

**re: Geotechnical Design Summary Details
Proposed Residential Development
Trails Edge East Block 193 and 194 - Ottawa**

to: Richcraft - **Mr. Alexander Orakwue** - aorakwue@richcraft.com

date: May 4, 2021

file: PG5397-MEMO.01

Further to your request and authorization, Paterson Group (Paterson) prepared the current memorandum to provide the geotechnical design summary details for the proposed residential development located at Trailsedge East Blocks 193 and 194 in the City of Ottawa. The following memorandum should be read in conjunction with the Geotechnical Investigation Report (Paterson Group Report PG5397-1 Revision 1 dated December 9, 2020).

Relevant design information is presented in the attached Table 1 - Summary of Design Details for the subject blocks and lots. The relevant design and inspection information includes the following:

- Legal lot/block number and building type
- Original ground surface elevation
- Proposed finished grade elevation
- Proposed USF elevation
- Seismic site class
- Bearing resistance values
- Maximum allowable grade raise
- Engineered fill recommendations
- Lightweight fill (LWF) recommendations

Grading Plan Review

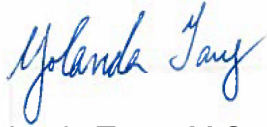
Paterson reviewed the following grading plan prepared by Stantec for the aforementioned residential development:

- Drawing No. GP-1 - Grading Plan - Trailsedge Block 193 and 194 - Project No. 160401585, Revision 2 dated April 30, 2021

Based on our review of the grading plan provided, the proposed grading for all blocks/units and subject roadways within the aforementioned development are considered acceptable and in compliance with our permissible grade raise recommendations. Therefore, no lightweight fill or surcharge program is required for the subject units/blocks, and conventional construction methods are acceptable. Our grading summary is presented in Table 1 - Summary of Design Details.

We trust that this information satisfies your requirements.

Paterson Group Inc.



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PG5397 - Table 1 - Summary of Grading Design Details - Trails Edge East - Block 193 and 194 - Brian Coburn Boulevard

Lot/Block Number	Unit *	Underside of Footing Elevation	Bearing Resistance Value at SLS	Original GS Front	Proposed GS Front	Estimated Engineered Fill Below Underside of Footing Elevation	Permissible Grade Raise	Permissible Grade Raise Elevation	Above Permissible Grade Raise	Minimum Thickness LWF in Garage and Front Porch	Minimum Requirements for Lightweight Fill	Seismic Site Class
		(m)	(kPa)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	
Block 1	1	86.60	100	88.43	88.60	n/a	1.70	90.13	n/a	n/a	n/a	D
	2	86.60	100	88.43	88.60	n/a	1.70	90.13	n/a	n/a	n/a	D
	3	86.60	100	87.88	88.42	n/a	1.70	89.58	n/a	n/a	n/a	D
	4	86.60	100	87.88	88.42	n/a	1.70	89.58	n/a	n/a	n/a	D
	5	86.60	100	87.45	88.60	n/a	1.70	89.15	n/a	n/a	n/a	D
	6	86.60	100	87.45	88.60	n/a	1.70	89.15	n/a	n/a	n/a	D
	7	86.60	100	87.88	88.75	n/a	1.70	89.58	n/a	n/a	n/a	D
	8	86.60	100	87.88	88.75	n/a	1.70	89.58	n/a	n/a	n/a	D
	9	86.60	100	88.43	88.75	n/a	1.70	90.13	n/a	n/a	n/a	D
Block 2	1	86.59	100	89.64	88.43	n/a	1.70	91.34	n/a	n/a	n/a	D
	2	86.59	100	89.64	88.43	n/a	1.70	91.34	n/a	n/a	n/a	D
	3	86.59	100	89.64	88.59	n/a	1.70	91.34	n/a	n/a	n/a	D
	4	86.59	100	89.64	88.59	n/a	1.70	91.34	n/a	n/a	n/a	D
	5	86.59	100	87.91	88.74	n/a	1.70	89.61	n/a	n/a	n/a	D
	6	86.59	100	87.91	88.74	n/a	1.70	89.61	n/a	n/a	n/a	D
	7	86.59	100	88.72	88.74	n/a	1.70	90.42	n/a	n/a	n/a	D
	8	86.59	100	88.72	88.74	n/a	1.70	90.42	n/a	n/a	n/a	D
Block 3	1	86.51	100	90.86	88.51	n/a	1.70	92.56	n/a	n/a	n/a	D
	2	86.51	100	90.86	88.51	n/a	1.70	92.56	n/a	n/a	n/a	D
	3	86.51	100	90.02	88.51	n/a	1.70	91.72	n/a	n/a	n/a	D
	4	86.51	100	90.02	88.51	n/a	1.70	91.72	n/a	n/a	n/a	D
	5	86.51	100	89.57	88.86	n/a	1.70	91.27	n/a	n/a	n/a	D
	6	86.51	100	89.57	88.86	n/a	1.70	91.27	n/a	n/a	n/a	D
	7	86.51	100	90.67	88.86	n/a	1.70	92.37	n/a	n/a	n/a	D
	8	86.51	100	90.67	88.86	n/a	1.70	92.37	n/a	n/a	n/a	D
Block 4	1	86.50	100	87.20	88.50	n/a	1.70	88.90	n/a	n/a	n/a	D
	2	86.50	100	87.20	88.50	n/a	1.70	88.90	n/a	n/a	n/a	D
	3	86.50	100	87.19	88.65	n/a	1.70	88.89	n/a	n/a	n/a	D
	4	86.50	100	87.19	88.65	n/a	1.70	88.89	n/a	n/a	n/a	D
	5	86.50	100	87.25	88.85	n/a	1.70	88.95	n/a	n/a	n/a	D
	6	86.50	100	87.25	88.85	n/a	1.70	88.95	n/a	n/a	n/a	D
	7	86.50	100	87.12	88.65	n/a	1.70	88.82	n/a	n/a	n/a	D
	8	86.50	100	87.12	88.65	n/a	1.70	88.82	n/a	n/a	n/a	D
Block 5	1	86.43	100	87.52	88.58	n/a	1.70	89.22	n/a	n/a	n/a	D
	2	86.43	100	87.33	88.58	n/a	1.70	89.03	n/a	n/a	n/a	D
	3	86.43	100	87.18	88.58	n/a	1.70	88.88	n/a	n/a	n/a	D
	4	86.43	100	87.18	88.58	n/a	1.70	88.88	n/a	n/a	n/a	D
	5	86.43	100	87.26	88.78	n/a	1.70	88.96	n/a	n/a	n/a	D
	6	86.43	100	87.26	88.78	n/a	1.70	88.96	n/a	n/a	n/a	D
	7	86.43	100	87.28	88.78	n/a	1.70	88.98	n/a	n/a	n/a	D
	8	86.43	100	87.28	88.78	n/a	1.70	88.98	n/a	n/a	n/a	D
Block 6	1	86.40	100	87.53	88.55	n/a	1.70	89.23	n/a	n/a	n/a	D
	2	86.40	100	87.53	88.55	n/a	1.70	89.23	n/a	n/a	n/a	D
	3	86.40	100	87.48	88.55	n/a	1.70	89.18	n/a	n/a	n/a	D
	4	86.40	100	87.48	88.55	n/a	1.70	89.18	n/a	n/a	n/a	D
	5	86.40	100	87.39	88.75	n/a	1.70	89.09	n/a	n/a	n/a	D
	6	86.40	100	87.43	88.75	n/a	1.70	89.13	n/a	n/a	n/a	D
	7	86.40	100	87.43	88.75	n/a	1.70	89.13	n/a	n/a	n/a	D
	8	86.40	100	87.41	88.75	n/a	1.70	89.11	n/a	n/a	n/a	D

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Lot/Block Number	Unit *	Underside of Footing Elevation	Bearing Resistance Value at SLS	Original GS Front	Proposed GS Front	Estimated Engineered Fill Below Underside of Footing Elevation	Permissible Grade Raise	Permissible Grade Raise Elevation	Above Permissible Grade Raise	Minimum Thickness LWF in Garage and Front Porch	Minimum Requirements for Lightweight Fill	Seismic Site Class
		(m)	(kPa)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	
Block 7	1	86.40	100	87.50	88.55	n/a	1.70	89.20	n/a	n/a	n/a	D
	2	86.40	100	87.50	88.55	n/a	1.70	89.20	n/a	n/a	n/a	D
	3	86.40	100	87.60	88.55	n/a	1.70	89.30	n/a	n/a	n/a	D
	4	86.40	100	87.72	88.55	n/a	1.70	89.42	n/a	n/a	n/a	D
	5	86.40	100	87.43	88.75	n/a	1.70	89.13	n/a	n/a	n/a	D
	6	86.40	100	87.43	88.75	n/a	1.70	89.13	n/a	n/a	n/a	D
	7	86.40	100	87.35	88.75	n/a	1.70	89.05	n/a	n/a	n/a	D
	8	86.40	100	87.35	88.75	n/a	1.70	89.05	n/a	n/a	n/a	D
Block 8	1	86.51	100	87.48	88.66	n/a	1.70	89.18	n/a	n/a	n/a	D
	2	86.51	100	87.48	88.66	n/a	1.70	89.18	n/a	n/a	n/a	D
	3	86.51	100	87.43	88.66	n/a	1.70	89.13	n/a	n/a	n/a	D
	4	86.51	100	87.43	88.66	n/a	1.70	89.13	n/a	n/a	n/a	D
	5	86.51	100	87.50	88.66	n/a	1.70	89.20	n/a	n/a	n/a	D
	6	86.51	100	87.50	88.66	n/a	1.70	89.20	n/a	n/a	n/a	D
	7	86.51	100	87.35	88.66	n/a	1.70	89.05	n/a	n/a	n/a	D
	8	86.51	100	87.35	88.66	n/a	1.70	89.05	n/a	n/a	n/a	D
Block 9	1	86.55	100	87.44	88.70	n/a	1.70	89.14	n/a	n/a	n/a	D
	2	86.55	100	87.44	88.70	n/a	1.70	89.14	n/a	n/a	n/a	D
	3	86.55	100	87.45	88.55	n/a	1.70	89.15	n/a	n/a	n/a	D
	4	86.55	100	87.45	88.55	n/a	1.70	89.15	n/a	n/a	n/a	D
	5	86.55	100	87.46	88.55	n/a	1.70	89.16	n/a	n/a	n/a	D
	6	86.55	100	87.46	88.55	n/a	1.70	89.16	n/a	n/a	n/a	D
	7	86.55	100	87.35	88.55	n/a	1.70	89.05	n/a	n/a	n/a	D
	8	86.55	100	87.35	88.55	n/a	1.70	89.05	n/a	n/a	n/a	D
Block 10	1	86.61	100	89.53	88.61	n/a	1.70	91.23	n/a	n/a	n/a	D
	2	86.61	100	90.25	88.61	n/a	1.70	91.95	n/a	n/a	n/a	D
	3	86.61	100	90.15	88.61	n/a	1.70	91.85	n/a	n/a	n/a	D
	4	86.61	100	90.15	88.61	n/a	1.70	91.85	n/a	n/a	n/a	D
	5	86.61	100	89.73	88.61	n/a	1.70	91.43	n/a	n/a	n/a	D
	6	86.61	100	89.73	88.61	n/a	1.70	91.43	n/a	n/a	n/a	D
	7	86.61	100	89.73	88.61	n/a	1.70	91.43	n/a	n/a	n/a	D
	8	86.61	100	89.73	88.61	n/a	1.70	91.43	n/a	n/a	n/a	D
Block 11	1	86.66	100	87.29	88.66	n/a	1.70	88.99	n/a	n/a	n/a	D
	2	86.66	100	87.45	88.66	n/a	1.70	89.15	n/a	n/a	n/a	D
	3	86.66	100	88.37	88.66	n/a	1.70	90.07	n/a	n/a	n/a	D
	4	86.66	100	88.37	88.66	n/a	1.70	90.07	n/a	n/a	n/a	D
	5	86.66	100	88.73	88.51	n/a	1.70	90.43	n/a	n/a	n/a	D
	6	86.66	100	88.73	88.51	n/a	1.70	90.43	n/a	n/a	n/a	D
	7	86.66	100	87.52	88.51	n/a	1.70	89.22	n/a	n/a	n/a	D
	8	86.66	100	87.52	88.51	n/a	1.70	89.22	n/a	n/a	n/a	D
Block 12	1	86.66	100	87.73	88.60	n/a	1.70	89.43	n/a	n/a	n/a	D
	2	86.66	100	87.73	88.60	n/a	1.70	89.43	n/a	n/a	n/a	D
	3	86.66	100	87.73	88.60	n/a	1.70	89.43	n/a	n/a	n/a	D
	4	86.66	100	87.73	88.60	n/a	1.70	89.43	n/a	n/a	n/a	D
	5	86.66	100	87.70	88.60	n/a	1.70	89.40	n/a	n/a	n/a	D
	6	86.66	100	87.70	88.60	n/a	1.70	89.40	n/a	n/a	n/a	D
	7	86.66	100	87.70	88.60	n/a	1.70	89.40	n/a	n/a	n/a	D
	8	86.66	100	87.70	88.60	n/a	1.70	89.40	n/a	n/a	n/a	D
	9	86.66	100	87.79	88.60	n/a	1.70	89.49	n/a	n/a	n/a	D
	10	86.66	100	87.79	88.60	n/a	1.70	89.49	n/a	n/a	n/a	D
	11	86.66	100	87.26	88.60	n/a	1.70	88.96	n/a	n/a	n/a	D
	12	86.66	100	87.26	88.60	n/a	1.70	88.96	n/a	n/a	n/a	D

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Lot/Block Number	Unit *	Underside of Footing Elevation	Bearing Resistance Value at SLS	Original GS Front	Proposed GS Front	Estimated Engineered Fill Below Underside of Footing Elevation	Permissible Grade Raise	Permissible Grade Raise Elevation	Above Permissible Grade Raise	Minimum Thickness LWF in Garage and Front Porch	Minimum Requirements for Lightweight Fill	Seismic Site Class
		(m)	(kPa)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	
Block 13	1	86.75	100	87.48	88.65	n/a	1.70	89.18	n/a	n/a	n/a	D
	2	86.75	100	87.48	88.65	n/a	1.70	89.18	n/a	n/a	n/a	D
	3	86.75	100	87.58	88.65	n/a	1.70	89.28	n/a	n/a	n/a	D
	4	86.75	100	87.58	88.65	n/a	1.70	89.28	n/a	n/a	n/a	D
	5	86.75	100	87.81	88.65	n/a	1.70	89.51	n/a	n/a	n/a	D
	6	86.75	100	87.81	88.65	n/a	1.70	89.51	n/a	n/a	n/a	D
	7	86.75	100	87.81	88.65	n/a	1.70	89.51	n/a	n/a	n/a	D
	8	86.75	100	87.81	88.65	n/a	1.70	89.51	n/a	n/a	n/a	D
	9	86.75	100	88.31	88.83	n/a	1.70	90.01	n/a	n/a	n/a	D
	10	86.75	100	88.31	88.83	n/a	1.70	90.01	n/a	n/a	n/a	D
	11	86.75	100	88.39	88.83	n/a	1.70	90.09	n/a	n/a	n/a	D
	12	86.75	100	88.39	88.83	n/a	1.70	90.09	n/a	n/a	n/a	D
Block 14	1	86.68	100	87.26	88.73	n/a	1.70	88.96	n/a	n/a	n/a	D
	2	86.68	100	87.26	88.73	n/a	1.70	88.96	n/a	n/a	n/a	D
	3	86.68	100	87.26	88.73	n/a	1.70	88.96	n/a	n/a	n/a	D
	4	86.68	100	87.26	88.73	n/a	1.70	88.96	n/a	n/a	n/a	D
	5	86.68	100	87.44	88.73	n/a	1.70	89.14	n/a	n/a	n/a	D
	6	86.68	100	87.44	88.73	n/a	1.70	89.14	n/a	n/a	n/a	D
	7	86.68	100	87.44	88.73	n/a	1.70	89.14	n/a	n/a	n/a	D
	8	86.68	100	87.44	88.73	n/a	1.70	89.14	n/a	n/a	n/a	D
	9	86.68	100	88.00	88.83	n/a	1.70	89.70	n/a	n/a	n/a	D
	10	86.68	100	88.00	88.83	n/a	1.70	89.70	n/a	n/a	n/a	D
	11	86.68	100	87.35	88.83	n/a	1.70	89.05	n/a	n/a	n/a	D
	12	86.68	100	87.35	88.83	n/a	1.70	89.05	n/a	n/a	n/a	D
Block 15	1	86.60	100	87.19	88.65	n/a	1.70	88.89	n/a	n/a	n/a	D
	2	86.60	100	87.19	88.65	n/a	1.70	88.89	n/a	n/a	n/a	D
	3	86.60	100	87.19	88.65	n/a	1.70	88.89	n/a	n/a	n/a	D
	4	86.60	100	87.19	88.65	n/a	1.70	88.89	n/a	n/a	n/a	D
	5	86.60	100	87.24	88.60	n/a	1.70	88.94	n/a	n/a	n/a	D
	6	86.60	100	87.24	88.60	n/a	1.70	88.94	n/a	n/a	n/a	D
	7	86.60	100	87.24	88.60	n/a	1.70	88.94	n/a	n/a	n/a	D
	8	86.60	100	87.24	88.60	n/a	1.70	88.94	n/a	n/a	n/a	D
	9	86.60	100	87.99	88.75	n/a	1.70	89.69	n/a	n/a	n/a	D
	10	86.60	100	87.99	88.75	n/a	1.70	89.69	n/a	n/a	n/a	D
	11	86.60	100	87.80	88.75	n/a	1.70	89.50	n/a	n/a	n/a	D
	12	86.60	100	87.80	88.75	n/a	1.70	89.50	n/a	n/a	n/a	D
Block 16	1	86.60	100	87.27	88.75	n/a	1.70	88.97	n/a	n/a	n/a	D
	2	86.60	100	87.27	88.75	n/a	1.70	88.97	n/a	n/a	n/a	D
	3	86.60	100	87.27	88.75	n/a	1.70	88.97	n/a	n/a	n/a	D
	4	86.60	100	87.27	88.75	n/a	1.70	88.97	n/a	n/a	n/a	D
	5	86.60	100	87.22	88.75	n/a	1.70	88.92	n/a	n/a	n/a	D
	6	86.60	100	87.22	88.75	n/a	1.70	88.92	n/a	n/a	n/a	D
	7	86.60	100	87.22	88.75	n/a	1.70	88.92	n/a	n/a	n/a	D
	8	86.60	100	87.22	88.75	n/a	1.70	88.92	n/a	n/a	n/a	D
	9	86.60	100	87.85	88.75	n/a	1.70	89.55	n/a	n/a	n/a	D
	10	86.60	100	87.85	88.75	n/a	1.70	89.55	n/a	n/a	n/a	D
	11	86.60	100	87.42	88.75	n/a	1.70	89.12	n/a	n/a	n/a	D
	12	86.60	100	87.42	88.75	n/a	1.70	89.12	n/a	n/a	n/a	D

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Lot/Block Number	Unit *	Underside of Footing Elevation	Bearing Resistance Value at SLS	Original GS Front	Proposed GS Front	Estimated Engineered Fill Below Underside of Footing Elevation	Permissible Grade Raise	Permissible Grade Raise Elevation	Above Permissible Grade Raise	Minimum Thickness LWF in Garage and Front Porch	Minimum Requirements for Lightweight Fill	Seismic Site Class
		(m)	(kPa)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	
Block 17	1	86.55	100	87.17	88.78	n/a	1.70	88.87	n/a	n/a	n/a	D
	2	86.55	100	87.17	88.78	n/a	1.70	88.87	n/a	n/a	n/a	D
	3	86.55	100	87.17	88.78	n/a	1.70	88.87	n/a	n/a	n/a	D
	4	86.55	100	87.17	88.78	n/a	1.70	88.87	n/a	n/a	n/a	D
	5	86.55	100	87.28	88.78	n/a	1.70	88.98	n/a	n/a	n/a	D
	6	86.55	100	87.28	88.78	n/a	1.70	88.98	n/a	n/a	n/a	D
	7	86.55	100	87.28	88.78	n/a	1.70	88.98	n/a	n/a	n/a	D
	8	86.55	100	87.28	88.78	n/a	1.70	88.98	n/a	n/a	n/a	D
	9	86.55	100	87.31	88.70	n/a	1.70	89.01	n/a	n/a	n/a	D
	10	86.55	100	87.31	88.70	n/a	1.70	89.01	n/a	n/a	n/a	D
	11	86.55	100	87.71	88.70	n/a	1.70	89.41	n/a	n/a	n/a	D
	12	86.55	100	87.71	88.70	n/a	1.70	89.41	n/a	n/a	n/a	D
Block 18	1	86.65	100	87.70	88.75	n/a	1.70	89.40	n/a	n/a	n/a	D
	2	86.65	100	87.70	88.75	n/a	1.70	89.40	n/a	n/a	n/a	D
	3	86.65	100	87.54	88.75	n/a	1.70	89.24	n/a	n/a	n/a	D
	4	86.65	100	87.54	88.75	n/a	1.70	89.24	n/a	n/a	n/a	D
	5	86.65	100	87.53	88.80	n/a	1.70	89.23	n/a	n/a	n/a	D
	6	86.65	100	87.53	88.80	n/a	1.70	89.23	n/a	n/a	n/a	D
	7	86.65	100	87.47	88.80	n/a	1.70	89.17	n/a	n/a	n/a	D
	8	86.65	100	87.47	88.80	n/a	1.70	89.17	n/a	n/a	n/a	D
	9	86.65	100	87.67	88.80	n/a	1.70	89.37	n/a	n/a	n/a	D
	10	86.65	100	87.67	88.80	n/a	1.70	89.37	n/a	n/a	n/a	D
	11	86.65	100	87.52	88.80	n/a	1.70	89.22	n/a	n/a	n/a	D
	12	86.65	100	87.52	88.80	n/a	1.70	89.22	n/a	n/a	n/a	D
Block 19	1	86.65	100	87.61	88.80	n/a	1.70	89.31	n/a	n/a	n/a	D
	2	86.65	100	87.61	88.80	n/a	1.70	89.31	n/a	n/a	n/a	D
	3	86.65	100	87.61	88.80	n/a	1.70	89.31	n/a	n/a	n/a	D
	4	86.65	100	87.61	88.80	n/a	1.70	89.31	n/a	n/a	n/a	D
	5	86.65	100	87.58	88.80	n/a	1.70	89.28	n/a	n/a	n/a	D
	6	86.65	100	87.58	88.80	n/a	1.70	89.28	n/a	n/a	n/a	D
	7	86.65	100	87.63	88.80	n/a	1.70	89.33	n/a	n/a	n/a	D
	8	86.65	100	87.63	88.80	n/a	1.70	89.33	n/a	n/a	n/a	D
	9	86.65	100	87.75	88.80	n/a	1.70	89.45	n/a	n/a	n/a	D
	10	86.65	100	87.75	88.80	n/a	1.70	89.45	n/a	n/a	n/a	D
	11	86.65	100	87.80	88.80	n/a	1.70	89.50	n/a	n/a	n/a	D
	12	86.65	100	87.80	88.80	n/a	1.70	89.50	n/a	n/a	n/a	D

The following grading plan were reviewed as part of this summary:
 - Stantec, TrailsEdge East Block 193 and 194, Grading Plan, Project No. 160401585, Drawing No. GP-1 Revision 2 Dated April 30, 2021.

Legend
 *Townhouse block units are listed from the front view, left to right