TRAFALGAR ENGINEERING LTD.

#1 - 481 Morden Road
Oakville Ontario
L6K 3W6

April 26, 2018 Our File: 1636

Functional Servicing Report
Four (4) – Storey Residential Condominium
Oakville, Ontario

1.0 INTRODUCTION

This report has been prepared in support of the Site Plan Application for a proposed Four (4) - Storey Residential Condominium development located at 156 Trafalgar Road in Oakville. The 0.092 ha site is located on the west side of Trafalgar Road, north of Randall Street and south of Dunn Street. The report outlines how the development can be serviced by the existing and proposed infrastructure for water, wasterwater, and storm drainage, and is update to the original Functional Servicing Report prepared by D. K. Barker & Associates Ltd., dated February 2013.

Information provided in the report is based on information obtained from the D. K. Barker report, the Town of Oakville, and the Region of Halton, as wells as discussions/meetings with the Town and the Regional Development staff.

This report should be read in conjunction with the proposed Grading / Servicing Plans prepared by Trafalgar Engineering and architectural and landscape plans.

2.0 SITE LOCATION AND DESCRIPTION

The subject land is currently vacant, but previously contained a two-storey mixed commercial and residential building. This building was already demolished. The site abuts Trafalgar Road to the east and residential detached house to the north, townhouses to the west, and residential/dental office to the south of the property.

Attached is a topographic survey of the site prepared by Cunningham McConnell Limited.

3.0 PROPOSED DEVELOPMENT

The Four (4) – Storey Residential Condominium proposes to develop the subject land with 10 residential units. The proposed development has a ramp access to parking garage at the basement level. There are 16 parking spaces at the basement level and an additional 4 parking spaces at the ground level.

4.0 WATER SERVICES

Development of the subject site will require adequately sized water services that comply with the Ontario Building Code (OBC) and Region of Halton Standards.

Plans obtained from the Region of Halton and the Town of Oakville indicate that there is a 150mm diameter watermain along the east side of Trafalgar Road. Per the D. K. Barker report, the current operating pressure is 65 psi. There are currently two service connections to the site. The connection to the south is active and to the north is not. These two service connections will be disconnected at the main. The existing service connections will be abandoned and a new water service will be installed.

Based on architectural plans, the calculated total fixture units for water service pipe are 167 fixture units. Hence, for water velocity of 2.4 m/s, OBC requires a 50mm diameter water service. In addition, a 150mm diameter fire line will be provided to the building.

Per the Region of Halton Standards for 6-storey apartment building or less, the equivalent population density is 135 persons per hectare. Based on this density, the site would have an equivalent of 13 persons (135 persons/ha x 0.092ha).

The Average Day Demand is 0.275 m^3/person/day, the Maximum Daily Demand Peaking Factor is 2.25 and the Maximum Hourly Demand Peaking Factor is 4.0. This results in:

- Average Daily Flow = 13 persons x 0.275 m^3/person/day = 3.6 m^3/day
- Maximum Daily Flow = 2.25 x 3.6 m^3/day = 8.1 m^3/day (6 L/min)
- Peak Hourly Flow = 4.0 x 3.6 m^3/day = 14.4 m^3/day (10 L/min)

Fire flow was estimated based on the Fire Underwriter Survey. The estimated fire flow for the site is 5,000 L/min. Therefore, the Maximum Daily Demand plus Fire Flow is 5,006 L/min.

The existing 150mm diameter watermain on Trafalgar Road will supply adequate water for the site and the increase in flow is insignificant.

An existing fire hydrant is located on the southeast corner of Trafalgar Road and Sumner Avenue / Dunn Street, and a new fire department connection is proposed on the northeast corner of the building. The proposed fire department connection is within the 45m maximum radius to the existing fire hydrant.

5.0 SANITARY DRAINAGE

There is an existing 250mm diameter sanitary sewer located along Trafalgar Road in front of the subject property. There are two existing sanitary laterals connected to the existing 250mm diameter sanitary sewer. These two existing sanitary laterals will be disconnected at the main, abandoned, and replaced with a 150mm diameter sanitary lateral for the new development. A new sanitary manhole will be installed 1.0m behind the property line for inspection and maintenance purposes.

Sanitary drainage from ground floor to upper floors will be drained by gravity. However, due to elevation constraints for basement level, it will not be possible to drain by gravity. Therefore, sanitary drainage from basement level will require pumping.

Based on the architectural plans, the calculated total fixture units for horizontal sanitary drainage pipe are 126 fixture units. The proposed 150mm diameter sanitary lateral at 2% slope can accommodate up to maximum of 840 fixture units.

Per the Region of Halton Standards for 6-storey apartment building or less, this results in:

- Equivalent Population = 135 persons/ha x 0.092 ha = 13 persons.
- Average Daily Flow = 13 persons x 0.275 m^3/person/day = 3.6 m^3/day or 0.04 L/s
- Peaking Factor = 4.4
- Peak Flow = 4.4 x 0.04 L/s = 0.18 L/s
- Infiltration Allowance = 0.286 L/s/ha x 0.092 ha = 0.03 L/s
- Design Flow = 0.18 L/s + 0.03 L/s = 0.21 L/s

The proposed sanitary sewer flows are very small with a minor increase to existing flows from the site. The proposed development will have no significant impact on the downstream sewer flows.

6.0 STORM DRAINAGE AND STORMWATER MANAGEMENT

6.1 Pre-Development Condition

The subject land is currently vacant, but previously contained a two-storey mixed commercial and residential building. The existing site generally drains to three different directions as follows:

1. A small area adjacent to Trafalgar Road drains directly to Trafalgar Road.
2. The paved portion (Area = 0.0256 ha) along the south side and at the rear of the property drains towards the existing catch basin. The existing catch basin is located in the driveway on the adjacent lands to the south and outlets to the existing storm sewer on Trafalgar Road.

   The Pre-development flows from the paved portion of the site are calculated using the equation below and summarized in the following table.

   $$Q = 2.778\ C\ I\ A \quad (L/s)$$

Pre-Development Flows (From Paved Portion of the Site Draining to Existing CB):

Return Period	Tc (min)	I (mm/hr)	Area (ha)	C	Q (L/s)
5-year Storm	10.0	114	0.0256	0.90	7.3
100-year Storm	10.0	201	0.0256	1.00	14.3

   The runoff coefficient for the 100-year storm was maximized to 1.00.

3. The balance of the site, mainly landscape area drains to the northwest corner of the site.

Record information obtained from the Town of Oakville shows that there is an existing 450mm diameter storm sewer on Trafalgar Road and was designed to include the drainage from the subject site. Based on air photo history map 2006 from the Town of Oakville website, the subject land was previously contained a building with asphalt driveway/parking on the south and west sides of the property. The previous runoff coefficient was calculated to be C=0.53 (see Figure 1).

The Pre-development flows from the whole site are summarized in the following table:

Pre-Development Flows (From Site):

Return Period	Tc (min)	I (mm/hr)	Area (ha)	C	Q (L/s)
5-year Storm	10.0	114	0.0920	0.53	15.4
100-year Storm	10.0	201	0.0920	0.66	33.9

The runoff coefficient for the 100-year storm (0.66) was increased by 25%.

The subject lands have two small external drainage areas as follows:

1. A small strip of the adjacent site between the property line and the retaining wall on the adjacent site appears drain into the site, although we would expect most of the drainage for this area to infiltrate in the granular backfill of the retaining wall. The flow from this area will not be included in calculation of the proposed sewer system.
2. Part of the property to the north, including the portion of the roof drainage flows into the site. The calculated drainage area is 0.0168 ha.

The Pre-development flows from the external property to the north are summarized in the following table:

Pre-Development Flows (From External Property to the North):

Return Period	Tc (min)	I (mm/hr)	Area (ha)	C	Q (L/s)
5-year Storm	10.0	114	0.0168	0.62	3.3
100-year Storm	10.0	201	0.0168	0.78	7.3

The runoff coefficient for the 100-year storm (0.78) was increased by 25%.

6.2 Post-Development Condition

The proposed development will widen the existing driveway on the adjacent property to the south. Drainage from the driveway will be conveyed to the existing catch basin located on the adjacent site and convey to Trafalgar Road sewer via the existing pipe. The drainage area from the proposed site that flows to the existing catch basin is 0.0108 ha.

The new calculated flows from the proposed site draining to the existing catch basin are summarized as follows:

Post-Development Flows (From Paved Portion of the Site Draining to Existing CB):

Return Period	Tc (min)	I (mm/hr)	Area (ha)	C	Q (L/s)
5-year Storm	10.0	114	0.0108	0.90	3.1
100-year Storm	10.0	201	0.0108	1.00	6.0

The runoff coefficient for the 100-year storm was maximized to 1.00.

The building will occupy most of the site with the exception of a small rear and side yards setbacks. The proposed building (main roof) will cover approximately 0.0562 ha. The proposed building will have a flat roof and drainage from the building will be collected into an internal sewer system. To control the flow of the main roof, two roof control flow drains will be installed. Each drain will be controlled to 136 L/min (Zurn controls). Assuming a maximum rooftop ponding of 150mm, the maximum flow from the roof will be 4.5 L/s.

A weeper pipe will be installed along the small landscape area at the rear of the building to collect drainage in this area. This weeper will be connected to the proposed catch basin.

The proposed down ramp to the underground garage will be covered, however, the side will be opened. A trench drain will be required at the bottom of the ramp. The trench drain will be connected to the building's foundation drain sump pit and pump.

A subdrain or weeping tile will be installed around the building. Due to grade issue, the weeping tile around the building will drain to the sump pit and pump into the storm sewer system.

Drainage from lower roofs and patio areas will be collected within the building drainage system. On-site catch basins and area drains will be provided to collect surface runoff. The on-site storm sewer will be designed for the 5-year storm and will be connected to the existing 450mm diameter sewer along Trafalgar Road using a 300mm diameter lateral. Manholes are proposed at the connection point with the mainline storm sewer and on the property line for inspection and flow monitoring purposes.

Calculations of Post-development runoff coefficients are in Figure 2 attached to this report.

Again, the total site area and main roof area are 0.0920 ha and 0.0562 ha, respectively. Therefore, the remaining uncontrolled area is 0.0358 ha.

The Post-development flows from the whole site are summarized as follows:

Post-Development Flows (From Site):

Return Period	Uncontrolled Flow					Controlled Roof Flow	Total Flow
	tc (min)	I (mm/hr)	Area (ha)	C	Q (L/s)	Q (L/s)	Q (L/s)
5-year	10	114	0.0358	0.74	8.4	4.5	12.9
100-year	10	201	0.0358	0.92	18.4	4.5	22.9

The runoff coefficient for the 100-year storm (0.92) was increased by 25%.

Please note that the Post-development flows from external site will be the same as the Pre-development flows summarized as follows:

Post-Development Flows (From External Property to the North):

Return Period	Tc (min)	I (mm/hr)	Area (ha)	C	Q (L/s)
5-year Storm	10.0	114	0.0168	0.62	3.3
100-year Storm	10.0	201	0.0168	0.78	7.3

The runoff coefficient for the 100-year storm (0.78) was increased by 25%.

6.3 Comparisons of Flows

Comparisons of Pre-development flows from Post-development flows show a reduction of flow after development.

As illustrated in the table below, Post-development flows draining to the existing catch basin located in the driveway of the adjacent lands to the south will be less than the Pre-development flows:

A. Comparison (From Paved Portion of the Site Draining to Existing CB):

Return Period	Pre-Development Flows Q (L/s)	Post-Development Flows Q (L/s)
5-year Storm	7.3	3.1
100-year Storm	14.3	6.0

Likewise, Post-development flows from the whole site will be less than the Pre-development flows as summarized in the table below:

B. Comparison (From Whole Site):

Return Period	Pre-Development Flows Q (L/s)	Post-Development Flows Q (L/s)
5-year Storm	15.4	12.9
100-year Storm	33.9	22.9

The table below summarized the on-site flows plus external flows, both for Pre and Post-development conditions. It shows that the Post-development flows will be less than the Pre-development flows.

C. Comparison (On-Site Flow + External Flow):

Return Period	Pre-Development Flows Q (L/s)			Post-Development Flows Q (L/s)		
	On-Site	External	Total	On-Site	External	Total
5-year Storm	15.4	3.3	**18.7**	12.9	3.3	**16.2**
100-year Storm	33.9	7.3	**41.2**	22.9	7.3	**30.2**

Summary:

1. There is adequate water capacity in adjacent watermain to service the proposed development. The additional water usage for the site results in a minor increase and will have an insignificant impact on the water distribution system.

2. The increase in sanitary sewer flows from the site is insignificant and the adjacent sewers have sufficient capacity.

3. To restrict peak flows from the building to the existing storm sewer, we are recommending the installation of two (2) controlled flow roof drains.

4. As illustrated in the above tables, the post-development flows will be less than the pre-development flows.

This report has shown that the proposed development of the site can be adequately serviced by making new connections to the municipal storm and sanitary sewers, and watermain on Trafalgar Road.

PREPARED BY:
TRAFALGAR ENGINEERING LTD.

APRIL 26, 2018

Joselito R. Endaya, M. Eng., P. Eng.
Senior Municipal Engineer

LICENSED PROFESSIONAL ENGINEER
J. R. ENDAYA
100085341
PROVINCE OF ONTARIO

Project: **Four (4) - Strorey Residential Condominium** **Project No.:** **1636**
Subject: **Fire Flow Requirements**

Required fire flow calculations are provided below:
(Based on guidelines provided in the Fire Underwriter Survey (FUS) – 1999 Edition)

An estimate of the fire flow required for a given area may be determined by the formula:

$F = 220 * C * (A)^{1/2}$

Structure: Four (4) - Strorey Residential Condominium

A. Determine the type of construction:

Type of construction, C = 0.6

B. Determine the ground floor area:

Ground Floor Area = 451 m^2

C. Determine the height in storeys:

Height in Storeys = 4

D. Using the fire flow formula, determine the required fire flow to the nearest 1000 L/min:

	Proposed Area	Area to Consider
Ground Floor (Not considered))	451	0
Second Floor (Largest Area)	572	572
Third Floor (Largest Area)	572	572
Fourth Floor (Use 50%)	534	267
Total Area =		1,411 m^2

Therefore: $F = 220*C*(A)^{1/2}$ = 4,958 L/min
5,000 L/min (Rounded to nearest 1,000)

E. Determine the increase or decrease for occupancy and apply to the value obtained in D above. Do not round off the answer:

For this structure, Low hazard Occupancy:
Decrease value by: 15 %

Therefore: F = D (1 - Percent Increase/Decrease in E) = 4,250 L/min

F. Determine the decrease, if any, for automatic sprinkler protection.
Do not round off the value.

With sprinkler system.	50	%
Decrease due to sprinkler =	2,125	L/min

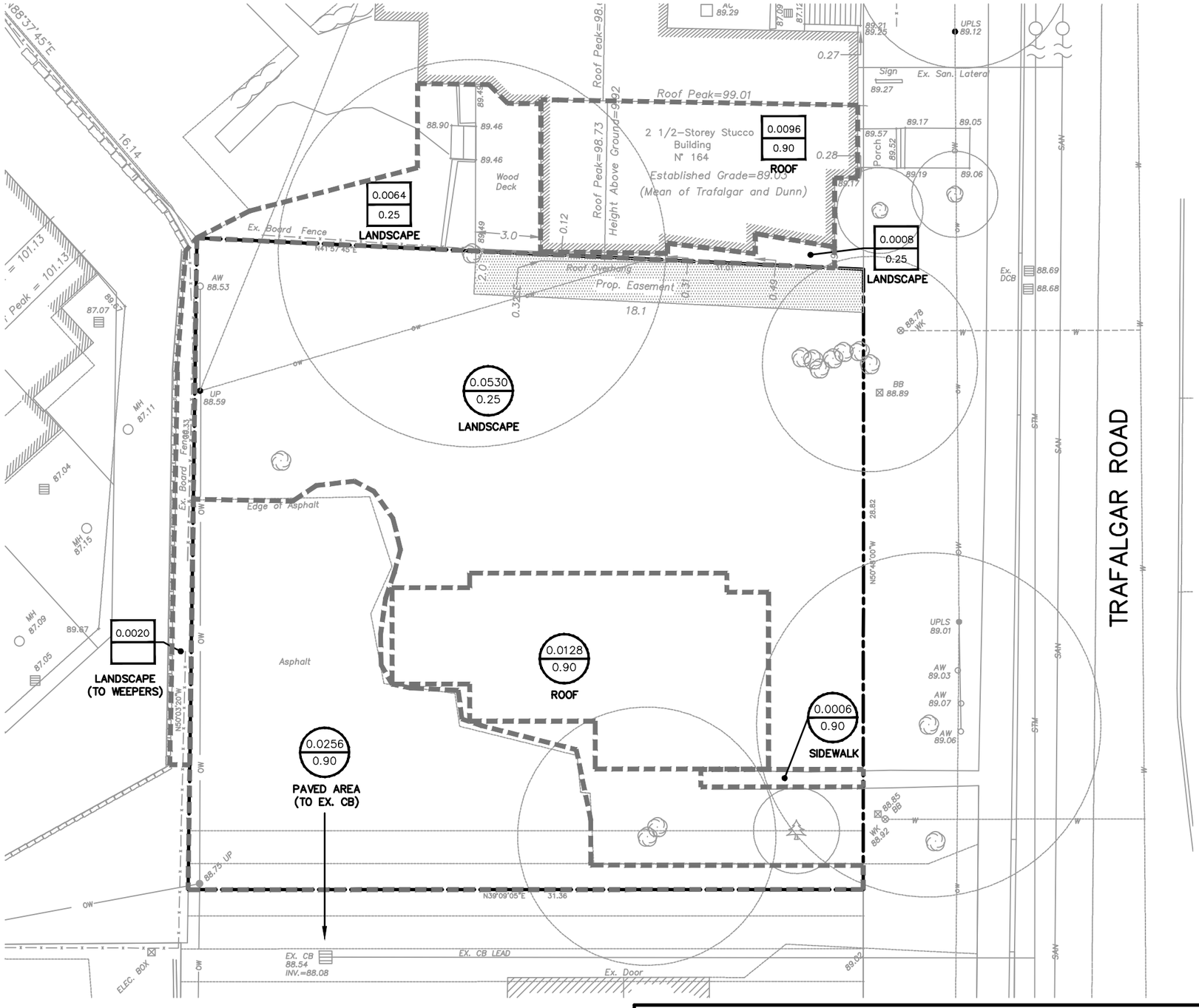
G. Determine the total increase for exposures. Do not round off the value.

North side separation:		
3.1m to 10.0m, add =	20	%
South side separation:		
3.1m to 10.0m, add =	20	%
East side separation:		
20.1m to 30.0m, add =	10	%
West side separation:		
3.1m to 10.0m, add =	20	%
Total Increase =	70	%

Therefore: F = E * Percent Increase in G = 2,975 L/min

H. To the answer obtained in E, subtract the value obtained in F and add the value obtanied in G.

	E	4,250	L/min	
	F	2,125	L/min	
	G	2,975	L/min	
Fire Flow, F = E - F + G =		5,100	L/min	
		5,000	L/min	(Rounded to nearest 1,000)
		1,320	US GPM	



AREA AND RUNOFF COEFFICIENT:

1.0 ON-SITE:

A. SITE AREA = 0.0920Ha

IMPERVIOUS AREA = 0.0256 + 0.0128 + 0.0006

= 0.0390Ha

PERVIOUS AREA = 0.0530Ha

B. COMPOSITE 'C' :

$$C = \frac{0.90\ (0.0390) + 0.25\ (0.0530)}{0.0920}$$

C = 0.53

2.0 EXTERNAL (NORTH) :

A. EXTERNAL AREA = 0.0168Ha

IMPERVIOUS AREA = 0.0096Ha

PERVIOUS AREA = 0.0064 + 0.0008

= 0.0072Ha

B. COMPOSITE 'C' :

$$C = \frac{0.90\ (0.0096) + 0.25\ (0.0072)}{0.0168}$$

C = 0.62

LEGEND

DRAINAGE AREA BOUNDARY

0.0032 / 0.90 — ON SITE AREA IN HECTARE / RUNOFF COEFFICIENT

0.0020 / 0.25 — EXTERNAL AREA IN HECTARE / RUNOFF COEFFICIENT

PROJECT TITLE

FOUR-STOREY RESIDENTIAL CONDOMINIUM

OAKVILLE , ON

DRAWING TITLE

PRE - DEVELOPMENT DRAINAGE AREA PLAN

TRAFALGAR ENGINEERING LTD.

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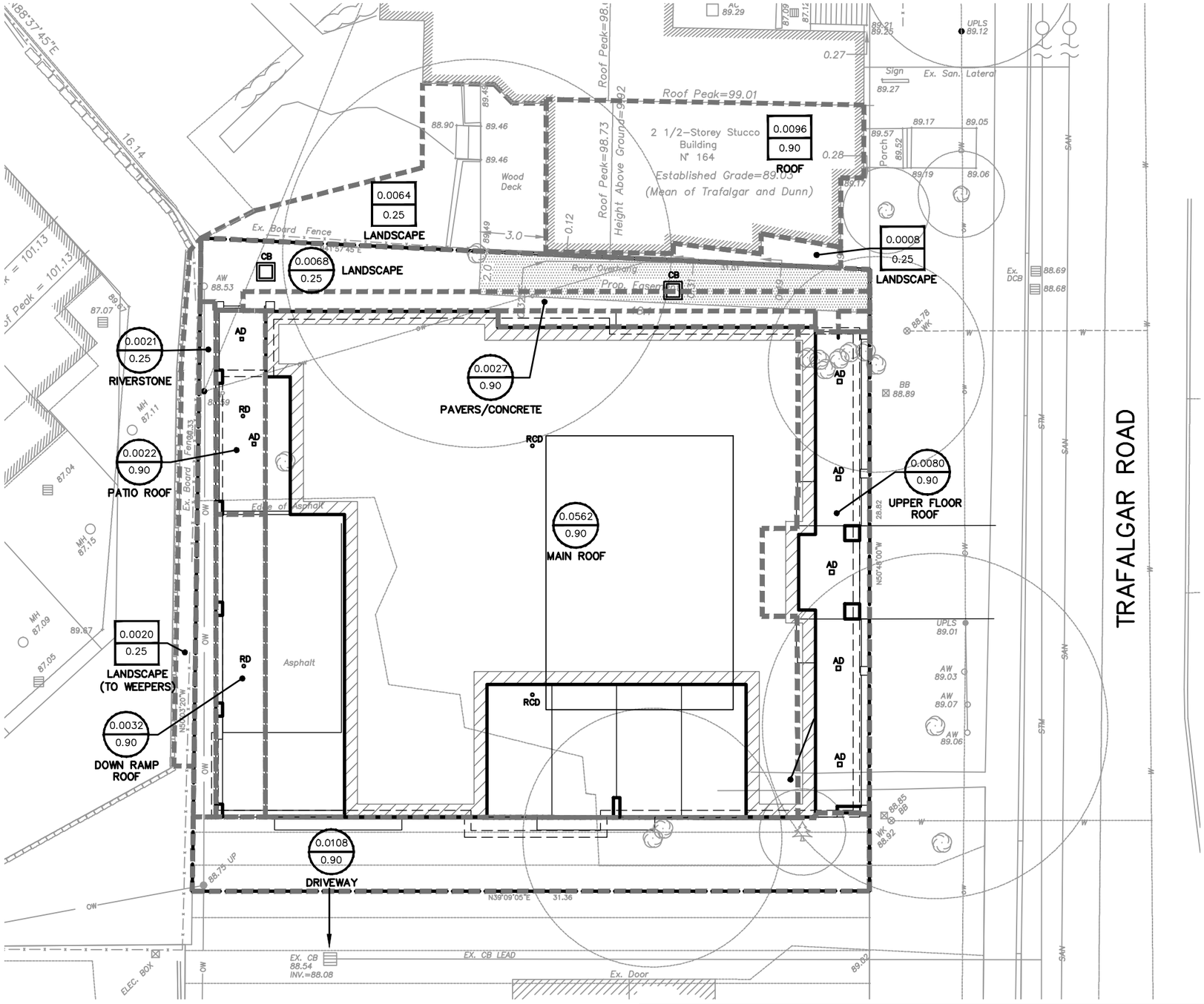
tel@trafalgareng.com

DESIGNED BY	JRE	SCALE	NTS	DRAWING No.
DRAWN BY	ZG	DATE	28 FEB 2018	FIGURE 1



AREA AND RUNOFF COEFFICIENT:

1.0 ON-SITE:

A. SITE AREA = 0.0920Ha

B. ON-SITE (CONTROLLED):

AREA = 0.0562Ha

C = 0.90

C. ON-SITE (UNCONTROLLED):

AREA = 0.0358Ha

IMPERVIOUS AREA = 0.0108 + 0.0032 + 0.0022 + 0.0080 + 0.0027

= 0.0269Ha

PERVIOUS AREA = 0.0021 + 0.0068

= 0.0089Ha

$$C = \frac{0.90\ (0.0269) + 0.25\ (0.0089)}{0.0358}$$

C = 0.74

2.0 EXTERNAL (NORTH) :

A. EXTERNAL (UNCONTROLLED) :

AREA = 0.0168Ha

IMPERVIOUS AREA = 0.0096Ha

PERVIOUS AREA = 0.0064 + 0.0008

= 0.0072Ha

$$C = \frac{0.90\ (0.0096) + 0.25\ (0.0072)}{0.0168}$$

C = 0.62

LEGEND

- DRAINAGE AREA BOUNDARY
- 0.0032 / 0.90 — ON SITE AREA IN HECTARE / RUNOFF COEFFICIENT
- 0.0020 / 0.25 — EXTERNAL AREA IN HECTARE / RUNOFF COEFFICIENT

PROJECT TITLE

FOUR-STOREY RESIDENTIAL CONDOMINIUM

OAKVILLE , ON

DRAWING TITLE

POST - DEVELOPMENT DRAINAGE AREA PLAN

TRAFALGAR ENGINEERING LTD.

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DESIGNED BY	JRE	SCALE	NTS	DRAWING No.
DRAWN BY	ZG	DATE	28 FEB 2018	FIGURE 2

GENERAL NOTES

1. ALL DIMENSIONS AND ELEVATIONS TO BE VERIFIED PRIOR TO CONSTRUCTION AND ANY DISCREPANCIES FOUND PRIOR TO OR DURING CONSTRUCTION SHALL BE CLARIFIED WITH THE ENGINEER.

2. CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS OF THE REGIONAL MUNICIPALITY OF HALTON AND THE TOWN OF OAKVILLE. ONTARIO PROVINCIAL STANDARD SPECIFICATIONS AND DRAWINGS (OPSS & OPSD) SHALL BE USED IN ABSENCE OF LOCAL STANDARDS.

3. RESTORE ROAD AS PER THE TOWN OF OAKVILLE ROAD CUT PERMIT.

4. THE LOCATION OF UTILITIES IS APPROXIMATE ONLY AND 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.

5. ALL REMOVED OR DAMAGED CURBS, SIDEWALK, GRANULARS, ASPHALT AND SOD RESULTING FROM SERVICE INSTALLATION SHALL BE REINSTATED BY SERVICING CONTRACTOR TO THE TOWN OF OAKVILLE STANDARDS.

STORM SEWERS

1. ALL STORM SEWERS 600mmø AND SMALLER SHALL BE PVC SDR35 OR ULTRA RIBBED PVC CSA B182.4 WITH BEDDING PER OPSD 802.010 UNLESS OTHERWISE NOTED.

2. ALL STORM MANHOLES SHALL BE 1200mmø PER OPSD 701.010 c/w COVER PER OPSD 401.010, UNLESS OTHERWISE NOTED.

3. ALL SEWER TRENCH BACKFILL WITHIN SITE SHALL BE NATIVE BACKFILL MATERIAL FREE OF ORGANIC MATERIAL AND COMPACTED TO 95% SPMDD. WITHIN THE PUBLIC ROW BACKFILL SHALL BE PER TOWN OF OAKVILLE REQUIREMENTS.

4. BENCHING IN MANHOLES IS TO EXTEND UP TO SPRINGLINE OF THE PIPE.

SANITARY SEWERS

1. ALL SANITARY SEWERS SHALL BE PVC SDR35 AND BEDDING PER OPSD 802.010*.

2. ALL SANITARY MANHOLES SHALL BE 1200mmø PER OPSD 701.010 c/w COVER PER OPSD 401.010, UNLESS OTHERWISE NOTED.

3. BENCHING IN MANHOLES IS THROUGHOUT TO THE CROWN OF ALL PIPES ON A VERTICAL PROJECTION FROM SPRING LINE.

4. ASTERISK (*) INDICATES OPSD CAN BE USED MODIFIED BY REGION OF HALTON.

WATERMAINS

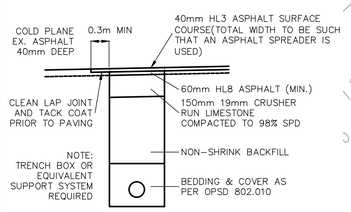
1. WATER SERVICE CONNECTION TO BE 50mm COPPER, TYPE "K" SOFT COPPER TUBING.

2. BEDDING ON WATER SERVICE SHALL BE PER OPSD 802.010*.

3. COVER SHALL BE 1.7m MIN. UNLESS OTHERWISE NOTED.

4. MINIMUM LATERAL SEPARATION FROM OTHER UTILITIES IS 2.5m.

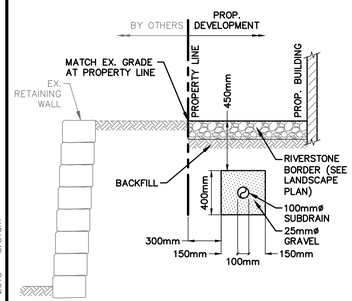
5. ANODE INSTALLATION PER RH 420.04



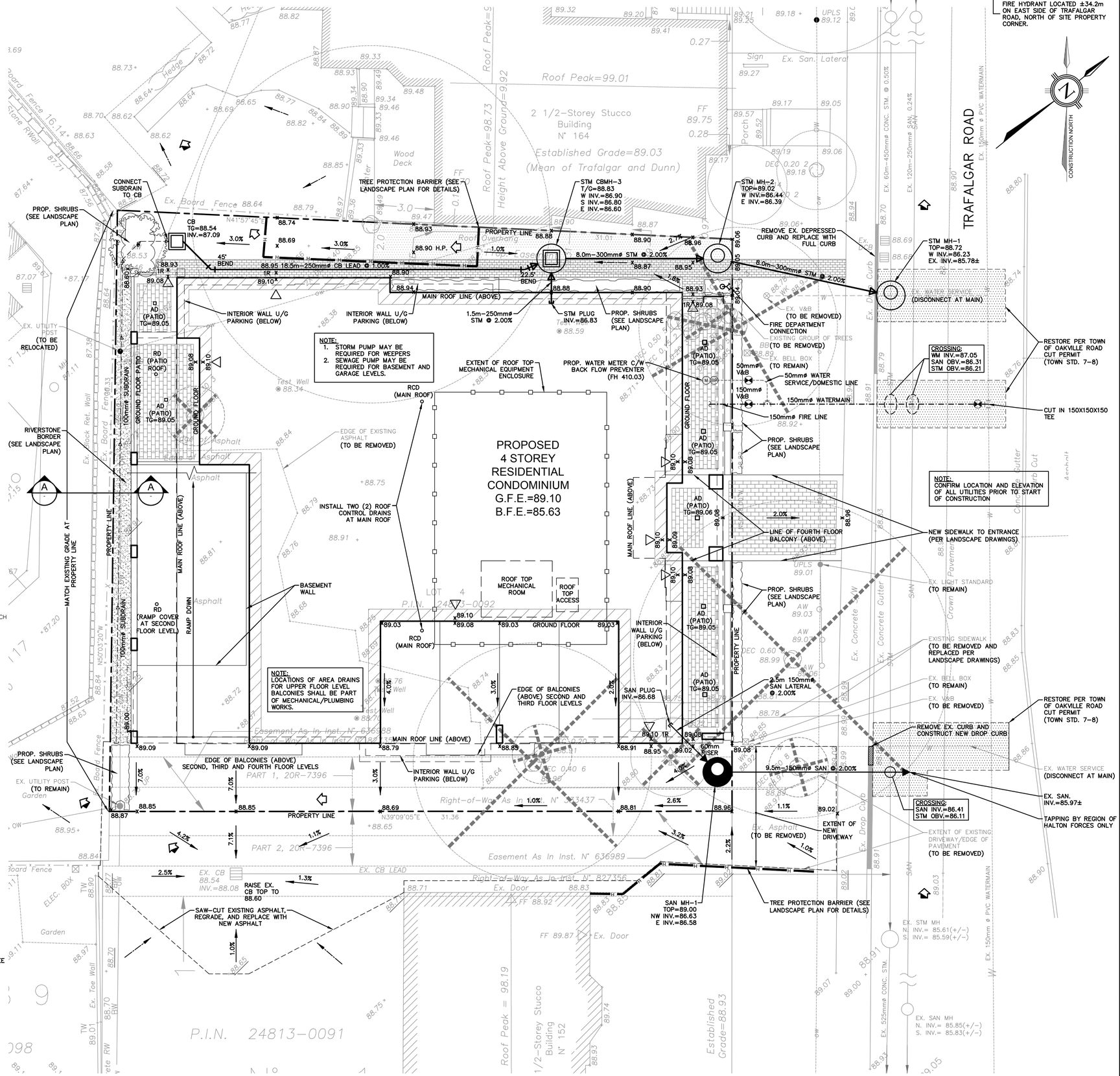
TYPICAL TRENCH RESTORATION
NTS

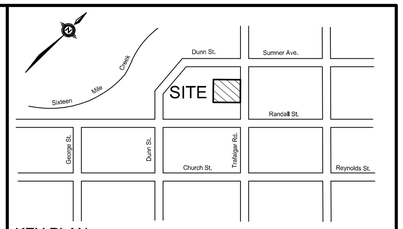
NOTE:

1. PLACE HL8 ASPHALT TO MATCH EX SURFACE.
2. IN FOLLOWING CONSTRUCTION SEASON GRIND ASPHALT 40mm DEEP AND PLACE 40mm HL3 ASPHALT.



SECTION A–A
NTS





KEY PLAN
NTS

LEGEND

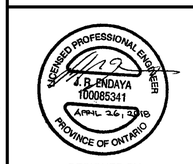
- PROPOSED CATCHBASIN
- PROPOSED DOUBLE CATCHBASIN
- PROPOSED CATCHBASIN MANHOLE
- PROPOSED DOUBLE CATCHBASIN MANHOLE
- PROPOSED STORM MANHOLE
- PROPOSED SANITARY MANHOLE
- PROPOSED FIRE HYDRANT
- PROPOSED VALVE & BOX
- PROPOSED PLUG
- PROPOSED WATER METER
- PROPOSED BACK–FLOW PREVENTER
- PROPOSED AREA DRAIN
- PROPOSED ROOF DRAIN
- PROPOSED ROOF CONTROL DRAIN
- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- PROPOSED WATERMAIN
- PROPOSED WATER SERVICE
- PROPOSED SUBDRAIN
- PROPOSED DRAINAGE DIRECTION
- PROPOSED SWALE DRAINAGE DIRECTION
- PROPOSED OVERLAND FLOW DIRECTION
- EXISTING OVERLAND FLOW DIRECTION
- +157.17 EXISTING ELEVATION
- +157.17 EXISTING ELEVATION TO BE MATCHED
- + 157.20 PROPOSED FINISHED ELEVATION
- 158.00 EXISTING CONTOUR
- TC EXISTING TOP OF CURB
- BC EXISTING BOTTOM OF CURB
- PROPOSED TREE PROTECTION BARRIER

NO.	DATE	BY/DRAWN	REVISIONS
3	26/APR/2018	SP/GL	ISSUED FOR SITE PLAN APPROVAL
2	11/APR/2018	SP/GL	ISSUED FOR CONFIRMATION
1	28/MAR/2018	SP/gl	PRELIMINARY DESIGN

CAD FILE: 1636GS | PLOT SCALE: 1:1 | PLOT DATE: 03/28/2018

BENCHMARK

1. ALL ELEVATIONS SHOWN HEREON ARE GEODETIC AND WERE DERIVED FROM THE TOWN OF OAKVILLE BENCHMARK O–18 HAVING AN ELEVATION OF 90.516m (CGVD–1928 DATUM).
2. SURVEY INFORMATION CONTAINED ON THIS DRAWING IS FROM PLAN 53–08–5 BY CUNNIGHAM McCONNELL LIMITED, ONTARIO LAND SURVEYORS, DATED FEB. 23, 2011, AND AS UPDATED ON AUG. 7, 2013.



DESIGNED BY | APPROVED BY

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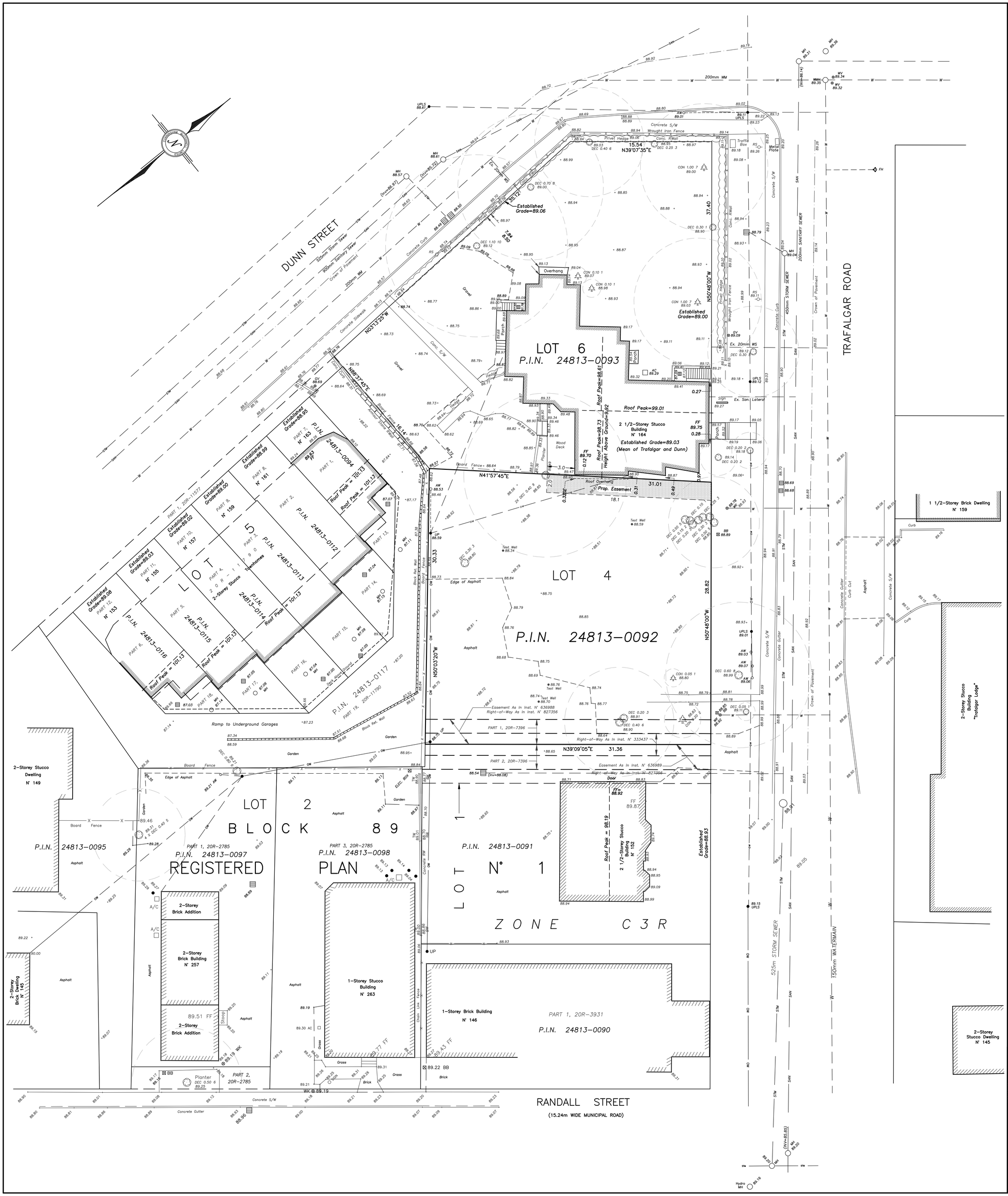
PROJECT TITLE
FOUR–STOREY RESIDENTIAL CONDOMINIUM

LOCATION
156 TRAFALGAR ROAD
OAKVILLE, ONTARIO

DRAWING TITLE
GRADING AND SERVICING PLAN

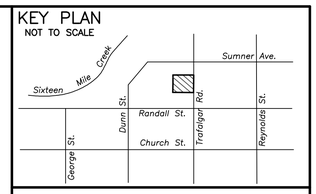
SCALE	1:100	DESIGN BY	JRE
DRAWN BY	GRL	CHECKED BY	SP
DATE	02/15/2018	SHEET	1 OF -
PROJECT No.	1636	PLAN No.	GS1

FILENAME: P:\1636 156 Trafalgar\Drawings\DWG\1636GS.dwg
PLOTDATE: Apr 25, 2018 - 8:31am



KEY PLAN

NOT TO SCALE



TOPOGRAPHIC SKETCH OF

PART OF LOT 4, BLOCK 89
REGISTERED PLAN N° 1
TOWN OF OAKVILLE

REGIONAL MUNICIPALITY OF HALTON

SCALE 1 : 150

3 0 3 6 9

GRAPHIC SCALE – METRES

BOUNDARY NOTE

ALL BOUNDARY DATA SHOWN HEREON WAS COMPILED FROM THE REGISTRY OFFICE RECORDS AND WAS VERIFIED IN THE FIELD.

ELEVATION NOTE

ALL ELEVATIONS SHOWN HEREON ARE GEODETIC AND WERE DERIVED FROM THE TOWN OF OAKVILLE BENCHMARK 0–18 HAVING AN ELEVATION OF 90.516m (CGVD–1928 DATUM).

TREE NOTE

ONLY TREES OF A DIAMETER GREATER THAN 0.15 m WERE LOCATED FOR THIS PLAN.

METRIC NOTE

ALL DISTANCES SHOWN HEREON ARE IN METRES AND CAN BE CONVERTED INTO FEET BY DIVIDING BY 0.3048.

LEGEND

AW	DENOTES ANCHOR WIRE(S)
BB	DENOTES BELL BOX
–B–	DENOTES U/G BELL CABLE
CON–0.20	DENOTES CONIFEROUS TREE 0.20 DIA
DEC–0.20	DENOTES DECIDUOUS TREE 0.20 DIA
FH	DENOTES FIRE HYDRANT
GM	DENOTES GAS METER
GV	DENOTES GAS VALVE
–G–	DENOTES U/G GAS MAIN
–H–	DENOTES U/G HYDRO CABLE
LS	DENOTES LIGHT STANDARD (LAMP)
MH	DENOTES MANHOLE
–OW–	DENOTES OVER HEAD WIRE(S)
–SAN–	DENOTES SANITARY SEWER
–STM–	DENOTES STORM SEWER
UP	DENOTES UTILITY POLE
UPLS	DENOTES UTILITY POLE/LIGHT STANDARD
WV	DENOTES WATER VALVE (KEY)
–W–	DENOTES U/G WATER MAIN

UNDERGROUND SERVICES NOTE

ONLY UNDERGROUND SERVICES VISIBLE ON THE GROUND WERE LOCATED FOR THIS PLAN.

THE USER OF THIS PLAN SHALL CONTACT THE LOCAL UTILITY COMPANIES FOR LOCATIONS PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS.

BUILDING HEIGHT TABLE

ADDRESS	ESTABLISHED GRADE	ROOF PEAK GRADE	HEIGHT (Above Est. Grade)
164 Trafalgar Road	89.03	99.01	9.98
152 Trafalgar Road	88.93	98.19	9.26
153 Dunn Street	89.08	101.13	12.05
155 Dunn Street	89.03	101.13	12.10
157 Dunn Street	89.02	101.13	12.11
159 Dunn Street	89.00	101.13	12.13
161 Dunn Street	88.99	101.13	12.14
163 Dunn Street	88.95	101.13	12.18

INTEGRATION OF BOUNDARIES NOTE

THE INTEGRATION OF THE BOUNDARIES SHOWN HEREON INTO NAD–83 (ORIGINAL) PROJECTION WILL BE REQUIRED FOR ANY CONDOMINIUM AND/OR PLAN OF SUBDIVISION RE–DEVELOPMENT.

SURVEYOR'S NOTE

I CERTIFY THAT:

1. THIS PLAN WAS PREPARED FOR DESIGN PURPOSES ONLY AND IS NOT SUITABLE FOR ANY LEGAL TRANSACTIONS.
2. THE TOPOGRAPHIC DETAIL SHOWN HEREON WAS ACQUIRED ON FEBRUARY 23, 2011.

DATE: FEBRUARY 28, 2011

JARO A. LEGAT, M.Sc.
ONTARIO LAND SURVEYOR

DATE	REVISIONS	INITIALS
2018/04/06	ADDING FIRE HYDRANT AND DOOR SILL	JAL
2018/03/27	UPDATING THE TOPOGRAPHIC DETAIL	JAL
2013/08/07	ADDING BUILDING HEIGHTS	JAL

CUNNINGHAM McCONNELL LIMITED
ONTARIO LAND SURVEYORS

1200 SPEERS ROAD, UNIT 38
OAKVILLE, ONTARIO L6L 2X4
PHONE (905) 845–3497
FAX (905) 845–3519
E–Mail: cmlols@bellnet.ca

205 MAIN STREET
MILTON, ONTARIO L9T 1N7
PHONE (905) 878–7810
FAX (905) 878–6572
E–Mail: cml@primus.ca

CLIENT: DOLPHIN MANAGEMENT

PLAN 53–08–5