

Amendment to the  
Engineer's Report for the  
O'Keefe Municipal Drain  
Block C, Station 0+000 to 0+234

Prepared For:



Prepared By:

Robinson Consultants Inc.  
Consulting Engineers

Our Project No. 17081  
November 2018

November 26<sup>th</sup>, 2018

Mayor and Members of Council  
City of Ottawa  
110 Laurier Avenue West  
Ottawa, ON K1P 1J1

**Attention:**           **Mr. Rick O'Connor**  
                                  **City Clerk**

**Reference:**           **Amendment to the Engineer's Report**  
                                  **O'Keefe Municipal Drain-Addition of a Culvert**  
                                  **Barrhaven Ward**  
                                  **Our Project No. 17081**

Dear Sir:

This Amendment to the Engineer's Report for the O'Keefe Municipal Drain, Barrhaven Ward, which is respectfully submitted for Council's consideration, was initiated by the City of Ottawa under Section 78 of the Drainage Act, RSO 1990. The purpose of the report is to accommodate a change in land use from vacant to urban development for portions of the lands within the drainage area of the O'Keefe Municipal Drain and to accommodate the installation of a new culvert on the drain. This Report makes modifications to the existing Engineer's Report entitled "Amendment to the Engineer's Report O'Keefe Municipal Drain", December 2015, by Robinson Consultants Inc. and the associated City of Ottawa By-Law 2016-149. The remaining sections of the O'Keefe Municipal Drain, not modified by this report, will continue to be governed by the "Amendment to the Engineer's Report O'Keefe Municipal Drain Modifications and Improvements", December, 2015 and the "Engineer's Report O'Keefe Municipal Drain, March 2006, both by Robinson Consultants Inc.

All costs associated with this Engineer's Report will be assessed to the owners/developers of the lands identified as Block C on DWG No. 17081-A1. Modifications to the O'Keefe Municipal Drain covered by this Engineer's Report will be completed by the developer in advance of the development of the lands at the developer's expense.

If you have any questions, please feel free to contact the undersigned at 613-592-6060 extension 104.

Yours very truly,

ROBINSON CONSULTANTS INC.

A handwritten signature in black ink, appearing to read 'A.J. Robinson', with a long horizontal flourish extending to the right.

A.J. Robinson, P.Eng.  
Drainage Engineer

AJR: plw

c.c. David Ryan, P. Geo., Municipal Drainage Manager/Drainage Superintendent,  
City of Ottawa

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## **1.0 INTRODUCTION**

Robinson Consultants Inc. was appointed by the City of Ottawa on November 2, 2017 to complete an Engineer's Report to amend the existing Engineer's Report for the O'Keefe Municipal Drain. The Amendment to the Engineer's Report for the modifications to the Municipal Drain was initiated by the City of Ottawa under Section 78 of the Drainage Act at the request of the developers/landowners of the lands within the development area.

### **1.1 History**

The existing O'Keefe Municipal Drain in the geographic Township of Nepean was last improved under an Engineer's Report by Robinson Consultants Inc., dated December 2015 and is enacted under City of Ottawa By-Law No. 2016-149

### **1.2 On-Site Meeting**

A meeting of representatives of the affected landowners, which for the purpose of the Drainage Act is accepted as the On-Site Meeting, was held on February 14, 2018.

## **2.0 PURPOSE OF THE AMENDMENT REPORT**

The City of Ottawa initiated the Amendment to the Engineer's Report under Section 78 of the Drainage Act, RSO 1990, in conjunction with the development of lands within the drainage area. The purpose of the Report is to accommodate the change in land use from vacant to urban development for the lands identified as Block C on DWG No. 17081-A1 and to accommodate the installation of a new culvert on the existing drain. Block C includes properties with ID Numbers 34 & 35 (DWG No. 14017-A2) in the Amendment to the Engineer's Report O'Keefe Municipal Drain, December 2015, by Robinson Consultants Inc.

To accommodate these changes, amendments are required to the existing Engineer's Report, entitled "Amendment to the Engineer's Report O'Keefe Municipal Drain", December 2015, by Robinson Consultants Inc. The amendments include installation of a new culvert and minor modifications to a portion of the drain.

### **2.1 Modifications – Main Drain**

Modifications to the existing O'Keefe Municipal Drain include the installation of a new culvert under a proposed access pathway, installation of rip rap erosion control works at the ends of the new culvert and at the ends of two existing culverts under O'Keefe Court and Fallowfield Road at the limits of the property being developed as well as minor grading adjacent to the drain.

### **3.0 EXISTING CONDITIONS**

#### **3.1 Location of the Drain**

The portion of the main drain as identified by this Report commences at the southern end of the culvert under O'Keefe Court (the northern limit of the proposed subdivision) at approximately Station 0+000 and continues to the northerly limit of the culvert under Fallowfield Road (the southern limit of the proposed subdivision) at approximately Station 0+234 shown on DWG 14017-P1, O'Keefe Municipal Drain Amendment to the Engineer's Report by Robinson Consultants Inc.

The location of the drain and the area of this amendment are shown on the Location Plan - **Figure 3.1**.

#### **3.2 Drainage Basin and Limits**

The limits of the drainage boundary (drainage basin) as well as property ownership are shown on DWG No. 14017-A2 which is included for reference.

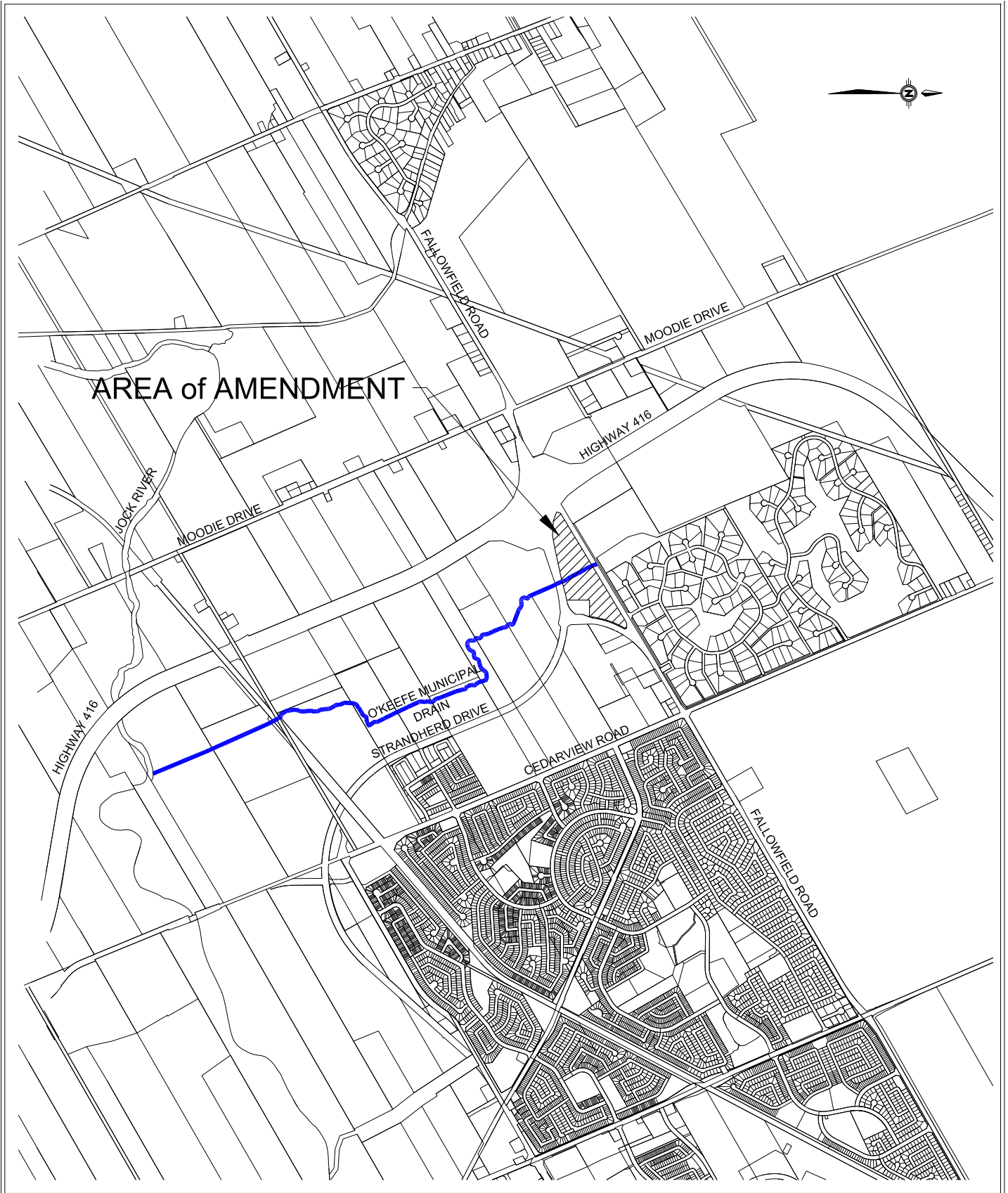
#### **3.3 Drawings Forming Part of the Engineer's Report**

Dwg. No. 17081-A1 has been prepared showing the plan of subdivision, including internal blocks, streets and public accesses within Block C as referenced in this report. DWG 14017-A2 from the December 2015 Engineer's Report by Robinson Consultants Inc. shows the limits of the drainage basin as well as individual properties (including ID Numbers) of the full drainage area. DWG 14017-P1 from the December 2015 report shows the profile and typical cross-section of the existing drain. The drawings as noted above are provided in **Appendix A**.

Detailed design Ditch Plan/Profile and Grading drawings for the new culvert, including locations of rip rap erosion control installation and modifications to the main drain, are included on Drawing No. 105, Revision No. 11 and Drawing No. 201, Revision 9, Project 39744 for the proposed development prepared by IBI Group. The above noted drawings are provided in **Appendix B**.

### **4.0 DESIGN CONSIDERATIONS**

The drainage design within Block C including the modifications to the O'Keefe Municipal Drain was completed by IBI Group, the engineer retained for the development of the lands in question, and approved by the City of Ottawa and the Rideau Valley Conservation Authority in conjunction with the development application process. IBI Group also has the responsibility to obtain approvals or permits from Ministry of Natural Resources and Forestry (MNRF), Department of Fisheries and Oceans (DFO) and other agencies as required.



**Robinson**  
Consultants

Title	LOCATION PLAN		Fig. No. <b>3.1</b>
Project	O'KEEFE MUNICIPAL DRAIN		Job No. 17081
	Scale	N.T.S.	Date NOVEMBER 2018

## 5.0 CONSTRUCTION

All required construction within the proposed development area will be completed in conjunction with the development of the lands in the subdivision at the cost of the developer. All excavated material will be addressed as per the development approval conditions. Access will be required for construction equipment, preferably on the east and north sides, adjacent to the drain.

## 6.0 ASSESSMENTS

### 6.1 General

The Drainage Act requires that the total estimated cost be assessed against the affected lands and roads under the categories of benefit (Section 22), outlet liability (Section 23), injuring liability (Section 23), special benefit (Section 24) and special assessment of public utility or road authority (Section 26). On this project there is no assessment for injuring liability. Assessments for future maintenance of the O'Keefe Municipal Drain will continue to be in accordance with the Assessment Schedules in the December 2015 Engineer's Report prepared by Robinson Consultants Inc., with the exception of the Assessments for the lands in Block C as stipulated herein.

### 6.2 Block C Assessment

A schedule of assessment for the properties in the area of the land use change is provided such that the combined assessment cost, as adjusted for the incorporation of lands into Block C may be utilized for the distribution of future maintenance costs. The combined assessment value is proportionally distributed to the City of Ottawa owned roads and public accesses and to the private lands within the subdivision. The Schedule of Assessment-Block C, Schedule A is provided in **Appendix C** of this report.

*Engineer may assess a block, etc.*

*25. (1) of the Drainage Act: The council of the local municipality may direct the engineer to assess as a block, a built-up area designated by the council, and the sum assessed therefore may be levied against all the ratable properties in the designated area proportionately on the basis of the assessed value of the land and buildings. R.S.O. 1990, c. D.17, s. 25 (1).*

*Assessment to be charged against public roads*

*(2) Where the engineer makes a block assessment under subsection (1), the engineer shall designate the proportion of the assessment to be charged against the public roads in the designated area. R.S.O., 1990, c. D.17, s. 25 (2).*



For the purpose of future maintenance, assessment to the proposed development area will be a "Block Assessment" in accordance with Section 25 of the Ontario Drainage Act, RSO 1990. Block C is shown on DWG No. 17081-A1 in Appendix A.

The Schedule of Assessment is provided in Appendix C of this report and is only for the lands impacted by this report. All other assessments remain as stipulated in the Amendment to the Engineer's Report for the O'Keefe Municipal Drain, December, 2015 by Robinson Consultants Inc. The land use factor has not change from that used in the above referenced report, therefore, the change in the assessment schedule is to incorporate lands into Block C and to distribute the assessment between the publically owned and privately owned property. All assessments may be distributed proportionally based on the public and private ownership. Appendix C shows the original assessments and the combined new assessments.

In addition to the costs assessed in Schedule A for future maintenance, all costs with regard to the preparation of this report are to be paid by the property owner(s) in Block C.

### 6.3 Special Benefit/Special Assessment

Special Benefit by definition under the Drainage Act, RSO 1990 is "any additional work or feature included in the construction, repair or improvement of a drainage works that has no effect on the functioning of the drainage works." A Special Benefit Assessment and/or a Special Assessment is charged against any owner, public utility, agency, authority or municipality for which special consideration was required to accommodate special design consideration or a special feature.

For the portion of the drain within the development area all costs associated with the initial design, construction, allowances, other costs and the Engineer's Report are assessed as a Special Assessment to the owner(s) of the lands in Block C.

**Table 6.1**  
**Distribution of Costs by Land Use**  
**Within Blocks C**  
**For Future Maintenance**

<b>Property Type</b>	<b>% Total (For Distribution)</b>	<b>Assessed To</b>
<b>BLOCK C</b>		
Commercial Properties	89.17 %	Property Owner
Roads & Public Access	10.83 %	City of Ottawa

## **7.0 COST ESTIMATE**

### **7.1 General**

The total estimated cost associated with the initial construction, engineering, contract administration, engineer's report, other costs and contingencies for the installation of the new culvert and modifications to the drain between Sta. 0+000 and 0+234 on profile drawing 14017-P1 (December 2015 Engineer's Report) which are shown on Drawings No. 105 and 201, Project No. 39744, IBI Group will be paid for by the property owner(s) of the lands in Block C in conjunction with the development approval process. There is no assessment to the remaining landowners for the modifications to the existing drain.

### **7.2 Allowances**

There are no allowances associated with the modifications to the drain that are covered by this report.

## **8.0 CHANGING THE SCOPE OF THE WORK**

Should changes, deletions or extensions in construction be requested or required after the bylaw is passed, the report must be amended and a revised bylaw must be passed. Since this project will be constructed through provisions of the Drainage Act, a bylaw must first be passed to authorize the work. If it is desired to make any substantial increase or decrease in the scope of work as designed it will be necessary that either a revised report be prepared and processed or, if the desired works are considered to be a gross error in accordance with the Drainage Act, that an application be made to the Agricultural, Food and Rural Affairs Appeal Tribunal (Drainage Tribunal) pursuant to Section 58(4) of the Drainage Act to obtain approval for such change.

## **9.0 MAINTENANCE**

Future maintenance of the project shall be the responsibility of the City of Ottawa, although the individual owners shall be responsible for periodic inspection of the drain and reporting maintenance problems to the City's Drainage Superintendent.

For the purpose of future maintenance, the works covered by this report are considered to be included with and governed by the Amendment to the Engineer's Report for the O'Keefe Municipal Drain, December 2015 by Robinson Consultants Inc.

## 10.0 PERMITS AND AUTHORIZATIONS

All permits and authorizations required for the initial construction, including, but not limited to, Department of Fisheries and Oceans (DFO), Ministry of Natural Resources and Forestry– Species at Risk (MNR-F-SAR), the Rideau Valley Conservation Authority (RVCA) and Ontario Ministry of the Environment, Conservation and Parks (MOECP) are to be completed in conjunction with the development and are solely the responsibility of the developer/property owner of lands in Block C.

All of which is respectfully submitted,

ROBINSON CONSULTANTS INC.



A.J. Robinson, P.Eng  
Drainage Engineer



## Appendix A

### Amendment Area, Property and Profile Plans

Amendment Area Block C-DWG 17081-A1

Property Ownership Plan-DWG 14017-A2

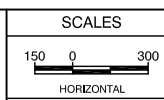
Profile Sta. 0+000 to 0+426.72-DWG 14017-P1

LEGEND

————— BLOCK C  
PROPERTY LINE



No.	DATE	REVISION	BY	No.	DATE	REVISION	BY
	dd.mm.yy	comment	x.x.		dd.mm.yy		
1							



**Robinson**  
Consultants

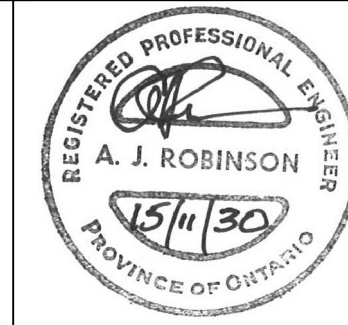
350 Palladium Drive, Suite 210  
Ottawa, ON K2V 1A8  
(613) 592-6060 rcll.com

DESIGN	LF
CHECKED	AJR
DRAWN	JHB
CHECKED	LF
APPROVED	AJR

CITY OF OTTAWA  
  
O'KEEFE MUNICIPAL DRAIN

AMENDMENT AREA  
BLOCK C

PROJECT No.	17018
CONTRACT No.	
DATED	NOVEMBER 2018
DWG. No.	17081-A1



NO.	REVISIONS	BY	DATE

NOTE:  
The location of the utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned.  
The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

O'KEEFE MUNICIPAL DRAIN

**Robinson**  
Consultants

CONTRACT NO.

DWG. NO.  
14017-A2

SHEET OF

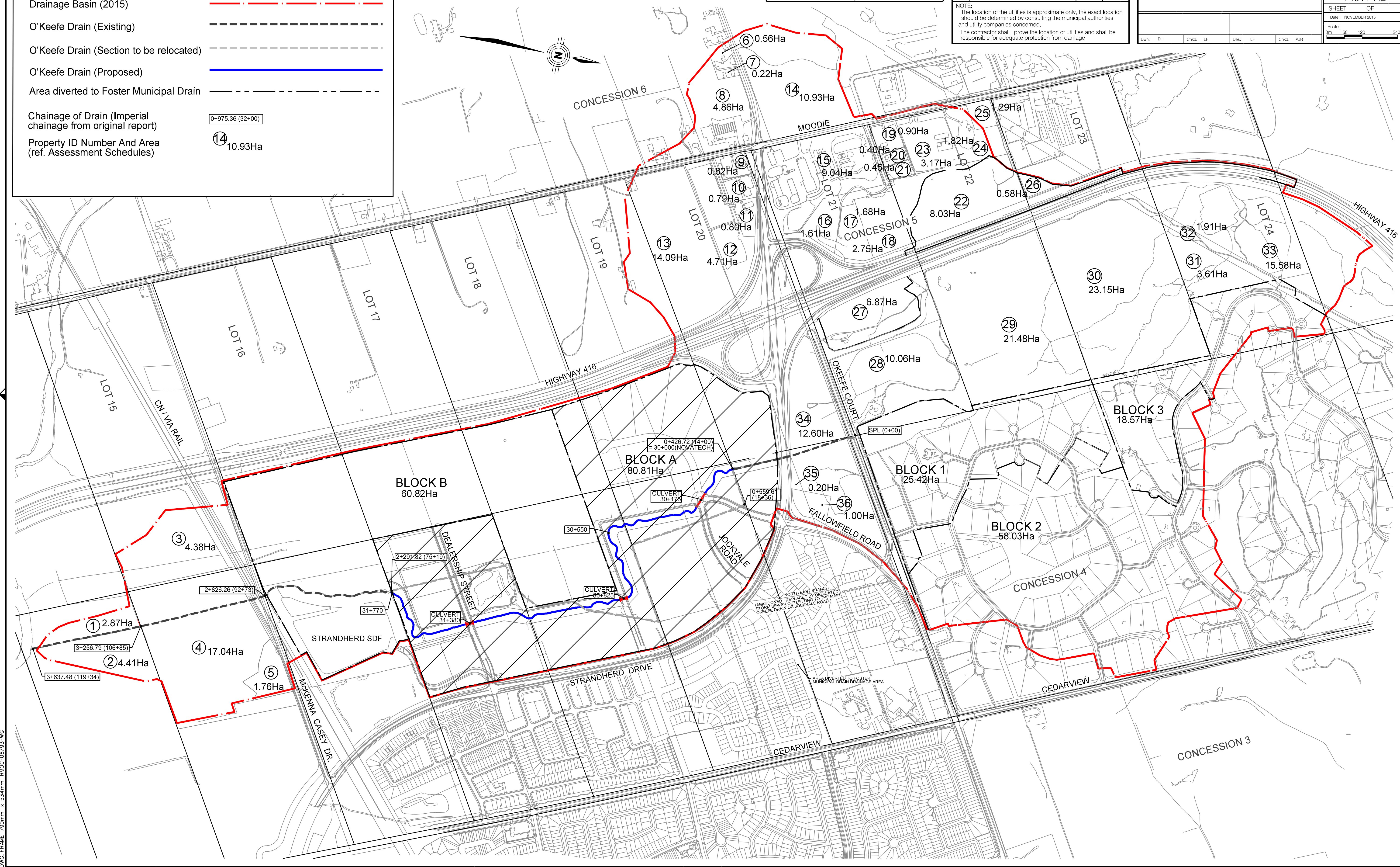
Date: NOVEMBER 2015

Scale: 0m 60 120 240

PROPERTY OWNERSHIP

### LEGEND

- Block Number **BLOCK 1**
- Block Limits
- Drainage Basin (2015)
- O'Keefe Drain (Existing)
- O'Keefe Drain (Section to be relocated)
- O'Keefe Drain (Proposed)
- Area diverted to Foster Municipal Drain
- Chainage of Drain (Imperial chainage from original report) 0+975.36 (32+00)
- Property ID Number And Area (ref. Assessment Schedules) 14 10.93Ha





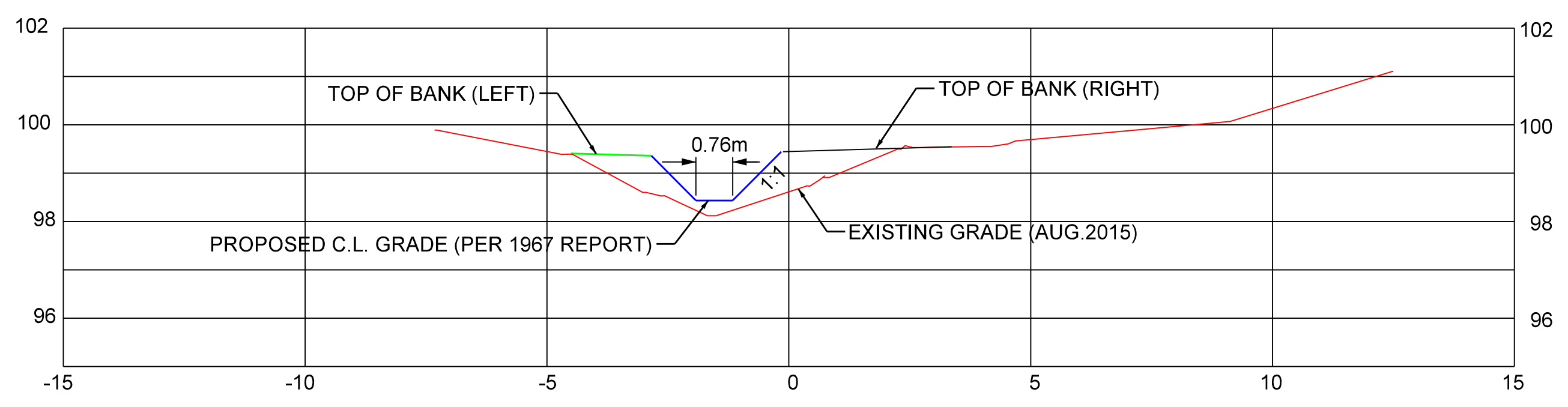
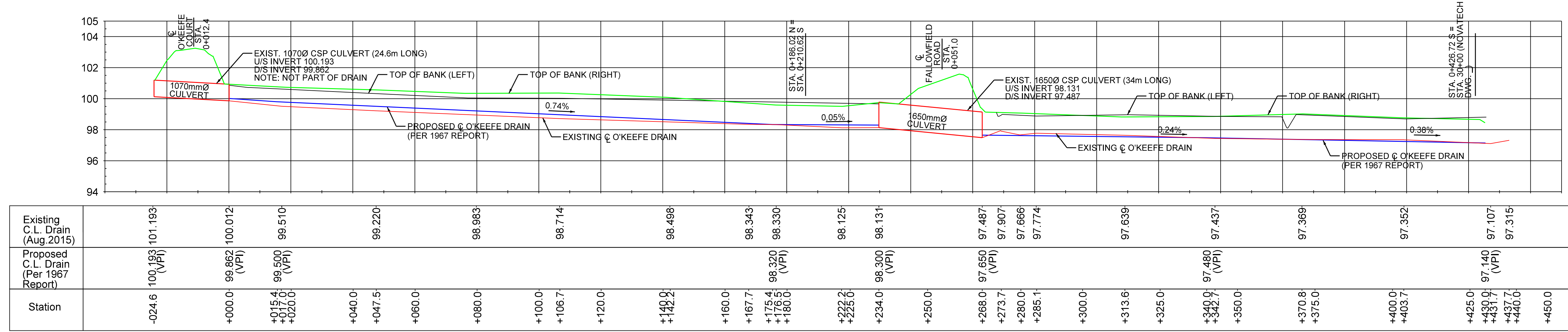
NO.	REVISIONS	BY	DATE

**O'KEEFE MUNICIPAL DRAIN**  
 AMMENDMENT TO THE ENGINEER'S REPORT  
 PROFILE  
 STA. 0+000 TO 0+426.72

**Robinson Consultants**  
 CONTRACT NO.  
 DWG. NO. 14017-P1  
 SHEET 1 OF 4  
 Date: NOVEMBER 2015  
 Scale: 0m 7.5 15 30

NOTE:  
 The location of the utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned.  
 The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage

Dwnr: DH Chkd: LF Des: LF Ckcd: AJR



TYPICAL CROSS SECTION (PER 1967 REPORT)  
 STA. 0+222  
 N.T.S.

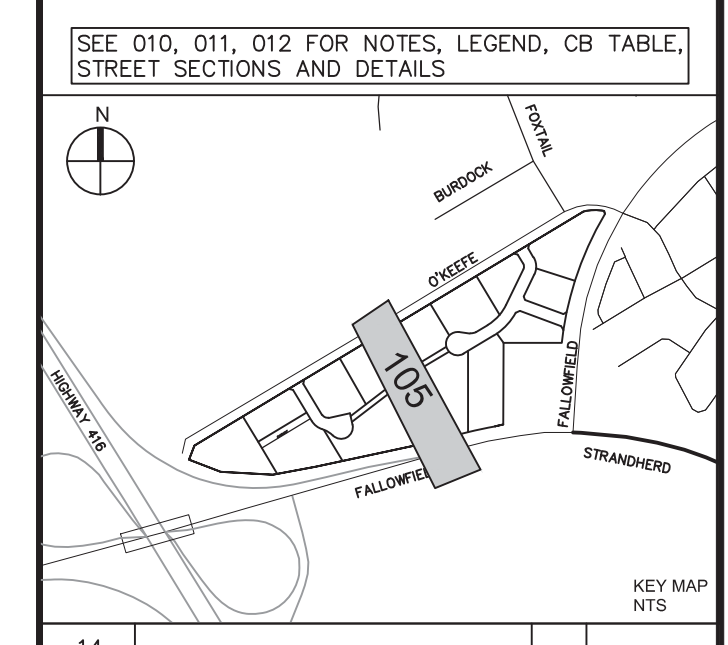
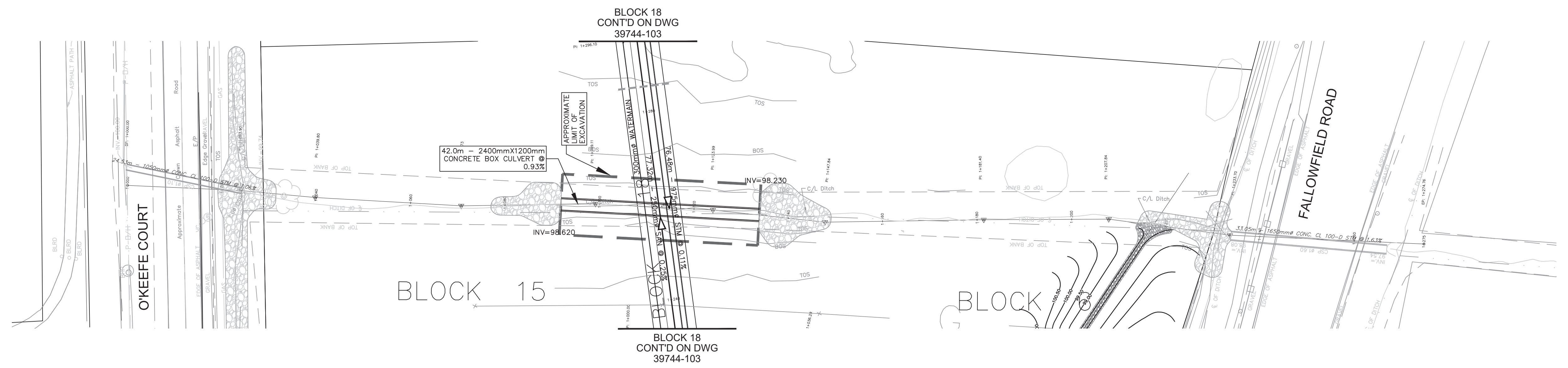
## Appendix B

### Proposed Plan and Profile Drawings

IBI Drawing No. 105-Ditch

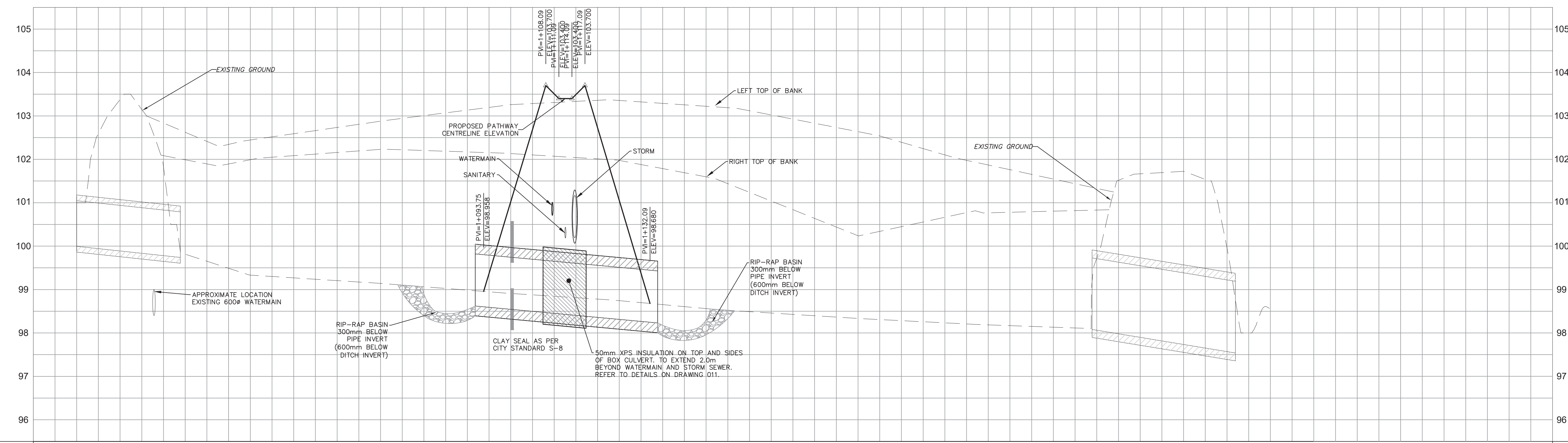
IBI Drawing No. 201-Grading





SEE 010, 011, 012 FOR NOTES, LEGEND, CB TABLE, STREET SECTIONS AND DETAILS

No.	REVISIONS	By	Date
14			
13			
12			
11	REVISED CULVERT NOTE	DGY	18.11.06
10	ISSUED FOR CONSTRUCTION	DGY	18.09.26
9	REVISED CULVERT - ISSUED TO CITY FOR REVIEW	DGY	18.08.28
8	ISSUED FOR CONSTRUCTION	DGY	18.08.08
7	ADDENDUM #3	DGY	18.06.15
6	ISSUED FOR TENDER	DGY	18.05.24
5	REVISED PER CITY COMMENTS	DGY	18.05.22
4	REVISED PER CITY COMMENTS	DGY	18.04.06
3	REVISED PER CITY COMMENTS	DGY	18.01.10
2	REVISED PER CITY COMMENTS	DGY	17.09.26
1	ISSUED FOR CITY REVIEW	DGY	17.05.04



ROAD GRADE		ROAD GRADE
EXISTING GRADE	101.829 99.333 99.205 99.065 98.916 101.026 103.700 103.400 103.400 103.700 102.725 98.680 98.607 98.459 98.335 98.233 98.194 98.151 101.516 101.535	EXISTING GRADE
STM SEWER INVERT	100.000 EXISTING 24.53m 1050mm <sup>ø</sup> CONC. CSP STM @ 1.06% 99.740 98.620 2400mm X 1200mm CONC. BOX CULVERT STM @ 0.93% WITH 300mm SUBMERGED INVERT 98.230 98.080 EXISTING 33.05m 1650mm <sup>ø</sup> CONC. CSP STM @ 1.63% 97.540	STM SEWER INVERT
SAN SEWER INVERT		SAN SEWER INVERT
STATION	1+000 1+020 1+040 1+060 1+080 1+100 1+120 1+140 1+160 1+180 1+200 1+220 1+240 1+260 1+280	STATION

**DCR/PHOENIX GROUP OF COMPANIES**  
18A BENTLEY AVE.  
OTTAWA ONT  
K2E 6T8

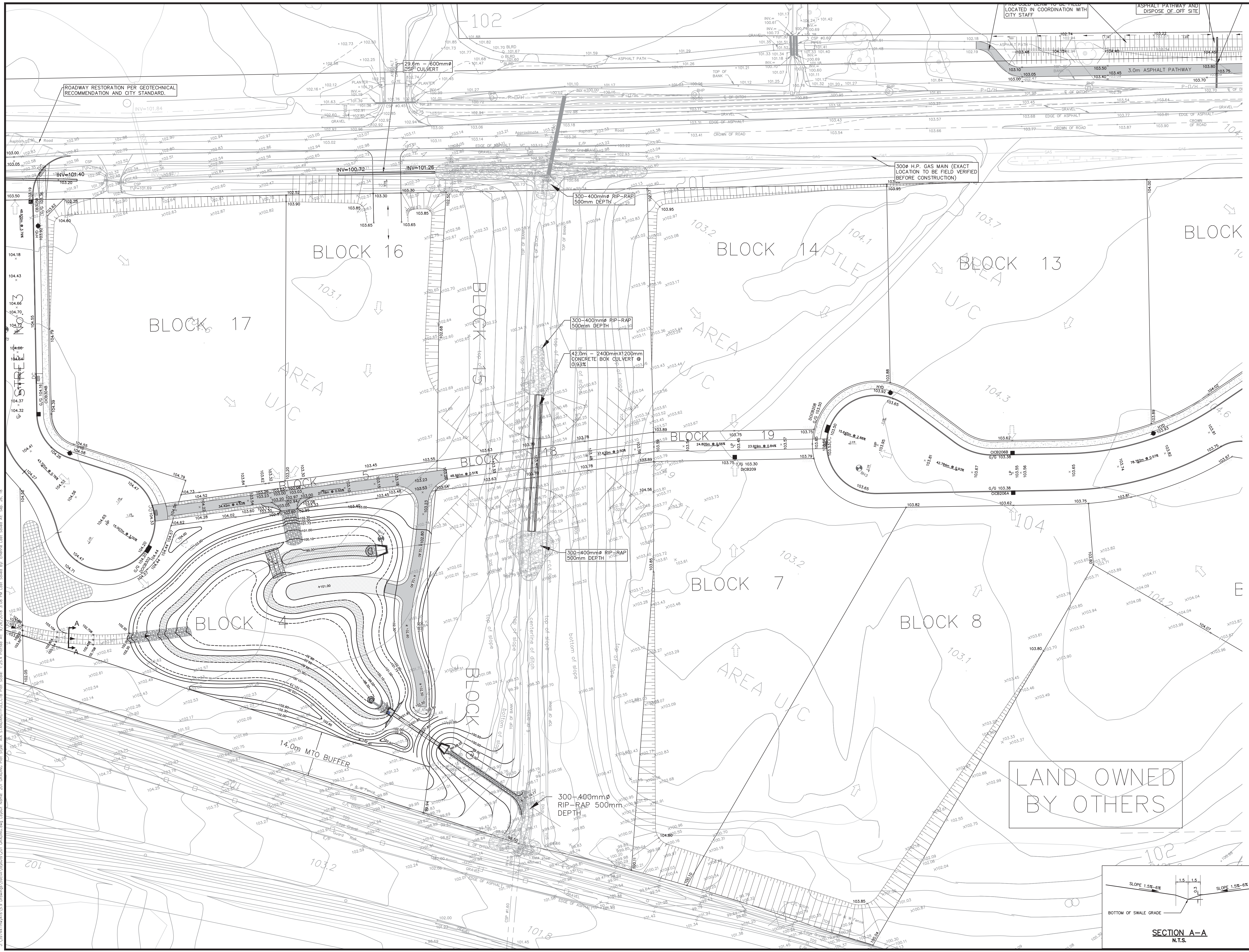
**IBI GROUP**  
400 - 333 Preston Street  
Ottawa ON K1S 5N4 Canada  
tel 613 225 1311 fax 613 225 9868  
ibigroup.com

Project Title  
**416 LANDS**  
4401 FALLOWFIELD ROAD

Professional Engineer  
D. Yannouloupoulos  
06/11/2018  
PROVINCE OF ONTARIO

Drawing Title  
**DITCH**

Scale	HORIZ. SCALE 1:500 VERT. SCALE 1:50
Design	MB/RM
Date	MARCH 2016
Drawn	EH
Checked	DGY
Project No.	39744
Drawing No.	105



REVIEWED BY  
DEVELOPMENT REVIEW SERVICES BRANCH

Signed \_\_\_\_\_  
Date \_\_\_\_\_ 2017  
Plan Number \_\_\_\_\_

SEE 010, 011, 012 FOR NOTES, LEGEND, CB TABLE, STREET SECTIONS AND DETAILS

No.	REVISIONS	By	Date
14			
13			
12			
11			
10			
9	ISSUED FOR CHW	DGY	18.09.26
8	ISSUED FOR CONSTRUCTION	DGY	18.08.08
7	ADDENDUM #3	DGY	18.06.15
6	ISSUED FOR TENDER	DGY	18.05.24
5	REVISED PER CITY COMMENTS	DGY	18.05.22
4	REVISED PER CITY COMMENTS	DGY	18.04.06
3	REVISED PER CITY COMMENTS	DGY	18.01.10
2	REVISED PER CITY COMMENTS	DGY	17.09.26
1	ISSUED FOR CITY REVIEW	DGY	17.05.04

DCR/PHOENIX GROUP OF COMPANIES  
18A BENTLEY AVE.  
OTTAWA ONT  
K2E 6T8

**IBI** IBI GROUP  
400 - 333 Preston Street  
Ottawa ON K1S 5N4 Canada  
tel 613 225 1311 fax 613 225 9868  
ibigroup.com

Project Title  
**416 LANDS**  
4401 FALLOWFIELD ROAD

DESIGNED PROFESSIONAL ENGINEER  
D. Yannouloupoulos  
26/09/2018  
PROVINCE OF ONTARIO

Drawing Title  
**GRADING**

Scale  
1:500

Design	MB/RM	Date	MARCH 2016
Drawn	EH	Checked	DGY
Project No.	39744	Drawing No.	201

SECTION A-A  
N.T.S.

J:\39744-may16\3.9 Drawings\39744\39744-01 GRADING.dwg Layout Name: 201 GRADING Plot Size: A4 STANDARD-FULL CTB Plot Scale: 1:25.4 Printed At: 8/26/2018 3:08 PM Last Saved By: Elenora Last Saved At: Sep. 26, 18

CITY PLAN No. 17492  
CITY FILE No. D07-16-13-0013

## Appendix C

### Schedule of Assessment-Block C For Future Maintenance



**SCHEDULE A  
SCHEDULE OF ASSESSMENT - BLOCK 'C'  
FOR THE O'KEEFE MUNICIPAL DRAIN**



Original Assessment Amendment to the O'Keefe Municipal Drain Robinson Consultants Inc. -- December 2015 (By-Law No. 2016-149)				Land Use Factor (LUF)		Land(s) Transferred To Block		Combined Assessment Cost		
ID No.	Roll No..	Benefit (\$)	Outlet (\$)	Existing	Proposed	Transferred		Benefit	Outlet	Total
						Block	Area (Ha)			
34	0614 120 825 09820 0000	\$ 611.95	\$ 1,052.13	4.00	4.00	C	10.99	\$621.66	\$ 1,069.37	\$1,691.03
35	0614 120 825 09801 0000	\$ 9.71	\$ 17.24	4.00	4.00					

\* Note: "Original Assessment Costs" from the 2015 RCI Report were based on an assumed total maintenance of \$10,000 in each of (2) sections for a total of \$20,000.

**BLOCK ASSESSMENT DISTRIBUTION**

ID No.	Property	% Total	Distribution Assessment		
			Benefit	Outlet	Total
<b>Block(s)</b>					
BLK C	Commercial Individual Owners (Area = 9.80ha)	89.17%	\$ 554.35	\$ 953.58	\$ 1,507.92
	Roads (City of Ottawa) (Area = 1.19ha)	10.83%	\$ 67.31	\$ 115.79	\$ 183.11
<b>Total - Block(s)</b>			<b>\$ 621.66</b>	<b>\$ 1,069.37</b>	<b>\$ 1,691.03</b>