

APPENDIX 'A'

GEOTECHNICAL REPORT



**GEOTECHNICAL INVESTIGATION
REGIONAL STREET EVALUATION
WINNIPEG, MANITOBA**

Submitted to:

MMM Group Limited
111-93 Lombard Avenue
Winnipeg, Manitoba
R3B 3B1

Attention: Mr. Mark Vogt

Submitted by:

Amec Foster Wheeler Environment & Infrastructure

440 Dovercourt Drive
Winnipeg, Manitoba
R3Y 1N4

1 March 2016

Amec Foster Wheeler File No. WX17881

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1.0 INTRODUCTION

Amec Foster Wheeler Environment & Infrastructure (Amec Foster Wheeler), was retained by MMM Group Limited (MMM) to conduct a pavement coring program related to the pavement evaluation and potential upgrades on Sargent Avenue in Winnipeg, Manitoba. The investigation consisted of a total of four cores obtained between Arlington and Beverley Streets, two from the eastbound lanes, and two from the westbound lanes.

The purpose of the investigation was to determine the pavement thickness at selected locations along the subject section of the street. The numbers of test holes per street were determined by MMM.

2.0 SITE CONDITIONS

At the streets investigated, the roadway surface consisted of asphalt underlain by concrete. At the time of the investigation, the roadway was snow and ice covered and therefore a detailed review of the pavement condition was not possible. Typical of roads in the Winnipeg area, the roads were generally flat lying and level, with local slopes between catch basins to facilitate drainage.

3.0 FIELD INVESTIGATION

On 17 February 2016 Amec Foster Wheeler obtained the four cores noted above on Sargent Avenue using a 150 mm diameter core barrel. The coring locations are shown on Figure 1. Amec Foster Wheeler retained Guardian Traffic Services to provide traffic control in keeping with City of Winnipeg requirements.

Upon retrieval of the core samples, each core hole was repaired with asphalt in accordance with City requirements.

4.0 PAVEMENT SUMMARY

Following is a summary of the pavement types and thickness encountered at each of the four locations.

Table 1: Sargent Avenue Pavement Thickness Summary

Core Hole #	CH01	CH02	CH03	CH04
Asphalt (mm)	160 ¹	100	175	175
Concrete (mm)	175	150	100	175

1) Approximately 60mm of the total asphalt thickness was turned to rubble during coring and is not shown on core photo

Photos of all core samples obtained can be found in Figures 2 to 5.

5.0 CLOSURE

The findings of this report were based on the results of field investigations at test hole locations as selected by MMM Group Limited.

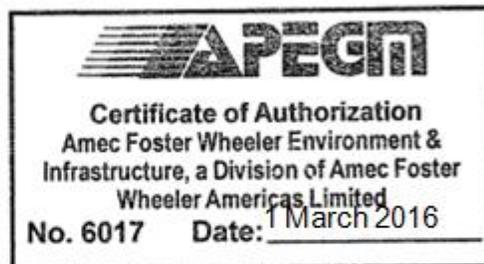
The site investigation was conducted for the sole purpose of profiling the pavement conditions.

This report was prepared exclusively for MMM Group Limited, and their clients and agents for the proposed development as described in the report. The data provided herein are presented in a factual manner only with no engineering interpretation provided, and should not be used for any other purpose, or by any other parties, without review and advice from a qualified geotechnical engineer. No other warranty, expressed or implied, is given.

Sincerely,

**Amec Foster Wheeler
Environment & Infrastructure**

Reviewed By:

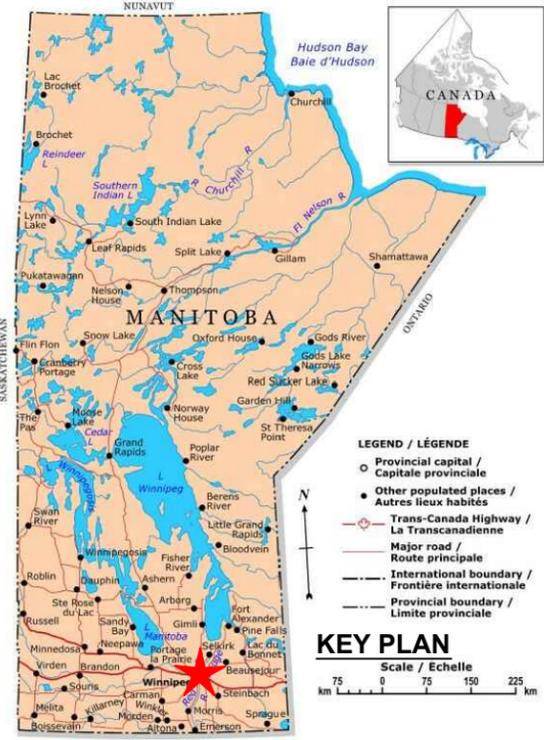


Jordan Wiwcharyk, P.Eng.
Geotechnical Engineer

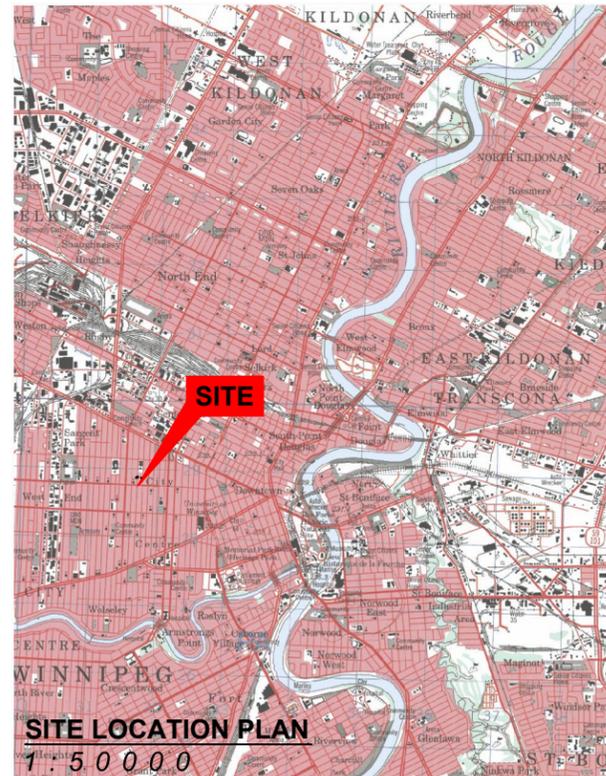
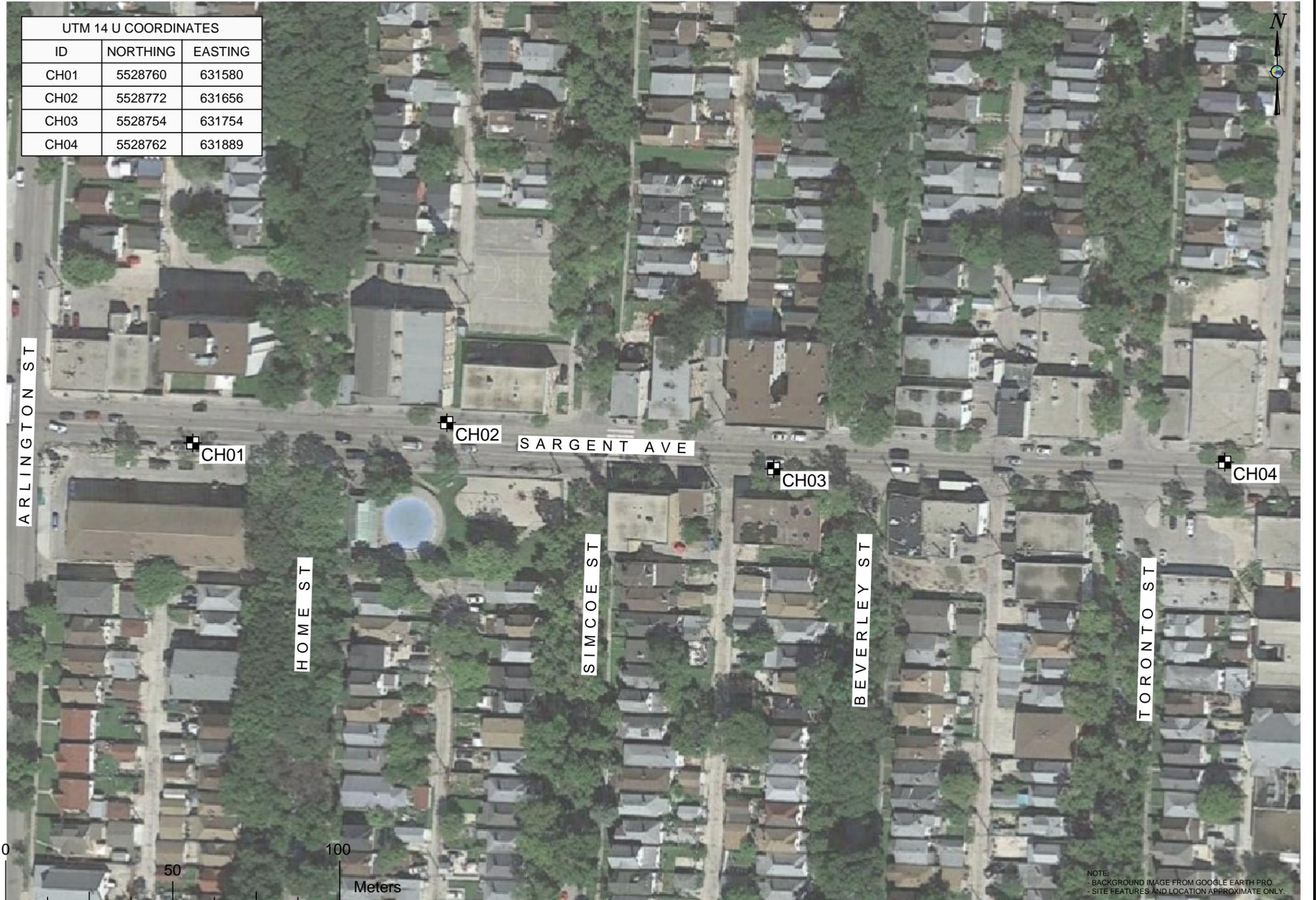
Reviewed by:
Harley Pankratz, P.Eng.
Vice President; Eastern Prairies /
Northern Alberta

MMM Group Limited
WX17881 – Pavement Investigation
Regional Street Evaluation
Winnipeg, Manitoba
29 February 2016

FIGURES



UTM 14 U COORDINATES		
ID	NORTHING	EASTING
CH01	5528760	631580
CH02	5528772	631656
CH03	5528754	631754
CH04	5528762	631889



P:\JOBS\1780\1780\S\17879 - CITY OF WINNIPEG STREETS\DRAWINGS\WX17879.DWG

LEGEND:
 ■ CONCRETE CORE LOCATION

REVISION	BY	DATE
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CLIENT:
MMM GROUP LTD.

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DWN BY: MD
 CHK'D BY: JW
 DATUM: NAD83
 PROJECTION: UTM Zone 14 U
 SCALE: AS SHOWN

GEOTECHNICAL INVESTIGATION
REGIONAL STREET PAVEMENT EVALUATION
SARGENT AVE
WINNIPEG, MANITOBA

CONCRETE CORE LOCATION PLAN

DATE: MARCH 2016
 PROJECT NO: WX17881
 REV. NO.: A
 FIGURE NO: FIGURE 1

NOTE:
 - BACKGROUND IMAGE FROM GOOGLE EARTH PRO.
 - SITE FEATURES AND LOCATION APPROXIMATE ONLY.



CORE #CH01 – ASPHALT SECTION



CORE #CH01 – CONCRETE SECTION

Amec Foster Wheeler Environment and
Infrastructure

**CORE PHOTOGRAPHS
CORE #CH01
SARGENT AVENUE
WINNIPEG, MANITOBA**

Drawn: JW

Scale: N/A

Date: 29 February 2016

Project No.: WX17881

Figure: 2



CORE #CH02 – ASPHALT SECTION



CORE #CH02 – CONCRETE SECTION

Amec Foster Wheeler Environment and
Infrastructure

**CORE PHOTOGRAPHS
CORE #CH02
SARGENT AVENUE
WINNIPEG, MANITOBA**

Drawn: JW

Scale: N/A

Date: 1 March 2016

Project No.: WX17881

Figure: 3



CORE #CH03 – ASPHALT SECTION



CORE #CH03 – CONCRETE SECTION

Amec Foster Wheeler Environment and
Infrastructure

**CORE PHOTOGRAPHS
CORE #CH03
SARGENT AVENUE
WINNIPEG, MANITOBA**

Drawn: JW

Scale: N/A

Date: 1 March 2016

Project No.: WX17881

Figure: 4



CORE #CH04 – ASPHALT SECTION



CORE #CH04 – CONCRETE SECTION

Amec Foster Wheeler Environment and
Infrastructure

**CORE PHOTOGRAPHS
CORE #CH04
SARGENT AVENUE
WINNIPEG, MANITOBA**

Drawn: JW

Scale: N/A

Date: 29 February 2016

Project No.: WX17881

Figure: 5