



D. G. Biddle & Associates Limited

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January 29, 2020

Cobourg Creek Loft
71 Prince of Wales Drive
Cobourg, ON
K9A 5X9

Attention: Mr. Scott Glover

Re: Functional Servicing and Stormwater Management Report
415 King Street West
Cobourg, Ontario
Our File: 118001

Dear Sir:

In support of the Application for Site Plan for the above referenced property at 415 King Street West in Cobourg, we herewith submit the following Functional Servicing & Stormwater Management Report. This report primarily addresses the Town of Cobourg and Ganaraska Region Conservation Authority requirements towards Site Plan Application approval. This report includes Servicing, Grading, Drainage and Erosion and Sediment Control Plans for the proposed development. This report identifies what exists and what is required to provide adequate servicing for the proposed development.

Please contact our office at your convenience, should you have any questions or require additional information on the enclosed report.

Yours truly,

D.G. BIDDLE & ASSOCIATES LIMITED

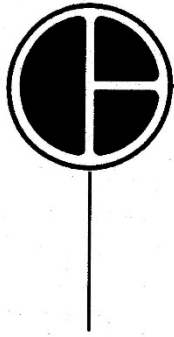
Kurtis Keuning, P.Eng.
Project Engineer



KGK/PB

Encl

\\FSHR\Staff\Job Files\118000\118001 415 King Street W. Cobourg\118001 Reports\118001 SWM Report.docx.



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**FUNCTIONAL SERVICING REPORT &
STORMWATER MANAGEMENT REPORT
FOR
415 KING STREET WEST, COBOURG
TOWNSHIP OF SCUGOG**

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1.0 INTRODUCTION

The subject property is located at 415 King Street West, in the Town of Cobourg. The legal description is Part 1, 2 & 3 of Registered Plan 39R-998, Town of Cobourg, Northumberland County. A Site Location Plan is attached as Figure 1.

The subject property is 0.76ha in size with frontage on both King Street and Tremaine Street. A building previously used for industrial uses exists on the property. This existing building is proposed to be expanded to include a second floor, and the footprint is to be expanded.

This report has been prepared to address storm sewer services, sanitary sewer services, water services and storm water quantity and quality control. Servicing and storm water management are to be in accordance with the requirements of the Town of Cobourg. Detailed information can be found illustrated on drawings 118001 SG-1, 118001 SS-1, 118001 ES-1, all appended to this report.

2.0 EXISTING SERVICES

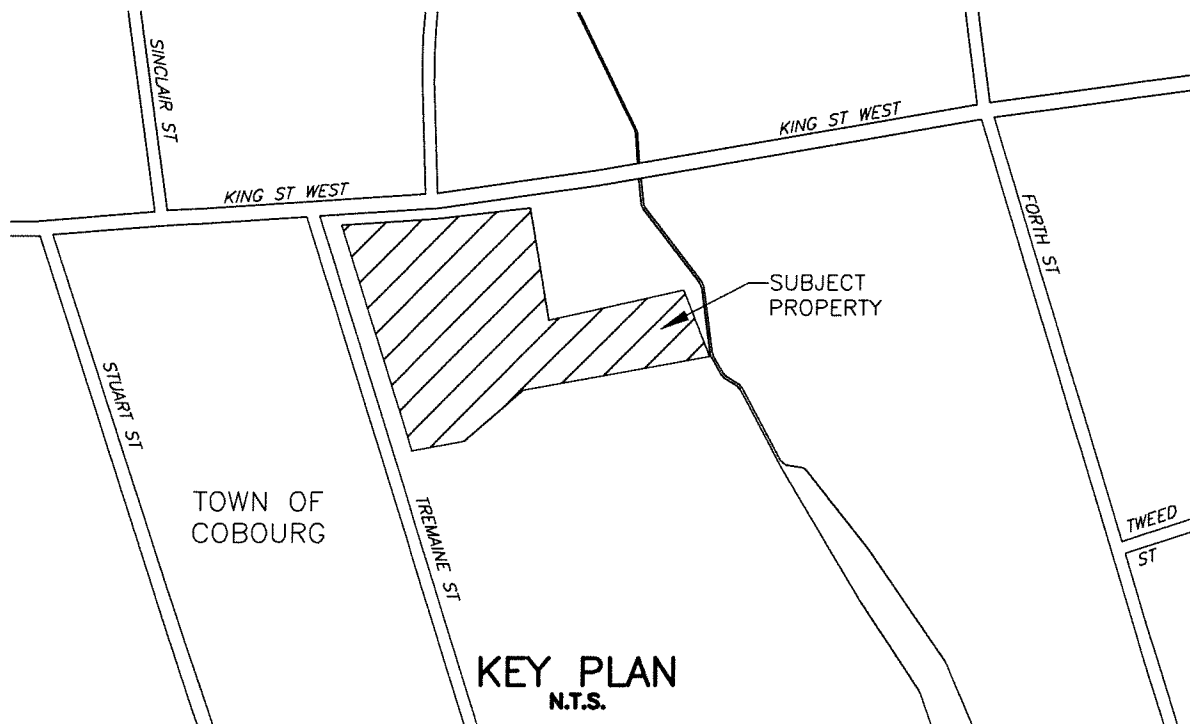
The existing services are illustrated on drawing 118001-SS-1, the Site Servicing Plan.

2.1 Existing Water Services

The site has an existing 150mm water service connected to the 300mm water main located on the North side of King Street West. Existing hydrants are located on King Street.

2.2 Existing Sanitary Sewer Service

There is an existing 200mm sanitary sewer located on the East side of Factory Creek. The existing building is serviced by a 200mm sanitary service connection that drains to under the creek. There is an additional existing sanitary connection from the building to the 200mm sanitary sewer on Tremaine Street



KEYPLAN
N.T.S.

415 KING STREET WEST, COBOURG, K9A 2N6

SITE LOCATION PLAN



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SCALE
DRAWN
DESIGN
CHECKED
DATE

N.T.S.
P.N.B.
K.G.K
K.G.K
NOV 2019

PROJECT
118001

DWG

FIG 1

2.3 Existing Storm Sewer Service

The existing site and building is currently serviced by a series of catchbasins at the rear of the building which discharge to Factory Creek.

3.0 PROPOSED SERVICES

The below describes the proposed municipal servicing strategy for the development.

3.1 Water Services

A new 150mm domestic water service and fire line will be installed from the existing 150mm water service connection on King Street West. The water service lines is to be metered s per Town of Cobourg standards.

3.2 Sanitary Sewer Service

Both existing sanitary sewer connections are to remain. The existing connections are to be flushed and inspected prior to re-use.

3.3 Storm Sewer Service

The existing storm sewer infrastructure is proposed to be abandoned. An 18.25m long, 400mm CSP at 2.00% grade is proposed to convey water from the north side of the proposed entrance ramp from King Street to the south side, as there is a local depression in this area.

4.0 STORMWATER MANAGEMENT

Per the Town of Cobourg's design criteria, the post development peak flow from the site is to be controlled to pre-development rates before being discharged offsite for all storm events, as to not negatively impact downstream infrastructure and associated watercourses.

4.1 Stormwater Quantity

The proposed development will not result in an increase in imperviousness, and therefore will not increase in runoff. A large portion of the rear yard which historically existed as a gravel parking area is to be restored with grass on 150mm topsoil. Any increase in runoff generated from the small increase in building rooftop and asphalt entrances and parking area will be off-set by this reduction of gravel parking. Post-development flows are to be attenuated through the net reduction in hardscaped area.

An infiltration gallery has been proposed to further decrease runoff from the development. Details are provided in section 4.2 below.

The overland flow direction remains consistent with existing conditions, with runoff flowing from west to east towards Factory Creek.

4.2 Stormwater Quality & Low Impact Development

As there is no increase in imperviousness through the proposal, stormwater quality is not anticipated to be negatively affected with the construction of the proposed addition to the building and associated entrance and parking area.

As the storm sewers are proposed to be abandoned from site, runoff which flows from west to east has opportunity to flow over grassed area at shallow grades, which will promote infiltration of water and filtration of any sediments prior to storm water reaching the Creek.

An infiltration gallery has been proposed to capture 15mm of runoff from the rooftop area for infiltration. The dimensions of the gallery are 7.5 x 7.5 x 1.2m effective depth. Low Impact development design has been prepared in accordance with the TRCA and CVC Low Impact Development Stormwater Management Planning and Design Guide. Refer to drawing SS-1, the Site Servicing Plan for details. A sizing spreadsheet is appended to this report.

5.0 TEMPORARY SEDIMENT AND EROSION CONTROLS

During the construction period, the removal of natural vegetation causes the transport of large amounts of sediment during rainfall events. To minimize the sediment laden storm water leaving the site during construction, it is recommended the following sediment control techniques be implemented.

1. Construction Vehicle Access
2. Perimeter Enviro Fence
3. Good Housekeeping Practices

The above techniques are illustrated on the Erosion and Sediment Control Plan, Drawing 118001-ES-1.

6.0 CONCLUSIONS

The preceding report identifies and justified the methods in which the proposed development can be serviced in accordance with the Town of Cobourg and Ganaraska Region Conservation requirements. The investigations into these requirements have resulted in the following conclusions for the Site Plan Application:

- The existing water service from King Street West is to remain.
- A 150mm domestic service and fire line is to be connected to the existing 150mm service connection.
- The existing sanitary service connections are to be flushed, inspected and reused.
- All existing on-site storm sewers are to be abandoned.
- Post-development stormwater flows will be generally the same as the pre development conditions. No quantity controls are proposed.
- Stormwater quality is not anticipated to be negatively affected by the development.

- Low Impact Development is proposed in the form of an infiltration gallery capturing 15mm of runoff from the building rooftop.
- Temporary sediment controls during construction can be managed by the use of perimeter enviro fence, construction vehicle access route, catch basin filtration and good engineering practices.

SCHEDULE 1

INFILTRATION GALLERY SIZING

PROJECT	415 King Street West
PROJECT #	118001
DATE	Oct 2019

Infiltration Gallery 1 (Canopy) Sizing

Infiltration Rate	12 mm/hr	$K=10^{-6}$	Assume
Area from Roof	1762 m ²		
Capture	15 mm		
WQV	26.43 m ³		
vr	0.4		
ts	48 hours		

Max depth	$i*ts/vr$	Max depth of infiltration gallery
	1440 mm	

Therefore Use dc =	1200 mm
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Af	$WQV/(dc*vr)$	Footprint area required
	55.1 m ²	

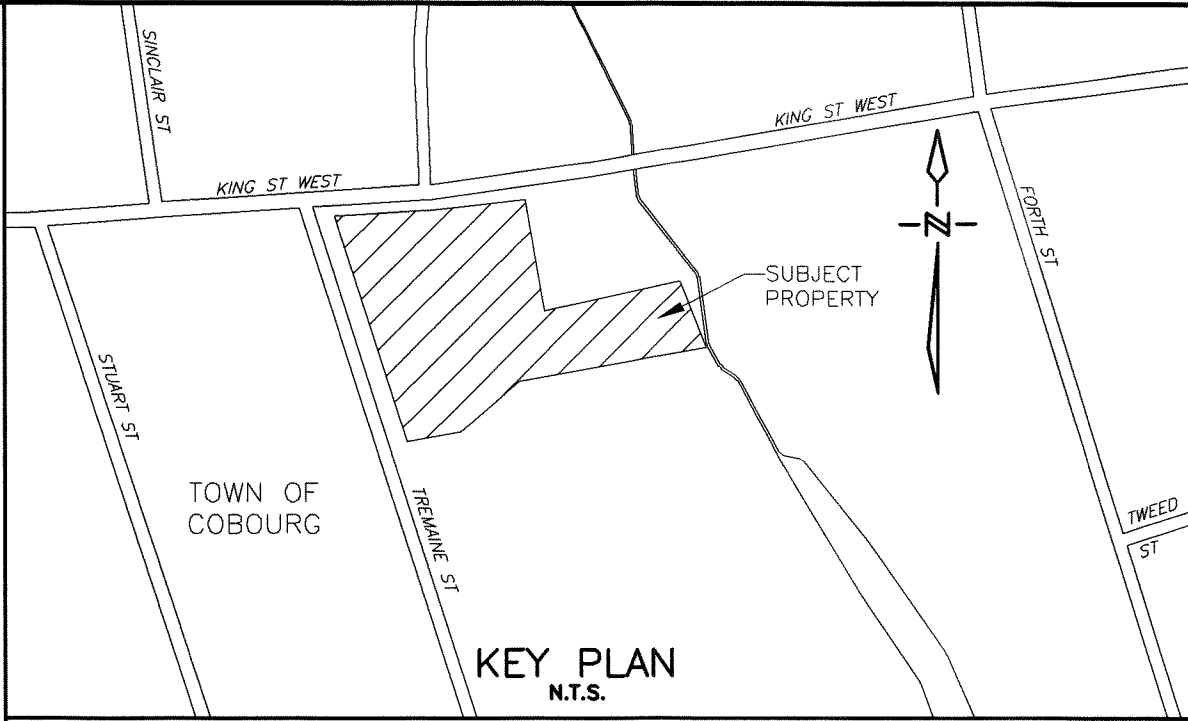
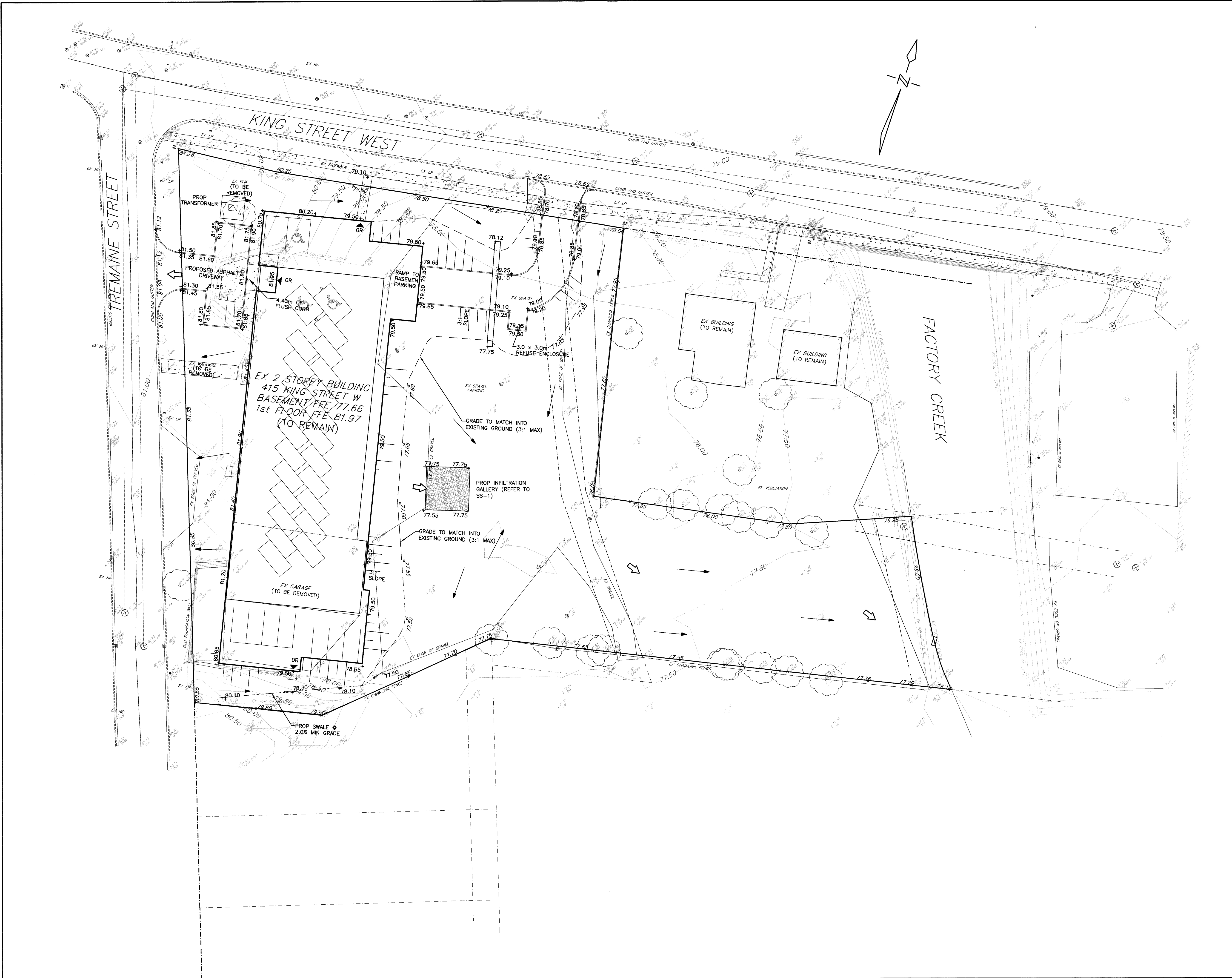
Prop. Dimensions

** Footprint Area Provided	56.3 m ²
* Depth	1.2 m

Water Volume Prop.	27.00 m ³
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* Functional Depth

** Refer to Drawing SS-1 for Footprint Area



PART OF BLOCK C,
CADDY PLAN
(FORMERLY LOT 20, CONCESSION A)
TOWN OF COBOURG
COUNTY OF NORTHUMBERLAND

BENCH MARK

TOWNSHIP: COBOURG C.P.R.Y., BRIDGE OVER HIGHWAY NO. 2, 1.0 KM WEST OF STATION, BOLT IN NORTHEAST FACE OF NORTH CONCRETE WING WALL AT WEST END OF BRIDGE, 1.2m FROM NORTH FACE OF ABUTMENT, 90cm ABOVE PAVEMENT.
ELEVATION: 82.924

SITE GRADING NOTES

- 1. A ROAD OCCUPANCY PERMIT WILL BE REQUIRED FOR ANY WORKS WITHIN THE MUNICIPAL RIGHT OF WAY.
- 2. ALL WORKS OR RESTORATION WITHIN THE MUNICIPAL RIGHT OF WAY SHALL BE COMPLETED AS PER TOWN OF COBOURG FIELD STAFF DIRECTION.
- 3. THE LOCATION AND ELEVATION OF ALL EXISTING UTILITIES AND SERVICES TO BE VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCING CONSTRUCTION. CONCERNED UTILITIES TO BE GIVEN ADVANCED NOTICE FOR STAKE OUT. THE CONSULTANT ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE UTILITIES SHOWN ON THE DRAWINGS.
- 4. QUANTITIES, DIMENSIONS AND ELEVATIONS TO BE VERIFIED BY THE CONTRACTOR PRIOR TO ORDERING MATERIALS OR COMMENCING CONSTRUCTION.
- 5. ALL SLOPES SHALL BE CONSTRUCTED AT 3:1 (MAXIMUM) UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- 6. ALL SWALES SHALL BE CONSTRUCTED WITH 2% MINIMUM GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- 7. ALL SLOPES, SWALES AND OPEN SPACE AREAS SHALL BE SODDED ON A MINIMUM OF 150mm OF TOPSOIL.
- 8. ALL DISTURBED AREAS WITHIN ABUTTING MUNICIPAL RIGHT OF WAYS SHALL BE SODDED ON A MINIMUM OF 150mm OF TOPSOIL.
- 9. BARRIER CURB AS PER OPSD 600.110.

LEGEND

- ORIGINAL SURVEY ELEVATION 101.15
- ORIGINAL ELEVATION TO REMAIN 101.35
- PROPOSED ELEVATIONS 103.15
- DIRECTION OF DRAINAGE
- DIRECTION OF OVERLAND FLOW

PRELIMINARY
NOT FOR CONSTRUCTION

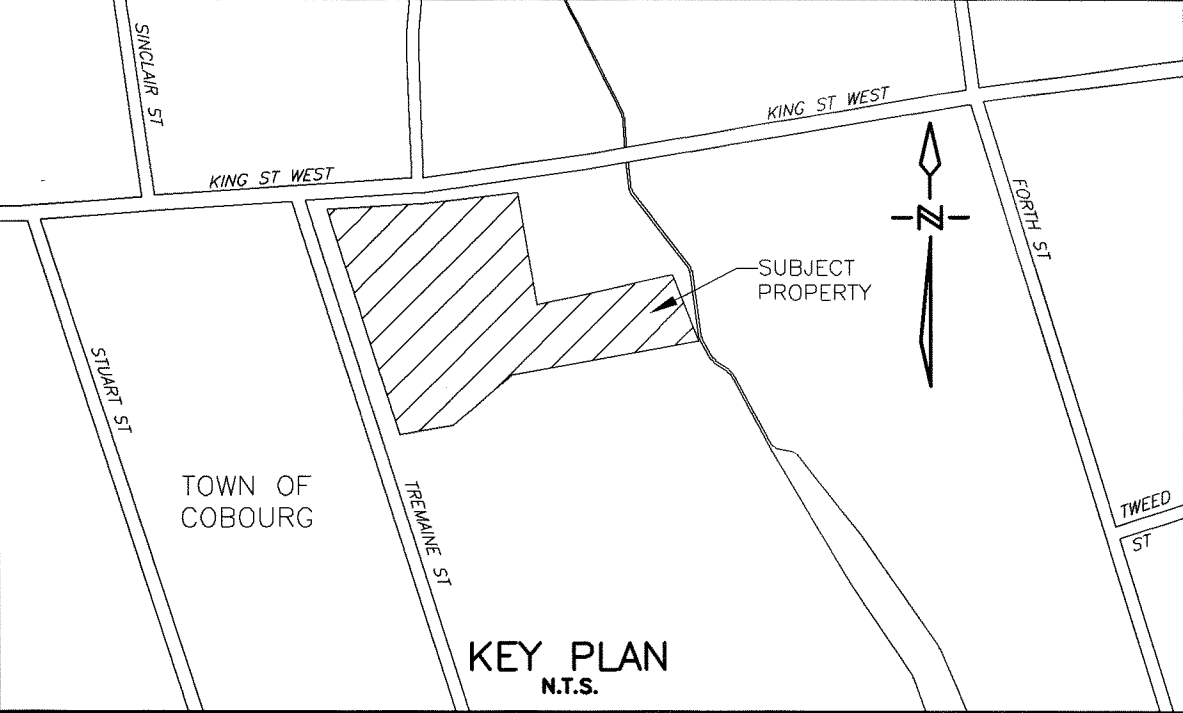
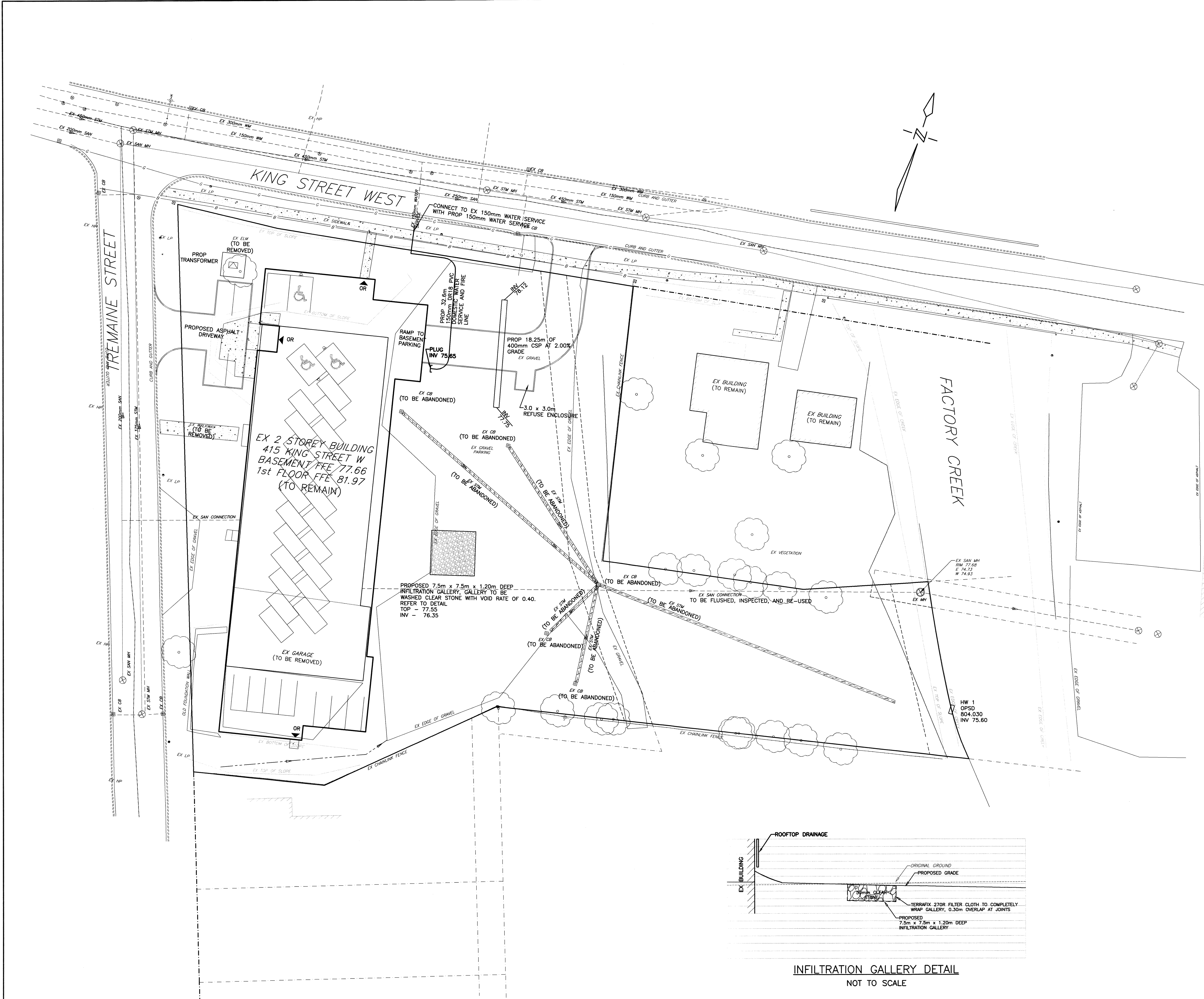
NO.	DATE	REVISION	BY
REVISIONS			

415 KING STREET WEST, COBOURG K9A 2N6

SITE GRADING PLAN

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	SCALE: 1:300	PROJECT NO. 118001
	DRAWN BY: C.L.G.	DRAWING NO. SG-1
	DESIGN BY: K.G.K.	
	CHECKED BY: K.G.K.	
	DATE: DECEMBER 2018	



PART OF BLOCK C,
CADDY PLAN
(FORMERLY LOT 20, CONCESSION A)
TOWN OF COBOURG
COUNTY OF NORTHUMBERLAND

BENCH MARK
TOWNSHIP: COBOURG C.P.R.Y., BRIDGE OVER HIGHWAY NO. 2, 1.0 KM WEST OF STATION, BOLT IN NORTHEAST FACE OF NORTH CONCRETE WING WALL AT WEST END OF BRIDGE, 1.2m FROM NORTH FACE OF ABUTMENT, 90cm ABOVE PAVEMENT. ELEVATION: 82.924

- SITE SERVICING NOTES**
- A ROAD OCCUPANCY PERMIT WILL BE REQUIRED FOR ANY WORKS WITHIN THE MUNICIPAL RIGHT OF WAY.
 - ALL WORKS OR RESTORATION WITHIN THE MUNICIPAL RIGHT OF WAY SHALL BE COMPLETED AS PER TOWN OF COBOURG FIELD STAFF DIRECTION.
 - THE LOCATION AND ELEVATION OF ALL EXISTING UTILITIES AND SERVICES TO BE VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCING CONSTRUCTION. CONCERNED UTILITIES TO BE GIVEN ADVANCED NOTICE FOR STAKE OUT. THE CONSULTANT ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE UTILITIES SHOWN ON THE DRAWINGS.
 - QUANTITIES, DIMENSIONS AND ELEVATIONS TO BE VERIFIED BY THE CONTRACTOR PRIOR TO ORDERING MATERIALS OR COMMENCING CONSTRUCTION.
 - ALL SANITARY SEWER AND APPURTENANCES SHALL COMPLY WITH THE TOWN OF COBOURG STANDARDS AND THE ONTARIO PLUMBING CODE.
 - SANITARY SEWER SERVICE PIPES, 150mm TO BE CL DR28 PVC PIPE, CL P BEDDING, 100mm SERVICE CONNECTIONS TO BE CL DR28 PVC PIPE, CL P BEDDING.
 - SANITARY MANHOLES AS PER OPSD 701.010 C/W GRATE AS PER OPSD 401.010
 - ALL TRENCHES SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH TOWN OF COBOURG STANDARDS.
 - ALL WATER MAINS AND APPURTENANCES SHALL COMPLY WITH THE TOWN OF COBOURG STANDARDS AND THE ONTARIO PLUMBING CODE.
 - ALL WATER MAINS SHALL BE CONSTRUCTED A MINIMUM OF 1.80m BELOW FINISHED GRADE
 - ALL TRENCHES SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH TOWN OF COBOURG STANDARDS
 - 150mm WATERMAIN TO BE DR18 PVC PIPE, CL P BEDDING
 - WATER SERVICE PIPES, 50mm TO BE MUNICIPEX CROSS LINKED POLYETHYLENE PIPE, CL P BEDDING.
 - ALL STORM SEWERS AND APPURTENANCES SHALL COMPLY WITH THE TOWN OF COBOURG STANDARDS AND THE ONTARIO PLUMBING CODE.
 - STORM SEWER PIPE 450mm AND SMALLER SHALL BE DR35 PVC PIPE, CL P BEDDING
 - STORM SEWER MANHOLES AND CATCH BASIN MANHOLES SHALL BE AS PER OPSD 701.010
 - CATCH BASINS SHALL BE AS PER OPSD 705.010
 - MANHOLE GRATES SHALL BE AS PER OPSD 401.010
 - CATCH BASIN GRATES SHALL BE AS PER OPSD 400.020
 - ALL TRENCHES SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH OPSD STANDARDS
 - GENERALLY, A MINIMUM OF 0.20m SHALL BE PROVIDED BETWEEN THE OUTSIDE OF PIPE BARRELS AT THE POINT OF CROSSING FOR STORM AND SANITARY SEWERS. A MINIMUM OF 0.50m SHALL BE PROVIDED BETWEEN THE OUTSIDE OF PIPE BARRELS AT THE POINT OF CROSSING FOR ALL SEWERS CROSSING WATER MAINS.
 - BARRIER CURB AS PER OPSD 800.110.

PRELIMINARY
NOT FOR CONSTRUCTION

NO.	DATE	REVISION	BY
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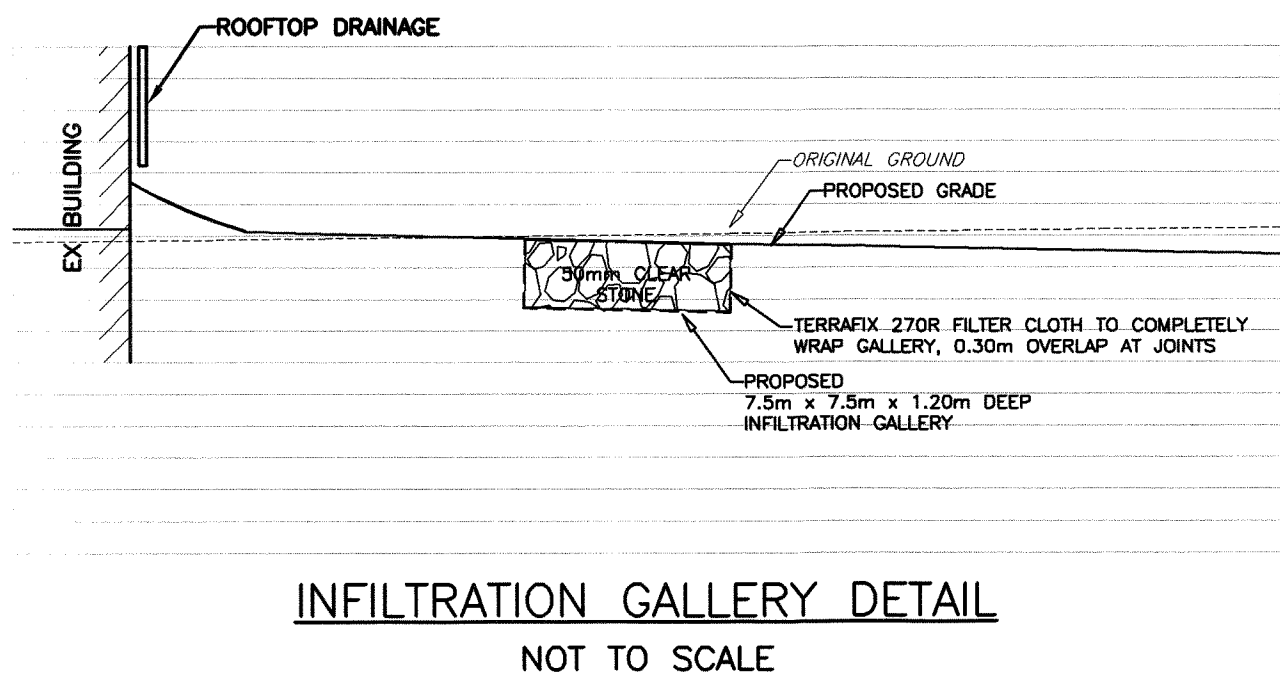
REVISIONS

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SITE SERVICING PLAN

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	CHECKED BY:	K.G.K.		
	DATE:	DECEMBER 2018		



Y:_JOB FILES\118001\118001_415 KING STREET W. COBOURG\118001 DRAWINGS\118001 ENGINEERING DRAWINGS\118001-30-SITE PLAN.DWG

