

to:	Lloyd Phillips & Associates Ltd. - <b>Christine McCuaig</b> - <a href="mailto:christine@lloydphillips.com">christine@lloydphillips.com</a>
re:	Geotechnical Design Summary Details <b>Proposed Residential Development</b> <b>2710 Draper Avenue - Ottawa</b>
date:	November 28, 2017
file:	PG1630-MEMO.06
from:	Nicholas Zulinski

Further to your request and authorization, Paterson Group (Paterson) prepared the current memorandum to provide a grading plan review for the proposed commercial buildings at the aforementioned development. The following memorandum should be read in conjunction with Paterson Report PG1630-3 Revision 1 dated November 28, 2017.

## **Grading Plan Review**

Paterson reviewed the following grading plan prepared by David Schaeffer Engineering Ltd. for the aforementioned development:

- ☐ Grading Plan - Project No. 17-927 - Drawing No. GP-1 - Revision 3 dated November 28, 2017.

Based on our review of the above noted grading plan, there were some minor instances where the permissible grade raise was exceeded. However, upon further review of both the existing soil profiles and the proposed grading requirements, the proposed grades are considered acceptable from a geotechnical perspective. Therefore, no lightweight fill is required at the subject site.

Table 1 attached provides a grading summary and lightweight fill (LWF) requirements for the subject blocks based on our grading plan review.

## **Outdoor Structures**

The following is recommended for setbacks regarding outdoor structures:

### *Swimming Pools*

The in-situ soils are considered to be acceptable for swimming pools. Above ground swimming pools must be placed a minimum of 5 m away from the residence and neighbouring foundations. Otherwise, pool construction is considered routine, and should be constructed in accordance with the manufacturer's requirements.

### *Aboveground Hot Tubs*

Additional grading around the hot tub should not exceed permissible grade raises. Otherwise, hot tub construction is considered routine, and can be constructed in accordance with the manufacturer's specifications.

### *Installation of Decks or Additions*

Additional grading around proposed deck or addition should not exceed permissible grade raises. Otherwise, standard construction practices are considered acceptable.

## **Tree Planting Restrictions**

The proposed residential dwellings are located in a high sensitivity area with respect to tree plantings over a silty clay deposit. It is recommended that trees placed within 5 m of the foundation wall consist of low water demanding trees with shallow roots systems that extend less than 1.5 m below ground surface. Trees placed greater than 5 m from the foundation wall may consist of typical street trees, which are typically moderate water demand species with roots extending to a maximum 2 m depth.

It is well documented in the literature, and is our experience, that fast-growing trees located near buildings founded on cohesive soils could result in long-term differential settlements of the structures. Tree varieties with most pronounced effect on foundations are seen to consist of poplars, willows and some maples (i.e. Manitoba Maples) and are not recommended for the landscape design.

We trust that this information satisfies your immediate requirements.

### **Paterson Group Inc.**



Nicholas Zulinski, P.Geo.



David J. Gilbert, P.Eng.

## **Paterson Group Inc.**

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Table 1 - Summary of Design Details - 2710 Draper Avenue-Phase 3

Legal Lot/Block Number	Original GS Front (m)	Proposed GS Front (m)	Original GS Rear (m)	Proposed GS Rear (m)	Finished Floor Elevation (m)	Bearing Resistance Value at SLS (kPa)	Permissible Grade Raise (m)	Above Permissible Grade Raise Front (m)	Above Permissible Grade Raise Rear (m)	Minimum Thickness LWF in Garage and Front Porch (m)	Minimum Thickness LWF Extent from Building Face	Seismic Site Class
Block 1-1	73.51	72.39	n/a	n/a	73.15	150	1.00	n/a	n/a	n/a	n/a	D
Block 1-2	73.55	72.39	n/a	n/a	73.15	150	1.00	n/a	n/a	n/a	n/a	D
Block 1-3	73.58	72.43	n/a	n/a	73.15	150	1.00	n/a	n/a	n/a	n/a	D
Block 1-4	73.38	72.43	n/a	n/a	73.15	150	1.00	n/a	n/a	n/a	n/a	D
Block 1-5	73.68	73.19	n/a	n/a	73.75	150	1.00	n/a	n/a	n/a	n/a	D
Block 1-6	73.68	73.19	n/a	n/a	73.75	150	1.00	n/a	n/a	n/a	n/a	D
Block 1-7	73.65	73.23	n/a	n/a	73.75	150	1.00	n/a	n/a	n/a	n/a	D
Block 1-8	73.65	73.23	n/a	n/a	73.75	150	1.00	n/a	n/a	n/a	n/a	D
Block 2-1	73.37	72.50	n/a	n/a	73.30	150	1.00	n/a	n/a	n/a	n/a	D
Block 2-2	73.43	72.50	n/a	n/a	73.30	150	1.00	n/a	n/a	n/a	n/a	D
Block 2-3	73.43	72.62	n/a	n/a	73.30	150	1.00	n/a	n/a	n/a	n/a	D
Block 2-4	73.33	72.57	n/a	n/a	73.30	150	1.00	n/a	n/a	n/a	n/a	D
Block 2-5	73.62	73.30	n/a	n/a	73.90	150	1.00	n/a	n/a	n/a	n/a	D
Block 2-6	73.62	73.30	n/a	n/a	73.90	150	1.00	n/a	n/a	n/a	n/a	D
Block 2-7	73.57	73.42	n/a	n/a	73.90	150	1.00	n/a	n/a	n/a	n/a	D
Block 2-8	73.57	73.42	n/a	n/a	73.90	150	1.00	n/a	n/a	n/a	n/a	D
Block 3-1	73.66	73.36	n/a	n/a	73.92	150	1.00	n/a	n/a	n/a	n/a	D
Block 3-2	73.85	73.28	n/a	n/a	73.92	150	1.00	n/a	n/a	n/a	n/a	D
Block 3-3	73.37	73.36	n/a	n/a	73.92	150	1.00	n/a	n/a	n/a	n/a	D
Block 3-4	73.59	73.36	n/a	n/a	73.92	150	1.00	n/a	n/a	n/a	n/a	D
Block 3-5	73.51	74.07	n/a	n/a	74.52	150	1.00	n/a	n/a	n/a	n/a	D
Block 3-6	73.50	74.01	n/a	n/a	74.52	150	1.00	n/a	n/a	n/a	n/a	D
Block 3-7	73.42	74.07	n/a	n/a	74.52	150	1.00	n/a	n/a	n/a	n/a	D
Block 3-8	73.55	74.07	n/a	n/a	74.52	150	1.00	n/a	n/a	n/a	n/a	D
Block 4-1	73.58	73.49	n/a	n/a	74.12	150	1.00	n/a	n/a	n/a	n/a	D
Block 4-2	73.58	73.41	n/a	n/a	74.12	150	1.00	n/a	n/a	n/a	n/a	D
Block 4-3	73.58	73.49	n/a	n/a	74.12	150	1.00	n/a	n/a	n/a	n/a	D
Block 4-4	73.71	73.49	n/a	n/a	74.12	150	1.00	n/a	n/a	n/a	n/a	D
Block 4-5	73.81	74.28	n/a	n/a	74.72	150	1.00	n/a	n/a	n/a	n/a	D
Block 4-6	73.54	74.21	n/a	n/a	74.72	150	1.00	n/a	n/a	n/a	n/a	D
Block 4-7	73.54	74.28	n/a	n/a	74.72	150	1.00	n/a	n/a	n/a	n/a	D
Block 4-8	73.48	74.28	n/a	n/a	74.72	150	1.00	n/a	n/a	n/a	n/a	D
Block 5-1	74.92	74.09	75.31	76.44	77.19	150	1.00	n/a	0.13	n/a	n/a	D
Block 5-2	74.92	74.09	75.31	76.44	77.19	150	1.00	n/a	0.13	n/a	n/a	D
Block 5-3	74.92	74.09	75.31	76.44	77.19	150	1.00	n/a	0.13	n/a	n/a	D
Block 5-4	75.11	74.11	75.38	76.44	77.19	150	1.00	n/a	0.06	n/a	n/a	D
Block 5-5	75.08	74.11	75.53	76.44	77.19	150	1.00	n/a	n/a	n/a	n/a	D
Block 5-6	75.08	74.11	75.61	76.44	77.19	150	1.00	n/a	n/a	n/a	n/a	D
Block 5-7	75.10	74.11	75.86	76.44	77.19	150	1.00	n/a	n/a	n/a	n/a	D
Block 6-1	73.71	72.70	n/a	n/a	73.32	150	1.00	n/a	n/a	n/a	n/a	D
Block 6-2	73.91	72.65	n/a	n/a	73.32	150	1.00	n/a	n/a	n/a	n/a	D
Block 6-3	73.91	72.79	n/a	n/a	73.32	150	1.00	n/a	n/a	n/a	n/a	D
Block 6-4	73.93	72.72	n/a	n/a	73.32	150	1.00	n/a	n/a	n/a	n/a	D
Block 6-5	73.91	72.86	n/a	n/a	73.32	150	1.00	n/a	n/a	n/a	n/a	D
Block 6-6	73.92	72.86	n/a	n/a	73.32	150	1.00	n/a	n/a	n/a	n/a	D
Block 6-7	73.82	73.50	n/a	n/a	73.92	150	1.00	n/a	n/a	n/a	n/a	D
Block 6-8	73.91	73.45	n/a	n/a	73.92	150	1.00	n/a	n/a	n/a	n/a	D
Block 6-9	73.91	73.59	n/a	n/a	73.92	150	1.00	n/a	n/a	n/a	n/a	D
Block 6-10	73.93	73.58	n/a	n/a	73.92	150	1.00	n/a	n/a	n/a	n/a	D
Block 6-11	73.91	73.62	n/a	n/a	73.92	150	1.00	n/a	n/a	n/a	n/a	D
Block 6-12	73.92	73.62	n/a	n/a	73.92	150	1.00	n/a	n/a	n/a	n/a	D
Block 7-1	73.71	73.63	n/a	n/a	74.20	150	1.00	n/a	n/a	n/a	n/a	D
Block 7-2	73.74	73.55	n/a	n/a	74.20	150	1.00	n/a	n/a	n/a	n/a	D

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Block 7-3	73.80	73.55	n/a	n/a	74.20	150	1.00	n/a	n/a	n/a	n/a	D
Block 7-4	73.80	73.70	n/a	n/a	74.20	150	1.00	n/a	n/a	n/a	n/a	D
Block 7-5	73.80	73.70	n/a	n/a	74.20	150	1.00	n/a	n/a	n/a	n/a	D
Block 7-6	74.47	74.49	n/a	n/a	74.80	150	1.00	n/a	n/a	n/a	n/a	D
Block 7-7	74.47	74.41	n/a	n/a	74.80	150	1.00	n/a	n/a	n/a	n/a	D
Block 7-8	74.49	74.46	n/a	n/a	74.80	150	1.00	n/a	n/a	n/a	n/a	D
Block 7-9	74.50	74.50	n/a	n/a	74.80	150	1.00	n/a	n/a	n/a	n/a	D
Block 7-10	74.52	74.33	n/a	n/a	74.80	150	1.00	n/a	n/a	n/a	n/a	D
Block 8-1	74.41	74.33	76.85	76.68	77.43	150	1.00	n/a	n/a	n/a	n/a	D
Block 8-2	74.41	74.33	76.85	76.68	77.43	150	1.00	n/a	n/a	n/a	n/a	D
Block 8-3	74.44	74.33	76.87	76.68	77.43	150	1.00	n/a	n/a	n/a	n/a	D
Block 8-4	74.46	74.33	76.87	76.68	77.43	150	1.00	n/a	n/a	n/a	n/a	D
Block 8-5	74.42	74.33	76.93	76.68	77.43	150	1.00	n/a	n/a	n/a	n/a	D
Block 8-6	74.35	74.33	76.93	76.68	77.43	150	1.00	n/a	n/a	n/a	n/a	D
Block 8-7	74.41	74.33	76.93	76.68	77.43	150	1.00	n/a	n/a	n/a	n/a	D
Block 9-1	73.50	72.92	73.55	74.58	76.15	150	1.00	n/a	0.03	n/a	n/a	D
Block 9-2	73.50	72.92	73.55	74.65	76.15	150	1.00	n/a	0.10	n/a	n/a	D
Block 9-3	73.43	73.12	73.57	74.70	76.15	150	1.00	n/a	0.13	n/a	n/a	D
Block 9-4	73.71	73.21	73.57	74.80	76.15	150	1.00	n/a	0.23	n/a	n/a	D
Block 9-5	73.84	73.21	73.91	74.85	76.15	150	1.00	n/a	n/a	n/a	n/a	D
Block 10-1	74.25	73.79	74.32	75.55	76.70	150	1.00	n/a	0.23	n/a	n/a	D
Block 10-2	74.25	73.79	74.32	75.55	76.70	150	1.00	n/a	0.23	n/a	n/a	D
Block 10-3	74.17	73.79	74.55	75.60	76.70	150	1.00	n/a	0.05	n/a	n/a	D
Block 10-4	74.48	74.05	74.66	75.75	76.70	150	1.00	n/a	0.09	n/a	n/a	D
Block 10-5	74.59	74.05	74.66	75.75	76.70	150	1.00	n/a	0.09	n/a	n/a	D
Block 11-1	74.86	74.28	75.04	76.18	77.10	150	1.00	n/a	0.14	n/a	n/a	D
Block 11-2	74.97	74.27	75.11	76.32	77.10	150	1.00	n/a	0.21	n/a	n/a	D
Block 11-3	74.68	74.18	76.35	76.37	77.10	150	1.00	n/a	n/a	n/a	n/a	D
Block 11-4	74.68	74.13	76.35	76.37	77.10	150	1.00	n/a	n/a	n/a	n/a	D
Block 11-5	73.75	74.08	76.51	76.44	77.10	150	1.00	n/a	n/a	n/a	n/a	D
Block 12-1	74.71	73.98	75.08	76.19	77.08	150	1.00	n/a	0.11	n/a	n/a	D
Block 12-2	74.71	73.98	75.08	76.50	77.08	150	1.00	n/a	0.42	n/a	n/a	D
Block 12-3	74.78	73.98	75.08	76.50	77.08	150	1.00	n/a	0.42	n/a	n/a	D
Block 12-4	74.87	73.98	75.06	76.50	77.08	150	1.00	n/a	0.44	n/a	n/a	D
Block 12-5	74.88	73.98	75.06	76.50	77.08	150	1.00	n/a	0.44	n/a	n/a	D
Block 12-6	74.80	73.98	75.14	76.50	77.08	150	1.00	n/a	0.36	n/a	n/a	D
Block 12-7	74.80	73.98	75.11	76.50	77.08	150	1.00	n/a	0.39	n/a	n/a	D
Proposed grade raise information was based on the following grading plans prepared by David Schaeffer Engineering Ltd. - Grading Plan - Project No. 17-927 - Drawing No. GP-1 - Revision 3 dated November 28, 2017												