

re: Pavement Structure Details
 5360 Bank Street – Ottawa, Ontario
to: Greely Sand & Gravel Inc. – **Brent Pyper** – info@greelysand.com
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file: PG7831-MEMO.01

Further to your request, Paterson Group (Paterson) prepared this memorandum to provide our geotechnical recommendations for the pavement structure details at the aforementioned site.

Pavement Design

The pavement design is provided below in Tables 1 and 2:

Table 1 - Recommended Pavement Structure – Car-only Parking Areas	
Thickness (mm)	Material Description
50	Wear Course - HL-3 or Superpave 12.5 Asphaltic Concrete
150	BASE - OPSS Granular A Crushed Stone
300	SUBBASE - OPSS Granular B Type II
SUBGRADE - Either fill, in situ soil, or OPSS Granular B Type I or II material placed over fill or in situ soil.	

Table 2 - Recommended Pavement Structure – Access Lanes, Loading Areas and Heavy Truck Parking	
Thickness (mm)	Material Description
40	Wear Course - Superpave 12.5 Asphaltic Concrete
50	Binder Course - Superpave 19.0 Asphaltic Concrete
150	BASE - OPSS Granular A Crushed Stone
450	SUBBASE - OPSS Granular B Type II
SUBGRADE - Either fill, in situ soil, or OPSS Granular B Type I or II material placed over fill or in situ soil.	



If soft spots develop in the subgrade during compaction or due to construction traffic, the affected areas should be excavated and replaced with OPSS Granular B Type I or II material.

Minimum Performance Graded (PG) 58-34 asphalt cement should be used for this project. The pavement granular base and subbase should be placed in maximum 300 mm thick lifts and compacted to a minimum of 99% of the material's standard Proctor maximum dry density (SPMDD) using suitable compaction equipment.

Where the proposed asphalt surface meets existing asphalt, the following joint transition detail should be employed:

- ☐ A 300 mm wide section of the existing asphalt should be saw cut from the existing pavement edge to provide a sound surface to abut the proposed pavement structure.
- ☐ It is recommended to mill a 300 mm wide and 40 mm deep section of the existing asphalt at the saw cut edge.

Winter Construction

Precautions must be taken if winter construction is considered for this project. The subsoil conditions at this site consist of frost susceptible materials. In the presence of water and freezing conditions, ice could form within the soil mass. Heaving and settlement upon thawing could occur.

Pavement construction is a difficult activity to complete during freezing conditions without introducing frost into the subgrade. Precautions should be taken if pavement construction is to be carried out during freezing conditions. Additional information can be provided, if required.

Final Remarks

It is recommended that Paterson conduct the following materials testing and inspections during the pavement construction:

- ☐ Sampling and testing of the base and sub-base materials,
 - ☐ Observation of all subgrades prior to placement of the base and sub-base,
 - ☐ Field density tests to determine the level of compaction achieved, and
 - ☐ Sampling and testing of the asphalt including mix design reviews.
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We trust that this Information satisfies your immediate requirements.

Best Regards,

Paterson Group Inc.

Scott S. Dennis, P.Eng.

