

J.A. SMITH DRAIN - ARMTEC REALIGNMENT

Town of Tillsonburg



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J.A. SMITH DRAIN - ARMTEC REALIGNMENT

Town of Tillsonburg

To the Mayor and Council of
the Town of Tillsonburg

Mayor and Council:

We are pleased to present our report on the realignment of parts of the J.A. Smith Municipal Drain serving parts of Lots 10 to 16, Concessions 2 N.T.R. to 4 N.T.R. (geographic Norfolk) in the Town of Tillsonburg. The total watershed area contains approximately 240 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 J.A. Smith Drain was last reconstructed pursuant to a report submitted by K.E. Weaslan, P. Eng. dated October 30, 1974 and consisted of drain improvements from the C.P.R. Railway in Lot 9, Concession 4 N.T.R. to its head at what is now Jackson Side Road.

EXISTING DRAINAGE CONDITIONS

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

- that the owner, Armtec Inc. (Roll No. 020-800), requested to relocate a portion of the drain in their lands due to the construction a new facility. This relocation will be completed in conjunction with their site plan completed by C.J.D.L. Consulting Engineers.

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

- that the drain could easily be relocated and that a portion of the drain could be enclosed



EXISTING DRAINAGE CONDITIONS (cont'd)

Preliminary design, cost estimates and assessments were prepared and circulated to the owners to review the findings and preliminary proposals. Further input and requests were provided by the affected owner at that time and at later dates. Based on the proposed design it was decided to proceed with the report.

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 calculated for the closed drain being incorporated was 38.1mm per 24 hrs. The open channel designed was calculated to convey a 1 in 2-year storm.

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 J.A. Smith Drain be relocated and incorporated closer to the west and south property line in Lot 10, Concession 4 N.T.R. Further that a portion of the drain be enclosed from the newly constructed ditch east to the existing road crossing under Rokeby Orchard Road for a total length of ditch being relocated will be 289 lineal meters and 116.5 lineal meters of drain will be enclosed.
- this work is being completed in conjunction with development of the site for a new facility and the owner is completing the works privately, in accordance with the approved site plan
- that the existing 1971 portion of the J.A. Smith drain in Lot 10, Concession 3 N.T.R. be officially abandoned from municipal status pursuant to Section 19 of the Drainage Act

ENVIRONMENTAL CONSIDERATIONS AND MITIGATION MEASURES

Based on the information available there are no significant wetlands or sensitive areas within the affected watershed area or along the route of the drains. The proposed incorporation of the J.A. Smith Drain includes quarry stone outlet protection & headwalls which greatly help reduce any subsequent erosion.

ENVIRONMENTAL CONSIDERATIONS AND MITIGATION MEASURES (cont'd)

We have reviewed the proposed work with the Department of Fisheries and Oceans, File No. 21-HCAA-00848, and they recommend the following mitigation measure be followed:

- Complete work outside restricted activity timing windows (no in-water work between October 1st and July 15th)
- 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
- Capture and relocate any trapped fish in the drain prior to construction while conduct work in the dry or low flow
- Install heavy duty erosion and sediment control measures downstream of work zone
- Reseed and/or replant any disturbed areas caused by the construction activities.

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 J.A. Smith Municipal Drain and shall not be disturbed or destroyed.

SUMMARY OF PROPOSED WORK

The proposed work consists of the incorporation approximately 289 lineal meters of open ditch realignment including quarry stone rip-rap bank protection and sediment basins; approximately 116.5 lineal meters of 900mm (36") dia. H.D.P.E. sewer pipe, including related appurtenances.

SCHEDULES

One schedule is attached hereto and forms part of this report, being Schedule 'A' - Cost Estimate.

Schedule 'A' - Cost Estimate. This schedule provides for a detailed cost estimate of the proposed work which is in the amount of \$10,250.00. This estimate includes engineering and administrative costs associated with this project.

Drawing No. 1, Job No. 221132, 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.

ASSESSMENT

We assess the entire cost of this report to the landowner Armtec Inc. (Roll No. 20-800). 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.

After completion, the entire J.A. Smith Drain being relocated under this report shall be maintained by the Town of Tillsonburg at the expense of Roll No 20-800.

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.



Respectfully submitted,

SPRIET ASSOCIATES LONDON LIMITED

B. Widner, P.Eng.



SCHEDULE 'A' - COST ESTIMATE

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

ADMINISTRATION

Interest and Net Harmonized Sales Tax	\$	250.00
Survey, Plan and Final Report	\$	9,390.00
Expenses	\$	<u>610.00</u>
TOTAL ESTIMATED COST	\$	<u><u>10,250.00</u></u>