PATERSON GROUP

memorandum

re: **Grading and Site Servicing Plans Review**
Proposed Residential Development
222 Baseline Road – Ottawa, Ontario

to: HP Urban – **Peter Hume** – peter.hume@hpurban.ca

date: October 20, 2025

file: PG6324-MEMO.01

Further to your request and authorization, Paterson Group (Paterson) prepared the current memorandum to provide a review from a geotechnical perspective for the grading and site servicing plans for the proposed residential building at the aforementioned site. This memorandum should be read in conjunction with Paterson Geotechnical Report PG6324-1 dated September 23, 2022.

1.0 Grading Plan Review

Paterson reviewed the following grading plans prepared by T.L. Mak Engineering Consultants Ltd, regarding the aforementioned residential building:

- ❑ Proposed Site Grading and Servicing Plan – Project No. 824-74 – Drawing No. G-1 – Revision 3 dated September 26, 2025.

1.1 Proposed Grading

Based on our review of the above noted grading plans, the proposed grade raises within the aforementioned site are acceptable from a geotechnical perspective. The proposed development is not subject to a permissible grade raise restriction. Therefore, lightweight fill is not required for building construction.

1.2 Bearing Medium

Based on our review of the grading plans, it is expected that the proposed underside of footing (USF) elevation is 80.15 m. Upon reviewing the subsurface profile according to the completed boreholes, the footings are set to be founded over an existing fill layer. This bearing medium is not acceptable to provide sufficient bearing capacity as per the above-noted geotechnical report. Therefore, it is recommended that the footings be dropped to a maximum elevation of 79.3 m. Alternatively, the footings may be founded over concrete in-filled, vertical, zero-entry trenches, extended vertically to an elevation of 79.3 m, or deeper.

The trenches should extend horizontally to a minimum of 300 mm beyond the edges of the proposed footings in all directions. The concrete should consist of 20 MPa lean-mix (28-day strength). The side walls of the trenches can be used as forms in preparations of concrete placement.

If one of the above-noted methods are used, the bearing capacities provided in the geotechnical report can be used. In addition, frost protection of the proposed footings will not be required.

If the USF is kept as per the grading plans, a bearing resistance value of 75 kPa (SLS) and 125 kPa (ULS) should be utilized for the proposed footings. These values will be required to be verified in the field. If the fill is found to be in a loose state of compactness, proof-rolling of the subgrade will be required. If organic matter is found within the fill material, or if soft spots develop, these areas will be required to be removed and replaced with OPSS Granular A or B Type II engineered fill. If required, the engineered fill should be placed in maximum 300 mm thick loose lifts and compacted to a minimum of 98% of the material's standard Proctor maximum dry density (SPMDD). Furthmore, frost protection will be required to be implemented as per the recommendations provided in the following Subsection 1.3

1.3 Protection of Footings Against Frost Action

Perimeter footings of heated structures are required to be insulated against the deleterious effects of frost action. A minimum 1.5 m thick soil cover (or insulation equivalent) should be provided in this regard.

Other exterior unheated footings, such as those for isolated exterior piers, are more prone to deleterious movement associated with frost action than the exterior walls of the proper structure. These footings should be provided with a minimum 2.1 m thick soil cover (or insulation equivalent).

Based on our review of above noted grading plan, the perimeter footings for the proposed development are not provided with sufficient soil cover for frost protection. Therefore, rigid insulation will be required. Reference should be made to Figure 1 – Insufficient Soil Cover (Footings), attached to the current memorandum.

To accommodate insufficient soil cover for the proposed footings, rigid insulation is required to achieve adequate frost protection. Rigid insulation recommendations are presented in Table 1 on the following page.

Table 1 – Frost Protection Recommendations for Footings with Reduced Soil Cover			
Thermal Condition	**Soil Cover Provided (mm)**	**Insulation Dimensions**	
		Thickness (mm)	**Extension (mm)**
Heated	1200-1500	25	Extend 900 mm horizontally beyond edge of footing face
	900-1200	50	Extend 1200 mm horizontally beyond edge of footing face
	600-900	75	Extend 1500 mm horizontally beyond edge of footing face
	300-600	100	Extend 1800 mm horizontally beyond edge of footing face
	0-300	125	Extend 2100 mm horizontally beyond edge of footing face
Unheated	1800-2100	25	Extend 600 mm horizontally beyond edge of footing face
	1200-1800	50	Extend 600 mm horizontally beyond edge of footing face
	900-1200	75	Extend 1200 mm horizontally beyond edge of footing face
	600-900	100	Extend 1800 mm horizontally beyond edge of footing face
	300-600	150	Extend 2100 mm horizontally beyond edge of footing face
	0-300	200	Extend 2100 mm horizontally beyond edge of footing face

All rigid insulation placed below the footings should consist of either Dow Chemical High-Load 40 (HL-40), Styro Rail SR.P400, or equivalent approved by Paterson. The rigid insulation placed below the footings should extend a minimum of 100 mm beyond the exterior edge of the footing. Styrofoam (SM) rigid insulation can be used beyond to extend beyond the footing face (above USF). Reference should be made to Figure 3 – Typical Rigid Insulation Detail, attached to this memorandum.

The rigid insulation boards should be placed upon a level and flat surface with negligible gaps between abutting boards. Consideration can be given to placing a thin levelling mat consisting of a layer of compacted OPSS Granular A crushed stone, stone dust, or sand below the insulation layer, as required.

The placement of the insulation layers should be reviewed by Paterson personnel at the time of construction.

It is recommended that Paterson review the proposed footing and/or insulation details once the final detail design drawings are available for the above noted items prior to construction to ensure the effects of frost action are mitigated appropriately.

2.0 Site Servicing Plan Review

Paterson reviewed the following general plan of services prepared by T.L. Mak Engineering Consultants Ltd, regarding the aforementioned residential building:

- ❑ Proposed Site Grading and Servicing Plan – Project No. 824-74 – Drawing No. G-1 – Revision 3 dated September 26, 2025.

2.1 Lateral Support Zones of Footings

Based on our review of the above-noted site service plans, all services will be constructed outside the lateral zones of the proposed footings of the building and are acceptable from a geotechnical perspective.

2.2 Protection of Pipes Against Frost Action

Insufficient frost protection has been provided for some of the proposed sanitary and storm sewer pipes throughout the subject site. Reference should be made to Figure 2 – Insufficient Soil Cover (Services), attached to the memorandum.

The sanitary and storm sewer pipes outlined on the above-noted figure are located within the frost zone of 2.1 m below the finished grade. Rigid insulation to provide adequate frost protection of the site servicing is recommended where insufficient frost cover has been provided. Any portion of the services installed at a depth of 2.1 m below the finished grade or deeper is considered to have sufficient soil cover for frost protection.

To accommodate insufficient soil cover for the proposed footings, rigid insulation is required to achieve adequate frost protection. Rigid insulation recommendations are presented in Table 2 on the following page.

Table 2 – Frost Protection Recommendations for Services 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

All rigid insulation should consist of either Dow Chemical High-Load 40 (HL-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. Reference should be made to Figure 3 – Typical Rigid Insulation Detail, attached to this memorandum.

It should be noted that the invert elevation of the watermain pipes has not been presented in the above-noted site servicing drawings. Therefore, if insufficient soil cover is provided for watermain pipes, rigid insulation should be installed for the proposed watermain pipes as recommended in the above table (Table 2).

We trust that the current submission meets your immediate requirements.

Best Regards,

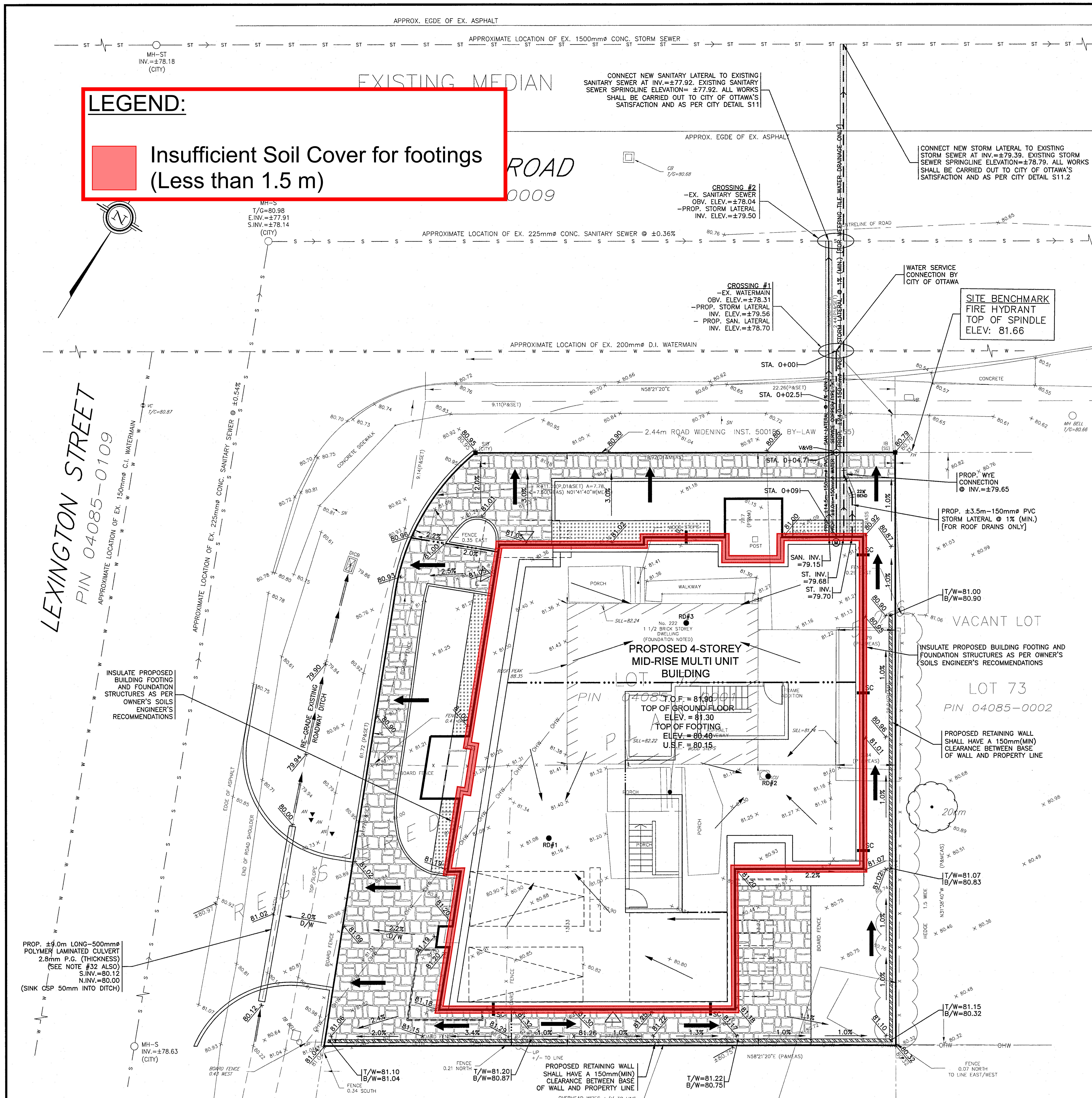
Paterson Group Inc.

Owen R. Canton, B. Eng.

Faisal I. Abou-Seido, P.Eng.

Attachments:

- ❑ Figure 1 – Insufficient Soil Cover (Footings)
- ❑ Figure 2 – Insufficient Soil Cover (Services)
- ❑ Figure 3 - Typical Rigid Insulation Detail

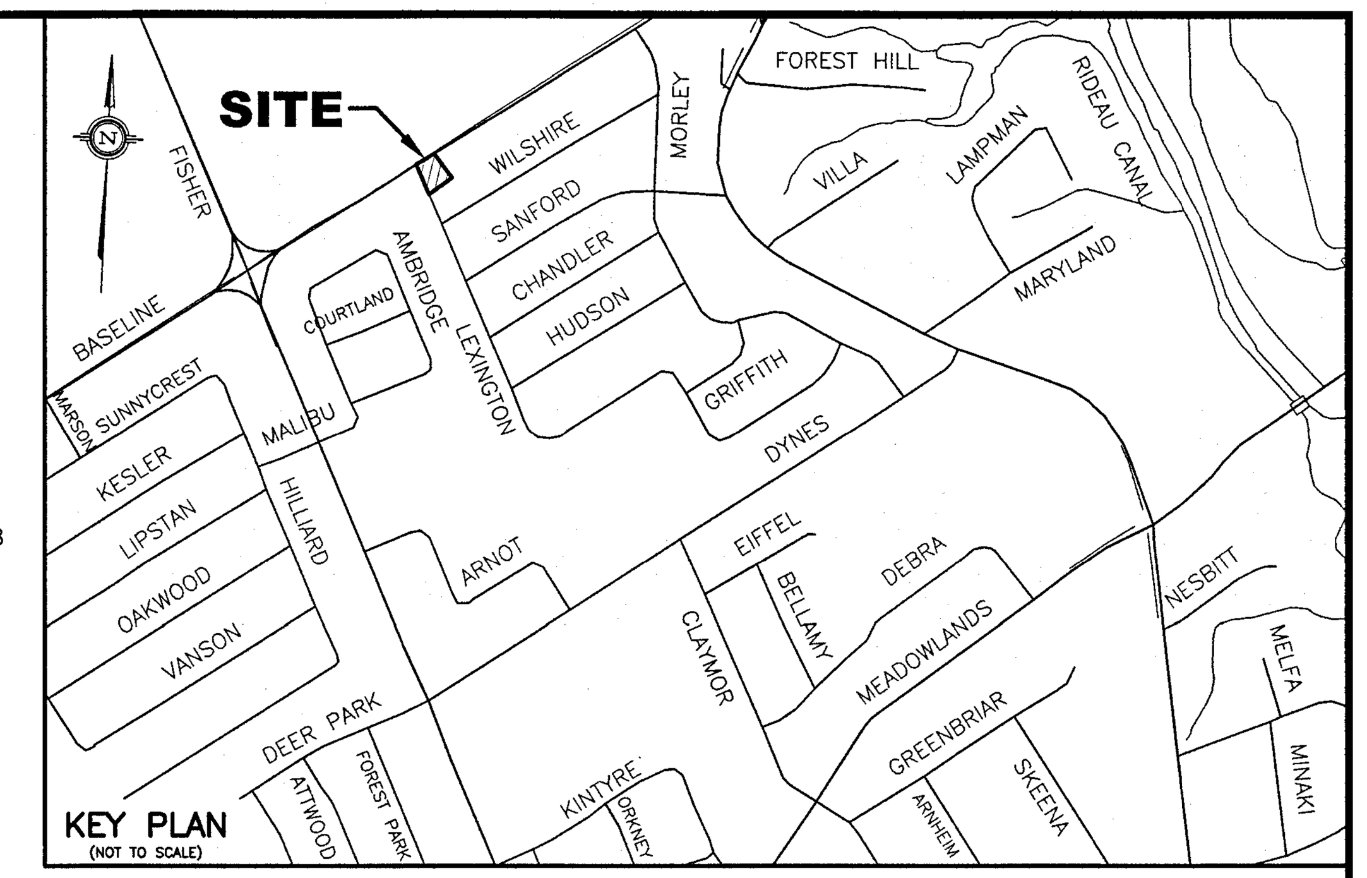


LEGEND

Symbol	Description
×81.10	PROPOSED ELEVATION
× 80.75	EXISTING ELEVATION
T.O.F.	PROPOSED TOP OF CONCRETE FOUNDATION ELEVATION
U.S.F.	PROPOSED UNDERSIDE OF CONCRETE FOOTING ELEVATION
D/W	PROPOSED DRIVEWAY
—S—	EXISTING SANITARY SEWER
—ST—	EXISTING STORM SEWER
—W—	EXISTING WATERMAIN
———	PROPOSED 150mmø PVC SANITARY LATERAL SERVICE @ 1% (MIN.) SLOPE
— — —	PROPOSED 150mmø PVC STORM LATERAL SERVICE @ 1% (MIN.) SLOPE
—·—	PROPOSED 150mmø WATER SERVICE PVC CL 150 DR-18
○ MH-S	EXISTING SANITARY MANHOLE
○ MH-ST	EXISTING STORM MANHOLE
□ CB	EXISTING CATCH BASIN
WV	EXISTING WATER VALVE
FH	EXISTING FIRE HYDRANT
○ UP	EXISTING UTILITY POLE
—OHW—	EXISTING OVERHEAD WIRES
V&VB	PROPOSED VALVE AND VALVE BOX (V&VB)
→	PROPOSED GENERAL DIRECTION OF LOT GRADING AND SURFACE FLOW
—···—	PROPOSED HIGH RIDGE LINE
▨	PROPOSED RETAINING WALL
T/C	PROPOSED TOP OF RETAINING WALL ELEVATION
B/C	PROPOSED BOTTOM OF RETAINING WALL ELEVATION
—SC	PROPOSED ROOF SCUPPER LOCATION
▒	PROPOSED RIGID STYROFOAM INSULATION 75mm THICK (MIN.) PER OWNER'S GEOTECHNICAL ENGINEER'S RECOMMENDATIONS
● RD#1	DENOTES FLAT ROOF TOP DRAIN LOCATION AND NUMBER
Ⓜ	DENOTES PROPOSED WATER METER LOCATION
➡	DENOTES PROPOSED OVERLAND FLOW ROUTE

PROFILE TABLE FOR 150mmø WATER SERVICE

STATION	ITEM DESCRIPTION	EXISTING/PROPOSED GROUND ELEVATION (m)	PROPOSED TOP OF WATER SERVICE (m)
0+00	CONNECTION TO EXISTING 200mmø WATERMAIN	EX. ℄ ROAD ±80.71	EXISTING ±78.31
0+02.5	150mmø WATER SERVICE	±80.79	±78.39
0+04.7	150mmø V&VB AT PROPERTY LINE	±80.67	±78.27
0+09	150mmø WATER SERVICE AT BUILDING LINE	±80.95	±78.55



NOTES

1. EXISTING SERVICES AND UTILITIES SHOWN ON THIS DRAWING WERE TAKEN FROM THE BEST AVAILABLE RECORDS BUT ARE NOT COMPLETE. CONTRACTOR IS REQUESTED TO CHECK IN THE FIELD FOR LOCATION AND ELEVATION OF PIPES, UNDERGROUND STRUCUTRES AND CHECK WITH AUTHORITIES AND UTILITIES TO HIS SATISFACTION BEFORE DIGGING.

2. CONTRACTOR IS ADVISED TO COLLECT INFORMATION ON SOIL CONDITIONS AS DEEMED NECESSARY. REFER TO THE SITE GEOTECHNICAL INVESTIGATION REPORT PREPARED BY THE OWNER'S SOILS ENGINEER PATERSON GROUP (REPORT No. PG6324-1 DATED SEPTEMBER 23, 2022).

3. EXISTING HORIZONTAL AND VERTICAL SURVEY DATA SHOWN ON THIS PLAN INCLUDING GEODETIC SITE BENCHMARK, ROAD ELEVATIONS, SEWER LOCATION, AND THE TOPOGRAPHICAL INFORMATION OF THE LOT WERE PROVIDED BY STANTEC GEOMATICS LTD. AS DEPICTED ON THEIR TOPOGRAPHICAL SURVEY PLAN (PROJ. No. 161614544-111 COMPLETED ON MARCH 16, 2022 AND REVISED ON SEPTEMBER 25, 2024) RECEIVED ON SEPTEMBER 27, 2024. T.L. MAK ENGINEERING CONSULTANTS LTD. DOES NOT TAKE ANY RESPONSIBILITY FOR THE SURVEY INFORMATION SHOWN HERE. FOR INFORMATION ABOUT THE STORM AND SANITARY INVERT ELEVATION AT MANHOLES AD WATERMAIN LOCATION AND SIZE, THE CONTRACTOR SHALL FIELD CHECK EXISTING SANITARY SEWER, STORM SEWER, AND WATERMAIN DEPTH TO THEIR SATISFACTION AND REFER TO CITY OF OTTAWA'S PLAN AND PROFILE PLAN ENTITLED "LEXINGTON STREET" - SANITARY SEWER DATED 1953 AND "BASELINE ROAD" - FISHER AVENUE TO PRESCOTT HWY PLAN No. E-25 REV. 2 DATED OCTOBER 20, 1960 FOR ADDITIONAL DETAILS.

4. SITE LAYOUT AND DETAILS FOR GRADING AND SWM DESIGN WERE PROVIDED BY THE OWNER'S ARCHITECT, BRYDEN GIBSON ARCHITECT INCORPORATED AS DETAILED ON THEIR SITE PLAN (DWG. No. A2 REV. 1 JOB No. 797-23) RECEIVED ON APRIL 22, 2025 AND UPDATED PER E-MAIL OF JULY 14, 2025. BUILDING ELEVATIONS WERE TAKEN FROM THE ARCHITECT'S BUILDING SECTION A-A PLAN DETAILS DATED APRIL 14, 2025 RECEIVED FROM THE ARCHITECT ON APRIL 22, 2025 REGARDING TOP OF GROUND FLOOR, TOP OF FOUNDATION, TOP OF FOOTING AND U.S.F. ELEVATIONS FOR THE BUILDING.

5. ALL GRADES SHOWN ARE GEODETIC AND METRIC (SEE STANTEC GEOMATICS LTD.'S TOPOGRAPHICAL PLAN). ALL GRADING SHALL BE DONE TO THE SATISFACTION OF THE CITY OF OTTAWA.

6. PIPE SIZES SHOWN ON THIS PLAN ARE METRIC.

7. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY EQUIPMENT, LABOUR AND MATERIALS RELATING TO ALL CIVIL WORKS REQUIRED FOR THIS SITE AND BY THE CITY OF OTTAWA TO CONNECT INTO THE WATERMAIN.

8. CONNECTION OF THE 150mmø WATER SERVICE TO THE EXISTING BASELINE ROAD WATERMAIN SHALL BE BY THE CITY OF OTTAWA. EXCAVATION, BACKFILLING, AND RESTORATION SHALL BE CARRIED OUT BY THE CONTRACTOR. CONNECTION SHALL BE CARRIED OUT AS PER CITY OF OTTAWA DWG. No. W50 DETAILS. ALL WATERWORKS TO BE CONSTRUCTED TO THE CITY OF OTTAWA WATER ENGINEERING STANDARDS AND SPECIFICATIONS.

9. INSULATE BUILDING SERVICE LATERALS AND STORM PIPES WITHIN PRIVATE PROPERTY AND ROAD RIGHT OF WAY WHERE GROUND COVER FOR FROST PROTECTION IS LESS THAN 2.4m FOR WATER SERVICE AND 2.4m FOR SANITARY AND STORM GRAVITY SEWERS. MINIMUM GROUND COVER OVER HOUSE SERVICE PIPES SHALL NOT BE LESS THAN 2.0m. EXACT INSULATION THICKNESS SHALL BE DETERMINED BY CITY INSPECTOR ON-SITE AND/OR OWNER'S SOILS ENGINEER. ALL INSULATION WORKS SHALL BE CARRIED OUT AS PER CITY OF OTTAWA'S CURRENT ENGINEERING STANDARDS DETAILS W22 AND W23.

10. CONSTRUCT ALL WATERMAINS, WATER SERVICES, SANITARY AND STORM SEWER SYSTEMS IN ACCORDANCE WITH CITY OF OTTAWA'S LATEST REVISED STANDARD OTHERWISE AS PER OPSS REQUIREMENT AND DONE TO THE SATISFACTION OF THE CITY.

11. BEDDING AND HAUNCHING MATERIAL FOR SEWER INSTALLATIONS TO BE GRANULAR "A" INSTALLED AND COMPACTED AS PER CITY STANDARD DETAIL DWG. No. S6 AND S7.

12. STORM AND SANITARY LATERALS (150mmø) SHALL BE PVC DR-28 OR EQUIVALENT.

13. ALL WATER SERVICES/MAINS SHALL HAVE 2.4m COVER (min.). THE 150mmø WATER SERVICE SHALL BE PVC CL 150 DR-18. WATER SERVICE AND WATERMAIN TRENCH DETAILS AS PER CITY OF OTTAWA W17 AND W22. THRUST BLOCK DETAILS ARE AS PER CITY DETAIL W25.3 DATED MAY 2001. FITTINGS SHALL CONFORM TO APPROVED AWWA AND/OR CSA STANDARDS. THE CONTRACTOR SHALL CONSTRUCT AND ENSURE THAT THE 150mmø WATER SERVICE SHALL HAVE A MINIMUM OF 2.4m OF GROUND COVER.

14. IF WATER SERVICE IS LESS THAN 1.0m FROM SEWER, MANHOLE OR CATCHBASIN, CONTRACTOR IS REQUESTED TO INSULATE BETWEEN THEM WITH S/M RIGID INSULATION (SEE CITY DETAIL DRAWING No. W23).

15. STORMWATER MANAGEMENT NOTES:
- SEE STORM DRAINAGE REPORT No. R-824-74 DATED APRIL 2025 ALSO FOR DETAILS.
- CONTROLLED ROOF DRAIN MAXIMUM FLOW RATE SHALL BE 0.95 L/s OR 15.0 U.S. GAL/MIN. PER EACH DRAIN.
- THREE (3) CONTROLLED ROOF DRAINS ARE PROPOSED AT THE FLAT ROOF TOP OF THIS BUILDING.

16. ALL PROPOSED BUILDING SANITARY, STORM AND WATER SERVICES SHALL TERMINATE ±1.0m OUTSIDE THE FOUNDATION WALL AND CONNECTION TO PLUMBING BY OTHERS.

17. SANITARY BUILDING DRAIN TO BE EQUIPPED WITH A FULL PORT BACKWATER VALVE AND INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS. STORMWATER DRAIN TO BE EQUIPPED WITH A BACKWATER VALVE AND INSTALLED AS PER CITY'S REQUIREMENTS.

18. PRIOR TO CONCRETE FOOTING AND FOUNDATION POURING, THE OWNERS AND/OR CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT THE SUBGRADE ON THIS LOT IS SUFFICIENT TO SUPPORT THE PROPOSED BUILDING.

19. FOR DEVELOPMENT OF THIS LOT, THE CONTRACTOR MUST FIRST CONSTRUCT THE UNDERGROUND SANITARY, STORM AND WATER SERVICES FROM THE SEWER AND WATERMAIN TO SERVICE THE ENTIRE PROPERTY, PRIOR TO BUILDING CONCRETE FOUNDATION POURING. THE CONTRACTOR SHALL VERIFY SEWER DEPTHS TO ENSURE THAT SEWER LATERALS CAN ACHIEVE A SLOPE OF 1% (MIN.) AND STILL BE BELOW PROPOSED UNDERSIDE OF CONCRETE FOOTING ELEVATION, IF THIS IS FOUND NOT POSSIBLE, THE CONTRACTOR SHALL CONTACT THE OWNER TO REPORT THE FINDING IN ORDER TO ADJUST THE BUILDING FOUNDATION GRADES PRIOR TO CONCRETE POURING.

20. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY EQUIPMENT, LABOUR AND MATERIALS RELATING TO THE CIVIL WORKS REQUIRED FOR INSTALLATION OF NEW SITE SERVICES. PROVINCIAL HEALTH AND SAFETY REGULATIONS MUST BE FOLLOWED DURING CONSTRUCTION.

21. IT IS THE RESPONSIBILITY OF THE SITE SERVICES CONTRACTOR TO OBTAIN AND CONSTRUCT THE WORKS TO MEET THE LATEST REVISIONS IN CURRENT CIRCULATION OF THE CITY OF OTTAWA'S ENGINEERING STANDARDS, OPSS AND OPSD STANDARDS, AND ONTARIO BUILDING/PLUMBING CODES. WHERE THE LATEST REVISION DIFFERS FROM THE REQUIREMENTS SET OUT IN THIS PLAN, THE CONTRACTOR SHALL PRICE THE WORKS TO MEET LATEST REVISED STANDARDS IN HIS PRICE BID FOR THIS PROJECT. THE CONTRACTOR SHALL INFORM THE ENGINEERS OF ANY CHANGES PRIOR TO COMMENCEMENT OF THE WORKS.

22. PROPOSED TOP OF ENTRY, TOP OF FOUNDATION, UNDERSIDE OF FOOTING ELEVATIONS SHALL BE REVIEWED AND APPROVED BY BRYDEN GIBSON ARCHITECTS INC. PRIOR TO CONSTRUCTION.

23. IF EXISTING GRADES ALONG ANY EXISTING ABUTTING PROPERTY LIMITS EXCEED THE PROPOSED GRADES ON THIS PROPERTY BY A HEIGHT DIFFERENTIAL THAT EXCEEDS TERRACING OF 3H TO 1V, THEN INSTALL A RETAINING WALL AS PER OWNER'S REQUIREMENTS.

24. SITE SERVICING BEDDING, BACKFILL REQUIREMENTS ALONG WITH ROADWAY AND PARKING LOT PAVEMENT STRUCTURES SHALL MEET RECOMMENDATIONS AND REQUIREMENTS SET OUT IN THE OWNER'S SOILS

25. THE CONTRACTOR, UPON COMPLETION OF THE NEW SERVICES, SHALL RESTORE THE EXISTING BASELINE ROAD AND LEXINGTON STREET ROADWAY BOULEVARD DISTURBED BY CONSTRUCTION WORKS ON THIS PROPERTY. ADDITIONALLY, THE ROADWAY GRADING SHALL BE RESTORED AND REGRADED TO DRAIN POSITIVELY TO EXISTING STORMWATER OUTLET AS REQUIRED BY THE CITY INSPECTOR.

26. THE RETAINING WALL TO BE CONSTRUCTED AND MATERIAL TYPE SHALL BE SPECIFIED BY THE OWNER'S ARCHITECT AND/OR HIS STRUCTURAL ENGINEER. ANY RETAINING WALLS BUILT ON THIS LOT EXCEEDING 1.0m IN HEIGHT FROM PROPOSED FINISHED GROUND ELEVATION WILL BE REQUIRED TO BE PREPARED AND CERTIFIED BY THE OWNER'S STRUCTURAL ENGINEER AND APPROVED BY THE CITY PRIOR TO CONSTRUCTION.

27. WHERE FROST COVER FROM UNDERSIDE OF BUILDING CONCRETE FOOTING TO PROPOSED FINISHED GROUND ELEVATION IS LESS THAN 1.55m, IT IS RECOMMENDED THAT INSULATION (50mm THICK) MINIMUM BE INSTALLED AT THE BUILDING FOOTING AND FOUNDATION TO PROVIDE SUFFICIENT FROST COVER FOR THE FOUNDATION STRUCTURES. THE FOOTINGS WILL NEED TO BE REVIEWED FOR INSULATION BY THE OWNER'S SOILS ENGINEER. EXACT INSULATION REQUIREMENTS SHALL BE AS PER ARCHITECT'S INSULATION DETAILS AS SHOWN ON THEIR ARCHITECTURAL DRAWINGS AND CONFIRMED BY THE OWNER'S SITE SOILS ENGINEER.

28. IT IS RECOMMENDED THAT A FULL PORT BACKWATER VALVE BE INSTALLED FOR THE SANITARY SERVICE LATERAL AND A BACKWATER VALVE FOR THE STORM SERVICE LATERAL PROPOSED TO SERVICE THE NEW BUILDING UNDER THE CURRENT REGULATION OF THE ONTARIO PLUMBING CODE AS PER CITY OF OTTAWA S14, S14.1 AND S14.2. THE OWNER'S ARCHITECT AND PLUMBER SHALL CHECK THE CURRENT ONTARIO PLUMBING CODE FOR REQUIREMENTS FOR A BACKWATER VALVE IN THE BUILDING AND AS PER THE MECHANICAL ENGINEER'S DRAWINGS AT THE SANITARY AND STORM SEWER SERVICE LINES.

29. EXISTING LATERALS AND WATER SERVICE PIPING HAVE BEEN AND/OR SHALL BE ABANDONED. THE WATER SERVICE SHALL BE BLANKED AND CAPPED AT THE MAIN AS PER CITY'S REQUIREMENTS. THE SEWER LATERAL(S) SHALL BE CAPPED AND/OR PLUGGED AT THE FRONT PROPERTY LINE. ALL WATER AND SEWER LATERAL WORKS SHALL BE CARRIED OUT TO THE CITY'S SATISFACTION.

30. a) THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES TO PROVIDE FOR PROTECTION OF THE RECEIVING STORM SEWER DURING CONSTRUCTION ACTIVITIES. THESE PRACTICES ARE REQUIRED TO ENSURE NO SEDIMENT AND/OR ASSOCIATED POLLUTANTS ARE RELEASED TO THE RECEIVING WATERCOURSE. THESE PRACTICES INCLUDE INSTALLATION OF SEDIMENT BARRIERS ON ALL CATCH BASIN AND MAINTENANCE HOLES AND A SILT FENCE BARRIER (AS PER OPSD 219.110 AND ASSOCIATED SPECIFICATIONS) ALONG THE PROPERTY LIMITS OF THE PROPOSED DEVELOPMENT AND ALL OTHER AREAS THAT SHEET DRAIN OFF SITE. MAINTENANCE HOLE SEDIMENT BARRIERS TO BE AMOCO 4555 NONWOVEN GEOTEXTILE OR APPROVED EQUIVALENT.

b) THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES TO PROVIDE FOR PROTECTION OF THE AREA DRAINAGE SYSTEM AND THE RECEIVING WATERCOURSE DURING CONSTRUCTION ACTIVITIES. THE CONTRACTOR ACKNOWLEDGES THAT FAILURE TO IMPLEMENT APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES MAY BE SUBJECT TO PENALTIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCY.

31. THE PROPOSED RESIDENTIAL APARTMENT BUILDING WILL HAVE A SPRINKLER SYSTEM FOR FIRE PROTECTION.

32. CONTRACTOR SHALL CONSTRUCT DRIVEWAY ENTRANCE CULVERT AS PER CITY OF OTTAWA REQUIREMENTS AND IN ACCORDANCE WITH CITY OF OTTAWA REQUIREMENTS OTHERWISE PER OPSD 803.030. END OF PIPE TREATMENT OF CULVERT SHALL BE CONSTRUCTED TO MEET THE OWNER'S REQUIREMENTS. PROPOSED CULVERT MATERIAL SHALL MEET CITY'S SPECIFICATION MS-18.3. POLYMER LAMINATED CONFORMING TO ASTM A929, ASTM A742 OR EQUAL.

33. NO EXCESS DRAINAGE, DURING AND AFTER CONSTRUCTION, WILL BE DIRECTED TOWARDS THE NEIGHBORS' PROPERTIES.

34. ALL TREES ON THE RIGHT-OF-WAY ARE TO BE MAINTAINED BEFORE AND AFTER CONSTRUCTION AND ALL TREES WITHIN THE PROPERTY SHALL BE PROTECTED AS PER THE 'MUNICIPAL TREES AND NATURAL AREAS PROTECTION BY-LAWS' AND THE 'URBAN TREES CONSERVATION BY-LAW' AS AMENDED FROM TIME TO TIME.

PATERSON GROUP
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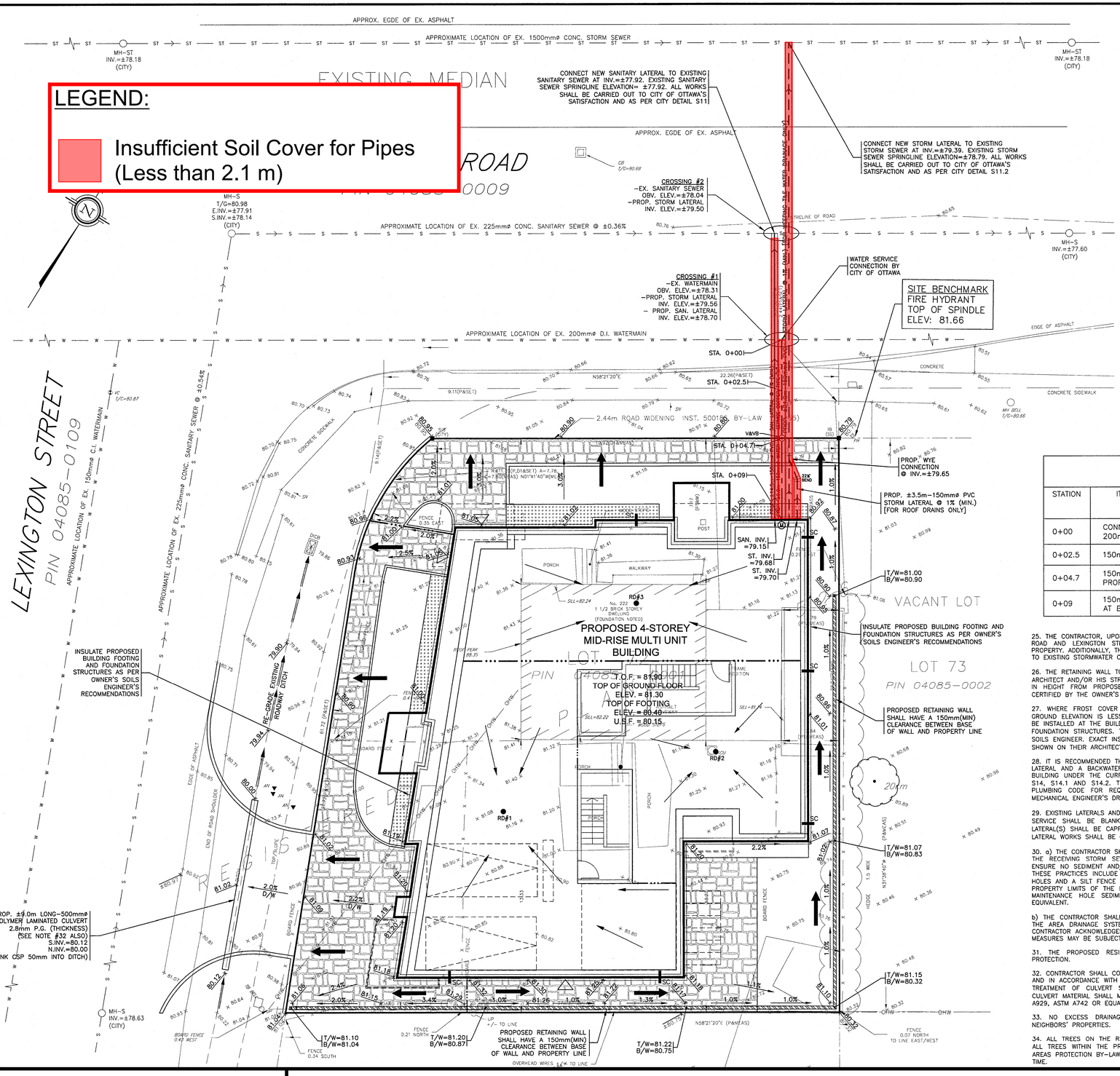
Figure 1 - Insufficient Soil Cover (Footings)

HP Urban	PG6324-MEMO.01	222 Baseline Road, Ottawa, Ontario



LEGEND

81.10	PROPOSED ELEVATION
× 80.75	EXISTING ELEVATION
T.O.F.	PROPOSED TOP OF CONCRETE FOUNDATION ELEVATION
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ST	EXISTING STORM SEWER
W	EXISTING WATERMAIN
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OHW	EXISTING OVERHEAD WIRES
V&VB	PROPOSED VALVE AND VALVE BOX (V&VB)
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T/C	PROPOSED TOP OF RETAINING WALL ELEVATION
B/C	PROPOSED BOTTOM OF RETAINING WALL ELEVATION
SC	PROPOSED ROOF SCUPPER LOCATION
	PROPOSED RIGID STYROFOAM INSULATION 75mm THICK (MIN.) PER OWNER'S GEOTECHNICAL ENGINEER'S RECOMMENDATIONS
RD#1	DENOTES FLAT ROOF TOP DRAIN LOCATION AND NUMBER
M	DENOTES PROPOSED WATER METER LOCATION
	DENOTES PROPOSED OVERLAND FLOW ROUTE

PROFILE TABLE FOR 150mmø WATER SERVICE

STATION	ITEM DESCRIPTION	EXISTING/PROPOSED GROUND ELEVATION (m)	PROPOSED TOP OF WATER SERVICE (m)
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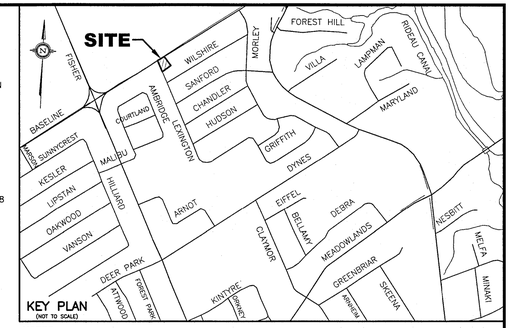
0+04.7	150mmø V&VB AT PROPERTY LINE	±80.67	±78.27
0+09	150mmø WATER SERVICE AT BUILDING LINE	±80.95	±78.55



NOTES

1. EXISTING SERVICES AND UTILITIES SHOWN ON THIS DRAWING WERE TAKEN FROM THE BEST AVAILABLE RECORDS BUT ARE NOT COMPLETE. CONTRACTOR IS REQUESTED TO CHECK IN THE FIELD FOR LOCATION AND ELEVATION OF PIPES, UNDERGROUND STRUCUTRES AND CHECK WITH AUTHORITIES AND UTILITIES TO HIS SATISFACTION BEFORE DIGGING.

2. CONTRACTOR IS ADVISED TO COLLECT INFORMATION ON SOIL CONDITIONS AS DEEMED NECESSARY. REFER TO THE SITE GEOTECHNICAL INVESTIGATION REPORT PREPARED BY THE OWNER'S SOILS ENGINEER PATERSON GROUP (REPORT No. PG6324–1 DATED SEPTEMBER 23, 2022).

3. EXISTING HORIZONTAL AND VERTICAL SURVEY DATA SHOWN ON THIS PLAN INCLUDING GEODETIC SITE BENCHMARK, ROAD ELEVATIONS, SEWER LOCATION, AND THE TOPOGRAPHICAL INFORMATION OF THE LOT WERE PROVIDED BY STANTEC GEOMATICS LTD. AS DEPICTED ON THEIR TOPOGRAPHICAL SURVEY PLAN (PROJ. No. 161614544–111 COMPLETED ON MARCH 16, 2022 AND REVISED ON SEPTEMBER 25, 2024) RECEIVED ON SEPTEMBER 27, 2024. T.L. MAK ENGINEERING CONSULTANTS LTD. DOES NOT TAKE ANY RESPONSIBILITY FOR THE SURVEY INFORMATION SHOWN HERE. FOR INFORMATION ABOUT THE STORM AND SANITARY INVERT ELEVATION AT MANHOLES AD WATERMAIN LOCATION AND SIZE, THE CONTRACTOR SHALL FIELD CHECK EXISTING SANITARY SEWER, STORM SEWER, AND WATERMAIN DEPTH TO THEIR SATISFACTION AND REFER TO CITY OF OTTAWA'S PLAN AND PROFILE PLAN ENTITLED "LEXINGTON STREET" – SANITARY SEWER DATED 1953 AND "BASELINE ROAD" – FISHER AVENUE TO PRESCOTT HWY PLAN No. E–25 REV. 2 DATED OCTOBER 20, 1960 FOR ADDITIONAL DETAILS.

4. SITE LAYOUT AND DETAILS FOR GRADING AND SWM DESIGN WERE PROVIDED BY THE OWNER'S ARCHITECT, BRYDEN GIBSON ARCHITECT INCORPORATED AS DETAILED ON THEIR SITE PLAN (DWG. No. A2 REV. 1 JOB No. 797–23) RECEIVED ON APRIL 22, 2025 AND UPDATED PER E–MAIL OF JULY 14, 2025. BUILDING ELEVATIONS WERE TAKEN FROM THE ARCHITECT'S BUILDING SECTION A–A PLAN DETAILS DATED APRIL 14, 2025 RECEIVED FROM THE ARCHITECT ON APRIL 22, 2025 REGARDING TOP OF GROUND FLOOR, TOP OF FOUNDATION, TOP OF FOOTING AND U.S.F. ELEVATIONS FOR THE BUILDING.

5. ALL GRADES SHOWN ARE GEODETIC AND METRIC (SEE STANTEC GEOMATICS LTD.'S TOPOGRAPHICAL PLAN). ALL GRADING SHALL BE DONE TO THE SATISFACTION OF THE CITY OF OTTAWA.

6. PIPE SIZES SHOWN ON THIS PLAN ARE METRIC.

7. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY EQUIPMENT, LABOUR AND MATERIALS RELATING TO ALL CIVIL WORKS REQUIRED FOR THIS SITE AND BY THE CITY OF OTTAWA TO CONNECT INTO THE WATERMAIN.

8. CONNECTION OF THE 150mmø WATER SERVICE TO THE EXISTING BASELINE ROAD WATERMAIN SHALL BE BY THE CITY OF OTTAWA. EXCAVATION, BACKFILLING, AND RESTORATION SHALL BE CARRIED OUT BY THE CONTRACTOR. CONNECTION SHALL BE CARRIED OUT AS PER CITY OF OTTAWA DWG. No. W5O DETAILS. ALL WATERWORKS TO BE CONSTRUCTED TO THE CITY OF OTTAWA WATER ENGINEERING STANDARDS AND SPECIFICATIONS.

9. INSULATE BUILDING SERVICE LATERALS AND STORM PIPES WITHIN PRIVATE PROPERTY AND ROAD RIGHT OF WAY WHERE GROUND COVER FOR FROST PROTECTION IS LESS THAN 2.4m FOR WATER SERVICE AND 2.4m FOR SANITARY AND STORM GRAVITY SEWERS. MINIMUM GROUND COVER OVER HOUSE SERVICE PIPES SHALL NOT BE LESS THAN 2.0m. EXACT INSULATION THICKNESS SHALL BE DETERMINED BY CITY INSPECTOR ON–SITE AND/OR OWNER'S SOILS ENGINEER. ALL INSULATION WORKS SHALL BE CARRIED OUT AS PER CITY OF OTTAWA'S CURRENT ENGINEERING STANDARDS DETAILS W22 AND W23.

10. CONSTRUCT ALL WATERMAINS, WATER SERVICES, SANITARY AND STORM SEWER SYSTEMS IN ACCORDANCE WITH CITY OF OTTAWA'S LATEST REVISED STANDARD OTHERWISE AS PER OPSS REQUIREMENT AND DONE TO THE SATISFACTION OF THE CITY.

11. BEDDING AND HAUNCHING MATERIAL FOR SEWER INSTALLATIONS TO BE GRANULAR "A" INSTALLED AND COMPACTED AS PER CITY STANDARD DETAIL DWG. No. S6 AND S7.

12. STORM AND SANITARY LATERALS (150mmø) SHALL BE PVC DR–28 OR EQUIVALENT.

13. ALL WATER SERVICES/MAINS SHALL HAVE 2.4m COVER (min.). THE 150mmø WATER SERVICE SHALL BE PVC CL 150 DR–18. WATER SERVICE AND WATERMAIN TRENCH DETAILS AS PER CITY OF OTTAWA W17 AND W22. THRUST BLOCK DETAILS ARE AS PER CITY DETAIL W25.3 DATED MAY 2001. FITTINGS SHALL CONFORM TO APPROVED AWWA AND/OR CSA STANDARDS. THE CONTRACTOR SHALL CONSTRUCT AND ENSURE THAT THE 150mmø WATER SERVICE SHALL HAVE A MINIMUM OF 2.4m OF GROUND COVER.

14. IF WATER SERVICE IS LESS THAN 1.0m FROM SEWER, MANHOLE OR CATCHBASIN, CONTRACTOR IS REQUESTED TO INSULATE BETWEEN THEM WITH S/M RIGID INSULATION (SEE CITY DETAIL DRAWING No. W23).

15. STORMWATER MANAGEMENT NOTES:
– SEE STORM DRAINAGE REPORT No. R–824–74 DATED APRIL 2025 ALSO FOR DETAILS.
– CONTROLLED ROOF DRAIN MAXIMUM FLOW RATE SHALL BE 0.95 L/s OR 15.0 U.S. GAL/MIN. PER EACH DRAIN.
– THREE (3) CONTROLLED ROOF DRAINS ARE PROPOSED AT THE FLAT ROOF TOP OF THIS BUILDING.

16. ALL PROPOSED BUILDING SANITARY, STORM AND WATER SERVICES SHALL TERMINATE ±1.0m OUTSIDE THE FOUNDATION WALL AND CONNECTION TO PLUMBING BY OTHERS.

17. SANITARY BUILDING DRAIN TO BE EQUIPPED WITH A FULL PORT BACKWATER VALVE AND INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS. STORMWATER DRAIN TO BE EQUIPPED WITH A BACKWATER VALVE AND INSTALLED AS PER CITY'S REQUIREMENTS.

18. PRIOR TO CONCRETE FOOTING AND FOUNDATION POURING, THE OWNERS AND/OR CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT THE SUBGRADE ON THIS LOT IS SUFFICIENT TO SUPPORT THE PROPOSED BUILDING.

19. FOR DEVELOPMENT OF THIS LOT, THE CONTRACTOR MUST FIRST CONSTRUCT THE UNDERGROUND SANITARY, STORM AND WATER SERVICES FROM THE SEWER AND WATERMAIN TO SERVICE THE ENTIRE PROPERTY, PRIOR TO BUILDING CONCRETE FOUNDATION POURING. THE CONTRACTOR SHALL VERIFY SEWER DEPTHS TO ENSURE THAT SEWER LATERALS CAN ACHIEVE A SLOPE OF 1% (MIN.) AND STILL BE BELOW PROPOSED UNDERSIDE OF CONCRETE FOOTING ELEVATION, IF THIS IS FOUND NOT POSSIBLE, THE CONTRACTOR SHALL CONTACT THE OWNER TO REPORT THE FINDING IN ORDER TO ADJUST THE BUILDING FOUNDATION GRADES PRIOR TO CONCRETE POURING.

20. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY EQUIPMENT, LABOUR AND MATERIALS RELATING TO THE CIVIL WORKS REQUIRED FOR INSTALLATION OF NEW SITE SERVICES. PROVINCIAL HEALTH AND SAFETY REGULATIONS MUST BE FOLLOWED DURING CONSTRUCTION.

21. IT IS THE RESPONSIBILITY OF THE SITE SERVICES CONTRACTOR TO OBTAIN AND CONSTRUCT THE WORKS TO MEET THE LATEST REVISIONS IN CURRENT CIRCULATION OF THE CITY OF OTTAWA'S ENGINEERING STANDARDS, OPSS AND OPSD STANDARDS, AND ONTARIO BUILDING/PLUMBING CODES. WHERE THE LATEST REVISION DIFFERS FROM THE REQUIREMENTS SET OUT IN THIS PLAN, THE CONTRACTOR SHALL PRICE THE WORKS TO MEET LATEST REVISED STANDARDS IN HIS PRICE BID FOR THIS PROJECT. THE CONTRACTOR SHALL INFORM THE ENGINEERS OF ANY CHANGES PRIOR TO COMMENCEMENT OF THE WORKS.

22. PROPOSED TOP OF ENTRY, TOP OF FOUNDATION, UNDERSIDE OF FOOTING ELEVATIONS SHALL BE REVIEWED AND APPROVED BY BRYDEN GIBSON ARCHITECTS INC. PRIOR TO CONSTRUCTION.

23. IF EXISTING GRADES ALONG ANY EXISTING ABUTTING PROPERTY LIMITS EXCEED THE PROPOSED GRADES ON THIS PROPERTY BY A HEIGHT DIFFERENTIAL THAT EXCEEDS TERRACING OF 3M TO 1V, THEN INSTALL A RETAINING WALL AS PER OWNER'S REQUIREMENTS.

24. SITE SERVICING BEDDING, BACKFILL REQUIREMENTS ALONG WITH ROADWAY AND PARKING LOT PAVEMENT STRUCTURES SHALL MEET RECOMMENDATIONS AND REQUIREMENTS SET OUT IN THE OWNER'S SOILS ENGINEER'S REPORT. ALL WORKS TO BE CARRIED OUT BY THE CONTRACTOR ON THE PROPOSED ASPHALT

25. THE CONTRACTOR, UPON COMPLETION OF THE NEW SERVICES, SHALL RESTORE THE EXISTING BASELINE ROAD AND LEXINGTON STREET ROADWAY BOULEVARD DISTURBED BY CONSTRUCTION WORKS ON THIS PROPERTY. ADDITIONALLY, THE ROADWAY GRADING SHALL BE RESTORED AND REGRADED TO DRAIN POSITIVELY TO EXISTING STORMWATER OUTLET AS REQUIRED BY THE CITY INSPECTOR.

26. THE RETAINING WALL TO BE CONSTRUCTED AND MATERIAL TYPE SHALL BE SPECIFIED BY THE OWNER'S ARCHITECT AND/OR HIS STRUCTURAL ENGINEER. ANY RETAINING WALLS BUILT ON THIS LOT EXCEEDING 1.0m IN HEIGHT FROM PROPOSED FINISHED GROUND ELEVATION WILL BE REQUIRED TO BE PREPARED AND CERTIFIED BY THE OWNER'S STRUCTURAL ENGINEER AND APPROVED BY THE CITY PRIOR TO CONSTRUCTION.

27. WHERE FROST COVER FROM UNDERSIDE OF BUILDING CONCRETE FOOTING TO PROPOSED FINISHED GROUND ELEVATION IS LESS THAN 1.55m, IT IS RECOMMENDED THAT INSULATION (50mm THICK) MINIMUM BE INSTALLED AT THE EXTERIOR OF BUILDING FOUNDATION TO PROVIDE SUFFICIENT FROST COVER FOR THE FOUNDATION STRUCTURES. THE FOOTINGS WILL NEED TO BE REVIEWED FOR INSULATION BY THE OWNER'S SOILS ENGINEER. EXACT INSULATION REQUIREMENTS SHALL BE AS PER ARCHITECT'S INSULATION DETAILS AS SHOWN ON THEIR ARCHITECTURAL DRAWINGS AND CONFIRMED BY THE OWNER'S SITE SOILS ENGINEER.

28. IT IS RECOMMENDED THAT A FULL PORT BACKWATER VALVE BE INSTALLED FOR THE SANITARY SERVICE LATERAL AND A BACKWATER VALVE FOR THE STORM SERVICE LATERAL PROPOSED TO SERVICE THE NEW BUILDING UNDER THE CURRENT REGULATION OF THE ONTARIO PLUMBING CODE AS PER CITY OF OTTAWA S14, S14.1 AND S14.2. THE OWNER'S ARCHITECT AND PLUMBER SHALL CHECK THE CURRENT ONTARIO PLUMBING CODE FOR REQUIREMENTS FOR A BACKWATER VALVE IN THE BUILDING AND AS PER THE MECHANICAL ENGINEER'S DRAWINGS AT THE SANITARY AND STORM SEWER SERVICE LINES.

29. EXISTING LATERALS AND WATER SERVICE PIPING HAVE BEEN AND/OR SHALL BE ABANDONED. THE WATER SERVICE SHALL BE BLANKED AND CAPPED AT THE MAIN AS PER CITY'S REQUIREMENTS. THE SEWER LATERAL(S) SHALL BE CAPPED AND/OR PLUGGED AT THE FRONT PROPERTY LINE. ALL WATER AND SEWER LATERAL WORKS SHALL BE CARRIED OUT TO THE CITY'S SATISFACTION.

30. a) THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES TO PROVIDE FOR PROTECTION OF THE RECEIVING STORM SEWER DURING CONSTRUCTION ACTIVITIES. THESE PRACTICES ARE REQUIRED TO ENSURE NO SEDIMENT AND/OR ASSOCIATED POLLUTANTS ARE RELEASED TO THE RECEIVING WATERCOURSE. THESE PRACTICES INCLUDE INSTALLATION OF SEDIMENT BARRIERS ON ALL CATCH BASIN AND MAINTENANCE HOLES AND A SILT FENCE BARRIER (AS PER OPSD 219.110 AND ASSOCIATED SPECIFICATIONS) ALONG THE PROPERTY LIMITS OF THE PROPOSED DEVELOPMENT AND ALL OTHER AREAS THAT SHEET DRAIN OFF SITE. MAINTENANCE HOLE SEDIMENT BARRIERS TO BE AMOCO 4555 NONWOVEN GEOTEXTILE OR APPROVED EQUIVALENT.

b) THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES TO PROVIDE FOR PROTECTION OF THE AREA DRAINAGE SYSTEM AND THE RECEIVING WATERCOURSE DURING CONSTRUCTION ACTIVITIES. THE CONTRACTOR ACKNOWLEDGES THAT FAILURE TO IMPLEMENT APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES MAY BE SUBJECT TO PENALTIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCY.

31. THE PROPOSED RESIDENTIAL APARTMENT BUILDING WILL HAVE A SPRINKLER SYSTEM FOR FIRE PROTECTION.

32. CONTRACTOR SHALL CONSTRUCT DRIVEWAY ENTRANCE CULVERT AS PER CITY OF OTTAWA REQUIREMENTS AND IN ACCORDANCE WITH CITY OF OTTAWA REQUIREMENTS OTHERWISE PER OPSD 803.030. END OF PIPE TREATMENT OF CULVERT SHALL BE CONSTRUCTED TO MEET THE OWNER'S REQUIREMENTS. PROPOSED CULVERT MATERIAL SHALL MEET CITY'S SPECIFICATION MS–18.3. POLYMER LAMINATED CONFORMING TO ASTM A929, ASTM A742 OR EQUAL.

33. NO EXCESS DRAINAGE, DURING AND AFTER CONSTRUCTION, WILL BE DIRECTED TOWARDS THE NEIGHBORS' PROPERTIES.

34. ALL TREES ON THE RIGHT–OF–WAY ARE TO BE MAINTAINED BEFORE AND AFTER CONSTRUCTION AND ALL TREES WITHIN THE PROPERTY SHALL BE PROTECTED AS PER THE 'MUNICIPAL TREES AND NATURAL AREAS PROTECTION BY–LAWS' AND THE 'URBAN TREES CONSERVATION BY–LAW' AS AMENDED FROM TIME TO TIME.

PATERSON GROUP
9 AURIGA DRIVE
OTTAWA, ON
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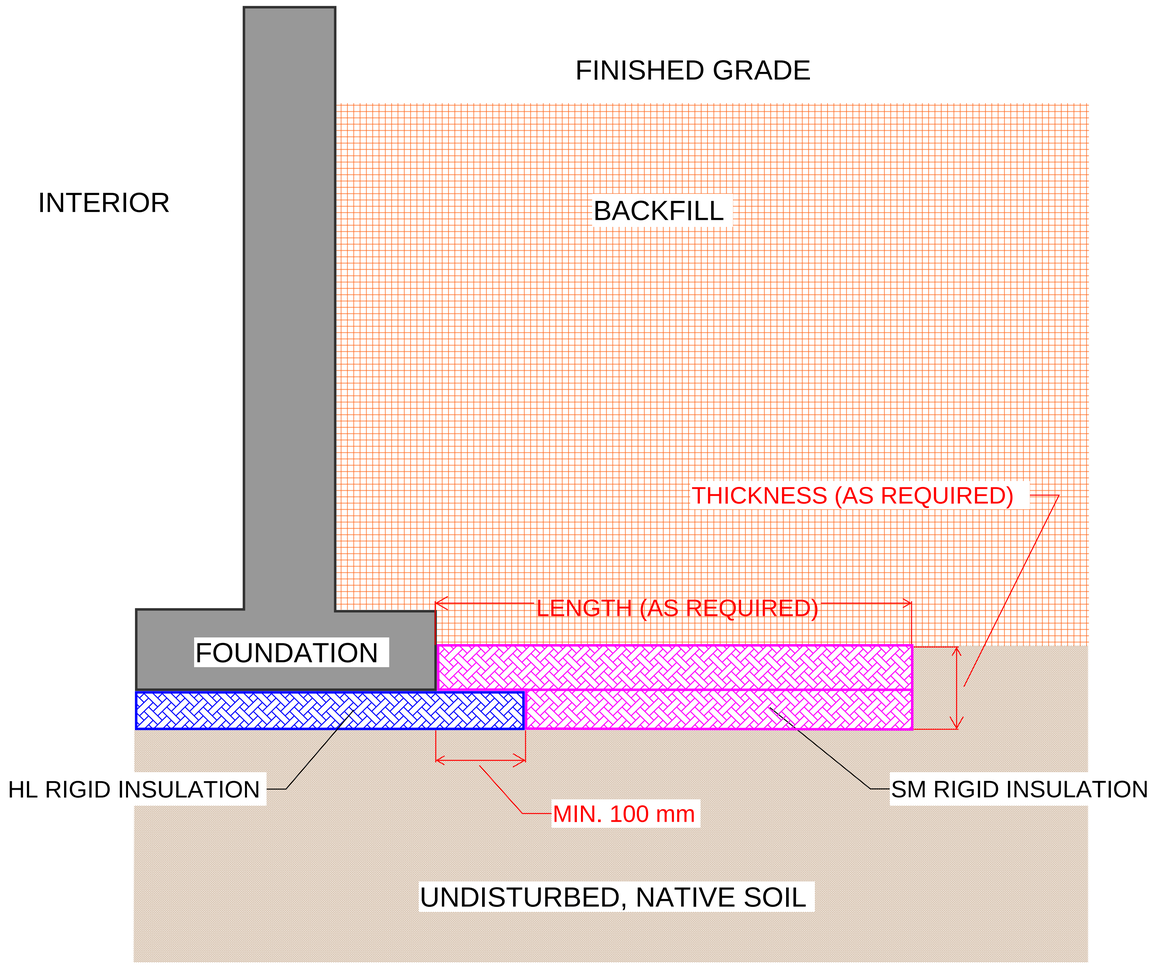
Figure 2 - Insufficient Soil Cover (Services)

HP Urban | **PG6324-MEMO.01** | **222 Baseline Road, Ottawa, Ontario**

FOOTINGS



SERVICES

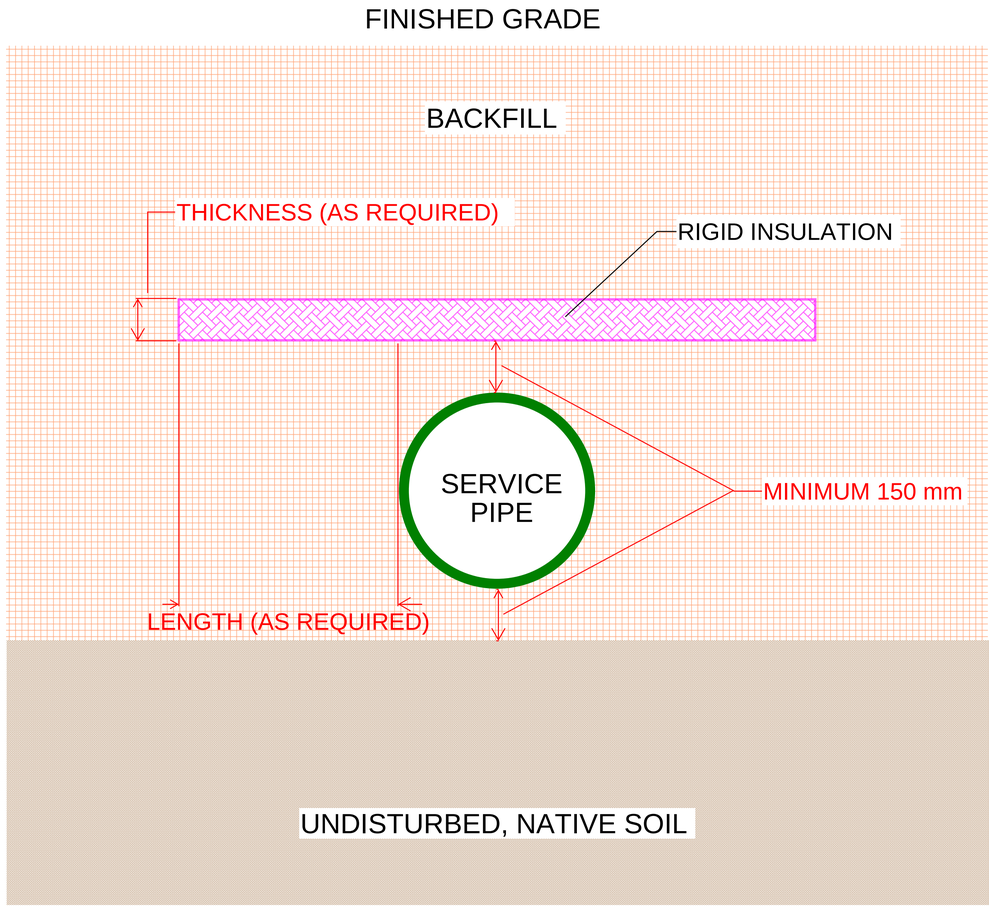


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Figure 3 - Typical Rigid Insulation Detail | **Scale: NTS**

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