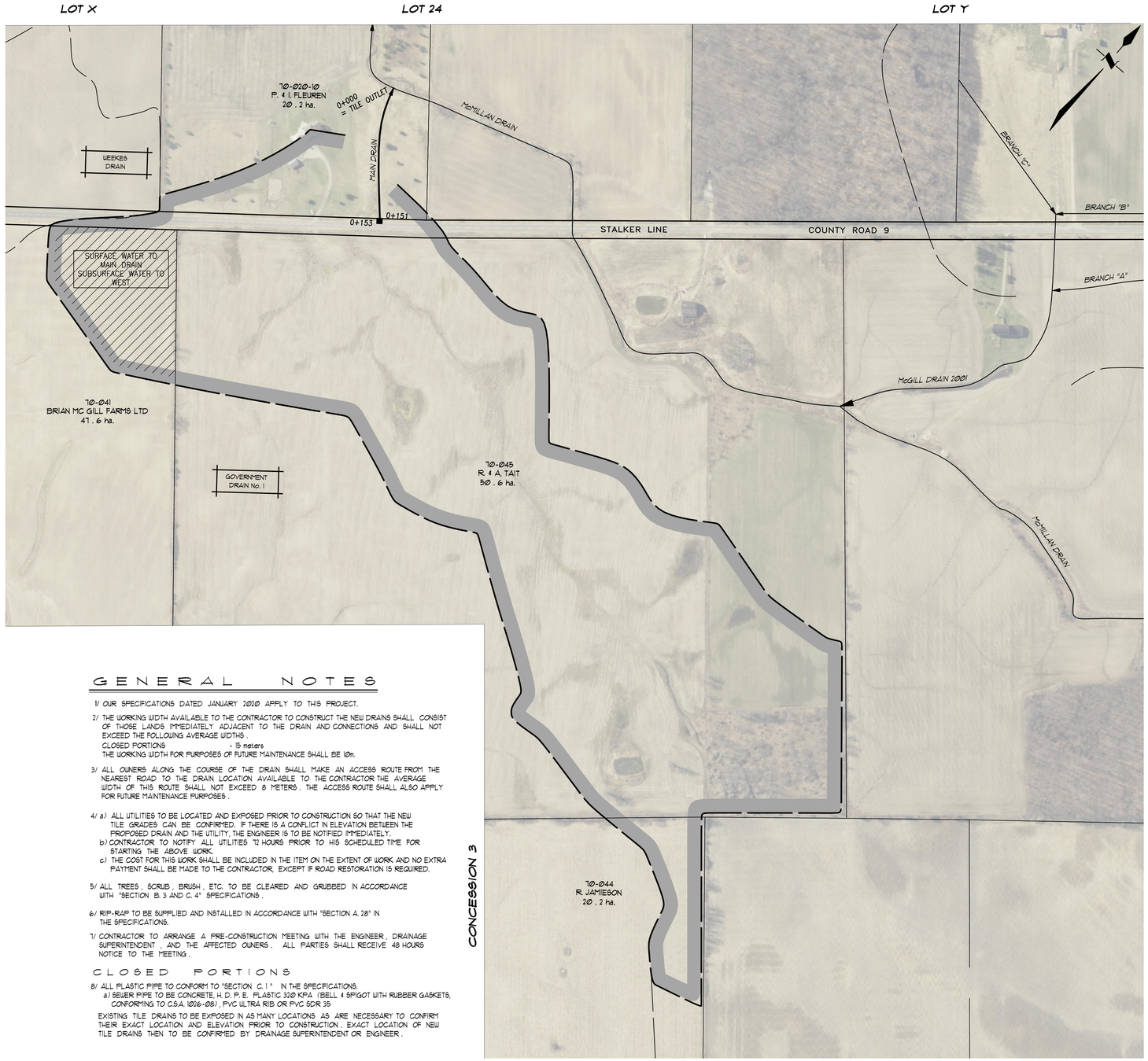
(FOR INFORMATION PURPOSES ONLY)

Job No. 223253

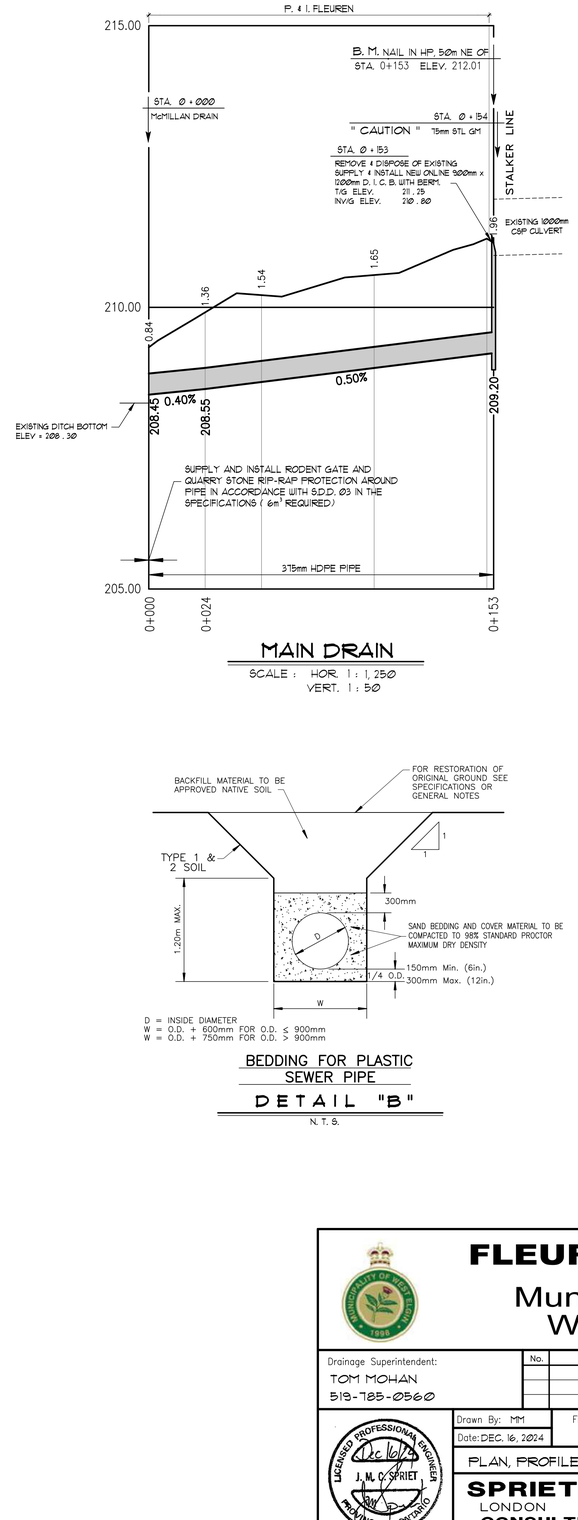
May 29th, 2024
Resubmitted Dec 16th, 2024

* = *Non-agricultural*

	ROLL NUMBER (OWNER)	TOTAL ASSESSMENT	GRANT	ALLOWANCES	APPROX. NET
	70-020-10 (P. & I. Fleuren)	$ 17,714.00	$ 5,905.00	$ 1,830.00	$ 9,979.00
	70-041 (Brian McGill Farms Ltd.)	778.00	259.00		519.00
	70-044 (R. Jamieson)	843.00	281.00		562.00
	70-045 (R. & A. Tait)	12,804.00	4,268.00		8,536.00
*	County Road 9	$ 7,861.00	$	$	$ 7,861.00
TOTALS		**$ 40,000.00**	**$ 10,713.00**	**$ 1,830.00**	**$ 27,457.00**



PLAN SCALE 1 : 2 , 500



MAIN DRAIN

SCALE : HOR. 1 : 1, 250
VERT. 1 : 50

D = INSIDE DIAMETER
W = O.D. + 600mm FOR O.D. ≤ 900mm
W = O.D. + 750mm FOR O.D. > 900mm

BEDDING FOR PLASTIC
SEWER PIPE

DETAIL "B"

N. T. S.

GENERAL NOTES

1/ OUR SPECIFICATIONS DATED JANUARY 2020 APPLY TO THIS PROJECT.

2/ THE WORKING WIDTH AVAILABLE TO THE CONTRACTOR TO CONSTRUCT THE NEW DRAINS SHALL CONSIST OF THOSE LANDS IMMEDIATELY ADJACENT TO THE DRAIN AND CONNECTIONS AND SHALL NOT EXCEED THE FOLLOWING AVERAGE WIDTHS .
CLOSED PORTIONS - 15 meters
THE WORKING WIDTH FOR PURPOSES OF FUTURE MAINTENANCE SHALL BE 10m.

3/ ALL OWNERS ALONG THE COURSE OF THE DRAIN SHALL MAKE AN ACCESS ROUTE FROM THE NEAREST ROAD TO THE DRAIN LOCATION AVAILABLE TO THE CONTRACTOR THE AVERAGE WIDTH OF THIS ROUTE SHALL NOT EXCEED 8 METERS . THE ACCESS ROUTE SHALL ALSO APPLY FOR FUTURE MAINTENANCE PURPOSES .

4/ a) ALL UTILITIES TO BE LOCATED AND EXPOSED PRIOR TO CONSTRUCTION SO THAT THE NEW TILE GRADES CAN BE CONFIRMED. IF THERE IS A CONFLICT IN ELEVATION BETWEEN THE PROPOSED DRAIN AND THE UTILITY, THE ENGINEER IS TO BE NOTIFIED IMMEDIATELY.
b) CONTRACTOR TO NOTIFY ALL UTILITIES 72 HOURS PRIOR TO HIS SCHEDULED TIME FOR STARTING THE ABOVE WORK.
c) THE COST FOR THIS WORK SHALL BE INCLUDED IN THE ITEM ON THE EXTENT OF WORK AND NO EXTRA PAYMENT SHALL BE MADE TO THE CONTRACTOR, EXCEPT IF ROAD RESTORATION IS REQUIRED.

5/ ALL TREES , SCRUB , BRUSH , ETC. TO BE CLEARED AND GRUBBED IN ACCORDANCE WITH "SECTION B. 3 AND C. 4" SPECIFICATIONS .

6/ RIP-RAP TO BE SUPPLIED AND INSTALLED IN ACCORDANCE WITH "SECTION A. 28" IN THE SPECIFICATIONS.

7/ CONTRACTOR TO ARRANGE A PRE-CONSTRUCTION MEETING WITH THE ENGINEER , DRAINAGE SUPERINTENDENT , AND THE AFFECTED OWNERS . ALL PARTIES SHALL RECEIVE 48 HOURS NOTICE TO THE MEETING .

CLOSED PORTIONS

8/ ALL PLASTIC PIPE TO CONFORM TO "SECTION C. 1 " IN THE SPECIFICATIONS.
a) SEWER PIPE TO BE CONCRETE, H. D. P. E. PLASTIC 320 KPA (BELL & SPIGOT WITH RUBBER GASKETS, CONFORMING TO C.S.A. 1026-09) , PVC ULTRA RIB OR PVC SDR 35 .

EXISTING TILE DRAINS TO BE EXPOSED IN AS MANY LOCATIONS AS ARE NECESSARY TO CONFIRM THEIR EXACT LOCATION AND ELEVATION PRIOR TO CONSTRUCTION . EXACT LOCATION OF NEW TILE DRAINS THEN TO BE CONFIRMED BY DRAINAGE SUPERINTENDENT OR ENGINEER .

PLAN LEGEND

- LIMIT OF WATERSHED AREA
- PROPOSED DRAINAGE WORKS
- EXTERIOR OR INTERIOR WATERSHED
- EXIST. MUNICIPAL DRAIN
- EXIST. WATERCOURSE OR PRIVATE DITCH

10 - 020 ASSESSMENT ROLL NUMBER
J. SMITH OWNERS NAME
40 . 9 ha. HECTARES OWNED

FLEUREN DRAIN

Municipality of West Elgin

Drainage Superintendent:
TOM MOHAN
519-785-0560

No.	REVISIONS	DATE

Drawn By: MM
Date: DEC. 16, 2024
Field Book: GPS
JOB No.: 223253
Drawing No.: 1 of 1

PLAN, PROFILE, DETAIL & NOTES

LICENSED PROFESSIONAL ENGINEER
J. M. C. SPRIET
PROVINCE OF ONTARIO

SPRIET ASSOCIATES
LONDON CONSULTING LIMITED ENGINEERS
155 YORK STREET --LONDON (519) 672-4100--N6A 1A8