



**re: Geotechnical Review of Grading Plan & Site Servicing
Proposed Multi-Storey Building
384 Arlington Avenue – Ottawa, Ontario**
**to: Windmill Developments – Kristen Jorgensen –
Kristen.jorgensen@windmilldevelopments.com**
date: October 7, 2024
file: PG6263-MEMO.03

Further to your request and authorization, Paterson Group (Paterson) prepared the current memorandum to document our review of the grading and servicing plans for the proposed multi-storey building to be located at the aforementioned site. This memorandum should be read in conjunction with Paterson Group Report PG6263-1 Revision 1 dated October 7, 2024.

Grading Plan Review

Paterson reviewed the following drawings prepared by CIMA+ regarding the aforementioned development:

- Project No. 12805 – Drawing No. C003 – REV 1 – Grading and Road Reinstatement Plan – dated October 4, 2024.

Based on our review of the above noted drawing and the soils present at the subject site, the grading is considered acceptable from a geotechnical perspective. A silty clay deposit was not encountered during the geotechnical investigation and therefore no permissible grade raise restrictions have been recommended at the subject site.

Site Servicing Plan Review

Paterson reviewed the following drawings prepared by CIMA+ regarding the aforementioned development:

- Project No. 12805 – Drawing No. C004 – REV 1 – Servicing Plan – dated October 4, 2024.

Based on our review of the site servicing plan, sufficient soil cover has been provided to the proposed watermain, sanitary services and the primary stormwater services. However, the emergency stormwater overflow services were noted to be provided with insufficient soil cover. Reference should be made to Figure 1 – Site Servicing Plan Review, attached.





Geotechnical Recommendations

Where insufficient soil cover (i.e. less than 2.1 m of soil cover is present above the obvert of the pipe) is available, the following frost protection criteria should be followed:

Table 1 – Rigid Insulation Recommendations for Storm Sewer Pipes with Reduced Soil Cover			
Thermal Condition	Soil Cover Provided (mm)	Insulation Dimensions	
		Thickness (mm)	Extension (mm)
Unheated	600 to 900	125	Extend 1200 mm horizontally beyond edge face of the pipe
	900 to 1200	100	Extend 1200 mm horizontally beyond edge face of the pipe
	1200 to 1500	75	Extend 900 mm horizontally beyond edge face of the pipe
	1500 to 1800	50	Extend 600 mm horizontally beyond edge face of the pipe
	1800 to <2100	25	Extend 300 mm horizontally beyond edge face of the pipe

Notes: All designs are based on a freezing index of 1000°C-days

All rigid insulation should consist of either Dow Chemical High-Load 40 (HI-40), Styro Rail SR.P400, or equivalent approved by Paterson. The placement of all insulation within the service trenches must be reviewed and approved by Paterson personnel at the time of construction

We trust that this information satisfies your immediate requirements.

Best Regards,

Paterson Group Inc.

Mrunmayi Anvekar, M.Eng.



Kevin Pickard, P.Eng.

Attachments:

- Figure 1 – Site Servicing Plan Review



FIGURE 1 - SITE SERVICING PLAN REVIEW

Proposed Monitoring Maintenance Hole

Prop. Grade = 71.95 m (+/-)
Prop. Invert = 69.65 m
Soil Cover Provided = 2.3 m

Proposed Sanitary Sewer

Prop. Grade = 71.95 m (+/-)
Prop. Invert = 69.45 m
Soil Cover Provided = 2.5 m

Proposed Waterline

Prop. Grade = 71.98 m (+/-)
Prop. Invert = 69.50 m
Soil Cover Provided = 2.4 m

Proposed Sanitary Sewer

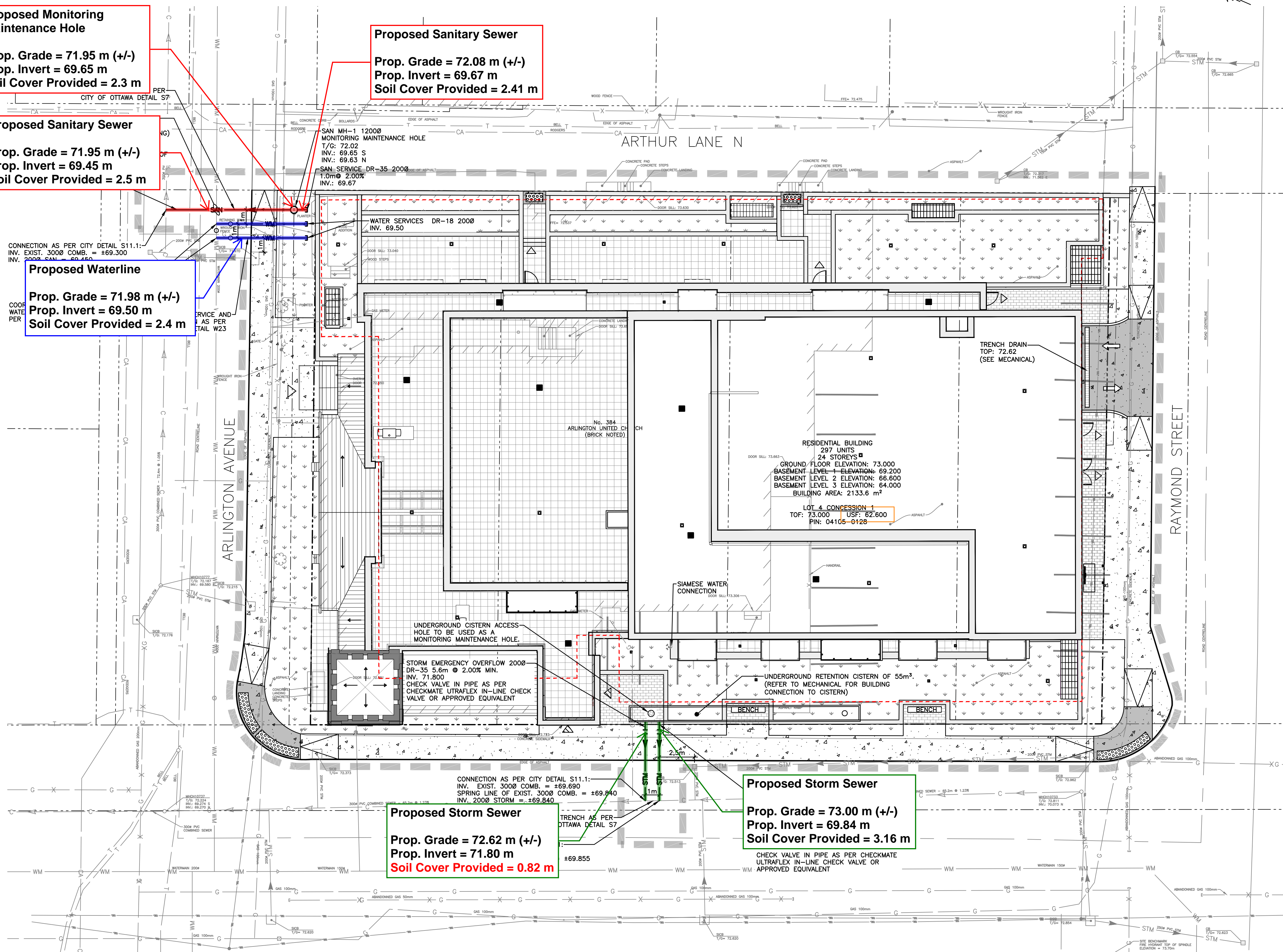
Prop. Grade = 72.08 m (+/-)
Prop. Invert = 69.67 m
Soil Cover Provided = 2.41 m

Proposed Storm Sewer

Prop. Grade = 73.00 m (+/-)
Prop. Invert = 69.84 m
Soil Cover Provided = 3.16 m

Proposed Storm Sewer

Prop. Grade = 72.62 m (+/-)
Prop. Invert = 71.80 m
Soil Cover Provided = 0.82 m



EXISTING	LEGEND	PROPOSED
WM	WATERMAIN	WM
SAN	SANITARY SEWER	SAN
STM	STORM SEWER	STM
D	DRAIN	D
G	GAS LINE (APPROX. LOC.)	
T	UNDERGROUND TELEPHONE (APPROX. LOC.)	
CA	UNDERGROUND CABLE (APPROX. LOC.)	
E	UNDERGROUND ELECTRICITY (APPROX. LOC.)	
X	OVERHEAD WIRES	
	LOT LINE	
	TOP OF SLOPE	
	DITCH CENTER	
	BOTTOM OF SLOPE	
	WOOD AREA	
	CATCHBASIN	
	MANHOLE/CATCHBASIN	
	MANHOLE	
	FIRE HYDRANT	
	VALVE	
	REDUCER	
	TEE	
	VALVE CHAMBER	
	PRIVATE UTILITIES (WATERMAIN)	
	NATURAL GAS VALVE	
	SIGN	
	STOP SIGN	
	ELECTRICITY POLE	
	TELEPHONE POLE	
	ELECTRICITY MANHOLE	
	TELEPHONE MANHOLE	
	SURVEY STATION	
	WORK LIMIT	
	UNDERGROUND PARKING LIMIT	
	STORM ROOF TYPE DRAINS (SEE MECHANICAL AND STRUCTURAL)	
	BUILDING ENTRANCE	
	MAIN ENTRANCE	
	SIAMSESE CONNECTION	
	CHECK VALVE	
	HARD LANDSCAPING AREA (SEE LANDSCAPE)	
	SOFT LANDSCAPING AREA (SEE LANDSCAPE)	
	CONCRETE SIDEWALK	
	DEPRESSED CONCRETE SIDEWALK	
	ASPHALT ROADWAY	
	REINSTATEMENT AS PER CITY OF OTTAWA DETAIL R10.	

- GENERAL NOTES:**
- FOUNDATION DRAIN BACKWATER VALVE REQUIRED ON SERVICE LATERAL PER CITY DETAIL S14 (REFER TO MECHANICAL).
 - SANITARY BACKWATER VALVE REQUIRED ON SERVICE LATERAL PER CITY DETAIL S14.1 (REFER TO MECHANICAL).
 - ALL FLOOR DRAINS WITHIN THE UNDERGROUND PARKING GARAGE MUST DISCHARGE TO THE SANITARY SERVICE LATERAL VIA SUMP PUMP (REFER TO MECHANICAL).
 - WATER METER TO BE LOCATED INSIDE BUILDING (REFER TO MECHANICAL).
 - THE CONTRACTOR MUST CONFIRM THE EXACT INVERT (GEODETIC ELEVATION), DIAMETER AND CONSTRUCTION MATERIAL OF THE EXISTING WATERMAIN AT THE PROPOSED CROSSINGS. HE MUST ALSO CARRY OUT, IF NECESSARY, EXPLORATORY EXCAVATIONS IN ORDER TO DETERMINE THE EXACT LOCATION AND INVERTS OF EXISTING DUCK BANKS. THIS INFORMATION MUST IMMEDIATELY BE PROVIDED TO THE ENGINEER PRIOR TO START UNDERTAKING ANY MUNICIPAL SERVICES WORK AND A 48 HOUR PERIOD MUST BE ALLOCATED TO THE ENGINEER FOR DESIGN REVIEW.
 - BUILDING FOUNDATION DRAIN, BUILDING AIR WELL DRAINS, AND TRENCH DRAIN FOR UNDERGROUND PARKING ENTRANCE FROM RAYMOND STREET TO BE PUMPED INTO UNDERGROUND CISTERN WEST OF BUILDING. BUILDING ROOF DRAIN TO BE DIRECTED INTO UNDERGROUND CISTERN VIA GRAVITY (REFER TO MECHANICAL).

NOTES GÉNÉRALES General Notes

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PLANNER:
FOTENN Planning and Urban design
 396 Queen Street, Ottawa, ON K1P 6P7
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LANDSCAPE ARCHITECT
SPRUCE LAB
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 spruce.ca

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ENVIRONMENTAL
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GENERAL CONTRACTOR
Doran Contractors Ltd.
 3187 Abbot Rd S. Ottawa, ON K1T 1W9
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ENERGY MODELING
EQ Building Performance Inc
 20 Floral Parkway Concord, ON L4K 4R1
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SCÉAU / Seal



384 ARLINGTON AVENUE

EMPLACEMENT Location NO PROJECT No.
 Adresse / Address 12805

NO	REVISION	DATE (aa-mm-jj)
0	FOR SPC	2024-06-06
1	FOR SPC FORMAL	2024-10-04

DESIGNER: S.C. POGGIOLI
 DATE: 2024-10-04
 TITRE DU DESSIN Drawing Title

VERIFIE PAR: E. POTVIN
 DATE: 2024-10-04
 ECHELLE Scale: 1:150

SERVICING PLAN

NOTE OF CAUTION

THE GEODETIC COORDINATES OF EVERY ITEM INCLUDED AS PART OF THIS DOCUMENT ARE IN NAD83 - ORIGINAL / MTM - REFERENCE SYSTEM AND HAVE NO LEGAL VALUE. THE SITE LAYOUT MUST BE COMPLETED USING THE OFFICIAL BENCHMARKS OF AN ACCREDITED LAND SURVEYOR IN THE NAD83 - ORIGINAL / MTM - REFERENCE SYSTEM.

THE UNDERGROUND FEATURES AND INFORMATION THAT APPEAR ON THE DRAWINGS WERE OBTAINED FROM THE PUBLIC UTILITY COMPANIES AND/OR FROM THE CITY EACH RESPECTIVELY.

ALL INFORMATION UNDER THE LEGEND 'EXISTING' IS FOR INFORMATION ONLY. COMPLETE OR EXACT LOCATION AND ELEVATION OF UNDERGROUND SERVICES ARE NOT GUARANTEED.

CERTAIN UNDERGROUND FEATURES ON PRIVATE PROPERTY ARE NOT SHOWN ON THE CURRENT DRAWING.

ANYONE WHO PROCEEDS WITH EXCAVATION WORK SHALL VERIFY THE EXACT LOCATION OF ALL UNDERGROUND FEATURES, BY EXPLORATORY EXCAVATIONS, AND SHALL ASSUME FULL RESPONSIBILITY IF THERE IS ANY DAMAGE THAT OCCURS DURING WORK.

THE CONTRACTOR WILL HAVE THE RESPONSIBILITY AND THE OBLIGATION TO VALIDATE, BY EXPLORATORY EXCAVATION, THE SIZE OF THE PUBLIC UTILITIES UNDERGROUND SERVICES AND TO WARN THE ENGINEER OF ANY CONFLICT WITH THE PROJECTED WORK.

Not for construction