

**DRAINAGE REPORT
FOR THE**

ST. LOUIS DRAIN

**IN THE
CITY OF WINDSOR & TOWN OF TECUMSEH**



(FINAL)
12 JUNE 2026
MARK D. HERNANDEZ, P.ENG.
FILE No. 18-8337
TECUMSEH FILE NO. EO9ST(101)

File No. 18-8337

Mayor and Council
The Corporation of the Town of Tecumseh
917 Lesperance Road
Tecumseh, Ontario
N8N 1W9

**Drainage Report for the
ST. LOUIS DRAIN
In the
City of Windsor & Town of Tecumseh**

Mayor and Council:

Instructions

The Municipality received a request from the County of Essex dated 30 April 2018 to repair and improve the municipal drains along County Road No. 42 as part of the County Road No. 42 reconstruction project. Council accepted the request under Section 78 of the Drainage Act and on 27 August 2018 appointed Dillon Consulting Limited to prepare a report. The Town of Tecumseh made a single appointment for the following drains as an initiating Municipality:

- St. Louis Drain
- 11th Concession Drain
- Banwell Road Drain
- Klondyke & Branch Drain
- Lesperance Road Drain West & Lesperance Road Drain (East Side)
- Dame & East Branch Drain

Background

The County of Essex is planning the reconstruction of County Road No. 42 which includes construction of a new storm sewer to be incorporated as a municipal drain referred to as the County Road No. 42 Drain, supplanting the existing municipal drains within the road allowance. This drain is proposed to extend from the west limit of the Town of Tecumseh municipal boundary and outlet into the Pike Creek Drain east of County Road No. 19 (Manning Road) within the Municipality of Lakeshore. As part of the same project, 11th Concession Road and Banwell Road (which constitute County Road No. 43) will be relocated westerly such that the two roads align at a single intersection with County Road No. 42. The proposed work is recognized to have various impacts to the existing municipal drainage infrastructure, as such the Municipality has made the appointment under the Act to incorporate the new drainage works and rectify any impacts to the remaining municipal drains and associated assessment schedules for future maintenance.

This appointment has been separated into various reports.

Construction of the County Road No. 42 Drain is phased. The portion of drain within the Town of Tecumseh that will replace the St. Louis Drain is not scheduled to be constructed until late 2026 or 2027.



1 Riverside Drive
West, 12th Floor
Windsor, Ontario
Canada
N9A 5K3
Telephone
519.948.5000
Fax
519.948.5054

Similarly, the City of Windsor plans to reconstruct Cabana Road East (formerly County Road No. 42) within the City limits where the portion of St. Louis Drain within the City of Windsor will eventually be replaced with a municipally owned storm sewer. This report provides for the abandonment of the St. Louis Drain within the Town of Tecumseh and the City of Windsor, as well as updated assessment schedules necessary for equitable distribution of maintenance costs incurred during the interim period before both road projects are complete, and the St. Louis Drain supplanted.

Watershed Description

To facilitate the improvements to County Road No. 42, the County Road No. 42 Drain commences at the City/Town boundary and flows easterly to Pike Creek Drain. The County Road No. 42 Drain report recommended the abandonment of the upstream portion of the St. Louis Drain commencing at the Town of Tecumseh municipal boundary then easterly to County Road No. 43 (11th Concession Road) reducing the area served by the St. Louis Drain.

Following completion of the County Road No. 42 works, the remaining drain will be approximately 150 metres in length and the watershed area is reduced to 2.63 hectares (6.50 acres) serving only the road and abutting lands. The remaining portion of drain is fully enclosed and provides access to property Roll No. 030-08900. The entirety of the remaining drain and watershed are within the City of Windsor.

Drain History

The recent history of Engineers' reports for the St. Louis Drain follows:

- **19 July 2006 by Bruce D. Crozier, P.Eng.:** The reconsidered report recommended work included the repair and improvement of the St. Louis Drain, including an enclosure and the lowering of four access culverts.
- **28 May 1999 by Lou Zarlenga, P.Eng.:** The report recommended the enclosure of 95 m of the St. Louis drain.
- **10 June 1981 by C.G.R. Armstrong, P.Eng.:** The recommended work included the repair and improvement of the entire St. Louis Drain, complete with brushing, and the lowering of an existing culvert.
- **10 December 1963 by C.G.R. Armstrong, P.Eng.:** The report recommended the establishment of a new drain and six access culverts.

On-Site Meeting

We conducted an on-site meeting on 2 October 2018. A record of the meeting is provided in Schedule 'A', which is appended hereto.

Design Considerations & Recommendations

We anticipate that the reconstruction of County Road No. 42 will take place before the construction of Cabana Road East. Therefore, we recommend a new manhole be installed on the upstream end of the enclosed portion of the St. Louis Drain to properly terminate the upstream end of drain. The manhole will allow for inspection and maintenance during the period following construction of the County Road No. 42 Drain and prior to the reconstruction of Cabana Road East. We further recommend the abandonment of the St. Louis Drain within the City of Windsor; however it shall remain in place until such time City owned storm sewers replace the drain as part of the Cabana Road reconstruction.

The responsibility and costs to maintain the abandoned portion of drain fall to the Road Authority where the drain resides.

The recommendation to abandon the St. Louis Drain within the Town of Tecumseh is made in the County Road No. 42 Drain report.

The remaining section of drain between County Road No. 43 and the Town of Tecumseh and City of Windsor boundary shall continue to serve as a municipal drain until the County Road No. 42 Drain is completed. The current governing drainage report dated 19 July 2006 shall continue to be referred to for technical details when completing maintenance activities. However, a new schedule for distributing future maintenance costs within the Town of Tecumseh only is provided herein to address changes in the watershed from recent land development and road reconstruction.

Allowances

In accordance with Sections 29 and 30 of the Drainage Act, we do not anticipate any lands being damaged or taken as a result of the proposed drainage works. Any residential properties and grassed areas shall be restored to original conditions as part of the work. Therefore, 'Schedule B' for Allowances has not been included.

Cost Estimate

We recommend that the St. Louis Drain be improved as described below:

Item	Description	Amount
	<u>CLOSED DRAIN WORK</u>	
1.	Removal of existing private access bridges off-site complete with headwalls (approximately 118 m of 450-700 mm diameter pipes).	\$18,700.00
2.	Clearing and grubbing of existing ditch (St. Louis Drain) including removal of organic material, topsoil, broken concrete and other deleterious materials. Filling in of existing drain with benching as per OPSD 208.010. <i>Note: Soils used for the filling of the drain shall be handled in accordance with O.Reg 406/19 On-Site and Excess Soils Management</i>	\$40,000.00
3.	Supply and install concrete storm manhole, as follows:	
	a) 1500 mm diameter (1 required) complete with cast iron frame with open cover and connect existing 750 mm diameter corrugated steel pipe. Work shall include restoration of all disturbed areas.	\$15,000.00
4.	Temporary Silt Control Measures During Construction	<u>\$1,200.00</u>
	SUB-TOTAL – EXCLUDING SECTION 26 COSTS	\$74,900.00
5.	Survey, Report, Assessment and Final Inspection (cost portion)	\$30,000.00
6.	Expenses and incidentals (cost portion)	<u>\$1,200.00</u>
	TOTAL – EXCLUDING SECTION 26 COSTS	\$106,100.00

The estimate provided in this report was prepared according to current materials and installation prices as of the date of this report. In the event of delays from the time of filing of the report by the Engineer to the time of tendering the work, it is understood that the estimate of cost is subject to inflation. The rate of inflation shall be calculated using the Consumer Price Index applied to the cost of construction from the date of the report to the date of tendering.

Assessment of Costs

The individual assessments are comprised of three (3) assessment components:

- i. Benefit (*advantages relating to the betterment of lands, roads, buildings, or other structures resulting from the improvement to the drain*).
- ii. Outlet Liability (*part of cost required to provide outlet for lands and roads*).
- iii. Special Benefit (*additional work or feature that may not affect function of the drain*).

Typically, we assess the estimated costs against the affected lands and roads as listed in Schedule 'C' under "Value of Special Benefit," "Value of Benefit" and "Value of Outlet." Since there is only one Special Benefit assessment, Schedule 'D' has not been included.

Assessment Rationale

Special Benefit assessment shown in Schedule 'C' and were derived as follows:

1. As the proposed recommendations are directly a result of the proposed road reconstruction of County Road No. 42. All associated costs of the drainage works, including the engineering cost portion shall therefore be assessed 100% against the County of Essex.

Future Maintenance

Future maintenance of the remaining portion of drain within the Town of Tecumseh shall be assessed against the lands and roads herein assessed under Schedule 'E.' These provisions for maintenance are subject to any other variations that may be made under the authority of the Drainage Act.

Once the County Road No. 42 Drain is complete, the St. Louis Drain will be abandoned pursuant to the Drainage Act and thus there will be no future maintenance work required.

Drawings and Specifications

Attached to this report is "Schedule G," which represents the following drawings that are also attached to this report:

Page 1 of 1: Watershed Plan

Approvals

The construction and/or improvement to a drainage works, including repair and maintenance activities, and all operations connected therewith are subject to the approval, inspection, by-laws and regulations of all Municipal, Provincial, Federal and other authorities having jurisdiction in respect to any matters embraced by the proposed works. The necessary approvals for the recommended works have been acquired from Essex Region Conservation Authority, Department of Fisheries and Oceans and Ministry of Environment, Conservation and Parks.

Construction of the works shall be carried out in accordance with all mitigation measures, timing windows, standard practices and other applicable limitations related to in-stream works.

Grants

In accordance with the provisions of Sections 85, 86 and 87 of the Drainage Act, a grant in the amount of 33-1/3 percent of the assessment eligible for a grant may be made in respect to the assessment made under this report upon privately owned lands used for agricultural purposes. The assessments levied against privately owned agricultural land must also satisfy all other eligibility criteria set out in the Agricultural Drainage Infrastructure Program policies.

In this particular circumstance, the entire cost of the work will be levied against the County of Essex and therefore, none of the assessed cost is eligible for a grant from the Ministry of Agriculture, Food and Rural Affairs.

DILLON CONSULTING LIMITED



Mark D. Hernandez, P.Eng.
MDH:wlb:lld

[County Road 42 Drains – Minutes of Onsite Meeting](#)

[Tuesday October 2, 2018 – Tecumseh Council Chambers](#)

General discussion regarding the Drainage Act

- Provincial Act but it is the responsibility of the municipalities to implement.
- Act is over 100 years old.
- Copy of the Act can be found on E-Laws Ontario Website.
- 'User Pay System' unlike sewers owned by the municipality.
- The process can generally be described as follows:
 - Request submitted
 - Engineer is appointed by the municipality
 - Conservation Authority notified.
 - Site meeting held
 - Field work completed
 - Draft report prepared
 - Public Information Centre (not required by the Act)
 - Report finalized
 - Meeting to Consider
 - Court of Revision
 - Construction (if no appeals)

What is a Municipal Drain?

- Means that the drain has status under a municipal bylaw
- The drain would have been established through the Drainage Act
- The drain will have a report which outlines pertinent information about the drain

What is the purpose of the site meeting in general?

- Gather information
 - Opportunity for landowners to provide feedback about the performance of the drain
 - Opportunity for landowners to comment on the drainage area.
 - Not everyone in attendance may be in the watershed.

What is the nature of the request(s)?

- Request from the County of Essex for 7 drains including:
 - Klondyke Drain
 - Leperance Road West Drain
 - Leperance Road East Drain
 - Dame Drain, Branch and Extension
 - 11th Concession Drain
 - Banwell Drain
 - St. Louis Drain

- 5 go to Pike Creek and 2 go through the City via other drains to Little River
- The County of Essex has retained Dillon Consulting to undertake the design for the reconstruction of County Road 42 from the City/Tecumseh boundary to the Pike Creek and the diversion of County Road 43.
 - The project generally entails widening of the road and the addition of bike lanes and sidewalks.
 - The additional width will affect the municipal drains and is the reason for Dillon's appointment under the Drainage Act.
 - The drains will likely be enclosed but may also be realigned and consolidated, however, the design has not yet been completed.
- Currently our appointment only pertains to how the drains will be impacted by the proposed roadwork
 - We do not intend to look upstream unless the Town receives a request in writing from a landowner.

Who is going to pay and how?

- The assessment will ultimately depend on the scope of work
 - It is anticipated that the County will pay most if not all of the costs
 - Typically, upstream landowners receive a small assessment for the equivalent value of maintaining the drain as it exists today.
 - If the drain is in good condition, then this does not apply.
- The engineer determines the assessment
 - Assessment is detailed in report for each property in the watershed
 - Block assessments are used for built up areas
- Grants are available for properties with Farm Class Tax Rate (1/3)
- The Municipality will bill the landowners after the work is complete for their net assessment

What should I expect in the report?

- All landowners receive copies of the draft report with their notice for the PIC, Meeting to Consider and Court of Revision
- Reports generally contain:
 - Background information about the request
 - Watershed drawing
 - History of the drain
 - Design considerations
 - Recommended work
 - Cost estimate
 - Meeting minutes
 - Assessments including FM provisions
 - Drawings
 - Specifications

How landowners will be affected during Construction

- Typically, only landowners along the drain affected by construction
 - Working corridors are defined in the report
- Work must result in the same or better level of service
- The quality of work is typically monitored during construction by the Drainage Superintendent
 - The Engineer is required to complete a final inspection

Environmental requirements

- DFO, MNRF and ERCA

Next Steps

- Topographical survey will be completed and then the preparation of the report will commence
- PIC
- Board meetings

Discussion:

- 1) Concern with respect to flooding – New drain will have to meet established level of service.
- 2) The scope of work cannot go upstream on an existing drain unless specifically requested by a landowner.
- 3) Town owned storm sewers are managed through Public Works.
- 4) Existing ditches will be cleaned out and enclosed.
- 5) Any new subdivision will have to manage their stormwater with a pond and/or other measures. They will not be allowed to release their flows with no controls.
- 6) The value of the work is not yet known. The request comes from the County to undertake the road improvements.
- 7) New pipes cannot be sized for major storm events as it would be cost prohibitive. Pre and post ponding will be reviewed during design.
- 8) The improvements to Pike Creek are being undertaken via a separate appointment and is unrelated to the County's request.
- 9) The new storm sewer will be under the improved / widened roadway.
- 10) The timing for the improvements will depend on the County's phasing and timing for the road improvements.
- 11) It is not clear whether drainage improvements could result in MPAC assessment changes.
- 12) Landowners can send additional questions at a later date via email or phone call.

Minutes taken by Mark Hernandez, P.Eng.

"SCHEDULE C"
SCHEDULE OF ASSESSMENT
ST. LOUIS DRAIN
TOWN OF TECUMSEH

MUNICIPAL LANDS:

Description	Area Affected (Acres) (Ha.)		Owner	Special Benefit	Benefit	Outlet	Total Assessment
County Road No. 42	0.50	0.20	County of Essex	\$106,100.00	\$0.00	\$0.00	\$106,100.00
Total on Municipal Lands.....				\$106,100.00	\$0.00	\$0.00	\$106,100.00
TOTAL ASSESSMENT.....				\$106,100.00	\$0.00	\$0.00	\$106,100.00

	(Acres)	(Ha.)
Total Area:	0.50	0.20

"SCHEDULE E"
SCHEDULE OF ASSESSMENT
ST. LOUIS DRAIN
TOWN OF TECUMSEH

MUNICIPAL LANDS:

Description	Area Affected		Owner	Special Benefit	Benefit	Outlet	Total Assessment
	(Acres)	(Ha.)					
County Road No. 42	2.00	0.81	County of Essex	\$0.00	\$1,743.00	\$790.00	\$2,533.00
560-03516	0.13	0.05	County of Essex	\$0.00	\$4.00	\$9.00	\$13.00
Total on Municipal Lands.....				\$0.00	\$1,747.00	\$799.00	\$2,546.00

PRIVATELY-OWNED - NON-AGRICULTURAL LANDS:

Roll No.	Con.	Description	Area Affected		Owner	Special Benefit	Benefit	Outlet	Total Assessment
			(Acres)	(Ha.)					
560-02900	10	Pt. Lot 19	9.34	3.78	Dupuis Trucking & Landscaping	\$0.00	\$568.00	\$530.00	\$1,098.00
560-03000	10	Pt. Lot 19	0.59	0.24	Richard & Jacquelyn Hillcock	\$0.00	\$134.00	\$91.00	\$225.00
560-03200	10	Pt. Lot 19	8.02	3.25	Raymond Pittao	\$0.00	\$505.00	\$503.00	\$1,008.00
560-03300	10	Pt. Lot 19	8.02	3.25	Hardish K. & Tejinder S. Dhanju	\$0.00	\$483.00	\$548.00	\$1,031.00
560-03400	10	Pt. Lot 19	8.02	3.25	Rupinder S. Brar	\$0.00	\$479.00	\$589.00	\$1,068.00
560-03500	10	Pt. Lot 19 RP 12R25489 Pt. 7	22.71	9.19	1000059455 Ontario Inc.	\$0.00	\$913.00	\$1,790.00	\$2,703.00
560-03501	10	Pt. Lot 19 RP 12R18067 Pt. Pt. 1	0.95	0.38	Marc A. Lafreniere & Mila Nerizon-Andot	\$0.00	\$171.00	\$150.00	\$321.00
Total on Privately-Owned - Non-Agricultural Lands.....				\$0.00	\$3,253.00	\$4,201.00	\$7,454.00		

TOTAL ASSESSMENT (Town of Tecumseh)..... **\$0.00** **\$5,000.00** **\$5,000.00** **\$10,000.00**

	(Acres)	(Ha.)
Total Area:	59.78	24.20

”SCHEDULE F”
DRAINAGE REPORT FOR THE
ST. LOUIS DRAIN
IN THE CITY OF WINDSOR & TOWN OF TECUMSEH
SPECIAL PROVISIONS - GENERAL

1.0 GENERAL SPECIFICATIONS

The General Specifications attached hereto is part of “Schedule F.” It also forms part of this specification and is to be read with it, but where there is a difference between the requirements of the General Specifications and those of the Special Provisions which follow, the Special Provisions will take precedence.

2.0 DESCRIPTION OF WORK

The work to be carried out under this Contract includes, but is not limited to, the supply of all **labour, equipment and materials** to complete the following items:

- Removal of existing private access bridges off-site complete with headwalls (approximately 118 m of 450-700 mm diameter pipes).
- Clearing and grubbing of existing ditch (St. Louis Drain) including removal of organic material, topsoil, broken concrete and other deleterious materials. Filling in of existing drain with benching per OPSD 208.010. *Note: Soils used for the filling of the drain shall be handled in accordance with O.Reg 406/19 On-Site and Excess Soils Management*
- Supply and install concrete storm manhole, as follows:
 - 1500 mm diameter (1 required) complete with cast iron frame with open cover and connect existing 750 mm diameter corrugated steel pipe. Work shall include restoration of all disturbed areas.
- Temporary Silt Control Measures During Construction

3.0 ACCESS TO THE WORK

Access to the drain shall be from County Road No. 42 right-of-way. The Contractor shall make his/her own arrangements for any additional access for his/her convenience. All road areas and grass lawn areas disturbed shall be restored to original conditions at the Contractor’s expense.

4.0 WORKING AREA

The working area shall be within the County Road No. 42 right-of-way.

The Contractor shall restrict his equipment to the working corridor as specified in this Section. Any damage resulting from non-compliance with this Section shall be borne by the Contractor.

Should the contractor elect to make use of any private lands outside the designated area, he will be responsible to negotiate any terms for use of these lands with the property owner and be responsible for any damages that occur.

SPECIAL PROVISIONS –MANHOLE

5.0 STORM MANHOLE

General

OPSS.MUNI 407 shall apply and govern except as amended or extended herein.

Scope of Work

Precast concrete manholes are to be supplied and installed in conjunction with the installation of the sewer and shall be equipped with cast iron frames and covers to OPSD 401.010 (Type A), ladder rungs to OPSD 405.020 and adjustment units shall be IPEX Lifesaver Adjustment Rings. Type 20 cement shall be used for all manholes.

The Contractor shall consider the elevation of the future road as shown in the drawings when placing adjustment rings and shall ensure that there is an adequate number of adjustment rings to facilitate lowering of the roadway in a future roadwork contract.

The Contractor shall be responsible to ensure that the use of engineered or prefabricated trench support systems are appropriate to satisfy the requirements of the Occupational Health and Safety Act.

The location of private drain connections may be revised depending on final locations confirmed with landowners. An extra credit to the tendered price shall only be considered if there is a 300 mm or more difference between the as-built depth to invert and the design depth to invert.

Backfill

Backfill shall be Granular “A”, mechanically compacted to 100 percent of the Standard Proctor Maximum Dry Density. Handheld mechanical compaction equipment or non-shrink fill shall be used where other conventional compaction equipment cannot be used.

Utility Supports

Where required, the Contractor shall construct utility supports following specifications and requirements of the respective Utility Companies. Utility supports shall be considered incidental to sewer construction. No payment shall be made for supports either temporary or permanent.

Utility supports shall be constructed as required by the respective utility companies per their respective standards and guidelines as outlined therein.

6.0 SITE CLEANUP AND RESTORATION

As part of the work and upon completion, the Contractor shall remove and dispose of, off-site any loose timber, logs, stumps, large stones, rubber tires, cinder blocks or other debris from the drain bottom and from the side slopes. Where the construction works cross a lawn, the Contractor shall take extreme care to avoid damaging the lawn, shrubs and trees encountered. Upon completion of the work, the Contractor shall completely restore the area by the placement and fine grading of topsoil and seeding or sodding the area as specified by the Engineer or Drainage Superintendent.

GENERAL SPECIFICATIONS

1.0 AGREEMENT AND GENERAL CONDITIONS

The part of the Specifications headed "Special Provisions" which is attached hereto forms part of this Specification and is to be read with it. Where there is any difference between the requirements of this General Specification and those of the Special Provisions, the Special Provisions shall govern.

Where the word "Drainage Superintendent" is used in this specification, it shall mean the person or persons appointed by the Council of the Municipality having jurisdiction to superintend the work.

Tenders will be received, and contracts awarded only in the form of a lump sum contract for the completion of the whole work or of specified sections thereof. The Tenderer agrees to enter into a formal contract with the Municipality upon acceptance of the tender. The General Conditions of the contract and Form of Agreement shall be those of the Stipulated Price Contract CCDC2-Engineers, 1994 or the most recent revision of this document.

2.0 EXAMINATION OF SITE, PLANS AND SPECIFICATIONS

Each tenderer must visit the site and review the plans and specifications before submitting his/her tender and must satisfy himself/herself as to the extent of the work and local conditions to be met during the construction. Claims made at any time after submission of his/her tender that there was any misunderstanding of the terms and conditions of the contract relating to site conditions, will not be allowed. The Contractor will be at liberty, before bidding to examine any data in the possession of the Municipality or of the Engineer.

The quantities shown or indicated on the drawings or in the report are estimates only and are for the sole purpose of indicating to the tenderers the general magnitude of the work. The tenderer is responsible for checking the quantities for accuracy prior to submitting his/her tender.

3.0 MAINTENANCE PERIOD

The successful Tenderer shall guarantee the work for a period of one (1) year from the date of acceptance thereof from deficiencies that, in the opinion of the Engineer, were caused by faulty workmanship or materials. The successful Tenderer shall, at his/her own expense, make good and repair deficiencies and every part thereof, all to the satisfaction of the Engineer. Should the successful Tenderer for any cause, fail to do so, then the Municipality may do so and employ such other person or persons as the Engineer may deem proper to make such repairs or do such work, and the whole costs, charges and expense so incurred may be deducted from any amount due to the Tenderer or may be collected otherwise by the Municipality from the Tenderer.

4.0 GENERAL CO-ORDINATION

The Contractor shall be responsible for the coordination between the working forces of other organizations and utility companies in connection with this work. The Contractor shall have no cause of action against the Municipality or the Engineer for delays based on the allegation that the site of the work was not made available to him by the Municipality or the Engineer by reason of the acts, omissions, misfeasance or non-feasance of other organizations or utility companies engaged in other work.

5.0 RESPONSIBILITY FOR DAMAGES TO UTILITIES

The Contractor shall note that overhead and underground utilities such as hydro, gas, telephone and water are not necessarily shown on the drawings. It is the Contractor's responsibility to contact utility companies for information regarding utilities, to exercise the necessary care in construction operations and to take other precautions to safeguard the utilities from damage. All work on or adjacent to any utility, pipeline, railway, etc., is to be carried out in accordance with the requirements of the utility, pipeline, railway, or other, as the case may be, and its specifications for such work are to be followed as if they were part of this specification. The Contractor will be liable for any damage to utilities.

6.0 CONTRACTOR'S LIABILITY

The Contractor, his/her agents and all workmen or persons under his/her control including sub-contractors, shall use due care that no person or property is injured and that no rights are infringed in the prosecution of the work. The Contractor shall be solely responsible for all damages, by whomsoever claimable, in respect to any injury to persons or property of whatever description and in respect of any infringement of any right, privilege or easement whatever, occasioned in the carrying on of the work, or by any neglect on the Contractor's part.

The Contractor shall indemnify and hold harmless the Municipality and the Engineer, their agents and employees from and against claims, demands, losses, costs, damages, actions, suits, or proceedings arising out of or attributable to the Contractor's performance of the contract.

7.0 PROPERTY BARS AND SURVEY MONUMENTS

The Contractor shall be responsible for marking and protecting all property bars and survey monuments during construction. All missing, disturbed or damaged property bars and survey monuments shall be replaced at the Contractor's expense, by an Ontario Land Surveyor.

8.0 MAINTENANCE OF FLOW

The Contractor shall, at his/her own cost and expense, permanently provide for and maintain the flow of all drains, ditches and water courses that may be encountered during the progress of the work.

9.0 ONTARIO PROVINCIAL STANDARDS

Ontario Provincial Standard Specifications (OPSS) and Ontario Provincial Standard Drawings (OPSD) shall apply and govern at all times unless otherwise amended or extended in these Specifications or on the Drawing. Access to the electronic version of the Ontario Provincial Standards is available online through the MTO website, free of charge to all users. To access the electronic standards on the Web go to <http://www.mto.gov.on.ca/english/transrd/>. Under the title Technical Manuals is a link to the Ontario Provincial Standards. Users require Adobe Acrobat to view all pdf files.

10.0 APPROVALS, PERMITS AND NOTICES

The construction of the works and all operations connected therewith are subject to the approval, inspection, by-laws and regulations of all Municipal, Provincial, Federal and other authorities having jurisdiction in respect to any matters embraced in this Contract. The Contractor shall obtain all approvals and permits and notify the affected authorities when carrying out work in the vicinity of any public utility, power, underground cables, railways, etc.

11.0 SUBLETTING

The Contractor shall keep the work under his/her personal control, and shall not assign, transfer, or sublet any portion without first obtaining the written consent of the Municipality.

12.0 TIME OF COMPLETION

The Contractor shall complete all work on or before the date fixed at the time of tendering. The Contractor will be held liable for any damages or expenses occasioned by his/her failure to complete the work on time and for any expenses of inspection, superintending, re-tendering or re-surveying, due to their neglect or failure to carry out the work in a timely manner.

13.0 TRAFFIC CONTROL

The Contractor will be required to control vehicular and pedestrian traffic along roads at all times and shall, at his/her own expense, provide for placing and maintaining such barricades, signs, flags, lights and flag persons as may be required to ensure public safety. The Contractor will be solely responsible for controlling traffic and shall appoint a representative to maintain the signs and warning lights at night, on weekends and holidays and at all other times that work is not in progress. All traffic control during construction shall be strictly in accordance with the **Occupational Health and Safety Act** and the current version of the **Ontario Traffic Manuals**. Access to the electronic version of the **Ontario Traffic Manual** is available online through the MTO website, free of charge to all users. To access the electronic standards on the Web go to <http://www.mto.gov.on.ca/english/transrd/>, click on "Library Catalogue," under the "Title," enter "Ontario Traffic Manual" as the search. Open the applicable "Manual(s)" by choosing the "Access Key," once open look for the "Attachment," click the pdf file. Users require Adobe Acrobat to view all pdf files.

Contractors are reminded of the requirements of the Occupational Health and Safety Act pertaining to Traffic Protection Plans for workers and Traffic Control Plan for Public Safety.

14.0 SITE CLEANUP AND RESTORATION

As part of the work and upon completion, the Contractor shall remove and dispose of, off-site any loose timber, logs, stumps, large stones, rubber tires, cinder blocks or other debris from the drain bottom and from the side slopes. Where the construction works cross a lawn, the Contractor shall take extreme care to avoid damaging the lawn, shrubs and trees encountered. Upon completion of the work, the Contractor shall completely restore the area by the placement and fine grading of topsoil and seeding or sodding the area as specified by the Engineer or Drainage Superintendent.

15.0 UTILITY RELOCATION WORKS

In accordance with Section 26 of the Drainage Act, if utilities are encountered during the installation of the drainage works that conflict with the placement of the new culvert, the operating utility company shall relocate the utility at their own costs. The Contractor however will be responsible to co-ordinate these required relocations (if any) and their co-ordination work shall be considered incidental to the drainage works.

16.0 FINAL INSPECTION

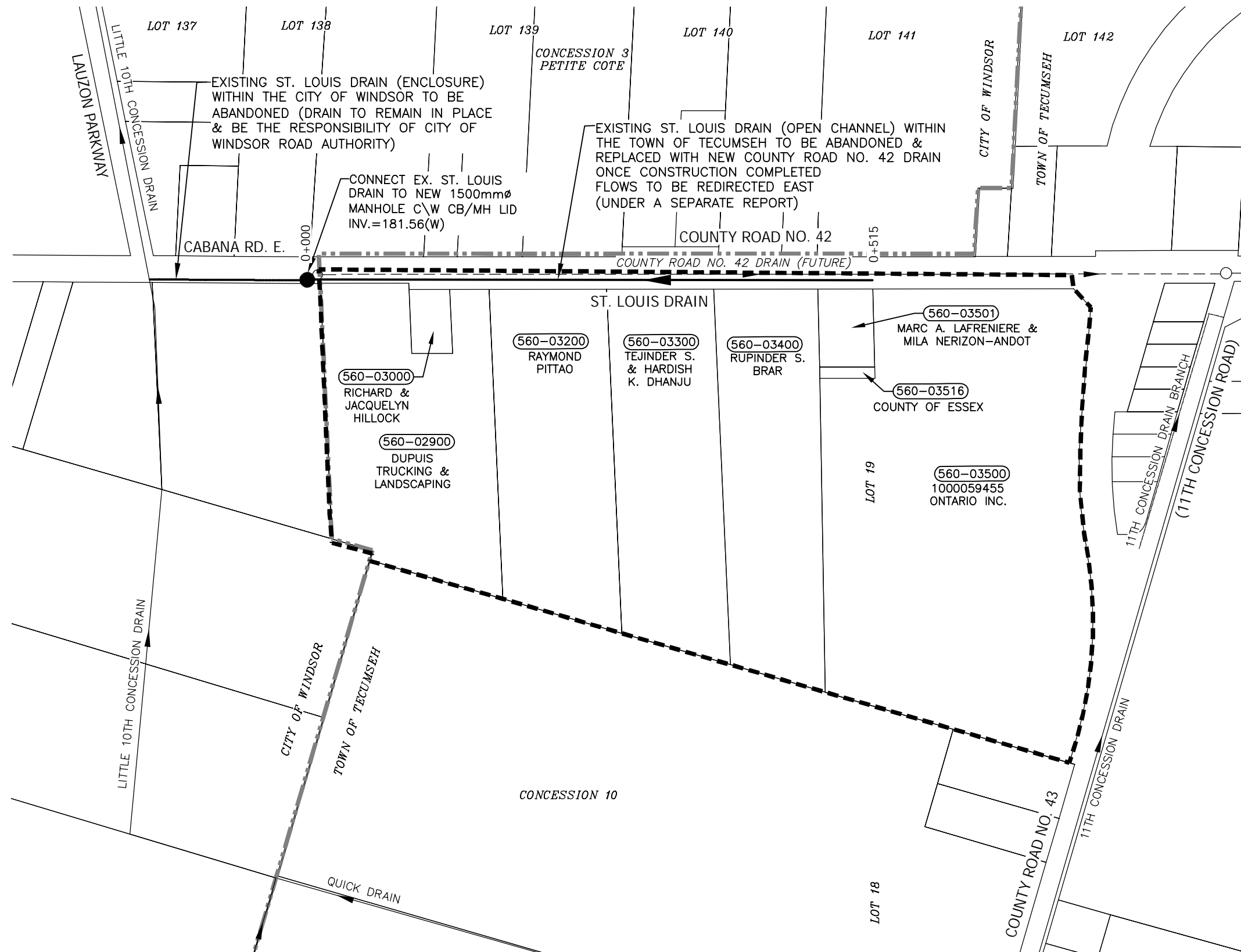
All work shall be carried out to the satisfaction of the Drainage Superintendent for the Municipality, in compliance with the specifications, drawings and the Drainage Act. Upon completion of the project, the work will be inspected by the Engineer and the Drainage Superintendent. Any deficiencies noted during the final inspection shall be immediately rectified by the Contractor.

Final inspection will be made by the Engineer within 20 days after the Drainage Superintendent has received notice in writing from the Contractor that the work is completed, or as soon thereafter as weather conditions permit.

17.0 FISHERIES CONCERNS

Standard practices to be followed to minimize disruption to fish habitat include embedment of the culvert a minimum 10% below grade, constructing the work 'in the dry' and cutting only trees necessary to do the work (no clear-cutting). No in-water work is to occur during the timing window unless otherwise approved by the appropriate authorities.

Jun 17, 2026 - 1:59pm C:\pw working directory\projects 2018\33\wb\dmr\43130\188337-03-DRN-CON (Feb2026).dwg



SITE BENCHMARK

PKNAIL IN TOP OF CONCRETE PUMP STATION ON NORTH SIDE OF SHIELDS AVENUE LOCATED OPPOSITE THE NORTHERLY PRODUCTION OF THE EAST WALL OF TECUMSEH VISTA SCHOOL. GEODETIC BENCHMARK ESTABLISHED BY VERHAEGEN STUBBERFIELD HARTLEY BREWER BEZAIRE INC, DECEMBER 2012 4-26338 05

PK NAIL ELEVATION=183.509

NOTE: CONTRACTOR TO VERIFY BENCHMARKS PRIOR TO CONSTRUCTION.

LEGEND

- MUNICIPAL BOUNDARY
- - - ST. LOUIS DRAIN DRAINAGE AREA
- ST. LOUIS DRAIN
- OTHER DRAINS
- NEW MANHOLE
- EXISTING MANHOLE

ONTARIO PROVINCIAL STANDARD DETAILS APPLY

OPSD 701.011	PRECAST CONCRETE MAINTENANCE HOLE (1500Ø)
OPSD 401.010	CAST IRON SQUARE FRAME W/CIRCULAR CLOSED OR OPEN COVER FOR MAINTENANCE HOLES

WATERSHED PLAN
SCALE=1:4,000



Conditions of Use

Verify elevations and/or dimensions on drawing prior to use. Report any discrepancies to Dillon Consulting Limited.

Do not scale dimensions from drawing.

Do not modify drawing, re-use it, or use it for purposes other than those intended at the time of its preparation without prior written permission from Dillon Consulting Limited.

No.	ISSUED FOR	DATE	BY
3	FINAL REPORT SUBMISSION	JUNE 12/26	MDH
2	PUBLIC INFORMATION CENTRE	MAY 25/26	MDH
1	CLIENT REVIEW	JAN. 21/25	MDH

DESIGN	MDH	REVIEWED BY	CDP
DRAWN	OEM/WLB	CHECKED BY	TRO
DATE	June 12, 2026		
SCALE	AS SHOWN		

PROJECT NO. 18-8337

DRAWING SCALES BASED ON A 11" X 17" SHEET

'SCHEDULE G'

Drainage Report for the
ST. LOUIS DRAIN
City of Windsor

SHEET TITLE **WATERSHED PLAN**

PAGE NO. 1 of 1