



Enhancing our communities



209806 Highway 26, Craigleith

FUNCTIONAL SERVICING REPORT

Pinnacle Building Group Corp.

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1 Introduction

Tatham Engineering Limited has been retained by Pinnacle Building Group Corp. to prepare a Functional Servicing Report in support of site plan approval for the construction of a residential condominium development at 209806 and 209808 Highway 26 in the Town of The Blue Mountains.

1.1 OBJECTIVE

The primary objective of this report is to address the servicing requirements of the Town of the Blue Mountains and Grey County with respect to the existing and proposed sanitary servicing, water supply and distribution, drainage and stormwater management (SWM), safe vehicular access to the site and utilities common to support a residential development (phone, hydro, cable, communications, TV, gas, etc.).

1.2 SUPPORTING REPORTS

Additional reports have been prepared in conjunction with this report in support of the proposed residential development, including:

- *209806 Highway 26 Stormwater Management Report* prepared by Tatham Engineering; and
- *209806 Highway 26 Traffic Impact Brief* prepared by Tatham Engineering.



2 Development Site

2.1 SITE LOCATION & DESCRIPTION

The site is legally described as Part Lots 150 & 151 Plan 14 The Blue Mountains. The site is located on Ontario Highway 26 and is bound by single detached residential dwellings to the west and south, an Esso gas station to the east and Highway 26 to the north. The subject property is zoned as R2 *Residential*.

2.2 SURFACE CONDITIONS

A topographic survey of the subject property was completed by Tatham in December 2021. The high spot of the subject site (180.53) is located at the southeast corner of the site. The subject property is fairly flat and generally slopes from the south to the north at an average gradient of less than 1% to existing ditches along Highway 26, eventually outletting to Georgian Bay.

The 0.68 ha site is currently occupied by a 480 m² motel building and 950 m² of driveway with the remainder of the site being treed or unmaintained lawn.

2.3 PROPOSED DEVELOPMENT

The proposed development will remove the existing motel building and driveway and feature 4 townhouse blocks, two comprised of 5 units, one comprised of 4 units and one comprised of 3 units for a total of 17 units as well as associated driveways and additional parking. The proposed development is shown on the Site Grading Plan (SG01).



3 Water Supply & Distribution

3.1 EXISTING INFRASTRUCTURE

There is an existing 200 mm watermain running east-west on the south side of Highway 26.

The Town of The Blue Mountains Water Treatment Plant has a water supply capacity of 16,390 m³/day (including the 1,250 m³/day received from the Town of Collingwood), as per *The Town of The Blue Mountains 2020 Year End Water and Wastewater Capacity Assessment*. The report indicates that 2,345 m³/day is available (86% of rated capacity).

3.2 PROPOSED INFRASTRUCTURE

The proposed water strategy for the 209806 Highway 26 development includes connecting to the 200 mm diameter watermain on the south side of Highway 26. A 150 mm diameter water main will convey flows onsite to the individual units.

Water meters will be installed internal to each townhouse block to record water consumption. The proposed buildings will be equipped with backflow prevention devices in accordance with the Ontario Building Code and the Town's water by-law. An existing fire hydrant is located along Highway 26 on the frontage of the project site. It is proposed an additional fire hydrant be added near the south end of the project site to provide appropriate access for firefighters. An auto-flusher with upstream water meter will be installed north of the fire hydrant.

See the Site Servicing Plan (SS01) for the proposed water system details.

3.3 WATER DEMANDS ASSESSMENT

3.3.1 Water Supply Demands

Water supply demands for the proposed development have been calculated based on the Ministry of the Environment Conservation and Parks (MECP) guidelines and the Town of The Blue Mountains (TOBM) design standards as noted below:



Table 1: Water Supply Design Criteria

DESIGN CRITERIA		SOURCE
Residential Population	2.30 persons/unit	TOBM
Average Daily Demand Per Person	450 L/person/day	TOBM
Maximum Daily Demand Factor	8.9	MECP
Peak Hourly Demand Factor	13.4	MECP
Minimum Fire Flow	200 L/s	FUS
Allowable Pressure Ranges		
Maximum Pressure	550 kPa (80 psi)	TOBM
Peak Hour Minimum Pressure	275 kPa (40 psi)	TOBM
Maximum Day Plus Fire Suppression Minimum Pressure	140 kPa (20 psi)	TOBM

Note that peaking factors were interpolated from Table 3-3 of the *Design Guidelines for Drinking-Water Systems* (MOE 2008) based on the design population. Minimum fire flows were calculated based on Table 8 of the *Water Supply For Public Protection* (FUS 2019).

Water demand calculations are provided in Appendix A and summarized as follows:

$$\begin{aligned}\text{Design Population (P)} &= 2.3 \text{ persons/unit} \times 17 \text{ units} \\ &= 39.1 \text{ persons}\end{aligned}$$

$$\begin{aligned}\text{Average day demand (ADD)} &= P \times \text{Average daily demand per person} \\ &= 39.1 \text{ persons} \times 450 \text{ L/person/day} \\ &= 17,595 \text{ L/day} \\ &= 17.6 \text{ m}^3/\text{day} \text{ (0.20 L/s)}\end{aligned}$$

$$\begin{aligned}\text{Peak Hour} &= \text{ADD} \times \text{Peak hourly factor} \\ &= 17.6 \text{ m}^3/\text{day} \times 13.1 \\ &= 230.5 \text{ m}^3/\text{day} \text{ (2.7 L/s)}\end{aligned}$$



Maximum day demand (MDD) = ADD x Maximum daily factor

$$= 17.6 \text{ m}^3/\text{day} \times 8.7$$

$$= 153.1 \text{ m}^3/\text{day} (1.8 \text{ L/s})$$

Maximum day plus fire flow = MDD + Minimum fire flow

$$= 1.8 \text{ L/s} + 200 \text{ L/s}$$

$$= 201.8 \text{ L/s}$$

3.3.2 Water Supply Demands

As outlined above, the Town of The Blue Mountains drinking water treatment plant has a rated capacity of 16,390 m³/day, with 2,345 m³/day available. The proposed maximum day demand of 153.1 m³/day for the proposed development could be accommodated by the treatment plant (excess capacity is 2,192 m³/day).



4 Sanitary Sewage Collection & Conveyance

4.1 EXISTING INFRASTRUCTURE

An existing 300 mm diameter sanitary sewer is located on the south side of Highway 26 flowing east to west. The ultimate discharge location is the Craigleith Wastewater Treatment Plant (WWTP).

Reviewing the Town of the Blue Mountains *Water & Wastewater Capacity Assessment* for 2020, the Craigleith Wastewater Treatment Plant (WWTP) the plant has a firm-built capacity of 8,133 m³/day. The report indicates that 1,467 m³/day is available (82 % of rated capacity).

4.2 PROPOSED INFRASTRUCTURE

Sanitary discharge from the proposed development will drain to the Highway 26 sanitary sewer via 80 m of 200 mm diameter pipe. The site will connect to the existing sanitary line at Sanitary Maintenance Hole 160. The proposed sanitary sewer system can be seen on the Site Servicing Plan (SS01).

4.3 SANITARY DEMANDS ASSESSMENT

4.3.1 Sewage Demands

A sanitary design sheet was prepared to quantify the sewage demands for the 17-unit development. The design sheet is included in Appendix B and summarized below:

Design Population (P)	= 2.3 persons/unit x 17 units
	= 39.1 persons
Average day flow (ADF)	= 0.36 L/s
Peak Flow	= 1.04 L/s

4.3.2 Sewage Capacity

As noted above, the Craigleith WWTP has an average day flow capacity of 8,133 m³/day, with 1,467 m³/day available. The average day flow of 0.36 L/s (31.1 m³/day) for the proposed development can be accommodated by the treatment plant (excess capacity is 1,435 m³/day).



5 Stormwater Management

A separate Stormwater Management (SWM) Report has been prepared by Tatham Engineering to address drainage and stormwater management requirements for the development. A summary of the SWM servicing strategy is as follows:

- Stormwater management quantity control will be provided by an underground storage system under the internal road. Stormwater will be discharged from the storage unit at pre-development peak flow rates up to and including the 100-year storm event from the site to the existing ditches on Highway 26.
- A Stormceptor EFO4 located downstream of the underground system will provide a minimum of 80% total solids removal and will treat 90% of the surface runoff generated from its contributing drainage area.

The Stormwater Management Report should be read in conjunction with this report.



6 Transportation

A Traffic Impact Brief has been completed by Tatham Engineering under separate cover. A summary of the conclusions and recommendations are as follows.

- Given the limited traffic volume to be generated by the development of the site and in considering the traffic volumes on the road system, such will not have any significant operational impacts on the operations of the local road system. The operational assessment of the site access points indicates that these intersections will experience excellent levels of service and minimal traffic delays for exiting traffic. Therefore, no operational improvements are required to support the development.
- The proposed locations of the site access points were also reviewed to ensure the provision of adequate spacing between adjacent intersections. In consideration of the road classifications, projected traffic volumes and the Transportation Association of Canada intersection spacing guidelines, the proposed locations are considered appropriate.
- The available sight lines on both Alice Street and Alfred Street to/from the east and west of the site access points are considered appropriate for a design speed of 60 km/h. Vehicles manoeuvring to and from the site can do so in a safe and efficient manner. As such, no further improvements are required to address sight line constraints.

The Traffic Impact Brief should be read in conjunction with this report.



7 Utilities

7.1 ELECTRICAL SERVICES

Electrical services fronting the proposed site are available along Highway 26. Tatham Engineering will be reviewing the proposed development from an electrical servicing standpoint and will confirm if external plant upgrades are required to service the site following submission of an electrical distribution plan. At the time of this report Hydro One confirmed that their system has sufficient capacity to service the proposed development with the expectation that it will be reconfirmed at the time the project proceeds.

7.2 GAS SERVICES

Enbridge was contacted about their existing gas mains in the area and their ability to service the proposed development. Enbridge has a high-pressure gas main adjacent to the proposed development, on the south side of Highway 26. At the time of contact Enbridge confirmed that the main has sufficient capacity to service the site, to be reconfirmed when the project proceeds to development.

7.3 TELEPHONE & INTERNET SERVICES

Bell has been contacted regarding available services in the area. Bell confirmed they have services along Highway 26 that could service the proposed development.

Rogers has been contacted regarding available services in the area. Rogers confirmed they have services along Highway 26 that could service the proposed development.



8 Summary

As outlined above, existing infrastructure surrounding the subject property can adequately service the development for sanitary sewage, potable water, hydro, natural gas, and telecommunications. Additionally, a Stormwater Management Plan submitted under separate cover confirms that applicable runoff, quantity, quality and erosion targets will be met. A Traffic Impact Study submitted under a separate cover confirms that the proposed development will not adversely affect the existing surrounding road network. A summary of the servicing strategy is as follows:

- Potable water will be provided by connecting into the existing 200 mm diameter watermain on the south side of Highway 26 with a proposed 150 mm watermain that extends into the subject site underneath the road corridor.
- Sanitary flows from the proposed development will drain to the existing 300 mm diameter sanitary sewer along Highway 26, connecting via SAN MH160.
- Stormwater management quantity control will be provided by an underground storage system under the internal roadway of the proposed site. Stormwater will discharge into the Highway 26 ditch.
- Stormwater management quality control will be provided by a Stormceptor EFO4 to provide at least 80% total solids removal and treat 90% of the surface runoff generated from its contributing drainage area.
- Electrical services fronting the proposed site are available along Highway 26. Tatham Engineering will review electrical servicing and confirm if external plant upgrades are required to service the site. Capacity of the existing high pressure gas main on Highway 26 will require confirmation. Bell has confirmed the site can be serviced with fibre optic cable north of the site.

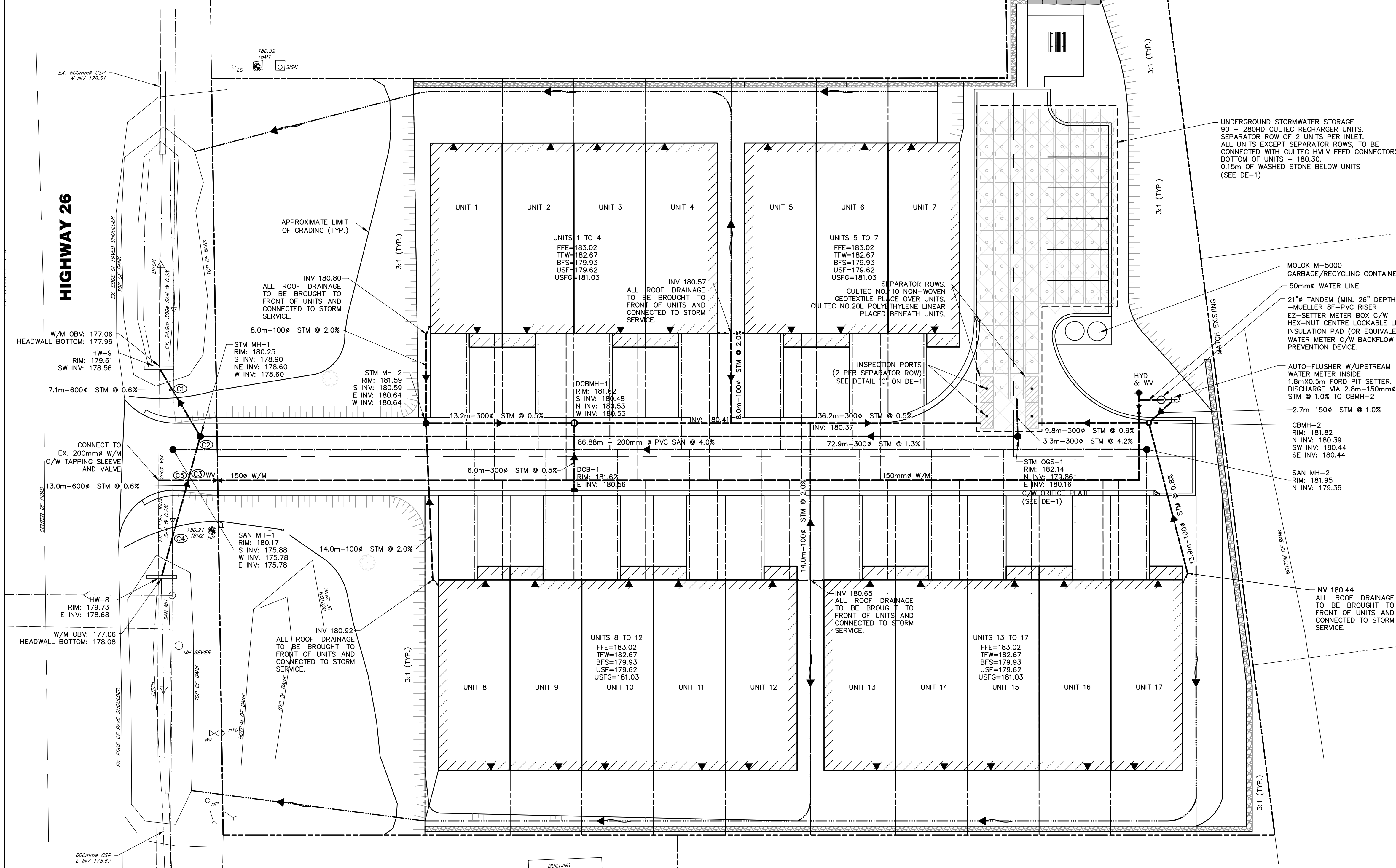
Additional details related to the various servicing components will be provided at the detailed design stage.



CROSSING TABLE				
	SANITARY SEWER	STORM SEWER	WATER MAIN	CLEARANCE
C1	OBV: 176.09	INV: 178.57		2.48m
C2	OBV: 176.17	INV: 178.61		2.44m
C3		INV: 178.62	OBV: 177.80	0.82m
C4	OBV: 176.06	INV: 178.66		2.60m
C5	OBV: 176.07		INV: 176.86	0.79m



KEYPLAN



UNDERGROUND STORMWATER STORAGE
90 - 280HD CULTEC RECHARGER UNITS.
SEPARATOR ROW OF 2 UNITS PER INLET.
ALL UNITS EXCEPT SEPARATOR ROWS, TO BE
CONNECTED WITH CULTEC HVLV FEED CONNECTORS
BOTTOM OF UNITS - 180.30.
0.15m OF WASHED STONE BELOW UNITS
(SEE DF-1)

- MOLOK M-5000
- GARBAGE/RECYCLING CONTAINERS
- 50mmØ WATER LINE
- 21"Ø TANDEM (MIN. 26" DEPTH)
- MUELLER 8F-PVC RISER
- EZ-SETTER METER BOX C/W
- HEX-NUT CENTRE LOCKABLE LID
- INSULATION PAD (OR EQUIVALENT)
- WATER METER C/W BACKFLOW
- PREVENTION DEVICE

AUTO-FLUSHER W/UPSTREAM
WATER METER INSIDE
1.8mX0.5m FORD PIT SETTER.
DISCHARGE VIA 2.8m-150mmØ
STM @ 1.0% TO CBMH-2

2.7m-150 ϕ STM @ 1.0%

—CBMH-2
RIM: 181.82
N INV: 180.39
SW INV: 180.44
SE INV: 180.44

SAN MH-2
RIM: 181.95
N INV: 179.36

OF BANK

INV. 180.44

ALL ROOF DRAINAGE
TO BE BROUGHT TO
FRONT OF UNITS AND
CONNECTED TO STORM

SERVICE.

1

1

806 HIGHWAY OF THE BLUE MOUNTAINS

SERVICING BULK

SERVICING PL

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BENCHMARKS

TBM1 - ELEVATION 180.32m
ELEVATIONS ARE GEODETIC AND REFER TO THE TOP OF
MOST NORTH-WEST BOTH ON NORTH SIGN POST FOR
ESSO GAS STATION SIGN.

TBM2 - ELEVATION 180.21m
ELEVATIONS ARE GEODETIC AND REFER TO THE DOUBLE
NAIL SPIKE IN SOUTH FACE OF HYDRO POLE ON WEST
SIDE OF EXISTING PAVED DRIVEWAY ENTRANCE TO SITE.

NOTES

LEGAL SURVEY INFORMATION AND LOT DIMENSIONS
SHOWN ON THIS PLAN ARE TAKEN FROM A SURVEY
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No.	REVISION DESCRIPTION	DATE
1.	1ST SUBMISSION	2022-09-1

ENGINEER STAMP

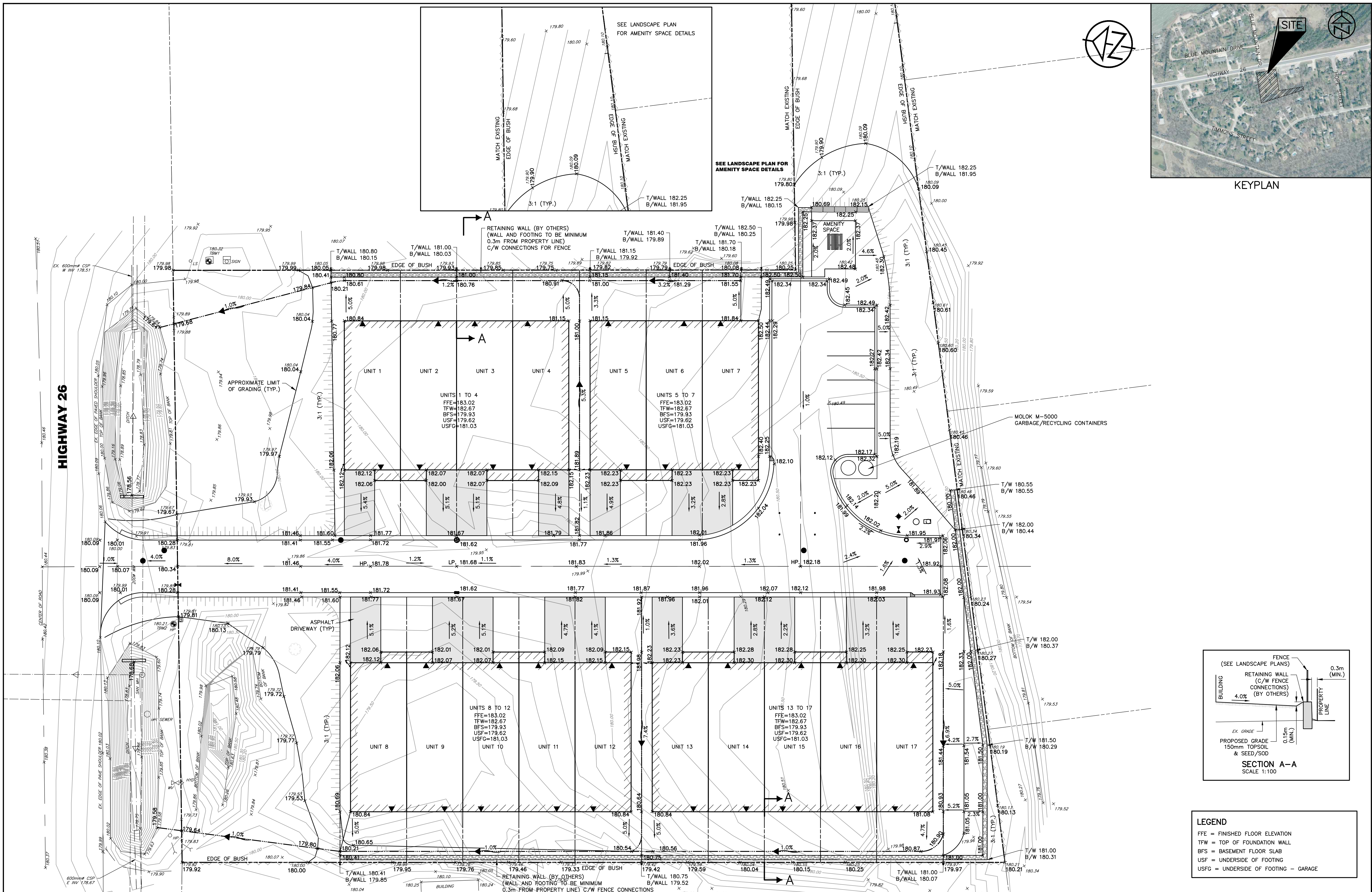


209806 HIGHWAY 26
TOWN OF THE BLUE MOUNTAINS

SITE SERVICING PLAN



DESIGN: MM	FILE: 121258	DWG: SS-1
DRAWN: MM	DATE: FEB 2022	
CHECK: RS	SCALE: 1:200	



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			1.	1ST SUBMISSION	2022–09–13					
							DESIGN: MM	FILE: 121258	DWG:	
								DRAWN: MM	DATE: FEB 2022	SG-1
								CHECK: RS	SCALE: 1:200	

Appendix A: Water Demand Calculations

Project: 209806 HWY 26

Date: August 2022

File No.: 121258

Designed: JB

Subject: Water Supply Calculations

Checked: AS

MOE GUIDELINES

Sewage Generation for Domestic Water Demand:	450 L/cap/day	As per TOBM Development Standards
Residential Population	2.30 PPU	As per TOBM Development Standards

Multi-Storey High Density Residential Building (32 units)

Total Units	=	17	
Number of Persons	=	39	
Average Daily Flow	=	17550 L/day	
Maximum Day Factor	=	8.7	As per MOE Design Guidelines for Drinking Water Systems (2008)
Peak Hour Factor	=	13.1	As per MOE Design Guidelines for Drinking Water Systems (2008)

Maximum Day Demand: 1.77 L/s

Peak Hour Demand: 2.66 L/s

Fire Suppression: 200.00 L/s As per FUS

Design Flow: 201.77 L/s Maximum Day Demand Plus Fire Flow

Appendix B: Sanitary Design Sheet

Engineer Stamp

Andrew Schoof	Aug 2022
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