
MEMORANDUM

DATE: August 30, 2018
TO: Rideau Valley Conservation Authority
ATTENTION: Hal Stimson, RVCA Inspector
SUBJECT: Barrhaven Conservancy
Jock River Floodplain – Cut/Fill Analysis

This memo is prepared to summarize the proposed Jock River cut/fill analysis presented in the attached Figure 1 – Floodplain Limit Based on RVCA Jock River 1:100 Flood Risk Elevations (DSEL, August 30, 2018). This analysis has been prepared to support development of Barrhaven Conservancy, Phase 1.

The attached figure illustrates the existing and proposed topographic conditions encountered on site as they relate to the 2005 Jock River Flood Risk Map 100-year regulatory flood elevations (cross sections 4380 + 4534 + 4803 + 5002). Existing topographic conditions are based on J.D. Barnes survey (December 22, 2017). Proposed topographic conditions are based on the Barrhaven Conservancy Phase 1 Draft Plan (dated July 27, 2018) and DSEL's proposed grading along the Regulatory Flood Limit.

Figure 1 illustrates the following:

- 1) The line of intersection of the 100-year Flood Limit Elevation and Existing Topography within the property. The line created at this intersection is considered to represent the Regulatory Flood Limit.
- 2) The proposed floodplain infill via the calculated volume between the surfaces created by i) the 100-year Regulatory Flood Limit Elevation and ii) J.D. Barnes topographic survey (December 22, 2017) within the development areas within the Regulatory Flood Limit. The 100-year water level is between 91.59 m and 91.67 m per RVCA 2005 Jock River Flood Risk Map. The total fill proposed below the 100-year water level elevation is 2,152 m³.
- 3) The proposed cut areas that were identified by comparing the surfaces created by i) the proposed draft plan (Barrhaven Conservancy Phase 1, July 27, 2018) and DSEL's proposed grading, and ii) the 100-year Regulatory Flood Limit Elevation. The proposed plan provides areas to cut below the 100-year Regulatory Flood Limit Elevation.

The proposed cut ties into the existing topography as surveyed by J.D. Barnes, December 22, 2017, and to the proposed subdivision. The proposed depth of cut does not exceed 0.30 m below the reported 100-year Regulatory Flood Limit Elevation, in accordance with RVCA regulatory policies (Section 2.1). The 100-year water level is between 91.61 m and 91.71 m per RVCA 2005 Jock River Flood Risk Map. As demonstrated in Figure 1, the total cut proposed under the 100-year Regulatory Flood Limit Elevation is 2,155m³ (312+1,843) which is 3 m³ greater than the proposed fill within the floodplain.

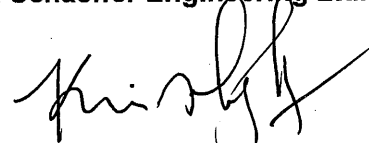
Table 1 illustrates the area and volume of cut and fill with respect to the 100-year Regulatory Flood Limit Elevation:

Table 1 – Cut / Fill Relative to 100-year Flood Limit Elevation

Depth from 100-Year Regulatory Flood Limit	CUT		FILL	
	Area (m ²)	Volume (m ³)	Area (m ²)	Volume (m ³)
0 cm – 10 cm	2031	1102	4815	1179
10 cm – 20 cm	3296	851	5168	675
20 cm – 30 cm	6614	202	3198	250
30 cm – 40 cm	N/A	N/A	936	48
40 cm – 50 cm	N/A	N/A	117	
50 cm – 60 cm	N/A	N/A	57	
TOTAL	11941	2155	14291	2152

This proposed fill is considered consistent with the intent of the RVCA policy. As demonstrated in **Table 1**, the cut volume is mostly greater than or very close to the fill volume at every stage of the analysis, up to 0.3 m below the 100-Year Flood Limit Elevation. The total compensating cut volume exceeds the total fill volume.

David Schaeffer Engineering Ltd.







Per: Kevin L. Murphy, P.Eng

© DSEL
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Attach.

- Figure 1, Barrhaven Conservancy, Floodplain Limit Based on RVCA Jock River 1:100 Flood Risk Elevations
- J.D. Barnes Draft Plan (Ref # 16-10-127-00, dated July 27, 2018)

LEGEND

-  100-YEAR FLOOD LINE FROM INTERSECTION OF JD BARNES DEC. 22 2017 SURVEY AND FLOOD ELEVATIONS REPORTED IN RVCA 2005 JOCK RIVER FLOOD RISK MAP 2. (91.59m, 91.61m, 91.67m, 91.71m)
-  SITE BOUNDARY
-  100-YEAR FLOOD ELEVATION FROM RVCA 2005 JOCK RIVER FLOOD RISK MAP 2
-  PROPOSED LIMIT OF DEVELOPMENT

Elevations Table				
Number	Minimum Elevation	Maximum Elevation	Area	Incr. Vol (m ³)
1	0.00	-0.10	4814.85	1179
2	-0.10	-0.20	5168.29	675
3	-0.20	-0.30	3198.00	250
4	-0.30	-0.40	935.73	48
5	-0.40	-0.50	117.25	48
6	-0.50	-0.60	57.24	48

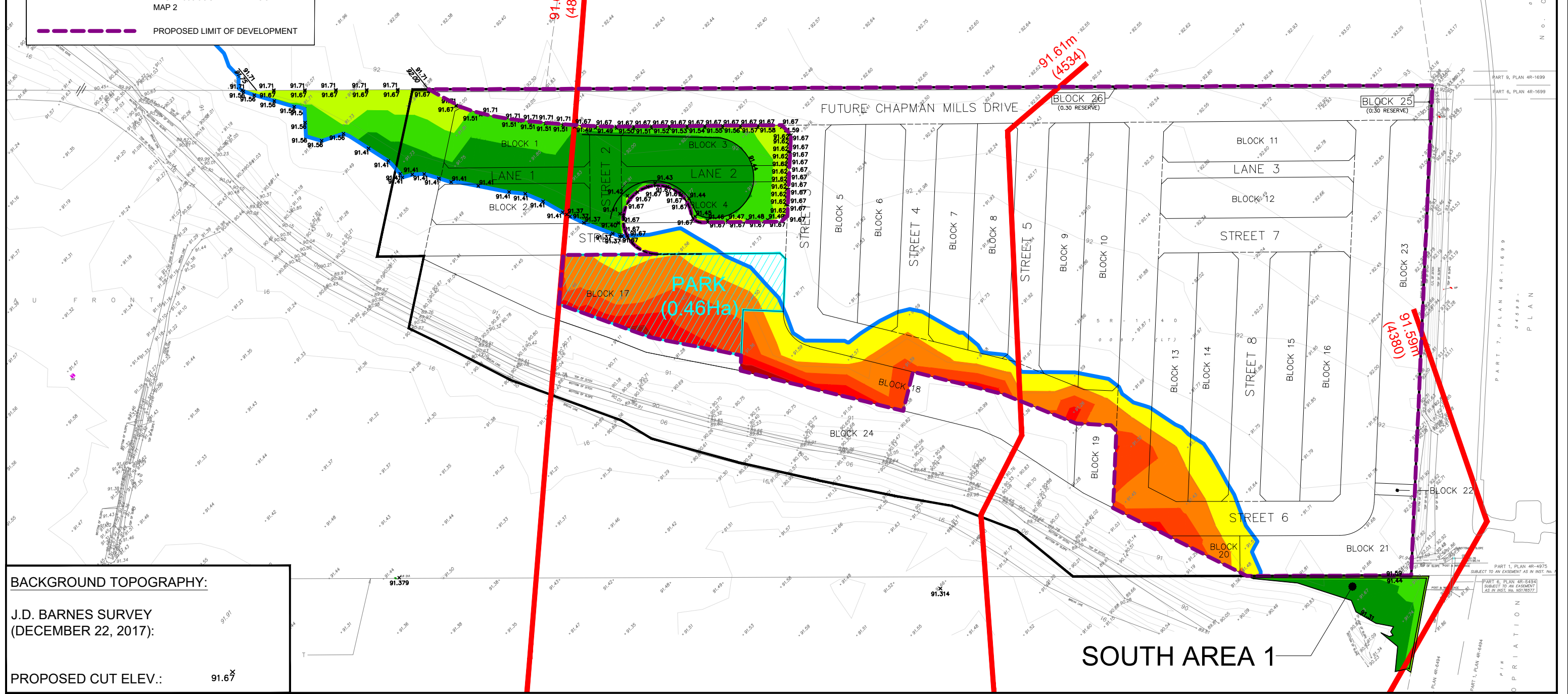
Elevations Table				
Number	Minimum Elevation	Maximum Elevation	Area	Incr. Vol (m ³)
1	0.00	-0.10	1936.95	961
2	-0.10	-0.20	2892.63	726
3	-0.20	-0.30	5651.38	156

Elevations Table				
Number	Minimum Elevation	Maximum Elevation	Area	Incr. Vol (m ³)
1	0.00	-0.10	93.67	141
2	-0.10	-0.20	403.03	125
3	-0.20	-0.30	962.79	46

TOTAL FILL VOLUME = 2,152m³
TOTAL FILL AREA = 14,292m²

TOTAL CUT VOLUME = 1,844m³
TOTAL CUT AREA = 10,481m²

TOTAL CUT VOLUME = 312m³
TOTAL CUT AREA = 1,459m²



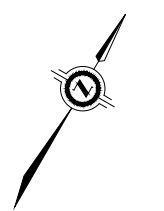
BACKGROUND TOPOGRAPHY:
J.D. BARNES SURVEY
(DECEMBER 22, 2017):
PROPOSED CUT ELEV.: 91.67

DSEL
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**BARRHAVEN CONSERVANCY
FLOODPLAIN LIMIT BASED ON
RVCA JOCK RIVER 1:100 FLOOD RISK ELEVATIONS**

PROJECT No.:	16-891
SCALE:	1:3000
DATE:	AUGUST 30, 2018
FIGURE:	1

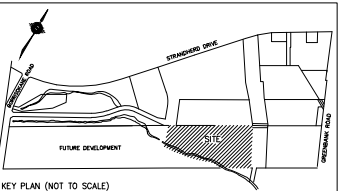


SUBJECT TO THE CONDITIONS, IF ANY, SET FORTH IN OUR LETTER DATED _____, THIS DRAFT PLAN IS APPROVED BY THE CITY OF OTTAWA UNDER SECTION 51 OF THE PLANNING ACT THIS _____ DAY OF _____, 2018.

 DON HERVEYER, MCP RPP, ACTING MANAGER
 DEVELOPMENT REVIEW, URBAN SERVICES
 PLANNING AND GROWTH MANAGEMENT DEPARTMENT
 PLANNING AND INFRASTRUCTURE PORTFOLIO
 CITY OF OTTAWA

ADDITIONAL INFORMATION
 As required under section 51(17) of the Planning Act R.S.O. 2001

(a)(b)(c)(d)(e)(f)(g)(h) and (i) - As shown on this Plan.
 (j) - As shown on this Draft and Key Plan
 (k) - Land to be used in accordance with the Schedule of Land Use
 (l)(m) - Full Municipal Services
 (n) - Offshore Marine Deposits of clay, silty clay and silt, Bedrock Ottawa Formation, limestone



DRAFT PLAN OF SUBDIVISION OF
 PART OF LOT 14
 CONCESSION 3 (RIDEAU FRONT)
 GEOGRAPHIC TOWNSHIP OF NEPEAN
 NOW IN THE
 CITY OF OTTAWA

SCALE 1 : 1000

METRIC DISTANCES AND/OR COORDINATES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

Schedule of Land Use			
Land Use	Lots/Blocks	Units	Area
Singles Detached	5 to 10, 13 to 16, 18, 19, 21 and 23		3.74 ha.
Rear Lane Townhome	1 to 4, 11 and 12		1.14 ha.
Park	17		0.67 ha.
SWM Block	20		0.04 ha.
Streets	1 to 8		2.64 ha.
Lanes	1 to 3		0.24 ha.
Reserves	25 and 26		0.02 ha.
Future Street	CHAPMAN MILLS DRIVE		1.15 ha.
Vista/Walkway	22		0.01 ha.
Natural Heritage System	24		1.73 ha.
Total			11.38 ha.

OWNER'S CERTIFICATE
 BARRHAVEN CONSERVANCY EAST INC., BEING THE REGISTERED OWNER OF THE SUBJECT LANDS HEREBY AUTHORIZES J. D. BARNES LIMITED TO PREPARE AND SUBMIT THIS DRAFT PLAN OF SUBDIVISION FOR APPROVAL.

DATE _____
 FRANK CHIRO
 PRESIDENT
 (I HAVE THE AUTHORITY TO BIND THE CORPORATION)

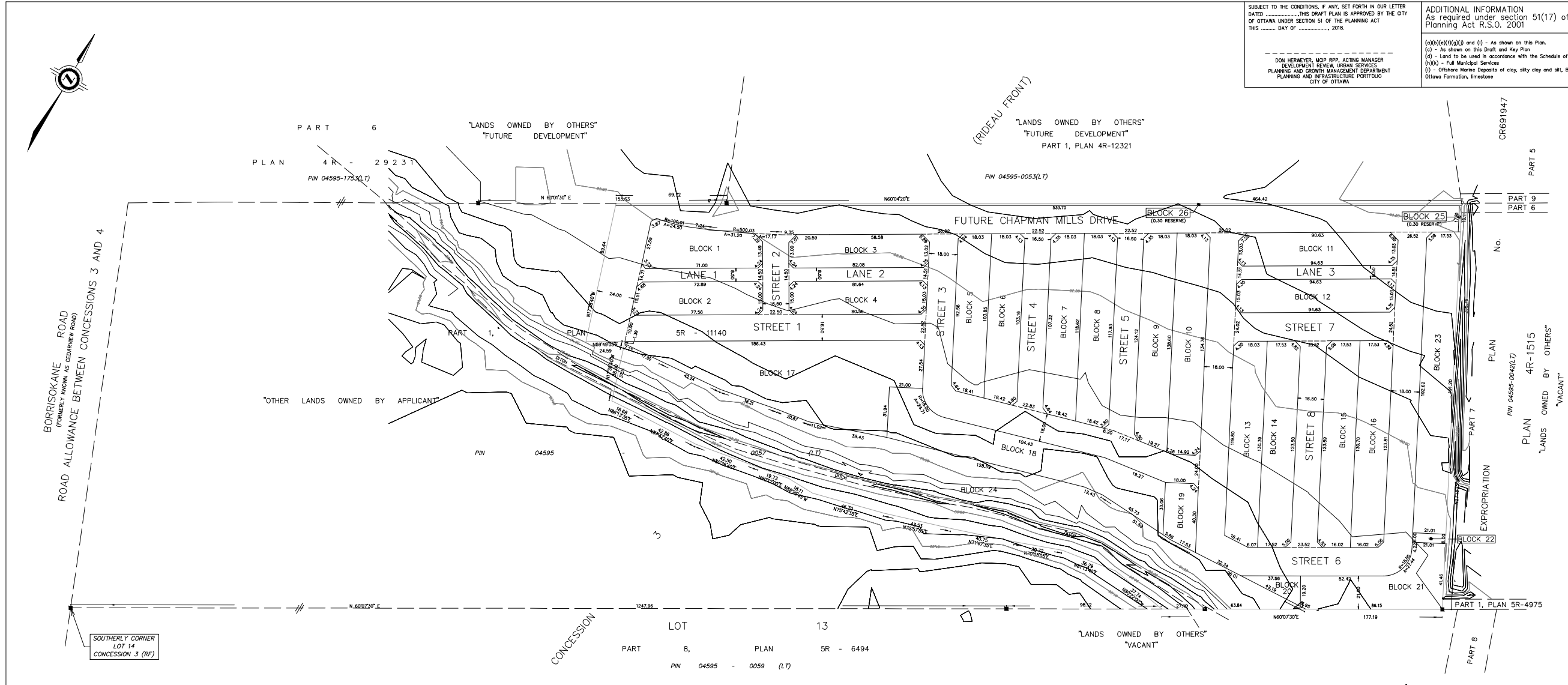
SURVEYOR'S CERTIFICATE
 I HEREBY CERTIFY THAT THE BOUNDARIES OF THE LAND TO BE SUBDIVIDED ARE CORRECTLY SHOWN.

DATE _____
 C. M. FOX
 ONTARIO LAND SURVEYOR

NOTE: BOUNDARY INFORMATION IS COMPILED FROM REFERENCE PLANS WHICH HAS NOT BEEN VERIFIED BY FIELD SURVEY.

240 BURNBEE DRIVE, SUITE 304, OTTAWA, ON K1H 1E1
 T: (613) 731-7244 F: (613) 731-8955 www.jdbarnes.com

DRAWN BY: CE/RA	CHECKED BY: CF	REFERENCE NO.: 16-10-127-00
FILE: 5165	DATE: JULY 27, 2018	



SOUTHERLY CORNER
 LOT 14
 CONCESSION 3 (RF)

CONCESSION 3
 LOT 13
 PART 8, PLAN 5R - 6494
 PIN 04595 - 0059 (LT)