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Stantec

March 26, 2010
File: 165601087

Municipality of Leamington
38 Erie Street North
LEAMINGTON, Ontario
N8H 2Z3

Attention: Mayor Adams & Members of Council

**Reference: Drainage Report for a Section of the Upper Portion of the
Temple Municipal Drain
Municipality of Leamington**

1.0 AUTHORIZATION

As authorized by Council Resolution No. C-344-09, Stantec Consulting Ltd. submits this Drainage Report for the upgrades to / relocation of a section of the Upper Portion of the Temple Drain, in accordance with Section 78(1) of the Drainage Act, R.S.O. 1990, in conjunction with and as a required result of proposed roadway improvements at the intersection of Essex County Road 31 and the Road 3 East / the 3rd Concession Road intersection, to be undertaken by the County of Essex. The Temple Drain is a covered Municipal Drain in the Municipality of Leamington commencing on the north side of the 3rd Concession Road running northerly along the east side of County Road 31 within the road right-of-way and outleting to Sturgeon Creek just north of and after crossing underneath of Highway No. 3. Road 3 East is in the Town of Kingsville. The above Council Resolution and appointment of Stantec Consulting Ltd. as the Engineer to prepare the Report was in response to the Request for Repair and Maintenance or Repair and Improvement of a Municipal Drain (Section 76 and 78 Drainage Act), submitted by the County of Essex on August 27, 2009, due to the proposed intersection roadway improvements.

2.0 EXISTING TEMPLE DRAIN

The current covered Temple Drain consists of buried sections of 450 mm (18 inch) diameter concrete sewer pipe, commencing at the northeast corner of County Road 31 and the 3rd Concession Road running northerly for approximately 585 metres (the Upper Portion of the Temple Drain), at which point it is connected to buried sections of 600 mm (24 inch) diameter concrete sewer pipe running northerly for approximately 30 metres up to and under Highway No. 3 to the north side of the highway and then outleting into Sturgeon Creek (the Lower Portion of the Temple Drain). There are manholes and catch basins installed at various locations along and in line with sewer pipes.

The boundaries of the Temple Drain drainage (watershed) area, outlined in red, are shown on **FIGURE 1** of this Report. Generally the drainage area includes sections of lands to the northeast (in Leamington), and the northwest and southwest (both in Kingsville) directions away from the

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intersection of County Road 31 and Road 3 East / the 3rd Concession Road, with the surface waters in these areas generally flowing towards this intersect both overland and via roadside ditches (with culverts crossing from the west side to the east side of County Road 31 at the intersection and several culverts downstream (i.e. north) of the intersection. The lands to the southeast of the intersection (in Leamington) do not flow to the Temple Drain and are not included in the drainage area.

The Drainage Area also includes and right-of-way portions (pavement / gravel shoulders / grass boulevards) of sections of: Road 3 East (west of the intersection) in Kingsville; County Road 31 (north and south of the intersection); the newly created County of Essex road right-of-way areas to accommodate a new modern roundabout (west and east of the intersection), and; the 3rd Concession Road (east of the intersection) in Leamington.

3.0 Purpose of Report

The County of Essex is improving the intersection of County Road 31 and Road 3 East / 3rd Concession Road with the installation of a modern roundabout. The purpose of this Drainage Report is to provide for the relocation of the first 89 metres of the existing covered Upper Portion of the Temple Drain that is currently within the footprint of the proposed modern roundabout. The existing drain consists of a 450 mm dia. (18 inch) pipe from it's starting point, which is a catch basin – maintenance hole, due to the construction of the traffic roundabout which will be built overtop of this existing 89 metre section. Although not part of the existing Temple Drain, the work to be undertaken under this Drainage Report will also include replacing the culverts under the existing County Road 31 / Road 3 East – 3rd Concession intersection, to continue to convey the flows in the roadside ditches of Road 3 East, County Road 31 and the 3rd Concession that currently outlet into the Temple Drain at it's starting point. The new culverts crossing under the intersection will be upgraded in size. Portions of these roadside ditches within the roundabout footprint will also be realigned, maintaining the same cross sections and grades. The ditch on the west side of County Road 31 will be filled in with a covered storm sewer pipe from Road 3 East southerly to the southern limit of the roundabout footprint.

As part of the County of Essex work program for the new intersection improvements, a *new separate storm drainage system*, that includes a new separate storm sewer outlet to Sturgeon Creek, paralleling the Temple Drain, to properly drain the new roundabout roadway pavement and boulevard will be constructed as part of the overall roundabout construction and **is not part of the works considered under this Drainage Report**. This new storm drainage system will remove a portion of the storm runoff flows that currently enter the Temple Drain, thereby freeing up some capacity for the remainder of the lands and roadways within the Temple Drain drainage area and therefore ultimately improving the existing conditions.

4.0 Maintenance Assessment Schedules

The most recent Maintenance Schedule provided for in the September 30, 1988 Maintenance Schedule Report in accordance with Section 76(1) of the Drainage Act, R.S.O. 1990 will be updated as part of this Drainage report. The 1988 Report was undertaken by Nick Peralta, P. Eng. at the request of the former Mersea Township.

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The proportions by which the cost of maintaining the Temple Drain will be re-evaluated and will be assessed against the lands and roads affected and benefitting from any proposed future maintenance works. In particular, the new larger roadway right-of-way footprint required for the modern roundabout will be assessed to the County of Essex. In addition, changes that have occurred since 1988 will be evaluated including:

- The extents of the drainage area boundary within certain parcels (by tax roll assessment),,
- Portions of several parcels of land that were not previously assessed are now shown to be assessed,
- Several parcel ownership have changed since 1988 Separate storm water management plans have been implemented for several greenhouse operations in both Kingsville and Leamington that retain the generated storm water runoff in ponds and release it at pre-development rates to outlets other than the Temple Drain.
- Similarly, the storm runoff flows from the Spinks Industrial Subdivision in Kingsville off of Road 3 East, west of County Road 31 are collected internally and discharge directly to the north to the King's Highway 3 Branch of Sturgeon Creek Drain and not to the Temple Drain; and
- None of the private properties in the southeast quadrant of the County Road 31 and 3rd Concession Road portion of the intersection are within the drainage area for the Temple drain and as such are not assessed, which represents no change from the 1988 report.

The 1988 report determined and established that the section of 600 mm diameter sewer pipe section of the drain crossing under Highway 3 and outletting to Sturgeon Creek should be called the Lower Portion of the Temple Drain and the 450 mm diameter sewer section of the drain from its starting point northerly to start of the 600 mm sewer, should be called the Upper Portion of the Temple Drain. Further, the 1988 report determined that future maintenance assessments should be set up under two separate maintenance schedules, one for the Upper Portion of the Temple Drain and one for the Lower Portion of the Temple Drain. The updated / revised Maintenance Schedules in this Report retains the two separate maintenance schedules.

5.0 ORDER OF PROCEDURE UNDER THE DRAINAGE ACT

The following is the general order of procedure that is followed to upgrade / relocate / improve a municipal drainage system or a portion thereof pursuant to Section 78 of The Drainage Act.

1. Municipal Council determines that repair and improvements are required.
2. Municipal Council appoints an Engineer
3. Engineer conducts an on site meeting
4. Engineer conducts a survey / examination of the drain
5. Need for preparation of a Preliminary Report is decided.
6. Engineer completes and provides Preliminary Report

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7. Municipal Council considers the Preliminary Report at a Public Meeting with affected landowners and road authorities and decides on option(s) with which to proceed.
8. Engineer prepares Final Drainage Report and provides it to Municipality.
9. Municipal Council considers the Report at a Public Meeting with affected landowners and road authorities.
10. At the meeting for consideration the Municipal Council may adopt the Drainage Report. If adopted the Municipal Clerk prepares a Provisional By-Law for the recommended work and sends copies of the By-Law to affected parties and arranges a second meeting of Council for Court of Revision.
11. The Court of Revision is held at a subsequent meeting with the affected landowners to discuss any disputes regarding assessment of cost to lands and roads.
12. Municipal Council passes By-Law for Construction of the Work after statutory waiting periods and appeal periods expire.
13. Tenders are received by the Municipality to perform the recommended work and construction is carried out. Inspection of the construction work may be provided by the Municipal Drainage Superintendent or by an inspector from the Engineer's office.
14. Upon completion of construction, the Municipal Clerk will finalize all applicable costs and submit grant applications to the Ministry of Agriculture, Food and Rural Affairs if applicable. The Municipal Clerk will then send a Final Net Assessment to the affected land owners and road authorities.

6.0 ON SITE MEETING

In accordance with the requirements of the Drainage Act, an on-site meeting was held on **Wednesday, December 16, 2010 at 3:00 p.m.** at the southwest corner of County Road 31 and Road 3 East, for which the Municipality of Leamington and the Town of Kingsville sent out notices to the property owners currently assessed in the Temple Drain drainage area or currently within the Temple Drain Drainage area, but not currently assessed. In attendance were the following:

Edward Araujo	2082 Road 3 East, Kingsville
Mark Araujo	2082 Road 3 East, Kingsville
Paul Watkins	1992 Road 3 East, Kingsville
Albert Quick	286 County Road 31, Leamington
Greg Sellon	Fox Ready Mix, 1992 Road 3 East, Kingsville
Elvey Marshall	22 queen's Avenue, Leamington
Nick Mastronardi	2237 County Road 31, Kingsville
Sante Gualdieri	2209 road 3 East, Kingsville
Felice Gualdieri	20 Park Lane, Town of Essex
Victor Martens	Concession 6, Kingsville

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Allan Koop	Erie Sand & Gravel, County Road 31, Leamington
Lu-Ann Barreto	Municipality of Leamington
Ken Vegh	Town of Kingsville
Jane Mustac	County of Essex
Jaime Garcia	County of Essex
Dan Newman	County of Essex
Michael Mastronardi	Stantec Consulting Ltd.

Generally, the following discussions took place and items noted:

- 1) Lu-Ann Barreto, Drainage Superintendent for the Municipality of Leamington introduced herself and welcomed everyone and stated that Stantec Consulting had been appointed by Council Resolution as the Drainage Engineer at the request of the County of Essex, to undertake a Drainage Report and prepare the necessary Plans to satisfy the provisions of the Drainage Act for improvements to the Temple Drain, as a result of the construction of a traffic roundabout at the intersection of Essex County Road 31 and Road 3 East (Kingsville) / 3rd Concession Road (Leamington). She further indicated that Mr. Michael Mastronardi, P. Eng., of Stantec Consulting (hereinafter referred to as the Engineer) will be undertaking the report and then turned the meeting over to him.
- 2) The Engineer introduced himself and welcomed everyone. He stated that due to the construction of a modern roundabout at this intersection by the County of Essex, the portion of the existing 450 mm (18 inch) dia. Temple Drain pipe on the east side of County Road 31 within the footprint of the roundabout, will have to be relocated, inasmuch as the start of the drain, which is a catchbasin–maintenance hole, is right at the radius of the northeast corner of County Road 31 and the 3rd Concession Road and would be under the new pavement of the roundabout. It then runs northerly within the right-of-way just off of the gravel shoulder on the east side of Road 31 and would also be under the new pavement within the footprint of the roundabout. As well culverts crossing under Road 31 and Road 3 East and the 3rd Concession Road, that transfer water from the roadside ditches on Road 3 East west of Road 31 and on the west side of Road 31 north and south of the intersection and on the east side of Road 31 south of the intersection to the start of the Temple Drain are in poor condition and would also be under the new pavement.
- 3) Therefore, it is both prudent and necessary, to relocate a portion of the covered Temple Drain pipe on the east side of County road 31, with a new pipe and to install new larger culverts (storm sewer pipes) underneath the roundabout to replace the old culverts under the intersection. In addition, the existing roadside ditches within the footprint of the roundabout will be realigned to the same size and grade to connect to the new culverts crossing under the roundabout and outletting to the start of the realigned Temple Drain pipe.
- 4) Several of the property owners, in particular the owners of the properties immediately adjacent to the southwest and northwest corners of the intersection and the farmer who farms the land immediately adjacent to the northeast corner of the intersection expressed concerns of periods of flooding and periods of standing water on their properties over the years after certain rainfall events and having lead to crop damage. They cited the infrequent maintenance / cleaning of the ditches, culverts and Temple Drain itself as

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possible reasons. As well the property owner at the northwest corner of the intersection claimed that ever since the Spinks Industrial Subdivision was developed, that storm water runoff ending up in the ditch in front of his property on the north side of Road 3 East have increased. The Engineer assured everyone that the storm flows from the industrial subdivision are contained within the subdivision, collected and outlet north to the Highway No. 3 Branch of Sturgeon Creek and do not enter the Temple Drain. The Engineer stated that the Temple Drain currently appears to be clean and the pipes and outlet at Sturgeon Creek currently appear to be in good shape as seen visually at the maintenance holes and catchbasins. A video inspection of Temple Drain may be undertaken as well to confirm its condition.

- 5) The Engineer stated that to the greatest extent practical, the method of dealing with the increased storm water runoff generated from the new pavement and boulevard areas of the roundabout will be designed to not have an adverse impact upon the operation of the Temple Drain. Possible methods include storage (underground in oversize pipes or above ground in linear ponds (ditches) within the footprint of the roundabout) with a controlled release rate of the runoff. Another alternative would be to design a totally separate storm drainage collection system for the roundabout pavement and boulevard areas outletting to a new storm sewer running all the way up to and outletting at Sturgeon Creek, completely separate from the Temple Drain.

7.0 CURRENT DRAINAGE REPORT (S)

The two most current reports on file with the Municipality of Leamington (former Township of Mersea) relating to the Temple Drain are:

- Drainage Report dated January 14, 1977, prepared by William J. Settingington, P. Eng.
- Maintenance Report dated September 30, 1988, prepared by Nick Peralta, P. Eng.

8.0 EXAMINATION

As part of the preparation of this Drainage Report, Stantec personnel did a cursory review of the properties within the drainage area including a site visit,, review of aerial photography and contour mapping, review of other drainage plans and the stormwater management plans for greenhouse developments, completed a topographic survey of the County Road 31 and Road 3 East / 3rd Concession Road intersection and determined grades and elevations on the existing Temple Drain and on the pavement and roadside ditches of sections of Road 3 East, as well as making visual observation of the maintenance holes and catchbasins along the Temple Drain including the outlet at Sturgeon Creek. Based on these visual observations the Temple Drain currently appeared to be clean and in good condition. As well the Temple Drain was video inspected as part of the preparation of this Drainage Report, which confirmed that it is generally clean and in good condition

9.0 REGULATORY AUTHORITY

The Essex Region Conservation Authority (ERCA) was consulted as part of the examination and preparation of this Drainage Report. ERCA indicated that Sturgeon Creek is a Regulated Water Course in terms of regulating additional or increased storm runoff flows being allowed to enter it.

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Therefore Stantec undertook an analysis of the impact of increased flows from the realigned portion of the 89 metres of Temple Drain and determined a floodline elevation increase of less than 5 mm and therefore concluded that the relatively small increase in flow will have a negligible impact on the Sturgeon Creek 100 year floodline.

Further to this conclusion, the new separate storm drainage system, being completed independently as part of the construction of the modern roundabout, will remove additional storm runoff flows that currently enter the Temple Drain.

10.0 EXISTING CONDITIONS

The existing Temple Drain 450 mm dia. concrete storm sewer pipe commences 8.5 metres north of the northeast radius pavement edge of County Road 31 and the 3rd Concession Road and 5.5 metres east of the east pavement edge of County Road 31, with a 900 mm (36 inch) CSP catchbasin - maintenance hole. There is a 300 mm CSP culvert crossing Road 31 from this starting CB – MH which connects to the roadside ditch on the west side of Road 31 north of Road 3 East and to the ditch on the north side of Road 3 East. There is a 300 mm dia. CSP culvert crossing from the west side of Road 31 connected to the ditch on the west side of Road 31 south of Road 3 East and to the ditch on the south side of Road 3 East which connects to a series of pipes under the pavement on the east side of the intersection which connect to the Temple Drain by way of a catchbasin south of the starting CB – MH and through a second connection further north of the CB – MH. There is a 450 mm dia. CSP culvert connected to the roadside ditch on the north side of the 3rd Concession Road connected to the catchbasin south of the starting CB – MH.

11.0 RECOMMENDATIONS

In order to construct the modern roundabout, it will be necessary remove an 89 meter section of the existing upper portion of Temple Drain covered storm sewer pipe that is located within the proposed footprint of the roundabout and install a new realigned section of covered storm sewer pipe so that it will not be under the new pavement and such that there will be access to it for any future maintenance. The existing roadside ditches and culverts under the pavement, connecting to the existing Temple Drain will be maintained / realigned and /or replaced with covered storm sewer pipe redirected to the new relocated starting point of the Temple Drain, as described below in this Report under Section 12.0 – PROPOSED WORK.

12.0 PROPOSED WORK

In order to construct the traffic roundabout it will be necessary to remove first 89 metres of the existing covered Temple Drain pipe and replace it with 63 metres of the same 450 mm dia. (18 inch) pipe, HDPE BOSS 2000, but realigned in a southeast direction within the new County of Essex road right-of-way in northeast corner of the intersection. Although not part of the existing Temple Drain, the work to be undertaken will also include replacing the culverts under the existing County Road 31 / Road 3 East – 3rd Concession intersection with 450 mm dia. concrete sewer pipes, to continue to convey the flows in the roadside ditches of Road 3 East, County Road 31 and the 3rd Concession Road via ditch inlet catchbasins (DICB's). As well portions of these roadside ditches within the roundabout footprint will also realigned to the DICB's, maintaining the same cross sections and grades. The ditch on the west side of County Road 31 will be filled in with 71 metres

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of 450 mm dia. HDPE BOSS 2000 covered storm sewer pipe from Road 3 East southerly to the southern limit of the roundabout footprint and any field tiles encountered will be connected to it. The ditch on the east side of Road 31 south of the 3rd Concession Road will be connected to the 450 mm dia. pipe on the west side with 375 mm dia. concrete sewer pipe at the point where the ditch currently ends. The proposed Temple Drain relocation work is shown on **FIGURE 2 – RELOCATED SECTION OF UPPER PORTION OF TEMPLE DRAIN**, attached to this Report.

13.0 DRAWINGS AND SPECIFICATIONS

The works to be undertaken under this Drainage Report for the Temple Drain will be included in the Contract Drawings and Specifications for the County of Essex modern roundabout construction. Figures 2 to 7 attached to this Report show the proposed construction of the roundabout and the Temple Drain realignment / improvements. The complete set of Construction Drawings and the Contract Documents and Specifications have not been finalized yet as of the date of this Preliminary Drainage Report. However the construction will generally be in accordance with Ontario Provincial Standard Specifications (OPSS) 410 – Construction Specification for Pipe Sewer Installation in Open Cut and OPSS 421 – Construction Specification for Pipe Culvert Installation in Open Cut. All potential utilities conflicts will be accounted for in the final design. A drawing of the 'Proposed Work' is included as an attachment to this report.

14.0 WORKING AREA AND ACCESS

The area available to the contractor to be used for the purpose of constructing the recommended Temple Drain drainage works of this Report and for future maintenance of the Temple Drain as provided for under Section 63 of the Drainage Act 1990 are described herein and form part of this Report. The roadway right-of-way for the modern roundabout owned by the County of Essex can be used as a working area both for construction and maintenance purposes.

15.0 ESTIMATE OF COST

A Summary of the Expected Costs (not including Tax) for the relocation of the 89 metre section of the Upper Portion of the Temple Drain and ancillary work is provided in the following table:

CONSTRUCTION	
Removal of existing section of Temple Drain, catchbasins and culverts – Lump Sum	\$ 3,000
134 m. of 450 mm dia. HDPE BOSS 2000 Sewer Pipe @ \$125/m	\$ 16,750
91 m. of 450 mm 140D Concrete Sewer Pipe @ \$200/m	\$ 18,200
16 m. of 375 mm dia. HDPE BOSS 2000 Sewer Pipe @ \$100/m	\$ 1,600
25 m. of 375 mm 140D Concrete Sewer Pipe @ \$175/m	\$ 4,375
3 – 1200 mm dia. Precast Concrete Maintenance Holes @ \$3,750 ea.	\$ 11,250
5 – 600 x 600 Precast Concrete Ditch Inlet Catchbasins @ \$1,200 ea.	\$ 6,000
1 – 600 x 600 Precast Concrete Catchbasin @ \$1,000 ea.	\$ 1,000
300 m. of Roadside Ditch Realignment @ \$20/m	\$ 6,000
SUB – TOTAL FOR CONSTRUCTION	\$ 68,175
INCIDENTALS	
Survey, on-site meeting, report, estimate and Tender Documents and Specifications	\$ 5,000

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Preparation of Drawings AUTOCAD	\$ 2,500
Tender Advertisement	\$ 300
Preparation of Payment and Final Certificates	\$ 500
Supervision of Construction 5 days @ \$600/day	\$ 3,000
Contingency Allowance	\$ 1,000
SUB – TOTAL FOR INCIDENTALS	\$ 12,300
TOTAL ESTIMATE (not including taxes)	\$ 80,475

16.0 ASSESSMENT

It is recommended that the total cost of this work be assessed against the County of Essex Roads Department. The drainage work will be completed within the construction contract.

17.0 MAINTENANCE SCHEDULES

In regards to the secondary purpose of this Report, as indicated and discussed in Section 4.0 – MAINTENANCE ASSESSMENT SCHEDULES, this Section describes the Maintenance Schedules for the proper allocation of any future maintenance work performed to the Upper and / or Lower Portions of the Temple Drain.

The Schedules are attached to this Report.

It is recommended that the total cost, including all incidental expenses associated with the future maintenance of the Upper Portion of the Temple Drain shall be assessed against the lands and roads as detailed and outlined in the accompanying Maintenance Schedule of Assessment attached herein and labeled **Maintenance Schedule “A”**, and in the proportions as indicated or until otherwise determined or reassessed under the provisions of the Drainage Act, R.S.O 1990.

It is also recommended that the total cost, including all incidental expenses associated with the future maintenance of the Lower Portion of the Temple Drain shall be assessed against the lands and roads as detailed and outlined in the accompanying Maintenance Schedule of Assessment attached herein and labeled **Maintenance Schedule “B”**, and in the proportions as indicated or until otherwise determined or reassessed under the provisions of the Drainage Act, R.S.O 1990.

The proportions as indicated in each of the attached Maintenance Schedules of Assessment attached herein and labeled as Maintenance Schedule “A” and Maintenance Schedule “B”, have been determined for an estimated future maintenance cost of \$10,000.00; however, the actual cost of maintaining these two portions of the Temple Drain, including all related incidental costs and expenses, shall be totaled and then assessed against the lands and roads where applicable, according to the proportions as outlined in each of the above Maintenance Schedules.

It is to be noted that the County of Essex has agreed to be included on the Maintenance Schedules in proportion to their full R.O.W. area within the Temple Drain Drainage Area, even though a portion of the Road System will no longer contribute to the Temple Drain since there will be a new separate storm drainage system for the roundabout outletting to Sturgeon Creek.

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STANTEC CONSULTING LTD.



Michael Mastronardi, P. Eng.
Project Engineer
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**Attachments: SCHEDULE A – SCHEDULE OF MAINTENANCE ASSESSMENT UPPER PORTION OF
TEMPLE DRAIN**

**SCHEDULE B – SCHEDULE OF MAINTENANCE ASSESSMENT LOWER PORTION OF
TEMPLE DRAIN**

FIGURE 1 – TEMPLE DRAIN ASSESSMENT MAPPING

FIGURE 2 – RELOCATED SECTION OF UPPER PORTION OF TEMPLE DRAIN

"SCHEDULE A"

SCHEDULE OF MAINTENANCE ASSESSMENT

UPPER PORTION OF THE TEMPLE DRAIN

TOWN OF KINGSVILLE

MAINTANANCE COST \$ 10,000.00 (EXAMPLE ONLY)

1 MUNICIPAL LANDS:

	Area Affected (Acres)	(Ha.)	Owner	Benefit	Special Benefit	Outlet	Total Assessment	Less 1/3 Aid
ROAD 3 EAST R.O.W	3.88	1.57	TOWN OF KINGSVILLE	\$0.00	\$0.00	\$356.33	\$356.33	\$356.33
COUNTY ROAD 31 R.O.W.	3.98	1.61	COUNTY OF ESSEX	\$0.00	\$0.00	\$365.41	\$365.41	\$365.41
Total on Municipal Lands				\$0.00	\$0.00	\$721.74	\$721.74	\$721.74

2 PRIVATELY-OWNED - NON-AGRICULTURAL LANDS:

Roll No.	Con.	Lot or Part	Area Affected (Acres)	(Ha.)	Owner	Benefit	Special Benefit	Outlet	Total Assessment	Less 1/3 Aid
290-26400	2	Pt Lot 12/13	2.17	0.88	ESSEX COUNTY (LANDFILL NO. 2)	\$0.00	\$0.00	\$199.73	\$199.73	\$199.73
290-26500	2	Pt Lot 13	1.21	0.49	GUALDIERI SANTE AND GUALDIERI ANGIOLINA	\$0.00	\$0.00	\$111.21	\$111.21	\$111.21
290-26600	2	Pt Lot 13	3.76	1.52	971174 ONTARIO LTD.	\$0.00	\$0.00	\$344.98	\$344.98	\$344.98
290-26700	2	Pt Lot 12	1.51	0.61	FOX READY MIX CO. LTD.	\$0.00	\$0.00	\$138.45	\$138.45	\$138.45
290-26800	2	Pt Lot 12	0.35	0.14	1394036 ONTARIO INC.	\$0.00	\$0.00	\$31.77	\$31.77	\$31.77
290-26803	2	Pt Lot 12	0.35	0.14	ENERQUEST SERVICES INC.	\$0.00	\$0.00	\$31.77	\$31.77	\$31.77
290-26804	2	Pt Lot 12	0.54	0.22	1394036 ONTARIO INC.	\$0.00	\$0.00	\$49.93	\$49.93	\$49.93
290-26806	2	Pt Lot 12	0.35	0.14	MORACCI EXCAVATING LTD.	\$0.00	\$0.00	\$31.77	\$31.77	\$31.77
290-26807	2	Pt Lot 12	0.35	0.14	MORACCI A. JOSEPH	\$0.00	\$0.00	\$31.77	\$31.77	\$31.77
340-00101	3	Pt Lot 13	0.42	0.17	ARAUJO MICHAEL EDWARD AND ARAUJO MELISSA LYNN	\$0.00	\$0.00	\$38.58	\$38.58	\$38.58
340-00150	3	Pt Lot 12	0.12	0.05	1068437 ONTARIO LTD	\$0.00	\$0.00	\$11.35	\$11.35	\$11.35
340-00203	3	Pt Lot 12	1.01	0.41	JAKAIT WAREHOUSING INC.	\$0.00	\$0.00	\$93.05	\$93.05	\$93.05
340-00205	3	Pt Lot 12	0.35	0.14	PENCOR DEVELOPMENTS INC	\$0.00	\$0.00	\$31.77	\$31.77	\$31.77
340-00206	3	Pt Lot 12	0.67	0.27	1157568 ONTARIO LIMITED	\$0.00	\$0.00	\$61.28	\$61.28	\$61.28
340-00300	3	Pt Lot 12	2.79	1.13	FOX READY MIX CO. LTD.	\$0.00	\$0.00	\$256.47	\$256.47	\$256.47
340-104450	3	Pt Lot 13	0.67	0.27	CRISTOFARI DOMENIC	\$0.00	\$0.00	\$61.28	\$61.28	\$61.28
340-10800	3	Pt Lot 13	0.49	0.20	MALOTT AYERIST WILLIAM AND	\$0.00	\$0.00	\$45.39	\$45.39	\$45.39

MALOTT DOROTHY PEAR

Total on Privately-Owned - Non-Agricultural Lands \$0.00 \$0.00 \$1,570.59 \$1,570.59 \$1,570.59

3 PRIVATELY-OWNED - AGRICULTURAL LANDS (GRANTABLE):

Roll No.	Con.	Lot or Part	Area Affected		Owner	Benefit	Special Benefit	Outlet	Total Assessment	Less 1/3 Aid
			(Acres)	(Ha.)						
290-26510	2	Pt Lot 13	8.95	3.62	GUALDIERI FELICE	\$0.00	\$0.00	\$821.61	\$821.61	\$547.74
340-00100	3	Pt Lot 13	9.44	3.82	ARAUJO EDWARD BARROS AND ARAUJO MARIA FATIMA	\$0.00	\$0.00	\$867.00	\$867.00	\$578.00
340-00102	3	Pt Lot 13	5.04	2.04	BRANCO JOSEPH LOUIS AND BRANCO MARIA	\$0.00	\$0.00	\$463.00	\$463.00	\$308.67
340-10400	3	Pt Lot 13	9.61	3.89	CRISTOFARI GIOVANNI AND CRISTOFARI ARGENTINA	\$0.00	\$0.00	\$882.89	\$882.89	\$588.59
340-10600	3	Pt Lot 13	7.71	3.12	TWIN PEAKS HYDROPONICS INC.	\$0.00	\$0.00	\$708.13	\$708.13	\$472.08
Total on Privately-Owned - Agricultural Lands (Grantable)						\$0.00	\$0.00	\$3,742.62	\$3,742.62	\$2,495.08

MUNICIPALITY OF LEAMINGTON

4 MUNICIPAL LANDS:

Roll No.	Con.	Lot or Part	Area Affected		Owner	Benefit	Special Benefit	Outlet	Total Assessment	Less 1/3 Aid
			(Acres)	(Ha.)						
3RD CONCESSION ROAD R.O.W.			3.88	1.57	MUNICIPALITY OF LEAMINGTON	\$0.00	\$0.00	\$356.33	\$356.33	\$356.33
COUNTY ROAD 31 R.O.W.			3.98	1.61	COUNTY OF ESSEX	\$0.00	\$0.00	\$365.41	\$365.41	365.41
Total on Municipal Lands						\$0.00	\$0.00	\$721.74	\$721.74	\$721.74

5 PRIVATELY-OWNED - NON-AGRICULTURAL LANDS:

Roll No.	Con.	Lot or Part	Area Affected		Owner	Benefit	Special Benefit	Outlet	Total Assessment	Less 1/3 Aid
			(Acres)	(Ha.)						
650-05100	3	Pt Lot 1	0.49	0.20	SABELLI BOILER WORKS INC.	\$0.00	\$0.00	\$45.39	\$45.39	\$45.39
650-05300	3	Pt Lot 1	0.44	0.18	MOTYL LYDIA MADELEINE	\$0.00	\$0.00	\$40.85	\$40.85	\$40.85
650-05500	3	Pt Lot 1	0.52	0.21	CRISTOFARI ARGENTINA	\$0.00	\$0.00	\$47.66	\$47.66	\$47.66
650-05800	3	Pt Lot 1	0.57	0.23	CRISTOFARI DOMENIC AND	\$0.00	\$0.00	\$52.20	\$52.20	\$52.20
Total on Privately-Owned - Non-Agricultural Lands						\$0.00	\$0.00	\$186.11	\$186.11	\$186.11

6 PRIVATELY-OWNED - AGRICULTURAL LANDS (GRANTABLE):

Roll No.	Con.	Lot or Part	Area Affected (Acres)	(Ha.)	Owner	Benefit	Special Benefit	Outlet	Total Assessment	Less 1/3 Aid
650-05200	3	Pt Lot 1	29.06	11.76	MOTYL DAVID AND MOTYL RICHARD	\$0.00	\$0.00	\$2,669.09	\$2,669.09	\$1,779.39
650-05400	3	Pt Lot 1	1.83	0.74	CRISTOFARI FARMS INC.	\$0.00	\$0.00	\$167.95	\$167.95	\$111.97
650-05600	3	Pt Lot 1	2.40	0.97	CRISTOFARI GIOVANNI AND CRISTOFARI ARGENTINA	\$0.00	\$0.00	\$220.15	\$220.15	\$146.77
Total on Privately-Owned - Agricultural Lands (Grantable)						\$0.00	\$0.00	\$3,057.19	\$3,057.19	\$2,038.13
TOTAL ASSESSMENT						\$0.00	\$0.00	\$10,000.00	\$10,000.00	\$7,733.39

Estimated amount of grant under Section 85 of The Drainage Act is \$2,266.61

Total Acres: 108.87

STANTEC CONSULTING LTD.

Per:

Michael Mastroradi

MICHAEL MASTRONARDI,
P. Eng.

WINDSOR, ONTARIO
MARCH 26, 2010

"SCHEDULE B"

SCHEDULE OF MAINTENANCE ASSESSMENT

LOWER PORTION OF THE TEMPLE DRAIN

MAINTENANCE COST \$ 10,000.00 (EXAMPLE ONLY)

1 ONTARIO LANDS:

Owner	Benefit	Special Benefit	Outlet	Total Assessment	Less 1/3 Aid
PROVINCE OF ONTARIO	\$0.00	\$0.00	\$5,000.00	\$5,000.00	\$5,000.00
Total on Ontario Lands	\$0.00	\$0.00	\$5,000.00	\$5,000.00	\$5,000.00

TOWN OF KINGSVILLE

2 MUNICIPAL LANDS:

Area Affected (Acres)	(Ha.)	Owner	Benefit	Special Benefit	Outlet	Total Assessment	Less 1/3 Aid
3.88	1.57	TOWN OF KINGSVILLE	\$0.00	\$0.00	\$178.17	\$178.17	\$178.17
3.98	1.61	COUNTY OF ESSEX	\$0.00	\$0.00	\$182.71	\$182.71	\$182.71
Total on Municipal Lands			\$0.00	\$0.00	\$360.87	\$360.87	\$360.87

3 PRIVATELY-OWNED - NON-AGRICULTURAL LANDS:

Roll No.	Con.	Lot or Part	Area Affected (Acres)	(Ha.)	Owner	Benefit	Special Benefit	Outlet	Total Assessment	Less 1/3 Aid
290-26400	2	Pt Lot 12/13	2.17	0.88	ESSEX COUNTY (LANDFILL NO. 2)	\$0.00	\$0.00	\$99.86	\$99.86	\$99.86
290-26500	2	Pt Lot 13	1.21	0.49	GUALDIERI SANTE AND GUALDIERI ANGIOLINA	\$0.00	\$0.00	\$55.61	\$55.61	\$55.61
290-26600	2	Pt Lot 13	3.76	1.52	971174 ONTARIO LTD.	\$0.00	\$0.00	\$172.49	\$172.49	\$172.49
290-26700	2	Pt Lot 12	1.51	0.61	FOX READY MIX CO. LTD.	\$0.00	\$0.00	\$69.22	\$69.22	\$69.22
290-26800	2	Pt Lot 12	0.35	0.14	1394036 ONTARIO INC.	\$0.00	\$0.00	\$15.89	\$15.89	\$15.89

Roll No.	Con.	Lot or Part	Area Affected (Acres)	Area Affected (Ha.)	Owner	Benefit	Special Benefit	Outlet	Total Assessment	Less 1/3 Aid
290-26803	2	Pt Lot 12	0.35	0.14	ENERQUEST SERVICES INC.	\$0.00	\$0.00	\$15.89	\$15.89	\$15.89
290-26804	2	Pt Lot 12	0.54	0.22	1394036 ONTARIO INC.	\$0.00	\$0.00	\$24.97	\$24.97	\$24.97
290-26806	2	Pt Lot 12	0.35	0.14	MORACCI EXCAVATING LTD.	\$0.00	\$0.00	\$15.89	\$15.89	\$15.89
290-26807	2	Pt Lot 12	0.35	0.14	MORACCI A. JOSEPH	\$0.00	\$0.00	\$15.89	\$15.89	\$15.89
340-00101	3	Pt Lot 13	0.42	0.17	ARAUJO MICHAEL EDWARD AND ARAUJO MELISSA LYNN	\$0.00	\$0.00	\$19.29	\$19.29	\$19.29
340-00150	3	Pt Lot 12	0.12	0.05	1068437 ONTARIO LTD	\$0.00	\$0.00	\$5.67	\$5.67	\$5.67
340-00203	3	Pt Lot 12	1.01	0.41	JAKAIT WAREHOUSING INC.	\$0.00	\$0.00	\$46.53	\$46.53	\$46.53
340-00205	3	Pt Lot 12	0.35	0.14	PENCOR DEVELOPMENTS INC	\$0.00	\$0.00	\$15.89	\$15.89	\$15.89
340-00206	3	Pt Lot 12	0.67	0.27	1157568 ONTARIO LIMITED	\$0.00	\$0.00	\$30.64	\$30.64	\$30.64
340-00300	3	Pt Lot 12	2.79	1.13	FOX READY MIX CO. LTD.	\$0.00	\$0.00	\$128.23	\$128.23	\$128.23
340-104450	3	Pt Lot 13	0.67	0.27	CRISTOFARI DOMENIC	\$0.00	\$0.00	\$30.64	\$30.64	\$30.64
340-10800	3	Pt Lot 13	0.49	0.20	MALOTT AYERIST WILLIAM AND MALOTT DOROTHY PEAR	\$0.00	\$0.00	\$22.70	\$22.70	\$22.70
Total on Privately-Owned - Non-Agricultural Lands						\$0.00	\$0.00	\$785.29	\$785.29	\$785.29

4 PRIVATELY-OWNED - AGRICULTURAL LANDS (GRANTABLE):

Roll No.	Con.	Lot or Part	Area Affected (Acres)	Area Affected (Ha.)	Owner	Benefit	Special Benefit	Outlet	Total Assessment	Less 1/3 Aid
290-26510	2	Pt Lot 13	8.95	3.62	GUALDIERI FELICE	\$0.00	\$0.00	\$410.80	\$410.80	\$273.87
340-00100	3	Pt Lot 13	9.44	3.82	ARAUJO EDWARD BARROS AND ARAUJO MARIA FATIMA	\$0.00	\$0.00	\$433.50	\$433.50	\$289.00
340-00102	3	Pt Lot 13	5.04	2.04	BRANCO JOSEPH LOUIS AND BRANCO MARIA	\$0.00	\$0.00	\$231.50	\$231.50	\$154.33
340-10400	3	Pt Lot 13	9.61	3.89	CRISTOFARI GIOVANNI AND CRISTOFARI ARGENTINA	\$0.00	\$0.00	\$441.44	\$441.44	\$294.30
340-10600	3	Pt Lot 13	7.71	3.12	TWIN PEAKS HYDROPONICS INC.	\$0.00	\$0.00	\$354.06	\$354.06	\$236.04
Total on Privately-Owned - Agricultural Lands (Grantable)						\$0.00	\$0.00	\$1,871.31	\$1,871.31	\$1,247.54

MUNICIPALITY OF LEAMINGTON

5 MUNICIPAL LANDS:

Area Affected (Acres)	(Ha.)	Owner	Benefit	Special Benefit	Outlet	Total Assessment	Less 1/3 Aid
3.88	1.57	MUNICIPALITY OF LEAMINGTON	\$0.00	\$0.00	\$178.17	\$178.17	\$178.17
3.98	1.61	COUNTY OF ESSEX	\$0.00	\$0.00	\$182.71	\$182.71	\$182.71
Total on Municipal Lands			\$0.00	\$0.00	\$360.87	\$360.87	\$360.87

6 PRIVATELY-OWNED - NON-AGRICULTURAL LANDS:

Roll No.	Con.	Lot or Part	Area Affected (Acres)	(Ha.)	Owner	Benefit	Special Benefit	Outlet	Total Assessment	Less 1/3 Aid
650-05100	3	Pt Lot 1	0.49	0.20	SABELLI BOILER WORKS INC.	\$0.00	\$0.00	\$22.70	\$22.70	\$22.70
650-05300	3	Pt Lot 1	0.44	0.18	MOTYL LYDIA MADELEINE	\$0.00	\$0.00	\$20.43	\$20.43	\$20.43
650-05500	3	Pt Lot 1	0.52	0.21	CRISTOFARI ARGENTINA	\$0.00	\$0.00	\$23.83	\$23.83	\$23.83
650-05600	3	Pt Lot 1	0.57	0.23	CRISTOFARI DOMENIC AND	\$0.00	\$0.00	\$26.10	\$26.10	\$26.10
Total on Privately-Owned - Non-Agricultural Lands						\$0.00	\$0.00	\$93.05	\$93.05	\$93.05

7 PRIVATELY-OWNED - AGRICULTURAL LANDS (GRANTABLE):

Roll No.	Con.	Lot or Part	Area Affected (Acres)	(Ha.)	Owner	Benefit	Special Benefit	Outlet	Total Assessment	Less 1/3 Aid
650-05200	3	Pt Lot 1	29.06	11.76	MOTYL DAVID AND MOTYL RICHARD	\$0.00	\$0.00	\$1,334.54	\$1,334.54	\$889.70
650-05400	3	Pt Lot 1	1.83	0.74	CRISTOFARI FARMS INC.	\$0.00	\$0.00	\$83.98	\$83.98	\$55.98
650-05600	3	Pt Lot 1	2.40	0.97	CRISTOFARI GIOVANNI AND CRISTOFARI ARGENTINA	\$0.00	\$0.00	\$110.08	\$110.08	\$73.38
Total on Privately-Owned - Agricultural Lands (Grantable)						\$0.00	\$0.00	\$1,528.60	\$1,528.60	\$1,019.06
TOTAL ASSESSMENT						\$0.00	\$0.00	\$10,000.00	\$10,000.00	\$8,866.70

Estimated amount of grant under Section 85 of The Drainage Act is \$1,133.30

Total Acres: 108.87

STANTEC CONSULTING LTD.

Per:

Michael Mastronardi

MICHAEL MASTRONARDI,
P. Eng.

WINDSOR, ONTARIO
MARCH 26, 2010

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KINGSVILLE					
ASSESSMENT ROLL NUMBER	MUNICIPAL NUMBER	OWNER	ACTUAL AREA (Ha)	ASSESSED AREA (Ha)	
290-26400	2021 ALBUNA TOWNLINE	ESSEX COUNTY	37.37	0.88	
290-26500	2209 COUNTY RD 31	GUALDIERI SANTE AND GUALDIERI ANGIOLINA	0.49	0.49	
290-26510	COUNTY RD 31	GUALDIERI FELICE	3.62	3.62	
290-26600	ROAD 3 E	971174 ONTARIO LIMITED	4.12	1.52	
290-26700	1991 ROAD 3 E	FOX READY-MIX CO LIMITED	5.12	0.61	
290-26800	1971 ROAD 3 E	1394036 ONTARIO INC	0.54	0.14	
290-26803	1969 ROAD 3 E	ENERQUEST SERVICES INC	0.66	0.14	
290-26804	1965 ROAD 3 E	1394036 ONTARIO INC	1.08	0.22	
290-26806	1963 ROAD 3 E	MORACCI EXCAVATING LTD	0.66	0.14	
290-26807	ROAD 3 E	MORACCI A. JOSEPH	0.66	0.14	
340-00100	2082 ROAD 3 E	ARAUJO EDWARD BARROS AND ARAUJO MARIA FATIMA	3.82	3.82	
340-00101	2068 ROAD 3 E	ARAUJO MICHAEL EDWARD AND ARAUJO MELISSA LYNN	0.17	0.17	
340-00102	2014 ROAD 3 E	BRANCO JOSEPH LOUIS AND BRANCO MARIA	4.29	2.04	
340-00150	1996 ROAD 3 E	1068437 ONTARIO LTD	1.16	0.05	
340-00203	ROAD 3 E	JAKAIT WAREHOUSING INC	1.03	0.41	
340-00205	1964 ROAD 3 E	PENCOR DEVELOPMENTS INC	0.34	0.14	
340-00206	1960 ROAD 3 E	1157568 ONTARIO LIMITED	0.69	0.27	
340-00300	1992 ROAD 3 E	FOX READY-MIX CO LIMITED	2.52	1.13	
340-10400	ALBUNA TOWNLINE	CRISTOFARI GIOVANNI AND CRISTOFARI ARGENTINA	5.79	3.89	
340-10450	2301 ALBUNA TOWNLINE	CRISTOFARI DOMENIC	0.27	0.27	
340-10600	2237 ALBUNA TOWNLINE	TWIN PEAKS HYDROPONICS INC	15.43	3.12	
340-10800	2227 ALBUNA TOWNLINE	MALOTT AYERIST WILLIAM AND MALOTT DOROTHY PEARL	0.20	0.20	
ROAD 3 EAST R-O-W			TOWN OF KINGSVILLE	1.57	1.57

LEAMINGTON					
650-05100	123 MERSEA RD 3	SABELLI BOILER WORKS INC	3.74	0.20	
650-05200	117 MERSEA RD 3	MOTYL DAVID AND MOTYL RICHARD	11.76	11.76	
650-05300	113 MERSEA RD 3	MOTYL LYDIA MADALINE	0.18	0.18	
650-05400	COUNTY RD 31	CRISTOFARI FARMS INC	9.18	0.74	
650-05420	328 COUNTY RD 31	CRISTOFARI GIOVANNI AND CRISTOFARI ARGENTINA	0.25	0.25	
650-05500	330 COUNTY RD 31	CRISTOFARI ARGENTINA	0.21	0.21	
650-05600	COUNTY RD 31	CRISTOFARI GIOVANNI AND CRISTOFARI ARGENTINA	2.97	0.97	
650-05620	338 COUNTY RD 31	CRISTOFARI DOMENIC AND CRISTOFARI NAMMAR	0.23	0.23	
3RD CONCESSION R-O-W			MUNICIPALITY OF LEAMINGTON	0.50	0.50

COUNTY OF ESSEX				
R-O-W		COUNTY OF ESSEX	3.21	3.21



**TEMPLE DRAIN
(MUNICIPAL DRAIN)**

ASSESSMENT MAPPING

PROJECT NO. 165601087	0 75 225 375m 1:7500	DRAWING NO. FIGURE 1
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STA. 1+050

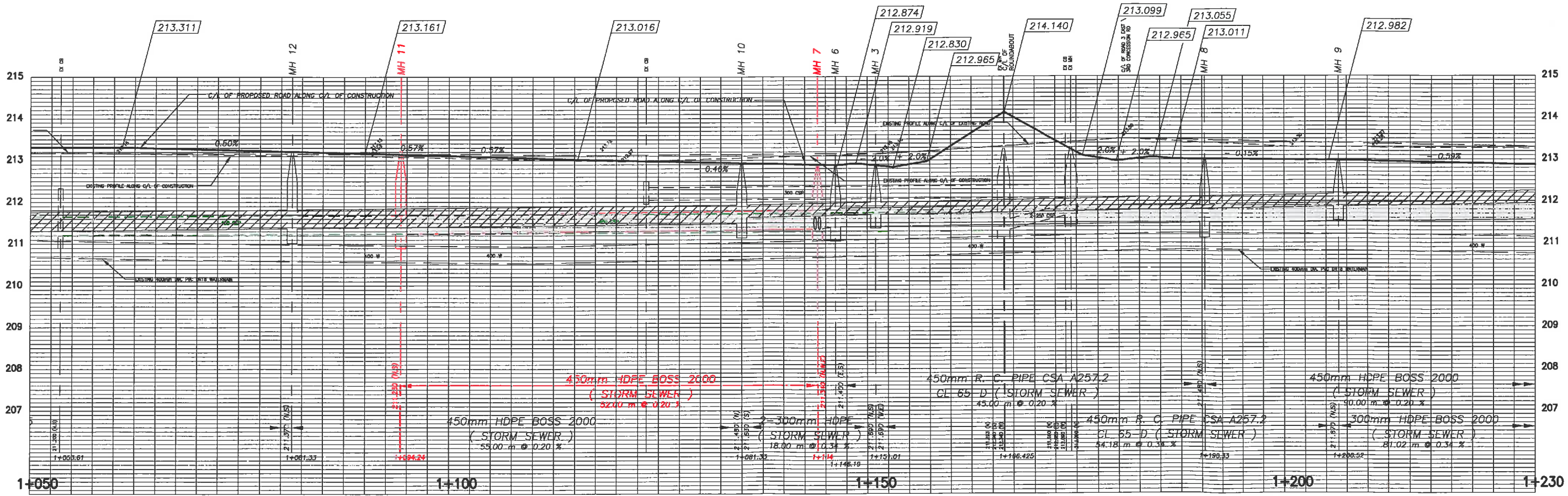
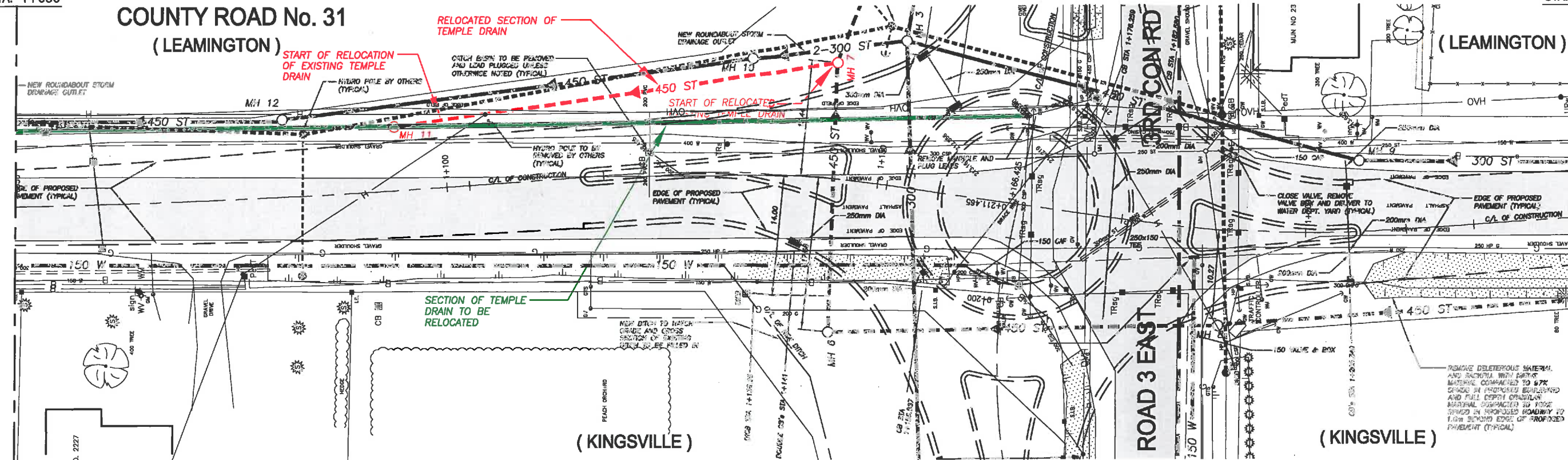
STA. 1+230

COUNTY ROAD No. 31 (LEAMINGTON)

(LEAMINGTON)

(KINGSVILLE)

(KINGSVILLE)



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RELOCATED SECTION OF UPPER PORTION OF TEMPLE DRAIN

PROJECT NO.	1:500H	0	5	15	25m	DRAWING NO.
165601087	1:100V	0	1	3	5m	FIGURE 2