

APPENDIX 'A'
Engineer's Report

BANNISTER DRAIN 2016

City of London



**SPRIET
ASSOCIATES**

ENGINEERS & ARCHITECTS

155 York Street
London, Ontario N6A 1A8
Tel. (519) 672-4100
Fax (519) 433-9351
E-mail MAIL@SPRIET.ON.CA

Our Job No. 211205

May 30, 2016

London, Ontario
May 30, 2016

BANNISTER DRAIN 2016

City of London

To the Mayor and Council of
The City of London

Mayor and Council:

We are pleased to present our report on the reconstruction and expansion to portions of the Bannister Municipal Drain serving parts of Lots 19 to 22, Concessions 4 to 6 (Westminster), in the City of London.

AUTHORIZATION

This report was prepared pursuant to Sections 4 and 78 of the Drainage Act in accordance with instructions received from your Municipality with respect to a motion of Council.

The work on the existing portion and extension of Branch 1 was initiated by a petition signed by the City of London road authority. The construction of Branch 3 was initiated by a petition signed by a majority of the owners in the area requiring drainage.

DRAINAGE AREA

The total watershed area as described above contains approximately 199 Hectares. The area requiring drainage for Branch 3 is described as the east part of the north half of Lot 22 and the west part of the north half of Lot 21, Concession 5.

HISTORY

The portion of the Bannister Drain serving the area in question was last reconstructed pursuant to a report submitted by S.W. Archibald, O.L.S. dated January 25, 1950 and consisted of a Main Drain and two Branch Drains. The Main Drain extended from an outlet in the Dingman Creek in the north part of Lot 23, Concession 4, upstream southerly and easterly to its head in the north half of Lot 19, Concession 5. The area in question was partially served by a branch referred to as Branch 1.

A subsequent report for the Bannister Drain was submitted by J. P. McIntyre, P.Eng., dated October 1, 1984, which provided for the reassessment of the Main Drain.

EXISTING DRAINAGE CONDITIONS

A site meeting was held and a field investigation and survey were completed. Upon reviewing our findings, we note the following:

- that the City of London is experiencing poor drainage conditions along Westminster Drive in parts of Lots 21 and 22
- the City requested that an old existing private tile which extended from the top of Branch 1 easterly into the low areas in Lot 21 be replaced to provide proper drainage for their road allowance
- that the existing Branch 1 has been replaced at some time in the past with a 300mm clay tile which is shallow and undersized by today's standards
- that a private culvert has also been installed in the existing open ditch of the Main Drain at some time in the past
- that the invert of the existing culvert and subsequently the existing open ditch upstream in the area of Branch 1 is significantly shallow and does not provide a sufficient outlet for any replacement / improvement to Branch 1
- that the old 200mm to 125mm private clay tile serving the area in Lot 21 no longer functions and results in significant ponding of water in low lying 'trapped' pockets of land
- that the portion of this low lying land on the north side of Westminster Drive has been filled in by the landowner in the relative recent past
- that the original Bannister and subsequent downstream Bannister drainage reports show area to the south of the lands in question being trapped without a natural surface outlet
- that the above area is predominantly comprised of gravel soils and has several gravel pits throughout

At an informal public meeting to review the proposed work the two landowners immediately to the south of Westminster Drive, which are the lands where the proposed drain will be located, reported that other low lying 'trapped' pockets of land on their property, that are assessed to the Bannister Drain, were experiencing significant rise in ground water levels over time. They also reported that their properties are now being regularly flooded to the point where substantial areas of agricultural field remain under water permanently and trees in the wooded areas are dying off due to saturation.

It was also reported that this area was serviced by an old private tile drain westerly and northerly to the Bannister Drain at Highway 402, which is no longer functioning. As a result these owners submitted a petition under the Drainage Act to provide a new Branch Drain to provide some drainage for the affected area. Upon being instructed to include the new branch as part of this project we completed a survey and field investigation and note the following:

- that the area which would be directly tributary by surface water to the requested branch consists of 8.7 hectares of agricultural land and 4.3 hectares of wooded area

EXISTING DRAINAGE CONDITIONS (cont'd)

- that presently approximately 2.4 hectares of this area is under water whereas the owners reported that at one time none of this area was
- that through a hydro-geological report prepared for the gravel pits to the south it has been determined the source of this rise in ground water levels is substantially due to rebound as a result of production ceasing from the White Oak Municipal wells in 1967. Wells 1, 2, 3, and 5 were decommissioned in 2001 and wells 4 and 6 in 2004
- that the above hydro-geological report indicated that most of the ground water rebound had occurred by 2010 but some low bowl-shaped treed areas could have intensified and continued the ground water recharge
- that when comparing OBM information for the area from 2006, 2012 and 2014 it is clear that a significant rise in water levels has occurred
- that through review with the Upper Thames River Conservation Authority they indicated support some lowering of the current ground water in the area through drainage while also having regard to protect the natural and positive aspects that low lying wetlands provide
- that the area directly tributary to Branch 3 would be provided with the most drainage improvement while other low lying 'trapped' areas within the Branches watershed that are not directly connected and further away would see less improvement, reducing as the distance grows

DESIGN CRITERIA AND CONSIDERATIONS

The Drainage Coefficient method contained in the "DRAINAGE GUIDE FOR ONTARIO", Publication 29 by the Ontario Ministry of Agriculture, Food, and Rural Affairs is typically used to design municipal drains. The Drainage Coefficient defines a depth of water that can be removed in a 24 hour period and is expressed in millimetres per 24 hours. The coefficient used to design this drain with respect to capacity was 38mm per 24 hrs for the directly connected tributary areas. As some slow groundwater movement is expected from the areas to the south the area encompassing Highway 401 and north was designed at 10% of normal ratio and areas south of the 401 at 5%.

We would like to point out that there have been indications of unstable soil conditions in the low lying areas but no formal soil investigation has been made.

All of the proposed work has been generally designed and shall be constructed in accordance with the DESIGN AND CONSTRUCTION GUIDELINES FOR WORK UNDER THE DRAINAGE ACT.

RECOMMENDATIONS

We are therefore recommending the following:

MAIN DRAIN:

- that the ditch be reconstructed for 257 meters downstream and 103 meters upstream of Branch 1 to provide a proper sub-surface drainage outlet
- that excavated material be levelled adjacent to the drain
- that the ditch bottom and ditch slopes be cleared of any trees, brush and scrub
- that the working space and access route be cleared and grubbed of trees, brush and scrub where required for machines to access and complete the work on the ditch and the areas where excavated material is to be levelled
- that the stumps, logs and brush be piled beyond this width
- that a new farm culvert consisting of 1800mm pipe culvert be constructed on the Hydro One Networks Inc. property (Roll No. 030-080-154), including the removal and disposal of the existing culvert

BRANCH 1:

- that the existing Branch 1 be replaced with a new 600mm to 450mm concrete tile (including related appurtenances) and that the existing tile be abandoned from municipal status pursuant to Section 19 of the Drainage Act
- that Branch 1 be extended upstream with 400mm to 300mm tile (including related appurtenances) to provide a proper surface and sub-surface drainage outlet for Westminster Drive and adjacent lands
- that a new 457mm smooth wall steel pipe be bored under Westminster Drive and that the existing pipe be filled with grout

BRANCH 3:

- that a new tile branch drain be constructed from Branch 1 southerly to the low areas consisting of 350mm to 375mm concrete tile and sewer pipe
- that a catchbasin be installed at the property line halfway between the two lower areas with swales to be constructed both north and south to direct surface water to the new drain
- that the catchbasin inlet elevation at the top end of Branch 3 be set at an elevation of 257.90 which is a compromise between the 2014 water level of 258.95 and the 2006 water level of 257.17

RECOMMENDATIONS (cont'd)

Due to the indications of poor soil conditions our design includes the wrapping of tile joints with geotextile and a contingency allowance for crushed stone bedding wrapped with geotextile where and if necessary. These areas are typically identified at the time of construction but may only become apparent after construction is completed. In this case, the extra costs for removal and reinstallation on stone bedding would be an extra to the project and if already billed become a supplementary billing.

ENVIRONMENTAL CONSIDERATIONS AND MITIGATION MEASURES

Based on the information available, there are no provincially significant wetlands or endangered species within the affected watershed area or along the route of the drains. The proposed construction includes quarry stone outlet protection and seeding which will help stabilize disturbed areas.

We have reviewed the proposed work and have submitted the report to the UTRCA, DFO, and MNR (UTRCA) for review under their respective environmental legislations.

We are also recommending that the following erosion and sediment control measures be included as part of our reconstruction proposal to help mitigate any potential adverse impacts of the proposed drainage works on water quality and fishery habitat:

- timing of construction is to be only at times of low or no flow
- a temporary flow check of silt fencing is to be installed for the duration of the construction at the bottom end of the ditch reconstruction

SUMMARY OF PROPOSED WORK

The proposed work consists of approximately 360 lineal meters of open ditch reconstruction including quarry stone rip-rap bank protection, bank seeding, construction of a farm culvert; approximately 944 lineal meters of 600mm to 300mm concrete field tile and sewer pipe and 100 meters of grassed swale.

SCHEDULES

Three schedules are attached hereto and form part of this report, being Schedule 'A' - Allowances, Schedule 'B' - Cost Estimate, and Schedule 'C' - Assessment for Construction.

Schedule 'A' - Allowances. In accordance with Sections 29 and 30 of the Drainage Act, allowances are provided for right-of-way and damages to lands and crops along the route of the drain as defined below.

Schedule 'B' - Cost Estimate. This schedule provides for a detailed cost estimate of the proposed work which is in the amount of \$ 179,800.00. This estimate includes engineering and administrative costs associated with this project.

SCHEDULES (cont'd)

Schedule 'C' - Assessment for Construction. This schedule outlines the distribution of the total estimated cost of construction over the roads and lands which are involved.

Drawing No.'s 1 and 2, Job No. 211205, and specifications form part of this report. They show and describe in detail the location and extent of the work to be done and the lands which are affected.

ALLOWANCES

DAMAGES: Section 30 of the Drainage Act provides for the compensation to landowners along the drain for damages to lands and crops caused by the construction of the drain.

The amounts granted are based on the following:

- a) for closed drain - \$3,613.00/ha.
- b) for open ditch work with excavated material levelled adjacent to drain - \$4,647.00/ha.

These base rates are multiplied by the hectares derived from the working widths shown on the plans and the applicable lengths.

RIGHT-OF-WAY Section 29 of the Drainage Act provides for an allowance to the owners whose land must be used for the construction, repair, or future maintenance of a drainage works.

For tile drains where the owners will be able to continue to use the land, the allowance provides for the right to enter upon such lands, and at various times for the purpose of inspecting such drain, removing obstructions, and making repairs. Also, the allowance provides for the restrictions imposed on those lands to protect the right-of-way from obstruction or derogation. The amounts granted for right-of-way on tile drains is based on a percentage of the value of the land designated for future maintenance. Therefore, the amounts granted are based on \$6,670.00/ha. This value is multiplied by the hectares derived from the width granted for future maintenance and the applicable lengths. No right-of-way was previously provided for the existing municipal portion of the drain being replaced.

For open ditches, the allowance provides for the loss of land due to the construction provided for in the report. The amounts granted are based on the value of the land, and the rate used was \$33,360.00/ha.

ASSESSMENT DEFINITIONS

In accordance with the Drainage Act, lands that make use of a drainage works are liable for assessment for part of the cost of constructing and maintaining the system. These assessments are known as benefit, outlet liability and special benefit as set out under Sections 22 and 23 of the Act.

ASSESSMENT DEFINITIONS

SECTION 22

Benefit as defined in the Drainage Act means the advantages to any lands, roads, buildings or other structures from the construction, improvement, repair or maintenance of a drainage works such as will result in a higher market value or increased crop production or improved appearance or better control of surface water, or any other advantages relating to the betterment of lands, roads, buildings or other structures.

Special Benefit is assessed to lands for which some additional work or feature has been included in the construction repair or improvement of a drainage works. The costs of such work are separated and assessed independently from the regular work. Typically these assessments are not considered special benefits under Section 24.

SECTION 23

Outlet liability is assessed to lands or roads that may make use of a drainage works as an outlet either directly or indirectly through the medium of any other drainage works or of a swale, ravine, creek or watercourse.

In addition, a Public Utility or Road Authority shall be assessed for and pay all the increased cost to a drainage works due to the construction and operation of the Public Utility or Road Authority. This may be shown as either benefit or special assessment.

ASSESSMENT

A modified "Todgham Method" was used to calculate the assessments shown on Schedule 'C'- Assessment for Construction. This entailed breaking down the costs of the drain into sections along its route. Special Assessments and Special Benefits were then extracted from each section.

The remainder is then separated into Benefit and Outlet costs. The Benefit cost is distributed to those properties receiving benefit as defined under "Assessment Definitions", with such properties usually being located along or close to the route of the drain. The Outlet Costs are distributed to all properties within the watershed area of that section on an adjusted basis. The areas are adjusted for location along that section, and relative run-off rates. Due to their different relative run-off rates, forested lands have been assessed for outlet at lower rates than cleared lands. Also, roads and residential properties have been assessed for outlet at higher rates than cleared farm lands.

The actual cost of the work involving this report, with the exception of Special Assessments, is to be assessed on a pro-rata basis against the lands and roads liable for assessment for special benefit, benefit, and outlet as shown in detail below and on Schedule 'C' - Assessment for Construction. The Special Assessments shall be levied as noted in the Section "Special Assessment".

The cost to restore water supply for any well determined to be impacted by any construction covered under this report shall become part of this report and be pro-rated with the costs provided for in this report.

SPECIAL BENEFIT ASSESSMENTS

Special Benefit Assessments have been made against individual properties for their portion of the cost of various special works provided to them. These works typically include farm culverts and shall be as shown on Schedule 'C' - Assessment for Construction. For open drains the Contractor shall contact the owner and request that all known outlet pipes be marked by the owner prior to commencement of excavation on each property. All outlets so marked or visible or as noted on the profile, and subsequently damaged by the Contractor's operations, will be repaired by the Contractor at his cost. All other outlet pipes repaired by the Contractor under direction of the Drainage Superintendent or Engineer shall be considered an extra to the contract price. This cost shall be assessed to the property as a non-pro-rateable special benefit.

SPECIAL ASSESSMENT

In accordance with Section 26 of the Drainage Act, a Special Assessment has been made against the City of London being the increased cost to the drainage work for boring a 457mm smooth wall steel pipe across their road allowance on Branch 1, due to the construction and operation of Westminster Drive. The Special Assessments shall be made up of the actual cost of this work and both the final and estimated values of the Special Assessment are to be calculated as follows:

Drain Crossing	Cost of Work	Less Equivalent Drain Cost (Fixed)	Plus Administration Cost	Plus Interest & Net H.S.T.	Special Assessment
Branch 1	\$10,580.00	\$675.00	\$1,935.00	\$240.00	\$12,080.00

The above special assessments shall not apply for future maintenance purposes.

A further Special Assessment has been made against the Bannister Drain Main Drain-Open Portion for a portion of the culvert replacement and ditch work. The Special Assessment shall apply when pro-rating construction costs and shall be levied against upstream lands and roads assessed the 1984 report and in the same relative proportions.

If any additional work is required to the drainage works due to the existence of buried utilities such as gas pipe lines, communications cables, etc. or if any of the utilities require relocation or repair, then, the extra costs incurred shall be borne by the utility involved in accordance with the provisions of Section 26 of the Drainage Act.

GRANTS

In accordance with the provisions of Section 85 of the Drainage Act, a grant **may** be available for assessments against privately owned parcels of land which are used for agricultural purposes and eligible for the Farm Property Class Tax rate. Section 88 of the Drainage Act directs the Municipality to make application for this grant upon certification of completion of this drain. The Municipality will then deduct the grant from the assessments prior to collecting the final assessments.

MAINTENANCE

Upon completion of construction, all owners are hereby made aware of Sections 80 and 82 of the Drainage Act which forbid the obstruction of or damage or injury to a municipal drain.

After completion, the Main Drain shall be maintained by the City of London at the expense of all upstream lands and roads assessed in Schedule of Assessment in the 1984 report and in the same relative proportions until such time as the assessment is changed under the Drainage Act.

After completion, Branches 1 and 3 shall be maintained by the City of London at the expense of all upstream lands and roads assessed in Schedule 'C' - Assessment for Construction and in the same relative proportions, with the exception that Special Assessments and Special Benefits shall **not** be pro-rated for future maintenance purposes, until such time as the assessment is changed under the Drainage Act.

Repairs or improvements to any road culvert or sub-surface road crossing shall be the responsibility of the applicable Road Authority, entirely at their cost.

The new farm culvert on the property described by Roll No. 030-280-154 shall have future maintenance costs levied two-thirds to the affected owner and the remainder shall be pro-rated over the upstream outlet assessments in the 1984 report.

Respectfully submitted,

SPRIET ASSOCIATES LONDON LIMITED

M.P. DeVos, P. Eng.



MPD:bv

SCHEDULE 'A' - ALLOWANCES

BANNISTER DRAIN 2016

City of London

In accordance with Sections 29 and 30 of the Drainage Act, we determine the allowances payable to owners entitled thereto as follows:

CONCESSION	LOT	ROLL NUMBER (Owner)	Section 29 Right-of-Way	Section 30 Damages	TOTALS
BRANCH 1 (and Main Drain Deepening)					
<i>Geographic Westminster</i>					
5	Pt. N½ 21	080-040-084 (969726 Ontario Ltd.)	\$ 1,730.00	\$ 1,410.00	\$ 3,140.00
5	N½ 22	080-040-085 (Lobban Farms Ltd.)	1,050.00	1,060.00	2,110.00
4	Pt.E½S½ 22	080-040-097 (Cobrell Holdings Inc.)	2,180.00	3,060.00	5,240.00
Right-of-W		030-280-154(Hydro One Networks Inc.)	270.00	470.00	740.00
Total Allowances			\$ 5,230.00	\$ 6,000.00	\$ 11,230.00
TOTAL ALLOWANCES ON BRANCH 1 (and Main Drain Deepening)					\$ 11,230.00
BRANCH 3					
<i>Geographic Westminster</i>					
5	N½ 22	080-040-085 (Lobban Farms Ltd.)	\$ 2,930.00	\$ 2,380.00	\$ 5,310.00
Total Allowances			\$ 2,930.00	\$ 2,380.00	\$ 5,310.00
TOTAL ALLOWANCES ON BRANCH 3					\$ 5,310.00
TOTAL ALLOWANCES ON THE BANNISTER DRAIN 2016					\$ 16,540.00

SCHEDULE 'B' - COST ESTIMATE

BANNISTER DRAIN 2016

City of London

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

BRANCH 1 (and Main Drain Deepening)

360 meters of open ditch reconstruction (Approx. 390 m ³)	\$	1,950.00
Seeding of ditch banks (approx. 1350 m ²)	\$	610.00
Levelling of excavated material	\$	1,000.00
Clearing & grubbing	\$	200.00
Supply & installation of the following helical corrugated aluminized steel pipe as new road culvert including supply and installation of quarry stone rip-rap protection around each end of pipe , removal & disposal of existing pipe culvert, supply & compaction of bedding and backfill materials, surface restoration 13 m - 1800mm dia, 2.8mm thick, 125mm x 25mm cor. (12 m ³ q.s.) Sta. 0+250 (Open Portion)	Supply Installation	\$ 5,160.00 \$ 5,990.00
6.0 meters of 600mm dia., H.D.P.E. plastic sewer pipe including rodent gate Supply (Single Length)	\$	850.00
Supply and Install quarry stone rip-rap protection around pipe (Approximately 4m ³ quarry stone req'd)	\$	900.00
Installation of the following concrete field tile including supply & installation of geotextile around tile joints (approx. 800m req'd) 337 meters of 300mm dia. concrete tile 74 meters of 400mm dia. concrete tile 23 meters of 450mm dia. concrete tile 124 meters of 600mm dia. concrete tile Supply of the above listed tile	\$	6,030.00 1,550.00 430.00 2,600.00 \$ 13,190.00
Stripping, stockpiling topsoil and relevelling upon completion (4m width)	\$	3,500.00
Contingency amount for increased cost due to poor soil conditions: Installation of tile on crushed stone bedding with excavator (275 meters) Supply & delivery of 19mm crushed (Approx. 160 tonnes req'd)	\$	6,900.00 \$ 3,450.00
15.0 meters of 300mm sewer pipe Supply Installation under laneway by open cut	\$	420.00 \$ 2,630.00
15.0 meters of 457mm (18") dia. 6.3mm thickness smooth was steel pipe Supply Installation under Westminister Drive by boring Disconnect Existing 200mm subsurface road crossing and fill with cement grout	\$	2,630.00 \$ 6,300.00 \$ 1,650.00

SCHEDULE 'B' - COST ESTIMATE (cont'd)

BANNISTER DRAIN 2016
City of London**BRANCH 1 (and Main Drain Deepening) (Cont.)**

Supply and install one 200mm dia. "Hickenbottom" catchbasin and three 600mm x 600mm ditch inlet catchbasins, including grates, leads, ditching, removal and disposal of existing catchbasins	\$	6,000.00
Exposing and locating existing tile drains	\$	1,000.00
Tile connections as noted on plan	\$	300.00
Contingency allowance for two additional equipment float moves (out and back in twice) to allow time for wet areas to drain	\$	1,200.00
Tile connections and contingencies	\$	4,300.00
Allowances under Sections 29 & 30 of the Drainage Act	\$	11,230.00

BRANCH 3

Installation of the following concrete field tile by wheel machine including supply & installation of geotextile around tile joints (approx. 300m req'd)		
115 meters of 350mm dia. 2000D concrete tile	\$	2,440.00
120 meters of 350mm dia. 2400D concrete tile	\$	3,130.00
Supply of the above listed tile	\$	5,060.00
Installation of the following concrete field tile and sewer pipe by excavator including supply & installation of geotextile around conc. tile joints (approx. 80m req'd) and supply and compaction of bedding material		
63 meters of 350mm dia. 2400D concrete tile	\$	4,410.00
52 meters of 375mm dia. sewer pipe	\$	4,160.00
Supply of the above listed tile and pipe	\$	3,610.00
Contingency amount for increased cost due to poor soil conditions:		
Installation of tile on crushed stone bedding with excavator (100 meters)	\$	2,500.00
Supply & delivery of 19mm crushed stone (Approx. 40 tonnes req'd)	\$	870.00
Stripping, stockpiling topsoil and releveling upon completion (4m width)	\$	2,600.00
Supply and install one 600mm x 600mm ditch inlet catchbasin including grates, berms, ditching	\$	1,800.00
Construct swale to north and south of new catchbasin (90m total) including leveling excavated material	\$	1,080.00
Contingency allowance for one additional equipment float move (out and back in) to allow time for wet area to drain	\$	600.00
Tile connections and contingencies	\$	3,300.00
Allowances under Sections 29 & 30 of the Drainage Act	\$	5,310.00

SCHEDULE 'B' - COST ESTIMATE (cont'd)

BANNISTER DRAIN 2016
City of London**ADMINISTRATION**

Net Harmonized Sales Tax	\$	2,610.00
Permit To Take Water and supporting documentation	\$	5,000.00
Conservation Authority Review Fee	\$	300.00
Survey, Plan and Final Report	\$	30,730.00
Expenses	\$	320.00
Supervision and Final Inspection	\$	<u>8,000.00</u>
TOTAL ESTIMATED COST	\$	<u>179,800.00</u>

SCHEDULE 'C' - ASSESSMENT FOR CONSTRUCTION

BANNISTER DRAIN 2016

City of London

Job No. 211205

May 30, 2016

* = Non-agricultural

COM	LOT	HECTARES AFFECTED	ROLL No. (OWNER)	SPECIAL BENEFIT	BENEFIT	OUTLET	TOTAL	
BRANCH 1 (and Main Drain Deepening)								
<i>Geographic Westminster</i>								
	6	Pt.N½ 19	2.1	080-020-166(A. Hennessy)	\$	\$ 42.00	\$ 42.00	
*	6	Pt.N½ 20	2.2	080-020-167(London City)		42.00	42.00	
*	6	Pt.N½ 20	2.4	080-020-167-01(London City)		42.00	42.00	
*	6	Pt.N½ 20	0.80	080-020-168(London City)		14.00	14.00	
*	6	Pt.N½ 20	0.11	080-020-169(London City)		1.00	1.00	
*	6	Pt.N½ 20	1.7	080-020-170(London City)		28.00	28.00	
*	5	Pt.S½ 19	24.2	080-020-193(Brekelmans Holdings Limited)		401.00	401.00	
*	5	Pt.S½ 19	0.10	080-020-194(London City)		1.00	1.00	
	5	Pt.N½ 19	1.7	080-040-080(M. McDougall & J. Brochu)		28.00	28.00	
*	5	Pt.N½19& 20	10.1	080-040-081(1028026 Ontario Ltd.)		167.00	167.00	
*	5	Pt.S½ 20	20.2	080-020-191(Brekelmans Holdings Limited)		333.00	333.00	
*	5	Pt.S½ 20	18.9	080-020-190-10(1028026 Ontario Ltd)		319.00	319.00	
*	5	Pt. N½ 20	15.0	080-040-081-20(1028026 Ontario Ltd.)		250.00	250.00	
*	5	Pt. N½ 20	0.40	080-040-082(United Church of Canada)				
*	5	Pt. N½ 20	0.61	080-040-083(White Oaks Cemetery Trustees)		14.00	14.00	
*	5	Pt.N½20& 21	6.2	080-040-084-05(969726 Ontario Ltd.)		97.00	97.00	
*	5	Pt.S½ 21	2.5	080-020-189(S. Shirley)		42.00	42.00	
*	5	Pt.S½ 21	23.0	080-020-190(M. & A. & W. & C. Brown)		389.00	389.00	
	5	Pt. N½ 21	28.6	080-040-084 (969726 Ontario Ltd.)	13,310.00	15,271.00	28,581.00	
	5	Pt.S½21& 22	3.3	080-020-187(R. & D. McDougall)		139.00	139.00	
	5	N½ 22	14.8	080-040-085 (Lobban Farms Ltd.)	4,050.00	5,373.00	9,423.00	
	4	Pt. S½ 21	1.5	080-040-101 (W B C Holdings Ltd)		1,208.00	1,208.00	
*	4	Pt.E½S½ 22	2.0	080-040-097 (Cobrell Holdings Inc.)	10,210.00	444.00	10,654.00	
*	Right-of-Way			030-280-154(Hydro One Networks Inc)	5,570.00	670.00	6,240.00	
TOTAL ASSESSMENT ON LANDS					5,570.00	\$ 28,240.00	\$ 24,645.00	\$ 58,455.00
Westminster Dr.				1.3	City of London	\$ 40,520.00	\$ 5,412.00	\$ 45,932.00
White Oak Road				3.5	City of London		222.00	222.00
Scotland Dr.				2.3	City of London		278.00	278.00
Highway 401				9.4	Ministry of Transportation		943.00	943.00
TOTAL ASSESSMENT ON ROADS					\$ 40,520.00	\$ 6,855.00	\$ 47,375.00	

SCHEDULE 'C' - ASSESSMENT FOR CONSTRUCTION (Cont'd)

BANNISTER DRAIN 2016
City of London

* = Non-agricultural

CON	LOT	HECTARES AFFECTED	ROLL No. (OWNER)	BENEFIT	OUTLET	TOTAL
BRANCH 1 (CON'T)						
SPECIAL ASSESSMENT against the City of London for the increased cost of boring a 458mm (18") dia. smooth wall pipe under Westminster Drive						\$ 12,080.00
SPECIAL ASSESSMENT to be charged out under maintenance to the Main Drain - Open Portion of the Bannister Drain 1984						\$ 5,980.00
TOTAL ASSESSMENT ON BRANCH 1						\$ 123,890.00
BRANCH 3						
<i>Geographic Westminster</i>						
6	Pt.N½ 19	2.1	080-020-166(A. Hennessy)	\$	\$ 76.00	\$ 76.00
* 6	Pt.N½ 20	2.2	080-020-167(London City)		85.00	85.00
* 6	Pt.N½ 20	2.4	080-020-167-01(London City)		95.00	95.00
* 6	Pt.N½ 20	0.8	080-020-168(London City)		28.00	28.00
* 6	Pt.N½ 20	0.1	080-020-169(London City)		0.00	0.00
* 6	Pt.N½ 20	1.7	080-020-170(London City)		66.00	66.00
* 5	Pt.S½ 19	24.2	080-020-193(Brekelmans Holdings Limited)		918.00	918.00
* 5	Pt.S½ 19	0.1	080-020-194(London City)		0.00	0.00
5	Pt.N½ 19	1.7	080-040-080(M. McDougall & J. Brochu)		66.00	66.00
* 5	Pt.N½19& 20	10.1	080-040-081(1028026 Ontario Ltd.)		379.00	379.00
* 5	Pt.S½ 20	20.2	080-020-191(Brekelmans Holdings Limited)		768.00	768.00
* 5	Pt.S½ 20	18.9	080-020-190-10(1028026 Ontario Ltd)		720.00	720.00
* 5	Pt. N½ 20	15.0	080-040-081-20(1028026 Ontario Ltd.)		569.00	569.00
* 5	Pt. N½ 20	0.4	080-040-082(United Church of Canada)		19.00	19.00
* 5	Pt. N½ 20	0.6	080-040-083(White Oaks Cemetery Trustees)		19.00	19.00
* 5	Pt.N½20& 21	6.2	080-040-084-05(969726 Ontario Ltd.)		237.00	237.00
* 5	Pt.S½ 21	2.5	080-020-189(S. Shirley)		95.00	95.00
* 5	Pt.S½ 21	23.0	080-020-190(M. & A. & W. & C. Brown)		872.00	872.00
5	Pt. N½ 21	17.1	080-040-084 (969726 Ontario Ltd.)	15,880.00	5,091.00	20,971.00
5	Pt.S½21& 22	3.3	080-020-187(R. & D. McDougall)		313.00	313.00
5	N½ 22	11.8	080-040-085 (Lobban Farms Ltd.)	16,880.00	7,811.00	24,691.00
TOTAL ASSESSMENT ON LANDS				\$ 32,760.00	\$ 18,227.00	\$ 50,987.00
=====						
* White Oak Road	3.5	City of London		\$	\$ 502.00	\$ 502.00
* Scotland Dr.	2.3	City of London			408.00	408.00
* Highway 401	9.4	Ministry of Transportation			4,013.00	4,013.00
TOTAL ASSESSMENT ON ROADS				\$	\$ 4,923.00	\$ 4,923.00
=====						
TOTAL ASSESSMENT ON THE BRANCH 3						\$ 55,910.00
TOTAL ASSESSMENT ON THE BANNISTER DRAIN 2016						\$ 179,800.00

SCHEDULE OF NET ASSESSMENT

BANNISTER DRAIN 2016

City of London

(FOR INFORMATION PURPOSES ONLY)

Job No. 211205

May 30, 2016

* = Non-agricultural

ROLL NUMBER (OWNER)	TOTAL ASSESSMENT	GRANT	ALLOWANCES	APPROX. NET
<i>Geographic Westminster</i>				
080-020-166(A. Hennessy)	\$ 118.00	\$ 39.00	\$	\$ 79.00
* 080-020-167(London City)	127.00			127.00
* 080-020-167-01(London City)	137.00			137.00
* 080-020-168(London City)	42.00			42.00
* 080-020-169(London City)	1.00			1.00
* 080-020-170(London City)	94.00			94.00
* 080-020-193(Brekelmans Holdings Limited)	1,319.00			1,319.00
* 080-020-194(London City)	1.00			1.00
080-040-080(M. McDougall & J. Brochu)	94.00	31.00		63.00
* 080-040-081(1028026 Ontario Ltd.)	546.00			546.00
* 080-020-191(Brekelmans Holdings Limited)	1,101.00			1,101.00
* 080-020-190-10(1028026 Ontario Ltd)	1,039.00			1,039.00
* 080-040-081-20(1028026 Ontario Ltd.)	819.00			819.00
* 080-040-082(United Church of Canada)	19.00			19.00
* 080-040-083(White Oaks Cemetery Trustees)	33.00			33.00
* 080-040-084-05(969726 Ontario Ltd.)	334.00			334.00
* 080-020-189(S. Shirley)	137.00			137.00
* 080-020-190(M. & A. & W. & C. Brown)	1,261.00			1,261.00
080-040-084 (969726 Ontario Ltd.)	49,552.00	16,517.00	3,140.00	29,895.00
080-020-187(R. & D. McDougall)	452.00	151.00		301.00
080-040-085 (Lobban Farms Ltd.)	34,114.00	11,371.00	7,420.00	15,323.00
080-040-101 (W B C Holdings Ltd)	1,208.00	403.00		805.00
* 080-040-097 (Cobrell Holdings Inc.)	10,654.00		5,240.00	5,414.00
* 030-280-154(Hydro One Networks Inc.)	6,240.00		740.00	5,500.00
Special Assessment to Bannister Drain 1984 - Main Drain - Open Portion	5,980.00	1,993.00		3,987.00
* Westminster Dr.	\$ 45,932.00	\$	\$	\$ 45,932.00
* Non-prorated Special Assessment	12,080.00			12,080.00
* White Oak Road	724.00			724.00
* Scotland Dr.	686.00			686.00
* Highway 401	4,956.00			4,956.00
TOTALS	\$ 179,800.00	\$ 30,505.00	\$ 16,540.00	\$ 132,755.00

