Appendix E.6
Geotechnical Report

Preliminary Geotechnical Investigation
Highway 50 from Castlemore to Mayfield Road
Mayfield Road from Highway 50 to Coleraine Drive
Town of Caledon and City of Vaughn, Region of Peel, Ontario

Prepared for:

Ms. Lori Longtin-Nobel.

HDR|iTRANS Consulting, Inc.
100 York Boulevard, Suite 300
Richmond Hill, Ontario
L4B 1J8

Trow Associates Inc.

1595 Clark Boulevard
Brampton, Ontario L6T 4V1
Telephone: (905) 793-9800
Facsimile: (905) 793-0641

brge00392733A
July 16, 2010

Table of Contents

Appendices

1 Introduction

The investigation described in this report was requested by HDR|iTRANS Consulting Inc. in connection with the environmental assessment (EA) study of Highway 50 from Castlemore Road to Mayfield Road, and for Mayfield Road from Highway 50 to Coleraine Drive for the purpose of improvement works. The total length of the roadways for the study is about 6.9 kilometers. The details of the improvement work are to be determined, but could include widening of the roads, improving road drainage, upgrading or reconstructing the existing pavement etc. We understand that no major change to existing horizontal and vertical road alignments is expected.

The engineering services completed by Trow include a preliminary geotechnical investigation, a hydrogeological assessment, a site contamination assessment, and inspection of the culverts to determine their structural conditions. There are several CSP culverts and two box culverts within the study area, which may need to be replaced or extended. This report is concerned with the preliminary geotechnical investigation, and includes the results of site contamination assessment and the culvert inspection. The report on hydrogeological assessment is provided under separate cover.

The purpose of the preliminary geotechnical investigation was to establish the composition of the existing pavement structure and subsurface conditions along the road, to provide recommendations for evaluation of the existing conditions and for planning the improvement works.

The comments and recommendations given in this report are based on the assumption of above-described concepts. If changes are made either in the planning/design phases or during construction, this office must be retained to review those modifications. The result of this review may be a modification of our recommendations or it may require additional field or laboratory work to check whether the changes are acceptable from a geotechnical viewpoint.

2 Methodology

The scope of the study as agreed with HDR|iTRANS consisted of drilling eighteen (18) boreholes along the road at about 500 m spacing. Eleven (11) boreholes were drilled to depths ranging from 5.0 to 6.6 m below existing road surface along Highway 50, while the three (3) boreholes on Mayfield Road were drilled to depths of 4.9 to 6.6 m below existing road surfaces. The remaining four (4) boreholes at the intersection of Highway 50 and Mayfield Road, were located close to the ends of the two box culverts across the roadways. These boreholes were drilled to depths of 7.8 to 9.6 m below existing road grades. The scope of the geotechnical investigation is summarized in Table 1.

Table 1: – Scope of Geotechnical Investigation

Location	Length of Road (km)	No. of Boreholes	Depth of Boreholes (m)	Borehole Designations
Highway 50	5.5	11	5.0 to 6.6	BH-5 to BH-8 BH-9 to BH-15
Mayfield Road	1.4	3	4.9 to 6.6	BH-1 to BH-3
Mayfield / Highway 50 Intersection (Box culverts)	-	4	7.8 to 9.6	BH-4A to BH-4C
Total	6.9	18		

The boreholes were drilled from February 10 to 22, 2010. All boreholes were advanced using a truck-mounted drilling rig equipped with powered augers. The boreholes were advanced at the approximate locations shown in Drawing Nos. L-1 to L-10 attached in Appendix 'D'. Approximate ground elevation at borehole locations were estimated from the existing ground elevation information available from contour plan of roadways provided by HDR|iTRANS.

A senior field technician from our office supervised the fieldwork. In each borehole location, the composition of the existing pavement was recorded. Below the pavement, soil samples were obtained from the boreholes using a 50-mm diameter split spoon sampler. Split spoon sampling was carried out in conjunction with the Standard Penetration Test (SPT) procedure, in general accordance with American Society for Testing and Materials (ASTM) Test Designation D-1586.

The samples were visually identified in the field and transported to our laboratory for moisture content, unit weight and grain size distribution evaluations on selected samples. The results of the SPT and index tests are summarized in the borehole logs, Drawing Nos. 1 to 18 in Appendix 'A'.

Figure Nos. 1 to 3 in Appendix 'B' show the results of the grain size analyses. In addition to the physical tests, eight (8) samples were forwarded to an accredited laboratory and tested for selected inorganic parameters listed in the MOE document entitled Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the *Environmental Protection Act.* The results are summarized in the Certificates of Analysis presented in Appendix 'C' of this report.

The results of the culvert inspection to assess their existing structural condition are presented in Appendix 'E'.

3 Subsurface Conditions

All the boreholes were drilled through the asphalt pavement surface of existing roads. The boreholes encountered fill below the existing pavement and granular material, except for two (2) Boreholes (Nos. 8 and 9) where native material was identified under the pavement structure. Traces of organics and decayed vegetation, possibly consisting of topsoil, was identified at the bottom of the fill in some boreholes. Native soils encountered in all the boreholes mostly consist of clayey silt to sandy silt till deposits, except that silty sand was encountered at the bottom in three (3) of the Boreholes (Nos. 12 to 14). In the following paragraphs, the relevant properties of the various deposits encountered are briefly described. The detailed subsurface conditions at the borehole locations are presented in the individual borehole logs, which are attached to this report as Drawing Nos. 1 to 18 inclusive, in Appendix 'A'.

It should be noted that the soil boundaries indicated on the borehole logs are inferred from non-continuous sampling and observations during the drilling. These boundaries are intended to reflect transition zones, for the purpose of geotechnical design and should not be interpreted as exact planes of geological change. The "Notes on Sample Description" preceding the borehole logs in Appendix 'A' are an integral part of and should be read in conjunction with this report.

3.1 Existing Pavement

The composition of the existing asphalt pavement on roadways at borehole locations was determined by recording the thicknesses of the asphaltic concrete and of the granular materials at the borehole locations. The results are summarized in Table 2 below. The thicknesses of the existing asphaltic concrete could be determined reasonably accurately in the boreholes; however, the thickness of the granular layer could only be determined approximately as it is often not possible to differentiate between the granular base and subbase. Relatively thick (~430 mm) asphalt was encountered in Borehole 3, probably as a result of repeated overlays locally. In view of the unusually thick asphalt that might be local, the existing pavement identified at Borehole 3 is disregarded from overall evaluation of pavement requirements for Mayfield Road.

The moisture contents measured in the existing granular base material generally ranged from 2 to 5%, but mostly from 2 to 4%, with an average of about 3%.

Granular Base Equivalency (GBE) factors of 1.25 and 0.7, and Structural Number (SN) factors of 0.26 and 0.1, are assumed for the existing pavement and granular base respectively, for the assessment of the GBE and SN values in Table 2.

Table 2: – Existing Pavement Composition

Boreholes	Location (Road)	Approximate Station (m)	Asphaltic Concrete (mm)	Granular Base (mm)*	GBE (mm)	SN (mm)
1	Mayfield Road	10+350	90	430	414	66
2	Mayfield Road	10+700	130	610	590	95
3	Mayfield Road	11+150	430	670	1007**	179**
4C	Mayfield Road	11+450	140	390	448	75
4D	Mayfield Road	11+450	140	340	413	70
4A	Highway 50	15+550	130	700	653	104
4B	Highway 50	15+550	220	380	541	95
5	Highway 50	14+850	150	520	552	91
6	Highway 50	14+300	150	510	545	90
7	Highway 50	13+900	200	510	607	103
8	Highway 50	13+300	200	640	698	116
9	Highway 50	12+600	190	700	728	119
10	Highway 50	12+300	150	690	671	108
11	Highway 50	11+850	250	500	663	115
12	Highway 50	11+350	150	610	615	100
13	Highway 50	10+850	270	210	485	91
14	Highway 50	10+500	150	470	517	86
15	Highway 50	10+300	300	430	676	121

* Includes base and subbase;

** Disregarded from pavement evaluation in view of unusually thick asphalt that may be local.

The boreholes found considerable differences in the composition of the existing pavement, as may be noted in Table 2. Based on the information derived from these widely spaced boreholes, structural capacity of the existing pavement structure along Highway 50 appears to be higher on the average, in terms of either GBE or the SN, than that of Mayfield Road.

The existing asphaltic concrete is generally in a fair condition.

3.2 Fill

All the boreholes except two (Boreholes 8 and 9) encountered fills underneath the existing granular road base materials. Where present, the depth of fill ranged approximately from 0.5 to 2 m below the granular base.

The existing fill materials comprise mostly a mixture of clayey silt, sandy silt, and gravel with traces of topsoil inclusions. In general, the organic content in the fill materials appeared low. The moisture contents of the fill materials range from about 4 to 32%, but mostly from 11 to 21%, with an average of about 18%. The higher moisture contents appeared to correspond to fills with organic traces, probably attributable to topsoil inclusions. The SPT 'N' values of the fill are between 2 and 26 blows per 0.3 m, indicating variable degrees of compaction.

3.3 Clayey Silt Till

Clayey silt till deposit constitutes the majority of the soils encountered in the boreholes. It is found underlying the fill in 16 boreholes, and underlying the granular base in 2 boreholes (Nos. 8 and 9), and extended to the full depth of exploration in 3 boreholes (Nos. 4B, 4D and 6). A thin layer of sandy silt till was identified within the clayey silt till deposit in Borehole 2. SPT 'N' values ranging from 5 to 49 blows, and averaging about 17 bows per 0.3 m were recorded in the clayey silt till material, suggesting firm to hard, but generally firm to very stiff consistency. The natural moisture contents of the till range from 11 to 24%.

Grain size analysis on seven (7) clayey silt till samples from six (6) different boreholes indicated 1 to 5% (average 2.5%) gravel, 13 to 23% (average 18.5%) sand, 46 to 55% (average 49.5%) silt and 25 to 42% (average 29.5%) clay. The results of these grain size analyses are shown on Figure 1 in Appendix 'B'.

3.4 Sandy Silt Till

Except for a thin layer sandwiched within clayey silt till in Borehole 2, sandy silt till deposit (where encountered) underlies the clayey silt deposits. Sandy silt till extends to the full depth of exploration in 10 boreholes (Nos. 3, 4A, 4C, 5, 7, 8, 9 to 11 and 15), and is underlain by silty sand in 3 boreholes (Nos. 12 to 14). Natural moisture contents measured in sandy silt till range from 7 to 16%. SPT 'N' values of 10 to over 100 blows per 0.3 m were recorded sandy silt till, indicating compact to very dense, but mostly compact to dense, conditions.

Two samples of sandy silt till soils taken from Boreholes 10 and 11 were analyzed for grain size distribution (Figure 2 in Appendix 'B'). The results show approximately 5 to 7% gravel, 29 to 32% sand, 44 to 45% silt, and 16 to 21% clay. The glacial deposits are also known to contain cobbles and boulders.

3.5 Silty Sand

Silty sand was identified in 3 Boreholes (Nos. 12 to 14) on Highway 50. Silty sand underlies the sandy silt till and extends to the full depth of all three boreholes. Silty sands have natural moistures of 11 to 17%. SPT 'N' values recorded in the silty sandy range from 13 to over 100 blows per 0.3 m, which indicate compact to very dense conditions. One sample of silty sand from Borehole 13 analyzed for grain size distribution (Figure 3, Appendix 'B') indicated approximately 65% sand, 32% silt and 3% clay.

3.6 Groundwater Conditions

The groundwater condition at the site was assessed by observing the water levels in the open boreholes during the fieldwork. Shortly after drilling, groundwater was not detected in the open boreholes, except for Boreholes 7, 12, 13, and 15, where groundwater was detected at depths ranging from 4.3 to 6.1 m below existing grades (~Elevations 200.5 to 212.8 m).

The ground water levels observed in open boreholes may not represent the true groundwater conditions at the site due to the short period of observation and the low permeabilities of some of the site soils, and possibly surface water infiltration.

A transient perched water table could exist in the fill materials in times of heavy precipitation and during thawing in Spring.

Ground water monitoring wells were installed in Boreholes 1, 4A, 4D, 6, 7, 9, 12 and 15 for longer term monitoring of ground water. Table 3 summarizes the groundwater levels observed in the monitoring wells. The observed water levels indicate a general groundwater flow from north to south. In the long term, some fluctuation in ground water levels is to be expected.

The monitoring wells may be used for long term observation of the groundwater in these areas.

It should be noted that in accordance with O.Reg.903, all of the monitoring wells/piezometers installed for this investigation will have to be decommissioned once they are no longer required. Responsibility for this rests with the property owner and this requirement is now being more strenuously enforced by the MOE. It is suggested that this be done on a time and materials basis utilizing the services of a licensed well driller.

Table 3: – Groundwater Levels in Monitoring Wells

Borehole No.	Date Installed	Date of Water Level Observation	Time in Days	Depth of Water (m)	Approximate Elevation (m)
1	Feb 22, 2010	Mar 19, 2010	25	2.9	227.1
4A	Feb 12, 2010	Mar 18, 2010	34	8.6	217.5
4D	Feb 22, 2010	Mar 18, 2010	24	5.4	219.8
6	Feb 11, 2010	Mar 18, 2010	35	1.1	221.7
7	Feb 12, 2010	Mar 19, 2010	35	5.0	213.9
9	Feb 11, 2010	Mar 18, 2010	35	1.5	210.7
12	Feb 10, 2010	Mar 18, 2010	36	2.9	206.1
15	Feb 11, 2010	Mar 19, 2010	36	3.0	203.3

3.7 Environmental Test Results

The eight (8) samples shown in the 4 below were sent to an environmental laboratory for testing of selected inorganic parameters listed in Table 3 of the MOE document entitled Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the *Environmental Protection Act.*

The results of the chemical tests are compared with the criteria listed in Table 3, which is considered the most appropriate for this study, based on the assumption of following site conditions:

- The road right of way has not been identified as a possible sensitive site.
- The road right of way and immediate adjacent area are supplied with water that is not derived from local groundwater.
- Full depth restoration of contamination (if encountered) is assumed.

The project being road widening, industrial/commercial land use criteria under this guideline are considered applicable. Soils at the site were found to be classified as predominantly medium to fine textured.

Table 4: – Environmental Test Samples

Borehole and Sample	Depth (m)	Material	Electrical Conductivity, EC (mS/cm)	SAR
BH-2, SS2	0.7 – 1.2	Fill	3.0	35
BH-4B, SS2	0.7 – 1.2	Fill	4.4	22
BH-5, SS2	0.7 – 1.2	Fill	2.7	Below limit
BH-7, SS2	0.2 – 0.6	Fill	4.7	27
BH-9, SS3	1.5 – 2.0	Clayey silt till	Below limit	Below limit
BH-11, SS3	1.5 – 2.0	Clayey silt till	3.1	14
BH-13, SS3	1.5 – 2.0	Clayey silt till	1.6	Below limit
BH-15, SS3	1.5 – 2.0	Clayey silt till	2.0	Below limit
Table 3 limits for commercial/industrial land use			1.4	12

The test results meet the limits specified in the MOE document except for electrical conductivity (EC) for 7 samples, and Sodium Absorption Ratio (SAR) for 4 samples (see Table 6). The SAR is higher than the permissible value of 12 for four (4) of the eight (8) samples tested, with the lowest and highest values of 1.6 and 35.0 respectively, indicating wide variability over the site. In addition, Electrical Conductivity (EC) was found to exceed the permissible limit of 1.4 mS/cm on seven (7) of the samples tested, with the lowest and highest values of 1.2 mS/cm and 4.7 mS/cm respectively. The average EC for all the samples tested is about 2.8 mS/cm, which is twice the applicable limit of 1.4, while the average SAR is about 15.7, which is marginally greater than the applicable limit of 12. EC and SAR are not health related parameters, and do not trigger a need for clean up. They do, however, affect the growth of certain plant species.

In relation to the stratified site condition Standards, the SAR and EC criteria are not applicable.

The results of limited environmental tests indicate that excess site soils may be suitable for use on like sites (public roadways) requiring fill. Alternatively, excess soils may be taken to any land based sites being developed for industrial/commercial/community uses, subject to the acceptance by the receiving site authorities, and for placement more than 2 m below the final grade. The excavated soils can also be disposed of at appropriately licensed landfill sites, subject to further testing that may be required by the landfill operator.

4 Site Contamination Assessment

A site reconnaissance and available public record search was conducted for the subject property to assess potential sources of contamination adjacent to the Site.

4.1 Site Reconnaissance

A site visit was conducted on May 20th, 2010 by Ms. Marie Bianchi of Trow Associates Inc. The purpose of this site visit was to identify potential sources of contamination in the vicinity of the Site. The properties adjacent to Mayfield Road, between Highway No. 50 and Coleraine Drive were primarily under residential land use, with the exception of 'Albion Nursery & Garden Centre' at 8602 Mayfield Road. A newly constructed warehouse structure at the northwest corner of Mayfield Road & Highway No. 50 (Sardo) was also observed during the site visit. However, this property is not likely to have adversely impacted the subsurface conditions of the Site.

Potential sources of contamination identified on the adjacent properties of the Site are listed in the following table.

Table 5: Potential Sources of Contamination

Municipal Address	Description of Activities	Associated Risk
9301 Highway 50	A gasoline service station (Petro Canada) was located on the northeast corner of Highway 50 and Castlemore Road.	Moderate – this southeast adjacent property is located within 50m of the subject property and may have adversely impacted the subsurface conditions of the south end of the Site. However, the Site is located down-gradient in terms of the inferred groundwater flow of the area.
7491 Nashville Road	A gasoline service station (Esso) was located on the southeast corner of Highway 50 and Nashville Road.	Moderate to High – this east adjacent property is located within 50m of the subject property and may have adversely impacted the subsurface conditions of the Site.

4.2 Aerial Photographs

Aerial photographs of the Site, dated 1951, 1974 and 1980, were obtained from the National Aerial Photo Library in Ottawa in order to review the development and land use history of the Site. Our review of the aerial photographs indicated the following:

- **1951:** Highway No. 50 was depicted in this aerial photograph. The Site and surrounding land use was depicted primarily as agricultural land use with scattered residential dwellings (farmhouses).

- **1974**: Mayfield Road was depicted in this aerial photograph. No significant changes were depicted from the 1951 aerial photograph. A commercial or industrial structure was depicted adjacent to Highway No. 50, just north of Major Mackenzie Drive (south of the Site).

- **1980**: No significant changes were depicted from the 1974 aerial photograph.

The review of aerial photographs indicated that the Site and its general area were primarily under agricultural land use historically. No apparent sources of contamination were depicted on Site or on its adjacent properties based on the aerial photograph review.

4.3 Property Use Directories

The available volumes of the Polk Suburban Toronto City Directory (City Directories), dated between 1985 and 2001, were reviewed at the Toronto Reference Library in order to identify the occupancy history of the Site and adjacent properties to the Site. It should be noted that the City Directories were no longer published after 2001. The occupancy records for the Site and adjacent properties are provided in Table 6.

Table 6: Occupancy Listings for the Site and Adjacent Properties

Municipal Address	Years Reviewed	Listings
9301 Highway No. 50	2001, 1997, 1995, 1994, 1991, 1990, 1989, 1988, 1987, 1986, 1985	Not Listed
10223 Highway No. 50		Kleinburg War Games
10335 Highway No. 50		Cheyenne Insulation Ltd., *residential*
10462 Highway No. 50		*Residential*
11221 Highway No. 50		Boltonview Dodge Chrysler Jeep (dealership)
7491 Nashville Road		**Penny's Gas Bar, Priti Gas Bar**, Coffee Time Doughnuts, Hurry 'N' Doughnuts
8782, 8779, 8752, 8576 Mayfield Road		*Residential*

Our review of the City Directories confirmed that a gasoline service station was located adjacent to the Site at 7491 Nashville Road and is likely the existing gasoline service station (Esso) on the southeast corner of Highway No. 50 and Nashville Road. According to the City

Directories, this source of contamination existed at this location since the mid-1980s.

Our review of the City Directories did not indicate any other obvious sources of contamination on the surrounding properties of the Site.

5 Existing Culvert Inspection

There are 18 pipe culverts and two (2) concrete box culverts along Highway 50, and 15 pipe culverts along Mayfield Road (of which 3 were found removed), within the area covered by this study. Inspection of these culverts in accordance with the Ontario Structures Inspection Manual (OSIM) was completed by Trow and their results, including photographs taken during site visit, are presented in Appendix 'E'. The results are summarized in Tables 9 and 10. Most of the culverts are in generally good conditions. Major rehabilitation is expected for one CSP culvert under Highway 50.

Table 9: – List of Culverts (Highway 50)

Serial No.	Peel Region Structure No	Type of Culvert	Direction	Repair	Remarks
1	2924	CSP; 500 mm ϕ	NS	Minor Rehab.	East entrance from Highway 50
2	2925	Poly; 400 mm ϕ	NS	None	West entrance from Highway 50
3	2926	CSP; 500 mm ϕ	NS	Minor Rehab.	West entrance from Highway 50
4	2927	CSP; 500 mm ϕ	NS	None	West entrance from Highway 50
5	2928	CSP; 500 mm ϕ	NS	None	West entrance from Highway 50
6	2929	CSP; 500 mm ϕ	NS	None	West entrance from Highway 50
7	2930	CSP; 500 mm ϕ	NS	None	West entrance from Highway 50
8	2952	CSP; 500 mm ϕ	NS	Minor Rehab.	East entrance from Highway 50
9	2953	CSP; 500 mm ϕ	NS	Minor Rehab.	East entrance from Highway 50
10	2954	CSP; 500 mm ϕ	NS	Minor Rehab.	East entrance from Highway 50
11	2955	CSP; 500 mm ϕ	NS	Minor Rehab.	East entrance from Highway 50
12	2956	CSP; 500 mm ϕ	NS	None	West entrance from Highway 50
13	2957	CSP; 600 mm ϕ	NS	None	West entrance from Highway 50
14	2967	CSP; 2-1350 mm ϕ	EW	Minor Rehab.	Across Highway 50
15	2968	CSP; 2-700 mm ϕ	EW	None	Across Highway 50
16	2971	CSP; 2-700 mm ϕ	EW	Major Rehab.	Across Highway 50
17	2973	CSP; 2-750 mm ϕ	EW	Minor Rehab.	Across Highway 50
18	2975	CSP; 2-1350 mm ϕ	EW	Minor Rehab.	Across Highway 50
19	2997	Box; 1.5 mX4.5 m	EW	None	Highway 50 & Mayfield
20	3027	Box; 1.5 mX2.5 m	NS	None	Highway 50 & Mayfield

Table 10: – List of Culverts (Mayfield Road)

Serial No.	Peel Region Structure No	Type of Culvert	Direction	Repair	Remarks
1	1915	CSP; 400 mm ϕ	EW	Replace	South entrance from Mayfield
2	1917	CSP; 400 mm ϕ	EW	Minor Rehab.	North entrance from Mayfield
3	1918	CSP; 400 mm ϕ	EW	Replace	North entrance from Mayfield
4	1919	CSP; 400 mm ϕ	EW	None	North entrance from Mayfield
5	1921	CSP; 400 mm ϕ	EW	None	North entrance from Mayfield
6	1922	Removed	EW	-	North entrance from Mayfield
7	1923	Removed	EW	-	North entrance from Mayfield
8	1924	CSP; 400 mm ϕ	EW	Unable to inspect	North entrance from Mayfield
9	1925	CSP; 600 mm ϕ	EW	None	North entrance from Mayfield
10	1926	CSP; 400 mm ϕ	EW	None	North entrance from Mayfield
11	1927	CSP; 400 mm ϕ	EW	Minor Rehab.	North entrance from Mayfield
12	1928	Removed	EW	-	North entrance from Mayfield
13	1936	CSP; 900 mm ϕ	NS	None	Across Mayfield Road
14	1937	CSP; 1200 mm ϕ	NS	Minor Rehab.	Across Mayfield Road
15	1938	CSP; 1200 mm ϕ	NS	None	Across Mayfield Road

6 Discussions and Recommendations

6.1 Engineering Evaluation of Pavement and Subgrade Conditions

Although the widely spaced for this preliminary investigation, the information from boreholes indicate some differences between Highway 50 and Mayfield Road concerning composition of the existing pavement. The existing pavement composition is as summarized in Table 2. Estimated overall structural capacity in terms of GBE and SN are about 610 mm and 100 mm respectively on the average for the existing pavement structure within project limits of Highway 50 covered by this investigation. In comparison, the estimated GBE and SN are 470 mm and 75 mm respectively for portion of the Mayfield Road covered in this investigation.

Although a variety of subgrade soils were encountered, the pavement should be designed for the subgrade soils in the upper 1.2 m of the road, which in most boreholes consist of clayey silt to sandy silt fill. The existing fill materials may be poor pavement subgrades due to their low load carrying value, high frost susceptibility, and poor drainage characteristics. Nevertheless, a properly designed and constructed pavement should perform satisfactorily.

The consistency of native clayey silt till underlying the fill or the pavement generally ranges from firm to very stiff, white the sandy silt till underlying the clayey silt till is in generally compact to dense condition. They should provide good support for, culverts or culvert extensions as necessary.

6.2 Pavement Requirements

The given design AADT, truck percentage and growth rate for the various segments of Highway 50, and for Mayfield Road, are summarized in Table 5.

The calculated design ESAL's for 20 years design period are also shown in Table 7. Although there are some variations for different segments of Highway 50, the pavement design should be based on 48.9 million ESAL. The pavement for Mayfield Road should be designed for traffic of 15.7 million ESAL.

Using the AASHTO pavement design method with an estimated subgrade resilient modulus of 35 MPa for the existing subgrade, pavement structures with structural numbers of 164 and 142 mm are recommended for Highway 50 and Mayfield Road, respectively. Since the average structural numbers of the existing pavement structures in Highway 50 and Mayfield Road are approximately 103 and 77 mm respectively (Table 2), upgrading or reconstruction of the existing pavements will be required.

Table 7: - Design AADT

Road Segments	Year	2009	2011	2021	2031	Truck Traffic	Design Lane ESAL
Mayfield Rd.: Colerain Dr. to. Highway 50	AADT	10100	10700	13900	18100	25%	15.7 Million
	Growth Rate		2.7%	2.7%	2.7%		
Highway 50: Mayfield to Major Mack.	AADT	34300	35500	41800	49400	25%	47.5 Million
	Growth Rate		1.7%	1.7%	1.7%		
Highway 50: Major Mac to Cadetta Rd.	AADT	30400	31400	36700	42900	25%	41.7 Million
	Growth Rate		1.6%	1.6%	1.6%		
Highway 50: Cadetta Road to Castlemore Road	AADT	31800	33500	43300	55900	25%	48.9 Million
	Growth Rate		2.6%	2.6%	2.6%		
Highway 50: South of Castlemore Road	AADT	34200	35300	41300	48300	25%	46.9 Million
	Growth Rate		1.6%	1.6%	1.6%		

6.3 Pavement Alternatives

Various methods of upgrading the existing pavement structure to the required capacity have been considered, including overlaying, insitu recycling, and complete reconstruction.

6.3.1 Overlaying

The existing pavements could be strengthened by providing an overlay as shown in Table 6. Before overlaying, the top 50 mm of the existing asphaltic concrete should be shaved to remove the majority of the pavement cracks. Any major cracks remaining in the asphaltic concrete should be grouted and sealed, and a tack coat applied before overlaying.

Table 8: – Overlaying

Location	Shaving	Hot Mix Overlay (After Shaving)		Grade Raise
		Superpave 12.5 FC1 (or HL3)	Superpave 19.0 (or HL8)	
Mayfield Road	50 mm	50 mm	50+55+55 mm	155 mm
Highway 50	50 mm	50 mm	50+55+55 mm	155 mm

The asphalt grade should be PG 64-28.

6.3.2 Insitu Recycling with Foam Stabilization, and Asphalt Overlay

Foam stabilization (OPSS 331 November 2003) is one of several cold insitu recycling method of rehabilitating existing pavements. In this strategy, the top part of the existing asphaltic concrete (about 50 mm) is shaved, the remaining asphalt is pulverized and mixed with some of the existing granular materials, asphalt (and possibly soil fines) is added, and a foaming process is carried out to form a stabilized layer of 150 mm. This stabilized layer is structurally superior to the existing asphaltic concrete but not as strong as new hot mix asphalt. The foam stabilized base asphalt should then be overlaid with hot mix asphalt to achieve the desired strength. The foam stabilized layer can be open to traffic immediately, but two to three days of curing are needed before the overlay can be applied.

The length of time the foam stabilized layer can be open to traffic is generally regarded as about 3 days, but will depend on the type and volume of traffic. It is possible to use foam stabilization in areas surrounding built up structures such as manholes etc. with proper grade adjustments. Foam stabilization generally involves less grade raises than mill and overlay

Table 9: – Foam Stabilization

Location	Foam Asphalt	Hot Mix Overlay		Grade Raise
		Superpave 12.5 FC1 (or HL3)	Superpave 19.0 (or HL8)	
Mayfield Road	150 mm	50 mm	50+50 mm	115 mm
Highway 50	150 mm	50 mm	65+70 mm	150 mm

With this rehabilitation strategy, all of the surface cracks will be eliminated. The rise in the final road grades will be about 115 to 150 mm, which includes a 10% increase in thickness of the foam layer. The actual thickness of the foam stabilized layer and the grade raise will vary across the width of the road. The values shown in Table 7 can be taken as the average values.

6.3.3 Reconstruction

If the road grades cannot be raised, the pavement may be completely reconstructed, which will provide maximum design flexibility and the most uniform final pavement structure.

The recommended new pavement structures are summarized in Table 8.

It should be noted that the pavement structures in Table 10 are the minimum required for the anticipated traffic, and is suitable for dry inorganic clayey subgrades. Any organic fills must be sub-excavated to 1.2 m below the finished pavement grades. The heaviest loading on the subgrades may be during construction. If construction is carried out when the subgrades are in a wet condition, as in late Fall or early Spring, it may be necessary to increase the thickness of the subbase materials to avoid overstressing of the subgrade soils. Alternatively, it may be necessary to reduce the weight of the trucks by using half loads.

Table 10: – New Pavement Structures

Pavement Components	Mayfield Road	Highway 50	Degree of Compaction
Superpave 12.5 FC1	40 mm	50 mm	92 – 97.5 % MRD*
Superpave 19.0	50+55 mm	70+75 mm	91 – 97.5 % MRD
Granular 'A' base	150 mm	150 mm	100 % SPMDD*
Granular 'B' Type 2	500 mm	600 mm	100 % SPMDD
Total Thickness	795 mm	945 mm	

* denotes Maximum Relative Density; ** denotes Standard Proctor Maximum Dry Density

6.3.4 New Pavement for Widening

The pavement given in Table 10 above can be used for any widening as necessary, with the additional requirements that the thickness of the sub-base materials should be extended to the same depth as that of the existing granular base materials (including any sand fill).

6.3.5 Subgrade Preparation for New Pavement

The long-term performance of the pavement structure is highly dependent upon the subgrade support conditions. To prepare the site for construction, all vegetation, organic surface soils, and other deleterious materials should be stripped and removed from the site. Once clearing and grubbing operations are complete, grading to establish desired subgrades can be initiated. The exposed subgrades should be surface compacted to 98% SPMDD, and proof rolled. In order to achieve proper fill compaction, the subgrade must be in a relatively stable condition. Subgrade materials which are wet, or otherwise not compactible, should be sub-excavated

and replaced with suitable clean fills. New fill materials for grading in the upper 600 mm of the subgrades should be compacted to minimum 98% SPMDD, and their moisture contents should be within 2% below and 1% above optimum moisture. Below this top layer, 95% compaction should be satisfactory.

If excessive soft and yielding subgrade is observed and it cannot be stabilized in place by aeration and compaction, bridging the unstable area using a geosynthetic fabric and then placing clean granular fill material can be considered. In general, a minimum of 0.5 m of clean, granular structural fill over the geosynthetic fabric should establish a stable bearing surface.

The finished pavement subgrade surface should be free of depressions and should be sloped at a minimum grade of three percent.

6.3.6 Subdrains

In rural sections of the road, sufficient deep ditches should be provided on both sides of the road to ensure that the subgrades are well drained.

In urban sections, subdrains in accordance with OPSD 216.021 should be installed under the edges of the new pavement widening. The subdrains should be 150 mm in diameter, and the clear stones should be wrapped with a Class II non-woven filter fabric with a filtration opening size of 100 microns or smaller.

6.4 Road Embankment

If widening is planned, it will require filling outside the existing road embankment, which we understand is no more than about 2.0 m above surrounding lands. Provided that the final road grades will not be significantly higher than the existing grades, the limited subsurface information indicate that stability of the new embankments should be satisfactory in most areas.

All topsoils should be stripped from under the footprint of the fill areas, and benches should be cut into the slopes of the existing embankments to receive the new fills (OPSD 208.010). The new fill materials should be inorganic clean fills at moisture contents suitable to be compacted to a high density. The new fills should be placed in 200 mm lifts and compacted to minimum 95% SPMDD, except for the top 0.6 m, which should be compacted to 98%. The finished slope surfaces should not be steeper than 2H:1V, and should be seeded or sodded for erosion protection. Our experience indicates that a 150 mm layer of topsoil on the finished slopes should be adequate for seeding or sodding.

The road widening works may also involve some short cut sections. Generally the cuts are expected to be less than 2 m high, and should be stable at 2H:1V. The finished slope surfaces

should be seeded or sodded for erosion protection.

6.5 Storm Sewer Support and Bedding

Storm sewers, where needed, are expected to be founded mostly in native soils, which should provide adequate support for the sewers. The sewer pipes should be provided with granular bedding in accordance with OPSD 802.030 to 802.032 or the equivalent Region of Peel specification.

Sewer bedding materials should be well graded (e.g. Granular 'A'). If the subgrades are wet, clear stone may be used as pipe bedding provided that they are completely wrapped with a non woven filter fabric.

6.6 Trench Backfill

Where applicable, the sewer and culvert trenches should be backfilled with the excavated inorganic fill or native materials. Fill materials containing a significant proportion of organics should not be re-used. The backfills should be compacted to minimum 95% SPMDD. In the top 0.6 m of the subgrades, the degree of compaction should be increased to 98%.

6.7 Reuse of Excavated Materials

The existing granular base materials may be reused for road grading.

The excavated native inorganic soils may be reused for general grading or trench backfill. Our study indicates that the native soils contain a sufficient percentage of fines (silt and clay particles) that will make them difficult to compact as engineering fill if they are too wet or too dry. Accordingly, the ability to use native soils from site excavations as engineering fill will depend on their moisture content and the prevailing weather conditions when site grading activities take place. Native soils that are too wet to properly compact could be dried by aeration during dry weather conditions.

Some of the re-excavated existing fill materials may also be re-used for general grading. Fill materials containing a significant amount of organic inclusions should not be re-used. Any excavated organic soils may be reused for slope flattening or landscaping.

Based on the results of the environmental tests, the excavated materials are environmentally suitable to be reused on site, or they may be taken to any land based sites being developed for industrial/commercial/community uses, subject to the acceptance by the receiving site authorities, and for placement more than 2 m below the final grade. The excavated soils can also be disposed of at appropriately licensed landfill sites.

7 Construction Conditions

All excavations for the project, including road grading, utility trenches, box culvert foundation excavation, as necessary, must be completed in accordance with the Ontario Health and Safety Act. For the purpose of this Act, the existing fills, and silty sand above the water table may be classified as Type 3 soils. The native clayey silt till and sandy silt till may be classified as Type 2 soils. Only minor groundwater seepage is expected in these soils at shallow depths, where it should be possible to handle the seepage by gravity drainage and pumping from filtered sumps.

The silty sand soils below water table are classified as Type 4 soils. It should be noted that, due to seepage pressure, these soils may not be stable even when they are excavated to 3H:1V slopes as suggested by OHSA. To maintain stability, the water level in the sandy soils should be temporarily lowered to below excavation level, possibly by installing closely spaced well points. The well points should be surrounded with a graded granular filter to prevent the removal of fine soil particles during pumping. The dewatering system should be designed and installed by a specialist contractor experienced in this field. As an alternative to dewatering, excavations in these soils could also be carried out within interlocking sheet piles, which could serve as shoring support and limit the extent of the excavation. The toes of the sheet piles should generally be driven to a depth below the excavation level equal to the height of the water table above the excavation level.

8 General Comments

Trow Associates Inc. should be retained for a general review of the final design and specifications to verify that this report has been properly interpreted and implemented. If not accorded the privilege of making this review, Trow Associates Inc. will assume no responsibility for interpretation of the recommendations in the report.

The comments given in this report are intended only for the guidance of design engineers. The number of boreholes required to determine the localized underground conditions between boreholes affecting construction costs, techniques, sequencing, equipment, scheduling, etc., could be greater than has been carried out for design purposes. Contractors bidding on or undertaking the works should, in this light, decide on their own investigations, as well as their own interpretations of the factual borehole results, so that they may draw their own conclusions as to how the subsurface conditions may affect them.

More specific information with respect to the conditions between samples, or the lateral and vertical extent of materials may become apparent during excavation operations. The interpretation of the borehole information must, therefore, be validated during excavation operations. Consequently, during the future development of the project area, conditions not observed during this evaluation may become apparent; should this occur, Trow Associates Inc. should be contacted to assess the situation, and additional testing and reporting may be required. Trow has qualified personnel to provide assistance in regards to future geotechnical and environmental issues related to this property.

9 Closure

We trust that this report has provided sufficient information for the preliminary design of the pavement. Should you have any questions regarding this report, please do not hesitate to call the undersigned.

Trow Associates Inc.

James Ng, M.Eng., P.Eng., MICE
Senior Project Manager
Geotechnical Division

Peter Chan, P.Eng.
Manager
Geotechnical Division

JN/t/I:\2003-Brampton\Projects\Geotechnical Engineering\0300000\0392000\392733a Highway 50 and Mayfield Rd\GeoReport\392733a Geo Report final.doc

Appendix 'A':
Notes on Sample Description;
Borehole Logs - Drawing Nos. 1 to 18

Notes On Sample Descriptions

1. All sample descriptions included in this report follow the Canadian Foundations Engineering Manual soil classification system. This system follows the standard proposed by the International Society for Soil Mechanics and Foundation Engineering. Laboratory grain size analyses provided by Trow also follow the same system. Different classification systems may be used by others; one such system is the Unified Soil Classification. Please note that, with the exception of those samples where a grain size analysis has been made, all samples are classified visually. Visual classification is not sufficiently accurate to provide exact grain sizing or precise differentiation between size classification systems.

ISSMFE SOIL CLASSIFICATION

CLAY	SILT			SAND			GRAVEL			COBBLES	BOULDERS
	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE		

0.002 0.006 0.02 0.06 0.2 0.6 2.0 6.0 20 60 200

EQUIVALENT GRAIN DIAMETER IN MILLIMETERS

CLAY (PLASTIC) TO SILT (NONPLASTIC)	FINE	MEDIUM	COARSE	FINE	COARSE
	SAND			GRAVEL	

UNIFIED SOIL CLASSIFICATION

2. Fill: Where fill is designated on the borehole log it is defined as indicated by the sample recovered during the boring process. The reader is cautioned that fills are heterogeneous in nature and variable in density or degree of compaction. The borehole description may therefore not be applicable as a general description of site fill materials. All fills should be expected to contain obstruction such as wood, large concrete pieces or subsurface basements, floors, tanks, etc., none of these may have been encountered in the boreholes. Since boreholes cannot accurately define the contents of the fill, test pits are recommended to provide supplementary information. Despite the use of test pits, the heterogeneous nature of fill will leave some ambiguity as to the exact composition of the fill. Most fills contain pockets, seams, or layers of organically contaminated soil. This organic material can result in the generation of methane gas and/or significant ongoing and future settlements. Fill at this site may have been monitored for the presence of methane gas and, if so, the results are given on the borehole logs. The monitoring process does not indicate the volume of gas that can be potentially generated nor does it pinpoint the source of the gas. These readings are to advise of the presence of gas only, and a detailed study is recommended for sites where any explosive gas/methane is detected. Some fill material may be contaminated by toxic/hazardous waste that renders it unacceptable for deposition in any but designated land fill sites; unless specifically stated the fill on this site has not been tested for contaminants that may be considered toxic or hazardous. This testing and a potential hazard study can be undertaken if requested. In most residential/commercial areas undergoing reconstruction, buried oil tanks are common and are generally not detected in a conventional geotechnical site investigation.

3. Till: The term till on the borehole logs indicates that the material originates from a geological process associated with glaciation. Because of this geological process the till must be considered heterogeneous in composition and as such may contain pockets and/or seams of material such as sand, gravel, silt or clay. Till often contains cobbles (60 to 200 mm) or boulders (over 200 mm). Contractors may therefore encounter cobbles and boulders during excavation, even if they are not indicated by the borings. It should be appreciated that normal sampling equipment cannot differentiate the size or type of any obstruction. Because of the horizontal and vertical variability of till, the sample description may be applicable to a very

limited zone; caution is therefore essential when dealing with sensitive excavations or dewatering programs in till materials.

4. Excerpt from "OHSA Regulations for Construction Projects," Part III, Section 226:

Soil Types

Type 1 Soil

a) is hard, very dense and only able to be penetrated with difficulty by a small sharp object;

b) has a low natural moisture content and a high degree of internal strength;

c) has no signs of water seepage; and

d) can be excavated only by mechanical equipment.

Type 2 Soil

a) is very stiff, dense and can be penetrated with moderate difficulty by a small sharp object;

b) has a low to medium natural moisture content and a medium degree of internal strength; and

c) has a damp appearance after it is excavated.

Type 3 Soil

a) is stiff to firm and compact to loose in consistency or is previously excavated soil;

b) exhibits signs of surface cracking;

c) exhibits signs of water seepage;

d) if it is dry, may run easily into a well-defined conical pile; and

e) has a low degree of internal strength.

Type 4 Soil

a) is soft to very soft and very loose in consistency, very sensitive and upon disturbance is significantly reduced in natural strength;

b) runs easily or flows, unless it is completely supported before excavating procedures;

c) has almost no internal strength;

d) is wet or muddy; and

e) exerts substantial fluid pressure on its supporting system. O. Reg. 213/91, s. 22

Log of Borehole 1

Project No. brge00392733A

Drawing No. 1

Project: Preliminary Geotechnical Investigation, Highway 50 and Mayfield Road

Sheet No. 1 of 1

Location: Town of Caledon and City of Vaughan, Region of Peel, ONtario

Mayfield Road

Date Drilled: February 22, 2010

Drill Type: CME 45C

Datum: Geodetic

Auger Sample
SPT (N) Value
Dynamic Cone Test
Shelby Tube
Field Vane Test

Combustible Vapour Reading
Natural Moisture
Plastic and Liquid Limit
Undrained Triaxial at % Strain at Failure
Penetrometer

GWL	SYMBOL	Soil Description	ELEV. m	DEPTH	N Value / Shear Strength kPa	Combustible Vapour Reading (ppm) / Natural Moisture Content % / Atterberg Limits (% Dry Weight)	SAMPLES	Natural Unit Weight kN/m³
		~90 mm asphalt over ~430 mm granular base	230.00 229.9	0				
		FILL Clayey silt to silt, some gravel, trace decayed vegetation; greenish brown to grey; moist	229.5					
		CLAYEY SILT TILL some sand, trace gravel; brown to grey; moist; stiff to very stiff	228.3	1	7			
				2	12			
				3	21			22.0 G*
			227.07		13			22.1
				4				
				5	27			22.0
				6	27			21.8
		- becomes grey	223.4					
		End of Borehole						
		*** G : Grain size analysis**						

LAGWGL02 392733A BH LOGS HWY 50.GPJ NEW.GDT 5/25/10

Trow

Time	Water Level (m)	Depth to Cave (m)
Completion	No free water	6
March 8, 2010	3.48	
March 19,2010	2.93	6.10

Log of Borehole 2

Project No. brge00392733A — Drawing No. 2

Project: Preliminary Geotechnical Investigation, Highway 50 and Mayfield Road — Sheet No. 1 of 1

Location: Town of Caledon and City of Vaughan, Region of Peel, ONtario

Mayfield Road

Date Drilled: February 22, 2010

Drill Type: CME 45C

Datum: Geodetic

Auger Sample
SPT (N) Value
Dynamic Cone Test
Shelby Tube
Field Vane Test (S)

Combustible Vapour Reading
Natural Moisture
Plastic and Liquid Limit
Undrained Triaxial at % Strain at Failure
Penetrometer

GWL	SYMBOL	Soil Description	ELEV. m	DEPTH	N Value / Shear Strength (kPa)	Combustible Vapour Reading (ppm) / Natural Moisture Content % / Atterberg Limits (% Dry Weight)	SAMPLES	Natural Unit Weight kN/m³
			230.00	0				
		~ 130 mm asphalt over ~ 610 mm granular base	229.9					
		FILL silt with some sand, organics/decayed vegetation; dark brown; damp	229.3	1	12			E* 19.4
		CLAYEY SILT TILL trace gravel, some sand; light brown to mottled brown; moist; very stiff	228.6	2	16			21.7
		SANDY SILT TILL trace clay and gravel; light brown; damp; compact	227.6	2	22			21.8
		CLAYEY SILT TILL trace gravel, sand seams; light brown; moist; very stiff to hard	226.9	3	32			21.9
		- becomes grey	225.0	4	19			21.8
		End of Borehole		5				

*** E : Environmental test**

LAGWGL02 392733A BH LOGS HWY 50.GPJ NEW.GDT 5/25/10

Trow

Time	Water Level (m)	Depth to Cave (m)
Completion	No free water	4.7

Log of Borehole 3

Project No. brge00392733A — Drawing No. 3

Project: Preliminary Geotechnical Investigation, Highway 50 and Mayfield Road — Sheet No. 1 of 1

Location: Town of Caledon and City of Vaughan, Region of Peel, ONtario

Mayfield Road

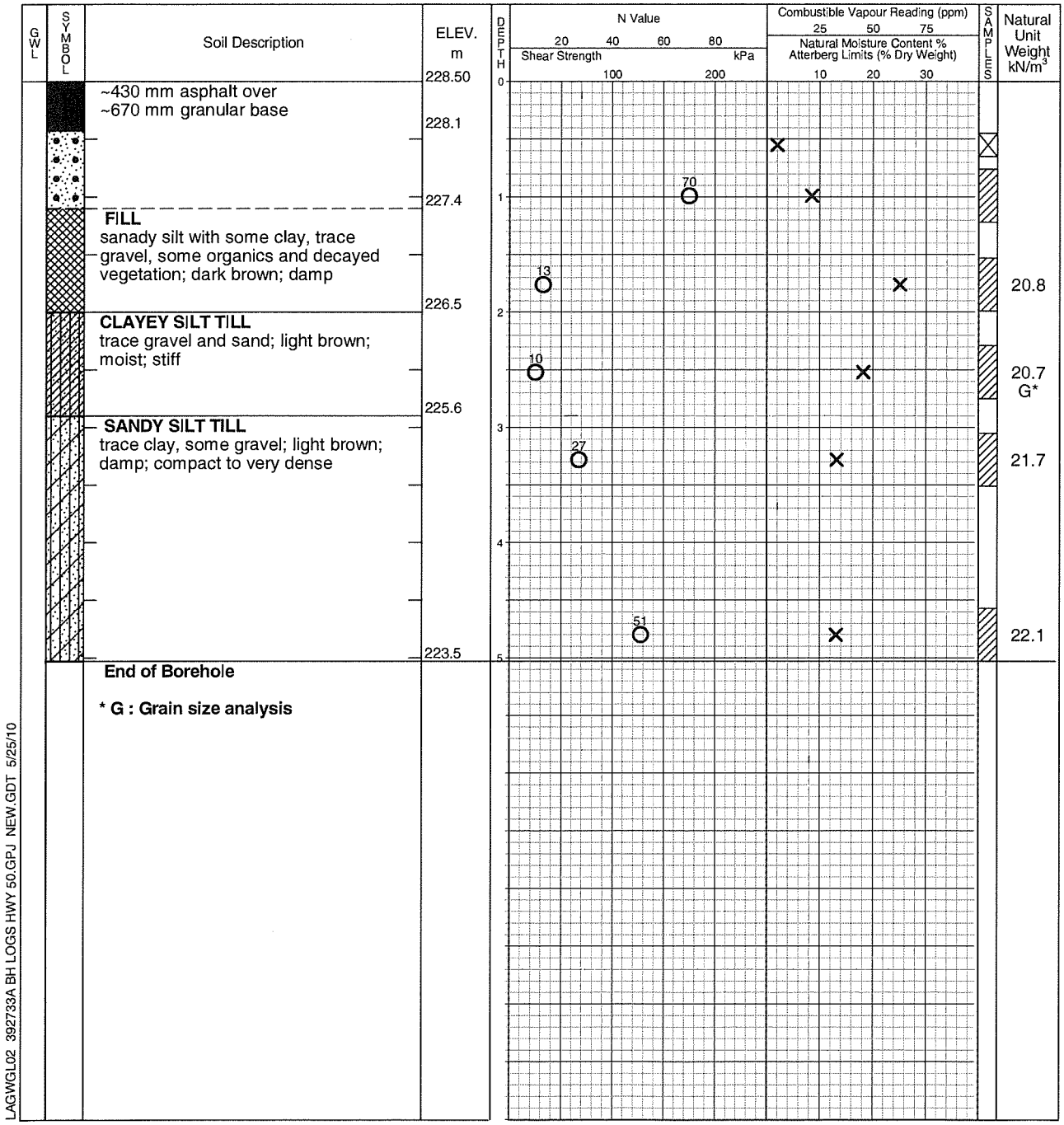
Date Drilled: February 22, 2010

Drill Type: CME 45C

Datum: Geodetic

Auger Sample
SPT (N) Value
Dynamic Cone Test
Shelby Tube
Field Vane Test (S)

Combustible Vapour Reading
Natural Moisture
Plastic and Liquid Limit
Undrained Triaxial at % Strain at Failure
Penetrometer



LAGWGL02 392733A BH LOGS HWY 50.GPJ NEW.GDT 5/25/10

Time	Water Level (m)	Depth to Cave (m)
Completion	No free water	4.72

Trow

Log of Borehole 4A

Project No. brge00392733A — Drawing No. 4

Project: Preliminary Geotechnical Investigation, Highway 50 and Mayfield Road — Sheet No. 1 of 2

Location: Town of Caledon and City of Vaughan, Region of Peel, ONtario

Highway 50

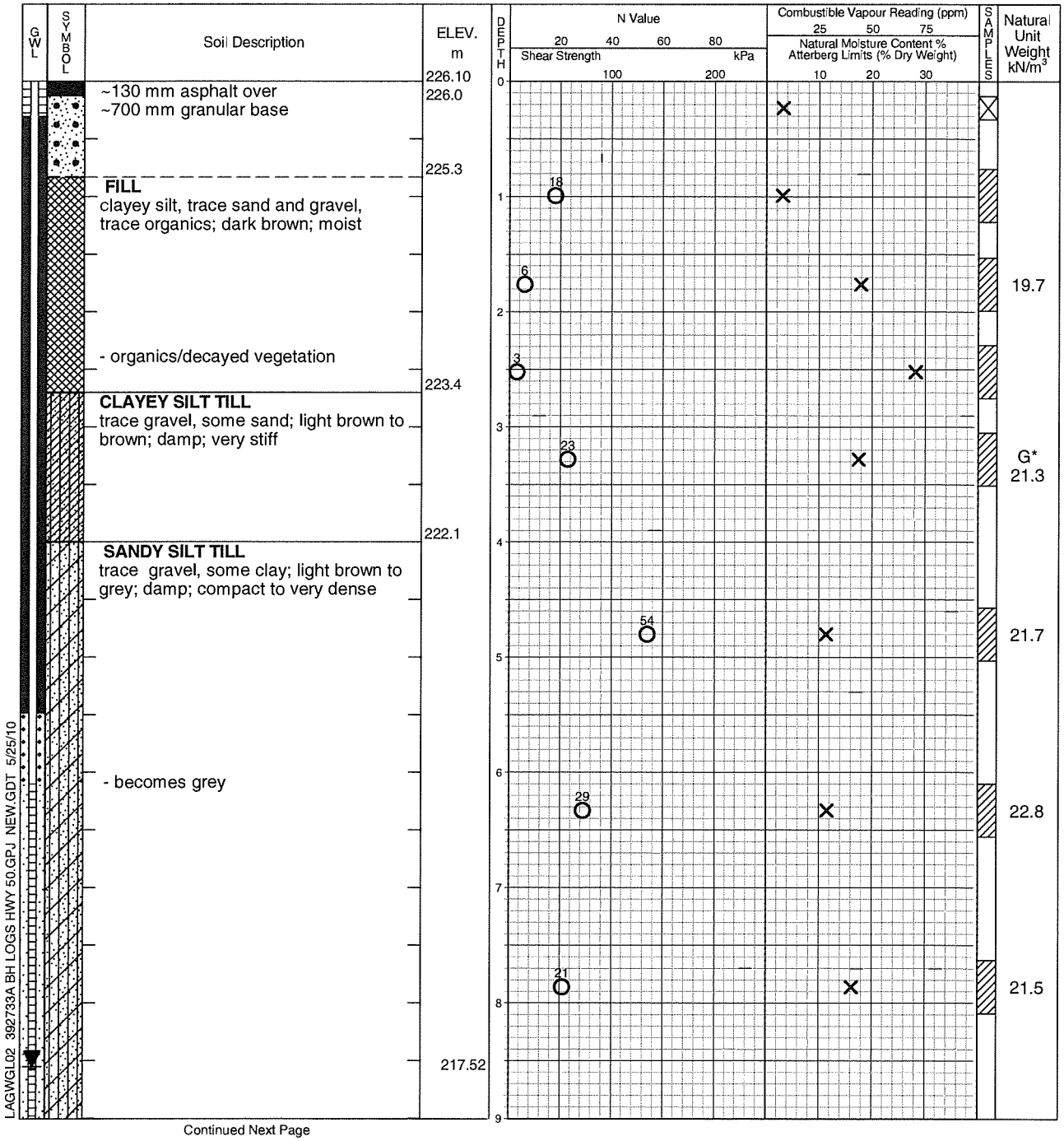
Date Drilled: February 12, 2010

Drill Type: CME 45C

Datum: Geodetic

Auger Sample
SPT (N) Value
Dynamic Cone Test
Shelby Tube
Field Vane Test (S)

Combustible Vapour Reading
Natural Moisture
Plastic and Liquid Limit
Undrained Triaxial at % Strain at Failure
Penetrometer



LAGWGL02 392733A BH LOGS HWY 50.GPJ NEW.GDT 5/25/10

Continued Next Page

Time	Water Level (m)	Depth to Cave (m)
Completion	No free water	9.45
March 8, 2010	8.75	
March 18,2010	8.58	9.06

Trow

Log of Borehole 4A

Project No. brge00392733A Drawing No. 4

Project: Preliminary Geotechnical Investigation, Highway 50 and Mayfield Road Sheet No. 2 of 2

GWL	SYMBOL	Soil Description	ELEV. m	DEPTH	N Value / Shear Strength kPa	Combustible Vapour Reading (ppm) / Natural Moisture Content % / Atterberg Limits (% Dry Weight)	SAMPLES	Natural Unit Weight kN/m³
			217.10	0	20 40 60 80 / 100 200	25 50 75 / 10 20 30		
				9	70 O	×		
			216.5					
		End of Borehole						
		*** G : Grain size analysis**						

LAGWGL02 392733A BH LOGS HWY 50.GPJ NEW.GDT 5/25/10

Trow

Time	Water Level (m)	Depth to Cave (m)
Completion	No free water	9.45
March 8, 2010	8.75	
March 18,2010	8.58	9.06

Log of Borehole 4B

Project No. brge00392733A — Drawing No. 5

Project: Preliminary Geotechnical Investigation, Highway 50 and Mayfield Road — Sheet No. 1 of 1

Location: Town of Caledon and City of Vaughan, Region of Peel, ONtario

Highway 50

Date Drilled: February 12, 2010

Drill Type: CME 45C

Datum: Geodetic

Auger Sample
SPT (N) Value
Dynamic Cone Test
Shelby Tube
Field Vane Test (S)

Combustible Vapour Reading
Natural Moisture
Plastic and Liquid Limit
Undrained Triaxial at % Strain at Failure
Penetrometer

GWL	SYMBOL	Soil Description	ELEV. m	DEPTH	N Value / Shear Strength kPa	Combustible Vapour Reading (ppm) / Natural Moisture Content % / Atterberg Limits (% Dry Weight)	SAMPLES	Natural Unit Weight kN/m³
		~ 220 mm asphalt over ~ 380 mm granular base	225.70 / 225.5	0				
		FILL silty sand, some gravel, trace organics and decayed wood; brown; damp	225.1	1	8		E*	21.2
				2	7			21.3
		- trace organics	223.1	3	7			19.5
		CLAYEY SILT TILL trace gravel, sand seams; light brown to grey; moist; firm to hard			22			21.2
		- becomes grey		4	49			22.0
		- some gravel		6	15			22.6
				7				
			217.6	8	20			21.6
		End of Borehole						
		*** E : Environmental test**						

LAGWGL02 392733A BH LOGS HWY 50.GPJ NEW.GDT 5/26/10

Trow

Time	Water Level (m)	Depth to Cave (m)
Completion	No free water	7.63

Log of Borehole 4C

Project No. brge00392733A — Drawing No. 6

Project: Preliminary Geotechnical Investigation, Highway 50 and Mayfield Road — Sheet No. 1 of 1

Location: Town of Caledon and City of Vaughan, Region of Peel, ONtario

Mayfield Road

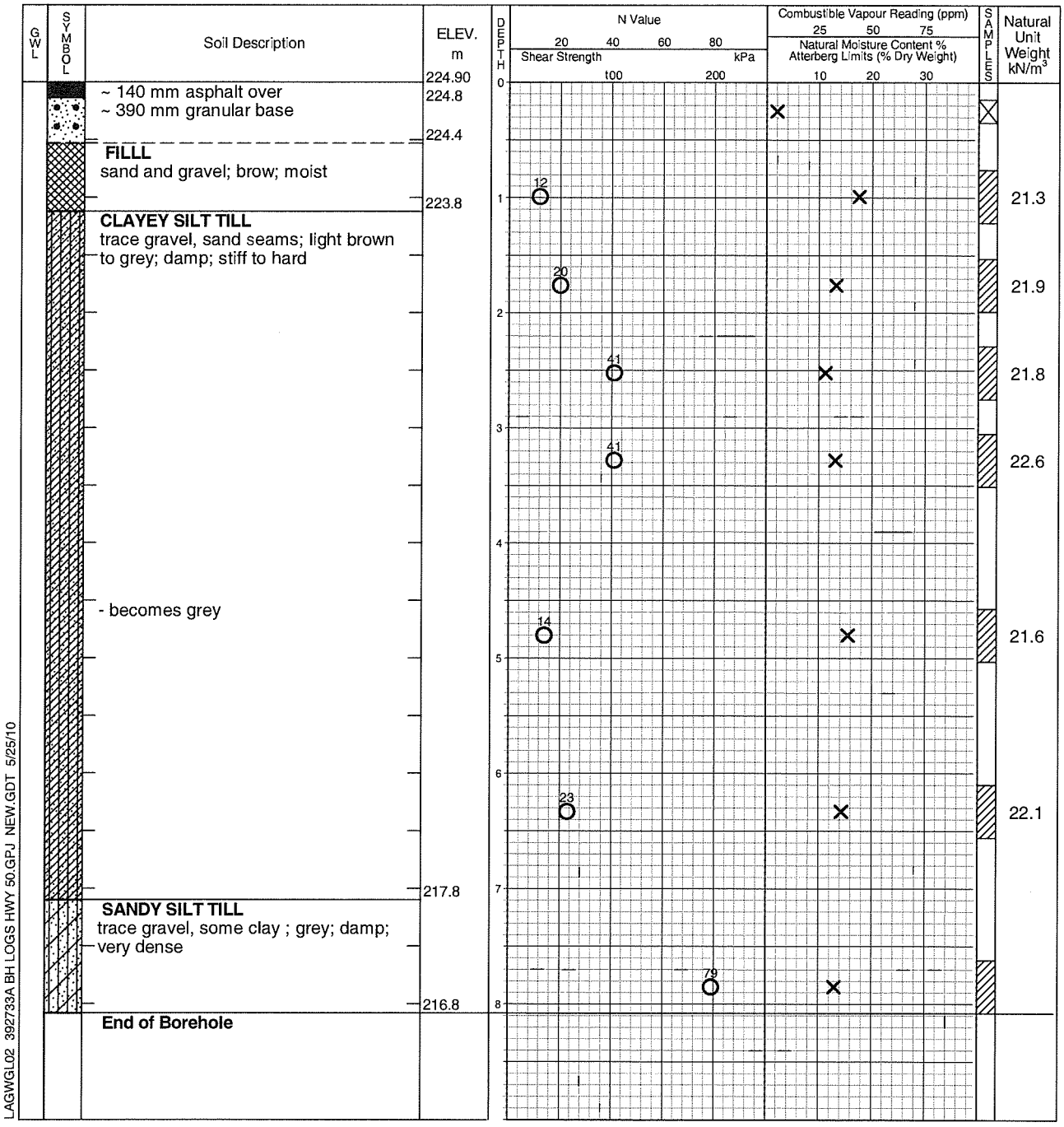
Date Drilled: February 22, 2010

Drill Type: CME 45C

Datum: Geodetic

Auger Sample
SPT (N) Value
Dynamic Cone Test
Shelby Tube
Field Vane Test (S)

Combustible Vapour Reading
Natural Moisture
Plastic and Liquid Limit
Undrained Triaxial at % Strain at Failure
Penetrometer



LAGWGL02 392733A BH LOGS HWY 50.GPJ NEW.GDT 5/25/10

Time	Water Level (m)	Depth to Cave (m)
Completion	No free water	7.93

Trow

Log of Borehole 4D

Project No. brge00392733A — Drawing No. 7

Project: Preliminary Geotechnical Investigation, Highway 50 and Mayfield Road — Sheet No. 1 of 1

Location: Town of Caledon and City of Vaughan, Region of Peel, ONtario

Mayfield Road

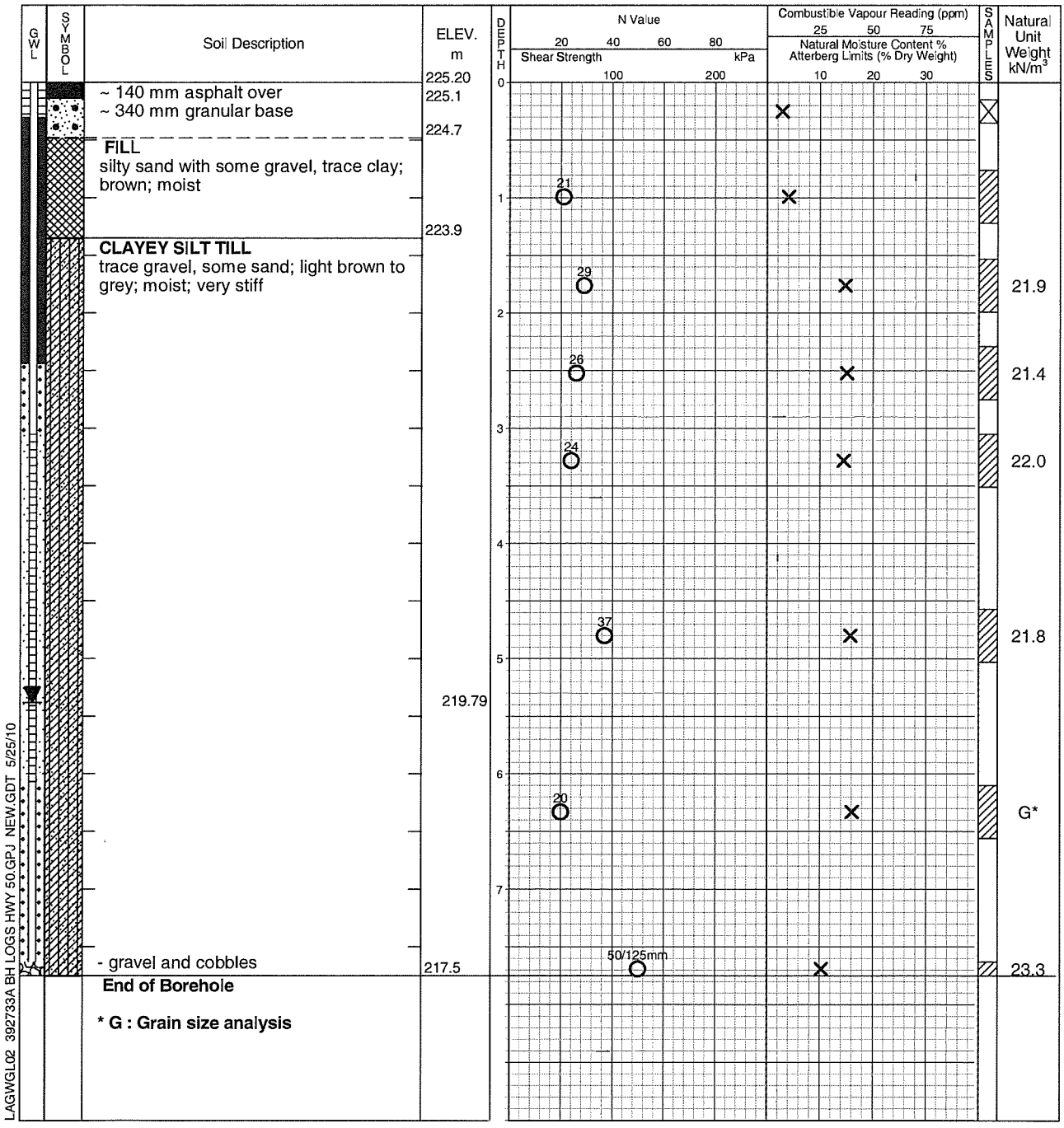
Date Drilled: February 22, 2010

Drill Type: CME 45C

Datum: Geodetic

Auger Sample
SPT (N) Value
Dynamic Cone Test
Shelby Tube
Field Vane Test

Combustible Vapour Reading
Natural Moisture
Plastic and Liquid Limit
Undrained Triaxial at % Strain at Failure
Penetrometer



LAGWGL02 392733A BH LOGS HWY 50.GPJ NEW.GDT 5/25/10

Time	Water Level (m)	Depth to Cave (m)
Completion	No free water	7.63
March 8, 2010	open to 5.72, no water	
March 18,2010	5.41	5.69

Trow

Log of Borehole 5

Project No. brge00392733A — Drawing No. 8

Project: Preliminary Geotechnical Investigation, Highway 50 and Mayfield Road — Sheet No. 1 of 1

Location: Town of Caledon and City of Vaughan, Region of Peel, ONtario

Highway 50

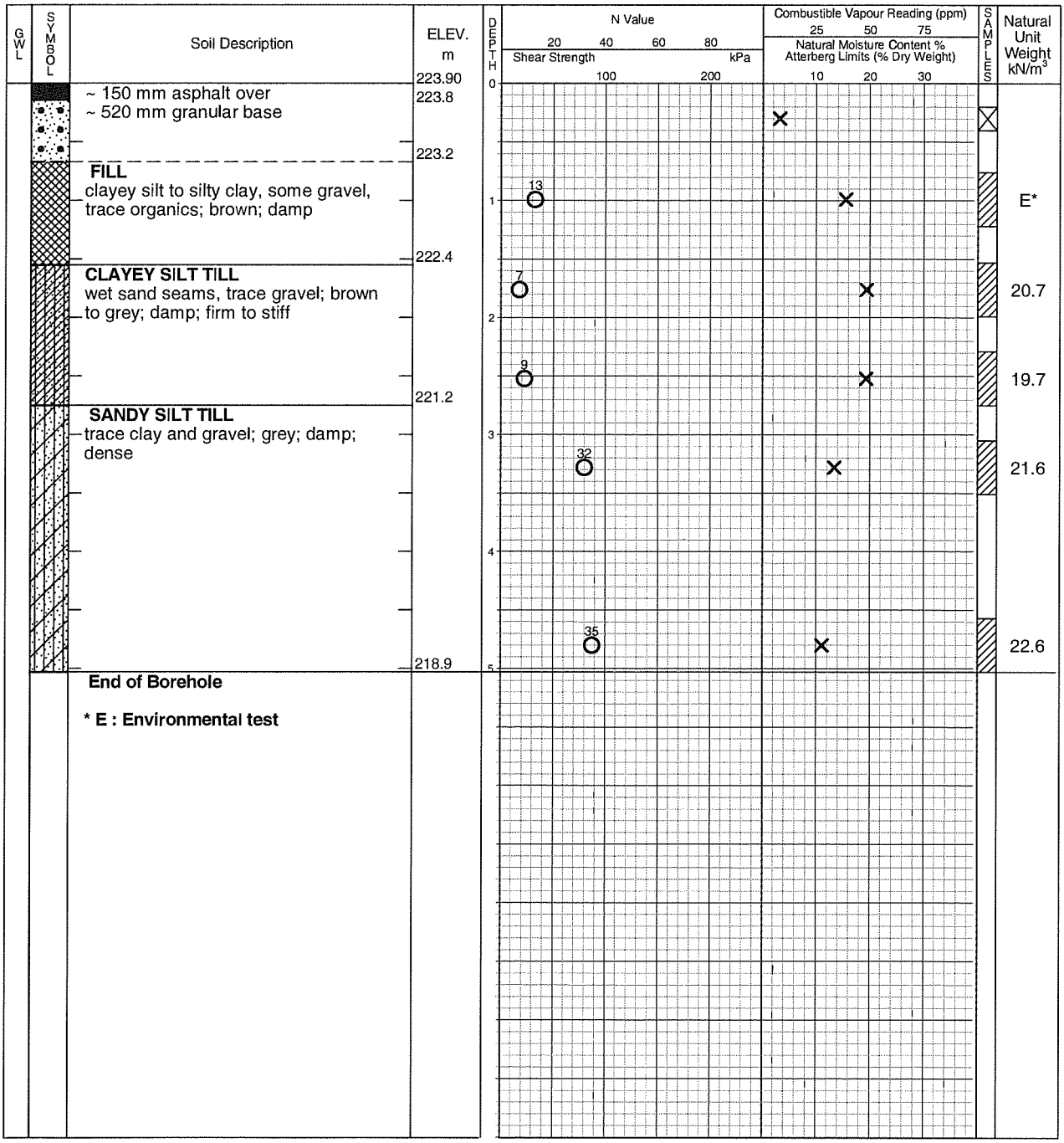
Date Drilled: February 11, 2010

Drill Type: CME 45C

Datum: Geodetic

Auger Sample
SPT (N) Value
Dynamic Cone Test
Shelby Tube
Field Vane Test (S)

Combustible Vapour Reading
Natural Moisture
Plastic and Liquid Limit
Undrained Triaxial at % Strain at Failure
Penetrometer



LAGWGL02_392733A BH LOGS HWY 50.GPJ NEW.GDT 5/25/10

Time	Water Level (m)	Depth to Cave (m)
Completion	No free water	5.03

Trow

Log of Borehole 6

Project No. brge00392733A — Drawing No. 9

Project: Preliminary Geotechnical Investigation, Highway 50 and Mayfield Road — Sheet No. 1 of 1

Location: Town of Caledon and City of Vaughan, Region of Peel, ONtario

Highway 50

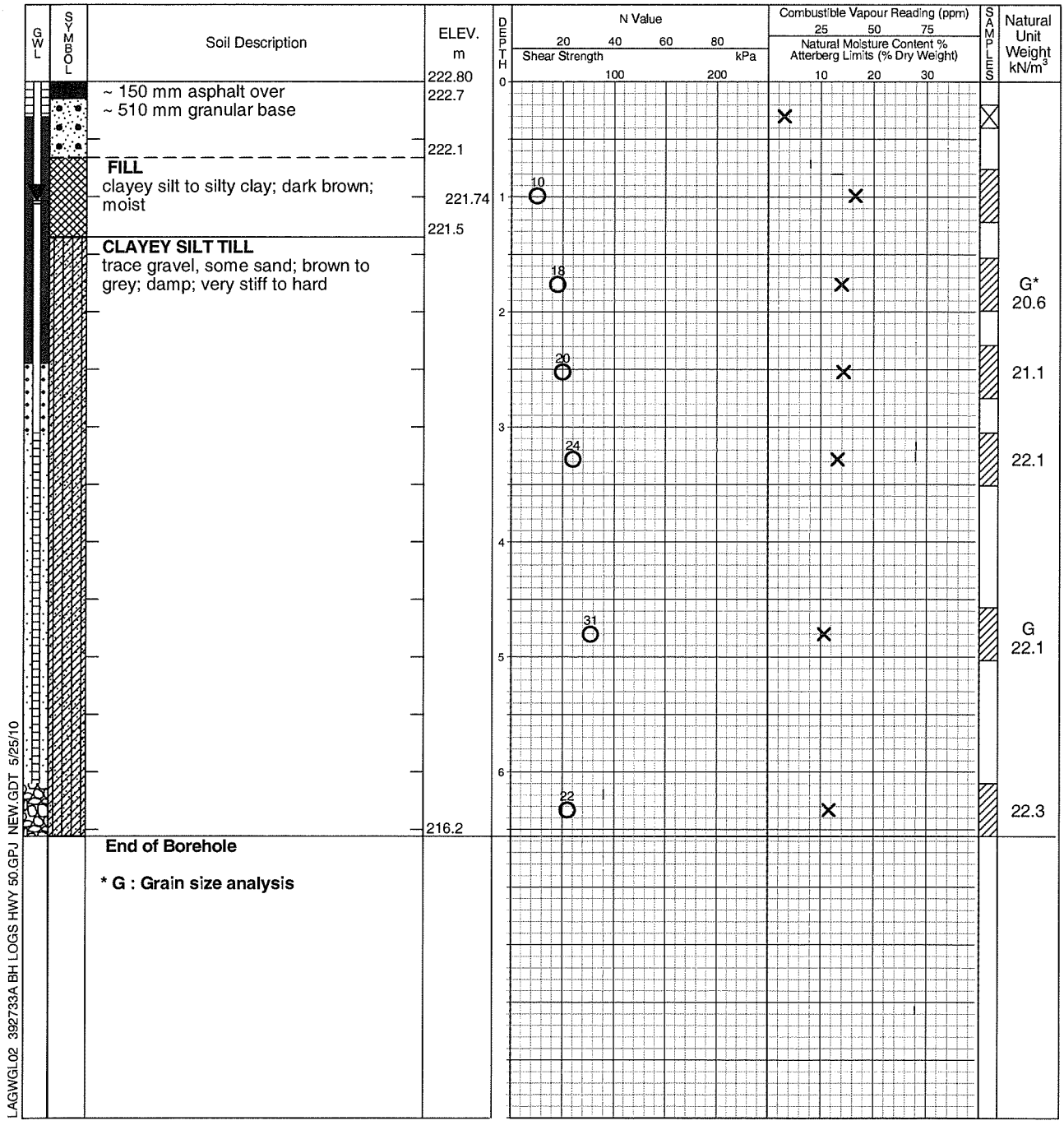
Date Drilled: February 11, 2010

Drill Type: CME 45C

Datum: Geodetic

Auger Sample
SPT (N) Value
Dynamic Cone Test
Shelby Tube
Field Vane Test

Combustible Vapour Reading
Natural Moisture
Plastic and Liquid Limit
Undrained Triaxial at % Strain at Failure
Penetrometer



LAGWGL02 392733A BH LOGS HWY 50.GPJ NEW.GDT 5/25/10

Time	Water Level (m)	Depth to Cave (m)
Completion	No free water	6.04
March 8, 2010	2.32	
March 18,2010	1.06	5.87

Trow

Log of Borehole 7

Project No. brge00392733A — Drawing No. 10

Project: Preliminary Geotechnical Investigation, Highway 50 and Mayfield Road — Sheet No. 1 of 1

Location: Town of Caledon and City of Vaughan, Region of Peel, ONtario

Highway 50

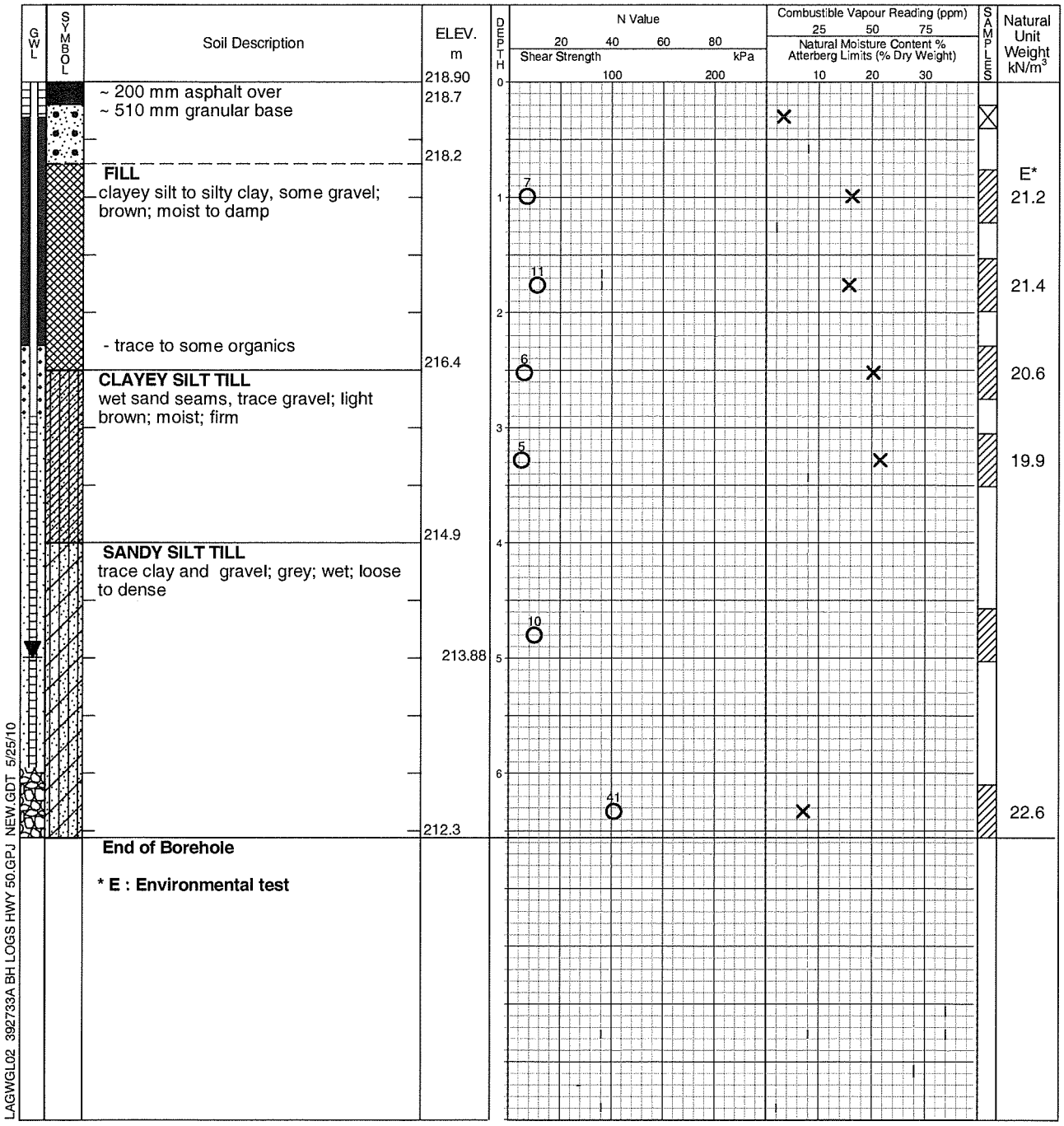
Date Drilled: February 12, 2010

Drill Type: CME 45C

Datum: Geodetic

Auger Sample
SPT (N) Value
Dynamic Cone Test
Shelby Tube
Field Vane Test (S)

Combustible Vapour Reading
Natural Moisture
Plastic and Liquid Limit
Undrained Triaxial at % Strain at Failure
Penetrometer



LAGWGL02 392733A BH LOGS HWY 50.GPJ NEW.GDT 5/25/10

Time	Water Level (m)	Depth to Cave (m)
Completion	6.09	6.1
March 8, 2010	5.15	
March 19,2010	5.02	5.88

Trow

Log of Borehole 8

Project No. brge00392733A Drawing No. 11

Project: Preliminary Geotechnical Investigation, Highway 50 and Mayfield Road Sheet No. 1 of 1

Location: Town of Caledon and City of Vaughan, Region of Peel, ONtario

Highway 50

Date Drilled: February 11, 2010

Drill Type: CME 45C

Datum: Geodetic

Auger Sample
SPT (N) Value
Dynamic Cone Test
Shelby Tube
Field Vane Test (S)

Combustible Vapour Reading
Natural Moisture
Plastic and Liquid Limit
Undrained Triaxial at % Strain at Failure
Penetrometer

GWL	SYMBOL	Soil Description	ELEV. m	DEPTH	N Value / Shear Strength kPa	Combustible Vapour Reading (ppm) / Natural Moisture Content % / Atterberg Limits (% Dry Weight)	SAMPLES	Natural Unit Weight kN/m³
			215.20	0				
		~ 200 mm asphalt over ~ 640 mm granular base	215.0					
			214.4	1	10			21.4
		CLAYEY SILT TILL trace gravel, sand seams; brown; damp; firm to stiff		2	9			20.9
		- organics/decayed vegetation	212.3		6			20.1
		SANDY SILT TILL trace clay and gravel; grey; damp; compact to very dense		3	20			21.4
				4				
				5	29			22.6
			209.0	6	50/ 125mm			22.7
		End of Borehole						

LAGWGL02 392733A BH LOGS HWY 50.GPJ NEW.GDT 5/25/10

Time	Water Level (m)	Depth to Cave (m)
Completion	No free water	6.22

Trow

Log of Borehole 10

Project No. brge00392733A — Drawing No. 12

Project: Preliminary Geotechnical Investigation, Highway 50 and Mayfield Road — Sheet No. 1 of 1

Location: Town of Caledon and City of Vaughan, Region of Peel, ONtario

Highway 50

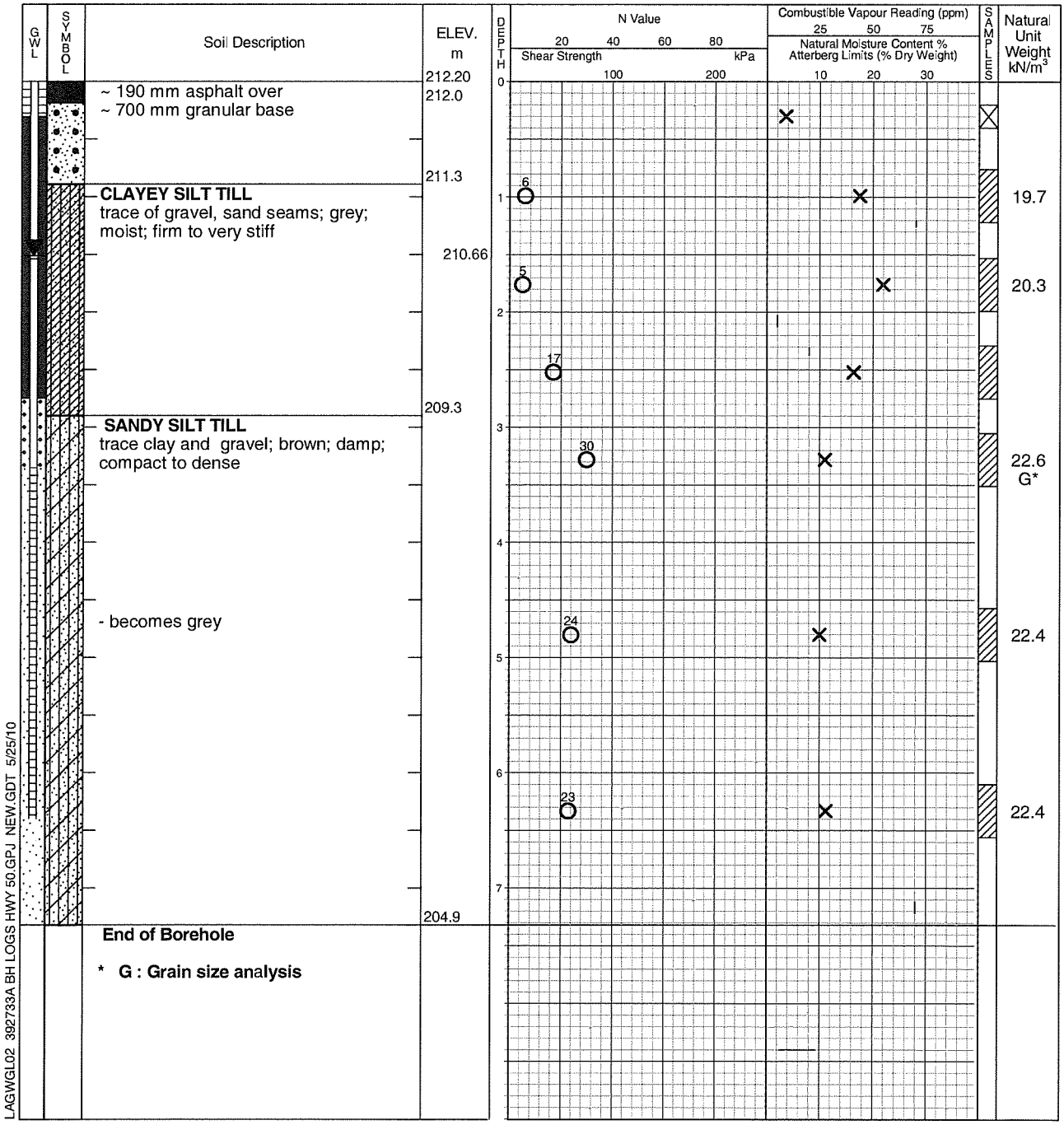
Date Drilled: February 11, 2010

Drill Type: CME 45C

Datum: Geodetic

Auger Sample
SPT (N) Value
Dynamic Cone Test
Shelby Tube
Field Vane Test (S)

Combustible Vapour Reading
Natural Moisture
Plastic and Liquid Limit
Undrained Triaxial at % Strain at Failure
Penetrometer



LAGWGL02 392733A BH LOGS HWY 50.GPJ NEW.GDT 5/25/10

Trow

Time	Water Level (m)	Depth to Cave (m)
Completion	No free water	7.32
March 8, 2010	1.72	
March 18,2010	1.54	6.10

Log of Borehole 11

Project No. brge00392733A — Drawing No. 13

Project: Preliminary Geotechnical Investigation, Highway 50 and Mayfield Road — Sheet No. 1 of 1

Location: Town of Caledon and City of Vaughan, Region of Peel, ONtario

Highway 50

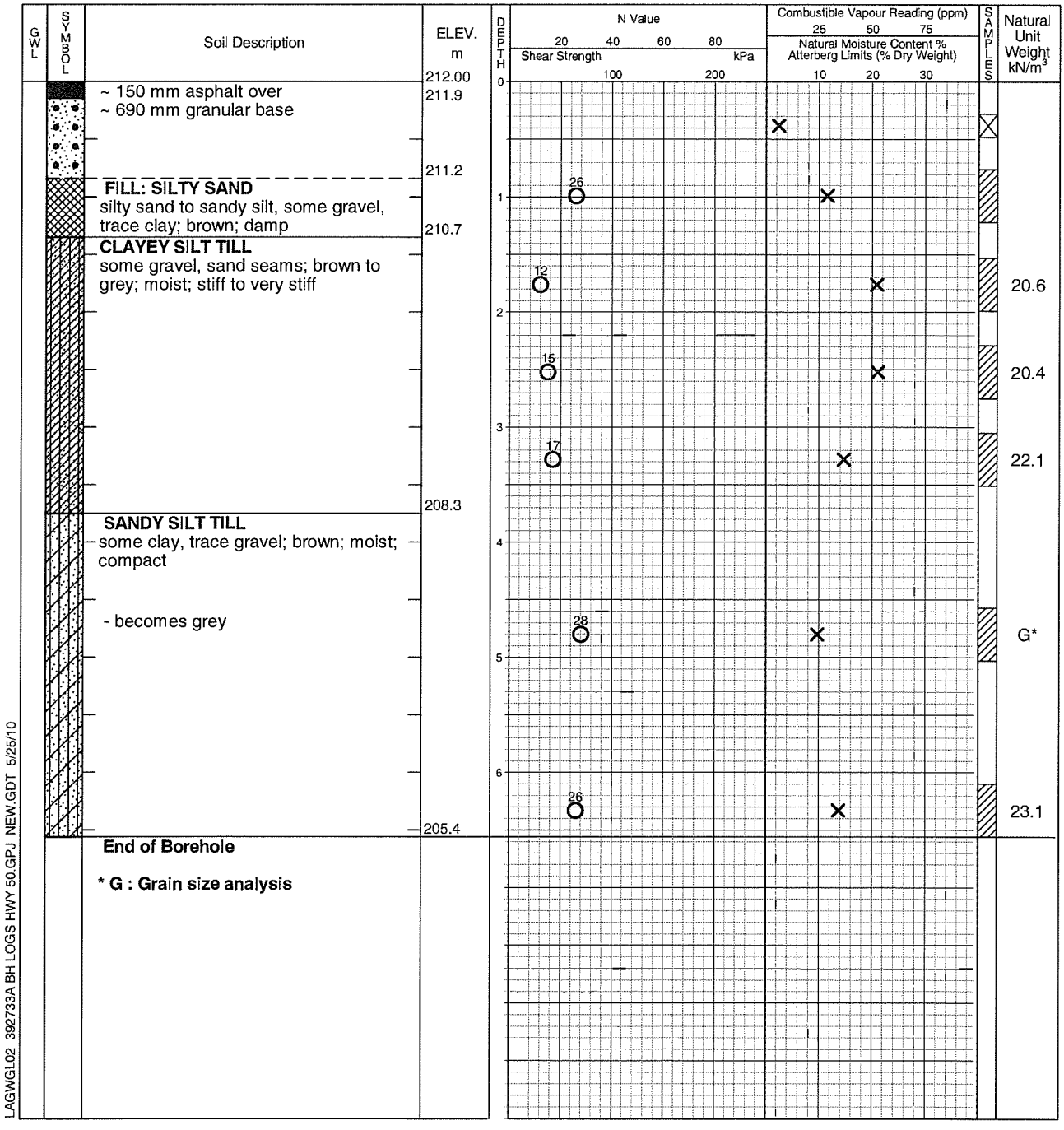
Date Drilled: February 10, 2010

Drill Type: CME 45C

Datum: Geodetic

Auger Sample
SPT (N) Value
Dynamic Cone Test
Shelby Tube
Field Vane Test (S)

Combustible Vapour Reading
Natural Moisture
Plastic and Liquid Limit
Undrained Triaxial at % Strain at Failure
Penetrometer



LAGWGL02 392733A BH LOGS HWY 50.GPJ NEW.GDT 5/25/10

Time	Water Level (m)	Depth to Cave (m)
Completion	No free water	6.1

Trow

Log of Borehole 12

Project No. brge00392733A — Drawing No. 14

Project: Preliminary Geotechnical Investigation, Highway 50 and Mayfield Road — Sheet No. 1 of 1

Location: Town of Caledon and City of Vaughan, Region of Peel, ONtario

Highway 50

Date Drilled: February 12, 2010

Drill Type: CME 45C

Datum: Geodetic

Auger Sample
SPT (N) Value
Dynamic Cone Test
Shelby Tube
Field Vane Test (S)

Combustible Vapour Reading
Natural Moisture
Plastic and Liquid Limit
Undrained Triaxial at % Strain at Failure
Penetrometer

GWL	SYMBOL	Soil Description	ELEV. m	DEPTH
		~ 250 mm asphalt over ~ 500 mm granular base	210.70	0
			210.5	
		FILL silty sand, some garvel, trace organics; dark brown; damp; compact	210.0	
			209.4	1
		CLAYEY SILT TILL trace gravel, some sand; light brown; damp; stiff to very stiff		2
			207.8	3
		SANDY SILT TILL some clay, trace gravel; light brown to grey; damp; compact to very dense		4
			205.7	5
		End of Borehole		
		*** E : Environmental test**		

N Value (20 40 60 80) — Shear Strength (100 200 kPa)

Combustible Vapour Reading (ppm) (25 50 75) — Natural Moisture Content % Atterberg Limits (% Dry Weight) (10 20 30)

SAMPLES

Natural Unit Weight kN/m³

E* 20.2

22.5

Time	Water Level (m)	Depth to Cave (m)
Completion	No free water	4.58

Trow

LAGWGL02 392733A BH LOGS HWY 50.GPJ NEW.GDT 5/25/10

Log of Borehole 13

Project No. brge00392733A — Drawing No. 15

Project: Preliminary Geotechnical Investigation, Highway 50 and Mayfield Road — Sheet No. 1 of 1

Location: Town of Caledon and City of Vaughan, Region of Peel, ONtario

Highway 50

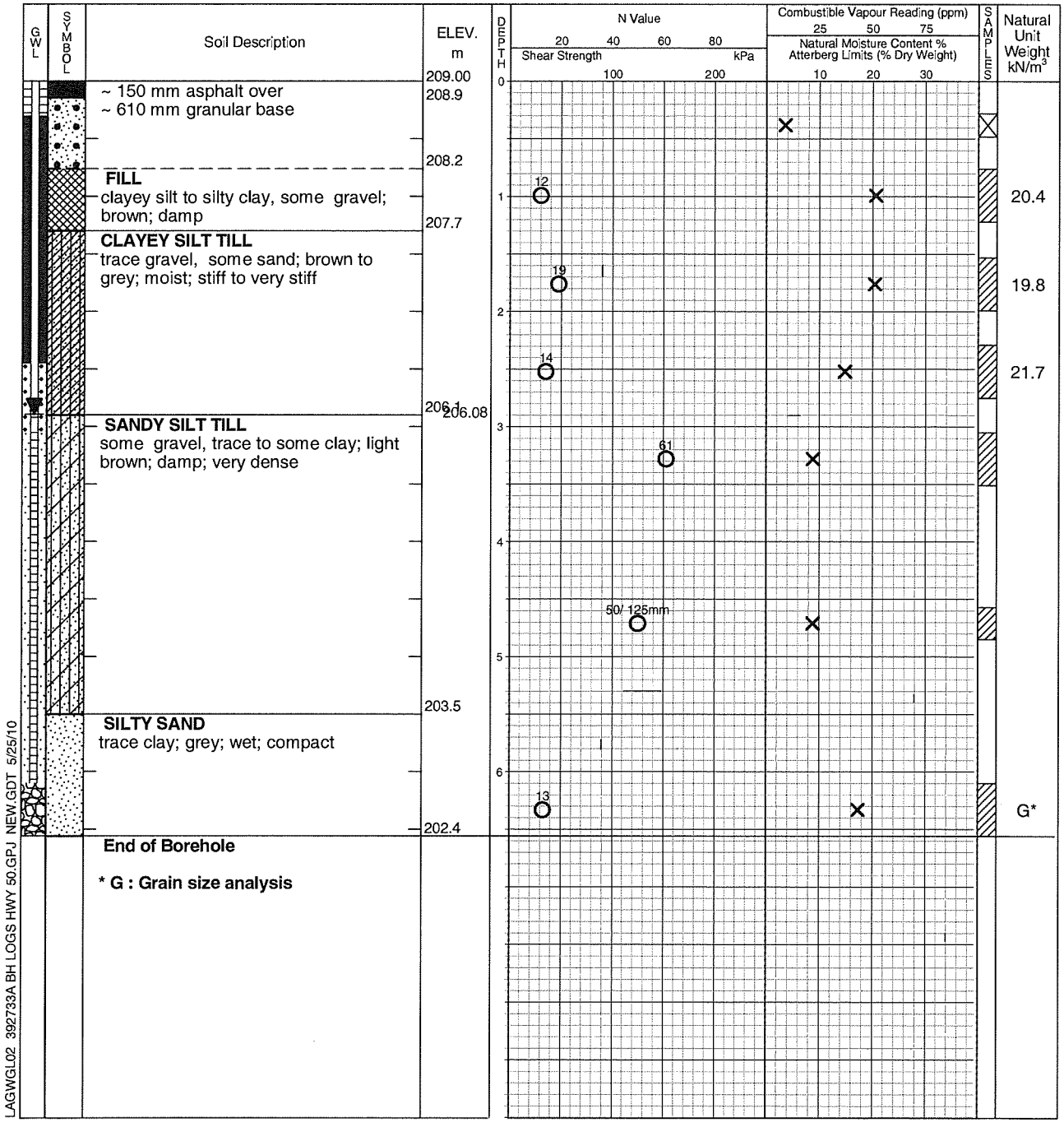
Date Drilled: February 10, 2010

Drill Type: CME 45C

Datum: Geodetic

Auger Sample
SPT (N) Value
Dynamic Cone Test
Shelby Tube
Field Vane Test (S)

Combustible Vapour Reading
Natural Moisture
Plastic and Liquid Limit
Undrained Triaxial at % Strain at Failure
Penetrometer



LAGWGL02 392733A BH LOGS HWY 50.GPJ NEW.GDT 5/25/10

Trow

Time	Water Level (m)	Depth to Cave (m)
Completion	4.58	5.49
March 8, 2010	3.47	
March 18,2010	2.92	5.99

Log of Borehole 14

Project No. brge00392733A — Drawing No. 16

Project: Preliminary Geotechnical Investigation, Highway 50 and Mayfield Road — Sheet No. 1 of 1

Location: Town of Caledon and City of Vaughan, Region of Peel, ONtario

Highway 50

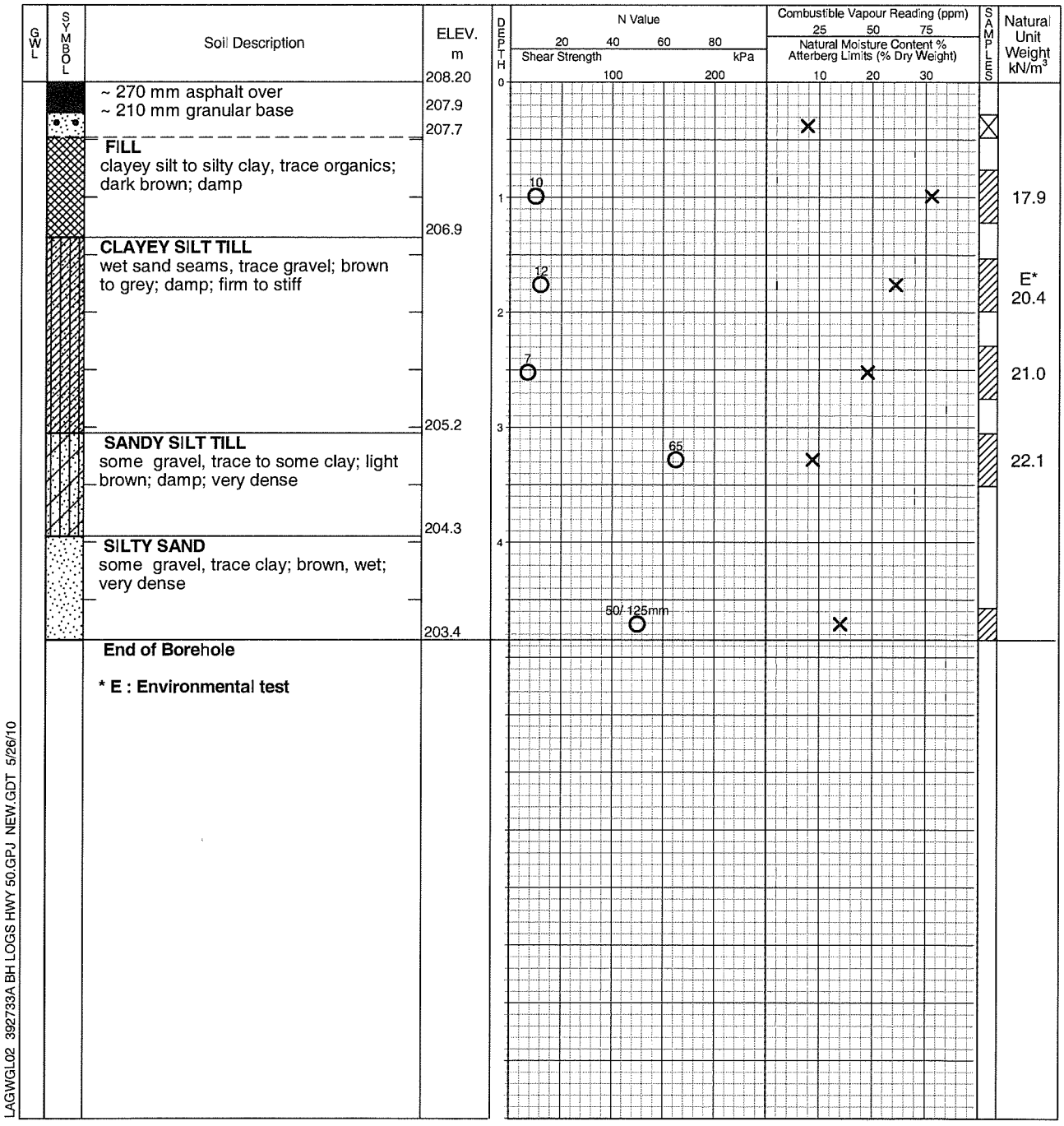
Date Drilled: February 12, 2010

Drill Type: CME 45C

Datum: Geodetic

Auger Sample
SPT (N) Value
Dynamic Cone Test
Shelby Tube
Field Vane Test

Combustible Vapour Reading
Natural Moisture
Plastic and Liquid Limit
Undrained Triaxial at % Strain at Failure
Penetrometer



LAGWGL02 392733A BH LOGS HWY 50.GPJ NEW.GDT 5/26/10

Time	Water Level (m)	Depth to Cave (m)
Completion	4.34	4.42

Trow

Log of Borehole 15

Project No. brge00392733A — Drawing No. 17

Project: Preliminary Geotechnical Investigation, Highway 50 and Mayfield Road — Sheet No. 1 of 1

Location: Town of Caledon and City of Vaughan, Region of Peel, ONtario

Highway 50

Date Drilled: February 10, 2010

Drill Type: CME 45C

Datum: Geodetic

Auger Sample
SPT (N) Value
Dynamic Cone Test
Shelby Tube
Field Vane Test

Combustible Vapour Reading
Natural Moisture
Plastic and Liquid Limit
Undrained Triaxial at % Strain at Failure
Penetrometer

GWL	SYMBOL	Soil Description	ELEV. m	DEPTH
			208.60	0
		~ 150 mm asphalt over ~ 470 mm granular base	208.5	
		FILL clayey silt to sandy silt; grey; moist	208.0	
		CLAYEY SILT TILL trace gravel, sand seams; light brown to grey; damp; very stiff	207.2	1
		SANDY SILT TILL some gravel, trace to some clay; light brown; damp; very dense	205.7	2
		SILY SAND some gravel, trace clay; brown, wet; very dense	204.6	3
		End of Borehole	203.6	4
				5

N Value (20 40 60 80) — Shear Strength (100 200 kPa)

Combustible Vapour Reading (ppm) (25 50 75) — Natural Moisture Content % Atterberg Limits (% Dry Weight) (10 20 30)

SAMPLES

Natural Unit Weight kN/m³

11 — 21 — 20.5 — 26 — 56 — 22.4 — 89/280mm

LAGWGL02 392733A BH LOGS HWY 50.GPJ NEW.GDT 5/25/10

Trow

Time	Water Level (m)	Depth to Cave (m)
Completion	No free water	4.88

Log of Borehole 16

Project No. brge00392733A — Drawing No. 18

Project: Preliminary Geotechnical Investigation, Highway 50 and Mayfield Road — Sheet No. 1 of 1

Location: Town of Caledon and City of Vaughan, Region of Peel, ONtario

Highway 50

Date Drilled: February 11, 2010

Drill Type: CME 45C

Datum: Geodetic

Auger Sample
SPT (N) Value
Dynamic Cone Test
Shelby Tube
Field Vane Test

Combustible Vapour Reading
Natural Moisture
Plastic and Liquid Limit
Undrained Triaxial at % Strain at Failure
Penetrometer

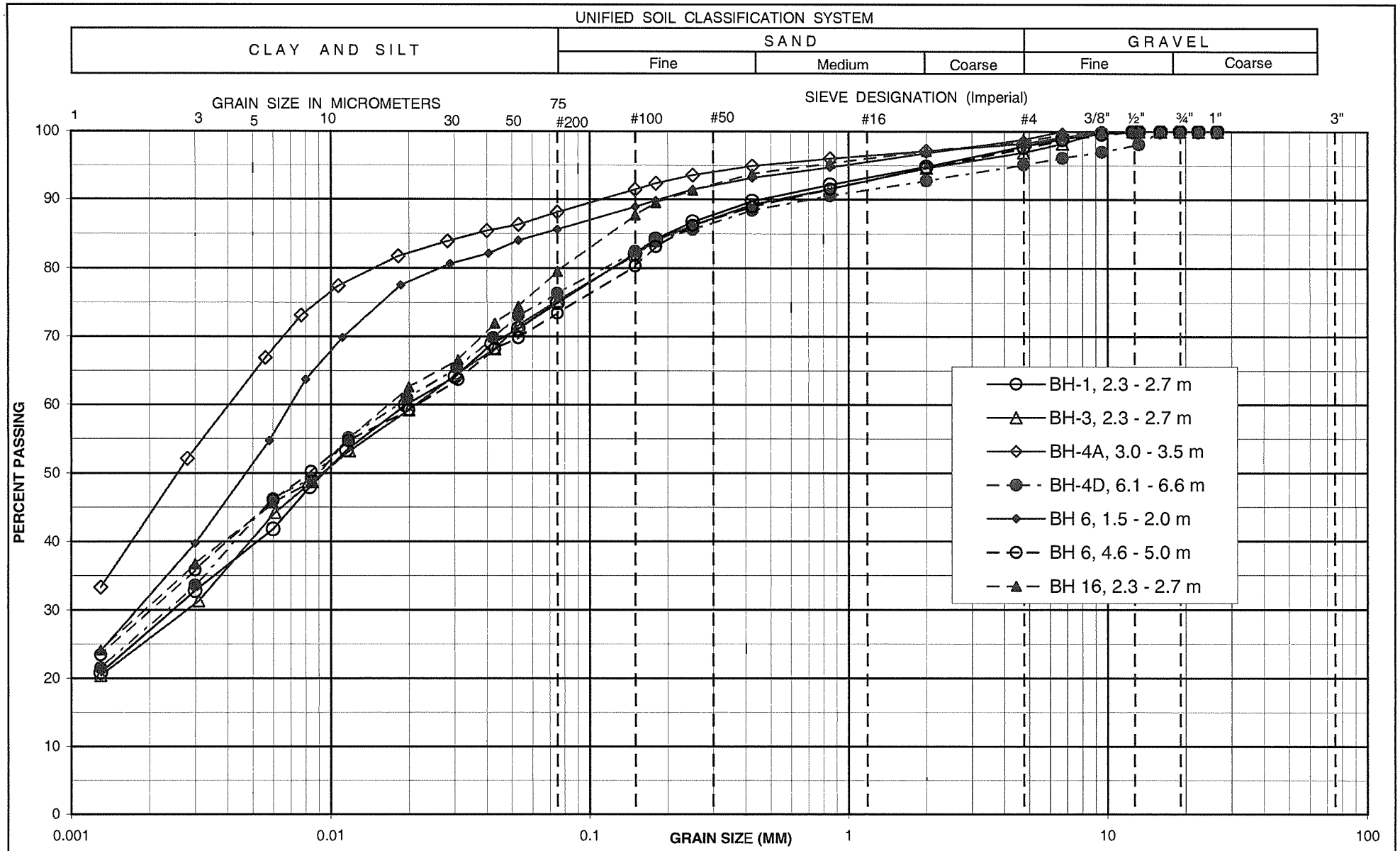
GWL	SYMBOL	Soil Description	ELEV. m	DEPTH	N Value / Shear Strength kPa	Combustible Vapour Reading (ppm) / Natural Moisture Content % / Atterberg Limits (% Dry Weight)	SAMPLES	Natural Unit Weight kN/m³
		~ 300 mm asphalt ~ 430 mm granular base	206.30 206.0	0				
		FILL sandy silt, trace organics; dark brown; damp	205.6 205.0	1	15			
		CLAYEY SILT TILL some gravel, sand seams; brown to grey; moist; very stiff	204.2	2	17			E* 21.0
		SANDY SILT TILL trace to some clay and trace gravel; brown to grey; damp; compact to dense			20			G** 20.7
		- becomes grey	203.29	3	36			21.1
				4				
				5	35			21.9
				6	50			22.0
		End of Borehole * **E : Environmental test** ** **G : Grain size analysis**	199.7					

LAGWGL02 392733A BH LOGS HWY 50.GPJ NEW.GDT 5/25/10

Trow

Time	Water Level (m)	Depth to Cave (m)
Completion	5.77	5.8
March 8, 2010	3.59	
March 19,2010	3.01	5.94

Appendix 'B':
Figure Nos. 1 – 3 : Grain Size Analyses Results



Trow

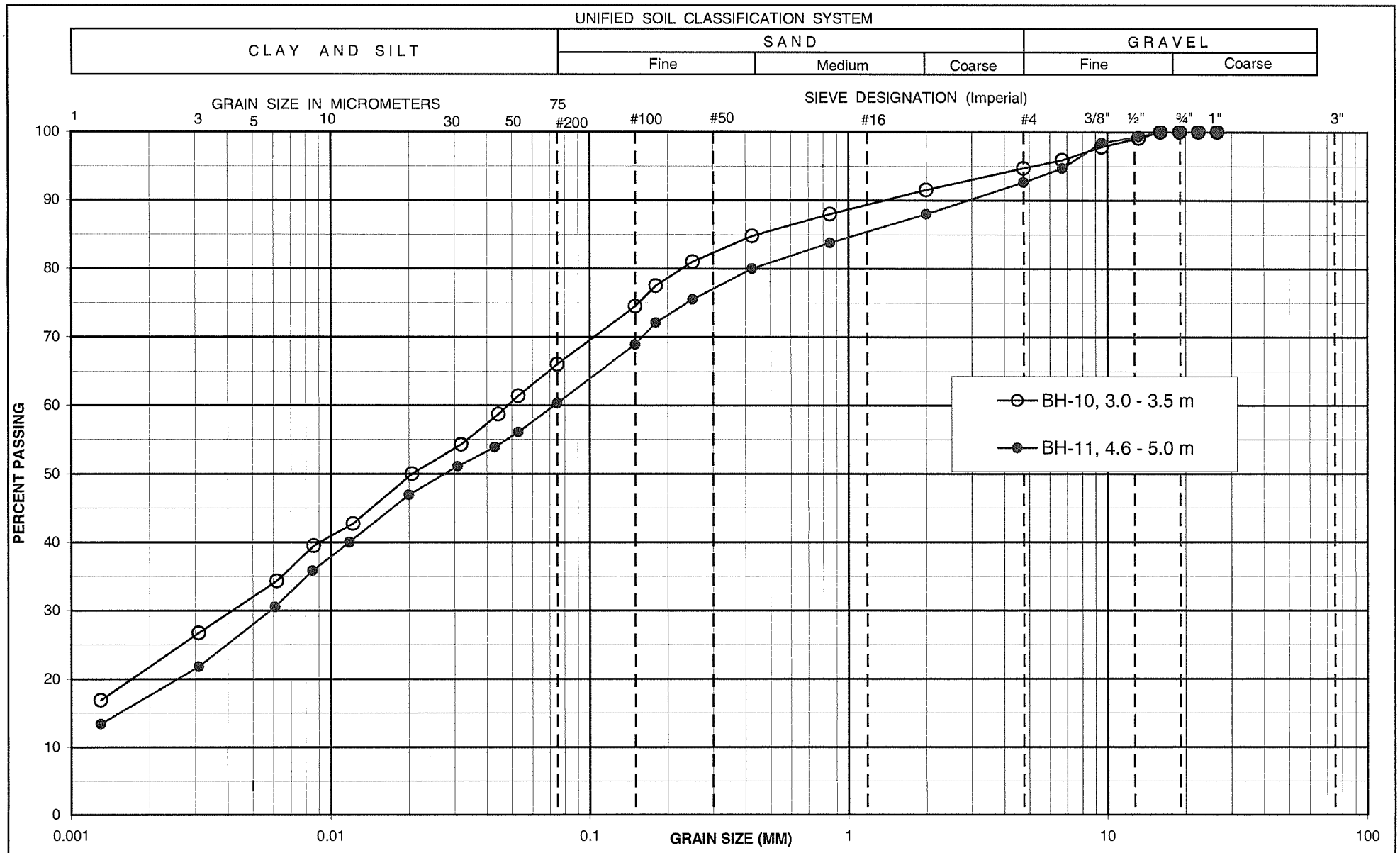
Trow Associates Inc.

GEO. & ENV. INVESTIGATIONS, HIGHWAY 50 AND MAYFIELD

GRAIN SIZE DISTRIBUTION

CLAYEY SILT TILL

FIGURE No.	1
REF. No.	BRGE00392733A
DATE	26 APRIL 2010



Trow

Trow Associates Inc.

GEO. & ENV. INVESTIGATIONS, HIGHWAY 50 AND MAYFIELD

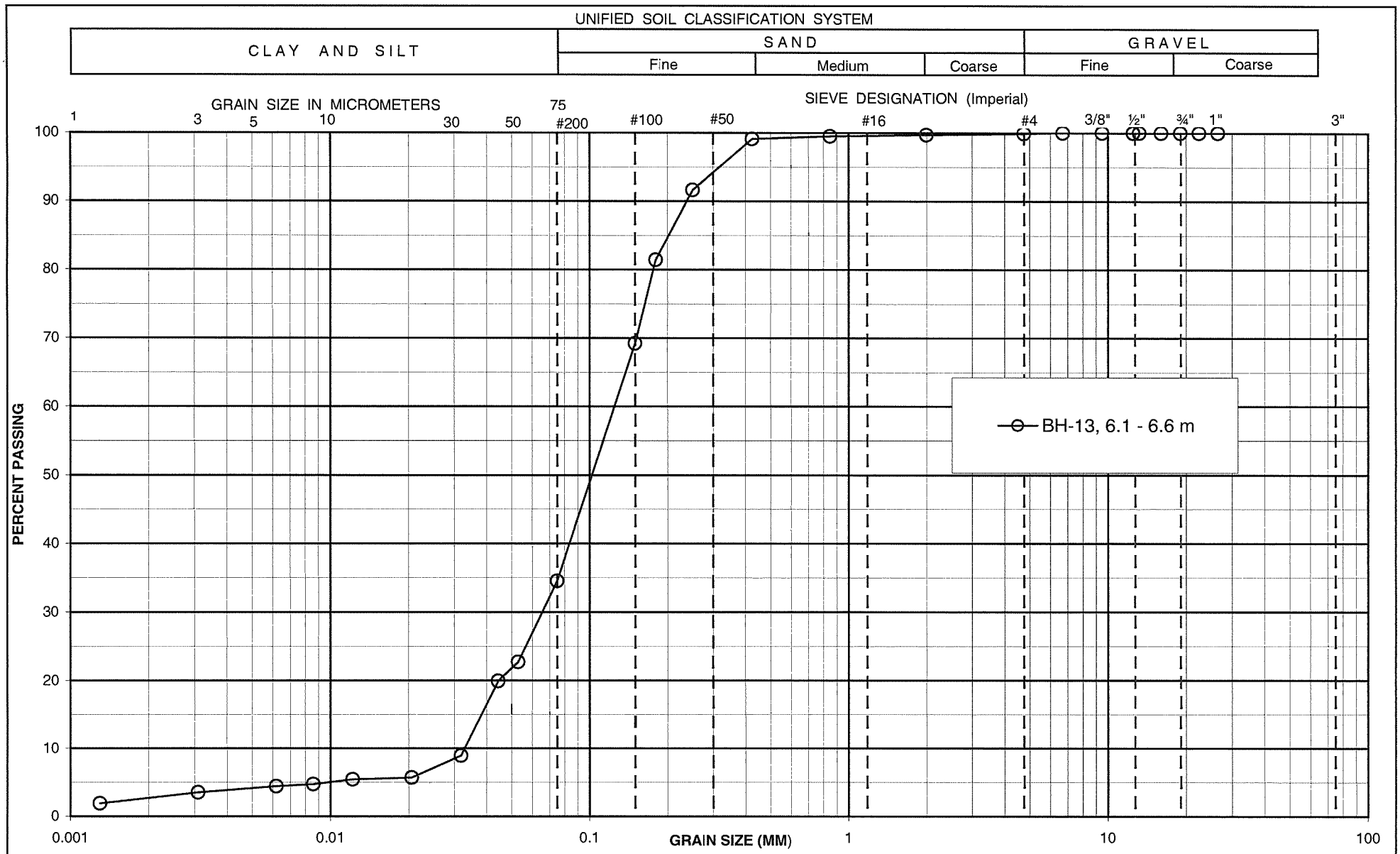
GRAIN SIZE DISTRIBUTION

SANDY SILT TILL

FIGURE No. 2

REF. No. BRGE00392733A

DATE 26 APRIL 2010



Trow

Trow Associates Inc.

GEO. & ENV. INVESTIGATIONS, HIGHWAY 50 AND MAYFIELD

GRAIN SIZE DISTRIBUTION

SILTY SAND

FIGURE No.	3
REF. No.	BRGE00392733A
DATE	26 APRIL 2010

Appendix 'C':
Results of Environmental Analyses

Your Project #: BRGE00392733A
Site: HWY 50 & MAYFIELD RD.
Your C.O.C. #: OO616207

Attention: Madan Karkee
Trow Associates Inc
1595 Clark Blvd
Brampton, ON
L6T 4V1

Report Date: 2010/03/11

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B025327
Received: 2010/03/03, 10:16

Sample Matrix: Soil
Samples Received: 8

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Hot Water Extractable Boron	7	2010/03/08	2010/03/08	CAM SOP-00408	R153 Ana. Prot. 2004
Hot Water Extractable Boron	1	2010/03/08	2010/03/09	CAM SOP-00408	R153 Ana. Prot. 2004
Free Cyanide	5	N/A	2010/03/09	CAM SOP-00457	SM 4500CN-I
Free Cyanide	2	N/A	2010/03/10	CAM SOP-00457	SM 4500CN-I
Free Cyanide	1	N/A	2010/03/11	CAM SOP-00457	SM 4500CN-I
Conductivity	8	N/A	2010/03/09	CAM SOP-00414	APHA 2510
Chromium (VI) in Soil	8	2010/03/08	2010/03/09	CAM SOP-00420	EPA 3060A
Acid Extr. Metals (aqua regia) by ICPMS	6	2010/03/08	2010/03/08	CAM SOP-00447	EPA 6020
Acid Extr. Metals (aqua regia) by ICPMS	2	2010/03/09	2010/03/09	CAM SOP-00447	EPA 6020
MOISTURE	8	N/A	2010/03/06	CAM SOP-00445	McKeague 2nd ed 1978
pH CaCl2 EXTRACT	8	2010/03/09	2010/03/09	CAM SOP-00413	SM 4500 H
Sodium Adsorption Ratio (SAR)	8	2010/03/03	2010/03/09	CAM SOP-00102	EPA 6010

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
* Results relate only to the items tested.

Encryption Key

Renata Spena
11 Mar 2010 12:53:47 -05:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

SARA SAROOP, Project Manager
Email: Sara.Saroop@maxxamanalytics.com
Phone# (905) 817-5700 Ext:5821

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 1

Maxxam Job #: B025327
Report Date: 2010/03/11

Trow Associates Inc
Client Project #: BRGE00392733A
Project name: HWY 50 & MAYFIELD RD.

O'REG 153 METALS & INORGANICS COMPLETE (SOIL)

Maxxam ID		FF7085		FF7086	FF7086		FF7087		FF7088	FF7088		
Sampling Date		2010/03/03		2010/03/03	2010/03/03		2010/03/03		2010/03/03	2010/03/03		
	Units	**BH2, SS2**	**QC Batch**	**BH4B, SS2**	**BH4B, SS2 Lab-Dup**	**QC Batch**	**BH5, SS2**	**QC Batch**	**BH7, SS2**	**BH7, SS2 Lab-Dup**	**RDL**	**QC Batch**
Calculated Parameters												
Sodium Adsorption Ratio	N/A	35	2091555	22		2091555	9.2	2091555	27		N/A	2091555
Inorganics												
Conductivity	mS/cm	3.0	2095626	4.4	4.5	2095647	2.7	2095626	4.7		0.002	2095626
Free Cyanide	ug/g	0.01	2095655	<0.01		2095655	<0.01	2095648	<0.01	<0.01	0.01	2095657
Moisture	%	9.7	2094497	14		2094497	14	2094497	14		0.2	2094497
Available (CaCl2) pH	pH	7.49	2095621	7.79	7.80	2095645	7.45	2095621	7.82			2095621
Metals												
Hot Water Ext. Boron (B)	ug/g	0.40	2095143	0.11		2095143	0.22	2095143	0.24		0.05	2095143
Chromium (VI)	ug/g	<0.2	2094944	<0.2		2094944	<0.2	2094944	<0.2		0.2	2094944
Acid Extractable Antimony (Sb)	ug/g	<0.2	2094960	<0.2		2094960	<0.2	2094960	<0.2		0.2	2094960
Acid Extractable Arsenic (As)	ug/g	3	2094960	4		2094960	3	2094960	4		1	2094960
Acid Extractable Barium (Ba)	ug/g	82	2094960	80		2094960	81	2094960	77		0.5	2094960
Acid Extractable Beryllium (Be)	ug/g	0.5	2094960	0.6		2094960	0.6	2094960	0.5		0.2	2094960
Acid Extractable Cadmium (Cd)	ug/g	0.2	2094960	<0.1		2094960	0.1	2094960	<0.1		0.1	2094960
Acid Extractable Chromium (Cr)	ug/g	14	2094960	20		2094960	20	2094960	18		1	2094960
Acid Extractable Cobalt (Co)	ug/g	7.3	2094960	11		2094960	10	2094960	10		0.1	2094960
Acid Extractable Copper (Cu)	ug/g	25	2094960	30		2094960	21	2094960	24		0.5	2094960
Acid Extractable Lead (Pb)	ug/g	11	2094960	11		2094960	14	2094960	10		1	2094960
Acid Extractable Molybdenum (Mo)	ug/g	<0.5	2094960	<0.5		2094960	<0.5	2094960	<0.5		0.5	2094960
Acid Extractable Nickel (Ni)	ug/g	14	2094960	24		2094960	21	2094960	22		0.5	2094960
Acid Extractable Selenium (Se)	ug/g	<0.5	2094960	<0.5		2094960	<0.5	2094960	<0.5		0.5	2094960
Acid Extractable Silver (Ag)	ug/g	<0.2	2094960	<0.2		2094960	<0.2	2094960	<0.2		0.2	2094960
Acid Extractable Thallium (Tl)	ug/g	0.09	2094960	0.12		2094960	0.11	2094960	0.09		0.05	2094960
Acid Extractable Vanadium (V)	ug/g	24	2094960	29		2094960	29	2094960	26		5	2094960
Acid Extractable Zinc (Zn)	ug/g	49	2094960	55		2094960	55	2094960	52		5	2094960
Acid Extractable Mercury (Hg)	ug/g	<0.05	2094960	<0.05		2094960	<0.05	2094960	<0.05		0.05	2094960

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B025327
Report Date: 2010/03/11

Trow Associates Inc
Client Project #: BRGE00392733A
Project name: HWY 50 & MAYFIELD RD.

O'REG 153 METALS & INORGANICS COMPLETE (SOIL)

Maxxam ID		FF7089	FF7089	FF7090			FF7091	FF7091		FF7092		
Sampling Date		2010/03/03	2010/03/03	2010/03/03			2010/03/03	2010/03/03		2010/03/03		
	Units	**BH10, SS3**	**BH10, SS3 Lab-Dup**	**BH12, SS3**	**RDL**	**QC Batch**	**BH14, SS3**	**BH14, SS3 Lab-Dup**	**RDL**	**BH16, SS3**	**RDL**	**QC Batch**
Calculated Parameters												
Sodium Adsorption Ratio	N/A	4.8		14	N/A	2091555	1.6		N/A	12	N/A	2091555
Inorganics												
Conductivity	mS/cm	1.2		3.1	0.002	2095626	1.6		0.002	2.0	0.002	2095626
Free Cyanide	ug/g	<0.01		<0.01	0.01	2095648	<0.01		0.01	<0.01	0.01	2095648
Moisture	%	20		18	0.2	2094497	11		0.2	17	0.2	2094497
Available (CaCl2) pH	pH	7.68		7.71		2095621	7.60			7.73		2095621
Metals												
Hot Water Ext. Boron (B)	ug/g	0.45		0.13	0.05	2095143	<0.25		0.25	0.18	0.05	2095143
Chromium (VI)	ug/g	<0.2	<0.2	<0.2	0.2	2094944	<0.2		0.2	<0.2	0.2	2094944
Acid Extractable Antimony (Sb)	ug/g	<0.2		<0.2	0.2	2094960	<0.2	<0.2	0.2	<0.2	0.2	2095698
Acid Extractable Arsenic (As)	ug/g	4		3	1	2094960	2	2	1	3	1	2095698
Acid Extractable Barium (Ba)	ug/g	110		120	0.5	2094960	63	64	0.5	110	0.5	2095698
Acid Extractable Beryllium (Be)	ug/g	0.8		0.6	0.2	2094960	0.5	0.4	0.2	0.6	0.2	2095698
Acid Extractable Cadmium (Cd)	ug/g	<0.1		0.1	0.1	2094960	0.3	0.3	0.1	0.1	0.1	2095698
Acid Extractable Chromium (Cr)	ug/g	25		22	1	2094960	18	19	1	20	1	2095698
Acid Extractable Cobalt (Co)	ug/g	14		10	0.1	2094960	7.3	7.7	0.1	9.1	0.1	2095698
Acid Extractable Copper (Cu)	ug/g	25		22	0.5	2094960	17	19	0.5	19	0.5	2095698
Acid Extractable Lead (Pb)	ug/g	13		9	1	2094960	8	7	1	9	1	2095698
Acid Extractable Molybdenum (Mo)	ug/g	<0.5		<0.5	0.5	2094960	<0.5	<0.5	0.5	<0.5	0.5	2095698
Acid Extractable Nickel (Ni)	ug/g	29		21	0.5	2094960	18	17	0.5	20	0.5	2095698
Acid Extractable Selenium (Se)	ug/g	<0.5		<0.5	0.5	2094960	<0.5	<0.5	0.5	<0.5	0.5	2095698
Acid Extractable Silver (Ag)	ug/g	<0.2		<0.2	0.2	2094960	<0.2	<0.2	0.2	<0.2	0.2	2095698
Acid Extractable Thallium (Tl)	ug/g	0.08		0.12	0.05	2094960	0.08	0.09	0.05	0.12	0.05	2095698
Acid Extractable Vanadium (V)	ug/g	31		31	5	2094960	22	23	5	25	5	2095698
Acid Extractable Zinc (Zn)	ug/g	64		55	5	2094960	89	90	5	48	5	2095698
Acid Extractable Mercury (Hg)	ug/g	<0.05		<0.05	0.05	2094960	<0.05	<0.05	0.05	<0.05	0.05	2095698

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B025327
Report Date: 2010/03/11

Trow Associates Inc
Client Project #: BRGE00392733A
Project name: HWY 50 & MAYFIELD RD.

Package 1	7.7°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Sample FF7091-01: Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B025327
Report Date: 2010/03/11

Trow Associates Inc
Client Project #: BRGE00392733A
Project name: HWY 50 & MAYFIELD RD.

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
2094497	Moisture	2010/03/06							4.9	50		
2094944	Chromium (VI)	2010/03/09	27(1, 2)	75 - 125	103	75 - 125	<0.2	ug/g	NC	35	99	85 - 115
2094960	Acid Extractable Antimony (Sb)	2010/03/08	92	75 - 125			<0.2	ug/g	NC	35	99	75 - 125
2094960	Acid Extractable Arsenic (As)	2010/03/08	103	75 - 125			<1	ug/g	NC	35	106	75 - 125
2094960	Acid Extractable Barium (Ba)	2010/03/08	NC	75 - 125			<0.5	ug/g	1.0	35	103	75 - 125
2094960	Acid Extractable Beryllium (Be)	2010/03/08	96	75 - 125			<0.2	ug/g	NC	35	98	75 - 125
2094960	Acid Extractable Cadmium (Cd)	2010/03/08	103	75 - 125			<0.1	ug/g	NC	35	102	75 - 125
2094960	Acid Extractable Chromium (Cr)	2010/03/08	99	75 - 125			<1	ug/g	1.1	35	104	75 - 125
2094960	Acid Extractable Cobalt (Co)	2010/03/08	102	75 - 125			<0.1	ug/g	3.9	35	105	75 - 125
2094960	Acid Extractable Copper (Cu)	2010/03/08	96	75 - 125			<0.5	ug/g	2.7	35	103	75 - 125
2094960	Acid Extractable Lead (Pb)	2010/03/08	95	75 - 125			<1	ug/g	5.7	35	103	75 - 125
2094960	Acid Extractable Molybdenum (Mo)	2010/03/08	105	75 - 125			<0.5	ug/g	NC	35	103	75 - 125
2094960	Acid Extractable Nickel (Ni)	2010/03/08	100	75 - 125			<0.5	ug/g	2.7	35	105	75 - 125
2094960	Acid Extractable Selenium (Se)	2010/03/08	107	75 - 125			<0.5	ug/g	NC	35	107	75 - 125
2094960	Acid Extractable Silver (Ag)	2010/03/08	100	75 - 125			<0.2	ug/g	NC	35	101	75 - 125
2094960	Acid Extractable Thallium (Tl)	2010/03/08	81	75 - 125			<0.05	ug/g	NC	35	98	75 - 125
2094960	Acid Extractable Vanadium (V)	2010/03/08	102	75 - 125			<5	ug/g	NC	35	103	75 - 125
2094960	Acid Extractable Zinc (Zn)	2010/03/08	NC	75 - 125			<5	ug/g	2.0	35	104	75 - 125
2094960	Acid Extractable Mercury (Hg)	2010/03/08	100	75 - 125			<0.05	ug/g	NC	35	104	75 - 125
2095143	Hot Water Ext. Boron (B)	2010/03/08					<0.05	ug/g			99	85 - 115
2095626	Conductivity	2010/03/09					<0.002	mS/cm	2.9	35	107	75 - 125
2095647	Conductivity	2010/03/09					<0.002	mS/cm	1.1	35	107	75 - 125
2095648	Free Cyanide	2010/03/09	54(1)	75 - 125	105	75 - 125	<0.01	ug/g	NC	35		
2095655	Free Cyanide	2010/03/10	102	75 - 125	103	75 - 125	<0.01	ug/g	NC	35		
2095657	Free Cyanide	2010/03/11	90	75 - 125	105	75 - 125	<0.01	ug/g	NC	35		
2095698	Acid Extractable Antimony (Sb)	2010/03/09	88	75 - 125			<0.2	ug/g	NC	35	95	75 - 125
2095698	Acid Extractable Arsenic (As)	2010/03/09	97	75 - 125			<1	ug/g	NC	35	98	75 - 125
2095698	Acid Extractable Barium (Ba)	2010/03/09	NC	75 - 125			<0.5	ug/g	2.4	35	95	75 - 125
2095698	Acid Extractable Beryllium (Be)	2010/03/09	88	75 - 125			<0.2	ug/g	NC	35	90	75 - 125
2095698	Acid Extractable Cadmium (Cd)	2010/03/09	98	75 - 125			<0.1	ug/g	NC	35	96	75 - 125
2095698	Acid Extractable Chromium (Cr)	2010/03/09	98	75 - 125			<1	ug/g	7.3	35	99	75 - 125
2095698	Acid Extractable Cobalt (Co)	2010/03/09	96	75 - 125			<0.1	ug/g	5.6	35	99	75 - 125
2095698	Acid Extractable Copper (Cu)	2010/03/09	95	75 - 125			<0.5	ug/g	7.6	35	98	75 - 125
2095698	Acid Extractable Lead (Pb)	2010/03/09	96	75 - 125			<1	ug/g	1.2	35	98	75 - 125
2095698	Acid Extractable Molybdenum (Mo)	2010/03/09	99	75 - 125			<0.5	ug/g	NC	35	99	75 - 125
2095698	Acid Extractable Nickel (Ni)	2010/03/09	95	75 - 125			<0.5	ug/g	2.1	35	99	75 - 125
2095698	Acid Extractable Selenium (Se)	2010/03/09	94	75 - 125			<0.5	ug/g	NC	35	96	75 - 125
2095698	Acid Extractable Silver (Ag)	2010/03/09	97	75 - 125			<0.2	ug/g	NC	35	96	75 - 125
2095698	Acid Extractable Thallium (Tl)	2010/03/09	85	75 - 125			<0.05	ug/g	NC	35	96	75 - 125
2095698	Acid Extractable Vanadium (V)	2010/03/09	97	75 - 125			<5	ug/g	NC	35	94	75 - 125

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B025327
Report Date: 2010/03/11

Trow Associates Inc
Client Project #: BRGE00392733A
Project name: HWY 50 & MAYFIELD RD.

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
2095698	Acid Extractable Zinc (Zn)	2010/03/09	NC	75 - 125			<5	ug/g	1.2	35	99	75 - 125
2095698	Acid Extractable Mercury (Hg)	2010/03/09	94	75 - 125			<0.05	ug/g	NC	35	98	75 - 125

N/A = Not Applicable
RPD = Relative Percent Difference
Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
QC Standard: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.
(1) - Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.
(2) - The recovery was below the lower control limit. This may be due in part to the reducing environment of the sample.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Validation Signature Page

Maxxam Job #: B025327

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Cristina Carriere

CRISTINA CARRIERE, Scientific Services

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Appendix 'D':
Drawing Nos. L-1 to L-10 :
Borehole Location Plans

Appendix 'E':
Results of Culvert Inspection

Ontario Structure Inspection Manual – Inspection Form

Region of Peel Structure # 1915

Inventory Data:

Structure Name			
Main Hwy/Road #		On ☐ Under ☒	Crossing Type: ☐ Navig. Water ☐ Non-Navig. Water ☐ Rail ☒ Road ☐ Ped. ☐ Other
Hwy/Road Name	Mayfield Rd		
Structure Location	South field entrance Mayfield Rd		
Latitude GPS Coord	E:604294	Longitude	N:4855091
Owner(s)	Region of Peel	Heritage Designation:	☐ Not Cons. ☐ Cons./not App. ☐ List/not Desig. ☐ Desig./not List ☐ Desig. & List
MTO Region	Central	Road Class:	Freeway ☐ Arterial ☐ Collector ☐ Local ☐
MTO District	-	Posted Speed	No. of Lanes
Old County	-	AADT	% Trucks
Geographic Twp.	Brampton	Inspection Route Sequence	
Structure Type	Culvert	Interchange Number	
Total Deck Length	(m)	Interchange Structure Number	
Overall Str. Width	9.2 (m)	Min. Vertical Clearance	0.16 (m)
Total Deck Area	- (sq.m)	Special Routes:	☐ Transit ☐ Truck ☐ School ☐ Bicycle
Roadway Width	- (m)	Detour Length Around Bridge	(km)
Skew Angle	- (Degrees)	Direction of Structure	E to W
No. of Spans	1	Fill on Structure	0.95 (m)
Span Lengths	0.46 (m)		

Historical Data:

Year Built		Year of Last Major Rehab.	
Last OSIM Inspection	07/22/2005	Last Evaluation	
Last Enhanced OSIM Inspection		Current Load Limit	/ / (tonnes)
Enhanced Access Equipment (ladder, boat, lift, etc.)		Load Limit By-Law #	
Last Underwater Inspection		By-Law Expiry Date	
Last Condition Survey			

Rehab History: (Date/description)

Scheduled Improvements:			
Regional Priority Number		Programmed Work Year	
Nature of Program Work:			

Appraisal Indices:		**Comments**
Fatigue	0	
Seismic	0	
Scour	0	
Flood	0	
Geometrics	0	
Barrier	0	
Curb	0	
Load Capacity	0	

Field Inspection Information:			
Date of Inspection:	January 27,2010	Type of Inspection:	☒ OSIM ☐ Enhanced OSIM
Inspector:	Eric Cheng		
Others in Party:	Alan Chung, Dan Urian		
Access Equipment Used:	Hand Tools, Digital Camera, Measuring Tape		
Weather:	Clear,some flurries		
Temperature:	-3°		

Additional Investigations Required:	Priority		
	None	Normal	Urgent
Material Condition Survey			
Detailed Deck Condition Survey:	X		
Non-destructive Delamination Survey of Asphalt-Covered Deck:	X		
Concrete Substructure Condition Survey:	X		
Detailed Coating Condition Survey:	X		
Detailed Timber Investigation	X		
Post-Tensioned Strand Investigation	X		
Underwater Investigation:	X		
Fatigue Investigation:	X		
Seismic Investigation:	X		
Structure Evaluation:	X		
Monitoring			
Monitoring of Deformations, Settlements and Movements:	X		
Monitoring Crack Widths:	X		
Investigation Notes: Effective Cross-Section:30%			

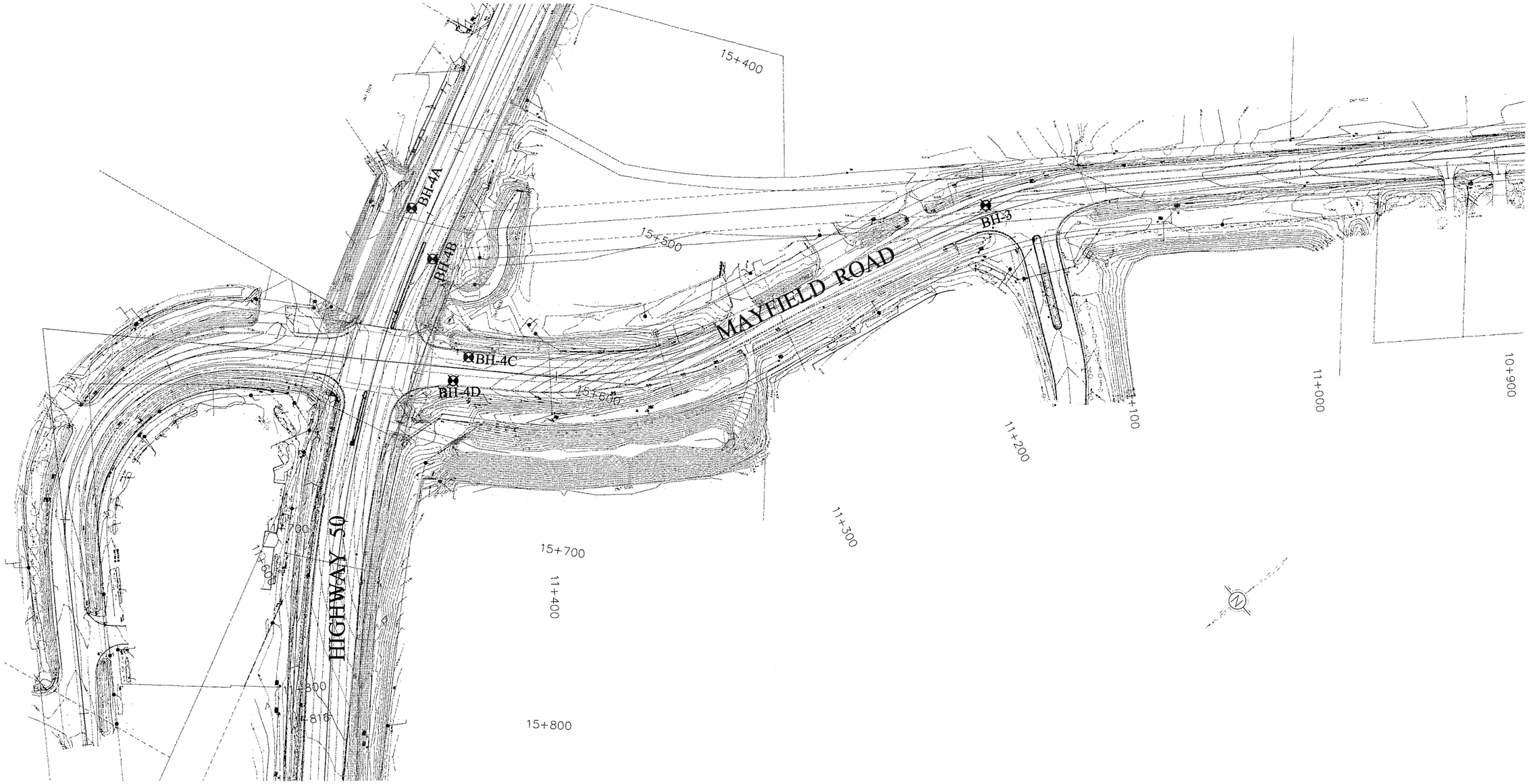
Overall Structure Notes:	
Recommended Work on Structure:	☐ None ☐ Minor Rehab. ☐ Major Rehab. ☒ Replace
Timing of Recommended Work:	☒ 1 to 5 years ☐ 6 to 10 years
Overall Comments:	The structure is in fair to poor condition. The ends are rusted.
Date of Next Inspection:	

Suspected Performance Deficiencies

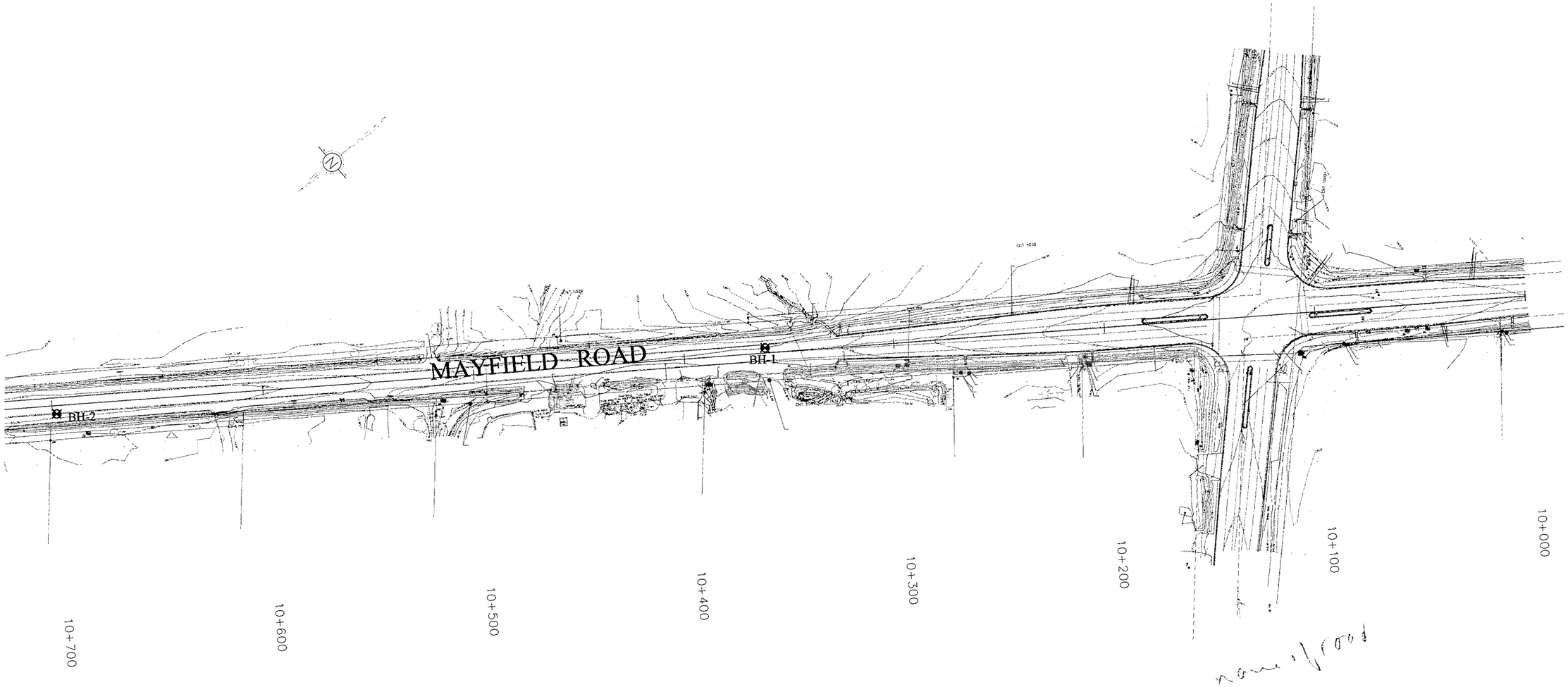
01	Load carrying capacity	06	Bearing not uniformly loaded/unstable	12	Slippery surfaces
02	Excessive deformations (deflections & rotations)	07	Jammed expansion joint	13	Flooding/channel blockage
03	Continuing settlement	08	Pedestrian/vehicular hazard	14	Undermining of foundation
04	Continuing movements	09	Rough riding surface	15	Unstable embankments
05	Seized bearings	10	Surface ponding	16	Other
		11	Deck drainage		

Maintenance Needs

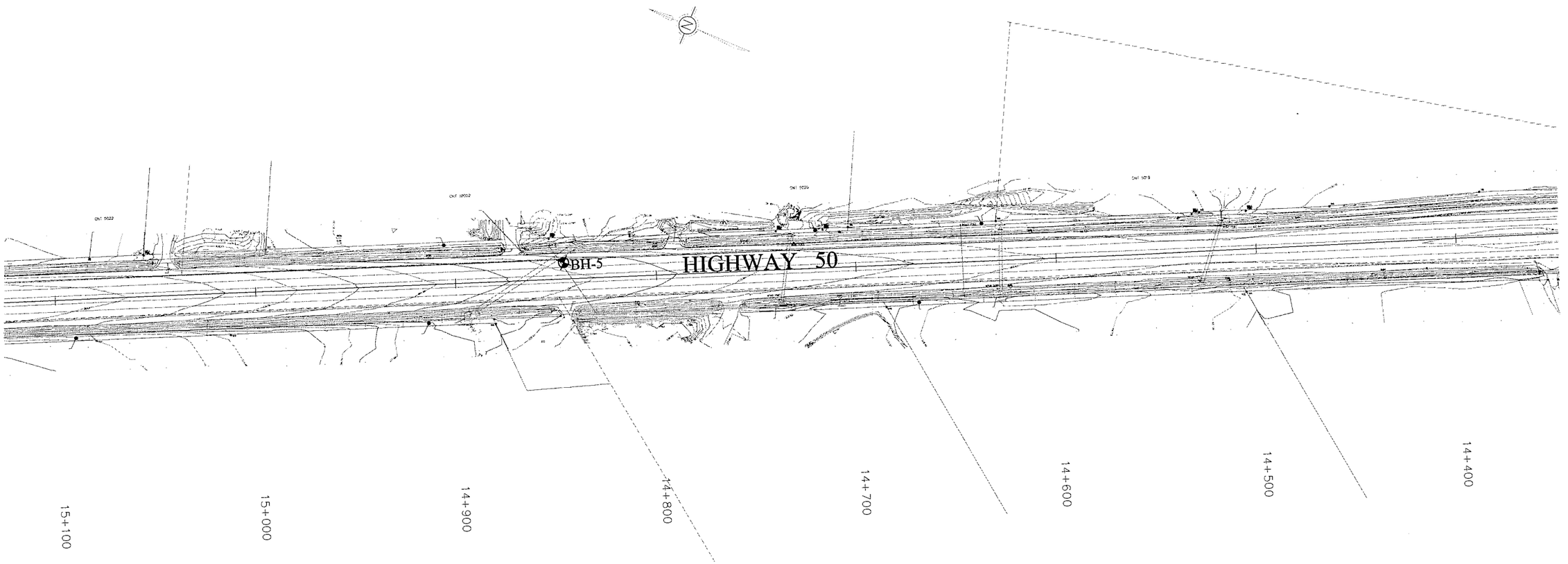
01	Lift and Swing Bridge Maintenance	07	Repair to Structural Steel	13	Erosion Control at Bridges
02	Bridge Cleaning	08	Repair of Bridge Concrete	14	Concrete Sealing
03	Bridge Handrail Maintenance	09	Repair of Bridge Timber	15	Rout and Seal
04	Painting Steel Bridge Structures	10	Bailey bridges - Maintenance	16	Bridge Deck Drainage
05	Bridge Deck Joint Repair	11	Animal/Pest Control	17	Scaling (Loose Concrete or ACR Steel)
06	Bridge Bearing Maintenance	12	Bridge Surface Repair	18	Other



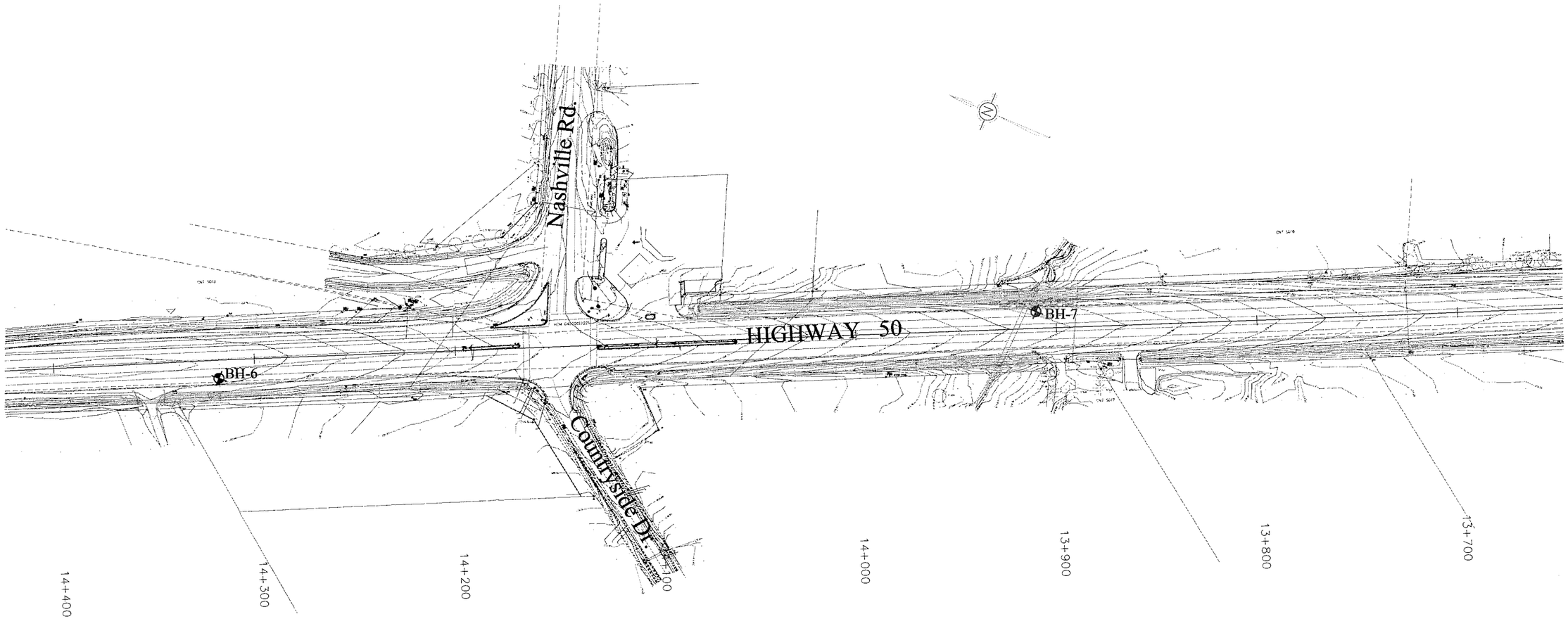
	Trow Associates Inc. 1595 CLARK BOULEVARD BRAMPTON, ONTARIO, L6T 4V1 (905) 793-9800	PROJECT TITLE AND LOCATION: Preliminary Geotechnical Investigation Highway 50 from Castlemore to Mayfield Road Mayfield Road from Highway 50 to Coleraine Drive Town of Caledone and City of Vaughn, Region of Peel Ontrrio	DRAWING TITLE: BOREHOLE LOCATION PLAN	JOB NO: BRGE00392733A	DWN.: TS
			SCALE: 1 : 500	CHKD.: MK
			DATE: MAY. 14, 2010	DWG. No.: L-1



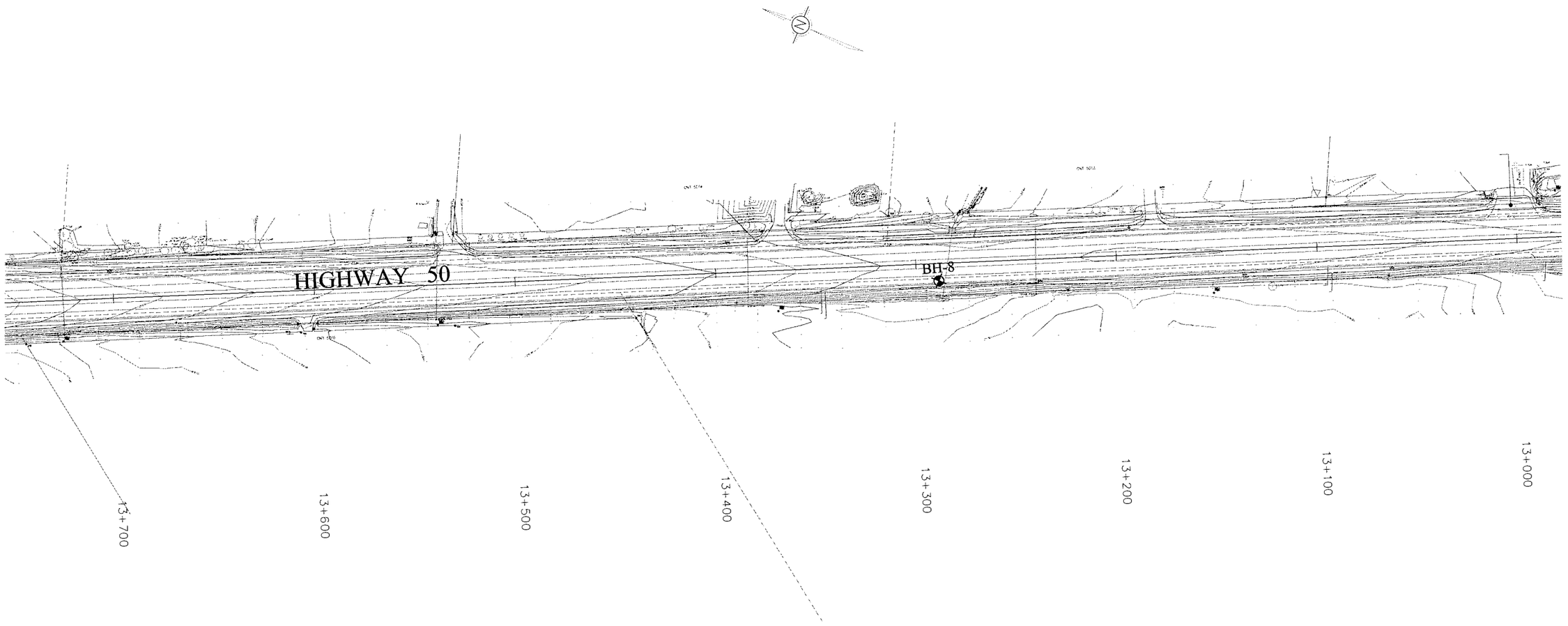
	Trow Associates Inc. 1595 CLARK BOULEVARD BRAMPTON, ONTARIO, L6T 4V1 (905) 793-9800	PROJECT TITLE AND LOCATION: Preliminary Geotechnical Investigation Highway 50 from Castlemore to Mayfield Road Mayfield Road from Highway 50 to Coleraine Drive Town of Caledon And City of Vaughn, Region of Peel, Ontario	DRAWING TITLE: BOREHOLE LOCATION PLAN	**JOB NO:** BRGE00392733A SCALE: 1 : 500 DATE: MAY. 14, 2010	DWN.: TS CHKD.: MK DWG. No.: L-3



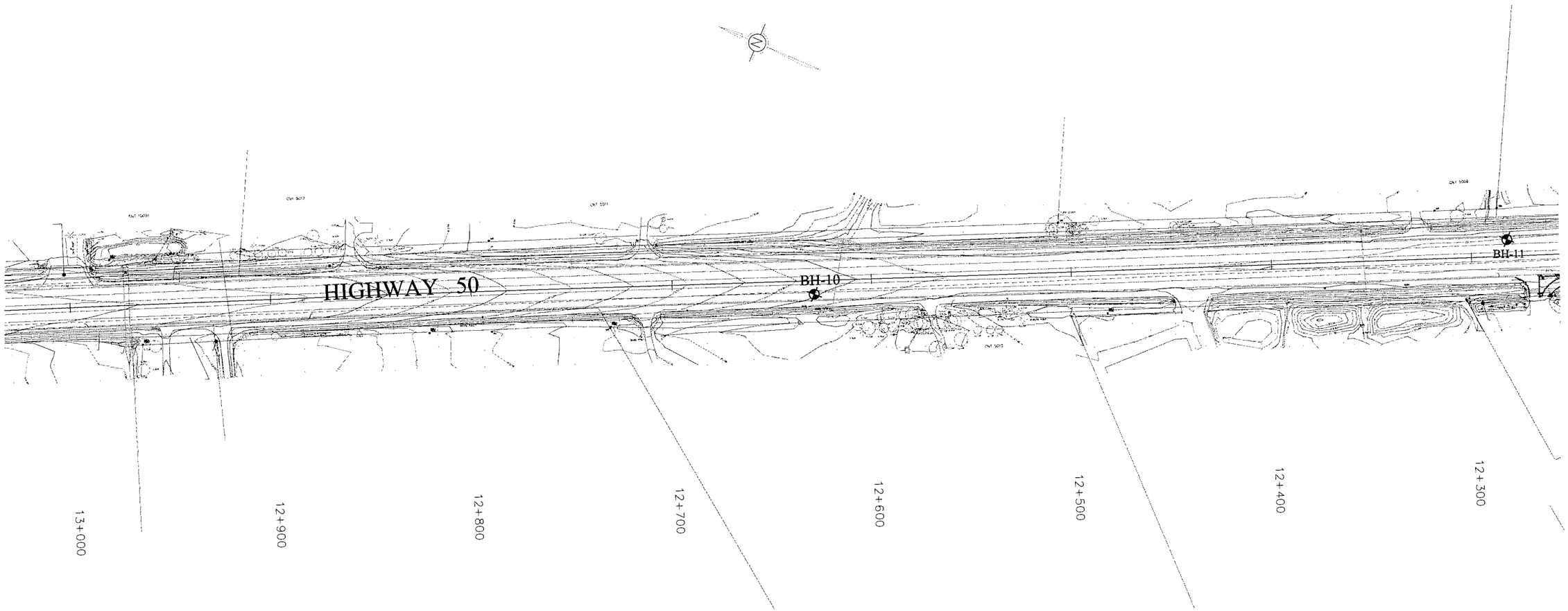
	Trow Associates Inc. 1595 CLARK BOULEVARD BRAMPTON, ONTARIO, L6T 4V1 (905) 793-9800	PROJECT TITLE AND LOCATION: Preliminary Geotechnical Investigation Highway 50 from Castlemore to Mayfield Road Mayfield Road from Highway 50 to Coleraine Drive Town of Caledon and City of Vaughn, Region of Peel, Ontario	DRAWING TITLE: BOREHOLE LOCATION PLAN	**JOB NO:** BRGE00392733A SCALE: 1 : 500 DATE: MAY. 14, 2010	DWN.: TS CHKD.: MK DWG. No.: L-5



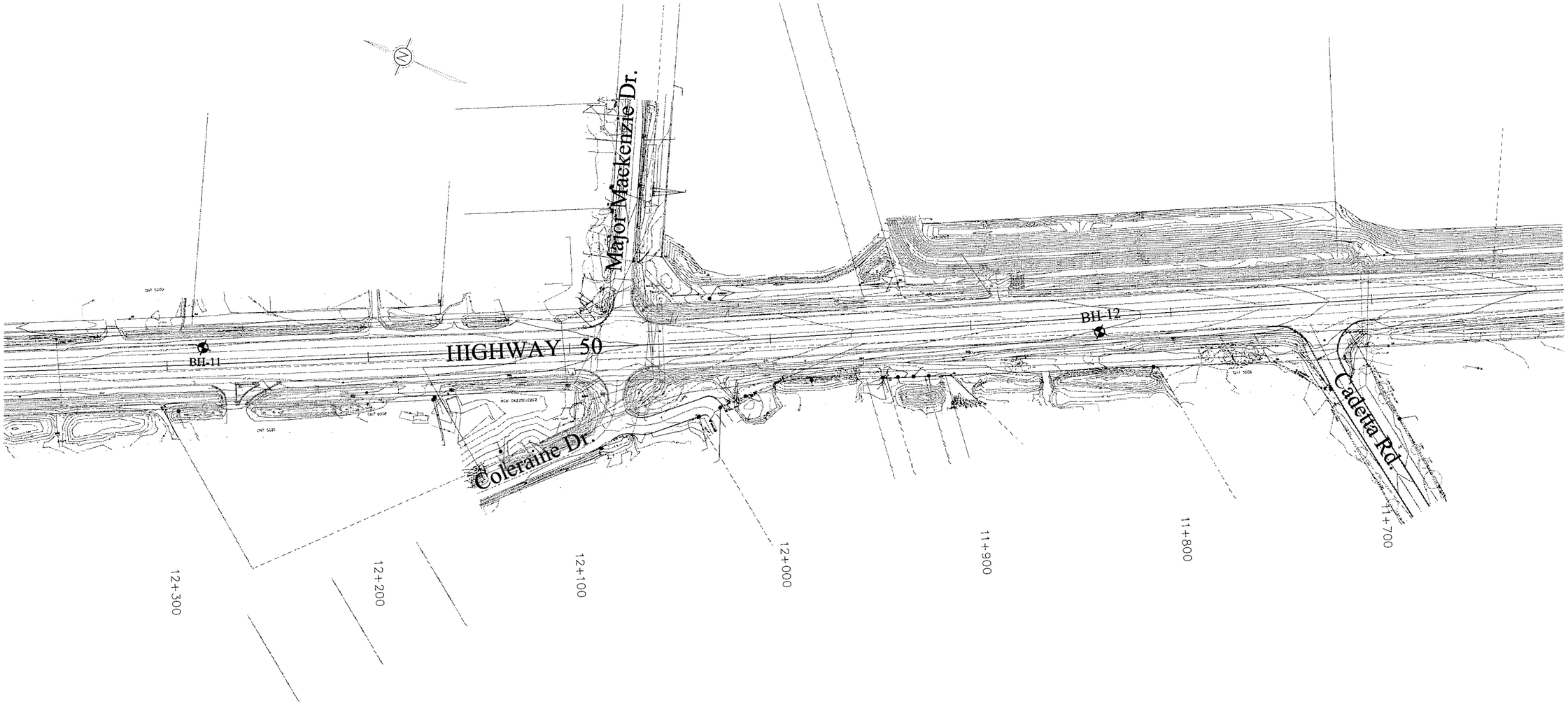
	Trow Associates Inc. 1595 CLARK BOULEVARD BRAMPTON, ONTARIO, L6T 4V1 (905) 793-9800	PROJECT TITLE AND LOCATION: Preliminary Geotechnical Investigation Highway 50 from Castlemore to Mayfield Road Mayfield Road from Highway 50 to Coleraine Drive Town of Caledon and City of Vaughn, Region of Peel, Ontario	DRAWING TITLE: BOREHOLE LOCATION PLAN	**JOB NO:** BRGE00392733A SCALE: 1 : 500 DATE: MAY. 14, 2010	DWN.: TS CHKD.: MK DWG. No.: L-6



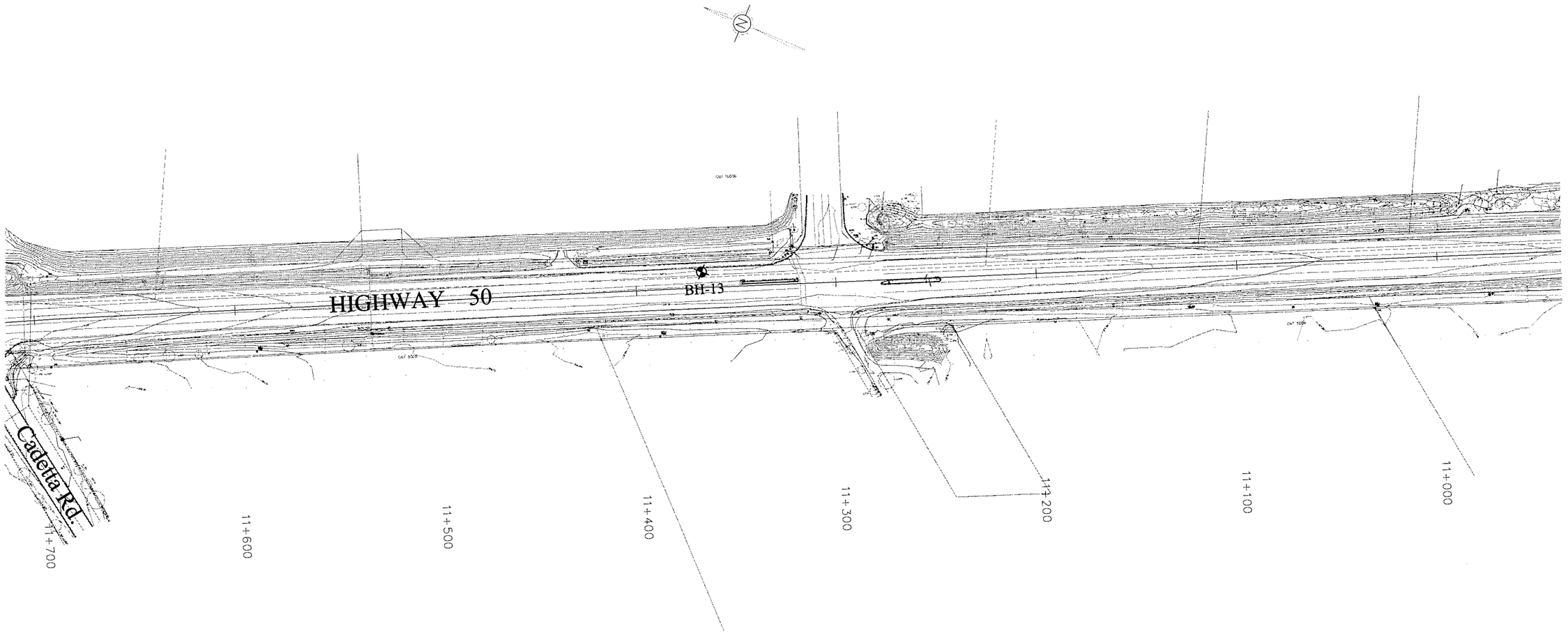
	Trow Associates Inc. 1595 CLARK BOULEVARD BRAMPTON, ONTARIO, L6T 4V1 (905) 793-9800	PROJECT TITLE AND LOCATION: Preliminary Geotechnical Investigation Highway 50 from Castlemore to Mayfield Road Mayfield Road from Highway 50 to Coleraine Drive Town of Caledon and City of Vaughn, Region Peel, Ontario	DRAWING TITLE: BOREHOLE LOCATION PLAN	JOB NO: BRGE00392733A SCALE: 1 : 500 DATE: MAY. 14, 2010	DWN.: TS CHKD.: MK DWG. No.: L-7



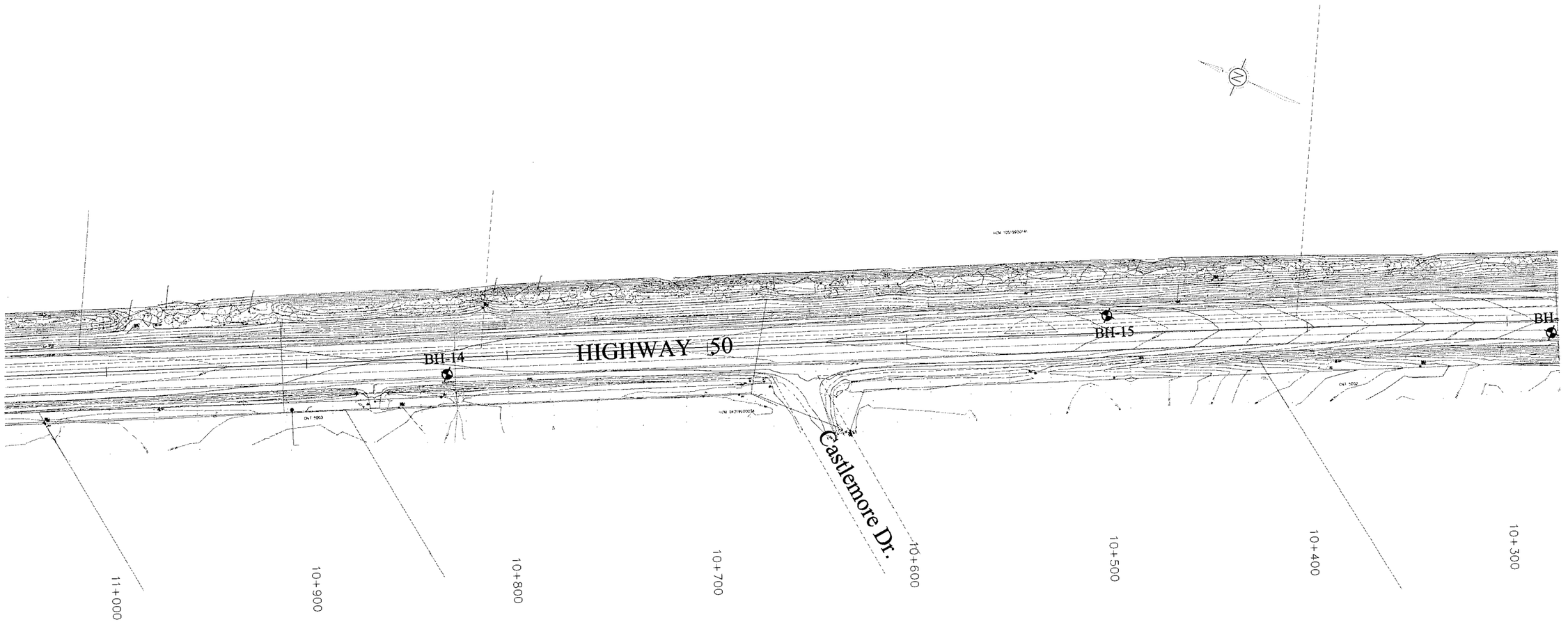
	Trow Associates Inc. 1595 CLARK BOULEVARD BRAMPTON, ONTARIO, L6T 4V1 (905) 793-9800	PROJECT TITLE AND LOCATION: Preliminary Geotechnical Investigation Highway 50 from Castlemore to Mayfield Road Mayfield Road from Highway 50 to Coleraine Drive Town of Caledon and City of Vaughn, Region of Peel, Ontario	DRAWING TITLE: BOREHOLE LOCATION PLAN	JOB NO: BRGE00392733A SCALE: 1 : 500 DATE: MAY. 14, 2010	DWN.: TS CHKD.: MK DWG. No.: L-8



	Trow Associates Inc. 1595 CLARK BOULEVARD BRAMPTON, ONTARIO, L6T 4V1 (905) 793-9800	PROJECT TITLE AND LOCATION: Preliminary Geotechnical Investigation Highway 50 from Castlemore to Mayfield Road Mayfield Road from Highway 50 to Coleraine Drive Town of Caledon and City of Vaughn, Region of Peel, Ontario	DRAWING TITLE: BOREHOLE LOCATION PLAN	JOB NO: BRGE00392733A	DWN.: TS
				SCALE: 1 : 500	CHKD.: MK
				DATE: MAY. 14, 2010	DWG. No.: L-9

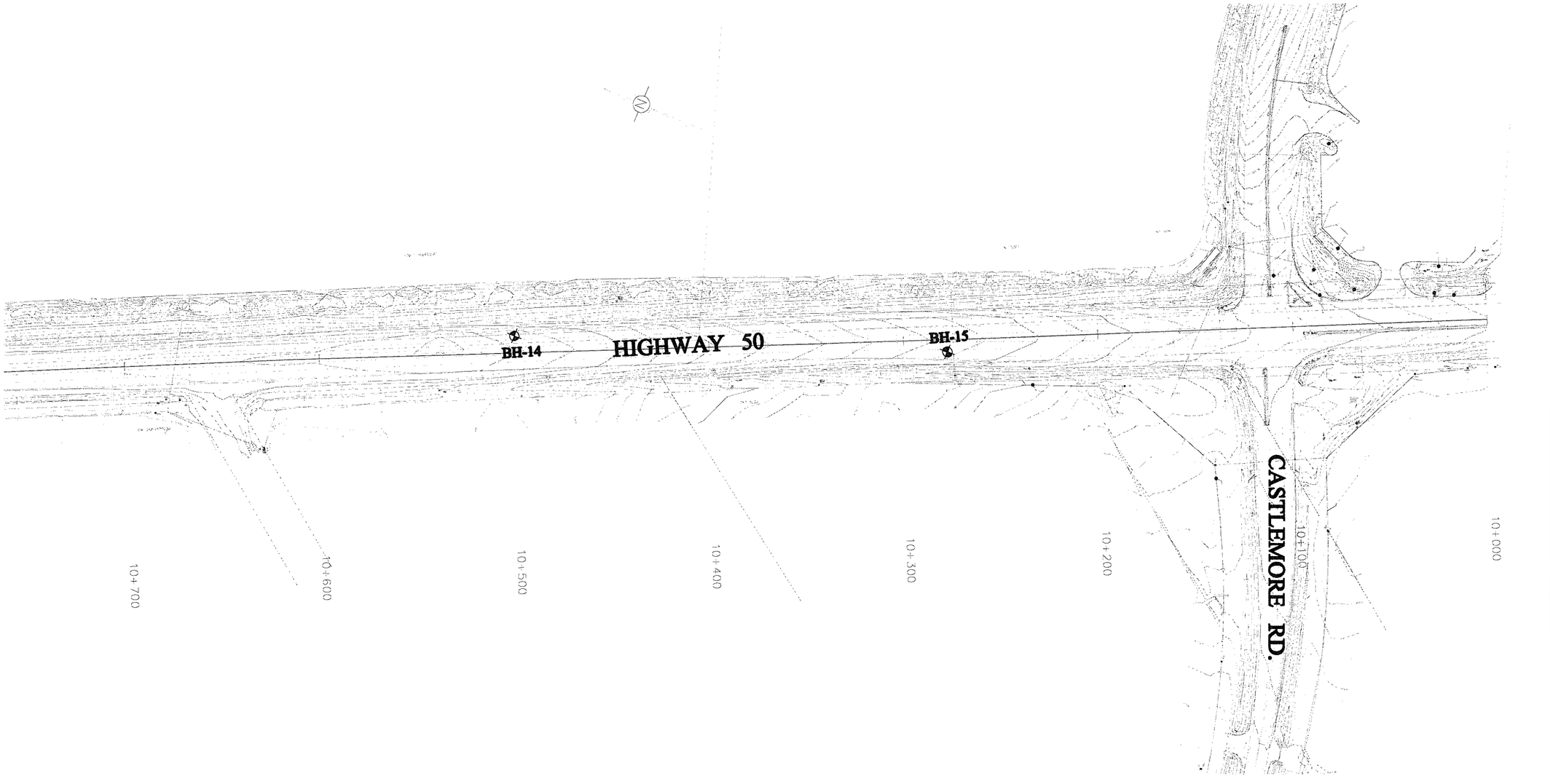


	Trow Associates Inc. 1595 CLARK BOULEVARD BRAMPTON, ONTARIO, L6T 4V1 (905) 793-9800	PROJECT TITLE AND LOCATION: Preliminary Geotechnical Investigation Highway 50 from Castlemore to Mayfield Road Mayfield Road from Mayfield Road to Coleraine Drive Town of Caledon and City of Vaughn, Region of Peel, Ontario	DRAWING TITLE: BOREHOLE LOCATION PLAN	JOB NO: BRGE00392733A	DWN.: TS
				SCALE: 1 : 500	CHKD.: MK
				DATE: MAY. 14, 2010	DWG. No.: L-10



	Trow Associates Inc. 1595 CLARK BOULEVARD BRAMPTON, ONTARIO, L6T 4V1 (905) 793-9800	PROJECT TITLE AND LOCATION: Preliminary Geotechnical Investigation Highway 50 from Castlemore to Mayfield Road Mayfield Road from Highway 50 to Coleraine Drive Town of Caledon and City of Vaughn, Region of Peel, Ontario	DRAWING TITLE: BOREHOLE LOCATION PLAN	**JOB NO:** BRGE00392733A	DWN.: TS
				SCALE: 1 : 500	CHKD.: MK
				DATE: MAY. 14, 2010	DWG. No.: L-11

	Trow Associates Inc. 1595 CLARK BOULEVARD BRAMPTON, ONTARIO, L6T 4V1 (905) 793-9800	PROJECT TITLE AND LOCATION: Preliminary Geotechnical Investigation Highway 50 from Castlemore to Mayfield Road Mayfield Road from Highway 50 to Coleraine Drive Town of Caledon and City of Vaughn, Region of Peel, Ontario	DRAWING TITLE: BOREHOLE LOCATION PLAN	**JOB NO:** BRGE00392733A SCALE: 1 : 500 DATE: MAY. 14, 2010	DWN.: TS CHKD.: MK DWG. No.: L-12



	Trow Associates Inc. 1595 CLARK BOULEVARD BRAMPTON, ONTARIO, L6T 4V1 (905) 793-9800	PROJECT TITLE AND LOCATION: Preliminary Geotechnical Investigation Highway 50 from Castlemore to Mayfield Road Mayfield Road from Highway 50 to Coleraine Drive Town of Caledon and City of Vaughn, Region of Peel, Ontario	DRAWING TITLE: BOREHOLE LOCATION PLAN	JOB NO: BRGE00392733A SCALE: 1 : 500 DATE: MAY. 14, 2010	DWN.: TS CHKD.: MK DWG. No.: L-10

Element Data 1915

Element Group:	Culvert	**Length:**	9.2m
Element Name:		**Width:**	0.46m
Location:	Entrance Mayfield Rd	**Height:**	
Material:	Corrugated Steel	**Count:**	1
Element Type:	Round	**Total Quantity:**	9.2m
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all				x

Comments: The structure is in fair to poor condition.
The ends are rusted. The replacement is suggested.

Recommended Work: ☐ Rehab ☒ Replace ☒ 1-5 years ☐ 6-10 years	**Maintenance Needs:** ☐ Urgent ☒ 1 year ☐ 2 year

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all				

Comments:

Recommended Work: ☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years	**Maintenance Needs:** ☐ Urgent ☐ 1 year ☐ 2 year

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all				

Comments:

Recommended Work: ☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years	**Maintenance Needs:** ☐ Urgent ☐ 1 year ☐ 2 year

* A quantity must be estimated using the appropriate unit (e.g. m^2). Percent should not be used.

Ontario Structure Inspection Manual – Inspection Form

Region of Peel Structure # 1916

Inventory Data:

Structure Name			
Main Hwy/Road #		On ☐ Under ☒	Crossing Type: ☐ Navig. Water ☐ Non-Navig. Water ☐ Rail ☒ Road ☐ Ped. ☐ Other
Hwy/Road Name	Mayfield Rd		
Structure Location	South entrance from Mayfield Rd		
Latitude GPS Coord	E:604701	Longitude	N:4855639
Owner(s)	Region of Peel	Heritage Designation:	☐ Not Cons. ☐ Cons./not App. ☐ List/not Desig. ☐ Desig./not List ☐ Desig. & List
MTO Region	Central	Road Class:	Freeway ☐ Arterial ☐ Collector ☐ Local ☐
MTO District	-	Posted Speed	No. of Lanes
Old County	-	AADT	% Trucks
Geographic Twp.	Brampton	Inspection Route Sequence	
Structure Type	Culvert	Interchange Number	
Total Deck Length	(m)	Interchange Structure Number	
Overall Str. Width	(m)	Min. Vertical Clearance	(m)
Total Deck Area	(sq.m)	Special Routes:	☐ Transit ☐ Truck ☐ School ☐ Bicycle
Roadway Width	(m)	Detour Length Around Bridge	(km)
Skew Angle	(Degrees)	Direction of Structure	W to E
No. of Spans		Fill on Structure	(m)
Span Lengths	The structure could not be located		(m)

Historical Data:

Year Built		Year of Last Major Rehab.	
Last OSIM Inspection	07/22/2005	Last Evaluation	
Last Enhanced OSIM Inspection		Current Load Limit	/ / (tonnes)
Enhanced Access Equipment (ladder, boat, lift, etc.)		Load Limit By-Law #	
Last Underwater Inspection		By-Law Expiry Date	
Last Condition Survey			

Rehab History: (Date/description)

Scheduled Improvements:			
Regional Priority Number		Programmed Work Year	
Nature of Program Work:			

Appraisal Indices:		**Comments**
Fatigue	0	
Seismic	0	
Scour	0	
Flood	0	
Geometrics	0	
Barrier	0	
Curb	0	
Load Capacity	0	

Field Inspection Information:			
Date of Inspection:	January 27,2010	Type of Inspection:	☒ OSIM ☐ Enhanced OSIM
Inspector:	Eric Cheng		
Others in Party:	Alan Chung, Dan Urian		
Access Equipment Used:	Hand Tools, Digital Camera, Measuring Tape		
Weather:	Clear,some flurries		
Temperature:	-3°		

Additional Investigations Required:	Priority		
	None	Normal	Urgent
Material Condition Survey			
Detailed Deck Condition Survey:	X		
Non-destructive Delamination Survey of Asphalt-Covered Deck:	X		
Concrete Substructure Condition Survey:	X		
Detailed Coating Condition Survey:	X		
Detailed Timber Investigation	X		
Post-Tensioned Strand Investigation	X		
Underwater Investigation:	X		
Fatigue Investigation:	X		
Seismic Investigation:	X		
Structure Evaluation:	X		
Monitoring			
Monitoring of Deformations, Settlements and Movements:	X		
Monitoring Crack Widths:	X		
Investigation Notes:			

Overall Structure Notes:	
Recommended Work on Structure:	☐ None ☐ Minor Rehab. ☐ Major Rehab. ☐ Replace
Timing of Recommended Work:	☐ 1 to 5 years ☐ 6 to 10 years
Overall Comments:	The structure could not be located.
Date of Next Inspection:	

Suspected Performance Deficiencies

01	Load carrying capacity	06	Bearing not uniformly loaded/unstable	12	Slippery surfaces
02	Excessive deformations (deflections & rotations)	07	Jammed expansion joint	13	Flooding/channel blockage
03	Continuing settlement	08	Pedestrian/vehicular hazard	14	Undermining of foundation
04	Continuing movements	09	Rough riding surface	15	Unstable embankments
05	Seized bearings	10	Surface ponding	16	Other
		11	Deck drainage		

Maintenance Needs

01	Lift and Swing Bridge Maintenance	07	Repair to Structural Steel	13	Erosion Control at Bridges
02	Bridge Cleaning	08	Repair of Bridge Concrete	14	Concrete Sealing
03	Bridge Handrail Maintenance	09	Repair of Bridge Timber	15	Rout and Seal
04	Painting Steel Bridge Structures	10	Bailey bridges - Maintenance	16	Bridge Deck Drainage
05	Bridge Deck Joint Repair	11	Animal/Pest Control	17	Scaling (Loose Concrete or ACR Steel)
06	Bridge Bearing Maintenance	12	Bridge Surface Repair	18	Other

Ontario Structure Inspection Manual – Inspection Form

Region of Peel Structure # 1917

Inventory Data:

Structure Name			
Main Hwy/Road #	On ☐ Under ☒	Crossing Type:	☐ Navig. Water ☐ Non-Navig. Water ☐ Rail ☒ Road ☐ Ped. ☐ Other
Hwy/Road Name	Mayfield Rd		
Structure Location	North entrance from Mayfield Rd		
Latitude GPS Coord	E:604534	Longitude	N:4855426
Owner(s)	Region of Peel	Heritage Designation:	☐ Not Cons. ☐ Cons./not App. ☐ List/not Desig. ☐ Desig./not List ☐ Desig. & List
MTO Region	Central	Road Class:	Freeway ☐ Arterial ☐ Collector ☐ Local ☐
MTO District	-	Posted Speed	No. of Lanes
Old County	-	AADT	% Trucks
Geographic Twp.	Brampton	Inspection Route Sequence	
Structure Type	Culvert	Interchange Number	
Total Deck Length	(m)	Interchange Structure Number	
Overall Str. Width	6.8 (m)	Min. Vertical Clearance	0.25 (m)
Total Deck Area	- (sq.m)	Special Routes:	☐ Transit ☐ Truck ☐ School ☐ Bicycle
Roadway Width	- (m)	Detour Length Around Bridge	(km)
Skew Angle	- (Degrees)	Direction of Structure	W to E
No. of Spans	1	Fill on Structure	0.6 (m)
Span Lengths	0.46 (m)		

Historical Data:

Year Built		Year of Last Major Rehab.	
Last OSIM Inspection	07/22/2005	Last Evaluation	
Last Enhanced OSIM Inspection		Current Load Limit	/ / (tonnes)
Enhanced Access Equipment (ladder, boat, lift, etc.)		Load Limit By-Law #	
Last Underwater Inspection		By-Law Expiry Date	
Last Condition Survey			

Rehab History: (Date/description)

Scheduled Improvements:			
Regional Priority Number		Programmed Work Year	
Nature of Program Work:			

Appraisal Indices:		**Comments**
Fatigue	0	
Seismic	0	
Scour	0	
Flood	0	
Geometrics	0	
Barrier	0	
Curb	0	
Load Capacity	0	

Ontario Structure Inspection Manual – Inspection Form MTO Site Number: 1917

Field Inspection Information:			
Date of Inspection:	January 27,2010	Type of Inspection:	☒ OSIM ☐ Enhanced OSIM
Inspector:	Eric Cheng		
Others in Party:	Alan Chung, Dan Urian		
Access Equipment Used:	Hand Tools, Digital Camera, Measuring Tape		
Weather:	Clear,some flurries		
Temperature:	-3°		

Additional Investigations Required:	Priority		
	None	Normal	Urgent
Material Condition Survey			
Detailed Deck Condition Survey:	x		
Non-destructive Delamination Survey of Asphalt-Covered Deck:	x		
Concrete Substructure Condition Survey:	x		
Detailed Coating Condition Survey:	x		
Detailed Timber Investigation	x		
Post-Tensioned Strand Investigation	x		
Underwater Investigation:	x		
Fatigue Investigation:	x		
Seismic Investigation:	x		
Structure Evaluation:	x		
Monitoring			
Monitoring of Deformations, Settlements and Movements:	x		
Monitoring Crack Widths:	x		

Investigation Notes:

Effective Cross-Section: 55%

Overall Structure Notes:	
Recommended Work on Structure:	☐ None ☒ Minor Rehab. ☐ Major Rehab. ☐ Replace
Timing of Recommended Work:	☒ 1 to 5 years ☐ 6 to 10 years
Overall Comments:	The structure has some damages at the east end. No urgent work is required.
Date of Next Inspection:	

Suspected Performance Deficiencies

01	Load carrying capacity	06	Bearing not uniformly loaded/unstable	12	Slippery surfaces
02	Excessive deformations (deflections & rotations)	07	Jammed expansion joint	13	Flooding/channel blockage
03	Continuing settlement	08	Pedestrian/vehicular hazard	14	Undermining of foundation
04	Continuing movements	09	Rough riding surface	15	Unstable embankments
05	Seized bearings	10	Surface ponding	16	Other
		11	Deck drainage		

Maintenance Needs

01	Lift and Swing Bridge Maintenance	07	Repair to Structural Steel	13	Erosion Control at Bridges
02	Bridge Cleaning	08	Repair of Bridge Concrete	14	Concrete Sealing
03	Bridge Handrail Maintenance	09	Repair of Bridge Timber	15	Rout and Seal
04	Painting Steel Bridge Structures	10	Bailey bridges - Maintenance	16	Bridge Deck Drainage
05	Bridge Deck Joint Repair	11	Animal/Pest Control	17	Scaling (Loose Concrete or ACR Steel)
06	Bridge Bearing Maintenance	12	Bridge Surface Repair	18	Other

Element Data

1917

Element Group:	Culvert	Length:	6.8m
Element Name:		Width:	0.46m
Location:	Entrance Mayfield Rd	Height:	
Material:	Corrugated Steel	Count:	1
Element Type:	Round	Total Quantity:	6.8m
Environment:	Benign / Moderate / Severe	Limited Inspection ☐	
Protection System:			

Condition Data:	Units	Exc.	Good	Fair	Poor*	Perform. Deficiencies
	m^2 / m / each / % / all		x			

Comments: The structure has some damages at the east end. No urgent work is required.

Recommended Work:	☒ Rehab ☐ Replace ☐ 1-5 years ☒ 6-10 years	Maintenance Needs:	☐ Urgent ☐ 1 year ☒ 2 year

Element Group:		Length:	
Element Name:		Width:	
Location:		Height:	
Material:		Count:	
Element Type:		Total Quantity:	
Environment:	Benign / Moderate / Severe	Limited Inspection ☐	
Protection System:			

Condition Data:	Units	Exc.	Good	Fair	Poor*	Perform. Deficiencies
	m^2 / m / each / % / all					

Comments:

Recommended Work:	☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years	Maintenance Needs:	☐ Urgent ☐ 1 year ☐ 2 year

Element Group:		Length:	
Element Name:		Width:	
Location:		Height:	
Material:		Count:	
Element Type:		Total Quantity:	
Environment:	Benign / Moderate / Severe	Limited Inspection ☐	
Protection System:			

Condition Data:	Units	Exc.	Good	Fair	Poor*	Perform. Deficiencies
	m^2 / m / each / % / all					

Comments:

Recommended Work:	☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years	Maintenance Needs:	☐ Urgent ☐ 1 year ☐ 2 year

* A quantity must be estimated using the appropriate unit (e.g. m^2). Percent should not be used.

Ontario Structure Inspection Manual – Inspection Form

Region of Peel Structure # 1918

Inventory Data:

Structure Name			
Main Hwy/Road #		On ☐ Under ☒	Crossing Type: ☐ Navig. Water ☐ Non-Navig. Water ☐ Rail ☒ Road ☐ Ped. ☐ Other
Hwy/Road Name	Mayfield Rd		
Structure Location	North entrance from Mayfield Rd		
Latitude GPS Coord	E:604517	Longitude	N:4855408
Owner(s)	Region of Peel	Heritage Designation:	☐ Not Cons. ☐ Cons./not App. ☐ List/not Desig. ☐ Desig./not List ☐ Desig. & List
MTO Region	Central	Road Class:	Freeway ☐ Arterial ☐ Collector ☐ Local ☐
MTO District	-	Posted Speed	No. of Lanes
Old County	-	AADT	% Trucks
Geographic Twp.	Brampton	Inspection Route Sequence	
Structure Type	Culvert	Interchange Number	
Total Deck Length	(m)	Interchange Structure Number	
Overall Str. Width	7.8 (m)	Min. Vertical Clearance	0.25 (m)
Total Deck Area	- (sq.m)	Special Routes:	☐ Transit ☐ Truck ☐ School ☐ Bicycle
Roadway Width	- (m)	Detour Length Around Bridge	(km)
Skew Angle	- (Degrees)	Direction of Structure	W to E
No. of Spans	1	Fill on Structure	0.45 (m)
Span Lengths	0.46 (m)		

Historical Data:

Year Built		Year of Last Major Rehab.	
Last OSIM Inspection	07/22/2005	Last Evaluation	
Last Enhanced OSIM Inspection		Current Load Limit	/ / (tonnes)
Enhanced Access Equipment (ladder, boat, lift, etc.)		Load Limit By-Law #	
Last Underwater Inspection		By-Law Expiry Date	
Last Condition Survey			

Rehab History: (Date/description)

Scheduled Improvements:			
Regional Priority Number		Programmed Work Year	
Nature of Program Work:			

Appraisal Indices:		**Comments**
Fatigue	0	
Seismic	0	
Scour	0	
Flood	0	
Geometrics	0	
Barrier	0	
Curb	0	
Load Capacity	0	

Field Inspection Information:			
Date of Inspection:	January 27,2010	Type of Inspection:	☒ OSIM ☐ Enhanced OSIM
Inspector:	Eric Cheng		
Others in Party:	Alan Chung, Dan Urian		
Access Equipment Used:	Hand Tools, Digital Camera, Measuring Tape		
Weather:	Clear,some flurries		
Temperature:	-3°		

Additional Investigations Required:	Priority		
	None	Normal	Urgent
Material Condition Survey			
Detailed Deck Condition Survey:	x		
Non-destructive Delamination Survey of Asphalt-Covered Deck:	x		
Concrete Substructure Condition Survey:	x		
Detailed Coating Condition Survey:	x		
Detailed Timber Investigation	x		
Post-Tensioned Strand Investigation	x		
Underwater Investigation:	x		
Fatigue Investigation:	x		
Seismic Investigation:	x		
Structure Evaluation:	x		
Monitoring			
Monitoring of Deformations, Settlements and Movements:	x		
Monitoring Crack Widths:	x		

Investigation Notes:

Effective Cross-Section: 55%

Overall Structure Notes:	
Recommended Work on Structure:	☐ None ☐ Minor Rehab. ☐ Major Rehab. ☒ Replace
Timing of Recommended Work:	☒ 1 to 5 years ☐ 6 to 10 years
Overall Comments:	The structure has both ends damaged. The ends should be replaced.
Date of Next Inspection:	

Suspected Performance Deficiencies

01	Load carrying capacity	06	Bearing not uniformly loaded/unstable	12	Slippery surfaces
02	Excessive deformations (deflections & rotations)	07	Jammed expansion joint	13	Flooding/channel blockage
03	Continuing settlement	08	Pedestrian/vehicular hazard	14	Undermining of foundation
04	Continuing movements	09	Rough riding surface	15	Unstable embankments
05	Seized bearings	10	Surface ponding	16	Other
		11	Deck drainage		

Maintenance Needs

01	Lift and Swing Bridge Maintenance	07	Repair to Structural Steel	13	Erosion Control at Bridges
02	Bridge Cleaning	08	Repair of Bridge Concrete	14	Concrete Sealing
03	Bridge Handrail Maintenance	09	Repair of Bridge Timber	15	Rout and Seal
04	Painting Steel Bridge Structures	10	Bailey bridges - Maintenance	16	Bridge Deck Drainage
05	Bridge Deck Joint Repair	11	Animal/Pest Control	17	Scaling (Loose Concrete or ACR Steel)
06	Bridge Bearing Maintenance	12	Bridge Surface Repair	18	Other

Element Data

1918

Element Group:	Culvert	Length:	7.8m
Element Name:		Width:	0.46m
Location:	Entrance Mayfield Rd	Height:	
Material:	Corrugated Steel	Count:	1
Element Type:	Round	Total Quantity:	7.8m
Environment:	Benign / Moderate / Severe	Limited Inspection ☐	
Protection System:			

Condition Data:	Units	Exc.	Good	Fair	Poor*	Perform. Deficiencies
	m^2 / m / each / % / all			x		

Comments:
The structure has both ends damaged.
The ends should be replaced.

Recommended Work:	☐ Rehab ☒ Replace ☒ 1-5 years ☐ 6-10 years	Maintenance Needs:	☐ Urgent ☐ 1 year ☒ 2 year

Element Group:		Length:	
Element Name:		Width:	
Location:		Height:	
Material:		Count:	
Element Type:		Total Quantity:	
Environment:	Benign / Moderate / Severe	Limited Inspection ☐	
Protection System:			

Condition Data:	Units	Exc.	Good	Fair	Poor*	Perform. Deficiencies
	m^2 / m / each / % / all					

Comments:

Recommended Work:	☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years	Maintenance Needs:	☐ Urgent ☐ 1 year ☐ 2 year

Element Group:		Length:	
Element Name:		Width:	
Location:		Height:	
Material:		Count:	
Element Type:		Total Quantity:	
Environment:	Benign / Moderate / Severe	Limited Inspection ☐	
Protection System:			

Condition Data:	Units	Exc.	Good	Fair	Poor*	Perform. Deficiencies
	m^2 / m / each / % / all					

Comments:

Recommended Work:	☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years	Maintenance Needs:	☐ Urgent ☐ 1 year ☐ 2 year

* A quantity must be estimated using the appropriate unit (e.g. m^2). Percent should not be used.

Ontario Structure Inspection Manual – Inspection Form

Region of Peel Structure # 1919

Inventory Data:

Structure Name			
Main Hwy/Road #		On ☐ Under ☒	Crossing Type: ☐ Navig. Water ☐ Non-Navig. Water ☐ Rail ☒ Road ☐ Ped. ☐ Other
Hwy/Road Name	Mayfield Rd		
Structure Location	North entrance from Mayfield Rd		
Latitude GPS Coord	E:604477	Longitude	N:4855353
Owner(s)	Region of Peel	Heritage Designation:	☐ Not Cons. ☐ Cons./not App. ☐ List/not Desig. ☐ Desig./not List ☐ Desig. & List
MTO Region	Central	Road Class:	Freeway ☐ Arterial ☐ Collector ☐ Local ☐
MTO District	-	Posted Speed	No. of Lanes
Old County	-	AADT	% Trucks
Geographic Twp.	Brampton	Inspection Route Sequence	
Structure Type	Culvert	Interchange Number	
Total Deck Length	(m)	Interchange Structure Number	
Overall Str. Width	7.8 (m)	Min. Vertical Clearance	0.1 (m)
Total Deck Area	- (sq.m)	Special Routes:	☐ Transit ☐ Truck ☐ School ☐ Bicycle
Roadway Width	- (m)	Detour Length Around Bridge	(km)
Skew Angle	- (Degrees)	Direction of Structure	W to E
No. of Spans	1	Fill on Structure	0.45 (m)
Span Lengths	0.46 (m)		

Historical Data:

Year Built		Year of Last Major Rehab.	
Last OSIM Inspection	07/22/2005	Last Evaluation	
Last Enhanced OSIM Inspection		Current Load Limit	/ / (tonnes)
Enhanced Access Equipment (ladder, boat, lift, etc.)		Load Limit By-Law #	
Last Underwater Inspection		By-Law Expiry Date	
Last Condition Survey			

Rehab History: (Date/description)

Scheduled Improvements:			
Regional Priority Number		Programmed Work Year	
Nature of Program Work:			

Appraisal Indices:		**Comments**
Fatigue	0	
Seismic	0	
Scour	0	
Flood	0	
Geometrics	0	
Barrier	0	
Curb	0	
Load Capacity	0	

Ontario Structure Inspection Manual – Inspection Form **MTO Site Number:** 1919

Field Inspection Information:			
Date of Inspection:	January 27,2010	Type of Inspection:	☒ OSIM ☐ Enhanced OSIM
Inspector:	Eric Cheng		
Others in Party:	Alan Chung, Dan Urian		
Access Equipment Used:	Hand Tools, Digital Camera, Measuring Tape		
Weather:	Clear,some flurries		
Temperature:	-3°		

Additional Investigations Required:	Priority		
	None	Normal	Urgent
Material Condition Survey			
Detailed Deck Condition Survey:	X		
Non-destructive Delamination Survey of Asphalt-Covered Deck:	X		
Concrete Substructure Condition Survey:	X		
Detailed Coating Condition Survey:	X		
Detailed Timber Investigation	X		
Post-Tensioned Strand Investigation	X		
Underwater Investigation:	X		
Fatigue Investigation:	X		
Seismic Investigation:	X		
Structure Evaluation:	X		
Monitoring			
Monitoring of Deformations, Settlements and Movements:	X		
Monitoring Crack Widths:	X		

Investigation Notes:

Effective Cross-Section: 16%

Overall Structure Notes:	
Recommended Work on Structure:	☒ None ☐ Minor Rehab. ☐ Major Rehab. ☐ Replace
Timing of Recommended Work:	☒ 1 to 5 years ☐ 6 to 10 years
Overall Comments:	
Date of Next Inspection:	

Suspected Performance Deficiencies

01	Load carrying capacity	06	Bearing not uniformly loaded/unstable	12	Slippery surfaces
02	Excessive deformations (deflections & rotations)	07	Jammed expansion joint	13	Flooding/channel blockage
03	Continuing settlement	08	Pedestrian/vehicular hazard	14	Undermining of foundation
04	Continuing movements	09	Rough riding surface	15	Unstable embankments
05	Seized bearings	10	Surface ponding	16	Other
		11	Deck drainage		

Maintenance Needs

01	Lift and Swing Bridge Maintenance	07	Repair to Structural Steel	13	Erosion Control at Bridges
02	Bridge Cleaning	08	Repair of Bridge Concrete	14	Concrete Sealing
03	Bridge Handrail Maintenance	09	Repair of Bridge Timber	15	Rout and Seal
04	Painting Steel Bridge Structures	10	Bailey bridges - Maintenance	16	Bridge Deck Drainage
05	Bridge Deck Joint Repair	11	Animal/Pest Control	17	Scaling (Loose Concrete or ACR Steel)
06	Bridge Bearing Maintenance	12	Bridge Surface Repair	18	Other

Element Data

1919

Element Group:	Culvert	**Length:**	7.8m
Element Name:		**Width:**	0.46m
Location:	Entrance Mayfield Rd	**Height:**	
Material:	Corrugated Steel	**Count:**	1
Element Type:	Round	**Total Quantity:**	7.8m
Environment:	Benign / Moderate / Severe	**Limited Inspection** ☐	
Protection System:			

Condition Data:	Units	Exc.	Good	Fair	Poor*	Perform. Deficiencies
	m^2 / m / each / % / all			x		

Comments: The structure presents signs of wear (bent) at the ends. The structure needs to be clean.

Recommended Work: ☒ Rehab ☐ Replace ☒ 1-5 years ☐ 6-10 years	**Maintenance Needs:** ☒ Urgent ☐ 1 year ☐ 2 year

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	Benign / Moderate / Severe	**Limited Inspection** ☐	
Protection System:			

Condition Data:	Units	Exc.	Good	Fair	Poor*	Perform. Deficiencies
	m^2 / m / each / % / all					

Comments:

Recommended Work: ☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years	**Maintenance Needs:** ☐ Urgent ☐ 1 year ☐ 2 year

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	Benign / Moderate / Severe	**Limited Inspection** ☐	
Protection System:			

Condition Data:	Units	Exc.	Good	Fair	Poor*	Perform. Deficiencies
	m^2 / m / each / % / all					

Comments:

Recommended Work: ☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years	**Maintenance Needs:** ☐ Urgent ☐ 1 year ☐ 2 year

* A quantity must be estimated using the appropriate unit (e.g. m^2). Percent should not be used.

Ontario Structure Inspection Manual – Inspection Form

Region of Peel Structure # 1920

Inventory Data:

Structure Name			
Main Hwy/Road #	On ☐ Under ☒	Crossing Type:	☐ Navig. Water ☐ Non-Navig. Water ☐ Rail ☒ Road ☐ Ped. ☐ Other
Hwy/Road Name	Mayfield Rd		
Structure Location	North entrance from Mayfield Rd		
Latitude GPS Coord	E:604464	Longitude	N:4855332
Owner(s)	Region of Peel	Heritage Designation:	☐ Not Cons. ☐ Cons./not App. ☐ List/not Desig. ☐ Desig./not List ☐ Desig. & List
MTO Region	Central	Road Class:	Freeway ☐ Arterial ☐ Collector ☐ Local ☐
MTO District	-	Posted Speed	No. of Lanes
Old County	-	AADT	% Trucks
Geographic Twp.	Brampton	Inspection Route Sequence	
Structure Type	Culvert	Interchange Number	
Total Deck Length	(m)	Interchange Structure Number	
Overall Str. Width	(m)	Min. Vertical Clearance	(m)
Total Deck Area	(sq.m)	Special Routes:	☐ Transit ☐ Truck ☐ School ☐ Bicycle
Roadway Width	(m)	Detour Length Around Bridge	(km)
Skew Angle	(Degrees)	Direction of Structure	W to E
No. of Spans		Fill on Structure	(m)
Span Lengths	The structure could not be located.		(m)

Historical Data:

Year Built		Year of Last Major Rehab.	
Last OSIM Inspection	07/22/2005	Last Evaluation	
Last Enhanced OSIM Inspection		Current Load Limit	/ / (tonnes)
Enhanced Access Equipment (ladder, boat, lift, etc.)		Load Limit By-Law #	
Last Underwater Inspection		By-Law Expiry Date	
Last Condition Survey			

Rehab History: (Date/description)

Scheduled Improvements:			
Regional Priority Number		Programmed Work Year	
Nature of Program Work:			

Appraisal Indices:		**Comments**
Fatigue	0	
Seismic	0	
Scour	0	
Flood	0	
Geometrics	0	
Barrier	0	
Curb	0	
Load Capacity	0	

Ontario Structure Inspection Manual – Inspection Form **MTO Site Number:** 1920

Field Inspection Information:			
Date of Inspection:	January 27,2010	Type of Inspection:	☒ OSIM ☐ Enhanced OSIM
Inspector:	Eric Cheng		
Others in Party:	Alan Chung, Dan Urian		
Access Equipment Used:	Hand Tools, Digital Camera, Measuring Tape		
Weather:	Clear,some flurries		
Temperature:	-3°		

Additional Investigations Required:	Priority		
	None	Normal	Urgent
Material Condition Survey			
Detailed Deck Condition Survey:	X		
Non-destructive Delamination Survey of Asphalt-Covered Deck:	X		
Concrete Substructure Condition Survey:	X		
Detailed Coating Condition Survey:	X		
Detailed Timber Investigation	X		
Post-Tensioned Strand Investigation	X		
Underwater Investigation:	X		
Fatigue Investigation:	X		
Seismic Investigation:	X		
Structure Evaluation:	X		
Monitoring			
Monitoring of Deformations, Settlements and Movements:	X		
Monitoring Crack Widths:	X		

Investigation Notes:
The structure could not be located.

Overall Structure Notes:	
Recommended Work on Structure:	☐ None ☐ Minor Rehab. ☐ Major Rehab. ☐ Replace
Timing of Recommended Work:	☐ 1 to 5 years ☐ 6 to 10 years
Overall Comments:	The structure could not be located.
Date of Next Inspection:	

Suspected Performance Deficiencies

01	Load carrying capacity	06	Bearing not uniformly loaded/unstable	12	Slippery surfaces
02	Excessive deformations (deflections & rotations)	07	Jammed expansion joint	13	Flooding/channel blockage
03	Continuing settlement	08	Pedestrian/vehicular hazard	14	Undermining of foundation
04	Continuing movements	09	Rough riding surface	15	Unstable embankments
05	Seized bearings	10	Surface ponding	16	Other
		11	Deck drainage		

Maintenance Needs

01	Lift and Swing Bridge Maintenance	07	Repair to Structural Steel	13	Erosion Control at Bridges
02	Bridge Cleaning	08	Repair of Bridge Concrete	14	Concrete Sealing
03	Bridge Handrail Maintenance	09	Repair of Bridge Timber	15	Rout and Seal
04	Painting Steel Bridge Structures	10	Bailey bridges - Maintenance	16	Bridge Deck Drainage
05	Bridge Deck Joint Repair	11	Animal/Pest Control	17	Scaling (Loose Concrete or ACR Steel)
06	Bridge Bearing Maintenance	12	Bridge Surface Repair	18	Other

Ontario Structure Inspection Manual – Inspection Form

Region of Peel Structure # 1921

Inventory Data:

Structure Name			
Main Hwy/Road #		On ☐ Under ☒	Crossing Type: ☐ Navig. Water ☐ Non-Navig. Water ☐ Rail ☒ Road ☐ Ped. ☐ Other
Hwy/Road Name	Mayfield Rd		
Structure Location	North field entrance from Mayfield Rd		
Latitude GPS Coord	E:604410	Longitude	N:4855271
Owner(s)	Region of Peel	Heritage Designation:	☐ Not Cons. ☐ Cons./not App. ☐ List/not Desig. ☐ Desig./not List ☐ Desig. & List
MTO Region	Central	Road Class:	Freeway ☐ Arterial ☐ Collector ☐ Local ☐
MTO District	-	Posted Speed	No. of Lanes
Old County	-	AADT	% Trucks
Geographic Twp.	Brampton	Inspection Route Sequence	
Structure Type	Culvert	Interchange Number	
Total Deck Length	(m)	Interchange Structure Number	
Overall Str. Width	0 (m)	Min. Vertical Clearance	(m)
Total Deck Area	- (sq.m)	Special Routes:	☐ Transit ☐ Truck ☐ School ☐ Bicycle
Roadway Width	- (m)	Detour Length Around Bridge	(km)
Skew Angle	- (Degrees)	Direction of Structure	
No. of Spans		Fill on Structure	(m)
Span Lengths	The structure was removed.		(m)

Historical Data:

Year Built		Year of Last Major Rehab.	
Last OSIM Inspection	07/22/2005	Last Evaluation	
Last Enhanced OSIM Inspection		Current Load Limit	/ / (tonnes)
Enhanced Access Equipment (ladder, boat, lift, etc.)		Load Limit By-Law #	
Last Underwater Inspection		By-Law Expiry Date	
Last Condition Survey			

Rehab History: (Date/description)

Scheduled Improvements:			
Regional Priority Number		Programmed Work Year	
Nature of Program Work:			

Appraisal Indices:		**Comments**
Fatigue	0	
Seismic	0	
Scour	0	
Flood	0	
Geometrics	0	
Barrier	0	
Curb	0	
Load Capacity	0	

Ontario Structure Inspection Manual – Inspection Form **MTO Site Number:** 1921

Field Inspection Information:			
Date of Inspection:	January 27,2010	Type of Inspection:	☒ OSIM ☐ Enhanced OSIM
Inspector:	Eric Cheng		
Others in Party:	Alan Chung, Dan Urian		
Access Equipment Used:	Hand Tools, Digital Camera, Measuring Tape		
Weather:	Clear,some flurries		
Temperature:	-3°		

Additional Investigations Required:	Priority		
	None	Normal	Urgent
Material Condition Survey			
Detailed Deck Condition Survey:	X		
Non-destructive Delamination Survey of Asphalt-Covered Deck:	X		
Concrete Substructure Condition Survey:	X		
Detailed Coating Condition Survey:	X		
Detailed Timber Investigation	X		
Post-Tensioned Strand Investigation	X		
Underwater Investigation:	X		
Fatigue Investigation:	X		
Seismic Investigation:	X		
Structure Evaluation:	X		
Monitoring			
Monitoring of Deformations, Settlements and Movements:	X		
Monitoring Crack Widths:	X		

Investigation Notes:

The structure was removed.

Overall Structure Notes:	
Recommended Work on Structure:	☒ None ☐ Minor Rehab. ☐ Major Rehab. ☐ Replace
Timing of Recommended Work:	☐ 1 to 5 years ☐ 6 to 10 years
Overall Comments:	The structure was removed (see photo).
Date of Next Inspection:	

Suspected Performance Deficiencies

01 Load carrying capacity
02 Excessive deformations (deflections & rotations)
03 Continuing settlement
04 Continuing movements
05 Seized bearings
06 Bearing not uniformly loaded/unstable
07 Jammed expansion joint
08 Pedestrian/vehicular hazard
09 Rough riding surface
10 Surface ponding
11 Deck drainage
12 Slippery surfaces
13 Flooding/channel blockage
14 Undermining of foundation
15 Unstable embankments
16 Other

Maintenance Needs

01 Lift and Swing Bridge Maintenance
02 Bridge Cleaning
03 Bridge Handrail Maintenance
04 Painting Steel Bridge Structures
05 Bridge Deck Joint Repair
06 Bridge Bearing Maintenance
07 Repair to Structural Steel
08 Repair of Bridge Concrete
09 Repair of Bridge Timber
10 Bailey bridges - Maintenance
11 Animal/Pest Control
12 Bridge Surface Repair
13 Erosion Control at Bridges
14 Concrete Sealing
15 Rout and Seal
16 Bridge Deck Drainage
17 Scaling (Loose Concrete or ACR Steel)
18 Other

Ontario Structure Inspection Manual – Inspection Form

Region of Peel Structure # 1922

Inventory Data:

Structure Name			
Main Hwy/Road #		On ☐ Under ☒	Crossing Type: ☐ Navig. Water ☐ Non-Navig. Water ☐ Rail ☒ Road ☐ Ped. ☐ Other
Hwy/Road Name	Mayfield Rd		
Structure Location	North field entrance from Mayfield Rd		
Latitude GPS Coord	E:604347	Longitude	N:4855191
Owner(s)	Region of Peel	Heritage Designation:	☐ Not Cons. ☐ Cons./not App. ☐ List/not Desig. ☐ Desig./not List ☐ Desig. & List
MTO Region	Central	Road Class:	Freeway ☐ Arterial ☐ Collector ☐ Local ☐
MTO District	-	Posted Speed	No. of Lanes
Old County	-	AADT	% Trucks
Geographic Twp.	Brampton	Inspection Route Sequence	
Structure Type	Culvert	Interchange Number	
Total Deck Length	(m)	Interchange Structure Number	
Overall Str. Width	0 (m)	Min. Vertical Clearance	(m)
Total Deck Area	- (sq.m)	Special Routes:	☐ Transit ☐ Truck ☐ School ☐ Bicycle
Roadway Width	- (m)	Detour Length Around Bridge	(km)
Skew Angle	- (Degrees)	Direction of Structure	
No. of Spans		Fill on Structure	(m)
Span Lengths	The structure was removed		(m)

Historical Data:

Year Built		Year of Last Major Rehab.	
Last OSIM Inspection	07/22/2005	Last Evaluation	
Last Enhanced OSIM Inspection		Current Load Limit	/ / (tonnes)
Enhanced Access Equipment (ladder, boat, lift, etc.)		Load Limit By-Law #	
Last Underwater Inspection		By-Law Expiry Date	
Last Condition Survey			

Rehab History: (Date/description)

Scheduled Improvements:			
Regional Priority Number		Programmed Work Year	
Nature of Program Work:			

Appraisal Indices:		**Comments**
Fatigue	0	
Seismic	0	
Scour	0	
Flood	0	
Geometrics	0	
Barrier	0	
Curb	0	
Load Capacity	0	

Field Inspection Information:			
Date of Inspection:	January 27,2010	Type of Inspection:	☒ OSIM ☐ Enhanced OSIM
Inspector:	Eric Cheng		
Others in Party:	Alan Chung, Dan Urian		
Access Equipment Used:	Hand Tools, Digital Camera, Measuring Tape		
Weather:	Clear,some flurries		
Temperature:	-3°		

Additional Investigations Required:	Priority		
	None	Normal	Urgent
Material Condition Survey			
Detailed Deck Condition Survey:	x		
Non-destructive Delamination Survey of Asphalt-Covered Deck:	x		
Concrete Substructure Condition Survey:	x		
Detailed Coating Condition Survey:	x		
Detailed Timber Investigation	x		
Post-Tensioned Strand Investigation	x		
Underwater Investigation:	x		
Fatigue Investigation:	x		
Seismic Investigation:	x		
Structure Evaluation:	x		
Monitoring			
Monitoring of Deformations, Settlements and Movements:	x		
Monitoring Crack Widths:	x		

Investigation Notes:
The structure was removed(see photo).

Overall Structure Notes:	
Recommended Work on Structure:	☒ None ☐ Minor Rehab. ☐ Major Rehab. ☐ Replace
Timing of Recommended Work:	☐ 1 to 5 years ☐ 6 to 10 years
Overall Comments:	The structure was removed.
Date of Next Inspection:	

Suspected Performance Deficiencies

01	Load carrying capacity	06	Bearing not uniformly loaded/unstable	12	Slippery surfaces
02	Excessive deformations (deflections & rotations)	07	Jammed expansion joint	13	Flooding/channel blockage
03	Continuing settlement	08	Pedestrian/vehicular hazard	14	Undermining of foundation
04	Continuing movements	09	Rough riding surface	15	Unstable embankments
05	Seized bearings	10	Surface ponding	16	Other
		11	Deck drainage		

Maintenance Needs

01	Lift and Swing Bridge Maintenance	07	Repair to Structural Steel	13	Erosion Control at Bridges
02	Bridge Cleaning	08	Repair of Bridge Concrete	14	Concrete Sealing
03	Bridge Handrail Maintenance	09	Repair of Bridge Timber	15	Rout and Seal
04	Painting Steel Bridge Structures	10	Bailey bridges - Maintenance	16	Bridge Deck Drainage
05	Bridge Deck Joint Repair	11	Animal/Pest Control	17	Scaling (Loose Concrete or ACR Steel)
06	Bridge Bearing Maintenance	12	Bridge Surface Repair	18	Other

Ontario Structure Inspection Manual – Inspection Form

Region of Peel Structure # 1923

Inventory Data:

Structure Name			
Main Hwy/Road #		On ☐ Under ☒	Crossing Type: ☐ Navig. Water ☐ Non-Navig. Water ☐ Rail ☒ Road ☐ Ped. ☐ Other
Hwy/Road Name	Mayfield Rd		
Structure Location	North entrance from Mayfield Rd		
Latitude GPS Coord	E:604298	Longitude	N:4855125
Owner(s)	Region of Peel	Heritage Designation:	☐ Not Cons. ☐ Cons./not App. ☐ List/not Desig. ☐ Desig./not List ☐ Desig. & List
MTO Region	Central	Road Class:	Freeway ☐ Arterial ☐ Collector ☐ Local ☐
MTO District	-	Posted Speed	No. of Lanes
Old County	-	AADT	% Trucks
Geographic Twp.	Brampton	Inspection Route Sequence	
Structure Type	Culvert	Interchange Number	
Total Deck Length	(m)	Interchange Structure Number	
Overall Str. Width	0 (m)	Min. Vertical Clearance	(m)
Total Deck Area	- (sq.m)	Special Routes:	☐ Transit ☐ Truck ☐ School ☐ Bicycle
Roadway Width	- (m)	Detour Length Around Bridge	(km)
Skew Angle	- (Degrees)	Direction of Structure	
No. of Spans		Fill on Structure	(m)
Span Lengths	The structure was removed		(m)

Historical Data:

Year Built		Year of Last Major Rehab.	
Last OSIM Inspection	07/25/2005	Last Evaluation	
Last Enhanced OSIM Inspection		Current Load Limit	/ / (tonnes)
Enhanced Access Equipment (ladder, boat, lift, etc.)		Load Limit By-Law #	
Last Underwater Inspection		By-Law Expiry Date	
Last Condition Survey			

Rehab History: (Date/description)

Scheduled Improvements:			
Regional Priority Number		Programmed Work Year	
Nature of Program Work:			

Appraisal Indices:		**Comments**
Fatigue	0	
Seismic	0	
Scour	0	
Flood	0	
Geometrics	0	
Barrier	0	
Curb	0	
Load Capacity	0	

Ontario Structure Inspection Manual – Inspection Form **MTO Site Number:** 1923

Field Inspection Information:			
Date of Inspection:	January 27,2010	Type of Inspection:	☒ OSIM ☐ Enhanced OSIM
Inspector:	Eric Cheng		
Others in Party:	Alan Chung, Dan Urian		
Access Equipment Used:	Hand Tools, Digital Camera, Measuring Tape		
Weather:	Clear,some flurries		
Temperature:	-3°		

Additional Investigations Required:	Priority		
	None	Normal	Urgent
Material Condition Survey			
Detailed Deck Condition Survey:	X		
Non-destructive Delamination Survey of Asphalt-Covered Deck:	X		
Concrete Substructure Condition Survey:	X		
Detailed Coating Condition Survey:	X		
Detailed Timber Investigation	X		
Post-Tensioned Strand Investigation	X		
Underwater Investigation:	X		
Fatigue Investigation:	X		
Seismic Investigation:	X		
Structure Evaluation:	X		
Monitoring			
Monitoring of Deformations, Settlements and Movements:	X		
Monitoring Crack Widths:	X		

Investigation Notes:

The structure was removed.

Overall Structure Notes:	
Recommended Work on Structure:	☒ None ☐ Minor Rehab. ☐ Major Rehab. ☐ Replace
Timing of Recommended Work:	☐ 1 to 5 years ☐ 6 to 10 years
Overall Comments:	The structure was removed (see photo).
Date of Next Inspection:	

Suspected Performance Deficiencies

01	Load carrying capacity	06	Bearing not uniformly loaded/unstable	12	Slippery surfaces
02	Excessive deformations (deflections & rotations)	07	Jammed expansion joint	13	Flooding/channel blockage
03	Continuing settlement	08	Pedestrian/vehicular hazard	14	Undermining of foundation
04	Continuing movements	09	Rough riding surface	15	Unstable embankments
05	Seized bearings	10	Surface ponding	16	Other
		11	Deck drainage		

Maintenance Needs

01	Lift and Swing Bridge Maintenance	07	Repair to Structural Steel	13	Erosion Control at Bridges
02	Bridge Cleaning	08	Repair of Bridge Concrete	14	Concrete Sealing
03	Bridge Handrail Maintenance	09	Repair of Bridge Timber	15	Rout and Seal
04	Painting Steel Bridge Structures	10	Bailey bridges - Maintenance	16	Bridge Deck Drainage
05	Bridge Deck Joint Repair	11	Animal/Pest Control	17	Scaling (Loose Concrete or ACR Steel)
06	Bridge Bearing Maintenance	12	Bridge Surface Repair	18	Other

Ontario Structure Inspection Manual – Inspection Form

Region of Peel Structure # 1924

Inventory Data:

Structure Name			
Main Hwy/Road #		On ☐ Under ☒	Crossing Type: ☐ Navig. Water ☐ Non-Navig. Water ☐ Rail ☒ Road ☐ Ped. ☐ Other
Hwy/Road Name	Mayfield Rd		
Structure Location	North entrance Mayfield Rd		
Latitude GPS Coord	E:604254	Longitude	N:4855073
Owner(s)	Region of Peel	Heritage Designation:	☐ Not Cons. ☐ Cons./not App. ☐ List/not Desig. ☐ Desig./not List ☐ Desig. & List
MTO Region	Central	Road Class:	Freeway ☐ Arterial ☐ Collector ☐ Local ☐
MTO District	-	Posted Speed	No. of Lanes
Old County	-	AADT	% Trucks
Geographic Twp.	Brampton	Inspection Route Sequence	
Structure Type	Culvert	Interchange Number	
Total Deck Length	(m)	Interchange Structure Number	
Overall Str. Width	15.0 (m)	Min. Vertical Clearance	0 (m)
Total Deck Area	- (sq.m)	Special Routes:	☐ Transit ☐ Truck ☐ School ☐ Bicycle
Roadway Width	- (m)	Detour Length Around Bridge	(km)
Skew Angle	- (Degrees)	Direction of Structure	W to E
No. of Spans	1	Fill on Structure	0.7 (m)
Span Lengths	0.38 (m)		

Historical Data:

Year Built		Year of Last Major Rehab.	
Last OSIM Inspection	07/25/2005	Last Evaluation	
Last Enhanced OSIM Inspection		Current Load Limit	/ / (tonnes)
Enhanced Access Equipment (ladder, boat, lift, etc.)		Load Limit By-Law #	
Last Underwater Inspection		By-Law Expiry Date	
Last Condition Survey			

Rehab History: (Date/description)

Scheduled Improvements:			
Regional Priority Number		Programmed Work Year	
Nature of Program Work:			

Appraisal Indices:		**Comments**
Fatigue	0	
Seismic	0	
Scour	0	
Flood	0	
Geometrics	0	
Barrier	0	
Curb	0	
Load Capacity	0	

Field Inspection Information:			
Date of Inspection:	January 27,2010	Type of Inspection:	☒ OSIM ☐ Enhanced OSIM
Inspector:	Eric Cheng		
Others in Party:	Alan Chung, Dan Urian		
Access Equipment Used:	Hand Tools, Digital Camera, Measuring Tape		
Weather:	Clear,some flurries		
Temperature:	-3°		

Additional Investigations Required:	Priority		
	None	Normal	Urgent
Material Condition Survey			
Detailed Deck Condition Survey:	x		
Non-destructive Delamination Survey of Asphalt-Covered Deck:	x		
Concrete Substructure Condition Survey:	x		
Detailed Coating Condition Survey:	x		
Detailed Timber Investigation	x		
Post-Tensioned Strand Investigation	x		
Underwater Investigation:	x		
Fatigue Investigation:	x		
Seismic Investigation:	x		
Structure Evaluation:	x		
Monitoring			
Monitoring of Deformations, Settlements and Movements:	x		
Monitoring Crack Widths:	x		

Investigation Notes:

Effective Cross-Section:0%

Overall Structure Notes:	
Recommended Work on Structure:	☒ None ☐ Minor Rehab. ☐ Major Rehab. ☐ Replace
Timing of Recommended Work:	☒ 1 to 5 years ☐ 6 to 10 years
Overall Comments:	The structure was buried under water and we were not able to inspect it.
Date of Next Inspection:	

Suspected Performance Deficiencies

01	Load carrying capacity	06	Bearing not uniformly loaded/unstable	12	Slippery surfaces
02	Excessive deformations (deflections & rotations)	07	Jammed expansion joint	13	Flooding/channel blockage
03	Continuing settlement	08	Pedestrian/vehicular hazard	14	Undermining of foundation
04	Continuing movements	09	Rough riding surface	15	Unstable embankments
05	Seized bearings	10	Surface ponding	16	Other
		11	Deck drainage		

Maintenance Needs

01	Lift and Swing Bridge Maintenance	07	Repair to Structural Steel	13	Erosion Control at Bridges
02	Bridge Cleaning	08	Repair of Bridge Concrete	14	Concrete Sealing
03	Bridge Handrail Maintenance	09	Repair of Bridge Timber	15	Rout and Seal
04	Painting Steel Bridge Structures	10	Bailey bridges - Maintenance	16	Bridge Deck Drainage
05	Bridge Deck Joint Repair	11	Animal/Pest Control	17	Scaling (Loose Concrete or ACR Steel)
06	Bridge Bearing Maintenance	12	Bridge Surface Repair	18	Other

Element Data

1924

Element Group:	Culvert	**Length:**	15.0m
Element Name:		**Width:**	0.38m
Location:	Entrance Mayfield Rd	**Height:**	
Material:	Corrugated Steel	**Count:**	1
Element Type:	Round	**Total Quantity:**	15.0m
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all				

Comments:

The structure was under water and we were not able to inspect it. Flushing and ditching is required.

Recommended Work:	☒ Rehab ☐ Replace	**Maintenance Needs:**	
	☒ 1-5 years ☐ 6-10 years	☒ Urgent ☐ 1 year ☐ 2 year	

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all				

Comments:

Recommended Work:	☐ Rehab ☐ Replace	**Maintenance Needs:**	
	☐ 1-5 years ☐ 6-10 years	☐ Urgent ☐ 1 year ☐ 2 year	

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all				

Comments:

Recommended Work:	☐ Rehab ☐ Replace	**Maintenance Needs:**	
	☐ 1-5 years ☐ 6-10 years	☐ Urgent ☐ 1 year ☐ 2 year	

* A quantity must be estimated using the appropriate unit (e.g. m^2). Percent should not be used.

Ontario Structure Inspection Manual – Inspection Form

Region of Peel Structure # 1925

Inventory Data:

Structure Name			
Main Hwy/Road #		On ☐ Under ☒	Crossing Type: ☐ Navig. Water ☐ Non-Navig. Water ☐ Rail ☒ Road ☐ Ped. ☐ Other
Hwy/Road Name	Mayfield Rd		
Structure Location	North entrance Mayfield Rd		
Latitude GPS Coord	E:604240	Longitude	N:4855054
Owner(s)	Region of Peel	Heritage Designation:	☐ Not Cons. ☐ Cons./not App. ☐ List/not Desig. ☐ Desig./not List ☐ Desig. & List
MTO Region	Central	Road Class:	Freeway ☐ Arterial ☐ Collector ☐ Local ☐
MTO District	-	Posted Speed	No. of Lanes
Old County	-	AADT	% Trucks
Geographic Twp.	Brampton	Inspection Route Sequence	
Structure Type	Culvert	Interchange Number	
Total Deck Length	(m)	Interchange Structure Number	
Overall Str. Width	12.8 (m)	Min. Vertical Clearance	0.25 (m)
Total Deck Area	- (sq.m)	Special Routes:	☐ Transit ☐ Truck ☐ School ☐ Bicycle
Roadway Width	- (m)	Detour Length Around Bridge	(km)
Skew Angle	- (Degrees)	Direction of Structure	W to E
No. of Spans	1	Fill on Structure	0.4 (m)
Span Lengths	0.61 (m)		

Historical Data:

Year Built		Year of Last Major Rehab.	
Last OSIM Inspection	07/25/2005	Last Evaluation	
Last Enhanced OSIM Inspection		Current Load Limit	/ / (tonnes)
Enhanced Access Equipment (ladder, boat, lift, etc.)		Load Limit By-Law #	
Last Underwater Inspection		By-Law Expiry Date	
Last Condition Survey			

Rehab History: (Date/description)

Scheduled Improvements:			
Regional Priority Number		Programmed Work Year	
Nature of Program Work:			

Appraisal Indices:		**Comments**
Fatigue	0	
Seismic	0	
Scour	0	
Flood	0	
Geometrics	0	
Barrier	0	
Curb	0	
Load Capacity	0	

Ontario Structure Inspection Manual – Inspection Form **MTO Site Number:** 1925

Field Inspection Information:			
Date of Inspection:	January 27,2010	Type of Inspection:	☒ OSIM ☐ Enhanced OSIM
Inspector:	Eric Cheng		
Others in Party:	Alan Chung, Dan Urian		
Access Equipment Used:	Hand Tools, Digital Camera, Measuring Tape		
Weather:	Clear,some flurries		
Temperature:	-3°		

Additional Investigations Required:	Priority		
	None	Normal	Urgent
Material Condition Survey			
Detailed Deck Condition Survey:	x		
Non-destructive Delamination Survey of Asphalt-Covered Deck:	x		
Concrete Substructure Condition Survey:	x		
Detailed Coating Condition Survey:	x		
Detailed Timber Investigation	x		
Post-Tensioned Strand Investigation	x		
Underwater Investigation:	x		
Fatigue Investigation:	x		
Seismic Investigation:	x		
Structure Evaluation:	x		
Monitoring			
Monitoring of Deformations, Settlements and Movements:	x		
Monitoring Crack Widths:	x		

Investigation Notes:

Effective Cross-Section:38%

Overall Structure Notes:	
Recommended Work on Structure:	☒ None ☐ Minor Rehab. ☐ Major Rehab. ☐ Replace
Timing of Recommended Work:	☒ 1 to 5 years ☐ 6 to 10 years
Overall Comments:	The structure is in fair condition. The culvert is protected by armour stone.
Date of Next Inspection:	

Suspected Performance Deficiencies

01	Load carrying capacity	06	Bearing not uniformly loaded/unstable	12	Slippery surfaces
02	Excessive deformations (deflections & rotations)	07	Jammed expansion joint	13	Flooding/channel blockage
03	Continuing settlement	08	Pedestrian/vehicular hazard	14	Undermining of foundation
04	Continuing movements	09	Rough riding surface	15	Unstable embankments
05	Seized bearings	10	Surface ponding	16	Other
		11	Deck drainage		

Maintenance Needs

01	Lift and Swing Bridge Maintenance	07	Repair to Structural Steel	13	Erosion Control at Bridges
02	Bridge Cleaning	08	Repair of Bridge Concrete	14	Concrete Sealing
03	Bridge Handrail Maintenance	09	Repair of Bridge Timber	15	Rout and Seal
04	Painting Steel Bridge Structures	10	Bailey bridges - Maintenance	16	Bridge Deck Drainage
05	Bridge Deck Joint Repair	11	Animal/Pest Control	17	Scaling (Loose Concrete or ACR Steel)
06	Bridge Bearing Maintenance	12	Bridge Surface Repair	18	Other

Element Data

1925

Element Group:	Culvert	**Length:**	12.8m
Element Name:		**Width:**	0.61m
Location:	Entrance Mayfield Rd	**Height:**	
Material:	Corrugated Steel	**Count:**	1
Element Type:	Round	**Total Quantity:**	12.8m
Environment:	Benign / Moderate / Severe	**Limited Inspection** ☐	
Protection System:			

Condition Data:	Units	Exc.	Good	Fair	Poor*	Perform. Deficiencies
	m^2 / m / each / % / all			x		

Comments: The structure is protected by armour stone and slightly bent in the middle.

Recommended Work: ☒ Rehab ☐ Replace ☒ 1-5 years ☐ 6-10 years	**Maintenance Needs:** ☐ Urgent ☐ 1 year ☒ 2 year

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	Benign / Moderate / Severe	**Limited Inspection** ☐	
Protection System:			

Condition Data:	Units	Exc.	Good	Fair	Poor*	Perform. Deficiencies
	m^2 / m / each / % / all					

Comments:

Recommended Work: ☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years	**Maintenance Needs:** ☐ Urgent ☐ 1 year ☐ 2 year

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	Benign / Moderate / Severe	**Limited Inspection** ☐	
Protection System:			

Condition Data:	Units	Exc.	Good	Fair	Poor*	Perform. Deficiencies
	m^2 / m / each / % / all					

Comments:

Recommended Work: ☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years	**Maintenance Needs:** ☐ Urgent ☐ 1 year ☐ 2 year

* A quantity must be estimated using the appropriate unit (e.g. m^2). Percent should not be used.

Ontario Structure Inspection Manual – Inspection Form

Region of Peel Structure # 1926

Inventory Data:

Structure Name			
Main Hwy/Road #		On ☐ Under ☒	Crossing Type: ☐ Navig. Water ☐ Non-Navig. Water ☐ Rail ☒ Road ☐ Ped. ☐ Other
Hwy/Road Name	Mayfield Rd		
Structure Location	North entrance Mayfield Rd		
Latitude GPS Coord	E:604211	Longitude	N:4855022
Owner(s)	Region of Peel	Heritage Designation:	☐ Not Cons. ☐ Cons./not App. ☐ List/not Desig. ☐ Desig./not List ☐ Desig. & List
MTO Region	Central	Road Class:	Freeway ☐ Arterial ☐ Collector ☐ Local ☐
MTO District	-	Posted Speed	No. of Lanes
Old County	-	AADT	% Trucks
Geographic Twp.	Brampton	Inspection Route Sequence	
Structure Type	Culvert	Interchange Number	
Total Deck Length	(m)	Interchange Structure Number	
Overall Str. Width	12.0 (m)	Min. Vertical Clearance	0.2 (m)
Total Deck Area	- (sq.m)	Special Routes:	☐ Transit ☐ Truck ☐ School ☐ Bicycle
Roadway Width	- (m)	Detour Length Around Bridge	(km)
Skew Angle	- (Degrees)	Direction of Structure	W to E
No. of Spans	1	Fill on Structure	0.4 (m)
Span Lengths	0.46 (m)		

Historical Data:

Year Built		Year of Last Major Rehab.	
Last OSIM Inspection	07/25/2005	Last Evaluation	
Last Enhanced OSIM Inspection		Current Load Limit	/ / (tonnes)
Enhanced Access Equipment (ladder, boat, lift, etc.)		Load Limit By-Law #	
Last Underwater Inspection		By-Law Expiry Date	
Last Condition Survey			

Rehab History: (Date/description)

Scheduled Improvements:			
Regional Priority Number		Programmed Work Year	
Nature of Program Work:			

Appraisal Indices:		**Comments**
Fatigue	0	
Seismic	0	
Scour	0	
Flood	0	
Geometrics	0	
Barrier	0	
Curb	0	
Load Capacity	0	

Ontario Structure Inspection Manual – Inspection Form **MTO Site Number:** 1926

Field Inspection Information:			
Date of Inspection:	January 27,2010	Type of Inspection:	☒ OSIM ☐ Enhanced OSIM
Inspector:	Eric Cheng		
Others in Party:	Alan Chung, Dan Urian		
Access Equipment Used:	Hand Tools, Digital Camera, Measuring Tape		
Weather:	Clear,some flurries		
Temperature:	-3°		

Additional Investigations Required:	Priority		
	None	Normal	Urgent
Material Condition Survey			
Detailed Deck Condition Survey:	X		
Non-destructive Delamination Survey of Asphalt-Covered Deck:	X		
Concrete Substructure Condition Survey:	X		
Detailed Coating Condition Survey:	X		
Detailed Timber Investigation	X		
Post-Tensioned Strand Investigation	X		
Underwater Investigation:	X		
Fatigue Investigation:	X		
Seismic Investigation:	X		
Structure Evaluation:	X		
Monitoring			
Monitoring of Deformations, Settlements and Movements:	X		
Monitoring Crack Widths:	X		

Investigation Notes:

Effective Cross-Section:42%

Overall Structure Notes:	
Recommended Work on Structure:	☒ None ☐ Minor Rehab. ☐ Major Rehab. ☐ Replace
Timing of Recommended Work:	☒ 1 to 5 years ☐ 6 to 10 years
Overall Comments:	The structure is in good condition.
Date of Next Inspection:	

Suspected Performance Deficiencies

01	Load carrying capacity	06	Bearing not uniformly loaded/unstable	12	Slippery surfaces
02	Excessive deformations (deflections & rotations)	07	Jammed expansion joint	13	Flooding/channel blockage
03	Continuing settlement	08	Pedestrian/vehicular hazard	14	Undermining of foundation
04	Continuing movements	09	Rough riding surface	15	Unstable embankments
05	Seized bearings	10	Surface ponding	16	Other
		11	Deck drainage		

Maintenance Needs

01	Lift and Swing Bridge Maintenance	07	Repair to Structural Steel	13	Erosion Control at Bridges
02	Bridge Cleaning	08	Repair of Bridge Concrete	14	Concrete Sealing
03	Bridge Handrail Maintenance	09	Repair of Bridge Timber	15	Rout and Seal
04	Painting Steel Bridge Structures	10	Bailey bridges - Maintenance	16	Bridge Deck Drainage
05	Bridge Deck Joint Repair	11	Animal/Pest Control	17	Scaling (Loose Concrete or ACR Steel)
06	Bridge Bearing Maintenance	12	Bridge Surface Repair	18	Other

Element Data

1926

Element Group:	Culvert	**Length:**	12.0m
Element Name:		**Width:**	0.46m
Location:	Entrance Mayfield Rd	**Height:**	
Material:	Corrugated Steel	**Count:**	1
Element Type:	Round	**Total Quantity:**	12.0m
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all		x		

Comments:

Recommended Work:	☒ Rehab ☐ Replace ☒ 1-5 years ☐ 6-10 years	**Maintenance Needs:**	☐ Urgent ☐ 1 year ☒ 2 year

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all				

Comments:

Recommended Work:	☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years	**Maintenance Needs:**	☐ Urgent ☐ 1 year ☐ 2 year

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all				

Comments:

Recommended Work:	☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years	**Maintenance Needs:**	☐ Urgent ☐ 1 year ☐ 2 year

* A quantity must be estimated using the appropriate unit (e.g. m^2). Percent should not be used.

Ontario Structure Inspection Manual – Inspection Form

Region of Peel Structure # 1927

Inventory Data:

Structure Name			
Main Hwy/Road #		On ☐ Under ☒	Crossing Type: ☐ Navig. Water ☐ Non-Navig. Water ☐ Rail ☒ Road ☐ Ped. ☐ Other
Hwy/Road Name	Mayfield Rd		
Structure Location	North entrance Mayfield Rd		
Latitude GPS Coord	E:604202	Longitude	N:4855007
Owner(s)	Region of Peel	Heritage Designation:	☐ Not Cons. ☐ Cons./not App. ☐ List/not Desig. ☐ Desig./not List ☐ Desig. & List
MTO Region	Central	Road Class:	Freeway ☐ Arterial ☐ Collector ☐ Local ☐
MTO District	-	Posted Speed	No. of Lanes
Old County	-	AADT	% Trucks
Geographic Twp.	Brampton	Inspection Route Sequence	
Structure Type	Culvert	Interchange Number	
Total Deck Length	(m)	Interchange Structure Number	
Overall Str. Width	8.0 (m)	Min. Vertical Clearance	0.25 (m)
Total Deck Area	- (sq.m)	Special Routes:	☐ Transit ☐ Truck ☐ School ☐ Bicycle
Roadway Width	- (m)	Detour Length Around Bridge	(km)
Skew Angle	- (Degrees)	Direction of Structure	W to E
No. of Spans	1	Fill on Structure	0.2 (m)
Span Lengths	0.38 (m)		

Historical Data:

Year Built		Year of Last Major Rehab.	
Last OSIM Inspection	07/25/2005	Last Evaluation	
Last Enhanced OSIM Inspection		Current Load Limit	/ / (tonnes)
Enhanced Access Equipment (ladder, boat, lift, etc.)		Load Limit By-Law #	
Last Underwater Inspection		By-Law Expiry Date	
Last Condition Survey			

Rehab History: (Date/description)

Scheduled Improvements:			
Regional Priority Number		Programmed Work Year	
Nature of Program Work:			

Appraisal Indices:		**Comments**
Fatigue	0	
Seismic	0	
Scour	0	
Flood	0	
Geometrics	0	
Barrier	0	
Curb	0	
Load Capacity	0	

Ontario Structure Inspection Manual – Inspection Form **MTO Site Number:** 1927

Field Inspection Information:			
Date of Inspection:	January 27,2010	Type of Inspection:	☒ OSIM ☐ Enhanced OSIM
Inspector:	Eric Cheng		
Others in Party:	Alan Chung, Dan Urian		
Access Equipment Used:	Hand Tools, Digital Camera, Measuring Tape		
Weather:	Clear,some flurries		
Temperature:	-3°		

Additional Investigations Required:	Priority		
	None	Normal	Urgent
Material Condition Survey			
Detailed Deck Condition Survey:	x		
Non-destructive Delamination Survey of Asphalt-Covered Deck:	x		
Concrete Substructure Condition Survey:	x		
Detailed Coating Condition Survey:	x		
Detailed Timber Investigation	x		
Post-Tensioned Strand Investigation	x		
Underwater Investigation:	x		
Fatigue Investigation:	x		
Seismic Investigation:	x		
Structure Evaluation:	x		
Monitoring			
Monitoring of Deformations, Settlements and Movements:	x		
Monitoring Crack Widths:	x		

Investigation Notes:

Effective Cross-Section:70%

Overall Structure Notes:	
Recommended Work on Structure:	☒ None ☐ Minor Rehab. ☐ Major Rehab. ☐ Replace
Timing of Recommended Work:	☐ 1 to 5 years ☒ 6 to 10 years
Overall Comments:	The structure is in good condition.
Date of Next Inspection:	

Suspected Performance Deficiencies

01	Load carrying capacity	06	Bearing not uniformly loaded/unstable	12	Slippery surfaces
02	Excessive deformations (deflections & rotations)	07	Jammed expansion joint	13	Flooding/channel blockage
03	Continuing settlement	08	Pedestrian/vehicular hazard	14	Undermining of foundation
04	Continuing movements	09	Rough riding surface	15	Unstable embankments
05	Seized bearings	10	Surface ponding	16	Other
		11	Deck drainage		

Maintenance Needs

01	Lift and Swing Bridge Maintenance	07	Repair to Structural Steel	13	Erosion Control at Bridges
02	Bridge Cleaning	08	Repair of Bridge Concrete	14	Concrete Sealing
03	Bridge Handrail Maintenance	09	Repair of Bridge Timber	15	Rout and Seal
04	Painting Steel Bridge Structures	10	Bailey bridges - Maintenance	16	Bridge Deck Drainage
05	Bridge Deck Joint Repair	11	Animal/Pest Control	17	Scaling (Loose Concrete or ACR Steel)
06	Bridge Bearing Maintenance	12	Bridge Surface Repair	18	Other

Element Data

1927

Element Group:	Culvert	**Length:**	8.0m
Element Name:		**Width:**	0.38m
Location:	Entrance Mayfield Rd	**Height:**	
Material:	Corrugated Steel	**Count:**	1
Element Type:	Round	**Total Quantity:**	8.0m
Environment:	Benign / Moderate / Severe	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all		x		

Comments:

The structure is in good condition.

Recommended Work:	☒ Rehab ☐ Replace ☐ 1-5 years ☒ 6-10 years	**Maintenance Needs:**	☐ Urgent ☐ 1 year ☒ 2 year

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all				

Comments:

Recommended Work:	☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years	**Maintenance Needs:**	☐ Urgent ☐ 1 year ☐ 2 year

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all				

Comments:

Recommended Work:	☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years	**Maintenance Needs:**	☐ Urgent ☐ 1 year ☐ 2 year

* A quantity must be estimated using the appropriate unit (e.g. m^2). Percent should not be used.

Ontario Structure Inspection Manual – Inspection Form

Region of Peel Structure # 1928

Inventory Data:

Structure Name			
Main Hwy/Road #	On ☐ Under ☒	Crossing Type:	☐ Navig. Water ☐ Non-Navig. Water ☐ Rail ☒ Road ☐ Ped. ☐ Other
Hwy/Road Name	Mayfield Rd		
Structure Location	North entrance from Mayfield Rd		
Latitude GPS Coord	E:604182	Longitude	N:4854984
Owner(s)	Region of Peel	Heritage Designation:	☐ Not Cons. ☐ Cons./not App. ☐ List/not Desig. ☐ Desig./not List ☐ Desig. & List
MTO Region	Central	Road Class:	Freeway ☐ Arterial ☐ Collector ☐ Local ☐
MTO District	-	Posted Speed	No. of Lanes
Old County	-	AADT	% Trucks
Geographic Twp.	Brampton	Inspection Route Sequence	
Structure Type	Culvert	Interchange Number	
Total Deck Length	(m)	Interchange Structure Number	
Overall Str. Width	(m)	Min. Vertical Clearance	(m)
Total Deck Area	- (sq.m)	Special Routes:	☐ Transit ☐ Truck ☐ School ☐ Bicycle
Roadway Width	- (m)	Detour Length Around Bridge	(km)
Skew Angle	- (Degrees)	Direction of Structure	W to E
No. of Spans		Fill on Structure	(m)
Span Lengths	The structure was removed.		(m)

Historical Data:

Year Built		Year of Last Major Rehab.	
Last OSIM Inspection	07/25/2005	Last Evaluation	
Last Enhanced OSIM Inspection		Current Load Limit	/ / (tonnes)
Enhanced Access Equipment (ladder, boat, lift, etc.)		Load Limit By-Law #	
Last Underwater Inspection		By-Law Expiry Date	
Last Condition Survey			

Rehab History: (Date/description)

Scheduled Improvements:			
Regional Priority Number		Programmed Work Year	
Nature of Program Work:			

Appraisal Indices:		**Comments**
Fatigue	0	
Seismic	0	
Scour	0	
Flood	0	
Geometrics	0	
Barrier	0	
Curb	0	
Load Capacity	0	

Field Inspection Information:			
Date of Inspection:	January 27,2010	Type of Inspection:	☒ OSIM ☐ Enhanced OSIM
Inspector:	Eric Cheng		
Others in Party:	Alan Chung, Dan Urian		
Access Equipment Used:	Hand Tools, Digital Camera, Measuring Tape		
Weather:	Clear,some flurries		
Temperature:	-3°		

Additional Investigations Required:	Priority		
	None	Normal	Urgent
Material Condition Survey			
Detailed Deck Condition Survey:	x		
Non-destructive Delamination Survey of Asphalt-Covered Deck:	x		
Concrete Substructure Condition Survey:	x		
Detailed Coating Condition Survey:	x		
Detailed Timber Investigation	x		
Post-Tensioned Strand Investigation	x		
Underwater Investigation:	x		
Fatigue Investigation:	x		
Seismic Investigation:	x		
Structure Evaluation:	x		
Monitoring			
Monitoring of Deformations, Settlements and Movements:	x		
Monitoring Crack Widths:	x		

Investigation Notes:

The structure was removed.

Overall Structure Notes:	
Recommended Work on Structure:	☐ None ☐ Minor Rehab. ☐ Major Rehab. ☐ Replace
Timing of Recommended Work:	☐ 1 to 5 years ☐ 6 to 10 years
Overall Comments:	The structure was removed (see photos).
Date of Next Inspection:	

Suspected Performance Deficiencies

01	Load carrying capacity	06	Bearing not uniformly loaded/unstable	12	Slippery surfaces
02	Excessive deformations (deflections & rotations)	07	Jammed expansion joint	13	Flooding/channel blockage
03	Continuing settlement	08	Pedestrian/vehicular hazard	14	Undermining of foundation
04	Continuing movements	09	Rough riding surface	15	Unstable embankments
05	Seized bearings	10	Surface ponding	16	Other
		11	Deck drainage		

Maintenance Needs

01	Lift and Swing Bridge Maintenance	07	Repair to Structural Steel	13	Erosion Control at Bridges
02	Bridge Cleaning	08	Repair of Bridge Concrete	14	Concrete Sealing
03	Bridge Handrail Maintenance	09	Repair of Bridge Timber	15	Rout and Seal
04	Painting Steel Bridge Structures	10	Bailey bridges - Maintenance	16	Bridge Deck Drainage
05	Bridge Deck Joint Repair	11	Animal/Pest Control	17	Scaling (Loose Concrete or ACR Steel)
06	Bridge Bearing Maintenance	12	Bridge Surface Repair	18	Other

Ontario Structure Inspection Manual – Inspection Form

Region of Peel Structure # 1936

Inventory Data:

Structure Name			
Main Hwy/Road #		On ☐ Under ☒	Crossing Type: ☐ Navig. Water ☐ Non-Navig. Water ☐ Rail ☒ Road ☐ Ped. ☐ Other
Hwy/Road Name	Mayfield Rd		
Structure Location	Cross Mayfield Rd		
Latitude GPS Coord	E:604187	Longitude	N:4854957
Owner(s)	Region of Peel	Heritage Designation:	☐ Not Cons. ☐ Cons./not App. ☐ List/not Desig. ☐ Desig./not List ☐ Desig. & List
MTO Region	Central	Road Class:	Freeway ☐ Arterial ☐ Collector ☐ Local ☐
MTO District	-	Posted Speed	No. of Lanes
Old County	-	AADT	% Trucks
Geographic Twp.	Brampton	Inspection Route Sequence	
Structure Type	Culvert	Interchange Number	
Total Deck Length	(m)	Interchange Structure Number	
Overall Str. Width	21.2 (m)	Min. Vertical Clearance	0.7 (m)
Total Deck Area	- (sq.m)	Special Routes:	☐ Transit ☐ Truck ☐ School ☐ Bicycle
Roadway Width	- (m)	Detour Length Around Bridge	(km)
Skew Angle	- (Degrees)	Direction of Structure	W to E
No. of Spans	1	Fill on Structure	0.9 (m)
Span Lengths	0.9 (m)		

Historical Data:

Year Built		Year of Last Major Rehab.	
Last OSIM Inspection	08/10/2005	Last Evaluation	
Last Enhanced OSIM Inspection		Current Load Limit	/ / (tonnes)
Enhanced Access Equipment (ladder, boat, lift, etc.)		Load Limit By-Law #	
Last Underwater Inspection		By-Law Expiry Date	
Last Condition Survey			

Rehab History: (Date/description)

Scheduled Improvements:			
Regional Priority Number		Programmed Work Year	
Nature of Program Work:			

Appraisal Indices:		**Comments**
Fatigue	0	
Seismic	0	
Scour	0	
Flood	0	
Geometrics	0	
Barrier	0	
Curb	0	
Load Capacity	0	

Field Inspection Information:			
Date of Inspection:	January 27,2010	Type of Inspection:	☒ OSIM ☐ Enhanced OSIM
Inspector:	Eric Cheng		
Others in Party:	Alan Chung, Dan Urian		
Access Equipment Used:	Hand Tools, Digital Camera, Measuring Tape		
Weather:	Clear,some flurries		
Temperature:	-3°		

Additional Investigations Required:	Priority		
	None	Normal	Urgent
Material Condition Survey			
Detailed Deck Condition Survey:	x		
Non-destructive Delamination Survey of Asphalt-Covered Deck:	x		
Concrete Substructure Condition Survey:	x		
Detailed Coating Condition Survey:	x		
Detailed Timber Investigation	x		
Post-Tensioned Strand Investigation	x		
Underwater Investigation:	x		
Fatigue Investigation:	x		
Seismic Investigation:	x		
Structure Evaluation:	x		
Monitoring			
Monitoring of Deformations, Settlements and Movements:	x		
Monitoring Crack Widths:	x		

Investigation Notes:

Effective Cross-Section: 83%

Overall Structure Notes:	
Recommended Work on Structure:	☒ None ☐ Minor Rehab. ☐ Major Rehab. ☐ Replace
Timing of Recommended Work:	☐ 1 to 5 years ☒ 6 to 10 years
Overall Comments:	The structure is in excellent condition.
Date of Next Inspection:	

Suspected Performance Deficiencies

01	Load carrying capacity	06	Bearing not uniformly loaded/unstable	12	Slippery surfaces
02	Excessive deformations (deflections & rotations)	07	Jammed expansion joint	13	Flooding/channel blockage
03	Continuing settlement	08	Pedestrian/vehicular hazard	14	Undermining of foundation
04	Continuing movements	09	Rough riding surface	15	Unstable embankments
05	Seized bearings	10	Surface ponding	16	Other
		11	Deck drainage		

Maintenance Needs

01	Lift and Swing Bridge Maintenance	07	Repair to Structural Steel	13	Erosion Control at Bridges
02	Bridge Cleaning	08	Repair of Bridge Concrete	14	Concrete Sealing
03	Bridge Handrail Maintenance	09	Repair of Bridge Timber	15	Rout and Seal
04	Painting Steel Bridge Structures	10	Bailey bridges - Maintenance	16	Bridge Deck Drainage
05	Bridge Deck Joint Repair	11	Animal/Pest Control	17	Scaling (Loose Concrete or ACR Steel)
06	Bridge Bearing Maintenance	12	Bridge Surface Repair	18	Other

Element Data

1936

Element Group:	Culvert	**Length:**	21.2m
Element Name:		**Width:**	0.9m
Location:	Entrance Mayfield Rd	**Height:**	
Material:	Poly	**Count:**	1
Element Type:	Round	**Total Quantity:**	21.2m
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all	x			

Comments:

The structure is in excellent condition.

Recommended Work:	☒ Rehab ☐ Replace	**Maintenance Needs:**	
	☐ 1-5 years ☒ 6-10 years	☐ Urgent ☐ 1 year	☒ 2 year

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all				

Comments:

Recommended Work:	☐ Rehab ☐ Replace	**Maintenance Needs:**	
	☐ 1-5 years ☐ 6-10 years	☐ Urgent ☐ 1 year	☐ 2 year

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all				

Comments:

Recommended Work:	☐ Rehab ☐ Replace	**Maintenance Needs:**	
	☐ 1-5 years ☐ 6-10 years	☐ Urgent ☐ 1 year	☐ 2 year

* A quantity must be estimated using the appropriate unit (e.g. m^2). Percent should not be used.

Ontario Structure Inspection Manual – Inspection Form

Region of Peel Structure # 1937

Inventory Data:

Structure Name			
Main Hwy/Road #		On ☐ Under ☒	Crossing Type: ☐ Navig. Water ☐ Non-Navig. Water ☐ Rail ☒ Road ☐ Ped. ☐ Other
Hwy/Road Name	Mayfield Rd		
Structure Location	Cross Mayfield Rd		
Latitude GPS Coord	E:604278	Longitude	N:4855077
Owner(s)	Region of Peel	Heritage Designation:	☐ Not Cons. ☐ Cons./not App. ☐ List/not Desig. ☐ Desig./not List ☐ Desig. & List
MTO Region	Central	Road Class:	Freeway ☐ Arterial ☐ Collector ☐ Local ☐
MTO District	-	Posted Speed	No. of Lanes
Old County	-	AADT	% Trucks
Geographic Twp.	Brampton	Inspection Route Sequence	
Structure Type	Culvert	Interchange Number	
Total Deck Length	(m)	Interchange Structure Number	
Overall Str. Width	18.4 (m)	Min. Vertical Clearance	0.5 (m)
Total Deck Area	- (sq.m)	Special Routes:	☐ Transit ☐ Truck ☐ School ☐ Bicycle
Roadway Width	- (m)	Detour Length Around Bridge	(km)
Skew Angle	- (Degrees)	Direction of Structure	N to S
No. of Spans	1	Fill on Structure	0.4 (m)
Span Lengths	1.3 (m)		

Historical Data:

Year Built		Year of Last Major Rehab.	
Last OSIM Inspection	08/10/2005	Last Evaluation	
Last Enhanced OSIM Inspection		Current Load Limit	/ / (tonnes)
Enhanced Access Equipment (ladder, boat, lift, etc.)		Load Limit By-Law #	
Last Underwater Inspection		By-Law Expiry Date	
Last Condition Survey			

Rehab History: (Date/description)

Scheduled Improvements:			
Regional Priority Number		Programmed Work Year	
Nature of Program Work:			

Appraisal Indices:		**Comments**
Fatigue	0	
Seismic	0	
Scour	0	
Flood	0	
Geometrics	0	
Barrier	0	
Curb	0	
Load Capacity	0	

Field Inspection Information:			
Date of Inspection:	January 27,2010	Type of Inspection:	☒ OSIM ☐ Enhanced OSIM
Inspector:	Eric Cheng		
Others in Party:	Alan Chung, Dan Urian		
Access Equipment Used:	Hand Tools, Digital Camera, Measuring Tape		
Weather:	Clear,some flurries		
Temperature:	-3°		

Additional Investigations Required:	Priority		
	None	Normal	Urgent
Material Condition Survey			
Detailed Deck Condition Survey:	x		
Non-destructive Delamination Survey of Asphalt-Covered Deck:	x		
Concrete Substructure Condition Survey:	x		
Detailed Coating Condition Survey:	x		
Detailed Timber Investigation	x		
Post-Tensioned Strand Investigation	x		
Underwater Investigation:	x		
Fatigue Investigation:	x		
Seismic Investigation:	x		
Structure Evaluation:	x		
Monitoring			
Monitoring of Deformations, Settlements and Movements:	x		
Monitoring Crack Widths:	x		

Investigation Notes:
Effective Cross-Section:35%

Overall Structure Notes:	
Recommended Work on Structure:	☐ None ☒ Minor Rehab. ☐ Major Rehab. ☐ Replace
Timing of Recommended Work:	☒ 1 to 5 years ☐ 6 to 10 years
Overall Comments:	The structure is in fair condition.Both ends are corroded and south end is broken. There is a bend in the middle.
Date of Next Inspection:	

Suspected Performance Deficiencies

01	Load carrying capacity	06	Bearing not uniformly loaded/unstable	12	Slippery surfaces
02	Excessive deformations (deflections & rotations)	07	Jammed expansion joint	13	Flooding/channel blockage
03	Continuing settlement	08	Pedestrian/vehicular hazard	14	Undermining of foundation
04	Continuing movements	09	Rough riding surface	15	Unstable embankments
05	Seized bearings	10	Surface ponding	16	Other
		11	Deck drainage		

Maintenance Needs

01	Lift and Swing Bridge Maintenance	07	Repair to Structural Steel	13	Erosion Control at Bridges
02	Bridge Cleaning	08	Repair of Bridge Concrete	14	Concrete Sealing
03	Bridge Handrail Maintenance	09	Repair of Bridge Timber	15	Rout and Seal
04	Painting Steel Bridge Structures	10	Bailey bridges - Maintenance	16	Bridge Deck Drainage
05	Bridge Deck Joint Repair	11	Animal/Pest Control	17	Scaling (Loose Concrete or ACR Steel)
06	Bridge Bearing Maintenance	12	Bridge Surface Repair	18	Other

Element Data

1937

Element Group:	Culvert	**Length:**	18.4m
Element Name:		**Width:**	1.3m
Location:	Entrance Mayfield Rd	**Height:**	
Material:	Corrugated Steel	**Count:**	1
Element Type:	Round	**Total Quantity:**	18.4m
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***	**Perform. Deficiencies**
	m^2 / m / each / % / all			x		

Comments: The structure is in fair condition.
The replacement is suggested for both ends.

Recommended Work:	**Maintenance Needs:**
☐ Rehab ☒ Replace ☒ 1-5 years ☐ 6-10 years	☐ Urgent ☐ 1 year ☒ 2 year

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***	**Perform. Deficiencies**
	m^2 / m / each / % / all					

Comments:

Recommended Work:	**Maintenance Needs:**
☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years	☐ Urgent ☐ 1 year ☐ 2 year

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***	**Perform. Deficiencies**
	m^2 / m / each / % / all					

Comments:

Recommended Work:	**Maintenance Needs:**
☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years	☐ Urgent ☐ 1 year ☐ 2 year

* A quantity must be estimated using the appropriate unit (e.g. m^2). Percent should not be used.

Ontario Structure Inspection Manual – Inspection Form

Region of Peel Structure # 1938

Inventory Data:

Structure Name			
Main Hwy/Road #		On ☐ Under ☒	Crossing Type: ☐ Navig. Water ☐ Non-Navig. Water ☐ Rail ☒ Road ☐ Ped. ☐ Other
Hwy/Road Name	Mayfield Rd		
Structure Location	Cross Mayfield Rd		
Latitude GPS Coord	E:604660	Longitude	N:4855561
Owner(s)	Region of Peel	Heritage Designation:	☐ Not Cons. ☐ Cons./not App. ☐ List/not Desig. ☐ Desig./not List ☐ Desig. & List
MTO Region	Central	Road Class:	Freeway ☐ Arterial ☐ Collector ☐ Local ☐
MTO District	-	Posted Speed	No. of Lanes
Old County	-	AADT	% Trucks
Geographic Twp.	Brampton	Inspection Route Sequence	
Structure Type	Culvert	Interchange Number	
Total Deck Length	(m)	Interchange Structure Number	
Overall Str. Width	19.8 (m)	Min. Vertical Clearance	0.45 (m)
Total Deck Area	- (sq.m)	Special Routes:	☐ Transit ☐ Truck ☐ School ☐ Bicycle
Roadway Width	- (m)	Detour Length Around Bridge	(km)
Skew Angle	- (Degrees)	Direction of Structure	N to S
No. of Spans	1	Fill on Structure	1.4 (m)
Span Lengths	1.2 (m)		

Historical Data:

Year Built		Year of Last Major Rehab.	
Last OSIM Inspection	08/10/2005	Last Evaluation	
Last Enhanced OSIM Inspection		Current Load Limit	/ / (tonnes)
Enhanced Access Equipment (ladder, boat, lift, etc.)		Load Limit By-Law #	
Last Underwater Inspection		By-Law Expiry Date	
Last Condition Survey			

Rehab History: (Date/description)

Scheduled Improvements:			
Regional Priority Number		Programmed Work Year	
Nature of Program Work:			

Appraisal Indices:		**Comments**
Fatigue	0	
Seismic	0	
Scour	0	
Flood	0	
Geometrics	0	
Barrier	0	
Curb	0	
Load Capacity	0	

Ontario Structure Inspection Manual – Inspection Form **MTO Site Number:** 1938

Field Inspection Information:			
Date of Inspection:	January 27,2010	Type of Inspection:	☒ OSIM ☐ Enhanced OSIM
Inspector:	Eric Cheng		
Others in Party:	Alan Chung, Dan Urian		
Access Equipment Used:	Hand Tools, Digital Camera, Measuring Tape		
Weather:	Clear,some flurries		
Temperature:	-3°		

Additional Investigations Required:	Priority		
	None	Normal	Urgent
Material Condition Survey			
Detailed Deck Condition Survey:	x		
Non-destructive Delamination Survey of Asphalt-Covered Deck:	x		
Concrete Substructure Condition Survey:	x		
Detailed Coating Condition Survey:	x		
Detailed Timber Investigation	x		
Post-Tensioned Strand Investigation	x		
Underwater Investigation:	x		
Fatigue Investigation:	x		
Seismic Investigation:	x		
Structure Evaluation:	x		
Monitoring			
Monitoring of Deformations, Settlements and Movements:	x		
Monitoring Crack Widths:	x		

Investigation Notes:

Effective Cross-Section:34%

Overall Structure Notes:	
Recommended Work on Structure:	☒ None ☐ Minor Rehab. ☐ Major Rehab. ☐ Replace
Timing of Recommended Work:	☒ 1 to 5 years ☐ 6 to 10 years
Overall Comments:	The structure is in good condition. South end is rusted and the needs to be replaced
Date of Next Inspection:	

Suspected Performance Deficiencies

01	Load carrying capacity	06	Bearing not uniformly loaded/unstable	12	Slippery surfaces
02	Excessive deformations (deflections & rotations)	07	Jammed expansion joint	13	Flooding/channel blockage
03	Continuing settlement	08	Pedestrian/vehicular hazard	14	Undermining of foundation
04	Continuing movements	09	Rough riding surface	15	Unstable embankments
05	Seized bearings	10	Surface ponding	16	Other
		11	Deck drainage		

Maintenance Needs

01	Lift and Swing Bridge Maintenance	07	Repair to Structural Steel	13	Erosion Control at Bridges
02	Bridge Cleaning	08	Repair of Bridge Concrete	14	Concrete Sealing
03	Bridge Handrail Maintenance	09	Repair of Bridge Timber	15	Rout and Seal
04	Painting Steel Bridge Structures	10	Bailey bridges - Maintenance	16	Bridge Deck Drainage
05	Bridge Deck Joint Repair	11	Animal/Pest Control	17	Scaling (Loose Concrete or ACR Steel)
06	Bridge Bearing Maintenance	12	Bridge Surface Repair	18	Other

Element Data

1938

Element Group:	Culvert	**Length:**	7.8m
Element Name:		**Width:**	0.46m
Location:	Entrance Mayfield Rd	**Height:**	
Material:	Corrugated Steel	**Count:**	1
Element Type:	Round	**Total Quantity:**	7.8m
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all		x		

Comments: The structure is in good condition. South end is rusted and the needs to be replaced.

Recommended Work:	**Maintenance Needs:**
☒ Rehab ☐ Replace ☒ 1-5 years ☐ 6-10 years	☐ Urgent ☐ 1 year ☒ 2 year

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all				

Comments:

Recommended Work:	**Maintenance Needs:**
☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years	☐ Urgent ☐ 1 year ☐ 2 year

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all				

Comments:

Recommended Work:	**Maintenance Needs:**
☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years	☐ Urgent ☐ 1 year ☐ 2 year

* A quantity must be estimated using the appropriate unit (e.g. m^2). Percent should not be used.

Ontario Structure Inspection Manual – Inspection Form

Region of Peel Structure # 1939

Inventory Data:

Structure Name			
Main Hwy/Road #		On ☐ Under ☒	Crossing Type: ☐ Navig. Water ☐ Non-Navig. Water ☐ Rail ☒ Road ☐ Ped. ☐ Other
Hwy/Road Name	Mayfield Rd		
Structure Location	North entrance from Mayfield Rd		
Latitude GPS Coord	E:604652	Longitude	N:4855569
Owner(s)	Region of Peel	Heritage Designation:	☐ Not Cons. ☐ Cons./not App. ☐ List/not Desig. ☐ Desig./not List ☐ Desig. & List
MTO Region	Central	Road Class:	Freeway ☐ Arterial ☐ Collector ☐ Local ☐
MTO District	-	Posted Speed	No. of Lanes
Old County	-	AADT	% Trucks
Geographic Twp.	Brampton	Inspection Route Sequence	
Structure Type	Culvert	Interchange Number	
Total Deck Length	(m)	Interchange Structure Number	
Overall Str. Width	(m)	Min. Vertical Clearance	(m)
Total Deck Area	(sq.m)	Special Routes:	☐ Transit ☐ Truck ☐ School ☐ Bicycle
Roadway Width	(m)	Detour Length Around Bridge	(km)
Skew Angle	(Degrees)	Direction of Structure	
No. of Spans		Fill on Structure	(m)
Span Lengths	The structure could not be located.		(m)

Historical Data:

Year Built		Year of Last Major Rehab.	
Last OSIM Inspection	08/10/2005	Last Evaluation	
Last Enhanced OSIM Inspection		Current Load Limit	/ / (tonnes)
Enhanced Access Equipment (ladder, boat, lift, etc.)		Load Limit By-Law #	
Last Underwater Inspection		By-Law Expiry Date	
Last Condition Survey			

Rehab History: (Date/description)

Scheduled Improvements:			
Regional Priority Number		Programmed Work Year	
Nature of Program Work:			

Appraisal Indices:		**Comments**
Fatigue	0	
Seismic	0	
Scour	0	
Flood	0	
Geometrics	0	
Barrier	0	
Curb	0	
Load Capacity	0	

Field Inspection Information:			
Date of Inspection:	January 27,2010	Type of Inspection:	☒ OSIM ☐ Enhanced OSIM
Inspector:	Eric Cheng		
Others in Party:	Alan Chung, Dan Urian		
Access Equipment Used:	Hand Tools, Digital Camera, Measuring Tape		
Weather:	Clear,some flurries		
Temperature:	-3°		

Additional Investigations Required:	Priority		
	None	Normal	Urgent
Material Condition Survey			
Detailed Deck Condition Survey:	x		
Non-destructive Delamination Survey of Asphalt-Covered Deck:	x		
Concrete Substructure Condition Survey:	x		
Detailed Coating Condition Survey:	x		
Detailed Timber Investigation	x		
Post-Tensioned Strand Investigation	x		
Underwater Investigation:	x		
Fatigue Investigation:	x		
Seismic Investigation:	x		
Structure Evaluation:	x		
Monitoring			
Monitoring of Deformations, Settlements and Movements:	x		
Monitoring Crack Widths:	x		

Investigation Notes:

The structure could not be located.

Overall Structure Notes:	
Recommended Work on Structure:	☐ None ☐ Minor Rehab. ☐ Major Rehab. ☐ Replace
Timing of Recommended Work:	☐ 1 to 5 years ☐ 6 to 10 years
Overall Comments:	The structure could not be located.
Date of Next Inspection:	

Suspected Performance Deficiencies

01	Load carrying capacity	06	Bearing not uniformly loaded/unstable	12	Slippery surfaces
02	Excessive deformations (deflections & rotations)	07	Jammed expansion joint	13	Flooding/channel blockage
03	Continuing settlement	08	Pedestrian/vehicular hazard	14	Undermining of foundation
04	Continuing movements	09	Rough riding surface	15	Unstable embankments
05	Seized bearings	10	Surface ponding	16	Other
		11	Deck drainage		

Maintenance Needs

01	Lift and Swing Bridge Maintenance	07	Repair to Structural Steel	13	Erosion Control at Bridges
02	Bridge Cleaning	08	Repair of Bridge Concrete	14	Concrete Sealing
03	Bridge Handrail Maintenance	09	Repair of Bridge Timber	15	Rout and Seal
04	Painting Steel Bridge Structures	10	Bailey bridges - Maintenance	16	Bridge Deck Drainage
05	Bridge Deck Joint Repair	11	Animal/Pest Control	17	Scaling (Loose Concrete or ACR Steel)
06	Bridge Bearing Maintenance	12	Bridge Surface Repair	18	Other

Ontario Structure Inspection Manual – Inspection Form

Region of Peel Structure # 2924

Inventory Data:

Structure Name			
Main Hwy/Road #	50 On ☐ Under ☒	Crossing Type:	☐ Navig. Water ☐ Non-Navig. Water ☐ Rail ☒ Road ☐ Ped. ☐ Other
Hwy/Road Name	Hwy 50		
Structure Location	East entrance from Hwy50		
Latitude GPS Coord	E:605692	Longitude	N:4853990
Owner(s)	Region of Peel	Heritage Designation:	☐ Not Cons. ☐ Cons./not App. ☐ List/not Desig. ☐ Desig./not List ☐ Desig. & List
MTO Region	Central	Road Class:	Freeway ☐ Arterial ☐ Collector ☐ Local ☐
MTO District	-	Posted Speed	No. of Lanes
Old County	-	AADT	% Trucks
Geographic Twp.	Brampton	Inspection Route Sequence	
Structure Type	Culvert	Interchange Number	
Total Deck Length	(m)	Interchange Structure Number	
Overall Str. Width	17.2 (m)	Min. Vertical Clearance	0.3 (m)
Total Deck Area	- (sq.m)	Special Routes:	☐ Transit ☐ Truck ☐ School ☐ Bicycle
Roadway Width	- (m)	Detour Length Around Bridge	(km)
Skew Angle	- (Degrees)	Direction of Structure	N to S
No. of Spans	1	Fill on Structure	0.4 (m)
Span Lengths	0.46 (m)		

Historical Data:

Year Built		Year of Last Major Rehab.	
Last OSIM Inspection	06/07/2005	Last Evaluation	
Last Enhanced OSIM Inspection		Current Load Limit	/ / (tonnes)
Enhanced Access Equipment (ladder, boat, lift, etc.)		Load Limit By-Law #	
Last Underwater Inspection		By-Law Expiry Date	
Last Condition Survey			

Rehab History: (Date/description)

Scheduled Improvements:			
Regional Priority Number		Programmed Work Year	
Nature of Program Work:			

Appraisal Indices:		**Comments**
Fatigue	0	
Seismic	0	
Scour	0	
Flood	0	
Geometrics	0	
Barrier	0	
Curb	0	
Load Capacity	0	

Ontario Structure Inspection Manual – Inspection Form **MTO Site Number:** 2924

Field Inspection Information:			
Date of Inspection:	January 27,2010	Type of Inspection:	☒ OSIM ☐ Enhanced OSIM
Inspector:	Eric Cheng		
Others in Party:	Alan Chung, Dan Urian		
Access Equipment Used:	Hand Tools, Digital Camera, Measuring Tape		
Weather:	Clear,some flurries		
Temperature:	-3°		

Additional Investigations Required:	Priority		
	None	Normal	Urgent
Material Condition Survey			
Detailed Deck Condition Survey:	x		
Non-destructive Delamination Survey of Asphalt-Covered Deck:	x		
Concrete Substructure Condition Survey:	x		
Detailed Coating Condition Survey:	x		
Detailed Timber Investigation	x		
Post-Tensioned Strand Investigation	x		
Underwater Investigation:	x		
Fatigue Investigation:	x		
Seismic Investigation:	x		
Structure Evaluation:	x		
Monitoring			
Monitoring of Deformations, Settlements and Movements:	x		
Monitoring Crack Widths:	x		
Investigation Notes: Effective Cross-Section:69%			

Overall Structure Notes:	
Recommended Work on Structure:	☐ None ☒ Minor Rehab. ☐ Major Rehab. ☐ Replace
Timing of Recommended Work:	☒ 1 to 5 years ☐ 6 to 10 years
Overall Comments:	The structure is in good condition. North end of structure is caved-in and to be replaced.
Date of Next Inspection:	

Suspected Performance Deficiencies

01	Load carrying capacity	06	Bearing not uniformly loaded/unstable	12	Slippery surfaces
02	Excessive deformations (deflections & rotations)	07	Jammed expansion joint	13	Flooding/channel blockage
03	Continuing settlement	08	Pedestrian/vehicular hazard	14	Undermining of foundation
04	Continuing movements	09	Rough riding surface	15	Unstable embankments
05	Seized bearings	10	Surface ponding	16	Other
		11	Deck drainage		

Maintenance Needs

01	Lift and Swing Bridge Maintenance	07	Repair to Structural Steel	13	Erosion Control at Bridges
02	Bridge Cleaning	08	Repair of Bridge Concrete	14	Concrete Sealing
03	Bridge Handrail Maintenance	09	Repair of Bridge Timber	15	Rout and Seal
04	Painting Steel Bridge Structures	10	Bailey bridges - Maintenance	16	Bridge Deck Drainage
05	Bridge Deck Joint Repair	11	Animal/Pest Control	17	Scaling (Loose Concrete or ACR Steel)
06	Bridge Bearing Maintenance	12	Bridge Surface Repair	18	Other

Element Data

2924

Element Group:	Culvert	**Length:**	17.2m
Element Name:		**Width:**	0.46m
Location:	Entrance from Hwy50	**Height:**	
Material:	Corrugated Steel	**Count:**	1
Element Type:	Round Culvert	**Total Quantity:**	17.2m
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all			x	

Comments: North end of structure is caved-in and to be replaced.

Recommended Work:	☐ Rehab ☒ Replace	**Maintenance Needs:**	
	☒ 1-5 years ☐ 6-10 years	☒ Urgent ☐ 1 year ☐ 2 year	

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all				

Comments:

Recommended Work:	☐ Rehab ☐ Replace	**Maintenance Needs:**	
	☐ 1-5 years ☐ 6-10 years	☐ Urgent ☐ 1 year ☐ 2 year	

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all				

Comments:

Recommended Work:	☐ Rehab ☐ Replace	**Maintenance Needs:**	
	☐ 1-5 years ☐ 6-10 years	☐ Urgent ☐ 1 year ☐ 2 year	

* A quantity must be estimated using the appropriate unit (e.g. m^2). Percent should not be used.

Ontario Structure Inspection Manual – Inspection Form

Region of Peel Structure # 2925

Inventory Data:

Structure Name			
Main Hwy/Road #	50 On ☐ Under ☒	Crossing Type:	☐ Navig. Water ☐ Non-Navig. Water ☐ Rail ☒ Road ☐ Ped. ☐ Other
Hwy/Road Name	Hwy 50		
Structure Location	West entrance		
Latitude GPS Coord	E:604915	Longitude	N:4855648
Owner(s)	Region of Peel	Heritage Designation:	☐ Not Cons. ☐ Cons./not App. ☐ List/not Desig. ☐ Desig./not List ☐ Desig. & List
MTO Region	Central	Road Class:	Freeway ☐ Arterial ☐ Collector ☐ Local ☐
MTO District	-	Posted Speed	No. of Lanes
Old County	-	AADT	% Trucks
Geographic Twp.	Brampton	Inspection Route Sequence	
Structure Type	Culvert	Interchange Number	
Total Deck Length	(m)	Interchange Structure Number	
Overall Str. Width	6.4 (m)	Min. Vertical Clearance	0.19 (m)
Total Deck Area	- (sq.m)	Special Routes:	☐ Transit ☐ Truck ☐ School ☐ Bicycle
Roadway Width	- (m)	Detour Length Around Bridge	(km)
Skew Angle	- (Degrees)	Direction of Structure	N to S
No. of Spans	1	Fill on Structure	0.8 (m)
Span Lengths	0.35 (m)		

Historical Data:

Year Built		Year of Last Major Rehab.	
Last OSIM Inspection	11/07/2005	Last Evaluation	
Last Enhanced OSIM Inspection		Current Load Limit	/ / (tonnes)
Enhanced Access Equipment (ladder, boat, lift, etc.)		Load Limit By-Law #	
Last Underwater Inspection		By-Law Expiry Date	
Last Condition Survey			

Rehab History: (Date/description)

Scheduled Improvements:			
Regional Priority Number		Programmed Work Year	
Nature of Program Work:			

Appraisal Indices:		**Comments**
Fatigue	0	
Seismic	0	
Scour	0	
Flood	0	
Geometrics	0	
Barrier	0	
Curb	0	
Load Capacity	0	

Field Inspection Information:			
Date of Inspection:	January 27,2010	Type of Inspection:	☒ OSIM ☐ Enhanced OSIM
Inspector:	Eric Cheng		
Others in Party:	Alan Chung, Dan Urian		
Access Equipment Used:	Hand Tools, Digital Camera, Measuring Tape		
Weather:	Clear,some flurries		
Temperature:	-3°		

Additional Investigations Required:	Priority		
	None	Normal	Urgent
Material Condition Survey			
Detailed Deck Condition Survey:	x		
Non-destructive Delamination Survey of Asphalt-Covered Deck:	x		
Concrete Substructure Condition Survey:	x		
Detailed Coating Condition Survey:	x		
Detailed Timber Investigation	x		
Post-Tensioned Strand Investigation	x		
Underwater Investigation:	x		
Fatigue Investigation:	x		
Seismic Investigation:	x		
Structure Evaluation:	x		
Monitoring			
Monitoring of Deformations, Settlements and Movements:	x		
Monitoring Crack Widths:	x		

Investigation Notes:

Effective Cross-Section: 55%

Overall Structure Notes:	
Recommended Work on Structure:	☒ None ☐ Minor Rehab. ☐ Major Rehab. ☐ Replace
Timing of Recommended Work:	☐ 1 to 5 years ☒ 6 to 10 years
Overall Comments:	The structure is in good condition.
Date of Next Inspection:	

Suspected Performance Deficiencies

01	Load carrying capacity	06	Bearing not uniformly loaded/unstable	12	Slippery surfaces
02	Excessive deformations (deflections & rotations)	07	Jammed expansion joint	13	Flooding/channel blockage
03	Continuing settlement	08	Pedestrian/vehicular hazard	14	Undermining of foundation
04	Continuing movements	09	Rough riding surface	15	Unstable embankments
05	Seized bearings	10	Surface ponding	16	Other
		11	Deck drainage		

Maintenance Needs

01	Lift and Swing Bridge Maintenance	07	Repair to Structural Steel	13	Erosion Control at Bridges
02	Bridge Cleaning	08	Repair of Bridge Concrete	14	Concrete Sealing
03	Bridge Handrail Maintenance	09	Repair of Bridge Timber	15	Rout and Seal
04	Painting Steel Bridge Structures	10	Bailey bridges - Maintenance	16	Bridge Deck Drainage
05	Bridge Deck Joint Repair	11	Animal/Pest Control	17	Scaling (Loose Concrete or ACR Steel)
06	Bridge Bearing Maintenance	12	Bridge Surface Repair	18	Other

Element Data

2925

Element Group:	Culvert	**Length:**	6.34m
Element Name:		**Width:**	0.35m
Location:	East entrance Hwy50	**Height:**	
Material:	Poly	**Count:**	1
Element Type:	Round Culvert	**Total Quantity:**	6.34m
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***	**Perform. Deficiencies**
	m^2 / m / each / % / all		x			

Comments:

The structure is in good condition.

Recommended Work:	☒ Rehab ☐ Replace ☐ 1-5 years ☒ 6-10 years	**Maintenance Needs:**	☐ Urgent ☐ 1 year ☒ 2 year

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***	**Perform. Deficiencies**
	m^2 / m / each / % / all					

Comments:

Recommended Work:	☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years	**Maintenance Needs:**	☐ Urgent ☐ 1 year ☐ 2 year

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***	**Perform. Deficiencies**
	m^2 / m / each / % / all					

Comments:

Recommended Work:	☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years	**Maintenance Needs:**	☐ Urgent ☐ 1 year ☐ 2 year

* A quantity must be estimated using the appropriate unit (e.g. m^2). Percent should not be used.

Element Data

2926

Element Group:	Culvert	**Length:**	16.4m
Element Name:		**Width:**	0.46m
Location:	West entrance Hwy50	**Height:**	
Material:	Corrugated Steel	**Count:**	1
Element Type:	Round Culvert	**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all				x

Comments:
The damaged section must be replaced.

Recommended Work:	**Maintenance Needs:**
☒ Rehab ☐ Replace	
☒ 1-5 years ☐ 6-10 years	☐ Urgent ☐ 1 year ☒ 2 year

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all				

Comments:

Recommended Work:	**Maintenance Needs:**
☐ Rehab ☐ Replace	
☐ 1-5 years ☐ 6-10 years	☐ Urgent ☐ 1 year ☐ 2 year

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all				

Comments:

Recommended Work:	**Maintenance Needs:**
☐ Rehab ☐ Replace	
☐ 1-5 years ☐ 6-10 years	☐ Urgent ☐ 1 year ☐ 2 year

* A quantity must be estimated using the appropriate unit (e.g. m^2). Percent should not be used.

Ontario Structure Inspection Manual – Inspection Form **MTO Site Number:** 2926

Field Inspection Information:			
Date of Inspection:	January 27,2010	Type of Inspection:	☒ OSIM ☐ Enhanced OSIM
Inspector:	Eric Cheng		
Others in Party:	Alan Chung, Dan Urian		
Access Equipment Used:	Hand Tools, Digital Camera, Measuring Tape		
Weather:	Clear,some flurries		
Temperature:	-3°		

Additional Investigations Required:	Priority		
	None	Normal	Urgent
Material Condition Survey			
Detailed Deck Condition Survey:	x		
Non-destructive Delamination Survey of Asphalt-Covered Deck:	x		
Concrete Substructure Condition Survey:	x		
Detailed Coating Condition Survey:	x		
Detailed Timber Investigation	x		
Post-Tensioned Strand Investigation	x		
Underwater Investigation:	x		
Fatigue Investigation:	x		
Seismic Investigation:	x		
Structure Evaluation:	x		
Monitoring			
Monitoring of Deformations, Settlements and Movements:	x		
Monitoring Crack Widths:	x		
Investigation Notes: Effective Cross-Section:56%			

Overall Structure Notes:	
Recommended Work on Structure:	☐ None ☒ Minor Rehab. ☐ Major Rehab. ☐ Replace
Timing of Recommended Work:	☒ 1 to 5 years ☐ 6 to 10 years
Overall Comments:	The culvert is deformed about 1.2m from end.
Date of Next Inspection:	

Suspected Performance Deficiencies

01	Load carrying capacity	06	Bearing not uniformly loaded/unstable	12	Slippery surfaces
02	Excessive deformations (deflections & rotations)	07	Jammed expansion joint	13	Flooding/channel blockage
03	Continuing settlement	08	Pedestrian/vehicular hazard	14	Undermining of foundation
04	Continuing movements	09	Rough riding surface	15	Unstable embankments
05	Seized bearings	10	Surface ponding	16	Other
		11	Deck drainage		

Maintenance Needs

01	Lift and Swing Bridge Maintenance	07	Repair to Structural Steel	13	Erosion Control at Bridges
02	Bridge Cleaning	08	Repair of Bridge Concrete	14	Concrete Sealing
03	Bridge Handrail Maintenance	09	Repair of Bridge Timber	15	Rout and Seal
04	Painting Steel Bridge Structures	10	Bailey bridges - Maintenance	16	Bridge Deck Drainage
05	Bridge Deck Joint Repair	11	Animal/Pest Control	17	Scaling (Loose Concrete or ACR Steel)
06	Bridge Bearing Maintenance	12	Bridge Surface Repair	18	Other

Scheduled Improvements:			
Regional Priority Number		Programmed Work Year	
Nature of Program Work:			

Appraisal Indices:		**Comments**
Fatigue	0	
Seismic	0	
Scour	0	
Flood	0	
Geometrics	0	
Barrier	0	
Curb	0	
Load Capacity	0	

Ontario Structure Inspection Manual – Inspection Form

Region of Peel Structure # 2926

Inventory Data:

Structure Name			
Main Hwy/Road #	50	On ☐ Under ☒	Crossing Type: ☐ Navig. Water ☐ Non-Navig. Water ☐ Rail ☒ Road ☐ Ped. ☐ Other
Hwy/Road Name	Hwy50		
Structure Location	West entrance from Hwy50		
Latitude GPS Coord	E:604938	Longitude	N:4855611
Owner(s)	Region of Peel	Heritage Designation:	☐ Not Cons. ☐ Cons./not App. ☐ List/not Desig. ☐ Desig./not List ☐ Desig. & List
MTO Region	Central	Road Class:	Freeway ☐ Arterial ☐ Collector ☐ Local ☐
MTO District	-	Posted Speed	No. of Lanes
Old County	-	AADT	% Trucks
Geographic Twp.	Brampton	Inspection Route Sequence	
Structure Type	Culvert	Interchange Number	
Total Deck Length	(m)	Interchange Structure Number	
Overall Str. Width	16.4 (m)	Min. Vertical Clearance	0.25 (m)
Total Deck Area	- (sq.m)	Special Routes:	☐ Transit ☐ Truck ☐ School ☐ Bicycle
Roadway Width	- (m)	Detour Length Around Bridge	(km)
Skew Angle	- (Degrees)	Direction of Structure	W to E
No. of Spans	1	Fill on Structure	0.6 (m)
Span Lengths	0.46 (m)		

Historical Data:

Year Built		Year of Last Major Rehab.	
Last OSIM Inspection	11/07/2005	Last Evaluation	
Last Enhanced OSIM Inspection		Current Load Limit	/ / (tonnes)
Enhanced Access Equipment (ladder, boat, lift, etc.)		Load Limit By-Law #	
Last Underwater Inspection		By-Law Expiry Date	
Last Condition Survey			

Rehab History: (Date/description)

Ontario Structure Inspection Manual – Inspection Form

Region of Peel Structure # 2927

Inventory Data:

Structure Name			
Main Hwy/Road #	50 On ☐ Under ☒	Crossing Type:	☐ Navig. Water ☐ Non-Navig. Water ☐ Rail ☒ Road ☐ Ped. ☐ Other
Hwy/Road Name	Hwy 50		
Structure Location	West field entrance from Hwy50		
Latitude GPS Coord	E:604990	Longitude	N:4855489
Owner(s)	Region of Peel	Heritage Designation:	☐ Not Cons. ☐ Cons./not App. ☐ List/not Desig. ☐ Desig./not List ☐ Desig. & List
MTO Region	Central	Road Class:	Freeway ☐ Arterial ☐ Collector ☐ Local ☐
MTO District	-	Posted Speed	No. of Lanes
Old County	-	AADT	% Trucks
Geographic Twp.	Brampton	Inspection Route Sequence	
Structure Type	Culvert	Interchange Number	
Total Deck Length	(m)	Interchange Structure Number	
Overall Str. Width	14.0 (m)	Min. Vertical Clearance	0.3 (m)
Total Deck Area	- (sq.m)	Special Routes:	☐ Transit ☐ Truck ☐ School ☐ Bicycle
Roadway Width	- (m)	Detour Length Around Bridge	(km)
Skew Angle	- (Degrees)	Direction of Structure	W to E
No. of Spans	1	Fill on Structure	0.7 (m)
Span Lengths	0.46 (m)		

Historical Data:

Year Built		Year of Last Major Rehab.	
Last OSIM Inspection	11/07/2005	Last Evaluation	
Last Enhanced OSIM Inspection		Current Load Limit	/ / (tonnes)
Enhanced Access Equipment (ladder, boat, lift, etc.)		Load Limit By-Law #	
Last Underwater Inspection		By-Law Expiry Date	
Last Condition Survey			

Rehab History: (Date/description)

Scheduled Improvements:			
Regional Priority Number		Programmed Work Year	
Nature of Program Work:			

Appraisal Indices:		**Comments**
Fatigue	0	
Seismic	0	
Scour	0	
Flood	0	
Geometrics	0	
Barrier	0	
Curb	0	
Load Capacity	0	

Ontario Structure Inspection Manual – Inspection Form

MTO Site Number: 2927

Field Inspection Information:			
Date of Inspection:	January 27,2010	Type of Inspection:	☒ OSIM ☐ Enhanced OSIM
Inspector:	Eric Cheng		
Others in Party:	Alan Chung, Dan Urian		
Access Equipment Used:	Hand Tools, Digital Camera, Measuring Tape		
Weather:	Clear,some flurries		
Temperature:	-3°		

Additional Investigations Required:	Priority		
	None	Normal	Urgent
Material Condition Survey			
Detailed Deck Condition Survey:	x		
Non-destructive Delamination Survey of Asphalt-Covered Deck:	x		
Concrete Substructure Condition Survey:	x		
Detailed Coating Condition Survey:	x		
Detailed Timber Investigation	x		
Post-Tensioned Strand Investigation	x		
Underwater Investigation:	x		
Fatigue Investigation:	x		
Seismic Investigation:	x		
Structure Evaluation:	x		
Monitoring			
Monitoring of Deformations, Settlements and Movements:	x		
Monitoring Crack Widths:	x		

Investigation Notes:

Effective Cross-Section: 69%

Overall Structure Notes:	
Recommended Work on Structure:	☒ None ☐ Minor Rehab. ☐ Major Rehab. ☐ Replace
Timing of Recommended Work:	☐ 1 to 5 years ☒ 6 to 10 years
Overall Comments:	The structure is in good condition.
Date of Next Inspection:	

Suspected Performance Deficiencies

01	Load carrying capacity	06	Bearing not uniformly loaded/unstable	12	Slippery surfaces
02	Excessive deformations (deflections & rotations)	07	Jammed expansion joint	13	Flooding/channel blockage
03	Continuing settlement	08	Pedestrian/vehicular hazard	14	Undermining of foundation
04	Continuing movements	09	Rough riding surface	15	Unstable embankments
05	Seized bearings	10	Surface ponding	16	Other
		11	Deck drainage		

Maintenance Needs

01	Lift and Swing Bridge Maintenance	07	Repair to Structural Steel	13	Erosion Control at Bridges
02	Bridge Cleaning	08	Repair of Bridge Concrete	14	Concrete Sealing
03	Bridge Handrail Maintenance	09	Repair of Bridge Timber	15	Rout and Seal
04	Painting Steel Bridge Structures	10	Bailey bridges - Maintenance	16	Bridge Deck Drainage
05	Bridge Deck Joint Repair	11	Animal/Pest Control	17	Scaling (Loose Concrete or ACR Steel)
06	Bridge Bearing Maintenance	12	Bridge Surface Repair	18	Other

Element Data

2927

Element Group:	Culvert	**Length:**	14.0m
Element Name:		**Width:**	0.46m
Location:	Entrance Hwy50	**Height:**	
Material:	Corrugated Steel	**Count:**	1
Element Type:	Round	**Total Quantity:**	
Environment:	Benign / Moderate / Severe	**Limited Inspection** ☐	
Protection System:			

Condition Data:	Units	Exc.	Good	Fair	Poor*	Perform. Deficiencies
	m^2 / m / each / % / all		x			

Comments: The structure is in good condition.

Recommended Work: ☒ Rehab ☐ Replace ☐ 1-5 years ☒ 6-10 years	**Maintenance Needs:** ☐ Urgent ☐ 1 year ☒ 2 year

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	Benign / Moderate / Severe	**Limited Inspection** ☐	
Protection System:			

Condition Data:	Units	Exc.	Good	Fair	Poor*	Perform. Deficiencies
	m^2 / m / each / % / all					

Comments:

Recommended Work: ☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years	**Maintenance Needs:** ☐ Urgent ☐ 1 year ☐ 2 year

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	Benign / Moderate / Severe	**Limited Inspection** ☐	
Protection System:			

Condition Data:	Units	Exc.	Good	Fair	Poor*	Perform. Deficiencies
	m^2 / m / each / % / all					

Comments:

Recommended Work: ☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years	**Maintenance Needs:** ☐ Urgent ☐ 1 year ☐ 2 year

* A quantity must be estimated using the appropriate unit (e.g. m^2). Percent should not be used.

Ontario Structure Inspection Manual – Inspection Form

Region of Peel Structure # 2928

Inventory Data:

Structure Name			
Main Hwy/Road #	50 On ☐ Under ☒	Crossing Type:	☐ Navig. Water ☐ Non-Navig. Water ☐ Rail ☒ Road ☐ Ped. ☐ Other
Hwy/Road Name	Hwy 50		
Structure Location	West entrance from Hwy50		
Latitude GPS Coord	E:605128	Longitude	N:4855179
Owner(s)	Region of Peel	Heritage Designation:	☐ Not Cons. ☐ Cons./not App. ☐ List/not Desig. ☐ Desig./not List ☐ Desig. & List
MTO Region	Central	Road Class:	Freeway ☐ Arterial ☐ Collector ☐ Local ☐
MTO District	-	Posted Speed	No. of Lanes
Old County	-	AADT	% Trucks
Geographic Twp.	Brampton	Inspection Route Sequence	
Structure Type	Culvert	Interchange Number	
Total Deck Length	(m)	Interchange Structure Number	
Overall Str. Width	14.4 (m)	Min. Vertical Clearance	0.25 (m)
Total Deck Area	- (sq.m)	Special Routes:	☐ Transit ☐ Truck ☐ School ☐ Bicycle
Roadway Width	- (m)	Detour Length Around Bridge	(km)
Skew Angle	- (Degrees)	Direction of Structure	N to S
No. of Spans	1	Fill on Structure	0.4 (m)
Span Lengths	0.46 (m)		

Historical Data:

Year Built		Year of Last Major Rehab.	
Last OSIM Inspection	11/07/2005	Last Evaluation	
Last Enhanced OSIM Inspection		Current Load Limit	/ / (tonnes)
Enhanced Access Equipment (ladder, boat, lift, etc.)		Load Limit By-Law #	
Last Underwater Inspection		By-Law Expiry Date	
Last Condition Survey			

Rehab History: (Date/description)

Scheduled Improvements:			
Regional Priority Number		Programmed Work Year	
Nature of Program Work:			

Appraisal Indices:		**Comments**
Fatigue	0	
Seismic	0	
Scour	0	
Flood	0	
Geometrics	0	
Barrier	0	
Curb	0	
Load Capacity	0	

Field Inspection Information:			
Date of Inspection:	January 27,2010	Type of Inspection:	☒ OSIM ☐ Enhanced OSIM
Inspector:	Eric Cheng		
Others in Party:	Alan Chung, Dan Urian		
Access Equipment Used:	Hand Tools, Digital Camera, Measuring Tape		
Weather:	Clear,some flurries		
Temperature:	-3°		

Additional Investigations Required:	Priority		
	None	Normal	Urgent
Material Condition Survey			
Detailed Deck Condition Survey:	x		
Non-destructive Delamination Survey of Asphalt-Covered Deck:	x		
Concrete Substructure Condition Survey:	x		
Detailed Coating Condition Survey:	x		
Detailed Timber Investigation	x		
Post-Tensioned Strand Investigation	x		
Underwater Investigation:	x		
Fatigue Investigation:	x		
Seismic Investigation:	x		
Structure Evaluation:	x		
Monitoring			
Monitoring of Deformations, Settlements and Movements:	x		
Monitoring Crack Widths:	x		
Investigation Notes: Effective Cross-Section:56%			

Overall Structure Notes:	
Recommended Work on Structure:	☒ None ☐ Minor Rehab. ☐ Major Rehab. ☐ Replace
Timing of Recommended Work:	☐ 1 to 5 years ☒ 6 to 10 years
Overall Comments:	The structure is in good condition.
Date of Next Inspection:	

Suspected Performance Deficiencies

01	Load carrying capacity	06	Bearing not uniformly loaded/unstable	12	Slippery surfaces
02	Excessive deformations (deflections & rotations)	07	Jammed expansion joint	13	Flooding/channel blockage
03	Continuing settlement	08	Pedestrian/vehicular hazard	14	Undermining of foundation
04	Continuing movements	09	Rough riding surface	15	Unstable embankments
05	Seized bearings	10	Surface ponding	16	Other
		11	Deck drainage		

Maintenance Needs

01	Lift and Swing Bridge Maintenance	07	Repair to Structural Steel	13	Erosion Control at Bridges
02	Bridge Cleaning	08	Repair of Bridge Concrete	14	Concrete Sealing
03	Bridge Handrail Maintenance	09	Repair of Bridge Timber	15	Rout and Seal
04	Painting Steel Bridge Structures	10	Bailey bridges - Maintenance	16	Bridge Deck Drainage
05	Bridge Deck Joint Repair	11	Animal/Pest Control	17	Scaling (Loose Concrete or ACR Steel)
06	Bridge Bearing Maintenance	12	Bridge Surface Repair	18	Other

Element Data

2928

Element Group:	Culvert	**Length:**	14.4m
Element Name:		**Width:**	0.46m
Location:	West entrance Hwy50	**Height:**	
Material:	Corrugated Steel	**Count:**	1
Element Type:	Round Culvert	**Total Quantity:**	14.4m
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all		x		

Comments:

The structure is in good condition.

Recommended Work:	☒ Rehab ☐ Replace ☐ 1-5 years ☒ 6-10 years	**Maintenance Needs:**	☐ Urgent ☐ 1 year ☒ 2 year

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all				

Comments:

Recommended Work:	☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years	**Maintenance Needs:**	☐ Urgent ☐ 1 year ☐ 2 year

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all				

Comments:

Recommended Work:	☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years	**Maintenance Needs:**	☐ Urgent ☐ 1 year ☐ 2 year

* A quantity must be estimated using the appropriate unit (e.g. m^2). Percent should not be used.

Ontario Structure Inspection Manual – Inspection Form

Region of Peel Structure # 2929

Inventory Data:

Structure Name			
Main Hwy/Road #	50 On ☐ Under ☒	Crossing Type:	☐ Navig. Water ☐ Non-Navig. Water ☐ Rail ☒ Road ☐ Ped. ☐ Other
Hwy/Road Name	Hwy 50		
Structure Location	Field entrance from Hwy50		
Latitude GPS Coord	E:605157	Longitude	N:4855112
Owner(s)	Region of Peel	Heritage Designation:	☐ Not Cons. ☐ Cons./not App. ☐ List/not Desig. ☐ Desig./not List ☐ Desig. & List
MTO Region	Central	Road Class:	Freeway ☐ Arterial ☐ Collector ☐ Local ☐
MTO District	-	Posted Speed	No. of Lanes
Old County	-	AADT	% Trucks
Geographic Twp.	Brampton	Inspection Route Sequence	
Structure Type	Culvert	Interchange Number	
Total Deck Length	(m)	Interchange Structure Number	
Overall Str. Width	13.4 (m)	Min. Vertical Clearance	0.15 (m)
Total Deck Area	- (sq.m)	Special Routes:	☐ Transit ☐ Truck ☐ School ☐ Bicycle
Roadway Width	- (m)	Detour Length Around Bridge	(km)
Skew Angle	- (Degrees)	Direction of Structure	N to S
No. of Spans	1	Fill on Structure	0.6 (m)
Span Lengths	0.46 (m)		

Historical Data:

Year Built		Year of Last Major Rehab.	
Last OSIM Inspection	11/07/2005	Last Evaluation	
Last Enhanced OSIM Inspection		Current Load Limit	/ / (tonnes)
Enhanced Access Equipment (ladder, boat, lift, etc.)		Load Limit By-Law #	
Last Underwater Inspection		By-Law Expiry Date	
Last Condition Survey			

Rehab History: (Date/description)

Scheduled Improvements:			
Regional Priority Number		Programmed Work Year	
Nature of Program Work:			

Appraisal Indices:		**Comments**
Fatigue	0	
Seismic	0	
Scour	0	
Flood	0	
Geometrics	0	
Barrier	0	
Curb	0	
Load Capacity	0	

Field Inspection Information:			
Date of Inspection:	January 27,2010	Type of Inspection:	☒ OSIM ☐ Enhanced OSIM
Inspector:	Eric Cheng		
Others in Party:	Alan Chung, Dan Urian		
Access Equipment Used:	Hand Tools, Digital Camera, Measuring Tape		
Weather:	Clear,some flurries		
Temperature:	-3°		

Additional Investigations Required:	Priority		
	None	Normal	Urgent
Material Condition Survey			
Detailed Deck Condition Survey:	x		
Non-destructive Delamination Survey of Asphalt-Covered Deck:	x		
Concrete Substructure Condition Survey:	x		
Detailed Coating Condition Survey:	x		
Detailed Timber Investigation	x		
Post-Tensioned Strand Investigation	x		
Underwater Investigation:	x		
Fatigue Investigation:	x		
Seismic Investigation:	x		
Structure Evaluation:	x		
Monitoring			
Monitoring of Deformations, Settlements and Movements:	x		
Monitoring Crack Widths:	x		
Investigation Notes: Effective Cross-Section: 28%			

Overall Structure Notes:	
Recommended Work on Structure:	☒ None ☐ Minor Rehab. ☐ Major Rehab. ☐ Replace
Timing of Recommended Work:	☐ 1 to 5 years ☒ 6 to 10 years
Overall Comments:	The structure is in good condition.
Date of Next Inspection:	

Suspected Performance Deficiencies

01	Load carrying capacity	06	Bearing not uniformly loaded/unstable	12	Slippery surfaces
02	Excessive deformations (deflections & rotations)	07	Jammed expansion joint	13	Flooding/channel blockage
03	Continuing settlement	08	Pedestrian/vehicular hazard	14	Undermining of foundation
04	Continuing movements	09	Rough riding surface	15	Unstable embankments
05	Seized bearings	10	Surface ponding	16	Other
		11	Deck drainage		

Maintenance Needs

01	Lift and Swing Bridge Maintenance	07	Repair to Structural Steel	13	Erosion Control at Bridges
02	Bridge Cleaning	08	Repair of Bridge Concrete	14	Concrete Sealing
03	Bridge Handrail Maintenance	09	Repair of Bridge Timber	15	Rout and Seal
04	Painting Steel Bridge Structures	10	Bailey bridges - Maintenance	16	Bridge Deck Drainage
05	Bridge Deck Joint Repair	11	Animal/Pest Control	17	Scaling (Loose Concrete or ACR Steel)
06	Bridge Bearing Maintenance	12	Bridge Surface Repair	18	Other

Element Data

2929

Element Group:	Culvert	**Length:**	13.4m
Element Name:		**Width:**	0.46m
Location:	Cross Hwy50	**Height:**	
Material:	Corrugated Steel	**Count:**	1
Element Type:	Round Culvert	**Total Quantity:**	13.4m
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all		x		

Comments:

The structure is in good condition.

Recommended Work:	☒ Rehab ☐ Replace	**Maintenance Needs:**	
	☐ 1-5 years ☒ 6-10 years	☐ Urgent ☐ 1 year ☒ 2 year	

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all				

Comments:

Recommended Work:	☐ Rehab ☐ Replace	**Maintenance Needs:**	
	☐ 1-5 years ☐ 6-10 years	☐ Urgent ☐ 1 year ☐ 2 year	

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all				

Comments:

Recommended Work:	☐ Rehab ☐ Replace	**Maintenance Needs:**	
	☐ 1-5 years ☐ 6-10 years	☐ Urgent ☐ 1 year ☐ 2 year	

* A quantity must be estimated using the appropriate unit (e.g. m^2). Percent should not be used.

Ontario Structure Inspection Manual – Inspection Form

Region of Peel Structure # 2930

Inventory Data:

Structure Name			
Main Hwy/Road #	50	On ☐ Under ☒	Crossing Type: ☐ Navig. Water ☐ Non-Navig. Water ☐ Rail ☒ Road ☐ Ped. ☐ Other
Hwy/Road Name	Hwy 50		
Structure Location	West entrance from Hwy50		
Latitude GPS Coord	E:605326	Longitude	N:4854730
Owner(s)	Region of Peel	Heritage Designation:	☐ Not Cons. ☐ Cons./not App. ☐ List/not Desig. ☐ Desig./not List ☐ Desig. & List
MTO Region	Central	Road Class:	Freeway ☐ Arterial ☐ Collector ☐ Local ☐
MTO District	-	Posted Speed	No. of Lanes
Old County	-	AADT	% Trucks
Geographic Twp.	Brampton	Inspection Route Sequence	
Structure Type	Culvert	Interchange Number	
Total Deck Length	(m)	Interchange Structure Number	
Overall Str. Width	13.2 (m)	Min. Vertical Clearance	0.25 (m)
Total Deck Area	- (sq.m)	Special Routes:	☐ Transit ☐ Truck ☐ School ☐ Bicycle
Roadway Width	- (m)	Detour Length Around Bridge	(km)
Skew Angle	- (Degrees)	Direction of Structure	S to N
No. of Spans	1	Fill on Structure	0.8 (m)
Span Lengths	0.46 (m)		

Historical Data:

Year Built		Year of Last Major Rehab.	
Last OSIM Inspection	11/07/2005	Last Evaluation	
Last Enhanced OSIM Inspection		Current Load Limit	/ / (tonnes)
Enhanced Access Equipment (ladder, boat, lift, etc.)		Load Limit By-Law #	
Last Underwater Inspection		By-Law Expiry Date	
Last Condition Survey			

Rehab History: (Date/description)

Scheduled Improvements:			
Regional Priority Number		Programmed Work Year	
Nature of Program Work:			

Appraisal Indices:		**Comments**
Fatigue	0	
Seismic	0	
Scour	0	
Flood	0	
Geometrics	0	
Barrier	0	
Curb	0	
Load Capacity	0	

Ontario Structure Inspection Manual – Inspection Form **MTO Site Number:** 2930

Field Inspection Information:			
Date of Inspection:	January 27,2010	Type of Inspection:	☒ OSIM ☐ Enhanced OSIM
Inspector:	Eric Cheng		
Others in Party:	Alan Chung, Dan Urian		
Access Equipment Used:	Hand Tools, Digital Camera, Measuring Tape		
Weather:	Clear,some flurries		
Temperature:	-3°		

Additional Investigations Required:	Priority		
	None	Normal	Urgent
Material Condition Survey			
Detailed Deck Condition Survey:	x		
Non-destructive Delamination Survey of Asphalt-Covered Deck:	x		
Concrete Substructure Condition Survey:	x		
Detailed Coating Condition Survey:	x		
Detailed Timber Investigation	x		
Post-Tensioned Strand Investigation	x		
Underwater Investigation:	x		
Fatigue Investigation:	x		
Seismic Investigation:	x		
Structure Evaluation:	x		
Monitoring			
Monitoring of Deformations, Settlements and Movements:	x		
Monitoring Crack Widths:	x		
Investigation Notes: Effective Cross-Section: 56%			

Overall Structure Notes:	
Recommended Work on Structure:	☐ None ☒ Minor Rehab. ☐ Major Rehab. ☐ Replace
Timing of Recommended Work:	☐ 1 to 5 years ☒ 6 to 10 years
Overall Comments:	The structure is rusted at the bottom.
Date of Next Inspection:	

Suspected Performance Deficiencies

01	Load carrying capacity	06	Bearing not uniformly loaded/unstable	12	Slippery surfaces
02	Excessive deformations (deflections & rotations)	07	Jammed expansion joint	13	Flooding/channel blockage
03	Continuing settlement	08	Pedestrian/vehicular hazard	14	Undermining of foundation
04	Continuing movements	09	Rough riding surface	15	Unstable embankments
05	Seized bearings	10	Surface ponding	16	Other
		11	Deck drainage		

Maintenance Needs

01	Lift and Swing Bridge Maintenance	07	Repair to Structural Steel	13	Erosion Control at Bridges
02	Bridge Cleaning	08	Repair of Bridge Concrete	14	Concrete Sealing
03	Bridge Handrail Maintenance	09	Repair of Bridge Timber	15	Rout and Seal
04	Painting Steel Bridge Structures	10	Bailey bridges - Maintenance	16	Bridge Deck Drainage
05	Bridge Deck Joint Repair	11	Animal/Pest Control	17	Scaling (Loose Concrete or ACR Steel)
06	Bridge Bearing Maintenance	12	Bridge Surface Repair	18	Other

Element Data

2930

Element Group:	Culvert	**Length:**	13.2m
Element Name:		**Width:**	0.46m
Location:	Entrance from Hwy50	**Height:**	
Material:	Corrugated Steel	**Count:**	1
Element Type:	Round	**Total Quantity:**	13.2m
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all			x	

Comments:
The structure is rusted at the bottom. Some rehabilitation is suggested.

Recommended Work:	☒ Rehab ☐ Replace ☒ 1-5 years ☐ 6-10 years	**Maintenance Needs:**	☒ Urgent ☐ 1 year ☐ 2 year

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all				

Comments:

Recommended Work:	☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years	**Maintenance Needs:**	☐ Urgent ☐ 1 year ☐ 2 year

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all				

Comments:

Recommended Work:	☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years	**Maintenance Needs:**	☐ Urgent ☐ 1 year ☐ 2 year

* A quantity must be estimated using the appropriate unit (e.g. m^2). Percent should not be used.

Ontario Structure Inspection Manual – Inspection Form

Region of Peel Structure # 2952

Inventory Data:

Structure Name			
Main Hwy/Road #	50 On ☐ Under ☒	Crossing Type:	☐ Navig. Water ☐ Non-Navig. Water ☐ Rail ☒ Road ☐ Ped. ☐ Other
Hwy/Road Name	Hwy 50		
Structure Location	East field entrance from Hwy50		
Latitude GPS Coord	E:605177	Longitude	N:4855147
Owner(s)	Region of Peel	Heritage Designation:	☐ Not Cons. ☐ Cons./not App. ☐ List/not Desig. ☐ Desig./not List ☐ Desig. & List
MTO Region	Central	Road Class:	Freeway ☐ Arterial ☐ Collector ☐ Local ☐
MTO District	-	Posted Speed	No. of Lanes
Old County	-	AADT	% Trucks
Geographic Twp.	Brampton	Inspection Route Sequence	
Structure Type	Culvert	Interchange Number	
Total Deck Length	(m)	Interchange Structure Number	
Overall Str. Width	12 (m)	Min. Vertical Clearance	0.42 (m)
Total Deck Area	- (sq.m)	Special Routes:	☐ Transit ☐ Truck ☐ School ☐ Bicycle
Roadway Width	- (m)	Detour Length Around Bridge	(km)
Skew Angle	- (Degrees)	Direction of Structure	N to S
No. of Spans	1	Fill on Structure	0.5 (m)
Span Lengths	0.5 (m)		

Historical Data:

Year Built		Year of Last Major Rehab.	
Last OSIM Inspection	06/07/2005	Last Evaluation	
Last Enhanced OSIM Inspection		Current Load Limit	/ / (tonnes)
Enhanced Access Equipment (ladder, boat, lift, etc.)		Load Limit By-Law #	
Last Underwater Inspection		By-Law Expiry Date	
Last Condition Survey			

Rehab History: (Date/description)

Scheduled Improvements:			
Regional Priority Number		Programmed Work Year	
Nature of Program Work:			

Appraisal Indices:		**Comments**
Fatigue	0	
Seismic	0	
Scour	0	
Flood	0	
Geometrics	0	
Barrier	0	
Curb	0	
Load Capacity	0	

Field Inspection Information:			
Date of Inspection:	January 27,2010	Type of Inspection:	☒ OSIM ☐ Enhanced OSIM
Inspector:	Eric Cheng		
Others in Party:	Alan Chung, Dan Urian		
Access Equipment Used:	Hand Tools, Digital Camera, Measuring Tape		
Weather:	Clear,some flurries		
Temperature:	-3°		

Additional Investigations Required:	Priority		
	None	Normal	Urgent
Material Condition Survey			
Detailed Deck Condition Survey:	X		
Non-destructive Delamination Survey of Asphalt-Covered Deck:	X		
Concrete Substructure Condition Survey:	X		
Detailed Coating Condition Survey:	X		
Detailed Timber Investigation	X		
Post-Tensioned Strand Investigation	X		
Underwater Investigation:	X		
Fatigue Investigation:	X		
Seismic Investigation:	X		
Structure Evaluation:	X		
Monitoring			
Monitoring of Deformations, Settlements and Movements:	X		
Monitoring Crack Widths:	X		

Investigation Notes:

Effective Cross-Section: 90%

Overall Structure Notes:	
Recommended Work on Structure:	☒ None ☐ Minor Rehab. ☐ Major Rehab. ☐ Replace
Timing of Recommended Work:	☐ 1 to 5 years ☒ 6 to 10 years
Overall Comments:	The structure is in fair condition. The bottom of structure is rusted.
Date of Next Inspection:	

Suspected Performance Deficiencies

01	Load carrying capacity	06	Bearing not uniformly loaded/unstable	12	Slippery surfaces
02	Excessive deformations (deflections & rotations)	07	Jammed expansion joint	13	Flooding/channel blockage
03	Continuing settlement	08	Pedestrian/vehicular hazard	14	Undermining of foundation
04	Continuing movements	09	Rough riding surface	15	Unstable embankments
05	Seized bearings	10	Surface ponding	16	Other
		11	Deck drainage		

Maintenance Needs

01	Lift and Swing Bridge Maintenance	07	Repair to Structural Steel	13	Erosion Control at Bridges
02	Bridge Cleaning	08	Repair of Bridge Concrete	14	Concrete Sealing
03	Bridge Handrail Maintenance	09	Repair of Bridge Timber	15	Rout and Seal
04	Painting Steel Bridge Structures	10	Bailey bridges - Maintenance	16	Bridge Deck Drainage
05	Bridge Deck Joint Repair	11	Animal/Pest Control	17	Scaling (Loose Concrete or ACR Steel)
06	Bridge Bearing Maintenance	12	Bridge Surface Repair	18	Other

Element Data

2952

Element Group:	Culvert	**Length:**	12.0m
Element Name:		**Width:**	0.50m
Location:	Cross Hwy50	**Height:**	
Material:	Corrugated Steel	**Count:**	1
Element Type:	Round Culvert	**Total Quantity:**	12.0m
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all			x	

Comments: The structure is in fair condition. The bottom of structure is rusted. Some rehabilitation is suggested.

Recommended Work:	☒ Rehab ☐ Replace ☒ 1-5 years ☐ 6-10 years	**Maintenance Needs:**	☒ Urgent ☐ 1 year ☐ 2 year

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all				

Comments:

Recommended Work:	☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years	**Maintenance Needs:**	☐ Urgent ☐ 1 year ☐ 2 year

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all				

Comments:

Recommended Work:	☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years	**Maintenance Needs:**	☐ Urgent ☐ 1 year ☐ 2 year

* A quantity must be estimated using the appropriate unit (e.g. m^2). Percent should not be used.

Ontario Structure Inspection Manual – Inspection Form

Region of Peel Structure # 2953

Inventory Data:

Structure Name			
Main Hwy/Road #	50	On ☐ Under ☒	Crossing Type: ☐ Navig. Water ☐ Non-Navig. Water ☐ Rail ☒ Road ☐ Ped. ☐ Other
Hwy/Road Name	Hwy 50		
Structure Location	East entrance from Hwy50		
Latitude GPS Coord	E:605147	Longitude	N:4855222
Owner(s)	Region of Peel	Heritage Designation:	☐ Not Cons. ☐ Cons./not App. ☐ List/not Desig. ☐ Desig./not List ☐ Desig. & List
MTO Region	Central	Road Class:	Freeway ☐ Arterial ☐ Collector ☐ Local ☐
MTO District	-	Posted Speed	No. of Lanes
Old County	-	AADT	% Trucks
Geographic Twp.	Brampton	Inspection Route Sequence	
Structure Type	Culvert	Interchange Number	
Total Deck Length	(m)	Interchange Structure Number	
Overall Str. Width	12.5 (m)	Min. Vertical Clearance	0.3 (m)
Total Deck Area	- (sq.m)	Special Routes:	☐ Transit ☐ Truck ☐ School ☐ Bicycle
Roadway Width	- (m)	Detour Length Around Bridge	(km)
Skew Angle	- (Degrees)	Direction of Structure	W to E
No. of Spans	1	Fill on Structure	0.7 (m)
Span Lengths	0.5 (m)		

Historical Data:

Year Built		Year of Last Major Rehab.	
Last OSIM Inspection	06/07/2005	Last Evaluation	
Last Enhanced OSIM Inspection		Current Load Limit	/ / (tonnes)
Enhanced Access Equipment (ladder, boat, lift, etc.)		Load Limit By-Law #	
Last Underwater Inspection		By-Law Expiry Date	
Last Condition Survey			

Rehab History: (Date/description)

Scheduled Improvements:			
Regional Priority Number		Programmed Work Year	
Nature of Program Work:			

Appraisal Indices:		**Comments**
Fatigue	0	
Seismic	0	
Scour	0	
Flood	0	
Geometrics	0	
Barrier	0	
Curb	0	
Load Capacity	0	

Field Inspection Information:			
Date of Inspection:	January 27,2010	Type of Inspection:	☒ OSIM ☐ Enhanced OSIM
Inspector:	Eric Cheng		
Others in Party:	Alan Chung, Dan Urian		
Access Equipment Used:	Hand Tools, Digital Camera, Measuring Tape		
Weather:	Clear,some flurries		
Temperature:	-3°		

Additional Investigations Required:	Priority		
	None	Normal	Urgent
Material Condition Survey			
Detailed Deck Condition Survey:	x		
Non-destructive Delamination Survey of Asphalt-Covered Deck:	x		
Concrete Substructure Condition Survey:	x		
Detailed Coating Condition Survey:	x		
Detailed Timber Investigation	x		
Post-Tensioned Strand Investigation	x		
Underwater Investigation:	x		
Fatigue Investigation:	x		
Seismic Investigation:	x		
Structure Evaluation:	x		
Monitoring			
Monitoring of Deformations, Settlements and Movements:	x		
Monitoring Crack Widths:	x		

Investigation Notes:

Effective Cross-Section: 63%

Overall Structure Notes:	
Recommended Work on Structure:	☐ None ☒ Minor Rehab. ☐ Major Rehab. ☐ Replace
Timing of Recommended Work:	☒ 1 to 5 years ☐ 6 to 10 years
Overall Comments:	The structure is deformed at the north end. The bottom of the structure is rusted.
Date of Next Inspection:	

Suspected Performance Deficiencies

01	Load carrying capacity	06	Bearing not uniformly loaded/unstable	12	Slippery surfaces
02	Excessive deformations (deflections & rotations)	07	Jammed expansion joint	13	Flooding/channel blockage
03	Continuing settlement	08	Pedestrian/vehicular hazard	14	Undermining of foundation
04	Continuing movements	09	Rough riding surface	15	Unstable embankments
05	Seized bearings	10	Surface ponding	16	Other
		11	Deck drainage		

Maintenance Needs

01	Lift and Swing Bridge Maintenance	07	Repair to Structural Steel	13	Erosion Control at Bridges
02	Bridge Cleaning	08	Repair of Bridge Concrete	14	Concrete Sealing
03	Bridge Handrail Maintenance	09	Repair of Bridge Timber	15	Rout and Seal
04	Painting Steel Bridge Structures	10	Bailey bridges - Maintenance	16	Bridge Deck Drainage
05	Bridge Deck Joint Repair	11	Animal/Pest Control	17	Scaling (Loose Concrete or ACR Steel)
06	Bridge Bearing Maintenance	12	Bridge Surface Repair	18	Other

Element Data

2953

Element Group:	Culvert	**Length:**	12.5m
Element Name:		**Width:**	0.5m
Location:	East entrance Hwy50	**Height:**	
Material:	Corrugated Steel	**Count:**	1
Element Type:	Round Culvert	**Total Quantity:**	12.5m
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all			x	

Comments:

The end needs to be replaced. The bottom should be rehabilitated.

Recommended Work: ☒ Rehab ☒ Replace ☒ 1-5 years ☐ 6-10 years	**Maintenance Needs:** ☒ Urgent ☐ 1 year ☐ 2 year

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all				

Comments:

Recommended Work: ☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years	**Maintenance Needs:** ☐ Urgent ☐ 1 year ☐ 2 year

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all				

Comments:

Recommended Work: ☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years	**Maintenance Needs:** ☐ Urgent ☐ 1 year ☐ 2 year

* A quantity must be estimated using the appropriate unit (e.g. m^2). Percent should not be used.

Ontario Structure Inspection Manual – Inspection Form

Region of Peel Structure # 2954

Inventory Data:

Structure Name			
Main Hwy/Road #	50 On ☐ Under ☒	Crossing Type:	☐ Navig. Water ☐ Non-Navig. Water ☐ Rail ☒ Road ☐ Ped. ☐ Other
Hwy/Road Name	Hwy 50		
Structure Location	East entrance		
Latitude GPS Coord	E:605079	Longitude	N:4855376
Owner(s)	Region of Peel	Heritage Designation:	☐ Not Cons. ☐ Cons./not App. ☐ List/not Desig. ☐ Desig./not List ☐ Desig. & List
MTO Region	Central	Road Class:	Freeway ☐ Arterial ☐ Collector ☐ Local ☐
MTO District	-	Posted Speed	No. of Lanes
Old County	-	AADT	% Trucks
Geographic Twp.	Brampton	Inspection Route Sequence	
Structure Type	Culvert	Interchange Number	
Total Deck Length	(m)	Interchange Structure Number	
Overall Str. Width	13.3 (m)	Min. Vertical Clearance	0.35 (m)
Total Deck Area	- (sq.m)	Special Routes:	☐ Transit ☐ Truck ☐ School ☐ Bicycle
Roadway Width	- (m)	Detour Length Around Bridge	(km)
Skew Angle	- (Degrees)	Direction of Structure	N to S
No. of Spans	1	Fill on Structure	0.6 (m)
Span Lengths	0.46 (m)		

Historical Data:

Year Built		Year of Last Major Rehab.	
Last OSIM Inspection	06/07/2005	Last Evaluation	
Last Enhanced OSIM Inspection		Current Load Limit	/ / (tonnes)
Enhanced Access Equipment (ladder, boat, lift, etc.)		Load Limit By-Law #	
Last Underwater Inspection		By-Law Expiry Date	
Last Condition Survey			

Rehab History: (Date/description)

Scheduled Improvements:			
Regional Priority Number		Programmed Work Year	
Nature of Program Work:			

Appraisal Indices:		**Comments**
Fatigue	0	
Seismic	0	
Scour	0	
Flood	0	
Geometrics	0	
Barrier	0	
Curb	0	
Load Capacity	0	

Field Inspection Information:			
Date of Inspection:	January 27,2010	Type of Inspection:	☒ OSIM ☐ Enhanced OSIM
Inspector:	Eric Cheng		
Others in Party:	Alan Chung, Dan Urian		
Access Equipment Used:	Hand Tools, Digital Camera, Measuring Tape		
Weather:	Clear,some flurries		
Temperature:	-3°		

Additional Investigations Required:	Priority		
	None	Normal	Urgent
Material Condition Survey			
Detailed Deck Condition Survey:	x		
Non-destructive Delamination Survey of Asphalt-Covered Deck:	x		
Concrete Substructure Condition Survey:	x		
Detailed Coating Condition Survey:	x		
Detailed Timber Investigation	x		
Post-Tensioned Strand Investigation	x		
Underwater Investigation:	x		
Fatigue Investigation:	x		
Seismic Investigation:	x		
Structure Evaluation:	x		
Monitoring			
Monitoring of Deformations, Settlements and Movements:	x		
Monitoring Crack Widths:	x		

Investigation Notes:

Effective Cross-Section: 82%

Overall Structure Notes:	
Recommended Work on Structure:	☐ None ☒ Minor Rehab. ☐ Major Rehab. ☐ Replace
Timing of Recommended Work:	☒ 1 to 5 years ☐ 6 to 10 years
Overall Comments:	The structure is in fair condition. The structure is rusted inside and outside.
Date of Next Inspection:	

Suspected Performance Deficiencies

01	Load carrying capacity	06	Bearing not uniformly loaded/unstable	12	Slippery surfaces
02	Excessive deformations (deflections & rotations)	07	Jammed expansion joint	13	Flooding/channel blockage
03	Continuing settlement	08	Pedestrian/vehicular hazard	14	Undermining of foundation
04	Continuing movements	09	Rough riding surface	15	Unstable embankments
05	Seized bearings	10	Surface ponding	16	Other
		11	Deck drainage		

Maintenance Needs

01	Lift and Swing Bridge Maintenance	07	Repair to Structural Steel	13	Erosion Control at Bridges
02	Bridge Cleaning	08	Repair of Bridge Concrete	14	Concrete Sealing
03	Bridge Handrail Maintenance	09	Repair of Bridge Timber	15	Rout and Seal
04	Painting Steel Bridge Structures	10	Bailey bridges - Maintenance	16	Bridge Deck Drainage
05	Bridge Deck Joint Repair	11	Animal/Pest Control	17	Scaling (Loose Concrete or ACR Steel)
06	Bridge Bearing Maintenance	12	Bridge Surface Repair	18	Other

Element Data

2954

Element Group:	Culvert	**Length:**	13.3m
Element Name:		**Width:**	0.46m
Location:	East entrance Hwy50	**Height:**	
Material:	Corrugated Steel	**Count:**	1
Element Type:	Round Culvert	**Total Quantity:**	13.3m
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all			x	

Comments:
The structure is rusted inside and should be rehabilitated or replaced in the near future.

Recommended Work:	☒ Rehab ☒ Replace ☒ 1-5 years ☐ 6-10 years	**Maintenance Needs:**	☐ Urgent ☒ 1 year ☐ 2 year

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all				

Comments:

Recommended Work:	☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years	**Maintenance Needs:**	☐ Urgent ☐ 1 year ☐ 2 year

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all				

Comments:

Recommended Work:	☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years	**Maintenance Needs:**	☐ Urgent ☐ 1 year ☐ 2 year

* A quantity must be estimated using the appropriate unit (e.g. m^2). Percent should not be used.

Ontario Structure Inspection Manual – Inspection Form

Region of Peel Structure # 2955

Inventory Data:

Structure Name			
Main Hwy/Road #	50 On ☐ Under ☒	Crossing Type:	☐ Navig. Water ☐ Non-Navig. Water ☐ Rail ☒ Road ☐ Ped. ☐ Other
Hwy/Road Name	Hwy 50		
Structure Location	East entrance from Hwy50		
Latitude GPS Coord	E:604990	Longitude	N:4855577
Owner(s)	Region of Peel	Heritage Designation:	☐ Not Cons. ☐ Cons./not App. ☐ List/not Desig. ☐ Desig./not List ☐ Desig. & List
MTO Region	Central	Road Class:	Freeway ☐ Arterial ☐ Collector ☐ Local ☐
MTO District	-	Posted Speed	No. of Lanes
Old County	-	AADT	% Trucks
Geographic Twp.	Brampton	Inspection Route Sequence	
Structure Type	Culvert	Interchange Number	
Total Deck Length	(m)	Interchange Structure Number	
Overall Str. Width	19.3 (m)	Min. Vertical Clearance	0.32 (m)
Total Deck Area	- (sq.m)	Special Routes:	☐ Transit ☐ Truck ☐ School ☐ Bicycle
Roadway Width	- (m)	Detour Length Around Bridge	(km)
Skew Angle	- (Degrees)	Direction of Structure	N to S
No. of Spans	1	Fill on Structure	0.5 (m)
Span Lengths	0.46 (m)		

Historical Data:

Year Built		Year of Last Major Rehab.	
Last OSIM Inspection	06/07/2005	Last Evaluation	
Last Enhanced OSIM Inspection		Current Load Limit	/ / (tonnes)
Enhanced Access Equipment (ladder, boat, lift, etc.)		Load Limit By-Law #	
Last Underwater Inspection		By-Law Expiry Date	
Last Condition Survey			

Rehab History: (Date/description)

Scheduled Improvements:			
Regional Priority Number		Programmed Work Year	
Nature of Program Work:			

Appraisal Indices:		**Comments**
Fatigue	0	
Seismic	0	
Scour	0	
Flood	0	
Geometrics	0	
Barrier	0	
Curb	0	
Load Capacity	0	

Field Inspection Information:			
Date of Inspection:	January 27,2010	Type of Inspection:	☒ OSIM ☐ Enhanced OSIM
Inspector:	Eric Cheng		
Others in Party:	Alan Chung, Dan Urian		
Access Equipment Used:	Hand Tools, Digital Camera, Measuring Tape		
Weather:	Clear,some flurries		
Temperature:	-3°		

Additional Investigations Required:	Priority		
	None	Normal	Urgent
Material Condition Survey			
Detailed Deck Condition Survey:	X		
Non-destructive Delamination Survey of Asphalt-Covered Deck:	X		
Concrete Substructure Condition Survey:	X		
Detailed Coating Condition Survey:	X		
Detailed Timber Investigation	X		
Post-Tensioned Strand Investigation	X		
Underwater Investigation:	X		
Fatigue Investigation:	X		
Seismic Investigation:	X		
Structure Evaluation:	X		
Monitoring			
Monitoring of Deformations, Settlements and Movements:	X		
Monitoring Crack Widths:	X		

Investigation Notes:

Effective Cross-Section:72%

Overall Structure Notes:	
Recommended Work on Structure:	☐ None ☒ Minor Rehab. ☐ Major Rehab. ☐ Replace
Timing of Recommended Work:	☒ 1 to 5 years ☐ 6 to 10 years
Overall Comments:	The structure is in fair condition. The structure is rusted inside.
Date of Next Inspection:	

Suspected Performance Deficiencies

01	Load carrying capacity	06	Bearing not uniformly loaded/unstable	12	Slippery surfaces
02	Excessive deformations (deflections & rotations)	07	Jammed expansion joint	13	Flooding/channel blockage
03	Continuing settlement	08	Pedestrian/vehicular hazard	14	Undermining of foundation
04	Continuing movements	09	Rough riding surface	15	Unstable embankments
05	Seized bearings	10	Surface ponding	16	Other
		11	Deck drainage		

Maintenance Needs

01	Lift and Swing Bridge Maintenance	07	Repair to Structural Steel	13	Erosion Control at Bridges
02	Bridge Cleaning	08	Repair of Bridge Concrete	14	Concrete Sealing
03	Bridge Handrail Maintenance	09	Repair of Bridge Timber	15	Rout and Seal
04	Painting Steel Bridge Structures	10	Bailey bridges - Maintenance	16	Bridge Deck Drainage
05	Bridge Deck Joint Repair	11	Animal/Pest Control	17	Scaling (Loose Concrete or ACR Steel)
06	Bridge Bearing Maintenance	12	Bridge Surface Repair	18	Other

Element Data

2955

Element Group:	Culvert	**Length:**	19.3m
Element Name:		**Width:**	0.46m
Location:	East entrance Hwy50	**Height:**	
Material:	Corrugated Steel	**Count:**	1
Element Type:	Round Culvert	**Total Quantity:**	19.3m
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all			x	

Comments:

The structure is rusted inside and should be rehabiliatated or replaced in the near future.

Recommended Work:	☒ Rehab ☒ Replace ☒ 1-5 years ☐ 6-10 years	**Maintenance Needs:**	☐ Urgent ☒ 1 year ☐ 2 year

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all				

Comments:

Recommended Work:	☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years	**Maintenance Needs:**	☐ Urgent ☐ 1 year ☐ 2 year

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all				

Comments:

Recommended Work:	☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years	**Maintenance Needs:**	☐ Urgent ☐ 1 year ☐ 2 year

* A quantity must be estimated using the appropriate unit (e.g. m^2). Percent should not be used.

Ontario Structure Inspection Manual – Inspection Form

Region of Peel Structure # 2956

Inventory Data:

Structure Name			
Main Hwy/Road #	50 On ☐ Under ☒	Crossing Type:	☐ Navig. Water ☐ Non-Navig. Water ☐ Rail ☒ Road ☐ Ped. ☐ Other
Hwy/Road Name	Hwy 50		
Structure Location	West entrance from Hwy50		
Latitude GPS Coord	E:605524	Longitude	N:4854285
Owner(s)	Region of Peel	Heritage Designation:	☐ Not Cons. ☐ Cons./not App. ☐ List/not Desig. ☐ Desig./not List ☐ Desig. & List
MTO Region	Central	Road Class:	Freeway ☐ Arterial ☐ Collector ☐ Local ☐
MTO District	-	Posted Speed	No. of Lanes
Old County	-	AADT	% Trucks
Geographic Twp.	Brampton	Inspection Route Sequence	
Structure Type	Culvert	Interchange Number	
Total Deck Length	(m)	Interchange Structure Number	
Overall Str. Width	10.6 (m)	Min. Vertical Clearance	0.3 (m)
Total Deck Area	- (sq.m)	Special Routes:	☐ Transit ☐ Truck ☐ School ☐ Bicycle
Roadway Width	- (m)	Detour Length Around Bridge	(km)
Skew Angle	- (Degrees)	Direction of Structure	S to N
No. of Spans	1	Fill on Structure	0.6 (m)
Span Lengths	0.46 (m)		

Historical Data:

Year Built		Year of Last Major Rehab.	
Last OSIM Inspection	11/07/2005	Last Evaluation	
Last Enhanced OSIM Inspection		Current Load Limit	/ / (tonnes)
Enhanced Access Equipment (ladder, boat, lift, etc.)		Load Limit By-Law #	
Last Underwater Inspection		By-Law Expiry Date	
Last Condition Survey			

Rehab History: (Date/description)

Scheduled Improvements:			
Regional Priority Number		Programmed Work Year	
Nature of Program Work:			

Appraisal Indices:		**Comments**
Fatigue	0	
Seismic	0	
Scour	0	
Flood	0	
Geometrics	0	
Barrier	0	
Curb	0	
Load Capacity	0	

Field Inspection Information:			
Date of Inspection:	January 27,2010	Type of Inspection:	☒ OSIM ☐ Enhanced OSIM
Inspector:	Eric Cheng		
Others in Party:	Alan Chung, Dan Urian		
Access Equipment Used:	Hand Tools, Digital Camera, Measuring Tape		
Weather:	Clear,some flurries		
Temperature:	-3°		

Additional Investigations Required:	Priority		
	None	Normal	Urgent
Material Condition Survey			
Detailed Deck Condition Survey:	x		
Non-destructive Delamination Survey of Asphalt-Covered Deck:	x		
Concrete Substructure Condition Survey:	x		
Detailed Coating Condition Survey:	x		
Detailed Timber Investigation	x		
Post-Tensioned Strand Investigation	x		
Underwater Investigation:	x		
Fatigue Investigation:	x		
Seismic Investigation:	x		
Structure Evaluation:	x		
Monitoring			
Monitoring of Deformations, Settlements and Movements:	x		
Monitoring Crack Widths:	x		

Investigation Notes:

Effective Cross-Section: 69%

Overall Structure Notes:	
Recommended Work on Structure:	☒ None ☐ Minor Rehab. ☐ Major Rehab. ☐ Replace
Timing of Recommended Work:	☒ 1 to 5 years ☐ 6 to 10 years
Overall Comments:	The structure in fair condition. The structure is slightly damaged at north end and rusted inside.
Date of Next Inspection:	

Suspected Performance Deficiencies

01	Load carrying capacity	06	Bearing not uniformly loaded/unstable	12	Slippery surfaces
02	Excessive deformations (deflections & rotations)	07	Jammed expansion joint	13	Flooding/channel blockage
03	Continuing settlement	08	Pedestrian/vehicular hazard	14	Undermining of foundation
04	Continuing movements	09	Rough riding surface	15	Unstable embankments
05	Seized bearings	10	Surface ponding	16	Other
		11	Deck drainage		

Maintenance Needs

01	Lift and Swing Bridge Maintenance	07	Repair to Structural Steel	13	Erosion Control at Bridges
02	Bridge Cleaning	08	Repair of Bridge Concrete	14	Concrete Sealing
03	Bridge Handrail Maintenance	09	Repair of Bridge Timber	15	Rout and Seal
04	Painting Steel Bridge Structures	10	Bailey bridges - Maintenance	16	Bridge Deck Drainage
05	Bridge Deck Joint Repair	11	Animal/Pest Control	17	Scaling (Loose Concrete or ACR Steel)
06	Bridge Bearing Maintenance	12	Bridge Surface Repair	18	Other

Element Data

2956

Element Group:	Culvert	**Length:**	10.6m
Element Name:		**Width:**	0.46m
Location:	West entrance Hwy50	**Height:**	
Material:	Corrugated Steel	**Count:**	1
Element Type:	Round	**Total Quantity:**	10.6m
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all			x	

Comments:
The structure is rusted inside and should be rehabiliatated or replaced in the near future.

Recommended Work:	**Maintenance Needs:**
☒ Rehab ☒ Replace ☒ 1-5 years ☐ 6-10 years	☐ Urgent ☒ 1 year ☐ 2 year

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all				

Comments:

Recommended Work:	**Maintenance Needs:**
☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years	☐ Urgent ☐ 1 year ☐ 2 year

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all				

Comments:

Recommended Work:	**Maintenance Needs:**
☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years	☐ Urgent ☐ 1 year ☐ 2 year

* A quantity must be estimated using the appropriate unit (e.g. m^2). Percent should not be used.

Ontario Structure Inspection Manual – Inspection Form

Region of Peel Structure # 2957

Inventory Data:

Structure Name			
Main Hwy/Road #	50	On ☐ Under ☒	Crossing Type: ☐ Navig. Water ☐ Non-Navig. Water ☐ Rail ☒ Road ☐ Ped. ☐ Other
Hwy/Road Name	Hwy 50		
Structure Location	West field entrance from Hwy50		
Latitude GPS Coord	E:605631	Longitude	N:4854046
Owner(s)	Region of Peel	Heritage Designation:	☐ Not Cons. ☐ Cons./not App. ☐ List/not Desig. ☐ Desig./not List ☐ Desig. & List
MTO Region	Central	Road Class:	Freeway ☐ Arterial ☐ Collector ☐ Local ☐
MTO District	-	Posted Speed	No. of Lanes
Old County	-	AADT	% Trucks
Geographic Twp.	Brampton	Inspection Route Sequence	
Structure Type	Culvert	Interchange Number	
Total Deck Length	(m)	Interchange Structure Number	
Overall Str. Width	10.2 (m)	Min. Vertical Clearance	0.35 (m)
Total Deck Area	- (sq.m)	Special Routes:	☐ Transit ☐ Truck ☐ School ☐ Bicycle
Roadway Width	- (m)	Detour Length Around Bridge	(km)
Skew Angle	- (Degrees)	Direction of Structure	E to W
No. of Spans	1	Fill on Structure	0.6 (m)
Span Lengths	0.75 (m)		

Historical Data:

Year Built		Year of Last Major Rehab.	
Last OSIM Inspection	11/07/2005	Last Evaluation	
Last Enhanced OSIM Inspection		Current Load Limit	/ / (tonnes)
Enhanced Access Equipment (ladder, boat, lift, etc.)		Load Limit By-Law #	
Last Underwater Inspection		By-Law Expiry Date	
Last Condition Survey			

Rehab History: (Date/description)

Scheduled Improvements:			
Regional Priority Number		Programmed Work Year	
Nature of Program Work:			

Appraisal Indices:		**Comments**
Fatigue	0	
Seismic	0	
Scour	0	
Flood	0	
Geometrics	0	
Barrier	0	
Curb	0	
Load Capacity	0	

Field Inspection Information:			
Date of Inspection:	January 27,2010	Type of Inspection:	☒ OSIM ☐ Enhanced OSIM
Inspector:	Eric Cheng		
Others in Party:	Alan Chung, Dan Urian		
Access Equipment Used:	Hand Tools, Digital Camera, Measuring Tape		
Weather:	Clear,some flurries		
Temperature:	-3°		

Additional Investigations Required:	Priority		
	None	Normal	Urgent
Material Condition Survey			
Detailed Deck Condition Survey:	X		
Non-destructive Delamination Survey of Asphalt-Covered Deck:	X		
Concrete Substructure Condition Survey:	X		
Detailed Coating Condition Survey:	X		
Detailed Timber Investigation	X		
Post-Tensioned Strand Investigation	X		
Underwater Investigation:	X		
Fatigue Investigation:	X		
Seismic Investigation:	X		
Structure Evaluation:	X		
Monitoring			
Monitoring of Deformations, Settlements and Movements:	X		
Monitoring Crack Widths:	X		

Investigation Notes:

Effective Cross-Section:46%

Overall Structure Notes:	
Recommended Work on Structure:	☒ None ☐ Minor Rehab. ☐ Major Rehab. ☐ Replace
Timing of Recommended Work:	☐ 1 to 5 years ☒ 6 to 10 years
Overall Comments:	The structure is in good condition.
Date of Next Inspection:	

Suspected Performance Deficiencies

01	Load carrying capacity	06	Bearing not uniformly loaded/unstable	12	Slippery surfaces
02	Excessive deformations (deflections & rotations)	07	Jammed expansion joint	13	Flooding/channel blockage
03	Continuing settlement	08	Pedestrian/vehicular hazard	14	Undermining of foundation
04	Continuing movements	09	Rough riding surface	15	Unstable embankments
05	Seized bearings	10	Surface ponding	16	Other
		11	Deck drainage		

Maintenance Needs

01	Lift and Swing Bridge Maintenance	07	Repair to Structural Steel	13	Erosion Control at Bridges
02	Bridge Cleaning	08	Repair of Bridge Concrete	14	Concrete Sealing
03	Bridge Handrail Maintenance	09	Repair of Bridge Timber	15	Rout and Seal
04	Painting Steel Bridge Structures	10	Bailey bridges - Maintenance	16	Bridge Deck Drainage
05	Bridge Deck Joint Repair	11	Animal/Pest Control	17	Scaling (Loose Concrete or ACR Steel)
06	Bridge Bearing Maintenance	12	Bridge Surface Repair	18	Other

Element Data

2957

Element Group:	Culvert	**Length:**	10.2m
Element Name:		**Width:**	0.6m
Location:	West entrance Hwy50	**Height:**	
Material:	Corrugated Steel	**Count:**	1
Element Type:	Round	**Total Quantity:**	10.2m
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***	**Perform. Deficiencies**
	m^2 / m / each / % / all		x			

Comments:

The structure is in good condition.

Recommended Work:	☒ Rehab ☐ Replace	**Maintenance Needs:**	
	☐ 1-5 years ☒ 6-10 years	☐ Urgent ☐ 1 year	☒ 2 year

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***	**Perform. Deficiencies**
	m^2 / m / each / % / all					

Comments:

Recommended Work:	☐ Rehab ☐ Replace	**Maintenance Needs:**	
	☐ 1-5 years ☐ 6-10 years	☐ Urgent ☐ 1 year	☐ 2 year

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***	**Perform. Deficiencies**
	m^2 / m / each / % / all					

Comments:

Recommended Work:	☐ Rehab ☐ Replace	**Maintenance Needs:**	
	☐ 1-5 years ☐ 6-10 years	☐ Urgent ☐ 1 year	☐ 2 year

* A quantity must be estimated using the appropriate unit (e.g. m^2). Percent should not be used.

Ontario Structure Inspection Manual – Inspection Form

Region of Peel Structure # 2967

Inventory Data:

Structure Name			
Main Hwy/Road #	50 On ☐ Under ☒	Crossing Type:	☐ Navig. Water ☐ Non-Navig. Water ☐ Rail ☒ Road ☐ Ped. ☐ Other
Hwy/Road Name	Hwy 50		
Structure Location	Cross Hwy50		
Latitude GPS Coord	E:605114	Longitude	N:4855227
Owner(s)	Region of Peel	Heritage Designation:	☐ Not Cons. ☐ Cons./not App. ☐ List/not Desig. ☐ Desig./not List ☐ Desig. & List
MTO Region	Central	Road Class:	Freeway ☐ Arterial ☐ Collector ☐ Local ☐
MTO District	-	Posted Speed	No. of Lanes
Old County	-	AADT	% Trucks
Geographic Twp.	Brampton	Inspection Route Sequence	
Structure Type	Culvert	Interchange Number	
Total Deck Length	(m)	Interchange Structure Number	
Overall Str. Width	65.2 (m)	Min. Vertical Clearance	0.5 (m)
Total Deck Area	- (sq.m)	Special Routes:	☐ Transit ☐ Truck ☐ School ☐ Bicycle
Roadway Width	- (m)	Detour Length Around Bridge	(km)
Skew Angle	- (Degrees)	Direction of Structure	W to E
No. of Spans	2	Fill on Structure	1.0 (m)
Span Lengths	1.3 (m)		

Historical Data:

Year Built		Year of Last Major Rehab.	
Last OSIM Inspection	14/07/2005	Last Evaluation	
Last Enhanced OSIM Inspection		Current Load Limit	/ / (tonnes)
Enhanced Access Equipment (ladder, boat, lift, etc.)		Load Limit By-Law #	
Last Underwater Inspection		By-Law Expiry Date	
Last Condition Survey			

Rehab History: (Date/description)

Scheduled Improvements:			
Regional Priority Number		Programmed Work Year	
Nature of Program Work:			

Appraisal Indices:		**Comments**
Fatigue	0	
Seismic	0	
Scour	0	
Flood	0	
Geometrics	0	
Barrier	0	
Curb	0	
Load Capacity	0	

Ontario Structure Inspection Manual – Inspection Form **MTO Site Number:** 2967

Field Inspection Information:			
Date of Inspection:	January 27,2010	Type of Inspection:	☒ OSIM ☐ Enhanced OSIM
Inspector:	Eric Cheng		
Others in Party:	Alan Chung, Dan Urian		
Access Equipment Used:	Hand Tools, Digital Camera, Measuring Tape		
Weather:	Clear,some flurries		
Temperature:	-3°		

Additional Investigations Required:	Priority		
	None	Normal	Urgent
Material Condition Survey			
Detailed Deck Condition Survey:	x		
Non-destructive Delamination Survey of Asphalt-Covered Deck:	x		
Concrete Substructure Condition Survey:	x		
Detailed Coating Condition Survey:	x		
Detailed Timber Investigation	x		
Post-Tensioned Strand Investigation	x		
Underwater Investigation:	x		
Fatigue Investigation:	x		
Seismic Investigation:	x		
Structure Evaluation:	x		
Monitoring			
Monitoring of Deformations, Settlements and Movements:	x		
Monitoring Crack Widths:	x		

Investigation Notes:

Effective Cross-Section: 35%

Overall Structure Notes:	
Recommended Work on Structure:	☐ None ☒ Minor Rehab. ☐ Major Rehab. ☐ Replace
Timing of Recommended Work:	☒ 1 to 5 years ☐ 6 to 10 years
Overall Comments:	North inlet(west side) is clogged w/ rip rap and deformed.
Date of Next Inspection:	

Suspected Performance Deficiencies

01	Load carrying capacity	06	Bearing not uniformly loaded/unstable	12	Slippery surfaces
02	Excessive deformations (deflections & rotations)	07	Jammed expansion joint	13	Flooding/channel blockage
03	Continuing settlement	08	Pedestrian/vehicular hazard	14	Undermining of foundation
04	Continuing movements	09	Rough riding surface	15	Unstable embankments
05	Seized bearings	10	Surface ponding	16	Other
		11	Deck drainage		

Maintenance Needs

01	Lift and Swing Bridge Maintenance	07	Repair to Structural Steel	13	Erosion Control at Bridges
02	Bridge Cleaning	08	Repair of Bridge Concrete	14	Concrete Sealing
03	Bridge Handrail Maintenance	09	Repair of Bridge Timber	15	Rout and Seal
04	Painting Steel Bridge Structures	10	Bailey bridges - Maintenance	16	Bridge Deck Drainage
05	Bridge Deck Joint Repair	11	Animal/Pest Control	17	Scaling (Loose Concrete or ACR Steel)
06	Bridge Bearing Maintenance	12	Bridge Surface Repair	18	Other

Element Data

2967

Element Group:	Culvert	**Length:**	65.2m
Element Name:		**Width:**	1.3m
Location:	Cross Hwy50	**Height:**	0.9m
Material:	Corrugated Steel	**Count:**	1
Element Type:	Oval Culvert	**Total Quantity:**	65.2m
Environment:	Benign / Moderate / Severe	**Limited Inspection** ☐	
Protection System:			

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***	**Perform. Deficiencies**
	m^2 / m / each / % / all			x		

Comments:
The structure is in fair condition. North end needs to be re-shaped and a flush/clean is necessary.

Recommended Work:	☒ Rehab ☐ Replace	**Maintenance Needs:**	
	☒ 1-5 years ☐ 6-10 years	☒ Urgent ☐ 1 year ☐ 2 year	

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	Benign / Moderate / Severe	**Limited Inspection** ☐	
Protection System:			

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***	**Perform. Deficiencies**
	m^2 / m / each / % / all					

Comments:

Recommended Work:	☐ Rehab ☐ Replace	**Maintenance Needs:**	
	☐ 1-5 years ☐ 6-10 years	☐ Urgent ☐ 1 year ☐ 2 year	

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	Benign / Moderate / Severe	**Limited Inspection** ☐	
Protection System:			

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***	**Perform. Deficiencies**
	m^2 / m / each / % / all					

Comments:

Recommended Work:	☐ Rehab ☐ Replace	**Maintenance Needs:**	
	☐ 1-5 years ☐ 6-10 years	☐ Urgent ☐ 1 year ☐ 2 year	

* A quantity must be estimated using the appropriate unit (e.g. m^2). Percent should not be used.

Ontario Structure Inspection Manual – Inspection Form

Region of Peel Structure # 2968

Inventory Data:

Structure Name			
Main Hwy/Road #	50 On ☐ Under ☒	Crossing Type:	☐ Navig. Water ☐ Non-Navig. Water ☐ Rail ☒ Road ☐ Ped. ☐ Other
Hwy/Road Name	Hwy 50		
Structure Location	Cross Hwy50		
Latitude GPS Coord	E:605175	Longitude	N:4855089
Owner(s)	Region of Peel	Heritage Designation:	☐ Not Cons. ☐ Cons./not App. ☐ List/not Desig. ☐ Desig./not List ☐ Desig. & List
MTO Region	Central	Road Class:	Freeway ☐ Arterial ☐ Collector ☐ Local ☐
MTO District	-	Posted Speed	No. of Lanes
Old County	-	AADT	% Trucks
Geographic Twp.	Brampton	Inspection Route Sequence	
Structure Type	Culvert	Interchange Number	
Total Deck Length	(m)	Interchange Structure Number	
Overall Str. Width	33.8 (m)	Min. Vertical Clearance	0 (m)
Total Deck Area	- (sq.m)	Special Routes:	☐ Transit ☐ Truck ☐ School ☐ Bicycle
Roadway Width	- (m)	Detour Length Around Bridge	(km)
Skew Angle	- (Degrees)	Direction of Structure	W to E
No. of Spans	2	Fill on Structure	0.7 (m)
Span Lengths	0.8 (m)		

Historical Data:

Year Built		Year of Last Major Rehab.	
Last OSIM Inspection	14/07/2005	Last Evaluation	
Last Enhanced OSIM Inspection		Current Load Limit	/ / (tonnes)
Enhanced Access Equipment (ladder, boat, lift, etc.)		Load Limit By-Law #	
Last Underwater Inspection		By-Law Expiry Date	
Last Condition Survey			

Rehab History: (Date/description)

Scheduled Improvements:			
Regional Priority Number		Programmed Work Year	
Nature of Program Work:			

Appraisal Indices:		**Comments**
Fatigue	0	
Seismic	0	
Scour	0	
Flood	0	
Geometrics	0	
Barrier	0	
Curb	0	
Load Capacity	0	

Field Inspection Information:			
Date of Inspection:	January 27,2010	Type of Inspection:	☒ OSIM ☐ Enhanced OSIM
Inspector:	Eric Cheng		
Others in Party:	Alan Chung, Dan Urian		
Access Equipment Used:	Hand Tools, Digital Camera, Measuring Tape		
Weather:	Clear,some flurries		
Temperature:	-3°		

Additional Investigations Required:	Priority		
	None	Normal	Urgent
Material Condition Survey			
Detailed Deck Condition Survey:	X		
Non-destructive Delamination Survey of Asphalt-Covered Deck:	X		
Concrete Substructure Condition Survey:	X		
Detailed Coating Condition Survey:	X		
Detailed Timber Investigation	X		
Post-Tensioned Strand Investigation	X		
Underwater Investigation:	X		
Fatigue Investigation:	X		
Seismic Investigation:	X		
Structure Evaluation:	X		
Monitoring			
Monitoring of Deformations, Settlements and Movements:	X		
Monitoring Crack Widths:	X		

Investigation Notes:

Effective Cross-Section: 0%

Overall Structure Notes:	
Recommended Work on Structure:	☒ None ☐ Minor Rehab. ☐ Major Rehab. ☐ Replace
Timing of Recommended Work:	☐ 1 to 5 years ☒ 6 to 10 years
Overall Comments:	The structure is in good condition.
Date of Next Inspection:	

Suspected Performance Deficiencies

01	Load carrying capacity	06	Bearing not uniformly loaded/unstable	12	Slippery surfaces
02	Excessive deformations (deflections & rotations)	07	Jammed expansion joint	13	Flooding/channel blockage
03	Continuing settlement	08	Pedestrian/vehicular hazard	14	Undermining of foundation
04	Continuing movements	09	Rough riding surface	15	Unstable embankments
05	Seized bearings	10	Surface ponding	16	Other
		11	Deck drainage		

Maintenance Needs

01	Lift and Swing Bridge Maintenance	07	Repair to Structural Steel	13	Erosion Control at Bridges
02	Bridge Cleaning	08	Repair of Bridge Concrete	14	Concrete Sealing
03	Bridge Handrail Maintenance	09	Repair of Bridge Timber	15	Rout and Seal
04	Painting Steel Bridge Structures	10	Bailey bridges - Maintenance	16	Bridge Deck Drainage
05	Bridge Deck Joint Repair	11	Animal/Pest Control	17	Scaling (Loose Concrete or ACR Steel)
06	Bridge Bearing Maintenance	12	Bridge Surface Repair	18	Other

Element Data

2968

Element Group:	Culvert	**Length:**	33.8m
Element Name:		**Width:**	0.8m
Location:	Cross Hwy50	**Height:**	
Material:	Corrugated Steel	**Count:**	2
Element Type:	Round Culvert	**Total Quantity:**	33.8m
Environment:	Benign / Moderate / Severe	**Limited Inspection** ☐	
Protection System:			

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***	**Perform. Deficiencies**
	m^2 / m / each / % / all		x			

Comments: The culvert needs flushing and the outlet freed of silty deposits and vegetation.

Recommended Work: ☒ Rehab ☐ Replace ☐ 1-5 years ☒ 6-10 years	**Maintenance Needs:** ☒ Urgent ☐ 1 year ☐ 2 year

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	Benign / Moderate / Severe	**Limited Inspection** ☐	
Protection System:			

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***	**Perform. Deficiencies**
	m^2 / m / each / % / all					

Comments:

Recommended Work: ☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years	**Maintenance Needs:** ☐ Urgent ☐ 1 year ☐ 2 year

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	Benign / Moderate / Severe	**Limited Inspection** ☐	
Protection System:			

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***	**Perform. Deficiencies**
	m^2 / m / each / % / all					

Comments:

Recommended Work: ☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years	**Maintenance Needs:** ☐ Urgent ☐ 1 year ☐ 2 year

* A quantity must be estimated using the appropriate unit (e.g. m^2). Percent should not be used.

Ontario Structure Inspection Manual – Inspection Form

Region of Peel Structure # 2971

Inventory Data:

Structure Name			
Main Hwy/Road #	50 On ☐ Under ☒	Crossing Type:	☐ Navig. Water ☐ Non-Navig. Water ☐ Rail ☒ Road ☐ Ped. ☐ Other
Hwy/Road Name	Hwy 50		
Structure Location	Cross Hwy50		
Latitude GPS Coord	E:605219	Longitude	N:4855984
Owner(s)	Region of Peel	Heritage Designation:	☐ Not Cons. ☐ Cons./not App. ☐ List/not Desig. ☐ Desig./not List ☐ Desig. & List
MTO Region	Central	Road Class:	Freeway ☐ Arterial ☐ Collector ☐ Local ☐
MTO District	-	Posted Speed	No. of Lanes
Old County	-	AADT	% Trucks
Geographic Twp.	Brampton	Inspection Route Sequence	
Structure Type	Culvert	Interchange Number	
Total Deck Length	(m)	Interchange Structure Number	
Overall Str. Width	31.4 (m)	Min. Vertical Clearance	0 (m)
Total Deck Area	- (sq.m)	Special Routes:	☐ Transit ☐ Truck ☐ School ☐ Bicycle
Roadway Width	- (m)	Detour Length Around Bridge	(km)
Skew Angle	- (Degrees)	Direction of Structure	W to E
No. of Spans	2	Fill on Structure	0.6 (m)
Span Lengths	0.75 (m)		

Historical Data:

Year Built		Year of Last Major Rehab.	
Last OSIM Inspection	14/07/2005	Last Evaluation	
Last Enhanced OSIM Inspection		Current Load Limit	/ / (tonnes)
Enhanced Access Equipment (ladder, boat, lift, etc.)		Load Limit By-Law #	
Last Underwater Inspection		By-Law Expiry Date	
Last Condition Survey			

Rehab History: (Date/description)

Scheduled Improvements:			
Regional Priority Number		Programmed Work Year	
Nature of Program Work:			

Appraisal Indices:		**Comments**
Fatigue	0	
Seismic	0	
Scour	0	
Flood	0	
Geometrics	0	
Barrier	0	
Curb	0	
Load Capacity	0	

Field Inspection Information:			
Date of Inspection:	January 27,2010	Type of Inspection:	☒ OSIM ☐ Enhanced OSIM
Inspector:	Eric Cheng		
Others in Party:	Alan Chung, Dan Urian		
Access Equipment Used:	Hand Tools, Digital Camera, Measuring Tape		
Weather:	Clear,some flurries		
Temperature:	-3°		

Additional Investigations Required:	Priority		
	None	Normal	Urgent
Material Condition Survey			
Detailed Deck Condition Survey:	x		
Non-destructive Delamination Survey of Asphalt-Covered Deck:	x		
Concrete Substructure Condition Survey:	x		
Detailed Coating Condition Survey:	x		
Detailed Timber Investigation	x		
Post-Tensioned Strand Investigation	x		
Underwater Investigation:	x		
Fatigue Investigation:	x		
Seismic Investigation:	x		
Structure Evaluation:	x		
Monitoring			
Monitoring of Deformations, Settlements and Movements:	x		
Monitoring Crack Widths:	x		

Investigation Notes:

Effective Cross-Section: 0%

Overall Structure Notes:	
Recommended Work on Structure:	☐ None ☐ Minor Rehab. ☒ Major Rehab. ☐ Replace
Timing of Recommended Work:	☒ 1 to 5 years ☐ 6 to 10 years
Overall Comments:	The structure is in poor condition. It is rusted inside and west end bent upwards.
Date of Next Inspection:	

Suspected Performance Deficiencies

01	Load carrying capacity	06	Bearing not uniformly loaded/unstable	12	Slippery surfaces
02	Excessive deformations (deflections & rotations)	07	Jammed expansion joint	13	Flooding/channel blockage
03	Continuing settlement	08	Pedestrian/vehicular hazard	14	Undermining of foundation
04	Continuing movements	09	Rough riding surface	15	Unstable embankments
05	Seized bearings	10	Surface ponding	16	Other
		11	Deck drainage		

Maintenance Needs

01	Lift and Swing Bridge Maintenance	07	Repair to Structural Steel	13	Erosion Control at Bridges
02	Bridge Cleaning	08	Repair of Bridge Concrete	14	Concrete Sealing
03	Bridge Handrail Maintenance	09	Repair of Bridge Timber	15	Rout and Seal
04	Painting Steel Bridge Structures	10	Bailey bridges - Maintenance	16	Bridge Deck Drainage
05	Bridge Deck Joint Repair	11	Animal/Pest Control	17	Scaling (Loose Concrete or ACR Steel)
06	Bridge Bearing Maintenance	12	Bridge Surface Repair	18	Other

Element Data

2971

Element Group:	Culvert	**Length:**	31.4m
Element Name:		**Width:**	0.75m
Location:	Cross Hwy50	**Height:**	
Material:	Corrugated Steel	**Count:**	2
Element Type:	Round Culvert	**Total Quantity:**	64.8m
Environment:	Benign / Moderate / Severe	**Limited Inspection** ☐	
Protection System:			

Condition Data:	Units	Exc.	Good	Fair	Poor*	Perform. Deficiencies
	m^2 / m / each / % / all				x	

Comments:
The structure is broken at east end and it should be replaced.
Re-lining is necessary at the west end. Cleaning work is required.

Recommended Work:	☒ Rehab ☐ Replace	**Maintenance Needs:**	
	☒ 1-5 years ☐ 6-10 years	☒ Urgent ☐ 1 year ☐ 2 year	

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	Benign / Moderate / Severe	**Limited Inspection** ☐	
Protection System:			

Condition Data:	Units	Exc.	Good	Fair	Poor*	Perform. Deficiencies
	m^2 / m / each / % / all					

Comments:

Recommended Work:	☐ Rehab ☐ Replace	**Maintenance Needs:**	
	☐ 1-5 years ☐ 6-10 years	☐ Urgent ☐ 1 year ☐ 2 year	

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	Benign / Moderate / Severe	**Limited Inspection** ☐	
Protection System:			

Condition Data:	Units	Exc.	Good	Fair	Poor*	Perform. Deficiencies
	m^2 / m / each / % / all					

Comments:

Recommended Work:	☐ Rehab ☐ Replace	**Maintenance Needs:**	
	☐ 1-5 years ☐ 6-10 years	☐ Urgent ☐ 1 year ☐ 2 year	

* A quantity must be estimated using the appropriate unit (e.g. m^2). Percent should not be used.

Ontario Structure Inspection Manual – Inspection Form

Region of Peel Structure # 2973

Inventory Data:

Structure Name			
Main Hwy/Road #	50 On ☐ Under ☒	Crossing Type:	☐ Navig. Water ☐ Non-Navig. Water ☐ Rail ☒ Road ☐ Ped. ☐ Other
Hwy/Road Name	Hwy 50		
Structure Location	Cross Hwy50		
Latitude GPS Coord	E:605257	Longitude	N:4855892
Owner(s)	Region of Peel	Heritage Designation:	☐ Not Cons. ☐ Cons./not App. ☐ List/not Desig. ☐ Desig./not List ☐ Desig. & List
MTO Region	Central	Road Class:	Freeway ☐ Arterial ☐ Collector ☐ Local ☐
MTO District	-	Posted Speed	No. of Lanes
Old County	-	AADT	% Trucks
Geographic Twp.	Brampton	Inspection Route Sequence	
Structure Type	Culvert	Interchange Number	
Total Deck Length	(m)	Interchange Structure Number	
Overall Str. Width	31.2 (m)	Min. Vertical Clearance	0 (m)
Total Deck Area	- (sq.m)	Special Routes:	☐ Transit ☐ Truck ☐ School ☐ Bicycle
Roadway Width	- (m)	Detour Length Around Bridge	(km)
Skew Angle	- (Degrees)	Direction of Structure	E to W
No. of Spans	2	Fill on Structure	0.6 (m)
Span Lengths	0.75 (m)		

Historical Data:

Year Built		Year of Last Major Rehab.	
Last OSIM Inspection	14/07/2005	Last Evaluation	
Last Enhanced OSIM Inspection		Current Load Limit	/ / (tonnes)
Enhanced Access Equipment (ladder, boat, lift, etc.)		Load Limit By-Law #	
Last Underwater Inspection		By-Law Expiry Date	
Last Condition Survey			

Rehab History: (Date/description)

Scheduled Improvements:			
Regional Priority Number		Programmed Work Year	
Nature of Program Work:			

Appraisal Indices:		**Comments**
Fatigue	0	
Seismic	0	
Scour	0	
Flood	0	
Geometrics	0	
Barrier	0	
Curb	0	
Load Capacity	0	

Ontario Structure Inspection Manual – Inspection Form **MTO Site Number:** 2973

Field Inspection Information:			
Date of Inspection:	January 27,2010	Type of Inspection:	☒ OSIM ☐ Enhanced OSIM
Inspector:	Eric Cheng		
Others in Party:	Alan Chung, Dan Urian		
Access Equipment Used:	Hand Tools, Digital Camera, Measuring Tape		
Weather:	Clear,some flurries		
Temperature:	-3°		

Additional Investigations Required:	Priority		
	None	Normal	Urgent
Material Condition Survey			
Detailed Deck Condition Survey:	x		
Non-destructive Delamination Survey of Asphalt-Covered Deck:	x		
Concrete Substructure Condition Survey:	x		
Detailed Coating Condition Survey:	x		
Detailed Timber Investigation	x		
Post-Tensioned Strand Investigation	x		
Underwater Investigation:	x		
Fatigue Investigation:	x		
Seismic Investigation:	x		
Structure Evaluation:	x		
Monitoring			
Monitoring of Deformations, Settlements and Movements:	x		
Monitoring Crack Widths:	x		

Investigation Notes:

Effective Cross-Section:0%

Overall Structure Notes:	
Recommended Work on Structure:	☐ None ☒ Minor Rehab. ☐ Major Rehab. ☐ Replace
Timing of Recommended Work:	☒ 1 to 5 years ☐ 6 to 10 years
Overall Comments:	The structure has minor deformations at west end and rusted inside and outside.
Date of Next Inspection:	

Suspected Performance Deficiencies

01	Load carrying capacity	06	Bearing not uniformly loaded/unstable	12	Slippery surfaces
02	Excessive deformations (deflections & rotations)	07	Jammed expansion joint	13	Flooding/channel blockage
03	Continuing settlement	08	Pedestrian/vehicular hazard	14	Undermining of foundation
04	Continuing movements	09	Rough riding surface	15	Unstable embankments
05	Seized bearings	10	Surface ponding	16	Other
		11	Deck drainage		

Maintenance Needs

01	Lift and Swing Bridge Maintenance	07	Repair to Structural Steel	13	Erosion Control at Bridges
02	Bridge Cleaning	08	Repair of Bridge Concrete	14	Concrete Sealing
03	Bridge Handrail Maintenance	09	Repair of Bridge Timber	15	Rout and Seal
04	Painting Steel Bridge Structures	10	Bailey bridges - Maintenance	16	Bridge Deck Drainage
05	Bridge Deck Joint Repair	11	Animal/Pest Control	17	Scaling (Loose Concrete or ACR Steel)
06	Bridge Bearing Maintenance	12	Bridge Surface Repair	18	Other

Element Data

2973

Element Group:	Culvert	**Length:**	31.2m
Element Name:		**Width:**	0.75m
Location:	Cross Hwy50	**Height:**	
Material:	Corrugated Steel	**Count:**	2
Element Type:	Round Culvert	**Total Quantity:**	64.4m
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all				x

Comments: The structures have minor deformations at west ends. First section of structures must be replaced. Cleaning work is required.

Recommended Work:	☒ Rehab ☒ Replace ☒ 1-5 years ☐ 6-10 years	**Maintenance Needs:**	☒ Urgent ☐ 1 year ☐ 2 year

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all				

Comments:

Recommended Work:	☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years	**Maintenance Needs:**	☐ Urgent ☐ 1 year ☐ 2 year

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all				

Comments:

Recommended Work:	☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years	**Maintenance Needs:**	☐ Urgent ☐ 1 year ☐ 2 year

* A quantity must be estimated using the appropriate unit (e.g. m^2). Percent should not be used.

Ontario Structure Inspection Manual – Inspection Form

Region of Peel Structure # 2975

Inventory Data:

Structure Name			
Main Hwy/Road #	50 On ☐ Under ☒	Crossing Type:	☐ Navig. Water ☐ Non-Navig. Water ☐ Rail ☒ Road ☐ Ped. ☐ Other
Hwy/Road Name	Hwy 50		
Structure Location	Cross Hwy50		
Latitude GPS Coord	E:605497	Longitude	N:4854341
Owner(s)	Region of Peel	Heritage Designation:	☐ Not Cons. ☐ Cons./not App. ☐ List/not Desig. ☐ Desig./not List ☐ Desig. & List
MTO Region	Central	Road Class:	Freeway ☐ Arterial ☐ Collector ☐ Local ☐
MTO District	-	Posted Speed	No. of Lanes
Old County	-	AADT	% Trucks
Geographic Twp.	Brampton	Inspection Route Sequence	
Structure Type	Culvert	Interchange Number	
Total Deck Length	(m)	Interchange Structure Number	
Overall Str. Width	42.8 (m)	Min. Vertical Clearance	0.8 (m)
Total Deck Area	- (sq.m)	Special Routes:	☐ Transit ☐ Truck ☐ School ☐ Bicycle
Roadway Width	- (m)	Detour Length Around Bridge	(km)
Skew Angle	- (Degrees)	Direction of Structure	W to E
No. of Spans	2	Fill on Structure	1.6 (m)
Span Lengths	1.35 (m)		

Historical Data:

Year Built		Year of Last Major Rehab.	
Last OSIM Inspection	14/07/2005	Last Evaluation	
Last Enhanced OSIM Inspection		Current Load Limit	/ / (tonnes)
Enhanced Access Equipment (ladder, boat, lift, etc.)		Load Limit By-Law #	
Last Underwater Inspection		By-Law Expiry Date	
Last Condition Survey			

Rehab History: (Date/description)

Scheduled Improvements:			
Regional Priority Number		Programmed Work Year	
Nature of Program Work:			

Appraisal Indices:		**Comments**
Fatigue	0	
Seismic	0	
Scour	0	
Flood	0	
Geometrics	0	
Barrier	0	
Curb	0	
Load Capacity	0	

Ontario Structure Inspection Manual – Inspection Form **MTO Site Number:** 2975

Field Inspection Information:			
Date of Inspection:	January 27,2010	Type of Inspection:	☒ OSIM ☐ Enhanced OSIM
Inspector:	Eric Cheng		
Others in Party:	Alan Chung, Dan Urian		
Access Equipment Used:	Hand Tools, Digital Camera, Measuring Tape		
Weather:	Clear,some flurries		
Temperature:	-3°		

Additional Investigations Required:	Priority		
	None	Normal	Urgent
Material Condition Survey			
Detailed Deck Condition Survey:	x		
Non-destructive Delamination Survey of Asphalt-Covered Deck:	x		
Concrete Substructure Condition Survey:	x		
Detailed Coating Condition Survey:	x		
Detailed Timber Investigation	x		
Post-Tensioned Strand Investigation	x		
Underwater Investigation:	x		
Fatigue Investigation:	x		
Seismic Investigation:	x		
Structure Evaluation:	x		
Monitoring			
Monitoring of Deformations, Settlements and Movements:	x		
Monitoring Crack Widths:	x		

Investigation Notes:

Effective Cross-Section:62%

Overall Structure Notes:	
Recommended Work on Structure:	☐ None ☒ Minor Rehab. ☐ Major Rehab. ☐ Replace
Timing of Recommended Work:	☒ 1 to 5 years ☐ 6 to 10 years
Overall Comments:	The structure is in good condition. Western inlets are rusted.
Date of Next Inspection:	

Suspected Performance Deficiencies

01	Load carrying capacity	06	Bearing not uniformly loaded/unstable	12	Slippery surfaces
02	Excessive deformations (deflections & rotations)	07	Jammed expansion joint	13	Flooding/channel blockage
03	Continuing settlement	08	Pedestrian/vehicular hazard	14	Undermining of foundation
04	Continuing movements	09	Rough riding surface	15	Unstable embankments
05	Seized bearings	10	Surface ponding	16	Other
		11	Deck drainage		

Maintenance Needs

01	Lift and Swing Bridge Maintenance	07	Repair to Structural Steel	13	Erosion Control at Bridges
02	Bridge Cleaning	08	Repair of Bridge Concrete	14	Concrete Sealing
03	Bridge Handrail Maintenance	09	Repair of Bridge Timber	15	Rout and Seal
04	Painting Steel Bridge Structures	10	Bailey bridges - Maintenance	16	Bridge Deck Drainage
05	Bridge Deck Joint Repair	11	Animal/Pest Control	17	Scaling (Loose Concrete or ACR Steel)
06	Bridge Bearing Maintenance	12	Bridge Surface Repair	18	Other

Element Data

2975

Element Group:	Culvert	**Length:**	42.8m
Element Name:		**Width:**	1.3m
Location:	Cross Hwy50	**Height:**	
Material:	Corrugated Steel	**Count:**	2
Element Type:	Round Culvert	**Total Quantity:**	85.6m
Environment:	Benign / Moderate / Severe	**Limited Inspection** ☐	
Protection System:			

Condition Data:	Units	Exc.	Good	Fair	Poor*	Perform. Deficiencies
	m^2 / m / each / % / all			x		

Comments: Western inlets are rusted and need rehabilitation work.

Recommended Work: ☒ Rehab ☐ Replace ☒ 1-5 years ☐ 6-10 years	**Maintenance Needs:** ☒ Urgent ☐ 1 year ☐ 2 year

Element Group:	Barriers	**Length:**	44.0m
Element Name:	Railing Systems	**Width:**	
Location:	West of Hwy50	**Height:**	
Material:	Hybrid	**Count:**	
Element Type:	Steel Rods on Wooden Posts	**Total Quantity:**	44.0m
Environment:	Benign / Moderate / Severe	**Limited Inspection** ☐	
Protection System:	Hot dip galvanizing		

Condition Data:	Units	Exc.	Good	Fair	Poor*	Perform. Deficiencies
	m^2 / m / each / % / all		x			

Comments: The railing system is in good condition.

Recommended Work: ☒ Rehab ☐ Replace ☒ 1-5 years ☐ 6-10 years	**Maintenance Needs:** ☐ Urgent ☐ 1 year ☒ 2 year

Element Group:	Barriers	**Length:**	40.0m
Element Name:	Railing Systems	**Width:**	
Location:	East of Hwy50	**Height:**	
Material:	Hybrid	**Count:**	
Element Type:	Steel Rods on Wooden Posts	**Total Quantity:**	40.0m
Environment:	Benign / Moderate / Severe	**Limited Inspection** ☐	
Protection System:			

Condition Data:	Units	Exc.	Good	Fair	Poor*	Perform. Deficiencies
	m^2 / m / each / % / all			x		

Comments: There are 3 wooden posts broken and need to be replaced.

Recommended Work: ☒ Rehab ☐ Replace ☒ 1-5 years ☐ 6-10 years	**Maintenance Needs:** ☒ Urgent ☐ 1 year ☐ 2 year

* A quantity must be estimated using the appropriate unit (e.g. m^2). Percent should not be used.

Ontario Structure Inspection Manual – Inspection Form

Region of Peel Structure # 2997

Inventory Data:

Structure Name			
Main Hwy/Road #	50 On ☐ Under ☒	Crossing Type:	☐ Navig. Water ☐ Non-Navig. Water ☐ Rail ☒ Road ☐ Ped. ☐ Other
Hwy/Road Name	Hwy50		
Structure Location	South of intersection Hwy 50 and Mayfield Rd		
Latitude GPS Coord	E:604835	Longitude	N:4855843
Owner(s)	Region of Peel	Heritage Designation:	☐ Not Cons. ☐ Cons./not App. ☐ List/not Desig. ☐ Desig./not List ☐ Desig. & List
MTO Region	Central	Road Class:	Freeway ☐ Arterial ☐ Collector ☐ Local ☐
MTO District	-	Posted Speed	No. of Lanes
Old County	-	AADT	% Trucks
Geographic Twp.	Brampton	Inspection Route Sequence	
Structure Type	Box	Interchange Number	
Total Deck Length	(m)	Interchange Structure Number	
Overall Str. Width	55.60 (m)	Min. Vertical Clearance	(m)
Total Deck Area	(sq.m)	Special Routes:	☐ Transit ☐ Truck ☐ School ☐ Bicycle
Roadway Width	(m)	Detour Length Around Bridge	(km)
Skew Angle	(Degrees)	Direction of Structure	W to E
No. of Spans	1	Fill on Structure	0.9 (m)
Span Lengths	3.0		(m)

Historical Data:

Year Built		Year of Last Major Rehab.	
Last OSIM Inspection	7/14/2005	Last Evaluation	
Last Enhanced OSIM Inspection		Current Load Limit	/ / (tonnes)
Enhanced Access Equipment (ladder, boat, lift, etc.)		Load Limit By-Law #	
Last Underwater Inspection		By-Law Expiry Date	
Last Condition Survey			

Rehab History: (Date/description)

Scheduled Improvements:			
Regional Priority Number		Programmed Work Year	
Nature of Program Work:			

Appraisal Indices:		**Comments**
Fatigue	0	
Seismic	0	
Scour	0	
Flood	0	
Geometrics	0	
Barrier	0	
Curb	0	
Load Capacity	0	

Field Inspection Information:			
Date of Inspection:	January 27,2010	Type of Inspection:	☒ OSIM ☐ Enhanced OSIM
Inspector:	Eric Cheng		
Others in Party:	Alan Chung, Dan Urian		
Access Equipment Used:	Hand Tools, Digital Camera, Measuring Tape		
Weather:	Clear,some flurries		
Temperature:	-3°		

Additional Investigations Required:	Priority		
	None	Normal	Urgent
Material Condition Survey			
Detailed Deck Condition Survey:	x		
Non-destructive Delamination Survey of Asphalt-Covered Deck:	x		
Concrete Substructure Condition Survey:	x		
Detailed Coating Condition Survey:	x		
Detailed Timber Investigation	x		
Post-Tensioned Strand Investigation	x		
Underwater Investigation:	x		
Fatigue Investigation:	x		
Seismic Investigation:	x		
Structure Evaluation:	x		
Monitoring			
Monitoring of Deformations, Settlements and Movements:	x		
Monitoring Crack Widths:	x		

Investigation Notes:

Effective Cross-Section: 50%

Overall Structure Notes:	
Recommended Work on Structure:	☒ None ☐ Minor Rehab. ☐ Major Rehab. ☐ Replace
Timing of Recommended Work:	☐ 1 to 5 years ☒ 6 to 10 years
Overall Comments:	The structure is in good condition
Date of Next Inspection:	

Suspected Performance Deficiencies

01	Load carrying capacity	06	Bearing not uniformly loaded/unstable	12	Slippery surfaces
02	Excessive deformations (deflections & rotations)	07	Jammed expansion joint	13	Flooding/channel blockage
03	Continuing settlement	08	Pedestrian/vehicular hazard	14	Undermining of foundation
04	Continuing movements	09	Rough riding surface	15	Unstable embankments
05	Seized bearings	10	Surface ponding	16	Other
		11	Deck drainage		

Maintenance Needs

01	Lift and Swing Bridge Maintenance	07	Repair to Structural Steel	13	Erosion Control at Bridges
02	Bridge Cleaning	08	Repair of Bridge Concrete	14	Concrete Sealing
03	Bridge Handrail Maintenance	09	Repair of Bridge Timber	15	Rout and Seal
04	Painting Steel Bridge Structures	10	Bailey bridges - Maintenance	16	Bridge Deck Drainage
05	Bridge Deck Joint Repair	11	Animal/Pest Control	17	Scaling (Loose Concrete or ACR Steel)
06	Bridge Bearing Maintenance	12	Bridge Surface Repair	18	Other

Element Data

Element Group:	Embankment& Streams	**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:	Rip Rap	**Count:**	
Element Type:		**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***	
	m^2 / m / each / % / all		x			

Comments:

Recommended Work:	☒ Rehab ☐ Replace	**Maintenance Needs:**	
	☐ 1-5 years ☒ 6-10 years	☐ Urgent ☐ 1 year ☒ 2 year	

Element Group:	Barriers	**Length:**	141m
Element Name:	Railing Systems	**Width:**	
Location:	East of HWY50	**Height:**	
Material:	Steel	**Count:**	1
Element Type:	Steel Flex Beam on Steel Posts	**Total Quantity:**	141m
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:	Hot dip galvanizing		**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***	
	m^2 / m / each / % / all		x			

Comments:

Guide rail on East side of Hwy 50 was affected structurally by impacts. 7.5m of steel beam and 5 posts are bent.

Recommended Work:	☒ Rehab ☐ Replace	**Maintenance Needs:**	
	☒ 1-5 years ☐ 6-10 years	☐ Urgent ☐ 1 year ☒ 2 year	

Element Group:	Barriers	**Length:**	73.5m
Element Name:	Railing Systems	**Width:**	
Location:	West of Hwy50	**Height:**	
Material:	Hybrid	**Count:**	1
Element Type:	Steel Flex Beam on Wood Post	**Total Quantity:**	73.5m
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:	Hot dip galvanizing		**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***	
	m^2 / m / each / % / all		x			

Comments:

Recommended Work:	☒ Rehab ☐ Replace	**Maintenance Needs:**	
	☐ 1-5 years ☒ 6-10 years	☐ Urgent ☐ 1 year ☒ 2 year	

* A quantity must be estimated using the appropriate unit (e.g. m^2). Percent should not be used.

Element Data

2997

Element Group:	Box Culverts	Length:	3.0m
Element Name:	Headwall	Width:	0.4m
Location:	West and East End	Height:	0.3m
Material:	Concrete	Count:	2
Element Type:		Total Quantity:	
Environment:	Benign / Moderate / Severe	Limited Inspection ☐	
Protection System:			

Condition Data:	Units	Exc.	Good	Fair	Poor*	Perform. Deficiencies
	m^2 / m / each / % / all		x			

Comments: The structure is in good condition.

Recommended Work:	☒ Rehab ☐ Replace ☐ 1-5 years ☒ 6-10 years	Maintenance Needs:	 ☐ Urgent ☐ 1 year ☒ 2 year

Element Group:	Box Culverts	Length:	55.6m
Element Name:	Box	Width:	2.5m
Location:	Cross Hwy50	Height:	1.0m
Material:	Concrete	Count:	
Element Type:	Rectangular	Total Quantity:	55.6m
Environment:	Benign / Moderate / Severe	Limited Inspection ☐	
Protection System:			

Condition Data:	Units	Exc.	Good	Fair	Poor*	Perform. Deficiencies
	m^2 / m / each / % / all		x			

Comments: The structure is in good condition.

Recommended Work:	☒ Rehab ☐ Replace ☐ 1-5 years ☒ 6-10 years	Maintenance Needs:	 ☐ Urgent ☐ 1 year ☒ 2 year

Element Group:	Pavement	Length:	
Element Name:	Asphaltic Surface	Width:	
Location:		Height:	
Material:	Asphalt	Count:	
Element Type:		Total Quantity:	
Environment:	Benign / Moderate / Severe	Limited Inspection ☐	
Protection System:			

Condition Data:	Units	Exc.	Good	Fair	Poor*	Perform. Deficiencies
	m^2 / m / each / % / all		x			

Comments: The pavement is in good condition.

Recommended Work:	☒ Rehab ☐ Replace ☒ 1-5 years ☐ 6-10 years	Maintenance Needs:	 ☐ Urgent ☐ 1 year ☒ 2 year

* A quantity must be estimated using the appropriate unit (e.g. m^2). Percent should not be used.

Ontario Structure Inspection Manual – Inspection Form

Region of Peel Structure # 3027

Inventory Data:

Structure Name			
Main Hwy/Road #	Hwy50 On ☐ Under ☒	Crossing Type:	☐ Navig. Water ☐ Non-Navig. Water ☐ Rail ☒ Road ☐ Ped. ☐ Other
Hwy/Road Name	Mayfield Rd		
Structure Location	West of intersection Hwy 50 and Mayfield Rd		
Latitude GPS Coord	E:604803	Longitude	N:4855900
Owner(s)	Region of Peel	Heritage Designation:	☐ Not Cons. ☐ Cons./not App. ☐ List/not Desig. ☐ Desig./not List ☐ Desig. & List
MTO Region	Central	Road Class:	Freeway ☐ Arterial ☐ Collector ☐ Local ☐
MTO District	-	Posted Speed	No. of Lanes
Old County	-	AADT	% Trucks
Geographic Twp.	Caledon	Inspection Route Sequence	
Structure Type	Box	Interchange Number	
Total Deck Length	(m)	Interchange Structure Number	
Overall Str. Width	43.40 (m)	Min. Vertical Clearance	0.75 (m)
Total Deck Area	- (sq.m)	Special Routes:	☐ Transit ☐ Truck ☐ School ☐ Bicycle
Roadway Width	- (m)	Detour Length Around Bridge	(km)
Skew Angle	0 (Degrees)	Direction of Structure	N to S
No. of Spans	1	Fill on Structure	0.9 (m)
Span Lengths	2.5 (m)		

Historical Data:

Year Built		Year of Last Major Rehab.	
Last OSIM Inspection	7/14/2005	Last Evaluation	
Last Enhanced OSIM Inspection		Current Load Limit	/ / (tonnes)
Enhanced Access Equipment (ladder, boat, lift, etc.)		Load Limit By-Law #	
Last Underwater Inspection		By-Law Expiry Date	
Last Condition Survey			

Rehab History: (Date/description)

Scheduled Improvements:			
Regional Priority Number		Programmed Work Year	
Nature of Program Work:			

Appraisal Indices:		**Comments**
Fatigue	0	
Seismic	0	
Scour	0	
Flood	0	
Geometrics	0	
Barrier	0	
Curb	0	
Load Capacity	0	

Field Inspection Information:			
Date of Inspection:	January 27,2010	Type of Inspection:	☒ OSIM ☐ Enhanced OSIM
Inspector:	Eric Cheng		
Others in Party:	Alan Chung, Dan Urian		
Access Equipment Used:	Hand Tools, Digital Camera, Measuring Tape		
Weather:	Clear,some flurries		
Temperature:	-3°		

Additional Investigations Required:	Priority		
	None	Normal	Urgent
Material Condition Survey			
Detailed Deck Condition Survey:	X		
Non-destructive Delamination Survey of Asphalt-Covered Deck:	X		
Concrete Substructure Condition Survey:	X		
Detailed Coating Condition Survey:	X		
Detailed Timber Investigation	X		
Post-Tensioned Strand Investigation	X		
Underwater Investigation:	X		
Fatigue Investigation:	X		
Seismic Investigation:	X		
Structure Evaluation:	X		
Monitoring			
Monitoring of Deformations, Settlements and Movements:	X		
Monitoring Crack Widths:	X		

Investigation Notes:

Effective Cross-Section:75%

Overall Structure Notes:	
Recommended Work on Structure:	☒ None ☐ Minor Rehab. ☐ Major Rehab. ☐ Replace
Timing of Recommended Work:	☐ 1 to 5 years ☒ 6 to 10 years
Overall Comments:	The structure is in good condition
Date of Next Inspection:	

Suspected Performance Deficiencies

01	Load carrying capacity	06	Bearing not uniformly loaded/unstable	12	Slippery surfaces
02	Excessive deformations (deflections & rotations)	07	Jammed expansion joint	13	Flooding/channel blockage
03	Continuing settlement	08	Pedestrian/vehicular hazard	14	Undermining of foundation
04	Continuing movements	09	Rough riding surface	15	Unstable embankments
05	Seized bearings	10	Surface ponding	16	Other
		11	Deck drainage		

Maintenance Needs

01	Lift and Swing Bridge Maintenance	07	Repair to Structural Steel	13	Erosion Control at Bridges
02	Bridge Cleaning	08	Repair of Bridge Concrete	14	Concrete Sealing
03	Bridge Handrail Maintenance	09	Repair of Bridge Timber	15	Rout and Seal
04	Painting Steel Bridge Structures	10	Bailey bridges - Maintenance	16	Bridge Deck Drainage
05	Bridge Deck Joint Repair	11	Animal/Pest Control	17	Scaling (Loose Concrete or ACR Steel)
06	Bridge Bearing Maintenance	12	Bridge Surface Repair	18	Other

Element Data

3027

Element Group:	Embankment& Streams	**Length:**	
Element Name:		**Width:**	
Location:	North and South End	**Height:**	
Material:	Rip Rap	**Count:**	
Element Type:		**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all		x		

Comments:

Recommended Work:	☒ Rehab ☐ Replace ☐ 1-5 years ☒ 6-10 years	**Maintenance Needs:**	☐ Urgent ☐ 1 year ☒ 2 year

Element Group:	Barriers	**Length:**	120.0m
Element Name:	Railing Systems	**Width:**	
Location:	South of Mayfield Rd	**Height:**	
Material:	Steel	**Count:**	
Element Type:	Steel Flex Beam on Steel Posts	**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all		x		

Comments:

Recommended Work:	☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years	**Maintenance Needs:**	☐ Urgent ☐ 1 year ☐ 2 year

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all				

Comments:

Recommended Work:	☐ Rehab ☐ Replace ☐ 1-5 years ☐ 6-10 years	**Maintenance Needs:**	☐ Urgent ☐ 1 year ☐ 2 year

* A quantity must be estimated using the appropriate unit (e.g. m^2). Percent should not be used.

Element Data 3027

Element Group:	Pavement	**Length:**	
Element Name:	Asphaltic Surface	**Width:**	
Location:	Over box culvert	**Height:**	
Material:	Asphalt	**Count:**	
Element Type:		**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all		x		

Comments:
The pavement is in good condition.

Recommended Work:	☒ Rehab ☐ Replace	**Maintenance Needs:**	
	☒ 1-5 years ☐ 6-10 years	☐ Urgent ☐ 1 year	☒ 2 year

Element Group:	Box Culverts	**Length:**	43.4m
Element Name:	Box	**Width:**	2.5m
Location:	Cross Mayfield Rd	**Height:**	1.0m
Material:	Concrete	**Count:**	
Element Type:	Rectangular	**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all		x		

Comments:
The structure is in good condition.

Recommended Work:	☒ Rehab ☐ Replace	**Maintenance Needs:**	
	☐ 1-5 years ☒ 6-10 years	☐ Urgent ☐ 1 year	☒ 2 year

Element Group:		**Length:**	
Element Name:		**Width:**	
Location:		**Height:**	
Material:		**Count:**	
Element Type:		**Total Quantity:**	
Environment:	**Benign / Moderate / Severe**	**Limited Inspection** ☐	
Protection System:			**Perform. Deficiencies**

Condition Data:	**Units**	**Exc.**	**Good**	**Fair**	**Poor***
	m^2 / m / each / % / all				

Comments:

Recommended Work:	☐ Rehab ☐ Replace	**Maintenance Needs:**	
	☐ 1-5 years ☐ 6-10 years	☐ Urgent ☐ 1 year	☐ 2 year

* A quantity must be estimated using the appropriate unit (e.g. m^2). Percent should not be used.