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April 4, 2016
File: 15014

Mr. Sergio Manchia, MCIP, RPP
Urban Solutions Planning & Land Development Consultants Inc.
105 Main Street East, Suite 501
Hamilton, Ontario
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Dear Mr. Manchia,

**Re.: Site Slope Reconstruction for Proposed Columbia International School Residence
925 Main Street West, Hamilton, Ontario**

Landtek Limited is pleased to submit this report regarding the proposed earthworks on the site of the proposed building development at 925 Main Street West in Hamilton, Ontario.

The project site is located on the south-west corner of Main Street West and Longwood Road South. Preliminary design information made available to Landtek Limited indicates that the development will include a fifteen-storey student residence building with retail space on the main floor and one level of underground parking.

Site, Subsurface and Slope Conditions

The subject site is located on table lands at the top of the valley slope along the Chedoke Expressway (Highway 403). Landtek Limited carried out a preliminary geotechnical investigation at the subject site in October 2014. The geotechnical investigation consisted of ten boreholes advanced on the table lands ranging in depth from 2.3 m to 39.6 m below existing ground elevation. The draft report for this investigation was issue November 19, 2014 (File No. 14293).

At the time of the geotechnical investigation there were two existing single storey buildings on the site and the majority of the remaining property was asphalt surfaced with catchbasins to handle surface water drainage. The predominant native soils were classified as fine grained silt, clayey silt, and silty clay. In general, fill was confirmed to extend to depths of between 2.0 m and 3.0 m however one location (borehole 7) was the exception where fill and possible fill extended to approximately 6.7 m.

Proposed Earthworks

It is intended that the existing slope face and gradient be improved by the addition of selected soils in a controlled, engineered manner, to create the shallower, more stable slope gradient of 3(H):1(V). The process of benching and material placement will result in the physical top of slope moving southwards in the order of approximately 14 m. The attached drawing "Site Section", dated January 2016, has been provided for reference.

It is further understood that the proposed development will consist of the construction of a new multi-storey residence building with one level of underground parking located adjacent to the

■ FOUNDATION INVESTIGATIONS ■ ENVIRONMENTAL SITE ASSESSMENTS AND CLEANUP ■ GROUNDWATER STUDIES ■ SLOPE STABILITY STUDIES
■ ASPHALT TECHNOLOGY ■ ASPHALT MIX DESIGNS ■ PAVEMENT PERFORMANCE ANALYSIS ■ CONSTRUCTION MATERIALS TESTING & INSPECTION
■ ANALYSIS OF SOIL CORROSION POTENTIAL ■ PAVEMENT REHABILITATION & TENDER SPECIFICATIONS ■ CONCRETE QUALITY ASSURANCE TESTING
■ ROOF INSPECTIONS ■ INFRASTRUCTURE NEEDS STUDIES ■ FAILURE ANALYSIS AND EXPERT WITNESS SERVICES ■ AGGREGATE EVALUATION

subject slope such that the rear (south) foundation wall of the underground parking level will be constructed with a 6 m setback from the proposed new, to be constructed, top of slope.

Recommended Slope Reconstruction Methodology

The following construction practices are recommended during reconstruction of the slope:

- The surface of the existing slope should be scarified to remove all organics and loose or soft materials;
- The existing slope face should be benched to prevent the formation of a slip plane between the existing slope soils, the benches compacted, and the engineered fill soil then placed and compacted;
- Soils to be used as engineered fill are to be approved granular, clay or silt based materials, not exceed 5 % organic content, and have a moisture content such that these soils are capable of achieving compaction of 95 % of their Standard Proctor Maximum Dry Density (SPMDD) value;
- Engineered fill is to be placed in horizontal lifts not exceeding 250 mm thick. Soils should be compacted to at least 95 % SPMDD value;
- Once reconstruction is completed, the slope should be aggressively vegetated to prevent erosion; and,
- Stormwater and surface water management for the proposed school residence is to include for the installation of appropriate crest drainage to prevent surface water flowing over the slope crest and across the slope face both during and after construction of the residence. This is to minimize surficial erosion from surface water runoff.

Reconstruction Goal

The ultimate goal for the reconstruction of the slope is to improve the longevity of the slope through the increasing of its long-term stability, while also improving the aesthetic nature of the area. This will be established by the re-profiling of the existing slope to a maximum gradient of 3(H):1(V), which is considered stable in the longer term, and by implementing an aggressive re-vegetation program.

The recommended reconstruction works are considered to be a net benefit to the slope area and surrounding lands. Therefore, the resulting enhancement of the existing slope will be a desired asset to the overall development.

Closure and Report Limitations

We trust this report is satisfactory for your purposes at this time. This report was intended to address the reconstruction of the slope only and was not intended to comment on foundation construction of the proposed building. Specific foundation design considerations are to be addressed in a separate geotechnical report to be completed at a later date.

Should you have any questions, please do not hesitate to contact our office.

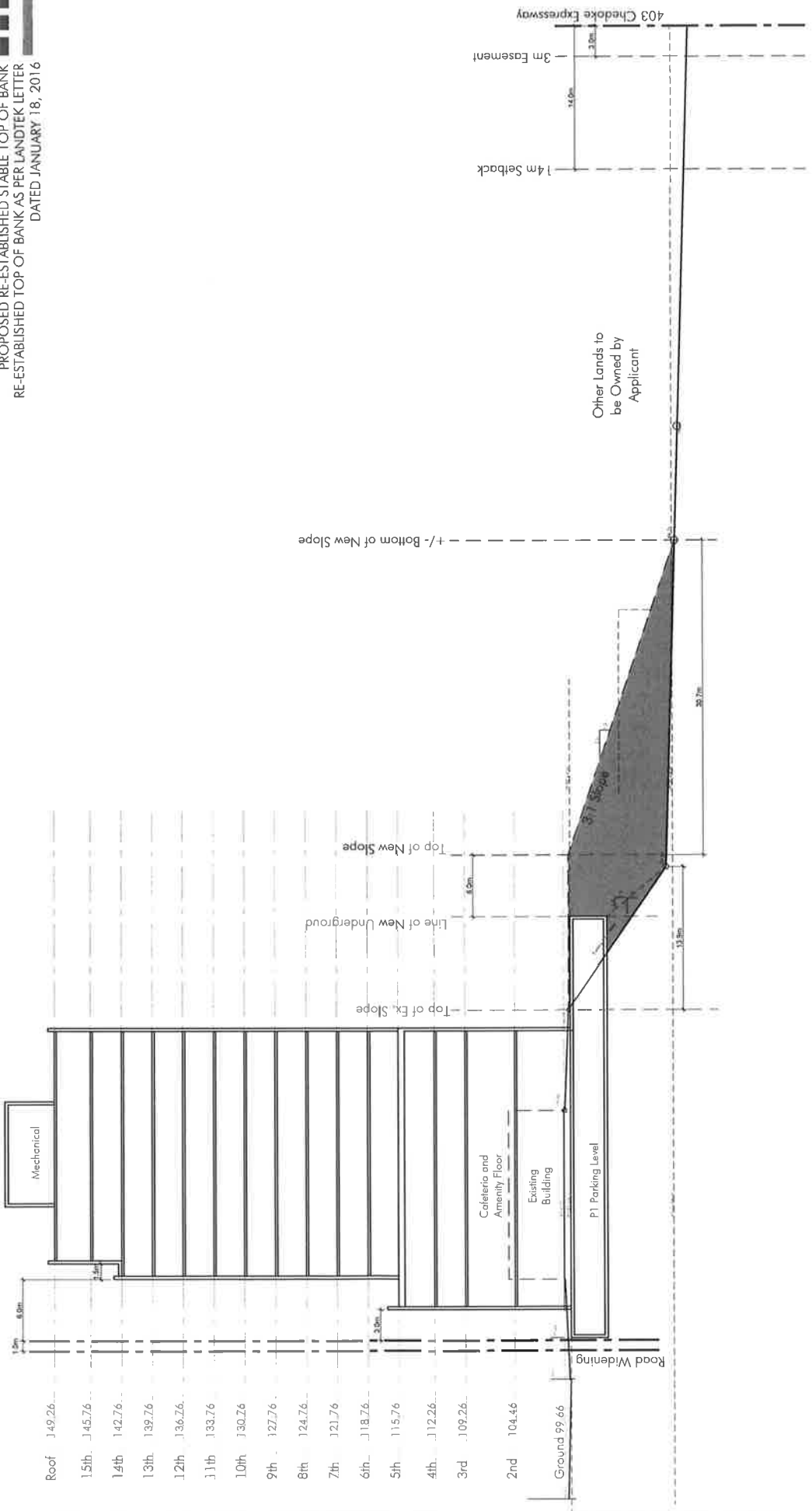
Yours very truly,

LANDTEK LIMITED


Ralph Di Cienzo, P.Eng.
Attachment



EXISTING TOP OF BANK PER SURVEY
 PROPOSED RE-ESTABLISHED STABLE TOP OF BANK
 RE-ESTABLISHED TOP OF BANK AS PER LANDTEK LETTER
 DATED JANUARY 18, 2016



Columbia International College
 925 Main St. West,
 City of Hamilton, Ontario

Site Section
 March 10, 2016