

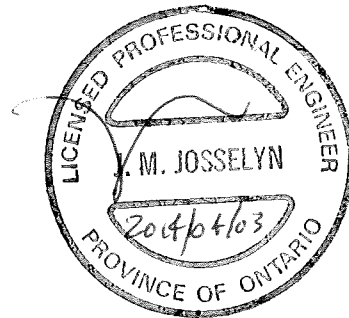
Site Development Report

For

129 South Street

in the Town of Gananoque

Project 1243



JOSSELYN ENGINEERING INC.
1225 Gardiners Road, Suite 105
Kingston, Ontario, K7P 0G3
(613) 634-9278

October 16, 2013.
(Revised April 3 2014 to include updated Site Plan)

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1. Introduction

Josselyn Engineering Inc. has been retained by CaraCo Development Corporation to prepare a site servicing analysis for the property identified as 129 South Street, located on the north shore of the St. Lawrence River, in the Town of Gananoque. A concept plan of the overall development is attached as Appendix A.

The subject property is presently occupied by Gordon Marina and two residential properties. The subject property is located on the north shore of the St. Lawrence River and fronts on South Street, which is a municipal road built to an urban standard. The road is paved, with curb/gutter, and with municipal services.

The proposed new development will consist of the construction of a six storey Residential Condominium Building consisting of 100 units with floor area of 2,400m (26,700 sq. ft.) and underground parking and paved parking and landscaped areas. See attached concept plan as Appendix A.

An application is being made for Official Plan and Zoning By-law Amendment for the subject property. The proposed planning approvals would permit the redevelopment of the site with an apartment tower replacing the existing private marina facility.

Total site area is approximately 0.72ha (1.79 acres). The property consists of Lots 673, 674, 675, 676, 677 and parts of Lots 671 and 672 of Compiled Plan 86 (East) Town of Gananoque.

This report is to advise on the following.

- Determine the perimeter municipal servicing available and determine if sufficient capacity is available within the existing sanitary, storm and water works to service the lands, and identify constraints on development that may exist.
- Determine the location and availability of other utility servicing, including Bell, Gas, Hydro and Communications.
- Assess Stormwater management and drainage requirements for the proposed development.

2. Site Statistics

The site is located on the south side of South Street. The site is described as Lots 673, 674, 675, 676 and 677 and Part of Lots 671 and 672 and Part of the Bed of the St Lawrence River Lying in Front of Lots 671 to 675 inclusive, complied Plan 86. The site is bound by the existing Firehall Theatre to the east, South Street to the north and Stone Street to the west and the St. Lawrence River to the south. The site has an area of approximately 0.72 hectares or 1.79 acres.

3. Servicing

3.1. Sanitary Sewer

There is an existing municipally owned 200 mm diameter sanitary sewer on South Street. A sketch showing the location of this sewer, as provided by Town of Gananoque Public Works, is attached as Appendix B.

Sanitary design flows from the project can be estimated as follows. The calculated peak flow based on a population of 3 persons per unit and a peak factor of 4 is 4.86 litres per second. Infiltration flow factor of 0.14 l/ha/s for the site is calculated as 0.09 l/s. The total flow from the site is estimated as 4.95 litres per second. Sanitary sewage flows to the East End Sewage Pumping Station and is then conveyed to the Town sewage lagoons. The Town of Gananoque has advised that there is sufficient capacity in the system for this development

There is an existing 135mm diameter sanitary sewer service, connected to the 200mm sanitary sewer on South Street, which provided sanitary servicing for the site. A minimum 200 mm diameter sanitary service at 1% gradient is more than adequate for the design flow. The existing sanitary service will be replaced with a new 200mm service. A sanitary manhole will be installed on the new sanitary service for sampling purposes (MISA MH) to allow the Town of Gananoque access for sampling. The Site plan agreement will make provision for right to access.

3.2. Water Service

There is a 300 mm watermain on South Street, which should be sufficient for this development proposal. A sketch showing the location of this watermain, as provided by Town of Gananoque Public Works, is attached as Appendix B.

The previous land use site plan drawing shows there is an existing 20mm water service on the site connected to the 300mm municipal watermain on South Street which is unsuitable for the proposed development. This service will be disconnected at the main.

There is an existing municipal fire hydrant on the west side of South Street immediately opposite the site property connected to the municipal watermain. The installation of a 200mm water service will suffice for the development connected to the 300 mm municipal watermain on South Street. A live tap to the existing municipal main for the 200 mm water service would be constructed by the developer at the developers cost.

A hydrant flow test was undertaken by the developer with Lakeshore Hydrant Services Inc. performing the flow testing. The Town of Gananoque Public Works Department was in attendance for the flow testing procedure to operate the municipal hydrant. Results of the hydrant flow test are attached as Appendix C. From the Hydrant Flow Test it is shown that the watermain flows in this area are very strong and it is calculated that the available flows at 20 psi is in the area of 14000 USGPM. The Town of Gananoque has advised that the flows are not reliant on booster station so the flows available are 'firm capacity' in the system.

4. Grade Control and Drainage

4.1. Existing Drainage Conditions

The lands are currently developed and occupied by an existing marina, with several buildings, and two residential properties (101 A/B & 119 South Street). The residential homes and marina buildings will be removed as part of this development. The lands consist currently of mix of hard surfaces and soft landscaped areas, with the majority of the overall site being hard surface (the existing marina site).

Drainage from the land is generally to the southeast, to the Saint Lawrence River, by means of surface drainage. A copy of a topographical survey by Hopkins, Cormier, Chitty, OLS is attached as Appendix D. A portion of the existing site, mainly the residential lots and an existing parking area, drain northwest to the existing 300mm municipal storm located within the South Street road allowance. The existing municipal storm sewer ultimately outlets to the St. Lawrence River immediately southwest of the subject site. Currently there are no means of stormwater management.

Cataraqui Region Conservation Authority will have input into the development of this plan, both as a regulatory agency, and a commenting authority. CRCA permit will be required under Ontario Regulation 148/06. CRCA would also provide comments based on their interests, which would focus on proper sediment and erosion controls, stormwater management, and flood-proofing standards. A wave up rush study has been prepared by Riggs Engineering Ltd, dated June 12.

4.2. Proposed Grade Control and Drainage

As the proposed building occupies the majority of the site, grading of the site shall be limited to ensuring positive drainage away from the building and maintaining the existing drainage patterns. Grades along the perimeter of the site are to match that of the adjacent properties.

Grassed areas shall be graded with a minimum slope of 2% and not exceed a maximum 3:1 slope. The minimum grade of hard surface areas, asphalt and concrete, shall be 1% to a maximum grade of 8%. Steeper grades, 10% or greater, may be considered for the ramps to the underground parking, however, not without de-icing elements.

Due to the existing topography of the site in relation to the elevation of the existing municipal sewers drainage from the site shall be by means of overland flow. Drainage from the front and westerly portion of the site shall be directed to the road allowance and the existing municipal sewer. Drainage along the easterly portion of the site shall be directed along the property limit to the south. The rear portion of the property, consisting mainly of landscaped area shall be directed to the river. Detailed grading plans are to be provided as part of the finalized design.

Where overland flow cannot be accommodated, such as drainage from the underground parking ramps, runoff will be required to be pumped to a suitable discharge location. The pump provided in the underground parking area will need to be sized to accommodate and convey drainage up to the 100 year event to the storm sewer. The mechanical engineer must make provision for this when sizing the pump and storm pipes within the building.

The underground parking from the new development will be connected into the sanitary system as per the Ontario Building Code and will not contribute to the storm sewer.

5. Stormwater Management Requirements

5.1. Quality Control

The CRCA has confirmed that quality control of runoff will be required, to a normal level of protection, as defined by the Ministry of the Environment Stormwater Management Design Guidelines.

Currently the site consists mainly of asphalt and gravel area for the purpose of parking, with no means of quality control. The proposed development consists mainly of building area and landscaped space. The overall reduction of parking area represents a significant decrease of pollutants due to vehicles. The quality of roof runoff water is considered unpolluted urban runoff. Therefore there will be an increase of water quality from the site as a result of the proposed development.

5.2. Quantity Control

The CRCA has confirmed that quantity control for this project is not required, as the runoff discharges directly to the St. Lawrence River, where there are no concerns for increased runoff. Erosion and sediment control, both during construction, and in the long term, will be required.

6. Source Water Protection

The property is located in IPZ (Intake Protection Zone) # 2 and is therefore not subject to policies under the Source Water Protection Plan. The CRCA has confirmed that the proposed development does not trigger any specific requirements outside the standard requirements for normal level SWM quality control, flood protection, and sediment/erosion controls, etc.

7. Utilities

7.1. Electrical Distribution

Electrical service is provided by Eastern Ontario Power. Preliminary indications provided by Caraco identify the requirement for a 3 Phase 600 amp 340/600 volt service, subject to confirmation by the project's Electrical Consultant. Eastern Ontario Power has

confirmed that 3-phase electrical service is not available on South Street, and the closest source for 3-phase power is several blocks away. Only single phase service is available at the present, however capital upgrades are forecast for 2014 which will extend 3-phase servicing to the intersection of Stone Street and Pine Street. Extension of 3-phase servicing to this project could be constructed at the developer's cost via overhead lines to the site.

It is suggested by Eastern Ontario Power that an on-site transformer be incorporated into the design of the building, and that individual units be provided with 120/208 distribution, to facilitate individual metering.

7.2. Telephone

The Bell service is to be provided by Bell Canada. Adequate telephone service can be provided from South Street.

7.3. Natural Gas

The natural gas provider is Union Gas. Adequate service can be provided from South Street

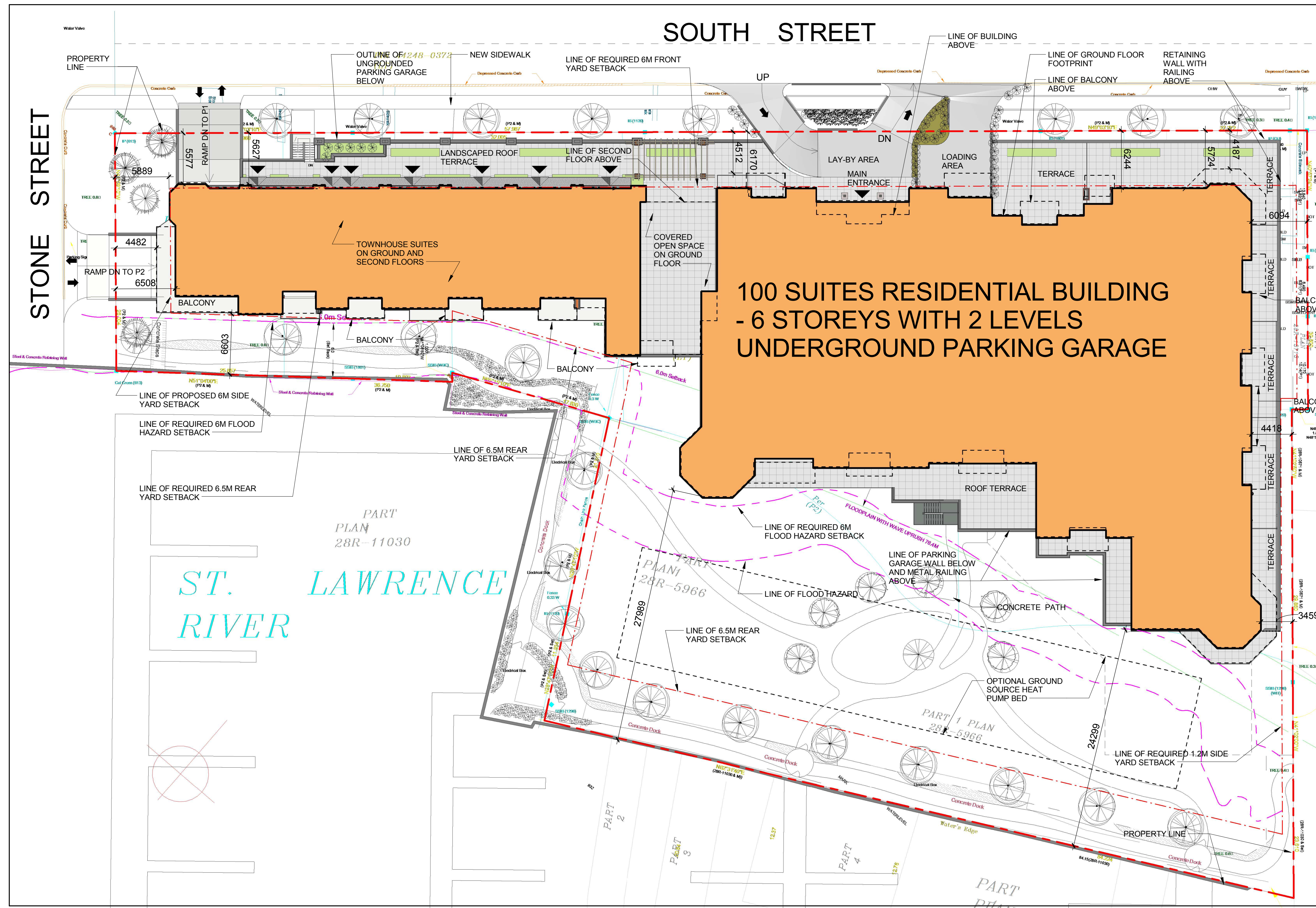
8. Conclusions and Recommendations

Based on the above, the following conclusions are made, and recommendations presented.

- Sanitary sewer for this site is available via the existing sanitary sewer main on South Street.
- Water service can be provided by the 300 mm main on South Street.
- Stormwater Management will be specific to the site, and will meet the requirements of the Town of Gananoque and Cataraqui Region Conservation Authority.
- Provision of other utility services will be determined when a development application is made.

APPENDIX A

Preliminary Concept Site Plan



1 Site Plan
A100 1 : 250

SITE DEVELOPMENT AND ZONING INFORMATION

THIS SITE PLAN DEVELOPMENT AND ZONING INFORMATION IS BASED ON DEVELOPMENT PERMIT BY-LAW 2010-75 BY TOWN OF GANANOQUE, ONTARIO

PROPERTY LEGAL DESCRIPTION
LOTS 671 TO 677 INCLUSIVE
PLAN 96(E), TOWN OF GANANOQUE, ONTARIO

ZONING CLASSIFICATION
SITE AREA 7,254.4 SM, 1.79 ACRE

BUILDING AREA 3,459 SM, 37,232 SF (INCLUDING THE AREA OF BASEMENT PARKING GARAGES THAT ABOVE GRADE)

BUILDING COVERAGE

REQUIRED	35 %
PROPOSED	47.7 %

GROSS FLOOR AREA

SM	SF	
GROUND FLOOR	2,764	29,751
SECOND FLOOR	2,871	30,903
THIRD FLOOR	2,871	30,903
FOURTH FLOOR	2,871	30,903
FIFTH FLOOR	2,871	30,903
SIXTH FLOOR	2,871	30,903
TOTAL	17,119	184,267

AMENITY AREA

SM	SF	
PROPOSED	669	72,01

RESIDENTIAL UNIT BREAKDOWN

1 BEDROOM+DEN	5
2 BEDROOM	7
2 BEDROOM+DEN	88
TOTAL	100

LANDSCAPE AREA 4,330 SM, 46,608 SF (INCLUDING SODDED PLANTING AREA, ROOF TERRACE, UNIT PAVEMENT)

COVERAGE	59.7 %
----------	--------

ASPHALT PAVEMENT AREA 160 SM, 1,722 SF

COVERAGE	2.22 %
----------	--------

BUILDING HEIGHT

REQUIRED	MAX. 20M
PROPOSED	AVERAGE 18.9 M(FROM AVERAGE GRADE TO ROOF DECK)

YARDS

	FRONT YARD	SIDE YARD- INTERIOR	SIDE YARD- EXTERIOR	REAR YARD
REQUIRED	6M	1.2M	15M	6.5M
PROPOSED	MIN 5.5M-6.2M (NORTH)	3.4M-6.0M (EAST)	5.8M-6.5M (WEST)	6.5M-24.3M (SOUTH)

FLOOD HAZARD SETBACKS

REQUIRED	6.0M
PROPOSED	MIN 6.5M(SOUTH)

PARKING

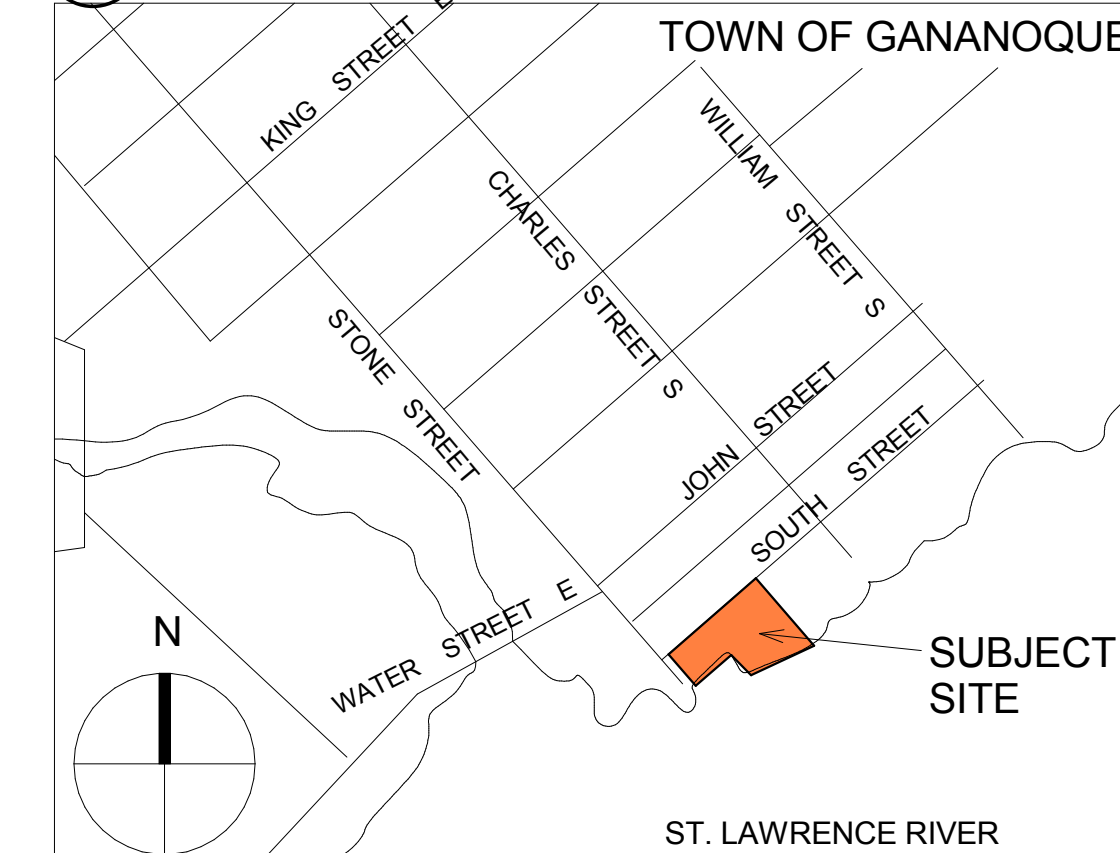
REQUIRED	128 SPACES (1.25 SPACE PER SUITE)
PROPOSED	162 SPACES
REQUIRED HANDICAP PARKING	8 SPACES (1 PER 20 PARKING SPACES)
PROPOSED HANDICAP PARKING	8 SPACES
PARKING DIMENSION	3.0M x 6.0M
HANDICAP PARKING DIMENSION	3.0M x 6.0M PLUS 1.5M AISLE
DRIVE WAY WIDTH	6.0M

LOADING

	REQUIRED	PROPOSED
SPACES		1 SPACE
DIMENSIONS	14M x 3.5M	8.0M x 5.0M

CREDIT NOTES
THIS SITE PLAN IS BASED UPON AND MUST BE READ IN CONJUNCTION WITH THE TOPOGRAPHICAL PLAN OF SURVEY PREPARED BY HOPKINS, CORMIER AND CHITTY SURVEYING CONSULTANTS INC, 634-636 NORRIS COURT, KINGSTON, ON, FILE NO. 2013-089, DATED MAY 7, 2013. CHAMBERLAIN ARCHITECT SERVICES ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THE DATA SUPPLIED AND SUCH DATA IS NOT INCLUDED UNDER SEALS OF CERTIFICATION, IF ANY.

2 SITE DEVELOPMENT AND ZONING INFO
A100 1 : 400



SITE LOCATION MAP



Chamberlain Architect Services Limited
5096 South Service Road
Suite 103
Burlington, Ontario L7L 5H4
CANADA
Tel: 905.631.7777
Fax: 905.631.7717
www.chamberlainpd.com

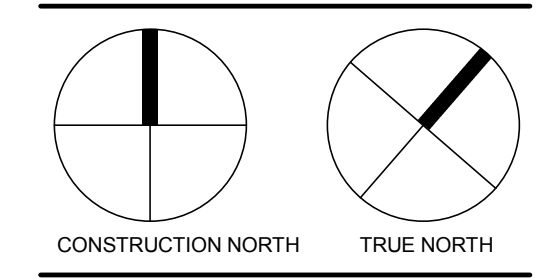
NO.	ISSUED	DATE
2	FOR BPA	SEPT 20, 2013
3	FOR COORDINATION	OCT 18, 2013
4	FOR COORDINATION	NOV 4, 2013
6	FOR PLANNING REVIEW	MARCH 26, 2014
7	FOR BPA	APRIL 4, 2014

DO NOT SCALE DRAWINGS. USE ONLY DRAWINGS MARKED "ISSUED FOR CONSTRUCTION". VERIFY CONFIGURATIONS AND DIMENSIONS ON SITE BEFORE BEGINNING WORK. NOTIFY ARCHITECT IMMEDIATELY OF ANY ERRORS, OMISSIONS OR DISCREPANCIES.
CHAMBERLAIN ARCHITECT SERVICES LIMITED AND CHAMBERLAIN CONSTRUCTION SERVICES LIMITED HAVE SIMILAR OWNERSHIP.



RIVIYRA DEVELOPMENT INC.

SEAL



PROJECT

RIVIYRA CONDOMINIUMS

SOUTH STREET & STONE STREET, GANANOQUE, ON

SHEET NAME
SITE PLAN

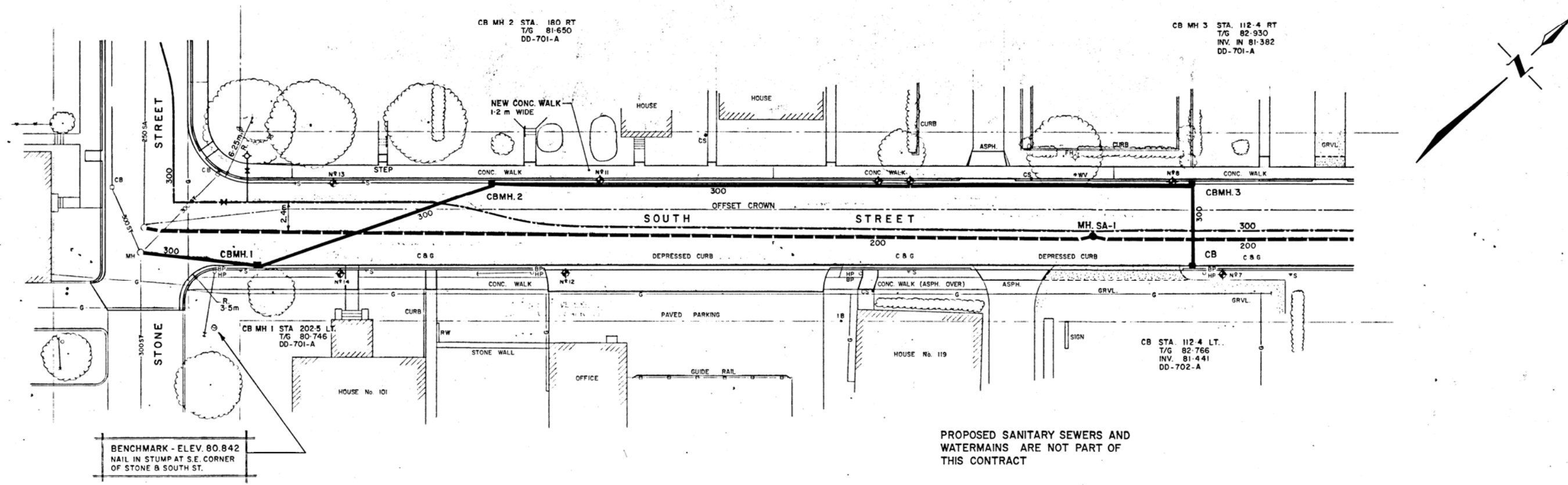
START DATE	JUNE, 2013
DRAWN BY	HC
CHECKED BY	
SCALE	As indicated
PROJECT NO.	113036
DRAWING	

A100

4/2/2014 4:12:33 PM \\proj\projects\2013\113036\2 Design Development\Gananoque Condo - Central\Options_3.rvt

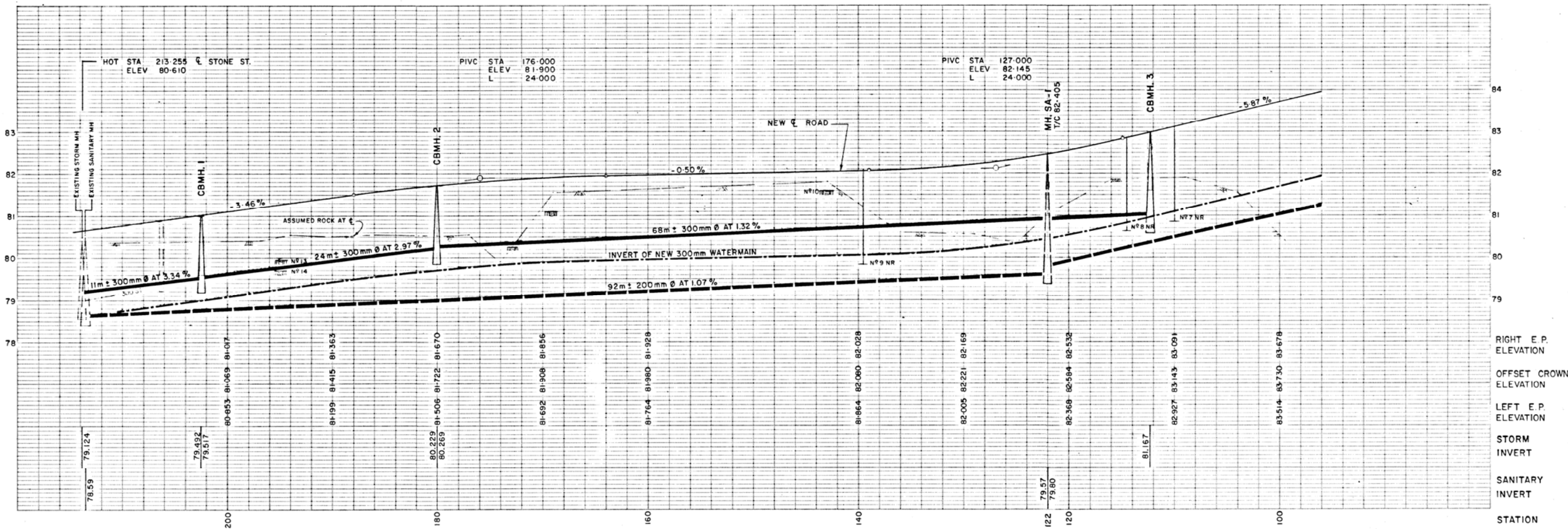
APPENDIX B

Sanitary sewer and Watermain location sketch



BENCHMARK - ELEV. 80.842
 NAIL IN STUMP AT S.E. CORNER
 OF STONE & SOUTH ST.

**PROPOSED SANITARY SEWERS AND
 WATERMAINS ARE NOT PART OF
 THIS CONTRACT**



BM-219

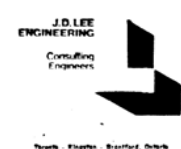
THIS DRAWING IS APPROVED
 FOR
CONSTRUCTION PURPOSES
 By [Signature] Date 07/15/82 Job No. 1515
J. D. LEE ENGINEERING

WARNING
 CONTRACTOR TO CHECK, VERIFY,
 AND BE RESPONSIBLE FOR ALL
 UNDERGROUND SERVICES
 STRUCTURES AND UTILITIES.

WARNING
 SOUNDINGS ARE SHOWN FOR THE
 INFORMATION OF CONTRACTORS
 ONLY. REFUSAL OR ASSUMED
 ROCK SURFACE IS NOT GUARANTEED.



1	82 07 30	GENERAL	
2	82 12 16	AS BUILT - STORM SEWER & STREET	TLK
3	83 01 18	AS BUILT - WATERMAIN & SANITARY SEWER	TLK
No	Date	Revision	CHK



PROJECT	SOUTH & STONE STREETS RECONSTRUCTION				
CLIENT	TOWN OF GANANOQUE				
TITLE	SOUTH STREET STA. 100 TO STA. 214				
DESIGN	[Signature]	DATE	82 07 15	SCALE	1:200
DRAWN	TLK	CHECKED	[Signature]	DRAWING NO.	1309 C
				REVISION	3

APPENDIX C
Hydrant Flow Test



FIRE FLOW TEST RESULTS

CLIENT: Josselyn Engineering Inc.
 1225 Gardiners Road
 Kingston, ON
 K7P 0G3

LOCATION OF TEST: South Street, Gananoque, ON
DATE: August 12, 2013

Flow Hydrant	Pitot Reading 1 port (psi)	Available Flow (1Port)	Pitot Reading 2 port (psi)	Total Available Flow (2Ports)	Outlet Diameter	Residual Hydrant	Static (psi)	Residual 1 port (psi)	Residual 2 port (psi)	TOTAL FLOW @ 20psi (1 Port)	TOTAL FLOW @ 20psi (2 Port)
Front of 134	50	1186 US gpm.	37 (x2)	2040 US gpm.	2 1/2"	Front of 101	70	66	62	4648 US gpm.	5494 US gpm.

LHS Operator: Terry

Hydrant Flow Test Report

Test Date 8/14/2013

Test Time

Location

South Street, Gananoque

Tested by

Notes

Caraco

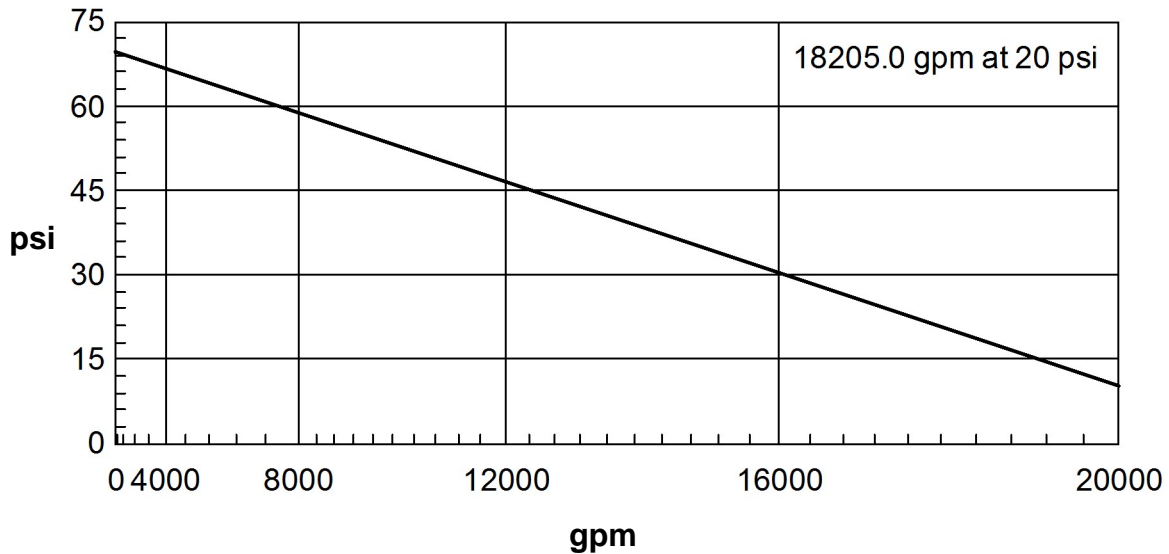
Read Hydrant

70 psi static pressure
66 psi residual pressure
hydrant elevation

Flow Hydrant(s)

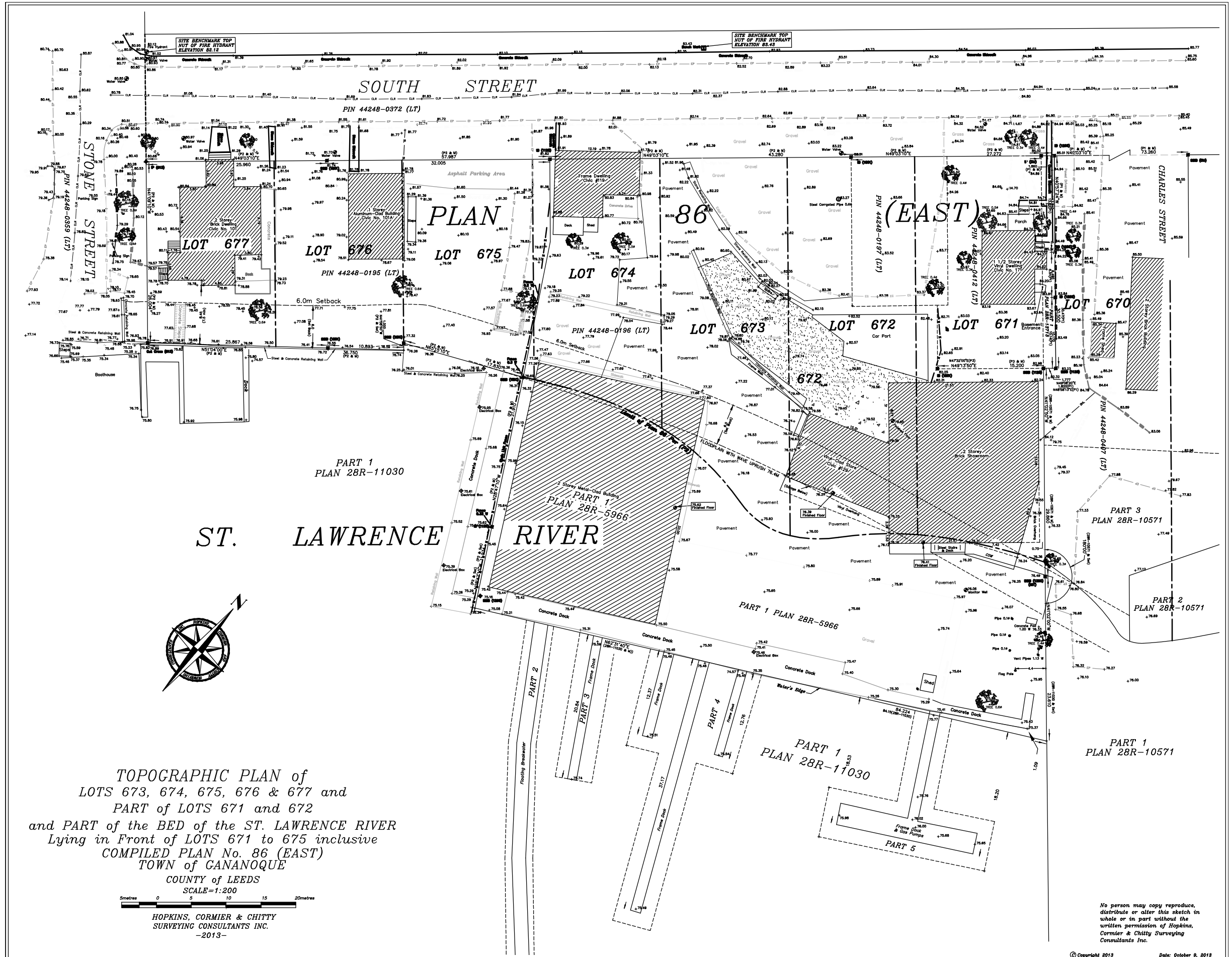
Outlet	Elev	Size	C	Pitot Pressure	Flow
#1					4648 gpm

Flow Graph



APPENDIX D

Topographical Survey Plan
by Hopkins, Cormier, Chitty, OLS



TOPOGRAPHIC PLAN of
 LOTS 673, 674, 675, 676 & 677 and
 PART of LOTS 671 and 672
 and PART of the BED of the ST. LAWRENCE RIVER
 Lying in Front of LOTS 671 to 675 inclusive
 COMPILED PLAN No. 86 (EAST)
 TOWN of CANANOQUE
 COUNTY of LEEDS

SCALE = 1:200

HOPKINS, CORMIER & CHITTY
 SURVEYING CONSULTANTS INC.
 -2013-

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METRIC	CAUTION:	NOTE:	ELEVATION NOTE:	BEARING NOTE:	LEGEND:
Distances Shown on This Plan are in Metres and can be Converted to Feet by Dividing by 0.3048	THIS DRAWING WAS PREPARED FOR THE SOLE USE BY CARACO DEVELOPMENT CORPORATION DISTANCES ARE GROUND AND CAN BE CONVERTED TO GRID BY MULTIPLYING BY THE COMBINED SCALE FACTOR OF 0.989697	AS PER THE CATARAUGUS REGION CONSERVATION AUTHORITY THE STATIC FLOOD PLAIN IS 76.9 AND THE ADDITIONAL RATE UPRUSH IS 0.4 METRES. THEREFORE THE CORRESPONDING REGULATORY FLOOD PLAIN ELEVATION IS 76.4 METRES CGC.	ELEVATIONS ARE GEODETIC AND ARE DERIVED FROM BENCHMARK No. 00119200236 BEING A BOLT IN THE NORTHEAST WALL OF THE FORMER CUSTOM HOUSE, 0.8 METRES FROM THE EASTERN CORNER AND IN SECOND COURSE OF STONEWORK BELOW THE WATER TABLE. SAID BENCHMARK HAVING A VALUE OF 76.8 METRES CGD - 1988:1978 AND TRANSFERRED TO A SITE BENCHMARK BEING THE TOP HUT OF A FIRE HYDRANT HAVING AN ELEVATION OF 82.12m AND SHOWN AS SITE BENCHMARK	BEARINGS ARE UTM GRID, DERIVED FROM THE SOUTHERLY LIMIT OF SOUTH STREET AS SHOWN ON PLAN 28R-13718 HAVING A BEARING OF N49°03'10" E, UTM ZONE 18, NAD83 (CSRS) (1987.0). FOR BEARING COMPARISONS, A ROTATION OF 00°45'10" CLOCKWISE WAS APPLIED TO BEARINGS ON PLAN 28R-11030	<ul style="list-style-type: none"> —○— Overhead Service Line —○— Overhead Utility Line —○— Centre Line of Ditch —○— Centre Line of Road —○— Filler Line —○— Top of Bank —○— Bottom of Bank —○— Edge of Pavement —○— Edge of Trench —○— Overhead Hydr Line —○— Flooded Survey Monument (F2) —○— Flooded Survey Monument (F4) —○— Standard Iron Bar —○— Short Standard Iron Bar —○— Iron Bar —○— Iron Bar (found) —○— Rock Post —○— Pin —○— Plan 28R-11030 —○— Plan 28R-5966 —○— SRPR by (1907) —○— Dated Jan. 2004 —○— Concrete Sidewalk

Copyright 2013 Date: October 9, 2013



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 Fax: (613) 384-2212
 PROJECT No. 2013-255
 Lots 671 to 677 Inclusive
 Plan 86 (E), Town of Cananoque