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

AGENDA

for the Meeting to be held on Wednesday March 2, 2022 at the
Innerkip Community Centre, 695566 17th Line, Innerkip, Ontario, at 9:00 a.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.

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

4. General Business:
   a) Confirm February 16, 2022 Council Meeting Minutes
   b) Oxford County – Consent Application B21-97-2 (Stevenson)
   c) Oxford County – Consent Application B21-103-104 (2825085 Ontario Inc.)

5. Delegations & Appointments:
   a) 9:15 a.m. – Consideration of Engineer's Report (Parker Drain 2022)
   b) 9:30 a.m. – Court of Revision – Tavistock Drain 1979 (Reconstruction 2021)
   c) 10:00 am – MVA Application A-1-2022 (Reyneveld)

6. Reports of Municipal Officers and Committees:
   a) Conferences and Seminars
   b) County Council – Updates & Questions
   c) Staff Reports – Updates & Questions
   d) February 22, 2022 Hickson Trail Committee Minutes
   e) Staff Report - #HRSC2022 – 01 re: Statutory Holiday/ Travel Allowance Policies
   f) Staff Report - #CIO2022 – 03 re: Culvert 2012 Replacement Tender Results
   g) Staff Report - #CIO2022 – 04 re: John/Henry St. Reconstruction Tender Results
   h) Staff Report - #CBO2022 – 03 re: Building, Development & Drainage Reporting
   i) Staff Report - #PW2022 – 02 re: Public Works Reporting
   j) Staff Report - #PW2022 – 03 re: Gravel Resurfacing - Tender
   k) Staff Report - #FC2022 – 02 re: Fire Department Reporting
   l) Staff Report - #FC2022 – 03 re: Joint Fire Prevention Officer Position
   m) Staff Report - #BCO2022 – 02 re: By-law Compliance Reporting
   n) Staff Report - #CSM2022 – 03 re: Corporate Services Reporting
   o) Staff Report - #CAO2022 – 02 re: CAO-Treasury Reporting

7. By-laws:
   a) By-law #2022-07-Parker Drain 2022 (Provisional By-law)
   b) 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 February 16, 2022.

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 provided an update on the Tavistock Braves' season. Councillor SMITH advised of the upcoming Coldest Night of the Year event, to be held February 26, 2022.

Approve Agenda

1. Moved by: Jeremy SMITH
Seconded by: Margaret LUPTON
Resolved that Council approve the agenda for the February 16, 2022 meeting, as printed and circulated.

CARRIED.

PECUNIARY INTERESTS:

- Jeremy SMITH – Item #5(a) (ZBA Application ZN2-21-14/ OPA Application 21-20-2 (peopleCare Inc.)

Confirm Minutes - Council

2. Moved by: Don EDMISTON
Seconded by: Matthew GILLESPIE
Resolved that Council confirm the Minutes of the February 2, 2022 Council Meeting, as printed and circulated.

CARRIED.

Correspondence & Reports – No Resolutions:

- January 24, 2022 TDRFB Minutes
- 2021 Council and PSB Pay & Expenses Report

Correspondence & Reports – Resolutions Following:

2021 Council and PSB Pay & Expenses Report

Council reviewed the 2021 Council and PSB Pay & Expenses Report.

Conferences and Seminars

Mayor MCKAY advised of his recent attendance at an Office of the Fire Marshal webinar regarding mandatory Firefighter Certification.

January 24, 2022 TDRFB Minutes

Council reviewed the January 24, 2022 Tavistock & District Recreation and Facilities Board (TDRFB) Minutes.

Having declared a pecuniary interest, Jeremy Smith left the meeting at 7:15 p.m.

Public Meeting - Open

3. Moved by: Margaret LUPTON
Seconded by: Scott RUDY
Resolved that Council does now adjourn to a Public Meeting in accordance with the provisions of the Planning Act at 7:16 p.m.

CARRIED.

Public Meeting for OP21-20-2 & ZN2-21-14 (peopleCare Inc.)

PUBLIC MEETING – PEOPLECARE INC. OFFICIAL PALN APPLICATION OP21-20-2 & ZONE CHANGE APPLICATION ZN2-21-14, PART LOTS 126, 127 & 128, PLAN 307, PART 2, REFERENCE PLAN 41R-1977, TOWNSHIP OF EAST ZORRA-TAVISTOCK.

Dustin Robson from the County of Oxford Planning Department was present to comment on his report #CP2022-64, regarding Official Plan and Zone Change Applications on lands owned by peopleCare Inc.

Council asked questions of the planner and Staff. The agent for the applicant was at the meeting and made a presentation in support of the application. Council reviewed and considered the comments made in making its decision regarding this application.

Council Reconvene

4. Moved by: Don EDMISTON
Seconded by: Phil SCHAEFER
Resolved that the Public Meeting does now adjourn and Council reconvenes at 7:32 p.m.

CARRIED.

5. Moved by: Matthew GILLESPIE
Seconded by: Scott RUDY
Resolved that Township Council advise County Council that the Township supports the application for Official Plan Amendment, File No. OP21-20-2, submitted by peopleCare Inc. for lands described as Part Lots 126, 127 & 128, Plan 307, Part 2, Reference Plan 41R-1977, in the Township of East Zorra-Tavistock, to facilitate the construction of a 128 bed long-term care facility.

CARRIED.

6. Moved by: Scott RUDY
Seconded by: Phil SCHAEFER
Resolved that Council approve-in-principle Zone Change Application ZN 2-21-14 submitted by peopleCare Inc., for lands described as Part Lots 126, 127 & 128, Plan 307, Part 2, Reference Plan 41R-1977, to rezone the subject lands from 'Development Zone (D)' to 'Institutional Zone (I)' to facilitate the construction of a 128 bed long-term care facility.

CARRIED.

Jeremy SMITH returned to the meeting at 7:36 p.m.

SB19-04-2 (Mill-Gate Homes Inc.) Application for Amendment to Draft Plan Approval

At 7:37 p.m., Development Planner Dustin Robson presented his report to Council (CP2022-58) regarding the application for amendment to draft plan of subdivision SB19-04-2 (Mill-Gate Homes Inc.). Mr. Robson advised that:

- The application proposes a minor amendment to the existing draft approved plan of subdivision, to establish a block for park purposes on the eastern side of the subject lands (to be conveyed to the Township at a later date), which also results in the extension of an internal street to provide access to the park block, and the creation of one additional residential lot;
- Agency circulation did not indicate any concerns with the proposed amendment.
- Planning staff recommend support of the applicant's request.

Council asked questions of the planner and Staff. The agent for the applicant was present and spoke favourably of the application.

7. Moved by: Phil SCHAEFER
Seconded by: Don EDMISTON
Resolved that Council advise Oxford County that the Township supports the modification to the approved draft plan of subdivision, File No. SB19-04-2, as submitted by Mill-Gate Homes Inc., for lands described as Part Lots 34 & 35, Concession 13 (East Zorra), being Part Lot 7 of Registered Plan 1609, in the Village of Tavistock.

CARRIED.

By-law: 1st & 2nd Reading

8. Moved by: Jeremy SMITH
Seconded by: Scott RUDY
Resolved that the following by-law be read a first and second time:
- 2022-04 – Amend Procedural By-law (Inaugural Meeting)
- 2022-05 – ZBA Application ZN2-20-10 (2796247 Ontario Ltd.)

CARRIED.

By-law: 3rd & Final Reading

9. Moved by: Matthew GILLESPIE
Seconded by: Don EDMISTON
Resolved that the following by-law be read a third and final time:
- 2022-04 – Amend Procedural By-law (Inaugural Meeting)
- 2022-05 – ZBA Application ZN2-20-10 (2796247 Ontario Ltd.)

CARRIED.

Confirming By-law

10. Moved by: Jeremy SMITH
Seconded by: Scott RUDY
Resolved that By-law #2022-06 being a by-law to confirm the proceedings of Council held Wednesday February 16, 2022 be read a first, second and third time this 16th day of February, 2022, and further that the Mayor and Clerk are hereby authorized to sign the same and affix the corporate seal thereto.

CARRIED.

Adjourn

11. Moved by: Margaret LUPTON
Seconded by: Phil SCHAEFER
Resolved that Council does now adjourn at 8:20 p.m.

CARRIED.

Will Jaques, Clerk

Don McKay, Mayor

Report No: CP 2022-72
COMMUNITY PLANNING
Land Division Committee: March 3, 2022

To: **Chair and Members of Oxford County Land Division Committee**

From: **Dustin Robson, Development Planner, Community Planning**

Application for Consent
B21-97-2 – Alistair & Catherine Stevenson

REPORT HIGHLIGHTS

- The purpose of the Application for Consent is to facilitate the creation of one (1) residential infill lot that will accommodate a single detached dwelling while the lot to be retained will continue to contain a single detached dwelling and associated accessory buildings.
- Planning staff are recommending that the subject application be approved as it is consistent with the Provincial Policy Statement and generally maintains the intent and purpose of the Official Plan respecting infill development within designated settlements.

DISCUSSION

Background

OWNER/APPLICANT: Alistair & Catherine Stevenson
201 Stonegate Road, Innerkip, ON N0J 1M0

LOCATION:

The subject lands are described as Lot 1, Plan 41M115, Township of East-Zorra Tavistock. The lands are located on the northwest corner of the Stonegate Road and Oxford Road 33 and are municipally known as 201 Stonegate Road in Innerkip.

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 BY-LAW NO. 2003-18:

Existing Zoning: 'Residential Type 1 Zone (R1)'

SERVICES:

Lot to be Severed – Municipal water and sanitary sewer
Lot to be Retained – Municipal water and sanitary sewer

ROAD ACCESS:

Lot to be Severed – paved, Town Road (Stonegate Road)
Lot to be Retained – paved, Town Road (Stonegate Road)

PROPOSAL:

	Lot to be Severed	Lot to be Retained
Area	1,416 m^2 (15,241.7 ft^2)	1,659.8 m^2 (17,865.9 ft^2)
Frontage	24 m (78.7 ft)	28.1 m (92.1 ft)
Depth	59 m (193.5 ft)	59 m (193.5 ft)

The purpose of the Application for Consent is to create one (1) residential infill lot with frontage on Stonegate Road. The proposed lot to be severed will be approximately 1,416 m^2 (15, 241.7ft^2), while the lot to be retained would also be approximately 1,659.8 m^2 (17,865.9 ft^2) in area. The lot to be severed would have a frontage of 24 m (78.7 ft) and is currently vacant. The lot to be retained would have a frontage of 28.1 m (92.1 ft) and would contain the existing single detached dwelling and two accessory buildings.

To the north and west of the subject lands is an established low density residential neighbourhood containing single detached dwellings. To the east of the lands is a fire hall while Innerkip Central School is located to the south.

Plate 1, Existing Zoning & Location Map, indicates the location of the severed and retained lands as well as the existing zoning in the immediate vicinity.

Plate 2, Existing Zoning & Aerial Map, provides an aerial view of the subject lands.

Plate 3, Applicant's Sketch, provides the configuration and dimensions of the proposed severed lot and retained lot in greater detail.

Application Review

2020 Provincial Policy Statement

The PPS recognizes that the vitality of settlement areas is critical to the long-term economic prosperity of our communities and that development pressures and land use change will vary across Ontario. It is in the interest of all communities to use land and resources wisely, to promote efficient development patterns, protect resources, promote green spaces, ensure effective use of infrastructure and public service facilities and minimize unnecessary public expenditures.

Section 1.1.3.3 of the PPS directs that planning authorities shall identify appropriate locations and promote opportunities for intensification and redevelopment where this can be accommodated taking into account existing building stock or areas, including brownfield sites, and the availability of suitable existing or planned infrastructure and public service facilities required to accommodate projected needs.

Further, Section 1.4.3 of the PPS directs that planning authorities shall provide for an appropriate mix of housing types and densities to meet projected requirements of current and future residents of the regional market area by:

- Establishing and implementing minimum targets for the provision of housing which is affordable to low and moderate income households;
- Permitting and facilitating all forms of residential intensification and redevelopment and all forms of housing required to meet the social, health and well-being requirements of current and future residents, including special needs requirements;
- Directing the development of new housing towards locations where appropriate levels of infrastructure and public service facilities are or will be available to support current and projected needs;
- Promoting densities for new housing which efficiently uses land, resources, infrastructure and public service facilities, and support the use of active transportation and transit areas where it exists or is to be developed; and
- Establishing development standards for residential intensification, redevelopment and new residential development which minimize the cost of housing and facilitate compact form while maintaining appropriate levels of public health and safety.

Official Plan

The subject lands are located within the 'Low Density Residential' designation as shown on Schedule ‘E-3’ - Village of Innerkip Land Use Plan in the County Official Plan. Low density residential areas include those lands that are primarily developed or planned for a variety of low rise, low density housing forms including single-detached dwellings, semi-detached dwellings, duplex, converted dwellings, quadraplexes, townhouses and low-density cluster development.

The policies of Section 6.2.2.1 (Infill Housing) also apply to this proposal. Infill housing is defined as the placement of new residential development into established built-up areas on vacant or underutilized sites. In order to efficiently utilize the land supply designated residential and municipal servicing infrastructure, infill housing will be supported in Low Density Residential Areas.

The introduction of new residential housing into an established streetscape pattern will only be permitted if the proposal is consistent with the characteristics of existing development in the immediate area. In order that the street oriented infill projects are sensitive to the continuity of the existing residential streetscape, the County Land Division Committee will ensure that:

- the proposal is consistent with street frontage, lot area, setbacks and spacing of existing development within the immediate residential area.

In addition to the specific infill policies identified, the following policies will apply to all infill proposals:

- existing municipal services and public facilities will be adequate to accommodate the proposed infill project;

- stormwater run-off from the proposal will be adequately controlled and will not negatively affect adjacent properties;
- adequate off-street parking and outdoor amenity areas will be provided;
- the location of vehicular access points, the likely impact of traffic generated by the proposal on public streets and potential traffic impacts are acceptable;
- the extent to which the proposed development provides for the retention of any desirable vegetation or natural features;
- the effect of the proposed development on environmental resources and environmental constraints are addressed and mitigated in accordance with Section 3.2;
- consideration of the potential effect of the development on natural and heritage resources and their settings; and
- compliance of the proposed development with the provisions of the Town's Zoning By-law.

Zoning By-law

The subject lands are zoned 'Residential Type 1 Zone (R1)' in the Township of East Zorra-Tavistock Zoning By-Law. The R1 zone permits a limited range of uses including a single detached dwelling, converted dwelling, and home occupation.

The R1 zone requires a minimum lot area of 420 m^2 (4,521 ft^2) and a minimum frontage of 14 m (45.9 ft) where the lots are serviced by both municipal water and sanitary sewer services. For corner lots that are serviced by both municipal water and sanitary sewer services a minimum lot area of 540 m^2 (5,812.7 ft^2) and a minimum frontage of 18 m (59.1 ft) is required. A minimum lot depth of 30 m (98.4 ft) is also required.

Agency Comments

The Township's Public Works Manager has indicated that the driveway location for the severed lot must be approved by Public Works and meet the Township Entrance from Roadway Policy.

The Township's Chief Building Official has indicated the following:

1.) A Surveyor's Real Property Report is required.
2.) The driveway/garage to be on the north side of the new lot.
3.) Severance Agreement will be required for newly created parcel.
4.) Sump Pit – PDC or discharge to grade required. Direct footing tile connection is not permitted.
5.) Cash-in-lieu of parkland – Fee in effect at the time the consent is finalized will be payable to the Township.
6.) Cost of Water/Wastewater service connections for newly created lot – Fee in effect from County of Oxford at the time the consent is finalized.
7.) Drainage Assessment Reapportionment is required.

The County of Oxford Public Works has indicated the following:

1.) A 3 m x 3 m sight triangle is required to be transferred to the County free and clear of all liens, easements, etc. at no cost to the County at the intersection of Oxford Road and Stonegate Road.
2.) The entrance to the severed property shall be as far north as possible, located on Stonegate Road.
3.) As a condition of severance, the retained property will be required to install a new sanitary service for the retained property, and one new water service for the severed property, to the satisfaction of the County.

Enbridge noted that they have service lines running within the area which may or may not be affected by the proposed severance. Should the proposed severance impact these services, it may be necessary to terminate the gas service and relocate the line according to the new lands boundaries and that any service relocation required due to a severance would be at the cost of the property owner. Also, should future gas service be required to either the severed or retained parcel an application for gas service is to be submitted to Union Gas.

The Township Fire Chief, Hydro One, Canada Post and Bell Canada indicated that they had no objections or concerns with the subject application.

Public Consultation

Notice of the public meeting for the proposal was circulated to neighbouring property owners on February 17, 2022 in accordance with the requirements of the *Planning Act*. As of the date of this report, no comments or concerns had been received from the public.

Planning Analysis

Planning staff are of the opinion that the proposal is generally consistent with the Provincial Policy Statement and the County's Official Plan regarding residential intensification within a settlement area.

Specifically, staff are of the opinion that the proposal will facilitate increased density that will assist in meeting housing requirements of the regional market on lands designated for such use. Further, staff are satisfied that the proposal will also assist in utilizing existing and planned servicing infrastructure and public service facilities, while maintaining intended density targets and efficiently utilizing existing underutilized lands.

With respect to the policies of the Official Plan regarding Street Oriented Infilling, residential development along Stonegate Road is exclusively single detached dwellings. The proposal for a single detached dwelling on the proposed lot will be similar to existing development in the immediate vicinity and staff are of the opinion that the proposed severed and retained lots resulting from this proposal will be in-keeping with the character of the immediate neighbourhood.

Staff are of the opinion that the proposal will comply with the review criteria for infill proposals contained in the Official Plan, as adequate municipal services are present to accommodate the development, the lands will be of a sufficient size to provide for adequate off-street parking, and outdoor amenity areas.

In reviewing the proposal against the zoning requirements for the R1 Zone, both the lot to be severed and the lot to be retained would have larger lot frontages, lot areas, and lot depths than are required. The proposed lot to be severed will have sufficient space to meet the required front yard depth, rear yard depth, and interior side yard widths in accordance with the provisions of the R1 Zone. No relief from the Zoning By-law is being requested at this time.

Staff note that an 11.7 m (38.3 ft) wide easement in favour of the Township exists along the entirety of the south side of the subject lands and would be located on the lot to be severed, if the proposal is approved. The easement is for the purpose of Drainage Works 1975, which includes a municipal drain running along the north side of Oxford Road 33. Development is not to occur within the 11.7 m (38.3 ft) wide easement.

While the lot to be severed is proposed to have a lot area of 1,416 m^2 (15,241.7 ft^2) and a frontage of 24 m (78.7 ft), the existence of the easement along the south portion of the lot would reduce the amount of developable land on the lot. The easement covers an area of 593.1 m^2 (6,384 ft^2) which reduces the developable area of the lot to be severed to 822.9 m^2 (8,857.6 ft^2). As the R1 zone generally requires a minimum area of 540 m^2 (5,812.7 ft^2) for a corner lot, staff are satisfied that the proposal will continue to provide adequate developable space on the lot to be severed.

In light of the foregoing, Planning staff are satisfied that the consent application is consistent with the PPS and maintains the intent and purpose of the County Official Plan. As such, Planning staff are satisfied that the application can be given favourable consideration, subject to the appropriate conditions, as noted below.

RECOMMENDATIONS

Whereas the application for consent is consistent with the 2020 Provincial Policy Statement, complies with the policies of the County of Oxford Official Plan, and the subject property is appropriately zoned, we are of the opinion that the application is acceptable from a planning perspective, and should be granted, subject to the following conditions:

1. **If required, drainage assessment reapportionment be undertaken, pursuant to Section 65 of the Drainage Act, R.S.O. 1990, at the owner's expense, to the satisfaction of the Township of East Zorra-Tavistock.**

2. **If required, the Owners shall enter into a standard Severance Agreement with the Township of East Zorra-Tavistock, to the satisfaction of the Township of East Zorra-Tavistock.**

3. **The Owners shall provide a survey for both the lot to be severed and the lot to be retained indicating the location and setbacks of the existing buildings and structures, to the satisfaction of the Township of East Zorra-Tavistock.**

4. **The Owners provide cash-in-lieu of parkland, to the satisfaction of the Township of East Zorra-Tavistock.**

5. **A sight triangle measuring 3 m (9.9 ft.) x 3 m (9.9 ft) at the corner of Oxford Road 33 and Stonegate Road shall be dedicated to the County of Oxford, free of all costs and encumbrances, to the satisfaction of the County of Public Works Department.**

6. **The County of Oxford Department of Public Works advise the Secretary-Treasurer of the County of Oxford Land Division Committee that all financial requirements of the County of Oxford with respect to provision of water and sewer services to the subject property have been complied with. This condition can be cleared by payment for the required services or entering into a severance agreement with the area municipality which states that no building permit shall be issued until payment is made to the County. In order to clear this condition, a copy of the draft Severance Agreement which addresses the above requirements to the satisfaction of the County of Oxford Public Works Department, must be provided to the Public Works Department.**

7. **The Clerk of the Township of East Zorra-Tavistock advise the Secretary-Treasurer of the Land Division Committee that all requirements of the Township of East Zorra-Tavistock, financial, services and otherwise, have been complied with.**

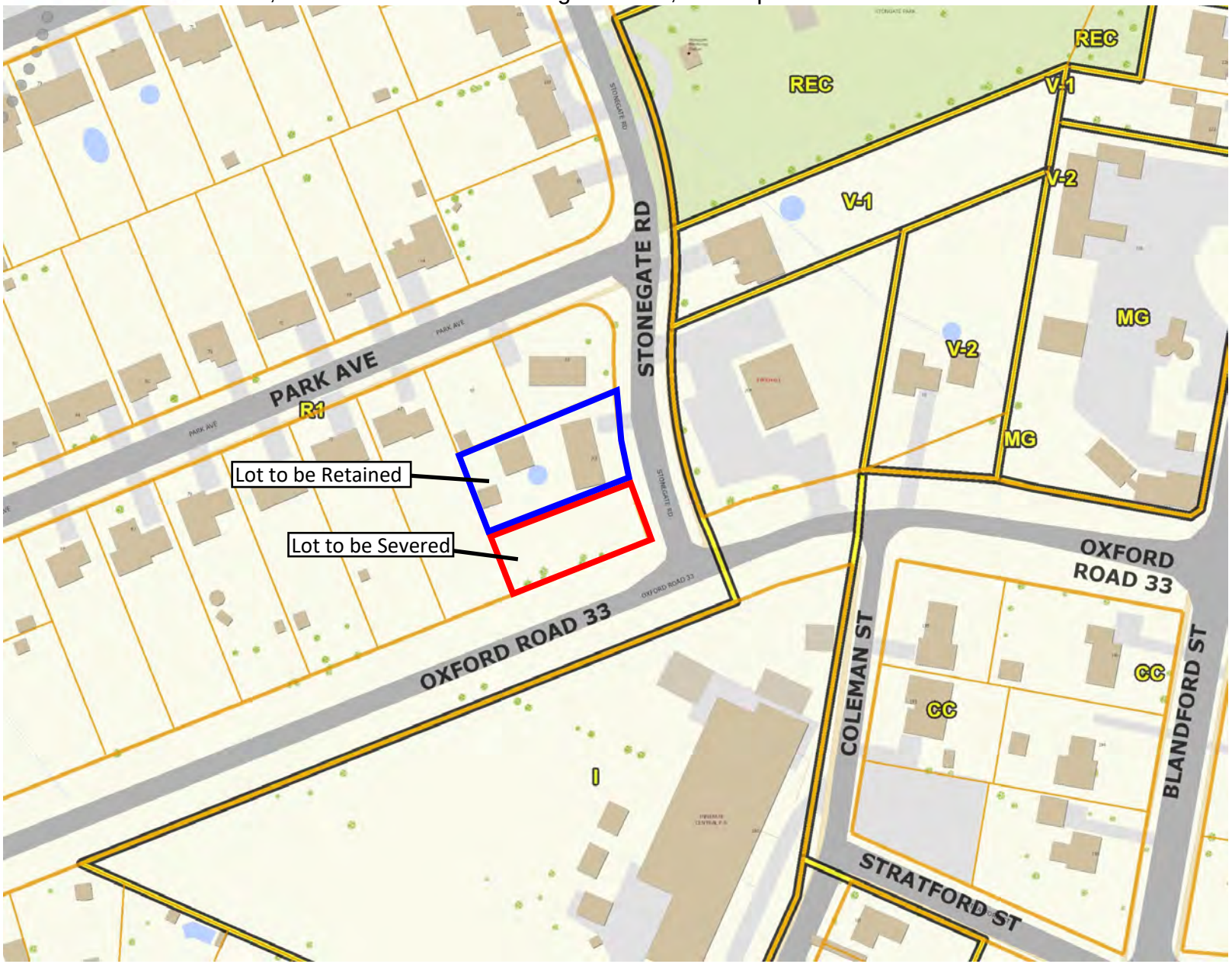
SIGNATURES

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

Approved for submission: *"Original Signed By"* Gordon K. Hough, RPP
Director

Oxford County
Growing stronger together

Plate 1: Existing Zoning & Location Map
File No: B21-97-2 - Stevenson
Lot 1, Plan 41M115 - 201 Stonegate Road, Innerkip



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

map it

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 2, 2021

Plate 1: Existing Zoning & Aerial Map
File No: B21-97-2 - Stevenson
Lot 1, Plan 41M115 - 201 Stonegate Road, Innerkip

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

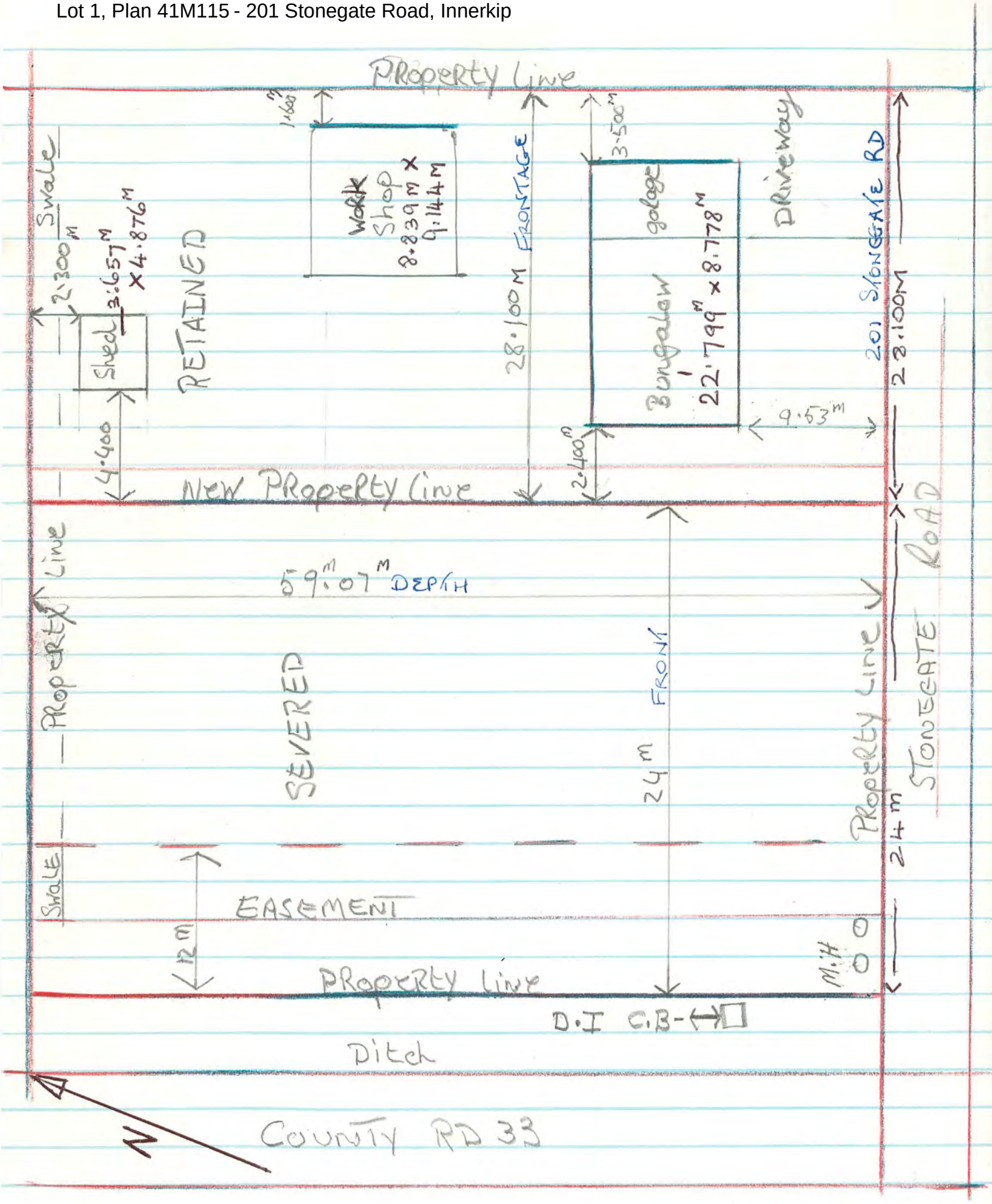
0 13 26 Meters

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 2, 2021

Plate 3: Applicant's Sketch
File No: B21-97-2 - Stevenson
Lot 1, Plan 41M115 - 201 Stonegate Road, Innerkip



Report No: CP 2022-76
COMMUNITY PLANNING
Land Division Committee: March 3, 2022

To: **Chair and Members of Oxford County Land Division Committee**

From: **Dustin Robson, Development Planner, Community Planning**

Applications for Consent & Minor Variance B21-103-2; B21-104-2; A21-30-2 – 2825085 Ontario Inc.

REPORT HIGHLIGHTS

- The purpose of the Applications for Consent is to create two (2) new residential lots fronting on the south side of Jacob Street East to facilitate the construction of a semi-detached dwelling with one (1) unit on the each lot to be severed. A duplex dwelling (comprising two dwelling units) is proposed on the lot to be retained.
- A variance is being requested to reduce the minimum lot frontage on the lot to be retained from 18 m (59.1 ft) to 7 m (22.9 ft).
- Planning staff are recommending approval of the proposal, as it is consistent with the Provincial Policy Statement and generally maintains the intent and purpose of the Official Plan respecting infill development within designated settlements.

DISCUSSION

Background

OWNER: 2825085 Ontario Inc.
3523 Huron Road, New Hamburg, ON N3A 3C5

APPLICANT: Scott Patterson (Patterson Planning Consultants Inc.)
6095 Line 66, Monkton, ON N0K 1P0

LOCATION:

The subject lands are described as Lot 1, W Pt Lot 2, Plan 307 in the Township of East Zorra-Tavistock. The subject lands are located on the south side of Jacob Street East, between John Street and Woodstock Street North. The subject lands are currently municipally addressed as 32 Jacob Street East in Tavistock.

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 NO. 2003-18:

Existing Zoning: 'Residential Type 2 Zone (R2)'

SERVICES: Lots to be Severed – Municipal water and sanitary sewer
Lot to be Retained – Municipal water and sanitary sewer

ROAD ACCESS: Lots to be Severed – Paved, Town Road (Jacob Street East)
Lot to be Retained – Paved, Town Road (Jacob Street East)

PROPOSAL:

	Lot to be Severed (B21-103-2)	Lot to be Severed (B21-104-2)	Lot to be Retained
Area	309.3 m^2 (3,329.2 ft^2)	309.3 m^2 (3,329.2 ft^2)	1,276.3 m^2 (13,737.9 ft^2)
Frontage	9.7 m (31.8 ft)	9.7 m (31.8 ft)	7 m (22.9 ft)
Average Depth	31.9 m (104.6 ft)	31.9 m (104.6 ft)	67.1 m (220.4 ft)

The Applications for Consent propose to create two (2) new residential infill lots that will have frontage on Jacob Street East. Each of the proposed lots to be severed will cover an area of approximately 309.3 m^2 (3,329.2 ft^2) and will have approximately 9.7 m (31.8 ft) of frontage on Jacob Street East. A semi-detached dwelling would be constructed with one (1) unit on each of the lots to be severed. The lot to be retained will have an area of approximately 1,276.3 m^2 (13,737.9 ft^2). A duplex is proposed to be constructed on the lot to be retained.

The Application for Variance proposes relief from Section 13.2 of the Township Zoning By-law to reduce the required minimum lot frontage from 18 m (59.1 ft) to 7 m (22.9 ft) for the lot to be retained. The frontage would be on Jacob Street East.

The subject lands currently contain a single detached dwelling, which will be removed from the site. The subject lands are generally surrounded by existing single detached dwellings. An existing institutional use (Men's Club) also exists to the southwest of the subject lands.

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

Plate 2, Existing Zoning & Aerial Map, provides an aerial view of the subject lands and immediate vicinity.

Plate 3, Applicant's Sketch, depicts the proposed configuration of the lands to be severed and retained along with the proposed layout of the dwelling units.

Application Review

2020 PROVINCIAL POLICY STATEMENT

Section 1.1.3.1 of the 2020 Provincial Policy Statement (PPS) directs that settlement areas will be the focus of growth, and their vitality and regeneration shall be promoted.

Section 1.1.3.3 of the PPS directs that planning authorities shall identify appropriate locations and promote opportunities for intensification and redevelopment, where this can be accommodated, taking into account existing building stock or areas, including brownfield sites, and the availability of suitable existing or planned infrastructure and public service facilities required to accommodate projected needs.

Further, Section 1.4.3 of the PPS directs that planning authorities shall provide for an appropriate mix of housing types and densities to meet projected requirements of current and future residents of the regional market area by:

- Establishing and implementing minimum targets for the provision of housing which is affordable to low and moderate income households;
- Permitting and facilitating all forms of residential intensification and redevelopment and all forms of housing required to meet the social, health and well-being requirements of current and future residents, including special needs requirements;
- Directing the development of new housing towards locations where appropriate levels of infrastructure and public service facilities are or will be available to support current and projected needs;
- Promoting densities for new housing which efficiently uses land, resources, infrastructure and public service facilities, and support the use of active transportation and transit areas where it exists or is to be developed; and
- Establishing development standards for residential intensification, redevelopment and new residential development, which minimize the cost of housing and facilitate compact form while maintaining appropriate levels of public health and safety.

OFFICIAL PLAN

The subject lands are located within the Village of Tavistock, which is identified as a ‘Serviced Village’ according to the Settlement Strategy Plan for the County of Oxford. The lands are also designated ‘Low Density Residential’ according to Schedule E-2, Village of Tavistock Land Use Plan.

Section 4.2.2 directs that Serviced Villages are settlements characterized by a broad range of uses and activities which have been developed or are proposed for development on centralized waste water and water supply facilities.

As per Section 6.2.2.1.2, infill development may involve the construction of a residential structure behind a building facing a street, the conversion of secondary structures for residential purposes, new residential development on lots with minimal street frontage or on small vacant remnant parcels of land which cannot be integrated into a plan of subdivision. Backyard infill may involve the development of existing lots of record, the creation of new lots by consent or the development of a garden suite.

The introduction of new residential housing into an established streetscape pattern will only be permitted if the proposal is consistent with the characteristics of existing development in the immediate area. In order that the street oriented infill projects are sensitive to the continuity of the existing residential streetscape, the County Land Division Committee will ensure that:

- the proposal is consistent with street frontage, lot area, setbacks and spacing of existing development within the immediate residential area.

In addition to the specific infill policies identified, the following policies will apply to all infill proposals:

- existing municipal services and public facilities will be adequate to accommodate the proposed infill project;
- stormwater run-off from the proposal will be adequately controlled and will not negatively affect adjacent properties;
- adequate off-street parking and outdoor amenity areas will be provided;
- the location of vehicular access points, the likely impact of traffic generated by the proposal on public streets and potential traffic impacts are acceptable;
- the extent to which the proposed development provides for the retention of any desirable vegetation or natural features;
- the effect of the proposed development on environmental resources and environmental constraints are addressed and mitigated in accordance with Section 3.2;
- consideration of the potential effect of the development on natural and heritage resources and their settings; and
- compliance of the proposed development with the provisions of the Town's Zoning By-law.

When considering proposals for backyard infilling, Area Council and the County Land Division Committee will be guided by the following criteria:

- the siting of any buildings and parking areas in relation to the size, configuration and topography of the lot is such that impact on light, view and privacy of adjacent backyards is minimal;
- for proposals involving more than two dwelling units, the exterior design in terms of height, bulk, scale and layout of the proposed building is consistent with present land uses in the area;
- direct vehicular access to a public street will be required and driveways will have sufficient width to allow efficient vehicular use and turning of both private and emergency vehicles and to provide for snow storage.

In addition, all infill proposals in serviced villages are subject to the following criteria:

- Stormwater run-off from the proposal will be adequately controlled and will not negatively affect adjacent properties;
- Adequate off-street parking and outdoor amenity areas will be provided;
- The location of vehicular access points, the likely impact of traffic generated by the proposal on public streets and potential traffic impacts on pedestrian and vehicular safety and surrounding properties is acceptable;
- Existing municipal services or private services and community facilities will be adequate to accommodate the proposed infill project;
- The extent to which the proposed development provides for the retention of any desirable vegetation or natural features that contribute to the visual character of the surrounding area;

- All infill proposals will be evaluated as to the environmental impacts and constraints associated with the proposed development in accordance with Section 3.2, as well as to the potential effect of the development on heritage resources (Section 3.2.7.5);
- Compliance of the proposed development with the provisions of the Zoning By-Law of the Township and other municipal by-laws.

TOWNSHIP OF EAST ZORRA-TAVISTOCK ZONING BY-LAW

The subject lands are zoned as 'Residential Type 2 (R2)' which permits single detached dwellings, semi-detached dwellings, duplexes, converted dwellings, and home occupations.

For a semi-detached dwelling, the R2 Zone requires a minimum lot area of 270 m^2 (2,906.3 ft^2) per dwelling or 450 m^2 (4,843.9 ft^2) per dwelling for a corner lot. The R2 also requires a minimum lot frontage of 9 m (29.5 ft), or 15 m (49.2 ft) for a corner lot, and a minimum lot depth of 30 m (98.4 ft).

The lots to be severed each propose a lot area of approximately 309.3 m^2 (3,329.2 ft^2), have frontages of 9.7 m (31.8 ft), and lot depths of 31.9 m (104.6 ft). There are no variances being requested for the lots to be severed as the proposed lots will comply with the R2 zoning provisions for a semi-detached dwelling.

For a duplex dwelling, the R2 Zone requires a minimum lot area of 600 m^2 (6,458.5 ft^2). The R2 also requires a minimum lot frontage of 18 m (59.1 ft), and a minimum lot depth of 30 m (98.4 ft).

A duplex dwelling is proposed for the lot to be retained and the said lot would have an approximate lot area of 1,276.3 m^2 (13,737.9 ft^2) and a lot depth of 67.1 m (220.4 ft). The applicant is proposing a variance to allow a frontage of 7 m (22.9 ft), which is reduced from 18 m (59.1 ft) frontage typically required by the Township's Zoning By-law for such development.

AGENCY COMMENTS

The application was circulated to various agencies considered to have an interest in the proposal.

The Township Fire Chief has indicated that provisions for adequate firefighting for both proposed properties will have to be developed in accordance with the Ontario Building Code (OBC).

The Township Manager of Public Works has indicated that new driveways must be approved by Public Works and meet the Township Entrance from Roadway Policy. Costs associated with sidewalk reconstruction along the property to accommodate new entrances will be borne by the developer.

The Township's Chief Building Official has indicated the following:

1.) Severance Agreement will be required for newly created parcel.
2.) Cash-in-lieu of parkland – Fee in effect at the time the consent is finalized will be payable to the Township.
3.) Drainage Assessment Reapportionment is required.
4.) Overall and detailed Lot Grading Plan required as a condition.
5.) All existing buildings to be removed (Demolition Permit required) as a condition.
6.) Privacy fencing to be provided between the severed lands and the retained lands.
7.) All driveways and parking surfaces to be concrete or asphalt (or similar dustless material).

The County of Oxford Public Works has indicated the owner shall agree to satisfy all requirements, financial and otherwise of the County, regarding the installation of water & sanitary sewer services, to the satisfaction of the County.

Bell Canada has requested a 3 m wide easement strip to measure 1.5 m on either side of the existing buried facilities, as can be reasonably accommodated, to protect the integrity of the existing facilities, with costs associated with the registration of the easement to be the responsibility of the landowner. The letter from Bell Canada has been attached.

Canada Post has indicated that the new addresses will fall under P.O. Box delivery via the Tavistock Post Office.

Hydro One has commented that they have no concerns with the proposal.

PUBLIC CONSULTATION:

Notice of the public meeting for the proposal was circulated to neighbouring property owners on February 17, 2022 in accordance with the requirements of the *Planning Act*. As of the date of this report, no comments or concerns had been received from the public.

Planning Analysis

Planning staff are of the opinion that the proposal promotes growth within the designated Settlement area of Tavistock, in accordance with Section 1.1.3.1 of the Provincial Policy Statement (PPS). Further, the proposal supports residential intensification and promotes a mix of housing types in an area where suitable infrastructure and public service facilitates are available. As such, staff are satisfied that the proposal is consistent with the policies of Section 1.1.3.3 and 1.1.4.3 of the PPS, respecting development within Settlement areas.

It is proposed that both the severed and retained lots will be used for residential purposes, which is in keeping with the policies for the Low Density Residential designation and other relevant policies of the Official Plan. Notwithstanding that surrounding residential development is comprised of single detached dwellings, staff are satisfied that the proposal will be compatible with existing development in the immediate area, as there is an existing variety of lot sizes. While the proposal will result in a total of four (4) new dwelling units on the subject lands, the form of the proposed buildings will be similar to that of existing development in the immediate area respecting setbacks and lot coverage.

With regard to the backyard infill policies of the Official Plan, the subject lands will have direct vehicular access to Jacob Street East via a driveway entrance which would be wide enough to allow for efficient vehicular access and no comments of concern were identified by the Township Fire Chief. Further, it is noted that prior to any new development on the subject lands, a lot grading plan would be required, to the satisfaction of the Township Building Department.

Staff are also satisfied that the proposed development will provide adequate space for off-street parking. The subject lands are also in close proximity to the Village downtown core and other community facilities in the Village.

As previously outlined, the applicant has submitted an application for variance proposing relief from Section 13.2 of the Township Zoning By-law to reduce the required minimum lot frontage from 18 m (83.3 ft) to 7 m (22.9 ft) for the lot to be retained.

Planning staff are generally satisfied that the requested reduction to lot frontage is appropriate as it will allow for sufficient space for vehicular access and maneuverability of emergency vehicles. The location of the proposed duplex dwelling, being on the southern portion of the retained lands, will have minimal impact on the surrounding lots as there will be adequate off-street parking provided on-site for the duplex and the duplex will be located further from the interior and rear lot lines than is required by the Zoning By-law. With the duplex being setback further than required, it will allow for the duplex to integrate into the established neighbourhood with minimal impacts. The additional distance will also allow for mitigation efforts such as fencing or screening to be used, if required. As a result, it is Planning staff's opinion that the proposal meets the four (4) tests of a minor variance.

In light of the foregoing, it is the opinion of this Office that the proposal is consistent with the policies of the PPS and maintains the intent of the County Official Plan. As such, Planning staff are satisfied that the application can be given favourable consideration, subject to the recommended conditions.

RECOMMENDATIONS

A21-30-2

That the Oxford County Land Division Committee approve Minor Variance Application A21-30-2 submitted by 2825085 Ontario Inc. for lands described as Lot 1, W Pt Lot 2, Plan 307 in the Township of East Zorra-Tavistock, as it relates to:

1. Relief from Section 13.1 – Table 13.3 of the Township Zoning By-law to reduce the required minimum lot frontage from 18 m (59.1 ft) to 7 m (22.9 ft) for the lot to be retained resulting from Severance Applications B21-103-2 and B21-104-2.

As the proposed variance is:

(i) a minor variance from the provisions of the Township of East Zorra-Tavistock Zoning By-law No. 2003-18;

(ii) desirable for the appropriate development or use of the land;

(iii) in keeping with the general intent and purpose of the Township of East Zorra-Tavistock Zoning By-law 2003-18; and

(iv) in keeping with the general intent and purpose of the Official Plan of the County of Oxford.

B21-103-2

Whereas the application for consent is consistent with the 2020 Provincial Policy Statement, conforms with the policies of the County Official Plan, and the subject property is appropriately zoned, we are of the opinion that the application is acceptable from a planning perspective, and should be granted, subject to the following conditions:

1. **If required, a drainage assessment reapportionment shall be undertaken, pursuant to The Drainage Act, R.S.O. 1990, to the satisfaction of the Township of East Zorra-Tavistock.**

2. **If required, the owners shall enter into a standard Severance Agreement with the Township of East Zorra-Tavistock, to the satisfaction of the Township of East Zorra-Tavistock.**

3. **The Owner shall provide cash-in-lieu of parkland, to the satisfaction of the Township of East Zorra-Tavistock.**

4. **The Owner shall provide an overall, detailed Grading Plan, to the satisfaction of the Township of East Zorra-Tavistock.**

5. **The existing buildings on the lots to be severed and retained shall be removed, subject to Building Permits for Demolition, to the satisfaction of the Township of East Zorra-Tavistock.**

6. **The Land Division Committee approves a Servicing Easement and the Owner shall enter into an agreement with Bell Canada, to the satisfaction of Bell Canada.**

7. **The County of Oxford Department of Public Works advise the Secretary-Treasurer of the County of Oxford Land Division Committee that all financial requirements of the County of Oxford with respect to provision of water and sewer services to the subject property have been complied with. This condition can be cleared by payment for the required services or entering into a severance agreement with the area municipality which states that no building permit shall be issued until payment is made to the County. In order to clear this condition, a copy of the draft Severance Agreement which addresses the above requirements to the satisfaction of the County of Oxford Public Works Department, must be provided to the Public Works Department.**

8. **The Clerk of the Township of East Zora-Tavistock advise the Secretary-Treasurer of the Land Division Committee that all requirements of the Township of East Zorra-Tavistock, financial, services and otherwise, have been complied with.**

B21-104-2

Whereas the application for consent is consistent with the 2020 Provincial Policy Statement, conforms with the policies of the County Official Plan, and the subject property is appropriately zoned, we are of the opinion that the application is acceptable from a planning perspective, and should be granted, subject to the following conditions:

1. **The certificate for Application B21-103-2 be issued and a copy of the registered transfer be presented to the Secretary-Treasurer of the Land Division Committee, prior to the issuance of the certificate for Application B21-104-2.**

2. **If required, a drainage assessment reapportionment shall be undertaken, pursuant to The Drainage Act, R.S.O. 1990, to the satisfaction of the Township of East Zorra-Tavistock.**

3. **If required, the owners shall enter into a standard Severance Agreement with the Township of East Zorra-Tavistock, to the satisfaction of the Township of East Zorra-Tavistock.**

4. **The Owner shall provide cash-in-lieu of parkland, to the satisfaction of the Township of East Zorra-Tavistock.**

5. **The Owner shall provide an overall, detailed Grading Plan, to the satisfaction of the Township of East Zorra-Tavistock.**

6. **The existing buildings on the lots to be severed and retained shall be removed, subject to Building Permits for Demolition, to the satisfaction of the Township of East Zorra-Tavistock.**

7. **The Land Division Committee approves a Servicing Easement and the Owner shall enter into an agreement with Bell Canada, to the satisfaction of Bell Canada.**

8. **The County of Oxford Department of Public Works advise the Secretary-Treasurer of the County of Oxford Land Division Committee that all financial requirements of the County of Oxford with respect to provision of water and sewer services to the subject property have been complied with. This condition can be cleared by payment for the required services or entering into a severance agreement with the area municipality which states that no building permit shall be issued until payment is made to the County. In order to clear this condition, a copy of the draft Severance Agreement which addresses the above requirements to the satisfaction of the County of Oxford Public Works Department, must be provided to the Public Works Department.**

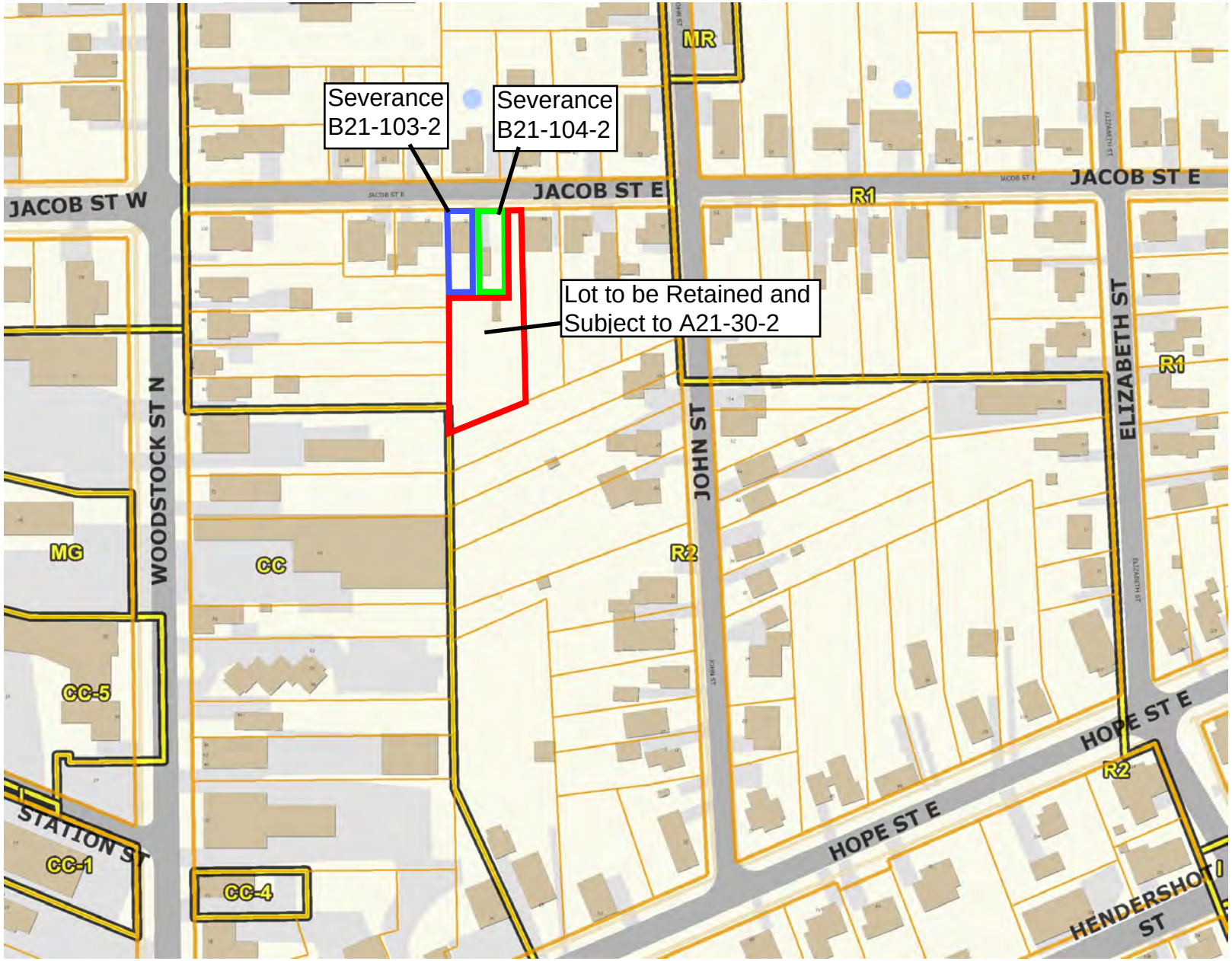
9. **The Clerk of the Township of East Zorra-Tavistock advise the Secretary-Treasurer of the Land Division Committee that all requirements of the Township of East Zorra-Tavistock, financial, services and otherwise, have been complied with.**

SIGNATURES

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

Approved for submission: *"Original Signed By"* Gordon K. Hough, RPP
Director

Plate 1: Existing Zoning & Location Map
File No. B21-103-104-2; A21-30-2 - 2825085 Ontario Inc.
Lot 1 and Part Lot 2, Plan 307, Township of East Zorra-Tavistock, 32 Jacob Street East, 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

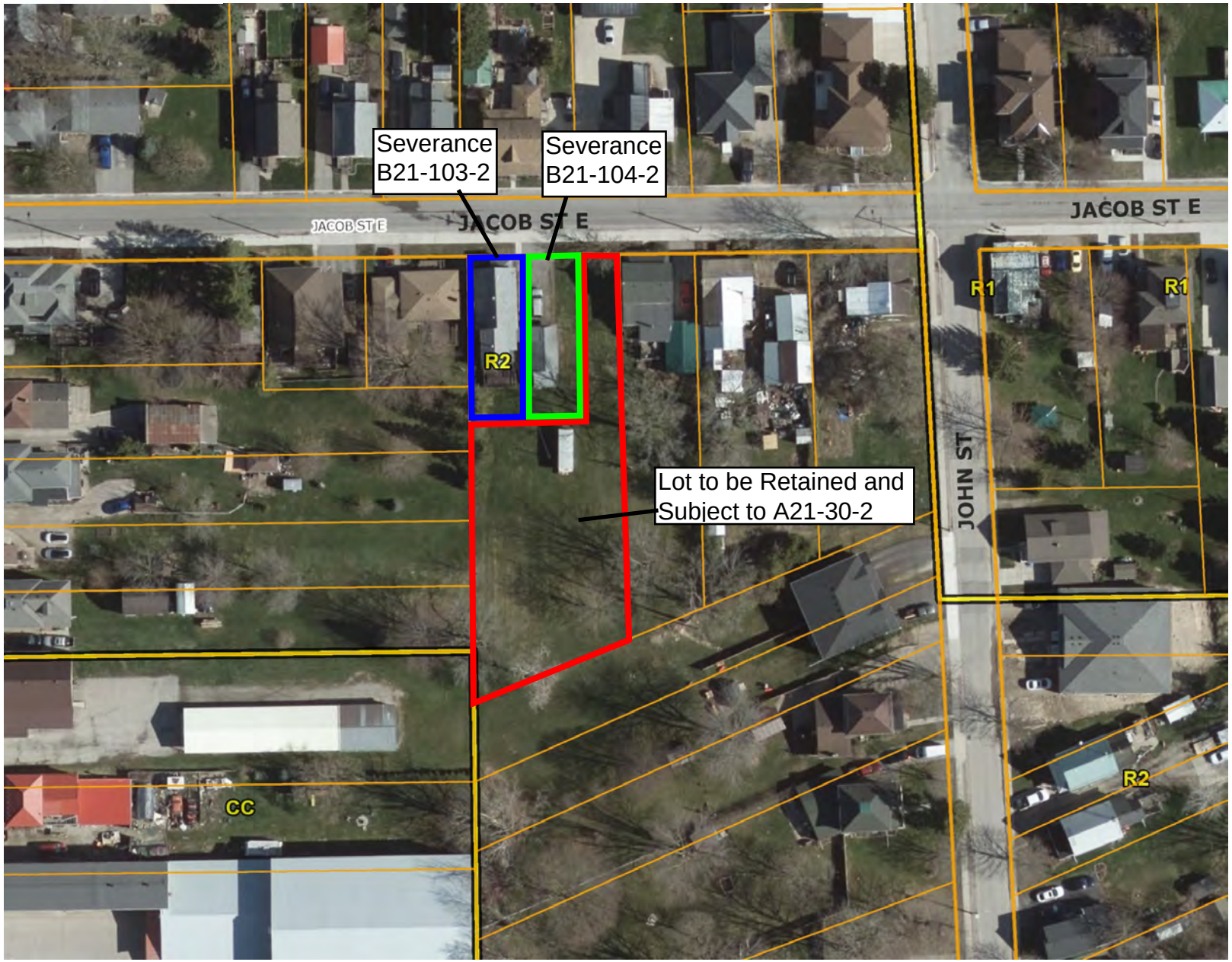
0 51 102 Meters

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 3, 2021

Plate 2: Existing Zoning & Aerial Map
File No. B21-103-104-2; A21-30-2 - 2825085 Ontario Inc.
Lot 1 and Part Lot 2, Plan 307, Township of East Zorra-Tavistock, 32 Jacob Street East, 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)

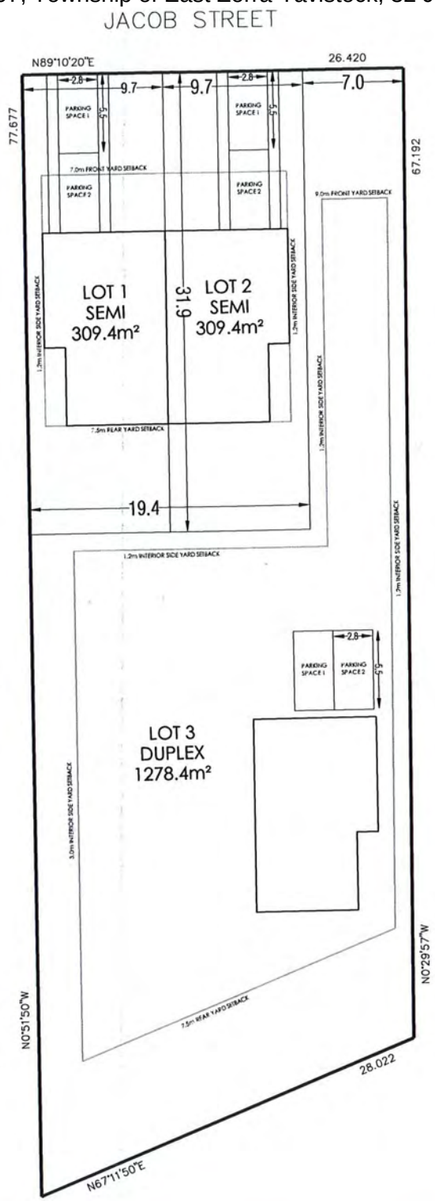
Notes

0 26 51 Meters

NAD_1983_UTM_Zone_17N

December 3, 2021

Plate 3: Applicant's Sketch
File No. B21-103-104-2; A21-30-2 - 2825085 Ontario Inc.
Lot 1 and Part Lot 2, Plan 307, Township of East Zorra-Tavistock, 32 Jacob Street East, Tavistock



32 JACOB STREET - DEVELOPMENT SKETCH
APPLE HOME BUILDERS
TOWNSHIP OF EAST ZORRA - TAVISTOCK (COUNTY OF OXFORD)

SCALE 1:250 (PAPER SIZE: 11x17)

PROJECT No. 71

Patterson Planning Consultants Inc.
Professional Planners, Development Consultants, Project Managers

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Bell Canada
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Barrie, Ontario
L4M 3B1

Tel: 705-722-2264
Fax: 705-726-4600

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December 14, 2021

County of Oxford
Community Planning
21 Reeve Street
Woodstock, ON
N4S 3G1

E-mail Only: planning@oxfordcounty.ca

Subject: Committee of Adjustment Consent Applications B21-103-2 and B21-104-2
32 Jacob Street East
Tavistock, ON
Bell File: 519-21-751

Thank you for your correspondence dated December 3, 2021.

Subsequent to review by our local engineering department, Bell Canada has identified that we require protection for existing facilities.

On the attached sketch, the yellow line indicates the approximate location of active, critical infrastructure. Located on the subject property, Bell Canada's facilities provide essential access to the network. Of major concern is the ability to access our equipment, particularly in the event of an interruption, or emergency, that would require Bell Canada to restore service to regular telephone lines, alarm services, internet access, and most importantly ensure the continuity of 911 service.

Bell Canada requests a 3.0m wide strip to measure 1.5m on either side of the buried facilities, as can be reasonably accommodated within the subject property's boundaries. In regards to the buried plant, it may be necessary for a surveyor to arrange for a cable locate to identify the precise location.

Since the intention of the requested easement is to protect the integrity of the existing facilities and preserve many services, we request that the cost associated with registration be the responsibility of the landowner.

We hope this proposal meets with your approval and request a copy of the decision. Should our request receive approval, we look forward to the owner's solicitor contacting us with a draft reference plan and accompanying draft easement documents for our approval prior to registration, along with an acknowledgement and direction for our execution.

If you have any questions or concerns, please feel free to contact me.

Yours truly,

Charleyne Hall

Charleyne Hall
Right of Way Associate

Prior to adjourning to the COR, East Zorra-Tavistock will appoint three (3) members, and name a Chairperson for the COR.

AGENDA for COURT OF REVISION
Tavistock Drain 1979 - Reconstruction 2021

1. Court opens (by resolution)

2. Written appeals received to the drain? (Clerk)

3. Chair Asks Engineer for comments

If there are verbal appeals:

4. Court must pass a resolution to accept any late appeals, or any verbal/written appeals from landowners present
    - Asks landowner(s) to state concerns
    - Asks Engineer for comments

5. After all appeals are heard (if any):
    - Deliberation by members of COR
    - Clarification from appellants or Engineer, if required to make decision

6. Court determines how appeals will be settled
    - Accept recommendation of Engineer?
    - Members agree on alternate recommendation?

If no verbal appeals:

7. Resolution(s) passed to adopt recommendations, amend assessments, etc.

8. Chair informs appellants that if they are not satisfied with the decision of the COR, they have 21 days in which to appeal to the Drainage Tribunal. (last day to submit appeal to the Clerk will be March 23, 2022)

If no appeals:

9. Resolution passed to sustain assessments.

10. Court adjourns and Council reconvenes (by resolution).

Understanding Court of Revision Procedures Under the Drainage Act

Sharon McCartan, OMAFRA

FEBRUARY 2010

INTRODUCTION

The Court of Revision is an appeal body established under the Drainage Act and administered by the local municipality. The Court of Revision allows landowners to challenge their drainage assessments quickly and informally. Unlike the Drainage Tribunal or the Drainage Referee, the Court of Revision has one power – to re-allocate funds in a drainage assessment schedule.

To learn more about assessments under the Drainage Act, refer to fact sheet Agdex 557 Order # 92-035, "Understanding Drainage Assessments."

THE ROLE OF THE MEMBERS OF THE COURT OF REVISION

- Members of the Court may hear appeals on three grounds:
  1) Land or road has been assessed too high or low.
  2) Land or road should have been assessed but has not.
  3) Due consideration has not been given to the land's use.
- The members of Court must hear these appeals and decide whether they are valid. The members must comply with the *Statutory Powers Procedure Act*, and they must conduct themselves fairly and without bias.
- The Court only has authority to change the schedule of assessments; they cannot make changes to the technical aspects of the report and they cannot refer the report back to the engineer for modifications.
- Total costs of the project must remain the same, which means that if the Court reduces an assessment, the Court re-allocates the shortfall among other assessed property owners.
- If the Court is considering adding to the assessment of one or more properties whose owners are not in attendance, the Court must adjourn and send notice to assessed property owners who were not at the Court of Revision at the time of the re-allocation. This allows the re-assessed landowners to appeal their new assessments.

THE ROLE OF THE APPELLANT

- If a landowner feels an assessment against their lands is too low, that land should have been assessed but has not, or that consideration has not been given to land use, they can file an appeal with the Court of Revision.
- Appeals must be filed with the clerk at least 10 days before the date of the Court of Revision.
- If a landowner wishes to appeal, but misses the date for filing the appeal, they can appear at the first sitting of the Court of Revision and request to have their appeal heard.
- At the sitting of the Court, the list of appellants will be read out and the Engineer will give evidence. When his or her time to present their case comes, the appellant must explain their reasons for appealing the assessment schedule.
- After the Court of Revision pronounces their decision, affected property owners have 21 days to appeal this decision to the Agriculture, Food and Rural Affairs Appeal Tribunal and the Tribunal's decision on this appeal is final.

COMPOSITION OF THE COURT OF REVISION

- If a drainage works only affects the initiating municipality, the initiating municipality's council appoints 3 to 5 members to make up the Court of Revision.
- If a drainage works affects two or more municipalities, the council of the initiating municipality appoints two members of the Court; and every other involved municipality appoints one person to be a member. One of the members appointed by the initiating municipality is the chair of the Court of Revision.
- To be eligible to sit as a Court of Revision member, the individual must be eligible to seek election as a member of council.

- Members of council may be appointed as members of the Court. However, the two roles must be kept separate – if a council member wishes to hear information or pass resolutions outside of the scope of the Court of Revision, they must close the Court, then open a new council meeting.

SUGGESTED PROCEDURE

- Opening of the Court of Revision
- Oaths
  - Members may take an oath, but it is not legally required.
  - Members are still legally required to act fairly and impartially, whether they declare this publicly as an oath or not.
- Order of Appeals
  - The appeals and the order in which they will be held are read out.
- Engineer Gives Evidence
  - The engineer gives his or her evidence regarding each appeal before the Court, per s. 55 of the Act.
- Appellants Present their Case
  - The landowners orally make a case for why their land was improperly assessed before the members of court.
  - The engineer may rebut the landowner's case.
- Late Appeals
  - If the Court of Revision members choose, they agree to entertain late appeals, per s. 52(2) of the Act.
- Deliberations
  - The Court of Revision members should retreat to deliberate these appeals and make decisions in private.
  - If court is considering reducing an assessment and adding it to a property whose owner is not present, then they must adjourn the Court of Revision, send notice to the absent parties to allow them to appeal the change, then reconvene, per s. 53 of the Act.
- Closing the Court of Revision and Rendering a Decision
  - The Court of Revision may give oral decisions on each appeal but this oral decision should be followed up with a decision in writing.
- Choosing which schedule to adopt
  - The Court of Revision should document whether they decided to adopt an altered version of the assessment schedule, or whether they chose to adopt the schedule as presented by the engineer.

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

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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

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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

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.

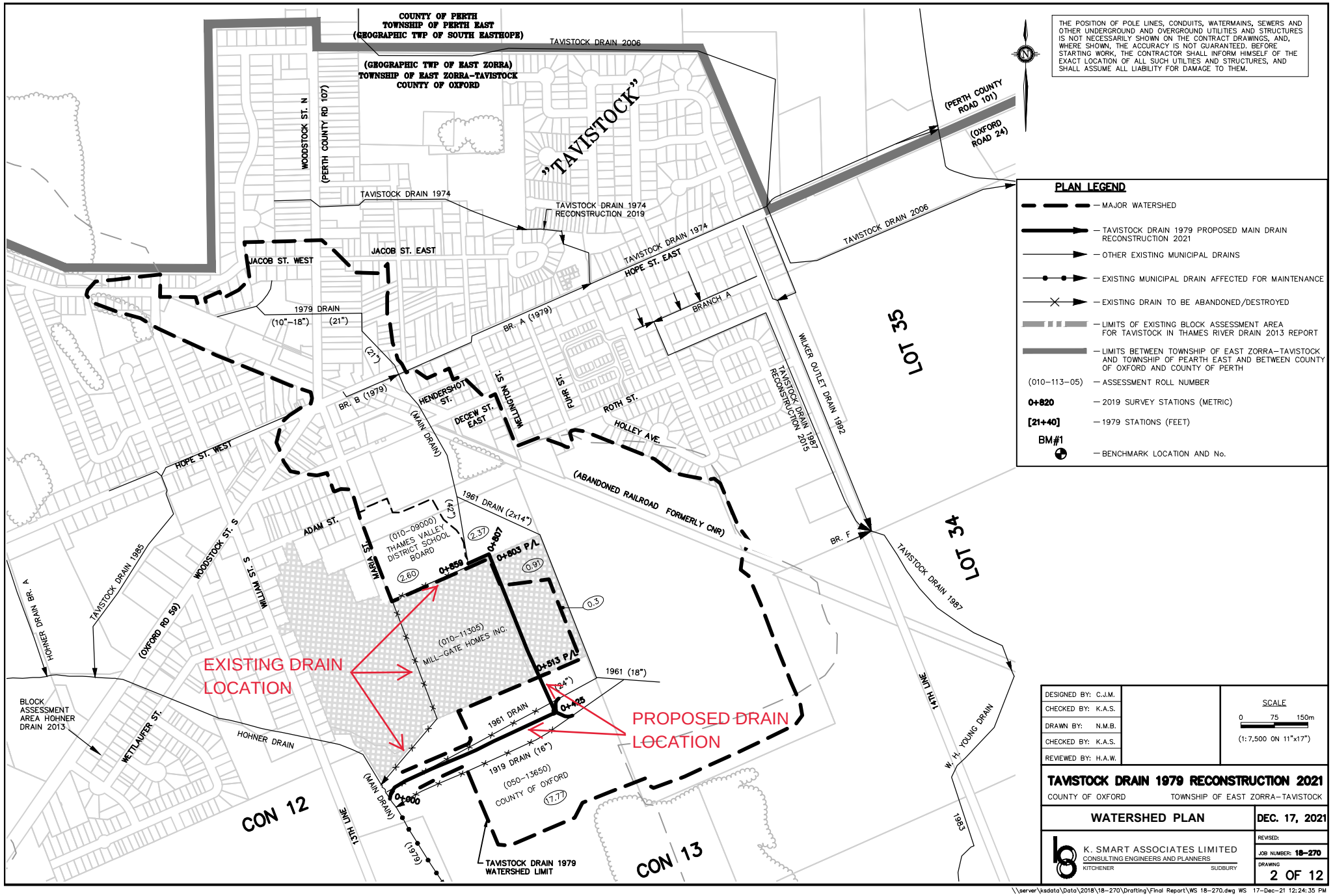
This letter is only a notification of the drainage work proposed for the Tavistock Drain 1979. **No costs relating to the Drainage Report or drain construction work will be levied to your property. The Engineer will be assessing all costs to Mill-Gate Homes Inc.** Also, no impact on future maintenance 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+807
0+803 P/L
0+859
0+513 P/L
0+495
0+000
(010-11305)
MILL-GATE HOMES INC.
1961 (18")
1961 DRAIN
1919 DRAIN (16")
(050-13650)
COUNTY OF OXFORD
(17.77)
(1979)
TAVISTOCK DRAIN 1985
WOODSTOCK ST. S
WILLIAM ST. S
(OXFORD RD 59)
HOHNER DRAIN BR. A
HOHNER DRAIN
BLOCK ASSESSMENT AREA HOHNER DRAIN 2013
WETTLAUFER ST.
13TH LINE
14TH LINE
W. H. YOUNG DRAIN
1963
CON 12
CON 13
EXISTING DRAIN LOCATION
PROPOSED DRAIN LOCATION
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

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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

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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

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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.

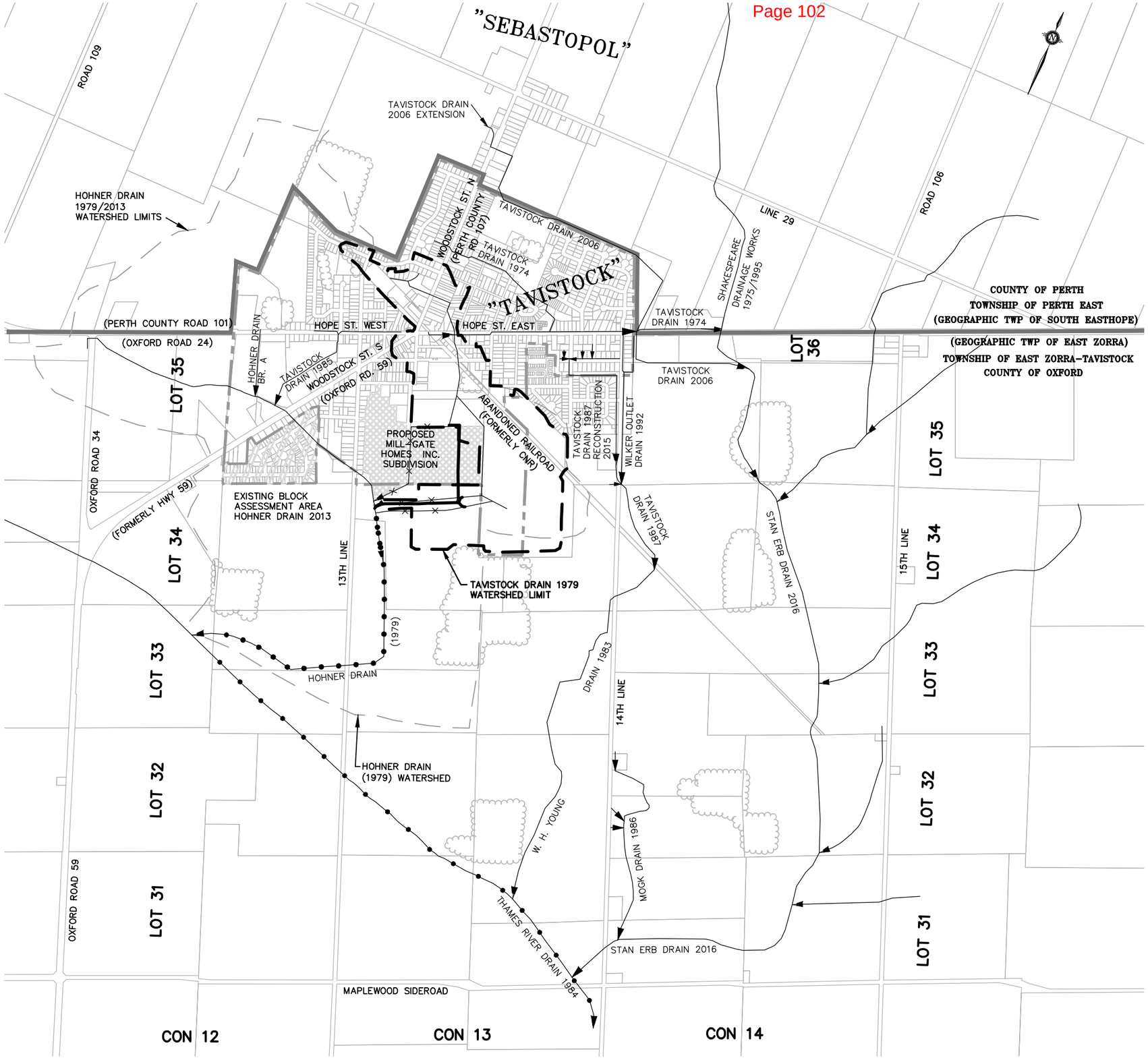
Backfill around all new catchbasins is recommended to be 19mm clear crushed stone to avoid future settlements. The Contractor shall be responsible for backfilling all settlement areas around catchbasins during the contract warranty period. No additional payment will be provided for adding backfill to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

HOPE ST. EAST

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

(21")

BR. A (1979)

BRANCH A

HENDERSHOT ST.

DECEW ST. EAST

WELLINGTON ST.

FISHER ST.

ROTH ST.

HOLLEY AVE.

TAVISTOCK DRAIN 1987
RECONSTRUCTION 2015

WILKER OUTLET DRAIN 1992

(PERTH COUNTY ROAD 101)
(OXFORD ROAD 24)

TAVISTOCK DRAIN 2006

LOT 35

HOPE ST. WEST

BR. B (1979)

(MAIN DRAIN)

(ABANDONED RAILROAD FORMERLY CNR)

1961 DRAIN (2x14")

(010-09000)
THAMES VALLEY
DISTRICT SCHOOL
BOARD

(42")

2.37

0+807

0+803 P.I.

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

2.60

0.91

0.3

MARIA ST.

ADAM ST.

SBM

WOODSTOCK ST. S

WILLIAM ST. S

(010-11305)
MILL-GATE HOMES INC.

0+513 P.I.

BM#1

1961 (18")

(24")

0+425

1961 DRAIN

1919 DRAIN (16")

(050-13650)
COUNTY OF OXFORD

17.77

0+000

(1979)

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.I. 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)
(050-11302) (TAVISTOCK COMMUNITY HEALTH)
MARIA STREET
(010-09000) THAMES VALLEY DISTRICT SCHOOL BOARD (TAVISTOCK PUBLIC SCHOOL)
PROPOSED 1200mm DIA. SRPE PIPE
10m R.O.W.
0+881
[=20+54 AH'D 21+54]
TAVISTOCK DRAIN 1979 (EX. 42") (1050mm)
0+859
0+807
0+800
0+803 ℄
BLOCK 153 PARK
STREET A
STREET B
STREET C
STREET D
STREET E
STREET F
STREET G
STREET H
WETTLAUFER STREET
WILLIAM STREET SOUTH
BLOCK 148 (E) (F) (G) (H) (I) (J) (K) (L)
BLOCK 149 (E) (F) (G) (H) (I) (J) (K)
BLOCK 150 (E) (F) (G) (H) (I) (J) (K)
BLOCK 151 (E) (F) (G) (H) (I)
TAVISTOCK DRAIN 1979 (42")
0+750
10m EASEMENT
BLOCK 157 MUNICIPAL DRAIN EASEMENT
0+700
PROPOSED 1200mm DIA. SRPE PIPE
BLOCK 152 LIGHT INDUSTRIAL
(010-11305)
0+650
0+600
0+550
12m EASEMENT
0+513 ℄
BM#1
0+500
0+509
Existing Forcemain Easement
Ex. Forcemain Easement To Be Relocated
BLOCK 154
BLOCK 155
BLOCK 156
TAVISTOCK DRAIN 1979 (2x27")
PROPOSED SWM FACILITY
PROPOSED SANITARY FORCEMAIN EASEMENT. RELOCATED BY OTHERS
Ex. 150mm CONC.
0+450
EX. 1961 DRAIN (24") (600mm)
EX. 600mmø LAGOON OUTLET
EX. 1919 DRAIN (16") (400mm)
1961 (18") (450mm)
0+425
OUTLET 1961 DRAIN (24") (600mm) AND 1919 (16") (400mm) DRAIN IN NEW STILLING BASIN
(050-13650) COUNTY OF OXFORD (EX. SEWAGE LAGOON CELL#1)
(050-13650) COUNTY OF OXFORD
[0+00]
0+000
EXISTING DITCH
PROPOSED DITCH
EXISTING LANEWAY
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

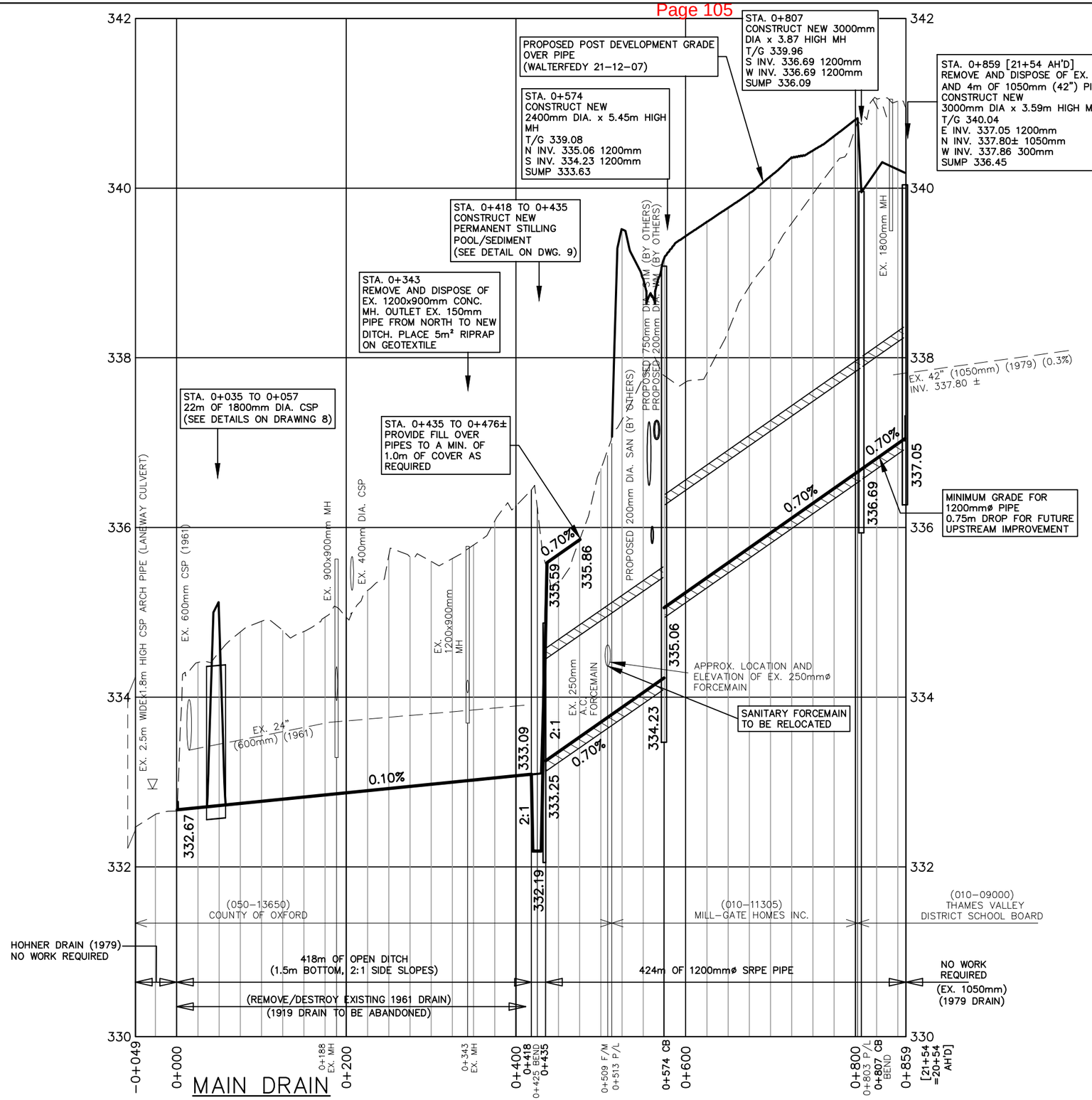
COUNTY OF OXFORD — TOWNSHIP OF EAST ZORRA-TAVISTOCK

ENLARGEMENT PLAN

DEC. 17, 2021

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
KITCHENER SUDBURY

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



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

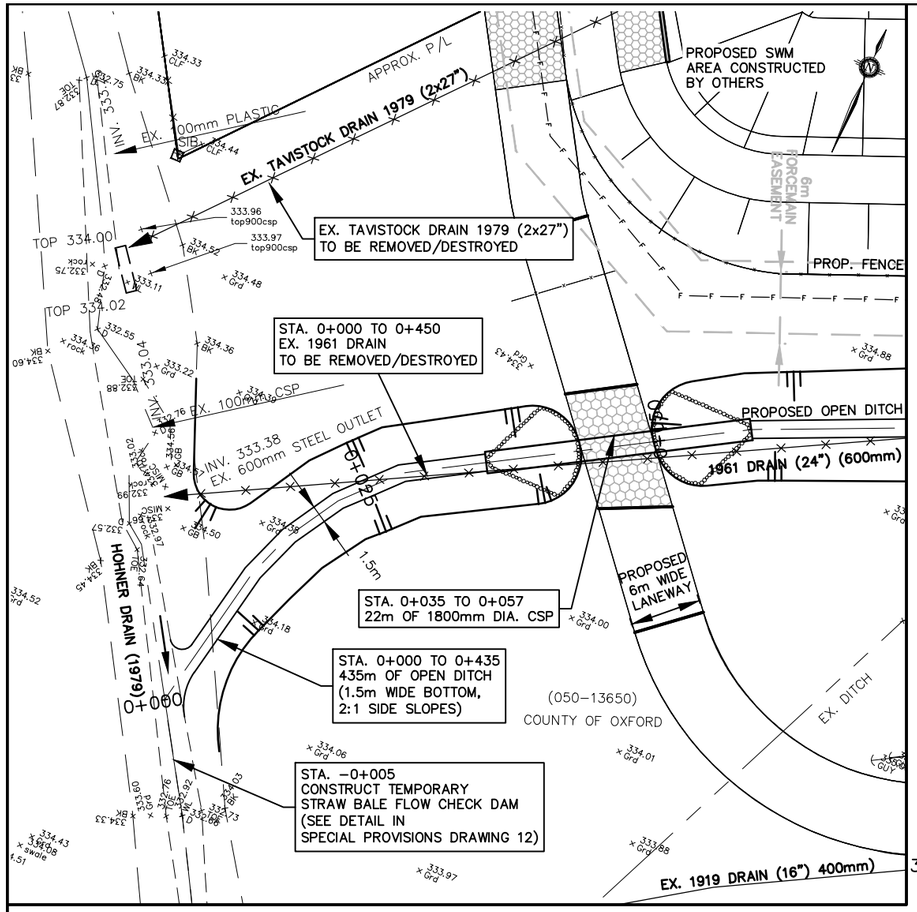
DEC. 17, 2021

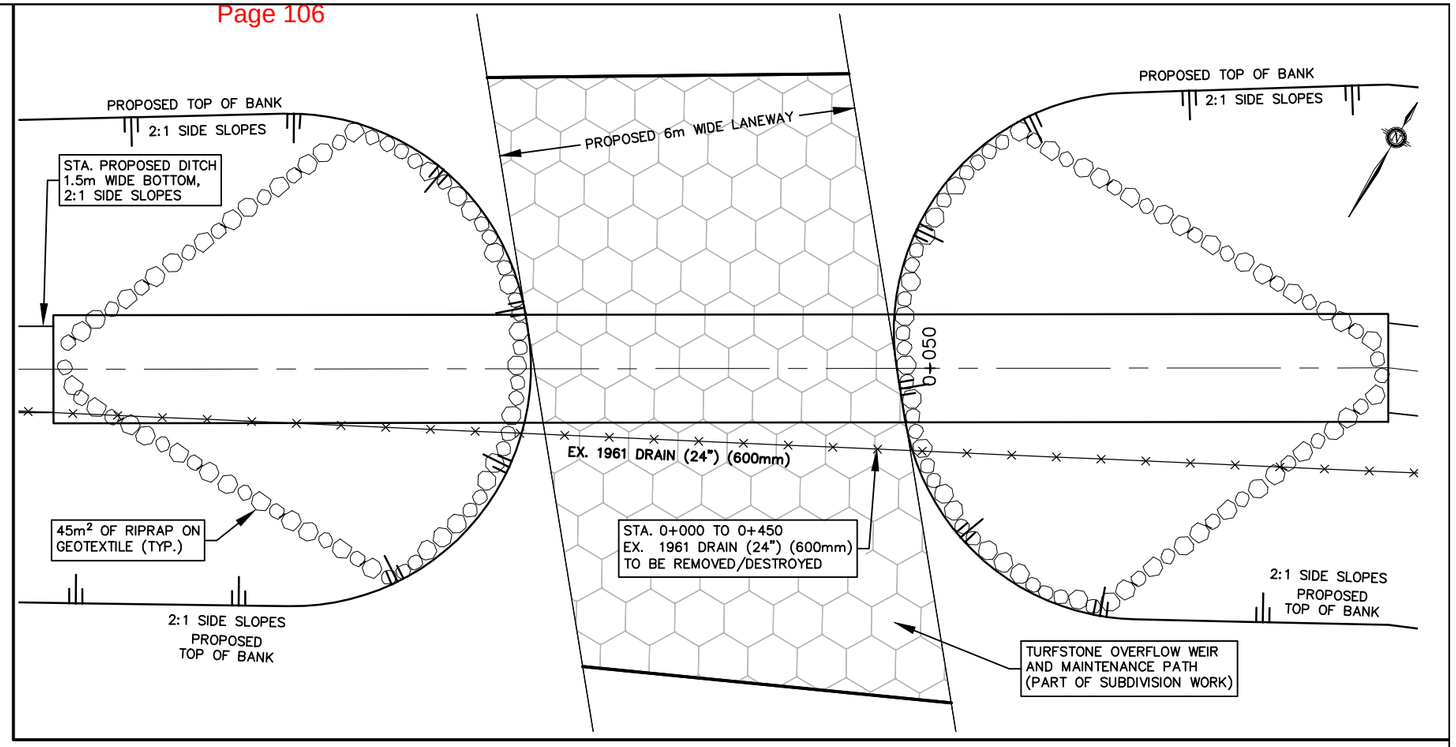
K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
KITCHENER — SUDBURY

REVISED:

JOB NUMBER: **18-270**

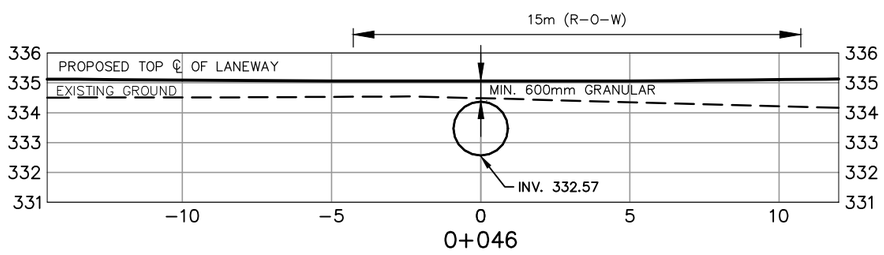
DRAWING
4 OF 12



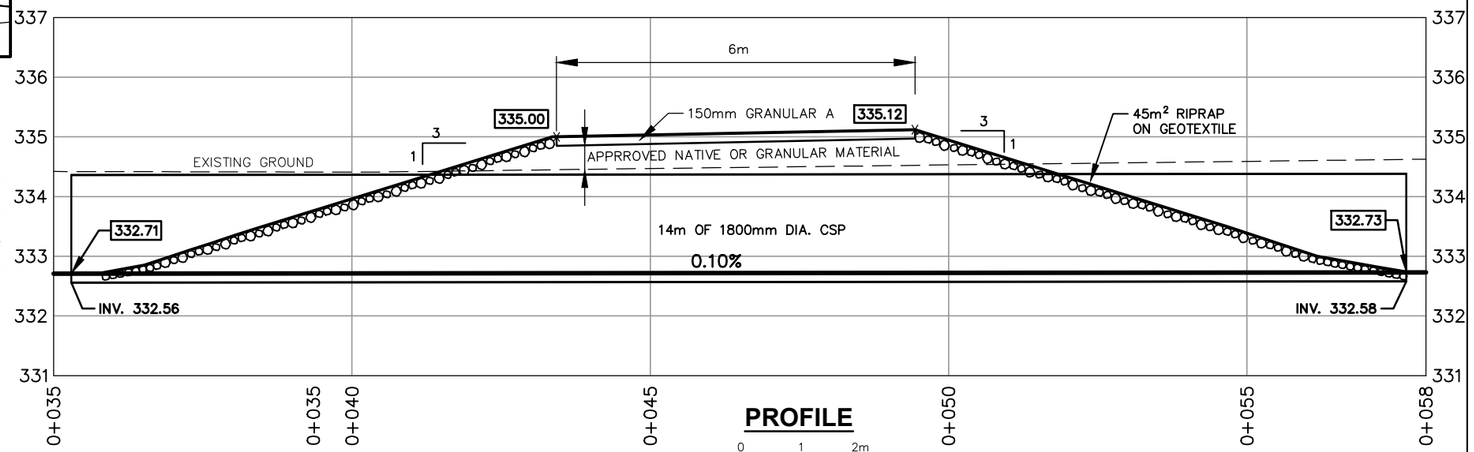


PLAN
SCALE 1:100

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.

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")

TAVISTOCK DRAIN 1979 RECONSTRUCTION 2021

COUNTY OF OXFORD — TOWNSHIP OF EAST ZORRA-TAVISTOCK

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

DEC. 17, 2021

REVISED:

JOB NUMBER: **18-270**

DRAWING
5 OF 12

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
KITCHENER SUDBURY

\\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

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

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

PLACE 100m² RIPRAP ON
GEOTEXTILE AT TILE OUTLETS

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

EX. 400mm
CSP

1.5m

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 ℄

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 ℄ 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

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

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")

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
KITCHENER SUDBURY

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

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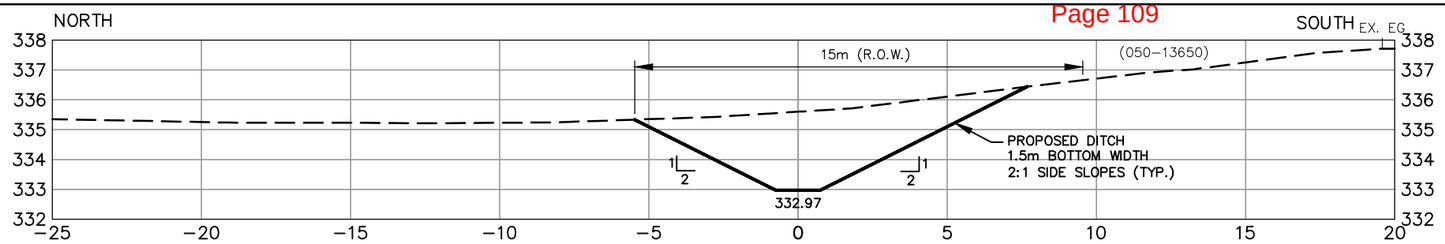

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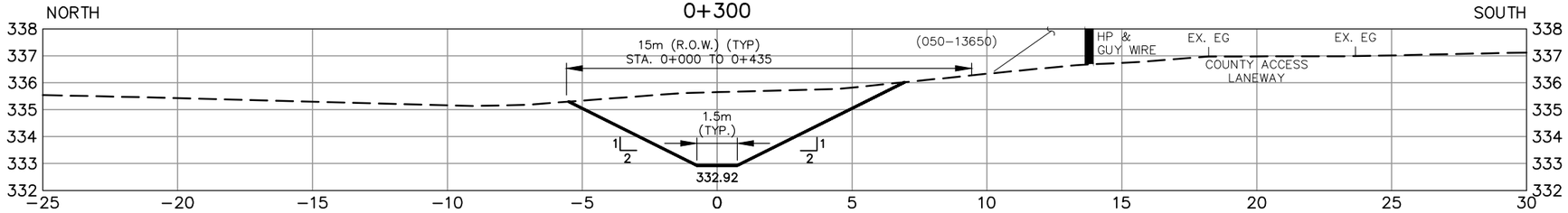

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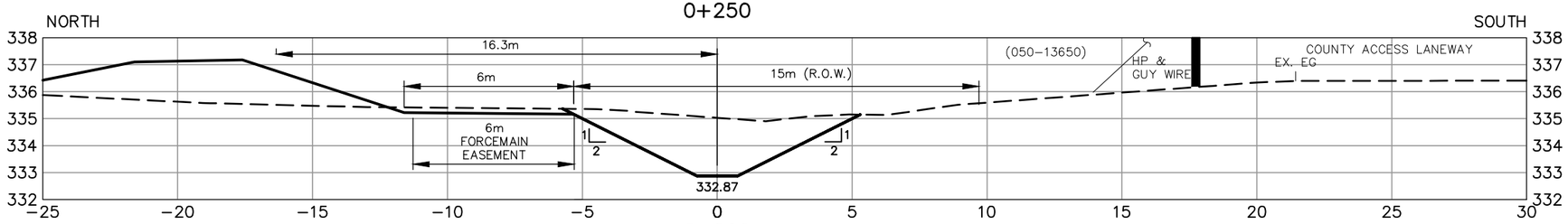

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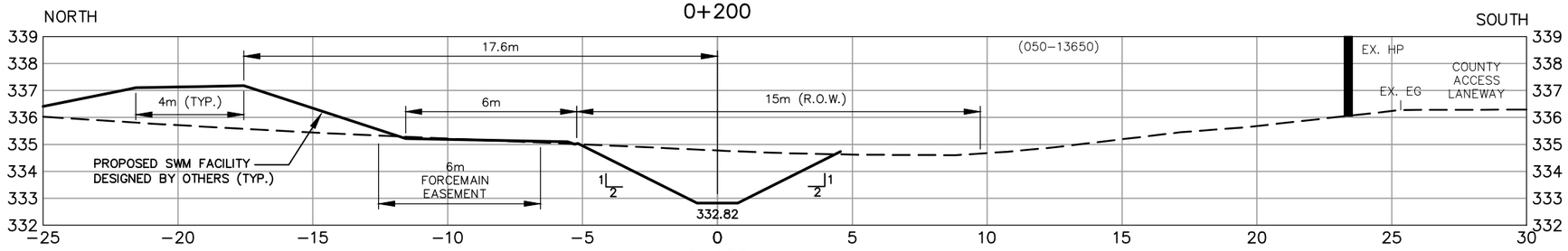

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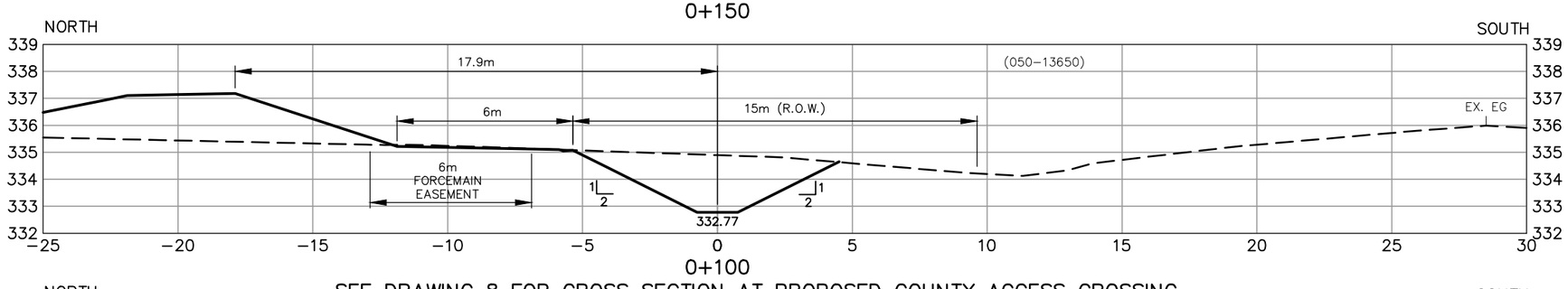

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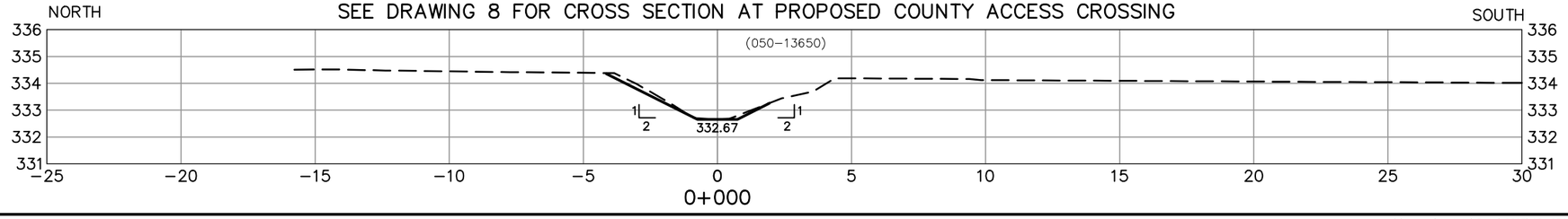
SEE DRAWING 8 FOR CROSS SECTION AT PROPOSED COUNTY ACCESS CROSSING



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

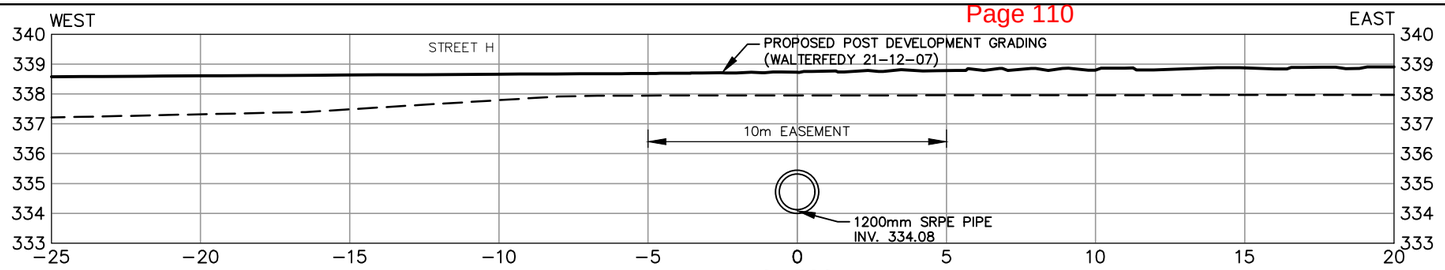
K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
KITCHENER — SUDBURY

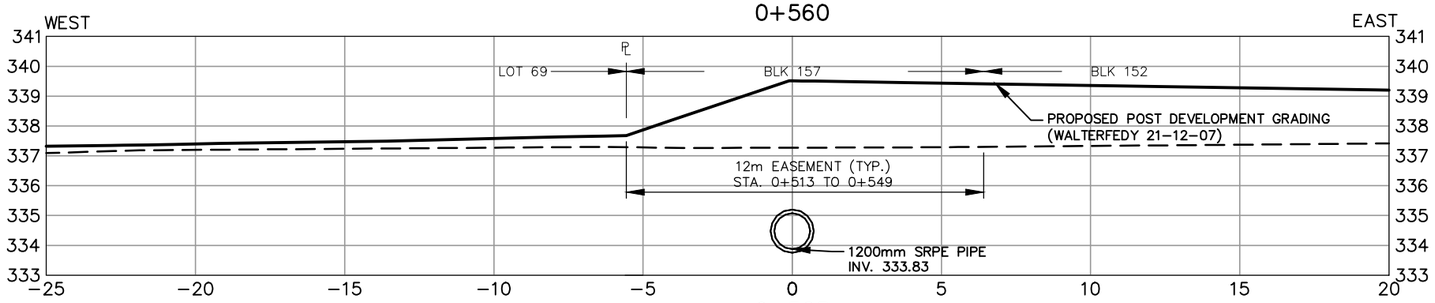
REVISED:

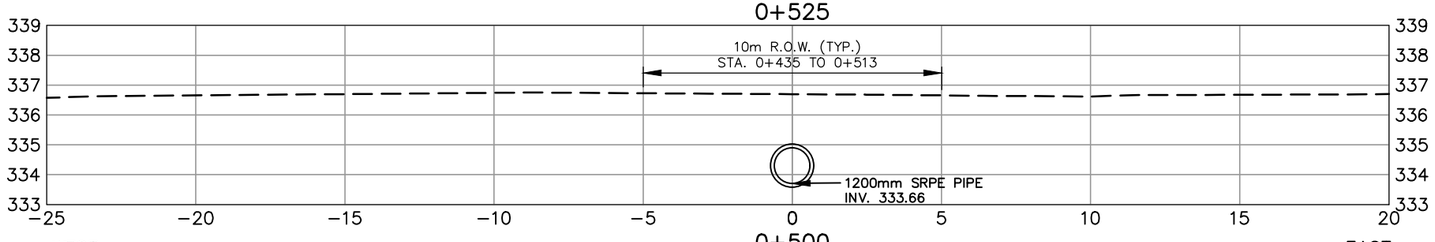
JOB NUMBER: **18-270**

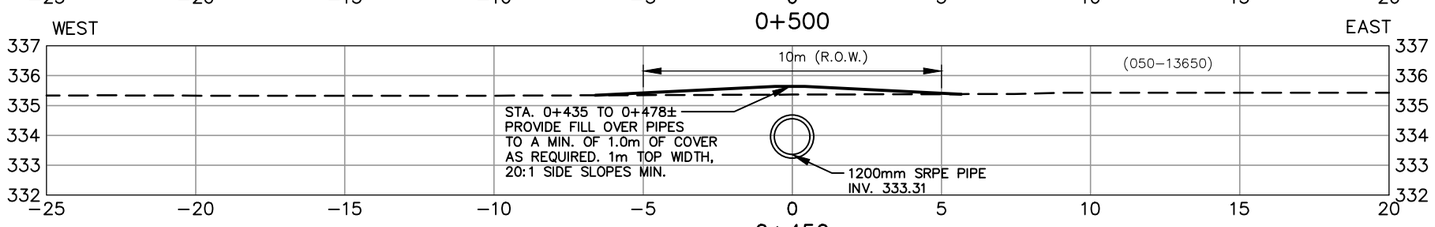
DRAWING
8 OF 12

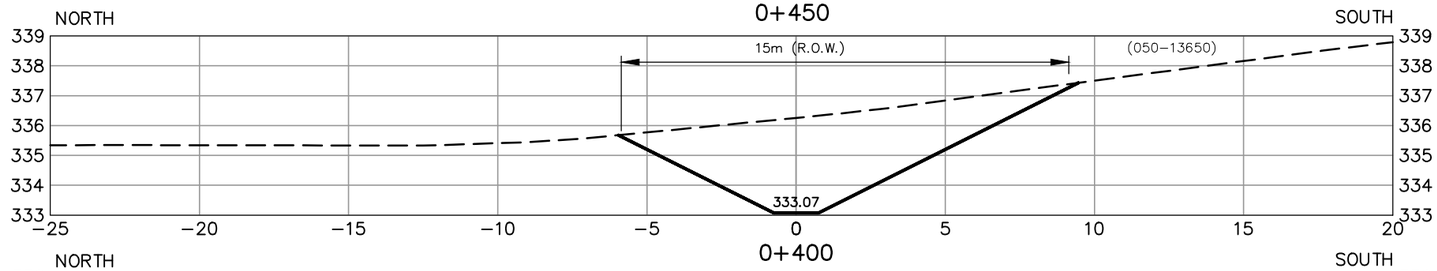
\\server\ksdata\Data\2018\18-270\Drafting\Final Report\PROFILE 18-270.dwg CROSS SECTIONS 000 TO 300 17-Dec-21 1:18:45 PM

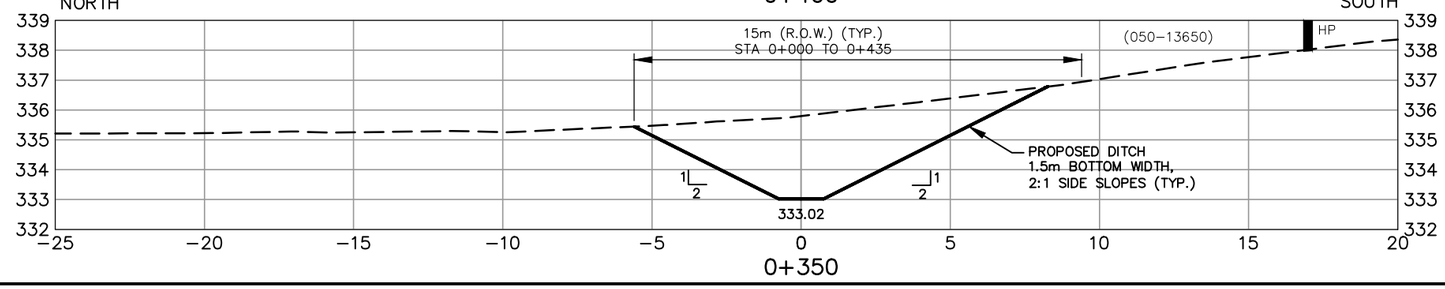












DESIGNED BY: C.J.M.	
DRAWN BY: N.M.B.	
CHECKED BY: K.A.S.	
REVIEWED BY: H.A.W.	

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

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

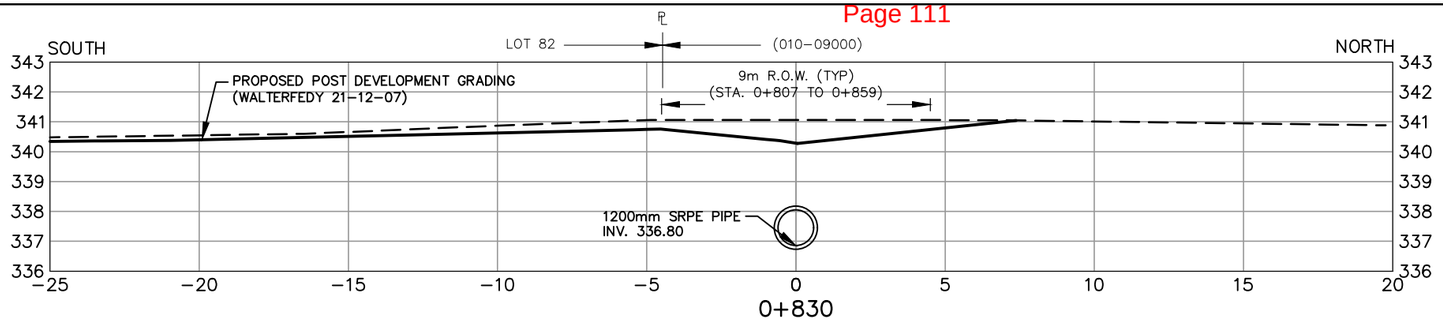
TAVISTOCK DRAIN 1979 RECONSTRUCTION 2021

COUNTY OF OXFORD — TOWNSHIP OF EAST ZORRA-TAVISTOCK

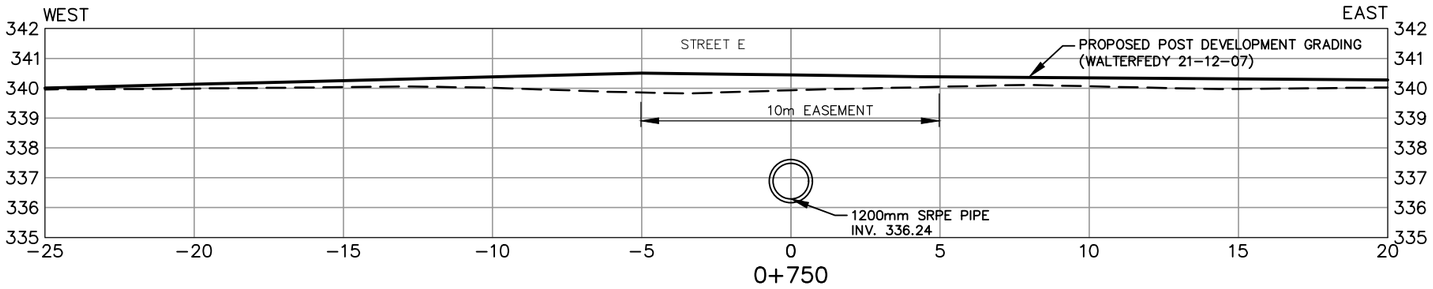
CROSS SECTIONS STA. 0+350 TO 0+560 | DEC. 17, 2021

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
KITCHENER SUDBURY

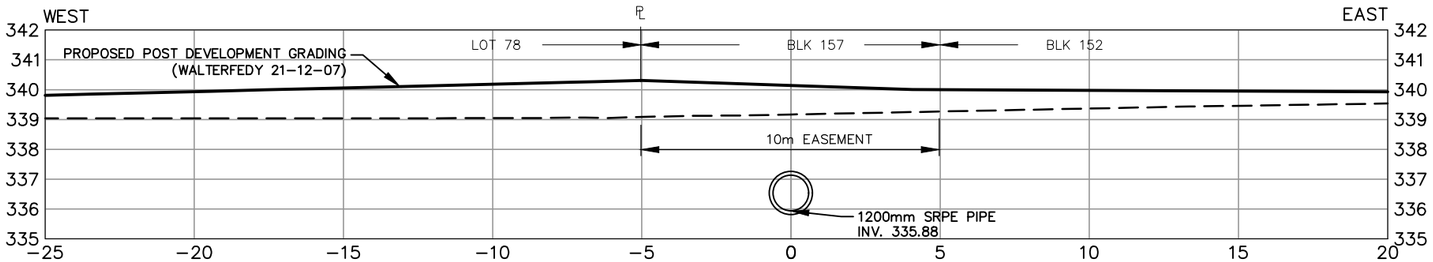
REVISED:
JOB NUMBER: **18-270**
DRAWING
9 OF 12



0+830



0+750



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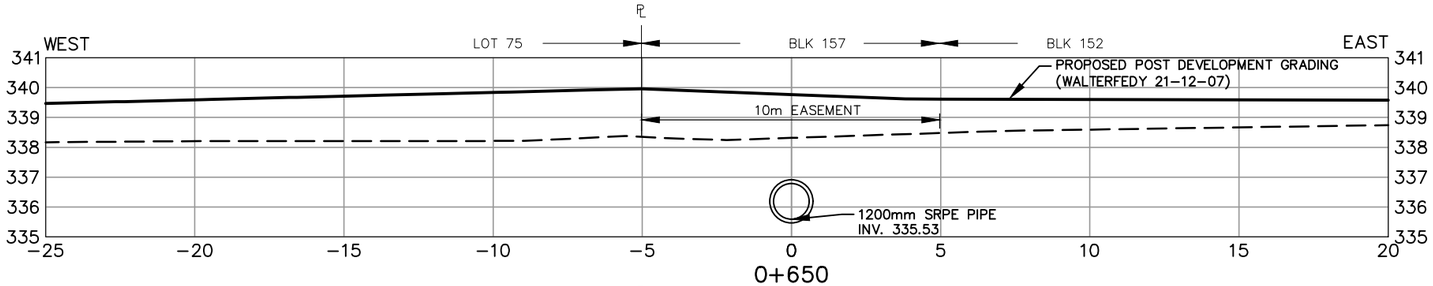

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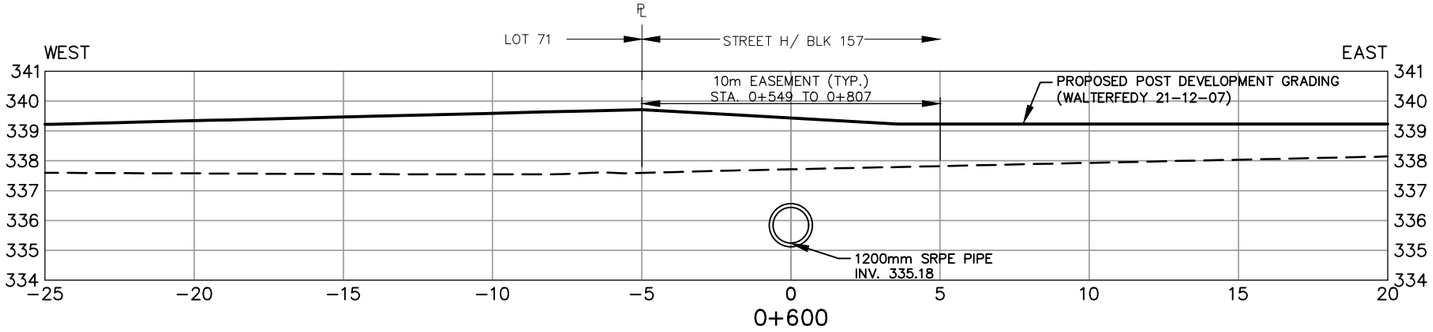


0+600

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

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.

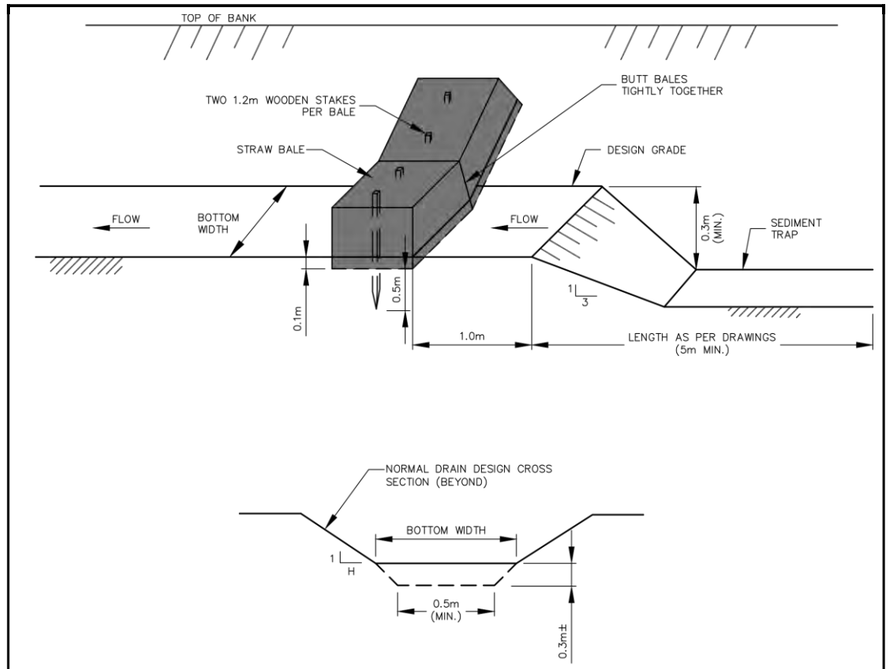
10.3 All maintenance holes (manholes), basins, chambers, etc. to be installed level and plumb to the satisfaction of the Engineer.

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

#5.b

ENGINEERING REPORT

For

PARKER DRAIN 2022

Township of East Zorra-Tavistock

(Geographic Township of East Zorra)

County of Oxford

Date: February 3, 2022

File No. 20-150

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS & PLANNERS
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DRAWINGS 1 TO 21

Definitions:

"Act" or "Drainage Act" means The Drainage Act RSO 1990
"CSP" means corrugated steel pipe
"Drain" means Parker Drain 2022
"Grant" means grant paid under the Agricultural Drainage Infrastructure Program
"HDPE" means high-density polyethylene
"KSAL" means K. Smart Associates Limited
"Municipality" or "Township" means Township of East Zorra-Tavistock
"OMAFRA" means the Ontario Ministry of Agriculture, Food and Rural Affairs
"Tribunal" or "Drainage Tribunal" means Agriculture, Food and Rural Affairs Appeal Tribunal
"Twp of EZT" means Township of East Zorra-Tavistock
"UTRCA" means Upper Thames River Conservation Authority

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February 3, 2022 File No. 20-150

PARKER DRAIN 2022

TOWNSHIP OF EAST ZORRA-TAVISTOCK

1 EXECUTIVE SUMMARY

This report is prepared pursuant to Section 4 of the Drainage Act RSO 1990. On March 12, 2020, the Municipality received a petition from Stiek Farms Inc., Killcrest Farms Inc., Darrin Dodd, Braemont Farms Ltd., and Townsend Farms Inc. for improved drainage in the upper Parker Drain watershed (Lots 18 to 20, Con. 9 & 10). Pursuant to Section 8 of the Act, on May 6, 2020, K. Smart Associates Limited (KSAL) was appointed by resolution of Council to prepare a report on the petition received. During the investigation/design stage, the Municipality received a 2nd petition signed by two properties: Stephen & Laurie Killing, as well as Stephen, Laurie, and Stephanie Killing & Jake Van Ryswyck for an outlet to farms in Lot 17 & 18, Con. 10. On September 2, 2020, as per Section 8(4) of the Act, KSAL was appointed by resolution of Council to combine the two petitions into a single report.

To address the petitions received, this report recommends the following:

Main Drain

- Removal of an existing laneway culvert, to be replaced with 12m of 1600mm dia. CSP.
- 179m of ditch bottom cleanout/excavation, including the construction of a permanent stilling pool/sediment trap at new tile outlet.
- 2,268m of new closed tile drain, including a crossing of the Enbridge Gas Inc. Trafalgar Lines and the Enbridge Pipelines Inc. Lines 7-9.

Branches A, B, & C

- Incorporation of 196m of 200mm dia. plastic tubing and outlet pipe.
- 149m of new closed tile drain, including 300mm dia. perforated plastic tubing and a road crossing of 10th Line.
- 1,099m of new closed tile drain, including a road crossing of 10th Line and Enbridge Pipelines Inc. Lines 7-9

In summary, the total length of proposed open drain is 179m and closed drain is 3,712m (2,268m Main Drain, 345m Branch A, 757m Branch B and 342m Branch C).

The estimated cost of this project is $725,000.

The watershed served is approximately 177.6 hectares (439 acres).

Assessment schedules are for construction and future maintenance of the Drain.

- Schedule A shows the assessment of the total estimated cost
- Schedule B is for prorating future maintenance cost
- Schedule C is for levying the final cost of the Drain.
- Appendix A illustrates the calculation of the assessments outlined in Schedules A and B.

2 DRAINAGE HISTORY

The Parker Drain was originally established in accordance with a report of F. J. Ure dated July 30, 1901. The drain was located in Lots 18 to 20, Concession 9 and consisted of the cleanout of approximately 300 ft. of open ditch and the installation of 5,000 ft. of 7" to 10" (175 to 250mm) tile. The tile portion ended in the north half of Lot 18, Concession 9 (location referred to as Sta. 1+074 on Drawing 1 of this report).

The Parker Drain was later improved in accordance with a report of H. M. Gibson, P. Eng., O.L.S. (Skelton, Gibson and Associates) dated February 18, 1966. The report appears to have continued from the end of the existing 10" tile from 1901 downstream through Lot 18 & 17, Concession 9 and consisted of 2,900 ft. of 14" (350mm) tile. Furthermore, 503 ft. of open ditch was then cleaned out to a location that is now the D. & J. Leiper laneway. Some repairs were completed to the 1901 drain in this report, however, for the most part the upper portion of the Parker Drain (5,000 ft. or 1524m) still exists today as the original 10" tile from 1901.

3 INVESTIGATION

3.1 On-Site Meeting

Attendees

Erik Rotteveel – Stiek Farms (Roll No. 040-02200)	Connor Occleston (Twp. of EZT)
Doug Killing – Killcrest Farms (Roll No. 040-01100)	Claire Orhling (Twp. of EZT)
Jim Walton (Roll No. 040-01001)	Curtis MacIntyre, P. Eng. (KSAL)
Trevor Townsend – Townsend Farms Inc. (Roll No. 040-02100)	Joel Miller, P. Eng. (KSAL)
Doug Leiper (Roll No. 040-01900)	

On June 30, 2020, an on-site meeting was held in accordance with Section 9(1) and 9(2) of the Act. Following the current Ontario COVID-19 gathering limitations imposed at the time, a notice was sent to only the petitioners and those believed to be directly affected by an improvement of the Parker Drain.

Upon briefly explaining the background of the petition received, as well as the documented history of the Parker Drain, all owners in attendance were given an opportunity to describe the drainage on their property and what they would like to

see completed. The following is a summary of the general comments listed by property:

Erik Rotteveel – Stiek Farms (Roll No. 040-02200 & 040-03801) (Petitioner)
Erik explained that he bought the farm on the west side of the road (Roll No. 040-02200) (meeting location) about 2 years ago and that he would be looking to systematically tile the land after obtaining an improved/upsized outlet. He believed the farm had some random tiling but did not know how much or when it would have been done. Erik explained that there are two hickenbottoms in the field, one on each side of the gas lines, but that they were private.

Erik described that he had purchased the adjacent farm on the east side of the road (Roll No. 040-03800) from Braemont Farms about a month prior. This explained why Braemont Farms was on the original petition. Erik thought it would be beneficial to look into the costs of continuing the drain upstream to this property.

Doug Killing – Killcrest Farms (Roll No. 040-01100)
Doug recalled that his farm was tiled at 40 foot spacing and that he would have tile plans for the farm. He knew that some of his farm was tiled away to the A.B. Murray Drain (northwest corner). Doug is in favour of oversizing the drain. Doug described three (3) Enbridge oil pipelines that cross his farm paralleling to the north of the four (4) Enbridge natural gas pipelines. Doug has edible beans in the southern portion of his field that should come off in September. The engineer described that this would likely be the most appropriate time to access the field and locate/document the pipelines for the purpose of designing the drain.

Jim Walton (Roll No. 040-01001)
Jim described taking photos this spring of large amounts of surface water over top of the drain that he would provide to KSAL. He leaves this area (route of the Parker Drain) as a grassed swale for that reason. Jim recalled that Mark Cook recently did some tiling on the north part of his farm but those tiles were taken west to the Balkema Drain. He did not think he would have any tile plans for tile towards the Parker Drain. Jim described that the row of trees around the farm were planted by him and would be on his side of the property line. He understood that the new drain construction would need to remove some trees.

Trevor Townsend – Townsend Farms Inc. (Roll No. 040-02100)
Trevor recalled that his family may have bought the farm around 1994 (at least sometime in the mid 1990's). He recalled that some of the farm is tiled at 60' spacing and some at 40' spacing, and that they did have tile plans. He stated that there is a bit of a berm on the property line between their property and the Spero Holsteins Ltd. farm, as well as two more in the field with catchbasins. He thought they may have created the berms around the time that the last pipeline was installed (therefore they are private and not a part of the drain). A grassed swale exists in between the two berms in the middle of the field. They also had received excess soil from the pipeline construction to fill the swale on their farm. He noted

that they are seeing considerable erosion of the ground around the berms and have dumped rocks around the berms to cut down on some of the erosion.

At the time of the meeting, considering the berms are already private, it was felt that the new drain construction may re-instate the berms as is, but will be kept private in case the landowner wishes to remove them in the future.

Trevor is in favour of oversizing the new municipal drain.

Doug Leiper (Roll No. 040-01900)
Doug recalled that the soils on the farm were Guelph Honeywood Complex and that the farm contained some tiling, but not very much and did not have tile plans. He could not recall how large the culvert under his laneway was, but a review after the meeting determined it was about a 1200mm dia. that was in somewhat poor shape. He recalled that a large storm around the year 2000 caused a flood that overtopped their laneway. He stated they had recently added some more gravel to the laneway over top of the culvert. Doug understood the need for a new drain upstream, but was concerned with the quantity of flow that would be coming to his lane culvert after a new, larger drain is installed. The engineers stated they would analyze his crossing and ensure it is properly sized for the new tile drain or propose an upgrade if it does not.

After the meeting, the laneway crossing was reviewed with the owner and the options to extend the tile down to the laneway, as well as install a stilling basin to dissipate the energy from the flow of water at the end of the tile drain was discussed as a likely feature to be proposed due to the size of the proposed drain.

Connor Occleston (Drainage Superintendent, Twp of EZT)
Connor suggested that test holes be dug to check for soil conditions/groundwater levels prior to finalizing the report. He also explained the working corridor width typically taken for a drain construction of this size, as well as the damage allowances. Connor described to the group the likely schedule for the upcoming design stage, meetings, and appeals phases.

3.2 Meeting with Other Affected Owners

Attendees

Jake Van Ryswyck (Roll No. 040-03500)	Doug Leiper (Roll No. 040-01900)
Steve Killing (Roll No. 040-3500 & 040-03600)	Connor Occleston (Twp. of EZT)
Scott Alexander (Roll No. 040-03400)	Claire Orhling (Twp. of EZT)
Laurence MacKay (tenant for Leiper farm)	Curtis MacIntyre, P. Eng. (KSAL)

On August 19, 2020, an additional meeting was held with the owners in the southeast portion of the Parker Drain watershed who had not received an invite to the original on-site meeting (Lot 16 & 17, Concession 9 & 10). The engineer explained that, under normal circumstances, they would have been invited and

given the opportunity to comment on drainage needs at this on-site meeting. He also described the general positive feedback for full replacement of the Parker Drain received at that meeting. It was understood at the onset of the meeting that Mr. Van Ryswyck intends to systematically tile his farm in the future and that this would be a good time to secure a legal outlet.

Laurence MacKay explained that within the past 3 years they installed their own 200mm (8") tile through the field from the catchbasin on the west side of the road to the ditch outlet and was completed by Darrin Dodd (also an owner in the watershed). Laurence recalled it cost roughly $3,000 at the time.

The engineer explained that if they wished, this tile could be incorporated as a municipal drain, with the Leiper farm being provided an allowance representing the cost they incurred for installing the tile themselves. New catchbasins could be proposed on either side of the road with a new road crossing over to the VanRyswyck/Killing farm.

Laurence and Doug explained that the road culvert and swale through their field located south of the laneway sees surface water just as bad or worse than the location north of the laneway. Jake Van Ryswyck agreed that location is where he also sees water ponding on his side. At the end of the meeting it was agreed that in addition to the road crossing mentioned above, it would also be beneficial for all parties if a tile drain was extended southerly along the east side of the trees to the location where this other surface culvert crosses the road (adjacent to the east-west tree line within the Van Ryswyck/Killing field). At this location another catchbasin would be constructed to catch the majority of the surface water before it crosses the road.

Mr. Alexander took in the information and would let the engineer know if they wanted the drain to be extended up to their property line. It was also decided collectively that this could potentially be done privately between the Killing/Van Ryswyck/Alexander parties.

3.3 Site Investigations After the Meeting

Following the original on-site meeting, the engineer walked the route of the drain and made the following observations, listed by property:

Leiper Farm (Roll No. 040-01900)

- Located existing CB on west side of the road for private branch to Killing/Van Ryswyck farm.
- Culvert under laneway is approx. 1200mm dia., is deformed and in poor shape. Culvert could/should be lengthened and upsized if new one installed.
- Found only one outlet at head of the ditch (400mm CSP).
- A berm was found at the property line shared with Spero-Holsteins, however no catchbasin was observed.

Spero Holsteins Ltd. (Roll No. 040-00800)

- Located a berm in middle of field with a DICB (DICB looks to be in decent condition). Hole in ground (blowout) over top of drain on the downstream side of the berm.
- Another berm exists on upstream property line, and located what looks to be a concrete catchbasin, however it contained a concrete cover with no surface water entrance. A swale has cut through the berm east of the structure, likely due to having no surface water entry to the drain.

Townsend Farms Inc. (Roll No. 040-02100)

- First berm in the middle of the field has considerable erosion around the west edge, as Trevor had indicated. Soils look to be very sandy. The erosion situation may be compounded due to the fact that the berm follows the east-west crop line and surface water flowing in a southwesterly direction looks to bypass the catchbasin. Surface water reaching the berm is diverted around the west end creating continued erosion at the end of the berm.
- Grassed swale exists in between the first and second berm in the middle of the field.
- Second berm also contained significant erosion around the outside edges. DICB visually looks to be in a good position and condition.
- Partial berm at the upstream property line and old catchbasin covered in grass, but is flowing water through it.

Stiek Farms Inc. (downstream) (Roll No. 040-02200) / J. & B. Walton (Roll No. 040-01001)

- Did not observe a catchbasin in the tree line on the upstream side of the Stiek property line with Walton farm.
- Grassed swale through corner of Walton farm overtop of the drain.
- Catchbasin found on north side of trees on upstream property line of Walton farm. Catchbasin had very little flow through it and appeared to be located east of the lowest point.

Killcrest Farms Inc. (Roll No. 040-01100) / D. & K. Dodd (Roll No. 040-02300) / Stiek Farms Inc. (Roll No. 40-02200)

- A catchbasin was found in the Killcrest Farms field where the crops are divided (edible beans to corn). Owner was later consulted and felt that a catchbasin remaining in this location would provide value.
- No catchbasin was located on the property line between Killcrest Farms and the Dodd farm, and although one was not originally found in the treeline property divide between the Dodd and Stiek farms, it was later located during survey.
- Two (2) hickenbottoms were found on the Stiek Farms property between the Enbridge gas lines (Trafalgar Lines) and Enbridge oil lines (Lines 7-9).

- Found a catchbasin on the west side of 10th line that is believed to be private. There was also a Hickenbottom in the field on the east side of the road (Erik Rotteveel's farm recently purchased from F. & B. Killing) that must cross into this catchbasin.

3.4 Phone Calls After the Meeting:

Fred Killing - Braemont Farms (Roll No.040-03700)

In a phone call following the on-site meeting, Fred said he had signed the petition back when he previously owned the farm to the north with Roll No. 040-03800, but also acknowledged that maybe 3-5 acres of their home farm to the south (Roll No. 040-03700) does still drain this way to the Parker Drain watershed. Fred recalled that they had constructed the hickenbottom in the field north of the laneway of the farm they used to own and connected it to the 4" tile that crosses the 10th Line approximately 10 years ago. At that time, the Municipality cleaned out the 4" pipe under the road to provide a better outlet. Fred recalled that the 4" crossing had been there longer than he could remember. Neither the farm they sold, nor the home farm contained any systematic tile drainage.

David Vanderspek – Spero-Holsteins Ltd. (Roll No.040-00800)

In a phone call to discuss the project and completing test holes on the property, David asked if the berm and catchbasin located in the centre of the property could be removed. The engineer also confirmed that a catchbasin would be added on the property line shared with the Townsend farm and that the existing berm would be re-instated to better direct surface water to that basin.

3.5 Site Examination and Survey

The routes of the existing drain were examined after the on-site meeting and on several occasions during 2020 and 2021. Topographic (GPS) survey was completed in July, 2020 from the existing laneway culvert in E½ Lot 17, Concession 9 upstream to the east side of the 10th Line in Lot 19, Concession 10, also well as the route of Branch A. Following later changes to the alignment, due to the impediments of crossing the pipelines, Branch B and Branch C were surveyed in July 2021.

3.6 Watershed Description

The perimeter watershed of the Drain has been established generally from the historic reports of the Parker Drain, however has been corrected as needed by the most current topographic information provided by the province. At the northern limits of the watershed, the Parker Drain watershed boundary was set to match a recent report completed by K. A. Smart, P. Eng. referred to as the Veale Drain Branch C 2019. The Drain also has common watersheds with the Balkema Drain 1997, Donald Murray Drain 1996, McDonald Drain and Veale Drain (1968 and 2007).

Land use in the watershed is predominately agricultural except for the 10th Line road allowance and one residential lot.

4 AUTHORITY FOR REPORT

Section 4 of the Drainage Act provides for the construction of new drainage works for an area requiring drainage. As a result of discussion at the site meeting and on-site examination, the area requiring drainage for the original petition received was determined to be the NE1/4 of Lot 18, Concession 9, the E1/2 of Lot 19, Concession 9, the majority of lands in Lot 20, Concession 9, and finally the NW1/4 of Lot 19, Concession 10. Of the seven owners in the area requiring drainage, five of which have signed the petition, representing a majority in number; thus, the petition is valid under Section 4(1)(a) of the Drainage Act.

The official on-site meeting for the second petition received was held at a meeting on December 10, 2021. The discussions of the meeting are later described in *Section 9 INFORMATION MEETING & ON-SITE MEETING FOR 2nd PETITION* of this report. The engineer determined that the area requiring drainage for the petition was the west half of the property with Roll No. 040-03500, as well as the surface water swale across property with Roll No. 040-01900 commencing at 10th Line westerly to the bush. With approximately 9.0 hectares of area proposed to one day be subsurface tile drained on the east side of 10th Line, the signatures on the petition represent greater than 60% of the area requiring drainage; thus, the second petition is valid under Section 4(1)(b) of the Drainage Act.

5 RECOMMENDED WORK

A property by property description of the proposed Parker Drain for construction and future maintenance can be found in the Special Provisions (Drawings 15-17). The proposed Drain is summarized as follows:

5.1 Main Drain

The proposed Main Drain commences on the south side of the D. & J. Leiper laneway continuing north and following the path of the existing Parker Drain nearly to its existing terminus, though ends just short at the property line between Killcrest Farms Inc. and D. & K. Dodd. The proposed Main Drain includes:

- Removal of an existing 1200mm dia. CSP laneway culvert, to be replaced with 12m of 1600mm dia. CSP
- 58m of ditch bottom cleanout, 94m of ditch excavation (deepening) and the construction of a 15m long, 1.0m deep (350m³) permanent stilling pool/sediment trap at new tile outlet.
- 2,268m of new closed tile drain (ranging in size from 600mm-300mm dia.), including a crossing of the Enbridge Gas Inc. Trafalgar Lines and the Enbridge Pipelines Inc. Lines 7-9.

5.2 Branch A

The proposed Branch A includes:

- Incorporation of 196m of 200mm dia. plastic tubing and outlet pipe.
- 149m of new closed tile drain, including 300mm dia. perforated plastic tubing and a road crossing of 10th Line.

5.3 Branch B

The proposed Branch B provides an outlet for the Stiek Farms Inc. property with Roll No. 040-03800 on the east side of 10th Line, as well as an outlet for the southeast quadrant of Roll No. 040-02200. Branch B was designed to divert upstream flow away from having to cross downstream Enbridge pipelines with enlarged drain pipe sizes, as only limited space exists to cross the pipelines leaving the sufficient separation between pipes and cover over the tile drain. It also eliminates the originally proposed inverted siphon crossing of the Trafalgar Lines on property with Roll No. 040-02200. The proposed Branch B includes:

- 757m of new closed tile drain (350mm dia. in size – 375mm dia. solid plastic pipe for portion through hill), including a road crossing of 10th Line.

5.4 Branch C

Branch C has been proposed to service the top end of the existing Parker Drain on the property line between D. & K. Dodd and Stiek Farms Inc., however the branch diverts flow southerly across Lines 7-9, then westerly to the Main Drain so that the Main Drain crossing on the Killcrest Farms Inc. property does not receive as much flow as it normally would. Therefore reducing the size of the Main Drain crossing of Lines 7-9 on the Killcrest Farms Inc. property.

- 342m of new closed tile drain (300mm dia. solid plastic pipe through hill), including a crossing of the Enbridge Pipelines Inc. Lines 7-9

5.5 Existing Parker Drain

The existing 175mm to 250mm (7” to 10”) 1901 drain is to be removed/destroyed where encountered. The existing 350mm (14”) 1966 drain is proposed to be abandoned and will become a private drain to be maintained by the landowners upon whose property it exists.

6 DESIGN CONSIDERATIONS

6.1 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.” For

this project, the existing ditch downstream of the D. & J. Leiper laneway crossing at Station 0+000 on the Main Drain provides sufficient outlet and will allow the proposed works to function as intended.

6.2 Drain Capacity

The size of the proposed tile drain was determined using the Drainage Coefficient Method outlined in the *Drainage Guide for Ontario*, published by OMAFRA. The drainage coefficient is a measure of the amount of runoff that a closed drain can remove from an upstream watershed in a 24-hour period. Based on our watershed examination and landowner discussions, the proposed tile drains for the Main Drain, Branch B and Branch C on this project have been designed for a 38mm (1.5”) drainage coefficient. Since the downstream portion of the proposed Branch A is an existing tile drain to be incorporated, in order to not overload the existing tile, the proposed 10th Line road crossing and plastic tubing on property with Roll No. 040-03500 has been designed for the 31.8mm (1-1/4”) drainage coefficient. The maximum capacity of the proposed road crossing is equal to the capacity of the existing downstream 200mm (8”) tile.

The open ditch portion of the Drain is designed to provide adequate depth for the proposed Main Drain tile outlet and will also convey between the 2-year and 5-year storms within the channel cross-section.

The new laneway culvert is designed for the 10-year storm with a water level at the top of the proposed culvert. With the laneway surface being an additional 1.2m above the top of the culvvert, the crossing is still able to pass the 50-year storm without overtopping the laneway.

6.3 Enbridge Pipeline Crossings

The existing Parker Drain currently crosses the four (4) pipelines of Enbridge’s Trafalgar Lines (Enbridge Gas Inc.), as well as the three (3) lines referred to as Lines 7-9 (Enbridge Pipelines Inc.), all within the Killcrest Farms Inc. property. Due to the topography of the land and the desire of the original petitioner (Stiek Farms Inc.) to extend the Parker Drain further upstream through property with Roll No. 040-02200, across 10th Line and provide an outlet for property with Roll No. 040-03800, it was anticipated that additional crossings of all the aforementioned lines would need to be made again on the Stiek Farms Inc. property, bringing the total proposed pipeline crossings to 14.

Upon completing the daylighting of the lines in various locations by hydrovac excavation, it was immediately clear that normal gravity crossings along the natural drainage pathway could not be achieved without conflicting with the next set of pipeline crossings downstream or causing the proposed tile drain to be too deep or shallow.

Several different designs were reviewed, however the natural drainage pathway could not be followed without requiring the use of multiple inverted siphon crossings of the pipelines. Ultimately the decision was made to propose alternate alignments through two (2) deep cuts in the hill, in order to divert the larger flows around the pipelines and avoid proposing any inverted siphons. This design decision is also favoured as it reduces/eliminates the maintenance/operational concerns of an inverted siphon. Further information regarding how increased costs are assessed is discussed in *Section 12.4 Increased Cost (Special) Assessments (Section 26).*

Preliminary drawings were sent to both Enbridge Gas Inc. and Enbridge Pipelines Inc. for their review and comment in July 2021. Response from Enbridge Pipelines Inc. requested a neoprene sheet over the crossing of Line 7 due to the minimal crossing separation. Response from Enbridge Gas Inc. requested that the crossing of all four (4) Trafalgar Lines be completed below the lines. The original design sent to Enbridge proposed to cross above the deeper 48" & 42" lines, and then drop under the more shallow 34" & 26" lines. More on this is discussed in *Section 9 INFORMATION MEETING & ON-SITE MEETING FOR 2nd PETITION.*

6.4 Berms

Berming behind catchbasins has been proposed at Stations 0+510, 0+856, 1+257, 1+631, 1+832, 1+984, and 2+436 along the Main Drain, some of which are newly proposed and some are existing berms to be repaired. The existing berms at 0+697 and 1+075 are to be completely removed. Berms range in height from 150-900mm at the centre, depending on the topography of the land. The main purpose of the berms is to direct as much of the surface water into the subsurface tile drain as possible during a rain event. The actual storage capacity of the berms is considered minimal.

All berms located at catchbasins on property lines are to remain in place and are considered/recognized to be part of the Drain for maintenance purposes. The proposed berm at Station 1+257 on the Townsend Farms Inc. property is to be considered private and can therefore be removed at the owner's discretion.

6.5 Soil Conditions

The Oxford County soils mapping for this area indicates that the soils adjacent to this Drain are Honeywood Silt Loams, with good drainage and considered to be slightly stony.

Test hole excavations were completed in seven (7) locations across the route of the drain. Most holes can be summarized as containing little to no stones, stable trench wall and topsoil depths in the 250-500mm range. The majority of holes contained no groundwater except for the hole dug on the Killcrest Farms Inc. property and the hole at the top end of the drain on the west side of 10th Line. Further detail on the test hole information can be found on Drawings 18-21.

Based on available information, adverse subsurface conditions are not expected to be a concern on this project, with the possible exception of some select locations in the upper portion of the watershed. The use of conventional construction equipment is anticipated. Refer to the Standard Specifications for drain construction procedures when adverse subsurface conditions are encountered.

6.6 Downstream Tile Drain Extension Inquiry

In a discussion between the engineer and Mr. Leiper following the on-site meeting, the engineer said he would consult with the Upper Thames River Conservation Authority (UTRCA) on a possible enclosure of the Drain from it's current tile drain outlet down to the Leiper laneway (approximate enclosure distance of 150m). On September 14, 2021, staff from the UTRCA, KSAL, and the affected property owners met on site to review the request. From the site visit, UTRCA staff indicated that, at a staff level, they could not support issuing a permit for the enclosure due in part to the contributing watershed area and the storage area that could potentially be lost. It was understood that a presentation could be made to the board for approval beyond the staff level if it was still desired to proceed, however the owner did not wish to pursue any further.

7 ENVIRONMENTAL CONSIDERATIONS

7.1 Agency Consultation

7.1.1 UTRCA

The UTRCA did not request an environmental appraisal under Section 6 of the Act. The Conservation Authority were sent notices to the public meetings. Other than the consultation mentioned above regarding the ditch enclosure inquiry, no comments regarding the petition and proposed improvements were received.

8 CONSTRUCTION CONSIDERATIONS

8.1 Pre-Construction Approvals

Before starting work, the Contractor shall ensure all public utilities are located and shall contact all landowners along the proposed drain route to determine the location of any private utilities. Permits will be required for the proposed work at the Enbridge Gas Inc. and Enbridge Pipelines Inc. crossings. It is also expected that a permit may be required with Hydro One for the portion of the Main Drain constructed within the transmission line corridor.

8.2 Construction Scheduling

Construction cannot commence until ten days after a bylaw to adopt this report is given third reading in accordance with the Act.

8.3 Minor Adjustments During Construction

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 to more than 133% of the tendered amount 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. If a substantial alteration is required, a revised report can be prepared and processed through the Act, or an application can be made under the Act to the Drainage Tribunal to recognize the substantial alteration. The application to the Tribunal must occur before final costs are levied.

8.4 Alignment of Drains

All drains shall be constructed and maintained generally to the alignment, as noted on the plans and specified by the Special Provisions. In the absence of survey bars, existing fences and similar boundary features are assumed to represent property lines.

Should landowners desire a more precise location for the drains in relation to their property line or if there is a dispute about the location of any property line, landowners may obtain a legal survey at their own cost before construction.

9 INFORMATION MEETING & ON-SITE MEETING FOR 2nd PETITION

Attendees

John R Townsend – Townsend Farms Inc. (Roll No. 040-02100)	Jake Van Ryswyck (Roll No. 040-03500)
Robin and Erik Rotteveel – Stiek Farms (Roll No. 040-02200 & 040-03800)	Tom Lightfoot (Roll No. 040-02000)
Doug Leiper (Roll No. 040-01900)	Connor Occleston (Twp. of EZT)
Laurence MacKay (tenant for Leiper farm)	Claire Orhling (Twp. of EZT)
Leroy Van Ryswyck (Roll No. 040-01000)	Curtis MacIntyre, P. Eng. (KSAL)
Steve Killing (Roll No. 040-3500 & 040-03600)	Alex Pasley, P. Eng. (KSAL)

On December 10, 2021, an information meeting with landowners was held. Notice for the meeting was sent to all landowners in the watershed. At the meeting, the results of the investigation to-date were presented along with a summary of the proposed work, preliminary cost estimates and assessments. The meeting also served as the official on-site meeting for the Killing/Van Ryswyck petition.

Those present at the meeting were in general agreement with the work proposed.

- A revision was made to the watershed and schedules to reflect the L. & K. Van Ryswyck farm tiled out of the watershed.
- Laurence MacKay also clarified that the existing tile to be incorporated as a part of Branch A was actually believed to be a 200mm dia. (not 250mm). Following the meeting, the proposed upstream tile size was reduced to not overload this existing tile and was agreed to by Jake Van Ryswyck.
- Finally, the southerly existing private berm located within the Townsend Farms property was determined to no longer be needed due to the increased size of proposed drain and close proximity to another berm on the property upstream. As with an existing berm located on the Spero Holsteins property proposed to be removed, a buried junction box is still proposed partly due to a drop of the tile inverts, but also so that the owner may convert back to a catchbasin should they wish to re-instate the berm in the future.

After the meeting, comment was received from Enbridge Gas Inc. requesting that the proposed Parker Drain cross below all four (4) Trafalgar Lines, as discussed earlier. To accommodate such, without flattening the grade and increasing the tile size downstream, the Drain was required to be deepened by approximately 0.5-0.85m for a distance of nearly 1km downstream. Furthermore, the portion of the Main Drain downstream through the Walton & Stiek farms was converted to solid plastic pipe due to the concerning depth of a non-reinforced concrete tile.

10 DRAWINGS AND SPECIFICATIONS

10.1 Drawings

The location of the Drain, watershed boundary and the affected properties are shown on Drawing No. 1 included with this report. The numbers adjacent to the Drain are station numbers, which indicate in metres the distance along the Drain from the outlet.

The profiles for the Drain are on Drawings 2 to 5. The profiles show the depth and grade for proposed work and future maintenance. Drawings 6 to 13 contain the details at specific locations, such as catchbasins, and road and pipeline crossings. Drawing 14 contains cross-sections of the open ditch. Drawings 15 to 17 contain the Special Provisions – Construction Specifications. Drawing 18 to 21 contain the Test Hole Investigations.

10.2 Specifications

This report incorporates the General Conditions, Standard Specifications and Special Provisions listed in the Table of Contents, which govern the construction and maintenance of the Drain.

11 COST ESTIMATE

The estimated cost of this project includes allowances to owners, the construction cost, the engineering cost and other costs associated with the project.

11.1 Allowances

Sections 29 to 33 of the Drainage Act provides for allowances (compensation) to owners affected by proposed drain construction. On this project, there are only allowances for Sections 30 & 31.

11.1.1 Section 30 - Damages

Section 30 provides for payment of an allowance to landowners along the Drain for damages caused by the construction of the Drain. Where separate access routes to the working area are specified in this report, Section 30 allowances also account for access route damage. In agricultural areas, crop damages are computed based on published crop values and declining productivity loss in the years following construction.

The allowance for damage to land and crops was calculated using a rate of $2,000 per hectare applied to the defined working area. For the basis of the Section 30 allowance calculations, a 25m width corridor is typically used for the closed drain portion, with the exception of 30m width for sections of closed drain deeper than 2.5m (See Section 300.2 Construction Specifications for more details). A 10m width is used for the open ditch portion. There is a minimum Section 30 allowance of $100.

11.1.2 Section 31 – Existing Drains

Section 31 provides for payment of an allowance to the owner of an existing drain that is to be incorporated as part of the new Drain. The allowance for incorporating the existing 180m of 200mm dia. plastic tubing on Branch A on the D. & J. Leiper property (Roll No. 040-01900) was set at the approximate construction cost as quoted by the landowner, and is for $3,000.

11.1.3 Summary of Allowances

The table below summarizes the amounts of the allowances to be provided under this report.

Table 11.1-1 - Summary of Allowances

	Main Drain	Branch A		Branch B	Branch C	
Roll Number	Dam. Sec. 30 ($)	Dam. Sec. 30 ($)	Ex. Drain Sec. 31 ($)	Dam. Sec. 30 ($)	Dam. Sec. 30 ($)	**Total ($)**
Main Drain						
040-00800	2,400					**2,400**
040-01001	1,000					**1,000**
040-01100	2,900				1,200	**4,100**
040-01900	2,000		3,000			**5,000**
040-02100	4,400					**4,400**
040-02200	1,200			4,200	900	**6,300**
040-02300	100				100	**200**
040-03500		400				**400**
040-03800				100		**100**
TOTAL ALLOWANCES:	**14,000**	*400*	*3,000* **3,400**	**4,300**	**2,200**	**23,900**

In accordance with Section 62(3) of the Act, the allowances shown may be deducted from the final assessment levied. Payment to the owner would only be made when the allowance is greater than the final assessment. The allowances are a fixed amount and are not adjusted due to construction.

11.2 Construction Cost Estimate

The estimated cost for Labour, Equipment and Materials to construct the proposed Drain is outlined in detail in *Table 11.6-1 - 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.

The contract for the Drain will be awarded by public tender. If the contract price is more than 33% over the engineer's estimate, Section 59 of the Act requires a Council meeting with the petitioners to determine if the project should proceed.

11.3 Engineering Cost Estimate

Engineering costs include report preparation and attending the Council meeting to consider the report and the Court of Revision.

Construction Phase Services may include: preparing tender documents and tender call, review of tenders, attending the pre-construction meeting, periodic construction inspection, payments, final inspection, post-construction follow-up, final cost analysis and preparation of the grant application.

The cost for report preparation 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, which would result in additional costs. The amount shown for meetings is an estimate. The final cost will be based on the actual time required for meetings. The estimate shown for construction phase services is based on experience and assumes good construction conditions and a Contractor who efficiently completes the construction. The final cost for the construction phase will vary as per the actual time spent during and following drain construction. Engineering costs are summarized in *Table 11.6-1 - Estimated Cost Summary*.

11.4 Estimate of Section 73 Costs

Section 73(2) and 73(3) of the Act direct that the cost of services provided by municipal staff and the Council to carry out the Act process shall not form part of the final cost of the Drain. However, Section 73(1) outlines that the following costs incurred by the Municipality can be included in the cost of the Drain: "*cost of any application, reference or appeal and the cost of temporary financing.*"

The estimate of Section 73 costs is included to cover the above-referenced items from Section 73(1) and primarily provides for interest charges on financing the project until it is completed. This 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 will form part of the final drain cost.

Grant policy indicates that municipal cost for photo-copying and mailing required to carry out the required procedures under the Act can be included in the final drain cost. Section 73 costs are summarized in *Table 11.6-1 - Estimated Cost Summary*.

11.5 Harmonized Sales Tax

The Harmonized Sales Tax (HST) will apply to most costs on this project. The Municipality is eligible for a partial refund on HST paid, the net 1.76% HST is included in the cost estimates in this report.

11.6 Estimated Cost Summary

Table 11.6-1 - Estimated Cost Summary

DESCRIPTION			TOTAL
ALLOWANCES:			**$23,900**
CONSTRUCTION COST ESTIMATE			
Item	Stations	Description	Cost
i) Main Drain			
M1	0+000 to 0+012	Remove and dispose of ex. 1200mm dia. CSP. Install 12m length of 1600mm dia. galvanized CSP, 2.8mm thickness, 125x25mm corrugations. Restore laneway to existing conditions.	16,000

		DESCRIPTION	TOTAL
M2	0+012 to 0+070	58m of ditch bottom cleanout, 1.0m bottom width, 2:1 side slopes.	1,500
M3	0+070 to 0+164	94m of ditch excavation, 1.0m bottom width, 2:1 side slopes.	4,700
M4	0+164 to 0+179	Permanent stilling pool (350m³) with 25m² of new riprap on geotextile at outlet.	12,000
M5	0+179 to 0+185	6m of 600mm dia. solid plastic pipe (HDPE) with rodent gate at outlet.	1,700
M6	0+179 to 0+185	Remove existing 400mm dia. CSP outlet pipe and install 6m of 375mm dia. HDPE pipe with rodent gate at outlet.	1,500
M7	0+185 to 0+511	326m of 600mm dia. concrete tile with joint wrap.	22,800
M8	0+510	Repair berm to existing conditions.	500
M9	0+511	900x1500mm concrete DICB, including connections and birdcage grate. Also includes removal of existing 600x600mm DICB.	4,900
M10	0+511 to 0+697	186m of 600mm dia. concrete tile with joint wrap.	13,000
M11	0+697	900x1500mm concrete JB, including connections and birdcage grate. Also includes removal of existing 600x600mm DICB.	3,000
M12	0+697	Existing berm to be removed. Spread material on downstream side of JB.	500
M13	0+697 to 0+857	160m of 600mm dia. concrete tile with joint wrap.	11,200
M14	0+856	Use existing partial berm to construct 75m long new berm (0.5m top width, 2:1 side slopes).	2,500
M15	0+857	900x1500mm concrete DICB, including connections and birdcage grate. Also includes removal and disposal of existing 600x600mm DICB	5,000
M16	0+857 to 1+075	218m of 600mm dia. concrete tile with joint wrap.	15,300
M17	1+075	Existing berm to be removed. Spread material around low areas.	1,000
M18	1+075	900x1500mm concrete JB, including connections and birdcage grate. Also includes removal of existing 600x600mm DICB.	2,500
M19	1+075 to 1+260	185m of 600mm dia. concrete tile with joint wrap. Includes break up/destroy and bury existing 250mm dia. concrete tile (1901)	13,000
M20	1+257	Repair berm to existing conditions. Extend both ends of berm, 10m of west end and 16m on east end using 2 truck loads of imported clay material as per detail.	1,500
M21	1+260	900x1200mm concrete CB, including connections and birdcage grate. Also includes removal of existing 600x600mm DICB	3,500
M22	1+260 to 1+633	373m of 600mm dia. concrete tile with joint wrap. Includes break up/destroy and bury existing 200/250mm dia. concrete tile (1901)	29,800
M23	1+631	Construct 30m of new berm as per detail.	1,200
M24	1+633	900x1200mm concrete CB, including connections and birdcage grate. Also includes removal of existing 600x600mm DICB	4,000
M25	1+633 to 1+833	200m of 600mm dia. HDPE pipe (solid). Includes break up/destroy and bury existing 200mm dia. clay tile (1901)	50,000
M26	1+832	Construct 30m of new berm as per detail.	1,200
M27	1+833	900x1200mm concrete CB, including connections and birdcage grate.	4,500
M28	1+835	Incidental clearing of 1-2 trees for tile and CB installation. To be hauled away unless other arrangements made with owner.	500
M29	1+833 to 1+988	155m of 525mm dia. HDPE pipe (solid). Includes break up/destroy and bury existing 200mm dia. clay tile (1901)	34,900
M30	1+984	Construct 20m of new berm as per detail.	1,000

		DESCRIPTION	TOTAL
M31	1+988	Incidental clearing of 1-2 trees for tile and CB installation. To be hauled away unless other arrangements made with owner.	500
M32	1+988	900x1200mm concrete CB, including connections and birdcage grate. Also includes removal of existing 600x600mm DICB.	4,500
M33	1+988 to 2+032	Locate, expose and protect four (4) Enbridge natural gas pipelines with extreme caution for Drain construction to proceed underneath of pipelines, consult specifications.	20,000
M34	1+988 to 2+032	44m of 525mm dia. PVC pipe crossing beneath four (4) Enbridge Natural Gas Pipelines by open cut.	15,000
M35	2+032	900x1200mm concrete JB, including connections.	4,500
M36	2+032 to 2+136	104m of 525mm dia. concrete tile with joint wrap. Includes break up/destroy and bury existing 200mm dia. clay tile (1901).	6,200
M37	2+136	900x1200mm concrete CB, including connections and birdcage grate. Also includes removal of existing 600x600mm CB.	3,000
M38	2+136 to 2+166	30m of 400mm dia. concrete tile with joint wrap. Includes break up/ destroy and bury existing 200mm dia. clay tile (1901).	1,500
M39	2+166	900x1200mm concrete JB, including connections.	2,500
M40	2+166 to 2+184	18m of twin runs (2) of 300mm PVC pipe crossing above three (3) Enbridge Oil Pipelines by open cut. Install neoprene sheet below drain and above Line 7 (approx. 1m wide x 3m long x 1/2" thick).	8,000
M41	2+184	900x1200mm concrete JB, including connections.	2,500
M42	2+184 to 2+437	253m of 300mm dia. concrete tile with joint wrap. Includes break up/destroy and bury existing 175mm dia. clay tile (1901).	10,100
M43	2+436	Construct 10m of new berm as per detail.	500
M44	2+437	600x600mm concrete CB, including connections and birdcage grate.	2,000
		Sub Total Part i)	**345,500**
ii) Branch A			
A1	0+000 to 0+196	Incorporate 190m of existing 200mm dia. perforated plastic tubing and 6m of 200mm dia. plastic outlet pipe.	0
A2	0+196	Construct 600x600mm CB, including removal of existing 600x600mm CB, existing rock salvaging/placement, grate and connections. Connect existing 200mm tubing to new CB with 2m of 200mm plastic tubing.	2,100
A3	0+196 to 0+215	19m of 250mm dia. solid plastic pipe across 10th Line by open cut methods.	6,000
A4	0+215	Construct 600x600mm CB, including 5m^2 riprap, 8m stub of 200mm dia. HDPE, grate and connections.	3,000
A5	0+215 to 0+345	130m of 250mm dia. perforated plastic tubing.	5,200
A6	0+345	Construct 600x600mm CB, including grate and connections.	2,000
A7	0+345	Construct 10m of new berm as per detail.	500
		Sub Total Part ii)	**18,800**
iii) Branch B			
B1	0+000 to 0+080	80m of 350mm dia. concrete tile with joint wrap.	3,600
B2	0+080 to 0+347	267m of 375mm dia. HDPE pipe (solid).	32,000
B3	0+347	Construct 600x600mm JB, including grate and connections.	1,800
B4	0+347 to 0+737	390m of 350mm dia. concrete tile with joint wrap.	17,600
B5	0+390 & 0+478	Remove two (2) existing tree stumps on drain alignment for installation of drain.	300
B6	0+737	600x600mm concrete CB, including 5m^2 riprap, connections and birdcage grate. Also includes removal of existing 600x600mm CB.	2,500

		DESCRIPTION		TOTAL
B7	0+737 to 0+757	20m of 375mm dia. solid plastic pipe across 10th Line by open cut including full granular backfill and road restoration (gravel).	7,000	
B8	0+757	600x600mm concrete CB, including 5m^2 riprap, connections and birdcage grate.	2,500	
		Sub Total Part iii)	**67,300**	
iv) Branch C				
C1	0+000 to 0+324	324m of 300mm dia. HDPE pipe (solid).	24,300	
C2	0+324	600x600mm concrete JB, including connections.	1,800	
C3	0+324 to 0+342	18m of twin runs (2) of 200mm PVC pipe crossing above three (3) Enbridge Oil Pipelines by open cut.	6,000	
C4	0+339	Incidental clearing of 1 tree for tile and CB installation. To be hauled away unless other arrangements made with owner.	300	
C5	0+342	600x600mm concrete DICB, including birdcage grate and connections.	2,000	
		Sub Total Part iv)	**34,400**	
v) Contingencies				
D1		Increased costs to install 200m of tile by backhoe in areas of muck or wet/unstable soils, including geotextile and 300mm of clear crushed stone. (Contingency is intended to be independent of tile size. If required and authorized, would be paid in addition to regular bid item above).	12,000	
D2		Increased costs to install 300m of tile by backhoe in stony conditions, where authorized and with thin bedding of clear crushed stone. (Contingency is intended to be independent of tile size. If required and authorized, would be in paid in addition to regular bid item above).	12,000	
D3		Contingency allowance for lift-outs of wheel machine to allow for stone removal, including the stone removal and restarting/continuing the wheel machine (based on 5 @ $300/lift-out).	1,500	
D4		Tile Connections (based on 15 @ $100/connection).	1,500	
D5		Contingency for steel lid to be used instead of typical concrete lid on 900x1200mm junction box (1" thick A36 steel plate, with hooks welded onto ends of plate for lifting and angle irons welded to bottom side of plate to avoid shifting- see Dwg 11).	600	
D6		Lump sum contingency allowance.	19,000	
		Sub Total Part v)	**46,600**	
		Net HST (1.76%)	9,020	
		TOTAL CONSTRUCTION COST ESTIMATE:		**521,620**
ENGINEERING COSTS				
		Report Preparation	90,000	
		Enbridge pipeline locating (Super Sucker Hydro Vac Services)	16,200	
		Consideration of Report Meeting	1,000	
		Court of Revision	1,000	
		Construction Phase Services	50,000	
		Net HST (1.76%)	2,785	
		TOTAL ENGINEERING COST ESTIMATE:		**160,985**
SECTION 73 COSTS				
		Printing of reports	200	
		Interest estimate	6,000	
		Other unforeseen costs & applications	12,295	
		TOTAL SECTION 73 COST ESTIMATE:		**18,495**
		TOTAL ESTIMATED COST:		**725,000**

12 ASSESSMENTS

The Drainage Act requires that the total estimated cost 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 Increased Cost (Section 26). On this project, assessments for Benefit, Outlet Liability and Increased Cost (Special) Assessments are involved.

12.1 Calculation of Assessments

For each individual branch, the first step in the assessment calculation is to determine the benefit assessment to the affected lands and roads, then special assessments to roads and utilities are determined, where applicable. After deducting the total benefit and special assessments from the total cost of each interval, the balance of the cost is then assessed as outlet liability on a per hectare basis to all lands and roads in the interval watershed.

12.2 Benefit Assessments (Section 22)

Benefit assessments are listed in Schedule A – Schedule of Assessments and shown on a per interval basis in Appendix A – Calculation of Assessments.

Section 22 benefits were determined based on the estimated value provided to the property by the works and are not proportional to the watershed area. For this specific project, benefit assessments are generally balanced and applied on the following three criteria: Direct Outlet (ability of a property to connect directly to the new drain), Subsurface Service Area (size of land area that is or can be directly connected via subsurface tile drains), and Improved Drainage (improved drainage along the length of the drain crossing a property).

12.3 Outlet Liability Assessments (Section 23)

Section 23(3) of the Drainage Act states that outlet liability assessment is to be based on the volume and rate of flow of the water artificially caused to flow. Therefore the lands and roads in the watershed are assessed on a per hectare basis, with adjustments made to recognize the different amount of runoff generated by different land uses. The basis for the adjustments is 1 hectare of cleared agricultural land contributing both surface and subsurface water to the Drain. Land uses with a different runoff rate are adjusted by the factors given in *Table 12.3-1 - Runoff Factors*.

Table 12.3-1 - Runoff Factors

Land Use	Runoff factor
Agricultural	1
Lands Tiled Away	0.5
Gravel Road	2

12.4 Increased Cost (Special) Assessments (Section 26)

Section 26 of the Drainage Act directs that any increased cost due to a public utility (utility) or road authority (road) shall be paid for by that utility or road. This assessment is known as a Special Assessment.The estimated special assessments are presented in *Table 12.4-1 - Estimated Special Assessments*. The equivalent drain cost is based on the length of Drain affected by the road allowance/utility right of way and the unit price of normal drain construction. The increased cost caused by the road or utility is determined by subtracting the equivalent drain cost from the construction and engineering costs.

The special assessments below represented by (C), (D), (F), (H), and (I) are those incurred by the physical crossings of the pipelines or road. Special assessments (A) and (B) are portions of the Parker Drain 2022 that are required to be installed much deeper (approx. 0.5 – 0.85m) than would normally be proposed, using high-density polyethylene pipe instead of concrete tile. Finally, special assessments (E) and (G) are identified by the engineer as increased costs, necessitated by the pipelines, for the alternative drain alignments to go through deep hills using high-density polyethylene pipe compared to using the natural drainage alignment with concrete tile. These alternative alignments avoided a second crossing of the Trafalgar Lines and the use of several inverted siphons. It should be noted that the special assessments of (E) and (G) are comparable to the special assessment that would instead have been incurred for a second crossing of the Trafalgar Lines.

Table 12.4-1 - Estimated Special Assessments

Drain	Location	Authority/ Owner	Construction Cost	+ Eng. Cost	- Equiv. Drain Cost	+ Net HST	= Est. Special Assess.
(A) Main Drain	1+633 to 1+833	Enbridge Gas Inc.	54,500 *(Items M25 & M27)*	13,700	-17,000	900	**52,100**
(B) Main Drain	1+833 to 1+988	Enbridge Gas Inc.	39,400 *(Items M29 & M32)*	10,500	-12,300	660	**38,260**
(C) Main Drain	1+988 to 2+032	Enbridge Gas Inc.	39,500 *(Items M33, M34 & M35)*	15,300	-2,640	920	**53,080**
(D) Main Drain	2+166 to 2+184	Enbridge Pipelines Inc.	13,000 *(Items M39, M40 & M41)*	5,800	-900	315	**18,215**
(E) Branch C	0+000 to 0+324	Enbridge Pipelines Inc.	24,300 *(Item C1)*	6,600	-8,820	390	**22,470**
(F) Branch C	0+324 to 0+342	Enbridge Pipelines Inc.	7,800 *(Items C2 & C3)*	4,000	-990	190	**11,000**
(G) Branch B	0+000 to 0+347	Enbridge Gas Inc.	37,400 *(Items B1, B2, & B3)*	10,900	-9,900	680	**39,080**
(H) Branch B	10th Line	Twp. of EZT	9,500 *(Items B6 & B7)*	4,000	-900	220	**12,820**
(I) Branch A	10th Line	Twp. of EZT	8,100 *(Items A2 & A3)*	3,000	-760	180	**10,520**

The actual special assessments will be determined after construction by inserting the actual construction and engineering costs in the Special Assessments Table. Any additional costs identified by the engineer will be added to the Special Assessment where appropriate.

The road authority or utility may elect to construct the Drain within their right of way with their forces. In this case, the special assessment is calculated by inserting zero for the construction cost.

If there are increased costs to the Drain at the time of construction due to a utility or road not listed in the table above, a Special Assessment will be based on the actual costs incurred.

Special Assessments do not apply to future maintenance assessments.

12.5 Assessment Schedules

In the assessment schedules each parcel of land assessed has been identified by the municipal assessment roll number at the time of the preparation of this report. The size of each parcel was established using the assessment roll information. If an "F" is shown in the first column, it denotes lands with current Farm Property Tax Class designation that may qualify for Grant. For convenience only, each parcel is also identified by the owner name(s) from the last revised assessment roll.

12.5.1 Schedule A- Schedule of Assessments

The estimated cost for the drainage works in this report is distributed among lands, roads and utilities, as shown in Schedule A, the Schedule of Assessments for Construction.

12.5.2 Schedule B -Schedule of Assessments for Maintenance

In accordance with Section 74 of the Act, the Drain shall be maintained by the Municipality, and the cost of maintenance shall be assessed to lands and roads upstream of the maintenance location, pro rata with the amounts in Schedule B. The $ amounts in Schedule B are listed solely for calculating percentages (share of future maintenance costs), and will not be levied with the final cost of the drainage works.

Schedule B is divided into columns to reflect the different branches and intervals where maintenance work may be undertaken. These column intervals assist in identifying upstream lands and roads to be assessed for future maintenance. The percentages shown in Schedule B determine the share of future maintenance to be levied to property or road. For example, a $1,000 ditch cleanout or tile repair will result in a $50 assessment to a property with a 5% maintenance assessment.

The Municipality will confirm eligibility for the grant at the time the maintenance cost is levied.

12.5.3 Schedule C – Schedule for Actual Cost Bylaw

After the construction of the Drain is certified, complete by the Engineer, the Municipality will determine the actual cost of the Drain. Actual assessments will be determined by prorating the actual cost of the Drain using Schedule C. Schedule C illustrates the estimated net assessments after deducting allowances and grants from the total assessments shown in Schedule A. Eligibility for the grant will be confirmed by the Municipality at the time the actual cost is levied. Actual assessments in Schedule C will be levied to the owner of the identified parcel at the time the Actual Cost Bylaw is passed.

13 GRANT

In accordance with the provisions of Section 85 of the Act, a grant not exceeding 1/3 (33-1/3%) may be available on the assessments against lands used for agricultural purposes. The current OMAFRA grant policy defines agricultural lands as privately owned parcels of land which have the Farm Property Class Tax Rate. Based on Municipal assessment roll information, parcels that have the Farm Property Tax Class are identified with an 'F' in the first column of the assessment schedules.

Section 88 of the Act provides for the Municipality to apply for this grant after the construction of the Drain is certified complete by the Engineer. The Municipality must confirm the Farm Property Tax Class on the assessed parcels at the time the grant application is completed and submitted to OMAFRA. OMAFRA has the authority to determine grant eligibility regardless of the designation herein.

If any portion of the drainage works is not eligible for the grant, those ineligible costs have been separately identified in this report.

14 PRIVACY OF LANDS

A right-of-way for the Municipality will exist along the Drain once constructed on each property. However, the property on which the right-of-way is located remains private property. Other landowners or the public may not enter or use the Drain right-of-way. Persons authorized to enter the Drain right-of-way to carry out duties authorized under the Act include Engineers, Contractors and the appointed Drainage Superintendents and/or their assistants.

15 MAINTENANCE

15.1 General

Section 74 of the Act requires the Drain, as outlined in this report, to be maintained by the Municipality, and the cost of maintenance to be assessed to the upstream lands and roads pro rata with the assessments in Schedule B.

All parties affected by the Drain, 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 exist for the Municipality to maintain the Drain.

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.

15.2 Updating Future Maintenance Schedules

To ensure future maintenance assessments are equitable, the assessments provided in this report should be reapportioned under Section 65 when severances or amalgamations occur when new lands are connected to the Drain or 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.

15.3 Drains To Be Abandoned

In accordance with Section 19 of the Act, the entirety of the existing Parker Drain (1901) and Parker Drain (1966) is hereby abandoned of status under the Act. The original 1901 portion is proposed to be destroyed with the completion of this Report, with the 1966 portion (Station 0+179 to Station 1+075) to become private and maintained by the owner of the property.

16 BYLAW

This report including the drawings and specifications, assessment schedules and appendices, when adopted by bylaw in accordance with the Act, provides the basis for construction and maintenance of the Drain.

All of which is respectfully submitted,

K. SMART ASSOCIATES LTD.

Curtis MacIntyre, P. Eng.

mw

SCHEDULE A - SCHEDULE OF ASSESSMENTS FOR CONSTRUCTION
PARKER DRAIN 2022
TOWNSHIP OF EAST ZORRA - TAVISTOCK

			Main Drain					Branch A				
Con	Lot	Roll Number (Owner)	Total ha affected	Benefit (Sec. 22)	Special (Sec. 26)	Outlet (Sec. 23)	Total	Total ha affected	Benefit (Sec. 22)	Special (Sec. 26)	Outlet (Sec. 23)	Total
Twp of East Zorra-Tavistock (Roll No. 32-38-010)												
F 9	Pt. Lots 17 & 18	040-00800 (Spero Holsteins Ltd)	16.5	30,200	0	9,004	39,204	0.0	0	0	0	0
F 9	Pt. Lots 18 & 19	040-01000 (L. & K. VanRyswyck)	5.6	0	0	2,248	2,248	0.0	0	0	0	0
F 9	Pt. Lot 19	040-01001 (J. & B. Walton)	4.4	5,700	0	7,533	13,233	0.0	0	0	0	0
F 9	Pt. Lot 20	040-01100 (Killcrest Farms Inc)	28.3	28,900	0	49,169	78,069	0.0	0	0	0	0
F 9	Pt. Lot 17	040-01900 (Douglas and Jean Leiper)	18.6	32,400	0	6,801	39,201	0.0	2,250	0	0	2,250
9	Lot 18 Part 1	040-02000 (C. & C. Lightfoot)	0.4	0	0	146	146	0.0	0	0	0	0
F 9	Pt . Lots 18 & 19	040-02100 (Townsend Farms Inc)	30.0	62,700	0	29,871	92,571	0.0	0	0	0	0
F 9	Pt. Lots 19 & 20	040-02200 (Stiek Farms Inc)	30.4	10,400	0	44,250	54,650	0.0	0	0	0	0
F 9	Pt Lot 20	040-02300 (D. & K. Dodd)	16.2	5,600	0	28,231	33,831	0.0	0	0	0	0
F 10	Pt. Lots 16 & 17	040-03400 (S. & H. Alexander)	4.1	0	0	444	444	4.1	0	0	2,534	2,534
F 10	Pt. Lot 17	040-03500 (S., L., & S. Killing & J. VanRyswyck)	9.0	0	0	974	974	9.0	5,600	0	5,562	11,162
F 10	Pt. Lots 17 & 18	040-03600 (S. & L. Killing)	1.2	0	0	130	130	1.2	0	0	741	741
F 10	Pt. Lots 18 & 19	040-03700 (F. & B. Killing)	2.1	0	0	2,545	2,545	0.0	0	0	0	0
F 10	Pt. Lots 19 & 20	040-03800 (Stiek Farms Inc)	9.0	0	0	10,909	10,909	0.0	0	0	0	0
		Subtotal (Lands):	175.8	175,900	0	192,255	368,155	14.3	7,850	0	8,837	16,687
		10th Line (Township of East Zorra-Tavistock)	1.8	0	0	2,415	2,415	0.5	3,750	10,520	618	14,888
		Enbridge Gas Inc. (Special Assessment)		0	143,440	0	143,440		0	0	0	0
		Enbridge Pipelines Inc. (Special Assessment)		0	18,215	0	18,215		0	0	0	0
		Subtotal (Roads & Utilities):	1.8	0	161,655	2,415	164,070	0.5	3,750	10,520	618	14,888
		TOTAL ASSESSMENT PARKER DRAIN 2022:	**177.6**	**175,900**	**161,655**	**194,670**	**532,225**	**14.8**	**11,600**	**10,520**	**9,455**	**31,575**

Notes:

1. Lands noted with an "F" are classified as agricultural and according to current OMAFRA policy qualify for the 1/3 grant.
   Eligibility for the 1/3 grant will be confirmed at the time the final cost is levied.
2. Section 21 of the Drainage Act, RSO 1990 requires that assessments be shown opposite each 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 the owner's names as shown by the last revised assessment roll have also been included.

SCHEDULE A - SCHEDULE OF ASSESSMENTS FOR CONSTRUCTION
PARKER DRAIN 2022
TOWNSHIP OF EAST ZORRA - TAVISTOCK

			Branch B					Branch C					Gross Total
Con	Lot	Roll Number (Owner)	Total ha affected	Benefit (Sec. 22)	Special (Sec. 26)	Outlet (Sec. 23)	Total	Total ha affected	Benefit (Sec. 22)	Special (Sec. 26)	Outlet (Sec. 23)	Total	Assessment ($)
Twp of East Zorra-Tavistock (Roll No. 32-38-010)													
F 9	Pt. Lots 17 & 18	040-00800 (Spero Holsteins Ltd)	0.0	0	0	0	0	0.0	0	0	0	0	39,204
F 9	Pt. Lots 18 & 19	040-01000 (L. & K. VanRyswyck)	0.0	0	0	0	0	0.0	0	0	0	0	2,248
F 9	Pt. Lot 19	040-01001 (J. & B. Walton)	0.0	0	0	0	0	0.0	0	0	0	0	13,233
F 9	Pt. Lot 20	040-01100 (Killcrest Farms Inc)	0.0	0	0	0	0	0.0	0	0	0	0	78,069
F 9	Pt. Lot 17	040-01900 (Douglas and Jean Leiper)	0.0	0	0	0	0	0.0	0	0	0	0	41,451
9	Lot 18 Part 1	040-02000 (C. & C. Lightfoot)	0.0	0	0	0	0	0.0	0	0	0	0	146
F 9	Pt . Lots 18 & 19	040-02100 (Townsend Farms Inc)	0.0	0	0	0	0	0.0	0	0	0	0	92,571
F 9	Pt. Lots 19 & 20	040-02200 (Stiek Farms Inc)	10.6	28,900	0	4,068	32,968	20.1	7,800	0	8,730	16,530	104,148
F 9	Pt Lot 20	040-02300 (D. & K. Dodd)	0.0	0	0	0	0	0.0	5,600	0	0	5,600	39,431
F 10	Pt. Lots 16 & 17	040-03400 (S. & H. Alexander)	0.0	0	0	0	0	0.0	0	0	0	0	2,978
F 10	Pt. Lot 17	040-03500 (S., L., & S. Killing & J. VanRyswyck)	0.0	0	0	0	0	0.0	0	0	0	0	12,136
F 10	Pt. Lots 17 & 18	040-03600 (S. & L. Killing)	0.0	0	0	0	0	0.0	0	0	0	0	871
F 10	Pt. Lots 18 & 19	040-03700 (F. & B. Killing)	2.1	0	0	1,680	1,680	0.0	0	0	0	0	4,225
F 10	Pt. Lots 19 & 20	040-03800 (Stiek Farms Inc)	9.0	7,600	0	7,199	14,799	0.0	0	0	0	0	25,708
		Subtotal (Lands):	21.7	36,500	0	12,947	49,447	20.1	13,400	0	8,730	22,130	456,419
		10th Line (Township of East Zorra-Tavistock)	0.8	3,000	12,820	1,253	17,073	0.0	0	0	0	0	34,376
		Enbridge Gas Inc. (Special Assessment)		0	39,080	0	39,080		0	0	0	0	182,520
		Enbridge Pipelines Inc. (Special Assessment)		0	0	0	0		0	33,470	0	33,470	51,685
		Subtotal (Roads & Utilities):	0.8	3,000	51,900	1,253	56,153	0.0	0	33,470	0	33,470	268,581
		TOTAL ASSESSMENT PARKER DRAIN 2022:	**22.5**	**39,500**	**51,900**	**14,200**	**105,600**	**20.1**	**13,400**	**33,470**	**8,730**	**55,600**	**725,000**

Notes:

1. Lands noted with an "F" are classified as agricultural and according to current OMAFRA policy qualify for the 1/3 grant.
   Eligibility for the 1/3 grant will be confirmed at the time the final cost is levied.
2. Section 21 of the Drainage Act, RSO 1990 requires that assessments be shown opposite each 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 the owner's names as shown by the last revised assessment roll have also been included.

SCHEDULE B - SCHEDULE OF ASSESSMENTS FOR FUTURE MAINTENANCE
PARKER DRAIN 2022
TOWNSHIP OF EAST ZORRA - TAVISTOCK

			MAIN DRAIN											
			Interval 1		Interval 2		Interval 3		Interval 4		Interval 5		Interval 6	
			0+000 to 0+044		0+044 to 0+511		0+511 to 1+260		1+260 to 1+832		1+832 to 2+136		2+136 to 2+437	
Con	Lot	Roll No. (Owner)	$	%	$	%	$	%	$	%	$	%	$	%
	Twp of East Zorra-Tavistock (Roll No. 32-38-010)													
9	Pt. Lots 17 & 18	040-00800 (Spero Holsteins Ltd)	*1,786*	8.02	*7,447*	12.89	*17,871*	21.32	*0*	0.00	*0*	0.00	*0*	0.00
9	Pt. Lots 18 & 19	040-01000 (L. & K. VanRyswyck)	*303*	1.36	*721*	1.25	*1,224*	1.46	*0*	0.00	*0*	0.00	*0*	0.00
9	Pt. Lot 19	040-01001 (J. & B. Walton)	*476*	2.14	*1,132*	1.96	*1,923*	2.29	*1,802*	2.75	*10,050*	25.41	*0*	0.00
9	Pt. Lot 20	040-01100 (Killcrest Farms Inc)	*3,064*	13.76	*7,284*	12.61	*10,866*	12.96	*11,590*	17.67	*14,003*	35.40	*6,803*	50.00
9	Pt. Lot 17	040-01900 (Douglas and Jean Leiper)	*5,164*	23.20	*17,837*	30.88	*0*	0.00	*0*	0.00	*0*	0.00	*0*	0.00
9	Lot 18 Part 1	040-02000 (C. & C. Lightfoot)	*43*	0.19	*103*	0.18	*0*	0.00	*0*	0.00	*0*	0.00	*0*	0.00
9	Pt . Lots 18 & 19	040-02100 (Townsend Farms Inc)	*3,248*	14.58	*7,721*	13.37	*27,554*	32.88	*22,698*	34.61	*0*	0.00	*0*	0.00
9	Pt. Lots 19 & 20	040-02200 (Stiek Farms Inc)	*3,291*	14.78	*7,824*	13.54	*11,784*	14.05	*17,650*	26.92	*7,401*	18.71	*0*	0.00
9	Pt Lot 20	040-02300 (D. & K. Dodd)	*1,754*	7.88	*4,170*	7.22	*7,079*	8.44	*6,634*	10.12	*8,101*	20.48	*6,802*	50.00
10	Pt. Lots 16 & 17	040-03400 (S. & H. Alexander)	*444*	1.99	*0*	0.00	*0*	0.00	*0*	0.00	*0*	0.00	*0*	0.00
10	Pt. Lot 17	040-03500 (S., L., & S. Killing & J. VanRyswyck)	*974*	4.37	*0*	0.00	*0*	0.00	*0*	0.00	*0*	0.00	*0*	0.00
10	Pt. Lots 17 & 18	040-03600 (S. & L. Killing)	*130*	0.58	*0*	0.00	*0*	0.00	*0*	0.00	*0*	0.00	*0*	0.00
10	Pt. Lots 18 & 19	040-03700 (F. & B. Killing)	*227*	1.02	*540*	0.93	*918*	1.09	*860*	1.31	*0*	0.00	*0*	0.00
10	Pt. Lots 19 & 20	040-03800 (Stiek Farms Inc)	*974*	4.37	*2,316*	4.00	*3,933*	4.69	*3,686*	5.62	*0*	0.00	*0*	0.00
		Total Assessments on Lands:	*21,878*	98.24	*57,095*	98.83	*83,152*	99.18	*64,920*	99.00	*39,555*	100.00	*13,605*	100.00
		10th Line (Township of East Zorra-Tavistock)	*392*	1.76	*670*	1.17	*698*	0.82	*655*	1.00	*0*	0.00	*0*	0.00
		Total Assessments on Roads:	*392*	1.76	*670*	1.17	*698*	0.82	*655*	1.00	*0*	0.00	*0*	0.00
		TOTAL ASSESSMENTS:	*22,270*	100.00	*57,765*	100.00	*83,850*	100.00	*65,575*	100.00	*39,555*	100.00	*13,605*	100.00

Notes:
1. Agricultural designation not included as grant eligibility has to be confirmed at the time of maintenance cost levy.
2. $ amounts above are listed solely for calculating percentages (share of future

SCHEDULE B - SCHEDULE OF ASSESSMENTS FOR FUTURE MAINTENANCE
PARKER DRAIN 2022
TOWNSHIP OF EAST ZORRA - TAVISTOCK

			BRANCH A				BRANCH B				BRANCH C	
			Interval 1		Interval 2		Interval 1		Interval 2		Interval 1	
			0+000 to 0+195		0+195 to 0+345		0+000 to 0+737		0+737 to 0+757		0+000 to 0+342	
Con	Lot	Roll No. (Owner)	$	%	$	%	$	%	$	%	$	%
	Twp of East Zorra-Tavistock (Roll No. 32-38-010)											
9	Pt. Lots 17 & 18	040-00800 (Spero Holsteins Ltd)	*0*	0.00	*0*	0.00	*0*	0.00	*0*	0.00	*0*	0.00
9	Pt. Lots 18 & 19	040-01000 (L. & K. VanRyswyck)	*0*	0.00	*0*	0.00	*0*	0.00	*0*	0.00	*0*	0.00
9	Pt. Lot 19	040-01001 (J. & B. Walton)	*0*	0.00	*0*	0.00	*0*	0.00	*0*	0.00	*0*	0.00
9	Pt. Lot 20	040-01100 (Killcrest Farms Inc)	*0*	0.00	*0*	0.00	*0*	0.00	*0*	0.00	*0*	0.00
9	Pt. Lot 17	040-01900 (Douglas and Jean Leiper)	*800*	40.00	*0*	0.00	*0*	0.00	*0*	0.00	*0*	0.00
9	Lot 18 Part 1	040-02000 (C. & C. Lightfoot)	*0*	0.00	*0*	0.00	*0*	0.00	*0*	0.00	*0*	0.00
9	Pt . Lots 18 & 19	040-02100 (Townsend Farms Inc)	*0*	0.00	*0*	0.00	*0*	0.00	*0*	0.00	*0*	0.00
9	Pt. Lots 19 & 20	040-02200 (Stiek Farms Inc)	*0*	0.00	*0*	0.00	*17,003*	55.00	*0*	0.00	*12,344*	80.00
9	Pt Lot 20	040-02300 (D. & K. Dodd)	*0*	0.00	*0*	0.00	*0*	0.00	*0*	0.00	*3,086*	20.00
10	Pt. Lots 16 & 17	040-03400 (S. & H. Alexander)	*268*	13.40	*2,576*	20.00	*0*	0.00	*0*	0.00	*0*	0.00
10	Pt. Lot 17	040-03500 (S., L., & S. Killing & J. VanRyswyck)	*654*	32.70	*7,728*	60.00	*0*	0.00	*0*	0.00	*0*	0.00
10	Pt. Lots 17 & 18	040-03600 (S. & L. Killing)	*78*	3.90	*663*	5.15	*0*	0.00	*0*	0.00	*0*	0.00
10	Pt. Lots 18 & 19	040-03700 (F. & B. Killing)	*0*	0.00	*0*	0.00	*2,077*	6.72	*152*	5.00	*0*	0.00
10	Pt. Lots 19 & 20	040-03800 (Stiek Farms Inc)	*0*	0.00	*0*	0.00	*9,658*	31.24	*1,366*	45.00	*0*	0.00
		Total Assessments on Lands:	*1,800*	90.00	*10,967*	85.15	*28,738*	92.96	*1,518*	50.00	*15,430*	100.00
		10th Line (Township of East Zorra-Tavistock)	*200*	10.00	*1,913*	14.85	*2,177*	7.04	*1,517*	50.00	*0*	0.00
		Total Assessments on Roads:	*200*	10.00	*1,913*	14.85	*2,177*	7.04	*1,517*	50.00	*0*	0.00
		TOTAL ASSESSMENTS:	*2,000*	100.00	*12,880*	100.00	*30,915*	100.00	*3,035*	100.00	*15,430*	100.00

Notes:
1. Agricultural designation not included as grant eligibility has to be confirmed at the time of maintenance cost levy.
2. $ amounts above are listed solely for calculating percentages (share of future

SCHEDULE C - SCHEDULE FOR ACTUAL COST BYLAW
PARKER DRAIN 2022
TOWNSHIP OF EAST ZORRA-TAVISTOCK

	Con	Lot	Roll No. (Owner)	Ha. Affected	Gross Assessment	1/3 Grant	Allowances	NET
	Twp of East Zorra-Tavistock (Roll No. 32-38-010)							
F	9	Pt. Lots 17 & 18	040-00800 (Spero Holsteins Ltd)	16.5	39,204	13,068	2,400	23,736
F	9	Pt. Lots 18 & 19	040-01000 (L. & K. VanRyswyck)	5.6	2,248	749		1,499
F	9	Pt. Lot 19	040-01001 (J. & B. Walton)	4.4	13,233	4,411	1,000	7,822
F	9	Pt. Lot 20	040-01100 (Killcrest Farms Inc)	28.3	78,069	26,023	4,100	47,946
F	9	Pt. Lot 17	040-01900 (Douglas and Jean Leiper)	18.6	41,451	13,817	5,000	22,634
	9	Lot 18 Part 1	040-02000 (C. & C. Lightfoot)	0.4	146	0		146
F	9	Pt . Lots 18 & 19	040-02100 (Townsend Farms Inc)	30.0	92,571	30,857	4,400	57,314
F	9	Pt. Lots 19 & 20	040-02200 (Stiek Farms Inc)	30.4	104,148	34,716	6,300	63,132
F	9	Pt Lot 20	040-02300 (D. & K. Dodd)	16.2	39,431	13,144	200	26,087
F	10	Pt. Lots 16 & 17	040-03400 (S. & H. Alexander)	4.1	2,978	993		1,985
F	10	Pt. Lot 17	040-03500 (S., L., & S. Killing & J. VanRyswyck)	9.0	12,136	4,045	400	7,691
F	10	Pt. Lots 17 & 18	040-03600 (S. & L. Killing)	1.2	871	290		581
F	10	Pt. Lots 18 & 19	040-03700 (F. & B. Killing)	2.1	4,225	1,408		2,817
F	10	Pt. Lots 19 & 20	040-03800 (Stiek Farms Inc)	9.0	25,708	8,569	100	17,039
			Subtotal (Lands):	175.8	456,419	152,090	23,900	280,429
			10th Line (Township of East Zorra-Tavistock)	1.8	34,376	0		34,376
			Enbridge Gas Inc. (Special Assessment)		182,520	0		182,520
			Enbridge Pipelines Inc. (Special Assessment)		51,685	0		51,685
			Subtotal (Roads & Utilities):	1.8	268,581	0	0	268,581
			TOTAL ASSESSMENT PARKER DRAIN 2022:	177.6	725,000	152,090	23,900	549,010

Notes:

1. Lands noted with an "F" are classified as agricultural and according to current OMAFRA policy qualify for the 1/3 grant Eligibility for the 1/3 grant will be confirmed at the time the final cost is levied.
2. Actual assessment is levied to the owner of the parcel at the time the final cost is levied.

				Main Drain																			
				Interval 1				Interval 2				Interval 3				Interval 4				Interval 5			
				Station	0+000	to	0+044	Station	0+044	to	0+511	Station	0+511	to	1+260	Station	1+260	to	1+833	Station	1+833	to	2+136
ESTIMATED COST	Allowances					100				1,900				4,400				3,600				2,400	
	Construction					18,500				53,700				79,200				99,800				99,100	
	Engineering					3,900				11,000				16,000				20,500				21,200	
	Construction Supervision					1,800				4,300				7,000				9,000				10,000	
	Administration					695				1,900				2,800				3,600				3,600	
	Net HST					425				1,215				1,800				2,275				2,295	
	TOTAL					25,420				74,015				111,200				138,775				138,595	
Roll No. (Owner)	Total Ha Affected	Run-off Factor	Total ha Adjusted	Benefit (Sec. 22)	Special (Sec. 26)	Adj Ha	Outlet (Sec. 23)	Benefit (Sec. 22)	Special (Sec. 26)	Adj Ha	Outlet (Sec. 23)	Benefit (Sec. 22)	Special (Sec. 26)	Adj Ha	Outlet (Sec. 23)	Benefit (Sec. 22)	Special (Sec. 26)	Adj Ha	Outlet (Sec. 23)	Benefit (Sec. 22)	Special (Sec. 26)	Adj Ha	Outlet (Sec. 23)
Twp of East Zorra-Tavistock (Roll No. 32-38-010)																							
040-00800 (Spero Holsteins Ltd)	16.5	1.0	16.5			16.5	1,786	6,400		16.5	4,247	23,800		6.8	2,971			0.0	0			0.0	0
040-01000 (L. & K. VanRyswyck)	5.6	0.5	2.8			2.8	303			2.8	721			2.8	1,224			0.0	0			0.0	0
040-01001 (J. & B. Walton)	4.4	1.0	4.4			4.4	476			4.4	1,132			4.4	1,923			4.4	1,802	5,700		4.4	2,200
040-01100 (Killcrest Farms Inc)	28.3	1.0	28.3			28.3	3,064			28.3	7,284			28.3	12,366			28.3	11,590	9,700		28.3	14,153
040-01900 (Douglas and Jean Leiper)	18.6	1.0	18.6	6,300		18.6	2,014	26,100		18.6	4,787			0.0	0			0.0	0			0.0	0
040-02000 (C. & C. Lightfoot)	0.4	1.0	0.4			0.4	43			0.4	103			0.0	0			0.0	0			0.0	0
040-02100 (Townsend Farms Inc)	30.0	1.0	30.0			30.0	3,248			30.0	7,721	30,900		27.7	12,104	31,800		16.6	6,798			0.0	0
040-02200 (Stiek Farms Inc)	30.4	1.0	30.4			30.4	3,291			30.4	7,824			30.4	13,284	10,400		30.4	12,450			14.8	7,401
040-02300 (D. & K. Dodd)	16.2	1.0	16.2			16.2	1,754			16.2	4,170			16.2	7,079			16.2	6,634			16.2	8,101
040-03400 (S. & H. Alexander)	4.1	1.0	4.1			4.1	444			0.0	0			0.0	0			0.0	0			0.0	0
040-03500 (S., L., & S. Killing & J. VanRyswyck)	9.0	1.0	9.0			9.0	974			0.0	0			0.0	0			0.0	0			0.0	0
040-03600 (S. & L. Killing)	1.2	1.0	1.2			1.2	130			0.0	0			0.0	0			0.0	0			0.0	0
040-03700 (F. & B. Killing)	2.1	1.0	2.1			2.1	227			2.1	540			2.1	918			2.1	860			0.0	0
040-03800 (Stiek Farms Inc)	9.0	1.0	9.0			9.0	974			9.0	2,316			9.0	3,933			9.0	3,686			0.0	0
Subtotal (Lands):	175.8		173.0	6,300	0	173.0	18,728	32,500	0	158.7	40,845	54,700	0	127.7	55,802	42,200	0	107.0	43,820	15,400	0	63.7	31,855
10th Line (Township of East Zorra-Tavistock)	1.8	2.0	3.6			3.6	392			2.6	670			1.6	698			1.6	655			0.0	0
Enbridge Gas Inc. (Special Assessment)																	52,100				91,340		
Enbridge Pipelines Inc. (Special Assessment)																							
Subtotal (Roads & Utilities):	1.8		3.6	0	0	3.6	392	0	0	2.6	670	0	0	1.6	698	0	52,100	1.6	655	0	91,340	0.0	0
TOTAL ASSESSMENT PARKER DRAIN 2022:	**177.6**		**176.6**	**6,300**	**0**	**176.6**	**19,120**	**32,500**	**0**	**161.3**	**41,515**	**54,700**	**0**	**129.3**	**56,500**	**42,200**	**52,100**	**108.6**	**44,475**	**15,400**	**91,340**	**63.7**	**31,855**

				Main Drain - Continued								Branch A											
				Interval 6				Main Drain				Interval 1				Interval 2				"A" Branch			
				Station	2+136	to	2+437	Total				Station	0+000	to	0+195	Station	0+195	to	0+345	Total			
ESTIMATED COST	Allowances					1,600				14,000				3,000				400				3,400	
	Construction					29,800				380,100				0				20,700				20,700	
	Engineering					6,700				79,300				0				4,300				4,300	
	Construction Supervision					4,300				36,400				0				2,000				2,000	
	Administration					1,100				13,695				0				700				700	
	Net HST					720				8,730				0				475				475	
	TOTAL					44,220				532,225				3,000				28,575				31,575	
Roll No. (Owner)	Total Ha Affected	Run-off Factor	Total ha Adjusted	Benefit (Sec. 22)	Special (Sec. 26)	Adj Ha	Outlet (Sec. 23)	**Total Benefit**	**Total Special**	**Total Outlet**	**Total**	Benefit (Sec. 22)	Special (Sec. 26)	Adj Ha	Outlet (Sec. 23)	Benefit (Sec. 22)	Special (Sec. 26)	Adj Ha	Outlet (Sec. 23)	**Total Benefit**	**Total Special**	**Total Outlet**	**Total**
Twp of East Zorra-Tavistock (Roll No. 32-38-010)																							
040-00800 (Spero Holsteins Ltd)	16.5	1.0	16.5			0.0	0	30,200	0	9,004	39,204			0.0	0			0.0	0	0		0	0
040-01000 (L. & K. VanRyswyck)	5.6	0.5	2.8			0.0	0	0	0	2,248	2,248			0.0	0			0.0	0	0		0	0
040-01001 (J. & B. Walton)	4.4	1.0	4.4			0.0	0	5,700	0	7,533	13,233			0.0	0			0.0	0	0		0	0
040-01100 (Killcrest Farms Inc)	28.3	1.0	28.3	19,200		23.4	712	28,900	0	49,169	78,069			0.0	0			0.0	0	0		0	0
040-01900 (Douglas and Jean Leiper)	18.6	1.0	18.6			0.0	0	32,400	0	6,801	39,201	1,500		0.0	0	750		0.0	0	2,250		0	2,250
040-02000 (C. & C. Lightfoot)	0.4	1.0	0.4			0.0	0	0	0	146	146			0.0	0			0.0	0	0		0	0
040-02100 (Townsend Farms Inc)	30.0	1.0	30.0			0.0	0	62,700	0	29,871	92,571			0.0	0			0.0	0	0		0	0
040-02200 (Stiek Farms Inc)	30.4	1.0	30.4			0.0	0	10,400	0	44,250	54,650			0.0	0			0.0	0	0		0	0
040-02300 (D. & K. Dodd)	16.2	1.0	16.2	5,600		16.2	493	5,600	0	28,231	33,831			0.0	0			0.0	0	0		0	0
040-03400 (S. & H. Alexander)	4.1	1.0	4.1			0.0	0	0	0	444	444			4.1	268			4.1	2,266	0		2,534	2,534
040-03500 (S., L., & S. Killing & J. VanRyswyck)	9.0	1.0	9.0			0.0	0	0	0	974	974	250		9.0	588	5,350		9.0	4,974	5,600		5,562	11,162
040-03600 (S. & L. Killing)	1.2	1.0	1.2			0.0	0	0	0	130	130			1.2	78			1.2	663	0		741	741
040-03700 (F. & B. Killing)	2.1	1.0	2.1			0.0	0	0	0	2,545	2,545			0.0	0			0.0	0	0		0	0
040-03800 (Stiek Farms Inc)	9.0	1.0	9.0			0.0	0	0	0	10,909	10,909			0.0	0			0.0	0	0		0	0
Subtotal (Lands):	175.8		173.0	24,800	0	39.6	1,205	175,900	0	192,255	368,155	1,750	0	14.3	934	6,100	0	14.3	7,903	7,850	0	8,837	16,687
10th Line (Township of East Zorra-Tavistock)	1.8	2.0	3.6			0.0	0	0	0	2,415	2,415	250		1.0	66	3,500	10,520	1.0	552	3,750	10,520	618	14,888
Enbridge Gas Inc. (Special Assessment)								0	143,440	0	143,440												
Enbridge Pipelines Inc. (Special Assessment)					18,215			0	18,215	0	18,215												
Subtotal (Roads & Utilities):	1.8		3.6	0	18,215	0.0	0	0	161,655	2,415	164,070	250	0	1.0	66	3,500	10,520	1.0	552	3,750	10,520	618.0	14,888
TOTAL ASSESSMENT PARKER DRAIN 2022:	**177.6**		**176.6**	**24,800**	**18,215**	**39.6**	**1,205**	**175,900**	**161,655**	**194,670**	**532,225**	**2,000**	**0**	**15.3**	**1,000**	**9,600**	**10,520**	**15.3**	**8,455**	**11,600**	**10,520**	**9,455**	**31,575**

APPENDIX A - Calculation of Assessments
PARKER DRAIN 2022
TOWNSHIP OF EAST ZORRA-TAVISTOCK

		Branch B												Branch C					
		Interval 1				Interval 2				"B" Branch								Grand	
		Station	0+000	to	0+737	Station	0+737	to	0+757	Total				Station	0+000	to	0+342	Total	
ESTIMATED COST	Allowances			4,200				100		4,300						2,200		23,900	
	Construction			60,800				13,200		74,000						37,800		512,600	
	Engineering			13,000				2,900		15,900						8,700		108,200	
	Construction Supervision			5,500				1,500		7,000						4,600		50,000	
	Administration			2,200				500		2,700						1,400		18,495	
	Net HST			1,395				305		1,700						900		11,805	
	TOTAL			87,095				18,505		105,600						55,600		725,000	
Roll No. (Owner)	Total Ha Affected	Run-off Factor	Total ha Adjusted	Benefit (Sec. 22)	Special (Sec. 26)	Adj Ha	Outlet (Sec. 23)	Benefit (Sec. 22)	Special (Sec. 26)	Adj Ha	Outlet (Sec. 23)	**Total Benefit**	**Total Special**	**Total Outlet**	**Total**	Benefit (Sec. 22)	Special (Sec. 26)	Adj Ha	Outlet (Sec. 23)	Total Benefits	Total Special	Total Outlets	TOTAL
Twp of East Zorra-Tavistock (Roll No. 32-38-010)																							
040-00800 (Spero Holsteins Ltd)	16.5	1.0	16.5			0.0	0			0.0	0	0		0	0			0.0	0	30,200	0	9,004	39,204
040-01000 (L. & K. VanRyswyck)	5.6	0.5	2.8			0.0	0			0.0	0	0		0	0			0.0	0	0	0	2,248	2,248
040-01001 (J. & B. Walton)	4.4	1.0	4.4			0.0	0			0.0	0	0		0	0			0.0	0	5,700	0	7,533	13,233
040-01100 (Killcrest Farms Inc)	28.3	1.0	28.3			0.0	0			0.0	0	0		0	0			0.0	0	28,900	0	49,169	78,069
040-01900 (Douglas and Jean Leiper)	18.6	1.0	18.6			0.0	0			0.0	0	0		0	0			0.0	0	34,650	0	6,801	41,451
040-02000 (C. & C. Lightfoot)	0.4	1.0	0.4			0.0	0			0.0	0	0		0	0			0.0	0	0	0	146	146
040-02100 (Townsend Farms Inc)	30.0	1.0	30.0			0.0	0			0.0	0	0		0	0			0.0	0	62,700	0	29,871	92,571
040-02200 (Stiek Farms Inc)	30.4	1.0	30.4	28,900	*	5.3	4,068			0.0	0	28,900		4,068	32,968	7,800	*	14.8	8,730	47,100	0	57,048	104,148
040-02300 (D. & K. Dodd)	16.2	1.0	16.2			0.0	0			0.0	0	0		0	0	5,600		0.0	0	11,200	0	28,231	39,431
040-03400 (S. & H. Alexander)	4.1	1.0	4.1			0.0	0			0.0	0	0		0	0			0.0	0	0	0	2,978	2,978
040-03500 (S., L., & S. Killing & J. VanRyswyck)	9.0	1.0	9.0			0.0	0			0.0	0	0		0	0			0.0	0	5,600	0	6,536	12,136
040-03600 (S. & L. Killing)	1.2	1.0	1.2			0.0	0			0.0	0	0		0	0			0.0	0	0	0	871	871
040-03700 (F. & B. Killing)	2.1	1.0	2.1			2.1	1,612			2.1	68	0		1,680	1,680			0.0	0	0	0	4,225	4,225
040-03800 (Stiek Farms Inc)	9.0	1.0	9.0	3,800		9.0	6,908	3,800		9.0	291	7,600		7,199	14,799			0.0	0	7,600	0	18,108	25,708
Subtotal (Lands):	175.8		173.0	32,700	0	16.4	12,588	3,800	0	11.1	359	36,500	0	12,947	49,447	13,400	0	14.8	8,730	233,650	0	222,769	456,419
10th Line (Township of East Zorra-Tavistock)	1.8	2.0	3.6	1,500		1.6	1,227	1,500	12,820	0.8	26	3,000	12,820	1,253	17,073	0		0.0	0	6,750	23,340	4,286	34,376
Enbridge Gas Inc. (Special Assessment)					39,080							0	39,080	0	39,080					0	182,520	0	182,520
Enbridge Pipelines Inc. (Special Assessment)												0	0	0	0		33,470			0	51,685	0	51,685
Subtotal (Roads & Utilities):	1.8		3.6	1,500	39,080	1.6	1,227	1,500	12,820	0.8	26	3,000	51,900	1,253.0	56,153	0	33,470	0.0	0	6,750	257,545	4,286	268,581
TOTAL ASSESSMENT PARKER DRAIN 2022:	**177.6**		**176.6**	**34,200**	**39,080**	**18.0**	**13,815**	**5,300**	**12,820**	**11.9**	**385**	**39,500**	**51,900**	**14,200**	**105,600**	**13,400**	**33,470**	**14.8**	**8,730**	**240,400**	**257,545**	**227,055**	**725,000**

Note:

***10.6 hectares of Roll No. 040-02200 is to be subsurface connected to Branch B, Interval 1. No surface water admitted at this location, therefore assessed as half rate (5.3 hectares).**

This amount removed from Branch C contribution (20.1 - 5.3 = 14.8 hectares).

200 GENERAL CONDITIONS

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200 GENERAL CONDITIONS

200.1 SCOPE

The work to be done under this contract consists of supplying all labour, equipment and materials to construct the drainage work as outlined in the Instructions to Tenderers, the Form of Tender and Agreement, the Schedule of Tender Prices, the Drawings, the General Conditions, Special Provisions and the Standard Specifications.

200.2 ORDER OF PRECEDENCE

In case of any inconsistency or conflict between the drawings and specifications, the following order of precedence shall apply: Addenda, Form of Tender and Agreement, Schedule of Tender Prices, Special Provisions, Contract Drawings, Standard Specifications, General Conditions.

200.3 MUNICIPALITY

Municipality refers to a municipal corporation in the Province of Ontario. Where reference to Township, County, Region, Town, City or Owner appears it shall be deemed to be the same as the word Municipality. Where reference to owner appears in the specifications it is usually in reference to the owner of the property on which the drain is being constructed.

200.4 TENDERS

Tenders are to be submitted on a lump sum basis for the complete works or a portion thereof, as instructed by the Municipality. The Schedule of Tender Prices must be completed and submitted with the Form of Tender and Agreement even though the Contract will be a lump sum. As outlined in the Instructions to Tenders a deposit in the form of a certified cheque, bank draft, bonding or irrevocable letter of credit must accompany each tender as a guarantee of good faith. The deposit shall name the Municipality as the payee. All deposits, except that of the Tenderer to whom the work is awarded, will be returned within 10 days of the time the contract is awarded. The certified cheque of the Tenderer awarded the work will be retained as Contract Security and returned with the Completion Certificate for the work. A Performance Bond may also be required to ensure maintenance of the work for a period of one year after the date of the Completion Certificate.

200.5 EXAMINATION OF SITE, PLANS AND SPECIFICATIONS

Prior to the submission of the Tender, the Tenderer must examine the premises and site to compare them with the Drawings and Specifications in order to be satisfied with the existing conditions and the extent of the work to be done. The Tenderer must ensure that the meaning and intent of the drawings, estimated quantities and specifications is clearly understood before submission of the Tender. No allowances shall be made on behalf of the Contractor by reason of any error made in the preparation of the tender submission.

Any estimates of quantities shown or indicated on the drawings or elsewhere in the tender document are provided for the convenience of the Tenderer. The Tenderer should check the estimate of quantities for accuracy. Any use made of the estimated quantities by the Tenderer in calculating the tendered amounts is done at the Tenderers risk.

200.6 COMMENCEMENT AND COMPLETION OF WORK

The work must commence immediately after the Tenderer is notified of the contract award or at a later date, if set out as a condition in the Form of Tender and Agreement. If weather and ground conditions are unsuitable, work may be started at a later date from either of the above two dates if such delay is approved by the Engineer. The Contractor shall provide a minimum of 48 hours advance notice to the Engineer and the Municipality before commencement of any work. The work must proceed in such manner as to ensure its completion at the earliest possible date consistent with first class workmanship and within the time limit set out in the tender/contract document. Failure to commence or complete the work as set out in the tender/contract document may result in a forfeiture of all or part of the Contract Security if the Engineer deems that damages have been sustained to the Municipality or to any landowner because of the non-commencement or non-completion of the contract as awarded and that the failure to meet the specified dates has been the fault of the Contractor.

200.7 NOTICES RE COMMENCEMENT OF WORK

If the Contractor leaves the job site for a period of time after initiation of work, a minimum of 48 hours advance notice shall be given to the Engineer and the Municipality before commencement of any further work. If any work is commenced without the advance notice the Contractor shall be fully responsible for all such work undertaken prior to such notification and shall make good any works or materials judged to be inadequate or constructed in any manner that may have been subject to alteration if made known to the Engineer prior to commencement of construction.

200.8 PERMITS, NOTICES, LAWS AND RULES

The Contractor shall apply and pay for all necessary permits or licenses required for the execution of the work. This shall not include the obtaining of permanent easements or rights or servitude. The Contractor shall give all necessary notices and pay all fees required by the law and comply with all laws, ordinances, rules and regulations relating to the work and to the preservation of the public's health and safety and if the specifications and drawings are at variance therewith, any resulting additional expense incurred by the Contractor shall constitute an addition to the contract price.

200.9 HEALTH AND SAFETY

Contractor must comply with the Occupational Health and Safety Act (OHSA) and the associated Regulations for Construction Projects. Contractor will also follow any site-specific safety and training requirements of the Municipality, agencies, utility companies or other authorities.

Communication about site-specific hazards and safety requirements shall occur at the pre-construction meeting. If no pre-construction meeting is conducted, Contractor will communicate site-specific hazards and safety requirements before beginning work.

Contractor shall immediately report any workplace incidents, near misses, injuries and occupational illnesses to the Engineer.

200.10 LIMITATIONS OF OPERATIONS

Except for such work as may be required by the Engineer to maintain the works in a safe and satisfactory condition, the Contractor shall not carry out operations under the contract on Sundays or Statutory Holidays without permission in writing from the Engineer. The Engineer may direct in writing to the Contractor to cease or limit operations under the contract on any day or days if the operations are of such a nature, or if the work is so located, or if the traffic is of such a volume, that the Engineer deems it necessary or expedient to do so.

200.11 SUPERVISION

The Contractor shall provide constant supervision of the construction work and shall keep a competent foreman in charge at the site.

200.12 CHARACTER AND EMPLOYMENT OF WORKERS

The Contractor shall employ only orderly, competent and skillful workers to do the work and shall give preference to available qualified residents in the area of the contract. Whenever the Engineer informs the Contractor in writing that any workers are, in the opinion of the Engineer, disorderly, incompetent, or breaking the law, such workers shall be discharged from the job site and shall not again be employed on the job site without the written consent of the Engineer.

200.13 SUB-CONTRACTORS

If the Municipality so directs, the Contractor shall not sublet the whole or any part of this contract without the approval of the Engineer.

200.14 PAYMENT

Progress payments in cash equal to about 90% of the value of the work done and materials incorporated in the work will be made to the Contractor monthly. If directed by the Engineer the Contractor may be required to provide a written request for the progress payment amount. An additional 7% will be paid 45 days after the date of the Completion Certificate by the Engineer and 3% of the contract price may be reserved by the Municipality as a maintenance holdback for one year from the date of the Completion Certificate.

The holdbacks noted above may be increased by the Municipality if, in the written opinion of the Engineer, particular conditions of the contract require such greater holdback.

After the completion of the work any part of maintenance holdback may be used to correct defects from faulty construction and/or materials provided that notice shall first be given by the Engineer in writing to the Contractor stating that the Contractor has seven (7) days in which to remedy the defect in construction and/or materials.

200.15 TERMINATION OF CONTRACT BY THE MUNICIPALITY

Termination of the contract by the Municipality may be considered if the Contractor:

1. should be adjudged bankrupt or make a general assignment for the benefit of creditors or if a receiver should be appointed on account of insolvency;
2. should refuse or fail to supply enough properly skilled workmen or proper materials after having received seven (7) days' notice in writing from the Engineer to supply such additional workmen or materials in order to commence or complete the works;
3. should fail to make prompt payment to sub-contractors or for materials or labour;
4. should persistently disregard laws, ordinances, or instructions from the Engineer, or otherwise be guilty of a substantial violation of the provisions of the contract;

then the Municipality, upon Certificate of the Engineer that sufficient cause exists to justify such action, may without prejudice to any other right or remedy, give written notice to the Contractor to terminate the employment of the Contractor and take possession of the premises, and of all materials, tools and appliances thereon, and may finish the work by whatever method the Municipality may deem expedient, but without undue delay or expense. In such case, the Contractor shall not be entitled to receive any further payment until the work is finished. If the unpaid balance of the contract price will exceed the expense of finishing the work including compensation to the Engineer for additional

services and including other damages of every name and nature, such excess shall be paid to the Contractor. If such expense will exceed such unpaid balance including the Contract Security, the Contractor shall pay the difference to the Municipality. The expense incurred by the Municipality, as herein provided, shall be certified by the Engineer. If the contract is terminated by the Municipality due to the Contractor's failure to properly commence the works, the Contractor shall forfeit the Contract Security and furthermore shall pay to the Municipality an amount to cover the increased costs, if any, associated with a new tender for the contract being terminated.

If any unpaid balance and the Contract Security do not equal the monies owed by the Contractor upon the termination of the contract, the Municipality may also charge such expenses against any money which is or may thereafter be due to the Contractor from the Municipality.

200.16 LIQUIDATED DAMAGES

It is agreed by the parties to the Contract that in case all the work called for under the Contract is not finished or complete within the period of time as set forth in the Tender/Contract Document, damage will be sustained by the Municipality. It is understood by the parties that it will be impracticable and extremely difficult to ascertain and determine the actual damage which the Municipality will sustain in the event of and by reason of such delay. The parties hereto agree that the Contractor will pay to the Municipality a sum as set out in the Form of Tender and Agreement for liquidated damages for each and every calendar day delay, including Saturdays, Sundays and Statutory Holidays, in finishing the work in excess of the number of working days prescribed. It is agreed that the liquidated damages amount is an estimate of the actual damage to the Municipality which will accrue during the period in excess of the prescribed number of working days.

The Municipality may deduct any amount due under this section from any monies that may be due or payable to the Contractor on any account whatsoever. The liquidated damages payable under this section are in addition to and without prejudice to any other remedy, action or other alternative that may be available to the Municipality.

The Contractor shall not be assessed with liquidated damages for any delay caused by acts of nature, or of the Public Enemy, Acts of the Province or of any Foreign State, Fire, Flood, Epidemics, Quarantine Restrictions, Embargoes or any delays of Sub-Contractors due to such causes.

If the time available for the completion of the work is increased or decreased by reason of alterations or changes made under the provisions of the Contract, the number of working days shall be increased or decreased as determined by the Engineer.

If the Form of Tender and Agreement does not show an amount for Liquidated Damages then Liquidated Damages do not apply for this contract.

200.17 CONTRACTOR'S LIABILITY

The Contractor and all workers, agents or any party under the Contractor's control, including Sub-Contractors, shall use due care that no person or property is injured and that no rights are infringed during the construction work outlined in the contract. The Contractor shall be solely responsible for all damages by whomsoever claimable in respect of any injury to persons or to lands, buildings, structures, fences, livestock, trees, crops, roadways, ditches, drains and watercourses, whether natural or artificial, or property of whatever description and in respect of any infringement of any right, privilege or easement wherever occasioned in the carrying on of the work or any part thereof, or by any neglect, misfeasance or non-feasance on the Contractor's part or on the part of any workers, agents or parties under the Contractor's control including Sub-Contractors, and shall bear the full cost thereof. The Contractor shall be fully responsible to make such temporary provisions as may be necessary to ensure the avoidance of any such damage, injury or infringement and to prevent the interruption of or danger or menace to the traffic in any railway or any public or private road entrance or sidewalk and to secure to all persons and corporations the uninterrupted enjoyment of all their

rights, in and during the performance of the work. The Contractor shall indemnify and save harmless the Municipality and the Engineer from and against all claims, demands, losses, costs, damages, actions, suits or other proceedings by whomsoever made, brought or prosecuted in any manner based upon, occasioned by, or attributed to any such damage, injury or infringement.

Wherever any work is of such an extent and nature that it must necessarily be confined to particular areas of a roadway, a working area, or private property, the Contractor shall use reasonable care not to damage or deface the remaining portions of the property, and if any damage is occasioned as a result of the Contractor's operations, it shall be rectified by and at the expense of the Contractor, to the satisfaction of the Engineer. Notwithstanding the indemnity provisions contained in this section, where in the opinion of the Engineer the Contractor has failed to rectify any damage, injury or infringement or has failed to adequately compensate any person for any damage, injury or infringement for which the Contractor is responsible under the contract, the Engineer, following notice in writing to the Contractor of an intention so to do, may withhold payment of any monies due the Contractor under this or any other contract until the Contractor has rectified such damage, injury or infringement or has paid adequate compensation for such damage, injury or infringement, provided however, that the Municipality will not withhold such monies where in the opinion of the Engineer there are reasonable grounds upon which the Contractor denies liability for such damage, injury or infringement and the Contractor has given the claimant a reasonable time in which to establish the validity of the claim, and provided further that the amount withheld under this section shall not exceed the amount of such claims against the Contractor.

Where the Contractor uses privately owned lands for pits or waste disposal areas, the Contractor shall comply with applicable laws and provide the Engineer with a release signed by or on behalf of the owner of each pit or waste disposal area used by the Contractor. If the said release is not obtained, then sufficient monies will be withheld from the Contractor except, however, where the owner's signature is withheld solely on the basis of damage, injury, or infringement it will be dealt with as provided elsewhere in this subsection.

Nothing herein contained shall be construed as in any way restricting or limiting the liability of the Contractor under the laws of the country, province or locality in which the work is being done. Neither the Completion Certificate nor final payment thereunder, nor any provision in the Contract Document shall relieve the Contractor from this liability.

200.18 LIABILITY INSURANCE

The Contractor shall take out and keep in force until the date of acceptance of the entire work by the Engineer, a comprehensive policy of public liability and property damage insurance providing insurance coverage of at least $3,000,000 for each and every accident, exclusive of interest and cost, against loss or damage resulting from bodily injury to or death of one or more persons and loss of or damage to property and such policy shall where, and as requested by the Municipality, name the Municipality and the Engineer as an additional insured thereunder and shall protect the Municipality against all claims for all damage or injury including death to any person or persons and for damage to any property of the Municipality or any other public or private property resulting from or arising out of any act or omission on part of the Contractor or any of his servants or agents during the execution of the Contract.

200.19 LOSSES DUE TO ACTS OF NATURE, ETC.

All damage, loss, expense and delay incurred or experienced by the Contractor in the prosecution of the work, by reason of unanticipated difficulties, bad weather, strikes, wars, acts of nature, or other mischances, shall be borne by the Contractor and shall not be the subject of a claim for additional compensation.

400 STANDARD SPECIFICATIONS FOR CONSTRUCTION OF DRAINS

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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.

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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

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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 BE INFORMED OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

BENCHMARKS

BM#1
NAIL IN E/FACE OF HP #CDTQOP W/SIDE 10th LINE, 25m NORTH OF BRANCH B ROAD CROSSING.
N 4,785,287.454
E 512,791.478
ELEV. 356.029m

BM#2
NAIL IN N/SIDE H.P. ON SW CORNER OXFORD ROAD 8 & 10th LINE.
N 4,785,899.733
E 512,547.275
ELEV. 343.631m

BM#3
SPIKE IN N/W SIDE OF H.P. WITH YELLOW BELL SIGN S/SIDE LANE ENTRANCE APPROX. 100m EAST OF LANE CULVERT @ BOTTOM END
N 4,783,743.517
E 513,290.649
ELEV. 338.788m

PLAN LEGEND

- — MAJOR WATERSHED
- — EXTERNAL/SUB WATERSHEDS
- — PROPOSED WORK OR INCORPORATION
- — EXISTING DRAIN
- — DITCH OR WATERCOURSE
- — DENOTES PROPERTY OWNERSHIP ON BOTH SIDES OF LOT LINE
- (2.9) — APPROXIMATE HECTARES IN WATERSHED
- (10.6*) — APPROXIMATE SUBSURFACE HECTARES TO BRANCH B
- 5.2 ha. — HECTARES OWNED
- (040-02000) — ASSESSMENT ROLL NUMBER
- — THIS AREA ASSESSED AT HALF RATE. SURFACE WATER TO PARKER DRAIN, SUBSURFACE WATER TO BALKEMA DRAIN
- — BUSH
- BM#3 — BENCHMARK LOCATION AND NO.
- ..... — ACCESS
- —— P —— — ENBRIDGE PIPELINES INC.
- —— G —— — ENBRIDGE GAS INC.

GEOGRAPHIC TOWNSHIP OF EAST ZORRA (WARD 2)

DESIGNED BY:	C.J.M.
CHECKED BY:	C.J.M.
DRAWN BY:	A.M.P.
CHECKED BY:	C.J.M.

LICENSED PROFESSIONAL ENGINEER — C. J. MACINTYRE 100507574 — FEB 3, 2022 — PROVINCE OF ONTARIO

SCALE
0 150 300m
(1:15,000 ON 11"x17")

PARKER DRAIN 2022

COUNTY OF OXFORD — TOWNSHIP OF EAST ZORRA-TAVISTOCK

WATERSHED PLAN — FEB. 3, 2022

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

REVISED:
JOB NUMBER: 20-150
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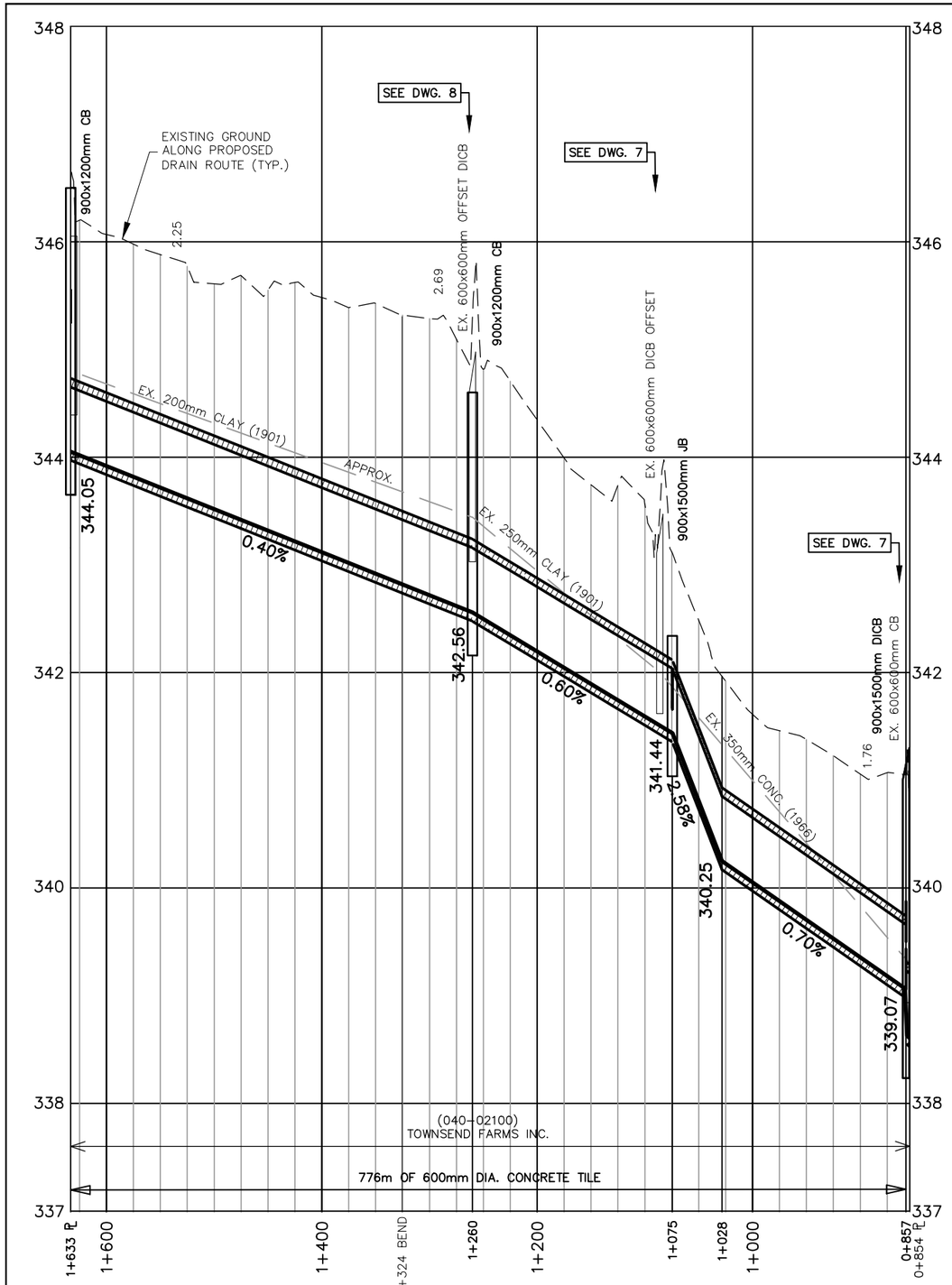

PARKER DRAIN 2022

COUNTY OF OXFORD — TOWNSHIP OF EAST ZORRA-TAVISTOCK

MAIN DRAIN PROFILE (1)

FEB. 3, 2022

DESIGNED BY:	C.J.M.
CHECKED BY:	C.J.M.
DRAWN BY:	A.M.P.
CHECKED BY:	C.J.M.

LICENSED PROFESSIONAL ENGINEER — C. J. MACINTYRE — 100507574 — FEB 3, 2022 — PROVINCE OF ONTARIO

0 50 100m (SCALE 1 : 5000) HORZ.

0 0.5 1m (SCALE 1 : 50) VERT.

SCALE (ON 11x17)

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
KITCHENER SUDBURY

REVISED:

JOB NUMBER: 20-150

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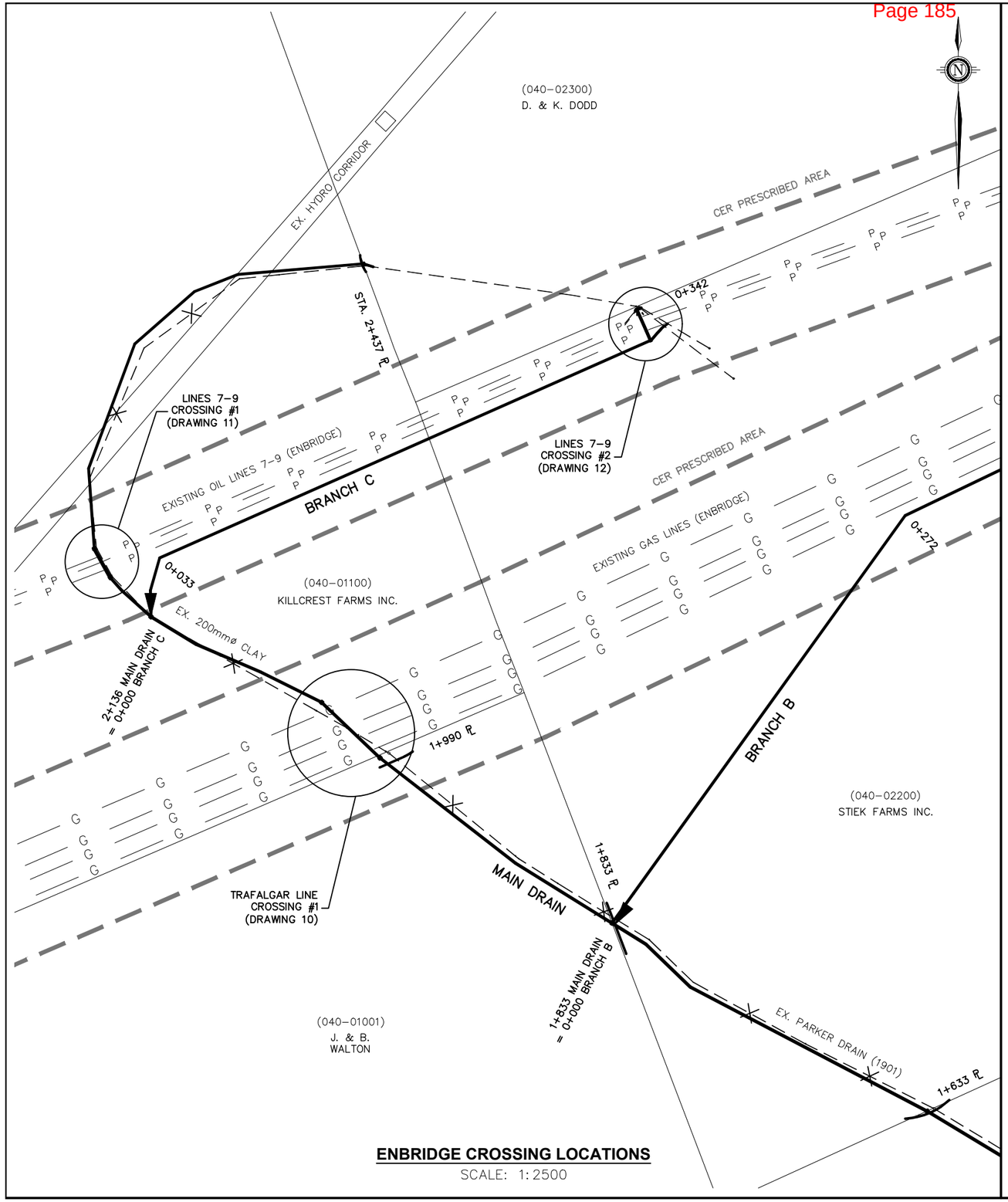

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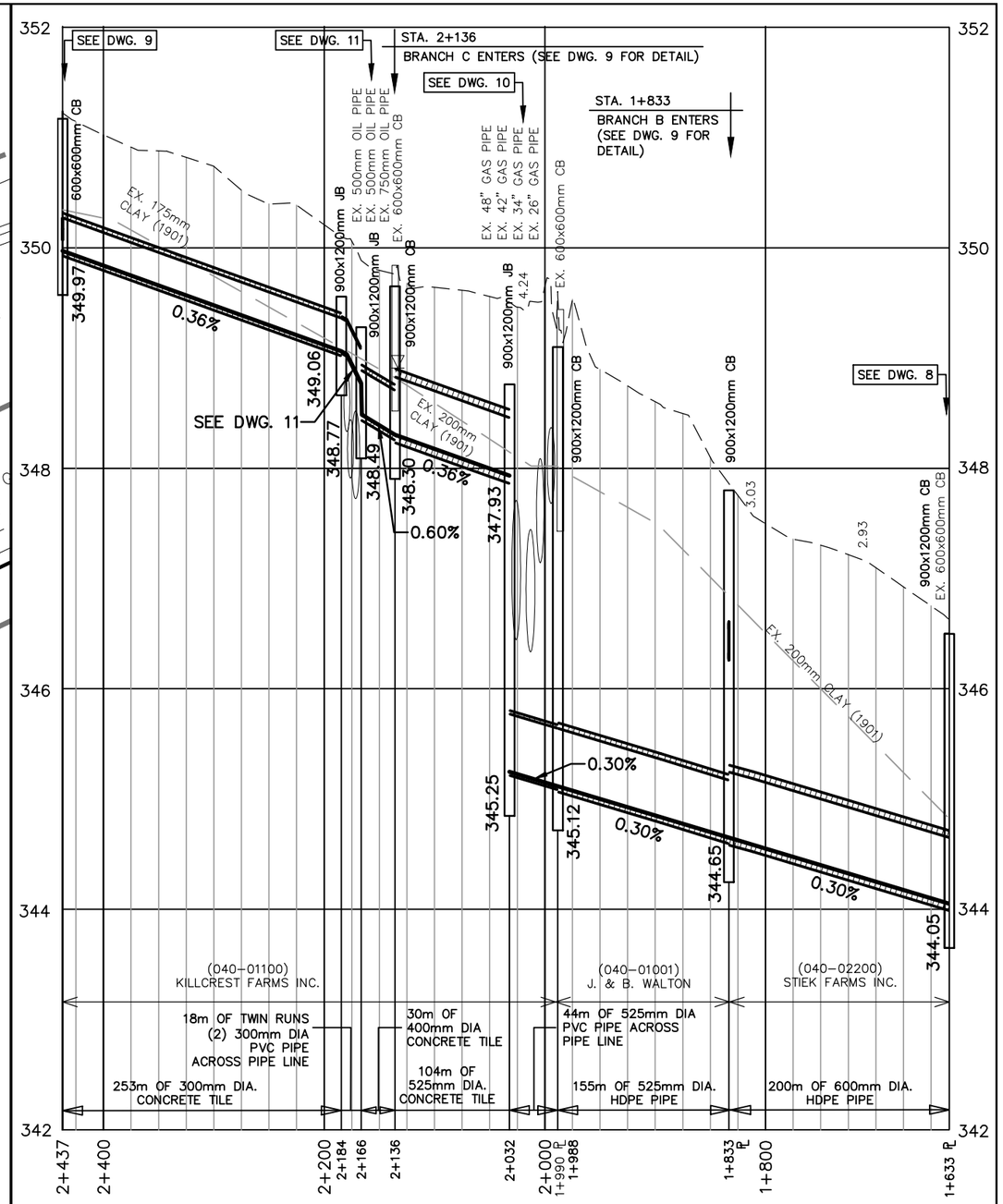

MAIN DRAIN

PARKER DRAIN 2022

COUNTY OF OXFORD — TOWNSHIP OF EAST ZORRA–TAVISTOCK

MAIN DRAIN PROFILE (2)

FEB. 3, 2022

DESIGNED BY:	C.J.M.
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CHECKED BY:	C.J.M.

LICENSED PROFESSIONAL ENGINEER — C. J. MACINTYRE — 100507574 — FEB 3, 2022 — PROVINCE OF ONTARIO

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SCALE (ON 11x17)

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

REVISED:

JOB NUMBER: 20–150

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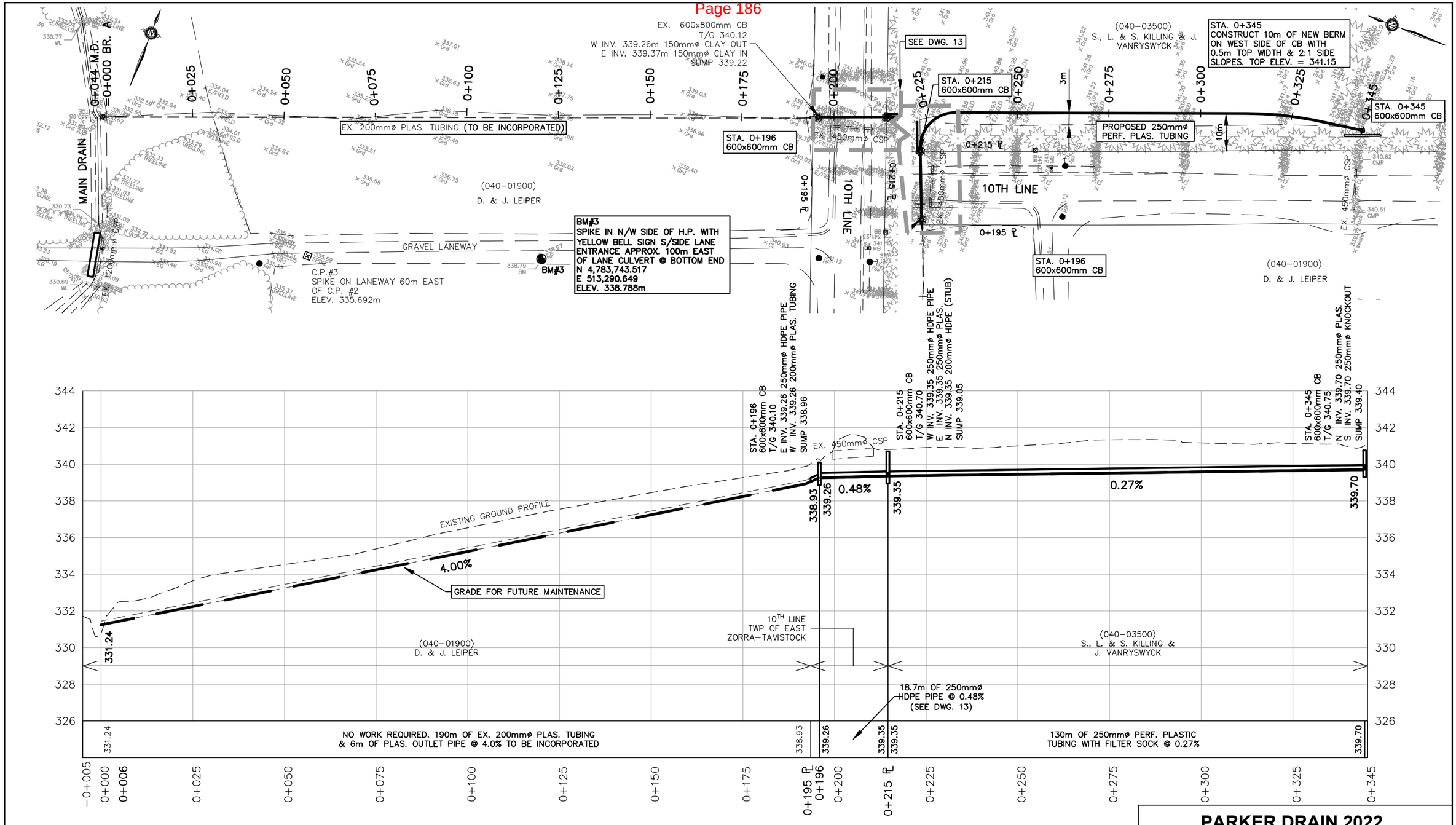

PARKER DRAIN 2022

COUNTY OF OXFORD — TOWNSHIP OF EAST ZORRA-TAVISTOCK

BRANCH A - PLAN & PROFILE

FEB. 3, 2022

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CHECKED BY:	C.J.M.

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C. J. MACINTYRE
100507574
FEB 3, 2022
PROVINCE OF ONTARIO

SCALE
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(SCALE 1 : 1000) HORZ.
0 2 4m
(SCALE 1 : 200) VERT.

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
KITCHENER SUDBURY

REVISED:
JOB NUMBER: 20-150
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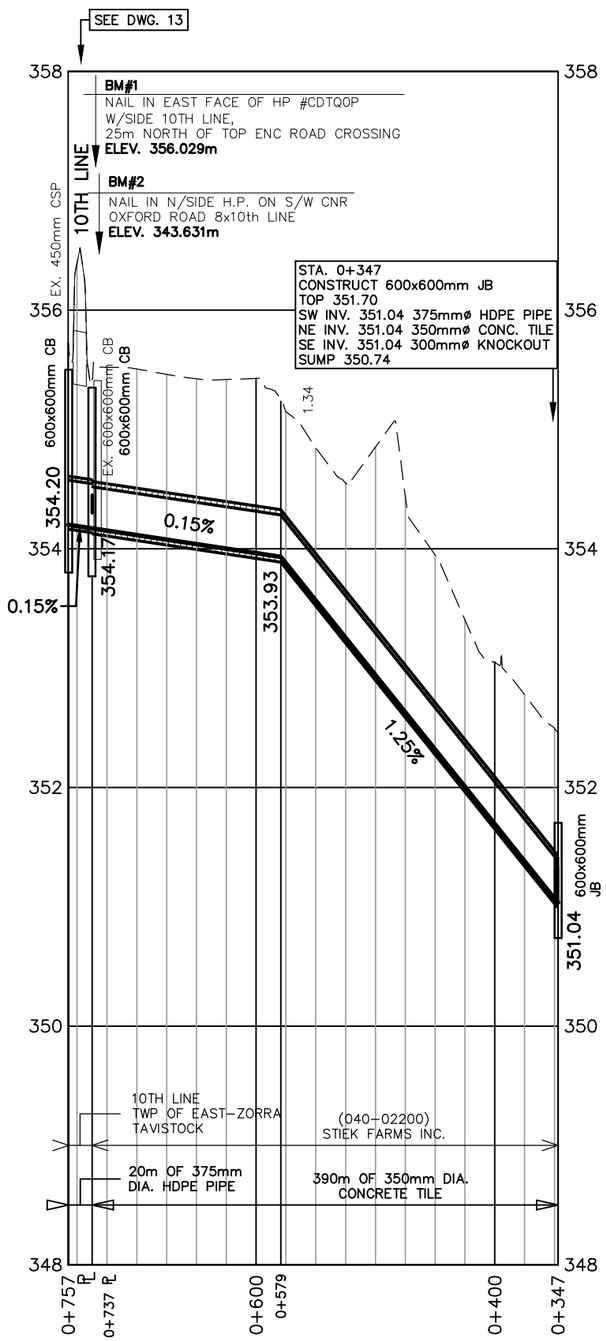

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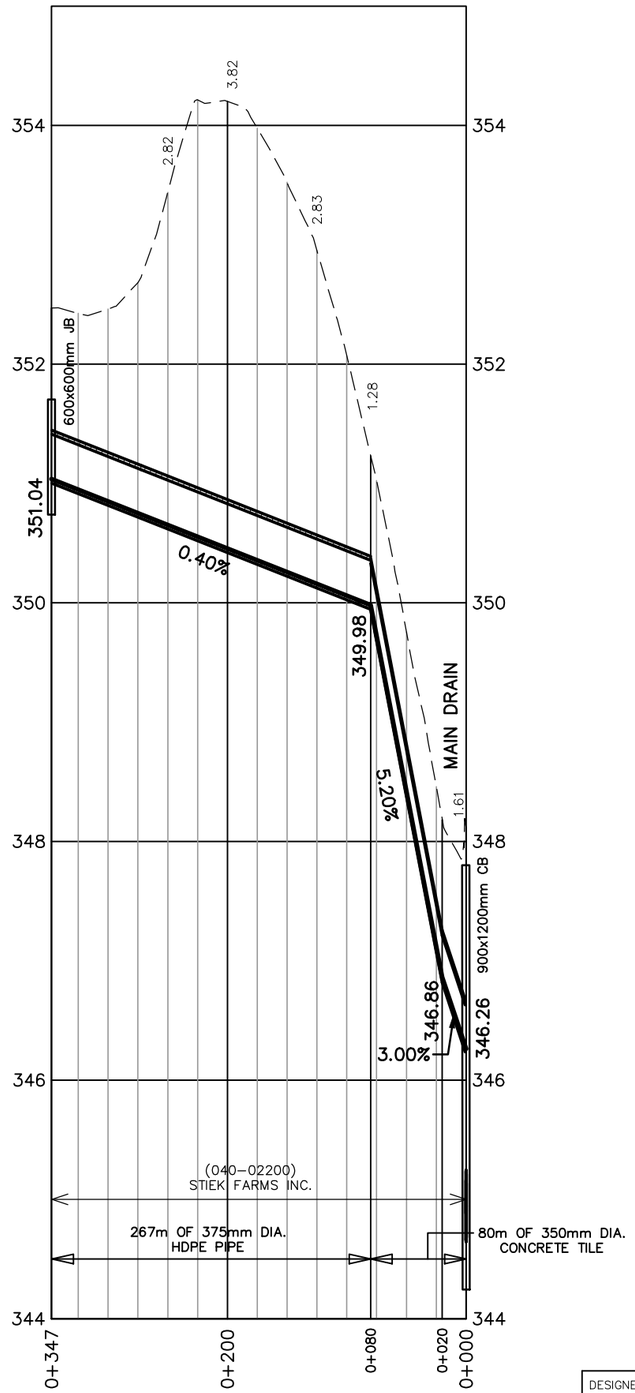

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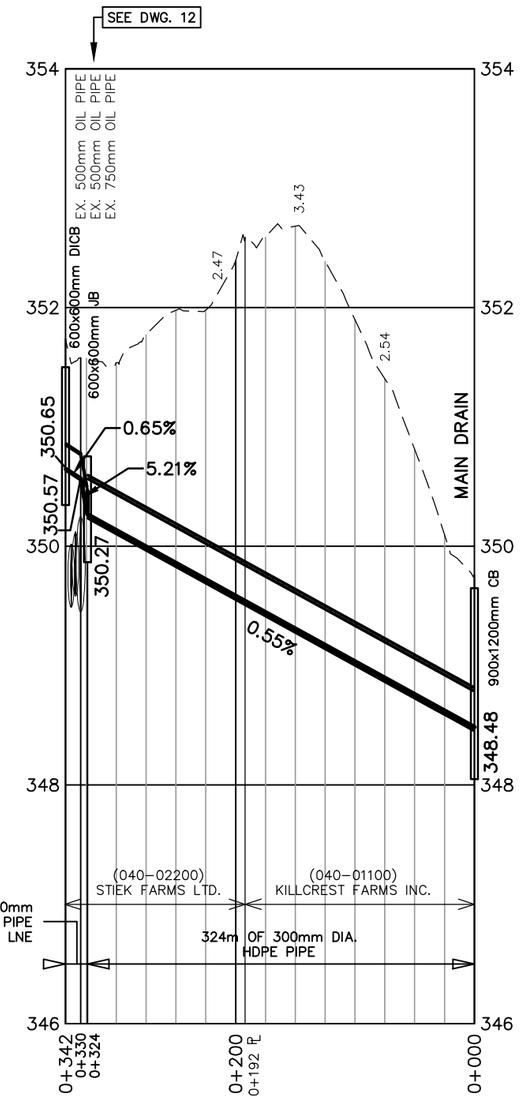

BRANCH C

DESIGNED BY:	C.J.M.
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100507574
FEB 3, 2022
PROVINCE OF ONTARIO

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

PARKER DRAIN 2022

COUNTY OF OXFORD — TOWNSHIP OF EAST ZORRA–TAVISTOCK

BRANCH DRAIN B & C PROFILES — FEB. 3, 2022

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
KITCHENER SUDBURY

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JOB NUMBER: 20–150
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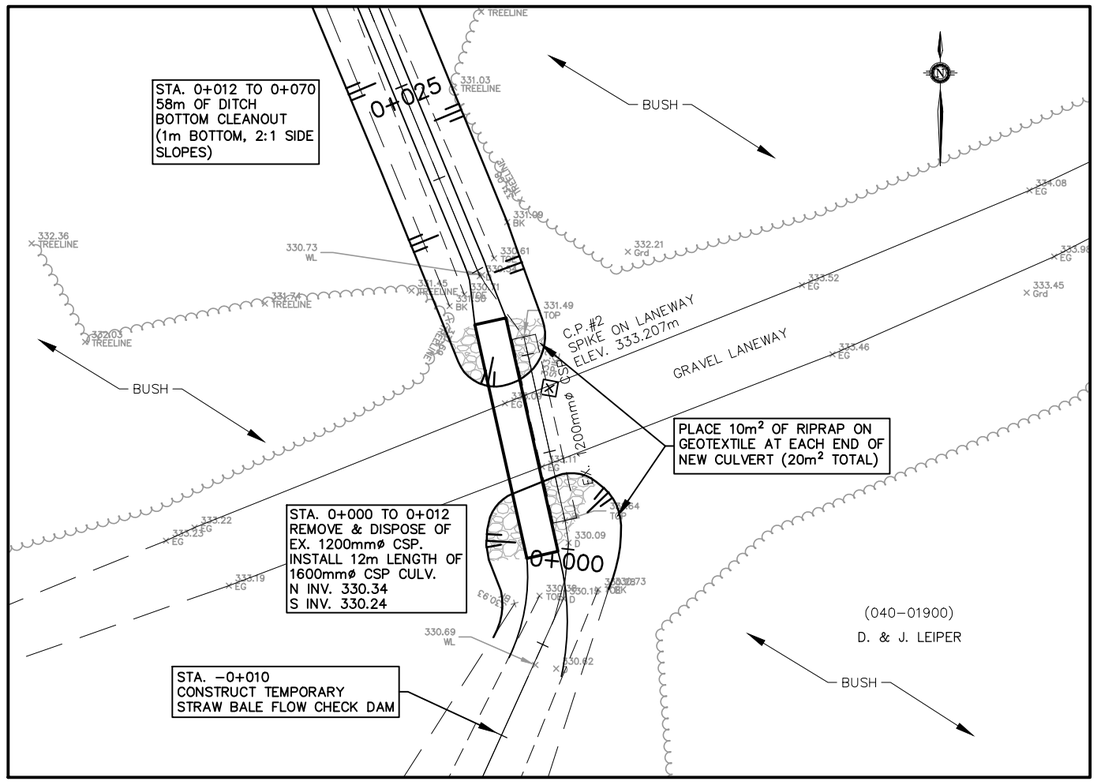
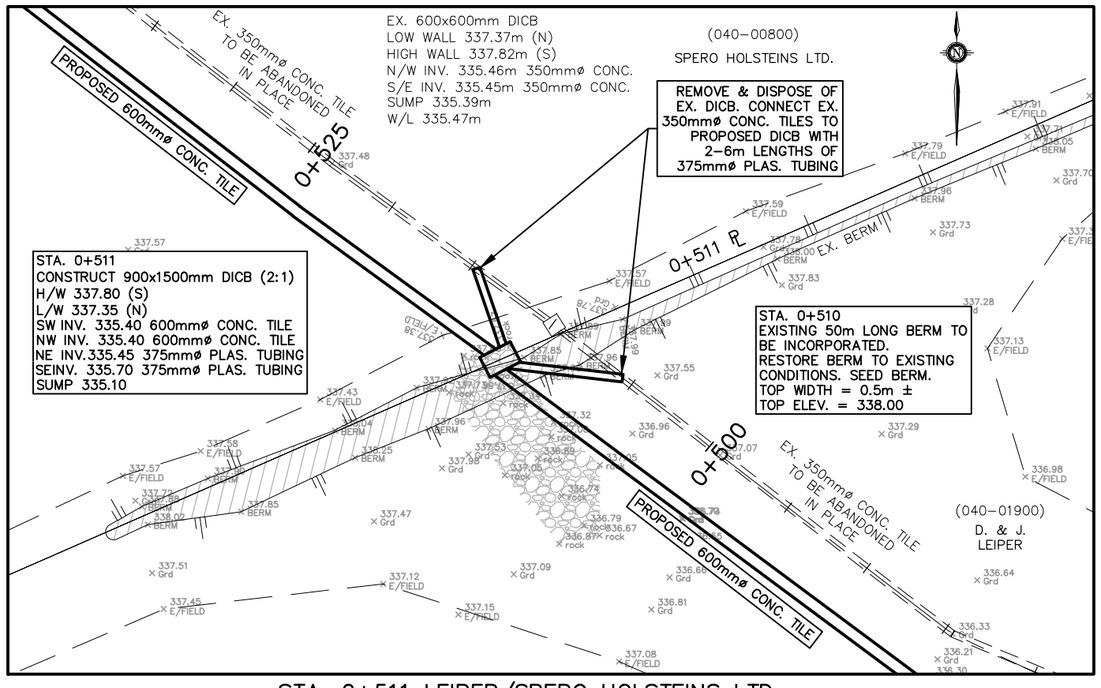


STA. 0+000 LEIPER LANEWAY



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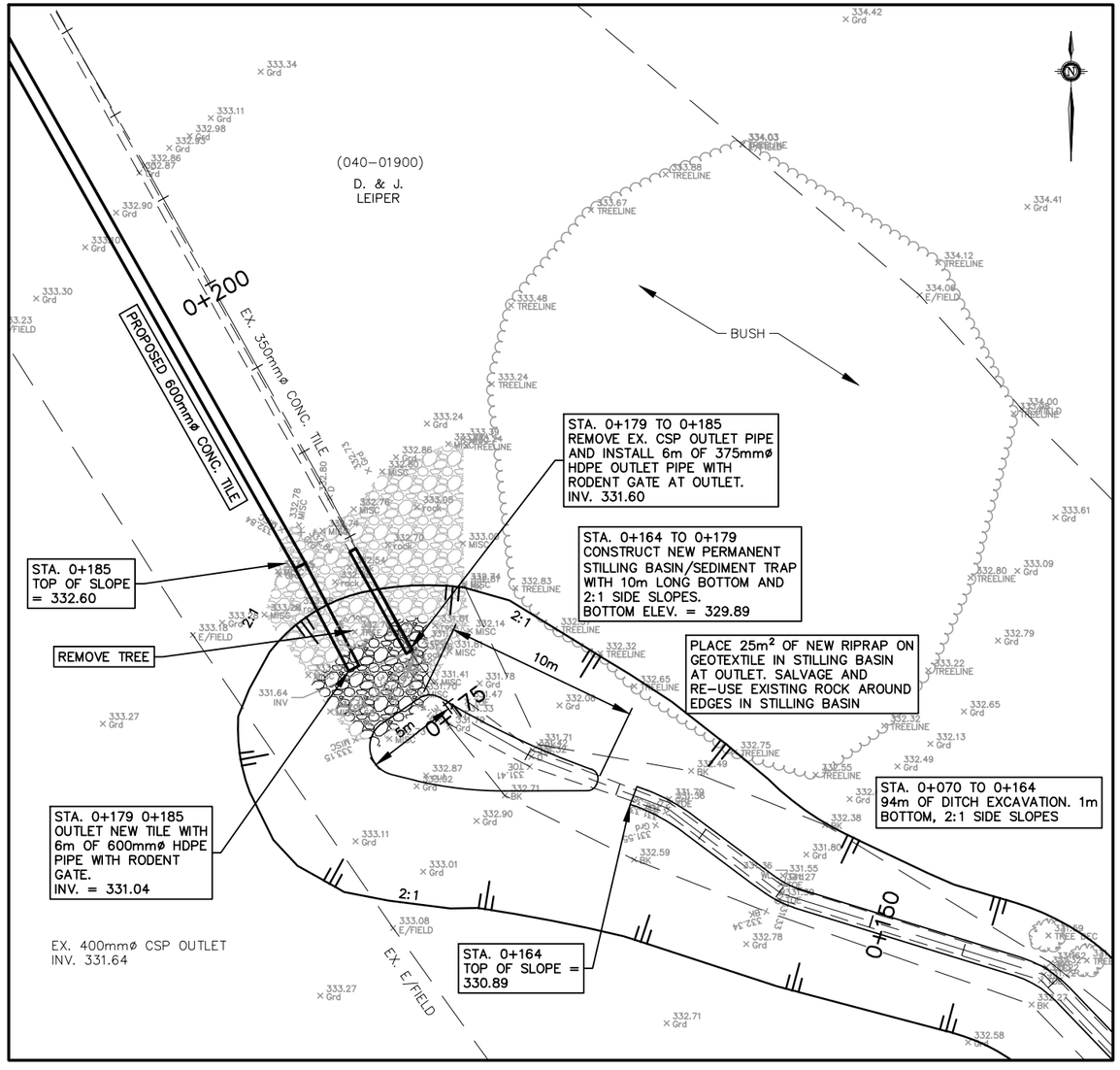

STA. 0+179 MAIN DRAIN TILE OUTLET

DESIGNED BY:	C.J.M.
CHECKED BY:	C.J.M.
DRAWN BY:	A.M.P.
CHECKED BY:	C.J.M.

LICENSED PROFESSIONAL ENGINEER
C. J. MACINTYRE
100507574
FEB 3, 2022
PROVINCE OF ONTARIO

SCALE
0 3 6m
(1:300 ON 11x17)

PARKER DRAIN 2022

COUNTY OF OXFORD — TOWNSHIP OF EAST ZORRA-TAVISTOCK

STA. 0+000 LEIPER LANEWAY CROSSING
STA 0+179 MAIN DRAIN TILE OUTLET
STA. 0+511 LEIPER/SPERO HOLSTEINS LTD.

FEB. 3, 2022

REVISED:

K. SMART ASSOCIATES LIMITED
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KITCHENER — SUDBURY

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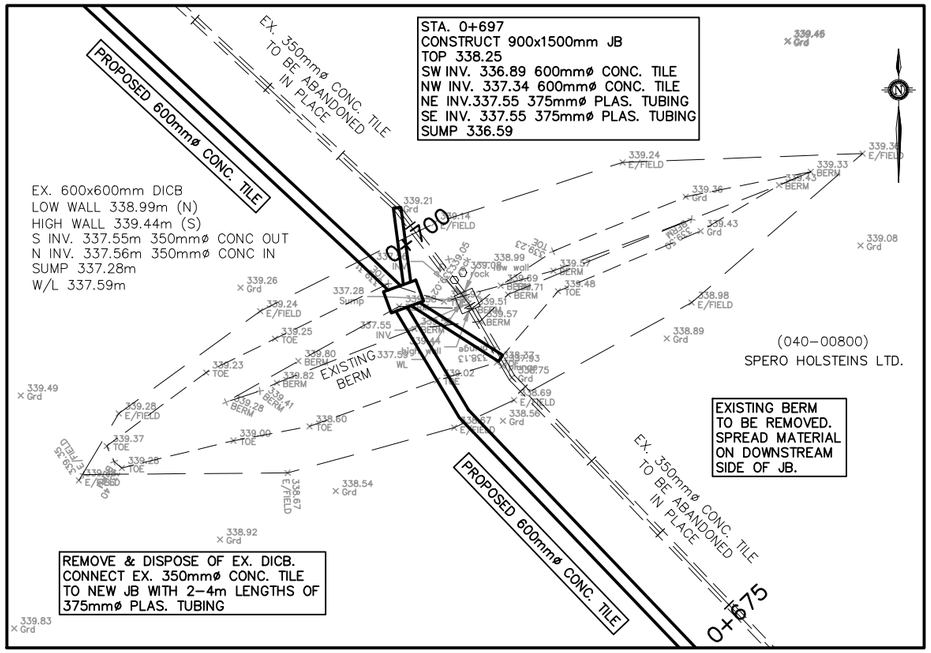

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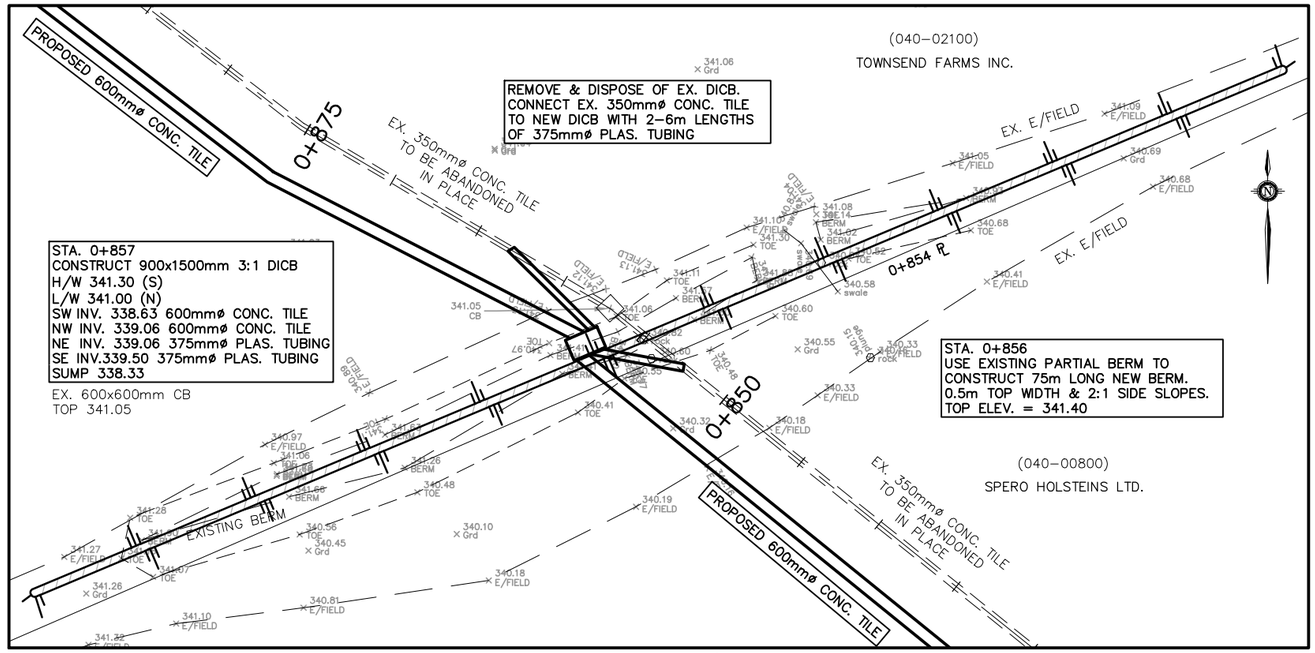

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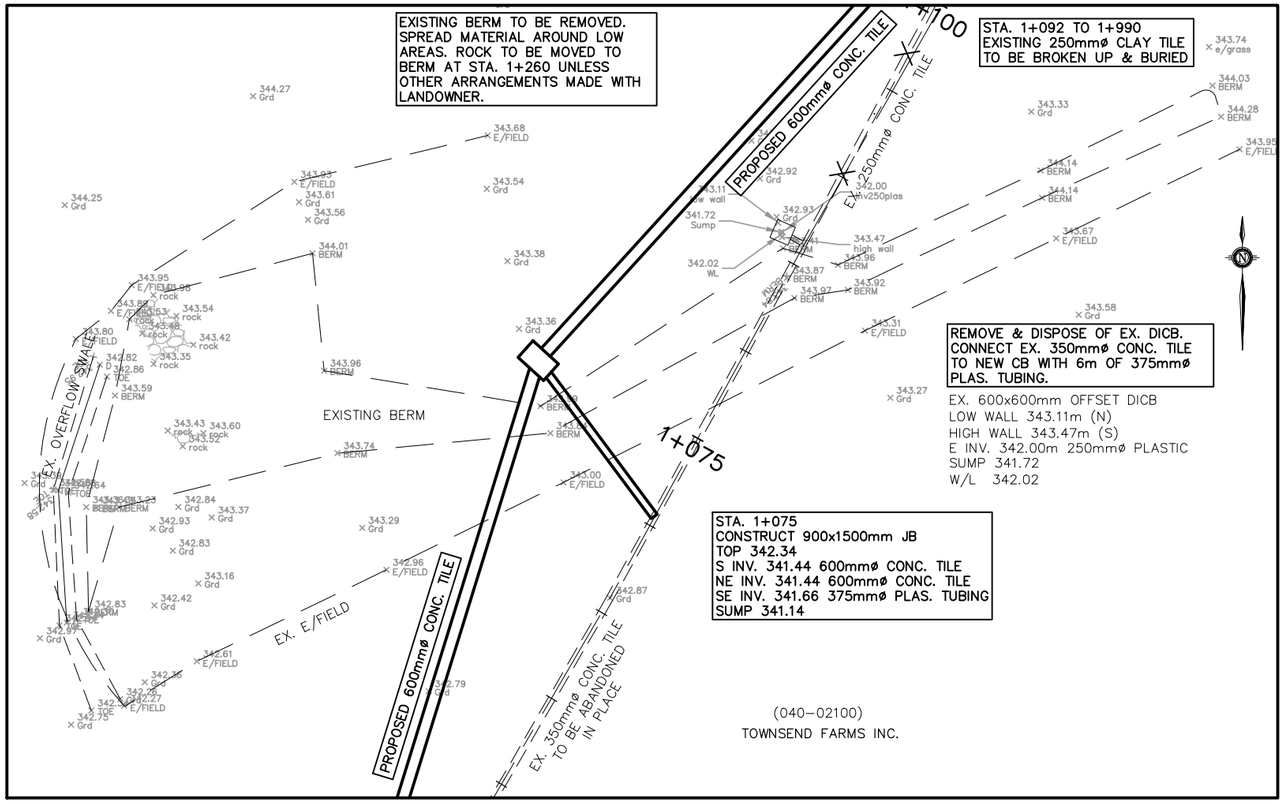

STA. 1+075 TOWNSEND FARMS INC.

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CHECKED BY:	C.J.M.

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C. J. MACINTYRE
100507574
FEB 3, 2022
PROVINCE OF ONTARIO

SCALE
0 3 6m
(1:300 ON 11x17)

PARKER DRAIN 2022

COUNTY OF OXFORD — TOWNSHIP OF EAST ZORRA-TAVISTOCK

STA. 0+697 SPERO HOLSTEINS LTD.
STA. 0+859 S.H. LTD./ T.F. INC.
STA. 1+075 TOWNSEND FARMS INC.

FEB. 3, 2022

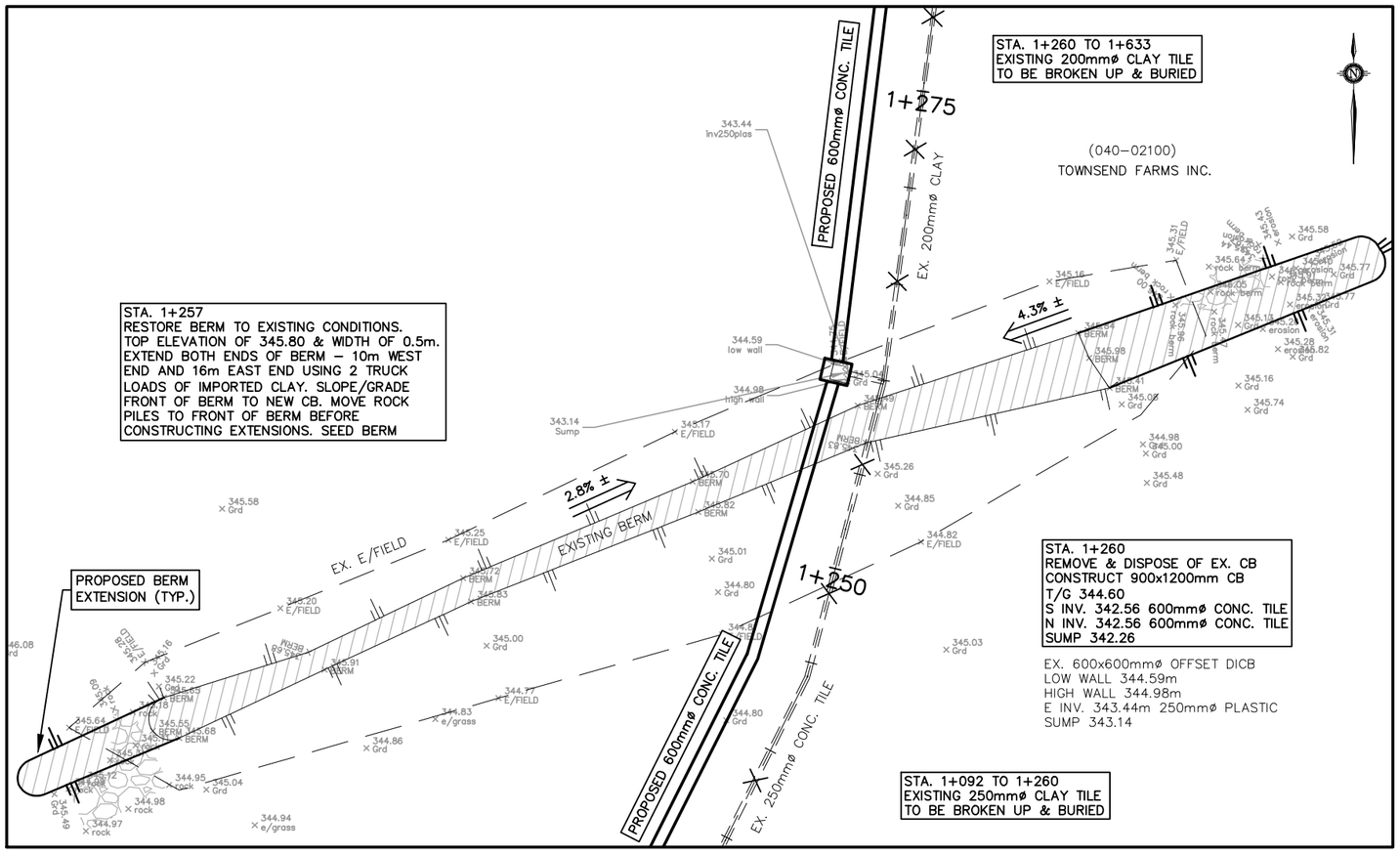
REVISED:

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

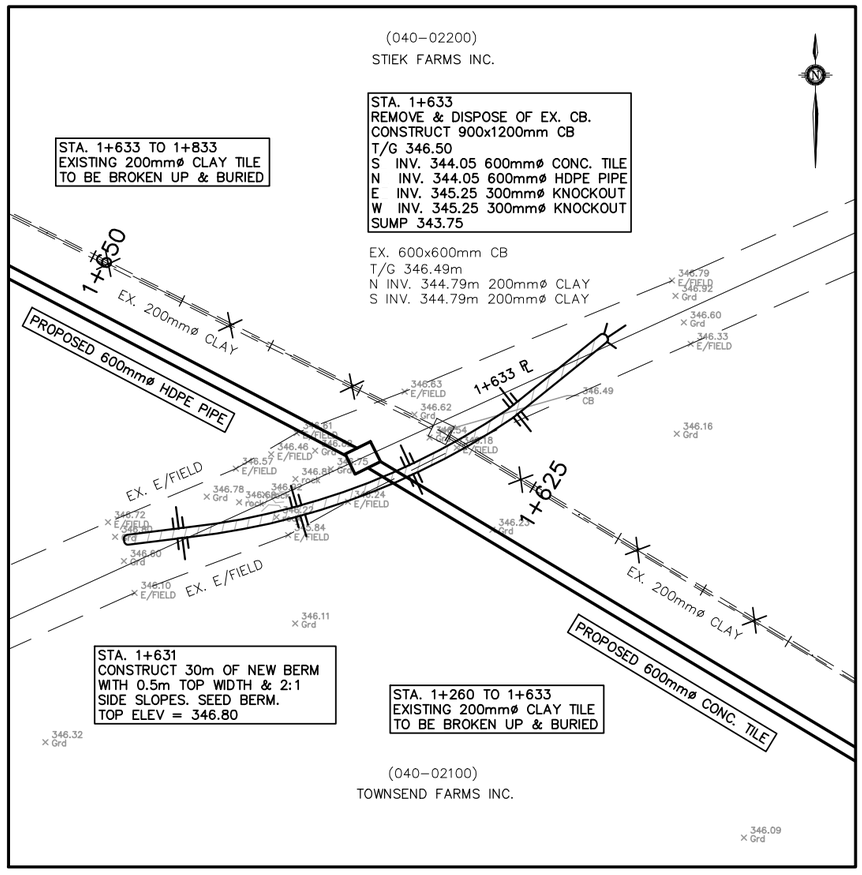
JOB NUMBER: **20-150**

DRAWING 7 OF 21

S:\2020\20-150\Drafting\PROFILE 20-150.dwg DETAILS STA. 0+697 0+859 AND 1+075 3-Feb-22 1:59:44 PM



STA. 1+260 TOWNSEND FARMS INC.



STA. 1+633 TOWNSEND FARMS INC./STIEK FARMS INC.

PARKER DRAIN 2022

COUNTY OF OXFORD — TOWNSHIP OF EAST ZORRA–TAVISTOCK

STA 1+260 TOWNSEND FARMS INC.
STA. 1+633 TOWNSEND FARMS INC./ STIEK FARMS INC.

FEB. 3, 2022

DESIGNED BY:	C.J.M.
CHECKED BY:	C.J.M.
DRAWN BY:	A.M.P.
CHECKED BY:	C.J.M.

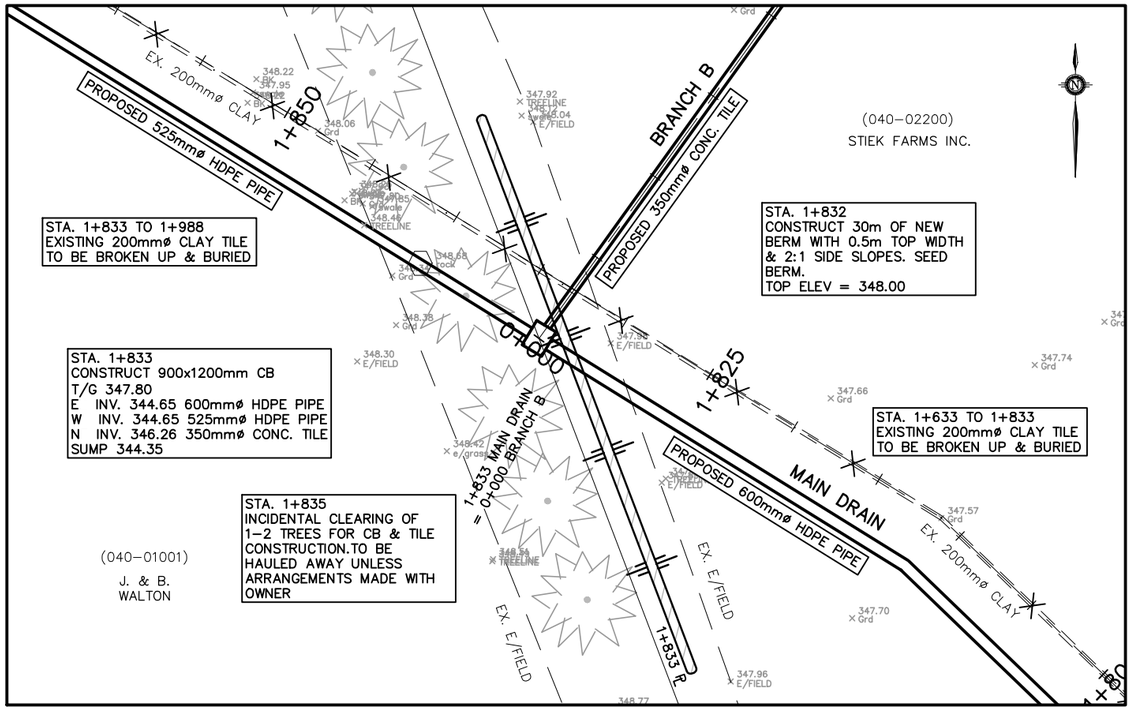
LICENSED PROFESSIONAL ENGINEER
C. J. MACINTYRE
100507574
FEB 3, 2022
PROVINCE OF ONTARIO

SCALE
0 3 6m
(1:300 ON 11x17)

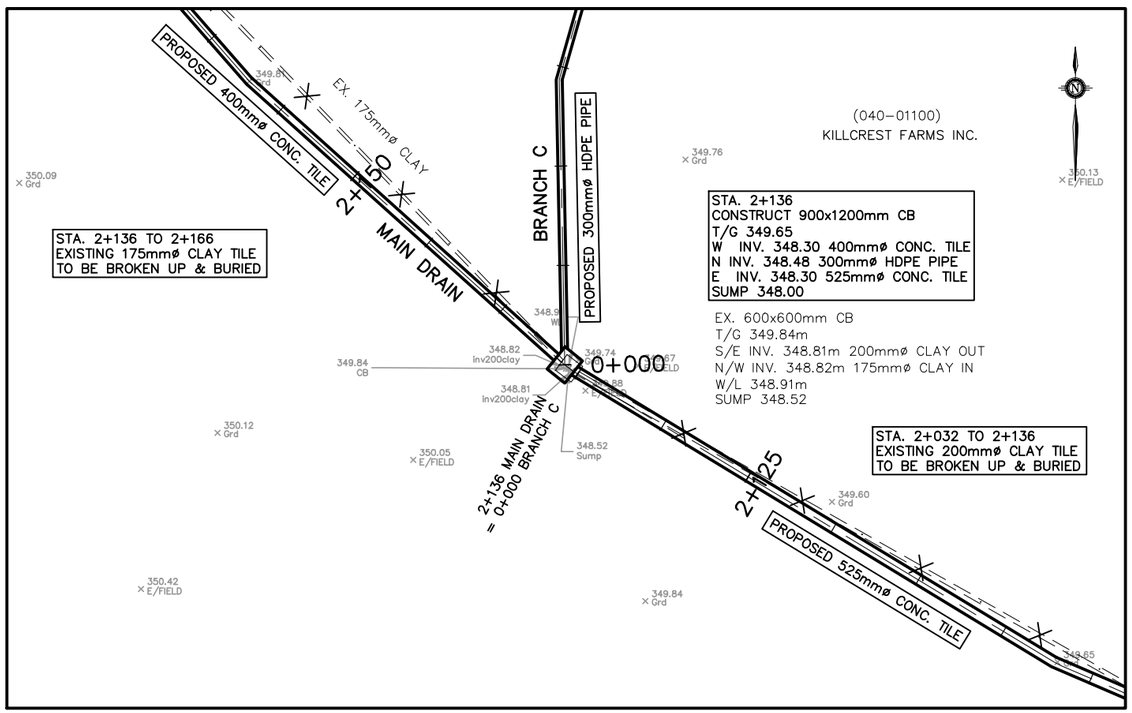
K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
KITCHENER SUDBURY

REVISED:
JOB NUMBER: **20–150**
DRAWING 8 OF 21

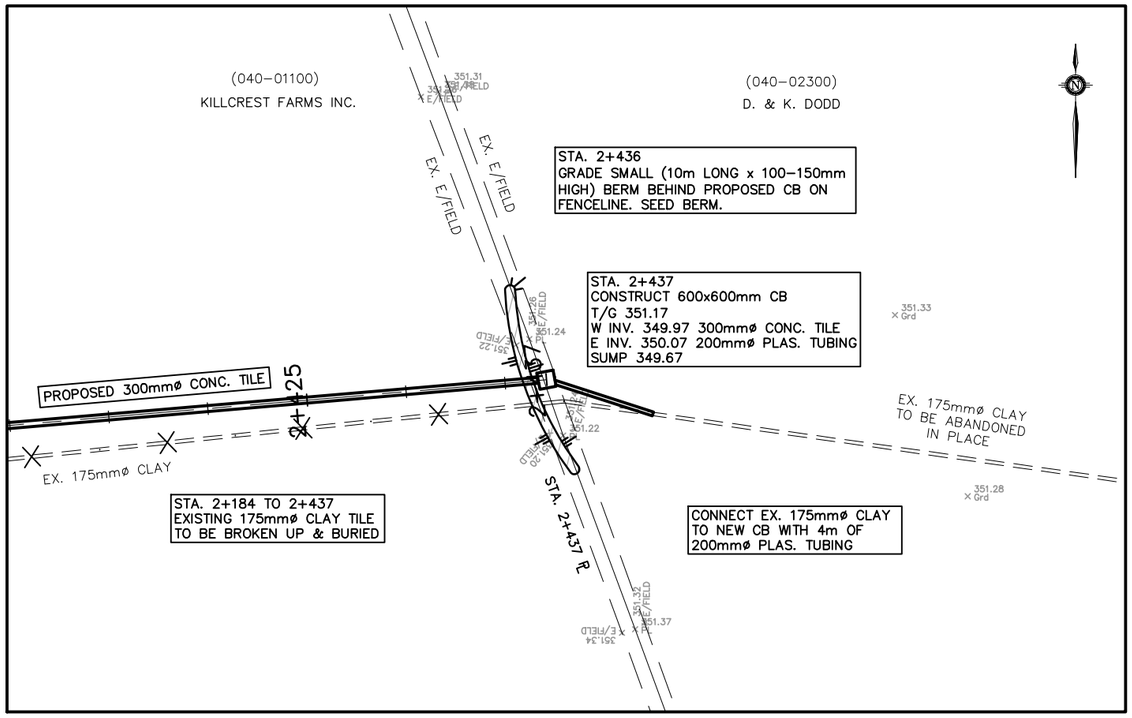
S:\2020\20–150\Drafting\PROFILE 20–150.dwg DETAILS STA. 1+260 AND STA. 1+633 3–Feb–22 2:00:08 PM



STA. 1+833 STIEK FARMS INC./J. & B. WALTON



STA. 2+136 KILLCREST FARMS INC.



STA. 2+437 KILLCREST FARMS INC./D. & K. DODD

NOTE: SEE DRAWINGS 10 & 11 FOR PROPOSED WORK BETWEEN STA. 1+988 TO 2+032 AND BETWEEN STA. 2+166 TO 2+184 (PIPELINE CROSSINGS)

DESIGNED BY:	C.J.M.
CHECKED BY:	C.J.M.
DRAWN BY:	A.M.P.
CHECKED BY:	C.J.M.

LICENSED PROFESSIONAL ENGINEER
C. J. MACINTYRE
100507574
FEB 3, 2022
PROVINCE OF ONTARIO

SCALE
0 3 6m
(1:300 ON 11x17)

PARKER DRAIN 2022

COUNTY OF OXFORD — TOWNSHIP OF EAST ZORRA–TAVISTOCK

STA. 1+833 STEIK FARMS INC./J.&B. WALTON
STA. 2+136 KILLCREST FAMS INC.
STA. 2+437 K.F. INC./D. & K. DODD

FEB. 3, 2022

REVISED:

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

JOB NUMBER: 20–150

DRAWING 9 OF 21

S:\2020\20–150\Drafting\PROFILE 20–150.dwg DETAILS STA. 1+833 2+136 2+437 3–Feb–22 2:00:41 PM

(040–01100)
KILLCREST FARMS INC.

STA. 1+988
REMOVE & DISPOSE
OF EX. CB

EX. 600x600mm CB
T/G 349.44m
N/W INV. 348.02m 200mmø CLAY
S/E INV. 347.99m 200mmø CLAY
SUMP 347.79m

STA. 1+260 TO 1+988
EXISTING 200mmø
CLAY TILE TO BE
BROKEN UP & BURIED

STA. 2+032
1200x900mm JB

PROPOSED 525mmø PVC
UNDER PIPELINES BY OPEN CUT

PROPOSED 525mmø CONC. TILE

EX. 200mmø CLAY
TO BE ABANDONED
IN PLACE

SEE NOTE 3

STA. 2+032 TO 2+136
EXISTING 200mmø CLAY TILE
TO BE BROKEN UP & BURIED

EX. 48"ø GAS LINE
EX. 42"ø GAS LINE
EX. 34"ø GAS LINE
EX. 26"ø GAS LINE

CAP

67°

1+990 R

EX. 200mm CLAY

PROPOSED 525mmø
HDPE PIPE

STA. 1+988
900x1200mm CB

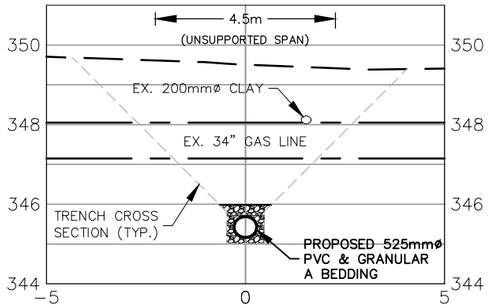
(040–01001)
J. & B.
WALTON

STA. 1+988
INCIDENTAL CLEARING OF
1–2 TREES FOR CB & TILE
CONSTRUCTION.TO BE
HAULED AWAY UNLESS
ARRANGEMENTS MADE WITH
OWNER

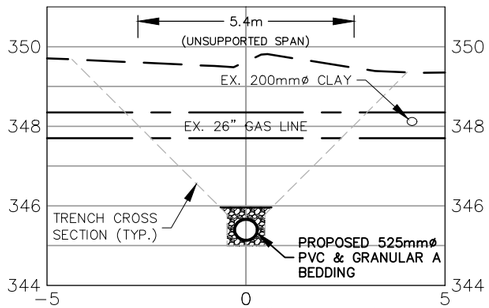
STA. 1+984
CONSTRUCT 20m OF NEW
BERM WITH 0.5m TOP WIDTH
& 2:1 SIDE SLOPES.
TOP ELEV/ = 349.60

NOTES

1. MECHANICAL EXCAVATION IS NOT PERMITTED WITHIN 3m OF THE PIPELINES, UNLESS VERIFIED VISUALLY. AFTER THE EXACT LOCATION OF THE PIPELINE IS VERIFIED VISUALLY, MECHANICAL EXCAVATION IS ALLOWED UP TO 1m FROM THE PIPELINE. WITHIN 1m, ONLY HAND DIGGING OR HYDRO–EXCAVATION IS ALLOWED.
2. PVC PIPE FOR PIPELINE CROSSING TO BE DR35, CSA B182.2
3. EXISTING PARKER DRAIN TO BE ABANDONED IN PLACE FROM STA. 1+988 to 2+032. TILE TO BE CAPPED ON BOTH ENDS AND AT 2+011± WHERE NEW DRAIN WILL CROSS THROUGH.
4. NEW PARKER DRAIN BETWEEN STA. 1+988 TO 2+032 (UNDERNEATH) TO BE INSTALLED AS PER OPSD 802.030. PARKER DRAIN PIPE BEDDING AND COVER MATERIAL TO BE GRANULAR A. IN THIS SECTION, BACKFILL MATERIAL UNDERNEATH ENBRIDGE GAS PIPES TO BE COMPACTED TO 95% STANDARD PROCTOR DENSITY. SAND PADDING MUST BE PLACED TO A LEVEL 150mm ABOVE AND BELOW THE GAS PIPE.
5. BACKFILL MATERIAL ABOVE PIPES TO BE NATIVE, ENSURING NO LARGE ROCKS ARE PLACED NEAR THE PIPELINE.
6. SEE CROSS SECTIONS THIS DRAWING FOR LOCATIONS OF DRAIN TO BE CROSSED UNDERNEATH ENBRIDGE 26" & 36" GAS LINES.

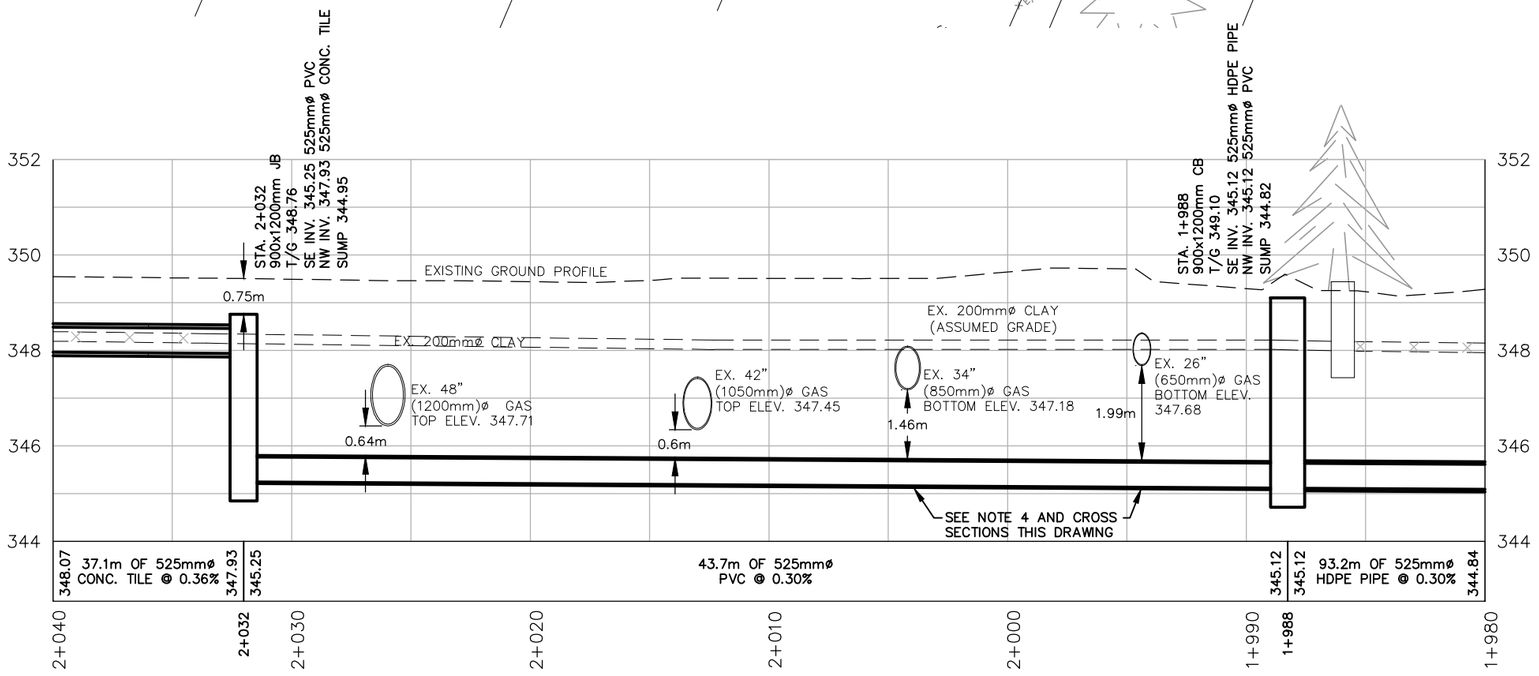


STA. 2+004 (34" CROSSING)



STA. 1+994 (26" CROSSING)

SCALE 1 : 150 (FOR SECTIONS ONLY)



DESIGNED BY:	C.J.M.
CHECKED BY:	C.J.M.
DRAWN BY:	A.M.P.
CHECKED BY:	C.J.M.

LICENSED PROFESSIONAL ENGINEER
C. J. MACINTYRE
100507574
FEB 3, 2022
PROVINCE OF ONTARIO

0 2.5 5m
(SCALE 1 : 250)
HORZ.
0 1.25 2.5m
(SCALE 1 : 125)
VERT.
SCALE (ON 11x17)

PARKER DRAIN 2022

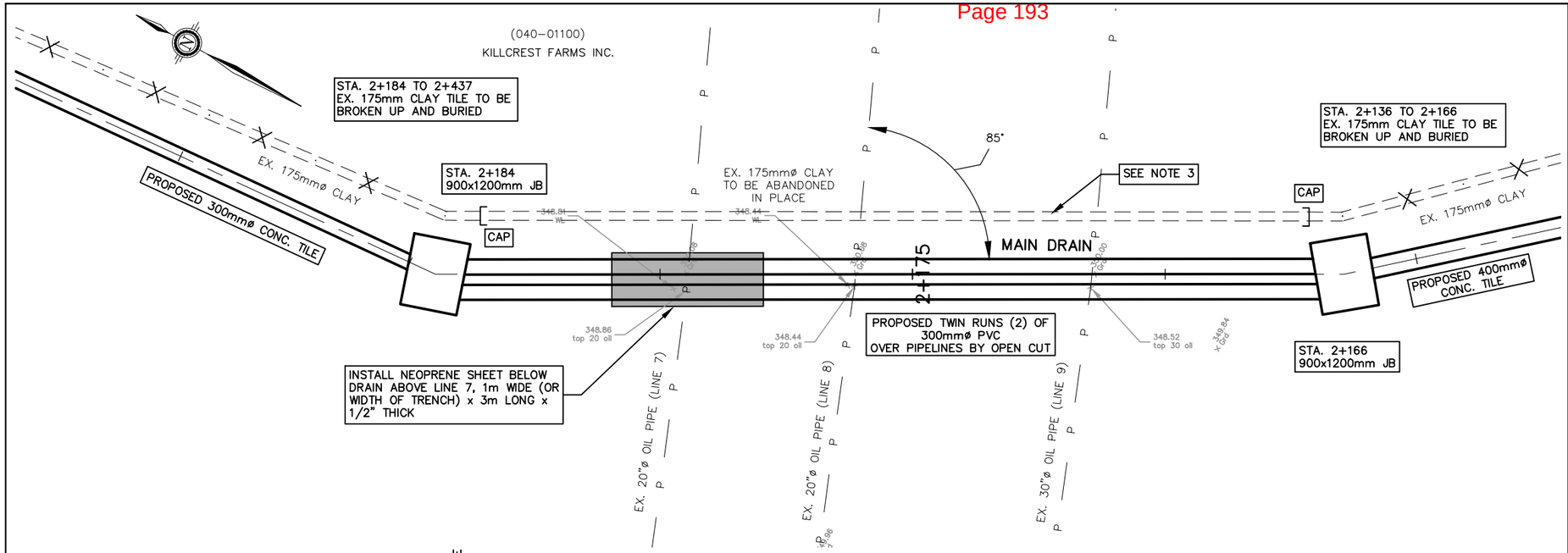
COUNTY OF OXFORD — TOWNSHIP OF EAST ZORRA–TAVISTOCK

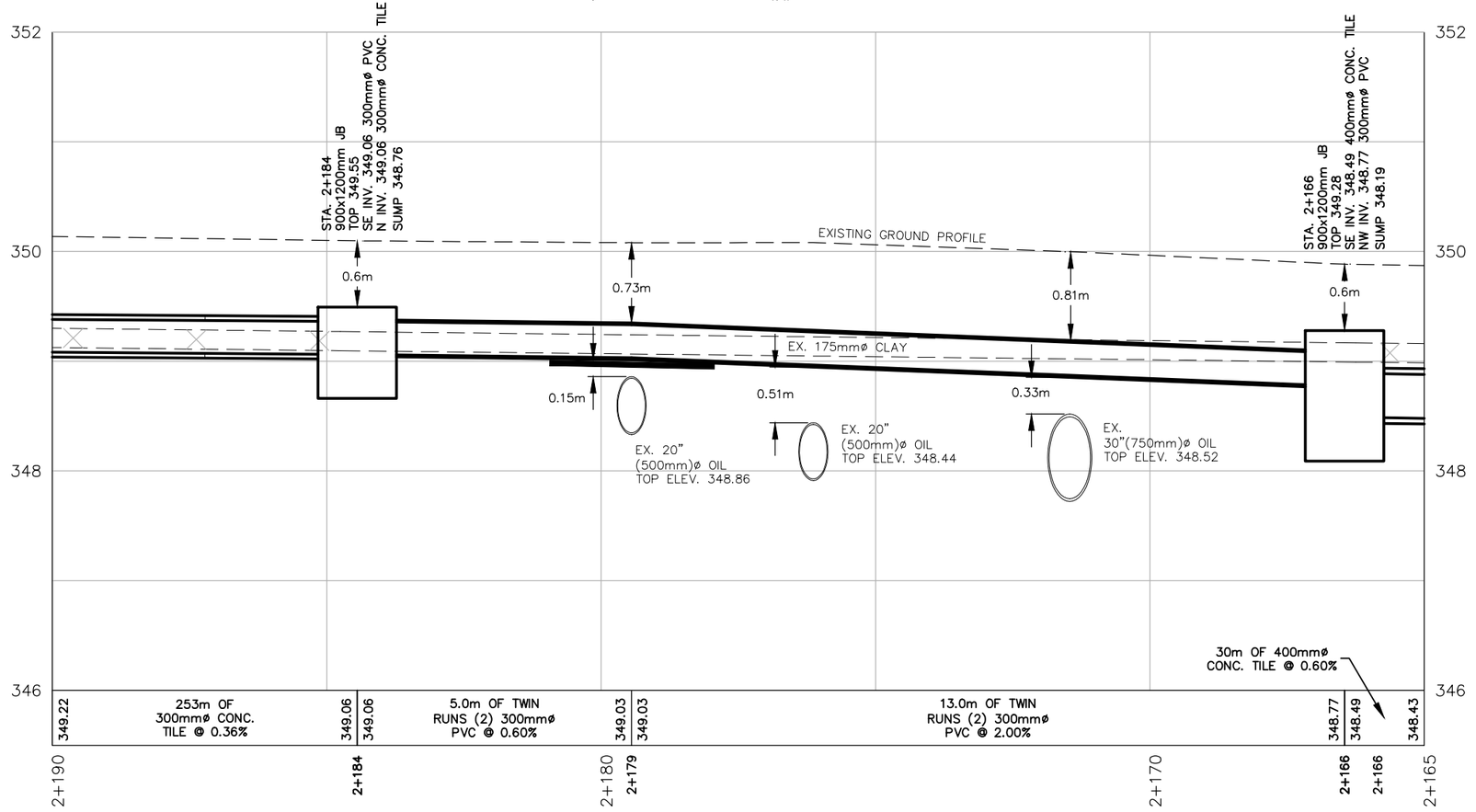
ENBRIDGE GAS INC.
TRAFALGAR LINE
CROSSING #1 OF 1

FEB. 3, 2022

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
KITCHENER SUDBURY

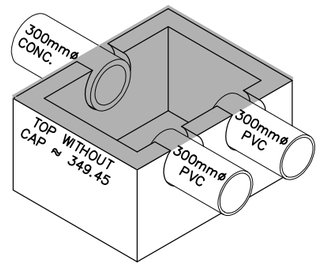
REVISED:
JOB NUMBER: **20–150**
DRAWING
10 OF 21





NOTES

1. MECHANICAL EXCAVATION IS NOT PERMITTED WITHIN 3m OF THE PIPELINES, UNLESS VERIFIED VISUALLY. AFTER THE EXACT LOCATION OF THE PIPELINE IS VERIFIED VISUALLY, MECHANICAL EXCAVATION IS ALLOWED UP TO 1m FROM THE PIPELINE. WITHIN 1m, ONLY HAND DIGGING OR HYDRO-EXCAVATION IS ALLOWED.
2. PVC PIPE FOR PIPELINE CROSSING TO BE DR35, CSA B182.2
3. LOCATION OF EXISTING PARKER DRAIN (175mm CLAY TILE) UNKNOWN. EXISTING TILE TO BE LOCATED OUTSIDE PIPELINES, CAPPED AT EACH END AND ABANDONED IN PLACE FROM STA. 2+166 to 2+184, OR REMOVED IF IN LOCATION OF PROPOSED DRAIN.
4. NEW PARKER DRAIN BETWEEN STA. 2+166 TO 2+184 (ABOVE) TO BE INSTALLED ON 100mm OF GRANULAR A BEDDING.
5. BACKFILL MATERIAL ABOVE PIPES TO BE NATIVE, ENSURING NO LARGE ROCKS ARE PLACED NEAR THE PIPELINE.
6. SUPPLIER OF SUCCESSFUL BIDDER IS TO PROVIDE SHOP DRAWINGS FOR STRUCTURES AT STA. 2+166 AND 2+184 THAT PROVIDE A MINIMUM OF 0.5m OF COVER. IF CONFIGURATION WITH CONCRETE LID AS DEPICTED BELOW DOES NOT PROVIDE SUFFICIENT COVER THEN AN ALTERNATIVE LID USING 1" THICK A36 STEEL PLATE COULD BE DISCUSSED (CONTINGENCY). STEEL PLATE WOULD REQUIRE ANGLE IRONS (300mm± IN LENGTH) WELDED TO THE BOTTOM SIDE TO AVOID SHIFTING ON CATCHBASIN AND HOOKS WELDED ONTO END OF PLATE FOR LIFTING



STA. 2+184: 900x1200mm JB
NOT TO SCALE

DESIGNED BY:	C.J.M.
CHECKED BY:	C.J.M.
DRAWN BY:	A.M.P.
CHECKED BY:	C.J.M.

LICENSED PROFESSIONAL ENGINEER
C. J. MACINTYRE
100507574
FEB 3, 2022
PROVINCE OF ONTARIO

0 1 2m
(SCALE 1 : 100)
HORZ.
0 0.5 1m
(SCALE 1 : 50)
VERT.
SCALE (ON 11x17)

PARKER DRAIN 2022

COUNTY OF OXFORD — TOWNSHIP OF EAST ZORRA-TAVISTOCK

ENBRIDGE PIPELINES INC.
LINES 7-9
CROSSING #1 OF 2

FEB. 3, 2022

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

REVISED:
JOB NUMBER: **20-150**
DRAWING
11 OF 21

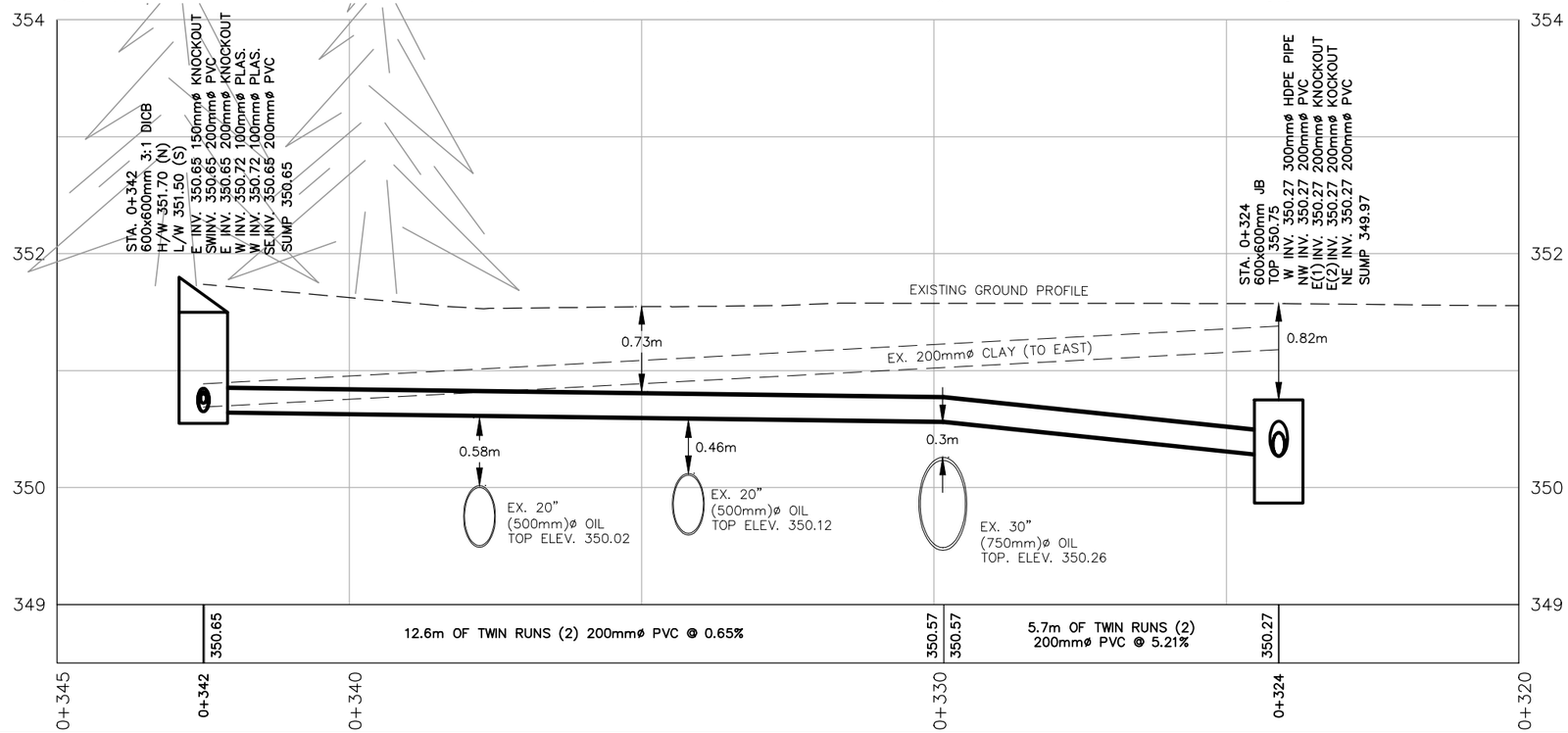
S:\2020\20-150\Drafting\PROFILE 20-150.dwg Enbridge Pipelines Line 7-9 (1) 3-Feb-22 2:01:52 PM

STA. 0+342
REMOVE & DISPOSE OF EX. CB, CAP EX. 175mmø CLAY TILE TO NORTH AND CONSTRUCT NEW 600x600mm DICB. GRADE AREA SOUTH OF DICB FROM E/FIELD TO LOW WALL. CONNECT TWO (2) EX. 100mmø PLAS. PIPES ON W. SIDE OF NEW DICB WITH 2–4m LENGTHS OF 100mmø PLAS. TUBING

STA. 0+342 – CONTINGENCY:
CONNECT EX. 200mmø & 150mmø CLAY TO E. SIDE OF NEW DICB WITH 4m 150mmø & 200mmø PLAS. TUBING IF NOT LOCATED AND CONNECTED AT 0+324

STA. 0+324
LOCATE EXISTING 200mmø AND 150mmø CLAY TILES SOUTH SIDE OF PIPELINES AND CONNECT EACH TO 600x600mm JB WITH APPROXIMATELY 12m OF 200mmø PLASTIC TUBING (TOTAL 24m).

EX. 200mmø CLAY (PRIVATE)
EX. 150mmø CLAY (PRIVATE)
90°
350.26 top 30 oil
350.12 top 20 oil
STA. 0+342 600x600mm DICB
CAP
(040–02300)
D. & K. DODD
BRANCH C
STA. 0+324 600x600mm JB
0+342
0+325
PROPOSED TWIN RUNS (2) OF 200mmø PVC OVER PIPELINES BY OPEN CUT
EX. 175mmø CLAY TO BE ABANDONED IN PLACE (PARKER DRAIN 1901)
E/FIELD
APPROX. P/L
EX. 100mmø PLAS. (PRIVATE)
EX. 100mmø PLAS. (PRIVATE)
EX. 600x600mm CB
T/G 352.14m
N/W INV. 350.65m 200mmø CLAY OUT
S/E INV. 350.68m 200mmø CLAY IN
S/E INV. 350.74m 150mmø CLAY IN
S/W INV. 350.79m 100mmø PLASTIC OUT
S/W INV. 350.74m 100mmø PLASTIC OUT
TOP SEDIMENT 350.60m
W/L 350.73m
EX. 20"ø OIL PIPE (LINE 7)
E/FIELD
EX. 20"ø OIL PIPE (LINE 8)
EX. 30"ø OIL PIPE (LINE 9)
STA. 0+339
INCIDENTAL CLEARING OF 1 TREE FOR DICB & TILE CONSTRUCTION. TO BE HAULED AWAY UNLESS OTHER ARRANGEMENTS MADE WITH LANDOWNER
PROPOSED 300mmø HDPE PIPE
(040–02200)
STIEK FARMS INC.



NOTES

1. MECHANICAL EXCAVATION IS NOT PERMITTED WITHIN 3m OF THE PIPELINES, UNLESS VERIFIED VISUALLY. AFTER THE EXACT LOCATION OF THE PIPELINE IS VERIFIED VISUALLY, MECHANICAL EXCAVATION IS ALLOWED UP TO 1m FROM THE PIPELINE. WITHIN 1m, ONLY HAND DIGGING OR HYDRO–EXCAVATION IS ALLOWED.
2. PVC PIPE FOR PIPELINE CROSSING TO BE DR35, CSA B182.2
3. NEW PARKER DRAIN BETWEEN STA. 0+324 TO 0+342 (ABOVE) TO BE INSTALLED ON 100mm OF GRANULAR A BEDDING.
4. BACKFILL MATERIAL ABOVE PIPES TO BE NATIVE, ENSURING NO LARGE ROCKS ARE PLACED NEAR THE PIPELINE.

DESIGNED BY:	C.J.M.
CHECKED BY:	C.J.M.
DRAWN BY:	A.M.P.
CHECKED BY:	C.J.M.

LICENSED PROFESSIONAL ENGINEER
C. J. MACINTYRE
100507574
FEB 3, 2022
PROVINCE OF ONTARIO

0 1 2m
(SCALE 1 : 100)
HORZ.
0 0.5 1m
(SCALE 1 : 50)
VERT.
SCALE (ON 11x17)

PARKER DRAIN 2022

COUNTY OF OXFORD — TOWNSHIP OF EAST ZORRA–TAVISTOCK

ENBRIDGE PIPELINES INC.
LINES 7-9
CROSSING #2 OF 2

FEB. 3, 2022

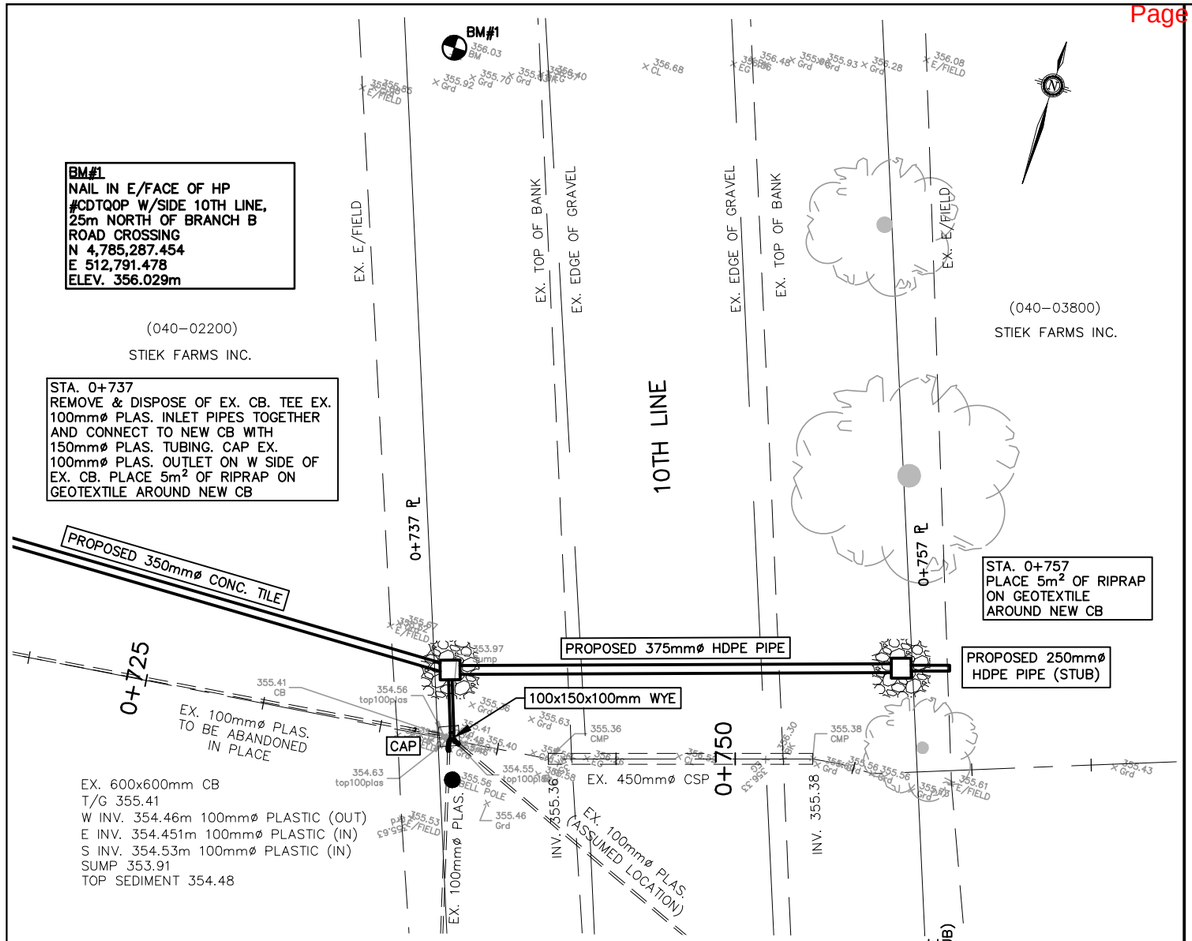
REVISED:

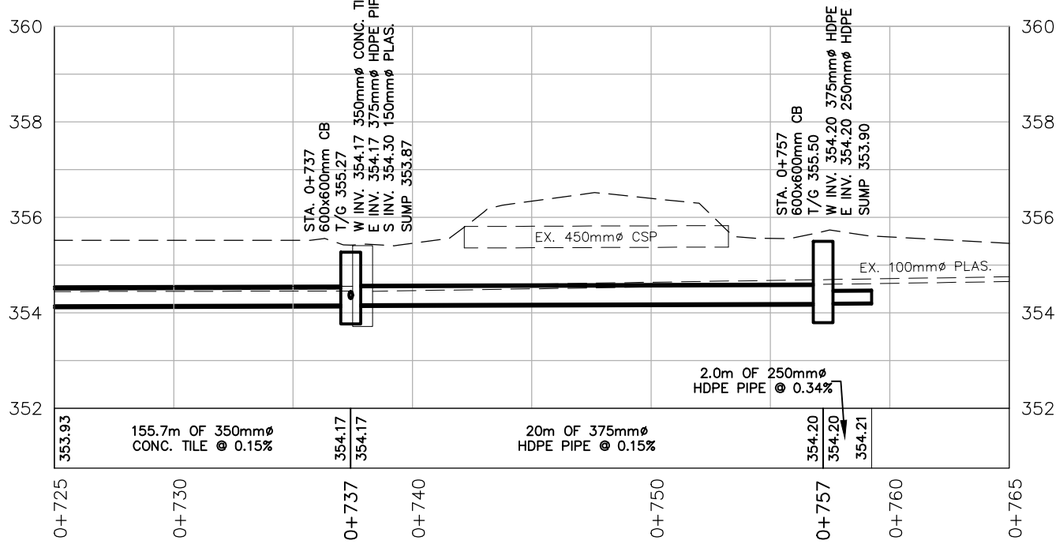
K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
KITCHENER — SUDBURY

JOB NUMBER: **20–150**

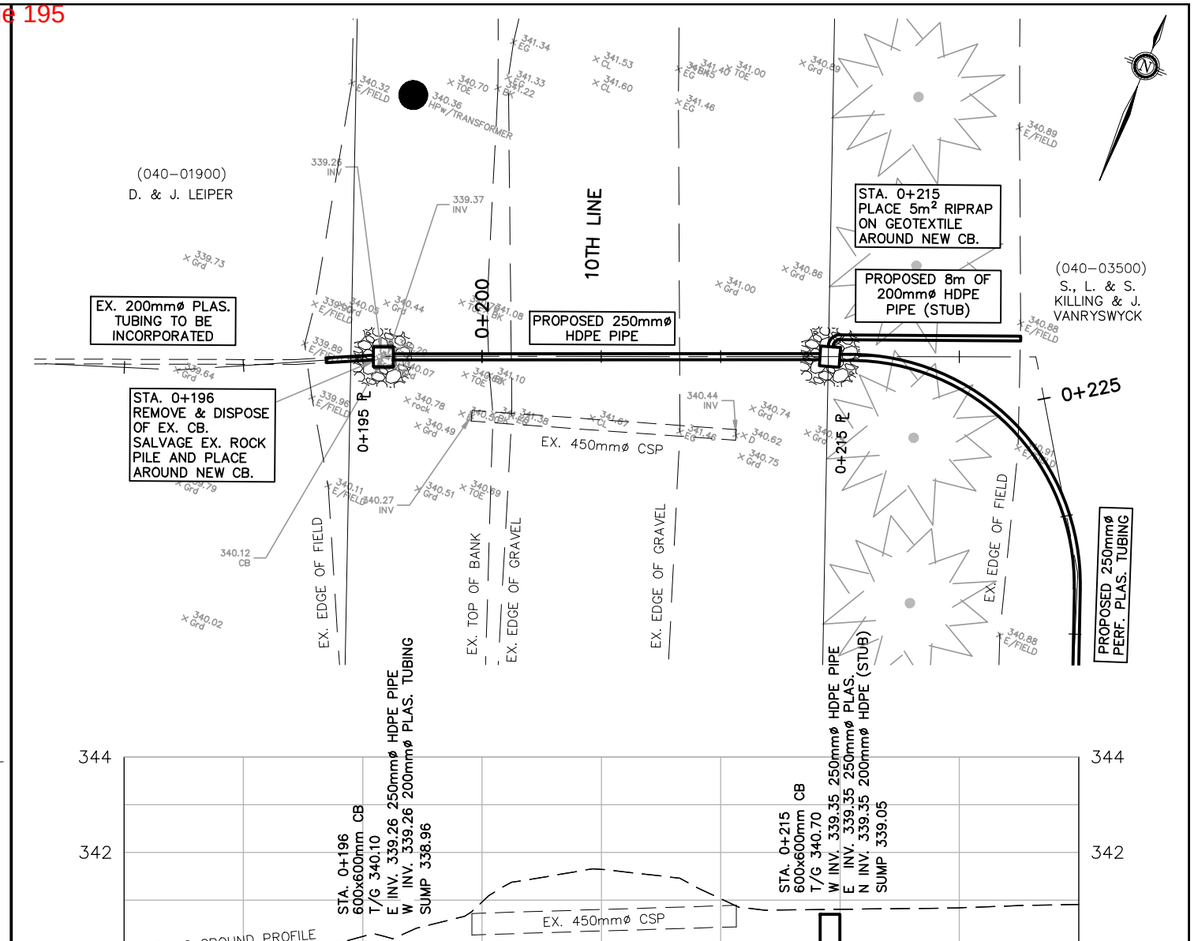
DRAWING
12 OF 21

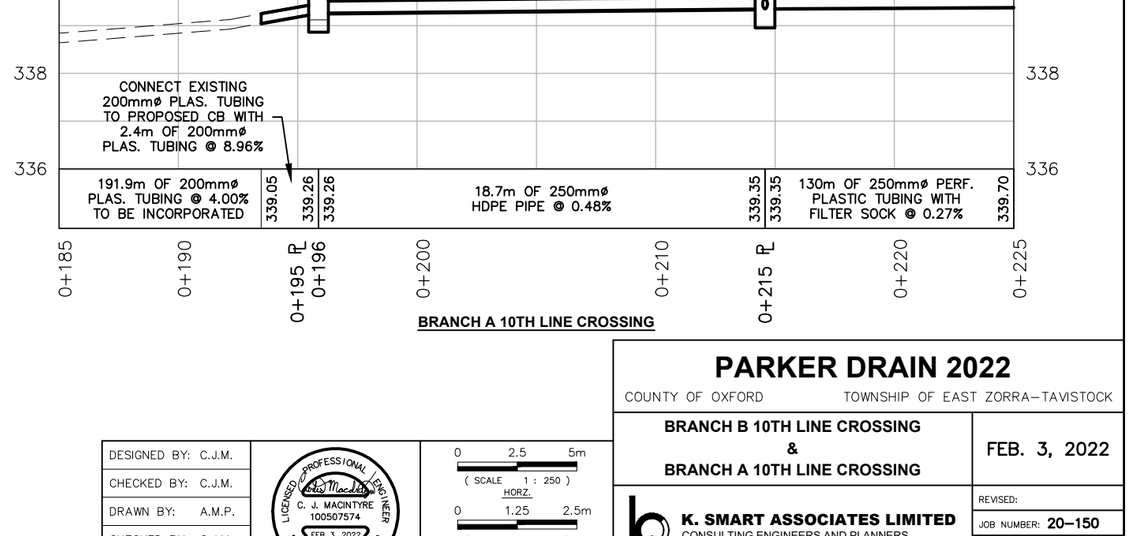
S:\2020\20–150\Drafting\PROFILE 20–150.dwg Enbridge Pipelines Line 7–9 (2) 3–Feb–22 2:02:14 PM





BRANCH B 10TH LINE CROSSING





BRANCH A 10TH LINE CROSSING

PARKER DRAIN 2022

COUNTY OF OXFORD — TOWNSHIP OF EAST ZORRA–TAVISTOCK

BRANCH B 10TH LINE CROSSING & BRANCH A 10TH LINE CROSSING

FEB. 3, 2022

DESIGNED BY:	C.J.M.
CHECKED BY:	C.J.M.
DRAWN BY:	A.M.P.
CHECKED BY:	C.J.M.

LICENSED PROFESSIONAL ENGINEER — C. J. MACINTYRE — 100507574 — FEB 3, 2022 — PROVINCE OF ONTARIO

0 2.5 5m (SCALE 1 : 250) HORZ.

0 1.25 2.5m (SCALE 1 : 125) VERT.

SCALE (ON 11x17)

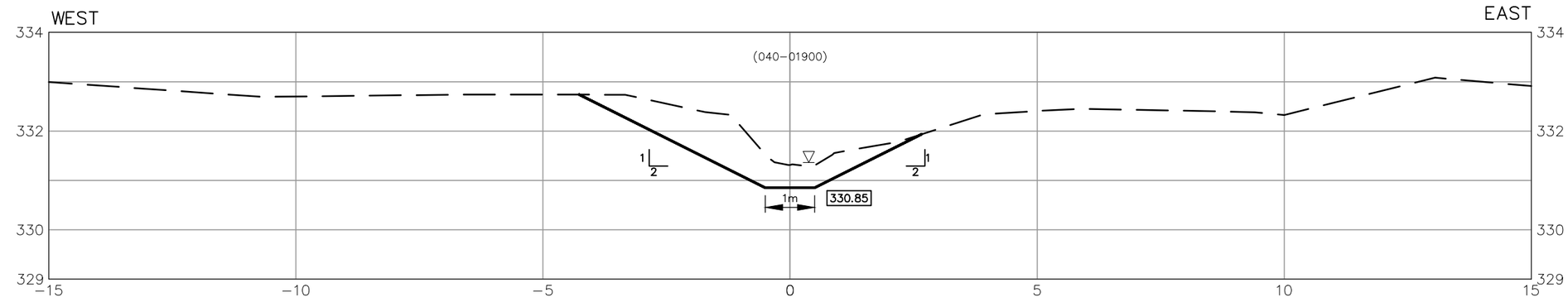
K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
KITCHENER — SUDBURY

REVISED:

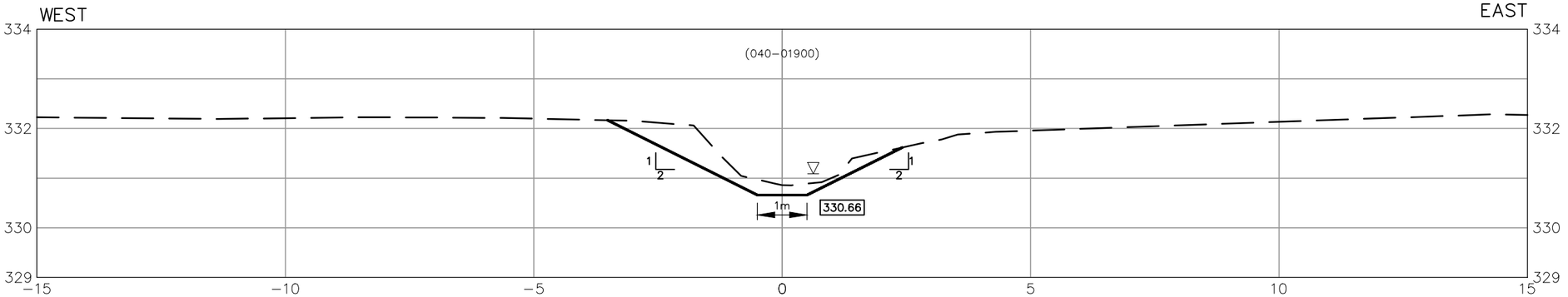
JOB NUMBER: **20–150**

DRAWING 13 OF 21

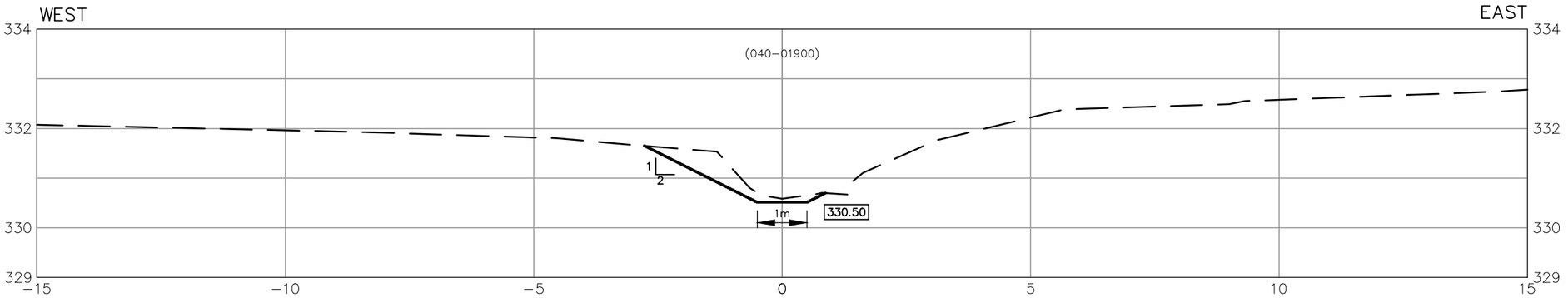
S:\2020\20–150\Drafting\PROFILE 20–150.dwg ROAD CROSSING DETAILS 3–Feb–22 2:02:54 PM



STA. 0+153



STA. 0+100



STA. 0+050

PARKER DRAIN 2022

COUNTY OF OXFORD — TOWNSHIP OF EAST ZORRA–TAVISTOCK

MAIN DRAIN CROSS SECTIONS — FEB. 3, 2022

DESIGNED BY:	C.J.M.
CHECKED BY:	C.J.M.
DRAWN BY:	A.M.P.
CHECKED BY:	C.J.M.

LICENSED PROFESSIONAL ENGINEER — C. J. MACINTYRE — 100507574 — FEB 3, 2022 — PROVINCE OF ONTARIO

SCALE

0 1 2m

(SCALE 1 : 100)

HORZ.

(ON 11x17)

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

REVISED:

JOB NUMBER: **20–150**

DRAWING 14 OF 21

S:\2020\20-150\Drafting\PROFILE 20-150.dwg CROSS SECTIONS 3-Feb-22 2:03:07 PM

300) CONSTRUCTION NOTES (SPECIAL PROVISIONS)

300.1) CONSTRUCTION SPECIFICATIONS - SPECIFIC NOTES

i) MAIN DRAIN

D. & J. Leiper (Roll No. 040-01900)

0+000 to 0+012
- Remove and dispose of existing 1200mm dia. CSP. Install 12m length of 1600mm dia. galvanized CSP, 2.8mm thickness, 125x25mm corrugations (see Drawing 6).
- Bedding & Backfill for this crossing:
  - Bedding to be 150mm granular A, shaped for pipe.
  - Pipe to be backfilled with 150mm granular A to ½ diameter of the culvert, compacted under haunches.
  - Remaining backfill to be native material.
- Restore gravel laneway to existing conditions, including any damages made to the portion of the laneway from the road used for construction access.
- Place 10m^2 of riprap on geotextile at each end of new culvert (20m^2 total).

0+012 to 0+070
- 58m of ditch cleanout (1.0m bottom, 2:1 side slopes).
- Verify side for levelling with landowner (applies to next note).

0+070 to 0+164
- 94m of ditch excavation (1.0m bottom, 2:1 side slopes).

0+164 to 0+179
- Construct permanent stilling pool (350m³) (see Drawing 6).
- Place 25m² of new riprap on geotextile around outlet pipes (Sta. 0+179). Salvage and re-use existing rock around edges in stilling basin.
- Seed banks of stilling basin.

0+179 to 0+185
- Install 6m of 600mm dia. solid plastic pipe (HDPE) with rodent gate at outlet.
- Remove existing CSP outlet pipe and install 6m of 375mm dia. solid plastic pipe (HDPE) pipe with rodent gate at outlet.

0+185 to 0+511
- Install 326m of 600mm (24") dia. concrete tile with joint wrap.
- Existing 350mm (14") dia. concrete tile (1966) to remain in place, but abandoned of status under the Act.

0+510
- Repair existing berm to existing conditions. Existing 50m long berm to be incorporated. Seed berm.

0+511
- Construct 900 x 1500mm concrete DICB including connections and birdcage grate. Also includes removal of existing 600 x 600mm DICB (see Drawing 6).

Spero Holsteins Ltd. (Roll No. 040-00800)

0+511 to 0+697
- Install 186m of 600mm (24") dia. concrete tile with joint wrap.
- Existing 350mm (14") dia. concrete tile (1966) to remain in place, but abandoned of status under the Act.

0+697
- Construct 900 x 1500mm concrete JB, including connections and concrete top. Also includes removal of existing 600 x 600mm DICB (see Drawing 7).
- Existing berm to be removed. Spread material on downstream side of new JB.

0+697 to 0+857
- Install 160m of 600mm (24") dia. concrete tile with joint wrap
- Existing 350mm (14") dia. concrete tile (1966) to remain in place, but abandoned of status under the Act.

0+856
- Use existing partial berm to construct 75m long new berm (0.5m top width, 2:1 side slopes). Height of existing berm at proposed CB is at design elevation. Some existing sections above design elevation can be cut down to extend berm to design length. Seed berm.

0+857
- Construct 900 x 1500mm concrete DICB, including connections and birdcage grate. Also includes removal of existing 600 x 600mm CB (see Drawing 7).

Townsend Farms Inc. (Roll No. 040-02100)

0+857 to 1+075
- Install 218m of 600mm (24") dia. concrete tile with joint wrap
- Existing 350mm (14") dia. concrete tile (1966) to remain in place, but abandoned of status under the Act.

1+075
- Construct 900 x 1500mm concrete JB, including connections and concrete top. Also includes removal of existing 600 x 600mm DICB (see Drawing 7).
- Existing berm to be removed. Spread material around low areas. Rocks to be moved to berm at Sta. 1+260 unless other arrangements made with owner.

1+075 to 1+260
- Install 185m of 600mm (24") dia. concrete tile with joint wrap. Includes breaking up and burying existing 250mm dia. concrete tile (1901).

1+257
- Repair berm to existing conditions. Extend both ends of berm, 10m of west end and 16m on east end using 2 truckloads of imported clay material as per detail on Drawing 8. Seed berm.

1+260
- Construct 900 x 1200mm concrete CB including connections and birdcage grate. Also includes removal of existing 600 x 600mm DICB (see Drawing 8).

1+260 to 1+633
- Install 373m of 600mm (24") dia. concrete tile with joint wrap. Includes breaking up and burying existing 200/250mm dia. concrete tile (1901).

1+631
- Construct 30m of new berm as per detail (0.5m top width, 2:1 side slopes) (see Drawing 8). Seed berm.

1+633
- Construct 900 x 1200mm concrete CB including connections and birdcage grate. Also includes removal of existing 600 x 600mm CB (see Drawing 8).

Stiek Farms Inc. (Roll No. 040-02200)

1+633 to 1+833
- Install 200m of 600mm (24") dia. solid plastic pipe (HDPE). Includes breaking up and burying existing 200mm dia. clay tile (1901).

1+832
- Construct 30m of new berm as per detail (0.5m top width, 2:1 side slopes) (see Drawing 9). Seed berm.

1+833
- Construct 900 x 1200mm concrete CB, including connections and birdcage grate (see Drawing 9).

J. & B. Walton (Roll No. 040-01001)

1+835
- Incidental clearing of 1-2 trees for tile and CB installation. To be hauled away unless other arrangements made with owner

1+833 to 1+988
- Install 155m of 525mm (21") dia. solid plastic pipe (HDPE). Includes breaking up and burying existing 200mm dia. clay tile (1901).

1+984
- Construct 20m of new berm as per detail (0.5m top width, 2:1 side slopes) (see Drawing 10). Seed berm.

1+988
- Construct 900 x 1200mm concrete CB, including connections and birdcage grate. Also includes removal of existing 600 x 600mm CB (see Drawing 10).
- Incidental clearing of 1-2 trees for tile and CB installation. To be hauled away unless other arrangements made with owner.

Killcrest Farms Inc. (Roll No. 040-01100)

1+988 to 2+032
- Existing 200mm dia. clay tile (1901) to be abandoned in place. Tile to be capped on both ends and at 2+011 where new drain will cross through (see Drawing 10).
- Locate, expose and protect 4 Enbridge natural gas pipelines with extreme caution. Drain construction to proceed underneath of pipelines, consult Enbridge representative on site and additional notes on Drawing 10.
- Install 44m of 525mm dia. PVC pipe crossing beneath four (4) Enbridge Natural Gas Pipelines by open cut. See additional notes on Drawing 10 for bedding and backfill around drain and pipelines.
- Bedding & Backfill for this crossing as per OPSD 802.030. See additional notes on Drawing 10.

2+032
- Construct 900 x 1200mm concrete JB, including connections and concrete top.

2+032 to 2+136
- Install 104m of 525mm (21") dia. concrete tile with joint wrap. Includes breaking up and burying existing 200mm dia. clay tile (1901).

2+136
- Construct 900 x 1200mm concrete CB, including connections and birdcage grate. Also includes removal of existing 600x600mm CB (see Drawing 9).

2+136 to 2+166
- Install 30m of 400mm (16") dia. concrete tile with joint wrap. Includes breaking up and burying existing 175mm dia. clay tile (1901).

2+166
- Construct 900 x 1200mm concrete JB, including connections and concrete top – subject to shop drawings prepared by supplier (see Drawing 11). Contingency for steel lid may apply.

2+166 to 2+184
- Location of existing 175mm dia. clay tile unknown. Existing tile to be located outside pipelines, capped at each end and abandoned in place. If existing tile is in the location of the proposed drain then the tile is to be removed.
- Locate/daylight and protect three (3) Enbridge Pipelines Inc. (oil) pipelines with extreme caution as required by Enbridge

representative on site for drain to be constructed overtop. See Additional notes on Drawing 11.
- 18m of twin runs (2) of 300mm dia. PVC pipe crossing above three (3) Enbridge Oil Pipelines by open cut.
- Bedding to be 100mm granular A, backfill to be native material. See additional notes on Drawing 11.

2+184 - Construct 900 x 1200mm concrete JB, including connections and concrete top – subject to shop drawings prepared by supplier (see Drawing 11). Contingency for steel lid may apply.

2+184 to 2+437 - Install 253m of 300mm (12") dia. concrete tile with joint wrap. Includes breaking up and burying existing 175mm dia. clay tile (1901).

2+436 - Grade small (10m long x 100-150mm high) berm as per detail. Seed berm.

2+437 - Construct 600 x 600mm concrete CB, including connections and birdcage grate (see Drawing 9).
- Existing 175mm dia. clay tile to be abandoned in place upstream.

ii) BRANCH A

0+000 to 0+345 - See Drawing 4 and 13.

D. & J. Leiper (Roll No. 040-01900)

0+000 to 0+196 - No work required. Existing 190m of 200mm (8") dia. perforated plastic tubing and 6m of plastic outlet pipe to remain and to be incorporated as part of the Drain.

10th Line (Township of East Zorra-Tavistock)

0+196 - Construct 600 x 600mm concrete CB including placing salvaged existing rock, connections and birdcage grate, on west side of the road. Also includes removal of existing 600 x 600mm CB (see Drawing 13).
- Connect existing 200mm tile to new CB with 2m of 200mm dia. plastic tubing.

0+196 to 0+215 - Install 19m of 250mm (10") dia. solid plastic pipe (HDPE) across 10th Line by open cut including full granular backfill and road restoration (see Drawing 13 & detail on Drawing 17).
- Bedding & Backfill for this crossing:
  - Bedding to be 150mm granular A, shaped for pipe.
  - Pipe and excavation to be fully backfilled with granular B, compacted under haunches.
  - 150mm of granular A at road surface (see detail on Drawing 17).

0+215 - Construct 600 x 600mm concrete CB including 5m^2 riprap on geotextile, 8m stub of 200mm dia. HDPE, birdcage grate and connections on east side of road

S., L. & S. Killing and J. Vanryswick (Roll No. 040-03500)

0+215 to 0+345 - Install 130m of 250mm (10") dia. perforated plastic tubing

0+345 - Construct 600 x 600mm CB including birdcage grate and connections.
- Construct 10m of new berm as per detail (0.5m top width, 2:1 side slopes) (see Drawing 4). Seed berm.

iii) BRANCH B

Stiek Farms Inc. (Roll No. 040-02200)

0+000 to 0+080 - Install 80m of 350mm (14") dia. concrete tile with joint wrap.

0+080 to 0+347 - Install 267m of 375mm (15") dia. solid plastic pipe (HDPE).

0+347 - Construct 600 x 600mm JB including connections and concrete top.

0+347 to 0+737 - Install 390m of 350mm (14") dia. concrete tile with joint wrap.

0+390 & 0+478 - Remove two (2) existing tree stumps on drain alignment for installation of drain.

10th Line (Township of East Zorra-Tavistock)

0+737 - Construct 600 x 600mm concrete CB including 5m^2 riprap on geotextile, connections and birdcage grate, on west side of the road. Also includes removal of existing 600 x 600mm CB (see Drawing 13).
- Connect existing 100mm tiles (2) to new 100x100x150mm tee and connect to south wall of new CB with 150mm plastic tubing.

0+737 to 0+757 - Install 20m of 375mm (15") dia. solid plastic pipe (HDPE) across 10th Line by open cut including full granular backfill and road restoration (see Drawing 13 & detail on Drawing 17).
- Bedding & Backfill for this crossing:
  - Bedding to be 150mm granular A, shaped for pipe.
  - Pipe and excavation to be fully backfilled with granular B, compacted under haunches.
  - 150mm of granular A at road surface (see detail on Drawing 17).

0+757 - Construct 600 x 600mm concrete CB including 5m^2 riprap on geotextile, 2m stub of 250mm dia. HDPE, connections and birdcage grate, on east side of the road.

iv) BRANCH C

Killcrest Farms Inc. (Roll No. 040-01100)

0+000 to 0+192 - Install 192m of 300mm (12") dia. solid plastic pipe (HDPE).

Stiek Farms Inc. (Roll No. 040-02200)

0+192 to 0+324 - Install 132m of 300mm (12") dia. solid plastic pipe (HDPE).

0+324 - Construct 600 x 600mm concrete JB including connections and concrete top.

0+324 to 0+342 - Locate/daylight and protect three (3) Enbridge Pipelines Inc. (oil) pipelines with extreme caution as required by Enbridge representative on site for drain to be constructed overtop. See Additional notes on Drawing 12.
- Install 18m of twin runs (2) of 200mm PVC pipe crossing above three (3) Enbridge Oil Pipelines by open cut.
- Bedding to be 100mm granular A, backfill to be native material. See additional notes on Drawing 12.

0+342 - Construct 600 x 600mm concrete DICB, including birdcage grate and connections. Also includes removal of existing 600 x 600mm CB.
- Incidental clearing of 1 tree for tile and DICB installation. To be hauled away unless other arrangements made with owner.

300.2) CONSTRUCTION SPECIFICATIONS – GENERAL NOTES

1. Working Area

For a closed drain up to 2.5m deep the working area shall be a 12.5m width on either side of the trench or any combination not exceeding 25m.
For closed drains deeper than 2.5m the working area shall be increased to 30m.
Specifically, this includes the HDPE/PVC pipe installation in the following areas:

- Main Drain: Stiek Farms Inc. (Sta. 1+633 to 1+832)
- Main Drain: J. & B. Walton (Sta. 1+832 to 1+988)
- Main Drain: Killcrest Farms Inc. (Trafalgar Line Crossing)
- Branch B: Stiek farms Inc. (Sta. 0+125± to 0+250±)
- Branch C: Killcrest Farms Inc. (Sta. 0+075 to 0+192 ±)

2. Access

Access to the working area shall be from road allowances and as designated on the drawings and/or specific notes. No other access routes shall be used unless first approved by the Engineer and the affected landowner. Specifications related to construction will apply to the access routes. Contractor shall make good any damages caused by using the designated access routes. The Contractor shall contact each owner prior to commencing construction on each property.

Roll No.	Owner	Phone No.
040-00800	Spero Holsteins Ltd.	
040-01001	J. & B. Walton	**To Be**
040-01100	Killcrest Farms Inc.	**Provided at**
040-01900	D. & J. Leiper	**Pre-Construction**
040-02100	Townsend Farms Inc.	**Meeting**
040-02200 & 040-03800	Stiek Farms Inc.	
040-02300	D. & K. Dodd	
040-03500	S., L. & S. Killing and J. VanRyswyck	
	Enbridge Gas Inc.	519-683-4468
	Enbridge Pipelines Inc.	519-332-4707
	Twp of East Zorra-Tavistock	519-462-2697
Engineer	Curtis MacIntyre, P.Eng. (KSAL)	office and cellphone: 519-748-1199 x252

3. Pre and Post Construction Meetings

The Contractor may be required to attend pre-and post-construction site meetings with the Engineer and landowners before starting and after finishing the work if requested.

4. Pre-locates

Cross trenches to be dug along entire length of Main Drain route at 100 to 200m intervals (minimum) prior to commencing construction so that true alignment of new drain may be established alongside existing drain without cutting off private lateral tiles. The frequency of pre-locating will depend on the alignment of the existing drains. More pre-locates will be necessary in a meandering route than in a route that is consistently straight.

5. Tile Drain Work

Refer to Specific Notes and 420 – Standard Specifications for Tile Drains.

TYPICAL NOTES FOR EACH NEW TILE LENGTH

1. Maintain all existing headers. Locate as part of *"4. Pre-locates"*

2. Ensure any connections to the old drain are connected/outletted to the new drain. All intercepted lateral tile are to be flagged so the Engineer can GPS.
3. On straight runs, ensure tile joints are parallel (maximum 12mm (½") gap), and tile wrap is flat, covers joint evenly and has overlap.
4. On curved runs, ensure tile joints are touching on one side with maximum gap of 12mm (½") on opposite side. Bevel cut tile or use elbow sections where curves are greater. Tile wrap to be flat, cover joints evenly and have overlap.
5. Test holes completed during design indicate very few stones will be encountered and that trench bottom conditions should be generally good throughout. As a result, tender prices for new tile are to be submitted for installation by tiling machine, except for portions of proposed HDPE/PVC pipe.
6. If stones however are found after doing the tile locate work and/or at the time of installation, of such size and or at such depths, or if soft or unstable soils are found at invert grade, that make backhoe methods necessary vs tiling machine usage, the contingency rates (either with or without stone bedding) will be applied.

6. Concrete Tile Installation

New tile to be installed by tiling (wheel) machine with joints tightly wrapped and topsoils to be separately stripped and replaced to width of machine plus width of spoil pile. For further materials information, refer to Standard Specification for Construction of Drains, Section 400.15.1. For information regarding installation procedure of concrete tile, refer to Standard Specification for Tile Drains, Section 420.3.5.1.

If backhoe methods are approved by engineer, the following shall be attended to: additional topsoils may need to be stripped and replaced, a shaped bottom to be provided and careful tamping around the tile is necessary. Final excavation to grade to be by hand and a shaped bottom to be provided. The Engineer may require a thin lift of stone bedding also as part of usage of backhoe if the native ground/shaped bottom is not satisfactory for long term integrity of the tile.

7. Solid Plastic Pipe or High Density Polyethylene Pipe (HDPE)

Solid plastic pipe to be high density polyethylene (HDPE) double wall (corrugated on the outside and smooth wall on the inside), such as BOSS 2000 Series 320 kPa or equal. Pipe material shall conform to CSA B182.8. Refer to Standard Specification for Tile Drains, Section 420.3.5.3 for installation on plastic pipe.

8. Tile Connections

The Contractor is to verify with each owner prior to starting, any systematic drainage scheme existing on each property and is to make provisions for connecting all headers and laterals.

All subsurface drainage tile encountered along the route of the proposed closed drain are to be connected up to the new drain if the intercepted tile are clean and do not contain polluted water.

All tile connections are to be flagged by the Contractor so the Engineer can GPS the location for future reference. The payment for connections is to be as set out in the tender form.

Refer to Standard Specification of Tile Drains, Section 420.3.7 for further information on tile connections.

9. Outlet Pipe

The outlet pipes specified in this report shall have rodent gates secured to them. The rodent gate shall be free moving and as supplied by Coldstream Concrete Products Ltd. or equal. The outlet pipe shall protrude no more than 1.0 metre from the bank and filter fabric and riprap shall be placed around and below the outlet pipe and into the channel bottom, with such riprap being set to be flush with the bank on either side. The discharge from the outlet pipe shall land on the riprap. Outlet pipes are to be a minimum of 6m in length and are to be desirably HDPE plastic pipe Series 210 with equal or larger diameter than the concrete tile.

10. Catchbasins and Junction Boxes

Catchbasins shall have secured grates and marker stakes. Grates are to be birdcage grates as manufactured by Coldstream Concrete or approved equal, unless otherwise specified in the Specific Notes. All grates are to be secured with non-corrosive fasteners. Marker stakes as supplied by Coldstream Concrete or equal are to be placed beside each catchbasin.
Backfill around all new catchbasins and junction boxes is recommended to be compacted 19mm clear crushed stone to avoid future settlements and Contractor obligations to repair such and to ensure connected tile has granular backfill.
All catchbasin sumps to be fully cleaned by the Contractor after completion of drain installation and backfilling.

Refer to Standard Specification for Tile Drains, Section 420.3.13 and 420.3.14 for more details.

11. Utilities

The Contractor shall arrange with all local utility companies (telephone, gas, hydro) to verify the location of all utilities within road allowances and 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.

Prior to construction, coordination with the engineer will be required to complete the necessary permitting paperwork for Enbridge pipeline crossings and Hydro One transmission line corridor encroachment.

12. Seeding of Non-Lawn Areas

For seeding use mechanical (cyclone) spreader (or approved equal) and the following shall apply:
Seed mixture to be applied at 60kg/ha and to be as follows:
i) Ditch banks and roadside ditches
35% Creeping Red Fescue
25% Birdsfoot Trefoil
25% Kentucky Bluegrass
10% Cover Crop (Oats, Rye, Barley, Wheat)
5% White Clover

To provide temporary cover for late fall planting add as additional 10 kg/ha of rye or winter wheat. Areas that remain grassed after excavation may not need to be seeded as directed by the Engineer.
Contractor responsible for additional seeding to provide uniform catch during one year maintenance period.

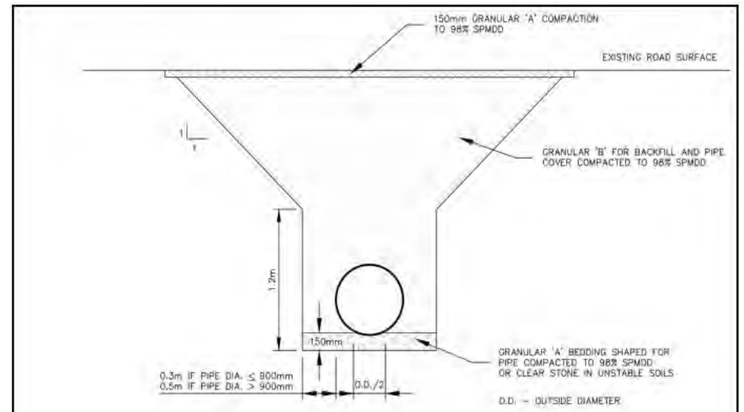
13. Open Cut Road Crossings (Township Roads)

The Road Authority is to be given 72 hours' notice of construction within their right-of-way. Proper detour signing in accordance with MTO signing manual to be used where roads are closed or restricted. Contractor is responsible to repair any settlement which occurs within warranty period. The location of the road crossing shall be confirmed with the Engineer and Road Authority prior to excavation. The Trench Detail on this drawing and the special construction notes shall also apply. If the Road Authority requires granular rather than native material backfill where native is allowed on the Trench Detail, additional payment will be allowed. Where granular is shown to be required, such is to be included as part of the tender. All surplus materials are to be hauled away. In the boulevards, topsoils shall be separately stripped and replaced. Seeding is required. All backfill to be compacted to 98% S.P.D. Pipe materials are to be as noted in the specific construction notes. All old crossings are to be located, removed and disposed of. If so noted, some may remain but are to be fully sealed with pumped concrete as part of the tender.

14. <u>Subsoil Instability</u>

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 weight tickets and the suppliers invoice.

The test hole investigation completed generally did not identify areas of unstable subsoils, with the possible exception of the top end of the Main Drain (Killcrest Farms Inc. property – Testhole #5) & top end of Branch B (Stiek Farms Inc. – Testhole #7). Refer to Drawings 18-21 for photos and descriptions of test holes.



OPEN CUT ROAD CROSSING DETAIL

NOT TO SCALE

NOTES:
1. BACKFILL AND COMPACTION REQUIREMENTS ALSO APPLY BEYOND THE SHOULDER AT A 1:1 SLOPE DOWN TO THE BOTTOM OF TRENCH EXCAVATION.
2. NEW FROST TAPER NOT REQUIRED UNLESS REQUESTED AT TIME OF CONSTRUCTION. BLEND INTO EXISTING TAPERS. IF REQUIRED, TAPERS TO BE IN ACCORDANCE WITH OPSD 803.03 AND ADDITIONAL PAYMENT WILL BE ALLOWED.
3. ALL SURPLUS EXCAVATED MATERIAL TO BE HAULED AWAY.
4. ASPHALT SHALL COMPLY WITH APPLICABLE OPSS MATERIAL SPECIFICATIONS.

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
KITCHENER SUDBURY

DETAIL DRAWING NO.
SD-13

PARKER DRAIN - TEST HOLE INVESTIGATION
TOWNSHIP OF EAST ZORRA-TAVISTOCK

MAP

TEST HOLE 1 – LEIPER FARM – NEAR PROPOSED TILE DRAIN OUTLET (STA. 0+215)

- Topsoil depth ~ 500mm
- 0.5 – 1.1m: silty loam material (brown)
- 1.1 – 1.8m: sandy clay material (grey) – this layer is stoney
- No water
- Trench walls holding well

TEST HOLE 2 – SPERO HOLSTEINS LTD. – (~STA. 0+635)

- Topsoil depth ~ 400mm
- 0.4 – 1.8m: sandy clay material for full trench
- Stoney conditions start at a depth of approx. 0.75m and below
- Relatively dry
- Trench walls holding well

TEST HOLE 3 – TOWNSEND FARMS INC. #1 – (~STA. 0+870)

- Topsoil depth ~ 500-600mm
- 0.6 – 1.8m: silty loam material (brown)
- 1.8 – 2.0m: clay
- No water, no stones
- Trench walls holding well

TEST HOLE 4 – TOWNSEND FARMS INC. #2 – ALONGSIDE BUSH AREA (~STA. 1+525)

- Topsoil depth ~ 200-250mm
- 0.2 – 1.9m: mix of sandy clay (grey/brown)
- No water, no stones
- Trench walls holding well

TEST HOLE 5 – KILLCREST FARMS INC. – (~STA. 2+125)

- Topsoil depth ~ 300mm
- 0.3 – 2.1m: sandy clay material (brown)
- Stoney conditions start at a depth of approx. 1.2m and below
- Soils are damp and some shearing of trench walls occurring
- Trench walls holding okay

TEST HOLE 6 – STIEK FARMS INC. #1 – (~STA. 0+324 Branch C)

- Topsoil depth ~ 450-500mm
- 0.45 – 0.9m: silty clay material (grey)
- 0.9 – 1.5m: sandy clay material (brown) – this layer is damp/moist but water not filling in trench
- No stones

TEST HOLE 7 – STIEK FARMS INC. #2 – (~STA. 0+737 BRANCH B)

- Topsoil depth ~ 450mm
- 0.45 – 1.5m: mix of grey-brown sandy clay – this layer is saturated
- 1.5m +: wet sand – starting to slump at bottom of trench
- No stones

Community Planning
P. O. Box 1614, 21 Reeve Street
Woodstock Ontario N4S 7Y3
Phone: 519-539-9800 • Fax: 519-421-4712
Web site: www.oxfordcounty.ca

Our File: **A01-22**

APPLICATION FOR MINOR VARIANCE

TO: Township of East Zorra-Tavistock Committee of Adjustment
MEETING: March 2, 2022
REPORT NUMBER: 2022-87

OWNERS/APPLICANTS: Dirk & Anne Reyneveld
496953 10th Line, RR #2, Tavistock, ON N0B 2R0

VARIANCES REQUESTED:

1. Relief from the provisions of **Section 7.2.4 Number of Accessory Dwellings and Garden Suites Per Lot**; to permit the establishment of a second accessory single detached dwelling; and,

2. Relief from the provisions of **Section 7.2.6 Location of New of Enlarged Farm Dwellings**; to permit a reduction to the required MDS 1 setback from 625 m (2,050.5 ft) and 290 m (951.4 ft) to 250 m (820.2 ft).

LOCATION:

The subject property is legally described as Lot 32, Concession 9 (East Zorra), Township of East Zorra-Tavistock. The property is located on the west side of 10th Line and the east side of Zorra/East Zorra-Tavistock, lying between Maplewood Sideroad and Perth-Oxford Road and is municipally known as 496953 10th Line.

BACKGROUND INFORMATION:

COUNTY OF OXFORD OFFICIAL PLAN:

Schedule 'E-1'	Township of East Zorra-Tavistock Land Use Plan	Agricultural Reserve

TOWNSHIP OF EAST ZORRA-TAVISTOCK ZONING BY-LAW:

General Agricultural Zone (A2)

COMMENTS:

(a) Purpose of the Application:

The applicants are requesting relief from the above-noted provisions of the Township Zoning By-law to permit the construction of a second, permanent single detached dwelling, accessory to an existing cash crop and a 120-head cattle operation (70 milking cow and 50 non-milking cows). It is proposed that the second dwelling will be occupied by the applicants' nephew, who is associated with the farm operation.

The applicants are also requesting relief to the required Minimum Distance Separation I (MDS I) formulae from two (2) surrounding livestock operations. Based on MDS I calculations, a setback of 625 m (2,050.5 ft) is required to the operation to the north of the subject lands at 496989 10th Line while a setback of 290 m (951.4 ft) m is required to the operation to the east of the subject lands at 496928 10th Line. The applicants are requesting a reduction to the required MDS I setbacks to allow for a setback of 250 m (820.2 ft).

The subject lands are approximately 83.8 ha (207 ac) in area, with approximately 615 m (2,017.7 ft) of frontage along 10th Line and approximately 612 m (2,007.8 ft) of frontage along Zorra/East-Zorra-Tavistock Line. The subject lands contain a drive shed, a cattle barn, a chicken coop, and a single detached dwelling accessory to the farm. Additionally, there is also a mobile home on the lands.

The existing mobile home was originally approved through Variance Application A03-97 for a period of five (5) years. Since that initial approval, the applicants have had to reapply to extend permission for the mobile home to remain on-site. Additional approvals have occurred in 2002 (A11-02), 2007 (A09-07), and 2012 (A06-12). The applicants are proposing to remove the mobile home as the proposed dwelling would be used permanently instead.

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

Plate 2A, Existing Zoning & Aerial Map, provides an aerial view of the subject lands.

Plate 2B, Existing Zoning & Aerial Map (Zoomed In), provides a zoomed in aerial view of the subject lands.

Plate 3, Applicants' Sketch, shows the details of the existing and proposed buildings on the subject lands, as provided by the applicants.

(b) Agency Comments

This application was circulated to those agencies considered to have an interest in the proposal. The following comment was received.

The Township Chief Building Official has indicated that confirmation of adequate well water supply is required or new well is to be installed for new dwelling.

The Township Fire Chief, the Township Director of Public Works have indicated they have no comments or concerns with the proposal.

(c) Public Comments

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 lands are designated as Agricultural Reserve, according to the Land Use Plan for the Township of East Zorra-Tavistock, as contained in the County Official Plan.

Within the Agricultural Reserve designation, lands are to be developed for a wide variety of agricultural land uses, including general farming and cash crop farms, together with farm buildings and structures necessary to the farming operation, including accessory residential uses required for the farm.

It is an objective of the Official Plan to permit the development of on-farm dwellings only where they are required to support the farm activity and to ensure that new dwellings will only be established for people associated with the farm activity.

The Official Plan does permit additional residential units associated with a farm operation in the form of temporary dwellings (such as mobile or modular homes) and permanent detached dwellings, provided they satisfy a number of criteria outlined in Section 3.1.4.5 of the Plan.

Specifically, this Section provides that Township Council shall be satisfied of the following;

- The type of farm warrants the need for an additional dwelling unit in terms of requiring close proximity for farm personnel for the farm operations;
- The size and scale of the farm unit in terms of land area and livestock or poultry currently warrants the need for an additional dwelling unit;
- The size of the farm parcel is in keeping with the policies of the Official Plan and the provisions of the Township Zoning By-law;
- The number of existing farm-related dwellings already on the farm unit cannot adequately serve the needs of the farm operation;
- The principal farm dwelling unit is occupied by the farmer, a retired farmer, or hired help or family members directly involved with the farming activity, and;
- The additional dwelling unit is demonstrated to be necessary for hired help or family members directly involved with the farming activity or is required for farm retirees.

The Plan further states that where a proposed additional farm dwelling is intended to be a permanent dwelling unit, the new dwelling will be located in close proximity to the existing dwelling unit and farm buildings, and will be encouraged to use the existing driveway for access, except in instances where farm safety issues would be better addressed by a separate access. Further, permanent dwellings are required to satisfy the Minimum Distance Separation I (MDS I) requirement.

The subject lands are currently in agricultural production (cash crop) and contain a cattle operation that houses approximately 120 head of cattle. Planning staff are of the opinion that the current farm operation (type, size, and scale) appears to have a legitimate need for the second accessory single detached dwelling. The size of the farm (83.8 ha (207 ac)) and the number and type of livestock (cattle) appear to warrant additional resources for farming help.

Staff also note that as the existing mobile home, which is to be removed, has been approved to be extended every five (5) years it has been proven that the additional dwelling has been

necessary for farm help. Given this, and given the fact that the landowners are continuing to age, Staff believe that there is merit in allowing a permanent second dwelling for on-site farm help. The second single detached dwelling will be occupied by the landowners' nephew, who is involved in the day-to-day operations of the farm.

It is the opinion of Planning staff that the application generally complies with the criteria outlined in Section 3.1.4.5 of the Official Plan as the applicants have demonstrated that the farming operation warrants a second dwelling, the proposed dwelling will be occupied by a family member involved with the farming operation, and the proposed dwelling will be located in close proximity to the existing buildings on the property and will be accessed by a shared driveway. Given this, staff are of the opinion that the proposal is in keeping with the policy direction of the Official Plan.

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

The subject lands are zoned 'General Agricultural Zone (A2)' in the Township of East Zorra-Tavistock Zoning By-Law 2003-18. The 'A2' zone permits a range of agricultural uses, including livestock and regulated farm operations, as well as buildings and structures accessory thereto.

Section 7.2.8 of the Zoning By-Law states that a maximum of one (1) single detached dwelling is permitted on an 'A2' zone, except that a maximum of three (3) accessory single detached dwellings may be permitted on a farm or regulated farm, subject to approval of the Committee of Adjustment. The intent of this provision is to ensure that dwellings located on a farm or regulated farm are necessary for the scale and type of operation and will be directly associated with the farming operation.

As the proposed dwelling will be occupied by a family member that is directly involved in the farming operation and the scale and size of the farming operation warrants a second dwelling, Staff believe that the proposal complies with the intent of the Zoning By-law in this regard.

Section 7.2.6 provides that new farm dwellings shall be required to satisfy the Minimum Distance Separation (MDS I) requirements, or not further reduce an existing insufficient setback. The purpose of the MDS I setbacks is to ensure that there is adequate distance between proposed sensitive uses, such as a dwelling, and existing livestock operations within the vicinity.

The existing single detached dwelling on the subject lands currently maintains a setback from the livestock operation at 496928 10th Line of approximately 228 m (748 ft) while the mobile home has a setback from the livestock operation at 496989 10th Line of approximately 372 m (1,220.4 ft). The proposed second dwelling's setback of 250 m (820.2 ft) would be further from the livestock facility 496928 10th Line than the existing dwelling on the subject lands. While the proposal would be adding another sensitive use that is deficient of the required MDS setbacks from the livestock facility, it would not be introducing a new constraint to the expansion of that facility that does not already exist. In regards to the livestock operation at 496989 10th Line, the location of the proposed second dwelling would be further setback from the operation than the current mobile home is, thus improving the separation between the two uses.

Planning staff are generally of the opinion that approval of the applicant's request to construct a new single detached dwelling is not anticipated to create additional land use conflicts with respect to odour, beyond what currently exists in the immediate vicinity, and as such the application is in keeping with the overall intent of the Township Zoning By-law

(f) Desirable Development:

The Official Plan provides in Section 10.3.6 that the Committee of Adjustment shall take the following into account when considering if a variance is desirable;

- whether constraints and/or restrictions to meeting the requirements of the Zoning By-law due to the physical or inherent conditions of the site are involved;
- whether alternative designs of the proposal which would be in conformity with the relevant By-law are clearly not feasible or appropriate for the site;
- the concerns of the effect on adjacent owners, residents and community in general have been considered;
- the approval of the minor variance would not create an undesirable precedent, and;
- that compliance with the standards of the relevant By-law would be unreasonable or impossible and would impose an undue hardship on the applicant.

The proposed second single detached dwelling will replace an existing mobile home that has existed on the property for approximately fifteen (15) years although it would be in a different location. The proposal represents a continuation of the existing use on the property and is not anticipated to have any negative adverse impacts on surrounding neighbours. It is Planning staff's opinion that the applicant has demonstrated a need for the additional dwelling unit and the proposal to replace the existing mobile home with a single detached dwelling, in the location of shown on Plate 3, is appropriate and desirable for the development of the land.

In light of the foregoing, Planning staff are satisfied that requested relief to replace the existing mobile home with a permanent single detached dwelling is in-keeping with the general intent and purpose of the County Official Plan and Township Zoning By-Law, is minor in nature, is desirable for the development of the land, and can be given favourable consideration.

RECOMMENDATION:

That the Township of East Zorra-Tavistock Committee of Adjustment **approve** Application File A01-22, submitted by Dirk and Anne Reneveld for lands described as Part Lot 32, Concession 9 (East Zorra), in the Township of East Zorra-Tavistock as it relates to:

1. Relief from the provisions of **Section 7.2.4 Number of Accessory Dwellings and Garden Suites Per Lot**; to permit the establishment of a second accessory single detached dwelling; and,

2. Relief from the provisions of **Section 7.2.6 Location of New of Enlarged Farm Dwellings**; to permit a reduction to the required MDS 1 setback from 625 m (2,050.5 ft) and 290 m (951.4 ft) to 250 m (820.2 ft).

    a. The requested relief shall apply to permit the construction of a single detached dwelling that is generally consistent with the location shown on Plate 3 of Report No. 2022-87.

As the proposed variances are considered to be:

i) in keeping with the general intent and purpose of the County's Official Plan;
ii) minor variances 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: Existing Zoning & Location Map
File No.: A01-22 - Reyneveld
Lot 32, Concession 9 (East Zorra) - 496953 10th Line, 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

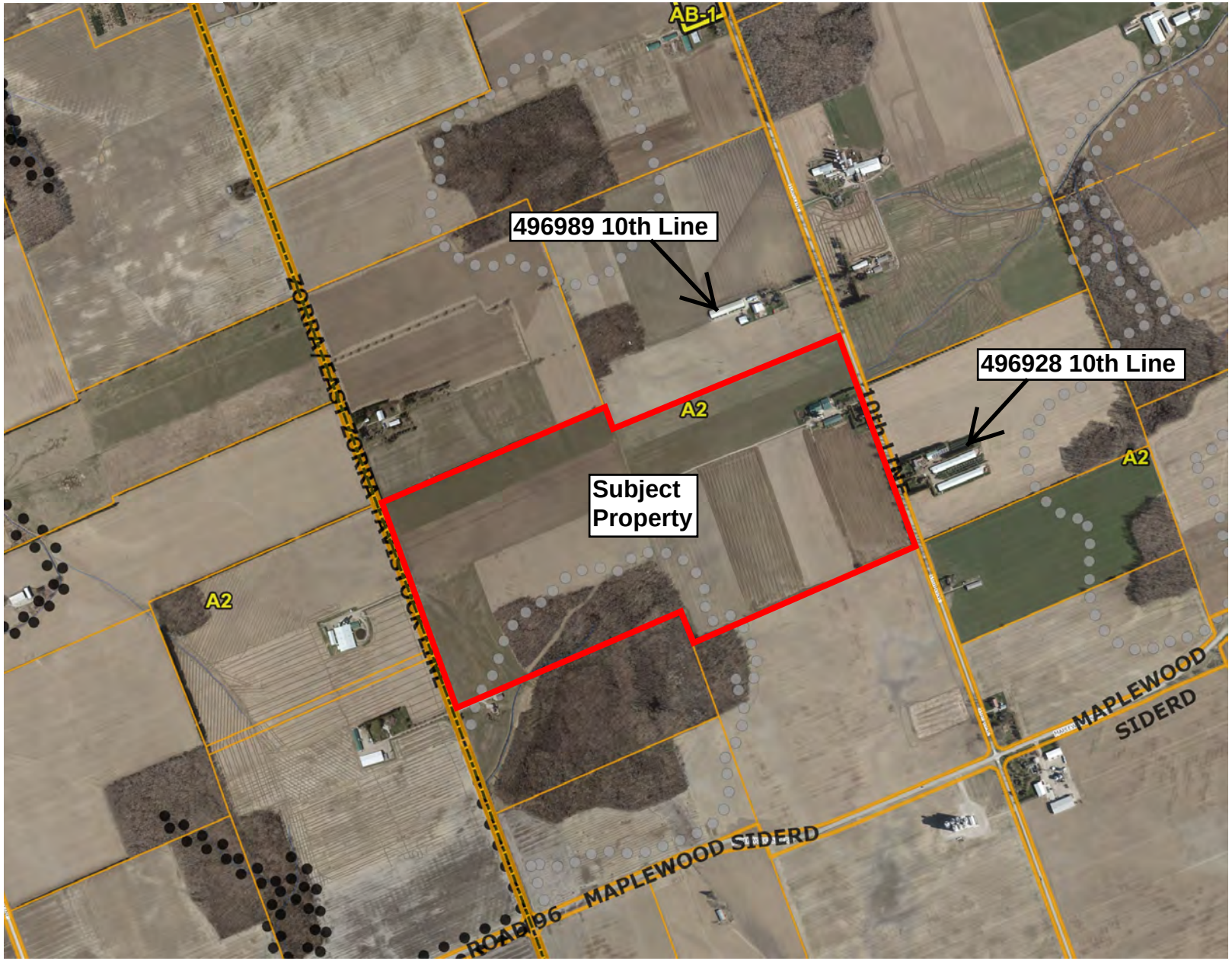
0 409 818 Meters

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

February 16, 2022

Plate 2A: Existing Zoning & Aerial Map
File No.: A01-22 - Reyneveld
Lot 32, Concession 9 (East Zorra) - 496953 10th Line, 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

0 409 818 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

February 16, 2022

Plate 2B: Existing Zoning & Aerial Map (Zoomed In)
File No.: A01-22 - Reyneveld
Lot 32, Concession 9 (East Zorra) - 496953 10th Line, 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

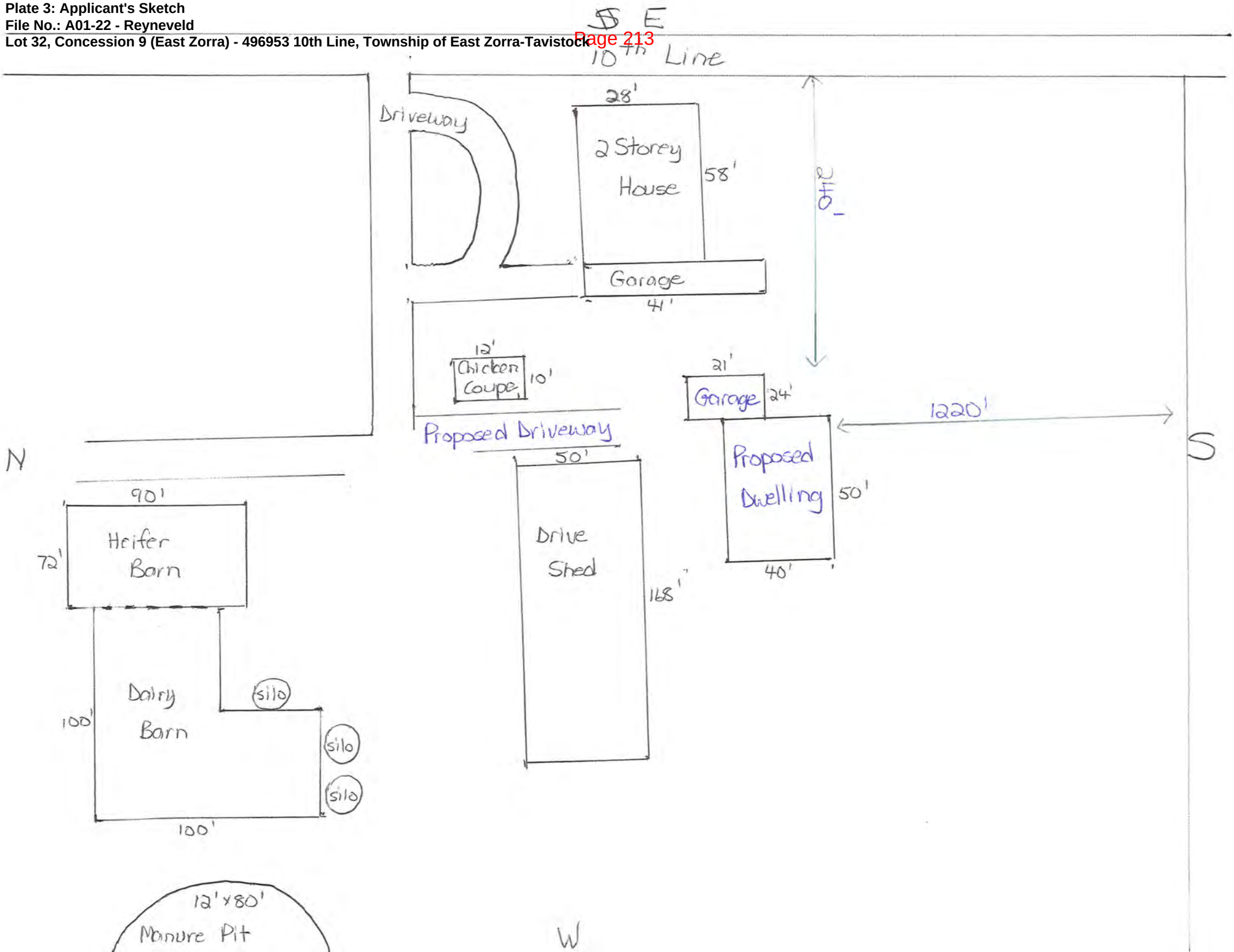
0 51 102 Meters

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

February 16, 2022

Plate 3: Applicant's Sketch
File No.: A01-22 - Reyneveld
Lot 32, Concession 9 (East Zorra) - 496953 10th Line, Township of East Zorra-Tavistock



#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

Hickson Trail Committee for 22 Feb. 2022
Zoom Meeting, 7 p.m.

Present: James Bond, Markley Bond, Scott Rudy, Sharron Skevington, Richard Skevington, Mike Kijewski, Karen DePrest, Lloyd Hatfield, Diane Hatfield, and Ross Campbell.
Regrets: Neil Langlois, Ted Douglas, and Will Jacques

Chair (James Bond):
I would like to thank all the members of this committee for all the hard work they have contributed to the construction and maintenance of the Hickson Trail over the past years, and I apologize for not being as active as I would have wished over the past year and a half. Please note, at the close of this meeting, I will be stepping away from this committee due to health concerns.

You will have noticed that there was no agenda sent with the zoom link to this meeting as there is only one item up for discussion, i.e., the future of this committee.

The Hickson trail committee was originally formed in 2014 at the request of EZT to collect donations, hire contractors and open the old rail bed between Braemar Road and Hickson as a hiking trail. The committee, having completed this task, then continued to maintain the entire trail from Woodstock to Hickson as part of EZT Township's recreational opportunities. At this time EZT is waiting for the final report from Stantec on all recreation in the township so now would be the ideal time to make a change.

With most of the members now well into our 70s and the need for heavier work maintenance with dead trees, drainage, and repair to bridge surfaces now getting beyond the capacity of many in this volunteer group it is time to re-evaluate the committee's goals.

Open discussion

Richard: Feels we have reached our goal of re-opening the trail.

Ross: Agrees with Richard. He was concerned about steel bars being put in Jim Mason's cornfield. He feels it is totally up to Township, not Committee or EZT staff to solve these issues and money spent on trails is a high priority.

Karen: Speaking as Treasurer assures Committee that the money donated to the Trail will always only be used for the Trail. As CAO she mentioned that the top passive leisure activity in EZT is our Trail. The Committee has done a great job.

Scott: Council and Staff appreciate work and reports from Committee. He would like to see input from Committee members in the future.

Karen: She has found a 1988 Master Plan that suggested an Advisory Committee. We need to see the new Master Plan that the consultant, Stantec, will present to the Township, and to see the Council's reaction, but she thought an Advisory Committee, at that point, would be helpful to Council and Staff.

Richard: Walked, with someone from Woodstock, a possible trail to extend Woodstock's portion of the Hickson Trail. None of this would cost Hickson Trail any money but would benefit everyone in the area.

Call for Vote:
Sharron moved "That the current Hickson Trail Committee be immediately disbanded and that all documents, finances, equipment and maintenance duties of this committee be taken over by township staff to be reorganized by EZT as they find necessary." Seconded by Lloyd.

Richard: Wanted to make it clear that Neil Langlois and Ted Douglas, in particular, have been carrying the weight of cleaning up the trail for the past couple of years, at least. Karen made it clear she would be contacting these men to see if they would stay as volunteers on the trail under the direction of the EZT staff, likely Tom Lightfoot.

Vote: Passed unanimously.

Chair expressed thanks, again, for Neil, Ted, Lloyd and Diane's work on the trail.

Markley asked Karen for details about what to do with minutes, our Facebook page, and our Webpage. Facebook page and Webpage will be transferred to Meaghan Vader, Corporate Initiatives Officer. Also, there is a couple of pieces of equipment to hand over to the Township if not being used for the Trail.

James closed the meeting by thanking the Committee, again, for its hard work over the last 8 years, including the Township staff, Karen, Will and Tom.

#6.e

STAFF REPORT

[redacted] Report #HRSC2022-01

To: His Worship the Mayor and Members of Council

From: Jennifer Albrecht, Human Resources and Safety Coordinator

Subject: HR Update - Statutory Holiday Policy/ Travel Allowance Policy

Date: February 23, 2022

Background:

The Township's Human Resources (HR) policies are updated and reviewed from time to time and when new regulations or situations arise then, if needed, a policy is brought forth to be added or reviewed for updates.

Discussion:

Staff is bringing forward an updated Policy #4.03 - Statutory Holiday Policy, for Council's consideration. This policy has been revised to address a few housekeeping items, and it also proposes changes to vacation hours used to cover the Christmas office closure.

In accordance with Employment Standards Act, staff are given twelve statutory holidays throughout the year. Please see the list in the attached Policy #4.03. It is the current practice with the office staff to have the flexibility to keep the office open on both Easter Monday and Remembrance Day. It is proposed that, beginning this year, this practice be discontinued and have the office remain closed on those dates.

Further to that, the revisions in the policy also refer to Item 1(a) which previously stated "whereby an employee is not entitled to statutory pay unless they have completed their probationary period". Staff is recommending that this be removed as the current practice is that new employees do receive statutory holiday pay without waiting the 6 month probationary period.

For further clarification regarding the timing of when a statutory holiday is to take place, Item 1 (d) now states, "If any of the above holidays fall on a Saturday, the employer shall establish the Friday prior to the holiday as the day to be observed as the holiday. If the holiday should fall on a Sunday, the employer shall establish the Monday following the holiday to be observed". The previous wording did not establish using Friday as the holiday for situations when the date fell on a Saturday.

In addition to these revisions, Staff is also proposing that the afternoon of both December 24th and 31st be considered as paid time off for all employees. Traditionally Township employees have used vacation time to cover off this time. On average, employees need to allocate 3.5 vacation days to cover the holiday office closure. These two afternoons would reduce the vacation requirement to 2.5 days.

A survey of neighbouring municipalities has illustrated that each office is unique as to how they handle the Christmas closure, with only one staying open and allowing the closure only for the 25th and 26th. Other municipalities offer paid time for the half days on the 24th and 31st, while a few are also paid the full week as statutory holiday pay.

Council will observe that the date of September 30 (the National Day of Truth and Reconciliation) is not listed as it has yet to be declared a Provincial statutory holiday. Should this situation change, there will be a revision to the list of statutory holidays as shown in Appendix 'A'.

Also included in this report is the updated Travel Allowance Policy #2.12. The 2022 CRA mileage rate has increased to $.61 per km. Historically the Township has always followed the recommended guidelines of the CRA for mileage.

Attachment:

1. Appendix 'A' - Policy #4.03 - Statutory Holiday Policy
2. Appendix 'B' - Policy #2.12 – Travel Allowance Policy

Recommendations:

1. That Council approve the updated Policy # 4.03 Statutory Holiday Policy, as attached to Staff Report #HRSC2022-01.

2. That Council approve the updated Policy # 2.12 Travel Allowance Policy, as attached to Staff Report #HRSC2022-01

Reviewed by:

Karen DePrest
Chief Administrative Officer

Report Prepared and Submitted by:

Jennifer Albrecht
Human Resources and Safety Coordinator

Township of East Zorra-Tavistock

Human Resources Manual

Title: Statutory Holidays	
Section: Personnel Policies	Number: 4.03
Version: 3.0	Review Frequency: as required
Approved by: Council	Approval Date: 2022-03-02
Application: Applies to all Township employees	
Notes: Housekeeping items	

PURPOSE

The following policy outlines the provisions for statutory holidays for Township employees.

PROCEDURE

1) Full-time Employees

a) All full-time employees shall receive the following holidays with pay:
   - i) New Year's Day
   - ii) Family Day
   - iii) Good Friday
   - iv) Easter Sunday
   - v) Victoria Day
   - vi) Canada Day
   - vii) Civic Holiday
   - viii) Labour Day
   - ix) Thanksgiving Day
   - x) Remembrance Day
   - xi) Christmas Day
   - xii) Boxing Day

b) Holiday pay will be computed on the basis of the number of hours the employee would otherwise have worked had there been no holiday at their regular straight time rate of pay.

c) In order to qualify for the holiday pay the employee must work their full scheduled shift immediately preceding and immediately following the holiday concerned,

unless absence is due to sickness, vacation or approved leave of absence.

d) All of the above mentioned holidays shall be observed with the closure of the municipal office and public works shops.

e) If any of the above holidays fall on a Saturday, the employer shall establish the Friday prior to the holiday as the day to be observed as the holiday. If the holiday should fall on a Sunday, the employer shall establish the Monday following the holiday to be observed.

f) Employees shall be paid at their regular rate of statutory holiday pay to for the afternoon of December 24th, and December 31st.

g) Any employee required to work on a holiday will be paid at the rate of time and one-half their regular straight time rate of pay for all authorized work performed on such a day in addition to whatever holiday pay to which they may be entitled.

2) Part-time, Contract, Temporary Employees

a) Part-time employees are eligible for payment for the Statutory Holidays as set out in the Employment Standards Act.

b) Volunteer Firefighters are not eligible for Statutory Holiday Pay.

Township of East Zorra-Tavistock

Human Resources Manual

Title: Travel Allowance Policy	
Section: Personnel Policies	Number: 2.12
Version: 1.11	Review Frequency: as required
Approved by: Council	Approval Date: 2006-01-01
Application: Employees, Council and Police Services Board	
Notes: January 6, 2017 updated 2017 rate June 1, 2019 updated 2019 rate March 4, 2020 updated 2020 rate Jan 18, 2021 no change to rate February 3, 2022 updated 2022 rate	

PURPOSE

The purpose of the Travel Allowance Policy is to set out the travel allowance rate and provisions for Council, Police Services Board and Staff.

PROCEDURE

1. The Township uses the federal government travel allowance rate. The rate is to be updated each January for the current year.

   2022 Rate is $0.61/km as per

Historical Rate Information
2020/2021 Rate is $0.59/km
2019 Rate is $0.58/km
2018 Rate is $0.55/km
2017 Rate is $0.54/km as per

2. The per km rate is applied as follows:
    a. For Township employees while attending to Township business that requires use of their personal vehicle.
    b. Employees must log the date, distance travelled, location travelled to and reason for the travel.
    c. Parking or toll charges are to be reimbursed upon presentation of receipts.
    d. Re-imbursement is made through payroll processing, upon submission of appropriate documentation

3. This policy does not apply to those provided with a Township vehicle.

4. The per km rate does not apply to Councillors for travel to/from Council, Committee Meetings and other meetings, events, seminars, etc. inside the Township. Travel outside the Township would be calculated from the Councillors residence and must exceed 30 km (one way) before being eligible for payment.

5. Tickets due to violation of any traffic or parking regulations will not be reimbursed.

6. The travel allowance applies while attending conferences, seminars, training courses or meetings. Employees with a Township vehicle shall be eligible for the per km rate if using a personal vehicle to attend these events.

7. For modes of transportation other than driving, cost and time shall be the primary consideration. The maximum payable under this policy would be the per km rate if another mode is utilized.

8. If a Township vehicle becomes unsuitable or unavailable for use the employee shall immediately notify their immediate supervisor. Should it become necessary for the employee to use another vehicle “ie” a rental vehicle or their own personal vehicle, the employee must obtain approval from their supervisor and/or Council prior to incurring any expenses for mileage and/or rental, if the expenses are to be reimbursed to the employee.

9. The above provision in Step 8 does not apply when an employee is having their Township Vehicle serviced or repaired. When having a vehicle serviced or repaired the employee must make arrangements to use another Township vehicle, have another employee pick them up and/or drop them off or if feasible and logical bring some work with them.

10. When a Township Business Trip is incorporated into travelling to and/or from work, only the additional distance traveled above and beyond what is normally

traveled shall be eligible for payment.

Example 1: Employee lives in Woodstock, goes straight to a morning meeting in Woodstock and then comes into the office. Only the extra distance travelled above a normal trip to work would be eligible for payment.

Example 2: Employee lives in Woodstock, goes straight to a meeting in Tillsonburg then comes into the office. Only the portion of the trip to Tillsonburg and back to Woodstock would be eligible for payment.

#6.f

STAFF REPORT

[redacted]

Report #CIO2022-03

To: His Worship the Mayor and Members of Council

From: Meaghan Vader, Corporate Initiatives Officer

Re: EZT-RFT-22-01 Culvert 2012 Replacement

Date: February 23, 2022

Background:

As part of the 2021 Capital budget, project EZT CPR-22-21 - 2012 Culvert Reconstruction, was approved. A Request for Tender, EZT-RFT-21-01 Culvert 2012 Replacement, was issued on Bids and Tenders on January 26, 2022, with a closing date of Friday February 18, 2022, at 2:00 pm.

There were 30 registered plan takers. Seven bid submissions were received and verified for compliance and mathematical accuracy by staff. All bids were deemed compliant. The lowest compliant bid was received from Theo Vandenberk Construction Inc. in the amount of $327,105.00, exclusive of taxes. A copy of the Compliant Bid Summary is attached for Council's reference.

Discussion:

The project includes the complete removal of the existing concrete box culvert and replacing it with a cast-in-place box culvert with wingwalls. The work also included minor roadway improvements.

Financial Implications:

This project was previously included in the 2021 capital budget. The original budget for this project was $425,000. The reserve fund source of financing will retain the surplus project savings.

Attachments:

- Appendix 'A' - EZT-RFT-22-01 Compliant Bid Summary
- Appendix 'B' - EZT CPR-21-21 2012 Culvert Reconstruction

Recommendation:

1. That Council accept the bid from Theo Vandenberk Construction Inc. in the amount of $327,105.00;

2. And further that Council authorizes the CAO/Treasurer to sign the contractual agreement with Theo Vandenberk Construction Inc., as provided in the tender bid document package EZT-RFT-22-01.

Reviewed by C.A.O:

Karen DePrest
Chief Administrative Officer

Report prepared and submitted by:

Meaghan Vader
Corporate Initiatives Officer

EAST ZORRA-TAVISTOCK

EZT-RFT-22-01
Culvert 2012 Replacement
Opening Summary
Closing Date: Friday, February 18, 2022 at 2:00:00 PM

	Company Name	Date/Time of Submission	Submission Form - Appendix B	Schedule of Items and Prices - Appendix C	Agreement to Bond 100% Performance 100% Labour/Materials	Proof of Ability and Reference Form - Appendix E	Senior Staff Qualifications Form - Appendix E	Proposed Subcontractors - Appendix E	Compliant? Y/N	Special Notes
1	VanDriel Excavating Inc	Submitted Fri Feb 18, 2022 10:31:03 AM	Y	$ 347,417.75	Y	Y	Y	Y	Y	
2	Capital Paving Inc	Submitted Fri Feb 18, 2022 12:28:58 PM	Y	$ 533,645.42	Y	Y	Y	Y	Y	
3	Theo Vandenberk Construction Inc.	Submitted Fri Feb 18, 2022 12:42:23 PM	Y	$ 327,105.00	Y	Y	Y	Y	Y	
4	Enscon Ltd	Submitted Fri Feb 18, 2022 1:14:01 PM	Y	$ 563,600.00	Y	Y	Y	Y	Y	
5	J-AAR Excavating Limited	Submitted Fri Feb 18, 2022 1:14:53 PM	Y	$ 512,210.00	Y	Y	Y	Y	Y	
6	Neptune Security Services Inc	Submitted Fri Feb 18, 2022 1:15:44 PM	Y	$ 979,220.00	Y	Y	Y	Y	Y	
7	Buildscapes Construction Ltd.	Submitted Fri Feb 18, 2022 1:44:02 PM	Y	$ 417,079.62	Y	Y	Y	Y	Y	

Proposals Opened by: Meaghan Vader
Witness: Claire Ohrling
Witness: _____
Witness: _____

EAST ZORRA-TAVISTOCK

EZT-RFT-22-01
Culvert 2012 Replacement
Compliant Bid Summary

Closing Date: Friday, February 18, 2022 at 2:00:00 PM

	Company Name	Schedule of Items and Prices - Appendix C
1	VanDriel Excavating Inc	$ 347,417.75
2	Capital Paving Inc	$ 533,645.42
3	Theo Vandenberk Construction Inc.	$ 327,105.00
4	Enscon Ltd	$ 563,600.00
5	J-AAR Excavating Limited	$ 512,210.00
6	Neptune Security Services Inc	$ 979,220.00
7	Buildscapes Construction Ltd.	$ 417,079.62

Proposals Opened by: Meaghan Vader

Witness: Claire Ohrling

Witness:

Witness:

#6.g

STAFF REPORT

[redacted]

Report #CIO2022-04

To: His Worship the Mayor and Members of Council

From: Meaghan Vader, Corporate Initiatives Officer

Re: EZT-RFT-22-02 John and Henry Street Reconstruction

Date: February 23, 2022

Background:

As part of the 2022 Capital budget, project EZT CPR-22-25 - John and Henry Street Reconstruction, is included. A Request for Tender, EZT-RFT-22-02 John and Henry Street Reconstruction, was issued on Bids and Tenders on February 8, 2022, with a closing date of Wednesday February 23, 2022, at 2:00 pm.

There were 27 registered plan takers. Four bid submissions were received and verified for compliance and mathematical accuracy by staff. All bids were deemed compliant. The lowest compliant bid was received from Oxford Civil Group Inc. in the amount of $1,076,073.85, exclusive of taxes. A copy of the Compliant Bid Summary is attached for Council's reference.

Discussion:

The project is in collaboration with Oxford County, who is contributing $450,000 in funding. The project includes the removal and replacement of the asphalt road, sidewalks, storm sewers, watermains and curbs, as well as sanitary service repair.

The RFT also requested the submission of pricing for provisional items, if deemed necessary throughout the duration of the project. Provisional pricing was received in the amount of $38,459.00.

All Bidders were also required to include a 10% contingency.

Financial Implications:

This project is included in the 2022 capital budget. The original budget for this project was $1,300,000.

Attachments:

- Appendix 'A' - EZT-RFT-22-02 Compliant Bid Summary
- Appendix 'B' - EZT CPR-22-25 John and Henry Street Reconstruction

Recommendation:

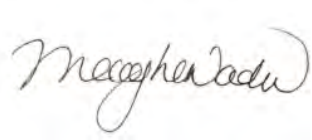
1. That Council accept the bid from Oxford Civil Group Inc. in the amount of $1,222,140.23, including provisional work and contingency;

2. And further that Council authorizes the CAO/Treasurer to sign the contractual agreement with Oxford Civil Group Inc., as provided in the tender bid document package EZT-RFT-22-02.

Reviewed by C.A.O:

Karen DePrest
Chief Administrative Officer

Report prepared and submitted by:



Meaghan Vader
Corporate Initiatives Officer

EAST ZORRA-TAVISTOCK

EZT-RFT-22-02

John and Henry Street Reconstruction

Opening Summary

Closing Date: Wednesday, February 23, 2022 at 2:00:00 PM

	Company Name	Date/Time of Submission	Submission Form - Appendix B	Schedule of Items and Prices - Appendix C	Agreement to Bond 100% Performance 100% Labour/Materials	Proof of Ability and Reference Form - Appendix E	Senior Staff Qualifications Form - Appendix E	Proposed Subcontractors - Appendix E	Compliant? Y/N	Special Notes
Y	VIEWCON CONSTRUCTION LTD	Submitted Wed Feb 23, 2022 11:33:07 AM	Y	$ 1,281,115.88	Y	Y	Y	Y	Y	
2	Steve Smith Construction Corporation	Submitted Wed Feb 23, 2022 12:04:45 PM	Y	$ 1,113,952.50	Y	Y	Y	Y	Y	
3	Oxford Civil Group Inc.	Submitted Wed Feb 23, 2022 12:11:07 PM	Y	$ 1,076,073.85	Y	Y	Y	Y	Y	
4	Ro-Buck Contracting Ltd	Submitted Wed Feb 23, 2022 1:33:44 PM	Y	$ 1,133,722.73	Y	Y	Y	Y	Y	
5										
6										
7										

Proposals Opened by: Meaghan Vader

Witness: Stephanie Mitchell

Witness: _____

Witness: _____

Revision Date: 2/24/2022

EAST ZORRA-TAVISTOCK

Capital Project Record (CPR)
2022 to 2031 Budget

Finance Input Only	
CPR Number:	EZT CPR-22-25
Project Number:	
WT Job Number:	

Project Name:	**John/ Henry Resurfacing**	**Project Lead:**	Tom Lightfoot
Project Description:	John/ Henry Resurfacing		
Project Justification: (select all that apply)	Currently unavailable	**Department:**	Public Works

Financial Summary:	**Prior Years**		**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**Beyond**	**Total**	
	Approved Budget	*Actual*	*Forecast*	*Forecast*	*Forecast*	*Forecast*	*Forecast*	*Forecast*	*Forecast*	*Forecast*			*Forecast*	*Budget*	*Actual (to date)*
Capital Expenditures															
Land Acquisition	-	-	-	-	-	-	-	-	-	-	-	-		-	-
Consulting and Engineering	-	-	-	-	-	-	-	-	-	-	-	-		-	-
Construction	-	-	1,300,000	-	-	-	-	-	-	-	-	-		1,300,000	-
Materials and Supplies	-	-	-	-	-	-	-	-	-	-	-	-		-	-
Vehicle and Equipment	-	-	-	-	-	-	-	-	-	-	-	-		-	-
EZT Related Expenses	-	-	-	-	-	-	-	-	-	-	-	-		-	-
Financing Costs (interest)	-	-	-	-	-	-	-	-	-	-	-	-		-	-
Other -	-	-	-	-	-	-	-	-	-	-	-	-		-	-
Total Capital Expenditures	-	-	1,300,000	-	-	-	-	-	-	-	-	-	-	1,300,000	-
Sources of Financing															
Rate Supported	-	-	-	-	-	-	-	-	-	-	-	-		-	-
Development Charges (DC's)	-	-	-	-	-	-	-	-	-	-	-	-		-	-
Reserves	-	-	42,875	-	-	-	-	-	-	-	-	-		42,875	-
Reserve Funds	-	-	-	-	-	-	-	-	-	-	-	-		-	-
Provincial Grants -	-	-	213,444	-	-	-	-	-	-	-	-	-		213,444	-
Federal Grants -	-	-	593,681	-	-	-	-	-	-	-	-	-		593,681	-
Debt Financed	-	-	-	-	-	-	-	-	-	-	-	-		-	-
Other -	-	-	450,000	-	-	-	-	-	-	-	-	-		450,000	-
Total Sources of Financing	-	-	1,300,000	-	-	-	-	-	-	-	-	-	-	1,300,000	-
Net Budget Impact	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

#6.h

STAFF REPORT

[redacted]

Report #CBO2022-03

To: His Worship the Mayor and Members of Council

From: John Scherer, Chief Building Official

Re: Building, Development & Drainage – March 2022 Council Report

Date: February 23, 2022

Departmental Highlights:

- StatsCan Population Growth Report:

	2016	2021	% Change	# Change
Township	7,113	7,841	10.2	728
Tavistock	2,955	3,171	7.3	216
Innerkip	894	1,342	50.1	448
Rural (+Hickson)	3,264	3,328	1.96	64

(Received February 2022 – Oxford County +9.9%)

Legislative Updates:

- Building Code Updates – Proposal:
  - A proposal has been initiated to increase the maximum size of a structure (Shed) not requiring a permit to 15m2 (currently 10m2).

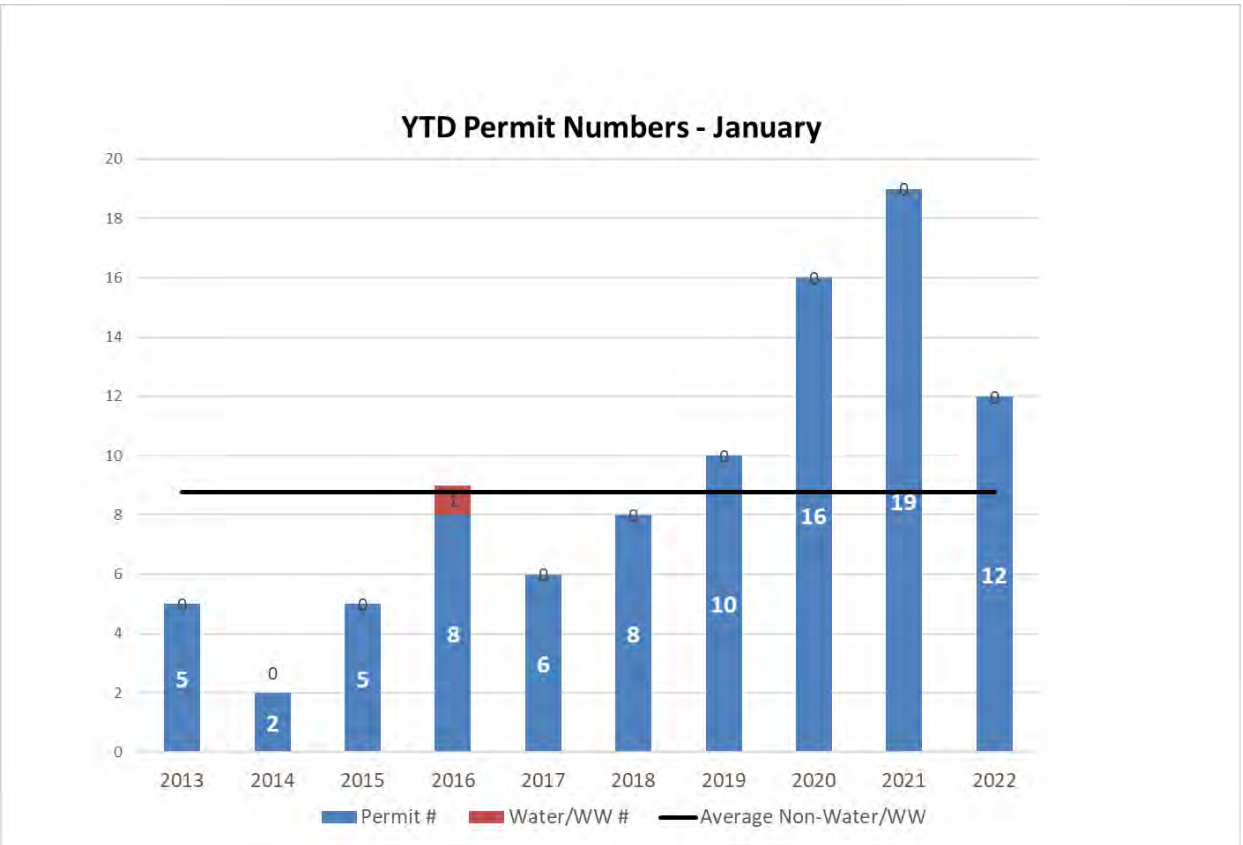
Monthly Permit Activity:

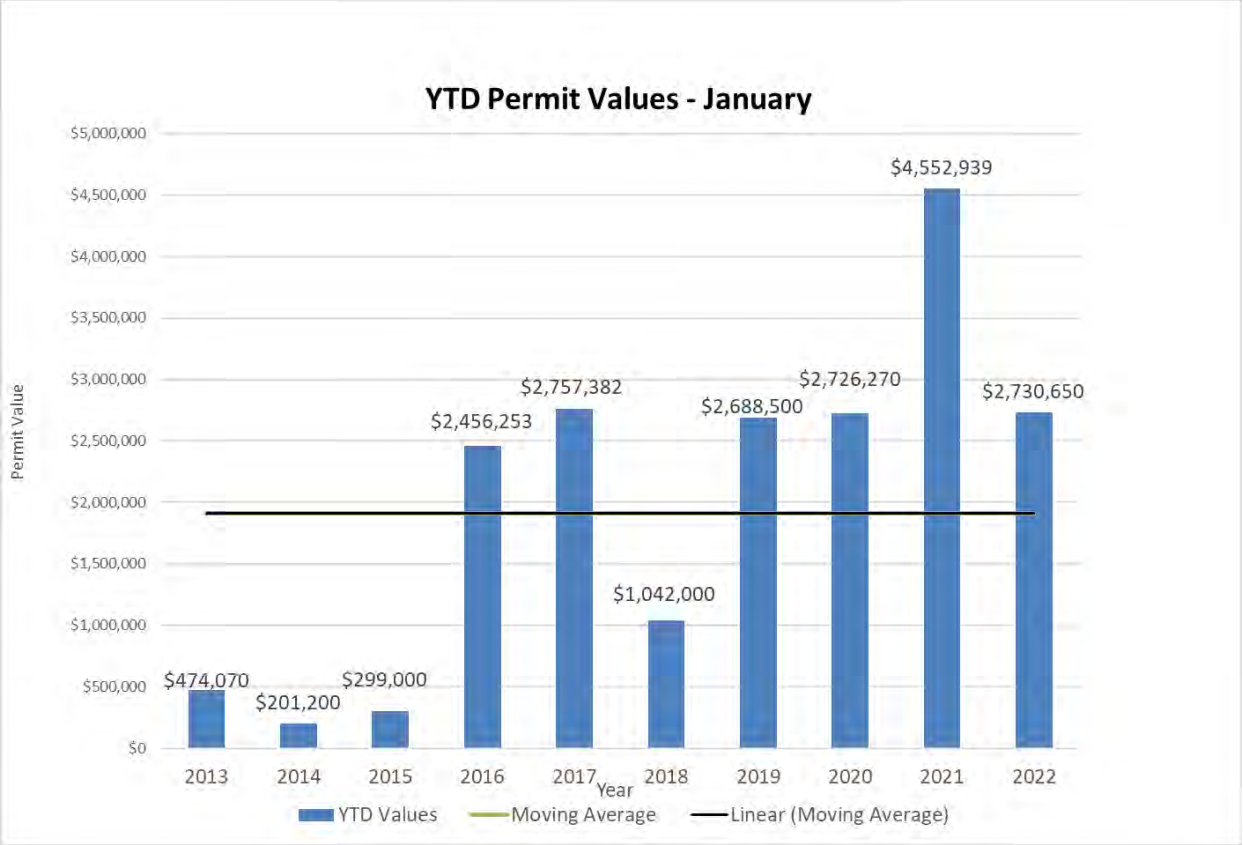
	No. of Permits	Permit Value	Permit Fees
January 2022	12	$2,730,650.00	$15,110.92
Year to Date – January 31, 2022	12	$2,730,650.00	$15,110.92

Number of Permits and Values

Description	Permit Value	Building Fees
Semi-detached dwelling	$400,000.00	$2,107.50
Semi-detached dwelling	$400,000.00	$2,107.50
Semi-detached dwelling	$400,000.00	$2,107.50

Semi-detached dwelling	$400,000.00	$2,107.50
Res - finish basement	$51,650.00	$300.00
Semi-detached dwelling	$410,000.00	$2,107.50
Semi-detached dwelling	$410,000.00	$2,107.50
Res - Garage	$60,000.00	$600.00
Res – finish basement	$5,000.00	$300.00
Res – finish basement	$14,000.00	$300.00
Storage Garage/Building	$30,000.00	$465.92
Grain storage	$150,000.00	$500.00
	$2,730,650.00	**$15,110.92**





Status of Development Matters:

Ward 1 - TAVISTOCK

*The Ponds (Phase 3)	33 SFD	Plan 41M-335 Plan 44M-68
The Orchards (Phase 1)	16 SFD 6 Semi Units 39 Condo Towns	Plan 41M-321 Warranty item identified for developer.
The Orchards (Phase 2)	48 SFD 2 Semi Units	Plan 41M-353 Construction started on all lots
The Orchards (Phase 3)	52 SFD 6 Semi Units	Plan 41M-371 Permits Issued.
Gateman Homes (Jacob St E)	13 SFD 10 Semi Units	Plan 41M-363 Permits Issued.
Mill-Gate Homes (Phase 1)		Subdivision details submitted.

Ward 3 - INNERKIP

Innerkip Meadows (P3 – Curtis St)	24 SFD + Semi detached units now proposed.	Plan 41M-313 Singles Completed.
Innerkip Meadows (P4– Lock St)	24 SFD	Plan 41M-325
Innerkip Meadows (P5 -Queen/Curtis)	25 SFD	Plan 41M-339
Innerkip Meadows (P6 - Lock)	19 SFD	Plan 41M-355
Innerkip Meadows (P7 - Matheson)	32 Semi detached units 1 SDD Unit	Plan 41M-313 Permits issued.
*Majestic Homes Development (James/Main St)	Condo Block on Main St (25 units)	Plan 41M-322 Unit construction underway.
Oxford Road Developments 5 Inc.	29 SFD + 1 Block for Future Dev.	Plan 41M - 352 Revised Grading Plan approved.

Drain & Streetlight Locate Summary:

Updated quarterly – next update April/May

Status of Drainage Matters:

Drain Name	Status
McLean Drain	Section 78 received, and Section 40 received. Petition restarted – Section 4 Proposed (New Drain). Report and design work underway.
Tavistock 1974 & 1979 Drains	Relocation of drains proposed for new residential developments. Tavistock 1974 Completed. Tavistock 1979 awaiting Subdivision Approval.
Parker Drain	Pending. Waiting Report.
Kuntze Drain	Large cleanout, weather pending. Finished by end of year.
Unnamed Drain	Pending. Waiting Report & Design.
Oxford Rd #33	Cleanout completed. Planting still to be completed.

Attachments:

- None

Recommendation:

1. None. For Council information only.

Reviewed by C.A.O.:

Karen DePrest
Chief Administrative Officer

Report prepared and submitted by:

John Scherer
Building, Drainage and Development Manager
(Chief Building Official)

#6.i

STAFF REPORT

[redacted]

Report #PW2022-02

To: His Worship the Mayor and Members of Council

From: Tom Lightfoot, Public Works Manager

Re: Public Works – March 2022 Council Report

Date: February 23, 2022

Departmental Highlights:

- Public Works staff have spent the last month focusing on winter control. When plowing wasn't required, the crew was removing snow piles from sight lines, parking areas and snow storage areas, within the Township. There have been a couple of storms with significant rain, wind and flash freezing that have lengthened our route times. Staff have still stayed within the Township's level of service and the Minimum Maintenance Standards. The Township did have a few locations of flooding, but none that led to any road closures.

- Staff spent time this last month issuing Public Works capitol project tenders. Staff issued the tenders for Culvert 2012, the John and Henry Streets re-construction, Granular "A" resurfacing, as well as request for quote for concrete crushing at the 89 Loveys Street Property. I would like to thank staff members Meaghan Vader and Claire Ohrling for their work in issuing and closing these tenders. Council will see separate reports for these tenders, on the March 2nd Council meeting agenda.

- With the temperature fluctuations and rains we have been receiving, Public Works staff have been out patching potholes on our paved roads. We are seeing a larger volume of potholes this year over past years, which can be attributed to the weather we are receiving. Staff plans to do more permanent repairs this summer at these locations.

- Gravel roads are holding together well. We will continue to monitor the roads during the spring thaw and address the condition of the roads, as weather permits.

- The reduced load period comes into affect on March 1st and continues until April 30th. The reduced load period is in place to protect the roads during the spring thaw and the hardening of the road base.

- Weather permitting, Public Works staff will be out in March trimming trees within the right of way. As well, staff will be completing the annual tree removal list, with the goal of getting the list issued for quotes in March.

- Public Works is pleased to announce that Marla Betts has accepted the asset management summer student position. Marla and Claire Ohrling will be focusing on capturing key attributes and conditions of our facilities, and contents within the structures. Marla will be starting May 2nd.

- Public Works staff continues to work out of two shops. This is to assist with staff member distancing and to minimize COVID staffing concerns. Post COVID, the plan is for the grass cutting crew to remain in the Tavistock shop, with the roads crew working out of the Hickson shop.

Status of Significant Capital Projects:

Capital Project	Current Status
Box Culvert #2012 replacement	Tender closed February 18, 2022.
Zorra/EZT Bridge Rehabilitation	Tender closes March 3, 2022.
John/Henry Streets re-construction in Tavistock	Tender closed February 23, 2022.

Recommendation:

1. None. For Council information only.

Reviewed by C.A.O.:

Karen DePrest
Chief Administrative Officer

Report prepared and submitted by:

Tom Lightfoot
Public Works Manager

#6.j

STAFF REPORT

[redacted]

Report #PW2022-03

To: His Worship the Mayor and Members of Council

From: Tom Lightfoot, Public Works Manager

Subject: Gravel Resurfacing Tender

Date: February 23, 2022

Background and Discussion:

As part of the annual gravel resurfacing program, Staff issued a tender on February 15, 2022, inviting bids for the supply and application of 18,000 tonnes of gravel. This year's tender covers the northern half of the Township (roads north of Oxford Road #8, excluding a few miles of roadway that are completed as part of gravelling the southern roads). It is the Township's practice to resurface gravel roads at a rate of approximately 400 tonnes/mile of road, every other year.

This year's tender closes on March 1, 2022. Given the timing of the tender closing, Staff will be providing Council with the results of the tender process at the March 2, 2022, Council meeting, including a recommendation to award the contract.

As part of the tender, Council will have the opportunity to decide whether they wish to accept the 2023 pricing in early 2023, or if they wish to go to tender again for spring granular resurfacing. The tender will include a provision for the 2023 pricing to be agreed upon later. This is to allow some time for fuel costs to stabilize and allow for more accurate pricing.

Recommendation:

1. For Council's Information. Staff will provide the tender results, including a recommendation to award the contract, at the March 2, 2022 Council meeting.

Reviewed by C.A.O.:

Karen DePrest
Chief Administrative Officer

Report prepared and submitted by:

Tom Lightfoot
Public Works Manager

STAFF REPORT

#6.k

[redacted]

Staff Report #FC2022-02

To: His Worship the Mayor and Members of Council

From: Scott Alexander, Township Fire Chief

Re: Fire & Protective Services – March 2022 Council Report

Date: February 23, 2022

Departmental Highlights:

Fire Department:

- The 2022 recruit class began in-person training on February 9th and has since completed the orientation and personal protective equipment modules. The recruits are scheduled to attend medical training on February 25th & 26th.

- All three Township stations resumed training in early February, and planning is in the early stages for live fire training on the Ingersoll Fire Department training grounds. There is also the possibility that an actual house fire demonstration in March or April may be arranged. As the Department has the 12 new firefighters, this extra training would be very beneficial for them both practically and to experience the heat and progression of a structure fire. For these two scenarios, careful planning of training evolutions would be created including possibly filming the fire as it progresses through the building. This would provide an excellent opportunity for the three Township stations to practice together and hopefully gain experience using Hickson's new pumper. Medical training has also returned to the stations after nearly a two-year hiatus, due to COVID restrictions.

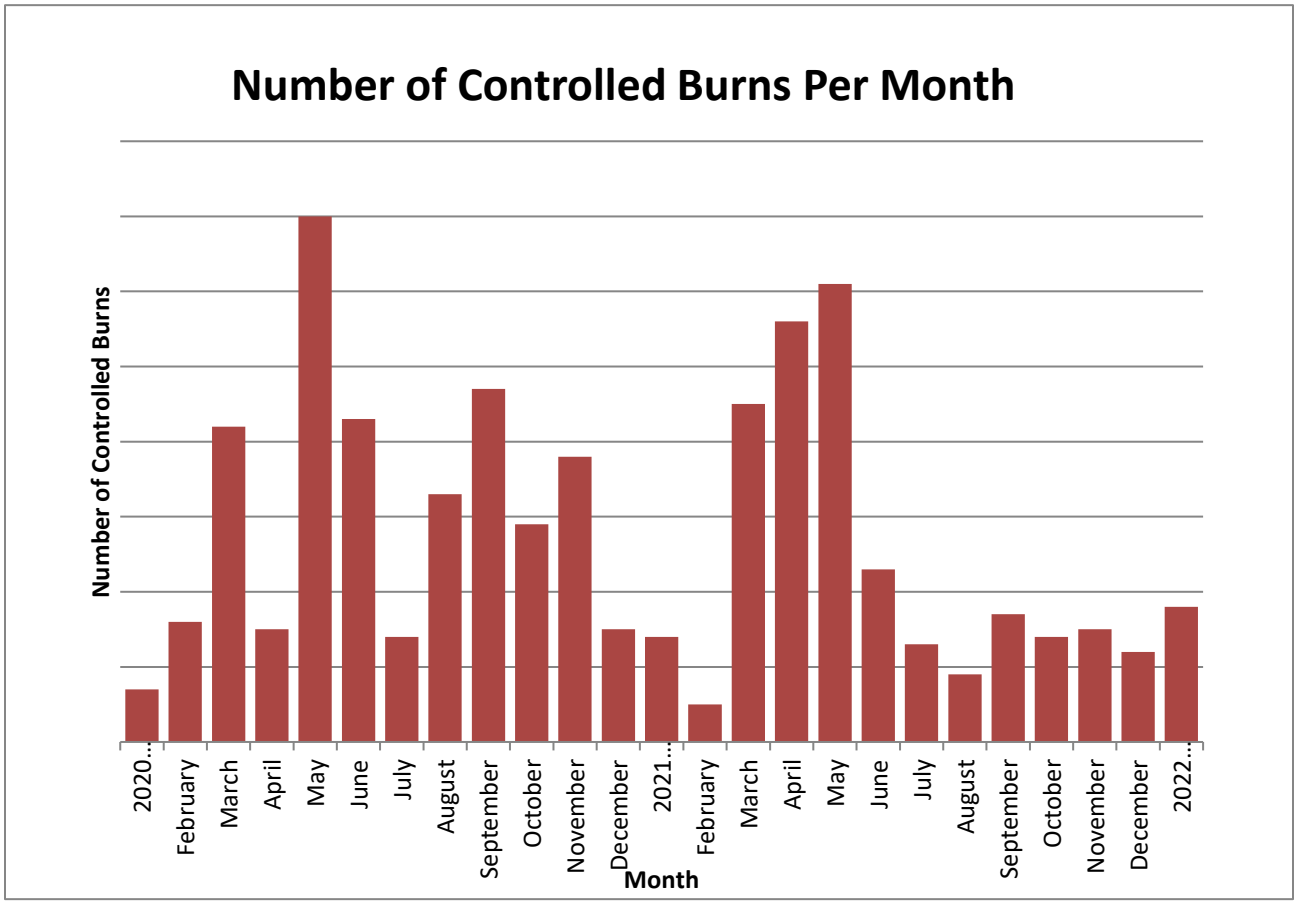
- Officer selection is nearly complete within the Township as the Innerkip station will be conducting interviews for the final vacant captain position in early March.

- Hickson's pumper is nearing completion and a final virtual inspection of the unit will be conducted before delivery. The truck is on schedule to be completed mid-March, with delivery before the end of the month.

- Innerkip's RFP for their rescue van will have to be re-issued due to technical reasons. Only one bid was received but had to be rejected due to errors following the RFP bid process. Staff is in the process of finalizing the SCBA RFP with hopes to have it issued by the end of March.

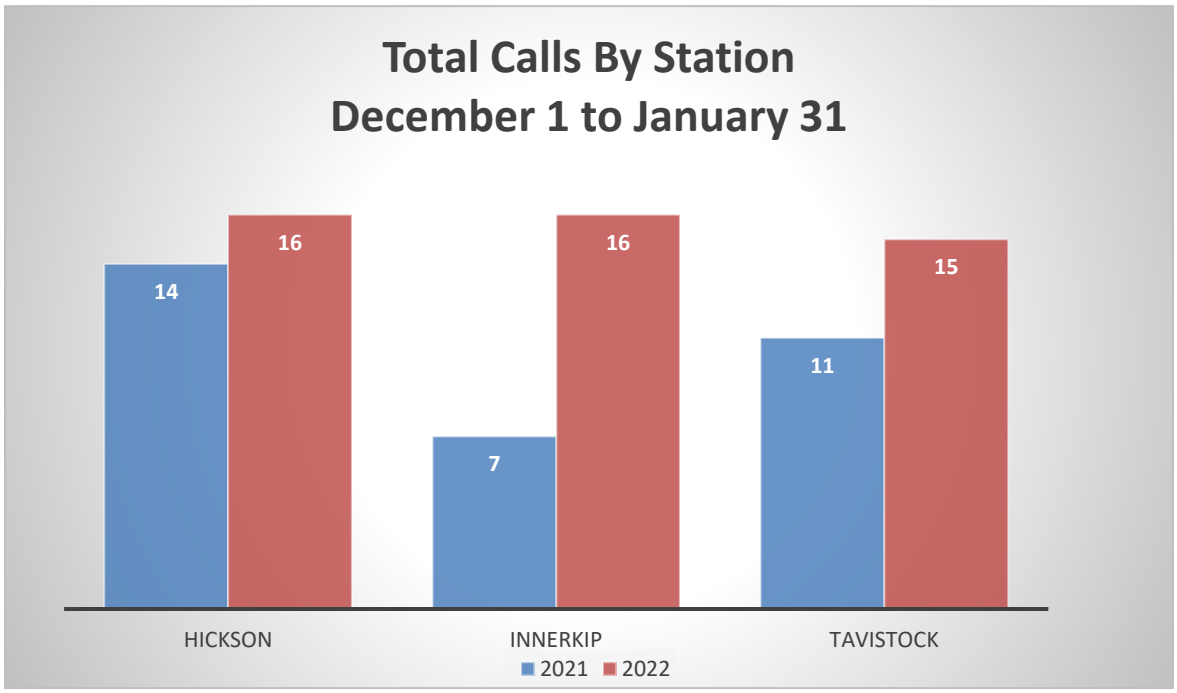
- Mandatory certification has been discussed at several meetings with the OFMEM, the OAFC Board of Directors, local OAFC zone meetings and finally, by the Rural Fire Services of Oxford County. The rural fire departments will be submitting their concerns and comments jointly to the OAFC, who is compiling a commentary for the Fire Marshal's office and the Province.

Controlled Burn Approvals:

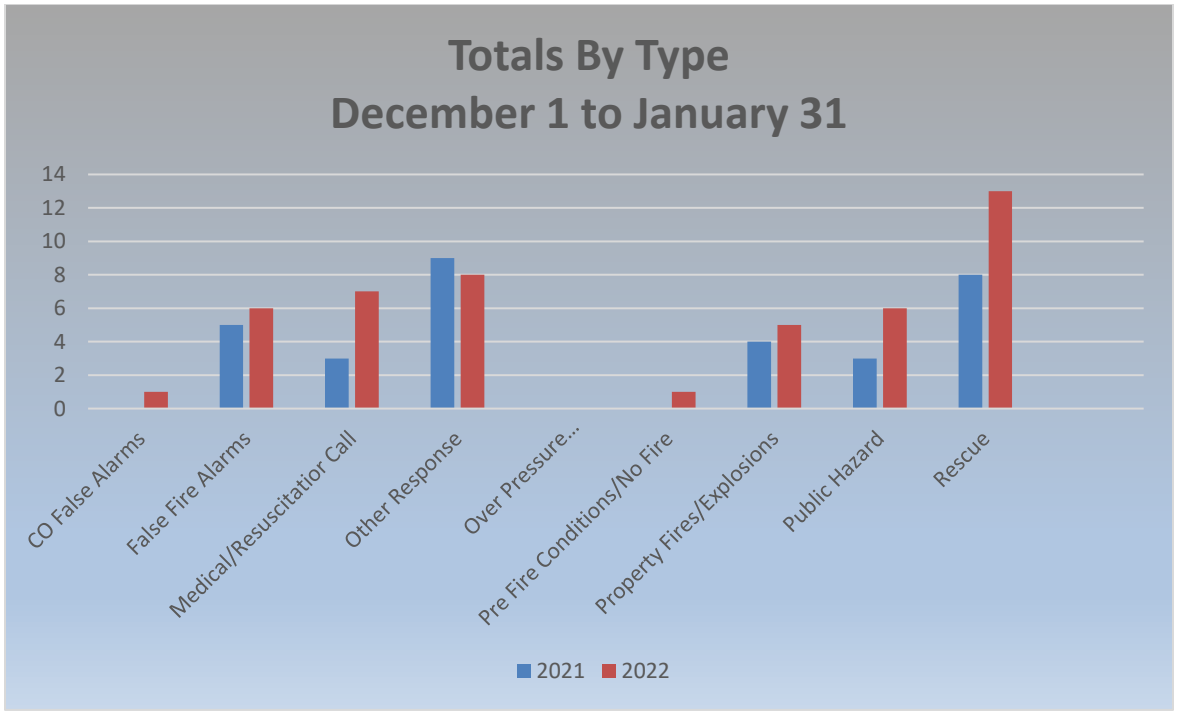


- January (2022): 18
- Year to Date (2022: 18

TOTAL FIRE CALLS FOR 2022 (December 1/21 to January 31/22)



TOTALS BY TYPE-2 YEAR COMPARISON (Dec. 1/21 to Jan./22)



Emergency Management:

- Staff virtually attended the annual Grand River Conservation Authority Flood Co-ordinators meeting, on February 23rd.

- Following concerns expressed by both the GRCA & UTRCA, Township staff issued several social media alerts regarding the dangers of flooding, swift-water and hazardous ice.

Legislation:

- None to report at this time.

Attachment:

1. Appendix 'A' – RFSOC Chiefs letter responding to Proposed Mandatory Certification Regulation.

Recommendation:

1. None. For Council information only.

Reviewed by C.A.O.:

Karen DePrest
Chief Administrative Officer

Report prepared and submitted by:

Scott Alexander
Township Fire Chief

STAFF REPORT

#6.I

[redacted]

Staff Report #FC2022-03

To: His Worship the Mayor and Members of Council

From: Scott Alexander, Township Fire Chief

Re: Fire & Protective Services – Joint Fire Prevention Position

Date: February 23, 2022

BACKGROUND:

Rural Fire Services of Oxford County

In 2015, the Oxford County Rural Municipal Fire Services (known as the Rural Fire Services of Oxford County, or 'RFSOC') commenced their own partnership to provide volunteer firefighter training to its members.

The RFSOC partnership consists of the fire services within Blandford-Blenheim, East Zorra-Tavistock, Norwich, South-West Oxford and Zorra. The RFSOC partnership provides community fire and life safety programs such as fire protection, fire prevention, inspections, and public education to their respective communities from five departments, thirteen fire stations and approximately 330 volunteer firefighters.

This ad hoc partnership was formed to facilitate the need to meet municipal responsibilities under the *Occupational Health and Safety Act* for training volunteer firefighters, and includes training and programs for recruit firefighters, existing firefighters, fire officers, training officers, public educators and fire inspectors.

Since it's inception, RFSOC has successfully commenced a shared service agreement with a Joint Training Officer position, which is hosted by Norwich Township. This position has been very successful at coordinating all training for the five municipalities.

In January 2019, the Province of Ontario announced that it would undertake a review of regional government in efforts to identify opportunities to improve municipal services and identify potential efficiencies.

While direction from the Province regarding fire services did not materialize, the County of Oxford did undertake a study to see if key efficiencies could be identified within the County. Municipal fire services were identified as one of the services that may benefit from shared services within the rural departments.

In the County-wide study, conducted by Watson & Associates in late 2019, the rural municipalities were identified as benefitting from a shared service fire inspector/public educator position.

Community Risk Assessment (CRA)

In 2018, the Provincial Government enacted Ontario Regulation 378/18 mandating that every municipality, and every fire department in a territory without municipal organization, must:

- complete and review a Community Risk Assessment, as provided by this Regulation; and,

- use its Community Risk Assessment to inform decisions about the provision of fire protection services.

A Community Risk Assessment is a process of identifying, analyzing, evaluating and prioritizing risks to public safety to inform decisions about the provision of fire protection services.

The municipality or fire department must complete a Community Risk Assessment no later than five years after the day its previous Community Risk Assessment was completed.

A municipality that exists on July 1, 2019, or a fire department in a territory without municipal organization that exists on July 1, 2019, must complete a Community Risk Assessment no later than July 1, 2024.

At this point, only the Township of Norwich has completed their Community Risk Assessment. Their Assessment identified a gap in the delivery of Fire Safety Standards Enforcement, something which is expected to happen with most volunteer departments, including the Township of East Zorra-Tavistock. Currently East Zorra-Tavistock, like most others, conducts fire safety inspections based on complaints, requests or as mandated under the Fire Protection and Prevention Act (e.g. long-term care facilities and retirement homes). This level of service does not provide for inspection on high-risk properties and buildings (e.g. migrant housing, village business

areas, restaurants, the fuel industry, and industries with a large employee base, etc.).

While inspections will be the focus of the proposed position, it is expected that the individual will also assist with fire prevention education, with construction plans reviews and recommendations and if necessary, fire cause and determination.

DISCUSSION:

As a result of the recommendations the Watson & Associates study, RFSOC members prepared the attached Fire Prevention Officer Business Case (attached as *Appendix 'A'*) recommending that each rural municipality pursue a partnership to hire one Fire Prevention Officer. The Business Case goes into greater detail on aspects of the position and examines advantages and disadvantages of this issue.

The following chart provides a breakdown of projected annual costs associated with the Fire Prevention Officer position:

Expenses	Annual Costs($)	Start Up Cost($)
Salary	64,000 – 81,000	
Benefits - 26%	16,640 – 21,060	
Phone	600	
Computer/Laptop		3,500
General Office Supplies	400	
Clothing	1,000	
Annual Training	1,500	
Mileage (until a surplus vehicle is available)	6,000	
Advertising		750
Amortized Start-up Costs (5 years)	650	
Total	90,790 – 112,210	4,250

RFSOC members presented the Business Case and proposal to the rural CAO's and there was concurrence to send this proposal to the respective Councils before their respective 2022 operating budget deliberations.

Staff anticipate that it would be approximately July, 2022, before all budgets are passed, the hiring process complete and the incumbent is performing their duties. This would allow municipalities to phase in their share of the costs over a two-year period - 50% in 2022, and an additional 50% in 2023 - to reach full funding.

Hosting of Position

The Township of East Zorra-Tavistock has proposed to host the Fire Prevention Officer position, should this endeavor move forward. The incumbent would be an employee of the Township of East Zorra-Tavistock with an office located in the Township Administration Building.

The Township of East Zorra-Tavistock would be responsible for direct management of the employee, administration of the position and invoicing the other municipalities for costs. The individual would spend time in each municipality on a rotating basis to conduct inspections, enforcement activities as directed by each municipality's Fire Chief.

All participating partners would be required to enter into an agreement with the Township of East Zorra-Tavistock to benefit from this position.

FINANCIAL/STAFFING/LEGAL IMPLICATIONS:

The Joint Fire Prevention Officer would require additional funding to the respective fire services operating budgets in 2022, and on a go forward basis. As noted in the chart above, the projected cost for a full-time (35 hrs/week) Fire Prevention Officer would be approximately $115,000 annually. It should also be added that this position was approved in principle in the 2021 fire budget.

This amount may vary slightly due to the host municipality's staffing pay structure and where the position would fit into the pay grid. Normally a Fire Prevention Officer receives approximately 80% of the Fire Chief's pay.

The approximate annual cost per municipality would be $23,000, provided that all municipalities participate in this endeavor. Should one municipality decide not to participate in the partnership, the remaining municipalities would be responsible for the overall costs or reduce the number of hours the individual would be required to work.

If Council approved, the costs will be included in the Draft 2022 Operating Budget for Council consideration.

CONCLUSION:

The Township of East Zorra-Tavistock on its own would not be able to provide enhanced fire inspection requirements from a logistical perspective, especially if it is identified in the coming Community Risk Assessment. Staff has worked with the other municipalities to develop a cost-effective solution in the form of a partnership with the other rural fire services. As well, based on the success of the shared Training Officer, it would be reasonable to assume a position and structure similar to the Training Officer would be a successful and cost-effective position. Staff suggests that a Joint Fire Prevention Officer position would benefit the Township as well as the other Municipalities that participate. In the alternative, Council may direct that staff continue to explore other partnerships or increased part-time staffing options for further Council considerations.

ATTACHMENT:

1. Appendix 'A' - RFSOC Fire Prevention Officer Business Case

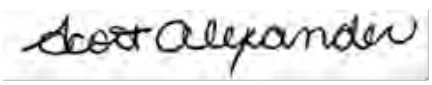
RECOMMENDATION:

THAT Council approve, in principle, the concept of a partnership for a Joint Fire Prevention Officer, as outlined in Staff Report #FC2022-03.

Reviewed by C.A.O.:

Karen DePrest
Chief Administrative Officer

Report prepared and submitted by:



Scott Alexander
Township Fire Chief

Oxford County Rural Municipal Fire Services

Fire Prevention Officer (Partnership)

Business Case

Forward

In January 2019, the Province of Ontario announced that it would undertake a review of regional government in an effort to identify opportunities to improve municipal services and identify potential efficiencies.

While provincial direction did not materialize, the County of Oxford did undertake a study to see if key efficiencies could be identified within the county. Municipal fire services were identified as one of the services that may benefit from shared services within the rural departments.

In the county-wide report conducted by Watson & Associates in late 2019, the rural municipalities were identified as benefitting from a shared service fire inspector/public educator position.

The rural municipal fire services consist of the Townships of Blandford-Blenheim, East Zorra Tavistock, Norwich, South-West Oxford and Zorra. Independently, they provide community fire and life safety programs such as public fire and life safety education, inspections and enforcement of the Fire Protection and Prevention Act as well as subsequent regulations and emergency response to their respective communities. This is accomplished through 13 fire stations and approximately 330 volunteer firefighters collectively.

For several years, the rural fire services in Oxford County have worked together to provide services that are financially difficult to manage and maintain on an individual municipal basis. Service sharing for expensive projects began as far back as 2011 as departments worked together to enhance firefighter safety with the purchase of a FIT tester. Dispatch agreements were jointly negotiated in 2013, followed by a county wide communications system in 2014. Some municipalities have also worked together on smaller projects such as purchasing personal protective equipment and self-contained breathing apparatus.

Additionally, Oxford County rural departments began firefighter recruit training together in 2013 along with fire services from Elgin County. In 2016, the Rural Fire Services in Oxford County (RFSOC) established a joint ad hoc partnership, known as the Rural Fire Services of Oxford County, to deliver a recruit training program and numerous other OFMEM approved NFPA training programs to their volunteer firefighters and other neighboring fire services.

The RFSOC program has been extremely successful and has grown and benefitted from the addition of a joint full-time Training Officer in 2019. The Training Officer provides leadership and coordination of the RFSOC programs as well as being a training resource for the participating municipal fire services at the local level.

The RFSOC program has obtained accreditation from the Office of the Fire Marshal and Emergency Management Academic and Standards Branch and successfully

delivers 15 NFPA certification courses. In 2021 RFSOC conducted 20 courses with approximately 254 students in a pandemic affected year. The RFSOC program has become a recognized model for delivering effective and cost-efficient firefighter training by the OFMEM and other departments since the closing of the Ontario Fire College.

Fire Service Legislation

Background

The *Fire Protection and Prevention Act, 1997 (FPPA)* mandates that every municipality in Ontario shall establish a program which must include public education with respect to fire safety and certain components of fire prevention and provide such other fire protection services as it determines may be necessary in accordance with its needs and circumstances.

In the fire service, these elements are commonly referred to as the Three Lines of Defense:

1. Public Fire Safety Education
2. Fire Safety Standards and Enforcement
3. Emergency Response

Together, these are provincially recognized as necessary to achieve an acceptable level of fire safety within communities.

The FPPA also mandates that inspections must be carried out in the following situations:

- when a complaint is received regarding the fire safety of a property
- when a request is made by a property owner or occupant for assistance to comply with the Fire Code where the involvement of the Chief Fire Official is required; and
- when the fire department becomes aware of Fire Code violations and/or other fire hazards at a particular property.
- On a building for which a request for assistance to comply with the Fire Code is received and the involvement of the Fire Chief is required.
- Annually at vulnerable occupancies (e.g. hospitals, retirement homes, community living residences, homes for the aged, and other care occupancies)

Further, fire safety complaints and requests for assistance to comply with the Fire Code where the involvement of the Chief Fire Official is required shall be assessed and a fire safety inspection undertaken if necessary.

As well, in May 2018, the Ministry of Community Safety and Correctional Services enacted new legislation under the *Fire Protection and Prevention Act* in which a

Community Risk Assessment must be completed by 2024 by each municipality and maintained annually.

Community Risk Assessment

Community risk assessments allow fire departments to make informed decisions about the types and levels of fire protection services they will provide based on identified risks. Risk is defined as a measure of the probability and consequence of an adverse effect to health, property, organization, environment, or community because of an event, activity, or operation.

By identifying all fire and life safety risks in their community and prioritizing them based on the probability of them occurring and the impact they would have if they occurred, fire departments are able to determine which risks to address and how best to address them. Risk assessments allow fire departments to ensure their levels of service, programs and activities for public fire safety education, Fire Code inspections and enforcement, and emergency response directly address the identified risks and are most effective at preventing and mitigating them.

As part of the effort to mitigate potential increased liability to municipalities, an expanded level of fire prevention and inspection would be integral in addressing any potential gaps discovered in the mandatory Community Risk Assessment (CRA).

Each municipality is currently meeting minimum legislative requirements, but emphasis on the first line of defence has not traditionally been a focus of most departments in the province. While departments have historically put a lot of emphasis on training and suppression, the mandatory CRA will emphasize the need for an increased focus on both education and inspection/enforcement, especially on high-risk population groups, buildings, and properties. Furthermore, by focusing on inspection/enforcement, more data will be available to promote education programs and ultimately compliance with safer standards and by-laws.

As well, it has been well identified in the municipal study that the rural fire departments would benefit from a shared Fire Prevention Officer (FPO) to address current and future gaps in delivery of effective public education, and inspection and enforcement programs.

One rural fire service has completed their CRA which has identified a gap in the delivery of Fire Safety Standards Enforcement. The Fire Chiefs are confident that the other rural municipalities and fire services are similar in the delivery of fire services and thus the following recommendation will be identified in each municipality once all CRAs are completed.

Currently our Townships conduct fire safety inspections based on complaint, requests or as mandated under the Fire Protection and Prevention Act, and upon request of the Building Department for Occupancy approval of new buildings. This level of service

does not provide for inspection on high-risk properties and buildings (e.g. migrant housing, village business areas, industry with a large employee base, etc.).

The current level of service for inspections is provided by the Fire Chief and fire inspectors that are part of the Volunteer Firefighter contingent. This model is effective in providing the minimum service level for inspection but is struggling to keep up with the legislative requirements and comes with challenges including, but not limited to, scheduling of inspections, conducting re-inspections, and time needed to initiate and process enforcement through the legal system when necessary. If there is sudden growth or an increased service need, as is projected, it will be difficult to keep up.

Fire Inspectors certified to Fire Inspector Level 1 are only able to perform inspections related to Parts 2, 6 and 9 under the Fire Code. This limits the availability of an Inspector to conduct inspections on industrial and commercial buildings and properties to those certified to Fire Inspector 2 which is often only the Fire Chief, who has broad responsibilities for overall fire services operations. As a result, they are not able to address the need for inspections on high-risk occupancies in a timely manner or even at all.

As a result of the CRA and the identified gap in the delivery of Fire Safety Standards Enforcement, it is recommended to expand fire standards enforcement to include routine inspections on high-risk areas, and buildings and properties. As an interim measure it is recommended to hire a part-time fire inspector or partner with other municipalities through a service agreement for inspection services. This option would allow the Fire Service and the Township the opportunity to conduct a more in-depth analysis of the actual needs and circumstances for conducting fire safety inspections.

Proposal for Fire Prevention Officer Position

The Fire Chiefs from the rural municipalities of Oxford propose to partner/share a full time Fire Prevention Officer position.

The Fire Chiefs are confident that in the future, the FPPA will again be amended to mandate that firefighters regardless of career or volunteer will need be trained to minimum standards to ensure firefighter safety and professionalism across Ontario. Fire Safety Standards never diminish and will always increase and expand in scope over time. This would include the necessity of fully NFPA trained and certified inspectors and educators to meet the expectations not only from the OFMEM but to lessen potential municipal liabilities.

Further, the Fire Chiefs are also confident that once completed the recommendations from their respective Community Risk Assessments will identify the need for increased levels of public fire and life safety education and regular inspections on high-risk buildings and properties (e.g. schools, large industrial/commercial, assembly occupancies such as churches, restaurants, community halls).

Finally, the creation of a shared Fire Prevention Officer would promote consistency and uniform application and enforcement of the Ontario Fire Code throughout the Rural Fire Departments of Oxford County.

Municipal Scan

A scan of other fire services was conducted to identify which departments have implemented or are considering a full or part-time Fire Prevention/Education Officer. Below is an overview of other municipalities that have or are considering a Fire Prevention Officer.

Fire Service	# of Municipalities Represented	Population Represented	# of Stations Represented	# of FF Represented	Full or Part Time FPO
Norfolk County (Single Tier)	1	64,044	11	254	Full Time 1.4 FTE
North Huron Huron East	4	14,070	5	148	Part Time
Perth East, West Perth	1	9,300	4	100	Full Time
Thames Centre	1	13,500	2	60	Part Time
Town of St. Marys	1	7,265	1	24	Part Time
RFSOC	**5**	**41,331**	**13**	**329**	**Full Time**
Wellington County (Upper Tier)	7	91,000	12	344	Full Time

Position Responsibilities

The major responsibilities of the position would be:

Fire Prevention/Inspection

- Conduct comprehensive fire prevention inspections of all classes of buildings and occupancies for compliance for all Townships' by-laws and the Ontario Fire Code, as required.

- Report findings to the appropriate authorities, make recommendations to improve building and occupancy fire safety, and initiate the appropriate corrective or enforcement action as necessary.
- Follow up on requests and complaints related to fire safety and investigate, as required.
- Prepare inspection orders, court documents and other records to fully document inspection processes and outcomes.
- Review and approve applications for fireworks displays, AGCO permits etc.
- Review selected building plans and conduct inspections on some new construction for compliance with the Ontario Building Code, in conjunction with the Chief Building Official, as required.
- Examine and approve fire safety plans, drawings, and specifications for new and existing buildings; review and comment on site plan agreements, zoning amendments and other planning related matters as required.
- Assist in the creation of pre-plans and water source mapping for the municipality.
- Conduct mandated annual inspections on existing care, care and treatment and retirement home buildings for compliance with the Ontario Fire Code, and any other relevant legislation, such as witnessed fire drills, and coordinate fire inspection/prevention reports in conjunction with such inspections.
- Conduct building code inspections of fire and life safety systems and components in conjunction with the Chief Building Official, as required.
- Perform the duties of “Chief Fire Official” under the Ontario Fire Code subject to the parameters of the delegation.
- Conduct routine inspections as per municipal policy on all classes of buildings on a regular and ongoing basis.
- Generate activity reports, time sheets, logs, detailed inspection reports and various other documents related to inspection and enforcement activities.
- Prepare Provincial Offences Act documents, swearing and serving information’s, preparing disclosure statements, and testifying in Provincial Offences court as required.
- Prepare reports and manage files within the Fire Prevention Division (electronic & hard copy) in compliance with the municipal records and retention policies.
- Accept and participate in training opportunities as they are provided.
- Liaise with the Office of the Fire Marshal and Emergency Management and other agencies as required.

Public Education

- Assist with delivery, supervision and evaluation of the Public Education and Fire Prevention Programs.
- Coordinate joint initiatives with other area fire departments/other emergency services on fire safety and prevention programs, education and training.
- Attend scheduled training sessions of all Municipal Fire Departments in the County of Oxford when required.
- Identify skill development needs and assist with coordinating training and professional development programs.
- Support in the preparation and delivery of fire prevention related material to fire department personnel and assist with the delivery of related training.
- Provide input and recommendations on Fire Prevention budget allocations.
- Accountability of public education materials and consistent centralized programming opportunities.

Fire Investigation

- Conduct fire cause and determination investigations and assist Office of the Ontario Fire Marshal and Emergency Management to investigate fires, as required.

Financial Impact

This endeavor would most likely require additional funding to the respective fire services operating budgets in 2022 and forward.

The projected cost for a full time (35 hrs. /week) Fire Prevention/Education Officer would be approximately $115,000 annually.

This amount may vary slightly due to the host municipalities staffing pay structure and where the position would fit into the pay grid. Normally a Fire Prevention/Education Officer receives approximately 80% of the Fire Chiefs pay.

The following chart provides a breakdown of projected annual costs associated with the Fire Prevention/Education Officer position.

Expense	Annual Costs ($)	Start Up Cost ($)
Salary	64,000 - **81,000**	
Benefits - 26%	16,640 – **21,060**	
Phone	600	
Computer/Laptop		3,500
General Office Supplies	400	
Clothing	1,000	
Annual Training	1,500	

Mileage (until a surplus vehicle is available)	6,000	
Advertising		750
Amortized Start-up Costs (5 years)	650	
Totals	90,790 - **112,210**	4,250

The approximate cost per municipality will fluctuate depending on the needs of each municipality. For example, if the municipality has an enforcement issue, the officer could be in that municipality more than the allotted time per week. That municipality would be billed accordingly, while the others would be discounted. An approximate cost would be $23,000 annually if all municipalities participate in this endeavor.

If one municipality decides not to participate the other municipalities would be responsible for the overall costs or reduce the number of hours the individual would be required to work.

The Fire Chiefs anticipate that it would be approximately July 2022 before all budgets are passed, the hiring process complete and the incumbent is performing their duties. This would allow municipalities to phase in their share of the costs over a two-year period; 50% in 2022 and an additional 50% in 2023 to reach full funding.

Methods of Delivery

There are several options for governance of a Fire Prevention/Education Officer position.

Upper Tier Municipal Delivery

The Counties of Wellington and Elgin have solicited the upper Tier government to administrate their position. This model will work for them as all participating municipalities are members of their county structure.

The Upper Tier governance model would not work for the rural municipalities as Ingersoll, Tillsonburg and Woodstock are also members of the Oxford County structure, but do not participate as members in the RFSOC group.

Individual Fire Service Delivery

Each rural fire service could hire their own part-time or full-time Fire Prevention/Education Officer. This is not seen as a cost-effective approach to having a Fire Prevention/Education Officer as some of the costs associated with the position would be duplicated (e.g. clothing, vehicle, and training). Further, the workload in each municipal fire service may not be sufficient to substantiate a part-time or full-time position in each individual fire service.

Currently some departments are providing inspection and education services using volunteer firefighters. This model for inspection and enforcement is not ideal and creates issues with inspector availability, document retention and conflict of interests. Further, the cost for this model is approximately $7,000 - $10,000 annually. This

model does not allow for consistency among fire services and does not allow for future expansion of municipal fire education, inspection and enforcement programs.

Joint Partnership Delivery

A joint partnership delivery model is seen to be the most effective and efficient option to implementing a Fire Prevention/Education Officer position. The shared cost model reduces duplication of some expenses associated with such a position, such as clothing, vehicle, training, and integrated technology costs. The RFSOC group has demonstrated that this model is very cost efficient, professional, and effective with the hiring and success of the Fire Training Officer position.

Further, this model will share the administrative costs across the participating municipalities.

Position Governance

The Fire Chiefs propose that the Fire Prevention/Education Officer be a member of staff at one of the municipalities. The individual would report directly to the Fire Chief of that municipality and indirectly to the RFSOC Fire Chiefs, similar to the current arrangement with the Fire Training Officer.

The managing municipality would be responsible for administration, supervisory and training responsibilities, and financial management of the position.

The RFSOC Fire Chiefs would develop the goals and objectives for the Fire Prevention/Education Officer and ensure that the objectives and for their municipality are met.

The initial suggestion is that the FPO will be available to each fire service one day every five working days. This model will allow some flexibility between departments when a department would require the FPO for consecutive days to conduct a fire investigation or to address an immediate threat to life situation under the Fire Code.

Pros and Cons

The following chart identifies the Pros and Cons of this proposal.

Pros	Cons
• Assists municipalities with meeting provincially legislated requirements • Professionalizes inspection, enforcement, and education programs within the RFSOC fire service • Cost effective way for municipal fire departments to implement a Fire Prevention/Education Officer as the costs of delivery and administration	• Cost of establishing Fire Prevention/Education Officer • Although the position reports to one Fire Chief, the governing model is based on direction from all Fire Chiefs based on individual municipal needs • Administration of a partnership

of RFSOC inspection, enforcement, and education programs to all participating departments. • Consistency of inspection, enforcement, and education programs within the RFSOC fire service • Allows Fire Chiefs to prioritize other important duties and responsibilities • Pay grid is likely sufficient to attract and retain a qualified candidate • Consistent records management across all departments • Reduces development duplication of an FPO in each municipality	• If one partner withdraws from the group, the other partners recognize increased costs • Incumbent turn over – once trained will the incumbent move to a larger department and portfolio • Developing consensus on complicated enforcement issues

Conclusion & Recommendation

The RFSOC Fire Chiefs recommend that each municipality pursue a joint partnership model for a full time Fire Prevention/Education Officer as per this Business Case.

STAFF REPORT

#6.m

[redacted]

Report #BCO2022-02

To: His Worship the Mayor and Members of Council

From: Melanie Shiell, By-law Compliance Officer

Re: By-law Compliance – March 2022 Council Report

Date: February 23, 2022

Departmental Highlights:

- None to report

Legislative Updates:

- None to report

By-law Compliance Activity for January 2022

OCCURRENCE TYPE	NUMBER OF NEW OCCURRENCES (Commenced this Month)		NUMBER OF ON-GOING OCCURRENCES (Commenced prior to this Month)	YEAR TO DATE OCCURRENCES	
	Open	Closed	Open	Open	Closed
Property Standards	1		3	3	
Clean Yard					
Animal Control					
Parking	3	3			3
Noise					
Zoning			2	2	
Illegal Dumping					
Inquiry	1	1			1
Canine	1	1			1
Other (Pool)					
TOTAL	6	5	5	5	5

Attachments:

- None

Recommendation:

1. None. For Council information only.

Reviewed by C.A.O.:

Karen DePrest
Chief Administrative Officer

Report prepared
and submitted by:

Melanie Shiell
By-law Compliance Officer

Department Approval:

Will Jaques
Corporate Services Manager/Clerk

STAFF REPORT

#6.n

[redacted]

Report #CSM2022-03

To: His Worship the Mayor and Members of Council

From: Will Jaques, Corporate Services Manager

Re: Corporate Services – March 2022 Council Report

Date: February 23, 2022

Departmental Highlights:

- Continued work on the 2022 election. Kick-off meeting has now occurred with the Internet/Telephone voting supplier (Intelivote).

Legislative Updates:

- N/A

Status of Land Use Planning Matters:

Applicant	Location	Application Type	Nature of Application	Status of Applications
2796427 Ontario Ltd.	162 Blandford St., Innerkip	Severance ZBA	Severance of an existing parcel of land, and associated re-zoning, to construct a 5-unit Townhouse.	Severance application approved and conditions being fulfilled. ZBA approved
Musselman	Con. 16, Part Lot 30	ZBA	Rezoning to allow development on undersize ag. parcel, on a lot that does not have road frontage.	Application deferred, pending applicant providing further information.

Applicant	Location	Application Type	Nature of Application	Status of Applications
Engberts	21 Burton St., Innerkip	Severance	Severance of an existing parcel of land.	Severance application approved and conditions being fulfilled.
Canada Farm Distributors Ltd.	165 Hope Street W.	Severance OPA ZBA	Severance of an existing parcel of land.	Severance process complete. OPA & ZBA applications have had public meetings.
Brenneman	616595 13th Line	Severance ZBA	Severance of an existing parcel of land, and associated rezoning.	Severance application approved and conditions being fulfilled. ZBA approved in principle.
Donron Farms Ltd.	616583 13th Line	Severance ZBA	Severance of an existing parcel of land, and associated rezoning.	Severance application approved and conditions being fulfilled. ZBA approved in principle.
Oxford Road Developments 5 Inc.	Extension of Phase #1 subdivision (Innerkip)	SDA OPA ZBA	OPA and ZBA required as part of the application for subdivision.	Applications received.
Lazenby & Shuster	745393 Oxford Rd. #17	Severance ZBA	Severance of an existing parcel of land, and associated rezoning.	Severance application approved and conditions being fulfilled. ZBA Public Meeting held Dec. 1/21.

Applicant	Location	Application Type	Nature of Application	Status of Applications
Shuster	745349 Oxford Rd. #17	ZBA	Rezoning to increase the permitted maximum gross floor area for an animal kennel.	Public Meeting held Dec. 1/21.
Fieldhouse	107 Blandford St., Innerkip	Severance MVA	Severance of an existing parcel of land (creation of 2 additional lots) with a reduction in lot frontage.	Severance application approved and conditions being fulfilled.
Faircrest Farms Ltd.	744772 Oxford Rd. #17	Severance ZBA	Severance of an existing parcel of land, and associated rezoning.	Severance application approved and conditions being fulfilled.
Wettlaufer	10 Homewood Ave. E, Tavistock	MVA	Relief to reduce rear yard setback requirements for a new shed.	Process complete.
Apple Home Builders	76 Fred Krug Ave., Tavistock	MVA	Relief to increase lot coverage for a new home build to 42.5% from 40%.	Process complete.
Hunt Homes Inc.	Lots 1, 12, 13 and 16, Plan 41M-373, Innerkip	MVA	Relief to reduce the minimum lot area from 450 sq. m., to the proposed 424.7 sq. m, for the specified lots.	Process complete.

Applicant	Location	Application Type	Nature of Application	Status of Applications
Stevenson	201 Stonegate Rd., Innerkip	Severance	Severance of an existing parcel of land.	Application received.
2825085 Ontario Inc.	32 Jacob St. E. Tavistock	Severance	Severance of an existing parcel of land (2 new lots).	Application received.
Zehr (U-turn Ranch)	537097 Oxford Rd. #34	ZBA	Amendment to allow for year-round camp and retreat centre.	Application received.
Wettlaufer	516930 11th Line	ZBA	Amendment to allow for second permanent dwelling on property (10 year period).	Application received.
Reyneveld	496953 10th Line	MVA	Relief to permit a second dwelling, as well as relief from MDS 1 requirements.	Public Hearing to be held March 2/22.
Nemeth	177 Coleman St. Innerkip	Severance	Severance of an existing parcel of land.	Application received.
Thoms	86 Lock St. Innerkip	MVA	Relief to permit an accessory structure within an exterior side yard, as well as relief to reduce the minimum interior and exterior side yard setbacks.	Application received.

Attachments:

- None.

Recommendation:

1. None. For Council Information.

Reviewed by C.A.O:

Karen DePrest
Chief Administrative Officer

Report prepared and submitted by:

Will Jaques
Corporate Services Manager

#6.0

STAFF REPORT

Report #CAO2022-02

To: His Worship the Mayor and Members of Council

From: Karen DePrest, CAO/Treasurer

Re: Treasury – March 2022 Council Report

Date: February 23, 2022

Departmental Highlights:

- The proposed 2022 Operating and Capital Budgets have been compiled, and the proposed Net Departmental Summary is presented in *Appendix "A"*. The combined budgets will be presented to Council in a "walkthrough" initial discussion at the March 2, 2022, meeting. Staff will be giving notice by way of this report, and postings in the local newspaper and on the Township website of a public meeting to discuss the budget at Council's March 16, 2022, meeting. The information is in summary only, with the detailed document to be provided to Council by way of their annual binder, and posted to the municipal website on Thursday, March 3rd for public review, prior to the public meeting on March 16th.

- As discussed with Council, Staff will be initiating a three-month trial period of keeping the office open during the lunch hour (12pm – 1pm), starting Monday April 4, 2022. This will provide staff with sufficient time to communicate this initiative with staff and ensure that notice is provided to the public. Staff will keep Council apprised of any feedback received during the trial period, as well as making this a more permanent change.

- As confirmed in *Appendix "B"*, the Township of East Zorra-Tavistock was successful in its grant application for funding under the FCM Asset Management Program, with an award of $50,000. This grant will be used for the non-core asset portion of the Asset Management Plan including a 2022 summer student in Public Works, as well as the necessary training and fieldwork required to compile, assess, and update the Citywide Database. These updates are necessary as per the Province's requirements, for the 2023 deadline. The total project cost has been included in the Proposed 2022 Operating and Capital Budgets, at $125,000.

- 2021 year-end work is underway in preparation for the annual Township audit scheduled for April 19th and 20th. This work includes year-end accruals and closing entries.

Parks and Recreation Master Plan:

- Staff continue to work Stantec on the Service Delivery (Phase 2) portion Parks and Rec Master Plan. It is still anticipated that the overall draft Plan will be presented to Council in the spring of 2022.

Legislative Updates:

- None

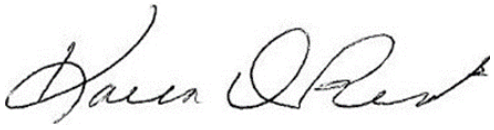
Attachment:

1. Appendix "A" – Proposed 2022 Operating and Capital Budget Summary
2. Appendix "B" – FCM Asset Management Program Enhancement Grant

Recommendation:

1. None. For Council Information.

Respectfully submitted by:



Karen DePrest
Chief Administrative Officer/Treasurer

Township of East Zorra-Tavistock **Revised Date:** 24-02-2022
SUMMARY OF NET DEPARTMENTAL BUDGETARY TAX IMPACTS
2022 Proposed Operating and Capital Budgets Summary

Net Budgets By Department	2021 Approved	2022 Proposed	Difference (2022 - 2021)		Remarks
Building, Locates and Drainage	388,320	**428,355**	40,034	**0.62%**	*reallocation of Storm Water Mgmt program to Building, Locates and Drainage in 2022*
Corporate Services	2,128,388	**2,206,561**	78,173	**1.22%**	*restructured Treasury Services budget items - extended 100% officer funding for 2022*
Fire and Protective Services	1,223,272	**1,295,700**	72,428	**1.13%**	*discretionary equipment spending as tax-supported going forward*
Parks and Recreation	489,751	**509,611**	19,860	**0.31%**	*revenue levels projected to return to pre-COVID state - grass cutting Township provided*
Public Works	3,078,267	**3,127,954**	49,687	**0.77%**	*new equipment purchases to supplement fleet for internal service delivery*
Treasury Services	(881,253)	**(945,304)**	(64,051)	**-1.00%**	*Treasury Services moved from Corporate Services - removed tax dependent PILs*
Net Tax-Supported Budget Summary	**6,426,746**	**6,622,878**	**196,132**	**3.05%**	*re-presented to include portion of Payments in Lieu of Taxes that are rate dependent*

2022 Assessment @ 2021 Tax Rates	6,547,978	**121,232**	1.89%	Assessment Increase
Tax Levy	121,232	**74,900**	1.17%	Tax Rate
		196,132	3.05%	Total Change

2021 Approved			
6,426,746	***includes adjustment for rate-based PILS***	$6,371,362	2021 Taxation Levied
		$ 55,384	2021 PILs Levied
		$6,426,746	**2021 Adjusted Levy**

28 January 2022

His Worship Mayor Don McKay
and Members of Council
Township of East Zorra-Tavistock
90 Loveys Street, Box 100
Hickson, Ontario
N0J 1L0

Title of initiative: Asset Management Program Enhancements in East Zorra-Tavistock
Application number: **MAMP-17824**

Dear Mayor McKay and Members of Council:

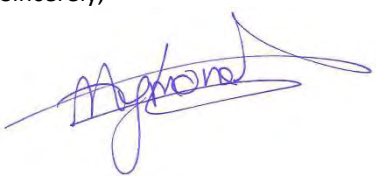
On behalf of the Municipal Asset Management Program (MAMP) it is my pleasure to confirm that the Township of East Zorra-Tavistock has been approved for a grant in the amount of up to **$50,000.**

In the near future, Dzifa Dravi will contact Stephanie Mitchell, Deputy Treasurer of the Township of East Zorra-Tavistock to finalize the agreement for the grant. FCM's obligation to fund the above-noted initiative will only become binding once the agreement is fully executed. During this time, eligible expenditures may be incurred as of your project's eligibility date: 7 December 2021.

Public announcements regarding MAMP-funded initiatives are overseen by FCM in partnership with the Government of Canada. Your municipality is welcome to participate in that process, but until authorised by FCM and Infrastructure Canada, any public statements related to the status of the application for MAMP funding are not permitted. This communication protocol is contained in the grant agreement. If you require further information prior to receiving the contract, please contact Dzifa Dravi at 343-925-6492 or by e-mail at ddravi@fcm.ca.

Thank you for your interest in MAMP. We look forward to working with you to improve asset management practices in your community, and to sharing the results of your initiative with communities across Canada.

Sincerely,



INSERT SIGNATURE
Aymone Agossou
Manager, Funding

cc: Stephanie Mitchell, Deputy Treasurer

THE CORPORATION OF THE

TOWNSHIP OF EAST ZORRA-TAVISTOCK

COUNTY OF OXFORD

PARKER DRAIN 2022

BY-LAW #2022 - 07

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 17-20, Concessions 9 & 10

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 $725,000.00;

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 February 3, 2022, 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 $725,000.00 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 $456,419.00 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 $34,376.00 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 PARKER DRAIN 2022.

READ A FIRST AND SECOND TIME THIS 2nd DAY OF MARCH, 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
PARKER DRAIN 2022

You are hereby advised that the Drainage Court of Revision for the PARKER DRAIN 2022 will be held on Wednesday, April 6, 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 March 28, 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: March 2, 2022

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 - 08

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 2nd day of March, 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 2nd DAY OF March, 2022.

_____

Don McKay, Mayor

seal

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Will Jaques, Clerk