CORPORATION OF THE TOWNSHIP OF EAST ZORRA-TAVISTOCK COUNCIL
2018 - 2022

AGENDA

for the Meeting to be held on Wednesday January 19, 2022 at the
Innerkip Community Centre, 695566 17th Line, Innerkip, Ontario, at 7:00 p.m.

PLEASE NOTE: As Social Distancing must be maintained, should you wish to attend the meeting, please contact Clerk Will Jaques via email (wjaques@ezt.ca) or telephone (519-462-2697 ext.7825) in advance to confirm your attendance can be accommodated. Mandatory face coverings shall be in place.

---

1. Call to order and opening remarks
2. Approve Agenda
3. Disclosure of Pecuniary Interest and General Nature Thereof

4. General Business:
   a) Confirm December 15, 2021 Meeting Minutes

5. Delegations & Appointments:
   a) 7:15 p.m. – Consideration of Engineer's Report (Tavistock Drain 1979 – Reconstruction 2021)
   b) 7:30 p.m. – MVA Application A-6-2021 (Apple Home Builders)
   c) 7:45 p.m. – MVA Application A-7-2021 (Hunt Homes Inc.)

6. Reports of Municipal Officers and Committees:
   a) Conferences and Seminars
   b) County Council – Updates & Questions
   c) Staff Reports – Updates & Questions
   d) November 22, 2021 TDRFB Minutes

7. By-laws:
   a) By-law #2022-01-Tavistock Drain 1979-Reconstruction 2021 (Provisional By-law)

8. Other and Unfinished Business:

9. Closed to the Public Session *as authorized under s. 239 of the Municipal Act*:

10. Confirming By-law

11. Adjourn

Placeholder Page for Agenda Item 1 –
Call to order and opening remarks

Use this page to note any opening remarks you wish to make.

2.

Placeholder Page for Agenda Item 2 – Approval of the Agenda

Use this page to note items you would like added to the agenda.

3.

Placeholder Page for Agenda Item 3 – Disclosure of Pecuniary Interest

Use this page to note any Pecuniary Interests you wish to declare at the meeting.

The Council of the Township of East Zorra-Tavistock met at the Innerkip Community Centre, Innerkip, Ontario at 7:00 p.m. on Wednesday December 15, 2021.

Members Present: Mayor Don MCKAY, Deputy Mayor Don EDMISTON and Councillors Matthew GILLESPIE, Margaret LUPTON, Scott RUDY, Phil SCHAEFER and Jeremy SMITH.

Members Absent: N/A.

Staff Present: CAO-Treasurer Karen DePrest, Clerk Will Jaques, CBO John Scherer and Public Works Manager Tom Lightfoot.

Mayor MCKAY welcomed everyone to the meeting. Councillor RUDY expressed his appreciation for the recent parade and associated food drive in the Hickson area. Council also noted the parades that took place recently in both Tavistock and Innerkip.

Approve Agenda

1. Moved by: Jeremy SMITH
Seconded by: Margaret LUPTON
Resolved that Council approve the agenda for the December 15, 2021 meeting, as printed and circulated and further that the following be added to the agenda for this meeting:
- Hickson pumper truck

CARRIED.

PECUNIARY INTERESTS:

- N/A

Confirm Minutes - Council

2. Moved by: Don EDMISTON
Seconded by: Matthew GILLESPIE
Resolved that Council confirm the Minutes of the December 1, 2021 Council Meeting, as printed and circulated.

CARRIED.

Correspondence & Reports – No Resolutions:

- ROEDC – September to November, 2021 Activity Report
- November 25, 2021 PSB Minutes

Correspondence & Reports – Resolutions Following:

ROEDC – September to November, 2021 Activity Report

Council reviewed the September to November, 2021 activity report from the Rural Oxford Economic Development Corporation (ROEDC). Deputy Mayor EDMISTON provided an update on other ROEDC activities.

November 25, 2021 PSB Minutes

Council reviewed the November 25, 2021 Police Services Board Minutes.

Staff Report #CBO2021 – 15 re: Settlement Drain Inspection Program

CBO John Scherer presented his report to Council regarding implementing a drainage inspection program in the urban settlement areas of the Township.

3. Moved by: Jeremy SMITH
Seconded by: Scott RUDY
Resolved that Council approve the initiation of the Settlement Drain Inspection Program, and that the funding of the Settlement Drain Inspection Program be deferred to budget.

CARRIED.

Staff Report #PW2021 – 15 re: Dust Suppressant Tender Results

Public Works Manager Tom Lightfoot presented his report to Council regarding the recent results of the Dust Suppressant tender process.

4. Moved by: Phil SCHAEFER
Seconded by: Jeremy SMITH
Resolved that Council accept the bid from Pollard Distribution Inc. to supply and apply salt brine dust suppressant to Township roads as required for 2022, 2023, 2024, for the bid prices as stated in the tender documents, through the Service Sharing Committee and administered by the Township of South-West Oxford.

CARRIED.

By-law:

1st & 2nd Reading

5. Moved by: Margaret LUPTON
Seconded by: Scott RUDY
Resolved that the following by-laws be read a first and second time:

- 2021-44 – 2022 Borrowing By-law
- 2021-45 – 2022 Interim Tax Levy By-law
- 2021-46 – Appointment of Committee of Adjustment (2022)
- 2021-47 – Actual Cost By-law (Tavistock Drain 1974)
- 2021-48 – Actual Cost By-law (Tavistock Drain 1987)

CARRIED.

By-law:

3rd & Final Reading

6. Moved by: Matthew GILLESPIE
Seconded by: Jeremy SMITH
Resolved that the following by-laws be read a third and final time:

- 2021-44 – 2022 Borrowing By-law
- 2021-45 – 2022 Interim Tax Levy By-law
- 2021-46 – Appointment of Committee of Adjustment (2022)
- 2021-47 – Actual Cost By-law
- (Tavistock Drain 1974)
- 2021-48 – Actual Cost By-law
- (Tavistock Drain 1987)

CARRIED.

Other and Unfinished Business

Councillor RUDY brought forward further discussion regarding the Road Needs Study, including the gravel to hardtop strategy, as originally presented to Council at their December 1, 2021 meeting. Council provided information and input to staff to help to further develop the gravel to hardtop strategy.

CAO-Treasurer Karen DePrest advised Council of a recent collision involving the Hickson pumper truck. A vehicle is currently being borrowed to supplement the loss of the Hickson pumper truck, however, if substantial work to the pumper truck is required, the purchase of a new vehicle may be required, under the emergency provisions of the Township's purchasing policy.

Confirming By-law

7. Moved by: Scott RUDY
Seconded by: Phil SCHAEFER
Resolved that By-law #2021-49 being a by-law to confirm the proceedings of Council held Wednesday December 15, 2021 be read a first, second and third time this 15th day of December, 2021, and further that the Mayor and Clerk are hereby authorized to sign the same and affix the corporate seal thereto.

CARRIED.

Adjourn

8. Moved by: Jeremy SMITH
Seconded by: Margaret LUPTON
Resolved that Council does now adjourn at 8:30 p.m.

CARRIED.

Will Jaques, Clerk

Don McKay, Mayor

#5.a

ENGINEERING REPORT

For

TAVISTOCK DRAIN 1979
RECONSTRUCTION 2021

TOWNSHIP OF EAST ZORRA-TAVISTOCK

County of Oxford

December 17, 2021

File No. 18-270

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS & PLANNERS
85 McIntyre Drive
Kitchener, ON N2R 1H6
Tel: 519-748-1199
Fax: 519-748-6100

This page intentionally left blank

TABLE OF CONTENTS

Definitions/Abbreviations:

"Act" or "Drainage Act" means The Drainage Act RSO 1990 as amended
"CSP" means Corrugated Steel Pipe
"DFO" means Fisheries and Oceans Canada
"Drain" means Tavistock Drain 1979 Reconstruction 2021
"Grant" means grant paid under Agricultural Drainage Infrastructure Program
"HDPE" means high density polyethylene
"KSAL" means K. Smart Associates Limited
"Manhole" means maintenance hole
"MECP" means Ministry of Environment, Conservation and Parks
"Municipality" or "Township" means Township of East Zorra-Tavistock
"OMAFRA" means the Ontario Ministry of Agriculture, Food and Rural Affairs
"Report" means this 2021 report
"T.B.D." means To Be Determined
"Tribunal" or "Drainage Tribunal" means Agriculture, Food and Rural Affairs Appeal Tribunal
"TVDSB" means Thames Valley District School Board
"Twp" means Township
"UTRCA" means Upper Thames River Conservation Authority

Other Tables:

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS & PLANNERS
85 McIntyre Drive
Kitchener, ON N2R 1H6
Tel: 519-748-1199
Fax: 519-748-6100

December 17, 2021 File No. 18-270

TAVISTOCK DRAIN 1979 RECONSTRUCTION 2021

TOWNSHIP OF EAST ZORRA-TAVISTOCK

1.0 SUMMARY

This is a drainage report pursuant to Sections 4 and 8 of the Drainage Act, RSO 1990. The report was prepared in accordance with instructions from the Township of East Zorra-Tavistock pursuant to a Council resolution dated September 19, 2018 appointing the Engineer to prepare a survey, plan and report on the petition by MillGate Holdings Inc. (now Mill-Gate Homes Inc.). The petition was dated September 13, 2018 and identified the required work to be the relocation of an existing municipal drain. The drain was identified as the Tavistock Drain 1979 in Pt. Lots 34 and 35, Concession 13, and part of Lot 124, R.P. 307 (East Zorra Twp) in the community of Tavistock in the Township of East Zorra-Tavistock.

The proposed new drain will be known as the Tavistock Drain 1979 Reconstruction 2021.

The work undertaken with the preparation of this report has followed the normal procedures of the Drainage Act, which have involved an on-site meeting, review of the site, survey work and design, and the preparation of a report to include plan and profile drawings, cost estimates, specifications, assessment and future maintenance schedules.

The main purpose of this Report is to provide for the relocation/reconstruction of the lower portion of the Tavistock Drain 1979 to accommodate the proposed subdivision development by Mill-Gate Homes Inc. in the community of Tavistock. The subdivision will ultimately consist of 190-200± total residential lots (single detached and townhouses), plus nine streets (extensions to Maria Street and Wettlaufer Street, and Streets A to H), one industrial block, and one park block, etc. The majority of the proposed lots and streets will be discharged into the subdivision's proposed stormwater management facility (SWM).

The second purpose of this Report will provide for the reapportionment to the Schedules of Assessment for Future Maintenance for the Tavistock Drain 1979 and the downstream affected drains (Hohner Drain and Thames River Drain) in accordance with Section 65 of the Drainage Act.

The proposed drain reconstruction/relocation will replace approx. 660m (2,165 ft.) of the existing Main Drain which flows southwesterly as it crosses through the Mill-Gate Homes Inc. (former P., W., & J. Wettlaufer in 1979, N. & J. Loggan in 2018), Tavistock Public School and County of Oxford properties.

The relocation of this section of the Tavistock Drain 1979 will contain 435m of open ditch and a closed pipe drain that is upgraded from twin 27" and 42" (675mm and 1050mm) diameter pipes to be 424m of 1200mm (48") pipe (total length of 859m). This upgrade is a requirement of the Township in order to have the Tavistock Master Storm Drainage System Plan (R.J. Burnside and Associates Limited) dated July 2007 recommendations addressed.

It is recognized by this Report that the construction work involved with the drain reconstruction will be a part of the subdivision servicing contract but with inspection also by Township staff and the Engineer. However, the reconstruction work can only be undertaken if authorized by an adopted Engineer's Report pursuant to the Drainage Act. This constitutes the required Report.

This Report contains estimates of the costs pursuant to the Drainage Act to address the Tavistock Drain 1979 reconstruction work. Only items of work directly affecting the Tavistock Drain 1979 and the removal/destruction/abandonment of a portion of the 1919 and 1961 drains are costed here. This report recognizes that the actual construction work involved may be tendered or done by the developer's contractor, and that all costs will be paid by the developer. The subdivider will also be assessed the allowances, and the engineering in connection with this Report, including any municipal (Township) administration and construction supervision costs incurred.

The total estimated cost associated with this Report related to the Tavistock Drain 1979 Reconstruction 2021 is **$1,140,000**. This estimate is based on this Engineer's estimate (for the fixed allowances, drain construction, engineering, construction supervision and administration costs), and does not include any engineering incurred by the Subdivider's Engineer, or any municipal (Township) administration and supervision costs.

The following Assessment Schedules and Tables are provided:

- *Schedule A - Schedule of Assessments* shows the assessment of the total estimated cost of the project to the affected owners.
- *Schedule B – Schedule for Actual Cost Bylaw* contains data that summarizes all estimated gross and net assessments. It will be of assistance when preparing the Final/Actual Cost By-Law. It shows the estimated net costs to all parties if the allowances are deducted from the assessments.
- Tables 1, 2 and 3, following Schedule B, are the respective reapportionments to the Schedules of Assessment (Future Maintenance Schedules) for the Tavistock Drain 1979, Hohner Drain and Thames River Drain. These reapportionments were prepared in accordance with Section 65 of the Drainage Act.

2.0 BACKGROUND

MillGate Holdings Inc. (now Mill-Gate Homes Inc.) submitted the drainage petition, under Section 4 of the Drainage Act, to the Township of East Zorra-Tavistock on September 13, 2018. Shawn Milloy as Secretary/Treasurer of the company, who has the authority to bind the corporation, signed the petition. The purpose of the petition was to have the Tavistock Drain 1979 relocated to provide for the development of a subdivision in Pt Lots 34 and 35, Concession 13 (East Zorra Twp), in the Township of East Zorra-Tavistock, in the community of Tavistock. In accordance with Section 8 of the Drainage Act, the Municipality appointed K. Smart Associates Limited (KSAL) to act as the Engineer, by resolution of Council on September 19, 2018.

KSAL subsequently advised that Ray Roscovich, P.Eng. would be the Engineer in charge. On May 25, 2021, a change of Engineer was made to Curtis MacIntyre, P.Eng.

3.0 DRAINAGE HISTORY

The Tavistock Drain was originally constructed in 1907 in accordance with a report of F.J. Ure. It was an open ditch, beginning at a tributary to the Thames River Drain in Lot 34, Concession 13 just east of the 13th Concession, and ran to a location that is now very close to the center of the lagoon area serving the village. From this point, the drain continued upstream heading in a northwesterly direction to the north side of Hope Street to a terminus. This part of the drain was a closed pipe, consisting of 14” and 15” (350 and 375mm) diameter drains. From Hope Street northerly to Woodstock Street, a 10” (250mm) diameter tile drain was constructed privately some time shortly after or before the 1907 report.

In a further 1919 report by F.J. Ure, the ditch portion of the original Tavistock Drain was closed in and replaced with a tile drain varying in size from 12” to 16” (300 to 400mm) diameter down to the outlet in the ditch in Lot 34, Concession 13 (as shown on Drawing 2). In addition, a branch drain was constructed from the former tile outlet (center of present lagoons) upstream to the north side of the railway to serve lands in E½ Lot 35, Concession 13. This branch consisted of 5” and 6” (125 and 150mm) diameter tile.

By a report of W.G. Ure dated October 12, 1927 the original Tavistock Drain south of the railway to the line between Lots 34 and 35 was improved with a new 14” (350mm) diameter tile drain and the 15” (375mm) drain between Hendershot Street and the railway was re-laid. Also, a 14” (350mm) drain coming from Decew Street was connected up at the railway.

By a further report of W.G. Ure dated October 30, 1929 and known as Tavistock Drain No. 7, it was recommended that the Tavistock Drain north of the railway be improved and extended. The 15” drain re-laid by the 1927 report was to be left intact and twinned with a 24” (600mm) drain. From Hendershot Street upstream the old 15” drain was to be removed to the south side of Hope Street and be replaced with two new drains; a 15” and a 24” drain. From the south side of Hope Street to the east side of Woodstock Street the existing 10” drain was to be incorporated and twinned with a 14” drain throughout. This October 1929 report superseded an August 1929 report which was to be known as the Zimmerman Drain and which was going to provide for new drains on the west side of Woodstock Street. It has been determined however, that neither the August nor the October 1929 report was implemented.

No record exists of further work in accordance with an Engineer's report on the original Tavistock Drain until the year 1961 when the sewage lagoons were constructed. Since the lagoons were built above a considerable portion of the original drain in Lots 34 and 35, Concession 13 a new 18" (450mm) diameter drain was laid from near the north west corner of the northerly lagoon where the two Tavistock Drain tiles (15" and 14") were intercepted southerly along the west edge of the lagoons to the location where the Tavistock Drain of 1919 was intercepted. At this point a 24" (600mm) diameter drain was laid westerly to the open ditch, the increase in size being such as to allow for lagoon draining. The old branch drain, which formerly went north to the railway under the lagoons, was connected up with a new 10" (250mm) drain under the lagoon.

The Tavistock Drain 1979 was constructed by the authority of a report prepared by K. A. Smart, P.Eng. (K. Smart Associates Limited) dated January 15, 1979. This report consisted of a Main Drain and Branches "A" and "B".

The Main Drain commenced at an open ditch outlet now known as the Hohner Drain in Lot 34, Concession 13 in the former Township of East Zorra, upstream in a northwesterly direction through Hope Street East and Woodstock Street North to a point just south of Jacob Street West in the Village of Tavistock and consisted of 5,090' (1,551m) of 21" to 42" (525mmm to 1050mm) diameter reinforced concrete sewer pipe, twin (2) - 27" (675mm) diameter concrete field tile with twin (2) - 36" (900mm) CSP's at the outlet, and the incorporation of approximately 674' (205m) of existing 8" to 18" (200mm to 450mm) diameter CSP.

Branch "A" commenced from the outlet into the Tavistock Municipal Drain 1974 and continued westerly approximately 965' (294m) along the north side of Hope Street East, crossed the road and continued westerly along the south side of the street for 550' (168m) to the Main Drain (1979) crossing. It consisted of approximately 1,565' (477m) of 18" to 24" (450mm to 600mm) diameter concrete sewer pipe. Branch A served to drain only the road waters along Hope Street East from the Main Drain crossing to the Tavistock Drain 1974.

Branch "B" commenced at the Main Drain crossing on the south side of Hope Street East and continued westerly along the south side of the road for 469' (143m). It consisted of approximately 469' (143m) of 10" and 12" (250mm and 300mm) diameter concrete sewer pipe. Branch B served to drain only road waters along Hope Street East from Woodstock Street North easterly to the Main Drain crossing of Hope Street East.

The 1979 report contained only one schedule, "Schedule of Assessment". A portion of this schedule will be reapportioned in this Report (see Section 15.1 and Table 1 following Schedule A).

The Tavistock Drain 1979 outlets into the Hohner Drain (1979), which outlets into the Thames River Drain 1984. A portion of these drains' maintenance schedules will also be reapportioned in this Report.

4.0 INITIAL INVESTIGATION

4.1 On-Site Meeting

Attendees:

Shawn Milloy (Gateman-Milloy)
Karen Winfield (UTRCA)
Imtiaz Shah (UTRCA)
Mitchell Heighway (Oxford County)
Connor Occleston (Drainage Superintendent, Township of EZT)
Ray Roscovich, P.Eng. (Engineer, KSAL)

On October 11, 2018, the on-site meeting for the Section 4 appointment was held at the Township Public Works shop adjacent to the proposed Mill-Gate Homes Inc. site. Those in attendance are listed above. The Engineer explained that this meeting was a required step in the Drainage Act process, and that the petition brought forward would be evaluated for sufficiency. The meeting was also explained to be for information gathering purposes, and the attendees were asked to speak about the petition and any drainage or environmental concerns. The subsequent comments and discussions are described below.

Mr. Milloy described his firm's plan for development on the agricultural lands, and he presented a concept plan, which included 200± residential lots for the site. He understood that the Tavistock Drain 1979 ran through the property and that the Township would not allow development on top of the drain. Mr. Milloy stated that the development will not be using the drain for SWM (to be handled with separate pond and outlet), and he signed the petition so that the drain could be relocated away from the Gateman-Milloy development.

The Township indicated that the Tavistock Drain 1979 was undersized according to the Tavistock Master Storm System Drainage Plan (R.J. Burnside, 2007), and the developer would be required to increase the pipe size to meet these recommendations upon relocation of the drain. The Township also stated that all costs to relocate the drain through an Engineer's report would be assessed to the developer. Mr. Milloy agreed to these conditions.

The Township pointed out that the Tavistock Drain 1961 and 1919 drains outlet into the Hohner Drain just downstream from the existing Tavistock Drain 1979 outlet, and the Township was interested in combining the 1979, 1961 and 1919 drains along the south limit of the development. The reason for doing so would be to upgrade these drains to the Tavistock Master Storm System Drainage Plan recommendations, and to streamline the outlet area. If the Engineer found this idea to be feasible, the Township would pay any additional costs for increasing the pipe size and rerouting the existing 1919 and 1961 drains. The Engineer agreed to evaluate this option.

The UTRCA had no concerns with the proposed drain relocation. The Authority requested that a sediment trap be incorporated into the design at the outlet, and the Engineer agreed to do so.

Since the sanitary system for the proposed subdivision would not be near the relocated drain, the County had no concern with the proposed drain relocation.

The Engineer informed Mr. Milloy that a letter would be issued to all of the ratepayers in the Tavistock Drain 1979 watershed. The purpose of the letter would be to inform everyone that approved alterations to the drain would be occurring, and that the developer would be solely assessed for the work.

4.2 Site Examination and Survey

The routes of the existing and proposed drain were examined after the on-site meeting and on several occasions in 2018 to 2020. Topographic (GPS) survey occurred in October 2018 and March/June 2019 from the outlets of the existing and proposed drains upstream and across the south part of the Tavistock Public School property. Further survey was undertaken in early 2021 to investigate open ditch options for the drain (to be described later in this report).

5.0 MILL-GATE HOMES SUBDIVISION HISTORY

Mill-Gate Homes Inc. engaged the services of WalterFedy Engineering to prepare the design and engineering drawings for the proposed subdivision. The development site consisted of a 48 acre (19.4 ha) assessment parcel (Assessment Roll No. 010-11305) that is to be subdivided/severed into 190-200± total residential lots (single detached and townhouses), plus 9 streets (extensions to Maria Street and Wettlaufer Street, and Streets A to h), one industrial block, and one park block, etc. All lots (except for 1 lot), blocks and road swales and piped drainage of the subdivision would be discharged into the proposed SWM area, which will outlet into the existing Hohner Drain ditch. The drainage from one lot, which fronts on Adam Street, will be discharged into the existing storm sewer on Adam Street.

6.0 AUTHORITY FOR REPORT

Section 4 of the Drainage Act provides for the construction of new drainage works for an area requiring drainage.

From a review of the petition, the area requiring drainage was determined to be the petitioner's Mill-Gate Homes Inc. property (Assessment Roll No. 010-11305) proposed subdivision lands in the area of Pt. Lot 124, Reg. Plan 307, Pt Lots 34 & 35, Concession 13 (East Zorra Twp), Township of East Zorra-Tavistock. The petition is dated September 13, 2018 and is signed by Shawn Milloy, Secretary/Treasurer of Mill-Gate Homes Inc. Mr. Milloy has jurisdiction/signing authority (authority to bind the corporation). The petition represents all of the area and the owners in the area requiring drainage and is therefore sufficient (valid) in accordance with Sections 4(1) (a) and 4(1) (b) of the Drainage Act.

7.0 INITIAL DESIGN AND PIPE SIZING

The Township of East Zorra-Tavistock's Master Storm System Drainage Plan for the village of Tavistock has identified the Tavistock Drain 1979 as a "trunk sewer". Trunk sewers are to be designed to the 10-year storm return period. The plan identified a requirement that the system be upsized to a 1350mm dia. pipe through the subdivision where the existing Drain contains a 0.3% slope and then a 1050mm dia. across the County property to its outlet in the Hohner Drain where the slope increases. At the on-site meeting, it was understood by all parties that

this upsizing would be a requirement. Following the meeting it was also generally understood between all parties that the proposed relocated drain alignment would start at the existing maintenance hole on the property line between Mill-Gate Homes Inc. and the Tavistock Public School, and turn east for approximately 50m± to the end of the proposed house lots. From here, it would turn south and run behind the proposed lots on Street F, within the proposed light industrial/park blocks, and continue for a distance onto the County lagoon property until meeting the existing Tavistock Drain 1961. From here, it would turn to the southwest across the County lagoon property to its outlet in the Hohner Drain, located south of the proposed SWM facility.

Given the new alignment and differing pipe slopes from those used in the Master Storm System Drainage Plan, the portion of the relocated drain between the school and the Tavistock Drain 1961 could be proposed as a single 1200mm dia. pipe (containing a slope of 0.70%±). However, downstream of the junction with the 1961 Drain, the slopes would be reduced to 0.20%± and require the relocated drain to be twin (2) – 1200mm dia. pipes. KSAL felt that if the existing 1961 Drain were not to be joined, the relocated drain would still need to be a single 1200mm dia. pipe with a single 1050mm dia. pipe. Therefore the Township's contribution to the cost may be justified as the difference between a 1050mm dia. pipe and a 1200mm dia. pipe from this location to the Hohner Drain ditch.

The final recommendations in this report are different from the design as described above, however this background is relevant for the discussions in later sections of this report.

8.0 ADDITIONAL MEETINGS/CORRESPONDENCE

From late 2019 to 2021, several emails, phone conversations, and virtual meetings were held between WalterFedy (the developer's engineer) and KSAL to discuss various aspects of the design. A summary of these key items is outlined below.

8.1 E-Mails/Phone Conversations

In June of 2020, KSAL approached the Township/County about altering the bottom portion of the proposed closed drain (portion located south of the SWM facility from approximately STA. 0+250) to being an open ditch instead of twin pipes. This would allow for significant cost savings to the project and improve upon the insufficient cover problem overtop of the closed drain in this area. In January of 2021, upon reviewing more detailed costing, WalterFedy, on behalf of the developer, requested a review to extend the open ditch further to the east and fully remove the length of twin-1200mm dia. pipes. KSAL prepared two options for an extension of the open ditch further upstream through the County's property and sent it to County staff for their comment. County staff agreed to the option to extend the open ditch along the north side of their access laneway to the point where the closed drain met the open ditch coming straight down from the subdivision to the north. This revision to the design also allowed for the twinned portion of the Drain to be removed, and eliminated justification for an assessment to the township, originally discussed at the on-site meeting. This is the design as currently shown herein this report.

Additional email correspondence between KSAL and WalterFedy from January to June 2021 discussed the material alteration of the 1200mm dia. pipe from reinforced concrete to steel reinforced polyethylene, as well as the review of required easement widths for the Drain.

8.2 Meetings

8.2.1 Meeting with WalterFedy, September 15, 2020

On September 15, 2020, a virtual meeting was held between KSAL and WalterFedy staff. The purpose of the meeting was to re-start discussions pertaining to the relocation of the municipal drain around the proposed subdivision. The main topic was to discuss the 100-year flows from the catchment north of the subdivision (Tavistock Public School & community centre property). Those in attendance were:

Dan Ferguson, P. Eng. and Kevin Brown, C.E.T. (WalterFedy)
Kenn Smart, P. Eng. and Curtis MacIntyre, P. Eng. (KSAL)

Prior to the meeting, KSAL was asked to look into the upsizing required for the municipal drain to be able to handle the 100-year flows from the external watershed of the school property to the north. To achieve this (using the current design at the time), the single 1200mm dia. pipe would be required to be a 1350mm dia., and the twin-1200mm dia. pipes would need to be twin-1350mm diameters. KSAL's recommendation was instead to re-route the major overland flows in a swale to the east and then south around the proposed development (area referred to as Block 152 & 153) and back onto the County property to the south. It was the opinion of KSAL that this was simply maintaining the route that the 100-year flows would normally go.

Additionally, it was felt by both parties that the desired location of the relocated drain at its northerly limits be proposed to be moved onto the school property instead of being in the future backyards of residential houses and under fences. Consultation should be made with the school board to review these two features.

Finally, WalterFedy advised KSAL that a decision was made with the County to remove the existing arch CSP for the County yard on the Hohner Drain and provide a new laneway access along the south side of the Hohner Drain. This will now cross the open ditch portion of the proposed Tavistock Drain 1979 relocation and will require a culvert. KSAL confirmed they would size this culvert and provide it to WalterFedy. This recommended size was determined to be an 1800mm dia. CSP.

8.2.2 Meeting with WalterFedy and School Property, September 28, 2020

On September 28, 2020, a virtual meeting was held to discuss the proposed subdivision and Drain relocation work and its effect on the Tavistock Public School property. Those in attendance are listed below:

Dan Ferguson, P. Eng. and Kevin Brown, C.E.T. (WalterFedy)
Carlos Henriquez, P. Eng. (TVDSB)
Connor Occleston, Drainage Superintendent (EZT)
Kenn Smart, P. Eng. and Curtis MacIntyre, P. Eng. (KSAL)

The purpose of the meeting was to discuss the relocation of the Tavistock Drain 1979 to the east, inside of school property, as well as a proposed swale on the school property to divert the 100-year flows easterly and around the proposed houses.

In summary, on initial thought, Carlos believed that the relocation of the municipal drain on school property may not be as much of a concern to the school board; however, the swale

portion of the project could be of a concern. Carlos asked that drawings be provided for the school board's engineer to review and provide comment.

Carlos mentioned that the school board's preference is to complete work during the summer months and that the grates on the manholes could be a standard road grate with holes in the top to allow the 5-year storm to enter.

9.0 DESIGN AND CONSTRUCTION CONSIDERATIONS

The following are various matters that were considered in arriving at the recommendations in this Report:

9.1 Environmental Considerations

The Tavistock Drain 1979 is primarily an enclosed pipe drain with a portion at its outlet proposed to be converted to an open channel. It primarily traverses farm/vacant lands and then developed (commercial, institutional and residential) lands. There are existing sewage lagoons in the watershed, otherwise there are no other known environmental constraints in the watershed.

For the purpose of energy dissipation of the stormwater into the downstream open channel, as well as being at the request of the UTRCA, a 10m long stilling basin is proposed at the outlet of the 1200mm dia. pipe. Erosion and sediment control features will be implemented along with the construction work all in accordance with drawings of the subdivider (developer), that are to be approved by the agencies involved.

Copies of this Report including the specifications will be submitted to the Upper Thames River Conservation Authority (UTRCA), and the Ministry of Environment, Conservation and Parks (MECP). All approvals and permits are to be obtained by the subdivider.

9.2 Sizing Considerations

As discussed in an earlier section of this report, the Tavistock Drain 1979 Reconstruction 2021 has been sized to convey a comparable flow to the pipe sizes recommended on the Township's Master Storm System Drainage Plan. In the plan, this drain was identified as a Trunk sewer, and was to be designed to the 10-year storm return period. The 1200mm dia. pipe at a slope of 0.70% to achieves the same capacity as the 1350mm dia. pipe at a 0.30% slope as recommended in the Master Storm System Drainage Plan.

The proposed new ditch and County access culvert have also been sized for the 10-year storm flows from the upstream pipe drain.

Original discussions with the Township indicated that the improved Tavistock Drain 1979 should be further upsized to accommodate and consolidate the capacities of the 1961 drain from the lagoons and the 1919 drain. The Township would have paid for this additional cost. However, with the extension of the open ditch portion further upstream, the 1961 and 1919 drains will outlet in the proposed stilling basin at the same location as the closed pipe portion of the Tavistock Drain 1979.

Furthermore, at the connection of the proposed 1200mm dia. pipe drain to the existing 1050mm dia. pipe (shared property line with the Tavistock Public School), an approximate 0.75m drop

has been provided to allow for a potential lowering or an increased grade of a replacement pipe across the school lands in the future.

9.3 Sufficient Outlet

Section 15 of the Act requires that the proposed work be continued downstream to a sufficient outlet. Section 1 of the Act defines sufficient outlet as “a point at which water can be discharged safely so that it will do no damage to lands or roads”.

The relocated drain (new ditch and pipe) is sized for a 10-year storm, as noted above. Although no stated capacity of the existing Hohner Drain ditch was made in the previous Section 76 report completed by K. A. Smart in 2013, nor the Section 4 report also completed by K. A. Smart in 1978, the as-surveyed width and normal water level depth support it being a sufficient outlet for the Tavistock Drain 1979 Reconstruction 2021.

9.4 Soils Considerations

The site of the proposed subdivision location was historically on agricultural lands. The Oxford County Soils Map shows that the Village of Tavistock is surrounded by Huron clay loam and Perth clay loams, with good to imperfect drainage and few stones.

In April 2019, Pinchin Environmental completed a geotechnical investigation of the subdivision site. The investigation involved fourteen boreholes including three monitoring wells drilled and sampled to depths of 5m to 6.6m below the ground surface. This report determined that the fill material and topsoil on the surface were underlain by a clayey-silt to silt-and-clay type soil with some sand and trace gravel.

From the soils mapping and the discussions in this 2019 geotechnical report, it is our opinion that the proposed works should be able to proceed without any great delays or expense due to poor soil conditions.

Pockets of poor soil conditions could be encountered, especially if ground water levels are high at the time of construction. Should poor soil conditions exist which require the installation of a crushed stone bedding for the affected part of the Drain, additional costs may be encountered.

9.5 Utilities

Utilities are not expected to be a problem for the initial construction of the Drain through the Mill-Gate Homes property. After construction, watermain, sanitary and storm sewer crossings will be made above the Drain in later construction phases of the subdivision and will be an impact on future maintenance of the Drain.

On the County of Oxford property (Roll No. 050-13650), there is an existing sanitary forcemain just south of the proposed subdivision lands that is to be located and relocated at time of construction as part of the Drain project. Furthermore, hydro poles exist along the north side of the County’s lagoon access way along the route of the proposed open ditch. Excavation is to be no closer than 1.5m away from any hydro pole.

On the Tavistock School property (Roll No. 010-09000), there is an existing private monitoring well just south of the proposed reconstructed drain route that will be removed by the developer.

The Contractor is to contact all utilities and landowners along the proposed Drain reconstruction route to determine the existence of all underground or overhead utilities on private properties.

Locates will be required to determine precise locations of any underground utilities prior to construction.

9.6 Construction Scheduling

The developer's engineer has indicated that the construction of the new Drain is proposed to be completed in two phases in order accommodate construction of the first phase of the subdivision, which includes the stormwater management pond, the sanitary forcemain relocation, and servicing.

Phase 1 would include construction of the new drain in its entirety from the outlet at the Hohner Drain to the connection to the existing Tavistock Drain 1979 on the school property. In an agreement with the Thames Valley District School Board, the contractor is to proceed with work within the school property in a way that minimizes impacts on the school operation. This would include proper isolation of the construction area, working outside of school hours, etc.

Phase 2 of the construction is proposed for the summer of 2022 when school is out and would include all other non-critical path items related to work on the school property. In specific to the Drain, this would include the removal of the existing 42" (1050mm) dia. concrete sewer pipe of the Tavistock Drain 1979. Though it has not been specified, the removal of the existing twin (2) – 27" (675mm) dia. pipes on the County of Oxford property may proceed at any time following the construction of the new Drain.

10.0 INFORMATION SENT TO LANDOWNERS

An explanatory letter and an overall plan drawing from KSAL will be sent to all landowners in the watershed of the Tavistock Drain 1979. The letter is intended to summarize the drain relocation work proposed in this Report, to advise of the proceedings, and to give direction on how to view or obtain a copy of this Report.

The explanatory letter and plan are duplicated and included in this Report in ***Appendix A***.

11.0 SUMMARY OF RECOMMENDATIONS

The recommended work listed here are primarily only those that pertain to the Tavistock Drain 1979 Reconstruction 2021.

The proposed subdivision storm sewers, manholes, catchbasins, services, swales, and SWM area that are to be built are not listed in these recommendations even though some of it parallels/crosses some of the recommended work. They will not be part of the Drain. The existing Tavistock Drain 1979 across the County of Oxford property, the subdivision land and

along the property line bordering with the Tavistock Public School is to be removed/destroyed after the new Drain is constructed and functioning.

From the surveys, design, and discussions listed above, the following is the recommended drain construction:

0+000 to 0+859 – 2021 Stationing by KSAL (m)
[21+54] – Tavistock Drain 1979 Original Stationing (ft.)

a) Works Part of Tavistock Drain 1979

(Note: Once these listed new works have been constructed/completed, they are to be recognized/incorporated as part of the Tavistock Drain 1979 for future maintenance purposes.)

County of Oxford (Roll No. 050-13650)

- Construct 418m of new open ditch (1.5m wide bottom, 2:1 side slopes) including seeding.
    - Developer's contractor to remove excess material from site, unless otherwise directed by County of Oxford.
    - Locate and remove/destroy the existing 1961 Drain.
    - Remove and dispose of existing 900 x 1200mm concrete maintenance hole. Connect 16m of 150mm dia. plastic to existing 150mm dia. pipe and outlet proposed ditch.
    - Remove and dispose of existing 900 x 900mm concrete maintenance hole and 25m of 400mm dia. CSP. Place 5m² of riprap on geotextile at outlet in ditch.
- 22m of 1800mm dia. galvanized CSP (125 x 25mm corrugations, 3.5mm thickness) access crossing with 45m² riprap at each end. Access laneway to be completed as per Mill-Gate Homes Inc. drawings by WalterFedy. (See details on Drawing 5.)
- Construct new permanent stilling pool/sediment trap with a 10m long bottom. (See details on Drawing 6.)
- Construct new reinforced concrete headwall as per OPSD 804.040 and grate on outlet as per OPSD 804-050. (See details on Drawing 6.)
- 78m of 1200mm dia. steel reinforced polyethylene pipe (SRPE)
    - Existing sanitary forcemain to be relocated.

Proposed Subdivision (Blk's 152 & 153 and Streets E & G - Roll No. To be Determined)

- 61m of 1200mm dia. steel reinforced polyethylene pipe.
- Construct 2400mm dia. x 5.45m high concrete maintenance hole including connections (see Detail on Drawing 7).
- 229m of 1200mm dia. steel reinforced polyethylene pipe.

Thames Valley District School Board (Tavistock Public School) (Roll No. 010-09000)

- 4m of 1200mm dia. steel reinforced polyethylene pipe
- Construct 3000mm dia. x 3.87m high concrete maintenance hole including connections. (See Detail on Drawing 7)
- 52m of 1200mm dia. steel reinforced polyethylene pipe.

- Removal of two (2) trees
- Existing monitoring well to be removed and disposed of.

- Remove and dispose of existing 1800mm dia. maintenance hole and existing 4m of 1050mm dia. (42") pipe and construct new 3000mm dia. x 3.59m high concrete maintenance hole (manhole) including connections. (See Detail on Drawing 7)

12.0 PRIVACY OF LANDS

Although a municipal drain is situated on the property of various landowners, one landowner may not enter onto another landowner's property via the Drain. Persons authorized to enter private lands to carry out duties authorized under the Act include Engineers, Contractors, and the appointed Drainage Superintendents (or their assistants).

13.0 DRAWINGS AND SPECIFICATIONS

13.1 Drawings

a) Plans

The locations of the existing Tavistock Drain 1979, the Tavistock Drain 1979 Reconstruction 2021, and the affected downstream drains for maintenance (Hohner Drain (1979) and Thames River Drain 1984) are shown on Drawing 1 (Overall Plan).

The location of the Tavistock Drain 1979 Reconstruction 2021 and the affected properties are shown on Drawing 2 (Watershed Plan). The heavy solid line indicates the location of the proposed drain reconstruction work. The heavy broken (dashed) line indicates the approximate watershed boundaries for the Drain.

Drawing 3 is an Enlargement Plan showing the location of the proposed work of the Mill-Gate Homes Inc. subdivision, the other small lots, lands and streets surrounding the proposed subdivision, the affected assessment roll numbers and landowners. The numbers adjacent to the heavy solid line are station numbers which indicate in metres the distance along the proposed drain reconstruction from the outlet. Drawing 3 also shows some of the Tavistock Drain 1979 stations (in feet) upstream of the proposed work.

b) Profiles and Other Drawings

The profile for the Tavistock Drain 1979 Reconstruction 2021 is on Drawing 4 (Main Drain Profile). The profile shows the grade of the proposed new ditch and pipe(s). The upper thin dashed line represents the existing ground level. The upper thicker solid line represents the proposed post development grade over pipe.

Drawings 5 to 7 contain details for the reconstruction work to be completed, and Drawings 8 to 10 contain the cross-sections. Drawings 11 and 12 contain the Special Provisions (Specific Notes and General Notes).

13.2 Specifications

This report includes the Standard Specifications and Special Provisions as listed in the Table of Contents, which are to govern the construction and maintenance of the Drain.

14.0 COST ESTIMATE

The cost estimate on this project consists of the allowances required to be made to the owners having work on their properties, the construction cost estimate including contingency items, the engineering cost estimate, the estimate of the construction supervision by the Engineer, an estimate of the Section 73 (administration and other) costs, and the estimated Net HST (1.76%)). The Estimated Cost Summary is then shown.

The cost estimate for the proposed Tavistock Drain 1979 Reconstruction 2021 is outlined in detail in the following sections:

14.1 Allowances

Sections 29 to 33 of the Drainage Act provides for allowances (compensation) to be made to owners affected by proposed drain construction. On this project, there are only allowances for Section 29 (R-O-W) and Section 30 (Damages).

i) Section 29 - Right-of-way

Section 29 of the Act provides for payment of an allowance to landowners for the right-of-way (R-O-W) required for construction and maintenance of the new Drain and for access routes to the Drain as necessary. Generally, the width of the R-O-W is the width needed to maintain the Drain. Most of the new reconstructed/relocated drain work on this project will be primarily across the proposed subdivision lands in easements or across a proposed road allowance, created pursuant to the subdivision registered plan (Roll No. 050-11305). No Section 29 allowances are provided for this property.

The Drain will also however be relocated on the Thames Valley District School Board (Tavistock Public School) property (Roll No. 010-09000) and County of Oxford property (Roll No. 050-13650).

For the County of Oxford property, the calculation of allowances for land zoned General Agricultural to be taken and used for the construction of an open ditch is based on a rate of approximately $50,000/ha. The Section 29 right-of-way allowance will be for a 15m width along the route of the new ditch (Sta. 0+000 to 0+435). Where the proposed closed pipe drain commences, the right-of-way width changes to 10m and the rate is reduced to $33,000/ha. This is because the land above the future closed pipe drain can still be used and cropped by the owner.

For the Tavistock Public School property, the calculation of allowances for land zoned Institutional would be $100,000/ha. This has been reduced to $67,000/ha, again due to the nature of being a closed pipe drain and any subsequent development by the owner would be subject to property line setback constraints.

ii) Section 30 - Damages

Section 30 of the Act provides for payment of allowances to landowners for damages to lands during construction of the Drain. The Section 30 allowances compensate the owners for damages caused by the construction equipment moving within the R-O-W and by the placement of any excavated spoil within or beyond the working area width needed for construction. Section 30 allowances are also provided for damages along access routes where separate from R-O-W routes, if any.

On this project, since most of the work subject to this report will be part of the work constructed during subdivision servicing, no Section 30 allowances will be made for any of the drain work on the subdivision lands (Roll No. 050-11305).

In agricultural areas, crop damages are computed based on published crop values and declining productivity loss in the years following construction. For the County of Oxford property, the allowance for damages to lands and crops was calculated using a rate of $1,850/ha applied to the defined working area. A 30m wide corridor along the Drain on the County property has been proposed for the basis of the Section 30 allowance calculations.

Additionally, under Section 30, allowances can be provided for the destruction of ornamental trees during the construction of the Drain. An amount of $500 has been provided to the Thames Valley District School Board (Tavistock Public School) property for the removal of two (2) matures spruce trees.

iii) General

In accordance with Section 62(3) of the Act, the allowances shown may be deducted from the final assessment levied. Payment to the owners for these allowances would only be made when the allowance is greater than the final assessment. The allowances are a fixed amount and are not adjusted at the conclusion of construction. Allowances can only be changed if the report is modified prior to adoption of the report by bylaw or in accordance with the paragraph in this report that deals with changing the scope of work after the Bylaw is passed. Allowances will be paid out by the Municipality and the cost of the allowances is part of the cost of the Drain.

iv) Summary

The allowances payable to the owners entitled thereto on this project are as follows:

Table 144-1 - Summary of Allowances

Con	Lot	R.P.	R.P. Lot	Proposed Subdiv. Lot/Block	Roll Number (32-38-020-)	R.O.W. (Sec 29) ($)	Damages (Sec 30) ($)	Total ($)
--	--	307	Pt 124	--	010-09000	3,700	500	4,200
13	Pt 34&35	--	--	--	050-13650	35,200	2,800	38,000
					TOTAL ALLOWANCES:	**38,900**	**3,300**	**42,200**

14.2 Construction Cost Estimate

The estimated cost of Labour, Equipment and Materials to construct the proposed drain is outlined in detail in Table 14-2 - Estimated Cost Summary. The construction cost estimate is based on recent costs for comparable work. A contingency amount is included to cover additional work that may be required due to field conditions or minor alterations to the project. This cost estimate does not include the cost estimate of any other storm sewers, manholes, CB's, services, swales and SWM area work on Mill-Gate Homes Inc. lands since these will not be part of the Drain. The Subdivider's Engineer has likely also prepared an estimate of this work for purposes of the Subdivision Agreement. These two estimates of

construction may differ but such will not impact this Report since the work is to be paid by the Subdivider/Landowner/Developer regardless of what actual tender is received.

The new works on the Main Drain, as set out in Table 14-2 – Estimated Cost Summary for the Tavistock Drain 1979 Reconstruction 2021 will be part of Tavistock Drain 1979 once constructed, for future maintenance purposes. (Stations in brackets refer to stationing in the 1979 report and are in feet.)

14.3 Engineering Cost Estimate (Report Preparation and Construction Phases)

Engineering costs include report preparation and attending the Council meeting to consider the report and the Court of Revision. The costs also include the preparation of reapportionments to future the maintenance schedules of existing drains affected for maintenance.

The Construction Phase Services estimate is prepared on the basis that the Subdivider's Engineer will tender, award and supervise all work related to the Tavistock Drain 1979 Reconstruction 2021. The Township (this Engineer) will only make periodic reviews of the work related to the Tavistock Drain 1979 Reconstruction 2021 on the Mill-Gate Homes Inc., County of Oxford and Tavistock Public School lands. The Construction Phase Services may include: attending pre-construction meeting, periodic construction inspection, performing construction review, preparing as-built drawings, attending final inspection meeting, post construction follow-up, and assistance to the Municipality on processing the project and final cost analysis.

The estimated cost of report preparation as shown is usually not altered at the conclusion of a project unless the report is referred back or the report is appealed to the Drainage Tribunal, either of which would result in additional costs. The amounts shown for future meetings are estimates. The final cost will be based on the actual time required for meetings.

The estimate shown for Construction Phase Services is based on past experience, assumes good construction conditions and a Contractor who efficiently completes the construction. The final (actual) cost for construction phase services will vary as per the actual time spent during and following Drain construction.

Engineering costs are summarized in Table 14-2 – Estimated Cost Summary.

14.4 Estimate of Section 73 Administration (Other) Costs

Section 73(1) of the Drainage Act outlines that the following costs incurred by a Municipality can be included in the cost of the drain: "*cost of any application, reference or appeal and the cost of temporary financing".* However, Sections 73(2) and 73(3) of the Act state that the costs of services provided by Municipal and County staff to carry out the Act process cannot form part of the final cost of the drain.

An estimate of Administration Costs is included to cover the above referenced items from Section 73(1) and primarily provides for interest charges on financing the Drain project until it is completed.

This administration cost estimate may not be adequate to cover legal or engineering costs incurred by or assessed to the Municipality should the project be appealed beyond the Court of Revision though such costs normally form part of the final drain cost.

The Policy for Provincial Grant purposes indicate that municipal costs for photocopying and mailing required to carry out the required procedures under the Act can be included in the drain cost estimate.

Section 73 costs are summarized in Table 14-2 – Estimated Cost Summary.

14.5 Harmonized Sales Tax

The Harmonized Sales Tax (HST) will apply to most costs on this project. The Municipality is eligible for a significant refund on the HST paid. The approximate resulting net 1.76% HST is included in the cost estimates in this Report. The Net HST has been rounded off to the nearest $5.

14.6 Estimated Cost Summary

Table 14-2 - Estimated Cost Summary

DESCRIPTION	TOTAL COST
ALLOWANCES (From Table 13-1) (Note: These are "fixed" allowances and therefore are not "estimates"):	**$ 42,200**

CONSTRUCTION COST ESTIMATE

Item	Stations	Description	Unit	Quan.	Unit Price	Cost
i) Main Drain						
1	0+000 to 0+418	418m of new open ditch (1.5m wide bottom, 2:1 side slopes) including levelling and seeding. Construct temporary straw bale flow check dam in Hohner Drain ditch.	m	418	100	41,800
2	0+000 to 0+450	Locate, remove/destroy existing 1961 drain	m	450	30	13,500
3	0+035 to 0+057	22m of 1800mm CSP crossing with 45m² riprap at each end (90m² riprap total)	L.S.	1	35,000	35,000
4	0+188	Remove and dispose of existing 900x900 MH and 25m of 400mm dia. CSP	L.S.	1	500	500
5	0+343	Remove and dispose of existing 1200x900mm MH. Connect 16m of 150mm dia. plastic pipe to proposed ditch. Place 5m^2 of riprap on geotextile at outlet.	L.S.	1	3,000	3,000
6	0+435	Locate and outlet existing 1961 - 600mm tile to new ditch with 25m of existing salvaged 600mm concrete tile and 6m of 600mm HDPE pipe and 10m± riprap. Also locate and outlet existing 1919 drain with approx. 40m of 450mm plastic pipe and reducer at connection to old drain	L.S.	1	9,000	9,000
7	0+418 to 0+435	Construct new permanent stilling basin/sediment trap, 10m long bottom x 5m wide x 0.9m deep	L.S.	1	10,000	10,000

		DESCRIPTION					TOTAL COST
8	0+435	Construct new reinforced concrete headwall with grate on the pipes as per OPSD 804.040 and 804.050.	L.S.	1	35,000	35,000	
9	0+435 to 0+574	139m of 1200mm dia. steel reinforced polyethylene pipe	m	139	1,400	194,600	
10	0+509	Existing sanitary forcemain to be relocated.	L.S.	1	5,000	5,000	
11	0+574	Construct new 2400mm dia. x 5.5m high concrete manhole including connections	L.S.	1	27,000	27,000	
12	0+574 to 0+807	233m of 1200mm dia. steel reinforced polyethylene pipe	m	233	1,400	326,200	
13	0+807	Construct new 3000mm dia. x 3.86m high concrete manhole including connections	L.S.	1	37,000	37,000	
14	0+807 to 0+859	52m of 1200mm dia. steel reinforced polyethylene pipe	m	52	1,400	72,800	
15	0+859 [21+54= 20+54 ah'd]	Remove and dispose of existing 2400mm dia. manhole and 4m of existing 1050mm concrete pipe. Construct new 3000mm dia. x 3.73m high concrete manhole including connections	L.S.	1	37,000	37,000	
16	0+000 to 0+859	Locate, remove/destroy existing 1979 drain	m	660	30	19,800	
		Sub Total Part i)				**867,200**	
ii) Contingencies							
17		Lump sum contingency allowance				**86,720**	
		Sub Total Parts i & ii):				**953,920**	
		Net HST (1.76%)				**16,790**	
		TOTAL CONSTRUCTION COST ESTIMATE:					**$970,710**
ENGINEERING COST ESTIMATE							
		Report Preparation				$93,000	
		Preparation of revised/reapportioned future maintenance schedules for the Tavistock Drain 1979 and the affected downstream drains				5,000	
		Consideration of Report Meeting				1000	
		Court of Revision Meeting				1000	
		Construction Phase Services				21,000	
		Net HST (1.76%)				2,130	
		TOTAL ENGINEERING COST ESTIMATE:					**$123,130**
SECTION 73 ADMINISTRATION (OTHER) COSTS ESTIMATE							
		Printing of reports				100	
		Interest estimate				3,000	
		Unforeseen costs				860	
		TOTAL SECTION 73 ADMINISTRATION (OTHER) COSTS ESTIMATE:					**$ 3,960**
		TOTAL PROJECT ESTIMATED COST:					**$1,140,000**

15.0 ASSESSMENTS

The Drainage Act requires that the total project cost (initially the estimated costs, ultimately the actual costs) be assessed to the affected lands and roads under the categories of Benefit (Section 22), Outlet Liability (Section 23), Injuring Liability (Section 23), Special Benefit

(Section 24) and/or Increased Cost (Section 26). On this project, assessments for "Special Benefit" only are involved and are described below.

The Schedule A included herein is based on estimated costs. The final project cost will be assessed out based on final/actual costs and using Table 14-1 and Schedule A.

15.1 Calculation of Special Benefit Assessments (Section 24) (Estimated)

The work in this report benefits the proposed subdivision, and the undersigned has determined they are special benefits. Although an improved outlet is provided to some properties, the undersigned has elected to assess only the parcel being subdivided. This decision is supported since the subdivision agreement being developed will require that the party involved with the development (the developer) pay all of the costs of this drain report.

The project costs are therefore to be assessed to the landowner/developer, Mill-Gate Homes Inc. (Roll No. 010-11305), using the category of Special Benefit (Section 24). The special benefit assessment to Mill-Gate Homes Inc. will include the allowances to be made, the engineering involved with the preparation and processing of this report, the construction phase services and Section 73 administration costs of the Drainage Engineer, the applicable administration costs of the Township plus the applicable net HST.

The following table illustrates the calculation of the estimated Special Benefit (Section 24) Assessments:

Table 15-1 - Calculation of Special Benefit Assessments

Roll No./ Owner	Construction Work (Est.)	Engineering Costs (Est.)	Construction Supervision (Est.)	Sec. 73 Admin. Costs (Est.)	Net HST (1.76%) (Est.)	Allow. to Landowners (Fixed)	Total Special Benefit (Est.)
010-11305	953,920	100,000	21,000	3,960	18,920	42,200	1,140,000

The actual special benefit assessment to be levied to the landowner/developer will be calculated in accordance with this table. However, it is to be noted that:

- Actual construction costs are to be used. If the developer attends to, and pays directly, any or all of the construction items listed in the cost estimate of this report, only the actual costs of any items that are attended to by the Township for the Drain will be used for final special benefit calculations. At this time, there are no construction items expected to be attended to by the Township.
- The Engineering costs should not vary significantly unless Drainage Act appeals have to be dealt with. Actual engineering costs as invoiced by this Engineer will be used.
- The Construction Phase Services costs and Section 73 Administration Costs will be the actual Construction Phase Services costs as invoiced by this Engineer or incurred by the Municipality.
- Net HST (1.76%) will be calculated on actual Construction, Engineering, Construction Phase Services and any applicable Administration costs.

- Allowances are fixed as per Table 13-1 of this report. These allowances will be paid by the Municipality to the owners and the amounts collected pursuant to the Special Benefit billing will be used to reimburse the Municipality.

15.2 Assessment Schedules

15.2.1 Schedule A – Schedule of Assessments

The estimated (and final/actual) cost of the drainage works in this report is to be assessed as shown by Schedule A, the Schedule of Assessments. In Schedule A each affected parcel of land assessed has been identified by the municipal assessment roll number at the time of the preparation of this report. For convenience only, each parcel is also identified by the owner name(s) from the last revised assessment roll.

The amounts in Schedule A are derived from the assessments/distribution shown in Table 15-1.

After construction is complete and final/actual costs are known, the assessments for the actual costs will be calculated using Table 15-1.

15.2.2 Schedules of Assessment for Future Maintenance

The Reapportioned Schedules of Assessment for Future Maintenance are described in Section 16.1 – Reapportionments, and are shown in Tables 1 to 3 following Schedule B.

15.2.3 Schedule B – Schedule for Actual Cost Bylaw

After the Engineer certifies the construction of the Drain complete, the Municipality will determine the total of incurred costs, which will be the final/actual cost of the Drain. Final/actual assessments will be determined by assessing the actual cost of the Drain using Table 15-1. Schedule B shows how the assessments in Schedule A will be applied. It illustrates the estimated net assessments after deducting the allowances from the total assessments shown in Schedule A. It will then be used for preparing the final/actual cost bylaw. Actual assessments as calculated pursuant to Schedule B will be levied to the owner of the identified parcel at the time the Actual Cost Bylaw is passed. Roll numbers are per the Municipality's last revised assessment roll, names included for convenience.

Should it be determined that Assessment Roll No. 010-11305 is not owned by Mill-Gate Homes Inc. at the time the costs of this report are billed out, the amount (assessment) is to be instead levied to any property (lot or block) in the proposed subdivision still owned by Mill-Gate Homes Inc. If the developer owns none of the properties, then the assessment is to be sent directly to them, since they were the original developer at the time of this Report.

The allowances for right-of-way (Section 29) and damages (Section 30) for the County of Oxford and Thames Valley District School Board (Tavistock Public School) properties (Assessment Roll No's. 050-13650 and 010-09000) are to be paid by the Township on behalf of the developer, Mill-Gate Homes Inc., to the current owners, at the time the costs of this Report are billed out.

16.0 MAINTENANCE

The Township of East Zorra-Tavistock under Section 74 of the Drainage Act is required to maintain all drains constructed by bylaw under the Drainage Act. Any open ditch or closed drain constructed pursuant to the Drainage Act may require periodical repair or maintenance work. Examples of future work possibly necessary include ditch cleanouts, riprap repairs, pipe repairs, maintenance hole (manhole) and catchbasin repairs and cleanouts. The cost of the maintenance is to be assessed to all upstream lands and roads pro rata with the applicable future maintenance schedule provided for in the Engineer's report in the current Bylaw for the Drain.

Therefore, in order to keep the existing drain maintenance assessment schedules for the Tavistock Drain 1979, and downstream drains (Hohner Drain and Thames River Drain 1984) up-to-date, the Township requires reapportionments/revisions of assessment schedules that apply for future maintenance. On this project, these reapportionments/ revisions are in accordance with Section 65 of the Drainage Act, and are as described in Section 16.1 below.

The Tavistock Drain 1979 for future maintenance purposes shall consist of all new proposed components listed in Section 11.0 of this Report, and all components shown of the remainder of the Tavistock Drain 1979 upstream of this proposed work, listed in the report from the report by K. A. Smart, P.Eng (K. Smart Associates Limited) dated January 15, 1979.

16.1 Reapportionments

For this project, three (3) municipal drain schedules will require reapportionment or revisions to the Schedules of Assessment for Future Maintenance. They are described below.

Tables 1, 2 and 3 following Schedule B in this report are the Reapportionments, in accordance with Section 65 of the Drainage Act, to the maintenance schedules (Schedules of Assessment for Future Maintenance) for the Tavistock Drain 1979, Hohner Drain and Thames River Drain 1984, respectively. Tables 1, 2 and 3 will only come into effect once the proposed Mill-Gate Homes Inc. subdivision is constructed/completed.

The reapportioned subdivision lots, blocks and streets in Tables 1, 2 and 3 refer to the proposed subdivision lots, blocks, and streets shown on Drawing No. 3 of this Report. If the numbering system and street names at the time of subdivision registration differs, the assigned Assessment Roll Numbers should correspond to the lots, blocks, and street names shown on Drawing No. 3 of this report.

Note: The dollar amounts/values shown in the reapportioned maintenance schedules are not amounts to be paid at this time. They are only to be used to create the percentage or portion that each parcel (property) and road will pay for any actually incurred future repair, maintenance costs or minor improvement costs. In some cases, dollars are not shown and the percentages only are provided.

i) Tavistock Drain 1979

The 1979 drain report contained only one schedule: Schedule of Assessment. This schedule was to be used as both a schedule of assessments and as a future maintenance schedule with maintenance costs being assessed "in the same relative proportion."

This Schedule of Assessment will need to be reapportioned for the "Main Drain and Branch B" portion of the 1979 Schedule and only involves the following 1979 properties:

- The Percy, William and Jack Wettlaufer property (now Mill-Gate Homes Inc., Assessment Roll No. 010-11305), Pt Lots 34 & 35, Concession 13 and R.P. 307, Pt Lot 124
- The Oxford County Board of Education property, RP 307, Pt Lot 124 (now Thames Valley District School Board, Assessment Roll No. 010-09000)
- The David & Doris Rudy property, Pt Lots 34 & 35, Concession 13 (now part of the County of Oxford property, Assessment Roll No. 050-13650)
- The Township of East Zorra-Tavistock (Lagoons) property, Pt Lot 35, Concession 13 (now part of the County of Oxford property, Assessment Roll No. 050-13650).

The watershed limit for this drain will change and be reduced because most of the areas of subdivision's storm sewers, swales and SWM areas will be deleted from the Tavistock Drain 1979 watershed. However there has also been a slight increase in area from the County of Oxford lands, as well as lands from the school property.

Table 1 has been prepared for this reapportionment, and is attached to this Report following Schedule B. Copies of Table 1 should be placed in the Township's files for the Tavistock Drain 1979.

Table 1 will not change the division of costs to other properties not shown when maintenance occurs. Notification of other owners in the Tavistock Drain 1979 watershed is not necessary since their shares for maintenance are not altered.

For purposes of future maintenance, the Tavistock Drain 1979 schedule and the 2021 reapportionment table (Table 1) will continue to be used until such time as the schedule is further modified in the future pursuant to Sections 65 or 76 of the Drainage Act. The drawings and specifications from the Tavistock Drain 1979 report by K.A. Smart, P.Eng. (K. Smart Associates Limited) dated January 15, 1979 where not changed by this Report, and the drawings and specifications from this Report are to be referred to and used.

ii) Hohner Drain

The Tavistock Drain 1979 outlets into the Hohner Drain. The Hohner Drain was originally constructed in accordance with a report by K.A. Smart, P.Eng. (K. Smart Associates Limited) dated April 11, 1979 and contained only one schedule: Schedule of Assessments. This schedule was to be used as both a schedule of assessment and as a future maintenance schedule with maintenance costs being assessed "in the same relative proportion".

The maintenance schedule was revised in 2013 in a report entitled Hohner Drain 2013 dated November 19, 2013 by K.A. Smart, P.Eng. (K. Smart Associates Limited). Schedule 2 - Schedule of Assessments in this 2013 report is the original 1979 schedule that was revised to include a Block Assessment area consisting of three proposed subdivisions in Part E½ Lot 35, Concession 12 (Wettlaufer Heights, Harry Loewith and Croft lands) and 2 other properties. Appendix B in the 2013 report was a list of all of the

Assessment roll numbers and owners in the Block Assessment area. The remaining portions of the Schedule remained as it was in 1979 except that the 1979 Special Assessments were deleted since they were not applicable to maintenance. The 2013 Schedule 2 - Schedule of Assessment is the schedule to be used as the future maintenance schedule for the Hohner Drain.

The 2013 Schedule of Assessment will need to be reapportioned on the Main Drain for the William, Jack & Percy Wettlaufer property as shown in 1979 (now Mill-Gate Homes Inc., Assessment Roll No. 010-11305 and County of Oxford, Assessment Roll No. 050-13650 properties), part of Lots 34 & 35, Concession 13 and RP 307, Lot 124.

Table 2 has been prepared for this reapportionment, and it is attached to this Report following Schedule B. Copies of Table 2 should be placed in the Township's files for the Hohner Drain (1979) and Hohner Drain 2013.

Table 2 will not change the division of costs to other properties not shown when maintenance occurs. Notification of other owners in the Hohner Drain watershed is not necessary since their shares for maintenance have not been altered.

Schedule 2 – Schedule of Assessments from the 2013 report, where not changed by this 2021 reapportionment, will continue to be used until such time as the schedule is further modified in the future pursuant to Sections 65 or 76 of the Drainage Act. For purposes of future maintenance, the drawings and specifications from the Hohner Drain report by K. A. Smart, P. Eng. (K. Smart Associates Limited) dated April 11, 1979, where not changed by this 2021 report, are to be referred to and used.

iii) Thames River Drain 1984

The Hohner Drain outlets into the Thames River Drain 1984. The Thames River Drain was last improved in a report entitled Thames River Drain 1984 dated January 23, 1984 and revised by Addendum No. 1 dated March 26, 1984, by John Kuntze, P.Eng. and K. A. Smart, P.Eng. (K. Smart Associates Limited). The communities of Tavistock, Sebastopal and Shakespeare were each separately assessed as block assessment areas in accordance with Section 25 of the Drainage Act.

The schedule of assessment and the block assessment area for Tavistock were revised in 2013 in a report titled Thames River Drain 2013 dated November 19, 2013 by K. A. Smart, P.Eng. (K. Smart Associates Limited).

Schedule 2 – Schedule of Assessments in the 2013 report is the March 26, 1984 schedule that was revised to delete three of the 1984 properties in Pt E½ Lot 35, Concession 12 that were to become subdivisions (Wettlaufer Heights, Harry Loewith and Croft Lands subdivisions), formerly Assessment Roll No's. 010-050107, 010-050108 and 010-050124, and to add them into the Block Assessment area for Tavistock which increased the block assessment area amount from $5,531 in 1984 to $5,610 in 2013. Appendix A in the 2013 report showed this. Also in 2013 the percentage that was assessed to roads in the Tavistock Block Assessment area increased from 8.1% to 8.5%, leaving 91.5% to be assessed to lands.

In this Report in Table 3, only the percentages to the Block Assessment area for Tavistock will change.

Changes to the percentages of lands and roads in this block assessment area for Tavistock arise because of the Mill-Gate Homes Inc. subdivision development. In the Tavistock Block Assessment area, the percentage to be assessed to roads will slightly increase and the percentage to be assessed to the lands will slightly decrease. This is due to greater area of roads versus lots and blocks in the new subdivision, that were formerly vacant lands in the 1984 and 2013 schedules.

Table 3 has been prepared for this reapportionment and it is attached to this Report following Schedule B. Copies of Table 3 should be placed in the Township's files for the Thames River Drain 1984 and Thames River Drain 2013.

Schedule 2 – Schedule of Assessments from the 2013 report, where not changed by this 2021 reapportionment, will continue to be used until such time as the schedule is further modified in the future pursuant to Sections 65 or 76 of the Drainage Act.

16.2 Duties of Landowners re Future Maintenance

All parties affected by the Tavistock Drain 1979 Reconstruction 2021 are encouraged to periodically inspect the Drain and report any visible or suspected problems to the Municipality. A right-of-way along the Drain and access routes to the Drain, as indicated in the Allowances section of this report, and in the 1979 report, if indicated, shall remain free of obstructions and be available for future maintenance work. The cost for removing obstructions is the responsibility of the owner.

The owners of the private lands, on which any part of the Drain (branch) is located, have to make an access to and a right-of-way along the Drain available to the Township at all reasonable times to allow for repair and maintenance of the Drain in the future.

Any landowner making a new connection to the Drain shall notify the Drainage Superintendent before making the connection. If the Drainage Superintendent is not notified, the cost to remedy new connections that obstruct or otherwise damage the Drain will be the responsibility of the owner.

16.3 Updating Maintenance Schedules for Future Parcel and Land Use Changes

To ensure maintenance assessments remain equitable, the assessments provided in any maintenance schedule should be reapportioned under Section 65 if and when future severances or amalgamations occur, or if and when new lands are connected to the Drain or if and when a land-use change occurs that can be accommodated by the existing drain. If a future land-use change will cause the drain capacity to be exceeded, a report under Section 4 or 78 may be required to provide increased capacity.

17.0 DRAINS TO BE ABANDONED

In accordance with Section 19 of the Act, the following drains are hereby abandoned of status under the Drainage Act:

- The Tavistock Drain 1979 across the proposed subdivision lands and along the south part of the school property, downstream of Sta. 0+859 (21+54=20+54 AH'D) of this Report. This portion will be removed/destroyed.

- The 1919 & 1961 drains downstream of Sta. 0+435 of this Report. This downstream portion of the 1961 drain will be broken up and/or removed/destroyed. If any parts in this portion of the 1961 drain should remain, it will be up to the landowner involved to maintain or remove it.

18.0 BYLAW PASSAGE AND CONSTRUCTION IMPLEMENTATION

It is recommended that this Report be processed through all the mandatory steps of the Drainage Act (i.e. circulation, consideration, court of revision and resolution of any appeals) to the point where it could be adopted as a bylaw. However, it is further recommended that this Report not be adopted as a bylaw by giving the third reading to the provincial bylaw until such time that a subdivision agreement is executed and the Registration of the Subdivision Plan has occurred and also assessment roll numbers have been assigned for the lots and blocks and townhouse/units for the proposed subdivision.

By so waiting, the opportunity exists for the Municipality to refer the Report back to the Engineer should there be any further changes necessary due to subdivision work. Should it be referred back, then the whole process of circulation, meetings and approvals will have to be repeated.

This report including assessment schedules, reapportionment tables, appendices, drawings and specifications, once adopted by bylaw in accordance with the Drainage Act, RSO 1990, will provide the basis for construction and maintenance of the project unless modified in whole or in part by a new and separate report as described above. Construction can be implemented upon passage of the Bylaw.

19.0 GRANTS ON MAINTENANCE ASSESSMENTS

In accordance with the provisions of Section 85 of the Drainage Act and OMAFRA's ADIP policies, a grant not exceeding 1/3 (33-1/3%) may be available in the future on the assessments against privately owned parcels of land which are used for agriculture (as per OMAFRA's ADIP policies) and are eligible for the Farm Property Class Tax Rate (F.P.C.T.R.), for maintenance and repair, if done on the recommendation and supervision of an approved Drainage Superintendent.

There are no grants available on the Special Benefit assessment to be made related to costs of this Report.

20.0 CHANGES TO DRAIN AFTER BYLAW PASSED AND BEFORE COST IS LEVIED

Changes to the Drain requested by landowners, agencies or other authorities after the bylaw is passed cannot be undertaken unless the report is amended.

Section 84.1 of the Act and the associated regulation, O. Reg. 500/21, now provide a process to amend this report if design changes are required during construction. Design changes must: arise from unforeseen circumstances encountered during construction, comply with existing agency approvals, not increase the total project cost by more than 133% and not impact drain capacity. If design changes meet these criteria and are

approved by the Engineer, the report can be amended after construction with the as-constructed design before passing the actual cost bylaw.

Additional work desired by the landowner(s) which is not part of the drainage works may be arranged with the Contractor provided the cost of the work is paid by the landowner(s), and the Engineer reviews the additional work in advance. Such additional work is not part of the drainage works for future maintenance.

All of which is respectfully submitted.

K. SMART ASSOCIATES LIMITED

Curtis MacIntyre, P. Eng.

mw

SCHEDULE A - SCHEDULE OF ASSESSMENTS
TAVISTOCK DRAIN 1979 RECONSTRUCTION 2021
TOWNSHIP OF EAST ZORRA-TAVISTOCK

Con/Plan	Lot	Roll No. (32-38-020-)	Owner	Special Benefit (Sec 24)
307	Pt 124	010-09000	Thames Valley District School Board	0
13	Pt 34 & 35	010-11305	Mill-Gate Homes Inc.	1,140,000
13	Pt 34 & 35	050-13650	County of Oxford	0
		TOTALS:		1,140,000

Notes:

1. The lands shown above are considered as non-agricultural.
2. Section 21 of the Drainage Act, RSO 1990 requires that assessments be made to the affected parcel of land and road affected. The affected parcels of land have been identified using the roll number from the last revised assessment roll for the Township. For convenience only, the owners' names as shown by the last revised assessment roll, has also been included.

SCHEDULE B - SCHEDULE FOR ACTUAL COST BYLAW
TAVISTOCK DRAIN 1979 RECONSTRUCTION 2021
TOWNSHIP OF EAST ZORRA-TAVISTOCK

Con/ Plan	Lot	Roll No. (32-38-020-)	Owner	Gross Total	Less Allowances	NET ASSESSMENT
307	Pt 124	010-09000	Thames Valley District School Board	0	4,200	(4,200)
13	Pt 34 & 35	010-11305	Mill-Gate Homes Inc.	1,140,000	0	1,140,000
13	Pt 34 & 35	050-13650	County of Oxford	0	38,000	(38,000)
TOTALS:				1,140,000	42,200	1,097,800

Notes:

1. The lands shown above are considered as non-agricultural.
2. Section 21 of the Drainage Act, RSO 1990 requires that assessments be made to the affected parcel of land and road affected. The affected parcels of land have been identified using the roll number from the last revised assessment roll for the Township. For convenience only, the owners' names as shown by the last revised assessment roll, has also been included.
3. Amounts in brackets ( ) are amounts to be paid to the listed roll number.
4. This schedule is included for information purposes only. It is not an official schedule, but could be used for preparing the actual cost by-law.
5. The value of the assessments identified in this schedule are estimates only and should not be considered final.
6. Actual assessment is levied to the owner of the parcel at the time of actual cost levy.

TABLE 1
REAPPORTIONMENT FOR TAVISTOCK DRAIN 1979

Con	Plan	Lot	Reg. Plan	Reg. Plan Lot No.	Roll No.	1979 Owner (2021 Owner)	Approx. Area Affected Acres	(Ha)	Benefit	Outlet	Total
Previous Assessments - Schedule of Assessment (January 15, 1979)											
Main Drain and Branch B											
13		Pts 34 & 35 & Pt 124	307			Percy, William & Jack Wettlaufer	25.00	(10.12)	2,000	2,000	4,000
13		Pts 34 & 35				David & Doris Rudy	13.00	(5.26)	0	1,040	1,040
13		Pt 35				Twp of East Zorra-Tavistock (Lagoons)	28.00	(11.33)	0	2,240	2,240
			307	Pt 124		Oxford County Board of Education	12.00	(4.86)	1,650	5,827	7,477
						TOTALS:	78.00	(31.57)	3,650	11,107	14,757
Reapportioned Assessments											
Main Drain and Branch B					(32-38-020-)	(2021 Owner)					
13		Pt 35	307	Pt 124	010-09000	(Thames Valley District School Board)		(4.97)	1,650	2,305	3,955
			T.B.D.	Blk 152 (Light Industrial)	T.B.D.	(Mill-Gate Homes Inc.)		(0.30)	0	139	139
			T.B.D.	Blk 153 (Park)	T.B.D.	(Mill-Gate Homes Inc.)		(0.91)	500	422	922
13		Pt 34 & 35	--	--	050-13650	(County of Oxford)		(17.77)	1,500	8,241	9,741
						Sub Total on Lands:		(23.95)	3,650	11,107	14,757
						Sub Total on Roads:		0	0	0	0
						TOTALS:		(23.95)	3,650	11,107	14,757

Notes:

1. *Owners' names shown in brackets ( ) are the 2021 owners.*
2. *All lands are in the geographic Township of East Zorra in theTownship of East Zorra-Tavistock.*
3. *This table was prepared for the Tavistock Drain 1979 Reconstruction 2021 report dated December 17, 2021.*
4. *The amounts shown are not dollars to be paid at this time. These amounts are only to be used to obtain the percentage or proportion that each parcel (property) and road will have of a future maintenance cost.*
5. *This table will only come into effect once the Tavistock Drain 1979 Reconstruction 2021 has been constructed/completed and the Registered Plan for the Mill-Gate Homes Inc. Subdivision has been registered and Assessment Roll Numbers, etc. have been assigned for each property/lots/blocks and the roads have been renamed and assumed by the Township.*
6. *The above revised assessments and the assessments that have not been revised from the existing 1979 report schedule dated January 15, 1979 are to be used to assess out repair and maintenance costs when incurred*

TABLE 2
REAPPORTIONMENT FOR HOHNER DRAIN

Con	Plan	Lot	Reg. Plan	Reg. Plan Lot No.	Roll No.	1979 Owner (2021 Owner)	Approx. Area Affected Acres	(Ha)	Benefit	Outlet	Total
Previous Assessments - Schedule 2 - Schedule of Assessment (November 19, 2013)											
Main Drain											
13		Pts 34 & 35 & Pt 124	307			W., J. & P. Wettlaufer	103.00	(41.70)	4,000	1,525	5,525
						Totals:	103.00	(41.70)	4,000	1,525	5,525
Reapportioned Assessments											
Main Drain					(32-38-020-)	(2021 Owner)					
			T.B.D.	1	T.B.D.	(Mill-Gate Homes Inc.)		(0.07)	0	5 +	5
			T.B.D.	2	T.B.D.	(Mill-Gate Homes Inc.)		(0.06)	0	5	5
			T.B.D.	3	T.B.D.	(Mill-Gate Homes Inc.)		(0.06)	0	5	5
			T.B.D.	4	T.B.D.	(Mill-Gate Homes Inc.)		(0.06)	0	5	5
			T.B.D.	5	T.B.D.	(Mill-Gate Homes Inc.)		(0.06)	0	5	5
			T.B.D.	6	T.B.D.	(Mill-Gate Homes Inc.)		(0.06)	0	5	5
			T.B.D.	7	T.B.D.	(Mill-Gate Homes Inc.)		(0.06)	0	5	5
			T.B.D.	8	T.B.D.	(Mill-Gate Homes Inc.)		(0.06)	0	5	5
			T.B.D.	9	T.B.D.	(Mill-Gate Homes Inc.)		(0.07)	0	5	5
			T.B.D.	10	T.B.D.	(Mill-Gate Homes Inc.)		(0.08)	0	5	5
			T.B.D.	11	T.B.D.	(Mill-Gate Homes Inc.)		(0.08)	0	5	5
			T.B.D.	12	T.B.D.	(Mill-Gate Homes Inc.)		(0.08)	0	5	5
			T.B.D.	13	T.B.D.	(Mill-Gate Homes Inc.)		(0.07)	0	5	5
			T.B.D.	14	T.B.D.	(Mill-Gate Homes Inc.)		(0.07)	0	5	5
			T.B.D.	15	T.B.D.	(Mill-Gate Homes Inc.)		(0.08)	0	5	5
			T.B.D.	16	T.B.D.	(Mill-Gate Homes Inc.)		(0.16)	0	5	5
			T.B.D.	17	T.B.D.	(Mill-Gate Homes Inc.)		(0.09)	0	5	5
			T.B.D.	18	T.B.D.	(Mill-Gate Homes Inc.)		(0.09)	0	5	5
			T.B.D.	19	T.B.D.	(Mill-Gate Homes Inc.)		(0.10)	0	5	5
			T.B.D.	20	T.B.D.	(Mill-Gate Homes Inc.)		(0.13)	0	5	5
			T.B.D.	21	T.B.D.	(Mill-Gate Homes Inc.)		(0.10)	0	5	5
			T.B.D.	22	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	23	T.B.D.	(Mill-Gate Homes Inc.)		(0.07)	0	5	5
			T.B.D.	24	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	25	T.B.D.	(Mill-Gate Homes Inc.)		(0.07)	0	5	5
			T.B.D.	26	T.B.D.	(Mill-Gate Homes Inc.)		(0.07)	0	5	5
			T.B.D.	27	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	28	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	29	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	30	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	31	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	32	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	33	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	34	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	35	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	36	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	37	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	38	T.B.D.	(Mill-Gate Homes Inc.)		(0.06)	0	5	5
			T.B.D.	39	T.B.D.	(Mill-Gate Homes Inc.)		(0.07)	0	5	5
			T.B.D.	40	T.B.D.	(Mill-Gate Homes Inc.)		(0.07)	0	5	5
			T.B.D.	41	T.B.D.	(Mill-Gate Homes Inc.)		(0.06)	0	5	5
			T.B.D.	42	T.B.D.	(Mill-Gate Homes Inc.)		(0.06)	0	5	5
			T.B.D.	43	T.B.D.	(Mill-Gate Homes Inc.)		(0.06)	0	5	5
			T.B.D.	44	T.B.D.	(Mill-Gate Homes Inc.)		(0.06)	0	5	5
			T.B.D.	45	T.B.D.	(Mill-Gate Homes Inc.)		(0.07)	0	5	5
			T.B.D.	46	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	47	T.B.D.	(Mill-Gate Homes Inc.)		(0.07)	0	5	5
			T.B.D.	48	T.B.D.	(Mill-Gate Homes Inc.)		(0.07)	0	5	5
			T.B.D.	49	T.B.D.	(Mill-Gate Homes Inc.)		(0.07)	0	5	5
			T.B.D.	50	T.B.D.	(Mill-Gate Homes Inc.)		(0.07)	0	5	5
			T.B.D.	51	T.B.D.	(Mill-Gate Homes Inc.)		(0.07)	0	5	5
			T.B.D.	52	T.B.D.	(Mill-Gate Homes Inc.)		(0.07)	0	5	5
			T.B.D.	53	T.B.D.	(Mill-Gate Homes Inc.)		(0.06)	0	5	5
			T.B.D.	54	T.B.D.	(Mill-Gate Homes Inc.)		(0.06)	0	5	5
			T.B.D.	55	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	56	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	57	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	58	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	59	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	60	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	61	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	62	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	63	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	64	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	65	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	66	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	67	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	68	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	69	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	70	T.B.D.	(Mill-Gate Homes Inc.)		(0.09)	0	5	5
			T.B.D.	71	T.B.D.	(Mill-Gate Homes Inc.)		(0.07)	0	5	5
			T.B.D.	72	T.B.D.	(Mill-Gate Homes Inc.)		(0.07)	0	5	5
			T.B.D.	73	T.B.D.	(Mill-Gate Homes Inc.)		(0.07)	0	5	5
			T.B.D.	74	T.B.D.	(Mill-Gate Homes Inc.)		(0.07)	0	5	5
			T.B.D.	75	T.B.D.	(Mill-Gate Homes Inc.)		(0.07)	0	5	5

TABLE 2
REAPPORTIONMENT FOR HOHNER DRAIN

Con	Plan	Lot	Reg. Plan	Reg. Plan Lot No.	Roll No.	1979 Owner (2021 Owner)	Approx. Area Affected Acres	(Ha)	Benefit	Outlet	Total
			T.B.D.	76	T.B.D.	(Mill-Gate Homes Inc.)		(0.07)	0	5	5
			T.B.D.	77	T.B.D.	(Mill-Gate Homes Inc.)		(0.07)	0	5	5
			T.B.D.	78	T.B.D.	(Mill-Gate Homes Inc.)		(0.07)	0	5	5
			T.B.D.	79	T.B.D.	(Mill-Gate Homes Inc.)		(0.07)	0	5	5
			T.B.D.	80	T.B.D.	(Mill-Gate Homes Inc.)		(0.09)	0	5	5
			T.B.D.	81	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	82	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	83	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	84	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	85	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	86	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	87	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	88	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	89	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	90	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	91	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	92	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	93	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	94	T.B.D.	(Mill-Gate Homes Inc.)		(0.06)	0	5	5
			T.B.D.	95	T.B.D.	(Mill-Gate Homes Inc.)		(0.08)	0	5	5
			T.B.D.	96	T.B.D.	(Mill-Gate Homes Inc.)		(0.08)	0	5	5
			T.B.D.	97	T.B.D.	(Mill-Gate Homes Inc.)		(0.06)	0	5	5
			T.B.D.	98	T.B.D.	(Mill-Gate Homes Inc.)		(0.06)	0	5	5
			T.B.D.	99	T.B.D.	(Mill-Gate Homes Inc.)		(0.06)	0	5	5
			T.B.D.	100	T.B.D.	(Mill-Gate Homes Inc.)		(0.06)	0	5	5
			T.B.D.	101	T.B.D.	(Mill-Gate Homes Inc.)		(0.06)	0	5	5
			T.B.D.	102	T.B.D.	(Mill-Gate Homes Inc.)		(0.06)	0	5	5
			T.B.D.	103	T.B.D.	(Mill-Gate Homes Inc.)		(0.06)	0	5	5
			T.B.D.	104	T.B.D.	(Mill-Gate Homes Inc.)		(0.06)	0	5	5
			T.B.D.	105	T.B.D.	(Mill-Gate Homes Inc.)		(0.06)	0	5	5
			T.B.D.	106	T.B.D.	(Mill-Gate Homes Inc.)		(0.08)	0	5	5
			T.B.D.	107	T.B.D.	(Mill-Gate Homes Inc.)		(0.08)	0	5	5
			T.B.D.	108	T.B.D.	(Mill-Gate Homes Inc.)		(0.06)	0	5	5
			T.B.D.	109	T.B.D.	(Mill-Gate Homes Inc.)		(0.06)	0	5	5
			T.B.D.	110	T.B.D.	(Mill-Gate Homes Inc.)		(0.06)	0	5	5
			T.B.D.	111	T.B.D.	(Mill-Gate Homes Inc.)		(0.06)	0	5	5
			T.B.D.	112	T.B.D.	(Mill-Gate Homes Inc.)		(0.06)	0	5	5
			T.B.D.	113	T.B.D.	(Mill-Gate Homes Inc.)		(0.06)	0	5	5
			T.B.D.	114	T.B.D.	(Mill-Gate Homes Inc.)		(0.06)	0	5	5
			T.B.D.	115	T.B.D.	(Mill-Gate Homes Inc.)		(0.06)	0	5	5
			T.B.D.	116	T.B.D.	(Mill-Gate Homes Inc.)		(0.06)	0	5	5
			T.B.D.	117	T.B.D.	(Mill-Gate Homes Inc.)		(0.08)	0	5	5
			T.B.D.	118	T.B.D.	(Mill-Gate Homes Inc.)		(0.07)	0	5	5
			T.B.D.	119	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	120	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	121	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	122	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	123	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	124	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	125	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	126	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	127	T.B.D.	(Mill-Gate Homes Inc.)		(0.07)	0	5	5
			T.B.D.	128	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	129	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	130	T.B.D.	(Mill-Gate Homes Inc.)		(0.07)	0	5	5
			T.B.D.	131	T.B.D.	(Mill-Gate Homes Inc.)		(0.07)	0	5	5
			T.B.D.	132	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	133	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	134	T.B.D.	(Mill-Gate Homes Inc.)		(0.07)	0	5	5
			T.B.D.	135	T.B.D.	(Mill-Gate Homes Inc.)		(0.08)	0	5	5
			T.B.D.	136	T.B.D.	(Mill-Gate Homes Inc.)		(0.08)	0	5	5
			T.B.D.	137	T.B.D.	(Mill-Gate Homes Inc.)		(0.07)	0	5	5
			T.B.D.	138	T.B.D.	(Mill-Gate Homes Inc.)		(0.06)	0	5	5
			T.B.D.	139	T.B.D.	(Mill-Gate Homes Inc.)		(0.06)	0	5	5
			T.B.D.	140	T.B.D.	(Mill-Gate Homes Inc.)		(0.06)	0	5	5
			T.B.D.	141	T.B.D.	(Mill-Gate Homes Inc.)		(0.06)	0	5	5
			T.B.D.	142	T.B.D.	(Mill-Gate Homes Inc.)		(0.08)	0	5	5
			T.B.D.	143	T.B.D.	(Mill-Gate Homes Inc.)		(0.09)	0	5	5
			T.B.D.	144	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	145	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	146	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
		A	T.B.D.	N.A.	T.B.D.	(Mill-Gate Homes Inc.)		(0.10)	0	5	5
			T.B.D.	Blk 148 - (A)	T.B.D.	(Mill-Gate Homes Inc.)		(0.06)	0	5	5
			T.B.D.	Blk 148 - (B)	T.B.D.	(Mill-Gate Homes Inc.)		(0.03)	0	5	5
			T.B.D.	Blk 148 - (C)	T.B.D.	(Mill-Gate Homes Inc.)		(0.03)	0	5	5
			T.B.D.	Blk 148 - (D)	T.B.D.	(Mill-Gate Homes Inc.)		(0.03)	0	5	5
			T.B.D.	Blk 148 - (E)	T.B.D.	(Mill-Gate Homes Inc.)		(0.03)	0	5	5
			T.B.D.	Blk 148 - (F)	T.B.D.	(Mill-Gate Homes Inc.)		(0.04)	0	5	5
			T.B.D.	Blk 148 - (G)	T.B.D.	(Mill-Gate Homes Inc.)		(0.04)	0	5	5
			T.B.D.	Blk 148 - (H)	T.B.D.	(Mill-Gate Homes Inc.)		(0.03)	0	5	5
			T.B.D.	Blk 148 - (I)	T.B.D.	(Mill-Gate Homes Inc.)		(0.03)	0	5	5
			T.B.D.	Blk 148 - (J)	T.B.D.	(Mill-Gate Homes Inc.)		(0.03)	0	5	5
			T.B.D.	Blk 148 - (K)	T.B.D.	(Mill-Gate Homes Inc.)		(0.03)	0	5	5
			T.B.D.	Blk 148 - (L)	T.B.D.	(Mill-Gate Homes Inc.)		(0.06)	0	5	5

TABLE 2
REAPPORTIONMENT FOR HOHNER DRAIN

Con	Plan	Lot	Reg. Plan	Reg. Plan Lot No.	Roll No.	1979 Owner (2021 Owner)	Approx. Area Affected Acres	(Ha)	Benefit	Outlet	Total
			T.B.D.	Blk 149 - (A)	T.B.D.	(Mill-Gate Homes Inc.)		(0.07)	0	5	5
			T.B.D.	Blk 149 - (B)	T.B.D.	(Mill-Gate Homes Inc.)		(0.03)	0	5	5
			T.B.D.	Blk 149 - (C)	T.B.D.	(Mill-Gate Homes Inc.)		(0.03)	0	5	5
			T.B.D.	Blk 149 - (D)	T.B.D.	(Mill-Gate Homes Inc.)		(0.03)	0	5	5
			T.B.D.	Blk 149 - (E)	T.B.D.	(Mill-Gate Homes Inc.)		(0.03)	0	5	5
			T.B.D.	Blk 149 - (F)	T.B.D.	(Mill-Gate Homes Inc.)		(0.04)	0	5	5
			T.B.D.	Blk 149 - (G)	T.B.D.	(Mill-Gate Homes Inc.)		(0.04)	0	5	5
			T.B.D.	Blk 149 - (H)	T.B.D.	(Mill-Gate Homes Inc.)		(0.03)	0	5	5
			T.B.D.	Blk 149 - (I)	T.B.D.	(Mill-Gate Homes Inc.)		(0.03)	0	5	5
			T.B.D.	Blk 149 - (J)	T.B.D.	(Mill-Gate Homes Inc.)		(0.03)	0	5	5
			T.B.D.	Blk 149 - (K)	T.B.D.	(Mill-Gate Homes Inc.)		(0.07)	0	5	5
			T.B.D.	Blk 150 - (A)	T.B.D.	(Mill-Gate Homes Inc.)		(0.07)	0	5	5
			T.B.D.	Blk 150 - (B)	T.B.D.	(Mill-Gate Homes Inc.)		(0.03)	0	5	5
			T.B.D.	Blk 150 - (C)	T.B.D.	(Mill-Gate Homes Inc.)		(0.03)	0	5	5
			T.B.D.	Blk 150 - (D)	T.B.D.	(Mill-Gate Homes Inc.)		(0.03)	0	5	5
			T.B.D.	Blk 150 - (E)	T.B.D.	(Mill-Gate Homes Inc.)		(0.03)	0	5	5
			T.B.D.	Blk 150 - (F)	T.B.D.	(Mill-Gate Homes Inc.)		(0.04)	0	5	5
			T.B.D.	Blk 150 - (G)	T.B.D.	(Mill-Gate Homes Inc.)		(0.04)	0	5	5
			T.B.D.	Blk 150 - (H)	T.B.D.	(Mill-Gate Homes Inc.)		(0.03)	0	5	5
			T.B.D.	Blk 150 - (I)	T.B.D.	(Mill-Gate Homes Inc.)		(0.03)	0	5	5
			T.B.D.	Blk 150 - (J)	T.B.D.	(Mill-Gate Homes Inc.)		(0.03)	0	5	5
			T.B.D.	Blk 150 - (K)	T.B.D.	(Mill-Gate Homes Inc.)		(0.07)	0	5	5
			T.B.D.	Blk 151 - (A)	T.B.D.	(Mill-Gate Homes Inc.)		(0.06)	0	5	5
			T.B.D.	Blk 151 - (B)	T.B.D.	(Mill-Gate Homes Inc.)		(0.04)	0	5	5
			T.B.D.	Blk 151 - (C)	T.B.D.	(Mill-Gate Homes Inc.)		(0.04)	0	5	5
			T.B.D.	Blk 151 - (D)	T.B.D.	(Mill-Gate Homes Inc.)		(0.04)	0	5	5
			T.B.D.	Blk 151 - (E)	T.B.D.	(Mill-Gate Homes Inc.)		(0.04)	0	5	5
			T.B.D.	Blk 151 - (F)	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	Blk 151 - (G)	T.B.D.	(Mill-Gate Homes Inc.)		(0.05)	0	5	5
			T.B.D.	Blk 151 - (H)	T.B.D.	(Mill-Gate Homes Inc.)		(0.04)	0	5	5
			T.B.D.	Blk 151 - (I)	T.B.D.	(Mill-Gate Homes Inc.)		(0.04)	0	5	5
			T.B.D.	Blk 151 - (J)	T.B.D.	(Mill-Gate Homes Inc.)		(0.04)	0	5	5
			T.B.D.	Blk 151 - (K)	T.B.D.	(Mill-Gate Homes Inc.)		(0.07)	0	5	5
			T.B.D.	Blk 152 (Light Industrial)	T.B.D.	(Mill-Gate Homes Inc.)		(2.26)	0	35	35
			T.B.D.	Blk 153 (Park)	T.B.D.	(Mill-Gate Homes Inc.)		(0.91)	0	14	14
			T.B.D.	Blk 154	T.B.D.	(Mill-Gate Homes Inc.)		(0.16)	0	5	5
			T.B.D.	Blk 155	T.B.D.	(Mill-Gate Homes Inc.)		(0.25)	0	5	5
			T.B.D.	Blk 156	T.B.D.	(Mill-Gate Homes Inc.)		(0.03)	0	5	5
			T.B.D.	Blk 157 (Drain Easement)	T.B.D.	(Mill-Gate Homes Inc.)		(0.03)	0	5	5
				050-13650		(County of Oxford)		(20.27)	2,500	310	2,810
				050-13650		(County of Oxford) (SWM Area)		(1.33)	1,200	20	1,220
						Sub Total Lands:		(36.29)	3,700	1,359	5,059
				Maria Street		(Mill-Gate Homes Inc.)		(0.51)	0	16	16
				Wettlaufer Street		(Mill-Gate Homes Inc.)		(0.57)	0	17	17
				Street A		(Mill-Gate Homes Inc.)		(0.25)	0	8	8
				Street B		(Mill-Gate Homes Inc.)		(0.66)	0	20	20
				Street C		(Mill-Gate Homes Inc.)		(0.30)	0	9	9
				Street D		(Mill-Gate Homes Inc.)		(0.30)	0	9	9
				Street E		(Mill-Gate Homes Inc.)		(0.68)	0	21	21
				Street F		(Mill-Gate Homes Inc.)		(0.36)	0	11	11
				Street G		(Mill-Gate Homes Inc.)		(0.36)	0	11	11
				Street H		(Mill-Gate Homes Inc.)		(1.42)	300	44	344
						Sub Total Roads:		(5.41)	300	166	466
						Totals:		(41.70)	4,000	1,525	5,525

Notes:

1. *Owners' names shown in brackets ( ) are the 2021 owners.*
2. *All lands are in the geographic Township of East Zorra in theTownship of East Zorra-Tavistock.*
3. *This table was prepared for the Tavistock Drain 1979 Reconstruction 2021 report dated December 17, 2021.*
4. *The amounts shown are not dollars to be paid at this time. These amounts are only to be used to obtain the percentage or proportion that each parcel (property) and road will have of a future maintenance cost.*
5. *This table will only come into effect once the Tavistock Drain 1979 Reconstruction 2021 has been constructed/completed and the Registered Plan for the Mill-Gate Homes Inc. Subdivision has been registered and Assessment Roll Numbers, etc. have been assigned for each property/lots/blocks and the roads have been renamed and assumed by the Township.*
6. *The above revised assessments and the assessments that have not been revised from the 1979/2013 report schedules dated April 11, 1979 and November 19, 2013 are to be used to assess out repair and maintenance costs when incurred on the Hohner Drain.*
7. *+ $10 was the minimum outlet assessment for a small (non agricultural/residential/commercial/industrial) property, regardless of size, in the Hohner Drain (1979) and 2013 Schedule of Assessments. Due to the quantity of new lots added, this has been reduced to $5.*
8. *The above reapportioned lots, blocks and roads refer to the proposed subdivision lots, blocks and roads/streets shown on Drawing No. 3 of this 2021 Report. If the numbering system at the time of subdivision registration differs, the assigned Roll Numbers should correspond to the lots and blocks shown on Drawing No. 3 of this Report.*

TABLE 3
REAPPORTIONMENT FOR THAMES RIVER DRAIN 1984

Built up Area (Block Assessment Area)	Proportion of Assessment To be Charged To Lands	Proportion of Assessment To be Charged To Roads (Sec 25 (2))
Previous Percentages (November 19, 2013)		
i) Township of East Zorra-Tavistock		
Tavistock	91.5%	8.5%
Reapportioned Percentages		
i) Township of East Zorra-Tavistock		
Tavistock	91.0%	9.0%

Notes:

1. *All lands are in the geographic Township of East Zorra in the Township of East Zorra-Tavistock.*
2. *This table was prepared for the Tavistock Drain 1979 Reconstruction 2021 report dated December 17, 2021.*
3. *This table will only come into effect once the Tavistock Drain 1979 Reconstruction 2021 has been constructed/completed and the Registered Plan for the Mill-Gate Homes Inc. Subdivision has been registered and Assessment Roll Numbers, etc. have been assigned for each property/lot/block and the roads have been renamed and assumed by the Township.*
4. *The above revised percentages and the assessments that have not been revised from the report schedule dated November 19, 2013 are to be used to assess out repair and maintenance costs when incurred on the Thames River Drain 1984.*

APPENDIX A

Explanatory Note Sent to Landowners

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
85 McIntyre Drive
Kitchener ON N2R 1H6
www.ksmart.ca
Tel: (519) 748-1199
Fax: (519) 748-6100

January 4, 2022 File No. 18-270

RE: TAVISTOCK DRAIN 1979 RECONSTRUCTION 2021
Pt. Lots 34 & 35, Concession 13, and part Lot 124, R.P. 307

Dear Sir/Madam,

In September 2018 the Township of East Zorra-Tavistock appointed K. Smart Associates Limited to prepare a Drainage Report pursuant to Section 4 of the Drainage Act, RSO 1990. This Council resolution was in response to a petition by Mill-Gate Homes Inc. for the improvement and relocation of the Tavistock Drain 1979 in Pt. Lot 34 & 35, Concession 13, and part of Lot 124 Plan 307.

The improvement and relocation of the Tavistock Drain 1979 is to facilitate the proposed subdivision at the end of Maria Street (south of the Tavistock Public School). Specifically, the work will involve realigning 660m of the existing drain that currently dissects the property from north to south. The new drain includes 424m of new closed pipe southerly along the east edge of the property, followed by 435m of new open ditch westerly to its outlet at Hohner Creek.

For your convenience, an overall plan drawing showing the existing drain and the proposed re-routing of the Tavistock Drain 1979 is enclosed. Along with this realignment, the drains capacity will be increased in accordance with the Tavistock Master Storm Drainage System Plan (R.J. Burnside and Associates Limited, 2007). This document provides recommendations for all future drain sizing within the village of Tavistock.

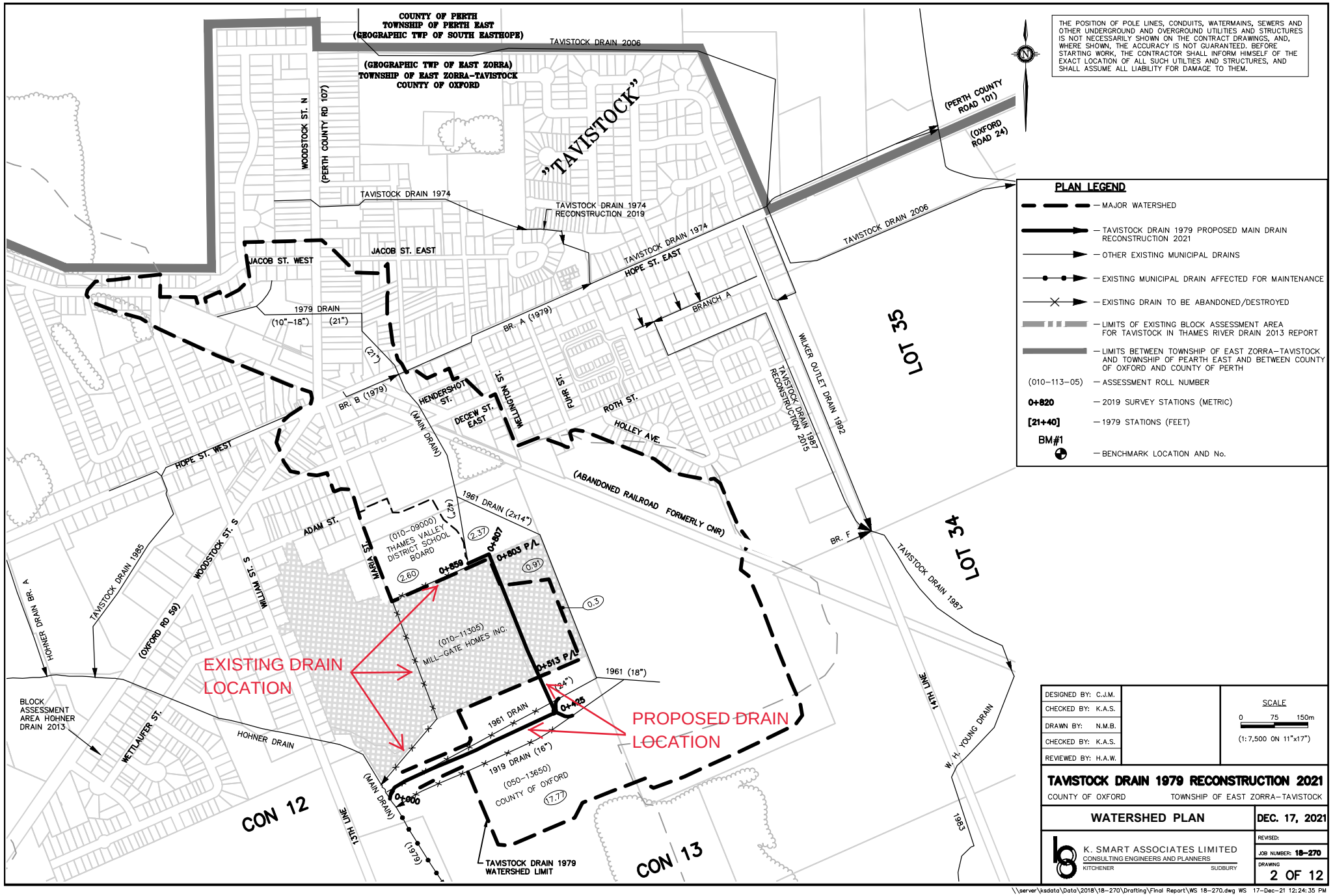
This letter is only a notification of the drainage work proposed for the Tavistock Drain 1979. **No costs relating to the Drainage Report or drain construction work will be levied to your property. The Engineer will be assessing all costs to Mill-Gate Homes Inc.** Also, no impact on future maintenance proportions will result to the upstream lands.

If you wish to view the Drainage Report, copies are available at the Township office in Hickson or an electronic version can be requested by contacting the Engineer at cmacintyre@ksmart.ca. If you have any questions or concerns about the drain relocation work please call Connor Occleston at the Township at 519-462-2697 or the Engineer at 519-748-1199, Ext. 252.

This Report, regarding the relocation of the drain, will be considered before Township Council on January 19, 2022 at 7:15 p.m.

Sincerely,

Curtis MacIntyre, P. Eng.
K. Smart Associates Limited


COUNTY OF PERTH
TOWNSHIP OF PERTH EAST
(GEOGRAPHIC TWP OF SOUTH EASTHOPE)
(GEOGRAPHIC TWP OF EAST ZORRA)
TOWNSHIP OF EAST ZORRA-TAVISTOCK
COUNTY OF OXFORD
"TAVISTOCK"
TAVISTOCK DRAIN 2006
TAVISTOCK DRAIN 1974
TAVISTOCK DRAIN 1974 RECONSTRUCTION 2019
WOODSTOCK ST. N
(PERTH COUNTY RD 107)
(PERTH COUNTY ROAD 101)
(OXFORD ROAD 24)
JACOB ST. WEST
JACOB ST. EAST
HOPE ST. EAST
HOPE ST. WEST
1979 DRAIN
(10"-18")
(21")
BR. A (1979)
BR. B (1979)
BRANCH A
HENDERSHOT ST.
DEGEW ST. EAST
WELLINGTON ST.
PARK ST.
ROTH ST.
HOLLEY AVE.
(MAIN DRAIN)
WILKER OUTLET DRAIN 1992
TAVISTOCK DRAIN 1987 RECONSTRUCTION 2015
LOT 35
LOT 34
(ABANDONED RAILROAD FORMERLY CNR)
BR. F
TAVISTOCK DRAIN 1987
1961 DRAIN (2x14")
ADAM ST.
MARIA ST.
(010-09000)
THAMES VALLEY DISTRICT SCHOOL BOARD
0+859
0+807
0+803 P/L
0+513 P/L
0+495
0+000
1961 (18")
1961 DRAIN
1919 DRAIN (16")
(050-13650)
COUNTY OF OXFORD
(010-11305)
MILL-GATE HOMES INC.
EXISTING DRAIN LOCATION
PROPOSED DRAIN LOCATION
TAVISTOCK DRAIN 1985
WOODSTOCK ST. S
WILLIAM ST. S
(OXFORD RD 59)
HOHNER DRAIN BR. A
HOHNER DRAIN
BLOCK ASSESSMENT AREA HOHNER DRAIN 2013
WETLAUFER ST.
13TH LINE
14TH LINE
W. H. YOUNG DRAIN
1963
CON 12
CON 13
TAVISTOCK DRAIN 1979 WATERSHED LIMIT
THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.
PLAN LEGEND
— MAJOR WATERSHED
— TAVISTOCK DRAIN 1979 PROPOSED MAIN DRAIN RECONSTRUCTION 2021
— OTHER EXISTING MUNICIPAL DRAINS
— EXISTING MUNICIPAL DRAIN AFFECTED FOR MAINTENANCE
— EXISTING DRAIN TO BE ABANDONED/DESTROYED
— LIMITS OF EXISTING BLOCK ASSESSMENT AREA FOR TAVISTOCK IN THAMES RIVER DRAIN 2013 REPORT
— LIMITS BETWEEN TOWNSHIP OF EAST ZORRA-TAVISTOCK AND TOWNSHIP OF PEARTH EAST AND BETWEEN COUNTY OF OXFORD AND COUNTY OF PERTH
(010-113-05) — ASSESSMENT ROLL NUMBER
0+820 — 2019 SURVEY STATIONS (METRIC)
[21+40] — 1979 STATIONS (FEET)
BM#1 — BENCHMARK LOCATION AND No.
DESIGNED BY: C.J.M.
CHECKED BY: K.A.S.
DRAWN BY: N.M.B.
CHECKED BY: K.A.S.
REVIEWED BY: H.A.W.
SCALE
0 75 150m
(1:7,500 ON 11"x17")
TAVISTOCK DRAIN 1979 RECONSTRUCTION 2021
COUNTY OF OXFORD
TOWNSHIP OF EAST ZORRA-TAVISTOCK
WATERSHED PLAN
DEC. 17, 2021
K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
KITCHENER
SUDBURY
REVISED:
JOB NUMBER: 18-270
DRAWING
2 OF 12
\\server\ksdata\Data\2018\18-270\Drafting\Final Report\WS 18-270.dwg WS 17-Dec-21 12:24:35 PM

400 STANDARD SPECIFICATIONS FOR CONSTRUCTION OF DRAINS

TABLE OF CONTENTS

400 STANDARD SPECIFICATIONS FOR CONSTRUCTION OF DRAINS

400.1 ABBREVIATIONS

i) MTO means the Ministry of Transportation of Ontario.
ii) ASTM means the American Society for Testing Materials.
iii) CSA means the Canadian Standard Association.
iv) OPSD means Ontario Provincial Standard Drawings
v) OPSS means Ontario Provincial Standard Specifications
vi) DFO means Fisheries and Oceans Canada
vii) MNRF means Ministry of Natural Resources and Forestry
viii) MECP means Ministry of Environment, Conservation and Parks

400.2 PRE CONSTRUCTION MEETING

The Contractor should arrange a pre-construction meeting with the Engineer, Municipality, affected landowners prior to commencement of construction.

If there is no pre-construction meeting or if a landowner is not present at the pre-construction meeting, the following shall apply. The drain is to be walked by the Contractor and each landowner prior to construction to ensure that both agree on the work to be done. Any difference of opinion shall be referred to the Engineer for decision. If the landowner is not contacted for such review, they are to advise the Engineer and/or Municipality.

400.3 COLD WEATHER

When working in cold weather is approved by the Engineer, the Contractor shall provide suitable means for heating, protection, and snow and ice removal. All work completed in cold weather conditions shall be to the satisfaction of the Engineer and any additional cost to remedy unsatisfactory work, or protect the work shall be borne by the Contactor. All backfilling operations shall be done as soon as possible to avoid backfilling with ground containing frozen particles. The Contractor will assume all responsibility for damages to any tile drains and for settlements or bank slippages that may result from work in cold weather.

400.4 WORKING AREA

Where any part of the drain is on a road allowance, the road allowance shall be the working area. For a closed drain the working area shall be a 10 metre width on either side of the trench or any combination not exceeding 20 metres. A 10m x 10m working area shall exist around any catchbasin, junction box or access point. For an open drain the working area shall be 17 metres on the side for leveling and 3 metres on the opposite side. A 10m working area shall exist for any overflow swale or grassed waterway. If any part of the drain is close to a property line then the fence line shall be one of the limits of the work area. Reduced or increased working areas will be described in detail on the Drawings.

400.5 ACCESS

The Contractor shall have access to the drain by entering the working area directly from road allowances or along access routes shown on the Drawings. All specifications governing fences, livestock and crops during drain construction apply to access routes. No other access routes shall be used unless first approved by the Engineer and the affected landowner. The Contractor shall contact each landowner prior to using the designated access routes. Contractor shall make good any damages caused by using the designated access routes.

400.6 ACCESS TO PROPERTIES ADJOINING THE WORK

The Contractor shall provide at all times and at no additional cost, adequate pedestrian access to private homes and commercial establishments unless otherwise authorized by the Engineer. Where interruptions to access have been authorized by the Engineer, reasonable notice shall be given by the Contractor to the affected landowners and such interruptions shall be arranged to minimize interference to those affected.

400.7 DRAINAGE SUPERINTENDENT

Where a Drainage Superintendent (Superintendent) is appointed by the Municipality, the Engineer may designate the Superintendent to act as the Engineer's representative. If so designated, the Superintendent will have the power to inspect and direct the execution of the work.

Any instructions given by the Superintendent which change the proposed work or with which the Contractor does not agree shall be referred to the Engineer for final decision.

400.8 ALTERATIONS TO WORK

The Engineer shall have the power to make alterations, additions and/or deletions in the work as shown or described in the Drawings or Specifications and the Contractor shall proceed to implement such changes without delay. Alterations ordered by the Engineer shall in no way render the contract void.

If a landowner desires deviations from the work described on the Drawings, the landowner shall submit a written request to the Engineer, at least 48 hours in advance of the work in question.

In every such case, the contract amount shall be increased or decreased as required according to a fair evaluation of the work completed. Where such changes involve additional work similar to items in the contract, the price for additional work shall be determined after consideration is given to the tendered price for similar items.

In no case shall the Contractor commence work considered to be extra work without the Engineer's approval. Payment for extra work is contingent on receipt of documentation to the satisfaction of the Engineer. Refer to the Extra Work Summary included in the Special Provisions.

400.9 ERRORS AND UNUSUAL CONDITIONS

The Contractor shall notify the Engineer immediately of any error or unusual conditions which may be found. Any attempt by the Contractor to correct the error without notice shall be done at the Contractor's risk. Any additional cost incurred by the Contractor to remedy an error or unusual condition without notice shall be borne by the Contractor. The Engineer shall direct the alteration necessary to correct errors or unusual conditions. The contract amount shall be adjusted in accordance with a fair evaluation of documentation for the work added, deleted or adjusted.

400.10 TESTS

The Engineer reserves the right to subject any materials to a competent testing laboratory for compliance with the standard. If any materials supplied by the Contractor are determined to be inadequate to meet the applicable standards, the Contractor shall bear full responsibility to remove and/or replace all such inadequate materials with materials capable of meeting the standards.

The cost of testing the materials supplied by the Contractor shall be borne by the Contractor.

400.11 BENCHMARKS AND STAKES

Prior to construction, the Engineer will confirm the benchmarks. The Contractor shall be held liable for the cost of replacing any benchmarks destroyed during construction.

If the Engineer provides layout stakes, the Contractor shall be held liable for the cost of replacing any layout stakes destroyed during construction.

Where property bars are shown on the Drawings, they are to be protected and if damaged by the Contractor, they will be reinstated by an Ontario Land Surveyor at the expense of the Contractor. Where property bars not shown on the Drawings are damaged, they will be reinstated by an Ontario Land Surveyor at the expense of the project.

400.12 OPENING UP OF FINISHED WORK

If ordered by the Engineer, the Contractor shall make such openings in the work as are needed to re-examine the work, and shall forthwith make the work good again. Should the Engineer find the work so opened up to be faulty in any respect, the whole of the expense of opening, inspecting and making the work good shall be borne by the Contractor. Should the Engineer find the work opened up to be in an acceptable condition the Contractor shall be paid for the expense of opening and making the work good, unless the Contractor has been obligated by any specification or by the direction of the Engineer to the leave the work open for the Engineer's inspection.

400.13 FINAL INSPECTION

Final inspection by the Engineer will be made within twenty (20) days after receiving notice in writing from the Contractor that work is complete, or as soon thereafter as weather conditions permit. All the work included in the contract must at the time of final inspection have the full dimensions and cross-sections.

Prior to commencing the final inspection an on-site meeting may be held by the Engineer and landowners directly affected by the construction of the drain. The Contractor will attend this meeting upon notice by the Engineer.

If there is no on-site meeting with the Engineer and landowners, the Contractor shall obtain from each landowner a written statement indicating that the work has been performed to the owner's satisfaction. If the Contractor is unable to obtain a written statement from the landowner, the Engineer will determine if further work is required prior to issuing the Completion Certificate.

400.14 WARRANTY

There shall be a one-year warranty period on all completed work. The warranty period will commence on the date of the Completion Certificate.

When directed by the Engineer, the Contractor shall repair and make good any deficiencies in the work that may appear during the warranty period.

Before the work shall be finally accepted by the Municipality, the Contractor shall complete all work as directed by the Engineer and remove all debris and surplus materials and leave the work neat and presentable.

400.15 MATERIALS

400.15.1 Concrete Drain Tile

Concrete drain tile shall conform to the requirements of the most recent ASTM C412 specifications for heavy duty extra quality, unless a stronger concrete tile is required by the Special Provisions or Drawings. All tile furnished shall be subject to the approval of the Engineer.

The minimum nominal lengths of the tile shall be 750mm for 150 to 350mm diameter tile and 1200mm for 400 to 900mm diameter tile.

All tile should be of good quality, free from distortions and cracks and shall meet the standards specified. The ends should be smooth and free from cracks or checks. All rejected tile are to be immediately removed from the site.

Granular backfill, where required, shall consist of approved sand or gravel having no particles retained on a screen having 50mm square openings.

Earth backfill shall consist of approved material having no large lumps or boulders.

400.15.2 Corrugated Plastic Tubing

Corrugated plastic tubing shall conform to the *Land Improvement Contractors of Ontario Standard Specification for Corrugated Plastic Drainage Tubing, 2006*. Type of material (solid or perforated) and need for filter sock will be specified on the Drawings or in the description of the work in the Special Provisions. Filter sock where specified shall be a standard synthetic filter material as provided by a recognized plastic tubing manufacturer unless noted differently on the contract drawings or elsewhere in the contract document. Protect coils of plastic tubing from damage and deformation.

400.15.3 Corrugated Steel Pipe

Corrugated Steel Pipe (CSP) shall be according to OPSS 1801 (CSA G401). Unless stated otherwise in the Special Provisions the pipe shall be:

- galvanized
- helical corrugation with lock seam and re-rolled annular ends
- 68mm x 13mm corrugation profile for diameters up to 1200mm
- 125mm x 25mm corrugation profile for diameters 1200mm and larger
- minimum wall thickness of 1.6mm for diameters up to 500mm
- minimum wall thickness of 2.0mm for diameters 600mm and larger
- joined using standard couplers matching the pipe diameter and material

Other coatings that may be specified include aluminized Type 2 or polymer. Polymer coating shall be a 254mm polymer film laminated to both sides of the pipe.

400.15.4 Plastic Pipe

Plastic Pipe shall be a high density polyethylene (HDPE) double wall corrugated pipe with smooth inner wall, solid with no perforations in accordance with OPSS 1840.

A minimum stiffness of 320 KPa at 5% deflection

The pipe shall be joined with snap-on or split couplers.

400.15.5 Concrete Sewer Pipe

Concrete sewer pipe shall be in accordance with OPSS 1820.

Non-reinforced concrete sewer pipe shall be used for pipe 375mm in diameter and smaller and reinforced concrete sewer pipe shall be used for pipe over 375mm.

Classes shall be as shown on the Contract Drawings or as described in the Form of Tender.

All new concrete sewer pipe shall have rubber-type gasket joints.

Where concrete sewer pipe “seconds” are specified, the pipe should exhibit no damage or cracks on the barrel section and shall be capable of satisfying the crushing strength requirements of OPSS 1820. The pipe may contain cracks or chips in the bell or spigot which prevent the use of rubber gaskets but the joints must be protected with filter cloth.

400.16 RIPRAP

All riprap is to be placed on a geotextile underlay (Terrafix 360R or equal) unless directed otherwise in the specific construction notes. The riprap is to be graded heavy angular stone (quarry stone is recommended) with particles averaging in size from 200mm to 300mm and is to be placed at 300mm thickness. Fine particles may be included to fill voids. Along upstream edges of riprap, where surface water will enter, underlay is to extend a minimum of 300mm upstream from riprap and then be keyed down a minimum of 300mm. Wherever riprap is placed, the area is to be over-dug so that finished top of riprap is at design cross-section, at design elevation or flush with existing ground.

400.17 GEOTEXTILE

To be non-woven fabric that is rot proof, non-biodegradable, chemically resistant to acidic or alkaline soils and is dimensionally stable under different hydraulic conditions. The filter fabric is to be a material whose primary function is to act as a highly permeable, non-clogging soil separator for fine soils (Terrafix 360R or equal). Contractor is to follow the manufacturer's recommendations for cutting, installation and precautions necessary to avoid damage to fabric. Other approved equals will be considered by the Engineer prior to construction.

400.18 DISPOSAL OF MATERIALS

The Contractor shall remove all surplus materials from the job site at the end of the project. The Contractor shall locate the disposal site for all materials to be disposed of. Disposal of materials shall comply with applicable regulations.

400.19 NOTIFICATION OF RAILROADS, ROAD AUTHORITIES AND UTILITIES

Contractor will notify any Railroad, Road Authority or Utility at least 48 hours in advance regarding work to be performed on their property or affecting their infrastructure. The notice will be in writing and is exclusive of Saturdays, Sundays and Holidays.

A utility includes any entity supplying the general public with necessaries or conveniences.

400.20 WORKING IN ROAD ALLOWANCES

400.20.1 General

Work within public road allowances shall be done in accordance with the Ontario Traffic Manual Book 7, latest edition.

400.20.2 Road Crossings

If no specific detail is provided for road crossings on the drawings or in the specifications the following shall apply:

- A Road Authority will supply no labour, equipment or materials for the construction of the road crossing.
- Contractor will not commence road crossing work until any required permits have been obtained. The Engineer may apply for any required permits prior to construction.
- Contractor will notify the Road Authority at least 72 hours in advance of any construction in the road allowance.
- Road crossings may be made with an open cut unless otherwise noted.
- Exact location of crossing shall be verified with the Road Authority and the Engineer.
- Pipe shall be placed on a minimum 150mm depth of Granular A shaped for the pipe.
- Pipe backfill shall be compacted Granular A and extend 300mm above the top of the pipe.
- Trench shall be backfilled with acceptable native material for the base width of the road bed.
- The material shall be placed in lifts not exceeding 300mm in depth and shall be thoroughly compacted with an approved mechanical vibrating compactor.
- Top 600mm of the road bed backfill shall consist of 450mm Granular B and 150mm of Granular A placed in lifts and fully compacted.
- Any surplus excavated material within the road allowance may be spread on the right-of-way with consent of the Road Superintendent otherwise the surplus material shall be hauled away.
- Existing asphalt or concrete pavement or surface treatment shall be replaced by the Contractor to the satisfaction of the Engineer and Road Authority.
- Contractor shall be responsible for correcting any backfill settlement during construction and during the warranty period. Upon approval of the road authority, surplus gravel shall be stockpiled near gravel road crossings to provide backfill for future trench settlement.
- All road crossings shall meet the approval of the Road Authority.
- If any road crossing is not left in a safe manner at the end of the working day barricades and warning signs shall be erected to guarantee the safety of the travelling public.
- If the Engineer deems a road to surface to have been damaged by the construction of a drain, either across or along the road, the Engineer may direct the Contractor to restore the road surface to existing or better condition at no additional cost.

400.20.3 Maintenance of Traffic

Unless directed otherwise on the drawings or in the specifications the Contractor shall keep the road open to traffic at all times. The Contractor shall provide suitable warning signs and/or flagging to the satisfaction of the Road Authority to notify of the construction work.

If a detour is required, the Contractor shall submit a proposal as to the details of the detour for approval by the Road Authority. If necessary to close the road to through traffic, the Contractor shall provide for and adequately sign the detour route. Contractor shall undertake all notifications required for a road closure in consultation with the Municipality.

400.21 LOCATIONS OF EXISTING UTILITIES

The position of pole lines, conduits, watermains, sewers and other underground and overhead utilities are not necessarily shown on the Contract Drawings, and, where shown, the accuracy of the position of such utilities and structures is not guaranteed. Before starting work, the Contractor shall have all utilities located in accordance with the Ontario Underground Infrastructure Notification System Act.

All utilities shall be exposed to the satisfaction of the utility company to verify that the construction proposed will not conflict with the utility structure. Additional payment will be allowed for relocation of utilities if conflicts should occur.

The Contractor is responsible for protecting all located and exposed utilities from damage during construction. The Contractor shall assume liability for damage caused to all properly located utilities.

400.22 LANEWAYS

If no specific detail is provided for laneway crossings on the Drawings or in the Specifications the following shall apply:

- Pipe backfill shall be acceptable native material that can be compacted in place.
- Top 450mm of laneway backfill shall consist of 300mm Granular B and 150mm of Granular A placed in lifts and fully compacted.
- Minimum cover on laneway culverts shall be 300mm.
- Existing asphalt or concrete pavement or surface treatment shall be replaced by the Contractor.
- The width of surface restoration shall match the existing laneway.
- Contractor shall be responsible for correcting any backfill settlement during construction and during the warranty period.

The timing of laneway closures will be coordinated by the Contractor to the satisfaction of the landowner.

400.23 EXISTING CROSSING CLEANOUT

Where the Special Provisions require an existing crossing to be cleaned, the Contractor shall provide a bottom width and depth that provides capacity equivalent to the capacity of the channel on either side. Excavated materials shall be hauled away unless adjacent landowners give permission for leveling. Care shall be taken to ensure that existing abutments or any portion of the structure are not damaged or undercut. The method of removing the material is to be pre-approved by the Engineer.

400.24 FENCES

If the Contractor is responsible to remove and install fences, the following shall apply:

- All fences removed by a Contractor are to be re-erected in as good a condition as existing materials permit.
- All fences shall be properly stretched and fastened. Where directed by the Engineer, additional steel posts shall be placed to adequately support a fence upon re-erection.
- Where practical and where required by the landowner, the Contractor shall take down an existing fence at the nearest anchor post and roll the fence back rather than cutting the fence and attempting to patch it.
- Where fence materials are in such poor condition that re-erection is not possible, the Contractor shall replace the fence using equivalent materials. Such fence material shall be approved by the Engineer and the landowner. Where the Engineer approves new fence material, additional payment will be provided.

Any fences paralleling an open drain, that are not line fences, that hinder the proper working of the excavating machinery for drain construction or maintenance shall be removed and rebuilt by the landowner at their own expense. If such parallel fences are line fences they shall be removed and reinstalled by the Contractor.

No excavated or cleared material shall be placed against fences.

The installation of all fences shall be done to the satisfaction of the Engineer and the landowner.

400.25 LIVESTOCK

If any construction will be within a fenced field containing livestock that are evident or have been made known to the Contractor, the Contractor shall notify the owner of the livestock 48 hours in advance of access into the field. Thereafter, the owner shall be responsible for the protection of the livestock in the field during construction and shall also be liable for any damage to or by the livestock.

Where the owner so directs or where the Contractor has failed to reach the owner, the Contractor shall adequately re-erect all fences at the end of each working day. No field containing livestock shall have a trench left open at the end of the working day, unless the trench has been adequately backfilled or protected. Failure of the Contractor to comply with this paragraph shall render the Contractor liable for any damage to or by the livestock.

Where livestock may be encountered on any property the Contractor shall notify the Engineer to arrange for inspection of the work prior to backfilling.

400.26 STANDING CROPS

The Contractor shall not be held responsible for damages to standing crops within the working area for the drain. However, the Contractor shall notify the owner of the crops 48 hours prior to commencement of construction so as to allow the owner an opportunity to harvest or salvage the crop within the drain working area. If this advance notice is not given the Contractor may be liable for the loss of the standing crops.

400.27 CLEARING VEGETATION

400.27.1 General
The area for clearing, if not defined elsewhere, shall be 15m on each side of the drain.

400.27.2 Trees to Remain
Where it is feasible to work around existing trees that do not impede the function of the drainage works, the Contractor shall not remove any deciduous tree larger than 300mm and any coniferous tree larger than 200mm, unless authorized by the Engineer.

400.27.3 Incidental Clearing
Incidental clearing includes removal of trees, brush or other vegetation with an excavator during construction activities, and the cost is to be included in the price for the related construction activity.

400.27.4 Power Brushing
Power brushing includes removal of above-ground vegetation with a rotary brush cutter or other mechanical means. Stump and root removal is not required. Power brushed vegetation in a channel cross-section shall be removed and leveled in the working area. Excavated material may be placed and leveled on power brushed vegetation.

400.27.5 Close-Cut Clearing
Close-cut clearing includes removal of above-ground vegetation cut flush with the ground. Stump and root removal is not required.

400.27.6 Clearing And Grubbing
Clearing and grubbing includes removal of vegetation, including stumps and roots. Removal of earth from the grubbed area into the windrows or piles is to be minimized.

400.27.7 Disposal of Cleared Vegetation

400.27.7.1 *In Bush Areas*

Cleared vegetation is to be pushed into windrows or piles at the edge of the cleared area. Stumps and roots are to be piled first at the edge of the cleared area, followed by other vegetation (trunks, branches, etc.). Provisions for lateral drainage are required through all windrows. Windrows are not to block any laneways or trails. After removing cleared vegetation, the working area shall be leveled to the satisfaction of the Engineer.

400.27.7.2 *In Field Areas*

Cleared vegetation resulting from incidental clearing or power brushing may be hauled away, mulched in place or reduced to a size that permits cultivation using conventional equipment without causing undue hardship on farm machinery.

Cleared vegetation resulting from close-cut clearing or clearing and grubbing is to be hauled away to an approved location. Disposal sites may be in bush areas or other approved locations on the same farm. No excavated material shall be levelled over any logs, brush or rubbish of any kind.

400.27.8 Landowner Requested Salvage

A landowner may request that wood be separated from the windrows for the landowner's future use. This additional work would be eligible for extra payment, subject to the approval of the Engineer. The cost of the additional work would be assessed to the landowner.

400.27.9 Clearing by Landowner

Wherever the Special Provisions indicate that clearing may be undertaken by the landowner, work by the landowner shall be in accordance with the Clearing Vegetation requirements of this specification and must be completed so as not to cause delay for the Contractor. If the landowner does not complete clearing in accordance with these requirements, the Contractor will undertake the clearing at a price approved by the Engineer.

400.28 ROCK REMOVAL

400.28.1 General

Rock shall be defined as bedrock and boulders that are greater than one-half cubic metre in size and that require blasting or hoe-ram removal. Bedrock or boulders that can be removed with a standard excavator bucket are not considered rock removal.

400.28.2 Blasting Requirements

All blasting shall be performed by a competent, qualified blaster in accordance with OPSS 120. Blasting mats are required. A pre-blast survey meeting the requirements of OPSS 120 must be completed for any structure within 200m of any blasting. The cost for pre-blast survey shall be included in the tender price for rock removal.

400.28.3 Typical Sections and Pay Limits

For tile drains and road culverts, rock shall be removed to 150mm below the proposed grade shown on the profile so that pipes are not in direct contact with rock. The width of rock removal shall be 1m minimum or the diameter of the pipe plus 600mm.

For open drains, rock removal shall match the proposed grade and bottom width shown on the Drawings. Side slopes shall be vertical or sloped outward. Side slopes shall be free of loose rock when excavation is completed.

Payment for the quantity of rock removed will be based on the typical sections described in these specifications and confirmed by field measurements. There will be no payment for overbreak.

400.28.4 Disposal of Rock

Excavated rock shall be piled at the edge of the working area at locations designated by the landowner. The cost to pile excavated rock shall be included in the tender price for rock removal. If the Special Provisions or the landowner require excavated rock to be hauled away, additional payment will be considered.

Where approved by the Engineer, excavated rock may be used in place of imported riprap.

400.29 SEEDING

400.29.1 General

Contractor responsible for re-seeding as necessary for uniform catch during warranty period.
Areas that remain grassed after construction may not need to be seeded unless directed otherwise by the Engineer.

400.29.2 Drainage Works and Road Allowances

All disturbed ditch banks, berms and road allowances are to be seeded at the end of the day.

The following seed mixture shall be applied at 60kg/ha using a mechanical (cyclone) spreader:

- 35% Creeping Red Fescue
- 25% Birdsfoot Trefoil
- 25% Kentucky Bluegrass
- 10% Cover Crop (Oats, Rye, Barley, Wheat)
- 5% White Clover

Provide temporary cover for late fall planting by adding an additional 10 kg/ha of rye or winter wheat.

400.29.3 Hydroseeding

Where hydroseeding is specified, disturbed areas will be restored by the uniform application of a standard roadside mix, fertilizer, mulch and water at a rate of 2,000 kg/ha and be in accordance with OPSS 804.

400.29.4 Seeding Lawns

Unless specified otherwise, lawn areas shall be seeded with Canada No. 1 lawn grass mixture applied at 300 kg/ha using a mechanical (cyclone) spreader on 100mm of topsoil. Fertilizer shall be 5:20:20 or 10:10:10 applied at 300 kg/ha. Seed and fertilizer shall be applied together. Contractor shall arrange for watering with landowners.

400.29.5 Sod

Where sod is specified, sod is to be commercial grade turfgrass nursery sod, Kentucky Bluegrass placed on 50mm of topsoil. Fertilizer shall be 5-20-20 applied at 10kg/ha. Place sod in accordance with supplier instructions. Contractor is responsible for saturating the sod with water on the day of sod placement. Subsequent watering is the responsibility of the landowner.

400.30 EROSION CONTROL BLANKETS

Erosion Control Blankets (ECB) shall be biodegradable and made of straw/coconut (Terrafix SC200, Nilex SC32 or equal) or coconut (Terrafix C200, Nilex C32 or equal) with photodegradable, double net construction. The blanket and the staples shall be supplied and installed as per OPSS 804.

Erosion control blanket shall be placed and stapled into position as per the manufacturer's installation instructions on slopes as directed by the Engineer. Blankets shall be installed in direct contact with the ground surface to form a uniform, cohesive mat over the seeded earth area. The blankets are to be single course with 150mm overlap between blankets and joints are to be staggered. The Contractor shall ensure that the ECB is anchored to the soil and that tenting of the ECB does not occur.

On slopes, when the ECB cannot be extended 1m beyond the crest of the slope, the uppermost edge of the ECB shall be anchored in a 150mm wide by 150mm deep trench. The trench shall be backfilled with earth and compacted.

400.31 SEDIMENT CONTROL

400.31.1 General

Contractor shall install sediment control features at the downstream limits of the project and at other locations as shown on the drawings or directed by the Engineer.

Sediment control features shall be installed prior to any excavation taking place upstream of that location. The Contractor shall maintain all sediment control features throughout construction and the warranty period.

Sediment that accumulates during construction shall be removed and levelled as required.

400.31.2 Flow Check Dams

400.31.2.1 *Temporary Straw Bale Flow Check Dam*

The straw bale flow check dam shall consist of a minimum of 3 bales. Each bale is to be embedded at least 150mm into the channel bottom and shall be anchored in place with 2 T-bar fence posts or 1.2m wooden stakes driven through the bale.

Straw bales shall be hauled away at the end of the warranty period. Accumulated sediments shall be excavated and levelled when the temporary straw bale flow check dam is removed.

400.31.2.2 *Temporary Rock Flow Check Dam*

The temporary rock flow check dam shall extend to the top of the banks so that dam overtopping does not cause bank erosion. Rock shall be embedded a minimum of 150mm into the ditch bottom and banks. No geotextile is required for temporary rock flow check dams.

Accumulated sediments shall be excavated and levelled when the temporary rock flow check dam is removed at the conclusion of the warranty period.

400.31.2.3 *Permanent Rock Flow Check Dam*

The requirements of temporary rock flow check dams shall apply except rock shall be placed on geotextile and the dam shall remain in place permanently.

400.31.3 Sediment Traps

400.31.3.1 *General*
The channel bottom shall be deepened in accordance with the dimensions provided in the Drawings or Special Provisions. If dimensions are not specified on the Drawings, the sediment trap shall be excavated within the channel cross-section at least 0.3m below the design grade.

The Contractor will monitor the sediment trap during construction and cleanout accumulated sediments as required to maintain the function of the sediment trap.

If specified to be temporary, no sediment trap maintenance is required after construction is complete.

If specified to be permanent, the contractor will clean out the sediment trap at the conclusion of the warranty period, unless directed otherwise by the Engineer.

400.31.3.2 *Sediment Trap with Flow Check Dam*
A permanent rock sediment trap shall include a permanent sediment trap and a rock flow check dam.

A temporary rock/straw sediment trap shall include a temporary sediment trap and a rock/straw flow check dam.

400.31.4 Turbidity Curtains
A turbidity curtain is required when there is permanent water level/flow and a sediment trap is not feasible.

Turbidity curtains shall be in accordance with OPSS 805 and installed per manufacturer's instructions.

Turbidity curtains shall be sized and anchored to ensure the bottom edge of the curtain is continuously in contact with the waterbody bed so that sediment passage from the enclosed area is prevented. The curtain must be free of tears and capable of passing the base flow from the drainage works. Turbidity curtain locations may be approved by the Engineer.

Turbidity curtains are to remain functional until work in the enclosed area is completed. Prior to relocating or removing turbidity curtains, accumulated sediment is to be removed from the drain and levelled.

Where a turbidity curtain remains in place for more than two weeks it shall be inspected for damage or clogging and replaced, repaired or cleaned as required.

400.31.5 Silt Fence
Silt fence shall be in accordance with OPSS 805.07.02.02 and OPSD 219.110 (light-duty).

400.32 GRASSED WATERWAYS AND OVERFLOW SWALES

Grassed waterways and overflow swales typically follow low ground along the historic flow route. The cross-section shall be saucer shaped with a nominal 1m bottom width, 8:1 side slopes and 300mm depth unless stated otherwise in the Special Provisions.

All grassed waterways are to be permanently vegetated. Grassed waterways shall be seeded with the following permanent seed mixture: 50% red fescue, 45% perennial ryegrass and 5% white clover, broadcast at 80 kg/ha. Fertilizer to be 7-7-7 applied at 80 kg/ha.
Provide temporary cover for late fall planting by adding an additional 10 kg/ha of rye or winter wheat.

Overflow swales may be cropped using conventional farming practice.

400.33 BUFFER STRIPS

Open drains shall include minimum 3m wide, permanently vegetated buffer strips on each side of the drain. Catchbasins shall include a minimum 1m radius, vegetated buffer strip around the catchbasin.

Cultivation of buffer strips using conventional farming practice may be undertaken, provided sediment transport into the drain is minimized.

400.34 MAINTENANCE CORRIDOR

The maintenance corridor along the route of the drain, as established in the report, shall be kept free of obstructions, ornamental vegetation and structures. When future maintenance is undertaken, the cost of removing such items from the corridor shall be assessed to the landowner.

400.35 POLLUTION

The Contractor shall keep their equipment in good repair. The Contractor or any landowner shall not spill or cause to flow any polluted material into the drain that is not acceptable to the MECP. The local MECP office and the Engineer shall be contacted if a polluted material enters the drain. The Contractor shall refill or repair equipment away from open water. If the Contractor causes a spill, the Contractor is responsible to clean-up the spill in accordance with MECP clean-up protocols.

400.36 SPECIES AT RISK

If a Contractor encounters a known Species At Risk designated by the MECP, MNRF or DFO, the Contractor shall notify the Engineer immediately and follow the Ministry's guidelines for work around the species.

410 STANDARD SPECIFICATIONS FOR OPEN DRAINS

TABLE OF CONTENTS

410.1 DESCRIPTION

Work under this item shall include the supply of labour, equipment and materials required for: channel excavation to the cross-section specified, leveling or disposal of all excavated material (spoil) as directed, reconstruction of all intercepted drains as required and any other items related to open drain construction as required by the Schedule of Tender Prices, Special Provisions or the Drawings.

410.2 MATERIALS

Refer to Section 400, Standard Specifications for Drain Construction for any materials required for open drain construction.

410.3 CONSTRUCTION

410.3.1 Excavation

The bottom width and the side slopes of the ditch shall be as shown on the profile drawing. If the channel cross-section is not specified in the Special Provisions it shall be a 1m bottom width with 1.5m horizontal to 1m vertical (1.5:1) bank slope. At locations along the drain where the specified side slopes change there shall be a transitional length of not less than 5m between the varying side slopes. At locations along the drain where the specified bottom width changes there shall be a transitional length of not less than 5m. In all cases there shall be a smooth transition between changes in any part of the channel cross-section. Where the bottom width of the existing ditch matches the specified bottom width, ditch excavation shall be completed without disturbing existing banks.

410.3.2 Low Flow Channels

Unless specified otherwise in the Special Provisions, all intermittent open drains with a bottom width greater than 1.8m and a grade less than 0.07%, shall have a low flow channel. The bottom of the low flow channel shall be the grade shown on the profiles.

The low flow channel shall have a U-shaped cross-section with an average top width of 0.5m and a minimum depth of 0.3m. The low flow channel will not be seeded and may meander along the main channel bottom provided it remains at least .3m from the toe of main channel bank slope.

410.3.3 Line

The drain shall be constructed according to the alignment shown on the drawings or shall follow the course of the existing ditch. All bends shall have a minimum inside radius of 2m. There shall be a smooth transition between changes in the channel alignment. The Contractor shall contact the Engineer before removing any bends or irregularities in an existing ditch.

410.3.4 Grade Control

The profile shows the grade line for the bottom of the ditch. Cuts may be shown on the profile from the existing top of bank and/or from the existing ditch bottom to the new ditch bottom. These cuts are shown for the convenience of the Contractor and are not recommended for quantity estimate or grade control. Accurate grade control must be maintained by the Contractor during ditch excavation. The ditch bottom elevation should be checked every 50 metres and compared to the elevation on the profile.

Benchmarks are identified on the Contract Drawings. The Engineer will confirm all benchmark elevations prior to construction.

410.3.5 Variation from Design Grade

A variation of greater than 25mm above the design grade line may require re-excavation. Excavation below design grade up to 150mm is recommended so that sediment accumulation during or following excavation will not place the ditch bottom above the design grade at completion. Under some circumstances the Engineer may direct that over excavation greater than 200mm will have to be backfilled. No additional payment will be made if backfilling is required to remedy over excavation.

410.3.6 Excavated Material

Excavated material (spoil) shall be deposited on either or both sides of the drain within the specified working area as directed in the Special Provisions. The Contractor shall verify the location for the spoil with each landowner before commencing work on their property. If not specified, spoil shall be placed on the low side of the ditch or opposite trees and fences. The spoil shall be placed a minimum 1m from the top of the bank. No excavated material shall be placed in tributary drains, depressions, or low areas such that water is trapped behind the spoil bank. Swales shall be provided through the leveled or piled spoil at approximately 60m intervals to prevent trapping water behind the spoil bank.

The excavated material shall be placed and leveled to a maximum depth of 250mm; unless otherwise instructed. If excavating more than 450mm topsoil shall be stripped, stockpiled separately and replaced over the leveled spoil, unless stated otherwise in the Special Provisions. The edge of the spoil bank furthest from the ditch shall be feathered down to existing ground. The edge of the spoil bank nearest the ditch shall have a maximum slope of 2:1. The material shall be leveled such that it may be cultivated with conventional equipment without causing undue hardship on farm machinery.

Wherever clearing is necessary prior to leveling, the Contractor shall remove all stumps and roots from the working area. No excavated material shall cover any logs, brush or rubbish of any kind. Large stones in the leveled spoil that are greater than 300mm in diameter shall be moved to the edge of the spoil bank nearest to the ditch but in general no closer than 1m to the top of bank.

Lateral channels that outlet into the drain shall be tapered over a distance of 10m to match the grade of drain excavation. No additional payment will be made for this work.

Where the elevation difference between the lateral channel and the drain is greater than 450mm, a rock chute or similar bank protection approved by the Engineer shall be provided. Additional payment may be allowed for this work.

Where it is specified to straighten any bends or irregularities in the alignment of the ditch or to relocate any portion of an existing ditch, the excavation from the new cut shall be used for backfilling the original ditch. Regardless of the distance between the new ditch and old ditch, no additional payment will be allowed for backfilling the existing ditch.

The Contractor shall contact the Engineer if a landowner indicates in writing that spoil on the owner's property does not need to be leveled. The Engineer may release the Contractor from the obligation to level the spoil and the Engineer shall determine the credit to be applied to the Contractor's payment. No additional compensation is provided to the owner if the spoil is not leveled.

The Engineer may require the Contractor to obtain written statements from any or all of the landowners affected by the leveling of the spoil. Final determination on whether or not the leveling of spoil meets the specification shall be made by the Engineer.

410.3.7 Excavation at Existing Bridge and Culvert Sites

The Contractor shall excavate the drain to the specified depth under all bridges and to the full width of the structure unless specified otherwise in the Special Provisions. All necessary care and precautions shall be taken to protect permanent structures. Temporary bridges may be removed and left on the bank of the drain. In cases where the design grade line falls below the top of footings, the Contractor shall take care to not over-excavate below the grade line. The Contractor shall notify the Engineer if excavation of the channel exposes the footings of the bridge or culvert, so the Engineer can make an evaluation.

The Contractor shall clean through all pipe culverts to the grade line and width specified on the profile. The Contractor shall immediately contact the Engineer after a culvert cleanout if it is found that the culvert bottom is above the grade line or where the structural integrity of the culvert is questionable.

Material resulting from cleanout through bridges or culverts shall be levelled on the adjacent private lands or hauled offsite at the expense of the bridge/culvert owner.

410.3.8 Bridges and Culverts

The size and material for any new ditch crossings shall be as outlined in the Special Provisions.

For culvert installation instructions, refer to the General Specifications for Drain Construction and the Drawings.

Any crossings assembled on-site shall be assembled in accordance with the manufacturer's specifications.

If directed on the drawings that the existing crossing is to be salvaged for the owner, the Contractor shall carefully remove the existing crossing and place it beside the ditch or haul to a location as specified by the owner. If the existing crossing is not to be saved then the Contractor shall remove and dispose of the existing crossing. Disposal by burying on-site must be approved by the Engineer and the owner.

All new pipe crossings shall be installed at the invert elevations as specified on the Drawings, usually a minimum of 50mm below design grade. If the ditch is over excavated greater than 200mm below design grade the Contractor shall confirm with the Engineer the elevations for installation of the new pipe crossing.

For backfill and surface restoration, refer to the General Specifications for Drain Construction and the Drawings.

Installation of private crossings during construction must be approved by the Engineer.

410.3.9 Obstructions

All trees, brush, fallen timber and debris shall be removed from the ditch cross-section and as required for spreading of the spoil. The roots shall be left in the banks if no bank excavation is required as part of the new channel excavation. In wooded or heavily overgrown areas all cleared material may be pushed into piles or rows along the edge of the cleared path and away from leveled spoil. All dead trees along either side of the drain that may impede the performance of the drain if allowed to remain and fall into the ditch, shall be removed and put in piles, unless directed otherwise by the Engineer.

410.3.10 Tile Outlets

The location of all existing tile outlets may not be shown on the profile for the drain. The Contractor shall contact each owner and ensure that all tile outlets are marked prior to commencing excavation on the owner's property. If a marked tile outlet or the tile upstream is damaged due to construction, it shall be replaced at the Contractor's expense. Additional payment will be allowed for the repair or replacement of any unmarked tile outlets encountered during excavation. In all cases, if an existing tile outlet requires replacement the Contractor shall confirm the replacement tile outlet with the Engineer. Where riprap protection exists at any existing tile outlet such protection shall be removed and replaced as necessary to protect the outlet after reconstruction of the channel.

If any tile outlet becomes plugged as a result of construction, the Contractor shall remove the obstruction.

410.3.11 Completion

At the time of final inspection, all work in the contract shall have the full dimensions and cross-sections specified.

420 STANDARD SPECIFICATIONS FOR TILE DRAINS

TABLE OF CONTENTS

420 STANDARD SPECIFICATIONS FOR TILE DRAINS

420.1 DESCRIPTION

Work under this specification will consist of supplying, hauling, laying and backfilling subsurface drainage conduit with the conduit materials as described on the Drawings and in the location, depth and invert grade as shown on the Drawings. In this specification the word "tile" will apply to all described conduit materials. Lengths are in millimeters (mm) and meters (m).

The work shall include the supplying of all labour, tools, equipment and extra materials required for the installation of the tile; the excavation and backfilling of the trenches; the hauling, handling, placing and compaction of the excavated material for backfill, the loading, hauling, handling and disposal of surplus excavation material; the removal and replacing of topsoil and sod where required by the Engineer.

All existing laterals crossed by the new line shall be reconnected in an approved manner. Either special manufactured connections shall be used or another method of sealing connections as approved by the Engineer. The Contractor shall also construct catchbasins, junction boxes and other structures where directed by the Engineer.

Except where complete removal of an existing pipe is required by new construction, existing pipes to be abandoned shall be sealed with a concrete or mortar plug with a minimum length of 300mm to the satisfaction of the Engineer.

Sections 6 and 7 of the current version of the *Drainage Guide for Ontario*, OMAFRA Publication 29 shall provide a general guide to all methods and materials to be used in the construction of tile drains except where superseded by this Contract.

The licensing requirements of the *Agricultural Tile Drainage Installation Act, 1990* will not be applicable to this Contract unless specified otherwise by this Contract.

420.2 MATERIALS

Refer to Section 400, Standard Specifications for Drain Construction for any materials required for tile drain construction.

420.3 CONSTRUCTION

420.3.1 Outlet

A tile drain outlet into a ditch or creek shall be protected using a 6m length of rigid pipe with a hinged grate for rodent protection. Maximum spacing between bars on the rodent grate shall be 50mm. Material for rigid pipe will be specified in the Special Provisions, plastic pipe is preferred. The joint between the rigid pipe and the tile drain shall be wrapped with filter fabric. All outlets will be protected with rock riprap to protect the bank cut and as a splash apron. In some locations riprap may also be required on the bank opposite the outlet. The quantity of riprap required will be specified in the Special Provisions. A marker stake as approved by the Engineer shall be placed at each tile outlet.

420.3.2 Line

The Engineer will designate the general location of the new drain. A landowner may indicate a revised location for the drain which must be approved by the Engineer. Where a change in alignment is required that is not accommodated in a catchbasin, junction box or similar structure the alignment change shall run on a curve with a radius not less than the minimum installation radius specified for the tile material.

The Contractor shall exercise care to not disturb any existing tile drains which parallel the course of the new drain, particularly where the new and existing tile act together to provide the necessary capacity. Where an existing tile is disturbed or damaged the Contractor shall perform the necessary correction or repair with no additional compensation.

NOTE: It is the Contractor's responsibility to ascertain the location of, and to contact the owners of all utility lines, pipes and cables in the vicinity of drain excavations. The Contractor shall be completely responsible for all damages incurred.

420.3.3 Grade Control

Tile is to be installed to the elevation and grade shown on the profiles. Accurate grade control must be maintained by the Contractor at all times during tile installation. The tile invert elevation should be checked every 50m and compared to the elevation on the profile.

Benchmarks are identified on the Contract Drawings. The Engineer will confirm all benchmark elevations prior to construction.

420.3.4 Variation from Design Grade

No reverse grade will be allowed. A small variation in grade can be tolerated where the actual capacity of the drain exceeds the required capacity. The constructed grade should be such that the drain will provide the capacity required for the drainage area. Constructed grade should not deviate from design grade by more than 10% of the internal diameter for more than 25m. Grade corrections shall be made gradually over a distance not less than 10m.

420.3.5 Installation

At each work stoppage, the exposed end of the tile shall be covered by a tight fitting board or metal plate. No installed tile shall be left exposed overnight. Any tile damaged or plugged during construction shall be replaced or repaired at the Contractor's expense.

Topsoil over the trench shall be stripped, stockpiled separately and replaced after the trench is backfilled. Where installation is across a residential lawn, existing sod over the trench shall be cut, lifted and replaced in a workmanlike manner or new sod laid to match pre-construction conditions.

420.3.5.1 Installation of Concrete Tile

Concrete tile shall be installed by a wheel trencher unless an alternate method of construction is noted on the Drawings.

Digging of the trench shall start at the outlet end and proceed upstream. The location and grade shall be as shown on Drawings but shall be liable to adjustment or change by the Engineer on site with no additional payment allowed except where the change involves increased depth of cut beyond the limitation of the wheel trencher in use at the time of the change. The trench width measured at the top of the tile should be at least 150mm greater than the tile diameter.

The bottom of the trench is to be cut accurately to grade and shaped so that the tile will be embedded in undisturbed soil or in a compacted bed at least for 10% of its overall height. Where hard shale, boulders or other unsuitable bedding material is encountered, the trench shall be excavated to 75mm below grade and backfilled with granular material compacted to a shaped, firm foundation. If the trench is overcut below the proposed grade, it is to be backfilled with granular material to the correct grade and compacted to a shaped, firm foundation.

Where the depth for the tile installation exceeds the depth capacity of the wheel trencher the Contractor shall excavate a trench of sufficient depth so that the wheel trencher can install the tile at the correct depth

and grade. The tender price shall include the cost of the additional excavation and backfilling and stripping and replacing topsoil over the trench.

The inside of the tile is to be kept clean during installation. All soil and debris should be removed before the next tile is laid. Maximum spacing at joints between tiles should be about 3mm. Directional changes can be made without fittings or structures provided the centre-line radius of the bend is not less than 15m radius. The tiles are to be beveled, if necessary, to ensure close joints on all bends.

All tile joints and connections with other pipe materials are to be fully and tightly wrapped with a minimum 300mm width of geotextile drain wrap. A 150mm overlap on top is required. No additional payment will be made for joint wrapping.

420.3.5.2 Installation of Corrugated Plastic Tubing

Corrugated plastic tubing shall be installed by a drainage plow or wheel trencher unless an alternate method of construction is specified on the Drawings. For other installation methods, proper bedding and backfill is required to maintain the structural integrity of the plastic tubing so that surface and earth loads do not deflect the tubing by more than 20% of its nominal diameter.

For all installation methods:

- the plastic tubing should not be stretched by more than 7% of its normal length
- protect tubing from floating off grade when installing in saturated soil conditions
- directional changes can be made without fittings provided the centre-line radius of the bend is not less than five times the tubing diameter

Drainage plow equipment should construct a smooth bottomed opening in the soil and maintain the opening until the tubing is properly installed. The size of the opening in the soil should conform closely to the outside diameter of the tubing.

420.3.5.3 Installation of Concrete Sewer Pipe or Plastic Pipe

The Contractor may install pipe using a wheel trencher. For concrete sewer pipe, the bells must be recessed.

The Contractor may install pipe using an excavator by shaping the bottom of the trench to receive and support the pipe over 10% of its diameter if the trench is backfilled with native material. Shaping the trench bottom is not required where 150mm of granular bedding is placed to the satisfaction of the engineer.

420.3.6 Backfilling

All tile should be blinded by the end of the day's work to protect and hold them in place against disturbances. After tile is inspected, it shall initially be backfilled with a minimum cover of 300mm.

For blinding and initial backfilling use clean native soil with no organic matter. Initial backfill shall be tamped around the pipe by backhoe bucket or similar if directed by the Engineer.

The tile shall be backfilled with native material such that there is a minimum cover of 600mm. In addition, a sufficient mound must be placed over the trench to ensure that no depression occurs after settling along the trench.

420.3.7 Tile Connections

All lateral drains encountered along the route of the new tile drain are to be connected to the new drain if the intercepted tile are clean and do not contain polluted water. Lateral drains that are full of sediments or contain polluted waters will be addressed by the Engineer at the time of construction. All lateral drains are to be connected to the new tile using a pipe material and size that will provide the same flow capacity as the existing lateral drain unless a different connection is described in the Special Provisions. Corrugated plastic tubing can be used for all tile connections. Tubing can be solid or perforated, filter sock is not required.

Contractor is responsible for installation and backfilling in a manner than maintains the structural integrity of the connection. Manufactured fittings should be used to ensure tight connections. Where an opening must be made in the new tile drain for a connection, the opening shall be field cut or cored. After the opening is cut in the new tile any gaps or voids around the connection shall be sealed with mortar, low-expanding spray foam or geotextile. Lateral tubing shall not protrude more than 25mm beyond the inside wall of the new tile drain. The Contractor shall ensure than any material used to seal the connection does not protrude beyond the inside wall of the new tile drain.

All connections that are described in the Special Provisions are considered to be part of the original Contract price. For all other connections the Contractor will be paid in accordance with the price established in the Schedule of Tender Prices. The Contractor must list all connections on the Lateral Connection Summary sheet, if included in the Special Provisions, in order to qualify for payment. The Lateral Connection Summary sheet describes all tile encountered based on location (station), side of trench, size and type of tile and approximate length and type of material used for the connection.

420.3.8 Stones and Rock

The Contractor shall immediately contact the Engineer if bedrock or stones of sufficient size and number are encountered such that installation by wheel trencher cannot continue. The Engineer may direct the Contractor to use some other method of excavation to install the tile. The basis of payment for such extra work shall be determined by the Engineer. Stones greater than 300mm in diameter that are removed during excavation shall be disposed of by the Contractor at an offsite location. No additional payment for excavating or hauling these stones will be provided.

420.3.9 Brush, Trees and Debris

Unless stated otherwise in the Special Provisions, the following requirements shall apply for installation of a tile drain in a wooded area. The Contractor will clear and grub a minimum corridor width of 30m centered on the tile drain alignment. The resulting debris shall be placed in a windrow along the edge of the working area. No additional payment will be made for such work.

420.3.10 Subsoil Instability

If poor subsoil conditions are encountered during tile installation by wheel trencher an attempt shall be made to install the tile with a continuous geotextile underlay in the trench bottom. The cost of the underlay, if approved by the Engineer, will be paid as an extra. If the continuous geotextile underlay is not sufficient then the tile will be installed by backhoe or excavator on a bedding of 19mm clear crushed stone (300mm depth) to achieve trench bottom stability for the new tile. If approved, the above work will be paid based on the unit price provided on the Form of Tender. The unit price shall include the cost to supply and place the stone. If more than 300mm depth of stone is required for bottom stability, additional payment will be allowed for the additional depth of stone. The additional quantity of stone shall be supported by weigh tickets and the suppliers invoice.

If poor subsoil conditions are encountered during tile installation by backhoe or excavator, the tile shall be installed on stone bedding as noted above. For this installation only the material cost of the stone will be paid as an extra. Supply of stone and cost to be supported by weigh tickets and supplier's invoice.

If the subsoil is a fine grained soil it may necessary to place the stone on a geotextile with the geotextile wrapped over the stone before laying the tile. Additional payment will be allowed to supply and install the geotextile.

420.3.11 Broken or Damaged Tile

The Contractor shall dispose of all damaged or broken tile and broken tile pieces off-site.

420.3.12 Excess Tile

All excess tile shall be removed from the job site.

420.3.13 Catchbasins

420.3.13.1 General

All catchbasins shall have minimum inside dimensions matching the dimensions shown on the Drawings. Contractor is responsible for ordering catchbasins to match the inlet and outlet connections and top elevations required by the Special Provisions and the Drawings.

420.3.13.2 Materials

Requirements in this section apply to catchbasins in non-travelled locations. Where catchbasins are proposed for travelled locations, refer to the Special Provisions and the Drawings for applicable OPSD information.

Precast concrete catchbasins shall be manufactured by as Coldstream Concrete or approved equal. Minimum wall thickness for catchbasins without reinforcement is 150mm and with reinforcement 100mm. The joints between precast catchbasin sections shall be protected with geotextile to prevent soil material from entering into the catchbasin. Joint protection using mortar or water tight barrier is also acceptable. Grates are to be birdcage grates as manufactured by Coldstream Concrete or approved equal unless specified otherwise on the Drawings. All grates to be secured with corrosion resistant hardware.

HDPE catchbasins shall be as fabricated by ADS, Armtec, Hancor or approved equal. Steel catchbasins shall be the Heavy Duty Steel Catch Basin as manufactured by AgriDrain or approved equal. PVC catchbasins shall be Nyloplast as manufactured by ADS or approved equal. HDPE, steel and PVC catchbasins shall be supplied with integral stubouts fabricated by the manufacturer and sized according to the pipe connections shown on the Drawings. Grates for HDPE, steel or PVC catchbasins shall be in accordance with the Special Provisions and manufacturer recommendations.

Marker stakes as supplied by Coldstream Concrete or equal are to be placed beside each catchbasin unless specified otherwise on the Drawings.

420.3.13.3 Installation

All tile or pipe connected to concrete catchbasins shall be mortared or secured in place so that no gaps remain at the connection. Mortar is to be applied on both the inside and outside wall surfaces.

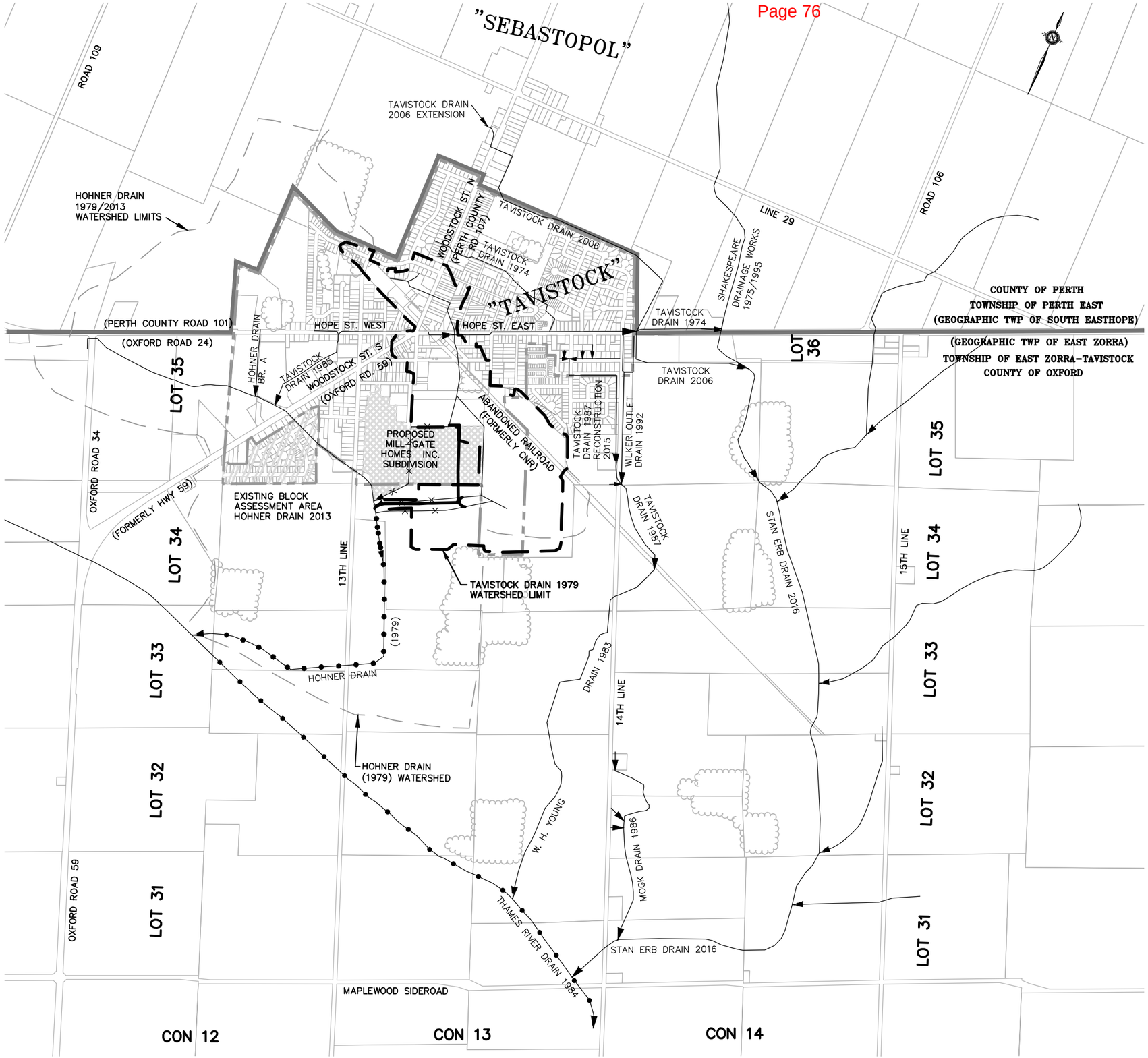
Backfill around all new catchbasins is recommended to be 19mm clear crushed stone to avoid future settlements. The Contractor shall be responsible for backfilling all settlement areas around catchbasins during the contract warranty period. No additional payment will be provided for adding backfill to settlement areas around catchbasins.

All catchbasin sumps to be fully cleaned by the Contractor after completion of drain installation and backfilling.

420.3.14 Junction Boxes

Junction boxes shall be precast concrete to the same specification as above for catchbasins except that the junction box shall have a solid lid. The lid shall be a minimum of 125mm thick with wire mesh reinforcement and 2 lifting handles. The top of the junction box should have a minimum ground cover of 450mm.

THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.



PLAN LEGEND

- — MAJOR WATERSHED
- — TAVISTOCK DRAIN 1979 PROPOSED MAIN DRAIN RECONSTRUCTION 2021
- — OTHER EXISTING MUNICIPAL DRAINS
- — EXISTING MUNICIPAL DRAIN AFFECTED FOR MAINTENANCE
- — LIMITS BETWEEN TOWNSHIP OF EAST ZORRA-TAVISTOCK AND TOWNSHIP OF PERTH EAST AND ALSO BETWEEN COUNTY OF OXFORD AND COUNTY OF PERTH
- — LIMITS OF EXISTING BLOCK ASSESSMENT AREA FOR TAVISTOCK IN THAMES RIVER DRAIN 2013 REPORT
- — PROPOSED MILL-GATE HOMES INC. SUBDIVISION AND AREA TO BE REVISED TO THE EXISTING TAVISTOCK BLOCK ASSESSMENT AREA FOR THAMES RIVER DRAIN 1984/2013
- — BLOCK ASSESSMENT AREA FOR THAMES RIVER DRAIN 1984/2013 AND FOR HOHNER DRAIN 2013

DESIGNED BY:	C.J.M.
CHECKED BY:	K.A.S.
DRAWN BY:	N.M.B.
CHECKED BY:	K.A.S.
REVIEWED BY:	H.A.W.

LICENSED PROFESSIONAL ENGINEER
C. J. MACINTYRE
100507574
DEC. 17, 2021
PROVINCE OF ONTARIO

SCALE
0 150 300m
(1:20,000 ON 11"x17")

TAVISTOCK DRAIN 1979 RECONSTRUCTION 2021

COUNTY OF OXFORD — TOWNSHIP OF EAST ZORRA-TAVISTOCK

OVERALL PLAN

DEC. 17, 2021

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
KITCHENER SUDBURY

REVISED:

JOB NUMBER: **18-270**

DRAWING 1 OF 12

COUNTY OF PERTH
TOWNSHIP OF PERTH EAST
(GEOGRAPHIC TWP OF SOUTH EASTHOPE)

(GEOGRAPHIC TWP OF EAST ZORRA)
TOWNSHIP OF EAST ZORRA-TAVISTOCK
COUNTY OF OXFORD

"TAVISTOCK"

TAVISTOCK DRAIN 2006

WOODSTOCK ST. N

(PERTH COUNTY RD 107)

TAVISTOCK DRAIN 1974

TAVISTOCK DRAIN 1974
RECONSTRUCTION 2019

JACOB ST. WEST

JACOB ST. EAST

1979 DRAIN
(10"-18")
(21")

(21")

TAVISTOCK DRAIN 1974

HOPE ST. EAST

BR. A (1979)

BRANCH A

TAVISTOCK DRAIN 2006

(PERTH COUNTY ROAD 101)
(OXFORD ROAD 24)

LOT 35

WILKER OUTLET DRAIN 1992

TAVISTOCK DRAIN 1987
RECONSTRUCTION 2015

BR. B (1979)

HENDERSHOT ST.

DECEW ST. EAST

WELLINGTON ST.

FISHER ST.

ROTH ST.

HOLLEY AVE.

(MAIN DRAIN)

HOPE ST. WEST

(ABANDONED RAILROAD FORMERLY CNR)

1961 DRAIN (2x14")

(010-09000)
THAMES VALLEY
DISTRICT SCHOOL
BOARD

(42")

2.37

0+807

0+803 P/L

MARIA ST.

0+859
[=20+54
AH'D 21+54]

2.60

0.91

0.3

ADAM ST.

SBM

WILLIAM ST. S

WOODSTOCK ST. S

(010-11305)
MILL-GATE HOMES INC.

0+513 P/L

BM#1

1961 (18")

(24")

0+425

1961 DRAIN

1919 DRAIN (16")

(050-13650)
COUNTY OF OXFORD

17.77

0+000

(1979)

(MAIN DRAIN)

BR. F

TAVISTOCK DRAIN 1987

LOT 34

14TH LINE

W. H. YOUNG DRAIN

1983

HOHNER DRAIN BR. A

TAVISTOCK DRAIN 1985

(OXFORD RD 59)

BLOCK
ASSESSMENT
AREA HOHNER
DRAIN 2013

WETTLAUFER ST.

HOHNER DRAIN

HOHNER
DRAIN 1979
WATERSHED
LIMITS

CON 12

CON 13

13TH LINE

ADDITIONAL AREA THAT WAS ADDED
TO TAVISTOCK BLOCK ASSESSMENT AREA
IN THAMES RIVER DRAIN 2013 REPORT

TAVISTOCK DRAIN 1979 WATERSHED LIMIT

THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILTIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

PLAN LEGEND

- — MAJOR WATERSHED
- — TAVISTOCK DRAIN 1979 PROPOSED MAIN DRAIN RECONSTRUCTION 2021
- — OTHER EXISTING MUNICIPAL DRAINS
- — EXISTING MUNICIPAL DRAIN AFFECTED FOR MAINTENANCE
- — EXISTING DRAIN TO BE ABANDONED/DESTROYED
- — LIMITS OF EXISTING BLOCK ASSESSMENT AREA FOR TAVISTOCK IN THAMES RIVER DRAIN 2013 REPORT
- — LIMITS BETWEEN TOWNSHIP OF EAST ZORRA-TAVISTOCK AND TOWNSHIP OF PEARTH EAST AND BETWEEN COUNTY OF OXFORD AND COUNTY OF PERTH
- (010-113-05) — ASSESSMENT ROLL NUMBER
- **0+820** — 2019 SURVEY STATIONS (METRIC)
- **[21+40]** — 1979 STATIONS (FEET)
- BM#1 — BENCHMARK LOCATION AND No.

SBM (SITE BENCHMARK)
SIB LOCATED ON SOUTH SIDE OF EXISTING ADAM STREET RIGHT-OF-WAY, AT NORTHEAST CORNER OF MUNICIPAL ADDRESS #53 ADAM STREET.
WAS ESTABLISHED SITE BENCHMARK REFERENCING CANADIAN GEODETIC DATUM REFERENCE 1928 (CGDV28(HTv2))
THROUGH GPS OBSERVATION USING THE CANNET NETWORK.
N 4796156.550, E 513204.793
ELEV. 342.971m

BM#1
NAIL IN SOUTH SIDE OF "NO TRESPASSING" FENCE POST ON EAST TO WEST P/L HALF WAY BETWEEN SCHOOL AND TAVISTOCK SEWAGE TREATMENT LAGOONS.
N 4795847.839, E 513738.710
ELEV. 336.637m

NOTE:
ALL ROLL NUMBERS BEGIN WITH 32-38-020-
i.e. 010-090-00 IN FULL IS 32-38-020-010-090-00

DESIGNED BY:	C.J.M.
CHECKED BY:	K.A.S.
DRAWN BY:	N.M.B.
CHECKED BY:	K.A.S.
REVIEWED BY:	H.A.W.

LICENSED PROFESSIONAL ENGINEER
C. J. MACINTYRE
100507574
DEC. 17, 2021
PROVINCE OF ONTARIO

SCALE
0 75 150m
(1:7,500 ON 11"x17")

TAVISTOCK DRAIN 1979 RECONSTRUCTION 2021

COUNTY OF OXFORD — TOWNSHIP OF EAST ZORRA-TAVISTOCK

WATERSHED PLAN

DEC. 17, 2021

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
KITCHENER SUDBURY

REVISED:

JOB NUMBER: **18-270**

DRAWING
2 OF 12

ADAM STREET

SBM

LOT A

(TAVISTOCK & DISTRICT RECREATION CENTRE)

[=36+12 AH'D 26+67]

[25+31] (CB 34)

1981 DRAIN (2x14") (2x350mm)

TAVISTOCK DRAIN 1979 (EX. 42") (MAIN DRAIN) (1050mm)

PROPOSED 1200mm DIA. SRPE PIPE

0+881

10m R.O.W.

0+807

0+800

0+803 ℄

0+859

[=20+54 AH'D 21+54]

TAVISTOCK DRAIN 1979 (EX. 42") (1050mm)

BLOCK 153 PARK

STREET E

0+750

10m EASEMENT

BLOCK 157 MUNICIPAL DRAIN EASEMENT

(050-13650)

COUNTY OF OXFORD (EX. SEWAGE LAGOON CELL#1)

0+700

PROPOSED 1200mm DIA. SRPE PIPE

BLOCK 152 LIGHT INDUSTRIAL

0+650

0+600

0+550

12m EASEMENT

0+513 ℄

0+509

0+500

BM#1

Existing Forcemain Easement

EX. 600mmø LAGOON OUTLET

EX. 1961 DRAIN (24") (600mm)

EX. 1919 DRAIN (16") (400mm)

1961 (18") (450mm)

0+450

0+425

OUTLET 1961 DRAIN (24") (600mm) AND 1919 (16") (400mm) DRAIN IN NEW STILLING BASIN

PROPOSED SANITARY FORCEMAIN EASEMENT. RELOCATED BY OTHERS

EX. 150mm CONC.

PROPOSED SWM FACILITY

TAVISTOCK DRAIN 1979 (2x27")

Ex. Forcemain Easement To Be Relocated

STREET G

BLOCK 154

BLOCK 155

BLOCK 156

STREET H

STREET C

STREET A

STREET B

STREET D

STREET F

STREET G

WETTLAUFER STREET

MARIA STREET

WILLIAM STREET SOUTH

(050-11302) (TAVISTOCK COMMUNITY HEALTH)

(010-09000) THAMES VALLEY DISTRICT SCHOOL BOARD (TAVISTOCK PUBLIC SCHOOL)

(010-11305)

(050-13650) COUNTY OF OXFORD

[0+00]

0+000

EXISTING DITCH

PROPOSED DITCH

EXISTING LANEWAY

(050-13650) COUNTY OF OXFORD

NOTE:
PROPOSED SUBDIVISION SWM AREA STORM SEWER, PDC SERVICES, CB, ETC. ARE NOT PART OF THE DRAIN

NOTE:
PORTIONS OF THIS DRAWING ARE BASED ON THE PROPOSED SUBDIVISION DRAWINGS PROVIDED WITH PERMISSION FROM WALTERFEDY ENGINEERING DATED DEC. 7, 2021

SBM (SITE BENCHMARK)
SIB LOCATED ON SOUTH SIDE OF EXISTING ADAM STREET RIGHT-OF-WAY, AT NORTHEAST CORNER OF MUNICIPAL ADDRESS #53 ADAM STREET.
CANADIAN GEODETIC DATUM REFERENCE 1928 (CGDV28(HTv2))
N 4796156.550, E 513204.793
ELEV. 342.971m

BM#1
NAIL IN SOUTH SIDE OF FENCE POST ON EAST TO WEST ℄ HALF WAY BETWEEN T.P.S. AND TAVISTOCK SEWAGE TREATMENT LAGOONS. POST HAS "NO TRESPASSING" SIGN ATTACHED
N 4795847.839, E 513738.710
ELEV. 336.637m

PLAN LEGEND

- DRAIN WORK THIS REPORT
- EXISTING TAVISTOCK DRAIN 1979
- EXISTING DRAIN TO BE ABANDONED/DESTROYED/REMOVED
- LIMITS OF PROPOSED SUBDIVISION
- (010-113-05) — 2019 ASSESSMENT ROLL NUMBER
- 0+550 — 2019 SURVEY STATIONS (METRIC)
- [21+54] — 1979 STATIONS (FEET)
- BM#1 — BENCHMARK LOCATION AND No.
- EXTERNAL MAJOR FLOWS - GREATER THAN 10-YEAR STORM (PROPOSED TO BE DIVERTED AROUND SUBDIVISION IN DITCH -NOT PART OF DRAIN)

DESIGNED BY:	C.J.M.
DRAWN BY:	N.M.B.
CHECKED BY:	K.A.S.
REVIEWED BY:	H.A.W.

LICENSED PROFESSIONAL ENGINEER C. J. MACINTYRE 100507574 DEC. 17, 2021 PROVINCE OF ONTARIO

SCALE
0 25 50m
(1:2,500 ON 11"x17")

TAVISTOCK DRAIN 1979 RECONSTRUCTION 2021

COUNTY OF OXFORD — TOWNSHIP OF EAST ZORRA-TAVISTOCK

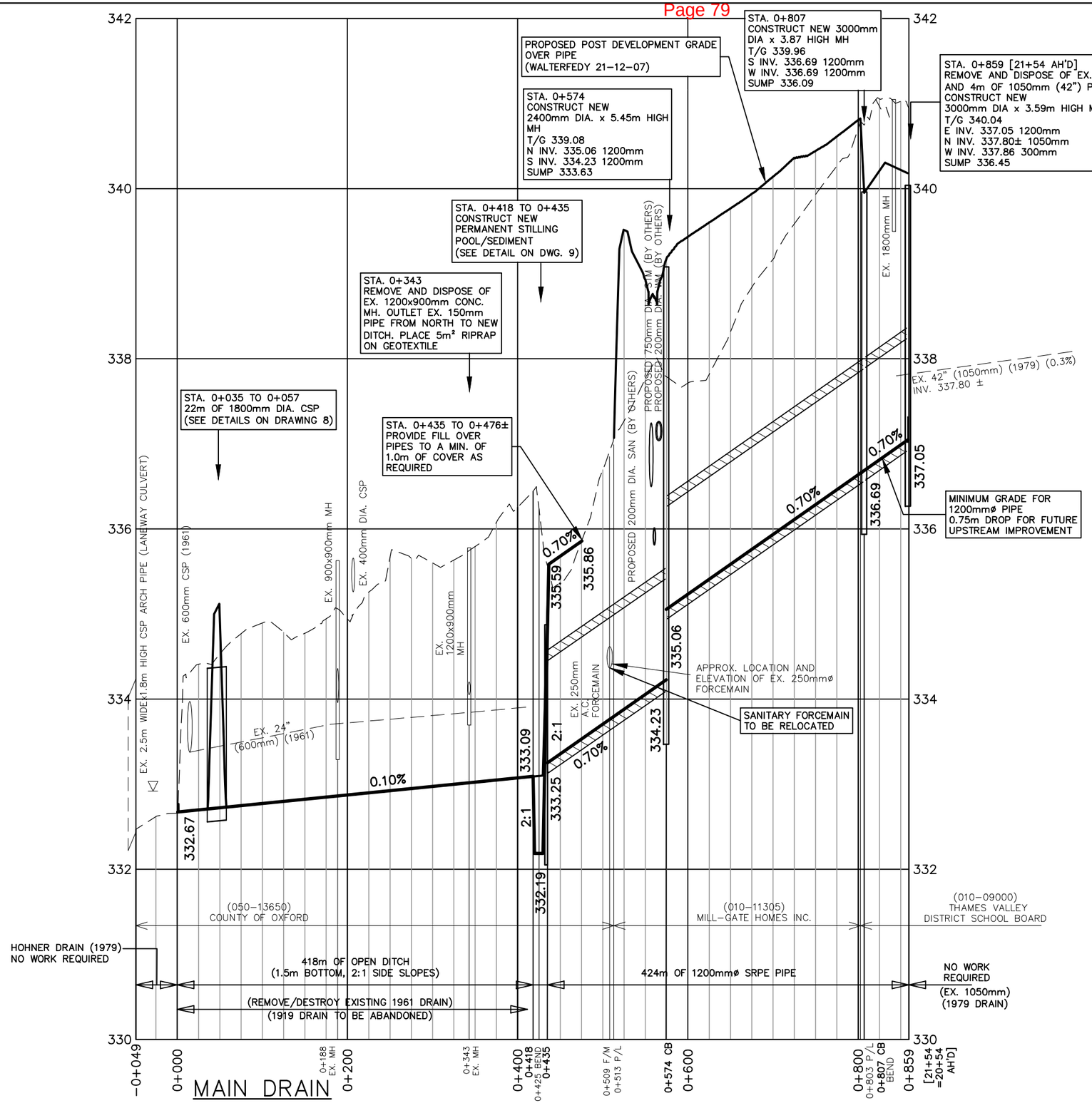
ENLARGEMENT PLAN

DEC. 17, 2021

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
KITCHENER — SUDBURY

REVISED:
JOB NUMBER: 18-270
DRAWING 3 OF 12

\\server\ksdata\Data\2018\18-270\Drafting\Final Report\PROFILE 18-270.dwg PLAN 17-Dec-21 1:15:34 PM



DESIGNED BY:	C.J.M.
DRAWN BY:	N.M.B.
CHECKED BY:	K.A.S.
REVIEWED BY:	H.A.W.

LICENSED PROFESSIONAL ENGINEER
C. J. MACINTYRE
100507574
DEC. 17, 2021
PROVINCE OF ONTARIO

SCALE
0 50 100m
(SCALE 1 : 5000)
HORZ.
0 0.5 1m
(SCALE 1 : 50)
VERT.
(ON 11"x17")

TAVISTOCK DRAIN 1979 RECONSTRUCTION 2021

COUNTY OF OXFORD — TOWNSHIP OF EAST ZORRA-TAVISTOCK

MAIN DRAIN PROFILE

DEC. 17, 2021

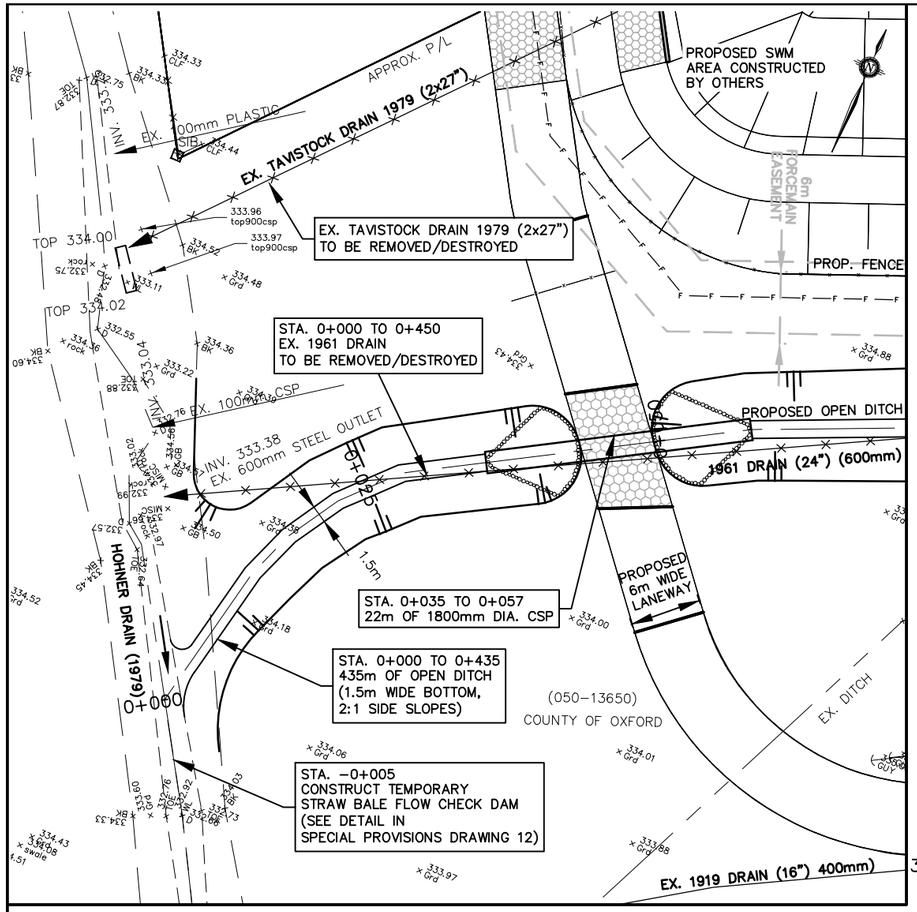
K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
KITCHENER — SUDBURY

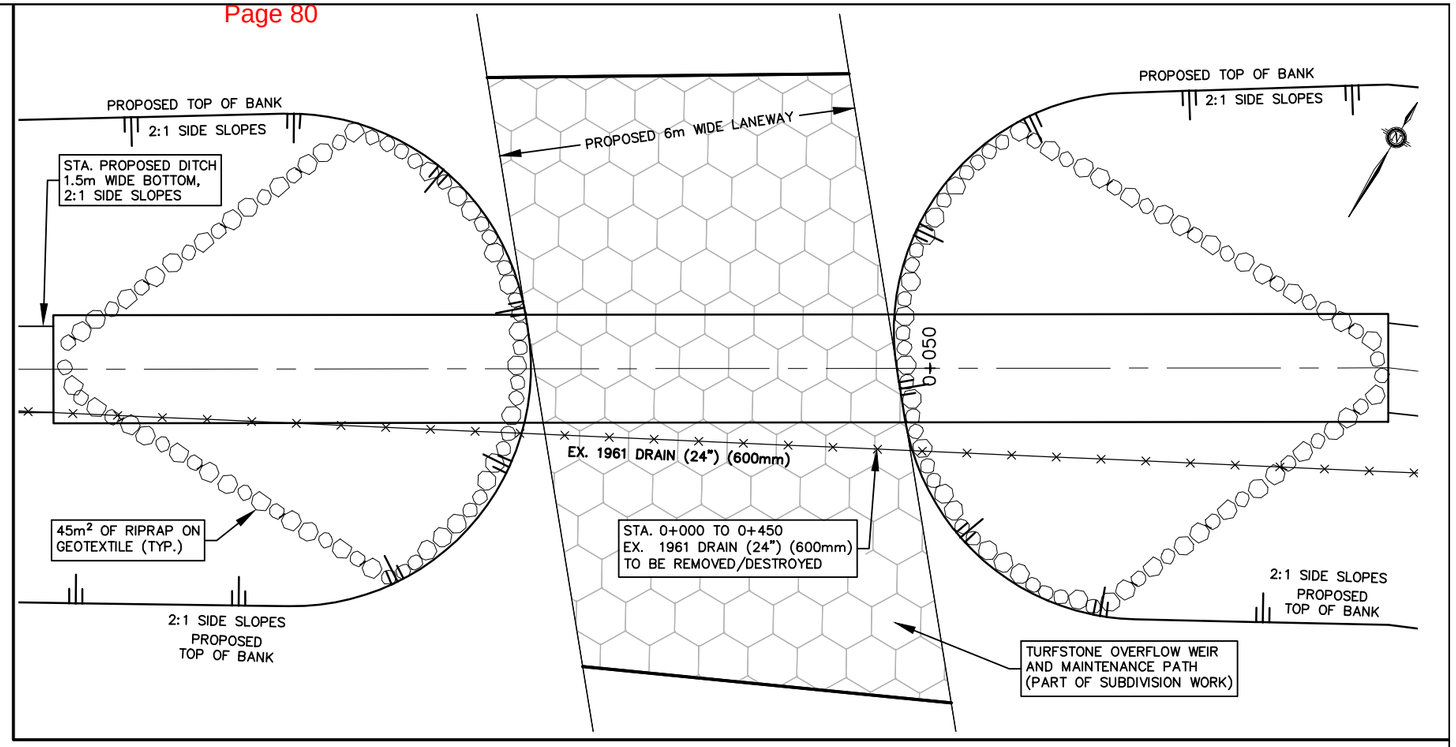
REVISED:

JOB NUMBER: **18-270**

DRAWING
4 OF 12

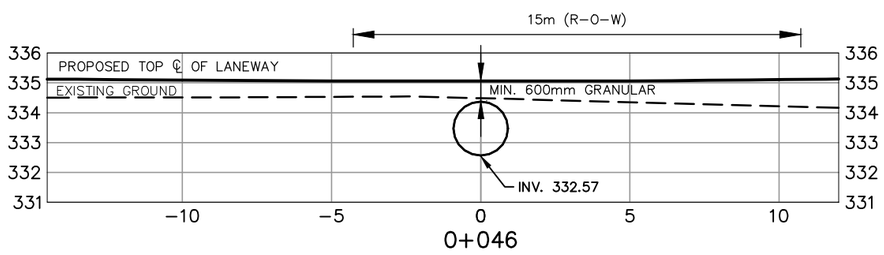
\\server\ksdata\Data\2018\18-270\Drafting\Final Report\PROFILE 18-270.dwg PROFILE 17-Dec-21 1:15:49 PM



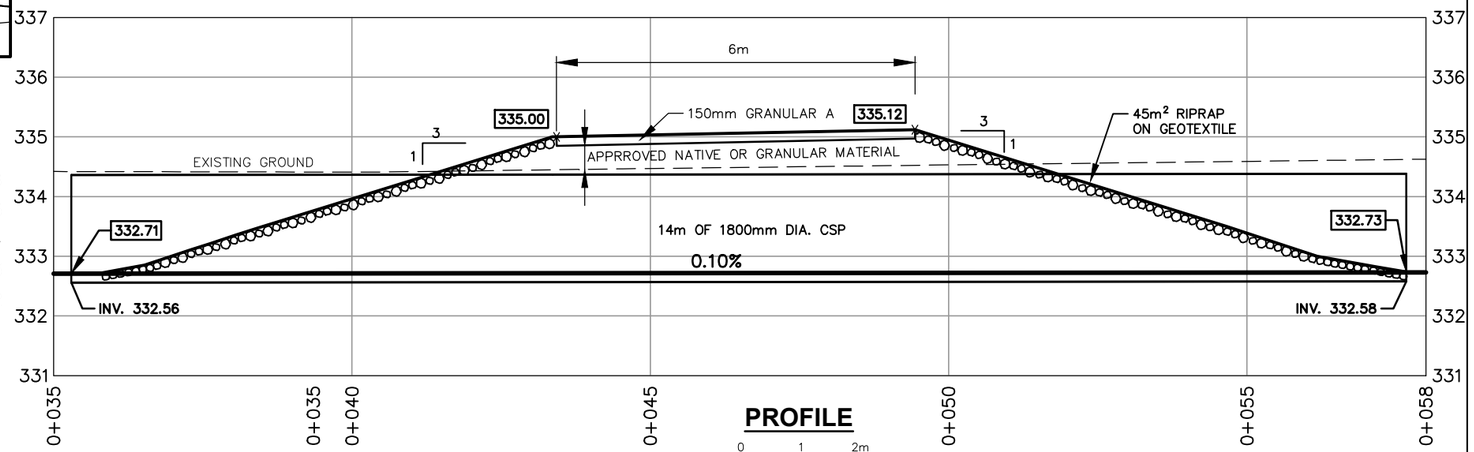


PLAN
SCALE 1:100

OUTLET DETAIL
SCALE 1:500



SECTION
0 2 4m
(SCALE 1:200) HORZ.
0 2 4m
(SCALE 1:200) VERT.



PROFILE
0 1 2m
(SCALE 1:100) HORZ.
0 1 2m
(SCALE 1:100) VERT.

TAVISTOCK DRAIN 1979 RECONSTRUCTION 2021

COUNTY OF OXFORD — TOWNSHIP OF EAST ZORRA-TAVISTOCK

THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL BE INFORMED OF THE EXACT LOCATION OF ALL SUCH UTILTIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

DESIGNED BY:	C.J.M.
DRAWN BY:	D.C.P.
CHECKED BY:	K.A.S.
REVIEWED BY:	H.A.W.

LICENSED PROFESSIONAL ENGINEER — C. J. MACINTYRE — 100507574 — DEC. 17, 2021 — PROVINCE OF ONTARIO

SCALE
(AS SHOWN)
(ON 11"x17")

DETAILS: COUNTY ACCESS CULVERT STA. 0+041 TO 0+055

DEC. 17, 2021

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
KITCHENER SUDBURY

REVISED:
JOB NUMBER: **18-270**
DRAWING
5 OF 12

\\server\ksdata\Data\2018\18-270\Drafting\Final Report\PROFILE 18-270.dwg PLAN AND PROFILE 17-Dec-21 1:16:42 PM

STA. 0+343
REMOVE AND DISPOSE OF
EX. 1200x900mm CONC. MH.
OUTLET EX. 150mm DIA. PIPE FROM
NORTH TO NEW DITCH WITH 16m OF
150mm DIA. PLASTIC.
PLACE 5m² RIPRAP ON GEOTEXTILE

STA. 0+000 TO 0+450
EX. 1961 DRAIN (24") (600mm)
TO BE REMOVED/DESTROYED

STA. 0+435 TO 0+574
PROPOSED 1200mm
DIA. SRPE PIPE

EX. 1961 DRAIN (24") (600mm)
TO REMAIN UPSTREAM OF
CONNECTION

(050-13650)
COUNTY OF OXFORD

0+450

EX. 1961 DRAIN (24") (600mm)

LOCATE AND EXTEND 1961 DRAIN TO
NEW STILLING BASIN WITH 25m OF
EXISTING SALVAGED 600mm DIA CONC.
TILE & 6m OF 600mm DIA. PLAS. AT
OUTLET. INVERT TO BE CONFIRMED AT
TIME OF CONSTRUCTION

STA. 0+435
TOP OF SLOPE = 335.59

STA. 0+418 TO 0+435
CONSTRUCT NEW
PERMANENT STILLING
BASIN/SEDIMENT TRAP
WITH 10m LONG BOTTOM
AND 2:1 SIDE SLOPES
BOTTOM ELEV. = 332.19

335.78 MH

335.50 MISC

5.8m

2:1

STA. 0+435
CONSTRUCT CONC. HEADWALL
AS PER OPSD 804.040 WITH
GRATE AS PER OPSD 804.050
TOP OF WALL 334.88
INV. 333.25 1200mm DIA. SRPE
TOP OF FOOTING 332.05

0+425

10m

PLACE 100m² RIPRAP ON
GEOTEXTILE AT TILE OUTLETS

0+300 0+325 0+350 0+375 0+400

STA. 0+418
TOP OF SLOPE = 333.09

LOCATE EX.1919 DRAIN NORTH
OF COUNTY ACCESS LANEWAY. IF
FOUND, EXTEND 1919 DRAIN TO
NEW STILLING BASIN WITH
APPROX. 40m OF 450mm DIA
PLAS. PIPE. CONNECT TO EX.
400mm DIA CONC. WITH
REDUCER. INVERT TO BE
CONFIRMED AT TIME OF
CONSTRUCTION

STA. 0+000 TO 0+418
418m OF OPEN DITCH
(1.5m WIDE BOTTOM,
2:1 SIDE SLOPES)

EX. 1919 DRAIN (16") (400mm)
TO BE ABANDONED DOWNSTREAM

EX. 1919 DRAIN (16") (400mm)
APPROX. LOCATION

EXISTING LANEWAY

EX. 1919 DRAIN (16") (400mm)
TO REMAIN UPSTREAM OF CONNECTION

STA. 0+411 TO 0+435 STILLING BASIN DETAIL

STA. 0+000 TO 0+450
EX. 1961 DRAIN (24") (600mm)
TO BE REMOVED/DESTROYED

STA. 0+188
REMOVE AND DISPOSE OF
900x900mm CONC. MH.
& 25m OF 400mmø CSP

PROPOSED SWM AREA
CONSTRUCTED BY OTHERS

(050-13650)
COUNTY OF OXFORD

PROP. FENCE

BOTTOM OF BERM

℄ OF
PROPOSED
DITCH

6m FORCEMAIN
EASEMENT

335.63 MH

Ex. 400mm CSP

335.27 CMP

INV. 335.26

1.5m

0+150 0+175 0+200 0+225 0+250 0+275

STA. 0+000 TO 0+418
418m OF OPEN DITCH
(1.5m WIDE BOTTOM,
2:1 SIDE SLOPES)

STA. 0+000 TO 0+411
EX. 1919 DRAIN (16") (400mm)
TO BE ABANDONED

EXISTING LANEWAY

STA. 0+150 TO 0+290 OPEN DITCH

DESIGNED BY: C.J.M.	
DRAWN BY: N.M.B.	
CHECKED BY: K.A.S.	
REVIEWED BY: H.A.W.	

LICENSED PROFESSIONAL ENGINEER
C. J. MACINTYRE
100507574
DEC. 17, 2021
PROVINCE OF ONTARIO

SCALE
0 5 10m
(1:500 ON 11"x17")

TAVISTOCK DRAIN 1979 RECONSTRUCTION 2021
COUNTY OF OXFORD — TOWNSHIP OF EAST ZORRA-TAVISTOCK

DETAILS: OPEN DITCH STA. 0+150 TO 0+465 | DEC. 17, 2021

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
KITCHENER SUDBURY

REVISED:
JOB NUMBER: **18-270**
DRAWING
6 OF 12

EX. ASPHALT

81m OF 300mmø STM (NOT PART OF DRAIN)

STA. 0+859
[21+54 AH'D]
REMOVE AND DISPOSE OF EXISTING 1800mm DIA MH AND 4m OF 1050mm (42") PIPE. CONSTRUCT NEW 3000mm DIA x 3.59m HIGH MH
T/G 340.04
E INV. 337.05 1200mm
N INV. 337.80± 1050mm
W INV. 337.86 300mm
SUMP 336.45

TAVISTOCK DRAIN 1979 (EX. 42") (MAIN DRAIN) (1050mm)

NEW 1200mm INV. 337.05

(010-09000)
UPPER THAMES VALLEY DISTRICT SCHOOL BOARD

10m R.O.W. LIMIT

STA. 0+829
REMOVE & DISPOSE OF EX. MONITORING WELL

STA. 0+807
CONSTRUCT
NEW 3000mm DIA x 3.87 HIGH MH
T/G 339.96
S INV. 336.69 1200mm
W INV. 336.69 1200mm
SUMP 336.09

CAUTION:
EX. WELL
TOP 341.20

0+825

10m

4.5m

PROPERTY LINE (L/F)

STA. 0+803 P/L

0+800

EX. 1800mm MH
T/G 341.05
INV. 337.80

REMOVE AND DISPOSE OF EX. 1979 DRAIN (42")

STA. 0+807 TO 0+859
PROPOSED 1200mmø SRPE PIPE.
TWO TREES TO BE REMOVED

EX. 1050mm (42")
INV. 337.80
TO BE REMOVED

84 83 82 81

STA. 0+574 TO 0+807
PROPOSED 1200mmø SRPE PIPE

10m EASEMENT LIMIT

BLOCK 153
PARK

0+775

10m EASEMENT

5m

STREET E

0+750

80

STA. 0+740 TO 0+859

STA. 0+574 TO 0+807
PROPOSED 1200mmø SRPE PIPE

10m

5m

10m EASEMENT LIMIT

STA. 0+574
CONSTRUCT NEW
2400mm DIA. x 5.45m HIGH MH
T/G 339.08
N INV. 335.06 1200mm
S INV. 334.23 1200mm
SUMP 333.63

70

0+575

PROPOSED 200mmø WATERMAIN

STREET H

PROPOSED 200mmø SANITARY

PROPOSED 750mmø STORM

PROPOSED SIDEWALK

0+550

0+548

BLOCK 152
LIGHT INDUSTRIAL

STA. 0+435 TO 0+574
PROPOSED 1200mm
DIA. SRPE PIPE

12m

12m EASEMENT LIMIT

68 69

0+525

BM#1

0+513 P.I.

EXISTING SANITARY FORCEMAIN

334.64 top forcemain

334.61 top force main

334.77 top force main

SANITARY FORCEMAIN TO BE RELOCATED

0+500

(050-13650)
COUNTY OF OXFORD

BM#1
NAIL IN SOUTH SIDE OF "NO TRESPASSING" FENCE POST ON EAST TO WEST P.I. HALF WAY BETWEEN SCHOOL AND TAVISTOCK SEWAGE TREATMENT LAGOONS.
N 4,795,847.839
E 513,738.710
ELEV. 336.637

STA. 0+574 MAINTENANCE HOLE DETAIL

DESIGNED BY:	C.J.M.
DRAWN BY:	N.M.B.
CHECKED BY:	K.A.S.
REVIEWED BY:	H.A.W.

LICENSED PROFESSIONAL ENGINEER
C. J. MACINTYRE
100507574
DEC. 17, 2021
PROVINCE OF ONTARIO

SCALE
0 5 10m
(1:500 ON 11"x17")

TAVISTOCK DRAIN 1979 RECONSTRUCTION 2021
COUNTY OF OXFORD — TOWNSHIP OF EAST ZORRA-TAVISTOCK

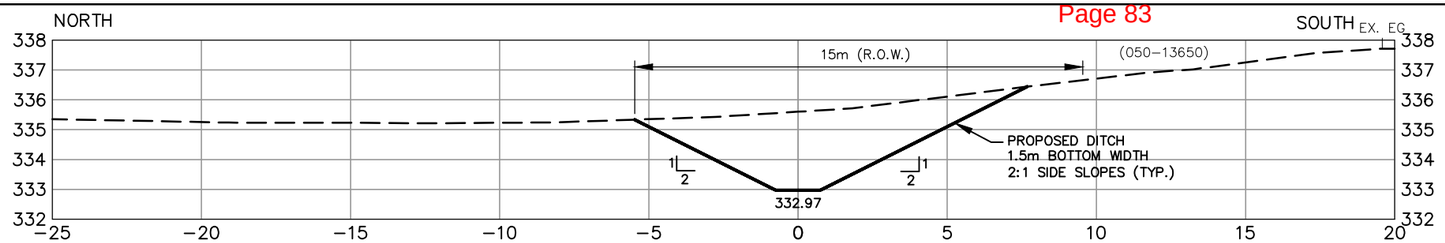
DETAILS
STA. 0+557 & STA. 0+790 TO 0+859

DEC. 17, 2021

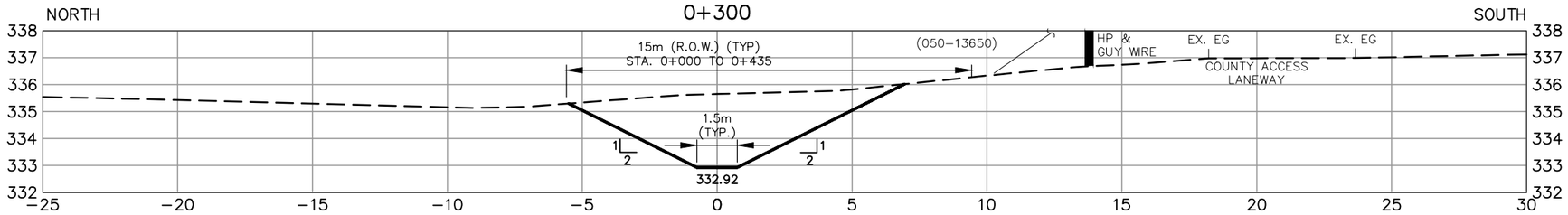
K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
KITCHENER — SUDBURY

REVISED:
JOB NUMBER: **18-270**
DRAWING
7 OF 12

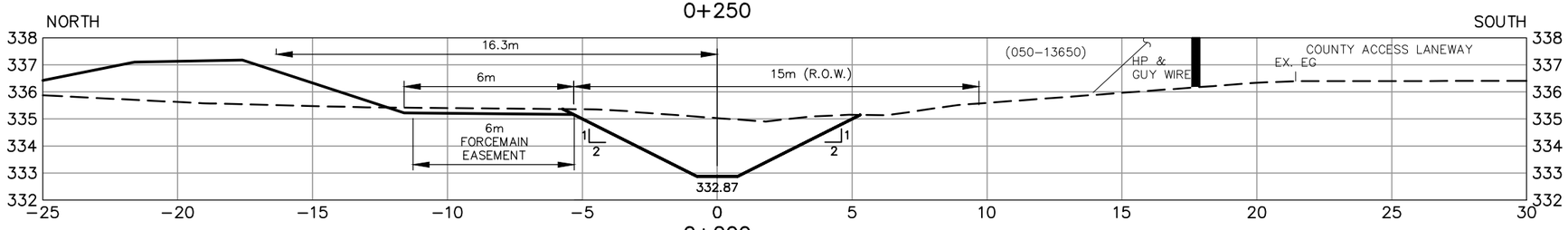
\\server\ksdata\Data\2018\18-270\Drafting\Final Report\PROFILE 18-270.dwg DETAILS 2 17-Dec-21 1:17:43 PM



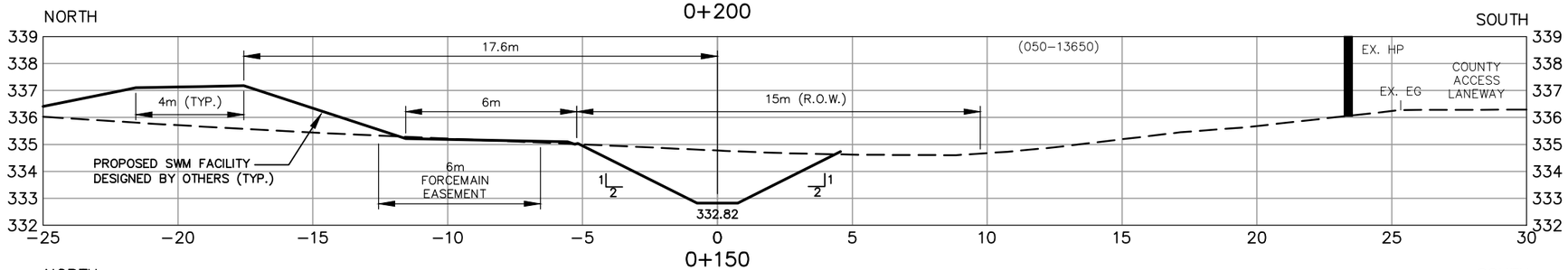
0+300



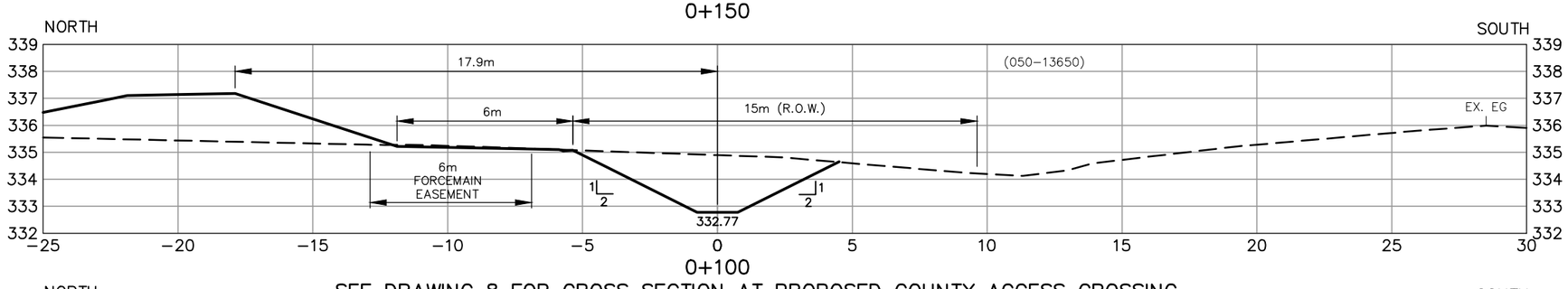
0+250



0+200

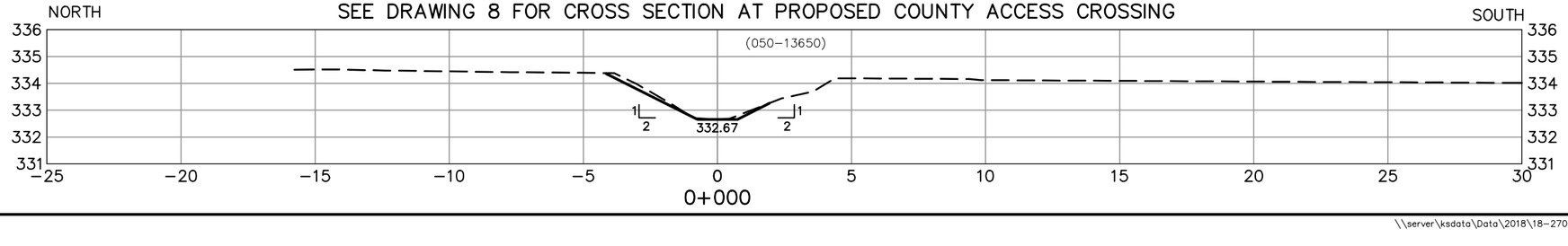


0+150



0+100

SEE DRAWING 8 FOR CROSS SECTION AT PROPOSED COUNTY ACCESS CROSSING



0+000

DESIGNED BY: C.J.M.	
DRAWN BY: N.M.B.	
CHECKED BY: K.A.S.	
REVIEWED BY: H.A.W.	

LICENSED PROFESSIONAL ENGINEER
C. J. MACINTYRE
100507574
DEC. 17, 2021
PROVINCE OF ONTARIO

SCALE
0 2 4m
(SCALE 1 : 200)
HORZ.
0 4m
(SCALE 1 : 200)
VERT.
(ON 11"x17")

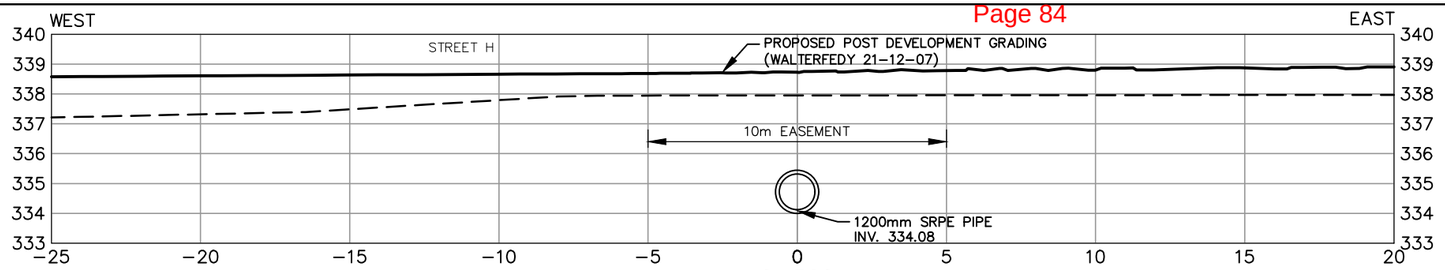
TAVISTOCK DRAIN 1979 RECONSTRUCTION 2021

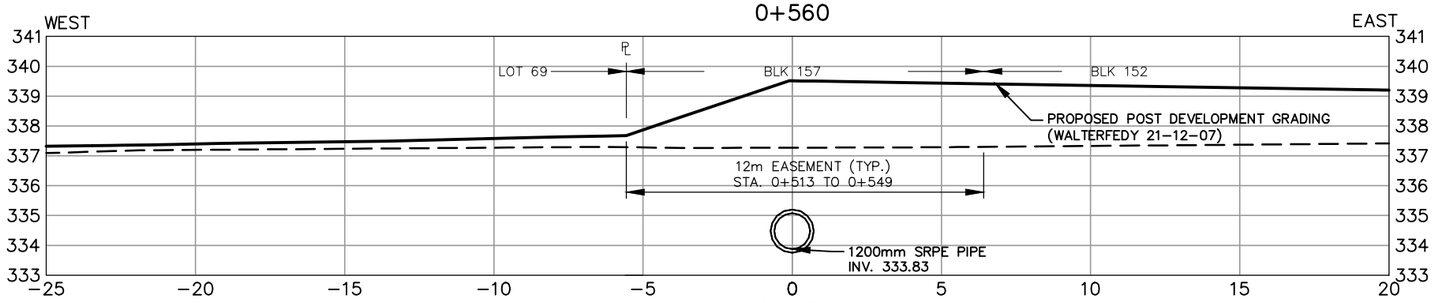
COUNTY OF OXFORD — TOWNSHIP OF EAST ZORRA-TAVISTOCK

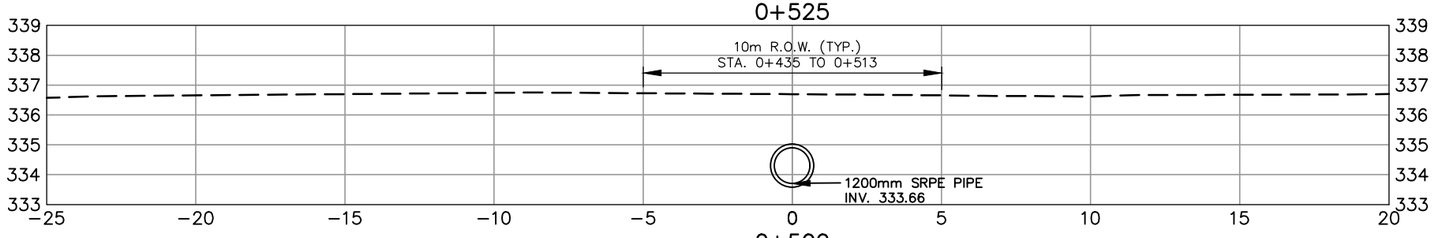
CROSS SECTIONS STA. 0+000 TO 0+300 | DEC. 17, 2021

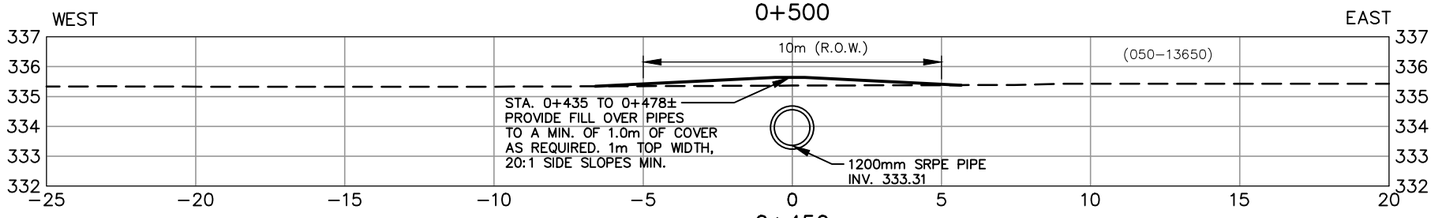
K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
KITCHENER SUDBURY

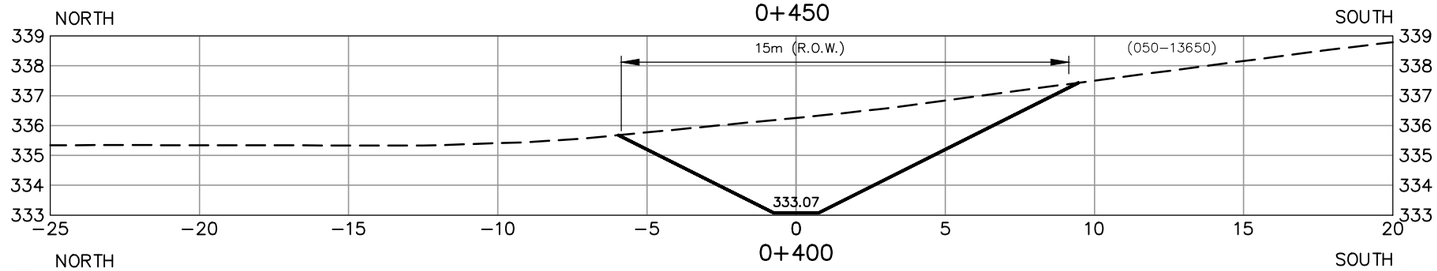
REVISED:
JOB NUMBER: **18-270**
DRAWING
8 OF 12

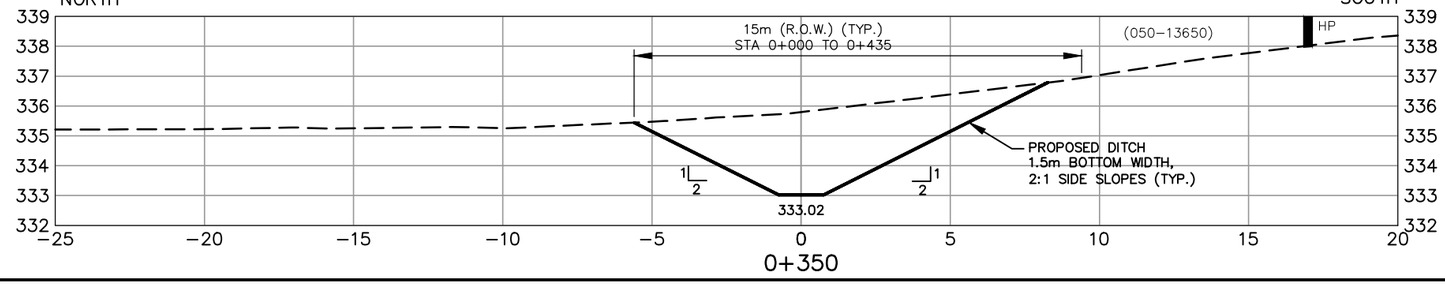












DESIGNED BY: C.J.M.	
DRAWN BY: N.M.B.	
CHECKED BY: K.A.S.	
REVIEWED BY: H.A.W.	

LICENSED PROFESSIONAL ENGINEER
C. J. MACINTYRE
100507574
DEC. 17, 2021
PROVINCE OF ONTARIO

SCALE
0 2 4m
(SCALE 1 : 200)
HORZ.
0 4m
(SCALE 1 : 200)
VERT.
(ON 11"x17")

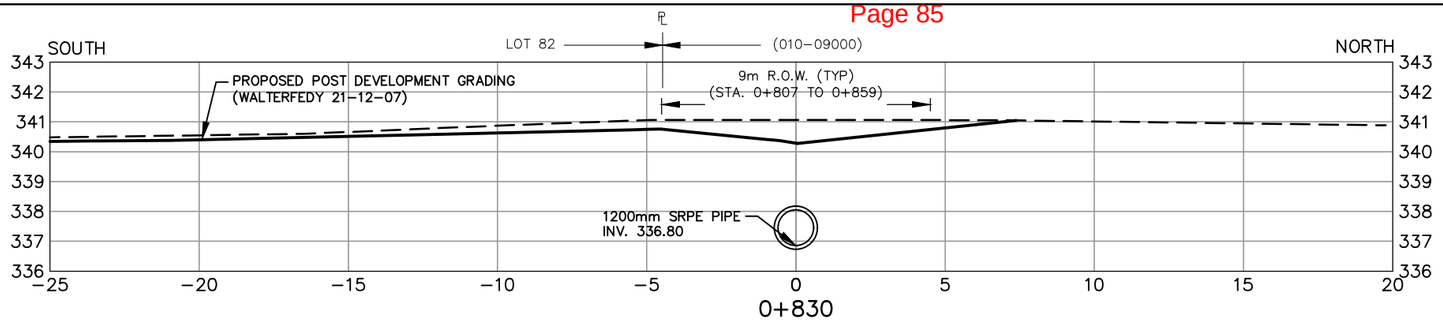
TAVISTOCK DRAIN 1979 RECONSTRUCTION 2021

COUNTY OF OXFORD — TOWNSHIP OF EAST ZORRA-TAVISTOCK

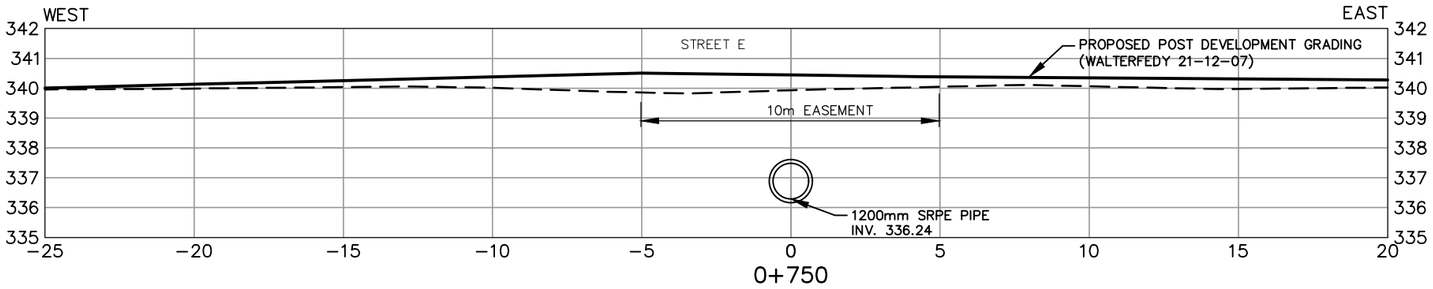
CROSS SECTIONS STA. 0+350 TO 0+560 | DEC. 17, 2021

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
KITCHENER SUDBURY

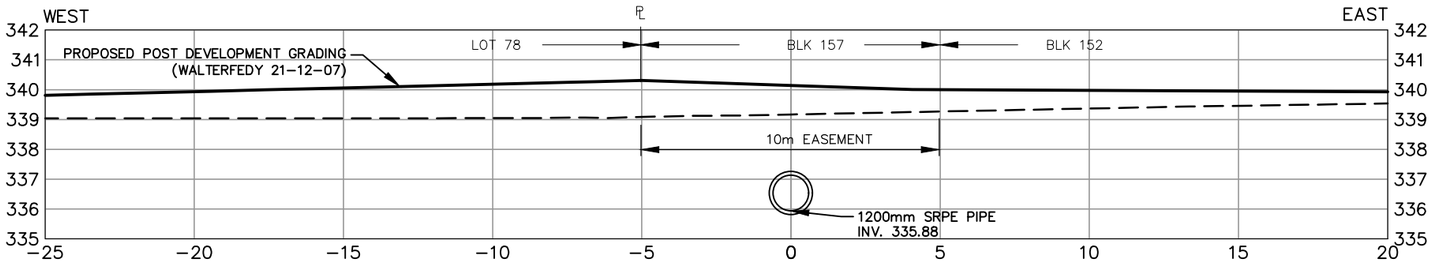
REVISED:
JOB NUMBER: **18-270**
DRAWING
9 OF 12



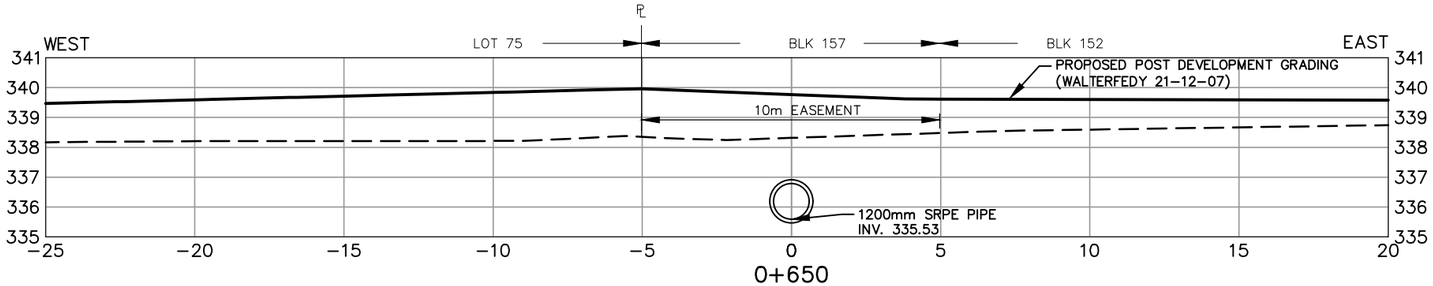
0+830



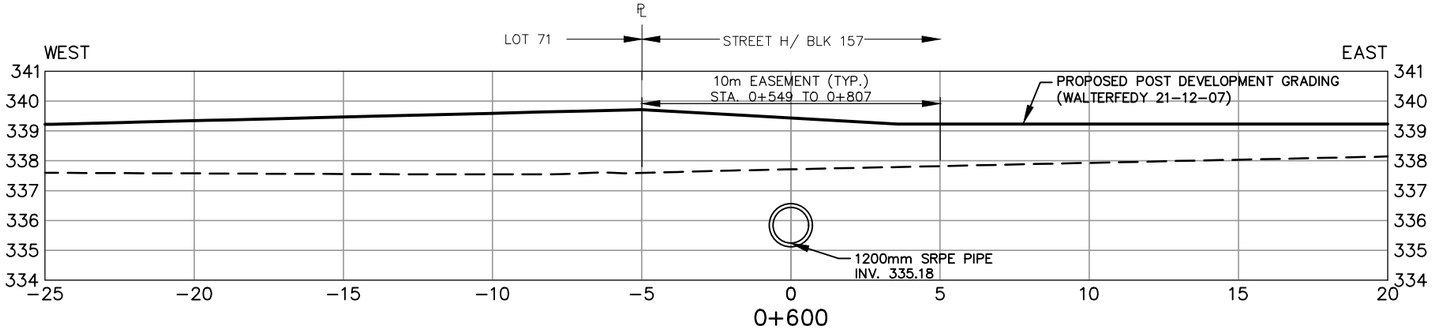
0+750



0+700



0+650



0+600

DESIGNED BY: C.J.M. DRAWN BY: N.M.B. CHECKED BY: K.A.S. REVIEWED BY: H.A.W.	LICENSED PROFESSIONAL ENGINEER C. J. MACINTYRE 100507574 DEC. 17, 2021 PROVINCE OF ONTARIO	SCALE 0 2 4m (SCALE 1 : 200) HORZ. 0 4m (SCALE 1 : 200) VERT. (ON 11"x17")

TAVISTOCK DRAIN 1979 RECONSTRUCTION 2021

COUNTY OF OXFORD — TOWNSHIP OF EAST ZORRA-TAVISTOCK

CROSS SECTIONS STA. 0+600 TO 0+830 — DEC. 17, 2021

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
KITCHENER — SUDBURY

REVISED:

JOB NUMBER: **18-270**

DRAWING
10 OF 12

\\server\ksdata\Data\2018\18-270\Drafting\Final Report\PROFILE 18-270.dwg CROSS SECTIONS 600 TO 830 17-Dec-21 1:20:48 PM

300) SPECIAL PROVISIONS

300.1) SPECIFIC NOTES

Sta. ***Description***

0+000 to 0+844 – 2020± Stationing by KSAL (m)
[21+54] – Tavistock Drain 1979 Original Stationing (ft.)

The existing Tavistock Drain 1979 across the County of Oxford property, the subdivision land and along the property line bordering with the Tavistock Public School is to be removed/destroyed after the new Drain is constructed and functioning.

i) Works to be Part of Tavistock Drain 1979

County of Oxford (Roll No. 050-13650)

-0+005 - Construct temporary straw bale flow check dam in existing Hohner Drain ditch prior to excavation of new ditch. (See Section 3.a) in 300.2) GENERAL NOTES, this drawing, and SD-2 on Drawing 12.)

0+000 to 0+418 - Construct 418m of new open ditch (1.5m wide bottom, 2:1 side slopes) including seeding.
- Developer's contractor to remove excess material from site, unless otherwise directed by County of Oxford.
- Locate and remove/destroy the existing 1961 drain.

0+035 to 0+057 - 22m of 1800mm dia. galvanized CSP (125 x 25mm corrugations, 3.5mm thickness) access crossing with 45m² riprap at each end. Access laneway to be completed as per Mill-Gate Homes Inc. drawings by WalterFedy. (See details on Drawing 5.)

0+188 - Remove and dispose of existing 900 x 900mm concrete maintenance hole and 25m of 400mm dia. CSP.

0+343 - Remove and dispose of existing 900 x 1200mm concrete maintenance hole. Connect 16m of 150mm dia. plastic to existing 150mm dia. pipe and outlet proposed ditch.
- Place 5m² of riprap on geotextile at outlet in ditch.

0+418 to 0+435 - Construct new permanent stilling pool/sediment trap. (See details on Drawing 6.)

0+435 - Construct new reinforced concrete headwall as per OPSD 804.040 and grate on outlet as per OPSD 804-050. (See details on Drawing 6.)

0+435 to 0+513 - 78m of 1200mm dia. steel reinforced polyethylene pipe (SRPE)

Proposed Subdivision: Blk 157, Street H & Street E (Roll No.'s to be Determined)

0+513 to 0+574 - 61m of 1200mm dia. steel reinforced polyethylene pipe.

0+574 - Construct 2400mm dia. x 5.45m high concrete maintenance hole including connections (see Detail on Drawing 7).

0+574 to 0+803 - 229m of 1200mm dia. steel reinforced polyethylene pipe.

Thames Valley District School Board (Tavistock Public School) (Roll No. 010-09000)

0+803 to 0+807 - 4m of 1200mm dia. steel reinforced polyethylene pipe

0+807 - Construct 3000mm dia. x 3.87m high concrete maintenance hole including connections. (See Detail on Drawing 7.)

0+807 to 0+859 - 52m of 1200mm dia. steel reinforced polyethylene pipe.
- Removal of two (2) trees

0+829± - Existing monitoring well to be removed and disposed of.

0+859 [21+54=20+54 AH'D] - Remove and dispose of existing 1800mm dia. maintenance hole (manhole) and existing 4m of 1050mm (42") pipe and construct new 3000mm dia. x 3.59m high concrete maintenance hole (manhole) including connections. (See Detail on Drawing 7.)

300.2) GENERAL NOTES

Notes below are described in the likely order of occurrence during the project, and have been written to generally conform to "DETAILS AND NOTES - SHEET 1" prepared by WalterFedy for MILL-GATE HOMES INC.

1. Miscellaneous – Commencement

1.1 No changes are to be made without the approval of the Design Engineer, the Township of East Zorra-Tavistock and Oxford County.

1.2 All work to be done in accordance with the Ontario Provincial Standard Drawings (OPSD) and Specifications (OPSS) except where noted.

1.3 Approximate locations of existing utilities have been indicated on the drawings. No responsibility is assumed by the Engineer or locate company for the exact locations as shown or the completeness of any or all locates.

1.4 Prior to construction, the Contractor must:

- Check and verify all dimensions and existing elevations which includes, but is not limited to, the benchmark elevation, existing service connections and existing inverts.
- Obtain all utility locates and required permits and licenses.
- Confirm all drawings used for construction are of the most recent revision.
- Report discrepancies in existing condition information immediately to the Engineer.

1.5 The Contractor shall contact the Engineer 48 hours prior to commencing work to determine degree of inspection and testing required for certification of underground service installation.

2. Site

2.1 Any area disturbed during construction shall be restored to its original condition or better to the satisfaction of the Engineer and authority having jurisdiction.

2.2 The Contractor shall assume all liability for damage to existing works. Damage shall be rectified to the satisfaction of the Engineer and Owner.

2.3 All construction traffic shall enter the site via Maria Street.

3. Silt Traps

a) *Temporary Sediment Traps (Straw Bales):*
Temporary sediment traps shall be installed in any ditch prior to any excavation taking place upstream of that location. The trap may be straw bales unless rock is specified. The straw bale dam is to consist of a minimum of 2 rows of 3 bales each with 2 iron fence posts or 1.2m long wood stakes per bale are to be used. The straw bales are to be embedded 150mm.

The Contractor shall maintain the straw bale sediment trap during the course of construction and for up to one year after completion of the work. The sediment traps shall be temporary (one year) and shall stay in place over one winter (or for less time if the Engineer directs) and are to be removed and disposed of. Accumulated sediments shall be removed and leveled as well. As well, prior to leaving the project site, at the end of the construction year, any accumulated sediments shall be removed and leveled. The Contractor can choose to use rock for temporary sediment trap. If so, the note below applies.

b) *Temporary Sediment Traps (Rock) (If Required):*
Wherever temporary sediment traps (rock) are specified, the work shall be done in accordance with OPSD 219.211. These temporary sediment traps shall be installed prior to any excavation taking place upstream of that location. The dam shall extend to the top of the banks so that overflow cannot wash the bank out along the edge. In each case the rock shall be recessed a minimum of 150mm into the ditch bottom. A small deepening of the channel upstream of the sediment trap shall be undertaken as provided in the detail. The over-excavated section shall have a bottom width equal to that of the adjacent channel, and the sides shall be sloped at the same ratio as the drain banks. **Note: Do not install filter cloth in sediment trap.**

The Contractor shall maintain the sediment trap during the course of construction and for one year after completion of the work. The sediment traps shall be temporary (one year) and shall stay in place over one winter (or for less time if the Engineer directs) and are to be disposed of in the channel bottom for fish habitat in the following late spring or early summer. The rock is to be leveled in the deepened section so that it is below the required ditch grade. Accumulated sediments shall be removed and leveled as well. As well, prior to leaving the project site, at the end of the construction year, any accumulated sediments shall be removed and leveled.

4. Utilities

The Contractor shall arrange with all local utility companies (telephone, Union Gas, hydro) to verify the location of all utilities within road allowances or on private lands. All utilities shall be exposed to the satisfaction of the utility company to verify that their elevations will not conflict with the construction of the drain at the specified elevations. Provisions for protection and relocation of utilities that conflict with the drain as designed will be determined at the time of construction.

5. Access (Standard Specifications – 400.5)

The Contractor shall have access to the drain along the routes shown on the plan. The access routes shall be along existing laneways or paths or where none exist, along a 6m wide (maximum) path. All specifications governing fences, livestock and crops during drain construction shall apply to access routes except where superseded by notes on the drawings. No other access routes shall be used unless first approved by the Engineer and affected landowner. The Contractor shall also contact each owner prior to using designated accesses.
Telephone numbers for contact are:

010-09000	Thames Valley District School Board	519-452-2000
	Tavistock Public School	519-655-2350
050-13650	County of Oxford	1-800-755-0394
Twp of East Zorra-Tavistock (Connor Occleston, Drainage Superintendent)		519-462-2697
Engineer (Curtis MacIntyre, P. Eng., K. Smart Associates Ltd.)		519-748-1199 x 252
One Call Centre		1-800-400-2055

6. Open Ditch

For details regarding open ditch excavation, refer to K. Smart Associates Ltd. Standard Specification for Open Drains (410).

7. Geotextile Fabric

To be non-woven fabric, rot proof, non-biodegradable, chemically resistant to acidic or alkaline soils, dimensionally stable under different hydraulic conditions. The filter fabric is to be a material whose primary function is a high permeable, non-clogging soil separator for fine soils (Terrafix 360R or equal). Contractor is to follow manufacturer's recommendations for cutting, installation, and precautions necessary to avoid damage to fabric.
Other approved equals will also be considered by the Engineer prior to construction.

8. Riprap

All riprap is to be placed on a geotextile underlay (Terrafix 360R or equal) unless directed otherwise in the specific construction notes. The riprap is to be graded heavy angular stone (quarry stone is recommended) with particles averaging in size from 200mm to 300mm and is to be placed at 300mm thickness. Fine particles may be included to fill voids. Along upstream edges of riprap, where surface water will enter, underlay is to extend a minimum of 300mm upstream from riprap and then be keyed down a minimum of 300mm. Wherever riprap is placed, the area is to be over-dug so that finished top of riprap is at design cross-section, at design elevation or flush with existing ground.

9. Storm Sewer

9.1 Storm sewer to be steel reinforced polyethylene (SRPE) meeting requirements of CSA Standards B182.14 and B182.15 (Boss 3000 or approved equal).

9.2 Storm sewers to be installed with minimum 1.0m cover. Where cover over storm sewer is deficient, the storm sewer is to be insulated.

9.3 Pipe bedding for rigid pipe to be Class "B" as per OPSD 802, and consist of at least 150mm thick Granular A compacted to at least 95% SPMDD. Granular A shall be used to backfill around the pipe to at least 300mm above the top of pipe.

9.4 Pipe shall be laid within the alignment and grade tolerances specified in the contract documents.

9.5 When bell and spigot pipe is laid, the bell end of the pipe shall be paid upgrade.

9.6 Contractor to provide CCTV survey of the storm system (mainline, stubs, service laterals, leads, etc.) at the start of maintenance and prior to final acceptance of the system.

9.7 A removable water-tight bulkhead shall be installed daily at the open end of the last pipe laid.

9.8 Pipe shall not be laid until the preceding pipe joint has been completed and the pipe is bedded and secured in place.

9.9 All pipe ends shall be thoroughly cleaned prior to the installation of gaskets. All gaskets to be lubricated prior to the installation of pipe or as recommended by the pipe manufacturer.

9.10 All storm sewers to be tested in accordance with OPSS 410 and Oxford County guidelines.

9.11 Any subsurface drainage tile encountered between Sta. 0+435 and 0+513 are to be connected to new drain if intercepted. Connections are to be made by coring into the new drain and on Inserta Tee fitting or approved equivalent.

9.12 Concrete headwalls to be as per OPSD's 804.040 and 804.050.

10. Maintenance Holes and Catchbasins

10.1 All structures (chambers) and maintenance holes (manholes) to have a minimum 600mm deep sump.

10.2 Storm manholes (maintenance holes) to be:

- OPSD 701.013 for 2400mm dia. and OPSD 701-060, 701.061 and 704.010 for components
- OPSD 701.014 for 3000mm dia. and OPSD 701.070, 701.071 & 704.010 for components.
- Storm manhole lids to be per OPSD 401.010 – Type B. Manhole grates in roadway to be per DGSSMS E4-01.

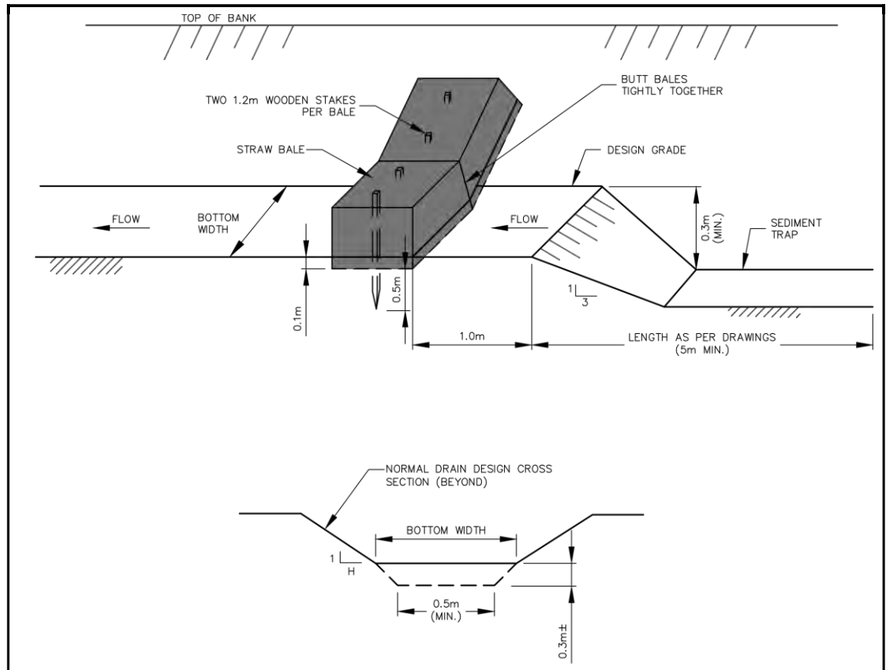
10.3 All maintenance holes (manholes), basins, chambers, etc. to be installed level and plumb to the satisfaction of the Engineer.

10.4 All pipes to be installed flush with the inside walls of the structure and parged to a smooth finish.

10.5 Maintenance holes (manholes) shall be fitted with self-adjusting manhole frame and cover.

11. Miscellaneous – Completion

At the end of construction, the Contractor shall provide the Engineer and Township with a digital file of as-constructed drawings. The drawings must reflect the constructed state of the work. Submission of unaltered design drawings and contract changes will not be accepted.



SEDIMENT TRAP CROSS SECTION

STRAW BALE CHECK DAM AT SEDIMENT TRAP

NOT TO SCALE

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
KITCHENER SUDBURY

DETAIL DRAWING NO.
SD–2

TAVISTOCK DRAIN 1979 RECONSTRUCTION 2021
Township of East Zorra-Tavistock
SPECIAL PROVISIONS
File No. 18-270 December 17, 2021
Drawing 12 of 12

#5.b

Our File: **A6-21**

APPLICATION FOR MINOR VARIANCE

TO: Township of East Zorra-Tavistock Committee of Adjustment
MEETING: January 19, 2022
REPORT NUMBER: 2022-20

OWNER: Apple Home Builders
210 Hope Street, Tavistock, ON N0B 2R0

VARIANCE REQUESTED:

1. Relief from **Section 12.2, Table 12.2 – Residential Type 1 Zone (R1) Lot Coverage Provision**, to increase the maximum lot coverage allowance from 40% to 42.5%.

LOCATION:

The subject property is legally described as Lot 15, Plan 41M-371. The subject lands are located on the west side of Fred Krug Avenue, lying west of 14th Line and are municipally known as 76 Fred Krug Avenue in the Village of Tavistock.

BACKGROUND INFORMATION:

COUNTY OF OXFORD OFFICIAL PLAN:

Schedule 'C-3'	County of Oxford Settlement Strategy Plan	Serviced Village
Schedule 'E-1'	Township of East Zorra-Tavistock Land Use Plan	Settlement
Schedule 'E-2'	Village of Tavistock Land Use Plan	Low Density Residential

TOWNSHIP OF EAST ZORRA-TAVISTOCK ZONING BY-LAW:

Residential Type 1 Zone (R1)

PLANNING REVIEW:

(a) Purpose of the Application

The application for minor variance has been requested to permit an increase to the maximum lot coverage allowance from 40% lot area to 42.5% to allow for a single detached dwelling on the subject lands. The preferred model of home would exceed the permitted lot coverage of 40% lot area.

The subject lands are approximately 516.9 m^2 (5,564.5 ft^2) in size with frontage onto the recently constructed Fred Krug Avenue. Surrounding land uses are predominately comprised of recently created lots for single detached dwellings, at various stages of development, as well as an agricultural operation to the east of the subject lands.

Plate 1, Location Map & Existing Zoning, shows the location of the subject property and existing zoning in the vicinity.

Plate 2, Applicant's Sketch, identifies the location and configuration of the proposed single detached dwelling on the subject lands, as provided by the applicant.

(b) Agency Comments

The application was circulated to a number of public agencies considered to have an interest in the proposal. The following comment was provided:

The Township Chief Building Official has indicated that the Subdivision Servicing Strategy Report for this subdivision stated that the Storm Water Design Capacity was designed at 70% imperviousness lot coverage per lot. The proposed development leaves 39 m^2 of impervious area to be added. It is also advised that a surveyor's real property report will be required prior to the commencement of framing.

The Township Fire Chief and the Township Public Works Manager have indicated no concerns.

(c) Public Consultation

Public Notice was mailed to surrounding property owners in accordance with the Planning Act. At the time of writing this report, no comments or concerns had been received from the public.

(d) Intent and Purpose of the Official Plan

The subject property is located within the Serviced Village of Tavistock, and is further designated as Low Density Residential, according to the County of Oxford Official Plan. Permitted uses on lands designated Low Density Residential allow for a range of low density residential uses, as well as accessory uses thereto.

Staff are satisfied that the use of the subject lands for a single detached dwelling is in keeping with the Low Density Residential designation policies of the Official Plan.

(e) Intent and Purpose of the Zoning By-law

The subject property is zoned 'Residential Type 1 Zone (R1)' in the Township Zoning By-law, which permits single detached dwellings and accessory structures thereto.

It is the intent of the maximum lot coverage provision to ensure that adequate space is maintained for private amenity areas, landscaping and required building setbacks. Lot coverage provisions also are intended to ensure that there is sufficient impervious area maintained on private property so as not to create negative impacts on municipal storm sewers, storm water management and drainage facilities.

The Township Chief Building Official has indicated that when the subdivision was approved that the Stormwater Design Capacity was designed at 70% imperviousness lot coverage per lot. This indicates that the stormwater infrastructure was built to handle stormwater runoff levels that are a result of each lot within the subdivision having 70% lot coverage. As the proposal is increasing the lot's lot coverage by 2.5% to a total of 42.5%, staff are satisfied that the increase of lot coverage will not adversely impact the stormwater infrastructure currently in place.

Planning staff are generally satisfied that the proposed increase to the maximum lot coverage allowance will continue to provide for sufficient area for private amenities and lot grading and drainage and staff are also satisfied that the minor increase to the permitted coverage will not negatively impact the stormwater management of the subdivision. As such, staff are of the opinion that the proposal maintains the intent of the Zoning By-law.

(f) Desirable Development/Use

It is the opinion of the Planning Office that the applicant's request can be considered minor and desirable for the development of the subject property. As the proposed relief is not anticipated to impact the ability of the property to provide adequate amenity space, or negatively impact drainage or overall subdivision stormwater management design or municipal stormwater management infrastructure, the requested relief can be considered minor. Further, staff are satisfied that the requested relief will maintain the existing and intended characteristics of surrounding land uses and further that proposed relief will not create an undesirable precedent for similarly zoned lands in the area.

In light of the foregoing, it is the opinion of this Office that the requested relief is in keeping with the general intent and purpose of the Official Plan and Town Zoning By-law and can be given favourable consideration, and staff are of the opinion that this proposal is minor in nature and satisfies the four tests for minor variance as set out in Section 45(1) of the Planning Act and can be supported from a Planning perspective.

RECOMMENDATION:

That the Township of East Zorra-Tavistock Committee of Adjustment **approve** Application A6-21, submitted by Apple Home Builders for lands described as Lot 15, Plan 41M-371 in the Village of Tavistock, being municipally known as 76 Fred Krug Avenue, as it relates to:

1. Relief from **Section 12.2, Table 12.2 –Residential Type 1 (R1) Zone Provisions**, to increase the maximum lot coverage allowance from 40% to 42.5%;

As the variance requested is considered to be:

i) in keeping with the general intent and purpose of the County's Official Plan;
ii) a minor variance from the provisions of the Township of East Zorra-Tavistock Zoning By-Law No. 2003-18;
iii) desirable for the appropriate development or use of the land, building or structure; and,
iv) in keeping with the general intent and purpose of the Township of East Zorra-Tavistock Zoning By-Law No.2003-18

Authored by: *Original Signed by*
Dustin Robson, MCIP, RPP
Development Planner

Approved by: *Original Signed by*
Eric Gilbert, MCIP, RPP
Senior Planner

Plate 1: Location Map & Existing Zoning
File No.: A06-21 - Apple Homes Builders
Lot 15, Plan 41M-371, Township of East Zorra-Tavistock - 76 Fred Krug Avenue

Legend

Parcel Lines
- Property Boundary
- Assessment Boundary
- Unit
- Road
- Municipal Boundary

Zoning Floodlines Regulation Limit
- 100 Year Flood Line
- 30 Metre Setback
- Conservation Authority Regulation Limit
- Regulatory Flood And Fill Lines

Land Use Zoning (Displays 1:16000 to 1:500)

Notes

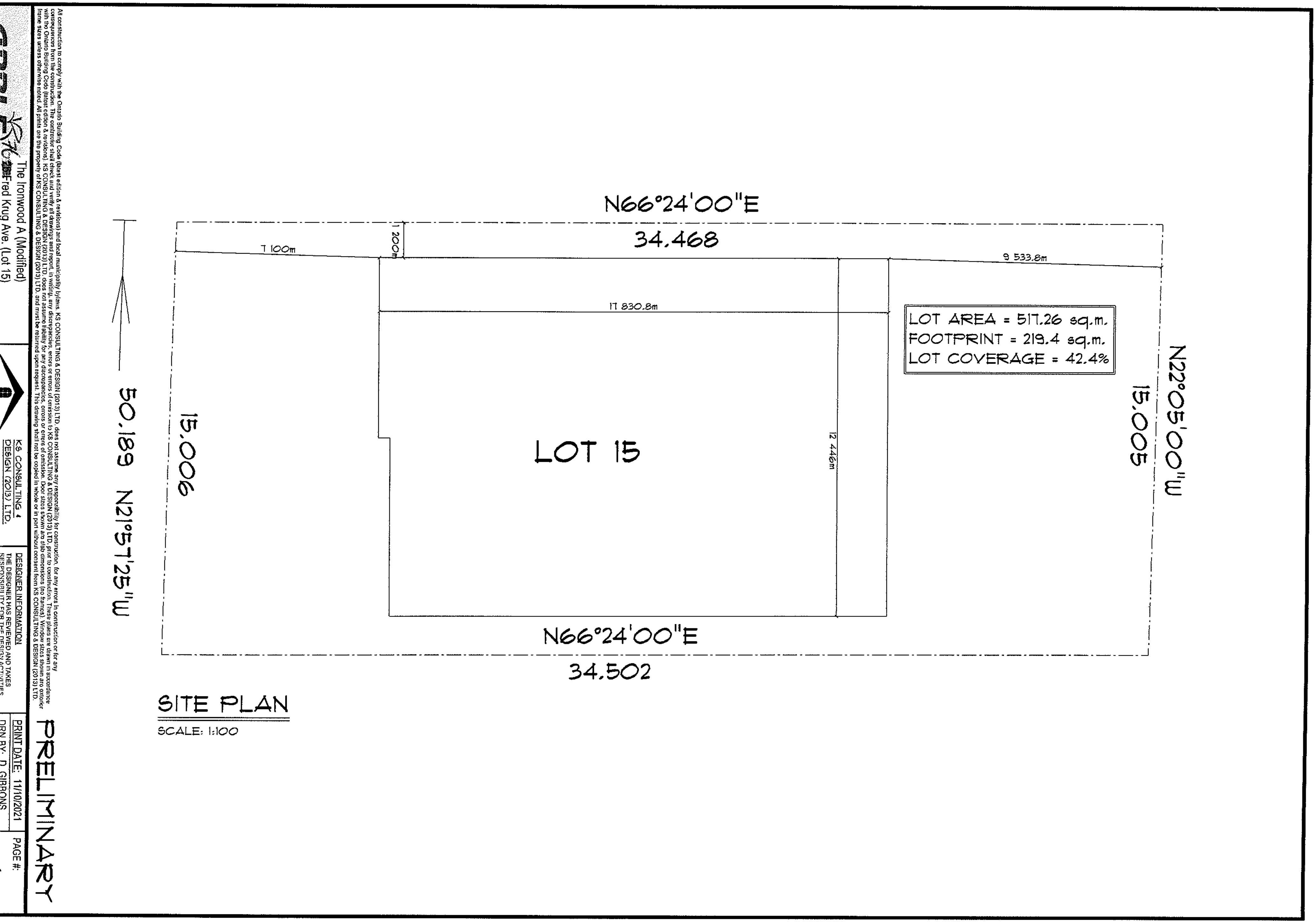
0 51 102 Meters

NAD_1983_UTM_Zone_17N

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. This is not a plan of survey

December 23, 2021

Plate 2: Applicant's Sketch
File No.: A06-21 - Apple Homes
Lot 15, Plan 41M-371, Township of East Zorra-Tavitock - 76 Fred Krug Avenue



Our File: **A7-22**

APPLICATION FOR MINOR VARIANCE

TO: Township of East Zorra-Tavistock Committee of Adjustment
MEETING: January 19, 2022
REPORT NUMBER: 2022-21

OWNERS: Hunt Homes Inc.
P.O. Box 20145, Woodstock, ON N4S 8X8

AGENT: Rick Dykstra (Dillon Consulting Ltd.)
130 Dufferin Avenue, London, ON N6A 5R2

VARIANCE REQUESTED:

1. Relief from **Section 13.2, Table 13.2 – Residential Type 2 Zone (R2) Lot Area Provision**, to decrease the minimum lot area for a corner lot containing a semi-detached dwelling from 450 m^2 (4,843.9 ft^2) to 424.2 m^2 (4,566 ft^2).

LOCATION:

The subject properties are legally described as Lots 1, 12, 13, and 16, Plan 41M-373. The subject lands are located on the east side of Jonker Street, lying south of Main Street and George Street in the Village of Innerkip.

BACKGROUND INFORMATION:

COUNTY OF OXFORD OFFICIAL PLAN:

Schedule 'C-3'	County of Oxford Settlement Strategy Plan	Serviced Village
Schedule 'E-1'	Township of East Zorra-Tavistock Land Use Plan	Settlement
Schedule 'E-3'	Village of Innerkip Land Use Plan	Low Density Residential

TOWNSHIP OF EAST ZORRA-TAVISTOCK ZONING BY-LAW:

Special Residential Type 2 Zone (R2-9)

PLANNING REVIEW:

(a) Purpose of the Application

The applicant is requesting relief from the above-noted provisions of the Township Zoning By-law to permit the development of a semi-detached dwelling on a residential corner building lot.

The lots in questions currently meet the required 450 m^2 (4,843.9 ft^2), however, once the lots are subject to a Part Lot Control Application, the resulting corner lots will no longer comply. The applicant is requesting to reduce the required minimum lot area for a corner lot from 450 m^2 (4,843.9 ft^2) to 424.2 m^2 (4,566 ft^2).

Surrounding land uses are predominately comprised of recently created lots for semi-detached detached dwellings, at various stages of development, as well as existing single detached dwellings to the west of the subject lands.

Plate 1, Location Map & Existing Zoning, shows the location of the subject property and existing zoning in the vicinity.

Plate 2, Applicant's Sketch, identifies the location and configuration of the proposed semi-detached dwelling on the subject lands, as provided by the applicant.

(b) Agency Comments

The application was circulated to a number of public agencies considered to have an interest in the proposal.

The Township Fire Chief, the Township Chief Building Official, and the Township Public Works Manager have indicated no concerns.

(c) Public Consultation

Public Notice was mailed to surrounding property owners in accordance with the Planning Act. At the time of writing this report, no comments or concerns had been received from the public.

(d) Intent and Purpose of the Official Plan

The subject property is located within the Serviced Village of Innerkip, and is further designated as Low Density Residential, according to the County of Oxford Official Plan. Permitted uses on lands designated Low Density Residential allow for a range of low density residential uses, as well as accessory uses thereto.

Staff are satisfied that the use of the subject lands for a semi-detached dwelling is in keeping with the Low Density Residential designation policies of the Official Plan.

(e) Intent and Purpose of the Zoning By-law

The subject property is zoned 'Special Residential Type 2 Zone (R2-9)' in the Township Zoning By-law, which permits semi-detached dwellings and accessory structures thereto. The R2-9 zoning includes such provisions as a minimum lot frontage of 12.5 m (41 ft) for corner lots, a minimum lot depth of 30 m (98.4 ft), and a minimum lot area of 450 m^2 (4,843.9 ft^2) for corner lots.

The applicant is requesting relief to permit a minimum lot area of 424.2 m^2 (4,566 ft^2), which is 25.3 m^2 (272.3 ft^2) less than the required 450 m^2 (4,843.9 ft^2). The subject lands currently range in sizes between 793 m^2 (8,535.7 ft^2) and 800 m^2 (8,611.1 ft^2). The lands in question are to be subject of Part Lot Control Applications in which the identified lots will each be severed to create two lots for semi-detached dwellings. Once the lots are severed as a result of the Part Lot Control Application, the resultant interior lots will comply with the minimum lot area of 270 m^2 (2,906.3 ft^2), however, the resultant corner lots will be deficient as they require 450 m^2 (4,843.9 ft^2).

The purpose of the minimum lot area requirement in the Zoning By-law is to ensure that sufficient space is maintained to accommodate a sufficient building envelope, without compromising outdoor amenity space and drainage requirements. The subject land will be located on a corner lot which has a greater lot area requirement to ensure that adequate space is maintained for setbacks and sightlines at the intersection, as well as for road maintenance purposes.

Planning staff have reviewed the application and are of the opinion that a reduction to the required lot area will continue to maintain enough space to accommodate for sightlines and road maintenance requirements at the intersection, while maintaining adequate areas for amenity space, parking and drainage on the lot.

(f) Desirable Development/Use

It is the opinion of this Office that the applicant's request can be considered minor and desirable for the development of the subject property.

Staff are satisfied that the proposed lot area reduction will maintain enough space on the subject lands to accommodate a dwelling that will be in keeping with the size and character of the surrounding neighbourhood, and further that approval of the applicant`s request will facilitate the development of the subdivision, which is considered to be desirable development for the area.

In light of the foregoing, it is the opinion of this Office that the requested relief is in keeping general intent and purpose of the County Official Plan and Township Zoning By-law and should be given favourable consideration.

RECOMMENDATION:

That the Township of East Zorra-Tavistock Committee of Adjustment **approve** Application A7-21, submitted by Hunt Homes Inc. for lands described as Lots 1, 12, 13, and 16, Plan 41M-373 in the Village of Innerkip, as it relates to:

1. Relief from **Section 13.2, Table 13.2 – Residential Type 2 Zone (R2) Lot Area Provision**, to decrease the minimum lot area for a corner lot containing a semi-detached dwelling from 450 m^2 (4,843.9 ft^2) to 424.2 m^2 (4,566 ft^2).

As the variance requested is considered to be:

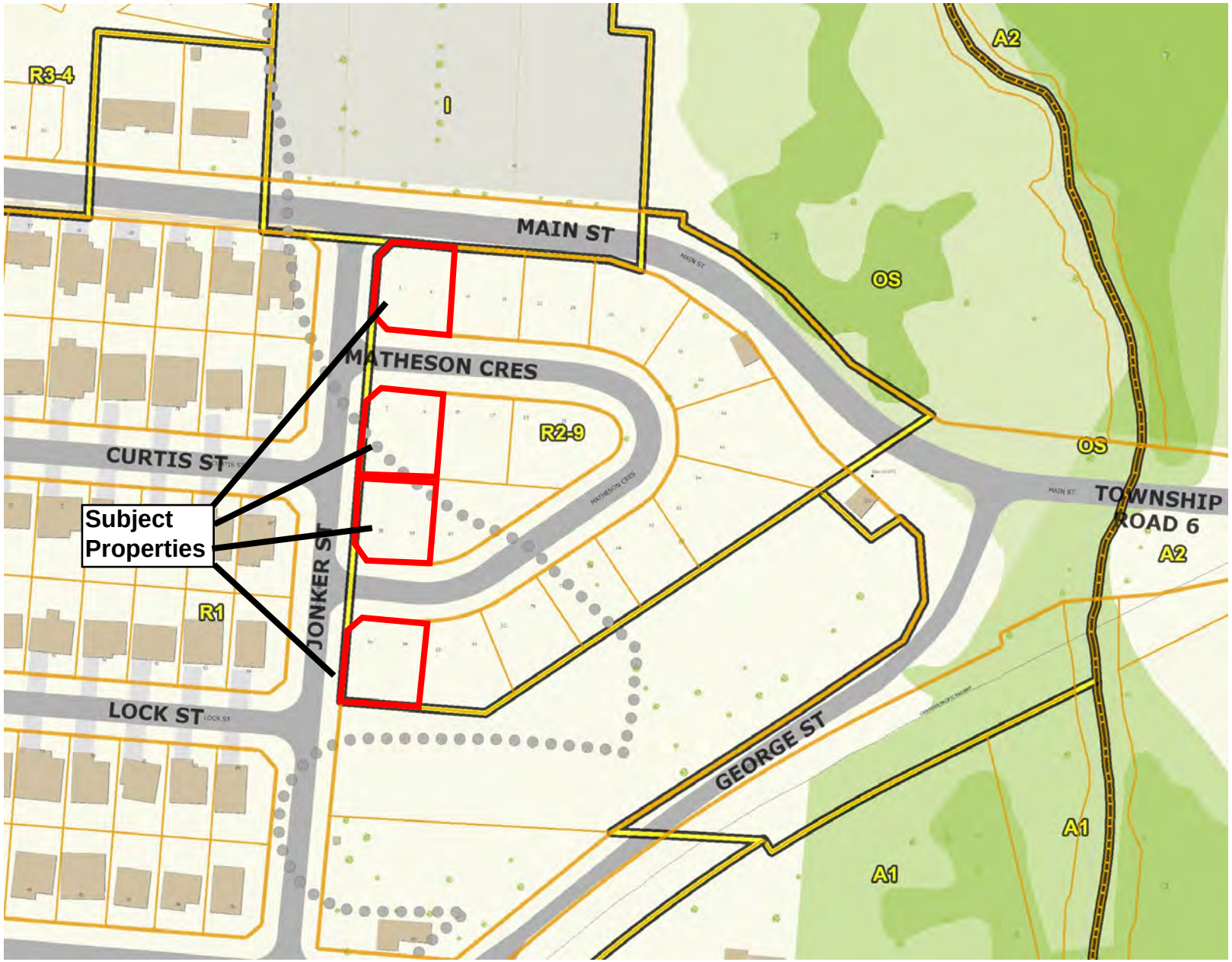
i) in keeping with the general intent and purpose of the County's Official Plan;
ii) a minor variance from the provisions of the Township of East Zorra-Tavistock Zoning By-Law No. 2003-18;
iii) desirable for the appropriate development or use of the land, building or structure; and,

iv) in keeping with the general intent and purpose of the Township of East Zorra-Tavistock Zoning By-Law No.2003-18

Authored by: *Original Signed by* Dustin Robson, MCIP, RPP
Development Planner

Approved by: *Original Signed by* Eric Gilbert, MCIP, RPP
Senior Planner

Plate 1: Location Map & Existing Zoning
File No.: A07-21 - Hunt Homes Inc.
Lots 1, 12, 13, 16, Plan 41M-373, Township of East Zorra-Tavistock



Legend

- Parcel Lines
  - Property Boundary
  - Assessment Boundary
  - Unit
  - Road
  - Municipal Boundary
- Zoning Floodlines Regulation Limit
  - 100 Year Flood Line
  - 30 Metre Setback
  - Conservation Authority Regulation Limit
  - Regulatory Flood And Fill Lines
- Land Use Zoning (Displays 1:16000 to 1:500)

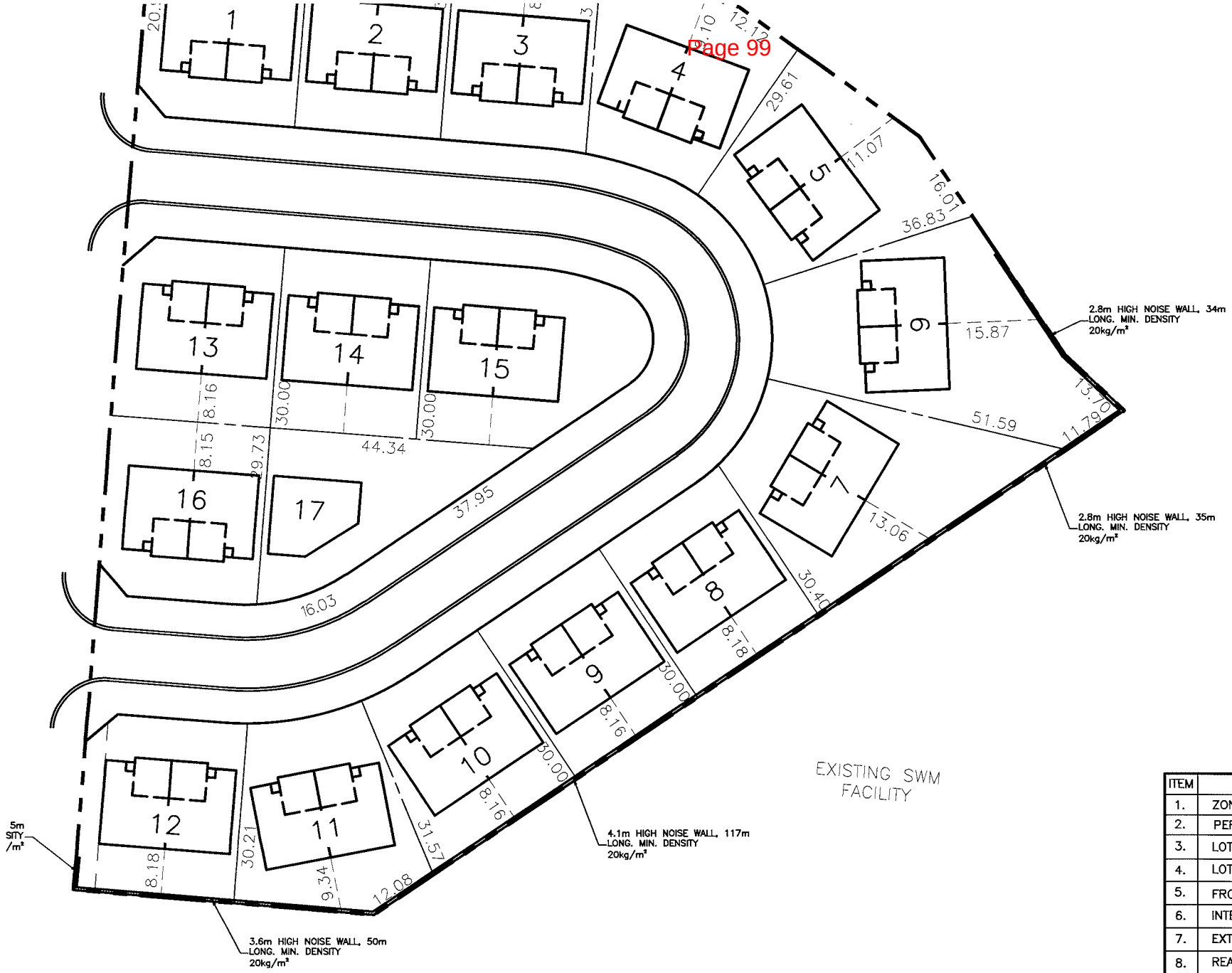
Notes

0 51 102 Meters

NAD_1983_UTM_Zone_17N

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. This is not a plan of survey

December 23, 2021



SITI

ITEM	A
1.	ZONE VARIATIONS
2.	PERMITTED USES
3.	LOT AREA (m²) MINIMUM
4.	LOT DEPTH (m) MINIMUM
5.	FRONT DEPTH (m) MINIMUM
6.	INTERIOR SIDE YARD DEPTH (m) MINIMU
7.	EXTERIOR SIDE YARD DEPTH (m) MINIMU
8.	REAR YARD DEPTH (m) MINIMUM
9.	LOT COVERAGE (%) MAXIMUM
10.	LANDSCAPED OPEN SPACE (%) MINIMUM
11.	HEIGHT (m) MAXIMUM

✱ DENOTES VARIANCES REQUESTED

Plate 2: Applicant's Sketch
File No.: A07-21 - Hunt Homes Inc.
Lots 1, 12, 13, 16, Plan 41M-373, Township of East Zorra-Tavistock

January 14th, 2022

VIA EMAIL ONLY

Township of East Zorra-Tavistock
90 Loveys Street
Hickson, Ontario
N0J 1L0

Attention: Will Jaques & Dustin Johnson

Innerkip Subdivision
Phase 7 Lots 1, 12, 13, 16 Minor Variance

Dillon Consulting Limited (Dillon) is pleased to provide an update on a previously submitted minor variance for the subject site mentioned above. In November of 2021 we submitted a minor variance requesting a reduction to the minimum lot area on corner lots under the R2-9 zone, the minimum area requested was 424.2m2. Upon further review of the plan, the owner would like to further decrease the minimum lot area for corner lots to 415m2 to allow for a safety buffer for lot 1 to be developed as intended. For further justification, please see the original minor variance letter submitted on November 25th, 2021.

Should you have any questions or require additional information, please do not hesitate to contact the undersigned at (519-719-0830) or cwilks@dillon.ca.

Sincerely,

DILLON CONSULTING LIMITED

Connor Wilks,
Planner

CPW:hkr

#6.a

Placeholder page for Agenda Item 6.a – Conferences & Seminars

#6.b

Placeholder page for Agenda Item 6.b - County Council – Update & Questions

#6.c

Placeholder page for Agenda Item 6.c –
Staff Reports and Questions for Staff

1 Adam St., P. O. Box 988,
Tavistock, Ont. N0B 2R0
(519) 655-2102 / Fax (519) 655-3560
e-mail: kwettlaufer@ezt.ca

#6.d

MINUTES

for the meeting of the Tavistock & District Recreation Facilities Board held in the Board Room on Nov 22, 2021 at 7:00pm.

Present:, Margaret Lupton, Don Mckay, Kristen Cook, Ron Wiffen, Phil Schaefer, Karen Deprest, Brett Zehr Ken Wettlaufer.
Absent:

CALL TO ORDER AND OPENING REMARKS

- Margaret Lupton called the meeting to order at 7:02 pm.

APPROVAL OF AGENDA

1- APPROVE AGENDA

Moved by – Brett Zehr
Seconded by – Kristen Cook
"resolved that the Agenda for the November 22, 2021 meeting be approved as printed and circulated and further that the following items be added to the Agenda for this meeting."
- None

CARRIED.

DISCLOSURE OF PECUNIARY INTERESTS AND GENERAL NATURE THEREOF

- None.

GENERAL BUSINESS

2- CONFIRM MINUTES

Moved by – Kristen Cook
Seconded by – Phil Schaefer
"resolved that the Board confirm the Minutes of the October 25th, 2021 meeting as printed and circulated." CARRIED.

Correspondence and Petitions

- Email regarding request for Seniors Euchre. Board instructed Ken to respond that we have space available to rent if they would like to proceed with organizing this type of activity.

DELEGATIONS AND APPOINTMENTS

- Scotty Zehr and Doug Sparling attended the meeting at 7:15 pm to provide some thoughts for an agreement / ongoing use of the Memorial Hall. The idea of a Friday Night Lights program was presented. Program would facilitate a Community Church program outside of the church facilities for the greater community, to engage all people and include some that may not otherwise attend a more traditional church environment. Past events of this nature would provide a free meal and guest speaker type of program. Was discussion about logistics of how this could be achieved. Having a full time tenant while still keeping the Hall available for other community functions. Would most likely involve

some type of renovations and entering into an agreement / partnership with the Township. It was noted that entering into this type of agreement would need to be a public process where others would have the same opportunity to provide proposals and feedback. Further discussion on this type of agreement would require a presentation at an EZT Council meeting.

REPORTS

A- Manager's Verbal Facilities Report

1- Dale McCormick request to rent the Pavilion ice every Friday night 5 to 7pm. Group that has some unvaccinated youth and can't play in doors. So, they are looking for ice time outdoors. Are we taking private rentals in the pavilion during ice season? Was agreed by the Board that pavilion ice should be used openly by the general public on a good will shared basis. This has worked well in the past, if concerns with this arrangement they would be dealt with as needed.

2- Public Skating on the weekends, is scheduled to start up again on Nov 28th

3- I attended the Mens Club meeting on Nov 18th to discuss the possibilities of reopening the booth. Number of concerns with addressing covid protocol were talked about. Question was raised about comfort level of the volunteers and working in this environment. While there is some interest in opening it again. They are first going to pole their volunteer workers. To see if they have commitment to meet staffing need as the first step. Will also evaluate the effect of the SWPH announcement the week of Nov 22nd. Ken will start to get things in place so that if we go ahead will have a head start.

4- Heat trace cable on the Pavilion Roof was removed in order to apply rubber Coating on the valleys etc. It is still working however the electrician indicated it was weather off and could be replaced. Quote to replace it would be $1200 to $1400. Even if there is ice buildup in this area. The new rubber coating is to have sealed up the leaky areas. Therefore, I would suggest reinstalling the old one again and hopefully getting a few more years out of it.

B- Arena Financial Statement as of November 19 were reviewed
C- Memorial Hall Financial Statement as of November 19 were reviewed
D- Queens & Bender Park Financial Statement as of November 19 were reviewed
E- TDRC October Management Contract Summary.

UNFINISHED AND OTHER BUSINESS

A- Southwest Public Health has some of highest Covid-19 case numbers in all of Ontario. Therefore, they are looking at imposing addition restrictions on capacity limits and reinforcing the message about social distancing. These new restrictions will affect patrons rather than capacities for on ice activities. Announcement is expected later in the week of Nov 22

B- How do restrictions affect Memorial Hall rentals etc. Will need to figure out capacity based on square footage vs 50% capacity. How will these limits be controlled at Halls and the Arena? This will need to be further evaluated when we receive the official announcement.

C- We have received a few questions about having the ice installed again in the Queens Park Pavilion this winter. Are we doing this again? How are we managing the Covid-19 protocol for this activity? In the past it has been open for the general public to use / share on a first come first serve basis. Are we taking bookings for exclusive use of the ice when / if it is installed? If ice is installed it would be dealt with on the same basis as has been done in the past. Open to the general public for shared use.

LEGAL AND PERSONNEL:

None

NEXT MEETING AND ADJOURN

- Next meeting is to be Monday January 24, 2022 @ 7:00pm.

3- ADJOURN

Moved by – Ron Wiffen
Seconded by – Phil Schaefer
"resolved that the Board does now adjourn at 8:25 pm."

CARRIED.

_____ _____

Margaret Lupton, Chairperson Ken Wettlaufer, Facility Manager

#7.a

THE CORPORATION OF THE

TOWNSHIP OF EAST ZORRA-TAVISTOCK

COUNTY OF OXFORD

TAVISTOCK DRAIN 1979 RECONSTRUCTION 2021

BY-LAW #2022 - 01

BEING a by-law to provide for drainage works in the Township of East Zorra-Tavistock, in the County of Oxford.

WHEREAS in accordance with the provisions of The Drainage Act, R.S.O. 1990, certain drainage works has been requested on the following lands:

Pt. Lots 34 & 35, Conc. 13, and Part of Lot 124, RP 307

AND WHEREAS the Council of the Township of East Zorra-Tavistock in the County of Oxford has procured a report by Mr. Curtis MacIntyre of the firm of K. Smart & Associates Ltd. of Kitchener, Ontario and the report shall be attached hereto and form part of this by-law;

AND WHEREAS the estimated total cost of constructing the drainage works is $1,140,000.00;

AND WHEREAS the Council is of the opinion that drainage of the area is desirable;

THEREFORE the Council of the Township of East Zorra-Tavistock, pursuant to The Drainage Act, R.S.O. 1990 ENACTS AS FOLLOWS:

1. The report dated December 17, 2021, is hereby adopted and the drainage works as therein set forth is hereby authorized, and shall be completed in accordance therewith.

2. (1) The Corporation of the Township of East Zorra-Tavistock may borrow on the credit of the Corporation the amount of $1,140,000.00 being the amount necessary for construction of the drainage works.

(2) The Corporation may arrange for the issue of debentures in the name of the County of Oxford for the amount borrowed less the total amount of
(a) grants received under Section 85 of The Act;
(b) commuted payments made in respect of lands and roads assessed within the municipality;
(c) moneys paid under Subsection 61(3) of The Act; and
(d) moneys assessed in and payable by another municipality

and such debentures shall be made payable within five (5) or ten (10) years from the date of the debenture and shall bear interest at the prevailing rates at the time the said debenture is sold by the County of Oxford.

3. For paying the amount of $1,140,000.00 being
(a) the amount assessed upon the lands and roads in the Township of East Zorra-Tavistock, except the lands and roads belonging to or controlled by the Municipality and
(b) the amount required to pay interest on the portion of the amount borrowed represented by the amount in Clause (a)

Less the total amount of
(c) grants under Section 85 of The Act
(d) commuted payments made in respect of the lands and roads assessed

4. For paying the amount of $0 being
a) the amount assessed upon the lands and roads belonging to or controlled by the Municipality
b) the amount required to pay interest on the portion of the amount borrowed represented by the amount in Clause (a)

A special rate shall be levied upon lands and roads as set forth in "Schedule of Assessments" to be collected in the same manner and at the same time as other taxes are collected.

The amount of the special rate levied upon each parcel of land or part thereof shall be divided into five (5) or ten (10) equal amounts and one such amount shall be collected in each year for five (5) or ten (10) years after the passing of this by-law.

5. This by-law shall come into force on the passing thereof, and may be cited as the TAVISTOCK DRAIN 1979 RECONSTRUCTION 2021.

READ A FIRST AND SECOND TIME THIS 19th DAY OF JANUARY, 2022.

_____ _____

Will Jaques, Clerk Don McKay, Mayor

READ A THIRD TIME AND FINALLY PASSED THIS ___ DAY OF _____, 2022.

_____ _____

Clerk Mayor

NOTICE OF COURT OF REVISION
TAVISTOCK DRAIN 1979 RECONSTRUCTION 2022

You are hereby advised that the Drainage Court of Revision for the TAVISTOCK DRAIN 1979 RECONSTRUCTION 2021 will be held on Wednesday, March 2, 2022, at the Innerkip Community Centre, 695566 17th Line, Innerkip, Ontario at 9:15 a.m. Any owner may appeal his/her assessment to the Court of Revision by giving written notice to the undersigned on or before Monday February 21, 2022, at 4:30 p.m.

Will Jaques, Clerk
Township of East Zorra-Tavistock
Hickson, Ontario N0J 1L0

Also take notice that in accordance with The Drainage Act any owner or public utility affected by the drainage works, if dissatisfied with the report of the Engineer on the grounds that:

(a) the benefits to be derived from the drainage work are not commensurate with the estimated cost thereof;

(b) the drainage works should be modified on the grounds to be stated;

(c) the compensation or allowances as provided by the Engineer are inadequate or excessive;

may appeal to the Tribunal. In every case, a written notice of appeal shall be served upon the Council of the initiating municipality within forty (40) days after the mailing of this notice.

DATED: January 19, 2022

#10

THE CORPORATION OF THE

TOWNSHIP OF EAST ZORRA-TAVISTOCK

COUNTY OF OXFORD

BY-LAW # 2022 - 02

Being a by-law to confirm all actions and proceedings of the Council.

NOW THEREFORE THE COUNCIL OF THE TOWNSHIP OF EAST ZORRA-TAVISTOCK ENACTS AS FOLLOWS:

All actions and proceedings of the Council taken at its meeting held on the 19th day of January, 2022 except those taken by By-law and those required by law to be done by resolution are hereby sanctioned, ratified and confirmed as though set out herein provided, however, that any member of this Council who has dissented from any action or proceeding or has abstained from discussion and voting thereon shall be deemed to have dissented or abstained, as the case may be, in respect of this By-law as it applies to such action or proceeding.

READ A FIRST, SECOND AND THIRD TIME AND FINALLY PASSED THIS 19th DAY OF JANUARY, 2022.

_____

Don McKay, Mayor

seal

_____

Will Jaques, Clerk