Lot 34 McDonald Drive Picton

Wentworth offices

SERVICING REPORT

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

September 1, 2022

JEI Project 1570-2

Table of Contents

1. Introduction

The purpose of this analysis is to determine the servicing requirements for the proposed development at Lot 34 on Macdonald Drive in the Town of Picton, in the Prince Edward Industrial Park. The intent of this report is to identify the existing and available services to the land, and identify requirements for new servicing. The site plan of the development is attached as Appendix A.

The legal description of the property is Part 10 Plan 47R-8409, located in Lot 3 Concession 1 northwest of Carrying Place, Geographic Township of Hallowell, Municipality of the County of Prince Edward. Lot 34 is an identifier assigned in the servicing and SWM studies, which has no legal status.

This report is to determine the perimeter servicing available and confirm sufficient capacity is available within the existing sanitary and water works to service the lands, and identify requirements for new services for the development.

2. Existing Conditions

The site is presently vacant, and drains generally southeasterly to the McDonald Drive.

McDonald Drive is constructed to a rural standard, with roadside ditches for drainage. Municipal sanitary sewer and water is available on the street.

3. Proposed Development

The proposed development within the 0.5 ha parcel consists of a 475 m² industrial building, 920 m² asphalt parking and 2300 m² of gravel area. Proposed usage includes warehouse space containing a wood shop, mechanics shop and offices consisting of 2 private offices, a work room for 3-4 staff, a small meeting and a lunch room.

4. Sanitary Sewer

There is an existing municipally owned 200 mm diameter sanitary sewer on McDonald Drive adjacent to the property. Existing services are shown on plans by Totten Sims Hubicki project 14-8678-02 dated April 1989.

There is an existing sanitary MH located at the south corner of the site, however, no information is currently available or the purpose of this structure is not known. Therefore, a new sanitary service from McDonald Drive is proposed.

Based on the usage of the building, and the minimal facilities provided in the building, a 150 mm sanitary service at 2% gradient is more than sufficient for expected flows. A new tee connection to the main is proposed, with a manhole to be located at the property line. This manhole can be used by the municipality for effluent sampling.

5. Water Service

Provision of municipal water service will be required to meet the requirements for domestic water demand, and for fire protection. There is an existing 200 mm watermain on McDonald Drive across the frontage of the property.

5.1. Domestic Water Demand

Due to the minimal number of facilities provided in the building, a 50 mm water service will be more than adequate for provision of domestic water. A new connection to the existing main is proposed, with a shut-off valve and box located at the street line.

5.2. Water for Fire Protection

To meet the requirements for fire protection, the system should maintain a minimum pressure of 140 kPa (20 psi) at ground level everywhere in the system during a maximum day plus fire flow demand condition.

Detailed Fire Flow calculations for the proposed building as per Fire Underwriters Survey for Water Supply for Public Fire Protection - 1999 (FUS) are attached as Appendix B. The building is constructed of normal construction materials, with normal occupancy, and without sprinklers. The building requires a fire flow of 117 litres per second.

As shown on the attached mapping provided by the municipality, available pressure during peak hour is between 60 and 80 psi, and the available fire flow at 20 psi is shown as being between 75 and 117 l/s, which meets the required 117 l/sec, and is therefore sufficient.

The distance from the closest municipal hydrant to the building is shown on the servicing plan.

6. Conclusions and Recommendations

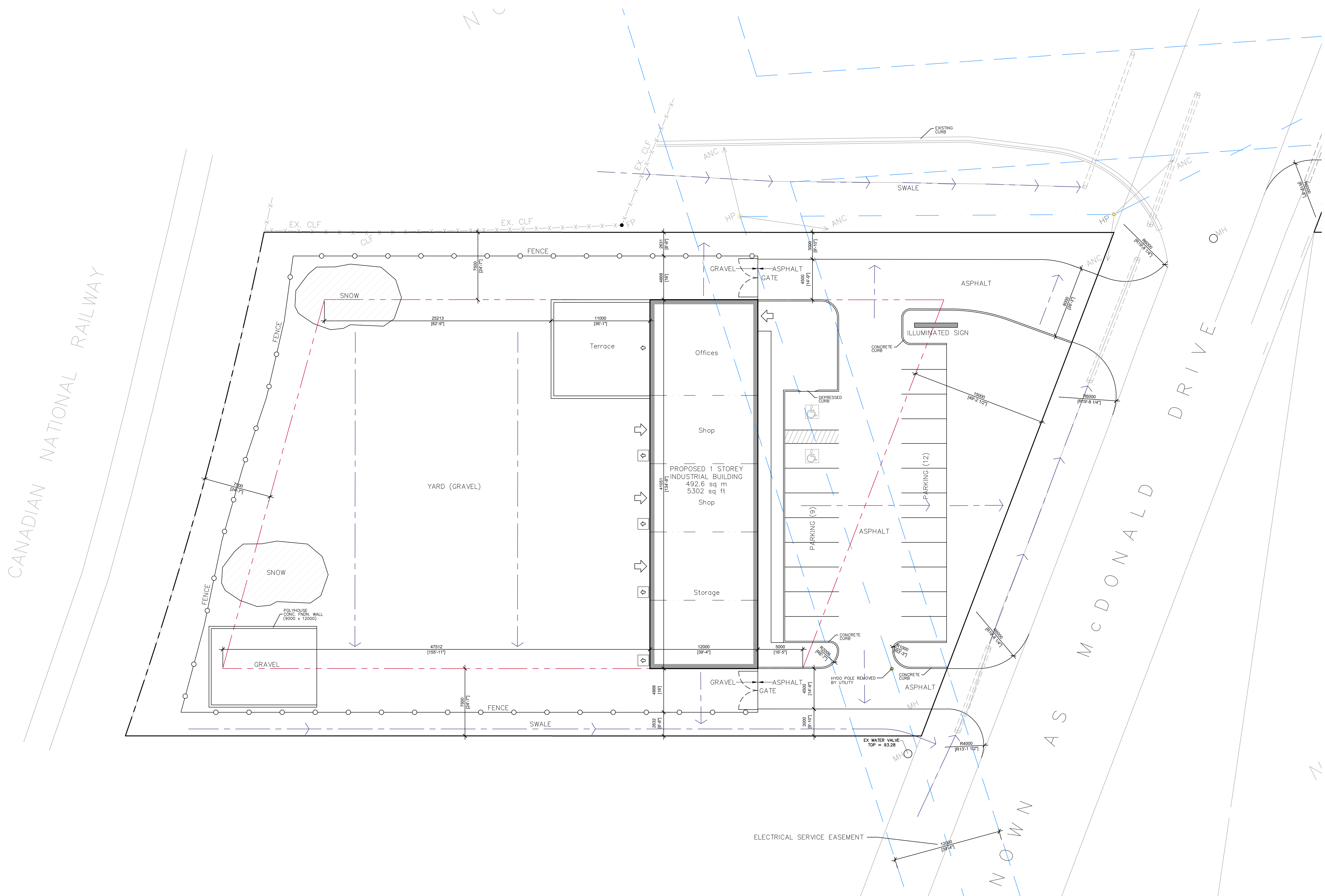
Based on the above, the following conclusions are made, and recommendations presented.

- A 150 mm sanitary service for this site will be provided from MacDonald Street, to meet the requirements of OBC.

- A 50 mm water service for this site will be provided from MacDonald Street, to meet the requirements of OBC. Fire protection is adequately provided by the existing municipal system.

Appendix A

Site Plan



1 Site Plan A020

5 0 5 10
SCALE: (in metres)

sza
Shoalts and Zaback Architects Ltd

Project North

Certificate of Practice Number: 2438
4 Cataraqui Street, Suite 206, Kingston, ON K7K 1Z7
tel. 613 541 0776 fax. 613 541 0804
mail@szarch.com www.szarchitects.ca

Revision	Description	Date
1	ISSUE FOR SITE PLAN CONTROL	

Project
New Offices & Shops

Location
Lot 34, McDonald Drive
Picton, ON

Client
Wentworth Landscapes

Drawing
Site Plan

Drawn by: HLG	Date:
File Name: 21105-A022	Scale: 1:200
Client Project #:	Drawing Number: A022
Project #: 21105 — Revision #: 1	

Appendix B

Fire Flow Calculations
Water distribution maps

Appendix C
Lot 34 McDonald Drive - Wentworth
Calculation of required fire flows using Fire Underwriters (1999) methodology

	distance (m)	maximum charge	applied percentage of maximum charge	applied charge/credit		Notes
approximate building footprint (m2)					492.6	
number of storeys					1	
A = total floor area (m2)					492.6	
C = coefficient related to type of construction *1					1	Coefficient for ordinary construction
Step 1 calculation of (F=220 x C x A^0.5) in litres per minute					4883	
Increase (reduction) for occupancy characteristics				15%	732	Increase for wood shop
Step 2 - calculation result (l/min)					5615	
Step 3 - reduction for sprinklers (l/min)				0%	0	
Step 4 - Separation charges (see table)						
east side	>45	0%	100%	0%		To prescribed zoning setback on opposite side of McDonald drive
north side	10.1	15%	100%	15%		To prescribed zoning setback on north lot line
west side	>45	0%	100%	0%		to far side of Millenium Trail
south side	10.1	15%	100%	15%		To prescribed zoning setback on south lot line
total separation charges as a percentage of step 2 value (maximum = 75%) (l/min)				30%	1685	
TOTAL REQUIRED FIRE FLOW (Step 2, plus charges and credits, rounded to nearest 1000 litres/minute)					**7000**	
TOTAL REQUIRED FIRE FLOW (l/s)					**117**	
TOTAL REQUIRED FIRE FLOW (USGPM)					**1848**	

Separation distance (m)	**Maximum Charge**
0 to 3	25%
3.1 to 10	20%
10.1 to 20	15%
20.1 to 30	10%
30.1 to 45	5%

The total percentage shall not exceed 75%.

Picton
Pressure during PHD

Pressure (psi)	Diameter (mm)
Less than 40	50
40.00 ~ 60.00	100
60.00 ~ 80.00	150
Greater than 80	200
	250
	300
	350
	450

0 137.5 275 550
Meters

N

One Picton HLP operating

WL - 76.55m

Sandbank houses (pending)

Barker St. (pending)

Talbot Ridge (pending)

Frank St. (pending)

Dedicated (private) booster pump for each house

Privately owned WM

WM owned by No Frills

WL-139.6m

Two Macaulay Village BPS are operating

Spring St. (pending)

Picton
Available Fire Flow during MDD

Available Flow (L/s)	Diameter (mm)
less than 67.00	50
67.00 ~ 75.00	100
75.00 ~ 117.00	150
117.00 ~ 150.00	200
150.00 ~ 200.00	250
200.00 ~ 239.00	300
greater than 239	350
	450

0 137.5 275 550
Meters

N

Two Picton HLP operating

WL - 76.55m

Sandbank houses (pending)

Barker St. (pending)

Talbot Ridge (pending)

Frank St. (pending)

Dedicated (private) booster pump for each house

Privately owned WM

WM owned by No Frills

WL-139.2m

Two Macaulay Village BPS are operating

Spring St. (pending)