PATERSON GROUP

memorandum

re: **Global Stability Analysis – Proposed Retaining Wall**
Proposed Commercial Development
301 Somme Street – Ottawa, Ontario

to: W.O. Stinson & Son Ltd. – **Scott Stinson** – sstinson@wostinson.com

date: July 23, 2026

file: PG7567-MEMO.03

Further to your request and authorization, Paterson Group (Paterson) prepared the following memorandum to complete a global stability analysis of the proposed stone strong retaining wall. The current memorandum should be read in conjunction with Paterson Group Report PG7567-1 Revision 2, dated July 23, 2026.

1.0 Background Information

As requested, Paterson completed the design of the proposed stone strong retaining wall system to be located at the aforementioned development. The stone strong retaining wall system has been checked for global stability, considering the site constraints and grading to date. The analysis was completed for the worst-case scenario (with the highest wall section on grading plans) as per the Canadian Highway and Bridge Design Code (CHBDC) 2019.

The following grading plan, prepared by Stantec, was considered as part of our design of the proposed retaining wall:

- Grading Plan – Project No. 160402138 – Drawing No. 124107-GP-1 – Revision No. 1, dated April 9, 2026.

Based on our design, the exposed portion of the subject stone strong retaining wall varies in height, ranging from 0.3 m to 7.9 m, located on the north property boundary along Rideau Road at the subject site. The global stability of retaining walls higher than 1.0 m should be assessed by a professional engineer, as per the City of Ottawa retaining wall design standards. One retaining wall section (the highest section of the retaining wall), with respect to the soil conditions across the site at the location of the highest section, has been used in this analysis.

Reference should be made to PG8054-1 – Stone Strong Retaining Wall Design Drawing, attached to the current memorandum, for the location of the cross section.

Retaining Wall System Stability

The proposed retaining wall has been verified for global stability and has an adequate factor of safety in excess of the required 1.5 for static conditions and 1.1 for seismic loading conditions. The applicable seismic design incorporates a PGA of 0.41, as per NBCC 2020.

Bearing Resistance Value

Geotechnical field review must be completed at the time of excavation, prior to placing the granular bedding layer, to assess the bearing medium under the proposed wall.

The bearing resistances provided in Table 1 are applicable to the proposed retaining wall. The soil parameters presented in Table 2 have been used for the design of the retaining wall.

Table 1 - Bearing Resistance Values

Bearing Surface	Bearing Resistance Value at SLS (kPa)	Factored Bearing Resistance Value at ULS (kPa)
Approved Engineered Fill Over an Undisturbed In-Situ Soil Bearing Surface	150	225
Undisturbed, Compact to Very Dense Glacial Till	250	375

The bearing medium at the subgrade level for the retaining wall should consist of a minimum 300 mm granular pad placed over an undisturbed, native, in-situ soil bearing surface.

Any loose sandy and fill material, where free of significant amounts of organic material, should be proof rolled by a vibratory roller making several passes under dry and above-freezing conditions, and reviewed and approved by Paterson Group at the time of construction. Provided that minimal flexing is observed the sand layer can be left in place as subgrade for retaining walls.

An undisturbed soil bearing surface consists of a surface from which all topsoil and deleterious materials, such as loose, frozen, or disturbed soil, whether in situ or not, have been removed, in the dry, prior to the placement of the granular base.

2.0 Global Stability Analysis

The global stability analysis was modeled using SLIDE2, a computer program which permits a two-dimensional slope stability analysis using several limit equilibrium analysis methods, which are widely used and accepted analysis methods. The program calculates a factor of safety, which represents the ratio of the forces resisting failure to those favoring failure. Theoretically, a factor of safety of 1.0 represents a condition where the slope is stable. However, due to intrinsic limitations of the calculation methods and the variability of the subsoil and groundwater conditions, a factor of safety greater than one is usually required to ascertain the risks of failure are acceptable. A minimum factor of safety of 1.5 is generally recommended for conditions where the failure of the slope would endanger permanent structures.

A minimum factor of safety of 1.5 is generally recommended for conditions where the slope failure would comprise permanent structures. An analysis considering seismic loading was also completed. A horizontal acceleration of 0.176 g (which is taken as 0.5 of the area's peak ground acceleration (PGA)), was considered for the sections for the seismic loading condition. A factor of safety of 1.1 is considered to be satisfactory for stability analyses including seismic loading.

The retaining wall section was reviewed using the design loading according to CHBDC 2019.

One representative section from the proposed retaining wall was evaluated as a worst-case scenario for soil conditions and loading possible to be encountered on site.

Section A represents the highest overall section for the proposed retaining wall located at the subject site. The highest section is approximately 8.2 m in height. The soil along that area was found to consist of a layer of engineered fill with a thickness of approximately 1.8 m. The engineered fill layer is underlain by an existing fill layer with an approximate thickness of 4.2 m and followed by a glacial till deposit. The bedrock is located at an approximate elevation of 81.1 m.

Reference should be made to above noted geotechnical report for the subsurface profile at the location of cross section A.

The effective and total soil strength parameters used for the analyses were chosen based on the subsoil information recovered during the geotechnical investigations. The effective and total soil strength parameters used for the static and seismic analyses are presented in Table 1 below.

Table 2 – Effective and Total Soil Strength Parameters

Soil Layer	Unit Weight (kN/m^3)	Friction Angle (degrees)	Cohesion (kPa)
Dynamic Compacted Granular Fill	21	35	0
Engineered Fill	21	36	0
Existing Fill	20	34	0
Grey Silty Sand	20	35	0
Glacial Till	20	35	1
OPSS Granular B Type II	22	38	0
Bedrock	23	-	-

Analysis Results

The factor of safety for the retaining wall section was found to be greater than 1.5 for static conditions. Similarly, the results under seismic loading yielded a factor of safety for this section greater than 1.1. Based on these results, the retaining wall design is considered suitable from a geotechnical perspective. Reference should be made to Figures 1A and 1B for the results of the global slope stability analysis, attached to the current memorandum.

3.0 Geotechnical Recommendations

Backfill Material

The retaining wall should be backfilled with free-draining granular backfill materials and incorporate longitudinal drains and weep holes to provide positive drainage for the accumulated surface water within the backfill material of the retaining wall. For the purpose of this report, it is recommended that the wall be backfilled with either OPSS Granular B Type II or Granular A materials.

The backfill should be placed within a wedge-shaped zone defined by a line drawn up and back from the back edge of the base block of the wall at an inclination of 1H:1V or a minimum of 1 m behind the back of the blocks, unless otherwise noted in the design drawing. All material should be compacted to a minimum of 95% of the material's SPMDD.

A non-woven geotextile liner such as Terrafix 270R or equivalent should be placed between the backfill material and the retained soil to ensure that the backfill material can retain its free draining characteristics.

The wall should be design with a minimum toe embedment of 200 mm.

Drainage

A 100 mm diameter perforated drainage pipe wrapped in geotextile such as Terrafix 270R or equivalent approved other, surrounded on all sides by 150 mm of clear crushed stone, should be installed at the heel of the bottom block. The drainage system should have outlets through the wall to drain at a nearby catch basin, drainage ditch, or ground surface. Drainage outlets should be spaced at minimum intervals of 10 m.

4.0 Construction Recommendations

It is recommended that the following be completed once the retaining wall design and course of action are determined:

- ❑ Observation of all bearing surfaces prior to backfill placement.
- ❑ Observation of all subgrades prior to placing backfilling materials.
- ❑ Observation of the drainage system prior to backfilling.
- ❑ Field density tests to ensure the specified level of compaction was achieved.
- ❑ Periodic observation of the retaining wall installation, especially at the first course.

It is further recommended that all bedding and backfill materials be placed under dry conditions and above freezing temperatures and approved by the geotechnical consultant at the time of construction. Precautions should be taken to ensure that the bedding material does not freeze before placement of the retaining wall blocks, which could lead to detrimental movement within the retaining wall once the frost leaves the bedding material.

A report confirming that these works have been conducted in general accordance with Paterson's recommendations could be issued upon request, following the completion of a satisfactory material testing and observation program by the geotechnical consultant.

We trust the current memorandum satisfies your immediate requirements.

Best Regards,

Paterson Group Inc

LICENSED PROFESSIONAL ENGINEER
July 23, 2026
J. R. VILLENEUVE
100504344
PROVINCE OF ONTARIO

Yashar Ziaeimehr, M.A.Sc., P.Eng.

Joey R. Villeneuve, M.A.Sc., P.Eng., ing.

Attachments:

- ❑ PG8054-1 – Stone Strong Retaining Wall Design Drawing
- ❑ Retaining Wall Design Calculations
- ❑ Figures 1A and 1B – Global Slope Stability Analysis Results

STONE STRONG GRAVITY CALCULATIONS - ver 6.7

Project Name: WO Stinson
Location: 301 Somme St
Job#: PG8054
Section: A
Calc by: Joey R Villeneuve

(incorporates CAN/CSA S6:19, Canadian Highway Bridge Design Code requirements)

7/22/26 12:24

Notes

Wall Configuration

unit	w (mm)	h (m)	setback (mm) face	setback (mm) tail	modular units Wb (kN)	modular units xb (mm)	unit fill Wa (kN)	unit fill xa (mm)	soil wedge Ws (kN)	soil wedge xs (mm)	CIP Extension we (mm)	CIP Extension h_t	Internal	Max Utiliization
24-44	1118	0.91	808	-1884	10.94	1346	8.65	1438	3.46	2072			Internal Stability OK!	51%
24-62	1575	0.91	707	-1528	12.40	1446	15.31	1545	4.75	2459			Internal Stability OK!	60%
24-62	1575	0.91	606	-1629	12.40	1345	15.31	1444	13.26	2610			Internal Stability OK!	69%
24-86	2184	0.91	505	-1121	13.85	1521	23.75	1651	12.14	3083			Internal Stability OK!	72%
24-86	2184	0.91	404	-1222	13.85	1420	23.75	1550	20.66	3247			Internal Stability OK!	88%
D150	3810	0.91	303	303	23.06	2195	42.26	2221	0.00	0			Internal Stability OK!	67%
D150	3810	0.91	202	202	23.06	2094	42.26	2120	0.00	0			Internal Stability OK!	72%
D150	3810	0.91	101	101	23.06	1993	42.26	2019	0.00	0			Internal Stability OK!	76%
D150	3810	0.91	0	0	23.06	1892	42.26	1918	0.00	0				
													External Stability OK!	**96%**
	3810	8.23	808	-1884	155.68	1789	255.81	1892	54.26	2911				

backfill height **8.23** m — ω 6.31 deg — δ 28.5 deg

exposed height 7.83 m — ω' -12.90 deg — μ_b 0.69

Wall Base

base embedment **400** mm
base thickness **400** mm
base material **agg**
toe slope ____ H:1V slope

Retained Soil

γ **22** kN/m3
ϕ **38** deg

Foundation Soil

γ **20** kN/m3
ϕ **30** deg
c' ____ kPa

allowable bearing pressure **250** kPa
(if specified) (net)

Aggregate Unit Fill

γ **17.3** kN/m3

STONE STRONG SYSTEMS

STONE STRONG GRAVITY CALCULATIONS - ver 6.7

Project Name:	WO Stinson
Location:	301 Somme St
Job#:	PG8054
Section:	A
Calc by:	Joey R Villeneuve

7/22/26 12:24

Backfill Slope & Surcharge

			rise in grade		LL surcharge		tier height	
length 1	13	m (horizontal)		m	17.6	kPa		m
length 2		m (horizontal)		m		kPa		m
length 3		m (horizontal)		m		kPa		m
length 4		m (horizontal)		m		kPa		

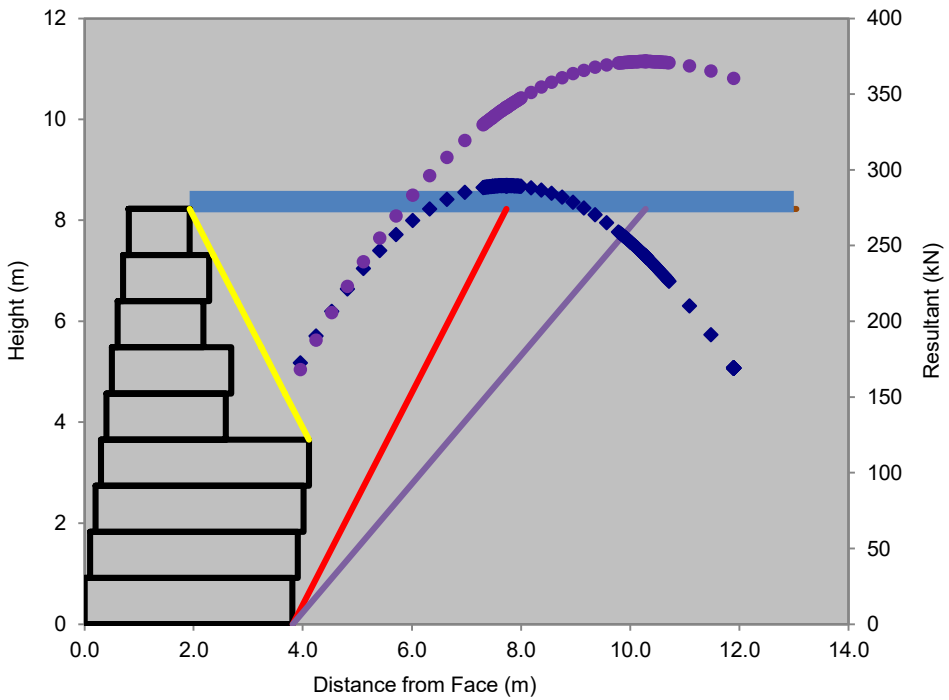
effective slope H:1V slope β 0.0 deg avg q 18 kPa

failure plane α 64.51 deg zone of influence 7.73 m

Seismic Load

PGA 0.41 G Fpga 1.00 Fa 1.20 k_h 0.20

Ground Surface & Trial Wedge Plot



Unfactored Loads

K_a =	0.326		K_{AE} =	0.499
P_h =	182.01	kN	ΔK_{AE} =	0.173
P_v =	160.46	kN	P_{IR} =	94.52 kN
Q_{lh} =	35.40	kN	ΔP_{AEh} =	96.82 kN
Q_{lv} =	31.21	kN	ΔP_{AEv} =	85.36 kN

© S T O N E S T R O N G S Y S T E M S

STONE STRONG SYSTEMS®

STONE STRONG GRAVITY CALCULATIONS - ver 6.7

Project Name: WO Stinson
Location: 301 Somme St
Job#: PG8054
Section: A
Calc by: Joey R Villeneuve

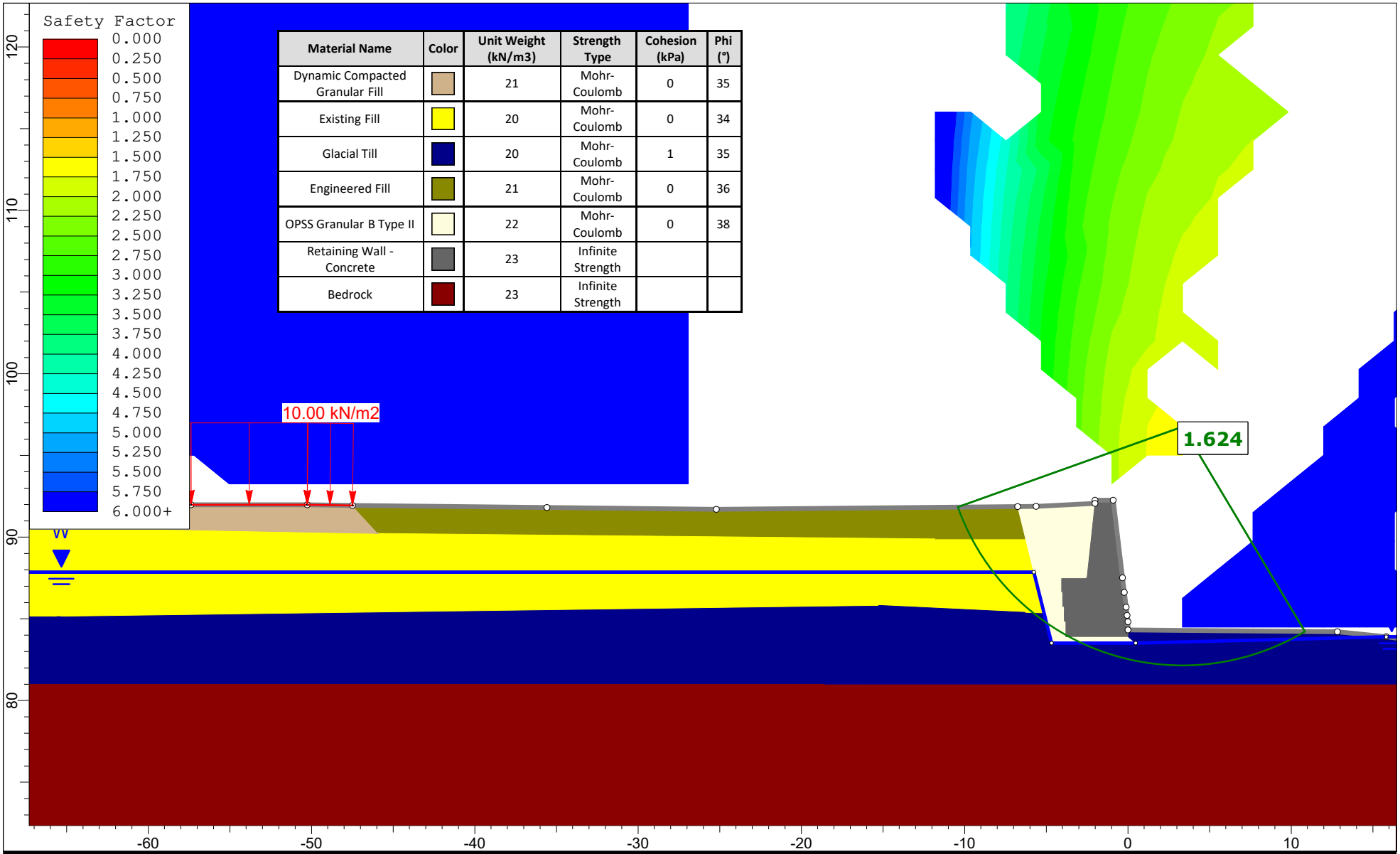
7/22/26 12:24

	Load Cases:	SLS 1	ULS 1-a	ULS 1-b	ULS 4	ULS 5-a (EQ)	ULS 5-b (EQ)	ULS 8 (Coll)	ULS 9	
Factored Loading	*Overturning (kN-m):*	630.10	871.35	871.35	623.82	991.38	1,091.20	499.06	623.82	**OK!**
	Sliding (kN):	213.87	287.69	287.69	227.51	336.94	373.35	182.01	227.51	**OK!**
	Bearing (kPa):	225.1	265.1	297.9	205.1	323.3	343.8	193.4	251.7	**OK!**
	e (m):	0.63	0.91	0.72	0.64	1.30	1.16	0.48	0.45	**OK!**
	Bf' (m):	3.10	2.55	2.94	3.06	1.85	2.12	3.38	3.43	
Factored Resistance	*Overturning (kN-m):*	1,407.51	1,465.91	1,784.54	1,313.74	1,313.81	1,574.36	1,302.74	1,707.65	
	Sliding (kN):	405.59	311.30	408.31	358.49	352.60	428.43	303.32	402.06	
	Bearing (kPa):	758.0	381.4	385.0	381.4	381.4	383.0	383.0	385.8	
	(@ top of base) Max e (m):	1.91	1.14	1.14	1.52	1.52	1.52	1.52	1.14	
Load & Resistance Factors	L	0.90	1.70	1.70	0.00	0.00	0.00	0.00	0.00	
	E	1.00	1.25	1.25	1.25	0.80	1.00	1.00	1.25	
	Hydro	0.00	0.90	0.90	1.10	0.00	0.00	0.00	0.90	
	EQ	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	
	H	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	
	LL Surcharge over Wall	0.90	0.00	1.70	0.00	0.00	0.00	0.00	0.00	
	DC	1.00	0.95	1.10	0.95	0.80	1.00	1.00	1.35	
	DE	1.00	0.80	1.25	0.80	0.80	1.00	1.00	1.35	
	BC	1.00	0.50	0.50	0.50	0.50	0.50	0.50	0.50	
	ϕt precast to agg	1.00	0.80	0.80	1.00	1.00	1.00	0.80	0.80	
	ϕt CIP to agg/soil	1.00	0.80	0.80	1.00	1.00	1.00	0.80	0.80	
	ϕt soil to soil	1.00	0.80	0.80	1.00	1.00	1.00	0.80	0.80	
	ϕt precast to precast	1.00	0.80	0.80	1.00	1.00	1.00	0.80	0.80	
	concrete interface - eccentricity limit	0.50	0.30	0.30	0.40	0.40	0.40	0.40	0.30	
	bearing on soil - eccentricity limit	0.50	0.30	0.30	0.40	0.40	0.40	0.40	0.30	

Max Utiliization
96%

Min Capacity/Demand Ratio
1.05

© S T O N E S T R O N G S Y S T E M S



Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (°)
Dynamic Compacted Granular Fill		21	Mohr-Coulomb	0	35
Existing Fill		20	Mohr-Coulomb	0	34
Glacial Till		20	Mohr-Coulomb	1	35
Engineered Fill		21	Mohr-Coulomb	0	36
OPSS Granular B Type II		22	Mohr-Coulomb	0	38
Retaining Wall - Concrete		23	Infinite Strength		
Bedrock		23	Infinite Strength		

PATERSON GROUP

SLIDEINTERPRET 9.036

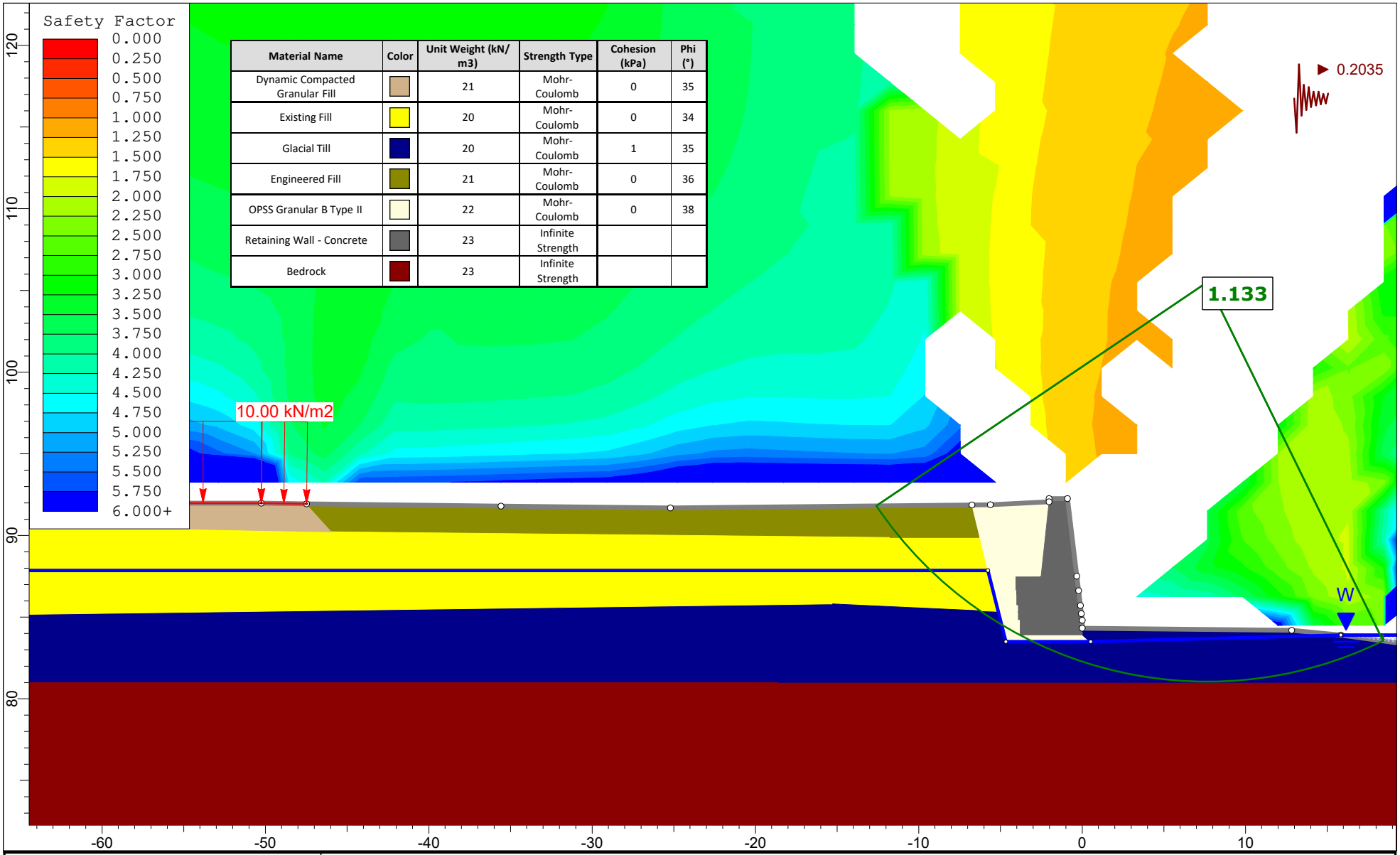
Project No.: **PG7567 - 301 Somme Street**

Drawing No.: **Figure 1A - Static Loading - Proposed Retaining Wall**

Prepared By: YZ

Approved By: JV

Date: 2026-07-22



Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (°)
Dynamic Compacted Granular Fill		21	Mohr-Coulomb	0	35
Existing Fill		20	Mohr-Coulomb	0	34
Glacial Till		20	Mohr-Coulomb	1	35
Engineered Fill		21	Mohr-Coulomb	0	36
OPSS Granular B Type II		22	Mohr-Coulomb	0	38
Retaining Wall - Concrete		23	Infinite Strength		
Bedrock		23	Infinite Strength		

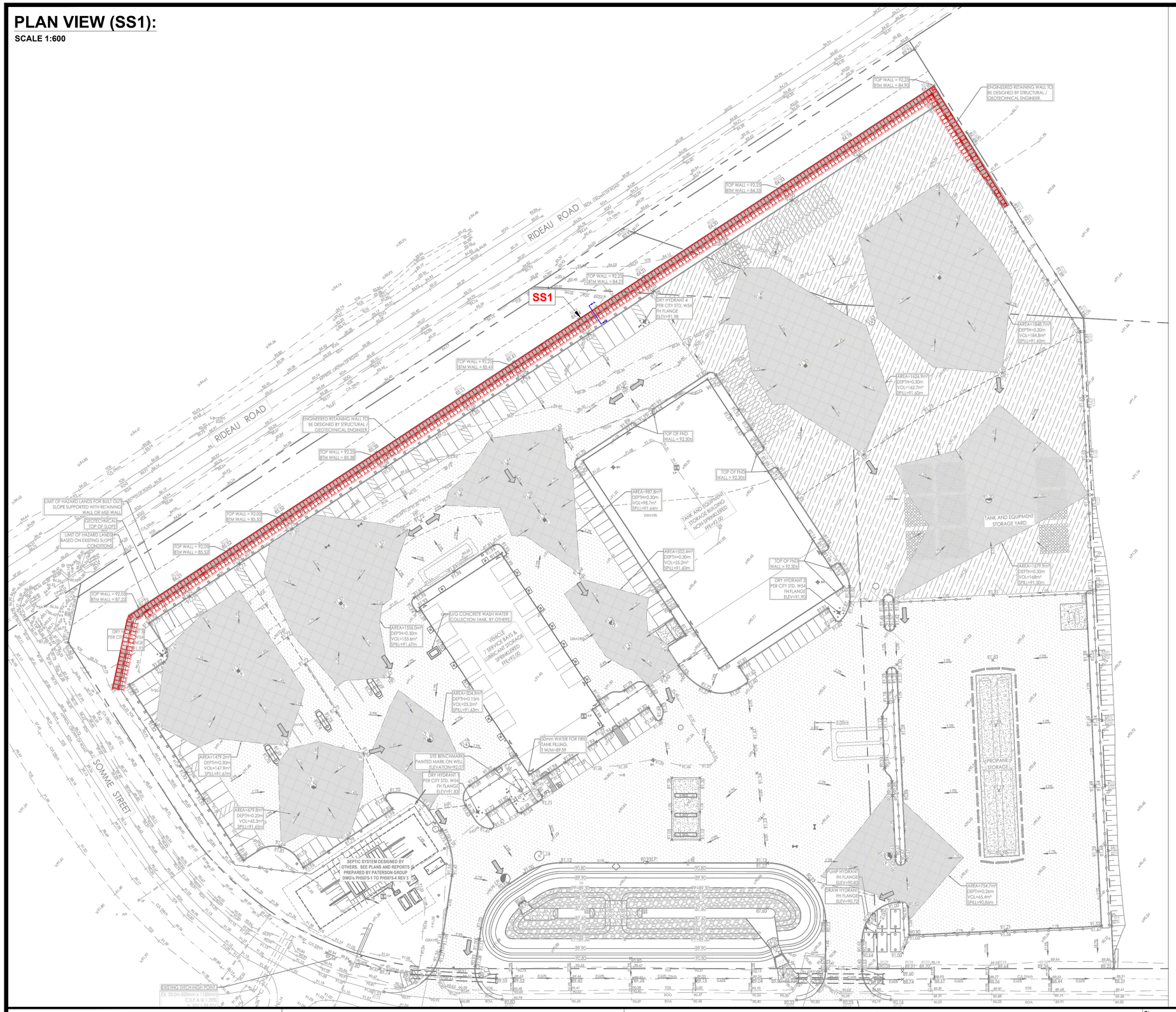
PATERSON GROUP

SLIDEINTERPRET 9.036

Project No.:	**PG7567 - 301 Somme Street**		
Drawing No.:	**Figure 1B - Seismic Loading - Proposed Retaining Wall**		
Prepared By: YZ	Approved By: JV	*Date:* 2026-07-22	

PLAN VIEW (SS1):

SCALE 1:600



NOTES:

1. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR UTILITY CLEARANCE AND CONSTRUCTION SITE SAFETY. MCON AND PATERSON GROUP SHALL NOT BE RESPONSIBLE FOR MEANS OR METHODS OF CONSTRUCTION OR FOR SAFETY OF WORKERS OR OF THE PUBLIC. THE LOCATION OF EXISTING OR PROPOSED UTILITIES MUST BE VERIFIED PRIOR TO CONSTRUCTION. IT IS RECOMMENDED THAT UTILITIES BE OFFSET FROM THE WALL TO PREVENT ADDITIONAL LOADING ON ANY CONDUIT UNLESS ACCOUNTED FOR IN DESIGN OF THE UTILITY, AS WELL AS TO ENSURE FUTURE ACCESS TO THE UTILITY WITHOUT UNDERMINING THE WALL.

2. THIS DESIGN IS BASED ON THE FOLLOWING SOIL PROPERTIES:

PROPERTY	RETAINED FILL	FOUNDATION MEDIUM
SOIL TYPE	GRANULAR B TYPE II	TILL
FRICTION ANGLE - ϕ	38°	35°
UNIT WEIGHT - γ	22 kN/m³	20 kN/m³
COHESION - C	0 kPa	0 kPa

MATERIAL PROPERTIES ARE BASED ON SITE EVALUATION BY PATERSON GROUP, SEISMIC LOADING WAS EVALUATED ACCORDING TO THE CURRENT CHBDC CSA-S6:19, WITH A PEAK GROUND ACCELERATION VALUE OF 0.41. A SURCHARGE OF 17.6 kPa WAS CONSIDERED FOR THE DESIGN.

3. THE DESIGN ELEVATIONS USED WERE BASED ON A GRADING PLAN DRAWN BY STANTEC, PROJECT No. 160402138, DRAWING No. GP-1, REV.1 (DATE: 26.04.09). THE WALL BASE DESIGN ASSUMES A BEARING RESISTANCE AT SLS OF 250 kPa ON GLACIAL TILL. PATERSON GROUP ENGINEER SHOULD OBSERVE THE BEARING CONDITIONS AND ADJUST THE THICKNESS OF THE GRANULAR BASE TO ACCOMMODATE THE SITE CONDITIONS, IF NECESSARY AND IF SOFT SPOT ARE ENCOUNTERED.

4. THE DESIGN HAS BEEN REVIEWED FOR THE STABILITY OF THE PRECAST MODULAR RETAINING WALL SYSTEM AND GLOBAL STABILITY WITH A FACTOR OF SAFETY OF 1.5 FOR STATIC CONDITIONS AND 1.1 UNDER SEISMIC CONDITIONS. WALL GEOMETRY AND GRADE ELEVATIONS ABOVE AND BELOW THE WALL SHOULD CONFORM WITH THE GRADING PLAN PROVIDED HEREIN. IF ACTUAL SITE GRADES VARY SIGNIFICANTLY FROM THOSE SHOWN OR IF THE BACK SLOPE DOES NOT CONFORM, INSTALLATION SHALL NOT PROCEED UNTIL THE DESIGN IS VERIFIED OR MODIFIED IN THE APPLICABLE AREA.

5. HORIZONTAL LAYOUT DIMENSIONS ARE MEASURED ALONG THE FACE OF THE WALL.

6. PRECAST UNITS SHALL BE STONE STRONG RETAINING WALL UNITS MANUFACTURED UNDER LICENSE FROM STONE STRONG SYSTEMS. UNITS SHALL HAVE A MOLDED GRANITE FACE. THE BLOCKS MAY BE STAINED IN PLACE TO ACHIEVE THE DESIRED COLOR.

7. THE WALL BASE SHALL CONSIST OF A MINIMUM OF 300mm OF OPSS GRANULAR A OR GRANULAR B TYPE II ON NATIVE SOIL. THE BASE SHALL BE COMPACTED AS TO PROVIDE A LEVEL AND HARD SURFACE ON WHICH TO PLACE THE FIRST COURSE OF UNITS. GRANULAR BASE MATERIAL SHALL BE COMPACTED TO A MINIMUM 98% OF STANDARD PROCTOR MAXIMUM DRY DENSITY (SPMDD). THE BASE SHALL BE SMOOTHED TO ENSURE COMPLETE CONTACT OF RETAINING WALL UNITS WITH BASE. THE SURFACE OF GRANULAR BASE MAY BE DRESSED WITH FINER AGGREGATE TO AID LEVELING. ENSURE GRADATION OF DRESSING MATERIAL IS SUCH AS TO PRECLUDE LOSS OF FINES INTO BASE. THE THICKNESS OF DRESSING LAYER SHOULD NOT EXCEED 3 TIMES THE MAXIMUM PARTICLE SIZE USED. THE CONTRACTOR MAY SUBSTITUTE CONCRETE WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 20MPa AND AIR ENTRAINMENT FOR THE GRANULAR BASE MATERIAL.

8. INSTALL 100mm DIAMETER PERFORATED PIPE DRAIN WRAPPED IN GEOTEXTILE BEHIND HEEL OF WALL (OR ALTERNATIVELY UNDER LOWER COURSE OF WALL). PROVIDE CLEAR STONE SURROUNDING THE DRAIN TO PROTECT PIPE FROM CLOGGING AND DAMAGE. PROVIDE OUTLETS THROUGH WALL BASE LAYER AT LOW AREAS, NO FURTHER APART THAN 30m CENTRES. IF OUTLET NOT AVAILABLE, RAISE DRAINAGE PIPE TO FINISHED GRADE AND DRAIN AT THE ENDS OF THE WALL AND OUTLET THROUGH THE FACE OF THE WALL (WITH RODENT GUARD) NO FURTHER APART THAN 30m CENTRES.

9. PATERSON SHOULD REVIEW THE BEARING SURFACE DURING THE CONSTRUCTION. IF FILL MATERIAL IS ENCOUNTERED, A REVIEW OF THE BEARING CONDITIONS SHOULD BE CONDUCTED BY PATERSON PERSONNEL PRIOR TO THE PLACEMENT OF THE GRANULAR BASE. PROOF ROLLING OF THE BEARING SURFACE WILL ALSO BE REQUIRED UNDER THE SUPERVISION OF PATERSON PERSONNEL TO REHABILITATE THE BEARING MEDIUM AND TO ACHIEVE THE DESIGN BEARING CAPACITIES. A BIAXIAL GEOGRID SUCH AS TBX 2500 MAY BE REQUIRED TO BE PLACED ON THE BEARING SURFACE AND WRAP AROUND THE EDGES OF THE GRANULAR BASE. ALTERNATIVELY, FILL MATERIAL CAN BE REMOVED AND REPLACED WITH ENGINEERED FILL SUCH AS GRANULAR B TYPE II PLACED IN MIN. 300mm THICK LIFTS COMPACTED TO A MINIMUM 98% OF THE MATERIAL'S SPMDD EXTENDING TO THE UNDERLYING NATIVE SOIL. A REVIEW OF THE BEARING SURFACE SHOULD BE CONDUCTED ON SITE AT THE TIME OF EXCAVATION.

10. WALL IS DESIGNED FOR A MINIMUM OF 300mm TOE EMBEDMENT WITH A MINIMUM HORIZONTAL LEDGE OF 300mm BEYOND THE FACE. WHERE GRANULAR BEDDING WILL NOT BE SUFFICIENT, THE USE OF CONCRETE BEDDING MAY BE REQUIRED. EXTRA PRECAUTIONS MUST BE TAKEN TO PROVIDE TOE EMBEDMENT IN AREAS WHERE BASE OF WALL STEPS.

11. THE RETAINING WALL IS A BATTERED WALL. ALIGNMENT OF THE BOTTOM WALL UNIT COURSE SHOULD BE PLANNED TO CONSIDER THAT A NOMINAL 50 mm AUTOMATIC SETBACK WILL OCCUR WITH EACH 0.46 m HIGH UNIT.

12. UNIT FILL SHALL BE A CLEAN, COURSE GRANULAR MATERIAL. UNIT FILL SHALL BE 19mmØ CLEAR STONE MEETING THE SATISFACTION OF THE GEOTECHNICAL ENGINEER. UNIT FILL SHALL FILL CAVITIES WITHIN AND BETWEEN THE UNITS AND MAY EXTEND BEHIND THE FACING UNITS FOR THE CONTRACTOR'S CONVENIENCE.

13. BACKFILL MATERIAL SHALL BE APPROVED BY THE SITE GEOTECHNICAL ENGINEER PRIOR TO USE AND SHOULD CONSIST OF OPSS GRANULAR A OR GRANULAR B TYPE II BUFFER OF 1000mm (AS SHOWN) WIDTH. ALL FILL WITHIN A 1H:1V ZONE UP AND BACK FROM THE HEEL SHOULD ALSO BE COMPACTED. BACKFILL SHALL BE PLACED IN MAXIMUM 300 mm LOOSE LIFTS AND COMPACTED TO A MINIMUM OF 98% OF THE MATERIAL'S SPMDD. MOISTURE CONTENT SHOULD BE CONTROLLED AND MAINTAINED WITHIN -3 TO +4 PERCENT OF OPTIMUM. ONLY WHERE WALL PASSES DIRECTLY AGAINST A FENCE POST SHOULD CLEAR STONE BE USED.

14. ENSURE EACH COARSE IS COMPLETELY FILLED AND BACKFILL IS PLACED TO THE SAME LEVEL PRIOR TO PROCEEDING TO THE NEXT COURSE. ENSURE ADJACENT UNITS ARE IN CONTACT SO THAT UNIT FILL MAY NOT ESCAPE THROUGH THE JOINT BETWEEN UNITS. STRIPS OF GEOTEXTILE CAN BE PLACED ON THE INSIDE OF THE BLOCK AT THE JOINTS TO RETAIN FILL. GAPS GREATER THAN 6 mm BETWEEN UNITS (AT THE FACE) SHALL NOT BE ALLOWED. AT THE INTERSECTIONS WITH STRUCTURES, CUT UNITS TO OBTAIN A NEAT FIT. PULL BLOCK UNITS FORWARD TO ENGAGE THE ALIGNMENT LOOPS ON THE UNIT BELOW BEFORE INFILLING IN ALL CASES.

15. MAINTAIN TEMPORARY GRADES TO DIVERT SURFACE WATER AWAY FROM THE RETAINING WALL EXCAVATION. SLOPE FINAL BACKFILL TO PROVIDE POSITIVE DRAINAGE AND TO ELIMINATE PONDING.

16. IF WINTER CONSTRUCTION IS CONSIDERED, HEAT MUST BE MAINTAINED WHEN THE BASE IS EXPOSED. THE WALL BASE MUST BE COVERED WITH INSULATION TARPS TO MAINTAIN HEAT AND PROTECT THE BASE FROM POTENTIAL FROSTHEAVE. ONCE THE BASE IS BACKFILLED, THE TOP OF WALL MUST BE COVERED WITH INSULATION TARPS OVERNIGHT UNTIL THE WALL CONSTRUCTION IS COMPLETED.

17. THE GEOTECHNICAL CONSULTANT SHOULD BE NOTIFIED AT THE BEGINNING OF THE WALL CONSTRUCTION TO COMPLETE PERIODIC INSPECTIONS AND PROVIDE GEOTECHNICAL RECOMMENDATIONS AS THE WALL CONSTRUCTION PROGRESSES.

18. DURING THE CONSTRUCTION OF THE RETAINING WALL, THE CONTRACTOR MUST ENSURE THAT A SAFE SLOPE IS PROVIDED BEHIND THE RETAINING WALL. THE GEOTECHNICAL CONSULTANT SHOULD COMPLETE PERIODIC INSPECTIONS TO ENSURE A PROPER SLOPE IS PROVIDED AS PER THE SITE GEOTECHNICAL RECOMMENDATIONS.

19. ANY INADEQUATE PERFORMING SUBGRADE SHOULD BE SUB-EXCAVATED AND REPLACED WITH OPSS GRANULAR B TYPE II, COMPACTED TO 98% OF THE MATERIALS SPMDD.

20. ANY CUTTING OF BLOCKS TO SUIT SITE CONDITIONS OR WALL DESIGN WILL BE THE RESPONSIBILITY OF THE CONTRACTOR. REMOVAL/CUTTING OF LIFTING LOOPS ON THE FINAL ROW OF BLOCKS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.

21. LEVELING OF THE BASE COURSE BLOCKS IS CRITICAL TO PROPER CONSTRUCTION OF THE WALL. THE USE OF SHIMS TO LEVEL THE BLOCKS IS NOT PERMITTED UNLESS REVIEWED ON SITE PRIOR TO THEIR USE. SHOULD SHIMS BE APPROVED FOR USE BY PATERSON, THE SPECIFICATIONS AND DETAILS OF THE SHIMS USED TO SUPPORT THE BLOCKS SHOULD BE PROVIDED TO PATERSON'S DESIGNER TO CONFIRM THAT NO LONG-TERM ISSUES MAY OCCUR AS A RESULT OF THE USE OF NON-SUITABLE SHIMS IN RELATION TO THE LOAD EXPECTED FROM THE BLOCKS ABOVE.

22. THE DESIGN ASSUMES THE FOLLOWING: THE MAXIMUM GROUNDWATER ELEVATION IS BELOW THE BASE OF THE WALL, THERE WILL BE NO HYDROSTATIC PRESSURE WITHIN OR BEHIND THE WALL, THE SURROUNDING STRUCTURES WILL NOT EXERT ANY ADDITIONAL LOADING ON THE WALL, THERE ARE NO STRUCTURES (UTILITIES SUCH AS GAS/WATER MAINS, STORM SEWERS, ELECTRICAL/COMMUNICATIONS CABLES, ETC) TO BE PLACED WITHIN OR BELOW THE REINFORCED FILL DURING OR AFTER CONSTRUCTION. ALTERNATIVELY, SEE DETAILS.

23. THE CONTRACTOR SHOULD REFER TO THE INSTALLATION MANUAL PROVIDED FOR THE RETAINING WALL BLOCK TYPE PROVIDED HEREIN FOR ADDITIONAL DETAILS ON ACCEPTABLE INSTALLATION PRACTICES.

24. RETAINING WALL CONSTRUCTION SHOULD BEGIN AT LOW POINTS, CORNERS OF THE WALL, OR KNOWN PROVIDED WORKING POINTS TO ENSURE WALL DIMENSIONS ARE FOLLOWED. DIMENSIONS PROVIDED MIGHT REQUIRE FIELD CUTTING TO ADJUST FOR FIELD CONDITIONS BASED ON BLOCK TOLERANCES.

25. SETBACK FROM PROPERTY LINE SHOULD CONSIDER COURSE SETBACK (WALL BATTER) BASED ON THE POSITION OF THE LOWER COURSE. EACH SUBSEQUENT COURSE OF 0.91m WILL HAVE A SUPPLEMENTAL SETBACK OF 100mm.

26. THE FENCING DETAIL PROVIDED IN THE CURRENT DESIGN ASSUMES A FULL PANELED WIND BEARING PRIVACY FENCE UP TO 2.1M IN HEIGHT. IF DIFFERENT FENCING AND/OR VEHICLE GUIDERAILS ARE PROPOSED, PATERSON MUST BE CONTACTED IMMEDIATELY PRIOR TO CONSTRUCTION AS ADDITIONAL RECOMMENDATIONS AND POSSIBLE CHANGES MAY APPLY TO THE SELECTED RETAINING WALL BLOCKS AT THESE SPECIFIC AREAS.

27. NO TREES SHOULD BE PLANTED WITHIN 3m FROM THE BACK OF THE TOP BLOCK. ALTERNATIVELY, HIGH GRADE ROOTBARRIERS SHOULD BE USED IN PLACED OF THE GEOTEXTILE TO LIMIT THE PLANTING SETBACK TO 1.5 m.

PATERSON GROUP
9 AURIGA DRIVE
OTTAWA, ON
K2E 7T9
TEL: (613) 226-7381

THIS DRAWING IS THE PROPERTY OF THE PATERSON GROUP ENTITY IDENTIFIED IN THE TITLE BLOCK AND MAY NOT BE REUSED OR ALTERED IN WHOLE OR IN PART WITHOUT THE EXPRESS WRITTEN PERMISSION OF SAME

NO.	REVISIONS	DATE	INITIAL

W.O STINSON

PROPOSED RETAINING WALL
301 SOMME STREET

OTTAWA, **ONTARIO**

Title:

STONE STRONG RETAINING WALL DESIGN

Stamp: LICENSED PROFESSIONAL ENGINEER 07/23/2026 J. R. VILLENEUVE 100504344 PROVINCE OF ONTARIO

Stamp: LICENSED PROFESSIONAL ENGINEER 07/23/2026 F. I. ABOU-SEIDO 100156744 PROVINCE OF ONTARIO

Scale:	AS SHOWN
Drawn by:	MLP
Checked by:	JV
Approved by:	JV
Date:	07/23/2026
File No.:	PG8054
Drawing No.:	PG8054-1
Revision No.:	0

Autodesk Docs://PG8054 Somme Street/PG8054-1.dwg