July 26, 2024
File: 161414378

Attention: Brent Lambert, Manager, Development Planning
Development and Compliance Services
City Hall – 6th Floor
300 Dufferin Avenue
London Ontario PO BOX 5035 N6A 4L9

Dear Brent,

Reference: 4040 Colonel Talbot Road – Water Servicing Brief

This letter is written to support the residential development at 4040 Colonel Talbot in the City of London in providing confirmation that the proposed water servicing meets the requirements of the City of London and the Ontario Building Code.

The proposed residential townhouse development consists of two(2) 3-storey stacked townhouse blocks with 24 units each and two (2) 2-storey townhouse blocks with 2 units each, corresponding with a total of 52 units. The development will be serviced by the existing low-level 600 mm diameter feeder main on Colonel Talbot Road.

Water Supply for Fire Protection

The proposed most critical townhouse block "B" at 4040 Colonel Talbot will include provisions for firefighting that include the following consideration based on the provisions of the Ontario Building Code (OBC) clause A.3.2.5.7.

- The fire flow requirements for the most critical and thus all townhouse blocks, serviced by the new proposed on-site fire hydrant (HYD-1), was determined in accordance with the requirements of the OBC. Based on a residential occupancy with an assembly occupancy group C, the fire flow requirement is 75 L/s (4,500L/min) at 140 kPa. The OBC fire flow requirements (4,500 L/min) was used to confirm the adequacy of the proposed water service network and to confirm fire protection. Copies of these calculations are attached.

Design with community in mind

Reference: 4040 Colonel Talbot Road – Water Servicing Brief

Model Scenarios

The scenarios analyzed for this development include average day demand, maximum hour demand, maximum day demand, and age analysis for the site, as well as a fire flow scenario at the proposed onsite hydrant. These analyses are based on the City of London standards and the guidelines set forth in the Ontario Building Code requirements.

The scenarios were analyzed with a boundary condition HGL (Hydraulic Grade Line) of 301.8 meters, as specified in the City of London Design Specifications and Requirements Manual, and with two reservoirs located along the existing 600 mm watermain on Colonel Talbot Road.

The attached modeling results and the summary below confirm that both the existing municipal water network and the proposed watermain servicing the development meet the requirements of the City of London and the Ontario Building Code.

Table 1. Summary of Results

Scenario	Velocity (m/s)		Pressure (psi)		Fire Flow (L/min)	
		Required Maximum	Available Minimum	Required Minimum	Available	Required Per OBC
Average Day	0.02	1.5	54.5	40	n/a	n/a
Max Hour	0.17	1.5	54.5	40	n/a	n/a
Max Day plus Fire (HYD-1)	1.55	2.4	53.4	20	4,500	4,500

Modelling confirms the available fire flow at 20 psi (140kPa) residual pressure for the proposed on-site fire hydrant is in excess of 5,680 L/min. This corresponds with a light blue hydrant colour marker to be installed by City staff. Pressures in the proposed watermain system are within the allowable limit of 40psi – 80psi. Therefore, no issues are anticipated.

Moreover, Flushing will not be required for the watermain once all the units are built, and accompanying demands come online (full build-out). Supporting model results attached, confirming water turnover is within 72 hours in accordance with City standards.

Design with community in mind

Reference: 4040 Colonel Talbot Road – Water Servicing Brief
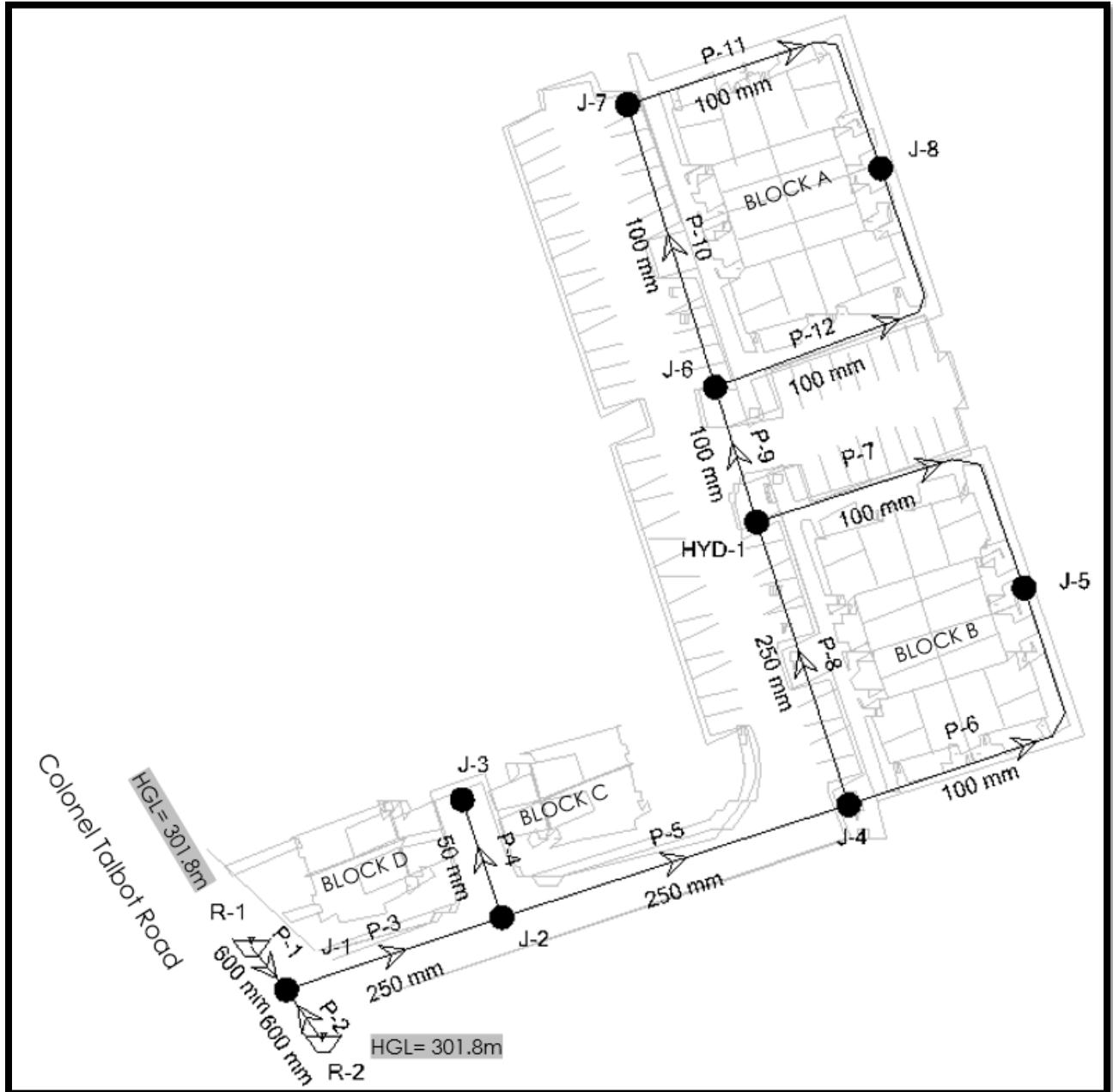
Figure 1: WaterCAD Schematic

Reference: 4040 Colonel Talbot Road – Water Servicing Brief

Closing

We trust this meets your requirements for confirmation that the proposed water servicing strategy is in compliance with the City of London standards and the Ontario Building Code. Should you have any questions or require anything further, please do not hesitate to contact the undersigned.

Sincerely,

STANTEC CONSULTING LTD.

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Community Development
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Dan Vucetic, MESc., P.Eng.
Project Manager, Engineering Team Lead
Associate, Community Development
Phone: 519-675-6655
Dan.Vucetic@stantec.com

Attachment: Site plan concept prepared by Sifton Properties Ltd., dated July 4th 2024
              Table 1 – Demand Summary
              Fire Flow Calculation (per OBC A-3.2.5.7)
              Modeling Results

SUBJECT AREA
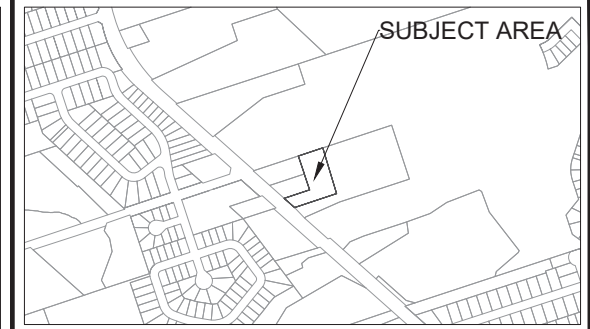
SITE DATA CHART FOR 4040 COLONEL TALBOT ROAD

CURRENT ZONING & PROPOSED NUMBER OF UNITS:
Current Zoning: UR-3, Proposed Zoning: R5-7
Two Stacked Townhouse Buildings, 48 Units
Two Semi-detached Dwellings, 4 Units

Blocks & Unit Counts	Estimated Building Gross Floor Area (GFA)	Ground Floor Area Coverage
BLOCK "A" - 24 Units	2,390.4 m²	597.6 m²
BLOCK "B" - 24 Units	2,390.4 m²	597.6 m²
BLOCK "C" - 2 Units	479.8 m²	177.0 m²
BLOCK "D" - 2 Units	479.8 m²	177.0 m²
Totals: 52 Units	**5,740.4 m²**	**1,549.2 m²**

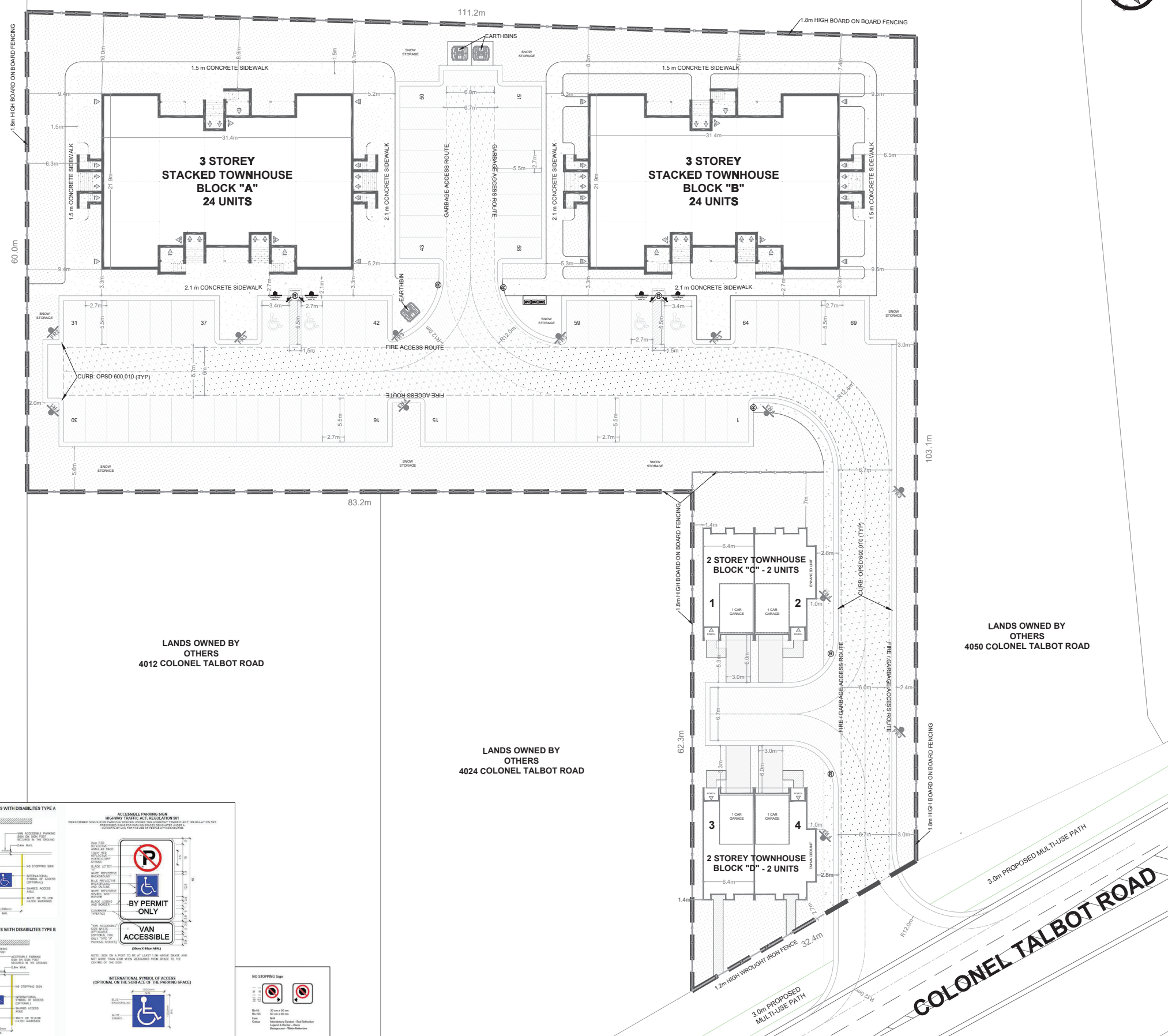| REGULATION	CURRENT REQUIREMENTS	AS SHOWN ON PLAN
LOT AREA MINIMUM	1,000 m²	8,021 m²
LOT FRONTAGE MINIMUM (Meters)	30.0 m	32.4 m
FRONT AND EXTERIOR SIDEYARD SETBACKS (To Main Building)	Front Yard = 6.0 m Ext. Side Yard = 6.0 m	2.7 m ** N/A
REAR AND INTERIOR SIDEYARD SETBACKS MINIMUM	Rear Yard = 6.0 m Interior Side Yard = 6.0 m	7.4 m ** 1.4m **
LANDSCAPE / OPEN SPACE MINIMUM	30 % of lot area	43.9 %
LOT COVERAGE MAXIMUM	45 % of lot area	19.3 %
HEIGHT MAXIMUM (Meters)	12.0 m	12.0 m
DENSITY - 60 UPH	48 units	65 UPH (52 units **)
PARKING (1 Space / Unit)	52	77
VISITOR PARKING (1 Space / 10 Units)	6	6

APPROVAL STAMP

Sifton
SIFTON PROPERTIES LTD.
NEIGHBOURHOOD DEVELOPMENTS
1295 RIVERBEND SOUTH, SUITE 300
LONDON, ONTARIO
N6K 0G2
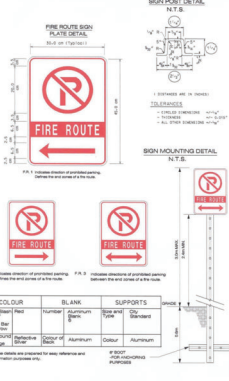
4040 COLONEL TALBOT ROAD
LAMBETH, ONTARIO

SITE PLAN CONCEPT
TWO STACKED TOWNHOUSES, 48 UNITS
TWO SEMI-DETACHED DWELLINGS, 4 UNITS

Project No. : --	Date: 5 July 2024
Drawing No. : --	Scale: 1:250
Drawn By : DCP & AL	
Checked By: DCP & AH	

On-plan labels:

1.8m HIGH BOARD ON BOARD FENCING

111.2m

EARTHBINS

1.5 m CONCRETE SIDEWALK

SNOW STORAGE

3 STOREY STACKED TOWNHOUSE BLOCK "A" 24 UNITS

3 STOREY STACKED TOWNHOUSE BLOCK "B" 24 UNITS

31.4m

2.1 m CONCRETE SIDEWALK

GARBAGE ACCESS ROUTE

FIRE ACCESS ROUTE

CURB: OPSD 600.010 (TYP)

60.0m

103.1m

83.2m

62.3m

LANDS OWNED BY OTHERS 3924 COLONEL TALBOT ROAD

LANDS OWNED BY OTHERS 4012 COLONEL TALBOT ROAD

LANDS OWNED BY OTHERS 4024 COLONEL TALBOT ROAD

LANDS OWNED BY OTHERS 4050 COLONEL TALBOT ROAD

2 STOREY TOWNHOUSE BLOCK "C" - 2 UNITS

1 CAR GARAGE

2 STOREY TOWNHOUSE BLOCK "D" - 2 UNITS

3.0m PROPOSED MULTI-USE PATH

1.2m HIGH WROUGHT IRON FENCE

COLONEL TALBOT ROAD

32.4m

FIRE ROUTE SIGN DETAILS

FIRE ROUTE

FIGURE 7.1: PARKING SPACE FOR PERSONS WITH DISABILITIES TYPE A
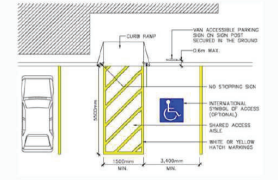
FIGURE 7.2: PARKING SPACE FOR PERSONS WITH DISABILITIES TYPE B

ACCESSIBLE PARKING SIGN

BY PERMIT ONLY

VAN ACCESSIBLE

INTERNATIONAL SYMBOL OF ACCESS (OPTIONAL ON THE SURFACE OF THE PARKING SPACE)

NO STOPPING SIGN

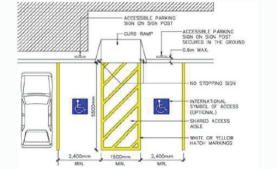| Block	Junction	Land Use	Number of Units	Population	Average Day Demand (L/s)	Average Day Demand (L/MIN)
			TABLE 1			
		Junction Demand Breakdown				
		4040 Colonel Talbot Road				
		161414378				
Block D	J-3	MD	2	5	0.01	0.89
Block C	J-3	MD	2	5	0.01	0.89
Block B	J-5	MD	24	58	0.17	10.27
Block A	J-8	MD	24	58	0.17	10.27

Notes -

* MD: Medium Density Residential
*Average day unit demand is 255 litres per capita per day at 2.4 people per unit for
Medium density residential per CoL DSRM

Subject:	**FIRE FLOW CALCULATIONS AS PER OBC REQUIREMENTS**
Project:	**4040 Colonel Talbot Road**
Project No.:	**161414378**
Client:	**Sifton Propoerties**
Date:	**26-Jul-24**

AVAILABLE FLOW

This site will be serviced from the low level system which has a hydraulic grade of 301.8m.

ONTARIO BUILDING CODE CLAUSE A-3.2.5.7.

TOWNHOUSE UNITS:

$$Q = K \, x \, V \, x \, S_{Tot}$$

Q = MINIMUM SUPPLY OF WATER (L)
K = WATER SUPPLY COEFFICIENT
V = BUILDING VOLUME (m³)
S_{Tot} = TOTAL OF SPATIAL COEFFICIENT VALUES FROM PROPERTY LINE
    EXPOSURES ON ALL SIDES AS OBTAINED FROM THE FORMULA:
where:
$$S_{Tot} = 1.0 + (S_{side1} + S_{side2} + \cdots etc)$$
values are obtained from Figure 1 A-3.2.5.7, OBC, as modified by
Sections 6.3 (e) and 6.3 (f) of this guideline, and
$$S_{Tot} = need \ not \ exceed \ 2.0$$

As per Table 2, Section A-3.2.5.7, OBC

OBC Part 3 Buildings under Building Code	Required Minimum Water Supply Flow
One-storey building with area ≤ 600 m2	1800
All other buildings	2700 (if Q ≤ 108,000 L)
	3600 (if Q >108,000 L and ≤ 135,000 L)
	4500 (if Q >135,000 L and ≤ 162,000 L)
	5400 (if Q >162,000 L and ≤ 190,000 L)
	6300 (if Q >190,000 L and ≤ 270,000 L)
	9000 (if Q >270,000 L)

Major Occupancy Classification

Group C	Residential Occupancies

Water Supply Coefficient - K

As per Table 1, Section A-3.2.5.7, OBC	K= 23

*Assuming Building is of combustible construction in absence of information

Total Building Volume

Floor	Area (m²)	Height (m)	Volume (m³)
4 Storey Stacked Towhouse	630	9.6	6048
Total			6048

*Building area and heights conservative estimate based on Site Plan
*Applicable to all Stacked townhouse blocks

Exposures

	Separation (m)	Spatial Coeff
North	30	0.00
South	11	0.00
East	45	0.00
West	33	0.00
S_{tot}		1.00

*No structures in immediate vicinity of proposed blocks; seperation available greater than 10m
*Seperations of 10m and greater result in a spatial cpefficient of 1

Minimum Water Supply

$$Q = K \, x \, V \, x \, S_{Tot}$$

Q = 23 x   6048 x 1.00 =   139,104 L
4500 (if Q >135,000 L and ≤ 162,000 L)

Required Fire Flow (from Table 2 above)	=	4500	L/min
	=	75	L/s

Active Scenario: Average Day

Label	Length (m)	Start Node	Stop Node	Diameter (mm)	Hazen-Williams C	Flow (L/min)	Velocity (m/s)
P-1	7.3	R-1	J-1	600	120	11.657	0.00
P-2	8.6	J-1	R-2	600	120	-10.663	0.00
P-3	30.4	J-1	J-2	250	110	22.320	0.01
P-4	16.6	J-2	J-3	50	100	1.780	0.02
P-5	48.8	J-2	J-4	250	110	20.540	0.01
P-6	49.9	J-4	J-5	100	100	5.186	0.01
P-7	48.8	J-5	HYD-1	100	100	-5.084	0.01
P-8	39.8	J-4	HYD-1	250	110	15.354	0.01
P-9	18.9	HYD-1	J-6	100	100	10.270	0.02
P-10	39.6	J-6	J-7	100	150	4.741	0.01
P-11	46.9	J-8	J-7	100	100	-4.741	0.01
P-12	49.3	J-6	J-8	100	100	5.529	0.01

Active Scenario: Average Day

Label	Elevation (m)	Demand (L/min)	Pressure (psi)
HYD-1	262.70	0.000	55.5
J-1	262.40	0.000	55.9
J-2	262.20	0.000	56.2
J-3	262.30	1.780	56.1
J-4	262.35	0.000	56.0
J-5	263.10	10.270	54.9
J-6	262.95	0.000	55.1
J-7	263.40	0.000	54.5
J-8	263.25	10.270	54.7

Active Scenario: Age Analysis
Current Time: 336.00 hours

Label	Length (m)	Start Node	Stop Node	Diameter (mm)	Hazen-Williams C	Flow (L/min)	Velocity (m/s)	Age (Calculated) (hours)
P-1	7.3	R-1	J-1	600	120	11.657	0.00	1.429
P-2	8.6	J-1	R-2	600	120	-10.663	0.00	1.856
P-3	30.4	J-1	J-2	250	110	22.320	0.01	3.873
P-4	16.6	J-2	J-3	50	100	1.780	0.02	4.583
P-5	48.8	J-2	J-4	250	110	20.540	0.01	5.401
P-6	49.9	J-4	J-5	100	100	5.186	0.01	7.002
P-7	48.8	J-5	HYD-1	100	100	-5.084	0.01	9.118
P-8	39.8	J-4	HYD-1	250	110	15.354	0.01	7.431
P-9	18.9	HYD-1	J-6	100	100	10.270	0.02	8.615
P-10	39.6	J-6	J-7	100	150	4.741	0.01	9.277
P-11	46.9	J-8	J-7	100	100	-4.741	0.01	10.471
P-12	49.3	J-6	J-8	100	100	5.529	0.01	9.315

Active Scenario: Age Analysis

Current Time: 336.00 hours

Label	Elevation (m)	Demand (L/min)	Pressure (psi)	Age (Calculated) (hours)
HYD-1	262.70	0.000	55.5	8.540
J-1	262.40	0.000	55.9	3.366
J-2	262.20	0.000	56.2	4.480
J-3	262.30	1.780	56.1	4.785
J-4	262.35	0.000	56.0	6.421
J-5	263.10	10.270	54.9	8.727
J-6	262.95	0.000	55.1	8.780
J-7	263.40	0.000	54.5	9.873
J-8	263.25	10.270	54.7	10.511

Active Scenario: Max Hour

Label	Length (m)	Start Node	Stop Node	Diameter (mm)	Hazen-Williams C	Flow (L/min)	Velocity (m/s)
P-1	7.3	R-1	J-1	600	120	90.921	0.01
P-2	8.6	J-1	R-2	600	120	-83.175	0.00
P-3	30.4	J-1	J-2	250	110	174.096	0.06
P-4	16.6	J-2	J-3	50	100	13.884	0.12
P-5	48.8	J-2	J-4	250	110	160.212	0.05
P-6	49.9	J-4	J-5	100	100	40.448	0.09
P-7	48.8	J-5	HYD-1	100	100	-39.658	0.08
P-8	39.8	J-4	HYD-1	250	110	119.764	0.04
P-9	18.9	HYD-1	J-6	100	100	80.106	0.17
P-10	39.6	J-6	J-7	100	150	36.980	0.08
P-11	46.9	J-8	J-7	100	100	-36.980	0.08
P-12	49.3	J-6	J-8	100	100	43.126	0.09

Active Scenario: Max Hour

Label	Elevation (m)	Demand (L/min)	Pressure (psi)
HYD-1	262.70	0.000	55.5
J-1	262.40	0.000	55.9
J-2	262.20	0.000	56.2
J-3	262.30	13.884	56.0
J-4	262.35	0.000	56.0
J-5	263.10	80.106	54.9
J-6	262.95	0.000	55.1
J-7	263.40	0.000	54.5
J-8	263.25	80.106	54.7

Active Scenario: Max Day+Fire @HYD-1

Label	Length (m)	Start Node	Stop Node	Diameter (mm)	Hazen-Williams C	Flow (L/min)	Velocity (m/s)
P-1	7.3	R-1	J-1	600	120	2,390.902	0.14
P-2	8.6	J-1	R-2	600	120	-2,187.217	0.13
P-3	30.4	J-1	J-2	250	110	4,578.119	1.55
P-4	16.6	J-2	J-3	50	100	6.230	0.05
P-5	48.8	J-2	J-4	250	110	4,571.888	1.55
P-6	49.9	J-4	J-5	100	100	233.964	0.50
P-7	48.8	J-5	HYD-1	100	100	198.019	0.42
P-8	39.8	J-4	HYD-1	250	110	4,337.924	1.47
P-9	18.9	HYD-1	J-6	100	100	35.945	0.08
P-10	39.6	J-6	J-7	100	150	16.594	0.04
P-11	46.9	J-8	J-7	100	100	-16.594	0.04
P-12	49.3	J-6	J-8	100	100	19.351	0.04

Active Scenario: Max Day+Fire @HYD-1

Label	Elevation (m)	Demand (L/min)	Pressure (psi)
HYD-1	262.70	4,499.999	53.4
J-1	262.40	0.000	55.9
J-2	262.20	0.000	55.7
J-3	262.30	6.230	55.5
J-4	262.35	0.000	54.6
J-5	263.10	35.945	53.1
J-6	262.95	0.000	53.0
J-7	263.40	0.000	52.4
J-8	263.25	35.945	52.6

Active Scenario: Rated Hydrant Capacity

Label	Fire Flow (Available) (L/min)	Pressure (Residual Lower Limit) (psi)	Pressure (psi)	Junction w/ Minimum Pressure (System)	Pipe w/ Maximum Velocity	Velocity of Maximum Pipe (m/s)
HYD-1	20,608.004	20.0	55.5	J-7	P-3	7.02