

POOL OUTLET DRAIN
Municipality of West Elgin



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Our Job No. 220248

September 8, 2021

London, Ontario
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POOL OUTLET 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 reconstruction of parts of the Pool Outlet Municipal Drain serving parts of Lots 10 to 18, Concessions 5 and 6 and parts of Lots 12 to 21, Concessions 6 and 7, and parts of Lots 21 to 25, Concession 9 in the Municipality of Chatham-Kent and parts of Lots A and B, in the Gore Concession and Concessions 5 and 6 in the Municipality of West Elgin. The total watershed area contains approximately 1860 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 one of the affected landowners.

HISTORY

The Pool Drain was last reconstructed pursuant to a report submitted by W.D. Colby, P. Eng. dated January 30, 1990, and consisted of the cleanout and brushing of the open drain from Lot 7, Concession 4 to the westerly limits of the drain located just north of Highway 401 in Lot A, Concession 6. In total, 3,400 lineal meters of open cleanout and brushing were performed as well as the installation of 3 rigid frame culverts.

EXISTING DRAINAGE CONDITIONS

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

- that the landowner, Fleuren Agri Inc. (Roll No. 20-005), indicated that a portion of the Pool Drain in their lands significantly affects their ability to work the lands. They requested that this portion be relocated to the north and west

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

- that the lands would benefit from the relocation of the open drain in a north-easterly direction. This would allow the lands located north of the existing drain to be more efficiently farmed

Preliminary design, cost estimates and assessments were prepared and, based on those, it was decided to proceed with the report.



DESIGN CONSIDERATIONS

The proposed drain was designed, with respect to capacity, using the Drainage Coefficient method contained in the "DRAINAGE GUIDE FOR ONTARIO", Publication 29 by the Ontario Ministry of Agriculture, Food, and Rural Affairs.

We would like to point out that there have been no indications of any adverse soil conditions, but no formal soil investigation has been made.

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.

RECOMMENDATIONS

We are therefore recommending the following:

- that the Pool Outlet Drain, in the lands of Fleuren Agri Inc. (Roll No. 20-005), be relocated to allow the landowner to farm their lands more effectively. The drain shall be relocated to the westerly property lines through the lands of Fleuren Agri Inc. to the Cruickshank Drain, for a total length of 337 lineal meters
- that the existing open drain be backfilled with materials from the existing drain
- that the Cruickshank Drain, from Sta. 0+050 to Sta. 0+198 be officially referred to as the Pool Drain and maintained under the Pool Drain Maintenance Schedules

ENVIRONMENTAL CONSIDERATIONS AND MITIGATION MEASURES

We have reviewed the proposed work with the Department of Fisheries and Oceans (File No. 20-HCAA-02161) and they recommend the following mitigation measure be followed in their letter of advice dated August 30, 2021:

- Complete the works outside of the restricted activity timing window for spring spawning fish (March 15- July 15)
- Complete the proposed works during low or no flow
- Implement and maintain appropriate erosion and sediment control measures, enhancing them if necessary
- Remove all non-biodegradable erosion and sediment control equipment upon completion of the project
- Develop and implement a response plan to avoid a spill of deleterious substances and report any spills of deleterious substances



ENVIRONMENTAL CONSIDERATIONS AND MITIGATION MEASURES (cont'd)

- Seed the realigned channel and allow vegetation to establish prior to diverting flows
- Backfill existing drain when it is dry after flows are diverted to the realigned channel

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:

- quarry stone rock chutes are to be constructed at surface inlet points to reduce erosion from direct surface water access into the ditch
- some severe bends in the drain are to be protected from erosion with the installation of quarry stone rip-rap on the ditch bank as specified on the plans
- all new tile drain outlets are to be installed with quarry stone rip-rap protection
- 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

SUMMARY OF PROPOSED WORK

The proposed work consists of approximately 535 lineal meters of open ditch cleanout and reconstruction including quarry stone rip-rap bank protection, rock chutes, and bank seeding.

SCHEDULES

Two schedules are attached hereto and form part of this report, being Schedule 'A' – Allowances and Schedule 'B' - Cost Estimate.

Schedule 'A' - Allowances. In accordance with Section 30 of the Drainage Act, allowances are provided for damages to lands and crops along the route of the drain as defined below. Note that no allowance for right-of-way has been paid as it is deemed transferred from the existing open drain that is to be backfilled.

Schedule 'B' - Cost Estimate. This schedule provides for a detailed cost estimate of the proposed work which is in the amount of \$ 50,000.00. This estimate includes engineering and administrative costs associated with this project.

Drawing No.'s 1 and 2, Job No. 220248, 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.



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

We assess the entire cost of this report to the landowner, Fleuren Agri Inc. (Roll No. 20-005).

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.

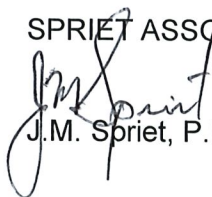
After completion, the entire Pool Outlet Drain, including the newly constructed drain, shall be maintained by the Municipality of West Elgin at the expense of all upstream lands and roads assessed in the report by W.D. Colby, P.Eng., dated January 30, 1990, until such time as the assessment is changed under the Drainage Act.

JMS:bv



Respectfully submitted,

SPRIET ASSOCIATES LONDON LIMITED


J.M. Spriet, P.Eng.



SPRIET ASSOCIATES
engineers & architects

SCHEDULE 'A' - ALLOWANCES

POOL OUTLET DRAIN

Municipality of West Elgin

In accordance with Sections 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				
5	S Pt. B	20-005 (Fleuren Agri Inc.)	\$ 2,350.00	\$ 2,350.00
			=====	
Total Allowances			\$ 2,350.00	\$ 2,350.00
			=====	
TOTAL ALLOWANCES ON THE MAIN DRAIN				\$ 2,350.00

POOL OUTLET DRAIN**Municipality of West Elgin**

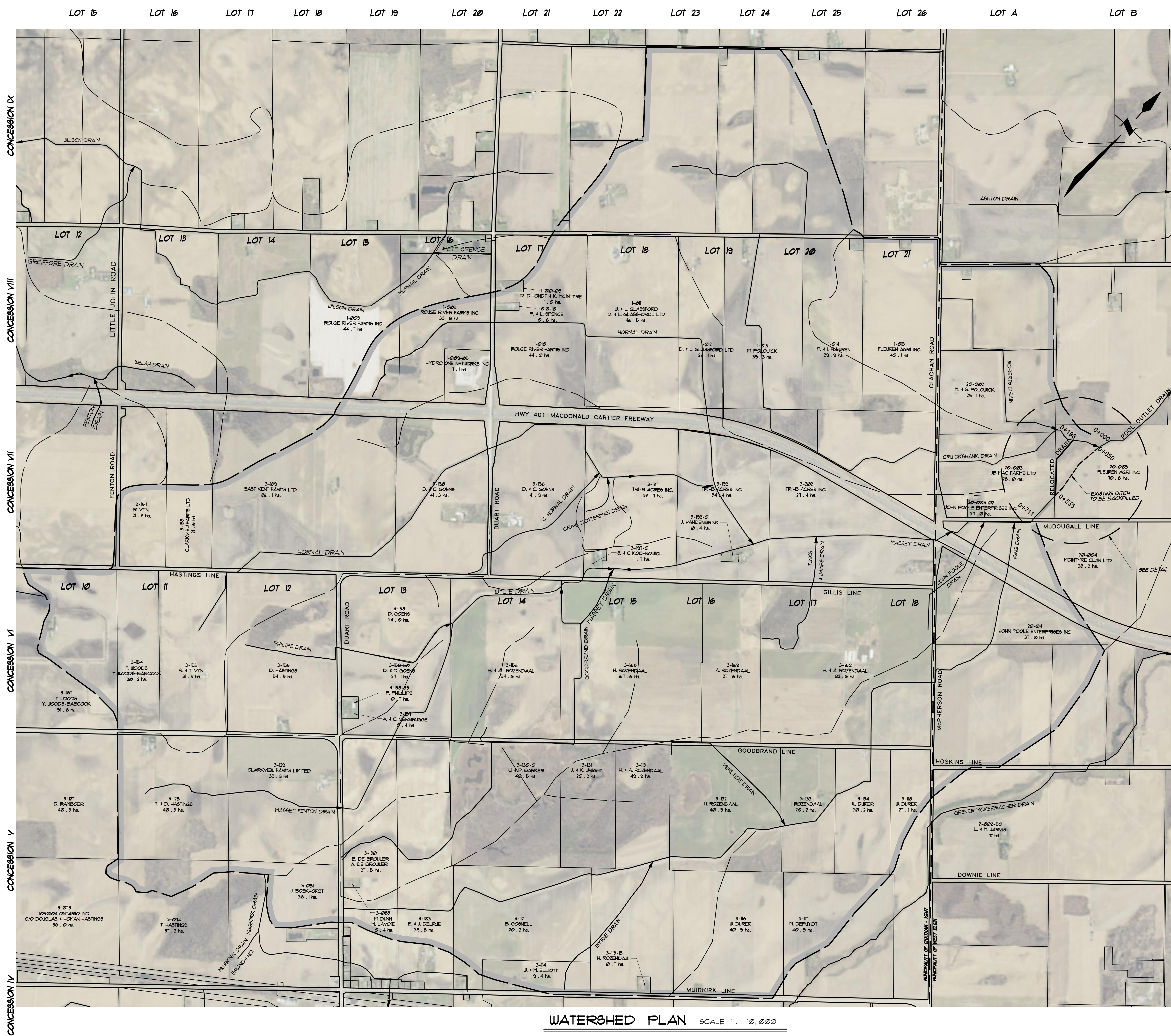
We have made an estimate of the cost of the proposed work which is outlined in detail as follows:

MAIN DRAIN

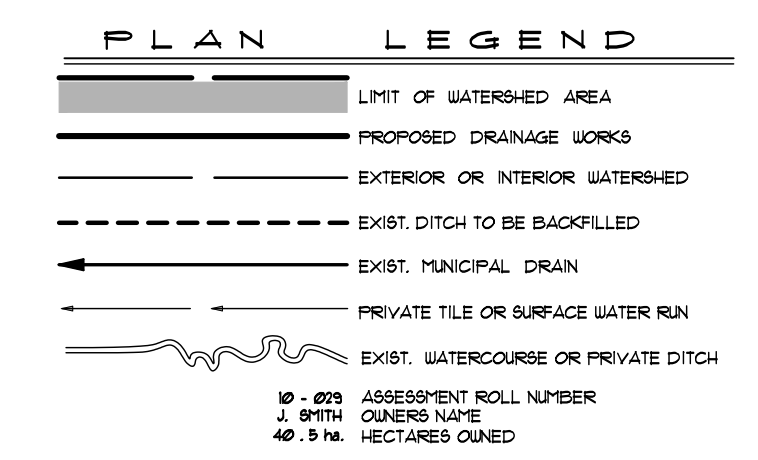
148 meters of open ditch re-construction (Approx. 800m ³)	\$ 3,000.00
337 meters of open ditch construction (Approx. 4500m ³)	\$ 12,500.00
Backfill existing ditch using excavated material from new ditch including hauling	\$ 12,000.00
Seeding of ditch banks and buffer strips. (Approx 6000m ³)	\$ 2,000.00
Supply and Install quarry stone rip-rap on outside banks at bends of new alignment 3 locations (Approx. 18m ³ req'd)	\$ 3,000.00
Removal and Disposal of Existing Culvert	\$ 500.00
Contingencies	\$ 2,000.00
Allowances under Sections 30 of the Drainage Act	\$ 2,350.00

ADMINISTRATION

Interest and Net Harmonized Sales Tax	\$ 1,160.00
Survey, Plan and Final Report	\$ 7,900.00
Expenses	\$ 740.00
Supervision and Final Inspection	\$ <u>2,850.00</u>
TOTAL ESTIMATED COST	\$ <u><u>50,000.00</u></u>



- ### 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:
 - OPEN PORTIONS - 18 meters (INCLUDING 3m BUFFER)
 - THE WORKING WIDTH FOR PURPOSES OF FUTURE MAINTENANCE SHALL BE THE SAME AS ABOVE
 - 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 12 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.
 - 8/ EXACT LOCATION TO BE CONFIRMED.
- ### OPEN PORTIONS
- 9/ A 3 METER WIDE BUFFER STRIP OF NEW & EXISTING VEGETATION BETWEEN THE TOP OF THE BANK AND THE CULTIVATED LANDS ON WEST SIDES OF THE DITCH SHALL BE MAINTAINED AS PART OF THE OPEN PORTION OF THE DRAIN.
 - 10/ NEWLY EXPOSED DITCH BANKS ARE TO BE HAND SEEDDED UPON COMPLETION OF CONSTRUCTION IN ACCORDANCE WITH "SECTION B.11" IN THE SPECIFICATIONS
 - 11/ SILT FENCE TO BE PLACED ACROSS DITCH BOTTOM AT STA. 0 + 453 DURING CONSTRUCTION TO PREVENT SILT FROM FLUSHING DOWNSIDE, AND ARE TO BE MAINTAINED AS NECESSARY DURING CONSTRUCTION. SILT FENCE AND SILT TO BE REMOVED AND DISPOSED OF AFTER CONSTRUCTION.



POOL OUTLET DRAIN

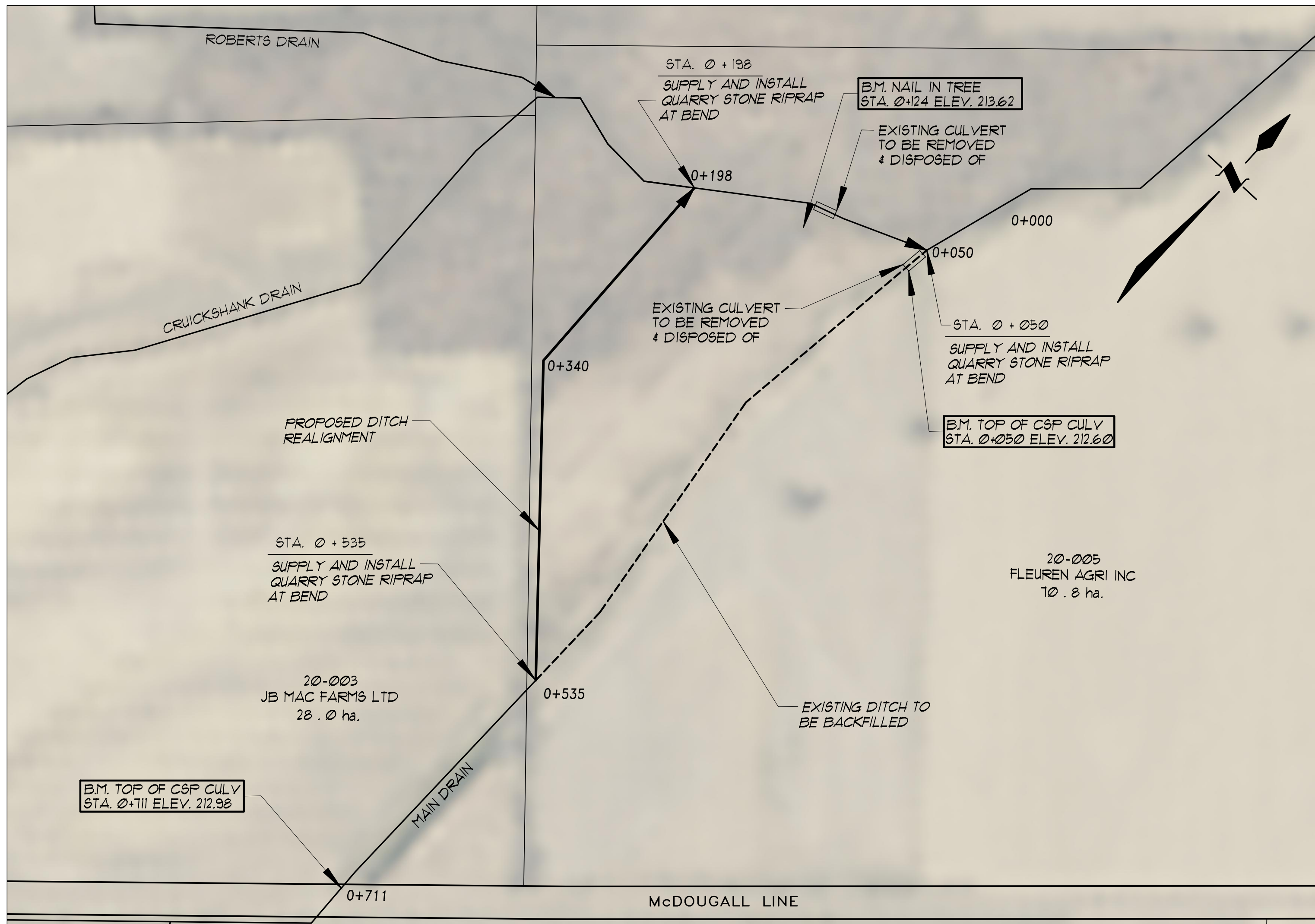
Municipality of West Elgin

Drainage Superintendent: TOM MOHAN 519-785-0560	No.	REVISIONS	DATE
Drawn By: AP Date: SEPT. 8, 2021	Field Book: D-GFS	JOB No.: 220248	Drawing No.: 1 of 2

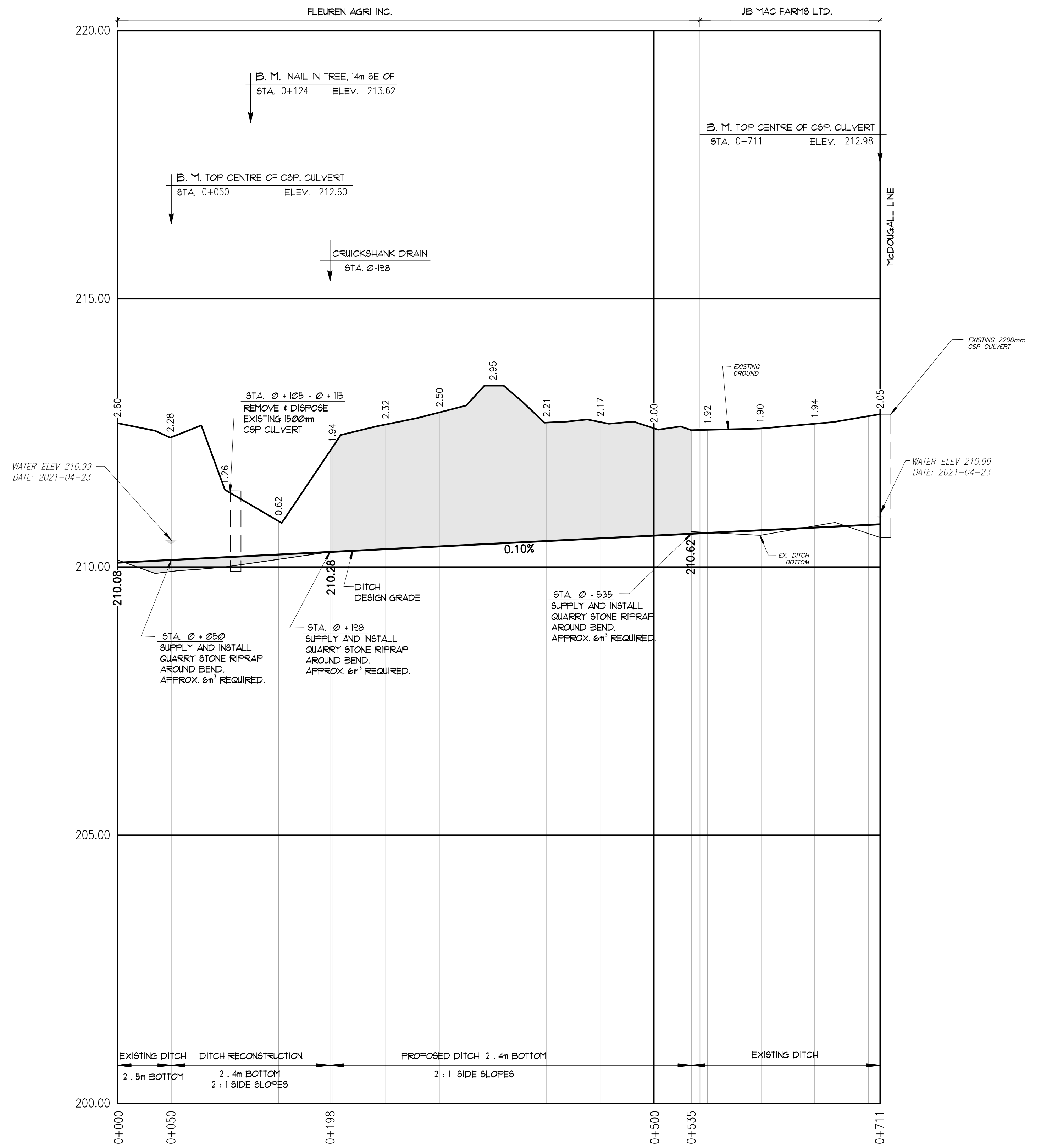
PLAN & NOTES

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

WATERSHED PLAN SCALE 1 : 10,000

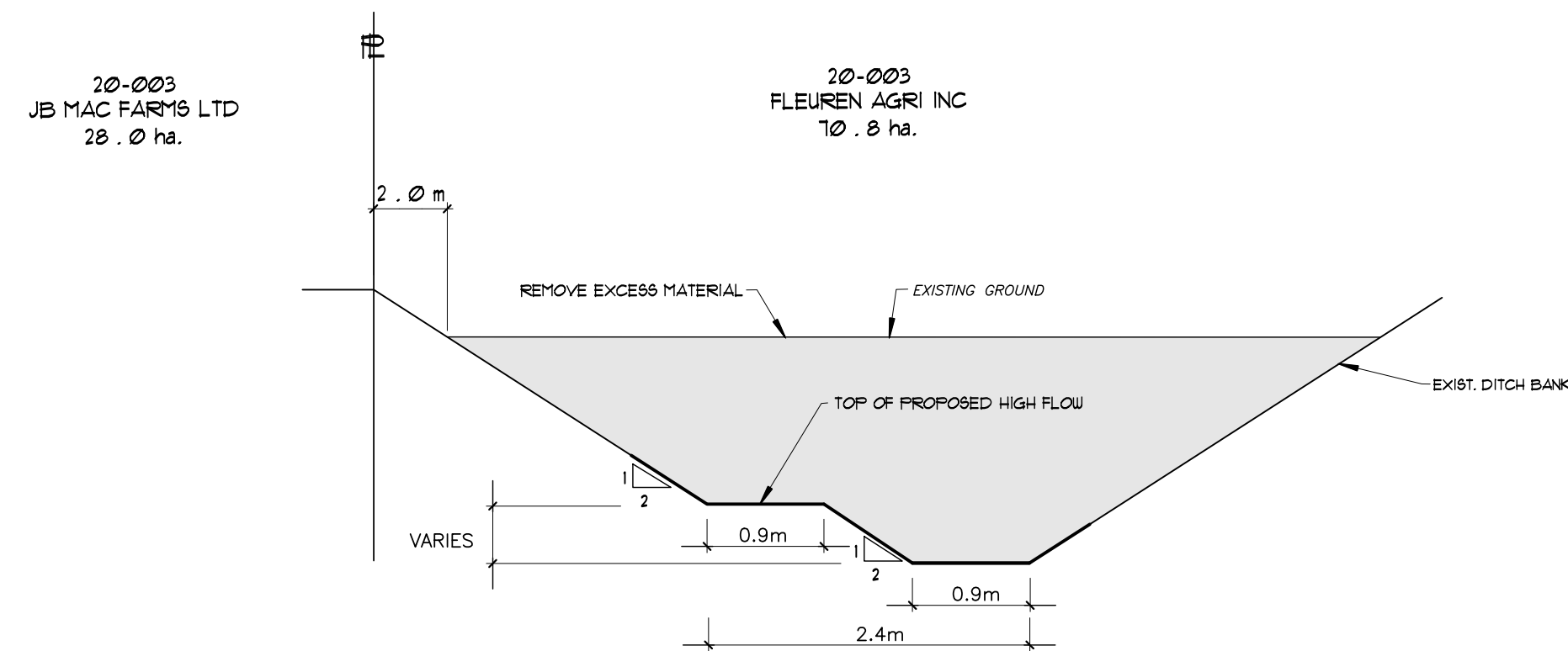


DETAIL PLAN SCALE 1 : 2,000



MAIN DRAIN

SCALE : HOR. 1 : 2,500
VERT. 1 : 50



TYPICAL DITCH
DETAIL "A"

N.T.S.

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Drainage Superintendent: TOM MOHAN 519-785-0560	No.	REVISIONS	DATE
Drawn By: AP Date: SEPT. 8, 2021	Field Book D-GFS	JOB No. 220248	Drawing No. 2 of 2
PLAN, PROFILE, & DETAIL			
SPRIET ASSOCIATES LONDON CONSULTING ENGINEERS 155 YORK STREET — LONDON (519) 672-4100 — NEA 1A8			