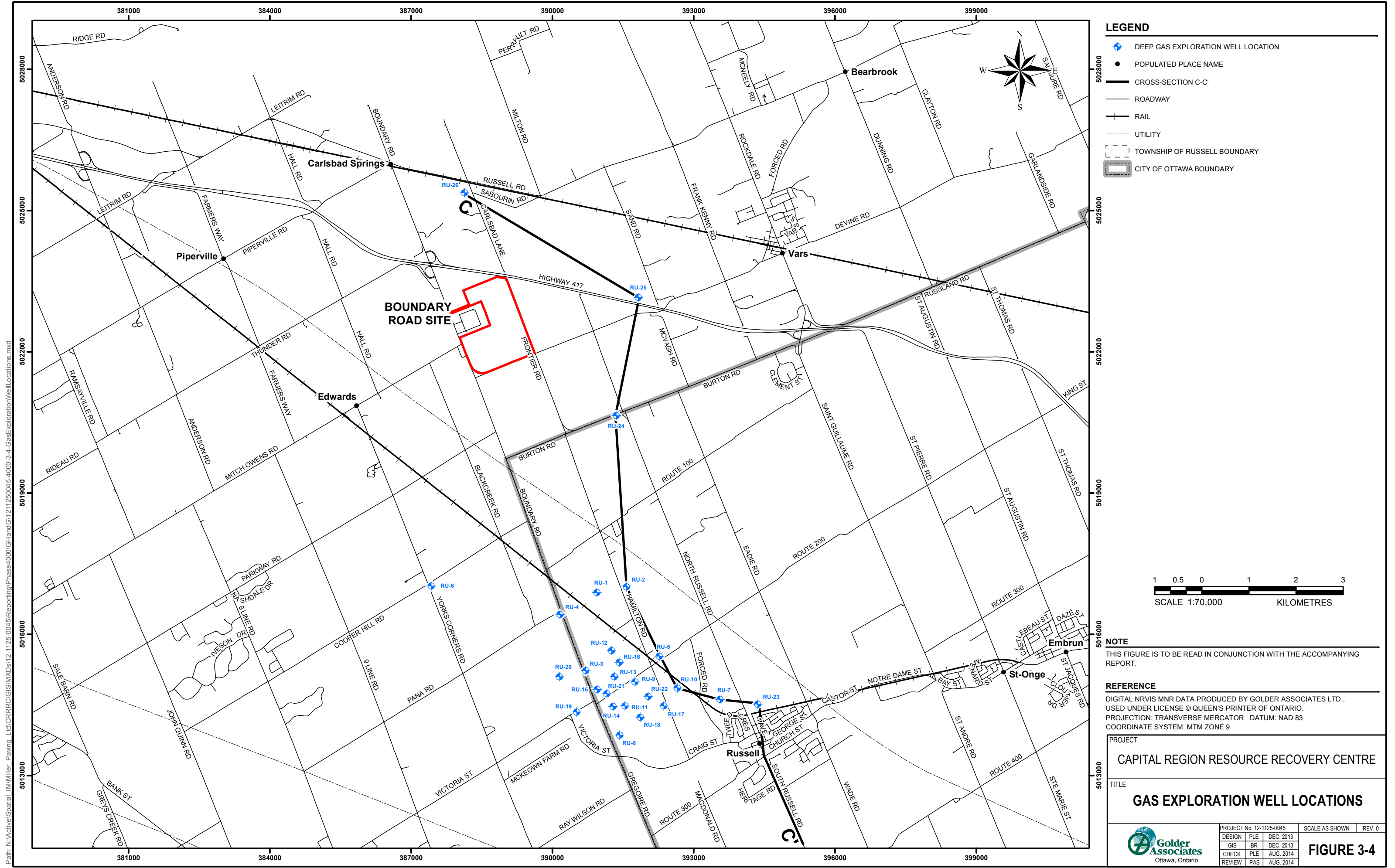
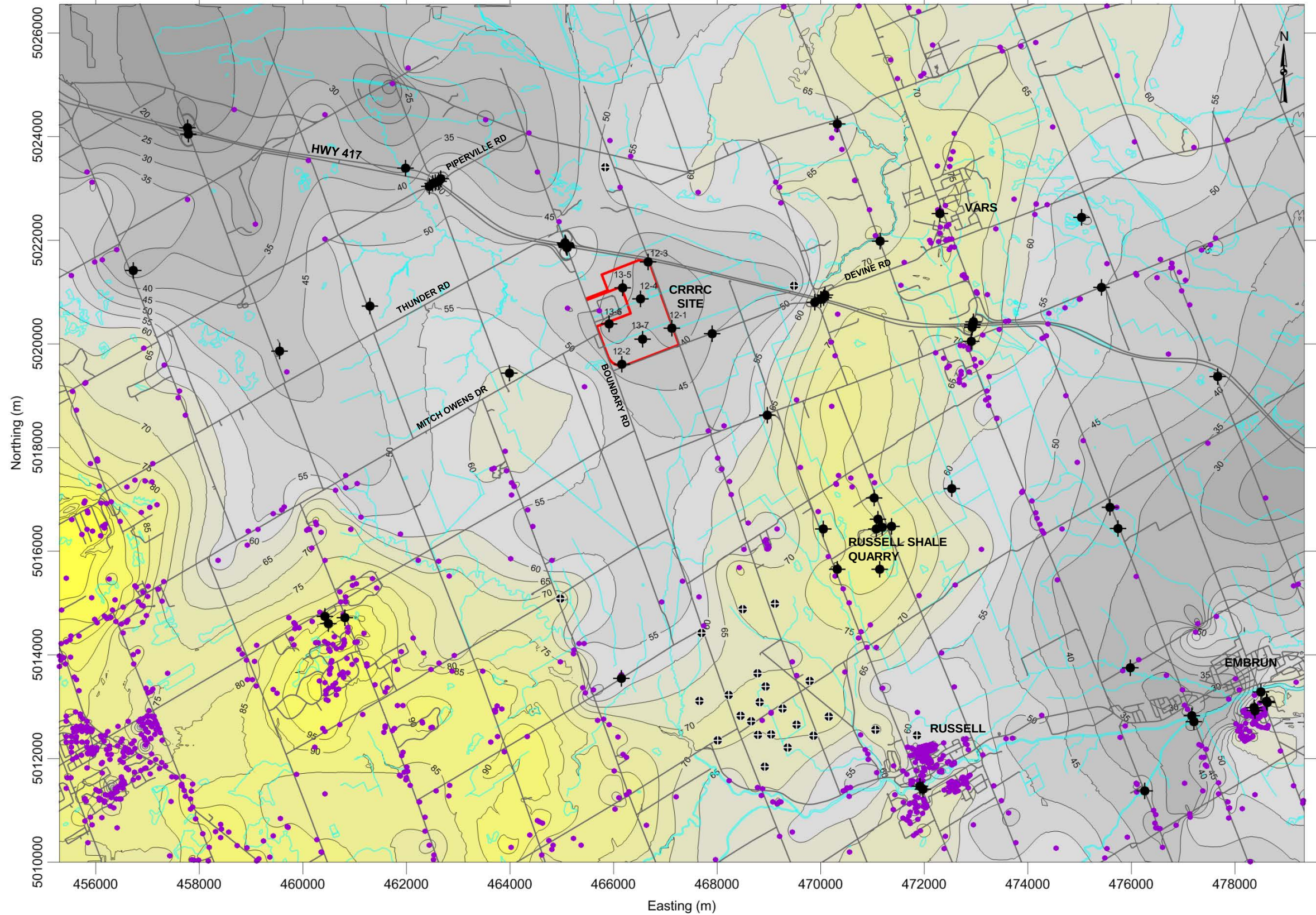


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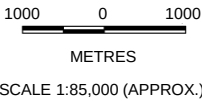
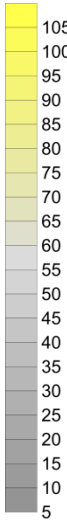


LEGEND

- CORED BOREHOLE LOCATION
- WATER WELL LOCATION
- OIL AND GAS EXPLORATION WELL LOCATION

- WATERBODIES
- ROADS
- PROPERTY BOUNDARY

BEDROCK SURFACE COLOUR SCALE
(mASL)



NOTE

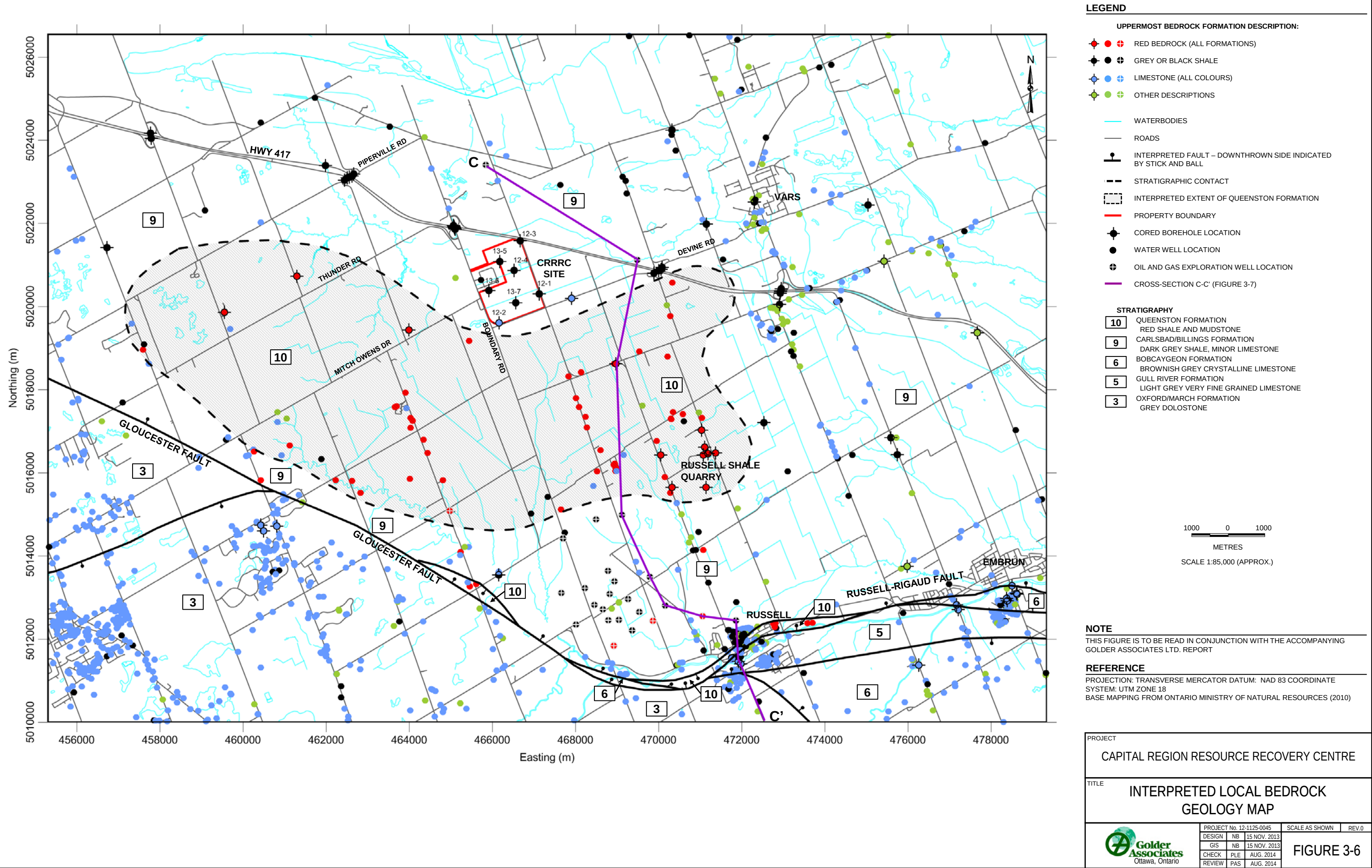
THIS FIGURE IS TO BE READ IN CONJUNCTION WITH THE ACCOMPANYING
GOLDER ASSOCIATES LTD. REPORT
ELEVATION CONTOUR INTERVAL = 5m
CONTOUR DATUM IS mASL

REFERENCE

PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE
SYSTEM: UTM ZONE 18
BASE MAPPING FROM ONTARIO MINISTRY OF NATURAL RESOURCES (2010)

PROJECT			
CAPITAL REGION RESOURCE RECOVERY CENTRE			
TITLE			
LOCAL BEDROCK SURFACE ELEVATION MAP			
	PROJECT No. 12-1125-0045		SCALE AS SHOWN
	DESIGN	NB 15 NOV. 2013	REV.0
	GIS	NB 15 NOV. 2013	
	CHECK	PLE AUG. 2014	
	REVIEW	PAS AUG. 2014	
			FIGURE 3-5

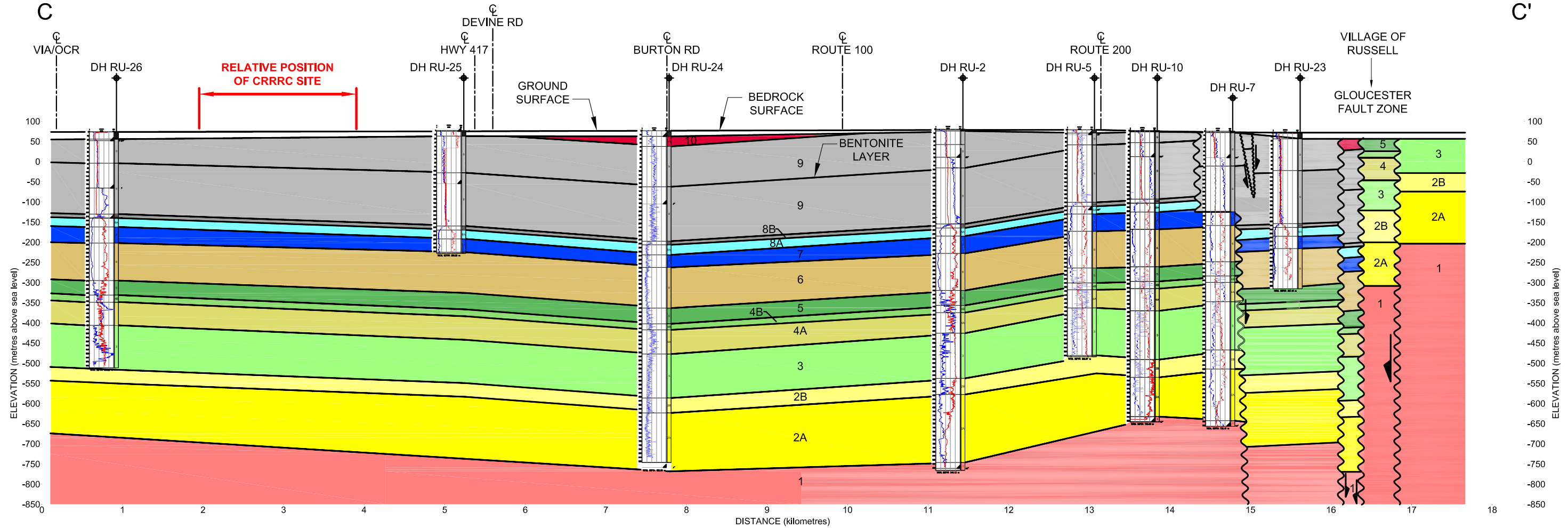
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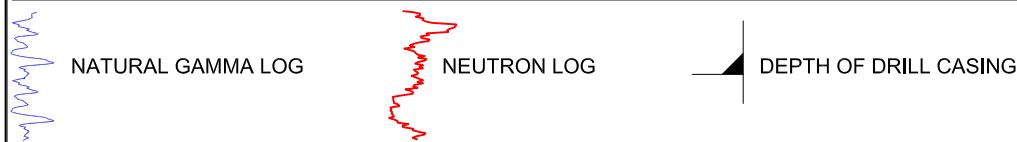
PLOT DATE: June 26, 2014
FILENAME: N:\Active\Spatial_IM\Miller_Paving_Ltd\CRPRC\ACAD\Phase 4000\1211250045-4000-3-7.dwg

NORTH
C

SOUTH
C'



BOREHOLE GEOPHYSICAL RECORDS



BEDROCK GEOLOGY

10 QUEENSTON FORMATION

Dark reddish brown calcareous mudstone with interbeds of greenish grey siltstone and mudstone.

9 CARLSBAD/BILLINGS FORMATIONS

Dark grey shale interbedded with micritic limestone interbeds (Carlsbad Fm) grading down to dark grey to dark brownish black bituminous shale with minor laminations to very thin interbeds of calcareous siltstone and dolomitic limestone (Billings Fm).

8B UPPER LINDSAY FORMATION (EASTVIEW MEMBER)

Interbedded dark brownish black bituminous shale and dark brownish grey nodular micritic limestone.

8A LOWER LINDSAY FORMATION

Medium to dark brownish grey thickly bedded micritic to calcarenitic nodular limestone.

7 VERULAM FORMATION

Medium brownish grey thinly to medium bedded shaley calcarenitic limestone with interbeds of nodular limestone, minor thin lithoclastic calcarenite limestone beds and numerous dark grey to black very thin to thinly interbeds shale.

6 BOBCAYGEON FORMATION

Light to medium brownish grey, medium to thickly bedded calcarenitic limestone and interbedded units of argillaceous nodular limestone and shaley limestone.

5 GULL RIVER FORMATION

Medium grey, micritic to lithographic limestone, argillaceous to calcareous dolostone and medium to very thickly bedded dolostone, minor interbedded black shale, shaley dolostone, dolomitic siltstone and partly bioturbated quartz sandstone.

4B UPPER ROCKCLIFFE FORMATION

Interbedded sequence composed of medium to thick beds of dolostone and calcareous dolostone, dark grey to black shale, medium grey, argillaceous limestone, minor light grey, calcareous cemented quartz sandstone.

4A LOWER ROCKCLIFFE FORMATION

Light whitish grey, laminar textured to rippled and cross bedded, thin to thick bedded silica cemented quartz sandstone, minor interbeds of shale.

3 OXFORD/MARCH FORMATIONS

Fine grained, micritic dolostone, calcareous dolostone, argillaceous nodular dolostone, subordinate beds lithoclastic dolostone, dark grey to black shale laminations in upper half (Oxford Fm), grading down to sandy dolostone to dolomitic sandstone and carbonate cemented quartz sandstone.

2 NEPEAN FORMATION

Light grey, laminar to cross bedded, silica cemented quartz sandstone. Includes widely spaced interbeds of grey shale and shaley siltstone with individual beds of quartz pebbles and cobbles set in a coarse grained quartz sandstone matrix. 2A Golder pick for top contact of Nepean Fm marking transition into silica sandstone sequence, 2B MNR Well Card pick for top of Nepean Fm (possible dolomitic sandstone of March Fm). Includes un-subdivided Covey Hill Fm sandstone and conglomerate at base if present.

1 PRECAMBRIAN BASEMENT

Quartz feldspar biotite gneiss or dolomitic marble typically weathered near the unconformable surface with either the overlying Covey Hill Formation quartz pebble cobble conglomerate or the Nepean Formation sandstone.

LEGEND

◆ BOREHOLE LOCATION

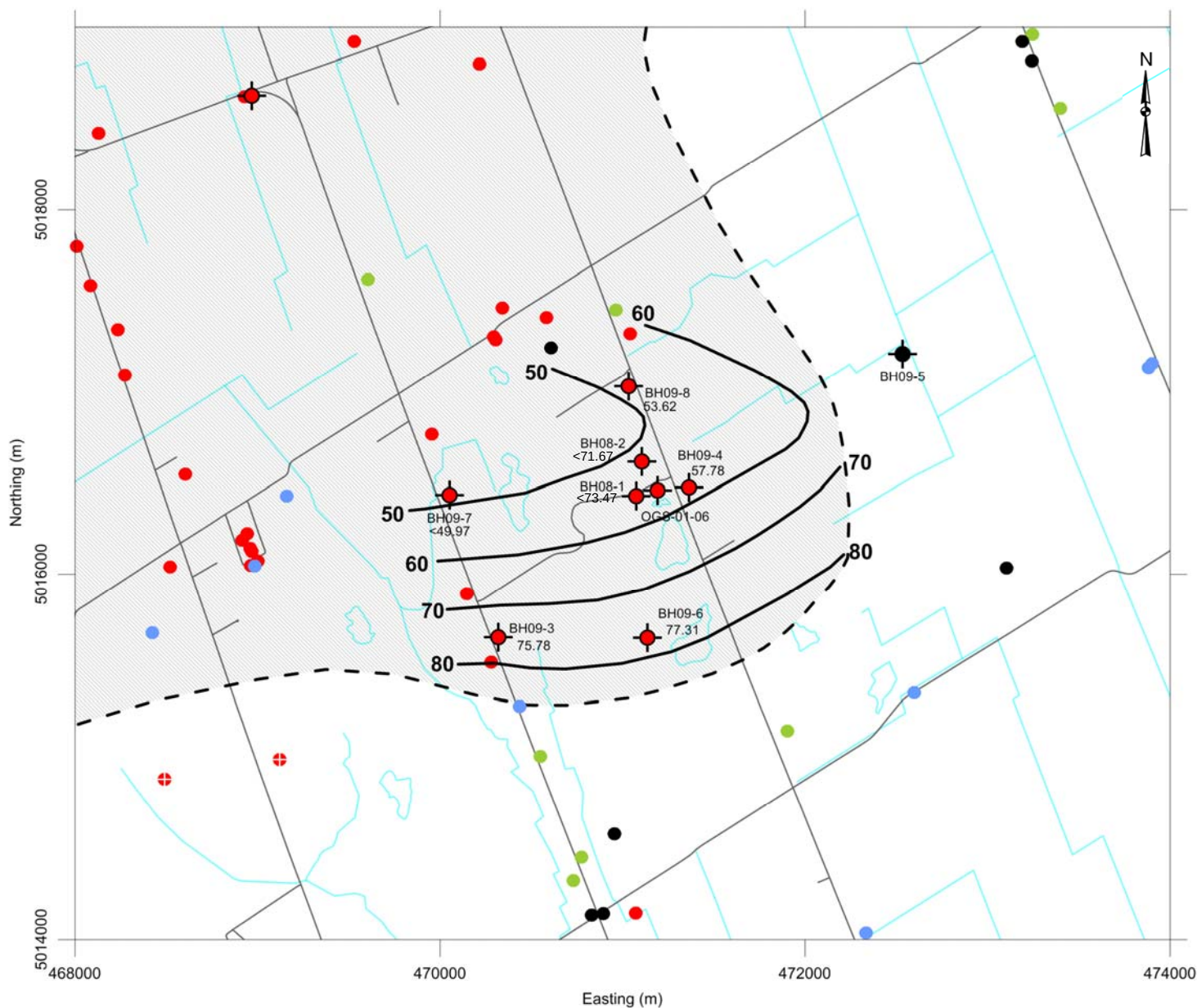
NOTES

- THIS FIGURE IS TO BE READ IN CONJUNCTION WITH THE ACCOMPANYING GOLDER ASSOCIATES LTD. REPORT
- FOR LOCATION OF SECTION C-C' SEE FIGURE 3-6
- FOR DETAILS OF BOREHOLE GEOPHYSICAL RECORDS SEE FIGURES A1 to A3 IN APPENDIX A

REV	DATE	DES	REVISION DESCRIPTION	CAD	CHK	RVW
PROJECT						
CAPITAL REGION RESOURCE RECOVERY CENTRE						
TITLE						
LOCAL STRUCTURAL GEOLOGIC CROSS-SECTION C-C'						
PROJECT No.			12-1125-0045	FILE No.		
DESIGN			JPAO	1211250045-4000-3-7.dwg		
CAD			JMJFC	SCALE		
CHECK			PLE	AS SHOWN		
REVIEW			PAS	REV.		
			Aug. 2014			
			Aug. 2014			



FIGURE 3-7



LEGEND

UPPERMOST BEDROCK FORMATION DESCRIPTION:

RED BEDROCK (ALL FORMATIONS)

GREY OR BLACK SHALE

LIMESTONE (ALL COLOURS)

OTHER DESCRIPTIONS

WATERBODIES

ROADS

BH09-3 75.78 BOREHOLE LOCATION AND ELEVATION OF QUEENSTON-CARLSBAD CONTACT (mASL) AT RUSSELL QUARRY

STRATIGRAPHIC CONTACT

INTERPRETED EXTENT OF QUEENSTON FORMATION

PROPERTY BOUNDARY

CORED BOREHOLE LOCATION

WATER WELL LOCATION

OIL AND GAS EXPLORATION WELL LOCATION

INTERPRETED CONTOUR OF QUEENSTON-CARLSBAD CONTACT (mASL)

500 0 500
METRES

SCALE 1:17,000 (APPROX.)

NOTES

THIS FIGURE IS TO BE READ IN CONJUNCTION WITH THE ACCOMPANYING REPORT
THE LOCATION OF OGS-01-06 IS SUSPECT AND THERE IS NO ELEVATION DATA AVAILABLE FOR THIS BOREHOLE

REFERENCE

LAND INFORMATION ONTARIO (LIO) DATA PRODUCED BY GOLDER ASSOCIATES LTD. UNDER LICENSE FROM ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEEN'S PRINTER 2011. PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: UTM ZONE 18

PROJECT

CAPITAL REGION RESOURCE RECOVERY CENTRE

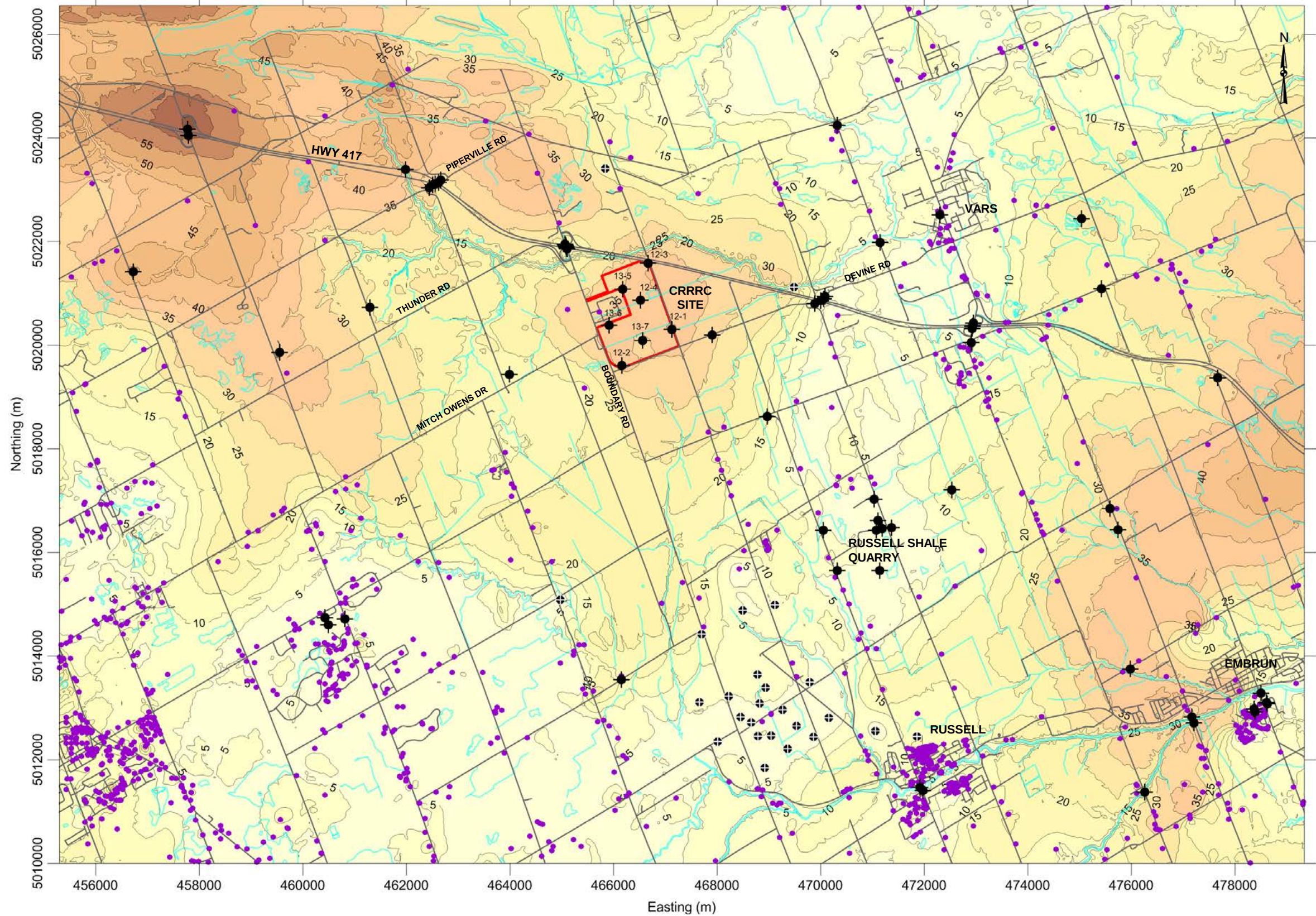
TITLE

ELEVATION OF QUEENSTON FORMATION
BASAL CONTACT AT RUSSELL QUARRY



PROJECT No.	12-1125-0045	PHASE No.	4500
DESIGN	NB	16 JAN. 2014	SCALE AS SHOWN
GIS	--	--	REV.0
CHECK	PLE	AUG. 2014	FIGURE 3-8
REVIEW	PAS	AUG. 2014	

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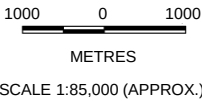
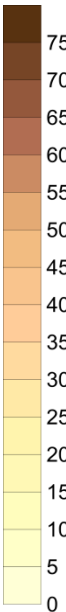


LEGEND

- CORED BOREHOLE LOCATION
- WATER WELL LOCATION
- ⊕ OIL AND GAS EXPLORATION WELL LOCATION

- WATERBODIES
- ROADS
- PROPERTY BOUNDARY

OVERBURDEN THICKNESS COLOUR SCALE (m)



NOTE

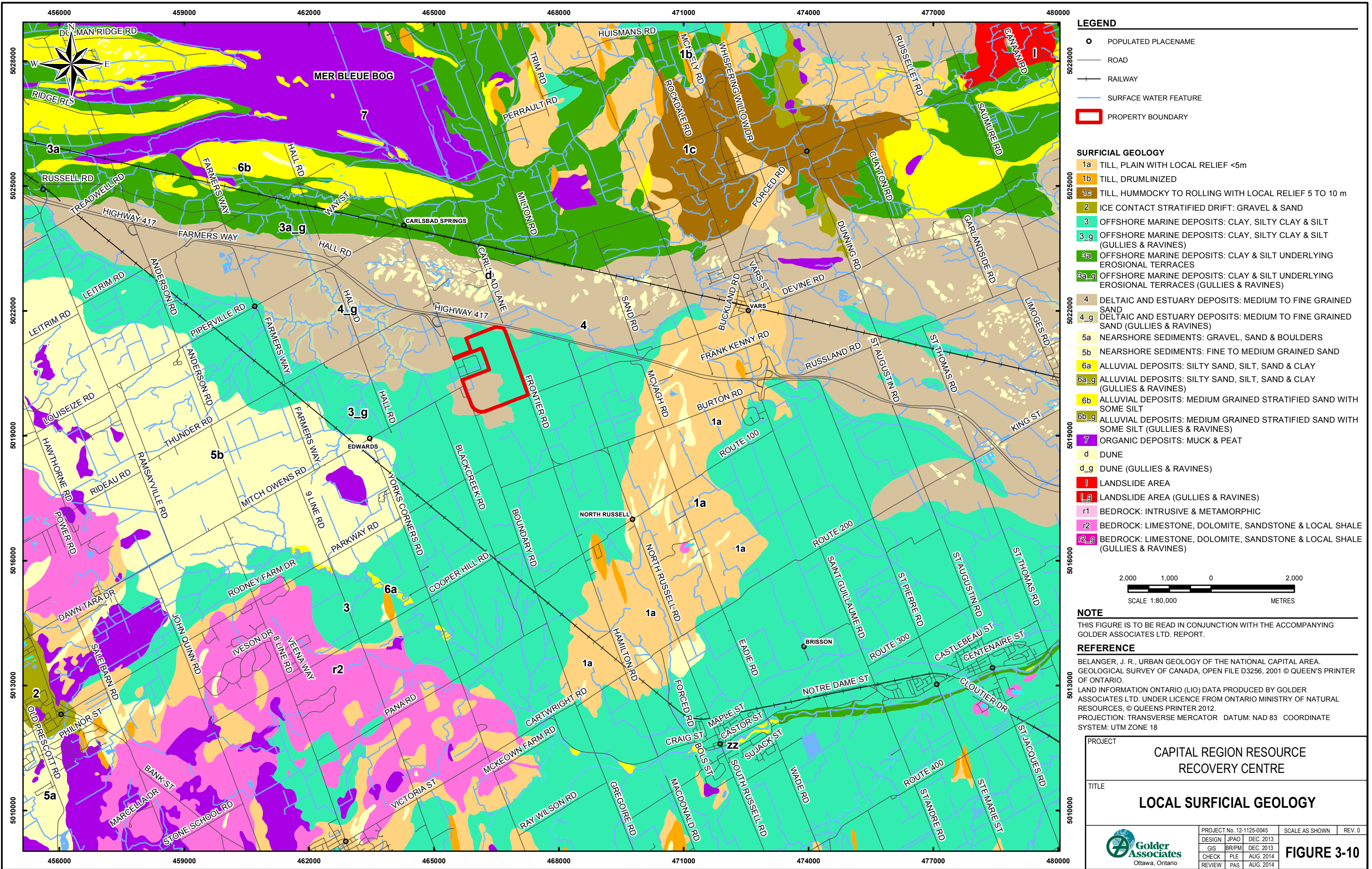
THIS FIGURE IS TO BE READ IN CONJUNCTION WITH THE ACCOMPANYING GOLDER ASSOCIATES LTD. REPORT ELEVATION CONTOUR INTERVAL = 5m

REFERENCE

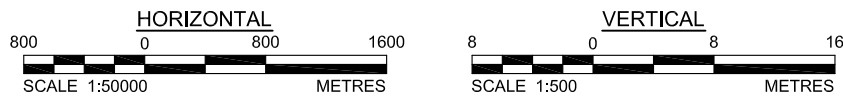
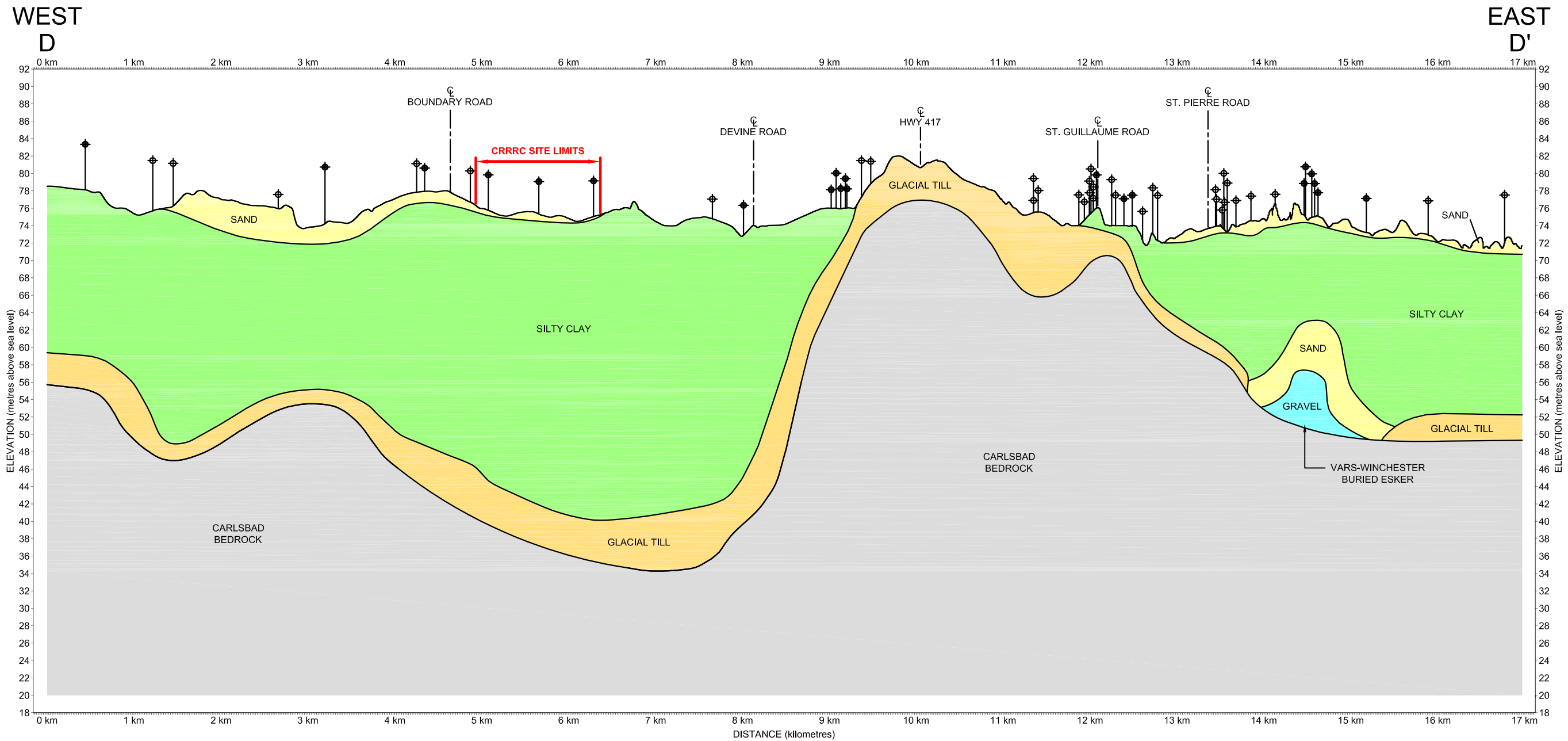
PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: UTM ZONE 18 BASE MAPPING FROM ONTARIO MINISTRY OF NATURAL RESOURCES (2010)

PROJECT	CAPITAL REGION RESOURCE RECOVERY CENTRE			
TITLE	LOCAL OVERBURDEN THICKNESS MAP			
	PROJECT No. 12-1125-0045		SCALE AS SHOWN	REV.0
	DESIGN	NB	15 NOV. 2013	FIGURE 3-9
	GIS	NB	15 NOV. 2013	
	CHECK	PLE	AUG. 2014	
	REVIEW	PAS	AUG. 2014	

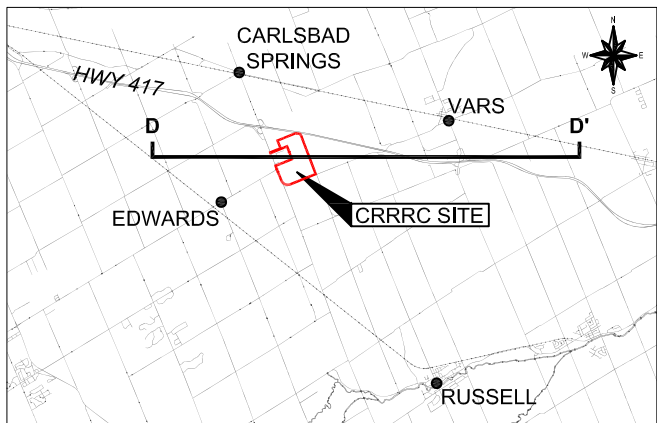
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PLOT DATE: October 7, 2014
FILENAME: N:\Active\Spatial_IM\Miller_Paving_Ltd\CRRRC\ACAD\Phase 4000\1211250045-4000-3-11.dwg



NOTE:
VERTICAL SCALE EXAGGERATED 100 TIMES THE HORIZONTAL SCALE FOR
PRESENTATION PURPOSES



KEY MAP
1:300,000

LEGEND

- ◆ BOREHOLE LOCATION
- ◆ MINISTRY OF THE ENVIRONMENT AND CLIMATE
CHANGE WATER WELL RECORD LOCATION

NOTE

THIS FIGURE IS TO BE READ IN CONJUNCTION WITH
THE ACCOMPANYING GOLDER ASSOCIATES LTD.
REPORT

REV	DATE	DES	REVISION DESCRIPTION	CAD	CHK	RVW
PROJECT						
CAPITAL REGION RESOURCE RECOVERY CENTRE						
TITLE						
LOCAL GEOLOGIC CROSS-SECTION D-D'						
PROJECT No.			12-1125-0045	FILE No.		
DESIGN			JPAO June 2013	SCALE		
CAD			JM Nov. 2013	AS SHOWN		
CHECK			PLE Aug. 2014	REV.		
REVIEW			PAS Aug. 2014	FIGURE 3-11		

