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Via Email (rtomas@ibigroup.com) CTA File No. 02-1589

Melcor Developments Ltd.
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Attention: Ryan Tomas, P. Eng., Project Manager

Subject: **UPDATE TO CURRENT CITY OF ST. ALBERT STANDARDS GEOTECHNICAL EVALUATION NE 1/4, SEC. 17-54-25-W4M WEST OF ST. ALBERT TR. AND 800 m NORTH OF VILLENEUVE RD. ST. ALBERT, ALBERTA**

1.0 INTRODUCTION

In May 2013, CT & Associates Engineering Inc. completed a Due Diligence Geotechnical Evaluation report for the above-noted proposed residential subdivision, located to the west of St. Albert Trail and 800 m north of Villeneuve Road, St. Albert, with results presented in the following document:

"Geotechnical Evaluation - NE 1/4 Sec. 17-54-25-W4M"
West of St. Albert Trail and 800 m of Villeneuve Road, St. Albert, Alberta"
prepared for IBI Group, May 2013.
CTA File No. 02-1589

In view of the elapsed time since completion of this document, this addendum has been prepared to confirm no changes to the site conditions since that time, and also to confirm that presented recommendations are in accordance with the current 2013 City of St. Albert Municipal Engineering Standards which has been released and adopted since the preparation of this study.

2.0 SITE LOCATION AND DESCRIPTION

The site is situated 50 m to the west of the St. Albert Trail (Highway 2) and 800 m north of Villeneuve Road in north St. Albert, Alberta, with the legal description of NE 1/4, Sec. 17-54-25-W4M. The site covers approximately 58 ha (144 acres) of land.

The property is currently undeveloped land, utilized as cultivated farmland.

The subject site is generally flat. There are low-lying areas covered with vegetation within northwest and southeast portions of the site, and a shallow surface drainage channel extending in a northwest-southeast direction within the central portion of the property.

3.0 UPDATES OF GEOTECHNICAL RECOMMENDATIONS

3.1 Site Conditions

As the site remains unchanged from the conditions as were presented at the time of the 2013 study, the general geotechnical recommendations remain applicable.

As outlined in the 2013 study, special considerations for the design and construction in view of wet and soft soil conditions encountered at depth within northwest and southeast portions (in the vicinity of the low-lying areas) of the development, through soil improvements for proper building foundations support and provision for proper base support for utility construction are required over these portions of the site.

3.2 Current City of St. Albert Municipal Engineering Standards

In view of the current City of St. Albert Standards, the following updates to the geotechnical recommendations are presented:

3.2.1 Report Section 5.3 - Site Grading and Preparation (Municipal Roadway)

All engineered clay fill materials for site grading and within municipal roadway construction should be compacted to 98% Standard Proctor Maximum Dry Density (SPD) in 150 mm lifts, with top 150 mm of the roadway sub-grade compacted to 100% SPD (for sub-grade preparation).

3.2.2 Report Section 5.5 - Municipal Roadway Utility Installation

Backfill of all municipal utilities should be compacted to 98% SPD in 150 mm lifts, with the top 150 mm to 100% SPD within roadways and to 98% SPD within sidewalks (for sub-grade preparation).

3.2.3 Report Section 5.6 - Pavement Structures

It is anticipated that the major roadway systems in the proposed development are to be the 9.0 m local residential, 11.0 m minor and 12.0 m major residential collectors.

Based on the anticipated traffic conditions for these roadway types and the subsurface conditions encountered, the following pavement designs, as outlined by the City of St. Albert (2013), are suitable and are recommended for staged construction:

- **Pavement Structures - Local Residential and Collector (5.6.1)**

TABLE 1

ROADWAY PAVEMENT STRUCTURES

GRANULAR BASE		
Material	**Layer Thickness (mm)**	
	9 m Local Residential	**11 m Minor Residential Collectors / 12 m Major Residential Collectors**
Asphalt Concrete	50 (ACR)	50/50 (ACO)
Asphalt Concrete (ACB)	75	100/150
Crushed Gravel (20 mm)*	150	150/200
Prepared Sub-grade *	150 (as per Report Section 5.6.2)	150 (as per Report Section 5.6.2)

Legend: * Compacted to 100% of Standard Proctor Maximum Dry Density (ASTM D698)
ACR = Asphaltic Concrete Residential Course
ACO = Asphaltic Concrete Overlays
ACB = Asphaltic Concrete Base

4.0 CLOSURE

We trust the above is satisfactory to your present requirements. If, however, you have any questions or concerns, please feel free to contact our office.

Yours truly,

CT & ASSOCIATES ENGINEERING INC.

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