



**FOUNDATION INVESTIGATION REPORT
SWAMP AND HIGH FILL CROSSINGS
for
HIGHWAY 69 FOUR-LANING
FROM 5.3 KM SOUTH OF HIGHWAY 529 (NORTH JUNCTION) NORTHERLY TO 2.2 KM NORTH OF HIGHWAY 529, 7.5 KM
G.W.P. 5112-07-00
MAGNETAWAN FIRST NATION / WALLBRIDGE TOWNSHIP, ONTARIO**

VOLUME 3

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Distribution:

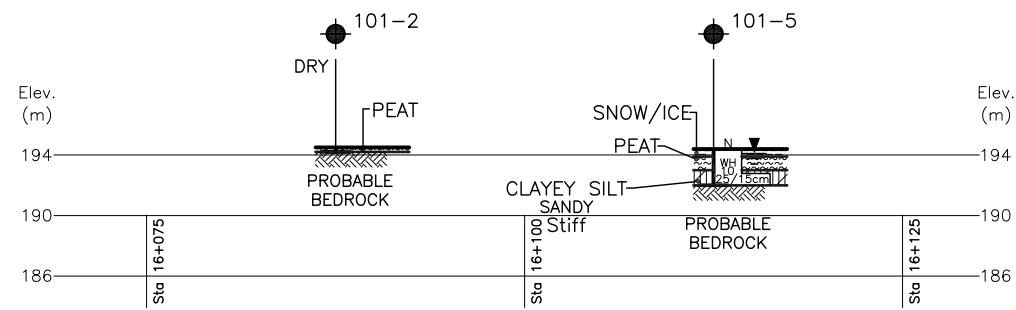
5 cc: AECOM for distribution to MTO, Project Manager
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1 cc: PML Kitchener
1 cc: PML Toronto

PML Ref.: 09TF043
Index No.: 387FIR
GEOCRES No.: 41H-148
March 11, 2015

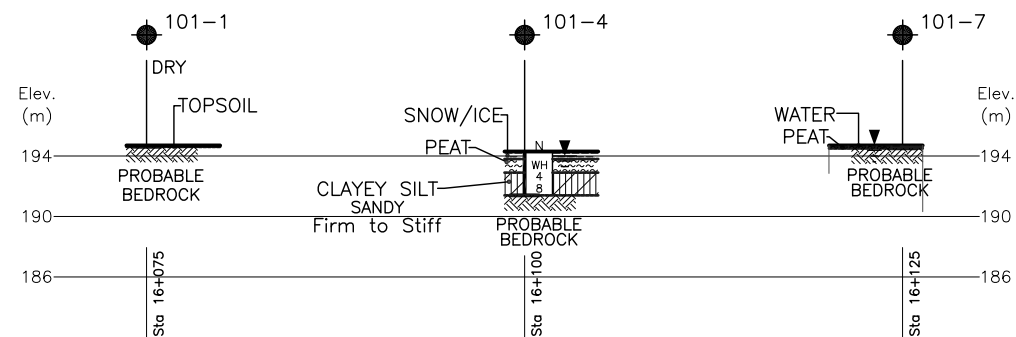


APPENDIX C

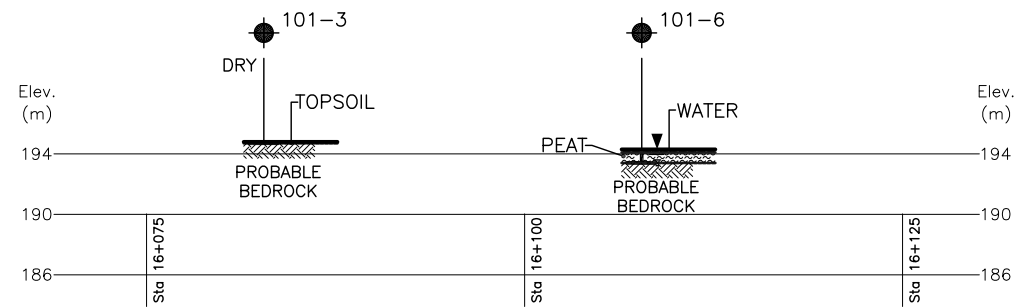
Drawings 101-1 to NT2-1: Borehole Locations and Soil Strata



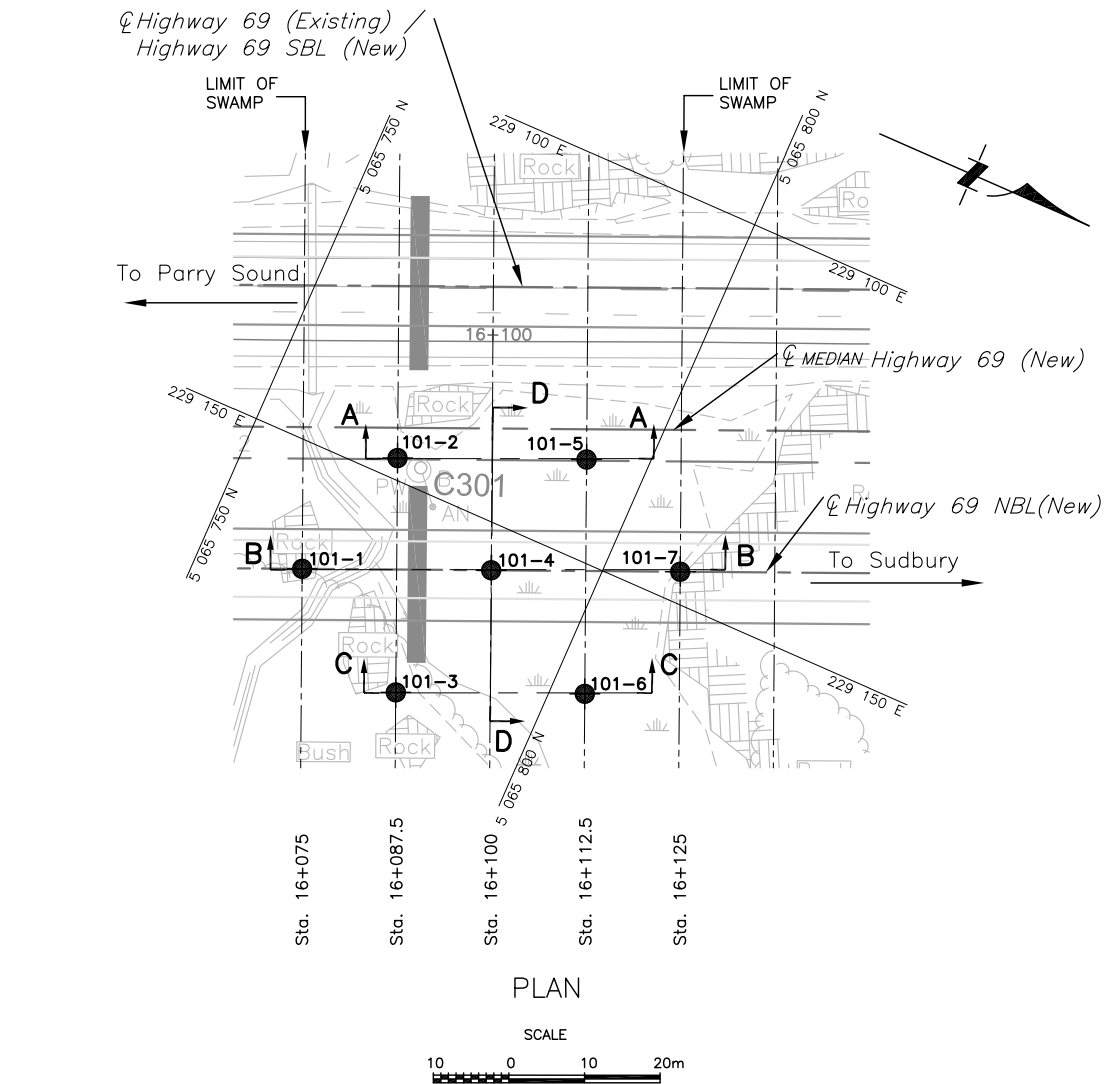
PROFILE A-A



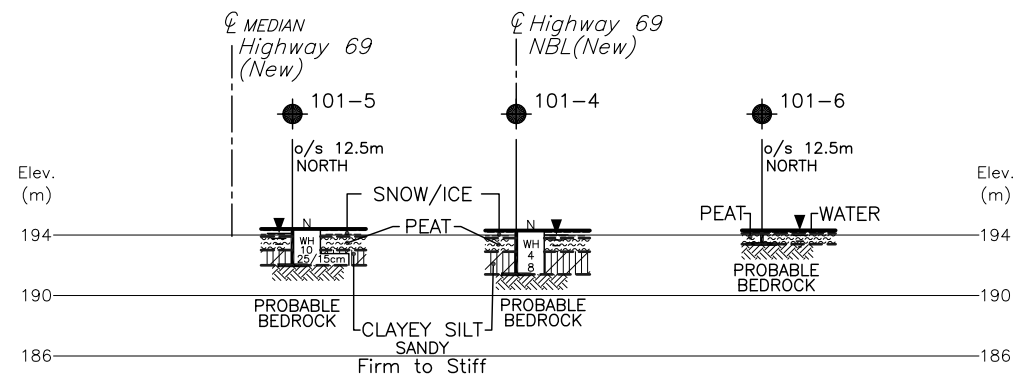
PROFILE B-B



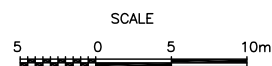
PROFILE C-C



PLAN



SECTION D-D

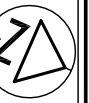


NOTES:

- THIS DRAWING 101-1 SHOULD BE READ IN CONJUNCTION WITH THE TEXT AND RECORD OF BOREHOLE LOGS.
- THIS DRAWING IS FOR SUBSURFACE INFORMATION ONLY. SURFACE DETAILS AND FEATURES ARE FOR CONCEPTUAL ILLUSTRATION.
- DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN. STATIONS ARE IN KILOMETRES AND METRES.

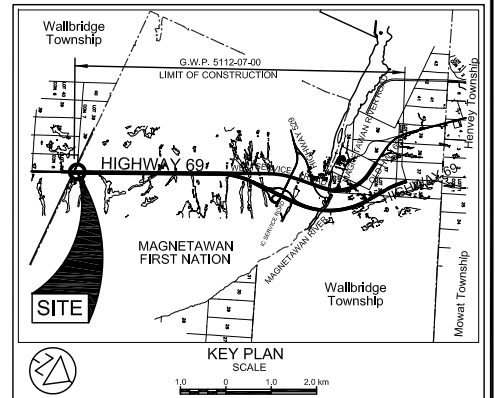
CONT No
GWP No 5112-07-00

HIGHWAY 69
HIGHWAY 69 FOUR-LANING
SWAMP 101, STA. 16+075 TO 16+125 (NBL) MAGNETAWAN TWP
BOREHOLE LOCATIONS AND SOIL STRATA



SHEET

PMI Peto MacCallum Ltd.
CONSULTING ENGINEERS



LEGEND

- Borehole
- Dynamic Cone Penetration Test (Cone)
- Borehole & Cone
- N Blows/0.3m (Std. Pen Test, 475 J/blow)
- CONE Blows/0.3m (60 °Cone, 475 J/blow)
- WL at time of investigation Oct 2011 and Feb. 2012
- Head
- ARTESIAN WATER
- Encountered
- PIEZOMETER

BH No	ELEVATION	STA MAGNETAWAN TWP	o/s CL MED
101-1	194.7	16+075	18.8m Rt.
101-2	194.5	16+087.5	4.0m Rt.
101-3	194.8	16+087.5	35.0m Rt.
101-4	194.3	16+100	18.8m Rt.
101-5	194.4	16+112.5	4.0m Rt.
101-6	194.3	16+112.5	35.0m Rt.
101-7	194.7	16+125	18.8m Rt.

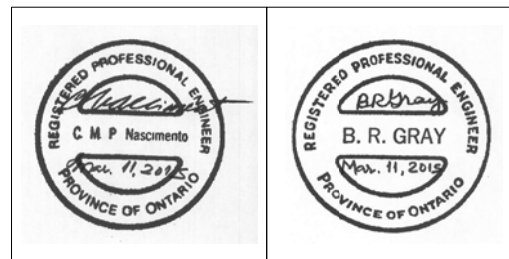
NOTE

The boundaries between soil strata have been established only at Borehole locations. Between Boreholes the boundaries are assumed from geological evidence.

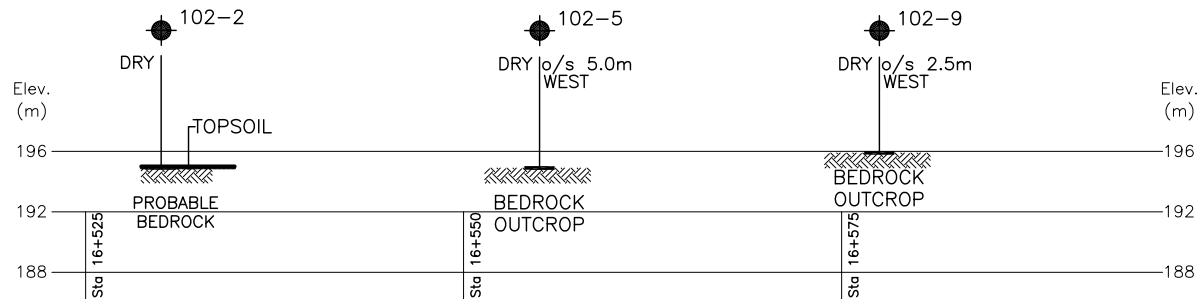
REVISIONS	DATE	BY	DESCRIPTION

Geocres No. 41H-148

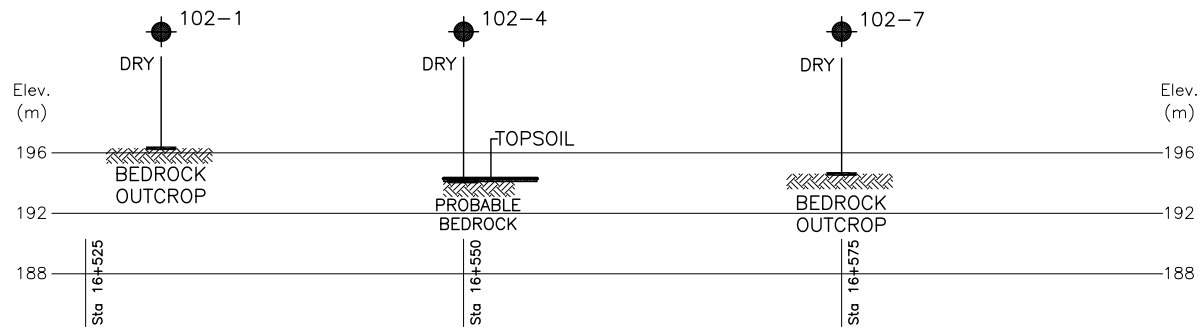
HWY No	69	DIST	54
SUBM'D	NA	CHECKED	GD
DATE	MAR. 11, 2015	SITE	---
DRAWN	NA	CHECKED	BRG
APPROVED	CN	DWG	101-1



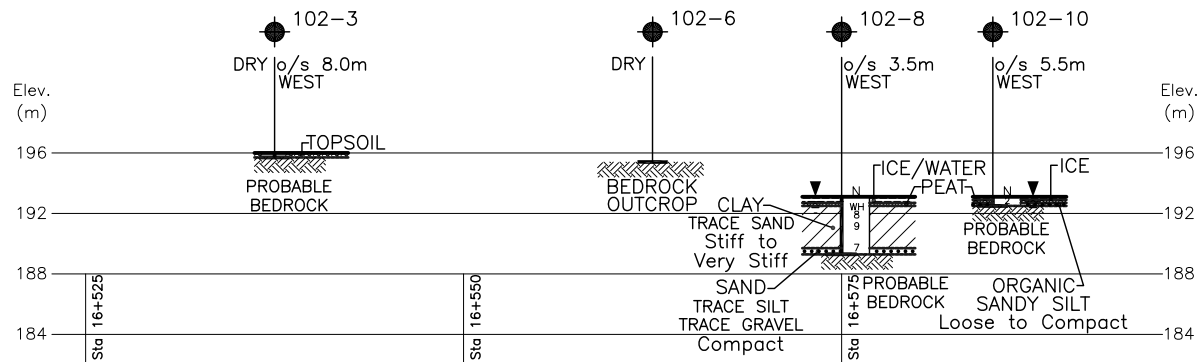
REFERENCE AECOM Drawings:
X-60143751-C-Hwy 69-Base.dwg; C6-Hwy69 Des.dwg;



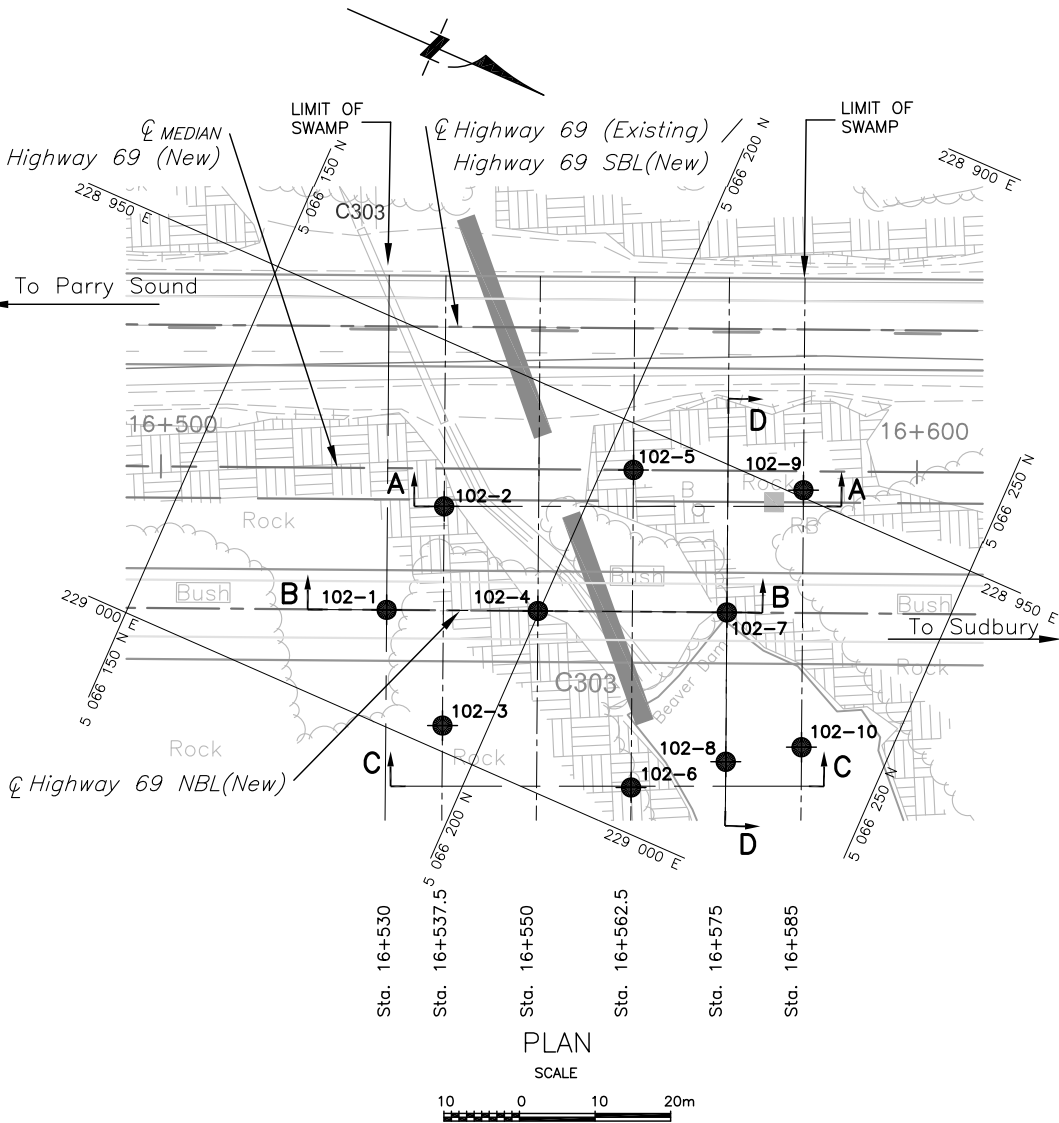
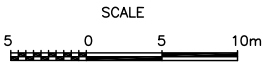
PROFILE A-A



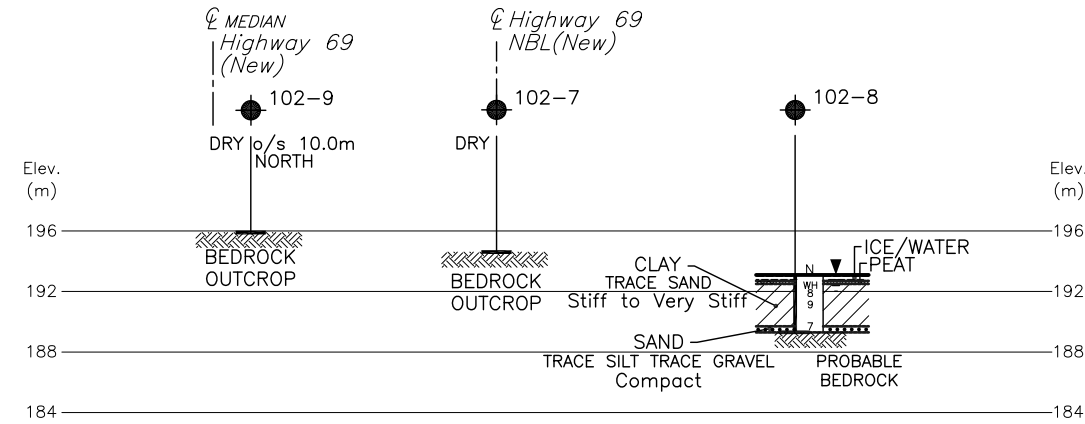
PROFILE B-B



PROFILE C-C



PLAN



SECTION D-D

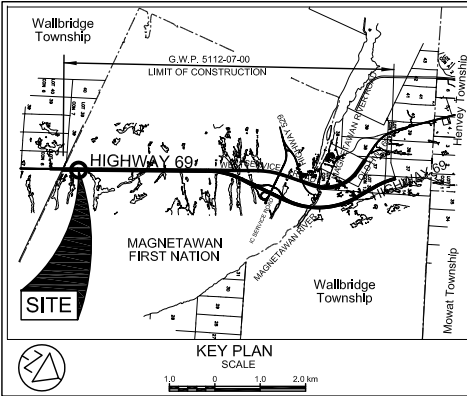
CONT No
GWP No 5112-07-00

HIGHWAY 69
HIGHWAY 69 FOUR-LANING
SWAMP 102, STA. 16+530 TO 16+585 (NBL) MAGNETAWAN TWP
BOREHOLE LOCATIONS AND SOIL STRATA



SHEET

PMI Peto MacCallum Ltd.
CONSULTING ENGINEERS



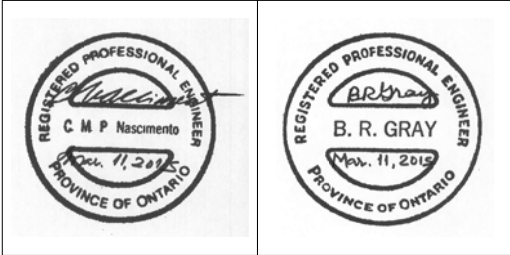
LEGEND

- Borehole
- ⊕ Dynamic Cone Penetration Test (Cone)
- ⊕ Borehole & Cone
- N Blows/0.3m (Std. Pen Test, 475 J/blow)
- CONE Blows/0.3m (60° Cone, 475 J/blow)
- ▽ WL at time of investigation Oct 2011 and Feb. 2012
- ▽ Head
- ▽ ARTESIAN WATER Encountered
- PIEZOMETER

BH No	ELEVATION	STA MAGNETAWAN TWP	o/s CL MED
102-1	196.3	16+530	18.8m Rt.
102-2	195.0	16+537.5	5.0m Rt.
102-3	196.0	16+537.5	34.0m Rt.
102-4	194.3	16+550	18.8m Rt.
102-5	194.9	16+562.5	CL
102-6	195.4	16+562.5	42.0m Rt.
102-7	194.6	16+575	18.8m Rt.
102-8	193.1	16+575	38.5m Rt.
102-9	195.9	16+585	2.5m Rt.
102-10	193.1	16+585	36.5m Rt.

NOTES:

- THIS DRAWING 102-1 SHOULD BE READ IN CONJUNCTION WITH THE TEXT AND RECORD OF BOREHOLE LOGS.
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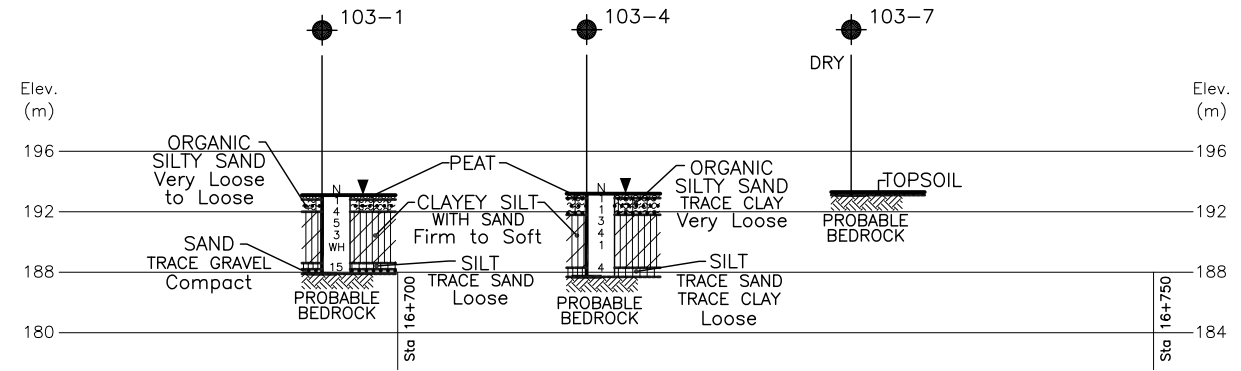
REF No. AECOM Drawings:
X-60143751-C-Hwy 69-Base.dwg; C6-Hwy69
Des.dwg.

NOTE

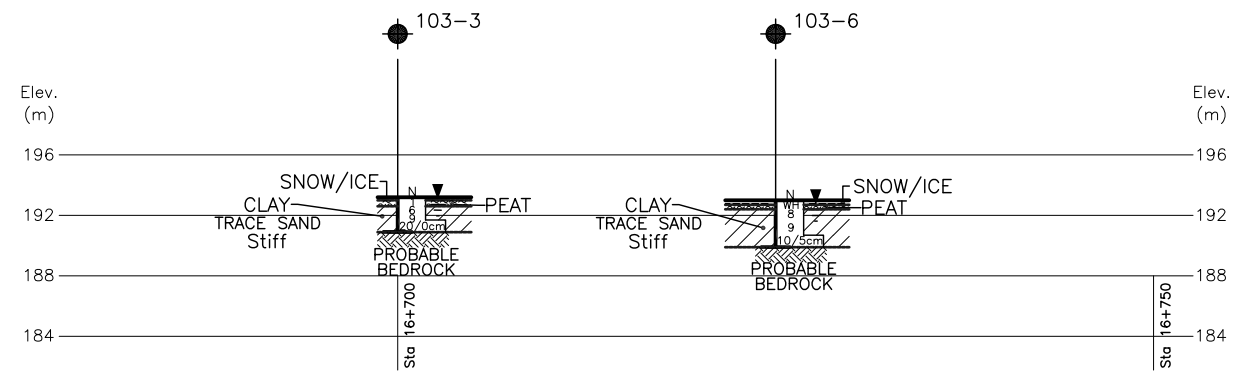
The boundaries between soil strata have been established only at Borehole locations. Between Boreholes the boundaries are assumed from geological evidence.

REVISIONS	DATE	BY	DESCRIPTION

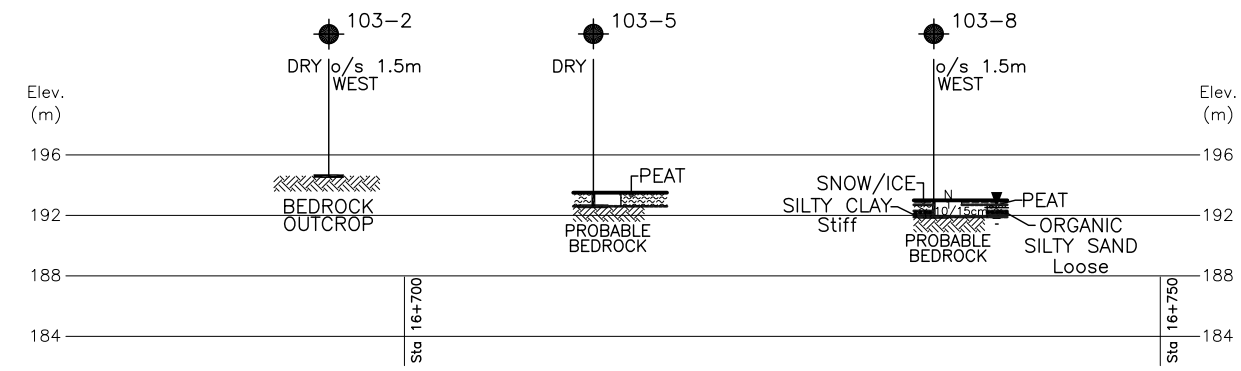
Geocres No. 41H-148	HWY No 69	DIST 54
SUBM'D NA	CHECKED GD	DATE MAR. 11, 2015
DRAWN NA	CHECKED BRG	APPROVED CN
		SITE DWG 102-1



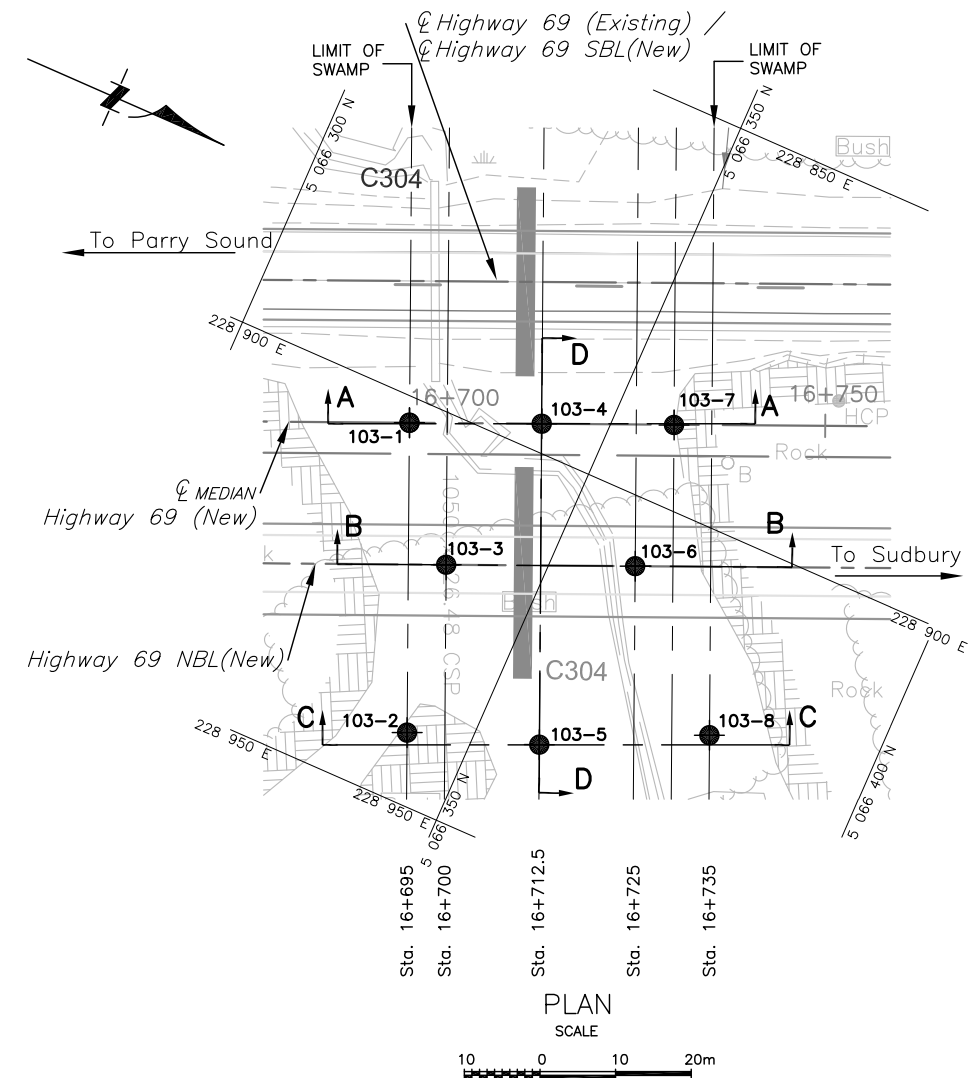
PROFILE A-A



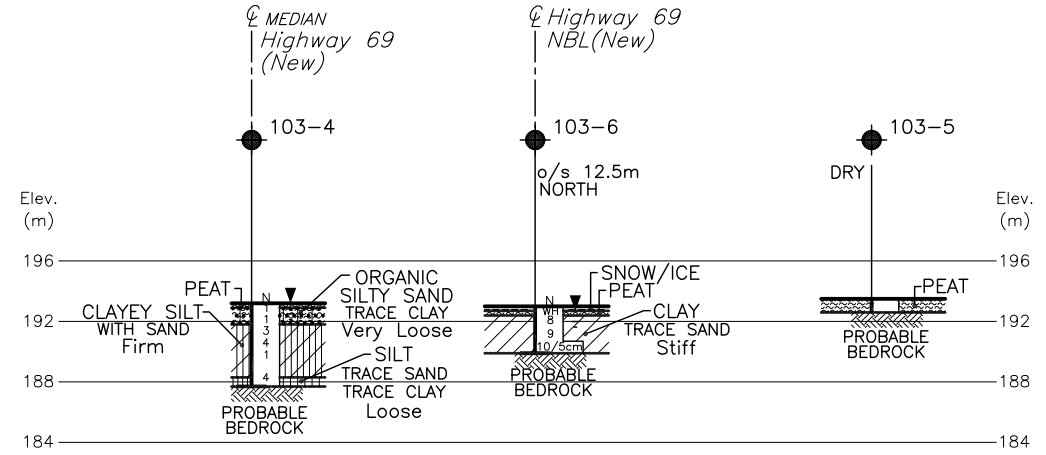
PROFILE B-B



PROFILE C-C

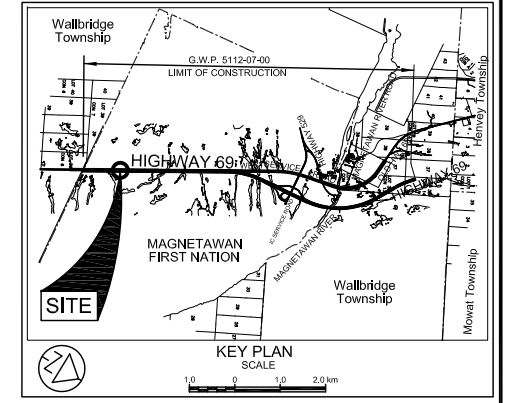
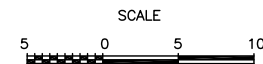


PLAN SCALE



SECTION D-D

- NOTES:
- THIS DRAWING 103-1 SHOULD BE READ IN CONJUNCTION WITH THE TEXT AND RECORD OF BOREHOLE LOGS.
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LEGEND

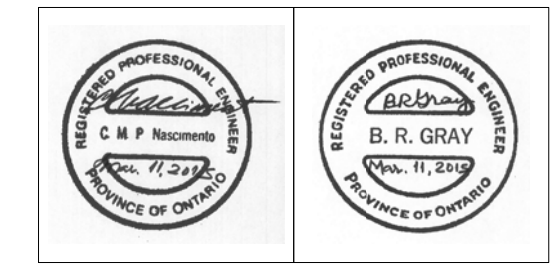
- Borehole
- Dynamic Cone Penetration Test (Cone)
- Borehole & Cone
- N Blows/0.3m (Std. Pen Test, 475 J/blow)
- CONE Blows/0.3m (60 °Cone, 475 J/blow)
- WL at time of investigation Oct 2011 and Feb. 2012
- Head
- ARTESIAN WATER
- Encountered
- PIEZOMETER

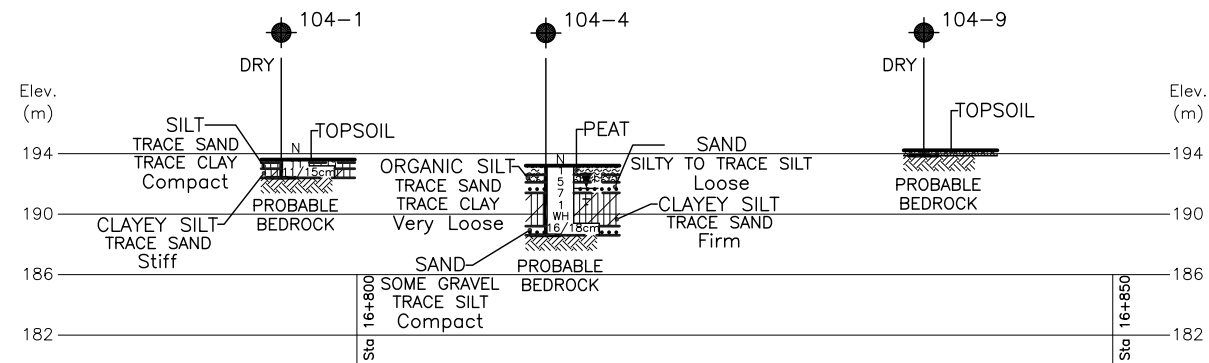
BH No	ELEVATION	STA		o/s CL MED
		MAGNETAWAN TWP		
103-1	193.1	16+695		CL
103-2	194.6	16+695		41.0m Rt.
103-3	193.2	16+700		18.8m Rt.
103-4	193.2	16+712.5		CL
103-5	193.5	16+712.5		42.5m Rt.
103-6	193.0	16+725		18.8m Rt.
103-7	193.3	16+730		CL
103-8	193.0	16+735		41.0m Rt.

NOTE:
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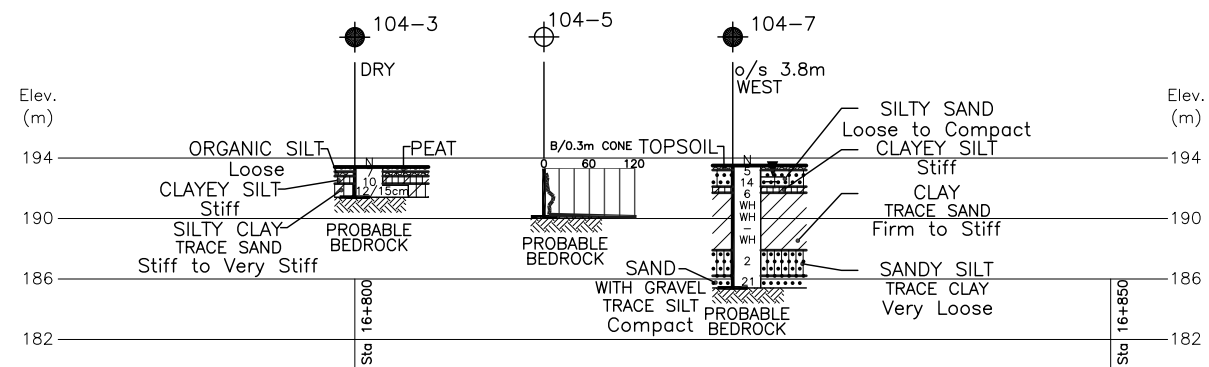
REVISIONS	DATE	BY	DESCRIPTION

Geocres No. 41H-148		DIST 54	
HWY No 69	CHECKED CD	DATE MAR. 11, 2015	SITE
SUBM'D NA	CHECKED BRG	APPROVED CN	DWG 103-1

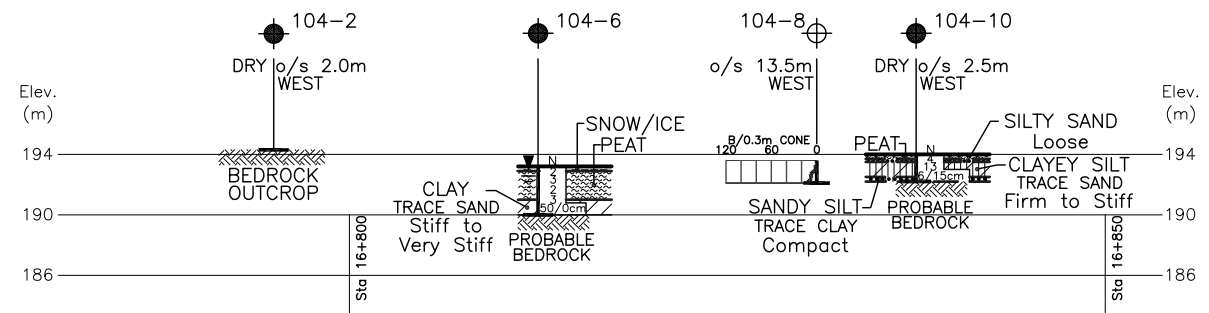




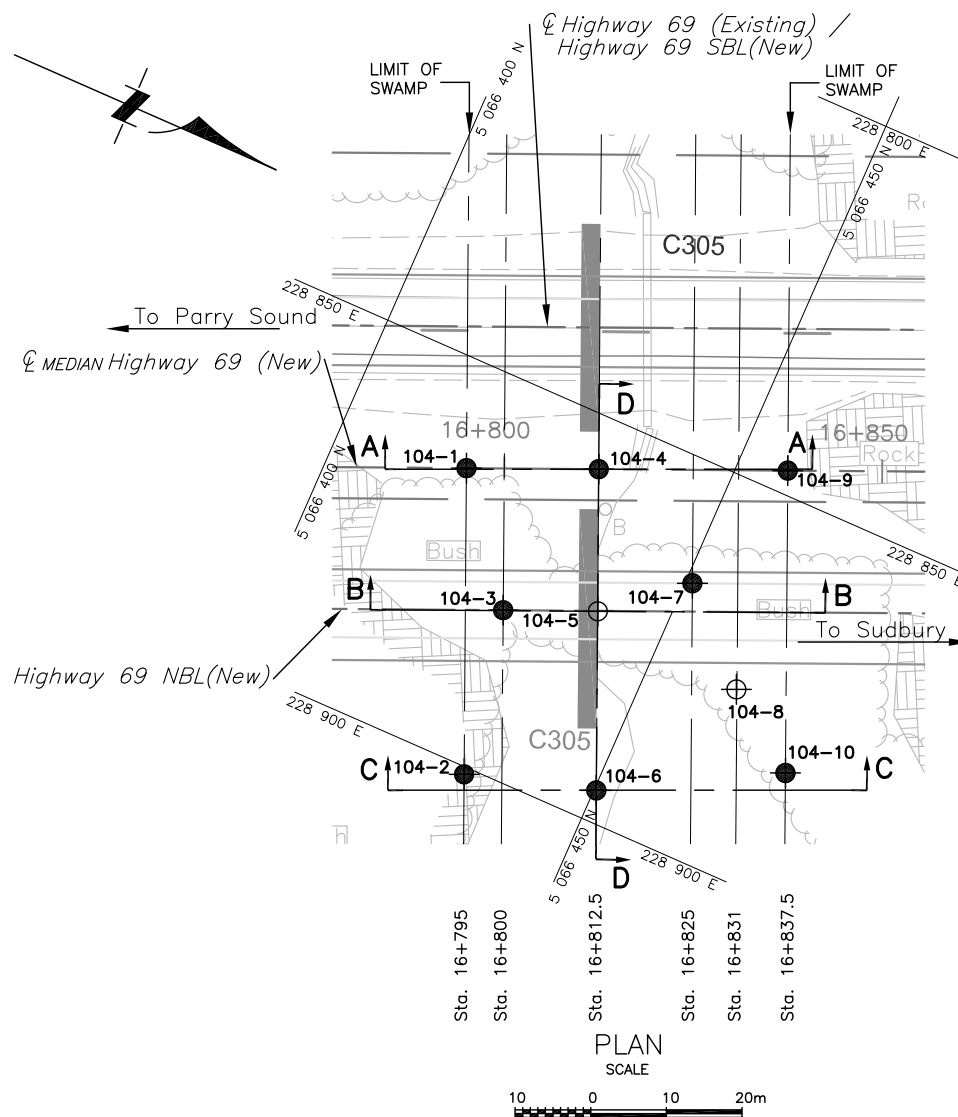
PROFILE A-A



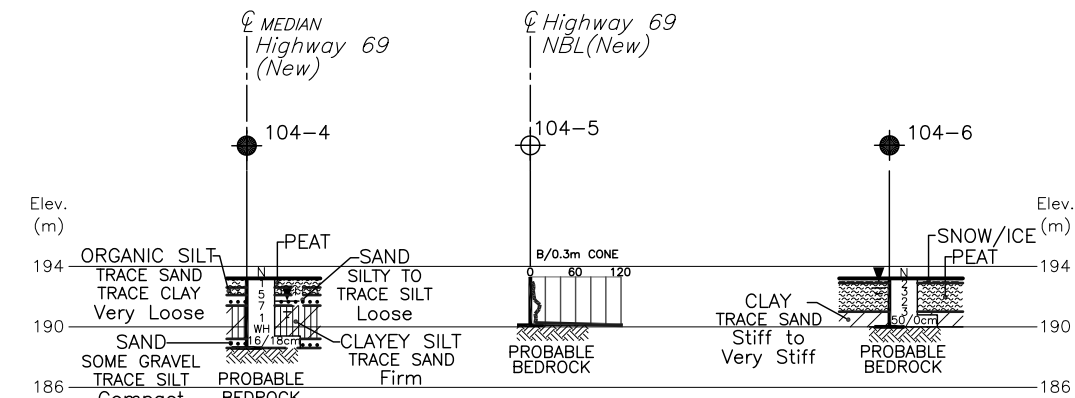
PROFILE B-B



PROFILE C-C



SECTION D-D



SECTION D-D

NOTES:

1. THIS DRAWING 104-1 SHOULD BE READ IN CONJUNCTION WITH THE TEXT AND RECORD OF BOREHOLE LOGS.
2. THIS DRAWING IS FOR SUBSURFACE INFORMATION ONLY. SURFACE DETAILS AND FEATURES ARE FOR CONCEPTUAL ILLUSTRATION.
3. DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN. STATIONS ARE IN KILOMETRES AND METRES.



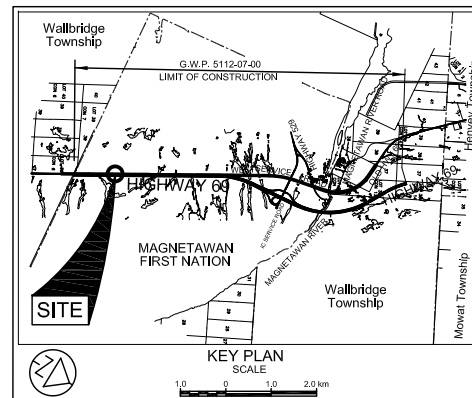
CONT No
GWP No 5112-07-00

HIGHWAY 69
HIGHWAY 69 FOUR-LANING
SWAMP 104, STA. 16+795 TO 16+837.5 (NBL) MAGNETAWAN TWP
BOREHOLE LOCATIONS AND SOIL STRATA



SHEET

PMI Peto MacCallum Ltd.
CONSULTING ENGINEERS



LEGEND

- Borehole
- ⊕ Dynamic Cone Penetration Test (Cone)
- ⊗ Borehole & Cone
- N Blows/0.3m (Std. Pen Test, 475 J/blow)
- CONE Blows/0.3m (60° Cone, 475 J/blow)
- WL at time of investigation Oct 2011 and Feb. 2012
- Head
- ARTESIAN WATER
- Encountered
- PIEZOMETER

BH No	ELEVATION	STA MAGNETAWAN TWP	o/s CL MED
104-1	193.6	16+795	CL
104-2	194.3	16+795	40.5m Rt.
104-3	193.4	16+800	18.8m Rt.
104-4	193.2	16+812.5	CL
104-5	193.3	16+812.5	18.8m Rt.
104-6	193.2	16+812.5	42.5m Rt.
104-7	193.5	16+825	15.0m Rt.
104-8	193.6	16+831	29.0m Rt.
104-9	194.3	16+837.5	CL
104-10	194.0	16+837.5	40.0m Rt.

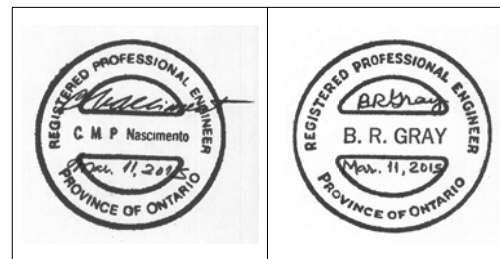
NOTE

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REVISIONS	DATE	BY	DESCRIPTION

Geocres No. 41H-148

HWY No	69	DIST	54
SUBM'D	NA	CHECKED	GD
DATE	MAR. 11, 2015	SITE	---
DRAWN	NA	CHECKED	BRG
APPROVED	CN	DWG	104-1



REFERENCED AECOM Drawings:
X-60143751-C-Hwy 69-Base.dwg; C6-Hwy69 Des.dwg;

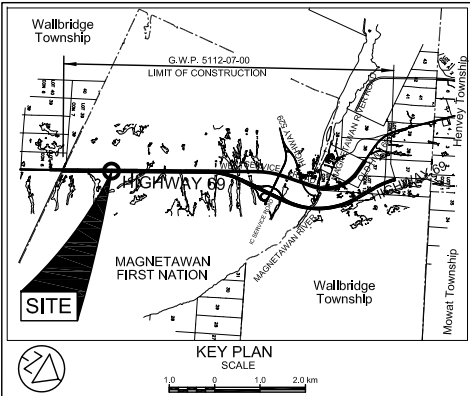
CONT No
GWP No 5112-07-00

HIGHWAY 69
HIGHWAY 69 FOUR-LANING
SWAMP 105, STA. 16+925 TO 17+030 (NBL) MAGNETAWAN TWP
BOREHOLE LOCATIONS AND SOIL STRATA



SHEET

PML Peto MacCallum Ltd.
CONSULTING ENGINEERS



LEGEND

- Borehole
- Dynamic Cone Penetration Test (Cone)
- Borehole & Cone
- N Blows/0.3m (Std. Pen Test, 475 J/blow)
- CONE Blows/0.3m (60° Cone, 475 J/blow)
- WL at time of investigation Oct 2011 and Feb. 2012
- Head
- ARTESIAN WATER
- Encountered
- PIEZOMETER

BH No	ELEVATION	STA	o/s CL MED
		MAGNETAWAN TWP	
105-1	195.9	16+925	18.8m Rt.
105-2	196.0	16+937.5	1.0m Rt.
105-3	196.4	16+937.5	36.5m Rt.
105-4	196.0	16+950	18.8m Rt.
105-5	196.8	16+962.5	0.5m Rt.
105-6	195.9	16+962.5	38.5m Rt.
105-7	196.1	16+975	18.8m Rt.
105-8	196.3	16+987.5	CL
105-9	196.1	16+987.5	39.0m Rt.
105-10	196.1	17+000	18.8m Rt.
105-11	196.6	17+012.5	CL
105-12	196.3	17+012.5	40.5m Rt.
105-13	197.3	17+025	18.8m Rt.
105-14	197.0	17+030	4.0m Rt.
105-15	198.4	17+030	34.5m Rt.

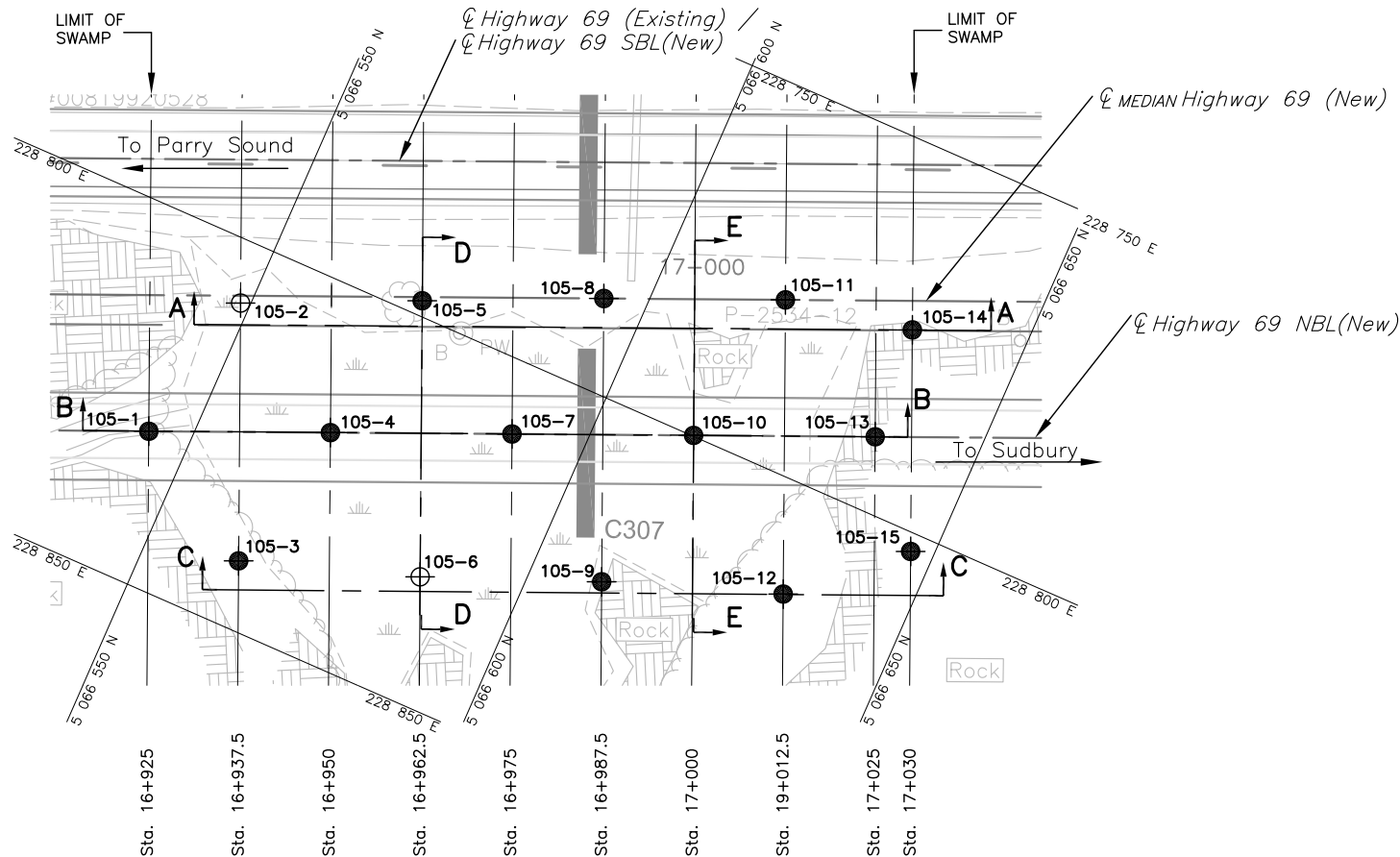
NOTE

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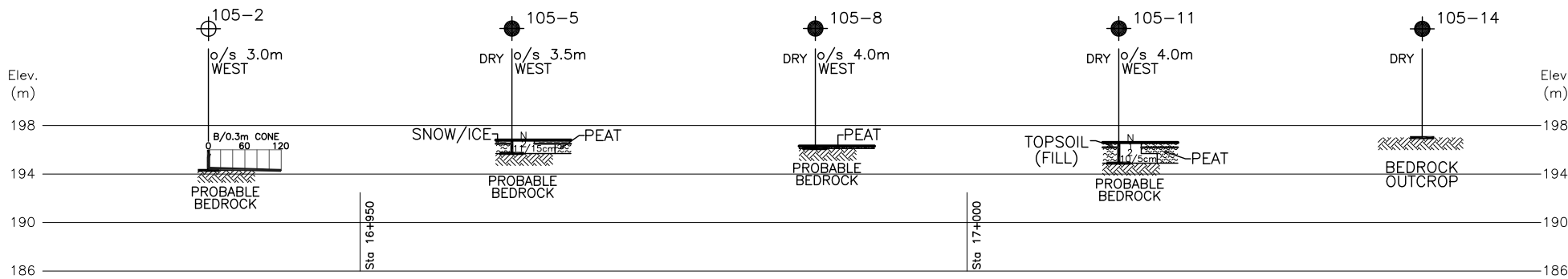
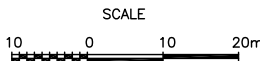
REVISIONS	DATE	BY	DESCRIPTION

Geocres No. 41H-148

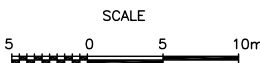
HWY No	69	DIST	54
SUBM'D	NA	CHECKED	GD
DATE	MAR. 11, 2015	SITE	—
DRAWN	NA	CHECKED	BRG
APPROVED	CN	DWG	105-1



PLAN

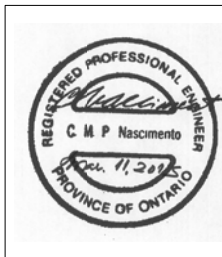


PROFILE A-A

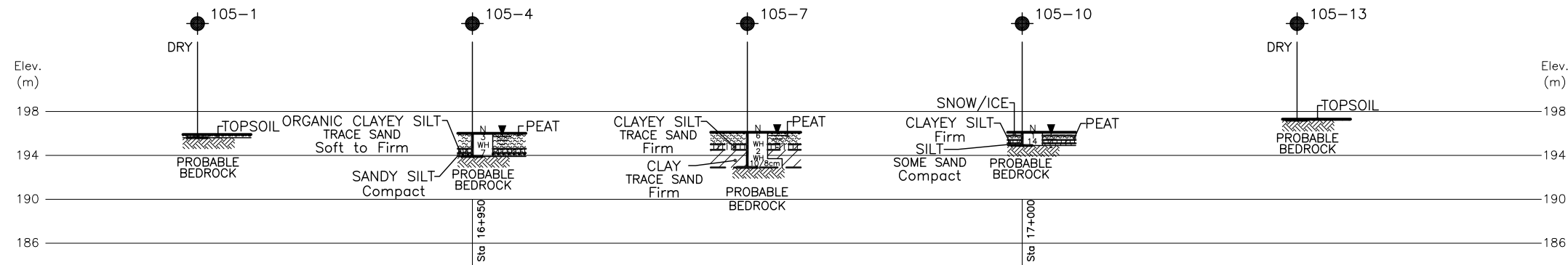


NOTES:

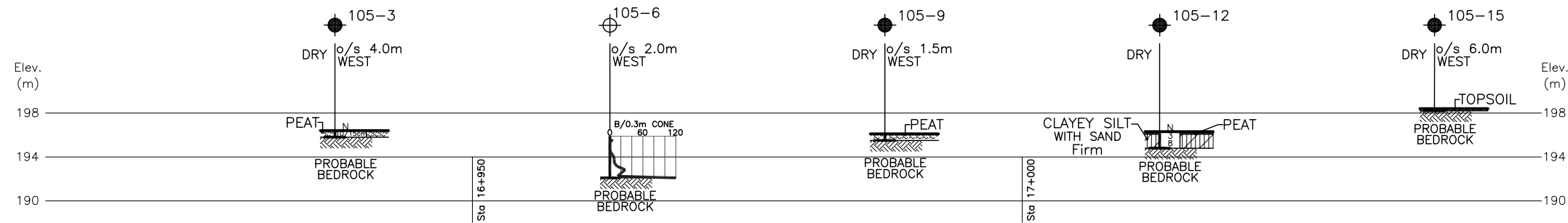
- DRAWINGS 105-1 AND 105-2 SHOULD BE READ IN CONJUNCTION WITH THE TEXT AND RECORD OF BOREHOLE LOGS.
- REFER TO DRAWING 105-2 FOR PROFILES B-B AND C-C AND SECTIONS D-D AND E-E.
- THIS DRAWING IS FOR SUBSURFACE INFORMATION ONLY. SURFACE DETAILS AND FEATURES ARE FOR CONCEPTUAL ILLUSTRATION.
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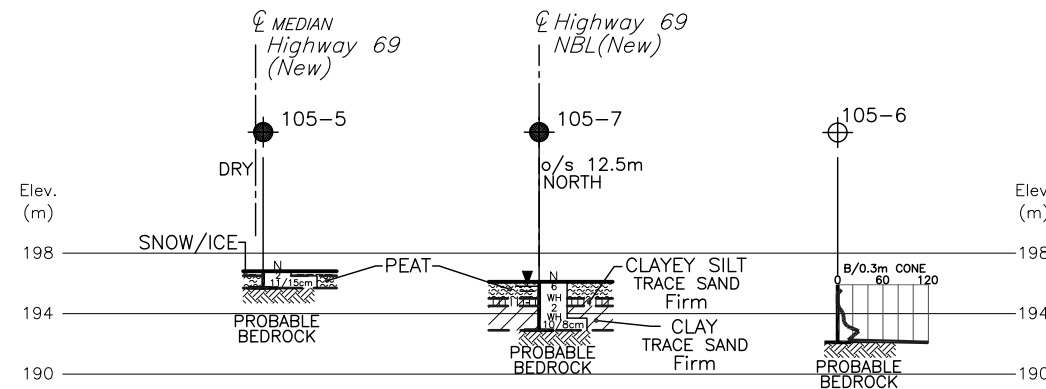
REF No. AECOM Drawings: X-60143751-C-Hwy 69-Base.dwg; C6-Hwy69 Base.dwg;



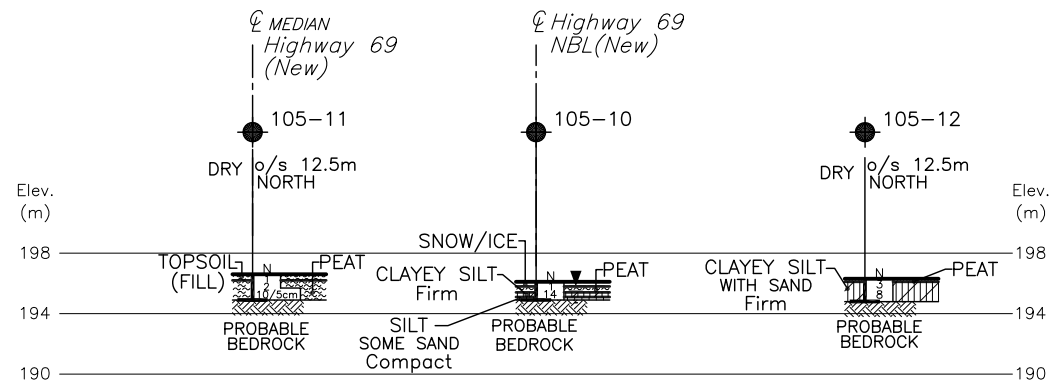
PROFILE B-B



PROFILE C-C



SECTION D-D



SECTION E-E

NOTES:

- DRAWINGS 105-1 AND 105-2 SHOULD BE READ IN CONJUNCTION WITH THE TEXT AND RECORD OF BOREHOLE LOGS.
- REFER TO DRAWING 105-1 FOR BOREHOLE LOCATION PLAN AND PROFILE A-A.
- THIS DRAWING IS FOR SUBSURFACE INFORMATION ONLY. SURFACE DETAILS AND FEATURES ARE FOR CONCEPTUAL ILLUSTRATION.
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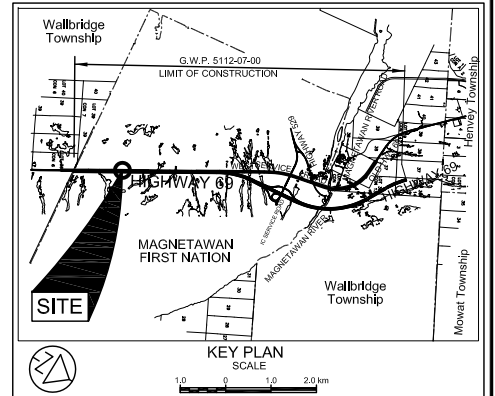


CONT No
GWP No 5112-07-00

HIGHWAY 69
HIGHWAY 69 FOUR-LANING
SWAMP 105, STA. 16+925 TO 17+030 (NBL) MAGNETAWAN TWP
BOREHOLE LOCATIONS AND SOIL STRATA

SHEET

PML Peto MacCallum Ltd.
CONSULTING ENGINEERS



LEGEND

- Borehole
- Dynamic Cone Penetration Test (Cone)
- Borehole & Cone
- N Blows/0.3m (Std. Pen Test, 475 J/blow)
- CONE Blows/0.3m (60° Cone, 475 J/blow)
- WL at time of investigation Oct 2011 and Feb. 2012
- Head
- ARTESIAN WATER
- Encountered
- PIEZOMETER

BH No	ELEVATION	STA	o/s CL MED
MAGNETAWAN TWP			
FOR DETAILS, REFER TO DWG. 105-1			

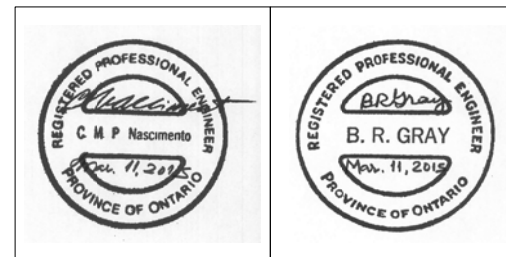
NOTE

The boundaries between soil strata have been established only at Borehole locations. Between Boreholes the boundaries are assumed from geological evidence.

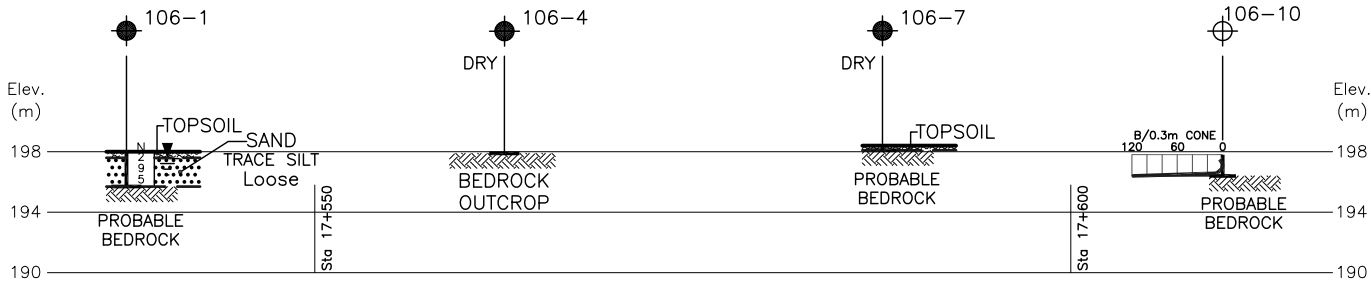
REVISIONS	DATE	BY	DESCRIPTION

Geocres No. 41H-148

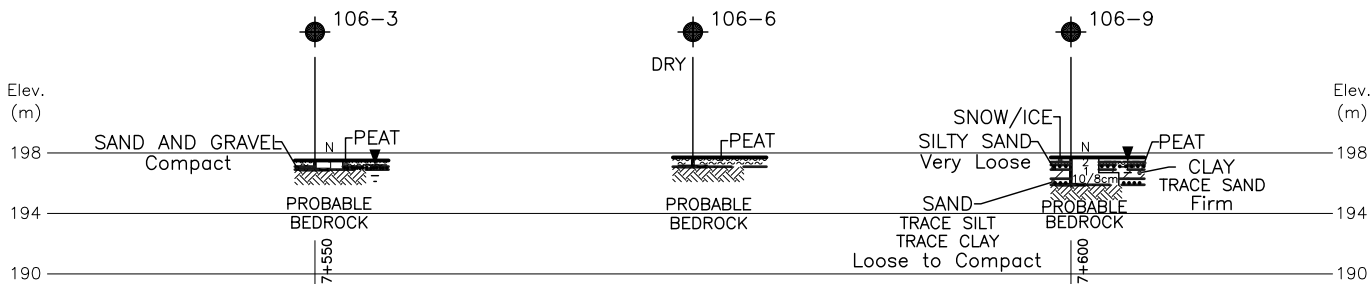
HWY No	69	CHECKED	GD	DATE	MAR. 11, 2015	DIST	54
SUBM'D	NA					SITE	---
DRAWN	NA		BRG	APPROVED	CN	DWG	105-2



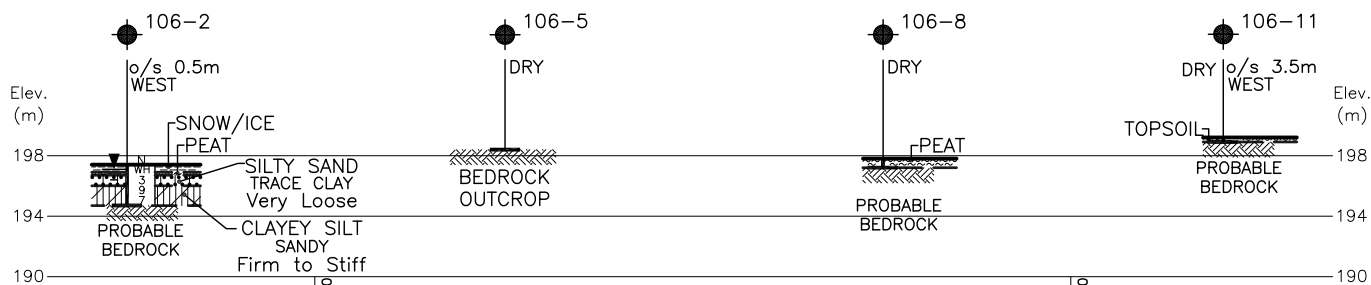
REF No. AECOM Drawings: X-60143751-C-Hwy 69-Base.dwg; C6-Hwy69 Des.dwg;



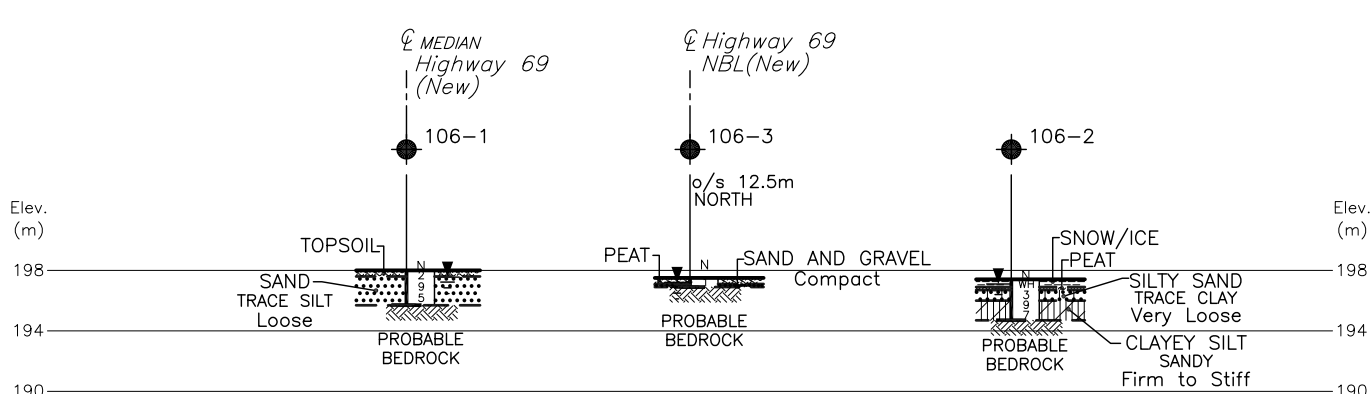
PROFILE A-A



PROFILE B-B

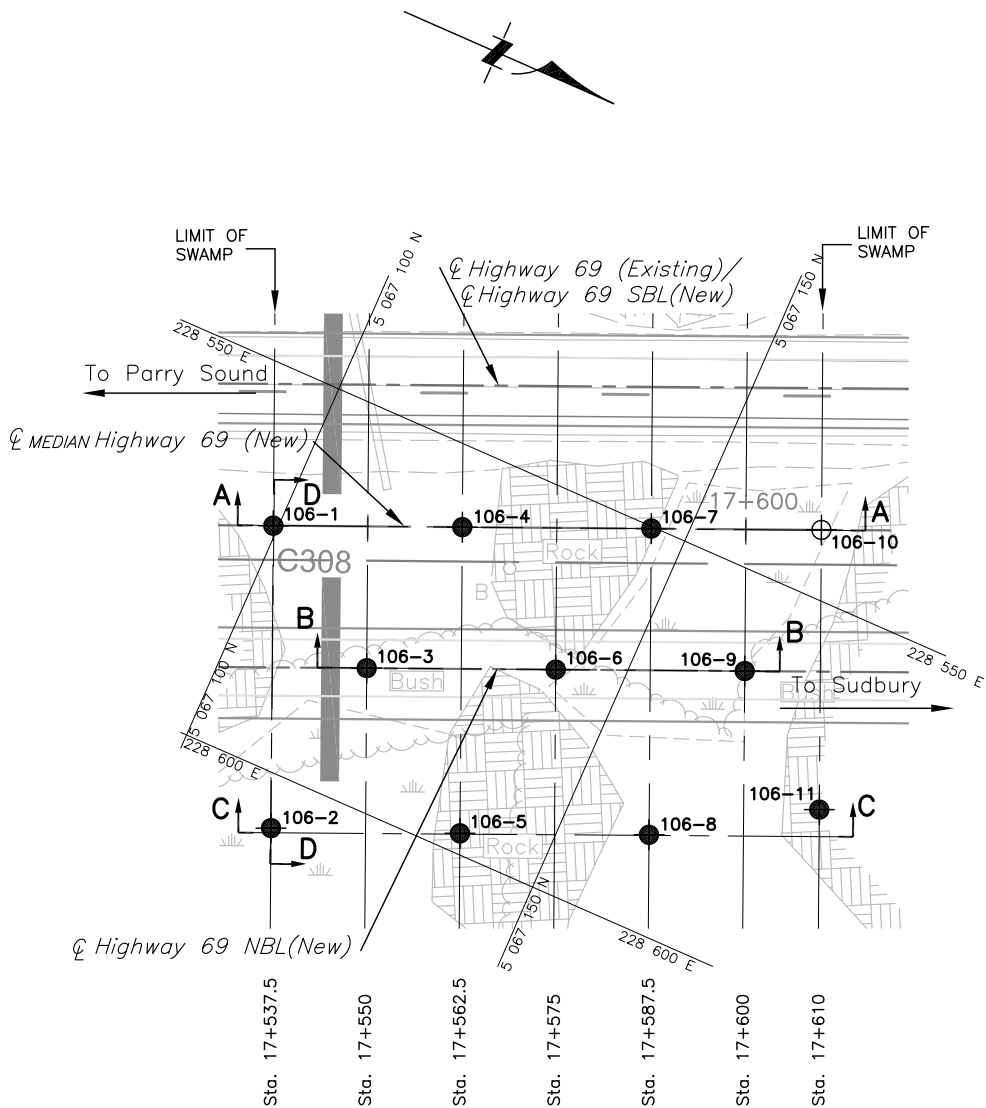


PROFILE C-C

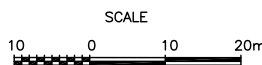


SECTION D-D

- NOTES:
- THIS DRAWING 106-1 SHOULD BE READ IN CONJUNCTION WITH THE TEXT AND RECORD OF BOREHOLE LOGS.
 - THIS DRAWING IS FOR SUBSURFACE INFORMATION ONLY. SURFACE DETAILS AND FEATURES ARE FOR CONCEPTUAL ILLUSTRATION.
 - DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN. STATIONS ARE IN KILOMETRES AND METRES.



PLAN

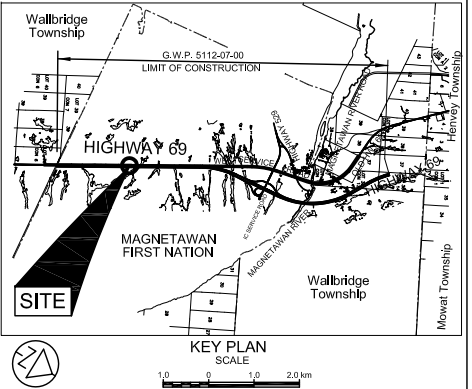


CONT No
GWP No 5112-07-00

HIGHWAY 69
HIGHWAY 69 FOUR-LANING
SWAMP 106, STA. 17+537.5 TO 17+610 (NBL) MAGNETAWAN TWP
BOREHOLE LOCATIONS AND SOIL STRATA



SHEET



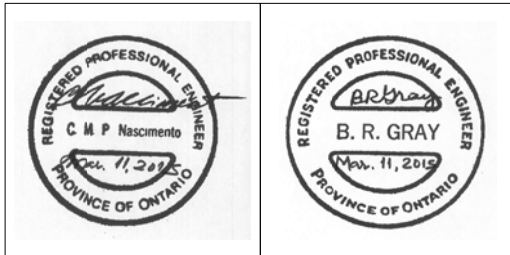
LEGEND

- Borehole
- Dynamic Cone Penetration Test (Cone)
- Borehole & Cone
- N Blows/0.3m (Std. Pen Test, 475 J/blow)
- CONE Blows/0.3m (60° Cone, 475 J/blow)
- WL at time of investigation Oct 2011 and Feb. 2012
- Head
- ARTESIAN WATER
- Encountered
- PIEZOMETER

BH No	ELEVATION	STA MAGNETAWAN TWP	o/s CL MED
106-1	198.0	17+537.5	CL
106-2	197.4	17+537.5	40.0m Rt.
106-3	197.5	17+550	18.8m Rt.
106-4	197.9	17+562.5	CL
106-5	198.4	17+562.5	40.5m Rt.
106-6	197.7	17+575	18.8m Rt.
106-7	198.4	17+587.5	CL
106-8	197.8	17+587.5	40.5m Rt.
106-9	197.7	17+600	18.8m Rt.
106-10	197.8	17+610	CL
106-11	199.2	17+610	37.0m Rt.

NOTE

The boundaries between soil strata have been established only at Borehole locations. Between Boreholes the boundaries are assumed from geological evidence.



REF No. AECOM Drawings:
X-60143751-C-Hwy 69-Base.dwg; C6-Hwy69 Des.dwg;

REVISIONS	DATE	BY	DESCRIPTION

Geocres No. 41H-148

HWY No	69	DIST	54
SUBM'D	NA	CHECKED	GD
DATE	MAR. 11, 2015	SITE	—
DRAWN	NA	CHECKED	BRG
APPROVED	CN	DWG	106-1

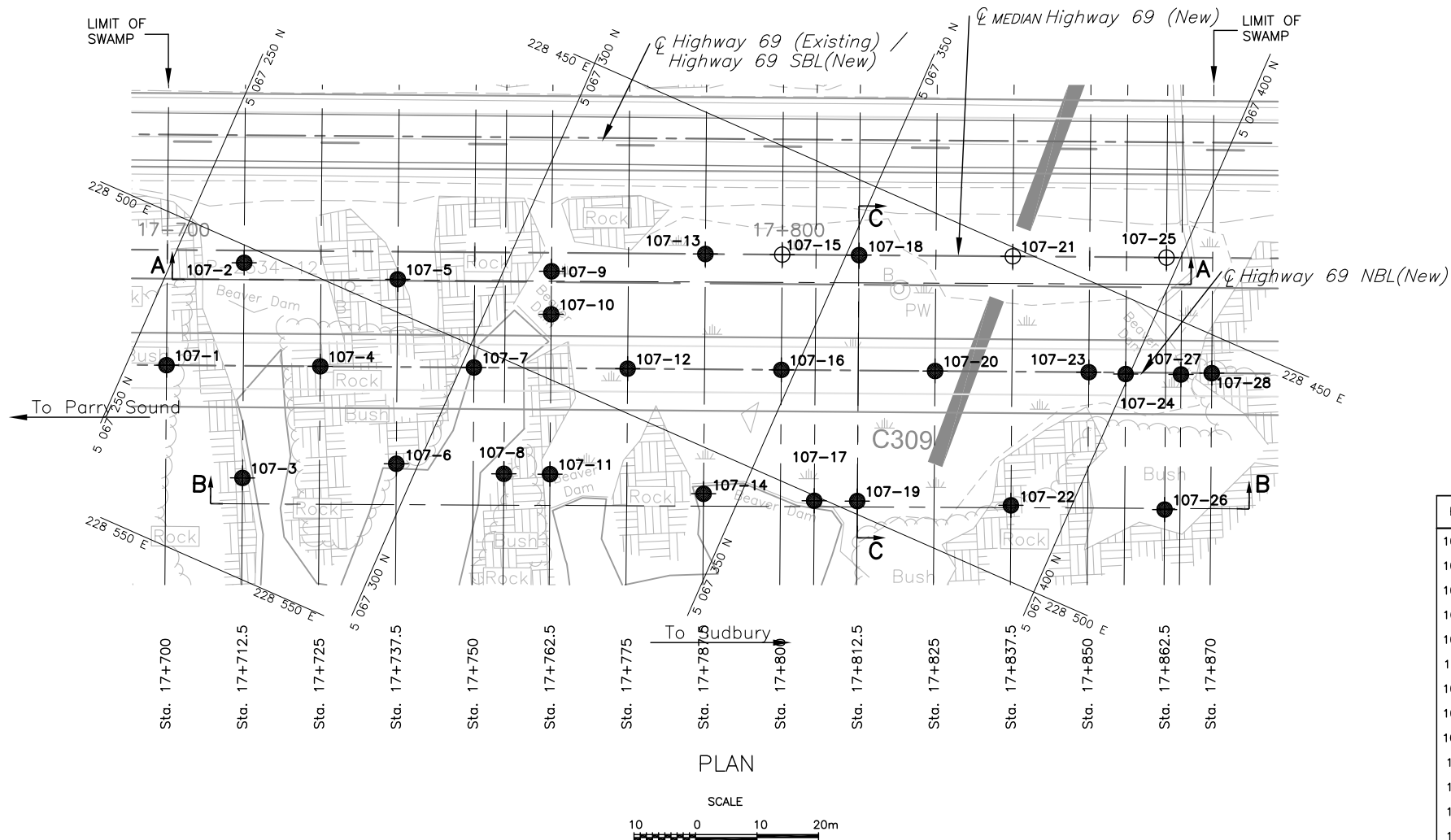
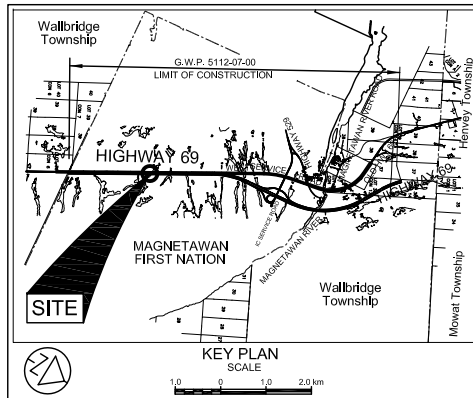
CONT No
GWP No 5112-07-00



HIGHWAY 69
HIGHWAY 69 FOUR-LANING
SWAMP 110, STA. 17+700 TO 17+870 (NBL) MAGNETAWAN TWP
BOREHOLE LOCATIONS AND SOIL STRATA

SHEET

PML Peto MacCallum Ltd.
CONSULTING ENGINEERS



(Legend Continued)

BH No	ELEVATION	STA MAGNETAWAN TWP	o/s CL MED
107-16	197.7	17+800	18.8m Rt.
107-17	197.8	17+805.5	40.0m Rt.
107-18	197.2	17+812.5	CL
107-19	197.6	17+812.5	40.0m Rt.
107-20	197.6	17+825	18.8m Rt.
107-21	197.7	17+837.5	CL
107-22	199.7	17+837.5	40.5m Rt.
107-23	197.4	17+850	18.8m Rt.
107-24	197.5	17+856	19.0m Rt.
107-25	197.6	17+862.5	CL
107-26	198.0	17+862.5	41.0m Rt.
107-27	197.7	17+865	19.0m Rt.
107-28	199.9	17+870	18.8m Rt.

LEGEND

- Borehole
- Dynamic Cone Penetration Test (Cone)
- Borehole & Cone
- N Blows/0.3m (Std. Pen Test, 475 J/blow)
- CONE Blows/0.3m (60° Cone, 475 J/blow)
- WL at time of investigation Oct 2011 and Feb. 2012
- Head
- ARTESIAN WATER
- Encountered
- PIEZOMETER

BH No	ELEVATION	STA MAGNETAWAN TWP	o/s CL MED
107-1	198.7	17+700	18.8m Rt.
107-2	197.8	17+712.5	2.0m Rt.
107-3	198.8	17+712.5	37.0m Rt.
107-4	198.7	17+725	18.8m Rt.
107-5	198.5	17+737.5	4.5m Rt.
107-6	198.6	17+737.5	34.5m Rt.
107-7	198.2	17+750	18.8m Rt.
107-8	197.8	17+755	36.0m Rt.
107-9	198.1	17+762.5	3.0m Rt.
107-10	197.9	17+762.5	10.0m Rt.
107-11	198.0	17+762.5	36.0m Rt.
107-12	197.8	17+775	18.8m Rt.
107-13	197.4	17+787.5	CL
107-14	198.1	17+787.5	39.0m Rt.
107-15	197.1	17+800	CL

(Legend Continues)

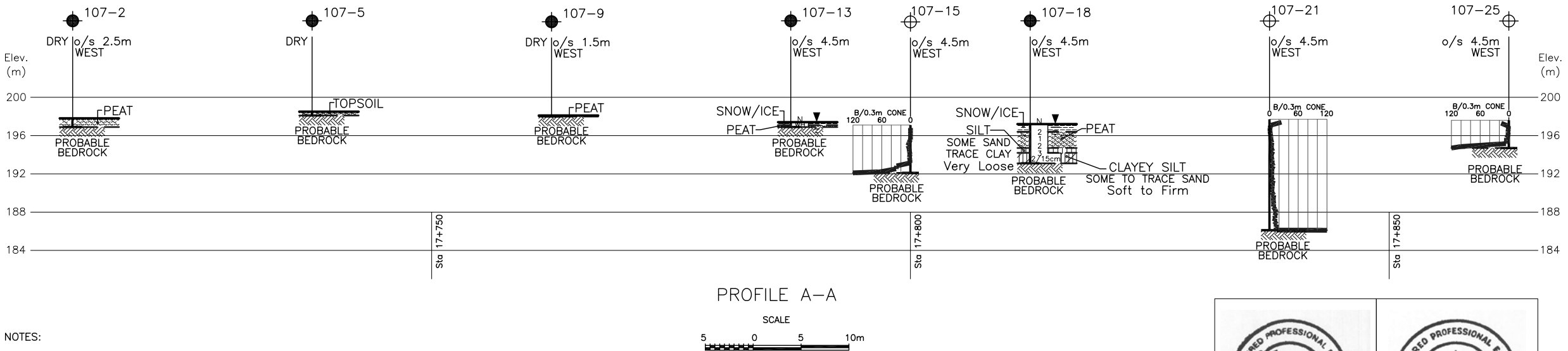
— NOTE —

The boundaries between soil strata have been established only at Borehole locations. Between Boreholes the boundaries are assumed from geological evidence.

REVISIONS	DATE	BY	DESCRIPTION

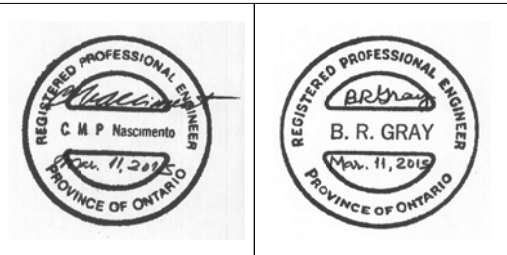
Geocres No. 41H-148

HWY No	69	DIST	54
SUBM'D	NA	CHECKED	GD
DATE	MAR. 11, 2015	SITE	—
DRAWN	NA	CHECKED	BRG
APPROVED	CN	DWG	107-1

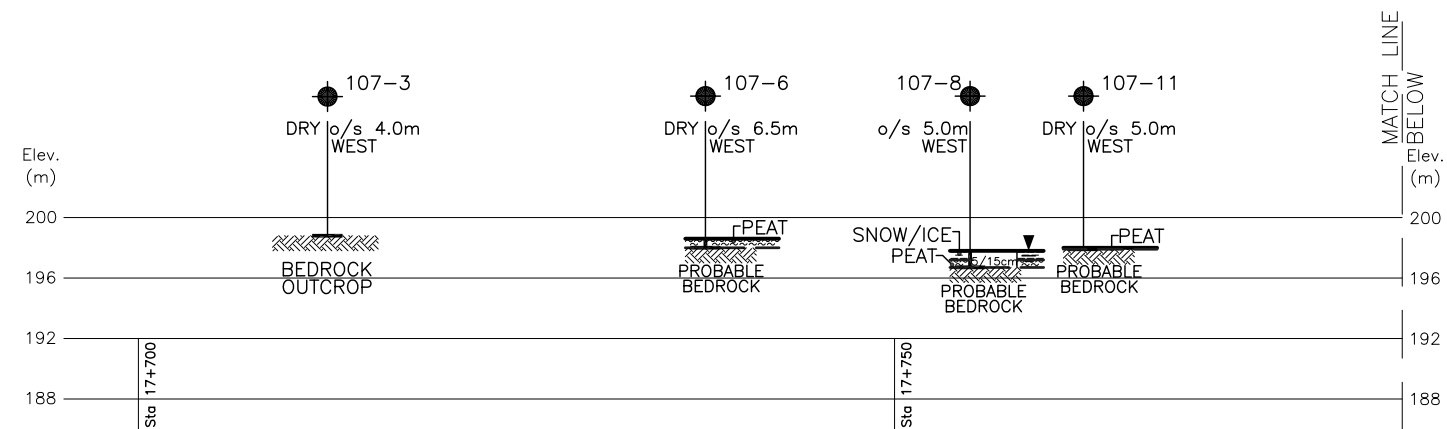


NOTES:

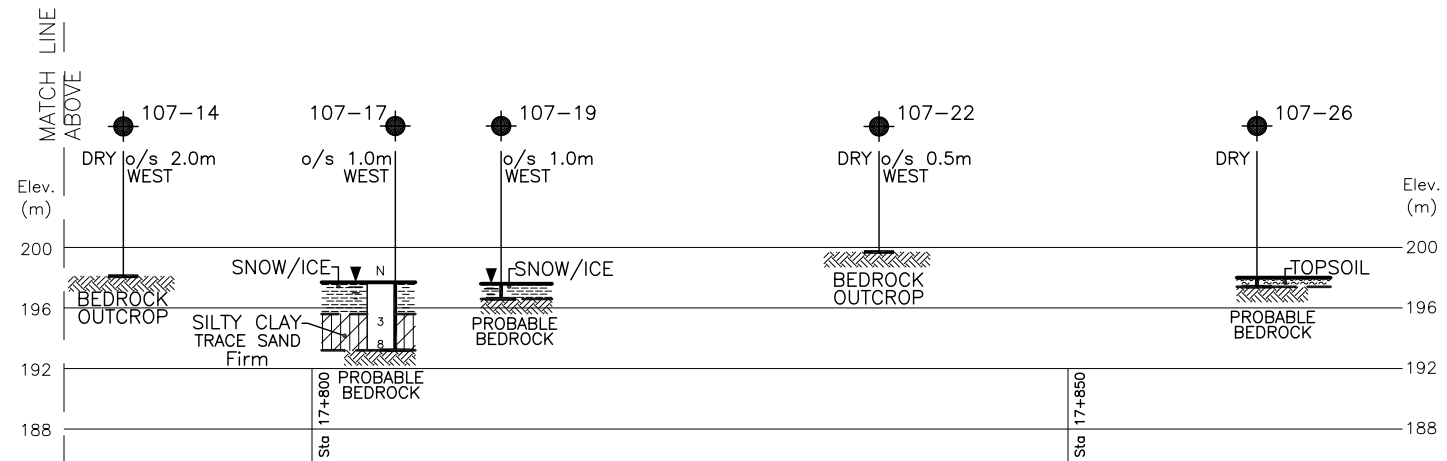
- DRAWINGS 107-1 AND 107-2 SHOULD BE READ IN CONJUNCTION WITH THE TEXT AND RECORD OF BOREHOLE LOGS.
- REFER TO DRAWING 107-2 FOR PROFILE B-B AND SECTION C-C.
- THIS DRAWING IS FOR SUBSURFACE INFORMATION ONLY. SURFACE DETAILS AND FEATURES ARE FOR CONCEPTUAL ILLUSTRATION.
- DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN. STATIONS ARE IN KILOMETRES AND METRES.



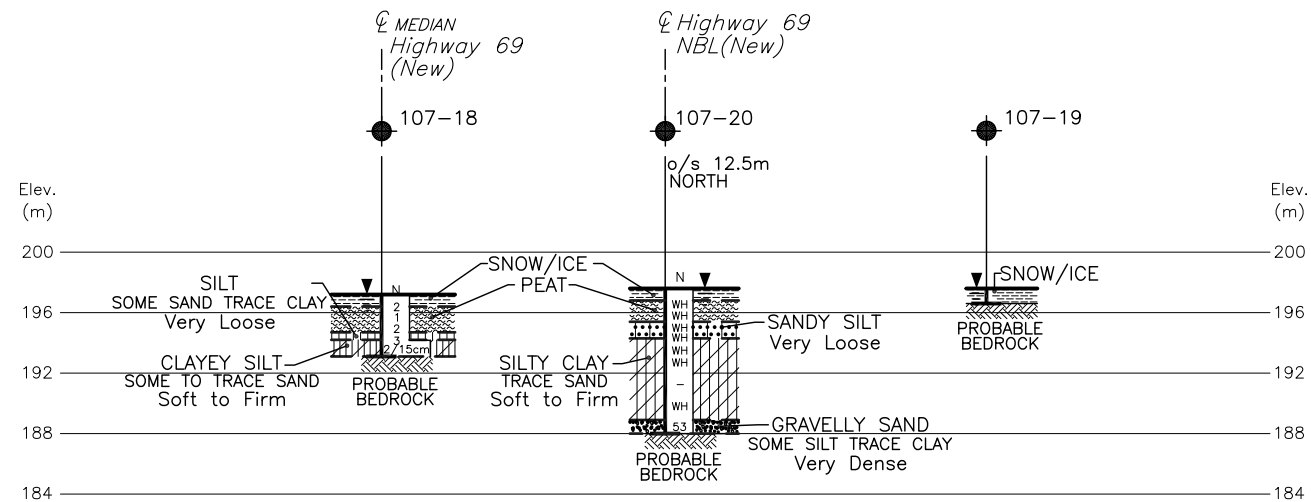
REF No. AECOM Drawings: X-60143751-C-Hwy 69-Base.dwg; C6-Hwy69 Dec.dwg;



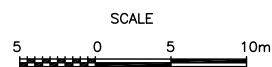
PROFILE B-B



PROFILE B-B (Continued)



SECTION C-C



NOTES:

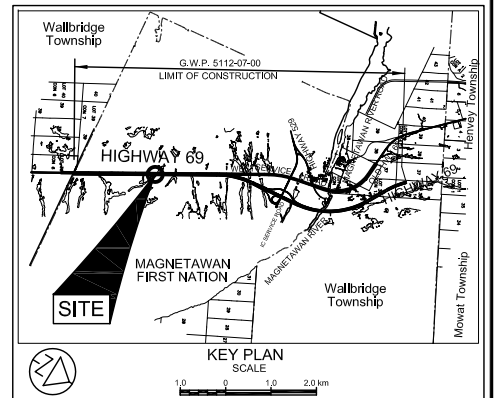
- DRAWINGS 107-1 AND 107-2 SHOULD BE READ IN CONJUNCTION WITH THE TEXT AND RECORD OF BOREHOLE LOGS.
- REFER TO DRAWING 107-1 FOR BOREHOLE LOCATION PLAN AND PROFILE A-A.
- THIS DRAWING IS FOR SUBSURFACE INFORMATION ONLY. SURFACE DETAILS AND FEATURES ARE FOR CONCEPTUAL ILLUSTRATION.
- DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN. STATIONS ARE IN KILOMETRES AND METRES.

CONT No
GWP No 5112-07-00

HIGHWAY 69
HIGHWAY 69 FOUR-LANING
SWAMP 105, STA. 16+925 TO 17+037.5 (NBL) MAGNETAWAN TWP
BOREHOLE LOCATIONS AND SOIL STRATA

SHEET

PML Peto MacCallum Ltd.
CONSULTING ENGINEERS



LEGEND

- Borehole
- Dynamic Cone Penetration Test (Cone)
- Borehole & Cone
- N Blows/0.3m (Std. Pen Test, 475 J/blow)
- CONE Blows/0.3m (60° Cone, 475 J/blow)
- WL at time of investigation Oct 2011 and Feb. 2012
- Head
- ARTESIAN WATER Encountered
- PIEZOMETER

BH No	ELEVATION	STA MAGNETAWAN TWP	o/s CL MED
FOR DETAILS, REFER TO DWG. 107-1			

NOTE

The boundaries between soil strata have been established only at Borehole locations. Between Boreholes the boundaries are assumed from geological evidence.

REVISIONS	DATE	BY	DESCRIPTION

Geocres No. 41H-148

HWY No 69	CHECKED CD	DATE MAR. 11, 2015	DIST 54
SUBM'D NA	CHECKED BRG	APPROVED CN	SITE DWG 107-2



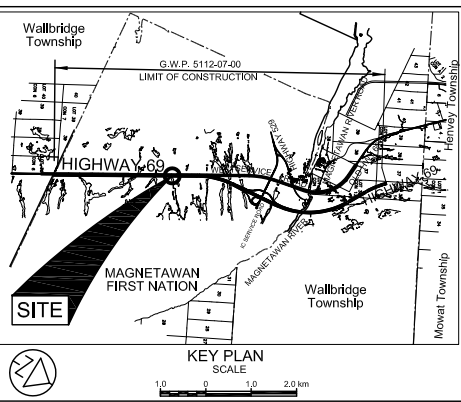
REF No. AECOM Drawings: X-60143751-C-Hwy 69-Base.dwg; C6-Hwy69 Des.dwg.











1. THIS DRAWING 09-1 SHOULD BE READ IN CONJUNCTION WITH THE TEXT AND RECORD OF BOREHOLE LOGS.
2. THIS DRAWING IS FOR SUBSURFACE INFORMATION ONLY. SURFACE DETAILS AND FEATURES ARE FOR CONCEPTUAL ILLUSTRATION.
3. DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN. STATIONS ARE IN KILOMETRES AND METRES.



Peto MacCallum Ltd.
CONSULTING ENGINEERS



LEGEND

	Borehole
	Dynamic Cone Penetration Test (Cone)
	Borehole & Cone
N	Blows/0.3m (Std. Pen Test, 475 J/blow)
CONE	Blows/0.3m (60° Cone, 475 J/blow)
	WL at time of investigation Oct 2011 and Feb. 2012
	Head
	ARTESIAN WATER
	Encountered
	PIEZOMETER

BH No	ELEVATION	STA	o/s CL MED
		MAGNETAWAN TWP	
109-1	193.1	18+580	18.8m Rt.
109-2	189.3	18+587.5	9.0m Rt.
109-3	192.5	18+587.5	36.5m Rt.
109-4	189.1	18+592	18.8m Rt.
109-5	188.2	18+600	18.8m Rt.
109-6	189.0	18+600	38.0m Rt.
109-7	188.2	18+607	15.0m Rt.
109-8	189.3	18+612.5	12.0m Rt.
109-9	188.1	18+612.5	39.0m Rt.
109-10	187.6	18+625	18.8m Rt.
109-11	187.8	18+625	38.0m Rt.
109-12	189.1	18+632	18.8m Rt.
109-13	190.4	18+634	18.8m Rt.
109-14	191.8	18+637.5	3.5m Rt.
109-15	193.3	18+637.5	35.5m Rt.
109-16	191.6	18+650	18.8m Rt.

The boundaries between soil strata have been established only at Borehole locations. Between Boreholes the boundaries are assumed from geological evidence.

REVISIONS							
DATE	BY	DESCRIPTION					
Records No. 411H-148							
HWY No	69					DIST	54
PLAN'D	NA	CHECKED	GD	DATE MAR. 11, 2015		SITE	—
DRAWN	NA	CHECKED	BRG	APPROVED CN		DWG	109-1

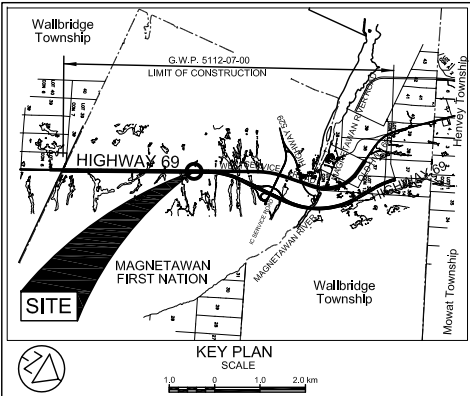
CONT No
GWP No 5112-07-00

HIGHWAY 69
HIGHWAY 69 FOUR-LANING
SWAMP 110, STA. 18+780 TO 18+970 (NBL) MAGNETAWAN TWP
BOREHOLE LOCATIONS AND SOIL STRATA



SHEET

PML Peto MacCallum Ltd.
CONSULTING ENGINEERS



LEGEND

- Borehole
- Dynamic Cone Penetration Test (Cone)
- Borehole & Cone
- N Blows/0.3m (Std. Pen Test, 475 J/blow)
- CONE Blows/0.3m (60° Cone, 475 J/blow)
- WL at time of investigation Oct 2011 and Feb. 2012
- Head
- ARTESIAN WATER
- Encountered
- PIEZOMETER

BH No	ELEVATION	STA MAGNETAWAN TWP	o/s CL MED
110-1	195.2	18+780	CL
110-2	195.4	18+790	CL
110-3	195.3	18+790	18.8m Rt.
110-4	198.4	18+790	39.0m Rt.
110-5	194.5	18+000	18.8m Rt.
110-6	195.0	18+812.5	CL
110-7	195.6	18+812.5	40.0m Rt.
110-8	194.0	18+825	18.8m Rt.
110-9	196.7	18+837.5	CL
110-10	196.7	18+837.5	40.5m Rt.
110-11	194.5	18+850	18.8m Rt.
110-12	195.7	18+862.5	CL
110-13	194.5	18+862.5	40.5m Rt.
110-14	196.3	18+875	18.8m Rt.
110-15	199.7	18+887.5	5.0m Rt.

(Legend Continues)

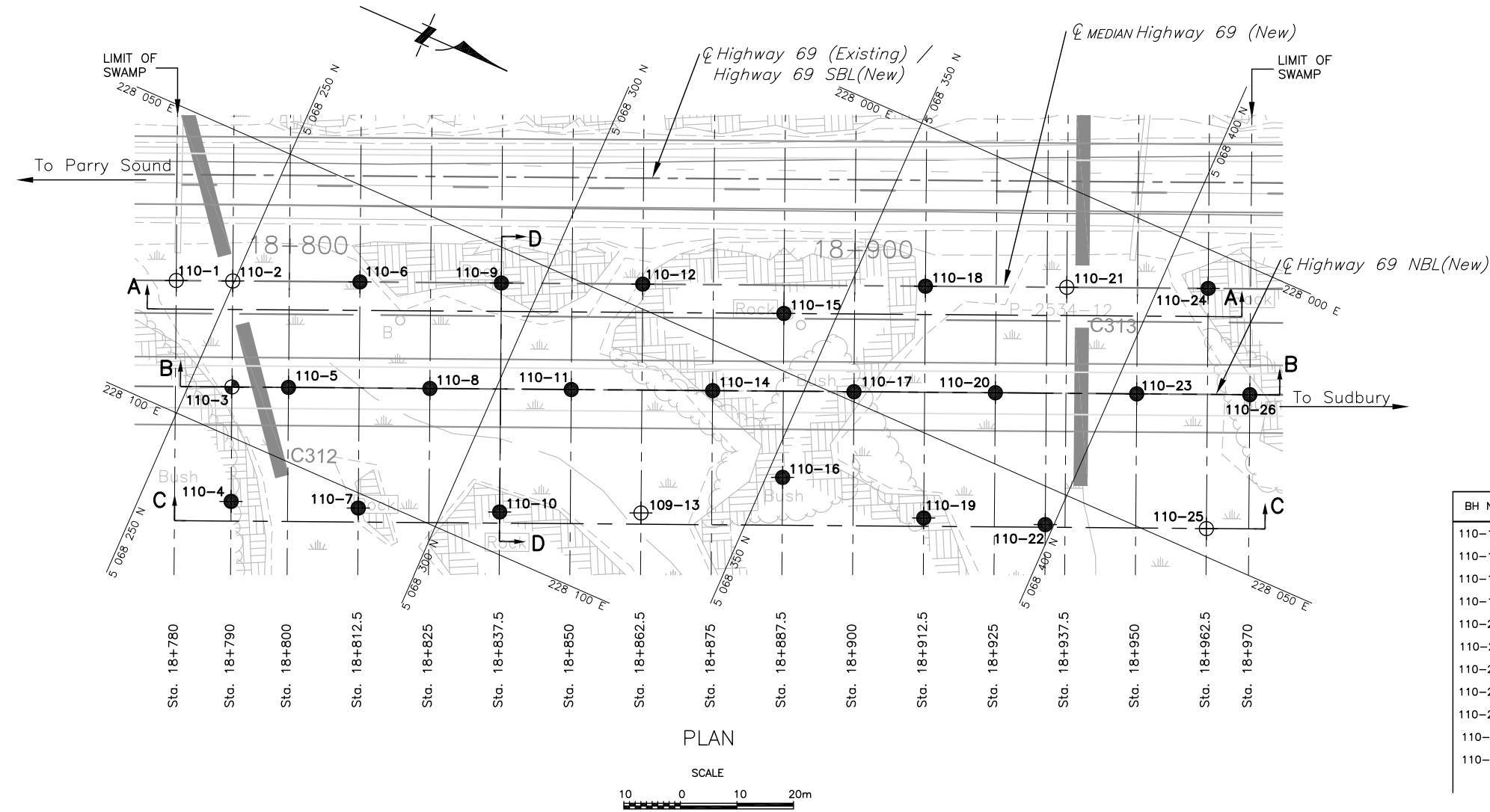
— NOTE —

The boundaries between soil strata have been established only at Borehole locations. Between Boreholes the boundaries are assumed from geological evidence.

REVISIONS	DATE	BY	DESCRIPTION

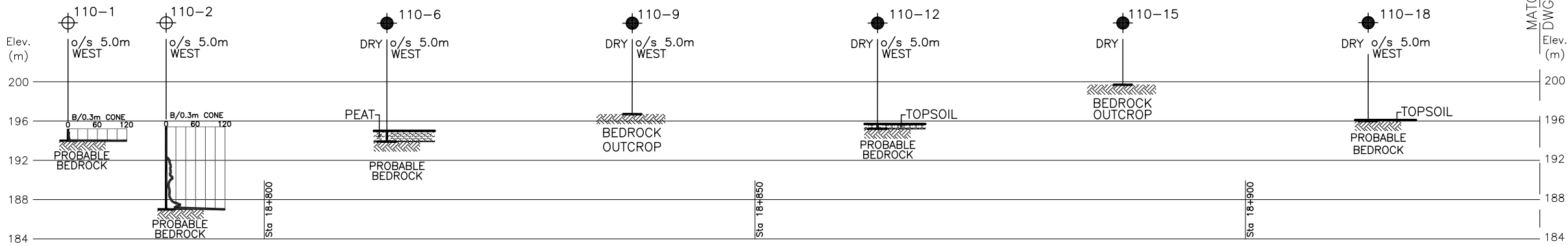
Geocres No. 41H-148

HWY No	69	DIST	54
SUBM'D	NA	CHECKED	GD
DATE	MAR. 11, 2015	SITE	—
DRAWN	NA	CHECKED	BRG
APPROVED	CN	DWG	110-1



PLAN

SCALE



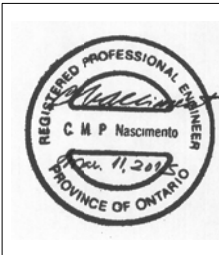
PROFILE A-A

SCALE



NOTES:

- DRAWINGS 110-1 AND 110-2 SHOULD BE READ IN CONJUNCTION WITH THE TEXT AND RECORD OF BOREHOLE LOGS.
- REFER TO DRAWING 110-2 FOR PROFILES A-A (Continued), B-B AND C-C AND SECTION D-D.
- THIS DRAWING IS FOR SUBSURFACE INFORMATION ONLY. SURFACE DETAILS AND FEATURES ARE FOR CONCEPTUAL ILLUSTRATION.
- DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN. STATIONS ARE IN KILOMETRES AND METRES.



REF No. AECOM Drawings: X-60143751-C-Hwy 69-Base.dwg; C6-Hwy69

Dec.dwg

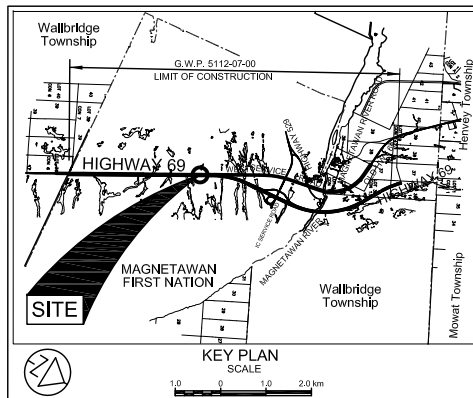
CONT No
GWP No 5112-07-00

HIGHWAY 69
HIGHWAY 69 FOUR-LANING
SWAMP 110, STA. 18+780 TO 18+970 (NBL) MAGNETAWAN TWP
BOREHOLE LOCATIONS AND SOIL STRATA



SHEET

PML Peto MacCallum Ltd.
CONSULTING ENGINEERS



LEGEND			
	Borehole		
	Dynamic Cone Penetration Test (Cone)		
	Borehole & Cone		
N	Blows/0.3m (Std. Pen Test, 475 J/blow)		
CONE	Blows/0.3m (60° Cone, 475 J/blow)		
	WL at time of investigation Oct 2011 and Feb. 2012		
	Head		
	ARTESIAN WATER		
	Encountered		
	PIEZOMETER		

BH No	ELEVATION	STA MAGNETAWAN TWP	o/s CL MED
FOR DETAILS, REFER TO DWG 110-1			

(Legend Continues)

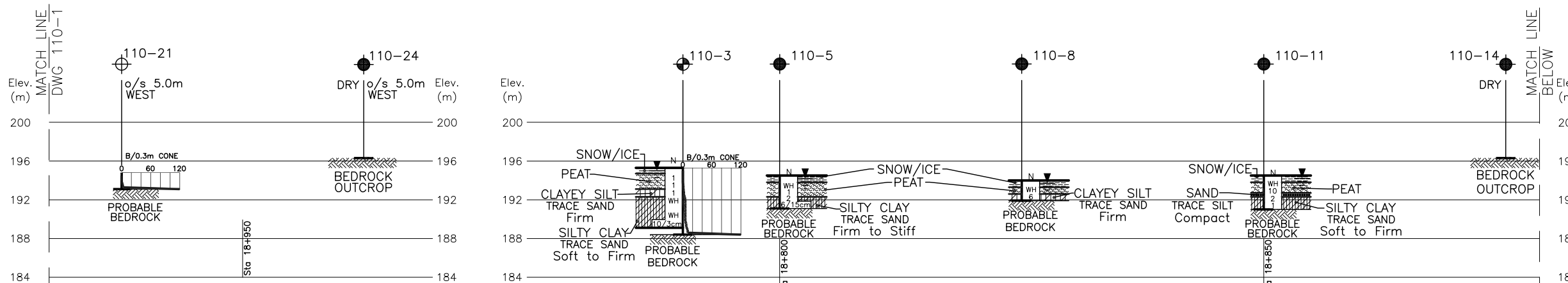
— NOTE —

The boundaries between soil strata have been established only at Borehole locations. Between Boreholes the boundaries are assumed from geological evidence.

REVISIONS	DATE	BY	DESCRIPTION

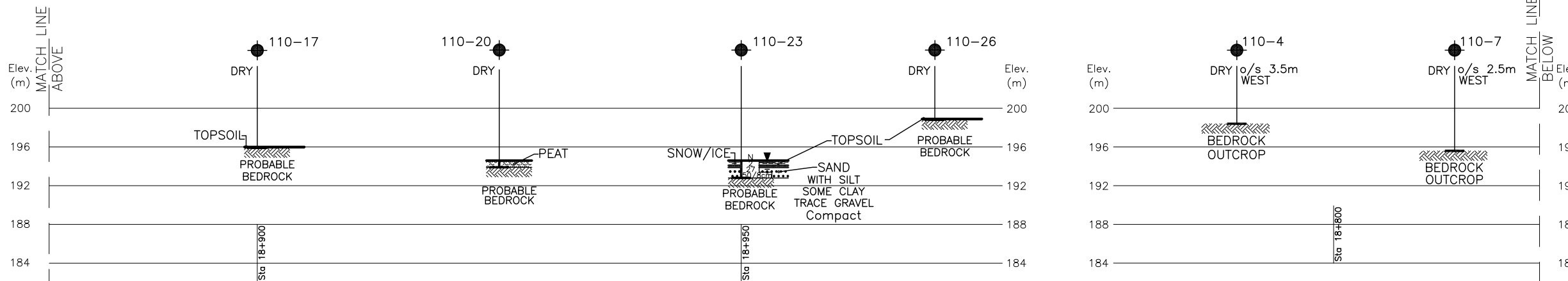
Geocres No. 41H-148

HWY No 69	SUBM'D NA	CHECKED GD	DATE MAR. 11, 2015	DIST 54
DRAWN NA	CHECKED BRG	APPROVED CN		DWG 110-2



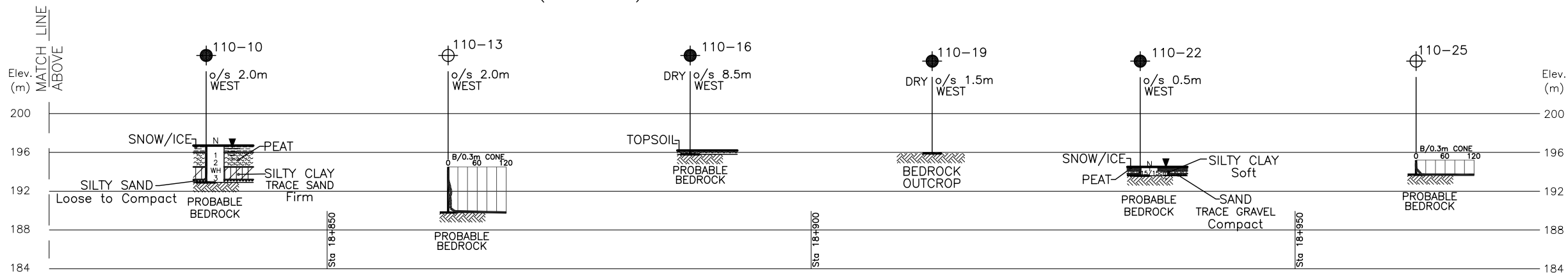
PROFILE A-A (Continued)

PROFILE B-B

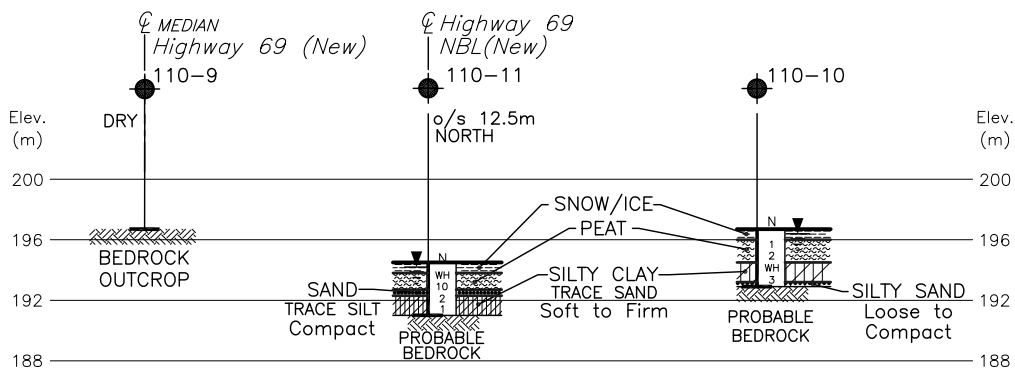


PROFILE B-B (Continued)

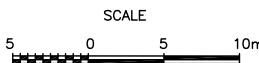
PROFILE C-C



PROFILE C-C (Continued)

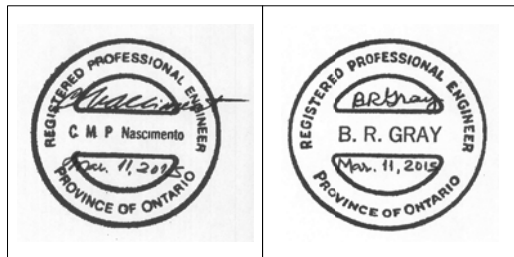


SECTION D-D

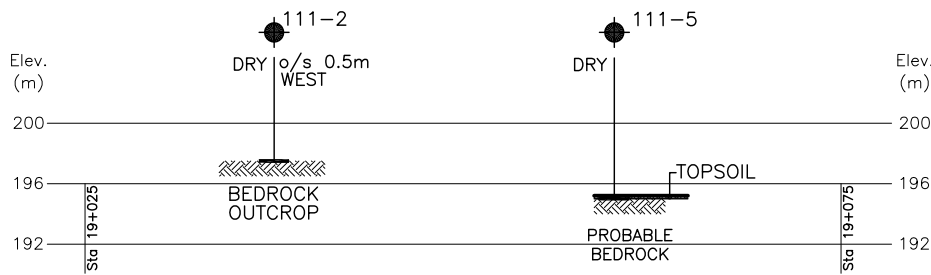


NOTES:

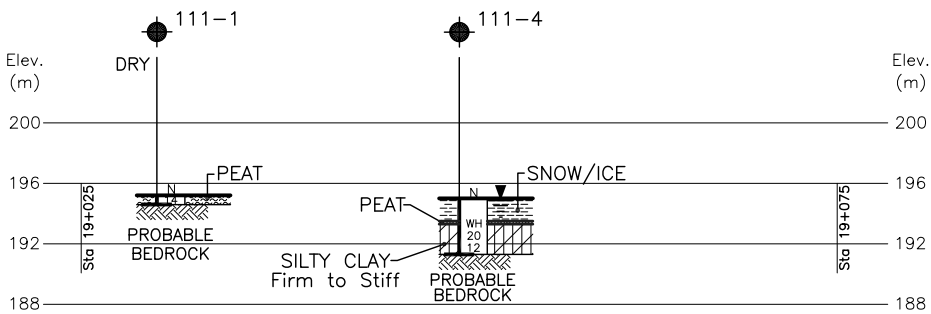
- DRAWINGS 110-1 AND 110-2 SHOULD BE READ IN CONJUNCTION WITH THE TEXT AND RECORD OF BOREHOLE LOGS.
- REFER TO DRAWING 110-1 FOR BOREHOLE LOCATION PLAN AND PROFILE A-A.
- THIS DRAWING IS FOR SUBSURFACE INFORMATION ONLY. SURFACE DETAILS AND FEATURES ARE FOR CONCEPTUAL ILLUSTRATION.
- DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN. STATIONS ARE IN KILOMETRES AND METRES.



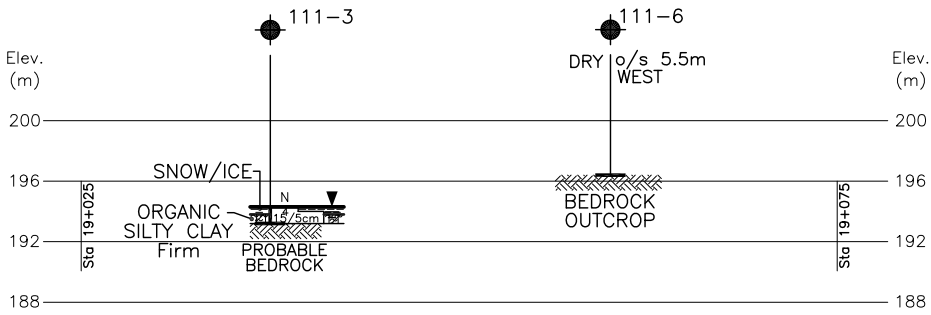
REF No. AECOM Drawings: X-60143751-C-Hwy 69-Base.dwg; C6-Hwy69 Des.dwg,



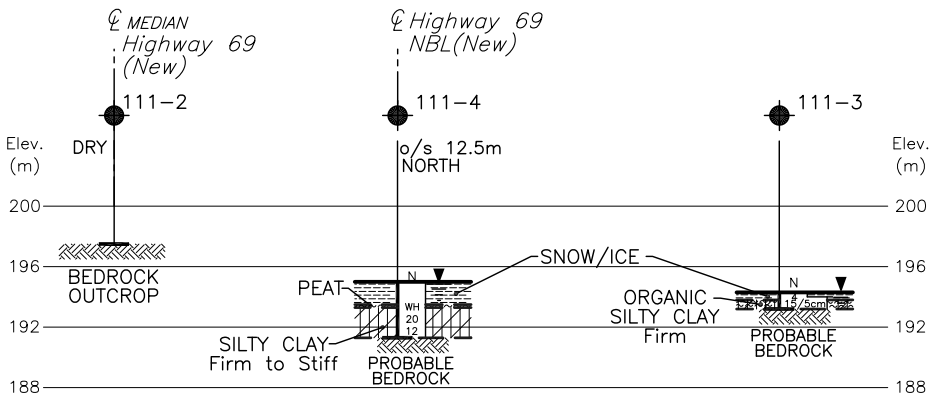
PROFILE A-A



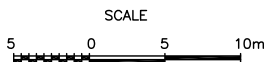
PROFILE B-B



PROFILE C-C

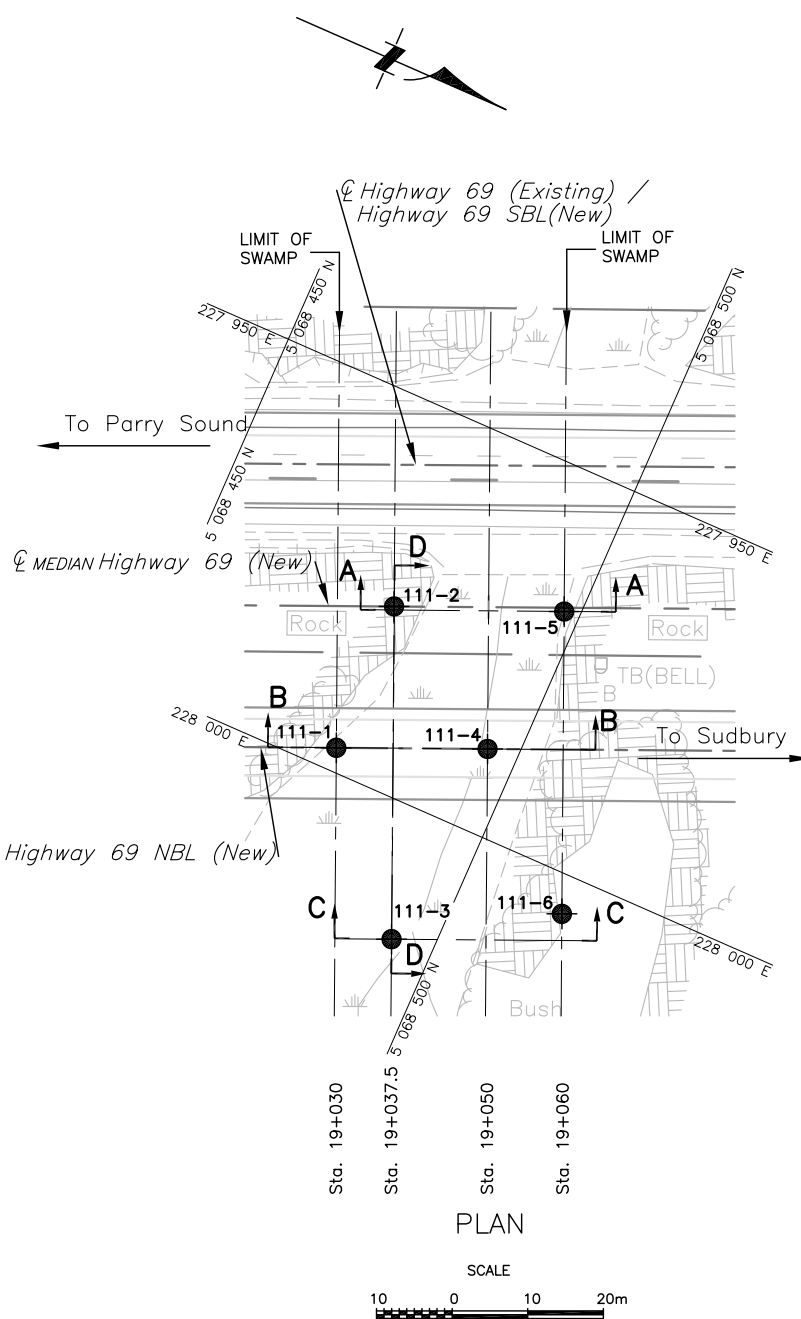


SECTION D-D



NOTES:

1. THIS DRAWING 111-1 SHOULD BE READ IN CONJUNCTION WITH THE TEXT AND RECORD OF BOREHOLE LOGS.
2. THIS DRAWING IS FOR SUBSURFACE INFORMATION ONLY. SURFACE DETAILS AND FEATURES ARE FOR CONCEPTUAL ILLUSTRATION.
3. DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN. STATIONS ARE IN KILOMETRES AND METRES.



PLAN



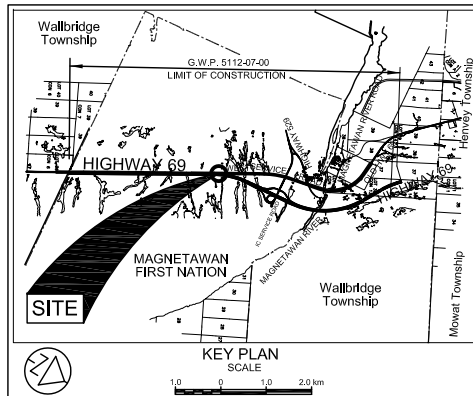
CONT No
GWP No 5112-07-00

HIGHWAY 69
HIGHWAY 69 FOUR-LANING
SWAMP 111, STA. 19+030 TO 19+060 (NBL) MAGNETAWAN TWP
BOREHOLE LOCATIONS AND SOIL STRATA



SHEET

PMI Peto MacCallum Ltd.
CONSULTING ENGINEERS



LEGEND

- Borehole
- Dynamic Cone Penetration Test (Cone)
- Borehole & Cone
- N Blows/0.3m (Std. Pen Test, 475 J/blow)
- CONE Blows/0.3m (60 °Cone, 475 J/blow)
- WL at time of investigation Oct 2011 and Feb. 2012
- Head
- ARTESIAN WATER
- Encountered
- PIEZOMETER

BH No	ELEVATION	STA	o/s CL MED
		MAGNETAWAN TWP	
111-1	195.2	19+030	18.8m Rt.
111-2	197.5	19+037.5	CL
111-3	194.3	19+037.5	44.0m Rt.
111-4	195.0	19+050	18.8m Rt.
111-5	195.2	19+060	0.5m Rt.
111-6	196.4	19+060	38.5m Rt.

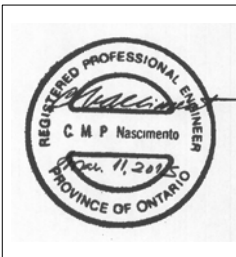
NOTE

The boundaries between soil strata have been established only at Borehole locations. Between Boreholes the boundaries are assumed from geological evidence.

REVISIONS	DATE	BY	DESCRIPTION

Geocres No. 41H-148

HWY No	69	CHECKED	CD	DATE	MAR. 11, 2015	DIST	54
SUBM'D	NA	CHECKED	BRG	APPROVED	CN	SITE	---
DRAWN	NA	CHECKED	BRG	APPROVED	CN	DWG	111-1



REF No. AECOM Drawings: X-60143751-C-Hwy 69-Base.dwg; C6-Hwy69 Des.dwg;

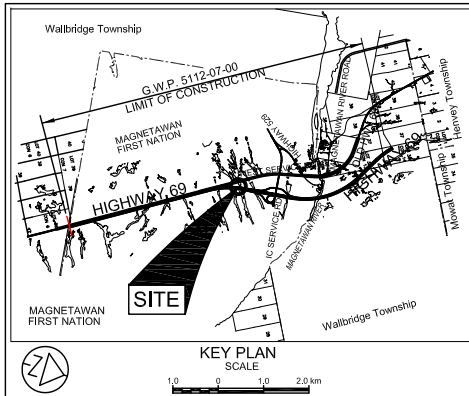
CONT No
GWP No 5112-07-00

HIGHWAY 69
HIGHWAY 69 FOUR-LANING
SWAMP 112, STA. 19+350 TO 19+460 MAGNETAWAN FN
BOREHOLE LOCATIONS AND SOIL STRATA



SHEET

PML Peto MacCallum Ltd.
CONSULTING ENGINEERS



LEGEND

- Borehole
- Dynamic Cone Penetration Test (Cone)
- Borehole & Cone
- N Blows/0.3m (Std. Pen Test, 475 J/blow)
- CONE Blows/0.3m (60° Cone, 475 J/blow)
- PM Pushed manually
- WH Penetration due to weight of rods & hammer
- WL at time of investigation Oct. 2011, Feb. & Sept 2012, and Feb. 2013
- Head
- ARTESIAN WATER
- Encountered
- PIEZOMETER

BH No	ELEVATION	STA MAGNETAWAN FN	o/s CL MED
112-1	196.0	19+350	18.8m Rt.
112-2	193.8	19+362.5	5.0m Rt.
112-3	193.7	19+362.5	34.0m Rt.
112-4	189.4	19+376	10.9m Rt.
112-5	188.7	19+377	19.0m Rt.
112-6	188.8	19+384	40.0m Rt.
112-7	188.7	19+391	10.0m Rt.
112-8	192.9	19+400	18.8m Rt.
112-9	193.7	19+412	7.9m Lt.
112-10	193.7	19+412.5	3.5m Rt.
112-11	191.6	19+412.5	35.5m Rt.
112-12	194.7	19+425	18.8m Lt.
112-13	191.1	19+425	19.0m Rt.
112-14	192.5	19+437	9.0m Lt.
112-15	191.7	19+437.5	36.0m Rt.
112-16	196.6	19+450	18.8m Lt.

(Legend Continues)

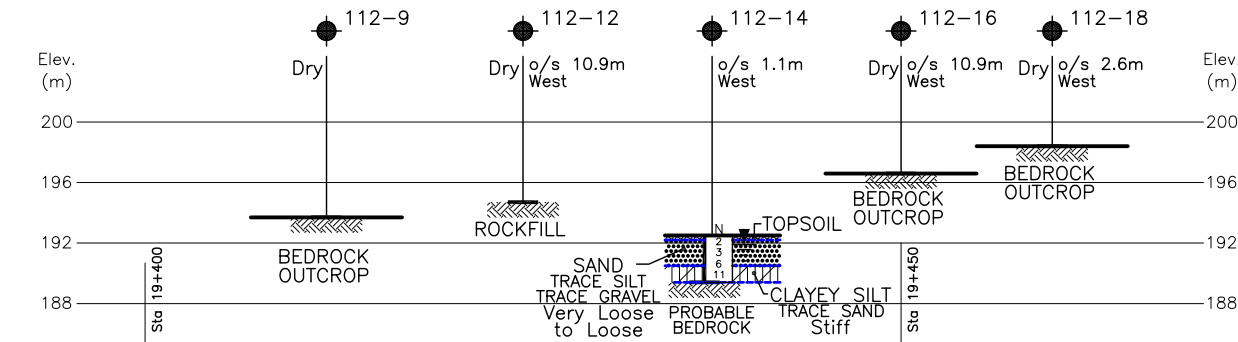
NOTE

The boundaries between soil strata have been established only at Borehole locations. Between Boreholes the boundaries are assumed from geological evidence.

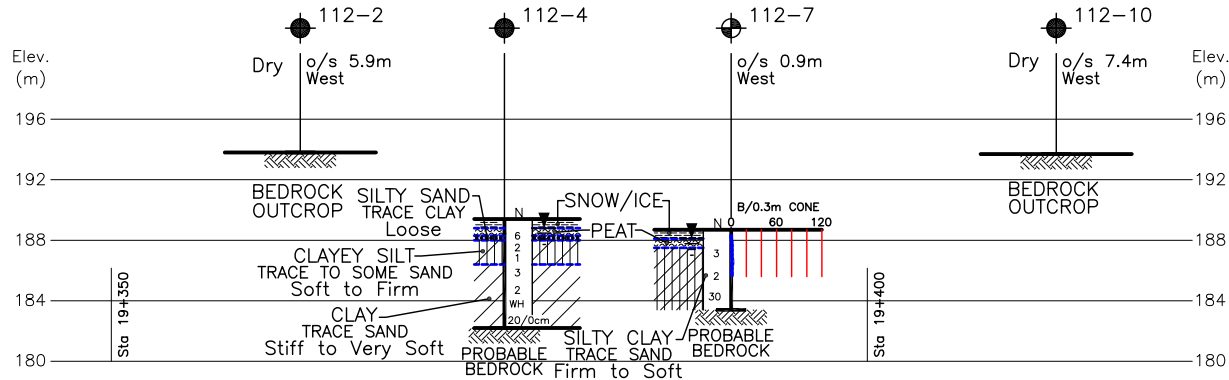
DATE	BY	DESCRIPTION

Geocres No. 41H-148

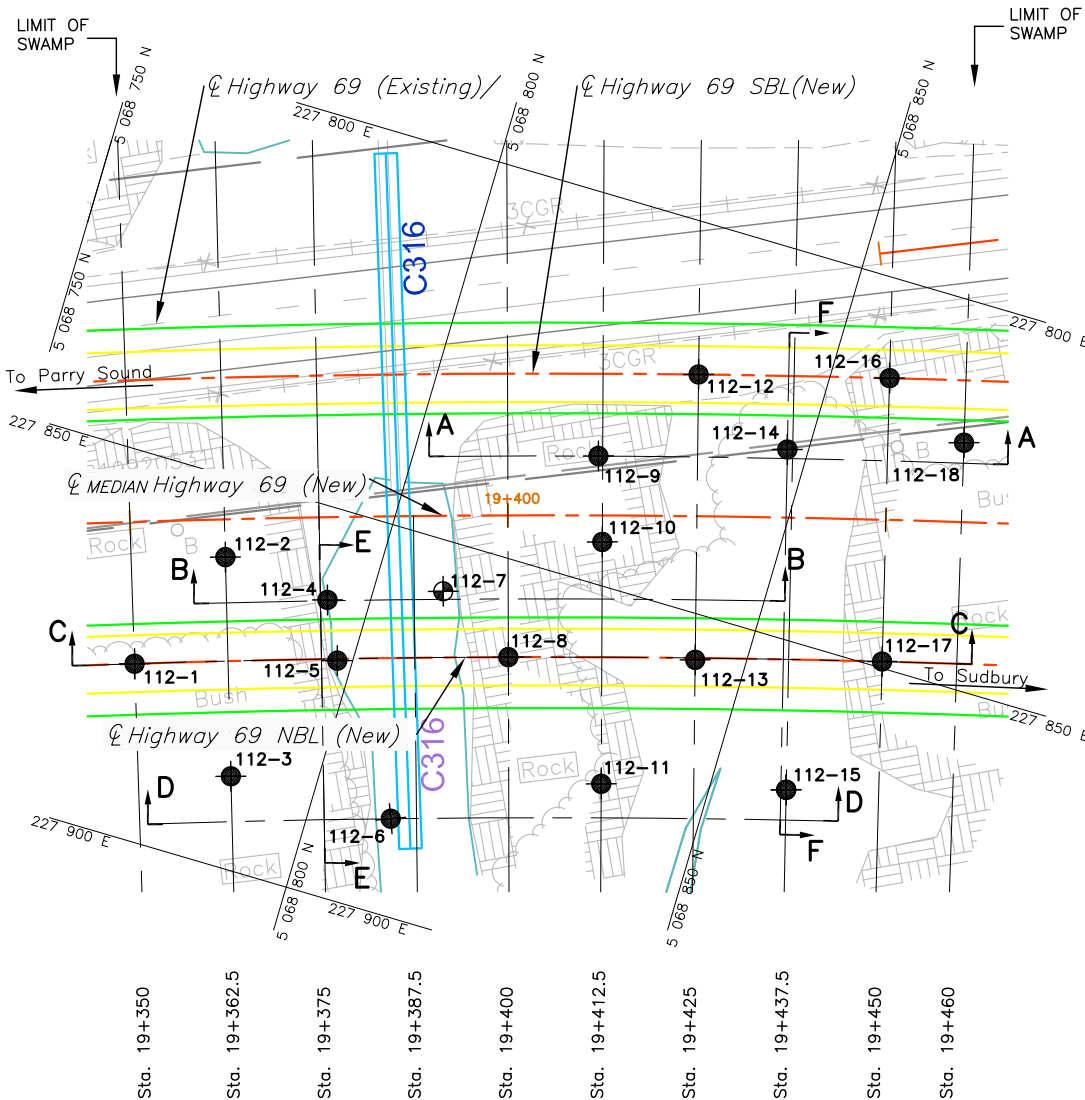
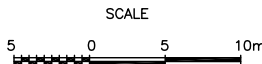
HWY No 69	DIST 54
SUBM'D NA	CHECKED GD
DATE MAR. 11, 2015	SITE
DRAWN NA	CHECKED BRG
APPROVED CN	DWG 112-1



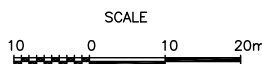
PROFILE A-A



PROFILE B-B



PLAN

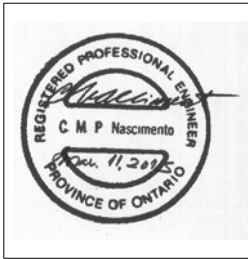


NOTES:

- DRAWINGS 112-1 AND 112-2 SHOULD BE READ IN CONJUNCTION WITH THE TEXT AND RECORD OF BOREHOLE LOGS.
- REFER TO DRAWING 112-2 FOR PROFILES C-C AND D-D AND SECTIONS E-E AND F-F.
- THIS DRAWING IS FOR SUBSURFACE INFORMATION ONLY. SURFACE DETAILS AND FEATURES ARE FOR CONCEPTUAL ILLUSTRATION.
- DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN. STATIONS ARE IN KILOMETRES AND METRES.

(Legend Continues)

BH No	ELEVATION	STA MAGNETAWAN FN	o/s CL MED
112-17	195.8	19+450	18.8m Rt.
112-18	198.4	19+460	10.5m Lt.



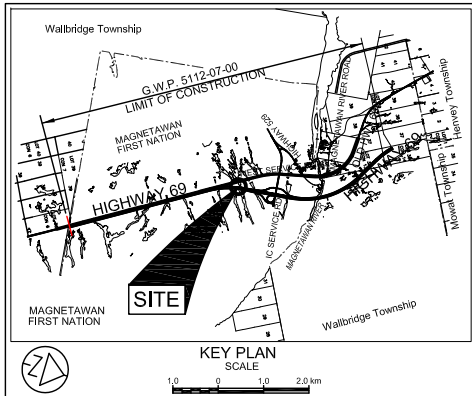
REF. AECOM Drawings:
X-60143751-C-Hwy 69-Base.dwg; C6-Hwy69 Des.dwg;

CONT No
GWP No 5112-07-00

HIGHWAY 69
HIGHWAY 69 FOUR-LANING
SWAMP 112, STA. 19+350 TO 19+460 MAGNETAWAN FN
SOIL STRATA

SHEET

PML Peto MacCallum Ltd.
CONSULTING ENGINEERS



LEGEND

- Borehole
- Dynamic Cone Penetration Test (Cone)
- Borehole & Cone
- N Blows/0.3m (Std. Pen Test, 475 J/blow)
- CONE Blows/0.3m (60° Cone, 475 J/blow)
- PM Pushed manually
- WH Penetration due to weight of rods & hammer
- WL at time of investigation Oct. 2011, Feb. & Sept 2012, and Feb. 2013
- Head
- ARTESIAN WATER
- Encountered
- PIEZOMETER

BH No	ELEVATION	STA MAGNETAWAN FN	o/s CL MED
FOR DETAILS, REFER TO DWG. 112-1			

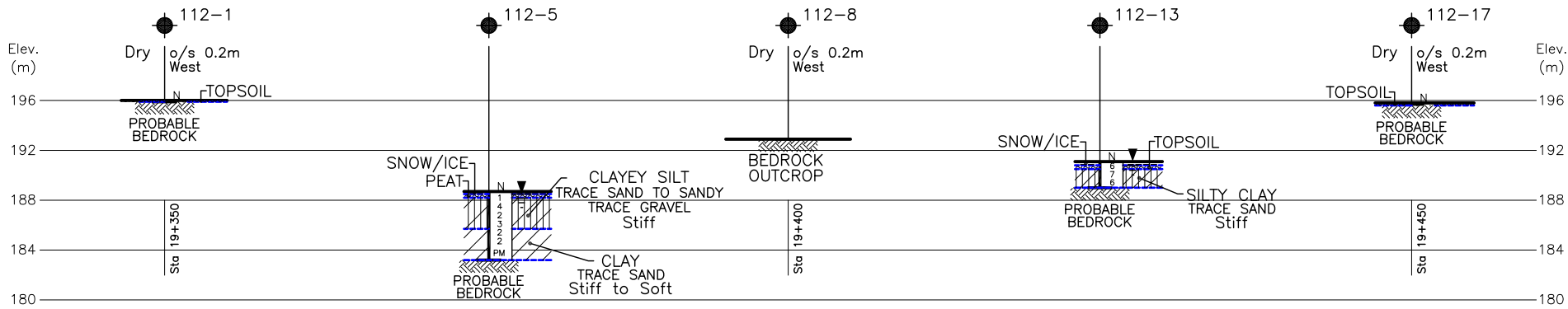
NOTE

The boundaries between soil strata have been established only at Borehole locations. Between Boreholes the boundaries are assumed from geological evidence.

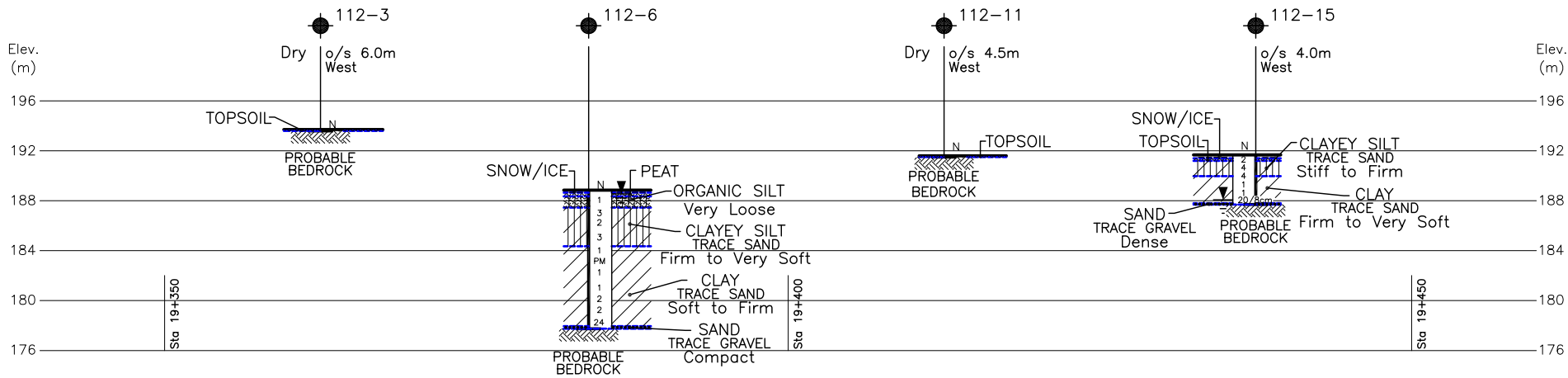
REVISIONS	DATE	BY	DESCRIPTION

Geocres No. 41H-148

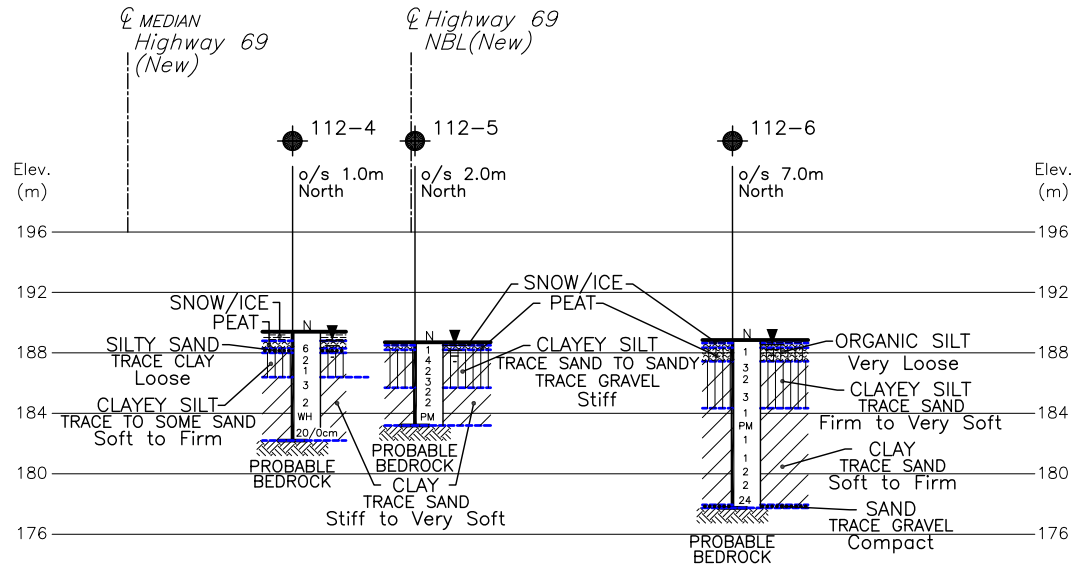
HWY No	69	DIST	54
SUBM'D	NA	CHECKED	GD
DATE	MAR. 11, 2015	SITE	---
DRAWN	NA	CHECKED	BRG
APPROVED	CN	DWG	112-2



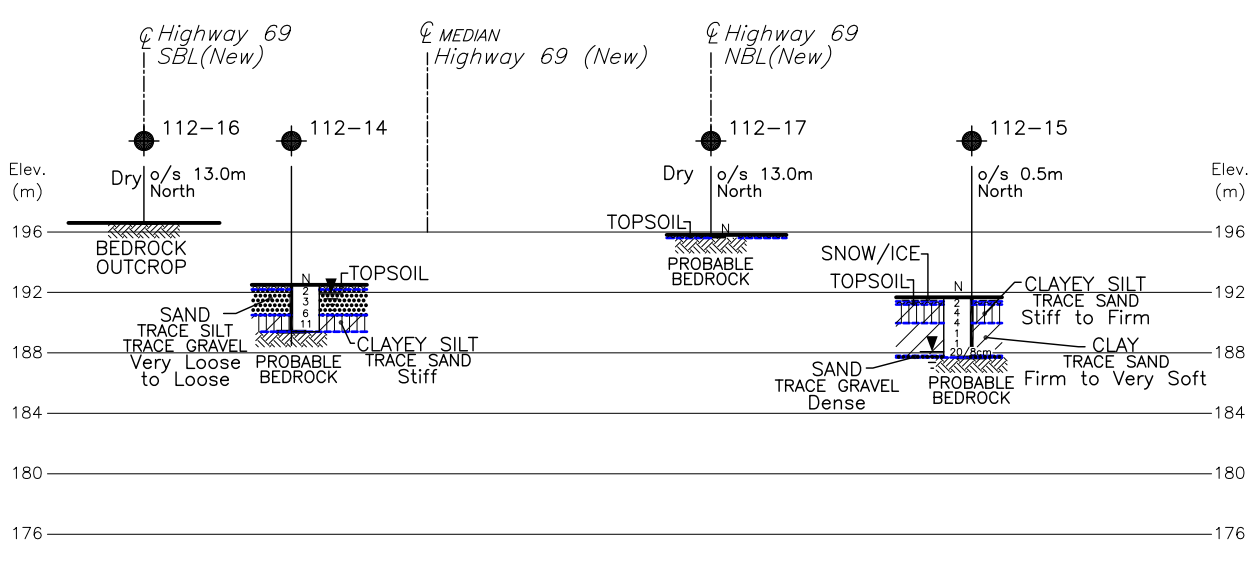
PROFILE C-C



PROFILE D-D



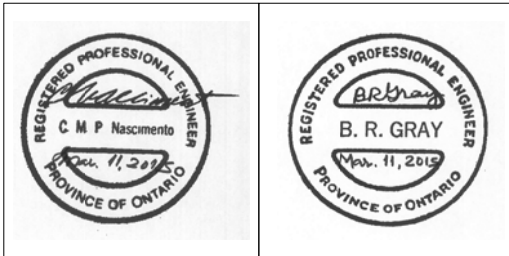
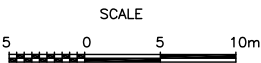
SECTION E-E



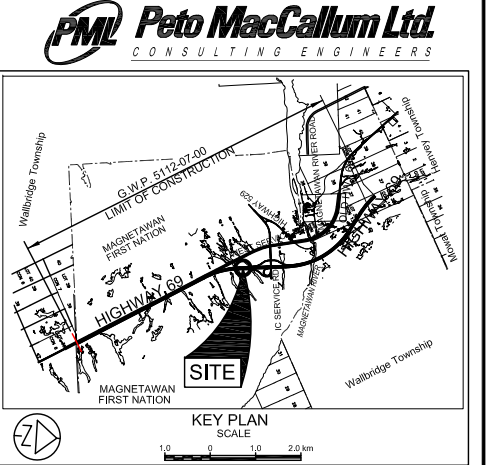
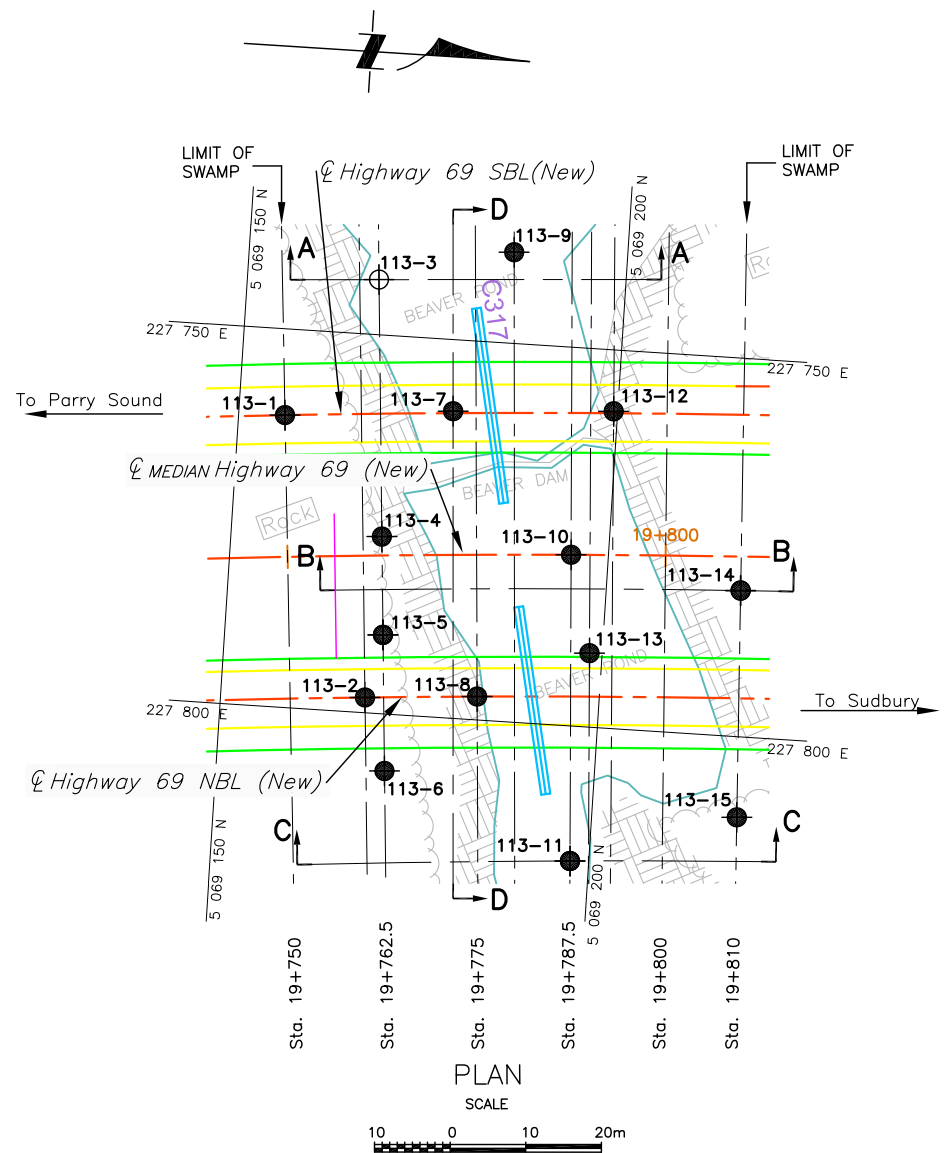
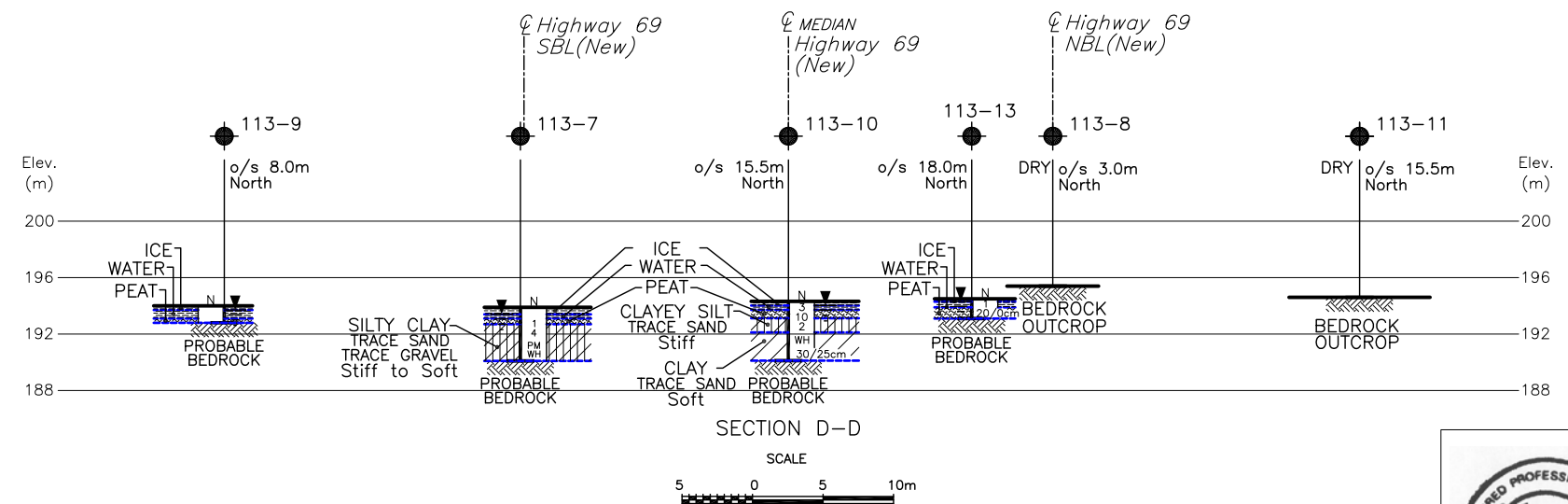
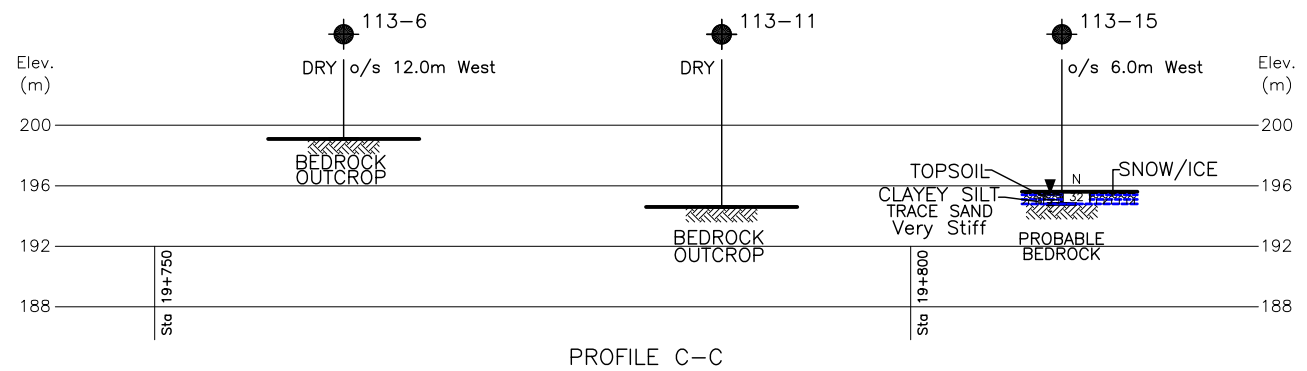
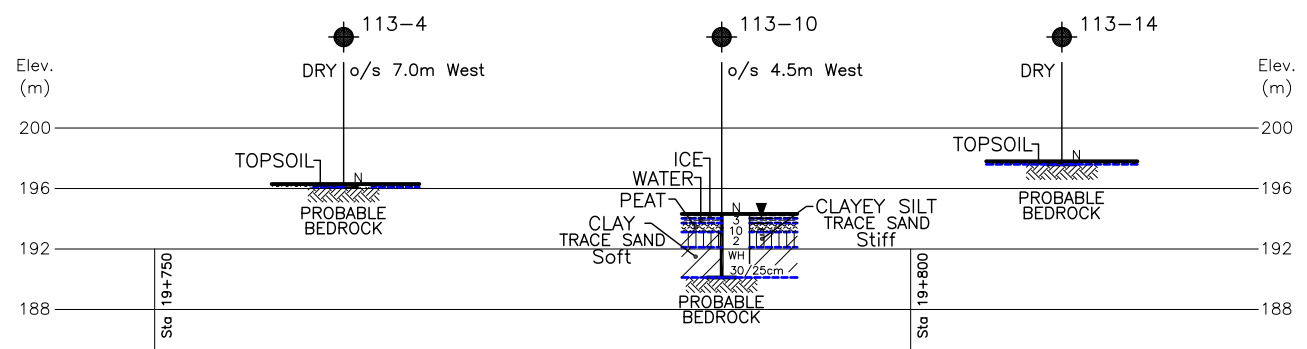
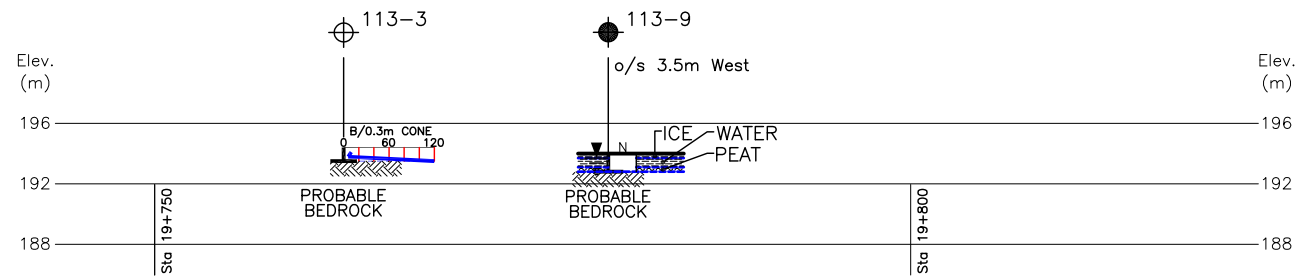
SECTION F-F

NOTES:

- DRAWINGS 112-1 AND 112-2 SHOULD BE READ IN CONJUNCTION WITH THE TEXT AND RECORD OF BOREHOLE LOGS.
- REFER TO DRAWING 112-1 FOR BOREHOLE LOCATION PLAN AND PROFILES A-A AND B-B.
- THIS DRAWING IS FOR SUBSURFACE INFORMATION ONLY. SURFACE DETAILS AND FEATURES ARE FOR CONCEPTUAL ILLUSTRATION.
- DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN. STATIONS ARE IN KILOMETRES AND METRES.



REF. AECOM Drawings:
X-60143751-C-Hwy 69-Base.dwg; C6-Hwy69 Des.dwg;

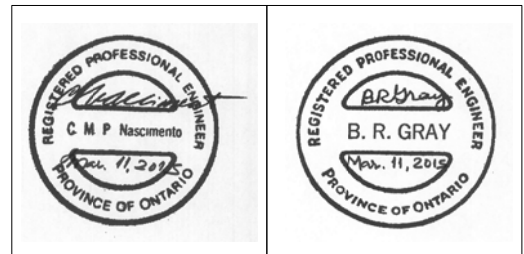


LEGEND

- Borehole
- Dynamic Cone Penetration Test (Cone)
- Borehole & Cone
- N Blows/0.3m (Std. Pen Test, 475 J/blow)
- CONE Blows/0.3m (60° Cone, 475 J/blow)
- PM Pushed manually
- WH Penetration due to weight of rods & hammer
- WL at time of investigation Sept 2012 and Feb. 2013
- Head
- ARTESIAN WATER
- Encountered
- PIEZOMETER

BH No	ELEVATION	STA MAGNETAWAN FN	o/s CL MED
113-1	196.5	19+750	18.8m Lt.
113-2	199.6	19+760	18.8m Rt.
113-3	194.4	19+762.5	36.5m Lt.
113-4	196.3	19+762.5	2.5m Lt.
113-5	198.8	19+762.5	10.5m Rt.
113-6	199.1	19+762.5	28.5m Rt.
113-7	193.9	19+772	19.0m Lt.
113-8	195.4	19+775	18.8m Rt.
113-9	194.0	19+780	40.0m Lt.
113-10	194.3	19+787.5	CL
113-11	194.6	19+787.5	40.5m Rt.
113-12	196.5	19+793	19.0m Lt.
113-13	194.5	19+790	13.0m Rt.
113-14	197.8	19+810	4.5m Rt.
113-15	195.6	19+810	34.5m Rt.

- NOTES:
- DRAWING 113-1 SHOULD BE READ IN CONJUNCTION WITH THE TEXT AND RECORD OF BOREHOLE LOGS.
 - THIS DRAWING IS FOR SUBSURFACE INFORMATION ONLY. SURFACE DETAILS AND FEATURES ARE FOR CONCEPTUAL ILLUSTRATION.
 - DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN. STATIONS ARE IN KILOMETRES AND METRES.



NOTE
The boundaries between soil strata have been established only at Borehole locations. Between Boreholes the boundaries are assumed from geological evidence.

REVISIONS	DATE	BY	DESCRIPTION

Geocres No. 41H-148

HWY No 69	CHECKED GD	DATE MAR. 11, 2015	DIST 54
SUBM'D NA	APPROVED CN	SITE	---
DRAWN NA	CHECKED BRG	APPROVED CN	DWG 113-1

REF. AECOM Drawings:
X-60143751-C-Hwy 69-Base.dwg; C6-Hwy69 Des.dwg;

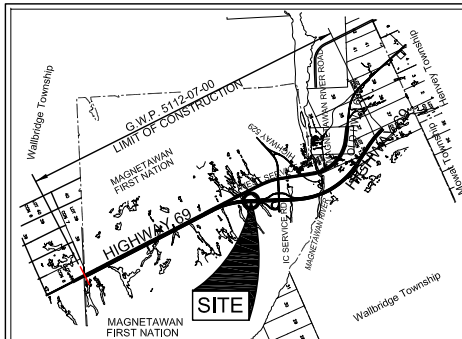
CONT No
GWP No 5112-07-00

HIGHWAY 69
HIGHWAY 69 FOUR-LANING
SWAMP 114, STA. 19+850 TO 19+955 MAGNETAWAN FN
BOREHOLE LOCATIONS AND SOIL STRATA



SHEET

PML Peto MacCallum Ltd.
CONSULTING ENGINEERS



KEY PLAN
SCALE
0 1.0 2.0 km

LEGEND

- Borehole
- Dynamic Cone Penetration Test (Cone)
- Borehole & Cone
- N Blows/0.3m (Std. Pen Test, 475 J/blow)
- CONE Blows/0.3m (60° Cone, 475 J/blow)
- WL at time of investigation Sept 2012 and Feb. 2013
- Head
- ARTESIAN WATER
- Encountered
- PIEZOMETER

BH No	ELEVATION	STA MAGNETAWAN FN	o/s CL MED
114-1	196.3	19+857	19.0m Rt.
114-2	196.5	19+862.5	4.5m Rt.
114-3	197.1	19+862	35.0m Rt.
114-4	196.4	19+875	18.8m Rt.
114-5	193.6	19+886	18.8m Lt.
114-6	193.5	19+887.5	43.0m Lt.
114-7	196.4	19+887.5	CL
114-8	196.3	19+887.5	34.5m Rt.
114-9	195.3	19+895	18.8m Lt.
114-10	194.6	19+900	18.8m Rt.
114-11	198.2	19+912.5	6.0m Rt.
114-12	195.1	19+912.5	33.0m Rt.
114-13	197.5	19+925	18.8m Rt.
114-14	195.6	19+937.5	4.0m Rt.
114-15	197.6	19+937.5	35.0m Rt.
114-16	196.5	19+950	18.8m Rt.

(Legend Continues)

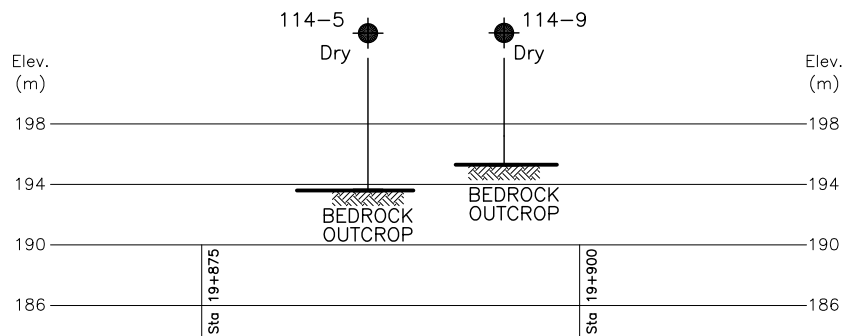
NOTE

The boundaries between soil strata have been established only at Borehole locations. Between Boreholes the boundaries are assumed from geological evidence.

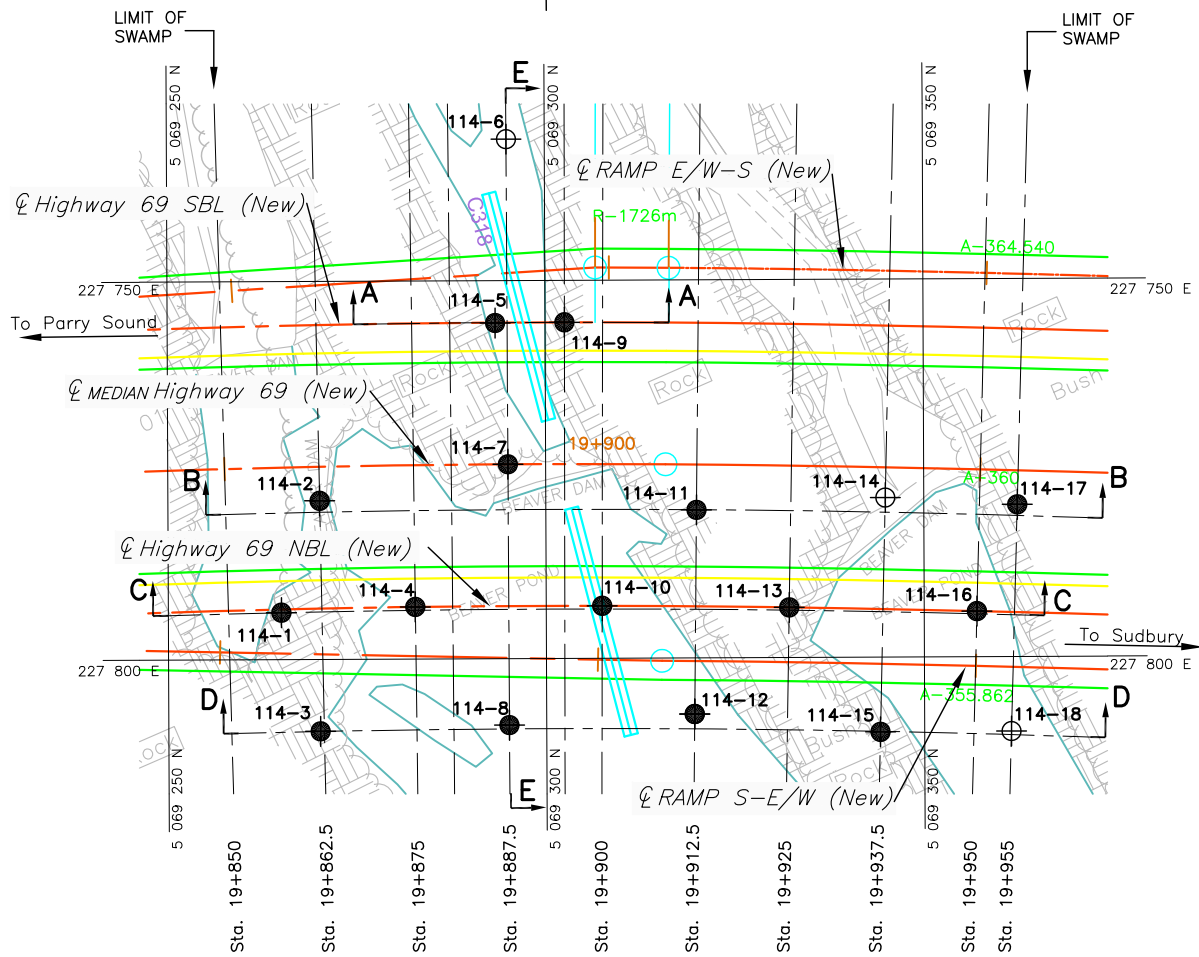
REVISIONS	DATE	BY	DESCRIPTION

Geocres No. 41H-148

HWY No 69	CHECKED CD	DATE MAR. 11, 2015	DIST 54
SUBM'D NA	CHECKED BRG	APPROVED CN	SITE --
DRAWN NA	CHECKED BRG	APPROVED CN	DWG 114-1

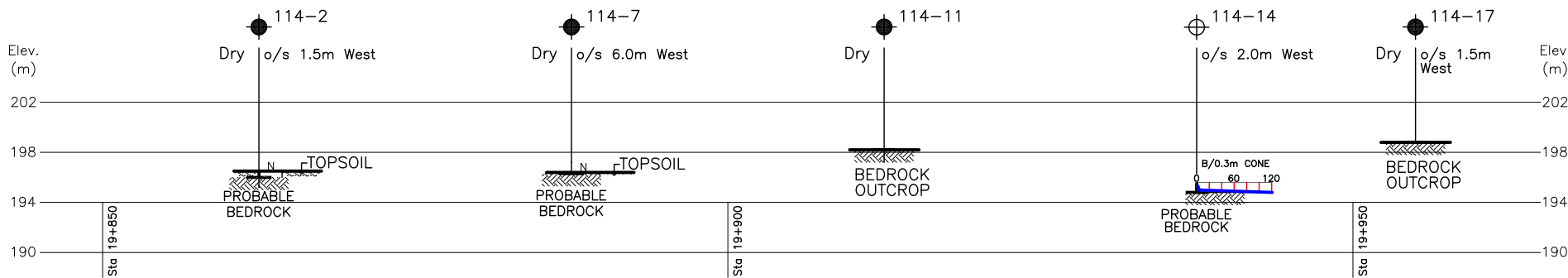


PROFILE A-A



PLAN

SCALE
10 0 10 20m



PROFILE B-B

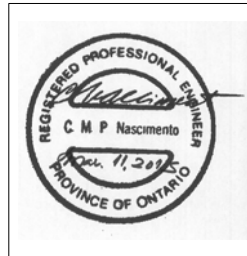
SCALE
5 0 5 10m

NOTES:

- DRAWINGS 114-1 AND 114-2 SHOULD BE READ IN CONJUNCTION WITH THE TEXT AND RECORD OF BOREHOLE LOGS.
- REFER TO DRAWING 114-2 FOR PROFILES C-C, D-D AND SECTION E-E.
- THIS DRAWING IS FOR SUBSURFACE INFORMATION ONLY. SURFACE DETAILS AND FEATURES ARE FOR CONCEPTUAL ILLUSTRATION.
- DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN. STATIONS ARE IN KILOMETRES AND METRES.

(Legend Continues)

BH No	ELEVATION	STA MAGNETAWAN FN	o/s CL MED
114-17	198.8	19+955	4.5m Rt.
114-18	196.2	19+955	34.5m Rt.



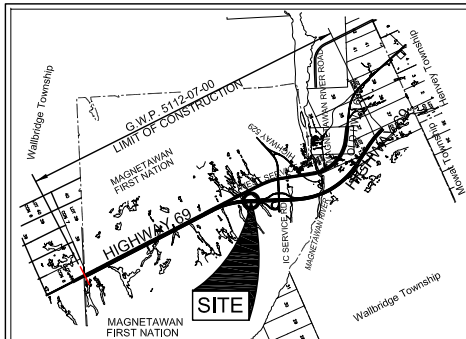
REF. AECOM Drawings:
X-60143751-C-Hwy 69-Base.dwg; C6-Hwy69 Des.dwg;

CONT No
GWP No 5112-07-00

HIGHWAY 69
HIGHWAY 69 FOUR-LANING
SWAMP 114, STA. 19+850 TO 19+955 MAGNETAWAN FN
SOIL STRATA

SHEET

PML Peto MacCallum Ltd.
CONSULTING ENGINEERS



KEY PLAN
SCALE
0 1.0 2.0 km

LEGEND

- Borehole
- Dynamic Cone Penetration Test (Cone)
- Borehole & Cone
- N Blows/0.3m (Std. Pen Test, 475 J/blow)
- CONE Blows/0.3m (60° Cone, 475 J/blow)
- WL at time of investigation Sept 2012 and Feb. 2013
- Head
- ARTESIAN WATER
- Encountered
- PIEZOMETER

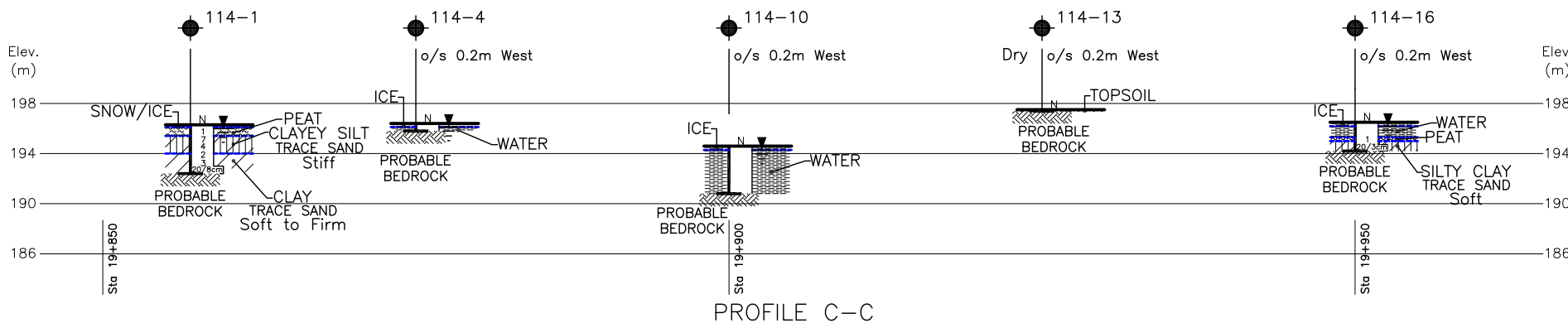
BH No	ELEVATION	STA MAGNETAWAN FN	o/s CL MED
FOR DETAILS, REFER TO DWG. 114-1			

NOTE

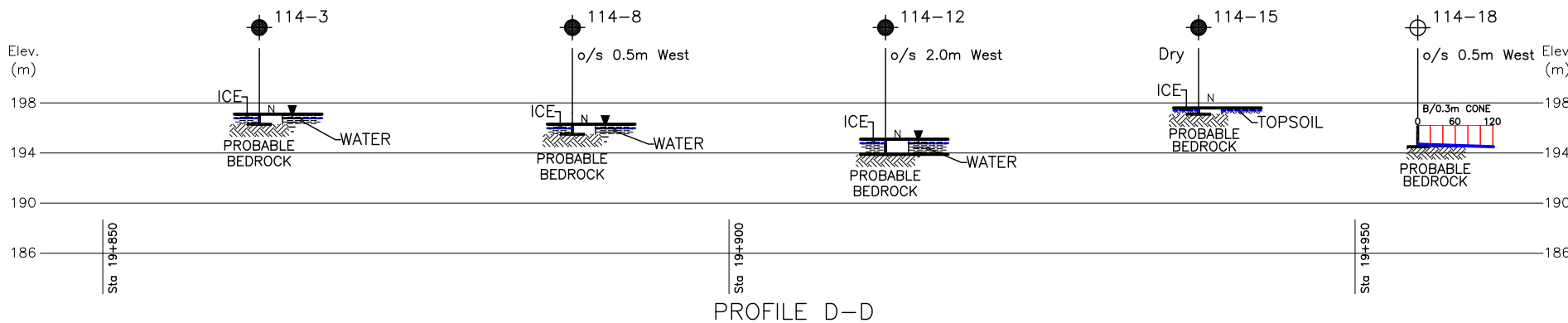
The boundaries between soil strata have been established only at Borehole locations. Between Boreholes the boundaries are assumed from geological evidence.

REVISIONS	DATE	BY	DESCRIPTION

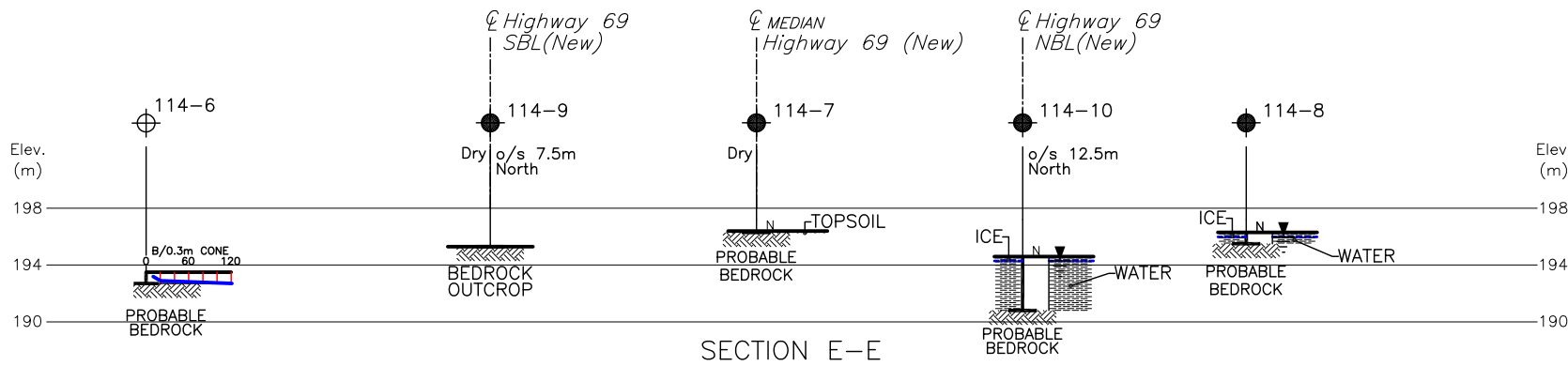
Geocres No. 41H-148	HWY No 69	SUBM'D NA	CHECKED CD	DATE MAR. 11, 2015	DIST 54
		DRAWN NA	CHECKED BRG	APPROVED CN	SITE DWG 114-2



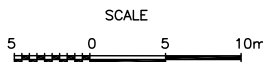
PROFILE C-C



PROFILE D-D

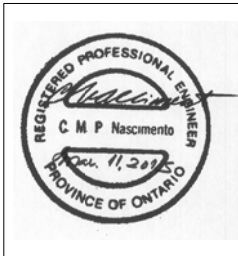


SECTION E-E



NOTES:

- DRAWINGS 114-1 AND 114-2 SHOULD BE READ IN CONJUNCTION WITH THE TEXT AND RECORD OF BOREHOLE LOGS.
- REFER TO DRAWING 114-1 FOR BOREHOLE LOCATION PLAN AND PROFILES A-A AND B-B.
- THIS DRAWING IS FOR SUBSURFACE INFORMATION ONLY. SURFACE DETAILS AND FEATURES ARE FOR CONCEPTUAL ILLUSTRATION.
- DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN. STATIONS ARE IN KILOMETRES AND METRES.



REF. AECOM Drawings:
X-60143751-C-Hwy 69-Base.dwg; C6-Hwy69 Des.dwg;

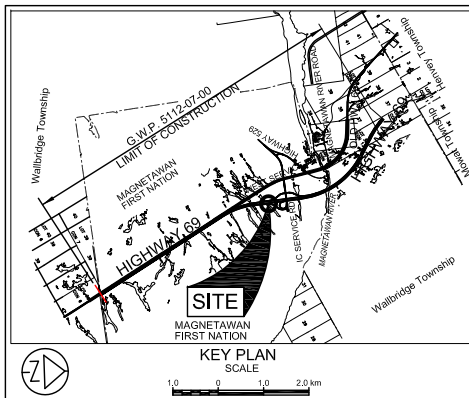
CONT No
GWP No 5112-07-00

HIGHWAY 69
HIGHWAY 69 FOUR-LANING
SWAMP 115, STA. 20+175 TO 20+270 MAGNETAWAN FN
BOREHOLE LOCATIONS AND SOIL STRATA



SHEET

PML Peto MacCallum Ltd.
CONSULTING ENGINEERS



LEGEND

- Borehole
- Dynamic Cone Penetration Test (Cone)
- Borehole & Cone
- N Blows/0.3m (Std. Pen Test, 475 J/blow)
- CONE Blows/0.3m (60° Cone, 475 J/blow)
- PH Pushed hydraulically
- WH Penetration due to weight of rods & hammer
- WL at time of investigation Sept 2012 and Jan-Feb. 2013
- Head
- ARTESIAN WATER
- Encountered
- PIEZOMETER

BH No	ELEVATION	STA MAGNETAWAN FN	o/s CL MED
115-1	200.0	20+175	18.8m Lt.
115-2	195.0	20+187.5	41.0m Lt.
115-3	197.5	20+187.5	CL
115-4	198.9	20+187.5	44.0m Rt.
115-5	195.2	20+200	19.0m Lt.
115-6	195.9	20+200	18.8m Rt.
115-7	194.5	20+212.5	42.5m Lt.
115-8	195.0	20+212.5	CL
115-9	197.9	20+212.5	51.0m Rt.
115-10	195.3	20+225	19.0m Lt.
115-11	194.8	20+225	18.8m Rt.
115-12	196.1	20+238.5	43.0m Lt.
115-13	194.6	20+237.5	CL
115-14	195.8	20+237.5	53.0m Rt.
115-15	196.4	20+250	18.8m Lt.
115-16	194.7	20+250	18.8m Rt.

(Legend Continues)

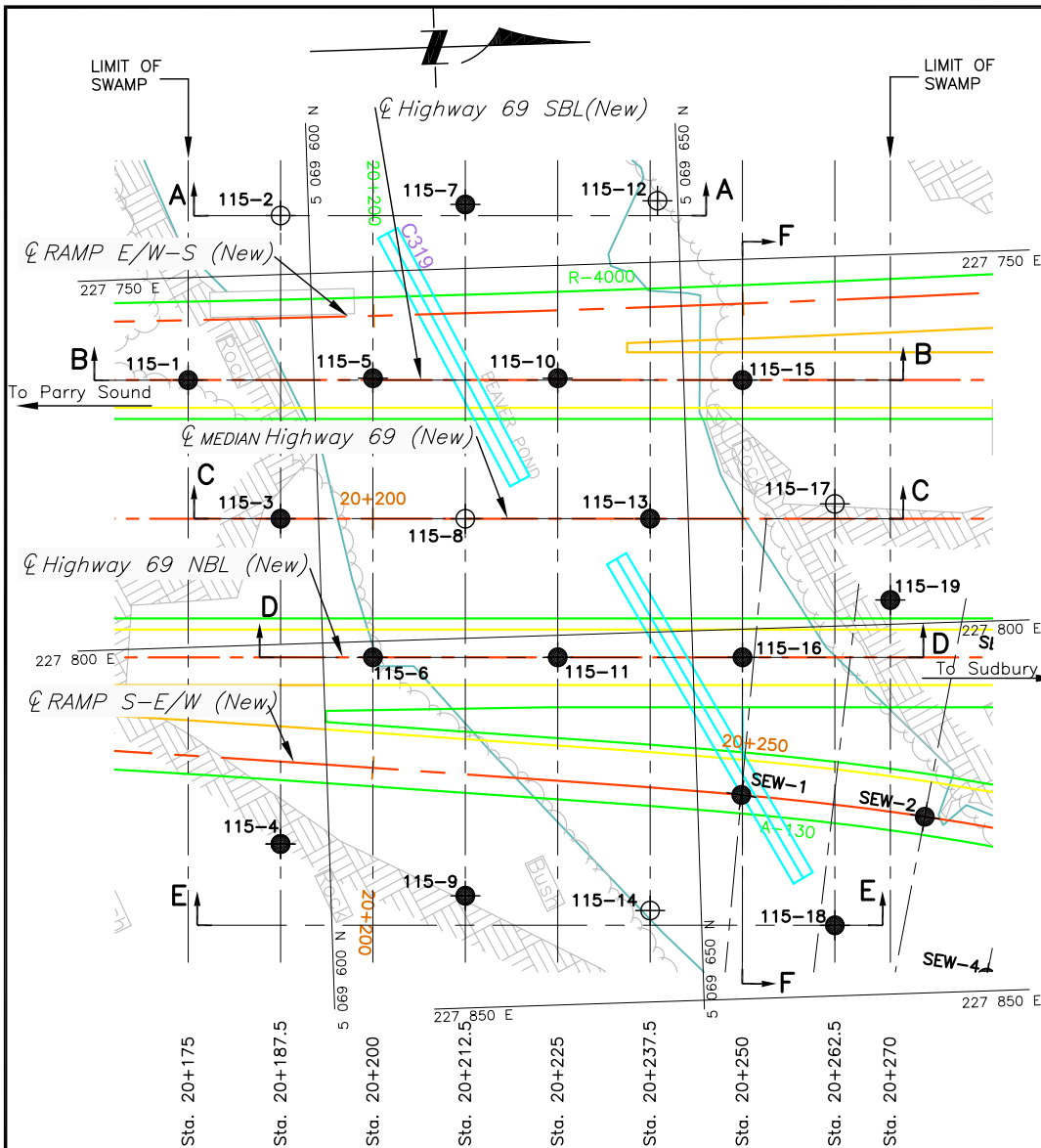
NOTE

The boundaries between soil strata have been established only at Borehole locations. Between Boreholes the boundaries are assumed from geological evidence.

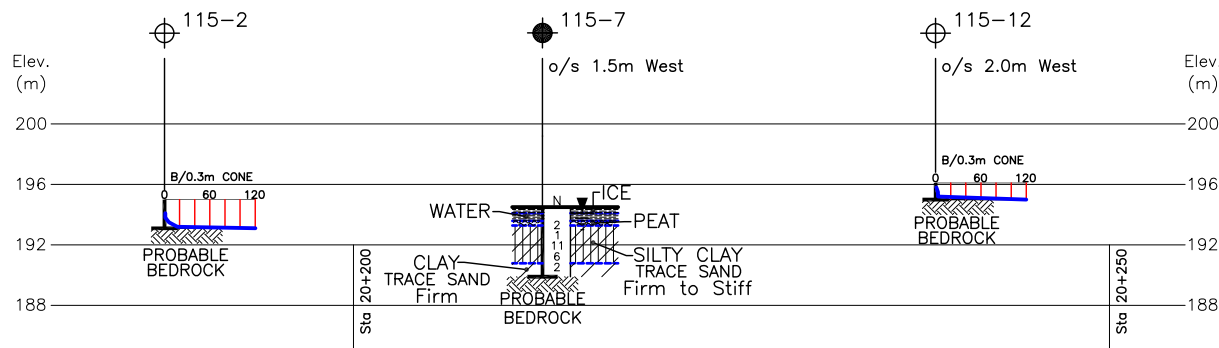
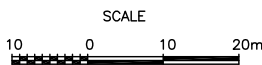
REVISIONS	DATE	BY	DESCRIPTION

Geocres No. 41H-148

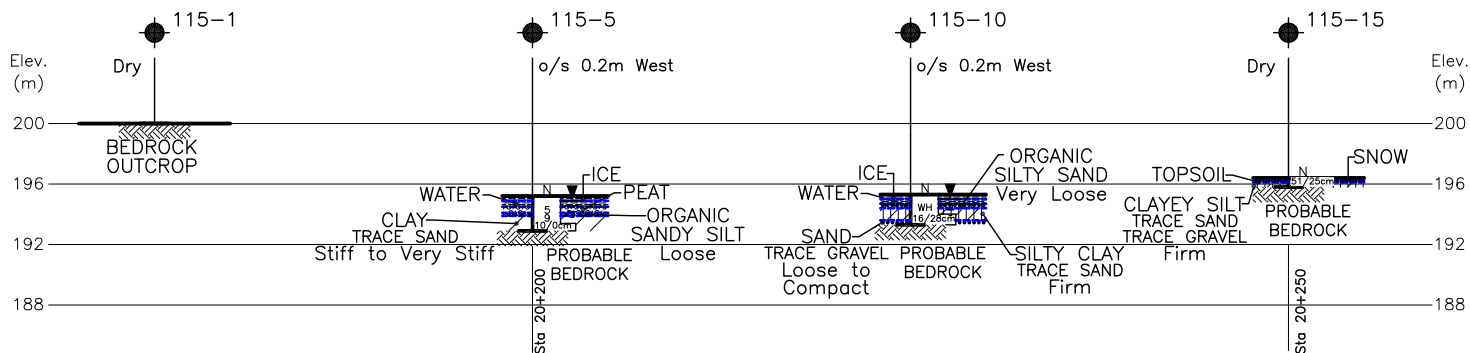
HWY No 69	SUBM'D NA	CHECKED GD	DATE MAR. 11, 2015	SITE	DIST 54
	DRAWN NA	CHECKED BRG	APPROVED CN	DWG 115-1	



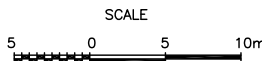
PLAN



PROFILE A-A



PROFILE B-B



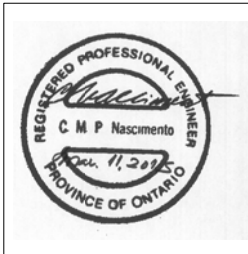
(Legend Continues)

BH No	ELEVATION	STA MAGNETAWAN FN	o/s CL MED
115-17	196.9	20+262.5	2.0m Lt.
115-18	194.6	20+262.5	55.0m Rt.
115-19	197.0	20+270	11.0m Rt.

BH No	ELEVATION	STA S-E/W RAMP	o/s CL MED
SEW-1	199.8	20+250	CL

NOTES:

- DRAWINGS 115-1 AND 115-2 SHOULD BE READ IN CONJUNCTION WITH THE TEXT AND RECORD OF BOREHOLE LOGS.
- REFER TO DRAWING 115-2 FOR PROFILES C-C, D-D, E-E AND SECTION F-F.
- THIS DRAWING IS FOR SUBSURFACE INFORMATION ONLY. SURFACE DETAILS AND FEATURES ARE FOR CONCEPTUAL ILLUSTRATION.
- DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN. STATIONS ARE IN KILOMETRES AND METRES.

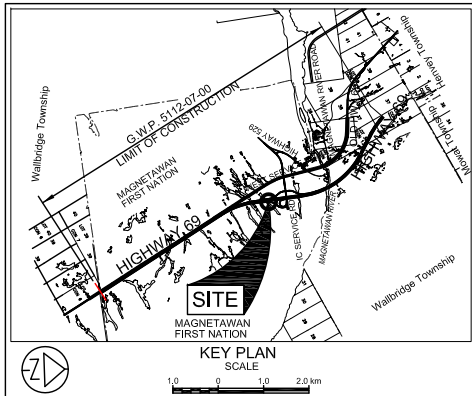


REF. AECOM Drawings:
X-60143751-C-Hwy 69-Base.dwg; C6-Hwy69 Des.dwg;

CONT No
GWP No 5112-07-00

HIGHWAY 69
HIGHWAY 69 FOUR-LANING
SWAMP 115, STA. 20+175 TO 20+270 MAGNETAWAN FN
SOIL STRATA

SHEET



LEGEND

- Borehole
- Dynamic Cone Penetration Test (Cone)
- Borehole & Cone
- N Blows/0.3m (Std. Pen Test, 475 J/blow)
- CONE Blows/0.3m (60° Cone, 475 J/blow)
- PH Pushed hydraulically
- WH Penetration due to weight of rods & hammer
- WL at time of investigation Sept 2012 and Jan-Feb. 2013
- Head
- ARTESIAN WATER
- Encountered
- PIEZOMETER

BH No	ELEVATION	STA MAGNETAWAN FN	o/s CL MED
FOR DETAILS, REFER TO DWG. 115-1			

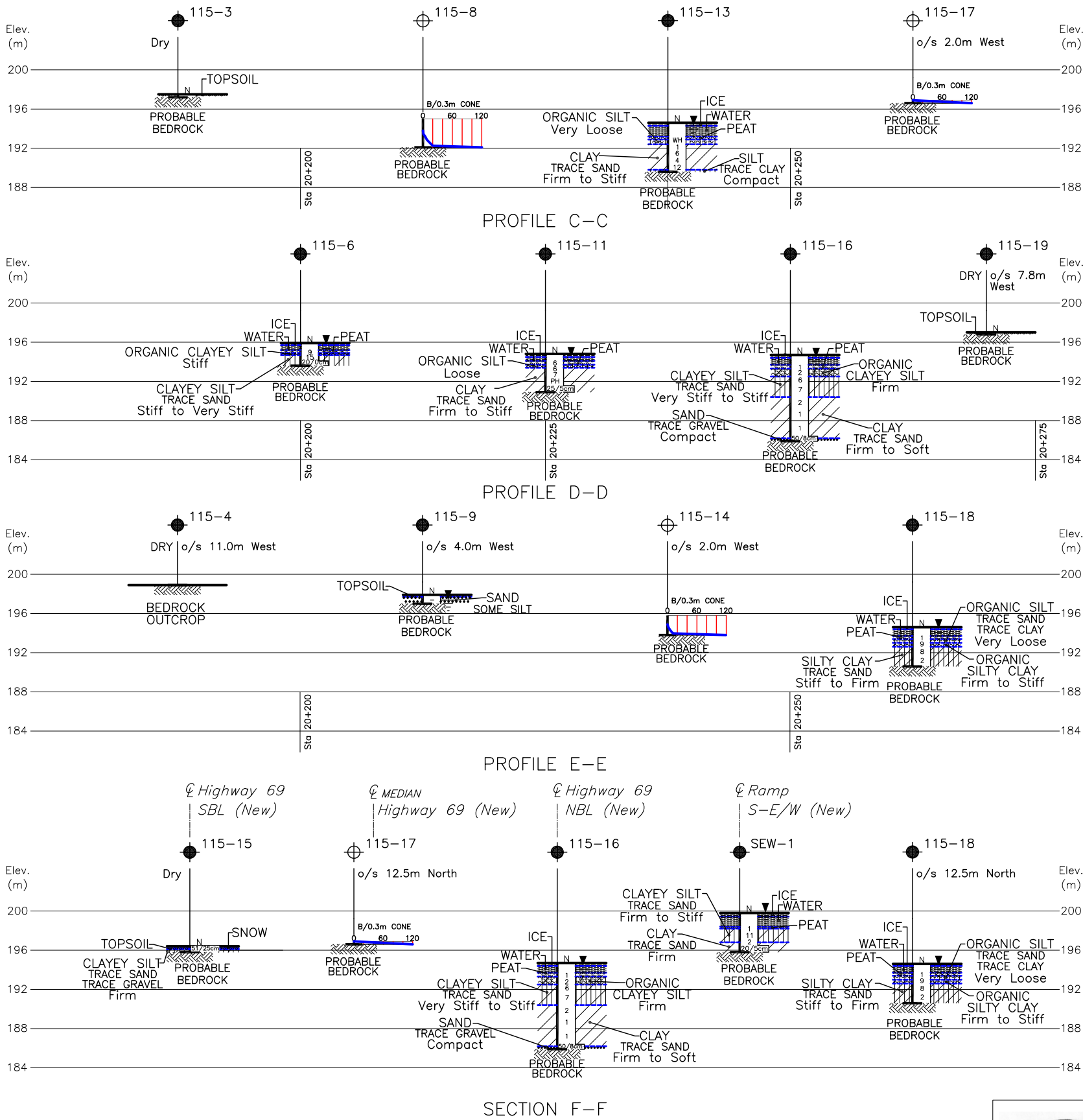
- NOTE -

The boundaries between soil strata have been established only at Borehole locations. Between Boreholes the boundaries are assumed from geological evidence.

REVISIONS	DATE	BY	DESCRIPTION

Geocres No. 41H-148

HWY No 69	SUBM'D NA	CHECKED GD	DATE MAR. 11, 2015	DIST 54
DRAWN NA	CHECKED BRG	APPROVED CN	SITE DWG 115-2	

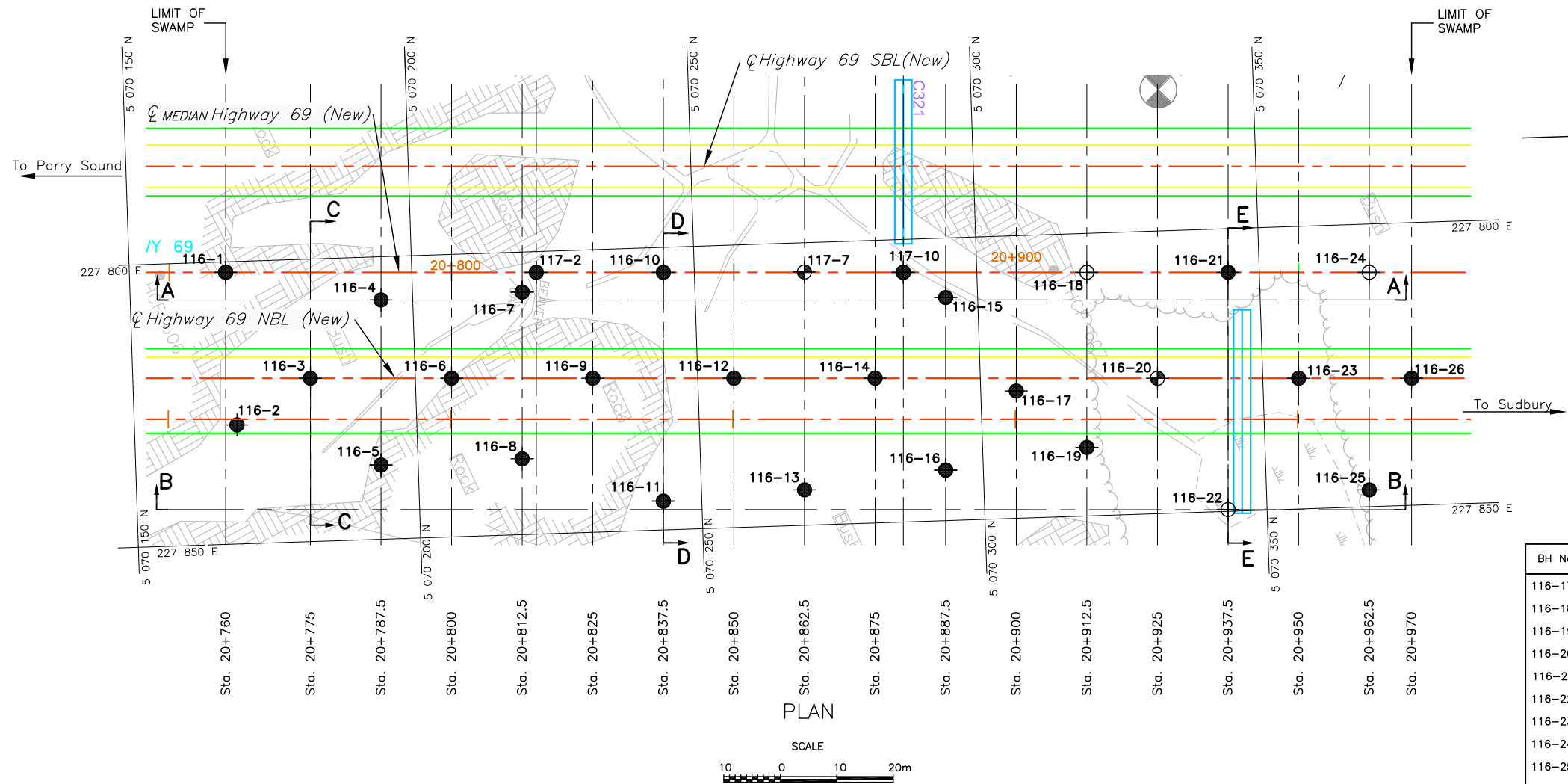


NOTES:

- DRAWINGS 115-1 AND 115-2 SHOULD BE READ IN CONJUNCTION WITH THE TEXT AND RECORD OF BOREHOLE LOGS.
- REFER TO DRAWING 115-1 FOR BOREHOLE LOCATION PLAN AND PROFILES A-A AND B-B.
- THIS DRAWING IS FOR SUBSURFACE INFORMATION ONLY. SURFACE DETAILS AND FEATURES ARE FOR CONCEPTUAL ILLUSTRATION.
- DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN. STATIONS ARE IN KILOMETRES AND METRES.

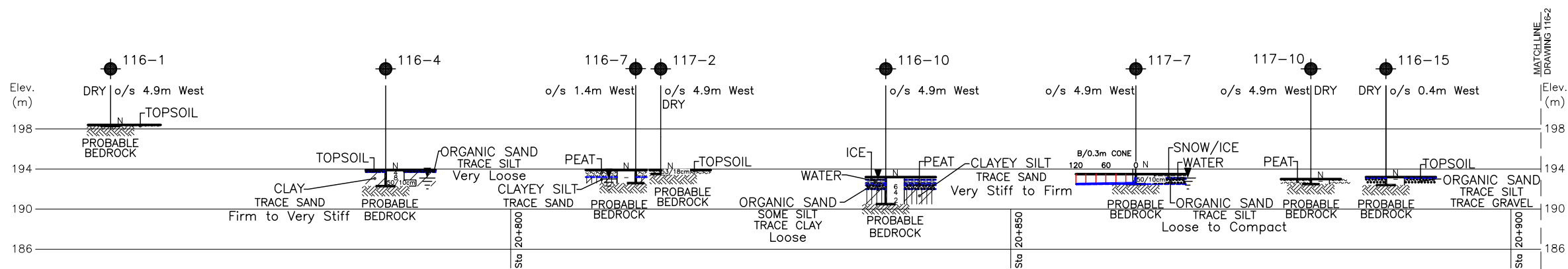


REF. AECOM Drawings:
X-60143751-C-Hwy 69-Base.dwg; C6-Hwy69 Des.dwg;



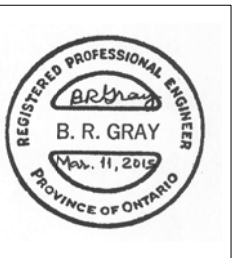
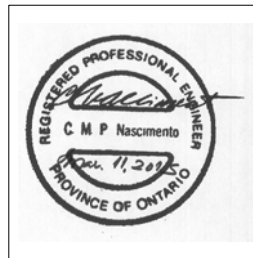
(Legend Continued)

BH No	ELEVATION	STA MAGNETAWAN FN	o/s CL MED
116-17	193.9	20+900	21.0m Rt.
116-18	193.2	20+912.5	CL
116-19	193.3	20+912.5	31.0m Rt.
116-20	193.1	20+925	18.8m Rt.
116-21	193.5	20+937.5	CL
116-22	192.3	20+937.5	42.0m Rt.
116-23	193.0	20+950	18.8m Rt.
116-24	194.6	20+962.5	CL
116-25	194.1	20+962.5	38.5m Rt.
116-26	195.8	20+970	18.8m Rt.
117-2	193.9	20+815	CL
117-7	193.5	20+862.5	CL
117-10	193.0	20+880	CL



NOTES:

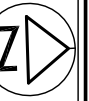
- DRAWINGS 116-1 AND 116-2 SHOULD BE READ IN CONJUNCTION WITH THE TEXT AND RECORD OF BOREHOLE LOGS.
- REFER TO DRAWING 116-2 FOR PROFILES A-A (CONTINUED), B-B AND SECTIONS C-C TO E-E.
- THIS DRAWING IS FOR SUBSURFACE INFORMATION ONLY. SURFACE DETAILS AND FEATURES ARE FOR CONCEPTUAL ILLUSTRATION.
- DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN. STATIONS ARE IN KILOMETRES AND METRES.



REF. AECOM Drawings:
X-60143751-C-Hwy 69-Base.dwg; C6-Hwy69 Des.dwg;

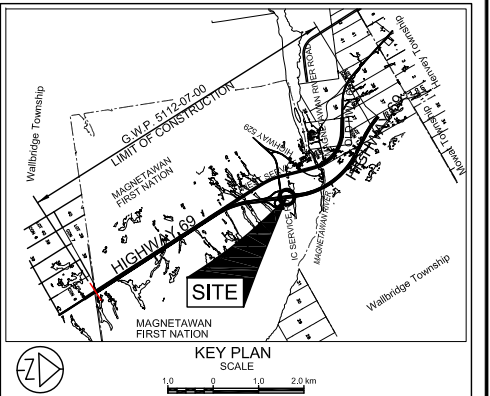
CONT No
GWP No 5112-07-00

HIGHWAY 69
HIGHWAY 69 FOUR-LANING
SWAMP 116, STA. 20+760 TO 20+970 (NBL) MAGNETAWAN FN
BOREHOLE LOCATIONS AND SOIL STRATA



SHEET

PML Peto MacCallum Ltd.
CONSULTING ENGINEERS



LEGEND

- Borehole
- Dynamic Cone Penetration Test (Cone)
- Borehole & Cone
- N Blows/0.3m (Std. Pen Test, 475 J/blow)
- CONE Blows/0.3m (60° Cone, 475 J/blow)
- WL at time of investigation Aug. 2012 and Feb. 2013
- Head
- ARTESIAN WATER Encountered
- PIEZOMETER

BH No	ELEVATION	STA MAGNETAWAN FN	o/s CL MED
116-1	198.4	20+760	CL
116-2	194.9	20+762	27.0m Rt.
116-3	194.3	20+775	18.8m Rt.
116-4	193.9	20+787.5	4.9m Rt.
116-5	193.9	20+787.5	34.1m Rt.
116-6	193.9	20+800	18.8m Rt.
116-7	193.9	20+812.5	3.5m Rt.
116-8	196.9	20+812.5	33.0m Rt.
116-9	196.5	20+825	18.8m Rt.
116-10	193.2	20+837.5	CL
116-11	194.0	20+837.5	40.5m Rt.
116-12	193.6	20+850	18.8m Rt.
116-13	195.0	20+862.5	38.5m Rt.
116-14	195.2	20+875	18.8m Rt.
116-15	193.2	20+887.5	4.5m Rt.
116-16	196.3	20+887.5	35.0m Rt.

(Legend Continues)

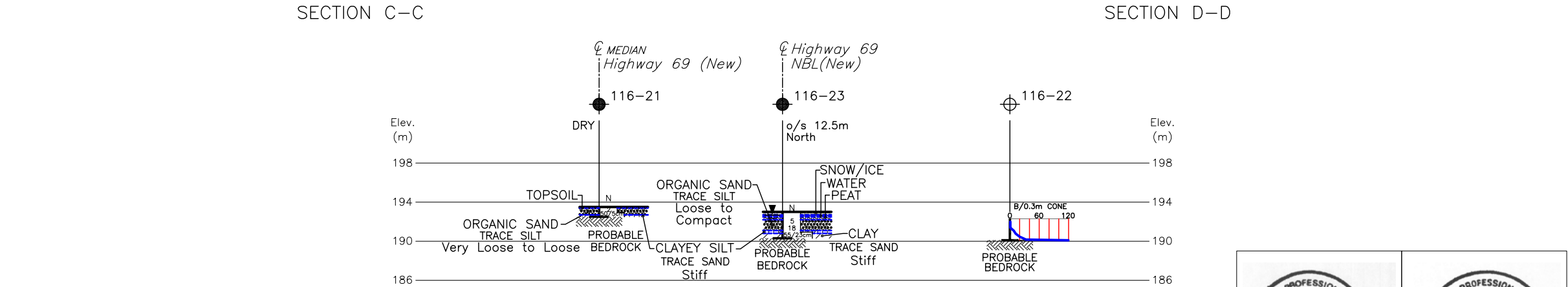
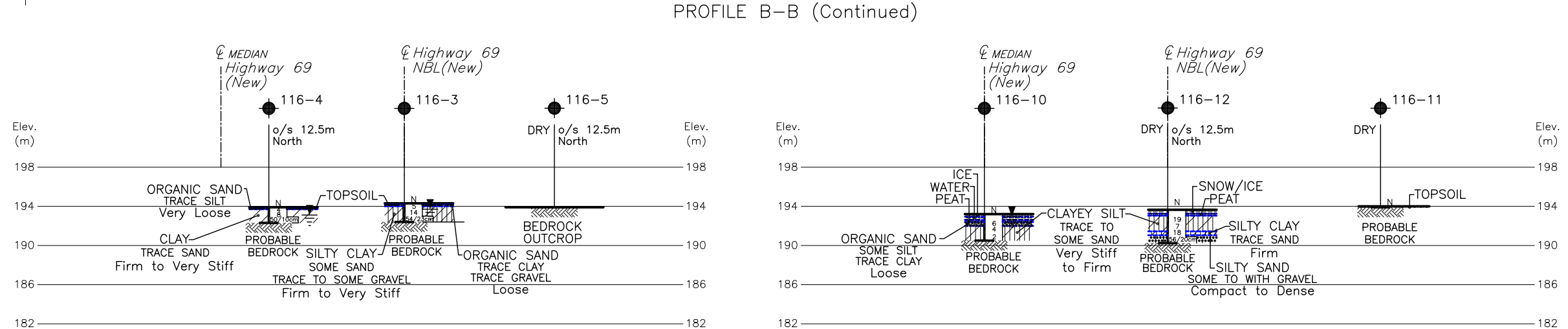
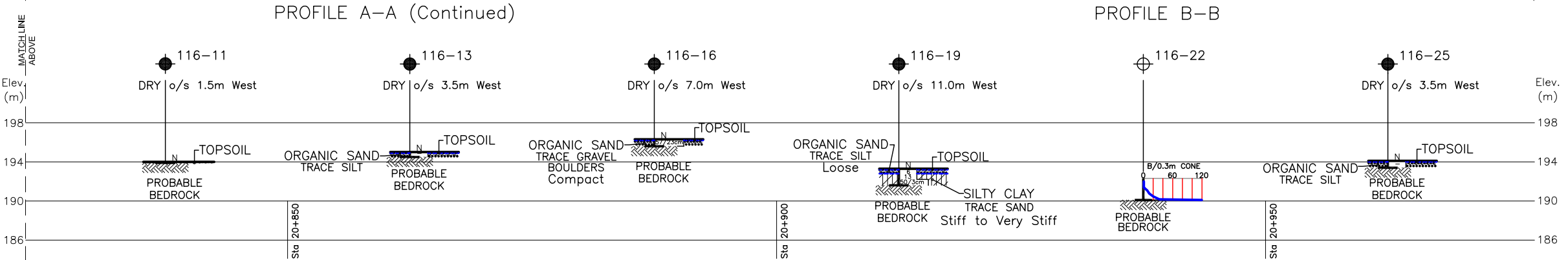
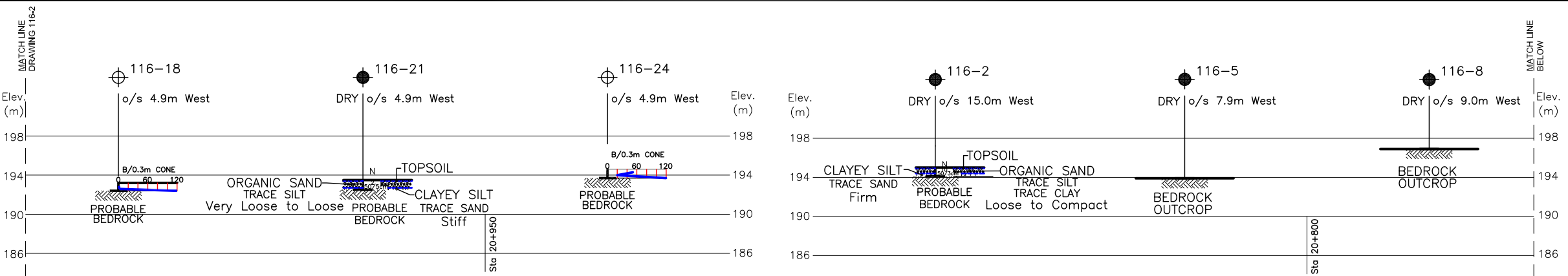
NOTE

The boundaries between soil strata have been established only at Borehole locations. Between Boreholes the boundaries are assumed from geological evidence.

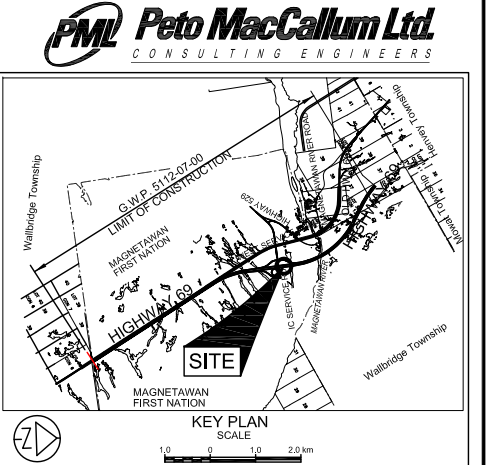
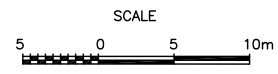
REVISIONS	DATE	BY	DESCRIPTION

Geocres No. 41H-148

HWY No	69	DIST	54
SUBM'D	NA	CHECKED	GD
DRAWN	NA	CHECKED	BRG
DATE	MAR. 11, 2015	APPROVED	CN
SITE	---	DWG	116-1



- NOTES:
- DRAWINGS 116-1 AND 116-2 SHOULD BE READ IN CONJUNCTION WITH THE TEXT AND RECORD OF BOREHOLE LOGS.
 - REFER TO DRAWING 116-1 FOR BOREHOLE LOCATION PLAN AND PROFILE A-A.
 - THIS DRAWING IS FOR SUBSURFACE INFORMATION ONLY. SURFACE DETAILS AND FEATURES ARE FOR CONCEPTUAL ILLUSTRATION.
 - DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN. STATIONS ARE IN KILOMETRES AND METRES.

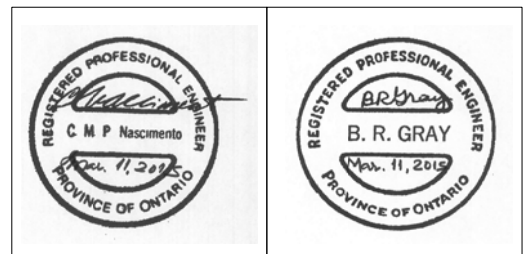


LEGEND

- Borehole
- Dynamic Cone Penetration Test (Cone)
- Borehole & Cone
- N Blows/0.3m (Std. Pen Test, 475 J/blow)
- CONE Blows/0.3m (60° Cone, 475 J/blow)
- WL at time of investigation Aug. 2012 and Feb. 2013
- Head
- ARTESIAN WATER Encountered
- PIEZOMETER

BH No	ELEVATION	STA MAGNETAWAN FN	o/s CL MED
FOR DETAILS, REFER TO DWG. 116-1			

NOTE -
The boundaries between soil strata have been established only at Borehole locations. Between Boreholes the boundaries are assumed from geological evidence.



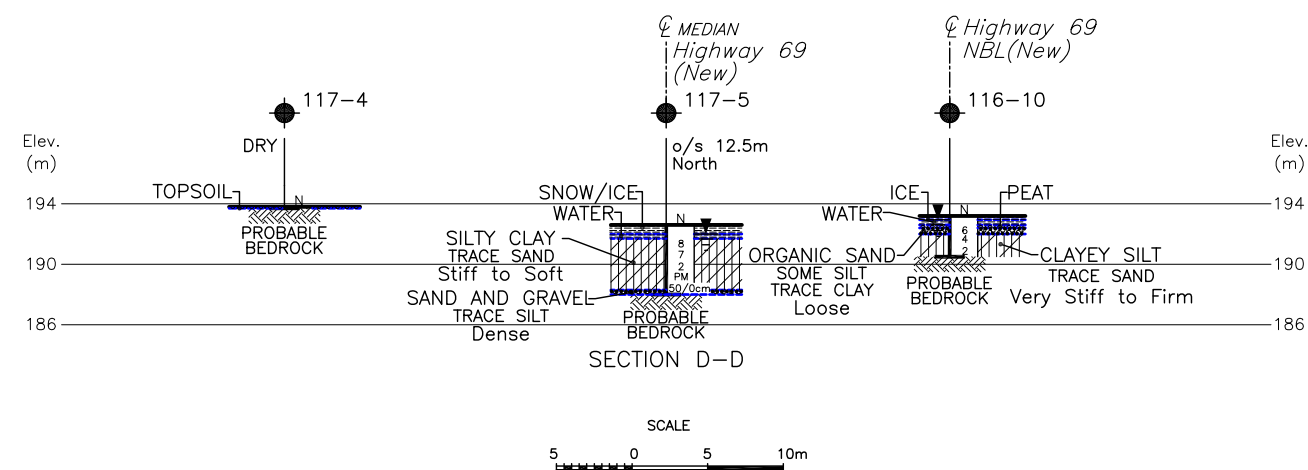
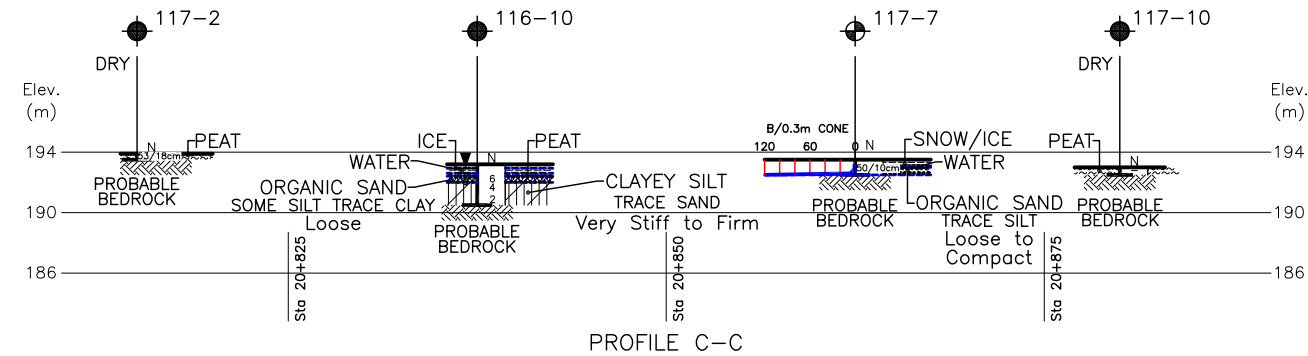
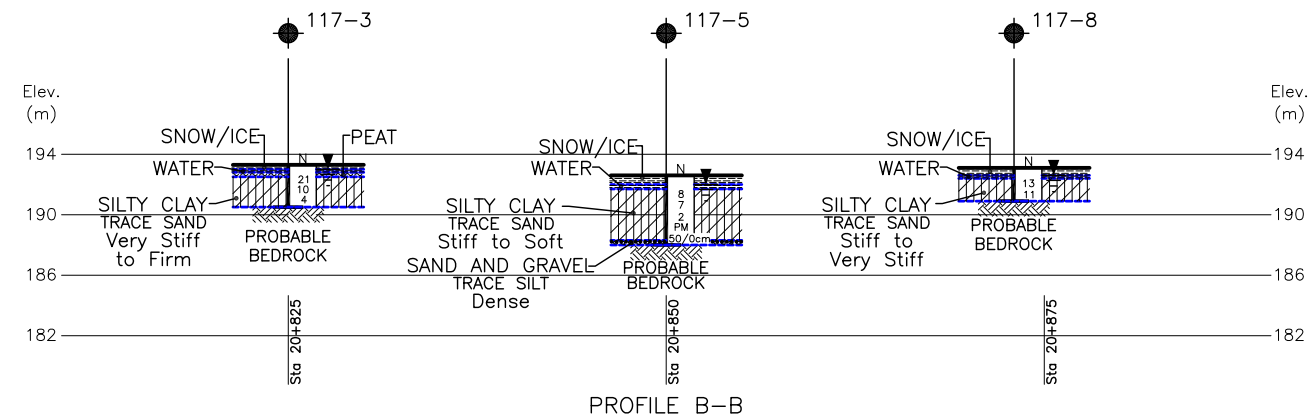
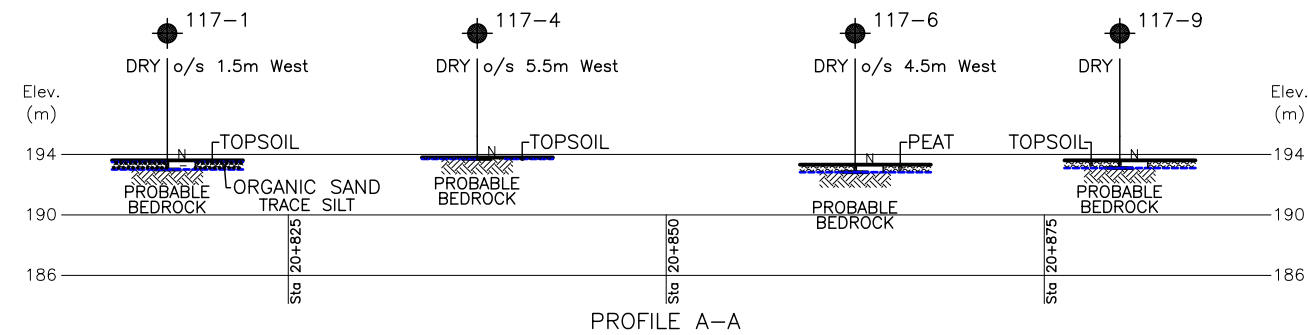
REF. AECOM Drawings:
X-60143751-C-Hwy 69-Base.dwg; C6-Hwy69 Des.dwg;

REVISIONS

DATE	BY	DESCRIPTION

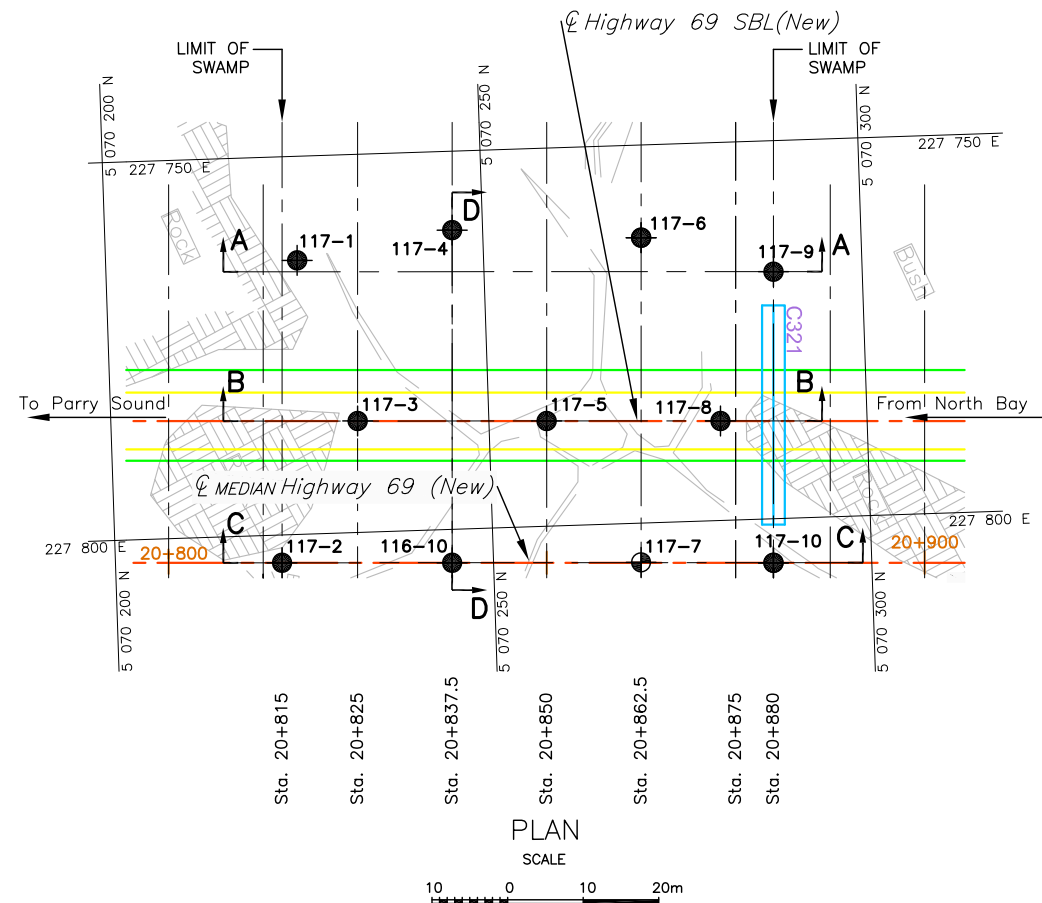
Geocres No. 41H-148

HWY No 69	SUBM'D NA	CHECKED GD	DATE MAR. 11, 2015	DIST 54
DRAWN NA	CHECKED BRG	APPROVED CN	SITE DWG 116-2	



NOTES:

- DRAWING 117-1 SHOULD BE READ IN CONJUNCTION WITH THE TEXT AND RECORD OF BOREHOLE LOGS.
- THIS DRAWING IS FOR SUBSURFACE INFORMATION ONLY. SURFACE DETAILS AND FEATURES ARE FOR CONCEPTUAL ILLUSTRATION.
- DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN. STATIONS ARE IN KILOMETRES AND METRES.



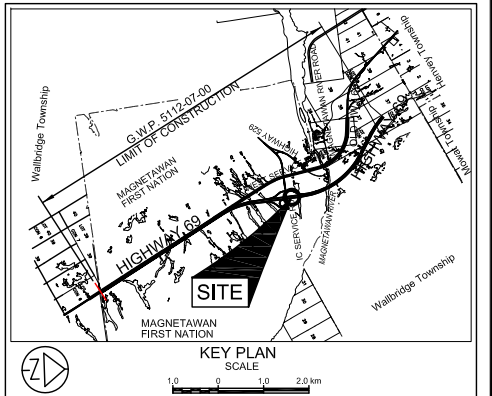
CONT No
GWP No 5112-07-00

HIGHWAY 69
HIGHWAY 69 FOUR-LANING
SWAMP 117, STA. 20+815 TO 20+880 (SBL) MAGNETAWAN FN
BOREHOLE LOCATIONS AND SOIL STRATA



SHEET

PML Peto MacCallum Ltd.
CONSULTING ENGINEERS



LEGEND

- Borehole
- Dynamic Cone Penetration Test (Cone)
- Borehole & Cone
- N Blows/0.3m (Std. Pen Test, 475 J/blow)
- CONE Blows/0.3m (60° Cone, 475 J/blow)
- PM Pushed manually
- WL at time of investigation Feb. 2013
- Head
- ARTESIAN WATER
- Encountered
- PIEZOMETER

BH No	ELEVATION	STA MAGNETAWAN FN	o/s CL MED
117-1	193.6	20+817	40.0m Lt.
117-2	193.9	20+815	CL
117-3	193.3	20+825	18.8m Lt.
117-4	193.8	20+837.5	44.0m Lt.
117-5	192.6	20+850	18.8m Lt.
117-6	193.2	20+862.5	43.0m Lt.
117-7	193.5	20+862.5	CL
117-8	193.1	20+873	18.8m Lt.
117-9	193.6	20+880	38.5m Lt.
117-10	193.0	20+880	CL
116-10	193.2	20+837.5	CL

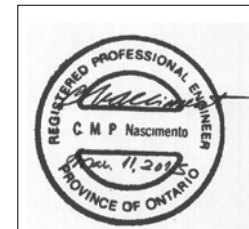
- NOTE -

The boundaries between soil strata have been established only at Borehole locations. Between Boreholes the boundaries are assumed from geological evidence.

REVISIONS	DATE	BY	DESCRIPTION

Geocres No. 41H-148

HWY No	69	DIST	54
SUBM'D	NA	CHECKED	GD
DATE	MAR. 11, 2015	SITE	---
DRAWN	NA	CHECKED	BRG
APPROVED	CN	DWG	117-1



REF. AECOM Drawings:
X-60143751-C-Hwy 69-Base.dwg; C6-Hwy69 Des.dwg;

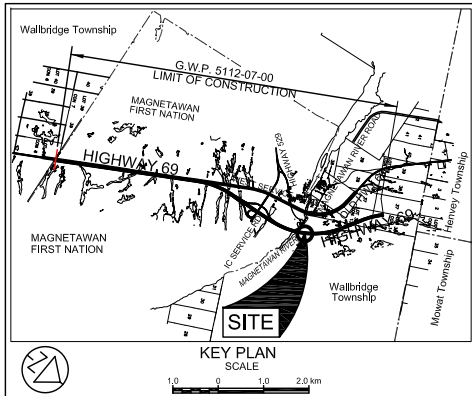
CONT No
GWP No 5112-07-00

HIGHWAY 69
HIGHWAY 69 FOUR-LANING
SWAMP 118, STA. 22+225 TO 22+320 WALLBRIDGE TWP
BOREHOLE LOCATIONS AND SOIL STRATA



SHEET

PML Peto MacCallum Ltd.
CONSULTING ENGINEERS



LEGEND

- Borehole
- Dynamic Cone Penetration Test (Cone)
- Borehole & Cone
- N Blows/0.3m (Std. Pen Test, 475 J/blow)
- CONE Blows/0.3m (60 °Cone, 475 J/blow)
- WL at time of investigation Sept 2012 and Feb. 2013
- Head
- ARTESIAN WATER Encountered
- PIEZOMETER

(Legend Continued)

BH No	ELEVATION	STA WALLBRIDGE TWP	o/s CL MED
118-17	201.9	22+310	38.0m Lt.
118-18	198.7	22+312.5	CL
118-19	197.4	22+312.5	38.5m Rt.
118-20	198.6	22+320	18.8m Rt.

BH No	ELEVATION	STA WALLBRIDGE TWP	o/s CL MED
118-1	198.5	22+225	18.8m Lt.
118-2	199.2	22+237.5	41.0m Lt.
118-3	198.5	22+237.5	CL
118-4	198.9	22+240	39.0m Rt.
118-5	197.8	22+250	18.8m Lt.
118-6	197.5	22+250	18.8m Rt.
118-7	198.1	22+262.5	42.0m Lt.
118-8	198.0	22+262.5	CL
118-9	197.9	22+262.5	44.0m Rt.
118-10	197.5	22+275	18.8m Lt.
118-11	197.1	22+275	18.8m Rt.
118-12	198.4	22+287.5	42.0m Lt.
118-13	197.5	22+287.5	CL
118-14	197.6	22+287.5	44.0m Rt.
118-15	198.0	22+300	18.8m Lt.
118-16	197.7	22+300	18.8m Rt.

(Legend Continues)

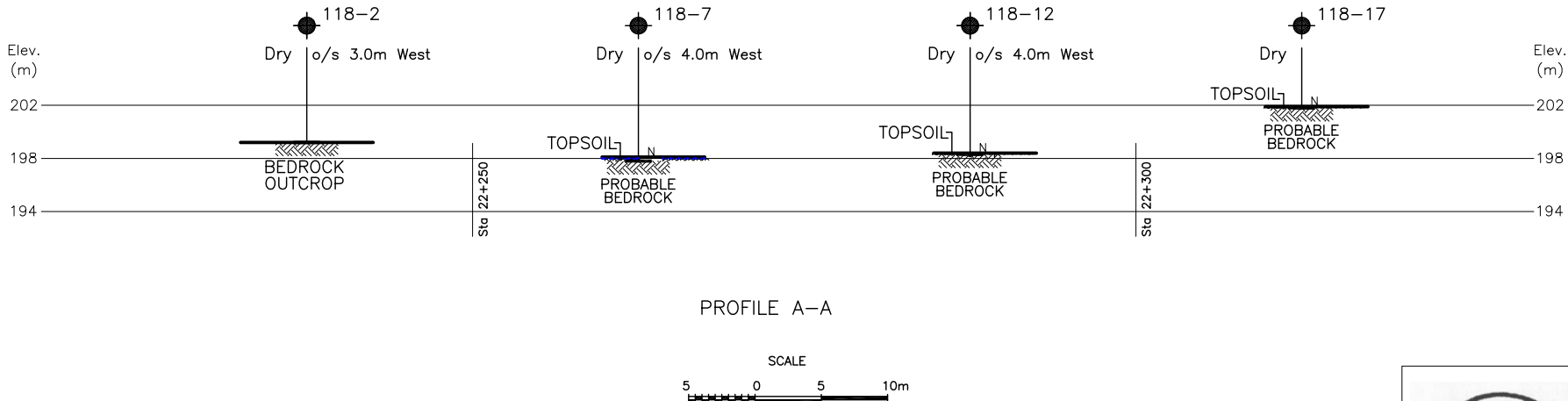
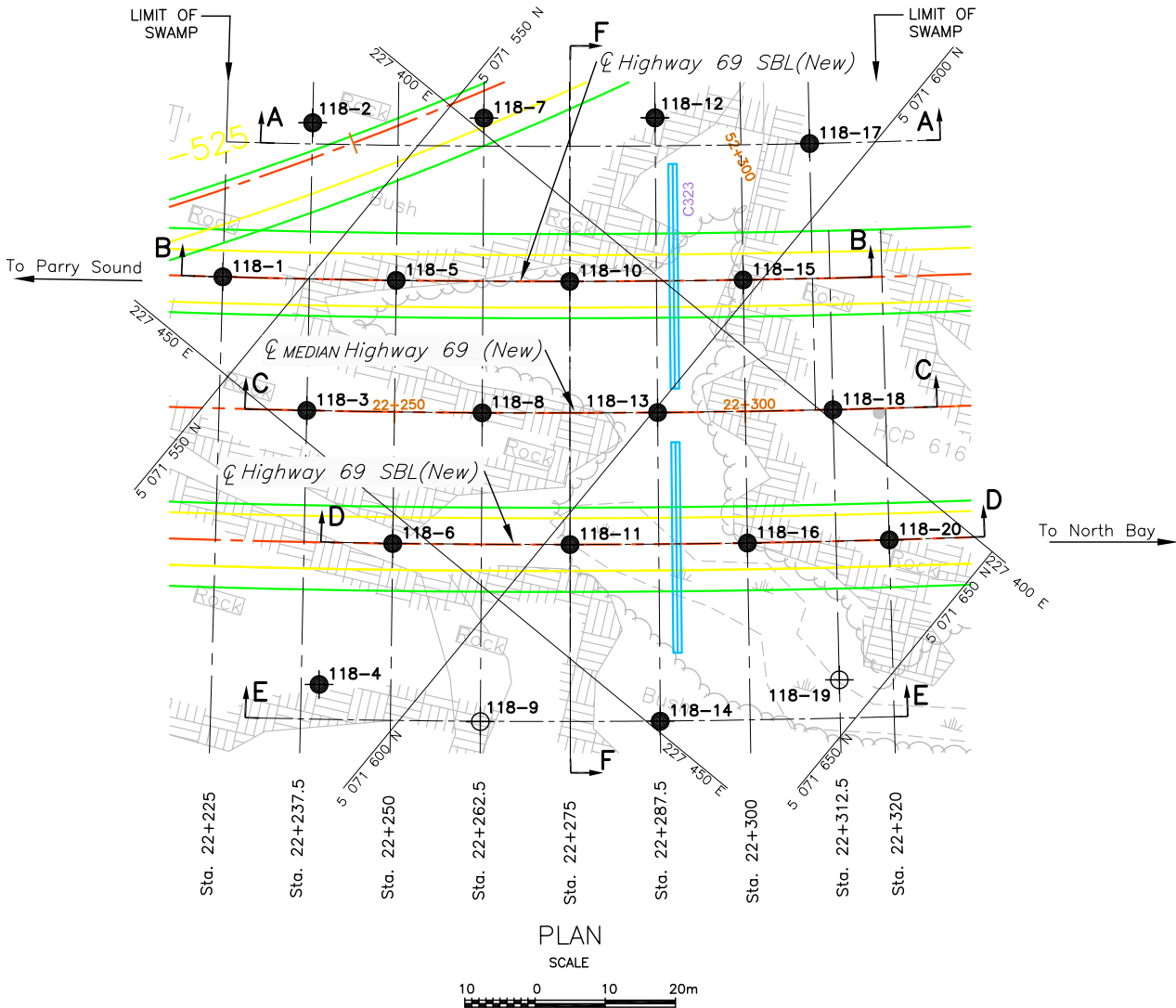
NOTE

The boundaries between soil strata have been established only at Borehole locations. Between Boreholes the boundaries are assumed from geological evidence.

REVISIONS	DATE	BY	DESCRIPTION

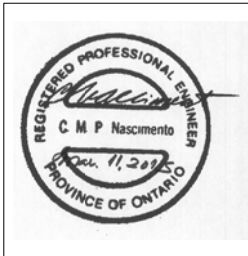
Geocres No. 41H-148

HWY No	69	DIST	54
SUBM'D	NA	CHECKED	GD
DATE	MAR. 11, 2015	SITE	---
DRAWN	NA	CHECKED	BRG
APPROVED	CN	DWG	118-1

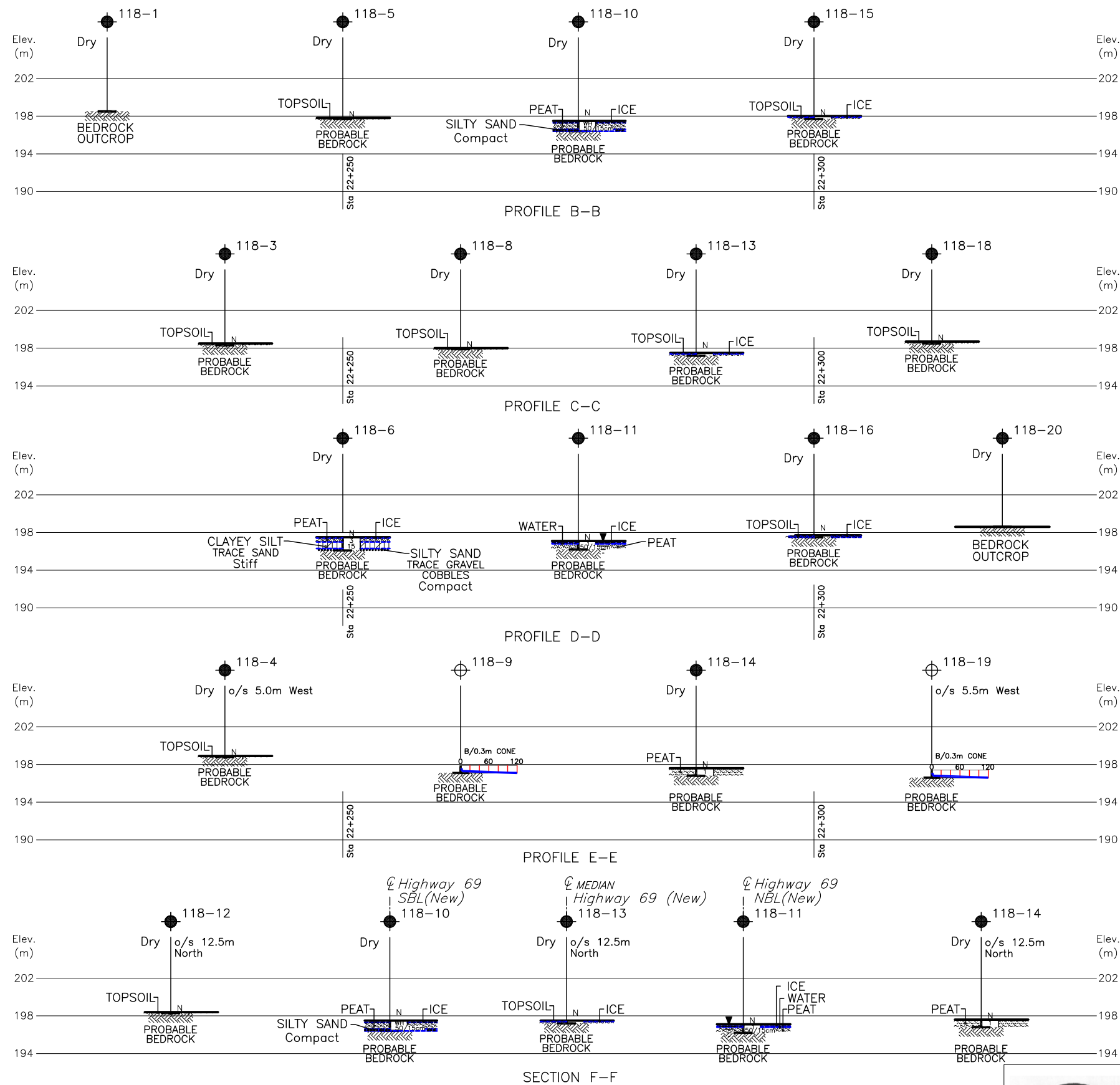


NOTES:

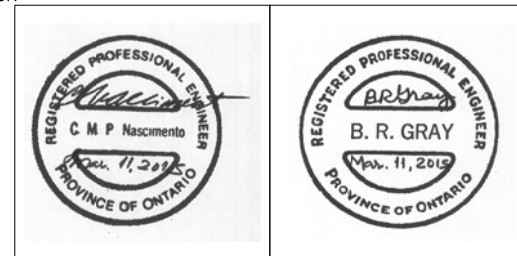
- DRAWINGS 118-1 AND 118-2 SHOULD BE READ IN CONJUNCTION WITH THE TEXT AND RECORD OF BOREHOLE LOGS.
- REFER TO DRAWING 118-2 FOR PROFILES B-B TO E-E AND SECTION F-F.
- THIS DRAWING IS FOR SUBSURFACE INFORMATION ONLY. SURFACE DETAILS AND FEATURES ARE FOR CONCEPTUAL ILLUSTRATION.
- DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN. STATIONS ARE IN KILOMETRES AND METRES.



REF. AECOM Drawings:
X-60143751-C-Hwy 69-Base.dwg; C6-Hwy69 Des.dwg;



- NOTES:
- DRAWINGS 118-1 AND 118-2 SHOULD BE READ IN CONJUNCTION WITH THE TEXT AND RECORD OF BOREHOLE LOGS.
 - REFER TO DRAWING 118-1 FOR BOREHOLE LOCATION PLAN AND PROFILE A-A.
 - THIS DRAWING IS FOR SUBSURFACE INFORMATION ONLY. SURFACE DETAILS AND FEATURES ARE FOR CONCEPTUAL ILLUSTRATION.
 - DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN. STATIONS ARE IN KILOMETRES AND METRES.



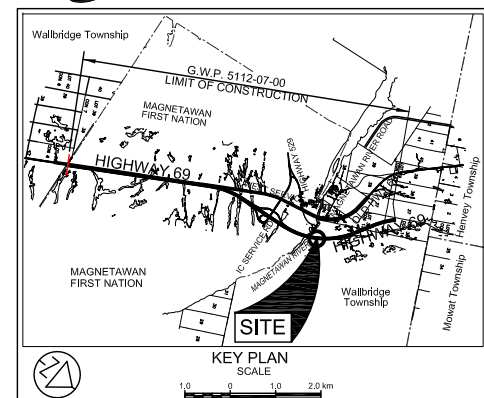
REF. AECOM Drawings:
X-60143751-C-Hwy 69-Base.dwg; C6-Hwy69 Des.dwg;

CONT No
GWP No 5112-07-00

HIGHWAY 69
HIGHWAY 69 FOUR-LANING
SWAMP 118, STA. 22+225 TO 22+320 WALLBRIDGE TWP
BOREHOLE LOCATIONS AND SOIL STRATA

SHEET

PML Peto MacCallum Ltd.
CONSULTING ENGINEERS



LEGEND

- Borehole
- Dynamic Cone Penetration Test (Cone)
- Borehole & Cone
- N Blows/0.3m (Std. Pen Test, 475 J/blow)
- CONE Blows/0.3m (60°Cone, 475 J/blow)
- WL at time of investigation Sept 2012 and Feb. 2013
- Head
- ARTESIAN WATER Encountered
- PIEZOMETER

BH No	ELEVATION	STA WALLBRIDGE TWP	o/s CL MED
FOR DETAILS, REFER TO DWG. 118-1			

NOTE

The boundaries between soil strata have been established only at Borehole locations. Between Boreholes the boundaries are assumed from geological evidence.

REVISIONS	DATE	BY	DESCRIPTION

Geocres No. 41H-148

HWY No	69	DIST	54
SUBM'D	NA	CHECKED	GD
DRAWN	NA	CHECKED	BRG
DATE	MAR. 11, 2015	APPROVED	CN
SITE	---	DWG	118-2

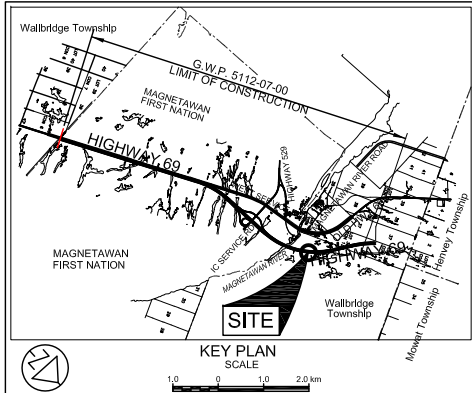
CONT No
GWP No 5112-07-00

HIGHWAY 69
HIGHWAY 69 FOUR-LANING
SWAMP 119, STA. 22+350 TO 22+725 (NBL) WALLBRIDGE TWP
BOREHOLE LOCATIONS



SHEET

PML Peto MacCallum Ltd.
CONSULTING ENGINEERS



LEGEND

- Borehole
- Dynamic Cone Penetration Test (Cone)
- Borehole & Cone
- N Blows/0.3m (Std. Pen Test, 475 J/blow)
- CONE Blows/0.3m (60° Cone, 475 J/blow)
- WL at time of investigation Sept. 2012 and Feb. 2013
- Head
- ARTESIAN WATER Encountered
- PIEZOMETER

(Legend Continued)

BH No	ELEVATION	STA WALLBRIDGE TWP	o/s CL MED
119-17	196.5	22+623	2.0m Rt.
119-18	196.2	22+625	37.0m Rt.
119-19	197.7	22+650	18.8m Rt.
119-20	196.5	22+675	CL
119-21	196.4	22+675	40.5m Rt.
119-22	197.0	22+700	18.8m Rt.
119-23	197.9	22+725	1.0m Rt.
119-24	199.3	22+725	38.0m Rt.
120-2	197.6	22+390	1.0m Lt.
120-5	197.5	22+412.5	1.0m Lt.
120-8	198.4	22+430	3.0m Lt.
121-2	197.8	22+590	3.0m Lt.
121-5	197.1	22+612.5	CL
121-8	196.3	22+637.5	CL
121-11	197.1	22+662.5	1.0m Lt.
121-14	196.6	22+687.5	CL

(Legend Continues)

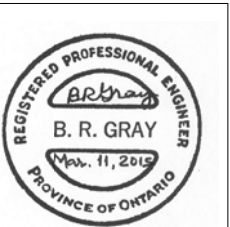
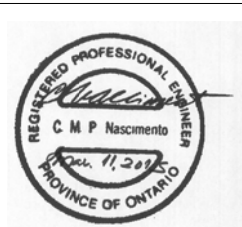
NOTE -

The boundaries between soil strata have been established only at Borehole locations. Between Boreholes the boundaries are assumed from geological evidence.

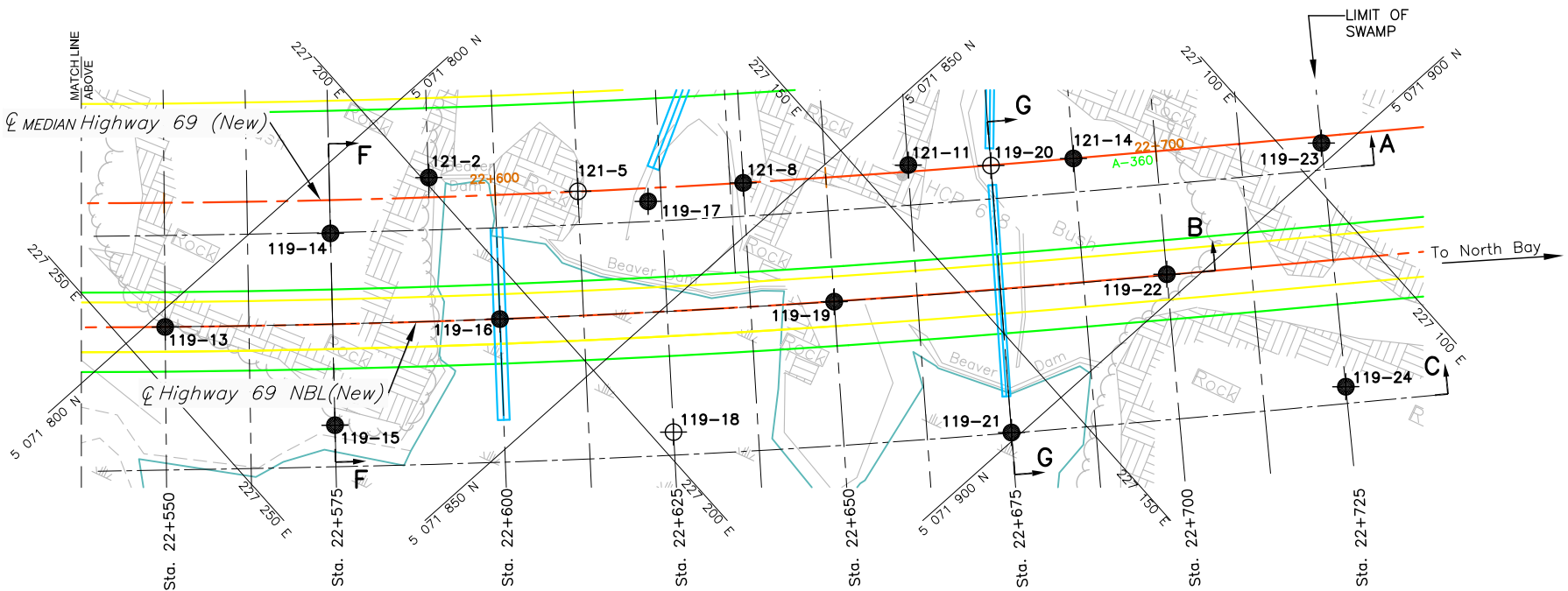
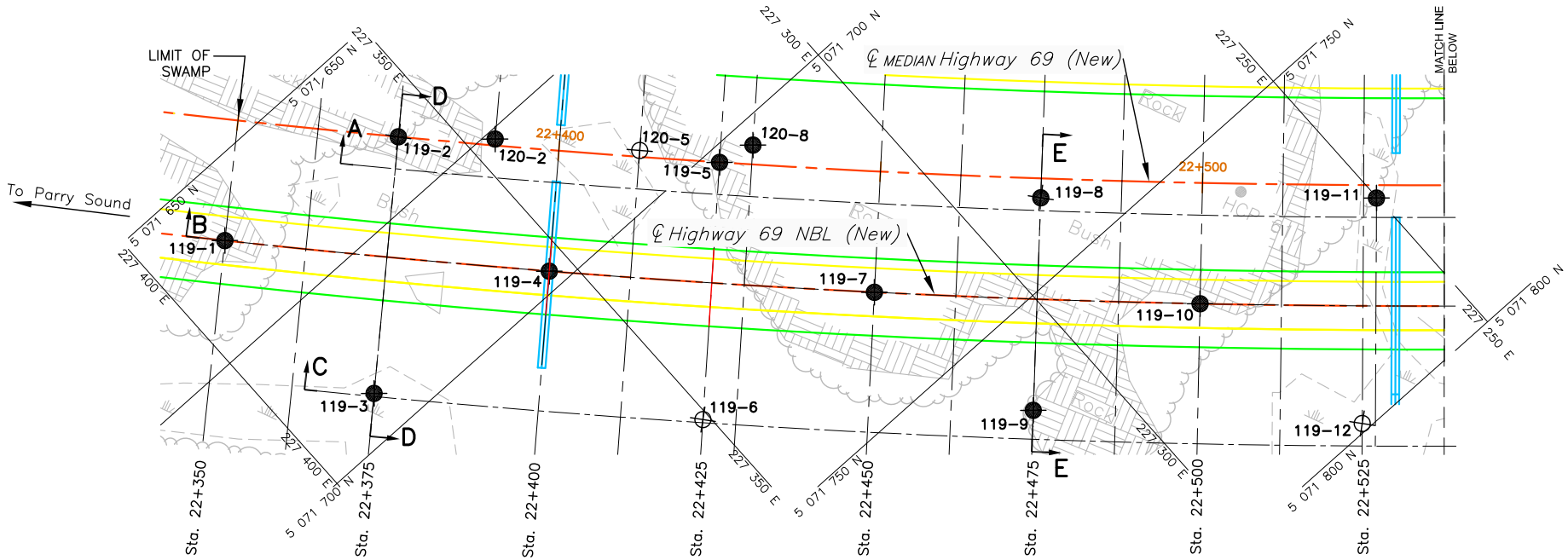
REVISIONS	DATE	BY	DESCRIPTION

Geocres No. 41H-148

HWY No 69	CHECKED GD	DATE MAR. 11, 2015	DIST 54
SUBM'D NA	CHECKED BRG	APPROVED CN	SITE --
DRAWN NA	CHECKED BRG	APPROVED CN	DWG 119-1



REF. AECOM Drawings:
X-60143751-C-Hwy 69-Base.dwg; C6-Hwy69 Des.dwg;



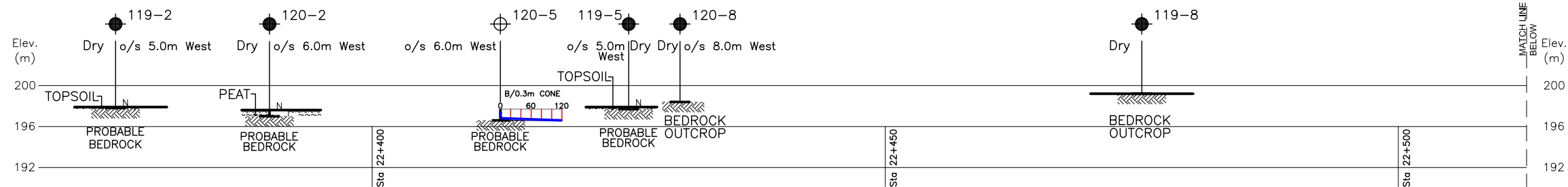
PLAN

SCALE

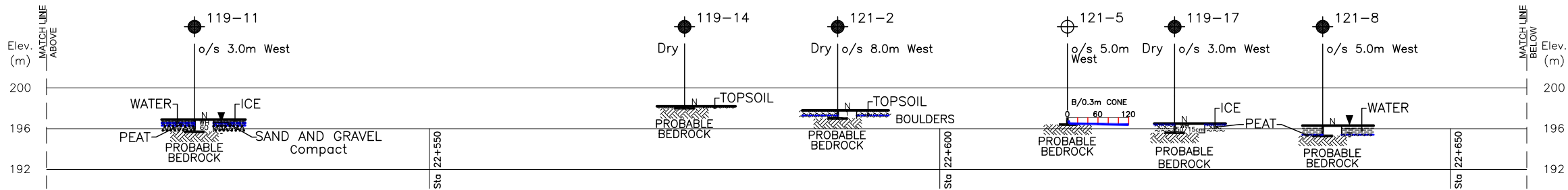


NOTES:

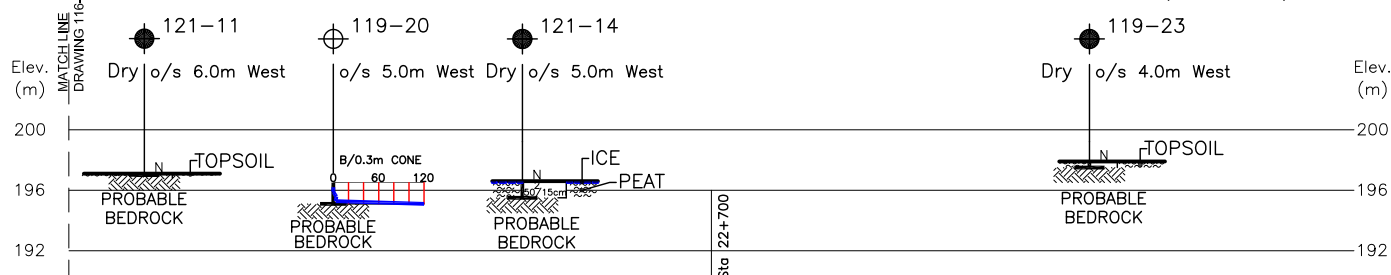
- DRAWINGS 119-1 TO 119-3 SHOULD BE READ IN CONJUNCTION WITH THE TEXT AND RECORD OF BOREHOLE LOGS.
- REFER TO DRAWINGS 119-2 AND 119-3 FOR PROFILES A-A TO C-C AND SECTIONS D-D TO G-G.
- THIS DRAWING IS FOR SUBSURFACE INFORMATION ONLY. SURFACE DETAILS AND FEATURES ARE FOR CONCEPTUAL ILLUSTRATION.
- DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN. STATIONS ARE IN KILOMETRES AND METRES.



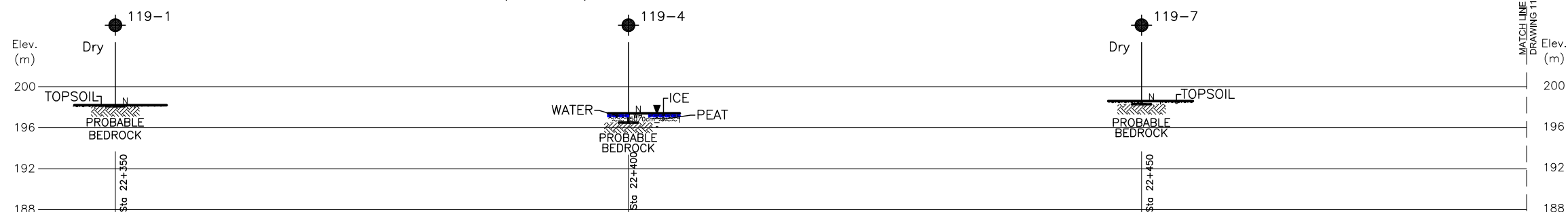
PROFILE A-A



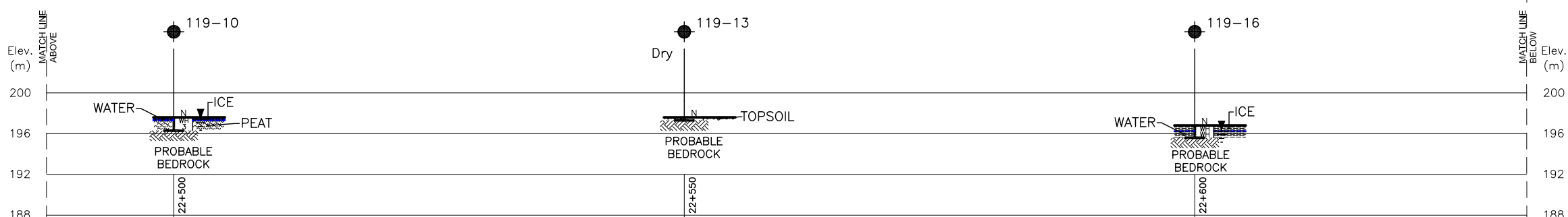
PROFILE A-A (Continued)



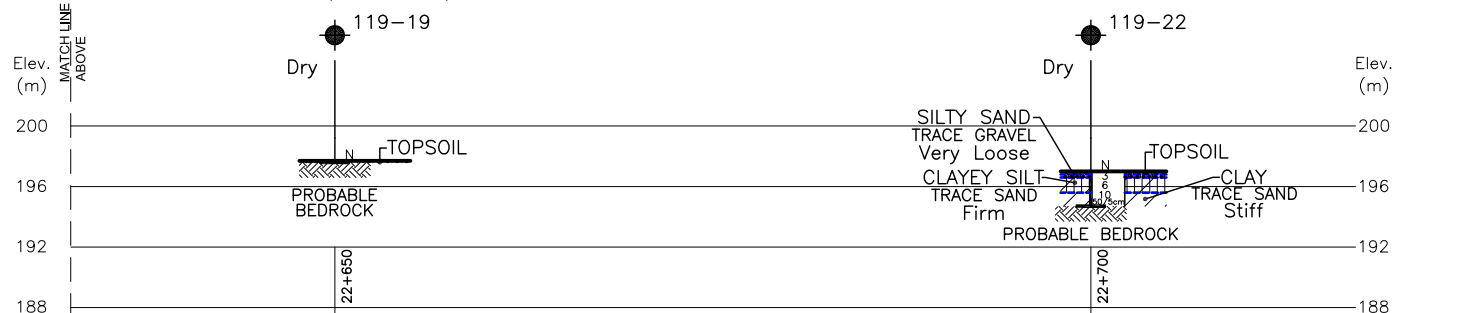
PROFILE A-A (Continued)



PROFILE B-B



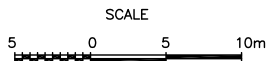
PROFILE B-B (Continued)



PROFILE B-B (Continued)

NOTES:

- DRAWINGS 119-1 TO 119-3 SHOULD BE READ IN CONJUNCTION WITH THE TEXT AND RECORD OF BOREHOLE LOGS.
- REFER TO DRAWING 119-1 FOR BOREHOLE LOCATION PLAN AND DRAWING 119-3 FOR PROFILE C-C AND SECTIONS D-D TO G-G.
- THIS DRAWING IS FOR SUBSURFACE INFORMATION ONLY. SURFACE DETAILS AND FEATURES ARE FOR CONCEPTUAL ILLUSTRATION.
- DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN. STATIONS ARE IN KILOMETRES AND METRES.

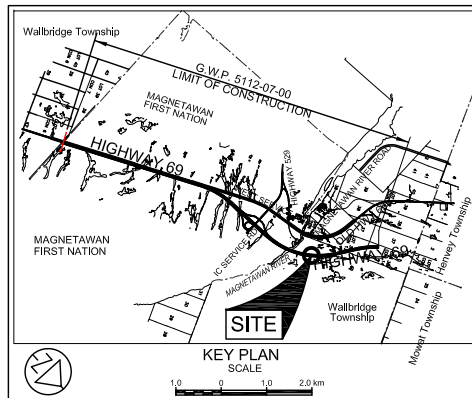


CONT No
GWP No 5112-07-00

HIGHWAY 69
HIGHWAY 69 FOUR-LANING
SWAMP 119, STA. 22+350 TO 22+725 (NBL) WALLBRIDGE TWP
SOIL STRATA

SHEET

PML Peto MacCallum Ltd.
CONSULTING ENGINEERS



LEGEND

- Borehole
- Dynamic Cone Penetration Test (Cone)
- Borehole & Cone
- N Blows/0.3m (Std. Pen Test, 475 J/blow)
- CONE Blows/0.3m (60 Cone, 475 J/blow)
- WH Penetration due to weight of rods & hammer
- WL at time of investigation Sept 2012 and Feb. 2013
- Head
- ARTESIAN WATER Encountered
- PIEZOMETER

BH No	ELEVATION	STA WALLBRIDGE TWP	o/s CL MED
FOR DETAILS, REFER TO DWG. 119-1			



NOTE

The boundaries between soil strata have been established only at Borehole locations. Between Boreholes the boundaries are assumed from geological evidence.

REVISIONS	DATE	BY	DESCRIPTION

Geocres No. 41H-148

HWY No 69	DIST 54
SUBM'D NA	CHECKED GD DATE MAR. 11, 2015 SITE
DRAWN NA	CHECKED BRG APPROVED CN DWG 119-2

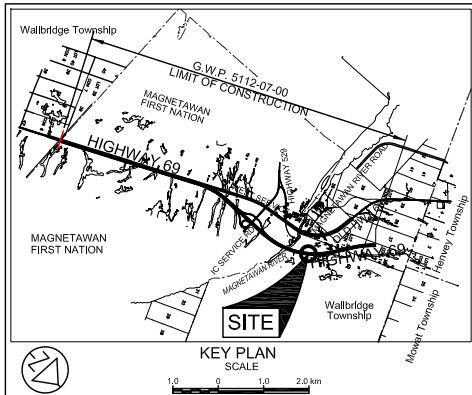
REF. AECOM Drawings:
X-60143751-C-Hwy 69-Base.dwg; C6-Hwy69 Des.dwg;

CONT No
GWP No 5112-07-00

HIGHWAY 69
HIGHWAY 69 FOUR-LANING
SWAMP 119, STA. 22+350 TO 22+725 (NBL) WALLBRIDGE TWP
SOIL STRATA

SHEET

PML Peto MacCallum Ltd.
CONSULTING ENGINEERS



LEGEND

- Borehole
- Dynamic Cone Penetration Test (Cone)
- Borehole & Cone
- N Blows/0.3m (Std. Pen Test, 475 J/blow)
- CONE Blows/0.3m (60° Cone, 475 J/blow)
- WH Penetration due to weight of rods & hammer
- WL at time of investigation Sept 2012 and Feb. 2013
- Head
- ARTESIAN WATER Encountered
- PIEZOMETER

BH No	ELEVATION	STA WALLBRIDGE TWP	o/s CL MED
FOR DETAILS, REFER TO DWG. 119-1			

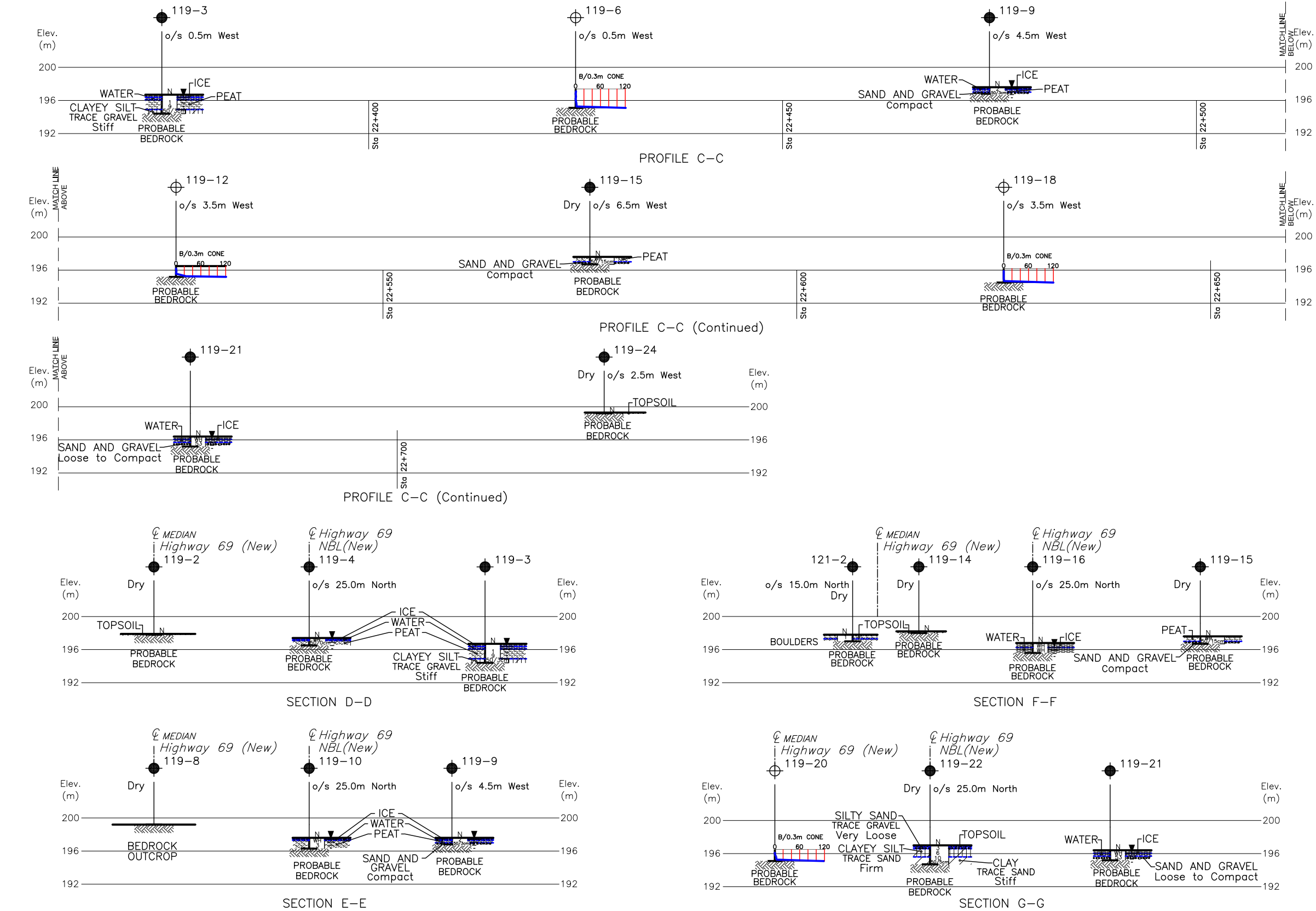
NOTE

The boundaries between soil strata have been established only at Borehole locations. Between Boreholes the boundaries are assumed from geological evidence.

REVISIONS	DATE	BY	DESCRIPTION

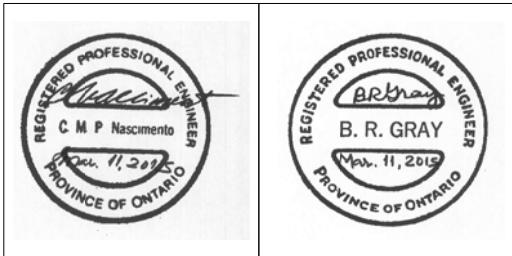
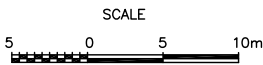
Geocres No. 41H-148

HWY No 69	CHECKED GD	DATE MAR. 11, 2015	DIST 54
SUBM'D NA	CHECKED BRG	APPROVED CN	SITE DWG 119-3

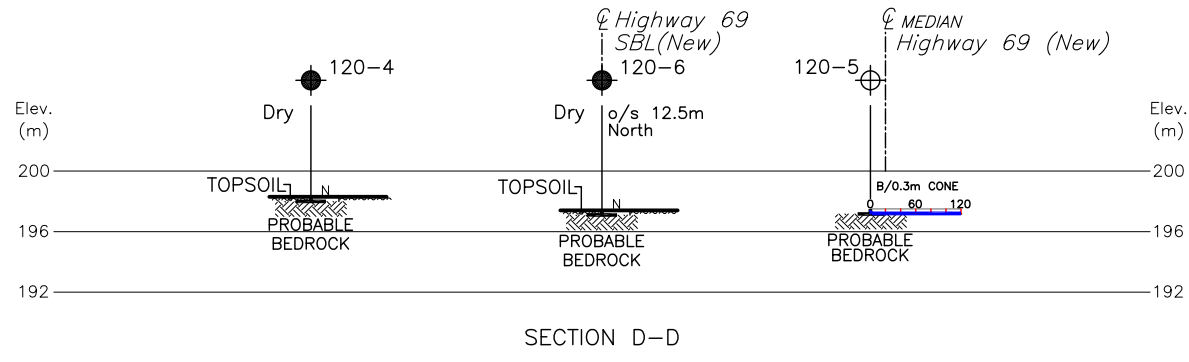
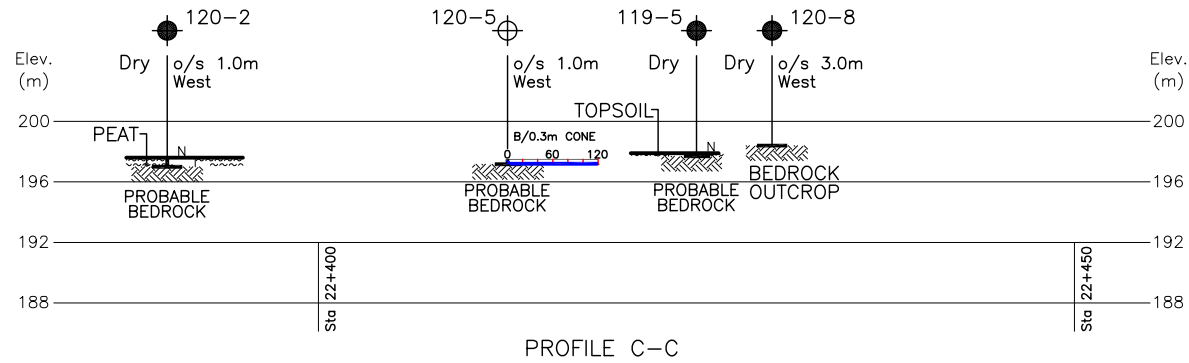
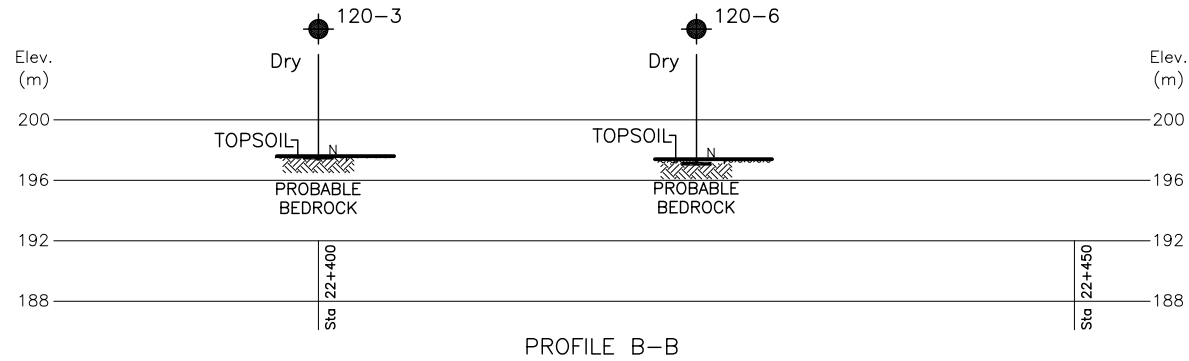
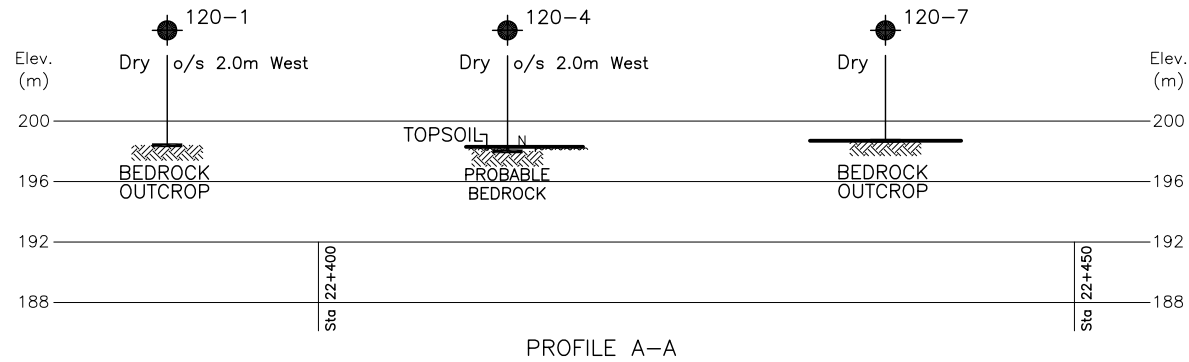
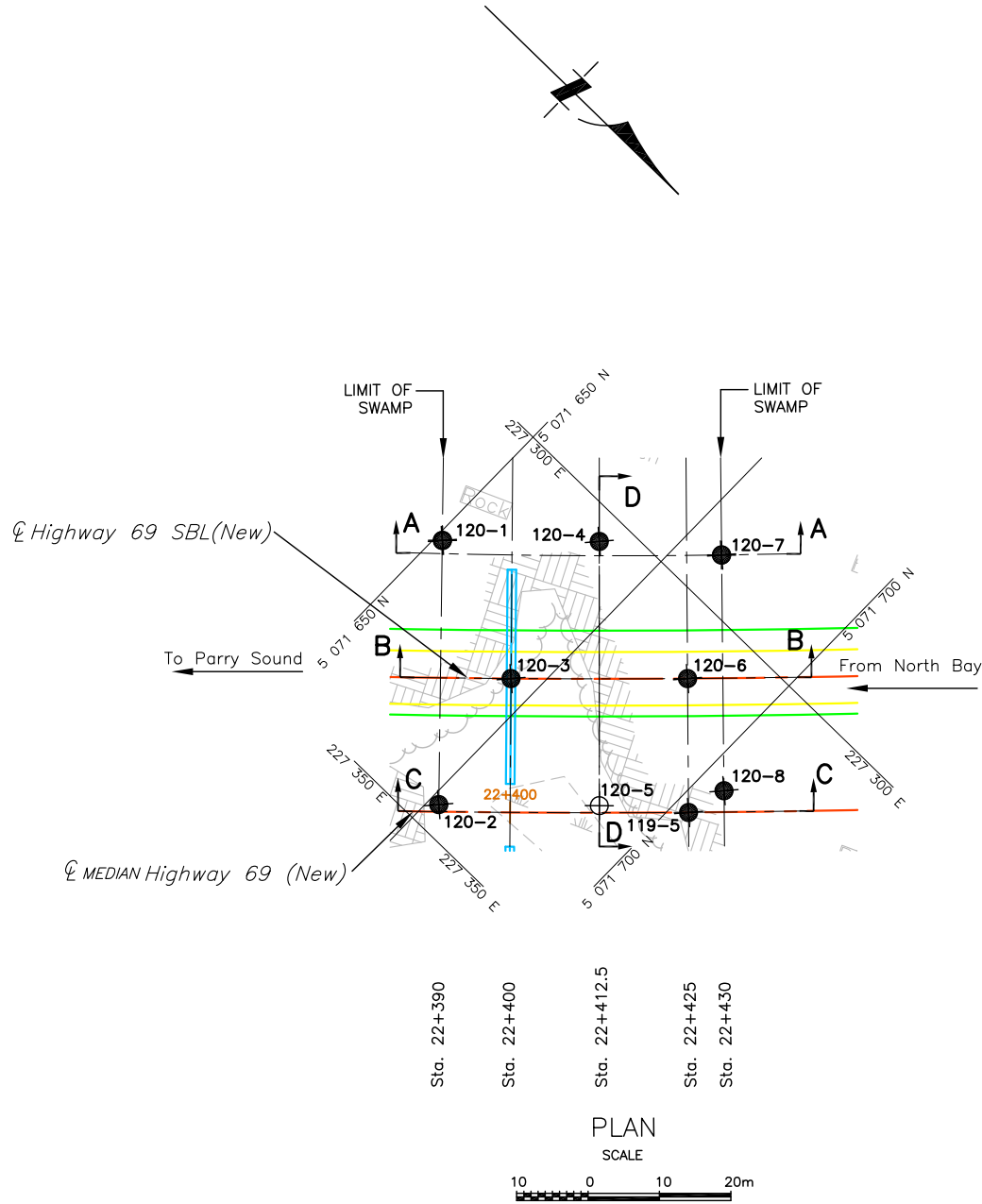


NOTES:

- DRAWINGS 119-1 TO 119-3 SHOULD BE READ IN CONJUNCTION WITH THE TEXT AND RECORD OF BOREHOLE LOGS.
- REFER TO DRAWING 119-1 FOR BOREHOLE LOCATION PLAN AND DRAWING 119-2 FOR PROFILES A-A AND B-B.
- THIS DRAWING IS FOR SUBSURFACE INFORMATION ONLY. SURFACE DETAILS AND FEATURES ARE FOR CONCEPTUAL ILLUSTRATION.
- DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN. STATIONS ARE IN KILOMETRES AND METRES.



REF. AECOM Drawings:
X-60143751-C-Hwy 69-Base.dwg; C6-Hwy69 Des.dwg;



- NOTES:
- DRAWING 120-1 SHOULD BE READ IN CONJUNCTION WITH THE TEXT AND RECORD OF BOREHOLE LOGS.
 - THIS DRAWING IS FOR SUBSURFACE INFORMATION ONLY. SURFACE DETAILS AND FEATURES ARE FOR CONCEPTUAL ILLUSTRATION.
 - DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN. STATIONS ARE IN KILOMETRES AND METRES.

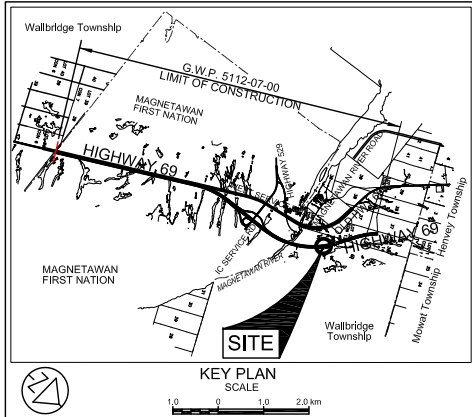
CONT No
GWP No 5112-07-00

HIGHWAY 69
HIGHWAY 69 FOUR-LANING
SWAMP 120, STA. 22+390 TO 22+430 (SBL) WALLBRIDGE TWP
BOREHOLE LOCATIONS AND SOIL STRATA



SHEET

PML Peto MacCallum Ltd.
CONSULTING ENGINEERS



LEGEND

- Borehole
- Dynamic Cone Penetration Test (Cone)
- Borehole & Cone
- N Blows/0.3m (Std. Pen Test, 475 J/blow)
- CONE Blows/0.3m (60 °Cone, 475 J/blow)
- WL at time of investigation Sept 2012 and Feb. 2013
- Head
- ARTESIAN WATER
- Encountered
- PIEZOMETER

BH No	ELEVATION	STA WALLBRIDGE TWP	o/s CL MED
120-1	198.4	22+390	38.0m Lt.
120-2	197.6	22+390	1.0m Lt.
120-3	197.4	22+400	18.8m Lt.
120-4	198.3	22+412.5	38.0m Lt.
120-5	197.5	22+412.5	1.0m Lt.
120-6	197.4	22+425	18.8m Lt.
120-7	198.7	22+430	36.0m Lt.
120-8	198.4	22+430	3.0m Lt.
119-5	197.9	22+425	CL

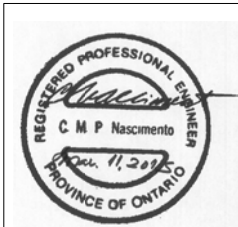
NOTE

The boundaries between soil strata have been established only at Borehole locations. Between Boreholes the boundaries are assumed from geological evidence.

REVISIONS	DATE	BY	DESCRIPTION

Geocres No. 41H-148

HWY No 69	CHECKED GD	DATE MAR. 11, 2015	DIST 54
SUBM'D NA	CHECKED BRG	APPROVED CN	SITE DWG 120-1



REF. AECOM Drawings:
X-60143751-C-Hwy 69-Base.dwg; C6-Hwy69 Des.dwg;

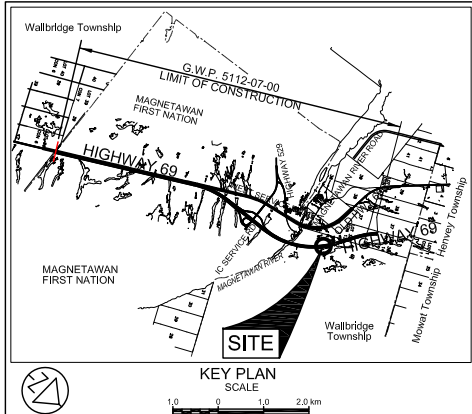
CONT No
GWP No 5112-07-00

HIGHWAY 69
HIGHWAY 69 FOUR-LANING
SWAMP 121, STA. 22+590 TO 22+700 (SBL) WALLBRIDGE TWP
BOREHOLE LOCATIONS AND SOIL STRATA



SHEET

PML Peto MacCallum Ltd.
CONSULTING ENGINEERS



LEGEND

- Borehole
- Dynamic Cone Penetration Test (Cone)
- Borehole & Cone
- N Blows/0.3m (Std. Pen Test, 475 J/blow)
- CONE Blows/0.3m (60 °Cone, 475 J/blow)
- WH Penetration due to weight of rods and hammer
- WL at time of investigation Sept 2012 and Feb. 2013
- Head
- ARTESIAN WATER
- Encountered
- PIEZOMETER

BH No	ELEVATION	STA WALLBRIDGE TWP	o/s CL MED
121-1	197.1	22+590	36.0m Lt.
121-2	197.8	22+590	3.0m Lt.
121-3	196.7	22+600	18.8m Lt.
121-4	197.6	22+612.5	40.5m Lt.
121-5	197.1	22+612.5	CL
121-6	196.8	22+622	18.8m Lt.
121-7	196.4	22+635.5	40.5m Lt.
121-8	196.3	22+637.5	CL
121-9	197.2	22+650	18.8m Lt.
121-10	196.2	22+662.5	38.0m Lt.
121-11	197.1	22+662.5	1.0m Lt
121-12	196.4	22+675	18.8m Lt.
121-13	196.4	22+687.5	41.0m Lt.
121-14	196.6	22+687.5	CL
121-15	196.7	22+700	18.8m Lt.

(Legend Continues)

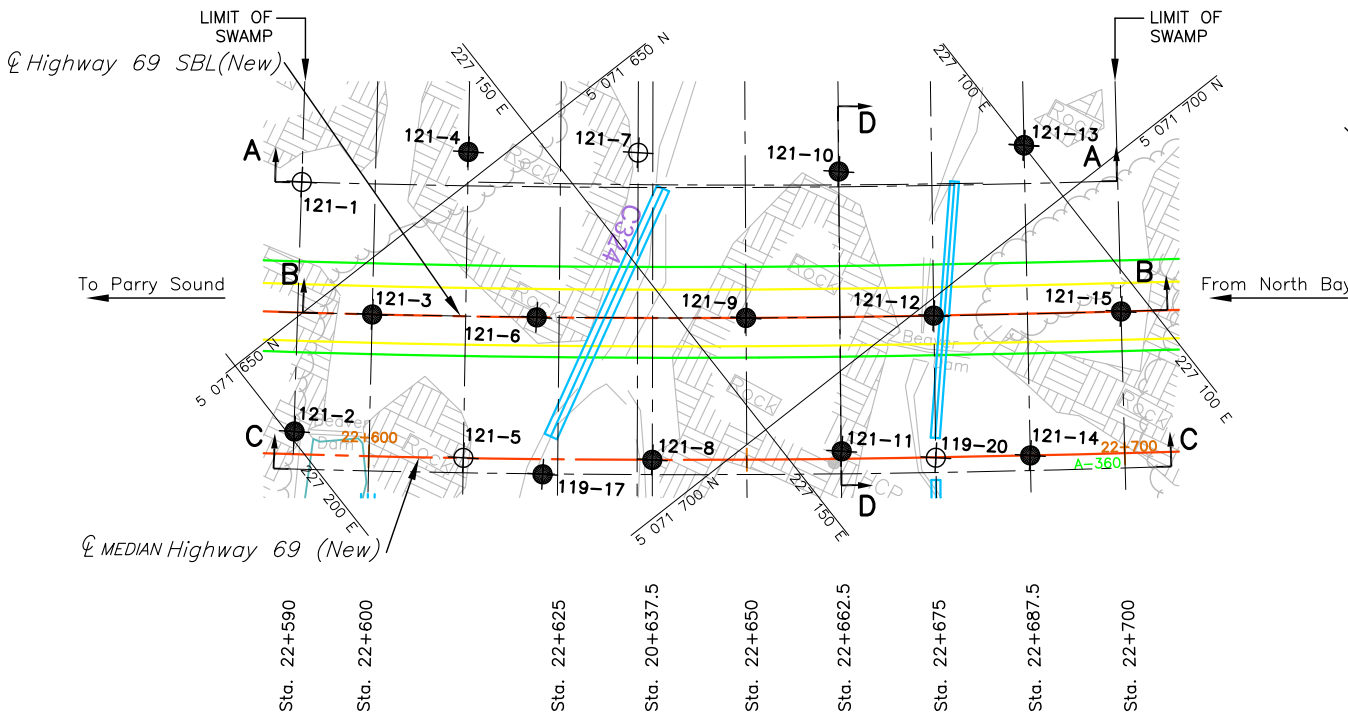
NOTE

The boundaries between soil strata have been established only at Borehole locations. Between Boreholes the boundaries are assumed from geological evidence.

REVISIONS	DATE	BY	DESCRIPTION

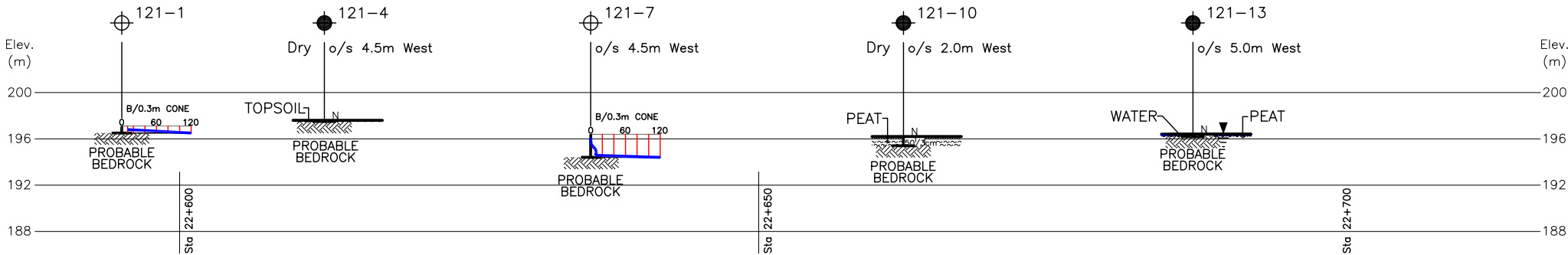
Geocres No. 41H-148

HWY No 69	CHECKED GD	DATE MAR. 11, 2015	DIST 54
SUBM'D NA	CHECKED BRG	APPROVED CN	SITE DWG 121-1



PLAN

SCALE



PROFILE A-A

SCALE



(Legend Continued)

BH No	ELEVATION	STA WALLBRIDGE TWP	o/s CL MED
119-17	196.5	22+623	2.0m Rt
119-20	196.5	22+675	CL

NOTES:

- DRAWINGS 121-1 AND 121-2 SHOULD BE READ IN CONJUNCTION WITH THE TEXT AND RECORD OF BOREHOLE LOGS.
- REFER TO DRAWING 121-2 FOR PROFILES B-B AND C-C AND SECTION D-D.
- THIS DRAWING IS FOR SUBSURFACE INFORMATION ONLY. SURFACE DETAILS AND FEATURES ARE FOR CONCEPTUAL ILLUSTRATION.
- DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN. STATIONS ARE IN KILOMETRES AND METRES.



REF. AECOM Drawings:
X-60143751-C-Hwy 69-Base.dwg; C6-Hwy69 Des.dwg;

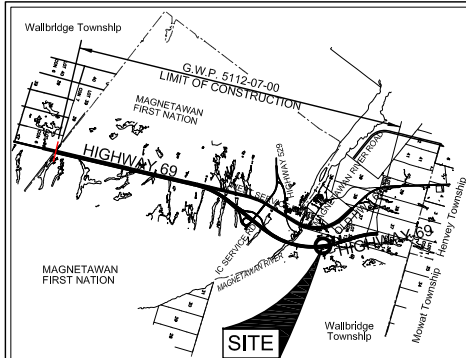
CONT No
GWP No 5112-07-00

HIGHWAY 69
HIGHWAY 69 FOUR-LANING
SWAMP 121, STA. 22+590 TO 22+700 (SBL) WALLBRIDGE TWP
SOIL STRATA



SHEET

PML Peto MacCallum Ltd.
CONSULTING ENGINEERS



KEY PLAN
SCALE

0 1.0 2.0 km

LEGEND

- Borehole
- Dynamic Cone Penetration Test (Cone)
- Borehole & Cone
- N Blows/0.3m (Std. Pen Test, 475 J/blow)
- CONE Blows/0.3m (60° Cone, 475 J/blow)
- WH Penetration due to weight of rods and hammer
- WL at time of investigation Sept 2012 and Feb. 2013
- Head
- ARTESIAN WATER
- Encountered
- PIEZOMETER

BH No	ELEVATION	STA WALLBRIDGE TWP	o/s CL MED
FOR DETAILS, REFER TO DWG. 121-1			

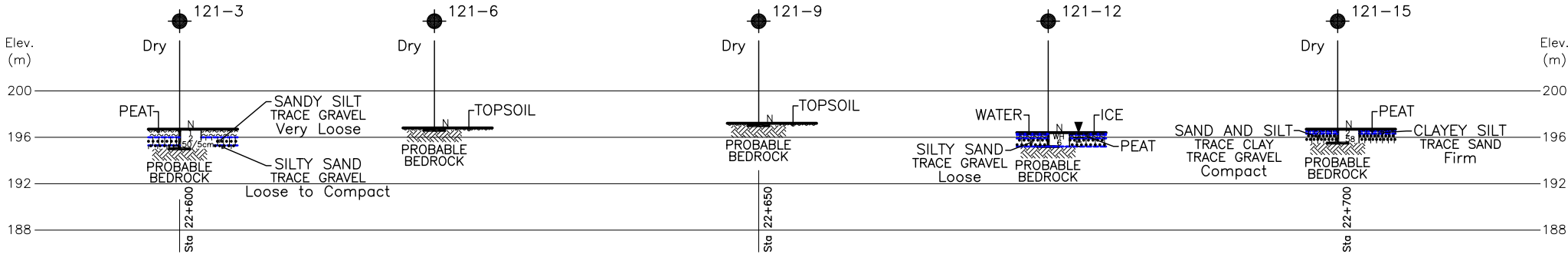
NOTE

The boundaries between soil strata have been established only at Borehole locations. Between Boreholes the boundaries are assumed from geological evidence.

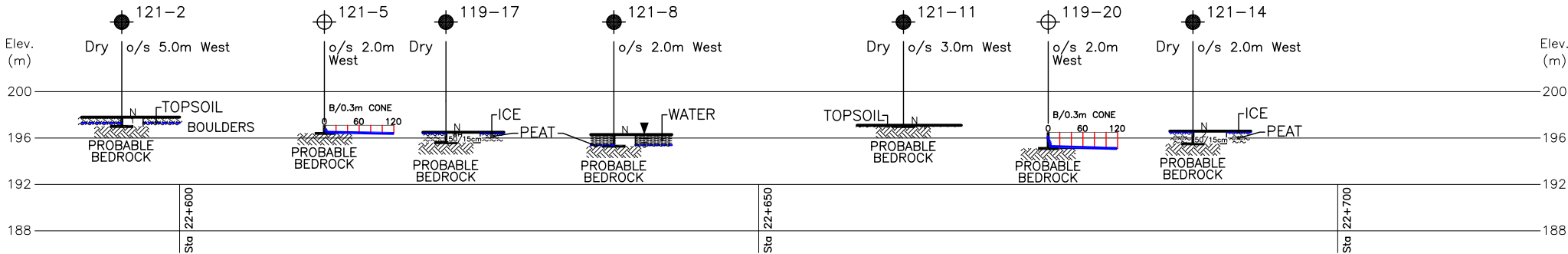
REVISIONS	DATE	BY	DESCRIPTION

Geocres No. 41H-148

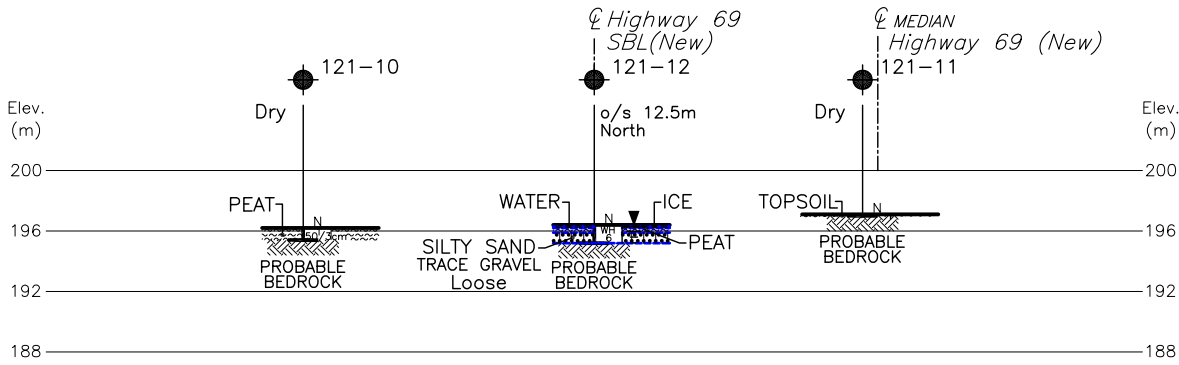
HWY No 69	CHECKED GD	DATE MAR. 11, 2015	DIST 54
SUBM'D NA	CHECKED BRG	APPROVED CN	SITE DWG 121-2



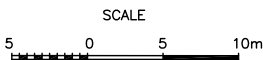
PROFILE B-B



PROFILE C-C



SECTION D-D

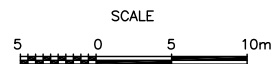
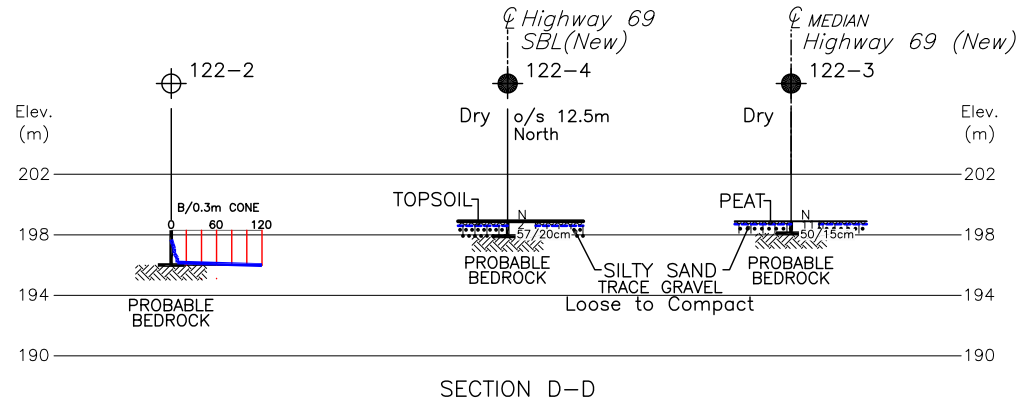
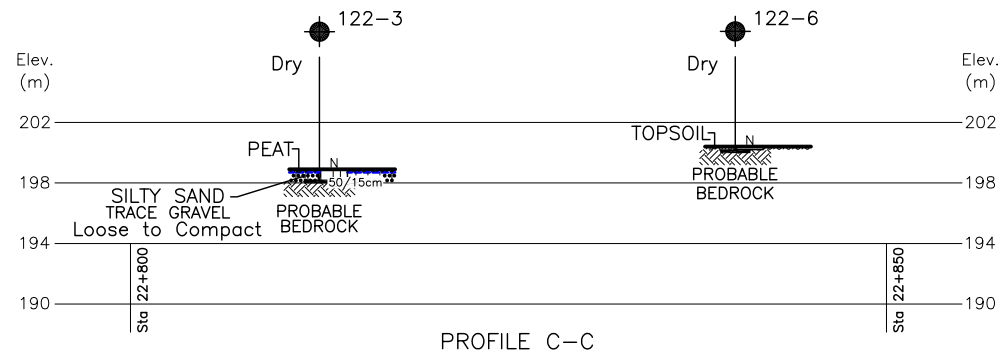
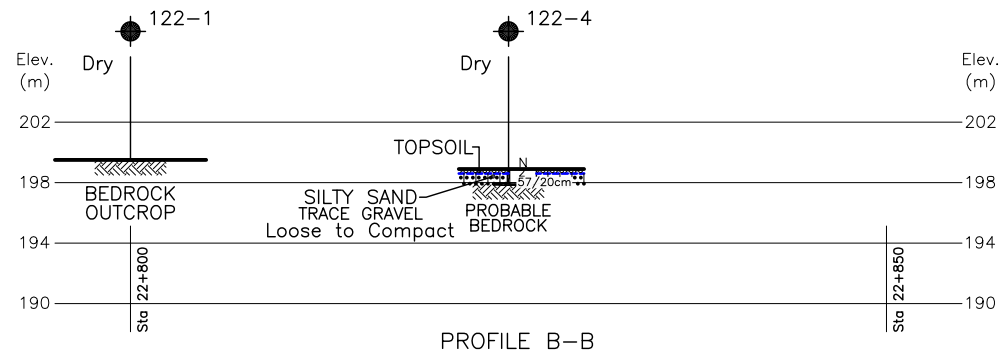
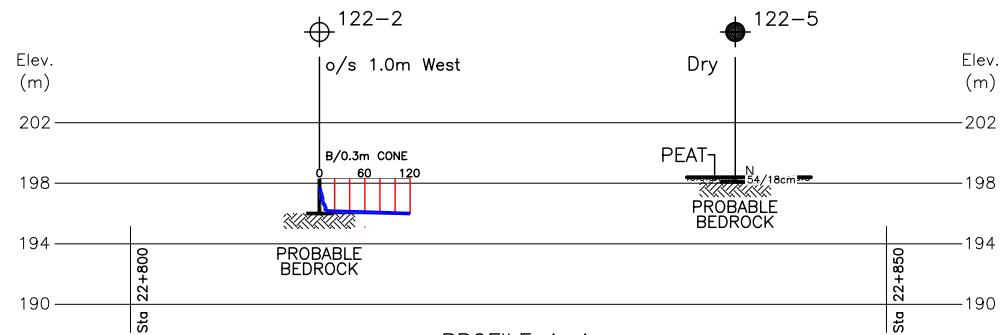


NOTES:

- DRAWINGS 121-1 AND 121-2 SHOULD BE READ IN CONJUNCTION WITH THE TEXT AND RECORD OF BOREHOLE LOGS.
- REFER TO DRAWING 121-1 FOR BOREHOLE LOCATION PLAN AND PROFILE A-A.
- THIS DRAWING IS FOR SUBSURFACE INFORMATION ONLY. SURFACE DETAILS AND FEATURES ARE FOR CONCEPTUAL ILLUSTRATION.
- DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN. STATIONS ARE IN KILOMETRES AND METRES.

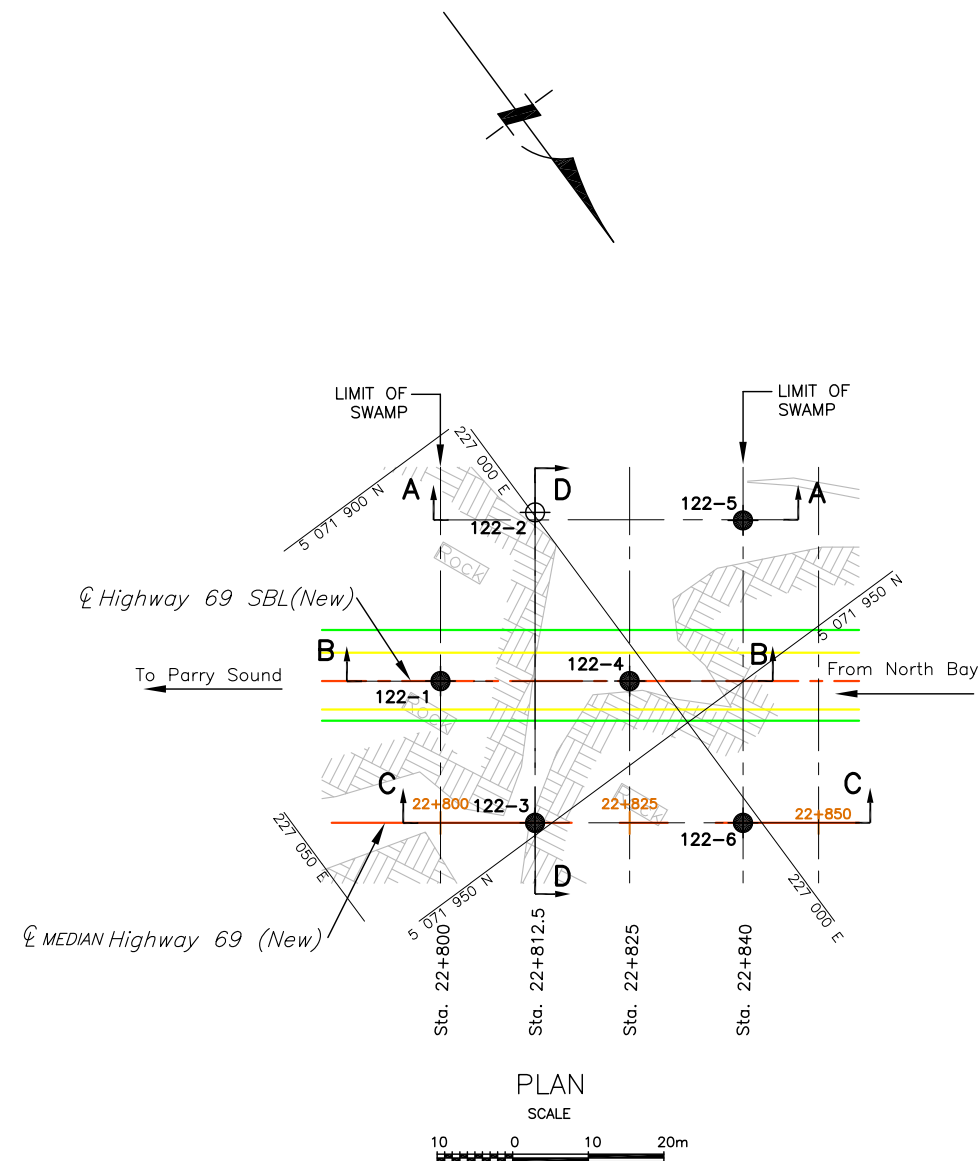


REF. AECOM Drawings:
X-60143751-C-Hwy 69-Base.dwg; C6-Hwy69 Des.dwg;



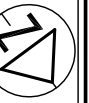
NOTES:

- DRAWING 122-1 SHOULD BE READ IN CONJUNCTION WITH THE TEXT AND RECORD OF BOREHOLE LOGS.
- THIS DRAWING IS FOR SUBSURFACE INFORMATION ONLY. SURFACE DETAILS AND FEATURES ARE FOR CONCEPTUAL ILLUSTRATION.
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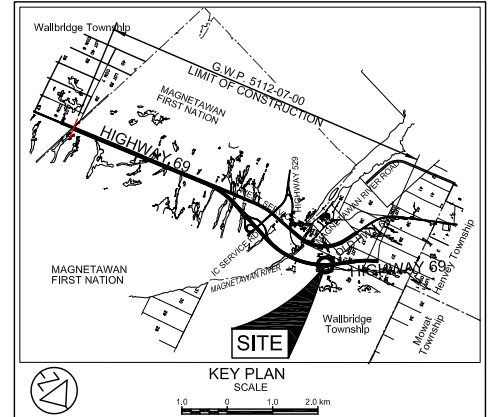
CONT No
GWP No 5112-07-00

HIGHWAY 69
HIGHWAY 69 FOUR-LANING
SWAMP 122, STA. 22+800 TO 22+840 (SBL) WALLBRIDGE TWP
BOREHOLE LOCATIONS AND SOIL STRATA



SHEET

PML Peto MacCallum Ltd.
CONSULTING ENGINEERS



LEGEND

- Borehole
- Dynamic Cone Penetration Test (Cone)
- Borehole & Cone
- N Blows/0.3m (Std. Pen Test, 475 J/blow)
- CONE Blows/0.3m (60 °Cone, 475 J/blow)
- WL at time of investigation Sept 2012 and Feb. 2013
- Head
- ARTESIAN WATER
- Encountered
- PIEZOMETER

BH No	ELEVATION	STA WALLBRIDGE TWP	o/s CL MED
122-1	199.5	22+800	18.8m Lt.
122-2	198.3	22+812.5	41.0m Lt.
122-3	198.9	22+812.5	CL
122-4	198.9	22+825	18.8m Lt.
122-5	198.4	22+840	40.0m Lt.
122-6	200.4	22+840	CL

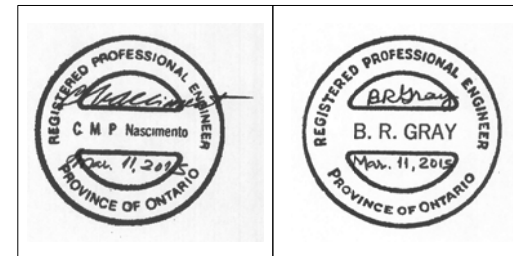
NOTE

The boundaries between soil strata have been established only at Borehole locations. Between Boreholes the boundaries are assumed from geological evidence.

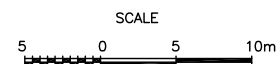
REVISIONS	DATE	BY	DESCRIPTION

Geocres No. 41H-148

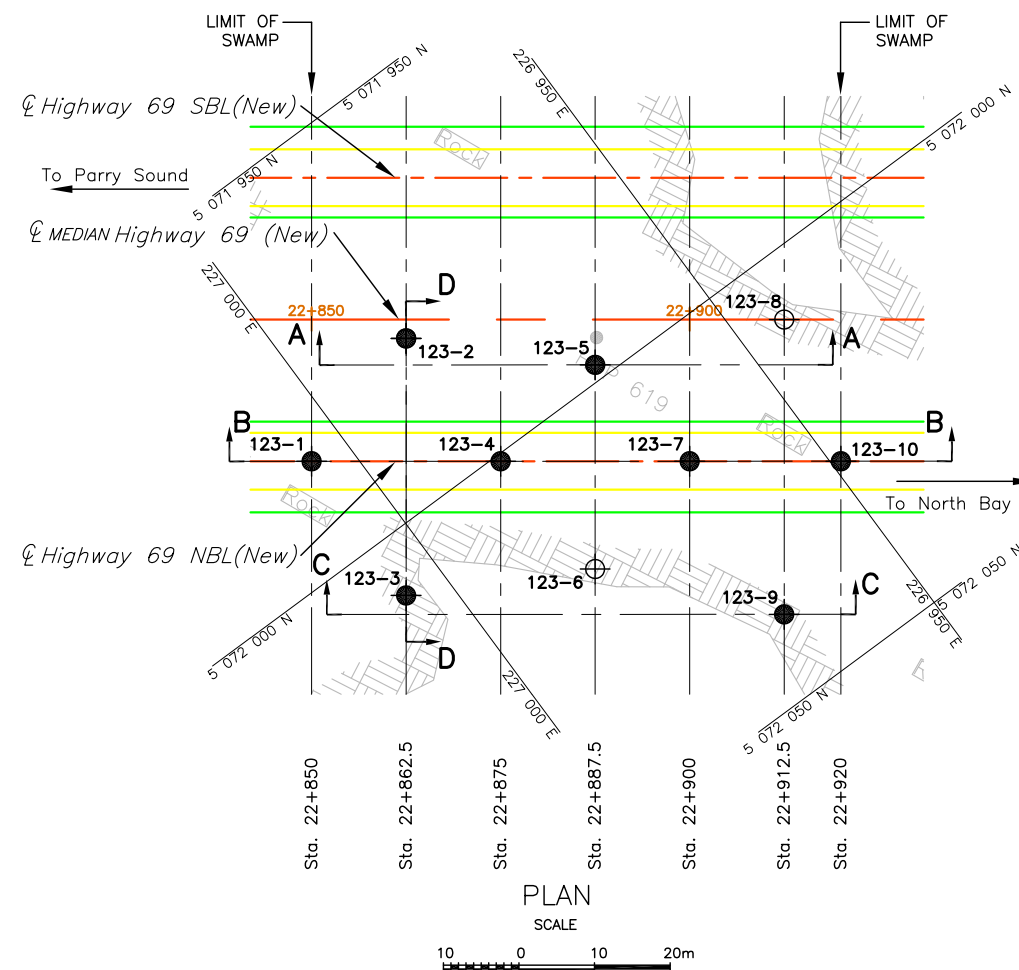
HWY No 69	CHECKED GD	DATE MAR. 11, 2015	DIST 54
SUBM'D NA	CHECKED CN	APPROVED BRG	SITE DWG 122-1



REF. AECOM Drawings:
X-60143751-C-Hwy 69-Base.dwg; C6-Hwy69 Des.dwg;



1. DRAWING 123-1 SHOULD BE READ IN CONJUNCTION WITH THE TEXT AND RECORD OF BOREHOLE LOGS.
2. THIS DRAWING IS FOR SUBSURFACE INFORMATION ONLY. SURFACE DETAILS AND FEATURES ARE FOR CONCEPTUAL ILLUSTRATION.
3. DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN. STATIONS ARE IN KILOMETRES AND METRES.

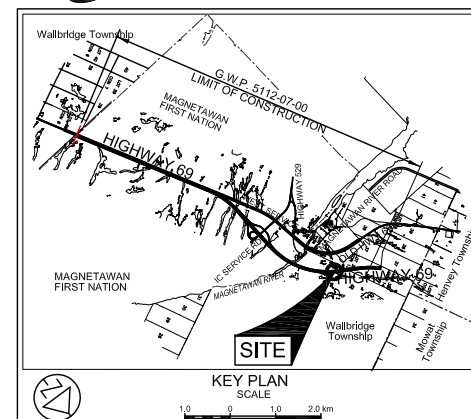


CONT No
GWP No 5112-07-00











HIGHWAY 69
HIGHWAY 69 FOUR-LANING
SWAMP 123, STA. 20+850 TO 20+920 (NBL) WALLBRIDGE TWO

PML Peto MacCallum Ltd
CONSULTING ENGINEERS



LEGEND

- | | |
|---|---|
|  | Borehole |
|  | Dynamic Cone Penetration Test (Cone) |
|  | Borehole & Cone |
| N | Blows/0.3m (Std. Pen Test, 475 J/blow) |
| CONE | Blows/0.3m (60 °Cone, 475 J/blow) |
|  | WL at time of investigation Sept 2012 & Feb. 2013 |
|  | Head |
|  | ARTESIAN WATER |
|  | Encountered |
|  | PIEZOMETER |

BH No	ELEVATION	STA WALLBRIDGE TWP	o/s CL MED
123-1	200.2	22+850	18.8m Rt.
123-2	200.6	22+862.5	2.5m Rt.
123-3	200.0	22+862.5	36.5m Rt.
123-4	201.1	22+875	18.8m Rt.
123-5	201.3	22+887.5	6.0m Rt.
123-6	199.8	22+887.5	33.0m Rt.
123-7	200.5	22+900	18.8m Rt.
123-8	199.7	22+912.5	CL
123-9	199.7	22+912.5	39.0m Rt.
123-10	200.9	22+920	18.8m Rt.

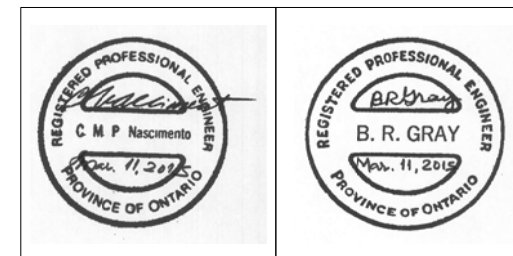
– NOTE –

The boundaries between soil strata have been established only at Borehole locations. Between Boreholes the boundaries are assumed from geological evidence.

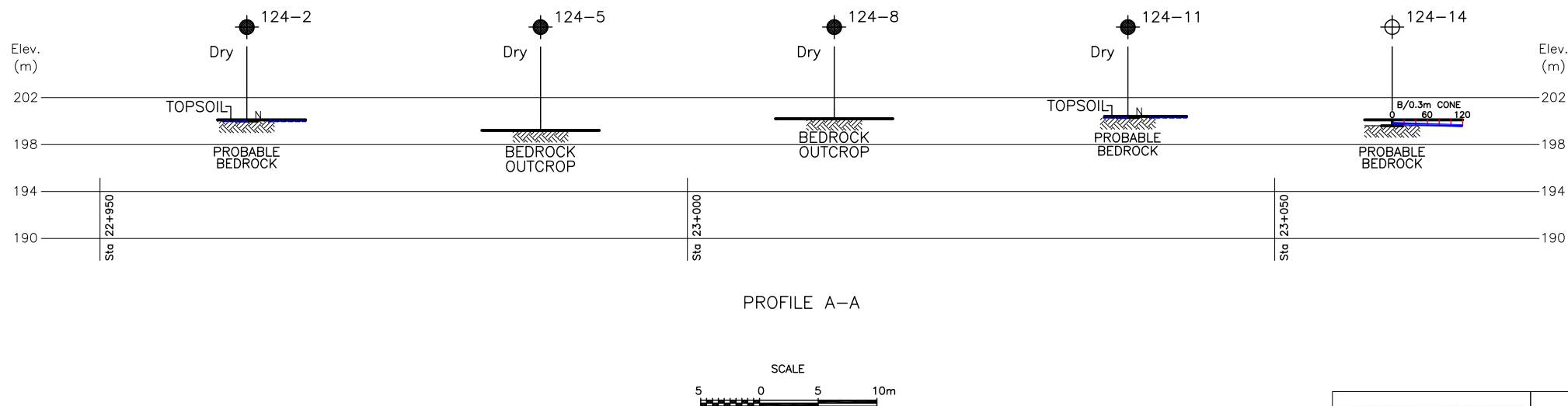
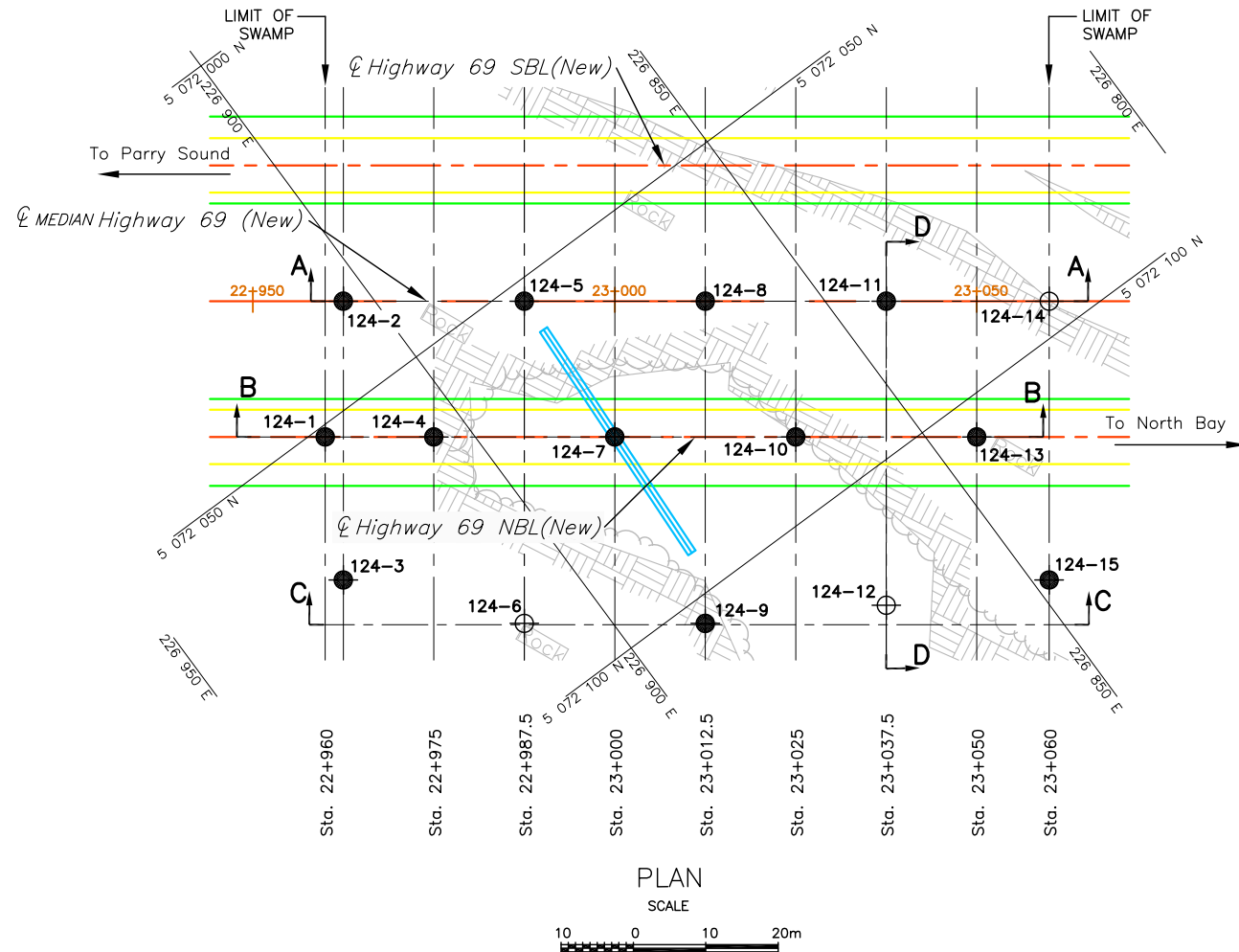
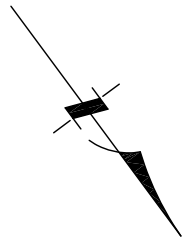
REVISIONS			
	DATE	BY	DESCRIPTION

Geocres No. 41H-148

HWY No 69				DIST 54
SUBM'D NA	CHECKED GD	DATE MAR. 11, 2015		SITE --
DRAWN NA	CHECKED CN	APPROVED BRG		DWG 123-1

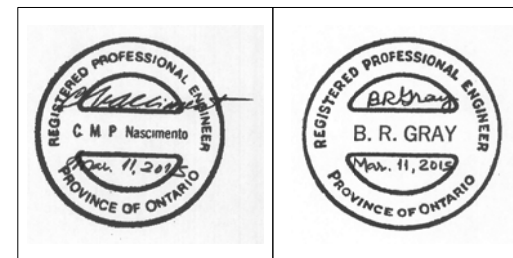


REF. AECOM Drawings:
X-60143751-C-Hwy 69-Base.dwg; C6-Hwy69 Des.dwg;



NOTES:

- DRAWINGS 124-1 AND 124-2 SHOULD BE READ IN CONJUNCTION WITH THE TEXT AND RECORD OF BOREHOLE LOGS.
- REFER TO DRAWING 124-2 FOR PROFILES B-B AND C-C AND SECTION D-D.
- THIS DRAWING IS FOR SUBSURFACE INFORMATION ONLY. SURFACE DETAILS AND FEATURES ARE FOR CONCEPTUAL ILLUSTRATION.
- DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN. STATIONS ARE IN KILOMETRES AND METRES.



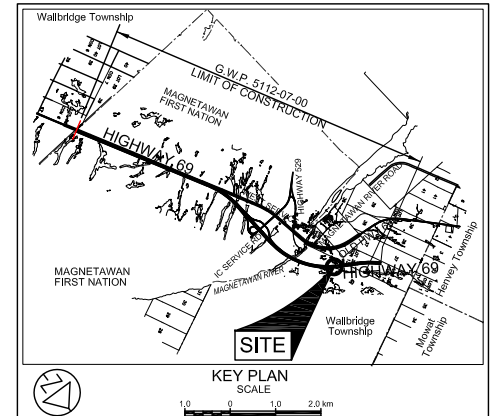
CONT No
GWP No 5112-07-00

HIGHWAY 69
HIGHWAY 69 FOUR-LANING
SWAMP 124, STA. 22+960 TO 23+060 (NBL) WALLBRIDGE TWP
BOREHOLE LOCATIONS AND SOIL STRATA



SHEET

PML Peto MacCallum Ltd.
CONSULTING ENGINEERS



LEGEND

- Borehole
- Dynamic Cone Penetration Test (Cone)
- Borehole & Cone
- N Blows/0.3m (Std. Pen Test, 475 J/blow)
- CONE Blows/0.3m (60 °Cone, 475 J/blow)
- WL at time of investigation Sept 2012 and Feb. 2013
- Head
- ARTESIAN WATER
- Encountered
- PIEZOMETER

BH No	ELEVATION	STA WALLBRIDGE TWP	o/s CL MED
124-1	200.6	22+960	18.8m Rt.
124-2	200.1	22+962.5	CL
124-3	201.0	22+962.5	38.5m Rt.
124-4	199.6	22+975	18.8m Rt.
124-5	199.2	22+987.5	CL
124-6	199.4	22+987.5	44.5m Rt.
124-7	199.2	23+000	18.8m Rt.
124-8	200.2	23+012.5	CL
124-9	199.4	23+012.5	44.5m Rt.
124-10	199.3	23+025	18.8m Rt.
124-11	200.4	23+037.5	CL
124-12	199.2	23+037.5	42.0m Rt.
124-13	200.3	23+050	18.8m Rt.
124-14	200.1	23+060	CL
124-15	200.2	23+060	38.5m Rt.

NOTE

The boundaries between soil strata have been established only at Borehole locations. Between Boreholes the boundaries are assumed from geological evidence.

REVISIONS	DATE	BY	DESCRIPTION

Geocres No. 41H-148

HWY No 69	CHECKED GD	DATE MAR. 11, 2015	DIST 54
SUBM'D NA	CHECKED CN	APPROVED BRG	SITE DWG 124-1

REF. AECOM Drawings:
X-60143751-C-Hwy 69-Base.dwg; C6-Hwy69 Des.dwg;

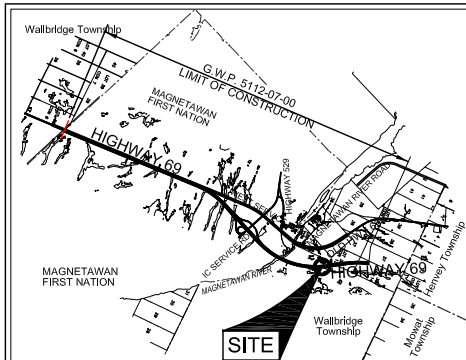
CONT No
GWP No 5112-07-00

HIGHWAY 69
HIGHWAY 69 FOUR-LANING
SWAMP 124, STA. 22+960 TO 23+060 (NBL) WALLBRIDGE TWP
SOIL STRATA



SHEET

PML Peto MacCallum Ltd.
CONSULTING ENGINEERS



KEY PLAN
SCALE
0 1.0 2.0 km

LEGEND

- Borehole
- Dynamic Cone Penetration Test (Cone)
- Borehole & Cone
- N Blows/0.3m (Std. Pen Test, 475 J/blow)
- CONE Blows/0.3m (60 °Cone, 475 J/blow)
- WL at time of investigation Sept 2012 and Feb. 2013
- Head
- ARTESIAN WATER
- Encountered
- PIEZOMETER

BH No	ELEVATION	STA WALLBRIDGE TWP	o/s CL MED
FOR DETAILS, REFER TO DWG. 124-1			

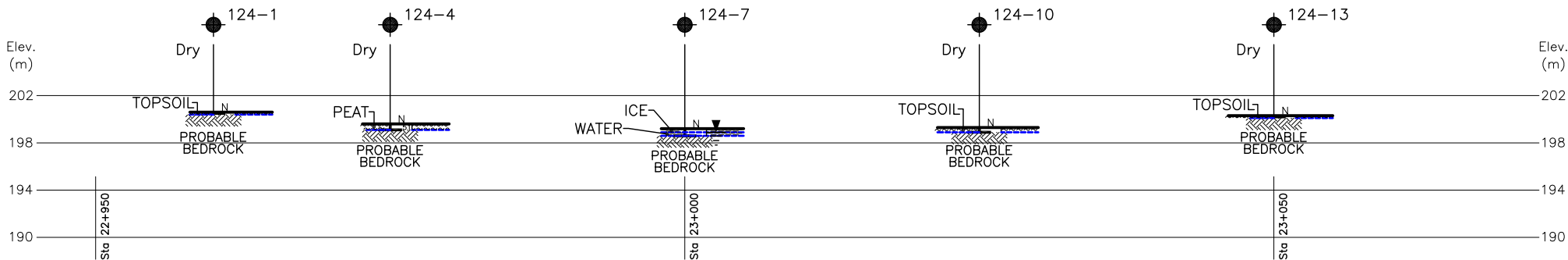
NOTE

The boundaries between soil strata have been established only at Borehole locations. Between Boreholes the boundaries are assumed from geological evidence.

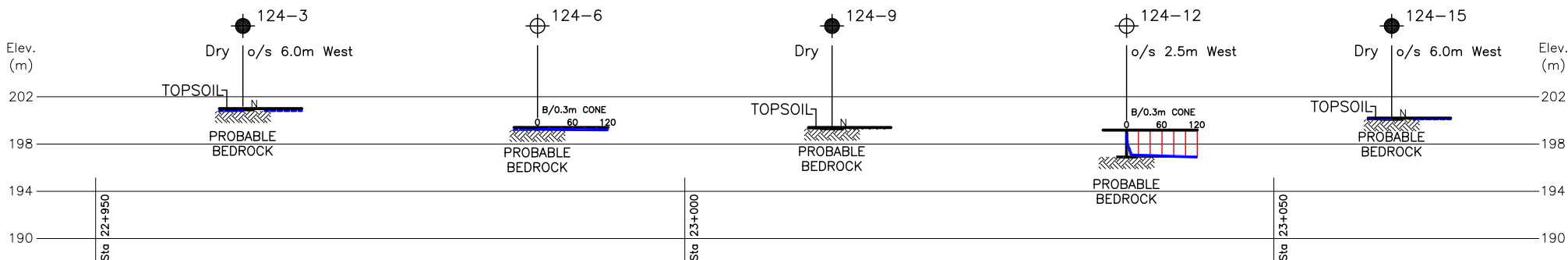
REVISIONS	DATE	BY	DESCRIPTION

Geocres No. 41H-148

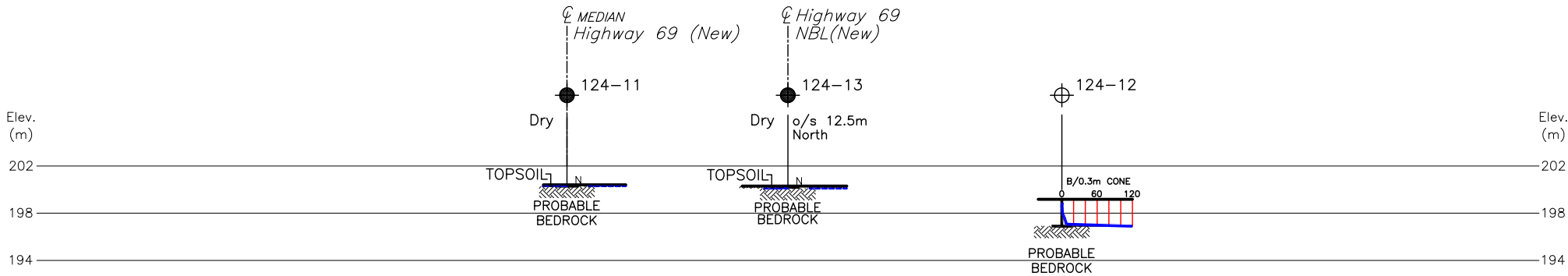
HWY No 69	CHECKED GD	DATE MAR. 11, 2015	DIST 54
SUBM'D NA	CHECKED CN	APPROVED BRG	SITE DWG 124-2



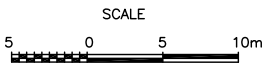
PROFILE B-B



PROFILE C-C

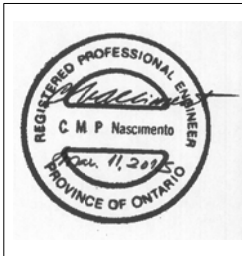


SECTION D-D



NOTES:

- DRAWINGS 124-1 AND 124-2 SHOULD BE READ IN CONJUNCTION WITH THE TEXT AND RECORD OF BOREHOLE LOGS.
- REFER TO DRAWING 124-1 FOR BOREHOLE LOCATION PLAN AND FOR PROFILE A-A.
- THIS DRAWING IS FOR SUBSURFACE INFORMATION ONLY. SURFACE DETAILS AND FEATURES ARE FOR CONCEPTUAL ILLUSTRATION.
- DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN. STATIONS ARE IN KILOMETRES AND METRES.



REF. AECOM Drawings:
X-60143751-C-Hwy 69-Base.dwg; C6-Hwy69 Des.dwg;