



TABLE 1
RECOMMENDED LOCATIONS FOR FOUNDATION INVESTIGATIONS
STRUCTURES AND CULVERTS
PREFERRED STRUCTURE LOCATIONS

SECTION	PROPOSED WORKS	STATIONS ⁽¹⁾	EXISTING DATA
SOUTH	Highway 11 (Mainline)		
	Underpass at Highway 11	Sta. 25+900(S)	—
	Interchange Underpass at Highway 11	Sta. 28+350(S)	—
	Culvert Extension for Unnamed Creek (Site 44-318/1)	Sta. 27+790(S)	Bedrock at 6 m depth
	Highway 11 Ramp E/W-S		
	Culvert at Swamp Crossing	Opposite Sta. 28+000(S)	—
CENTRAL	Highway 11 (Mainline)		
	Underpass at Highway 11	Sta. 11+125(N)	Bedrock at 3 to 8 m depth ⁽²⁾
	Hills Siding Road Realignment		
	Culvert for Boleau (Boulder) Creek Crossing	Opposite Sta. 11+125(N)	Bedrock at 3 to 8 m depth ⁽²⁾
NORTH	Highway 11 (Mainline)		
	Underpass at Highway 11	Sta. 15+575(N)	Possible rock outcrop
	Connecting Road from Rivers Road West to Stone Road		
	Culvert for Tributary of Windsor Creek and swamp crossing	Opposite Sta. 15+850(N)	—

NOTES: (1) Chainages may vary for northbound and southbound mainlines to be confirmed / refined during detailed design.
(2) Based on previous Boleau (Boulder) Creek investigation data.
(S) Refers to South Himsworth Township.
(N) Refers to North Himsworth Township.



TABLE S-1– SOFT GROUND/SWAMPS

INTERCHANGE ALTERNATIVES		SOFT GROUND/SWAMPS DEPTHS AND FAVOURABILITY						WEIGHTED FAVOURABILITY VALUE(A _i)	
		L1	F1	L2	F2	L3	F3		
		Depth Range (0 - 3 m)		Depth Range (3 - 10 m)		Depth Range (>10 m)			
S1	Interchange at Sta. 28+350 ^S (Note 1) (Combination of Parclo A and Diamond)	1025	5	880	3	200	1	3.78	A ₁
S2	Underpass at Sta. 28+350 ^S (Peever Line / Pine Tree Way)	550	5	580	3	200	1	3.53	A ₂
C1	Underpass at Sta. 10+700 ^N (South of Hills Siding Road)	1385	5	140	3	200	1	4.37	A ₃
C2	Underpass at Sta. 11+630 ^N (North of Hills Siding Road)	100	5	1460	3	40	1	3.08	A ₄
C3	Underpass at Sta. 11+125 ^N (At Hills Siding Road)	–	5	350	3	75	1	2.65	A ₅
N1	Underpass at Sta. 15+575 ^N (Rivers Road East / Wookey Road)	–	5	750	3	–	1	3.00	A ₆
N2	Underpass at Sta. 15+900 ^N (Rivers Road East / Stone Road)	–	5	850	3	150	1	2.70	A ₇

NOTES: Embankment lengths (L1, L2, L3) measured at ramps and approach fills

Enter weighted favourability value A_i in Table S-7.

^S refers to South Himsworth TWP and ^N refers to North Himsworth TWP

Note 1: Includes underpass at Sta. 25+900 (Oakwood Road / Main Street connection).



TABLE S-2– GROUNDWATER CONDITIONS

INTERCHANGE ALTERNATIVES		GROUNDWATER DEPTHS AND FAVOURABILITY						WEIGHTED FAVOURABILITY VALUE(Ai)	
		L1	F1	L2	F2	L3	F3		
		Depth Range (>5m)		Depth Range (1 - 5m)		Depth Range (0 -1 m)			
S1	Interchange at Sta. 28+350 ^S (Note 1) (Combination of Parclo A and Diamond)	3150	5	2650	3	2105	1	3.26	A ₁
S2	Underpass at Sta. 28+350 ^S (Peever Line / Pine Tree Way)	2340	5	835	3	1330	1	3.45	A ₂
C1	Underpass at Sta. 10+700 ^N (South of Hills Siding Road)	350	5	925	3	1725	1	2.08	A ₃
C2	Underpass at Sta. 11+630 ^N (North of Hills Siding Road)	1900	5	500	3	1950	1	2.98	A ₄
C3	Underpass at Sta. 11+125 ^N (At Hills Siding Road)	–	5	600	3	425	1	2.17	A ₅
N1	Underpass at Sta. 15+575 ^N (Rivers Road East / Wookey Road)	1750	5	–	3	750	1	3.80	A ₆
N2	Underpass at Sta. 15+900 ^N (Rivers Road East / Stone Road)	1425	5	–	3	1000	1	3.35	A ₇

NOTES: Enter weighted favourability value Ai in Table S-7.

^S refers to South Himsworth TWP and ^N refers to North Himsworth TWP

Note 1: Includes underpass at Sta. 25+900 (Oakwood Road / Main Street connection).



TABLE S-3– STRUCTURE FOUNDATIONS

INTERCHANGE ALTERNATIVES		CONTEMPLATED STRUCTURE/INTERCHANGE SITE										WEIGHTED FAVOURABILITY VALUE(Ai)	
		South Section				Central Section				North Section			
		Highway 11 Underpass At Sta. 25+900		Highway 11 Underpass At Sta. 28+350		Highway 11 Underpass At Sta. 10+700 ⁽¹⁾ Sta. 11+630 ⁽²⁾ Sta. 11+125 ⁽³⁾		Boleau Creek Bridge Widening/New Bridge at Latour Crescent		Highway 11 Underpass At Sta. 15+575 (*) Sta. 15+900 (**)			
		Type	F1	Type	F2	Type	F3	Type	F4	Type	F5		
S1	Interchange at Sta. 28+350 ^S (Note 1) (Combination of Parclo A and Diamond)	A	5	B	4	–	–	–	–	–	–	4.50	A ₁
S2	Underpass at Sta. 28+350 ^S (Peever Line / Pine Tree Way)	–	–	B	4	–	–	–	–	–	–	4.00	A ₂
C1	Underpass at Sta. 10+700 ^N (South of Hills Siding Road)	–	–	–	–	A	5	B	4	–	–	4.50	A ₃
C2	Underpass at Sta. 11+630 ^N (North of Hills Siding Road)	–	–	–	–	A	5	B	4	–	–	4.50	A ₄
C3	Underpass at Sta. 11+125 ^N (At Hills Siding Road)	–	–	–	–	B	4	–	–	–	–	4.00	A ₅
N1	Underpass at Sta. 15+575 ^N (Rivers Road East / Wookey Road)	–	–	–	–	–	–	–	–	A	5	5.00	A ₆
N2	Underpass at Sta. 15+900 ^N (Rivers Road East / Stone Road)	–	–	–	–	–	–	–	–	A	5	5.00	A ₇

NOTES: Enter weighted favourability value A_i in Table S-7.

A: Shallow Foundation, F = 5

B: Deep Foundation: Integral Abutments, F = 4; Others, F=3

Note 1: Includes underpass at Sta. 25+900 (Oakwood Road / Main Street connection).

^S refers to South Himsworth TWP and ^N refers to North Himsworth TWP

⁽¹⁾ Alternate C1 Sta. (Highway 11 Chainage) ⁽²⁾ Alternate C2 Sta. (Highway 11 Chainage) ⁽³⁾ Alternate C3 Sta. (Highway 11 Chainage)

(*) Alternate N1 Sta. (Highway 11 Chainage) (**) Alternate N2 Sta. (Highway 11 Chainage)



TABLE S-4– EMBANKMENT SETTLEMENT

INTERCHANGE ALTERNATIVES		SUBSOIL TYPE AND FAVOURABILITY FACTOR						WEIGHTED FAVOURABILITY VALUE(Ai)	
		Less than 3 m Deep		3-10 m Deep		Deeper than 10 m			
		L1	L2	L3	L4	L5	L6		
		Silty/Sandy (F1=5)	Clayey (F2 =4)	Silty/Sandy (F3=4)	Clayey (F4 =3)	Silty/Sandy (F5=2)	Clayey (F6 =1)		
S1	Interchange at Sta. 28+350 ^S (Note 1) (Combination of Parclo A and Diamond)	2425	1025	2650	880	725	200	3.94	A ₁
S2	Underpass at Sta. 28+350 ^S (Peever Line / Pine Tree Way)	1260	550	1065	580	850	200	3.64	A ₂
C1	Underpass at Sta. 10+700 ^N (South of Hills Siding Road)	875	1385	400	140	—	200	4.05	A ₃
C2	Underpass at Sta. 11+630 ^N (North of Hills Siding Road)	50	100	450	1810	—	40	3.23	A ₄
C3	Underpass at Sta. 11+125 ^N (At Hills Siding Road)	—	—	600	350	—	75	3.44	A ₅
N1	Underpass at Sta. 15+575 ^N (Rivers Road East / Wookey Road)	—	—	—	750	—	—	3.00	A ₆
N2	Underpass at Sta. 15+900 ^N (Rivers Road East / Stone Road)	—	—	—	850	—	150	2.70	A ₇

NOTE: Enter weighted favourability value A_i in Table S-7.

^S refers to South Himsworth TWP and ^N refers to North Himsworth TWP

Note 1: Includes underpass at Sta. 25+900 (Oakwood Road / Main Street connection).



TABLE S-5– EMBANKMENT STABILITY

INTERCHANGE ALTERNATIVES		EMBANKMENT REQUIRING SPECIAL OR CONVENTIONAL DESIGN				WEIGHTED FAVOURABILITY VALUE(A _i)	
		L1	L2	L3	L4		
		Conventional Embankment (F1 = 5)	Embankment Requiring Subexcavation (F2 = 3)	Embankment Requiring Toe- Stabilizing Berms (F3 = 2)	Embankment Requiring pre- loading/ Wick Drains (F4 = 1)		
S1	Interchange at Sta. 28+350 ^S (Note 1) (Combination of Parclo A and Diamond)	6250	1525	580	–	4.43	A ₁
S2	Underpass at Sta. 28+350 ^S (Peever Line / Pine Tree Way)	3175	780	350	200	4.24	A ₂
C1	Underpass at Sta. 10+700 ^N (South of Hills Siding Road)	1275	1525	–	200	3.72	A ₃
C2	Underpass at Sta. 11+630 ^N (North of Hills Siding Road)	2750	1500	100	–	4.24	A ₄
C3	Underpass at Sta. 11+125 ^N (At Hills Siding Road)	600	425	–	–	4.17	A ₅
N1	Underpass at Sta. 15+575 ^N (Rivers Road East / Wookey Road)	1750	750	–	–	4.40	A ₆
N2	Underpass at Sta. 15+900 ^N (Rivers Road East / Stone Road)	1425	550	300	150	3.93	A ₇

NOTE: Enter weighted favourability value A_i in Table S-7.

^S refers to South Himsworth TWP and ^N refers to North Himsworth TWP

Note 1: Includes underpass at Sta. 25+900 (Oakwood Road / Main Street connection).



TABLE S-6– CONSTRUCTION FEASIBILITY

INTERCHANGE ALTERNATIVES		STRUCTURES/EMBANKMENT REQUIRING SPECIAL CONSTRUCTION						WEIGHTED FAVOURABILITY VALUE(A _i)	
		No of Structure Foundations		No of Major Culvert Foundations		Swamps L (m)			
		Shallow Foundation (F=5)	Deep Foundation (F=4)	To be Constructed (F=4)	To be Extended (F=5)	Convenional (F=5)	Special (F=1)		
S1	Interchange at Sta. 28+350 ^S (Note 1) (Combination of Parco A and Diamond)	1	1	1	1	1525	580	12.90	A ₁
S2	Underpass at Sta. 28+350 ^S (Peever Line / Pine Tree Way)	–	1	4	–	780	550	11.35	A ₂
C1	Underpass at Sta. 10+700 ^N (South of Hills Siding Road)	1	1	1	–	1525	200	13.04	A ₃
C2	Underpass at Sta. 11+630 ^N (North of Hills Siding Road)	1	1	2	–	1500	100	13.25	A ₄
C3	Underpass at Sta. 11+125 ^N (At Hills Siding Road)	–	1	1	–	425	–	13.00	A ₅
N1	Underpass at Sta. 15+575 ^N (Rivers Road East / Wookey Road)	1	–	–	1	750	–	15.00	A ₆
N2	Underpass at Sta. 15+900 ^N (Rivers Road East / Stone Road)	1	–	1	1	550	450	12.70	A ₇

NOTES: Enter weighted favourability value A_i in Table S-7.

Bridge Foundations Favourability: Shallow F=5 and Deep F=4; Culvert Favourability: New F=4; Extension F=5;

Swamps Favourability: conventional treatment F=5, special treatment F=1

^S refers to South Himsworth TWP and ^N refers to North Himsworth TWP

Note 1: Includes underpass at Sta. 25+900 (Oakwood Road / Main Street connection).



TABLE S-7 – SCORING OF FOUNDATION CRITERIA (INTERCHANGES)

EVALUATION CRITERIA		SOFT GROUND/ SWAMPS		GROUNDWATER CONDITIONS		STRUCTURE FOUNDATIONS		EMBANKMENT SETTLEMENT		EMBANKMENT STABILITY		CONSTRUCTION FEASIBILITY		NORMALIZED SCORE	RANKING
TABLE No.		S1		S2		S3		S4		S5		S6			
IMPACT WEIGHT, Bi		0.10		0.15		0.25		0.20		0.20		0.10			
INTERCHANGE ALTERNATIVES		Ai	Ni	Ai	Ni	Ai	Ni	Ai	Ni	Ai	Ni	Ai	Ni		
S1	Interchange at Sta. 28+350 ^S (Note 1) (Combination of Parclo A and Diamond)	3.78	1.00	3.26	0.95	4.50	1.00	3.94	1.00	4.43	1.00	12.90	1.00	4.96	1
S2	Underpass at Sta. 28+350 ^S (Peever Line / Pine Tree Way)	3.53	0.93	3.45	1.00	4.00	0.89	3.64	0.92	4.24	0.96	11.35	0.88	4.65	2
C1	Underpass at Sta. 10+700 ^N (South of Hills Siding Road)	4.37	1.00	2.08	0.70	4.50	1.00	4.05	1.00	3.72	0.88	13.04	0.98	4.64	1
C2	Underpass at Sta. 11+630 ^N (North of Hills Siding Road)	3.08	0.70	2.98	1.00	4.50	1.00	3.23	0.80	4.24	1.00	13.25	1.00	4.65	1
C3	Underpass at Sta. 11+125 ^N (At Hills Siding Road)	2.65	0.61	2.17	0.73	4.00	0.89	3.44	0.85	4.17	0.98	13.00	0.98	4.28	3
N1	Underpass at Sta. 15+575 ^N (Rivers Road East / Wookey Road)	3.00	1.00	3.80	1.00	5.00	1.00	3.00	1.00	4.40	1.00	15.00	1.00	5.00	1
N2	Underpass at Sta. 15+900 ^N (Rivers Road East / Stone Road)	2.70	0.90	3.35	0.88	5.00	1.00	2.70	0.90	3.93	0.89	12.70	0.85	4.58	2

NOTES: Enter weighted favourability value Ai in Table S-7.

Ai - Weighted Favourability Value

Ni - Normalized Favourability Value

^S refers to South Himsworth TWP and ^N refers to North Himsworth TWP

Note 1: Includes underpass at Sta. 25+900 (Oakwood Road / Main Street connection).



TABLE SC-1– SOFT GROUND/SWAMPS

ACCESS SCENARIOS		SOFT GROUND/SWAMPS DEPTHS AND FAVOURABILITY						WEIGHTED FAVOURABILITY VALUE(Ai)	
		L1	F1	L2	F2	L3	F3		
		Depth Range (0 - 3 m)		Depth Range (3 - 10 m)		Depth Range (>10 m)			
SC1	Access Scenario 1	650	5	2155	3	625	1	3.01	A ₁
SC2a	Access Scenario 2a	2585	5	990	3	400	1	4.10	A ₂
SC2b	Access Scenario 2b	650	5	2610	3	240	1	3.23	A ₃
SC3	Access Scenario 3	650	5	2175	3	425	1	2.67	A ₄

NOTES: Embankment lengths (L1, L2, L3) measured at ramps and approach fills
 Enter weighted favourability value A_i in Table SC-7.



TABLE SC-2– GROUNDWATER CONDITIONS

ACCESS SCENARIOS		GROUNDWATER DEPTHS AND FAVOURABILITY						WEIGHTED FAVOURABILITY VALUE(Ai)	
		L1	F1	L2	F2	L3	F3		
		Depth Range (>5m)		Depth Range (1 - 5m)		Depth Range (0 -1 m)			
SC1	Access Scenario 1	6035	5	3835	3	3430	1	3.39	A ₁
SC2a	Access Scenario 2a	4880	5	2935	3	3975	1	3.15	A ₂
SC2b	Access Scenario 2b	4830	5	2360	3	3500	1	3.25	A ₃
SC3	Access Scenario 3	4680	5	2925	3	3250	1	3.26	A ₄

NOTES: Enter weighted favourability value Ai in Table SC-7.



TABLE SC-3– STRUCTURE FOUNDATIONS

ACCESS SCENARIOS		CONTEMPLATED STRUCTURE/INTERCHANGE SITE										WEIGHTED FAVOURABILITY VALUE(Ai)	
		South Section				Central Section				North Section			
		Highway 11 Underpass At Sta. 25+900		Highway 11 Underpass At Sta. 28+350		Highway 11 Underpass At Sta. 10+700 ⁽¹⁾ Sta. 11+125 ⁽²⁾ Sta. 11+630 ⁽³⁾		Boleau Creek Bridge Widening/New Bridge at Latour Cresent		Highway 11 Underpass At Sta. 15+575 (*) Sta. 15+900 (**)			
		Type	F1	Type	F2	Type	F3	Type	F4	Type	F5		
SC1	Access Scenario 1	A	5	B	4	B	4	—	—	A	5	4.50	A ₁
SC2a	Access Scenario 2a	A	5	B	4	A	5	B	4	A	5	4.60	A ₂
SC2b	Access Scenario 2b	A	5	B	4	A	5	B	4	A	5	4.60	A ₃
SC3	Access Scenario 3	A	5	B	4	B	4	—	—	A	5	4.40	A ₄

NOTES: Enter weighted favourability value A_i in Table SC-7.

A: Shallow Foundation, F = 5

B: Deep Foundation: Integral Abutments, F = 4; Others, F=3

⁽¹⁾ Scenario 2a Sta. (Highway 11 Chainage) ⁽²⁾ Scenarios 1 and 3 Sta. (Highway 11 Chainage) ⁽³⁾ Scenario 2b Sta. (Highway 11 Chainage)

(*) Scenarios 1 and 2a and 2b Sta. (Highway 11 Chainage) (**) Scenario 3 Sta. (Highway 11 Chainage)



TABLE SC-4– EMBANKMENT SETTLEMENT

ACCESS SCENARIOS		SUBSOIL TYPE AND FAVOURABILITY FACTOR						WEIGHTED FAVOURABILITY VALUE(Ai)	
		Less than 3 m Deep		3-10 m Deep		Deeper than 10 m			
		L1	L2	L3	L4	L5	L6		
		Sandy/Silty (F1=5)	Clayey (F2 =4)	Sandy/Silty (F3=4)	Clayey (F4 =3)	Sandy/Silty (F5=2)	Clayey (F6 =1)		
SC1	Access Scenario 1	2135	650	3835	2155	1125	625	3.61	A ₁
SC2a	Access Scenario 2a	1375	2935	2860	1220	—	400	3.88	A ₂
SC2b	Access Scenario 2b	550	650	2760	2840	—	240	3.57	A ₃
SC3	Access Scenario 3	150	1000	3375	2405	—	425	3.44	A ₄

NOTE: Enter weighted favourability value Ai in Table SC-7.



TABLE SC-5– EMBANKMENT STABILITY

ACCESS SCENARIOS		EMBANKMENT REQUIRING SPECIAL OR CONVENTIONAL DESIGN				WEIGHTED FAVOURABILITY VALUE(A _i)	
		L1	L2	L3	L4		
		Conventional Embankment (F1 = 5)	Embankment Requiring Subexcavation (F2 = 3)	Embankment Requiring Toe- Stabilizing Berms (F3 = 2)	Embankment Requiring pre- loading/ Wick Drains (F4 = 1)		
SC1	Access Scenario 1	9870	2730	600	100	4.42	A ₁
SC2a	Access Scenario 2a	7785	3705	100	400	4.22	A ₂
SC2b	Access Scenario 2b	7310	3030	150	200	4.32	A ₃
SC3	Access Scenario 3	7375	2780	550	150	4.28	A ₄

NOTE: Enter weighted favourability value A_i in Table SC-7.



TABLE SC-6– CONSTRUCTION FEASIBILITY

ACCESS SCENARIOS		STRUCTURES/EMBANKMENT REQUIRING SPECIAL CONSTRUCTION						WEIGHTED FAVOURABILITY VALUE(Ai)	
		No of Structure Foundations		No of Major Culvert Foundations		Swamps L (m)			
		Shallow Foundation (F=5)	Deep Foundation (F=4)	To be Constructed (F=4)	To be Extended (F=5)	Convenional (F=5)	Special (F=1)		
SC1	Access Scenario 1	2	2	10	—	2730	700	12.68	A ₁
SC2a	Access Scenario 2a	3	2	5	—	3705	500	13.12	A ₂
SC2b	Access Scenario 2b	3	2	4	—	3030	350	13.19	A ₃
SC3	Access Scenario 3	2	2	6	1	2780	150	13.44	A ₄

NOTES: Enter weighted favourability value A_i in Table SC-7.

Bridge Foundations Favourability: Shallow F=5 and Deep F=4; Culvert Favourability: New F=4; Extension F=5;

Deep Swamps Favourability: conventional treatment F=5, special construction treatment F=1



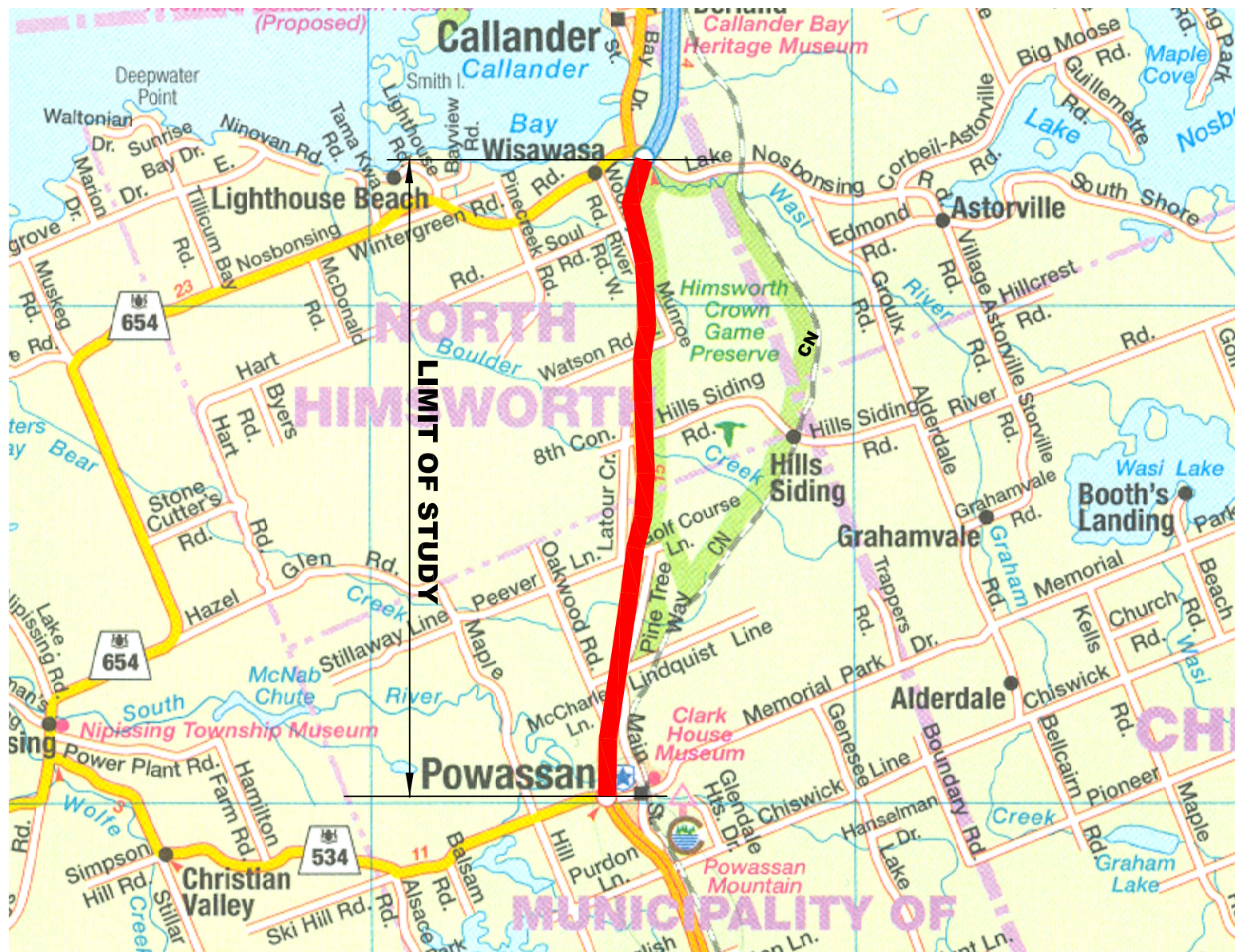
TABLE SC-7 – SCORING OF FOUNDATION CRITERIA (ACCESS SCENARIOS)

EVALUATION CRITERIA		SOFT GROUND/ SWAMPS		GROUNDWATER CONDITIONS		STRUCTURE FOUNDATIONS		EMBANKMENT SETTLEMENT		EMBANKMENT STABILITY		CONSTRUCTION FEASIBILITY		NORMALIZED SCORE	RANKING
TABLE No.		S1		S2		S3		S4		S5		S6			
IMPACT WEIGHT, Bi		0.10		0.15		0.25		0.20		0.20		0.10			
ACCESS SCENARIOS		Ai	Ni	Ai	Ni	Ai	Ni	Ai	Ni	Ai	Ni	Ai	Ni		
SC1	Access Scenario 1	3.01	0.74	3.39	1.00	4.50	0.98	3.61	0.93	4.42	1.00	12.68	0.94	4.74	2
SC2a	Access Scenario 2a	4.10	1.00	3.15	0.93	4.60	1.00	3.88	1.00	4.22	0.95	13.12	0.98	4.89	1
SC2b	Access Scenario 2b	3.23	0.79	3.25	0.96	4.60	1.00	3.57	0.92	4.32	0.98	13.19	0.98	4.75	2
SC3	Access Scenario 3	2.67	0.65	3.26	0.96	4.40	0.96	3.44	0.89	4.28	0.97	13.44	1.00	4.60	4

NOTES: Enter weighted favourability value Ai in Table SC-7.

Ai - Weighted Favourability Value

Ni - Normalized Favourability Value



REFERENCE: THIS FIGURE WAS REPRODUCED FROM MAPARTS MAP OF NORTH BAY.

GEOCREs No. 31L-139

PROJECT LOCATION MAP

HIGHWAY 11

ACCESS REVIEW AT THE NORTH ENTRANCE TO POWASSAN
From Highway 534 to Highway 654

PLAN
SCALE

1 0 1 2km

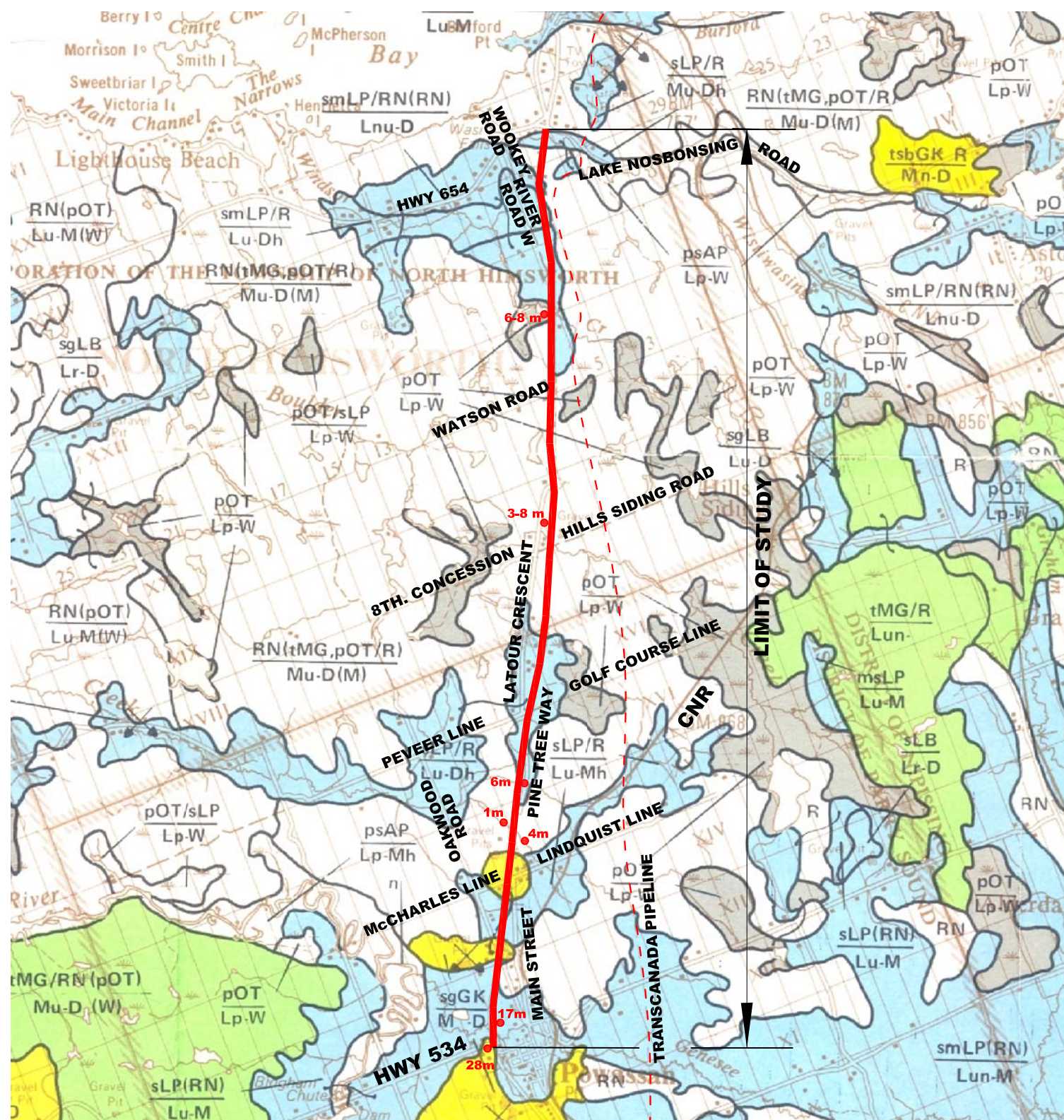


HIGHWAY 11
G.W.P. 5379 - 06 - 00



FIGURE
1

METRIC



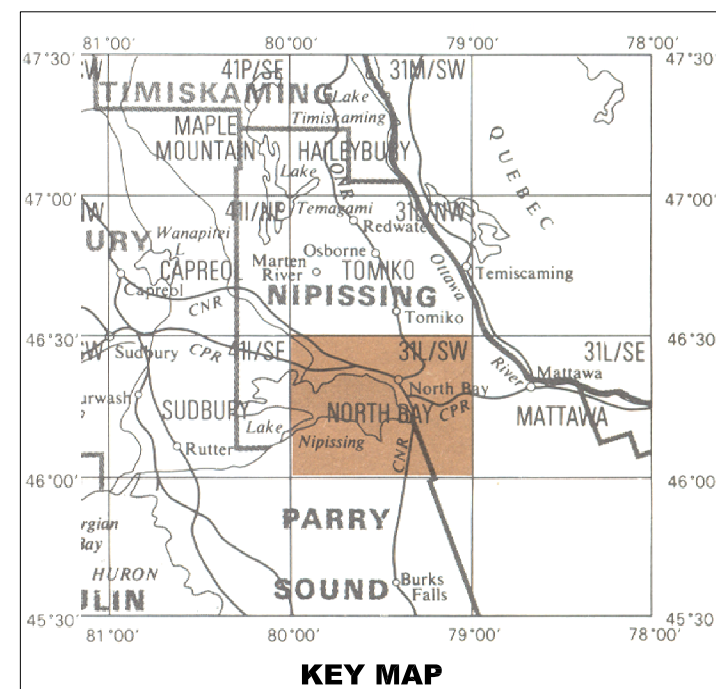
SITE GEOLOGY - SOILS AND BEDROCK DEPTHS

HIGHWAY 11

ACCESS REVIEW AT THE NORTH ENTRANCE TO POWASSAN

From Highway 534 to Highway 654

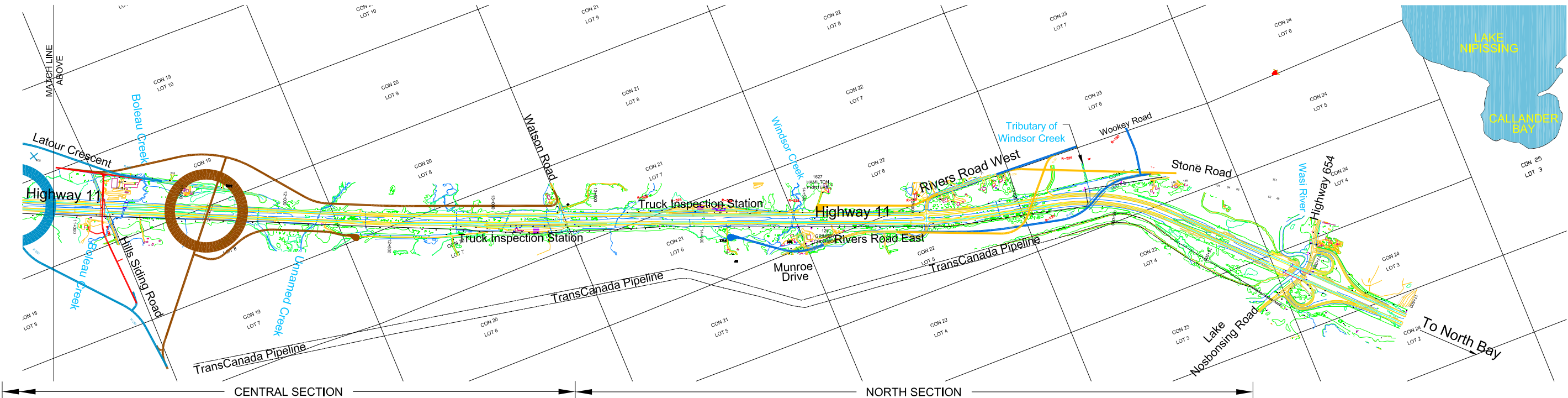
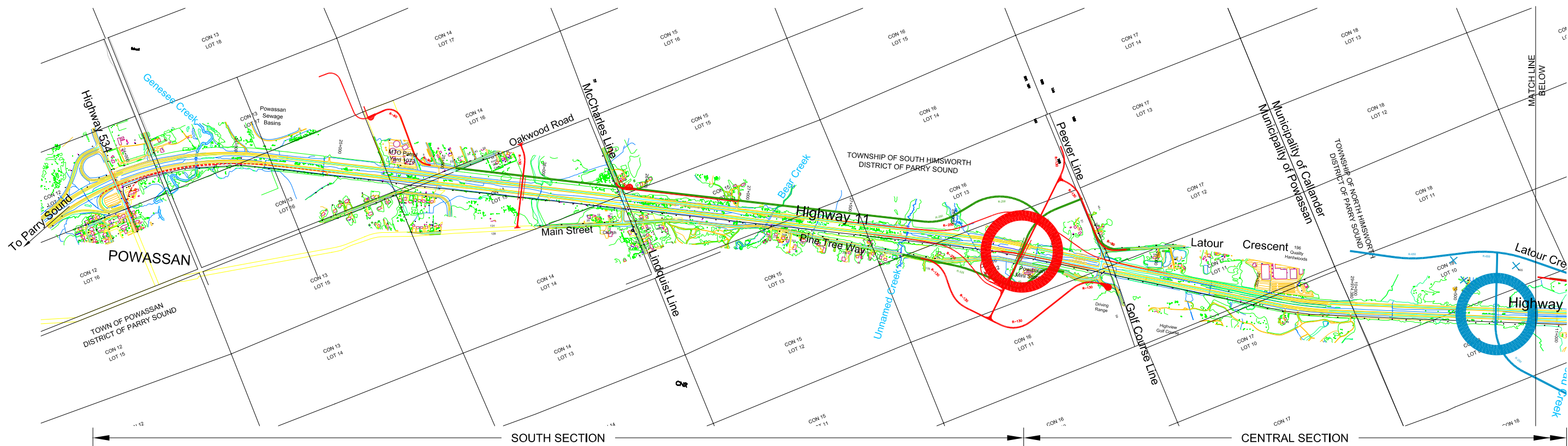
METRIC



HIGHWAY 11
G.W.P. 5379 - 06 - 00



FIGURE
2



LEGEND:

SOUTH ALTERNATIVES

- ALTERNATIVE S1 (PREFERRED)
- ALTERNATIVE S2

CENTRAL ALTERNATIVES

- ALTERNATIVE C1
- ALTERNATIVE C2
- ALTERNATIVE C3 (PREFERRED)

NORTH ALTERNATIVES

- ALTERNATIVE N1 (PREFERRED)
- ALTERNATIVE N2

REFERENCE: THIS DRAWING WAS REPRODUCED FROM THE DRAWING - 689_Design_Alternatives (1).dwg, PREPARED BY STANTEC CONSULTING LTD., AND DOWNLOADED FROM THEIR FTP SITE ON JUNE 22, 2009.

GEOCRES No. : 31L-139

<p>KEY MAP</p> <p>HIGHWAY 11</p> <p>ACCESS REVIEW AT THE NORTH ENTRANCE TO POWASSAN</p> <p>From Highway 534 to Highway 654</p>	<p>PLAN SCALE</p> <p>500m 0 250 500m</p>		<p>HIGHWAY 11</p> <p>GWP No. 5379-06-00</p>	<p>DRAWING</p> <p>A</p>
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METRIC

NOTES:

- BEDROCK OUTCROPS SHOWN ON PLAN ARE BASED ON EXISTING CONSTRUCTION DATA, SITE RECONNAISSANCE AND AERIAL PHOTOGRAPHS. THE SYMBOLS ON THE PLANS INDICATE THE LOCAL PRESENCE OF THE BEDROCK UNIT AND DO NOT REPRESENT THE FULL EXTENT OF EACH ROCK OUTCROP.
- THE EXTENT OF SWAMPS, WATER BODIES AND FILL AREAS IS AS INTERPRETED FROM SITE RECONNAISSANCE AND AERIAL PHOTOGRAPHS. THE AREAS EXTENT SHOWN ON THE PLANS REPRESENT ESTIMATES ONLY AND ACTUAL AREAS MAY VARY FROM THOSE SHOWN.
- ESTIMATED DEPTH TO COMPETENT GROUND AND OR BEDROCK IN SWAMPS IS BASED ON GEOLOGICAL EVIDENCE, DESKTOP LITERATURE SEARCH DATA AND LIMITED SITE RECONNAISSANCE INFORMATION AND MAY VARY SUBSTANTIALLY WITHIN THE LIMITS OF THE SWAMP.
- THE GEOLOGIC UNIT SYMBOLS SHOWN ON THE PLANS REPRODUCE THOSE SHOWN ON GEOLOGIC MAPPING OF THE AREA AND ARE ONLY A GENERAL REPRESENTATION OF BEDROCK AND SOIL UNITS.
- THE PLANS ARE AN ENCLOSURE TO THE ALTERNATIVE STRUCTURE LOCATION SELECTION STUDY PREPARED BY PETO MACCALLUM LTD. THE DATA ON THESE PLANS MUST BE READ IN CONJUNCTION WITH THE REPORT.
- THE DETAIL SHOWN ON THE PLAN IS CONSIDERED APPROPRIATE FOR ALTERNATIVE STRUCTURE LOCATION SELECTION PURPOSES. WHEN THE PREFERRED STRUCTURE LOCATIONS HAVE BEEN SELECTED, A SUBSURFACE INVESTIGATION SHOULD BE UNDERTAKEN TO DELINEATE THE STRATIGRAPHIC CONDITIONS ON A SITE SPECIFIC BASIS FOR PRELIMINARY AND DETAILED DESIGN PURPOSES.

LEGEND:

SOUTH ALTERNATIVES

ALTERNATIVE S1 (PREFERRED)

ALTERNATIVE S2

CENTRAL ALTERNATIVES

ALTERNATIVE C1

ALTERNATIVE C2

ALTERNATIVE C3 (PREFERRED)

NORTH ALTERNATIVES

ALTERNATIVE N1 (PREFERRED)

ALTERNATIVE N2

BEDROCK OUTCROP (R O/C)

SOFT GROUND / SWAMP

5m

ANTICIPATED DEPTH (metres) TO
COMPETENT MATERIAL/BEDROCK

WATER BODY

GF (K)

GLACIOFLUVIAL (KAME)

GL (P)

GLACIOLACUSTRINE (PLAIN)

BR (V)

BEDROCK (VENEER OVER BEDROCK)

BR (N)

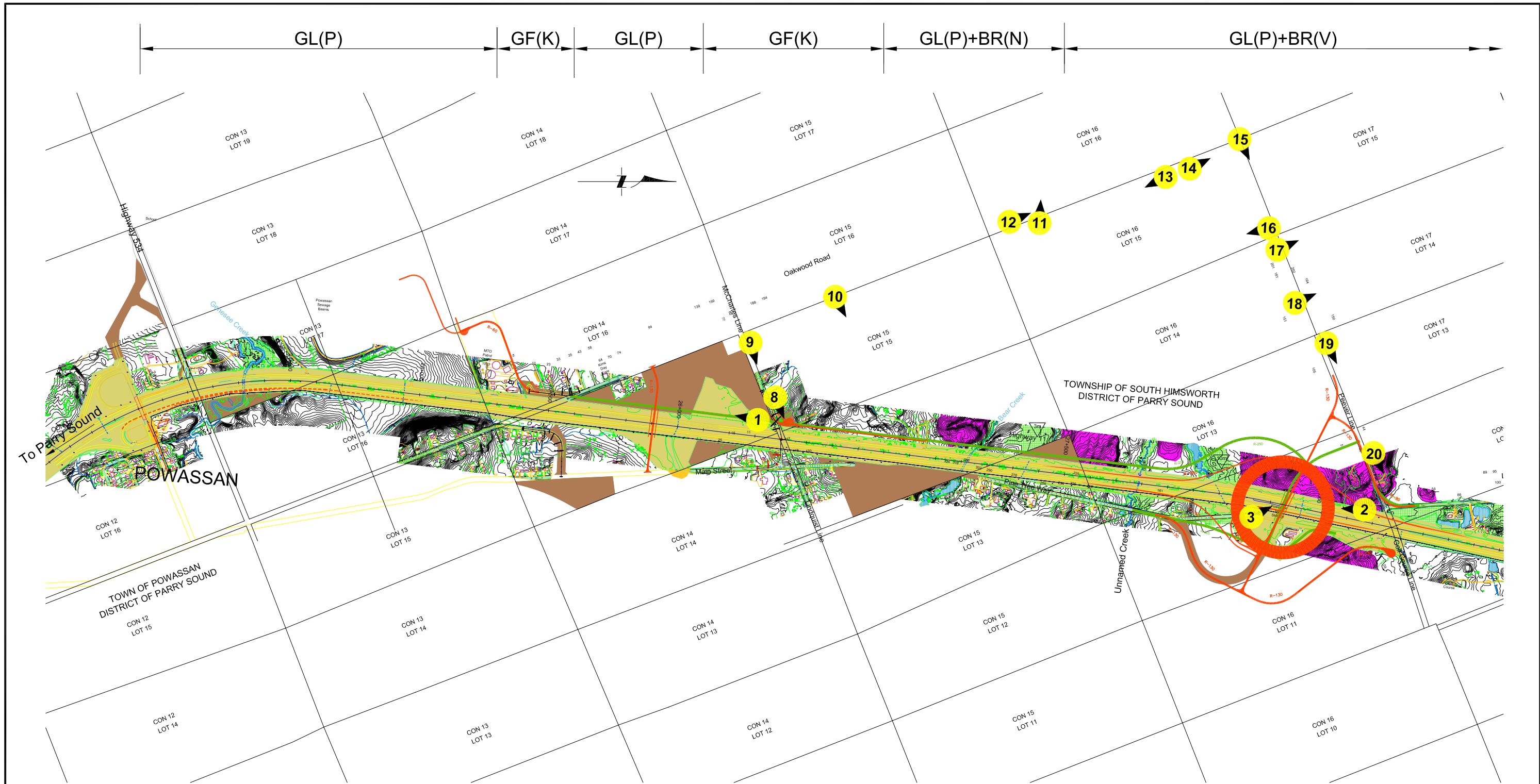
BEDROCK (KNOBS)

M (G)



GROUND MORAINE

20

PHOTOGRAPH NUMBER
(ARROW SHOWS DIRECTION OF VIEW)

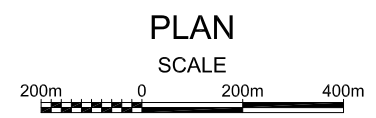


REFERENCE: THIS DRAWING WAS REPRODUCED FROM THE DRAWING - 689_Design_Alternatives (1).dwg,
 PREPARED BY STANTEC CONSULTING LTD., AND DOWNLOADED FROM THEIR FTP SITE
 ON JUNE 22, 2009.

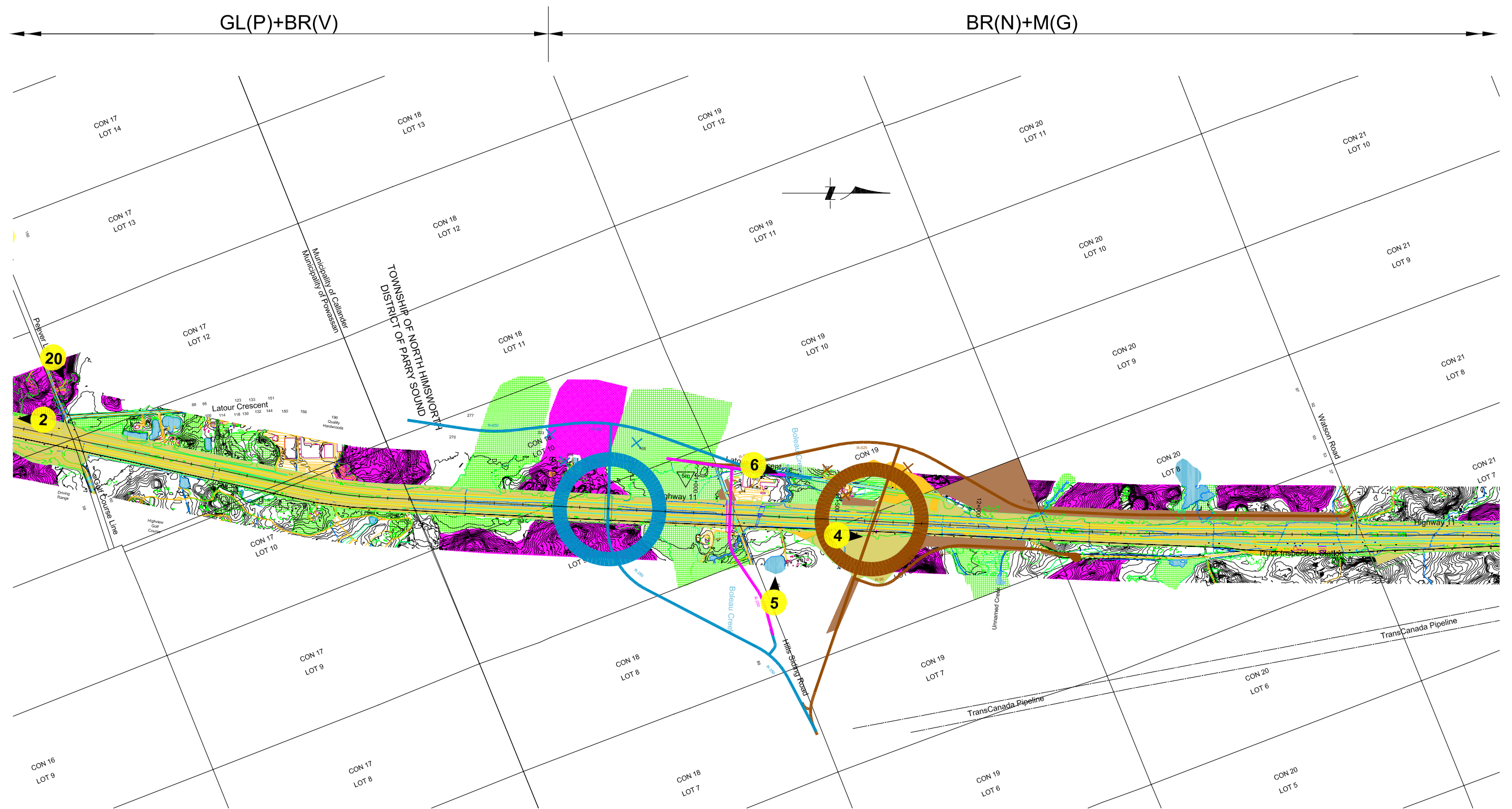
GEOCRES No. : 31L-139
LEGEND:
 ALTERNATIVE S1 (PREFERRED)
 ALTERNATIVE S2

SOUTH SECTION (TWO ALTERNATIVES)
HIGHWAY 11
 ACCESS REVIEW AT THE NORTH ENTRANCE TO POWASSAN
 From Highway 534 to Highway 654

METRIC



 	 HIGHWAY 11 G.W.P. 5379 - 06 - 00	 DRAWING B1
--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------



GEOCRES No. : 31L-139

LEGEND:

- ALTERNATIVE C1
- ALTERNATIVE C2
- ALTERNATIVE C3 (PREFERRED)

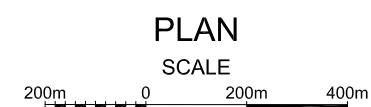
REFERENCE: THIS DRAWING WAS REPRODUCED FROM THE DRAWING - 689_Design_Alternatives (1).dwg,
PREPARED BY STANTEC CONSULTING LTD., AND DOWNLOADED FROM THEIR FTP SITE
ON JUNE 22, 2009.

CENTRAL SECTION (THREE ALTERNATIVES)

HIGHWAY 11

ACCESS REVIEW AT THE NORTH ENTRANCE TO POWASSAN
From Highway 534 to Highway 654

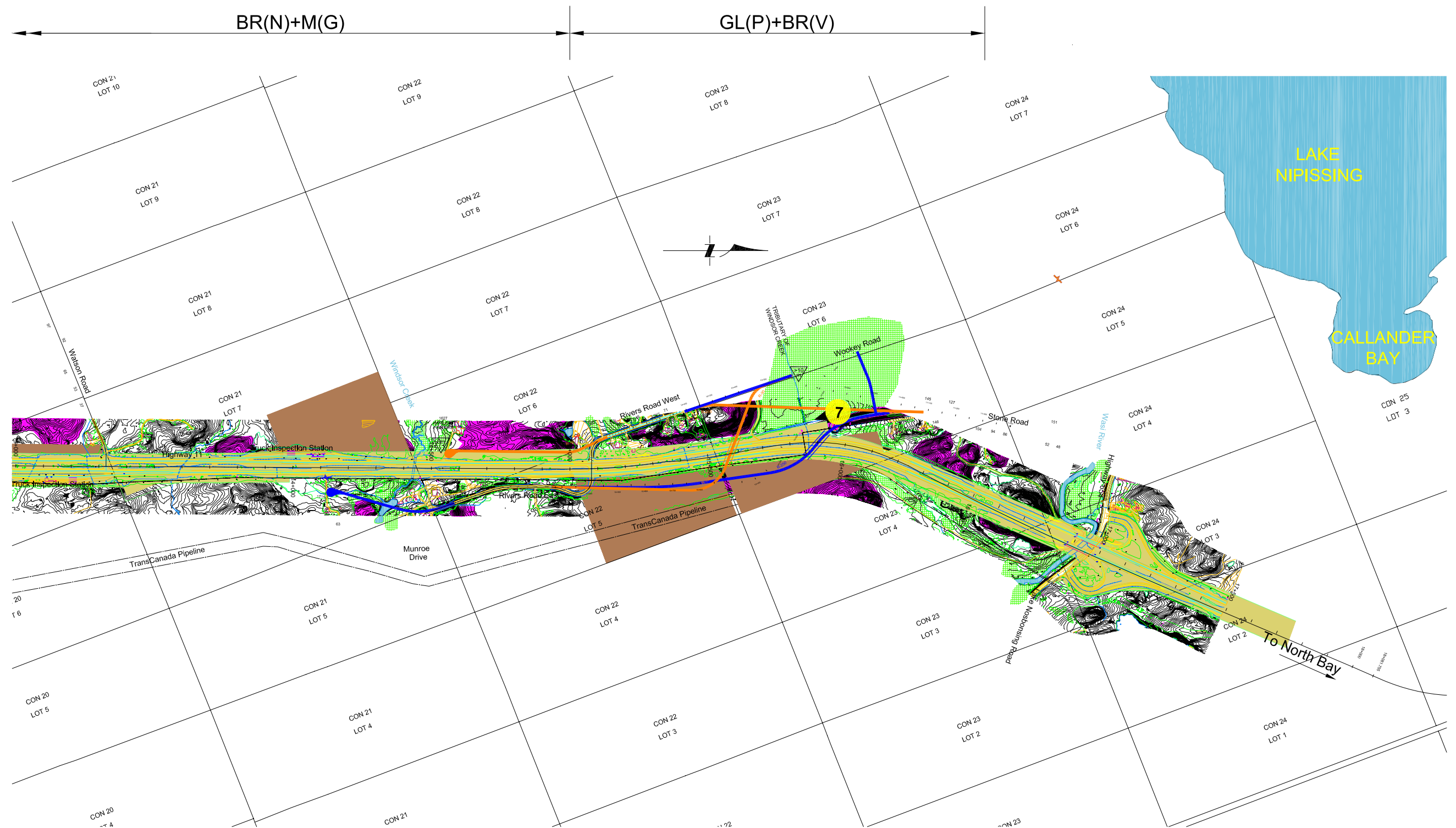
METRIC



HIGHWAY 11
G.W.P. 5379 - 06 - 00



DRAWING
B2



GEOCREs No. : 31L-139

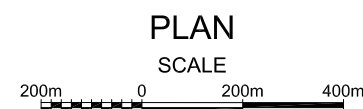
LEGEND:

- ALTERNATIVE N1 (PREFERRED)
- ALTERNATIVE N2

REFERENCE: THIS DRAWING WAS REPRODUCED FROM THE DRAWING - 689_Design_Alternatives (1).dwg, PREPARED BY STANTEC CONSULTING LTD., AND DOWNLOADED FROM THEIR FTP SITE ON JUNE 22, 2009.

CENTRAL SECTION (THREE ALTERNATIVES) HIGHWAY 11 ACCESS REVIEW AT THE NORTH ENTRANCE TO POWASSAN From Highway 534 to Highway 654

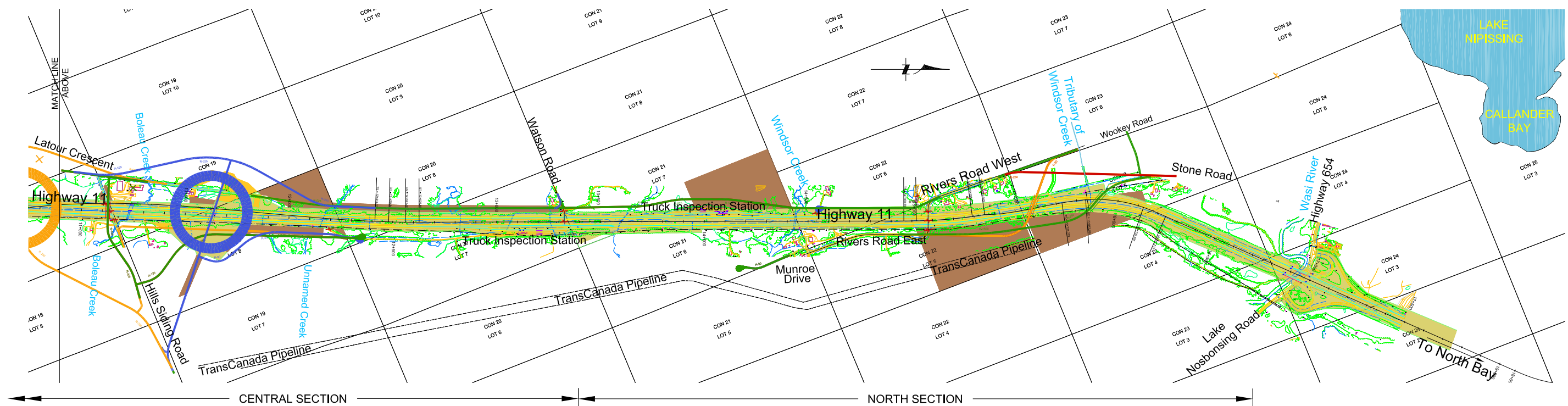
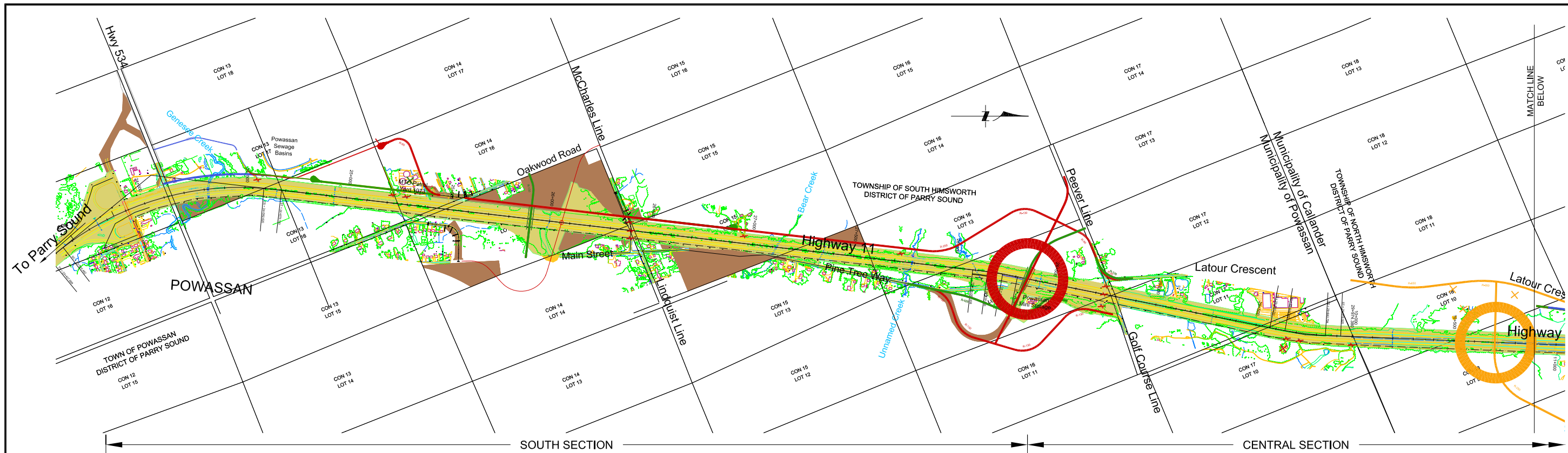
METRIC



HIGHWAY 11
G.W.P. 5379 - 06 - 00



DRAWING
B3



REFERENCE: THIS DRAWING WAS REPRODUCED FROM THE DRAWING - 689_Design_Alternatives (1).dwg,
PREPARED BY STANTEC CONSULTING LTD., AND DOWNLOADED FROM THEIR FTP SITE
ON APRIL 14, 2009.

LEGEND:

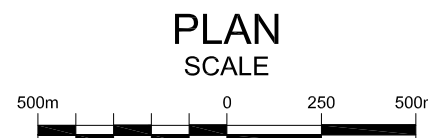
- | | |
|----------------------------------------------------------|--------------------------------------------------------|
| — ACCESS SCENARIO 1 | — ACCESS SCENARIO 2b |
| — ACCESS SCENARIO 2a | — ACCESS SCENARIO 3 |

GEOCRES No. : 31L-139

KEY MAP HIGHWAY 11

ACCESS REVIEW AT THE NORTH ENTRANCE TO POWASSAN
From Highway 534 to Highway 654

METRIC



HIGHWAY 11
G.W.P. 5379 - 06 - 00



DRAWING
SC-A

NOTES:

- 1. BEDROCK OUTCROPS SHOWN ON PLAN ARE BASED ON EXISTING CONSTRUCTION DATA, SITE RECONNAISSANCE AND AERIAL PHOTOGRAPHS. THE SYMBOLS ON THE PLANS INDICATE THE LOCAL PRESENCE OF THE BEDROCK UNIT AND DO NOT REPRESENT THE FULL EXTENT OF EACH ROCK OUTCROP.
- 2. THE EXTENT OF SWAMPS, WATER BODIES AND FILL AREAS IS AS INTERPRETED FROM SITE RECONNAISSANCE AND AERIAL PHOTOGRAPHS. THE AREAS EXTENT SHOWN ON THE PLANS REPRESENT ESTIMATES ONLY AND ACTUAL AREAS MAY VARY FROM THOSE SHOWN.
- 3. ESTIMATED DEPTH TO COMPETENT GROUND AND OR BEDROCK IN SWAMPS IS BASED ON GEOLOGICAL EVIDENCE, DESKTOP LITERATURE SEARCH DATA AND LIMITED SITE RECONNAISSANCE INFORMATION AND MAY VARY SUBSTANTIALLY WITHIN THE LIMITS OF THE SWAMP.
- 4. THE GEOLOGIC UNIT SYMBOLS SHOWN ON THE PLANS REPRODUCE THOSE SHOWN ON GEOLOGIC MAPPING OF THE AREA AND ARE ONLY A GENERAL REPRESENTATION OF BEDROCK AND SOIL UNITS.
- 5. THE PLANS ARE AN ENCLOSURE TO THE ALTERNATIVE STRUCTURE LOCATION SELECTION STUDY PREPARED BY PETO MACCALLUM LTD. THE DATA ON THESE PLANS MUST BE READ IN CONJUNCTION WITH THE REPORT.
- 6. THE DETAIL SHOWN ON THE PLAN IS CONSIDERED APPROPRIATE FOR ALTERNATIVE STRUCTURE LOCATION SELECTION PURPOSES. WHEN THE PREFERRED STRUCTURE LOCATIONS HAVE BEEN SELECTED, A SUBSURFACE INVESTIGATION SHOULD BE UNDERTAKEN TO DELINEATE THE STRATIGRAPHIC CONDITIONS ON A SITE SPECIFIC BASIS FOR PRELIMINARY AND DETAILED DESIGN PURPOSES.

LEGEND:

ACCESS SCENARIOS

- ACCESS SCENARIO 1
- ACCESS SCENARIO 2a
- ACCESS SCENARIO 2b
- ACCESS SCENARIO 3

- BEDROCK OUTCROP (R O/C)
- SOFT GROUND / SWAMP
- ANTICIPATED DEPTH (metres) TO COMPETENT MATERIAL/BEDROCK
- WATER BODY
- GF (K) GLACIOFLUVIAL (KAME)
- GL (P) GLACIOLACUSTRINE (PLAIN)
- BR (V) BEDROCK (VENEER OVER BEDROCK)
- BR (N) BEDROCK (KNOBS)
- M (G) GROUND MORaine
- PHOTOGRAPH NUMBER (ARROW SHOWS DIRECTION OF VIEW)

GEOCRES No. : 31L-139

LEGEND
HIGHWAY 11

ACCESS REVIEW AT THE NORTH ENTRANCE TO POWASSAN
From Highway 534 to Highway 654

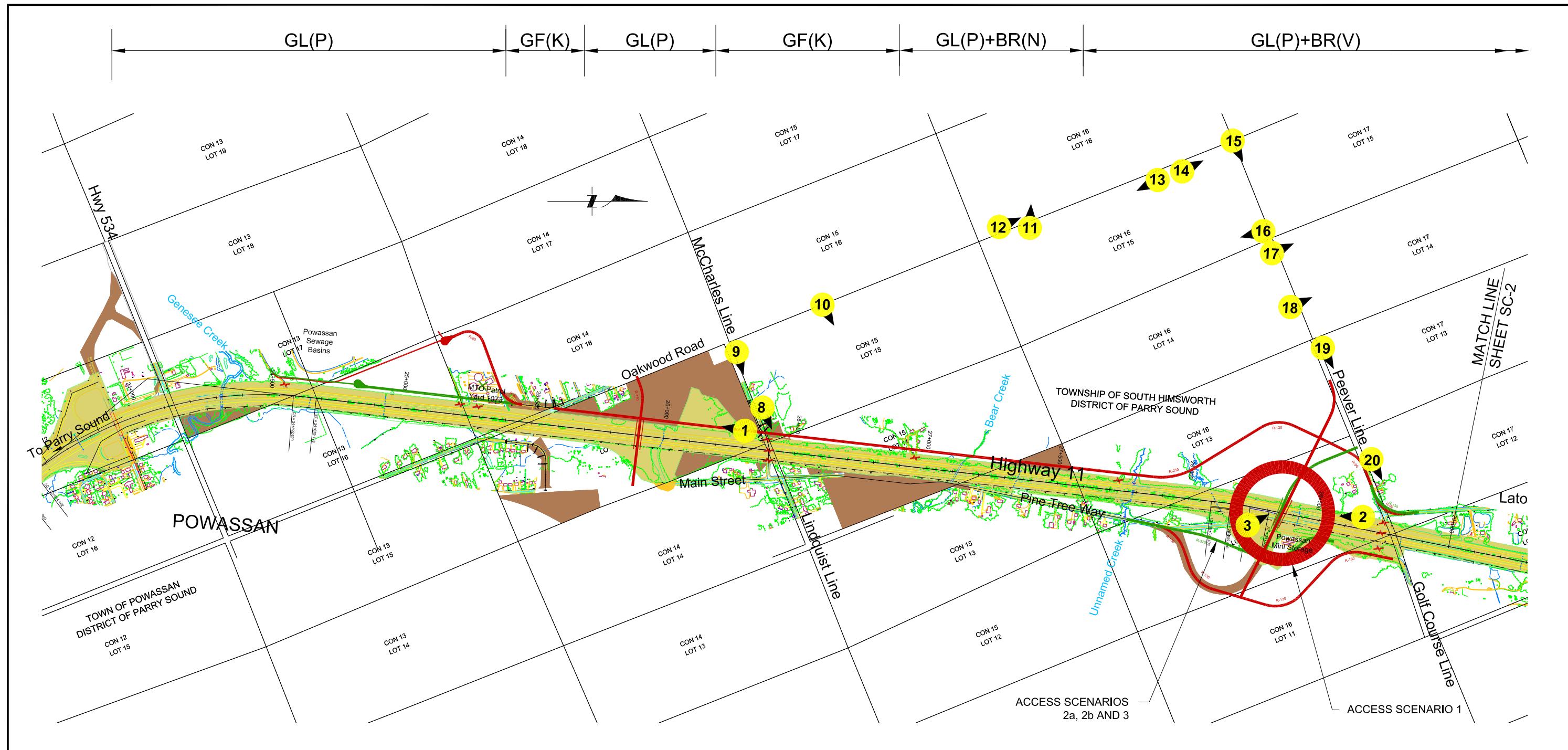
METRIC



HIGHWAY 11

G.W.P. 5379 - 06 - 00

DRAWING
SC-B



GEOCRES No. : 31L-139

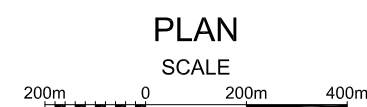
LEGEND:

- ACCESS SCENARIO 1
- ACCESS SCENARIO 2a
- ACCESS SCENARIO 2b
- ACCESS SCENARIO 3

REFERENCE: THIS DRAWING WAS REPRODUCED FROM THE DRAWING - 689_Design_Alternatives (1).dwg,
PREPARED BY STANTEC CONSULTING LTD., AND DOWNLOADED FROM THEIR FTP SITE
ON APRIL 14, 2009.

STA. 24+000 TO 29+000 (TOWNSHIP OF SOUTH HIMSWORTH)
HIGHWAY 11
ACCESS REVIEW AT THE NORTH ENTRANCE TO POWASSAN
From Highway 534 to Highway 654

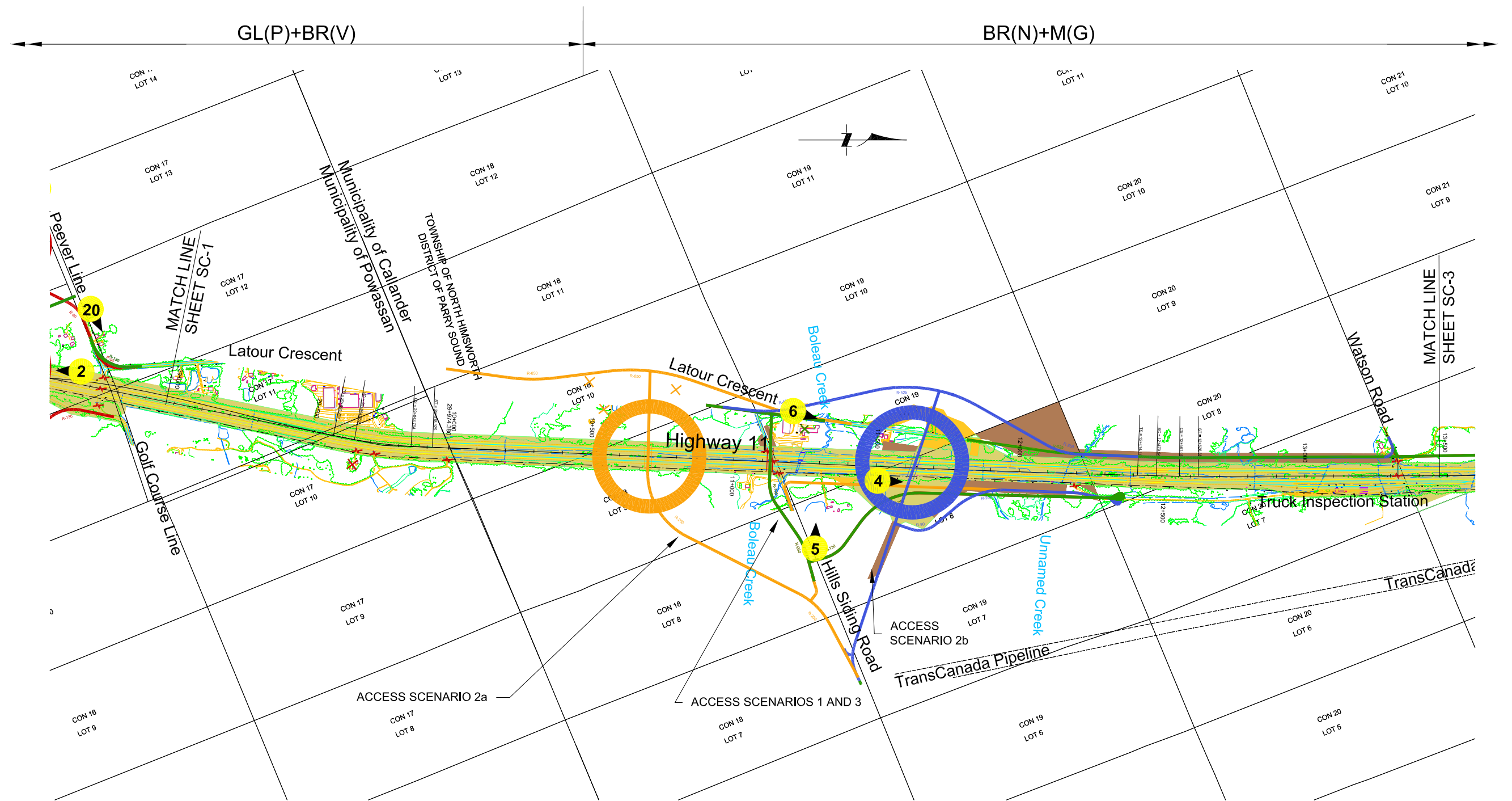
METRIC



HIGHWAY 11
G.W.P. 5379 - 06 - 00



DRAWING
SC-1



GEOCRES No. : 31L-139

LEGEND:

- ACCESS SCENARIO 1
- ACCESS SCENARIO 2a
- ACCESS SCENARIO 2b
- ACCESS SCENARIO 3

REFERENCE: THIS DRAWING WAS REPRODUCED FROM THE DRAWING - 689_Design_Alternatives (1).dwg,
PREPARED BY STANTEC CONSULTING LTD., AND DOWNLOADED FROM THEIR FTP SITE
ON APRIL 14, 2009.

STA. 29+000 to 29+974.380(TOWNSHIP OF SOUTH HIMSWORTH) and
STA. 10+000 to STA. 13+500 (TOWNSHIP OF NORTH HIMSWORTH)
HIGHWAY 11
ACCESS REVIEW AT THE NORTH ENTRANCE TO POWASSAN
From Highway 534 to Highway 654

METRIC

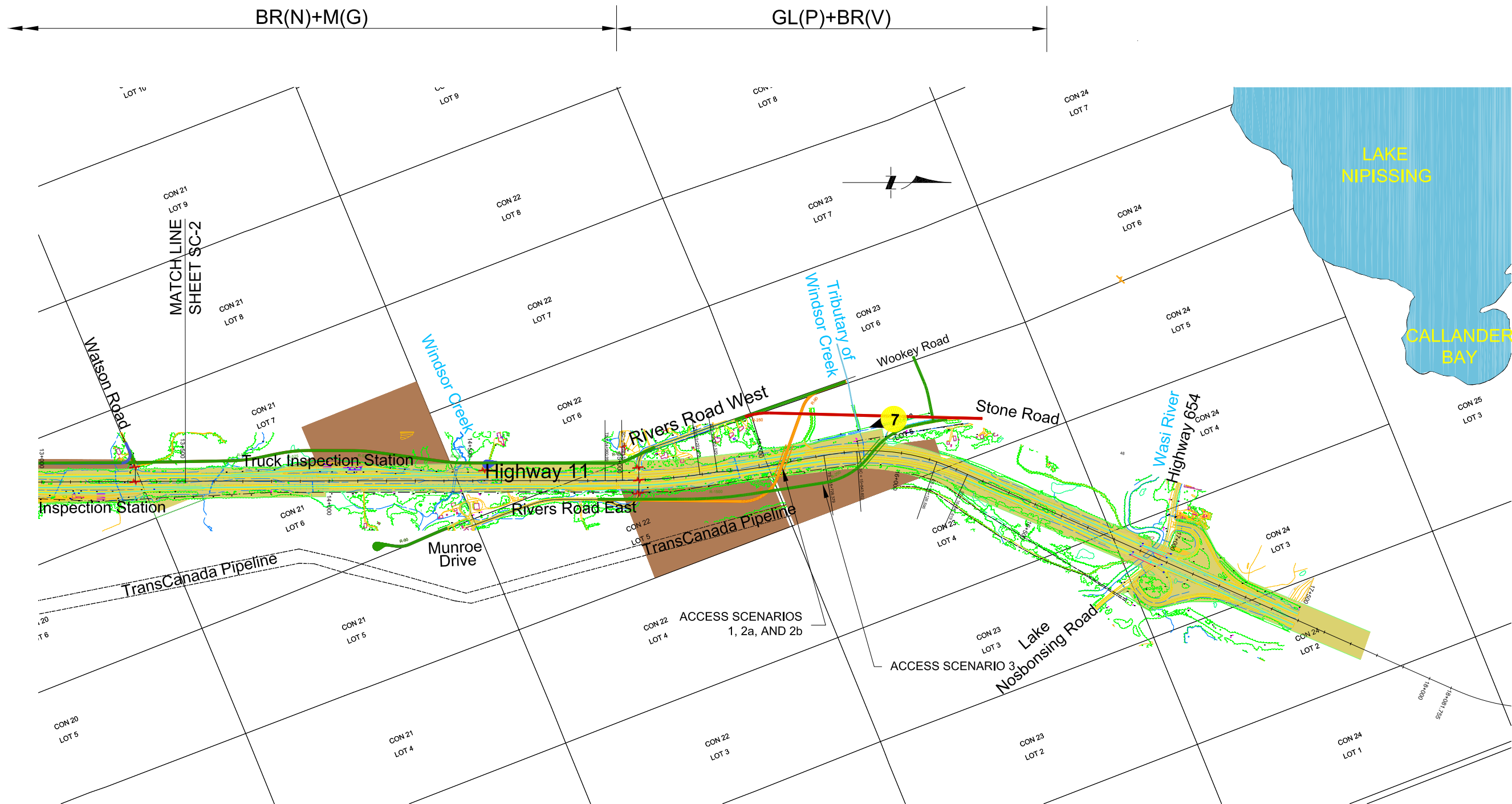
PLAN
SCALE
200m 0 200m 400m



HIGHWAY 11
G.W.P. 5379 - 06 - 00



DRAWING
SC-2



GEOCRES No. : 31L-139

LEGEND:

- ACCESS SCENARIO 1
- ACCESS SCENARIO 2a
- ACCESS SCENARIO 2b
- ACCESS SCENARIO 3

REFERENCE: THIS DRAWING WAS REPRODUCED FROM THE DRAWING - 689_Design_Alternatives (1).dwg,
PREPARED BY STANTEC CONSULTING LTD., AND DOWNLOADED FROM THEIR FTP SITE
ON APRIL 14, 2009.

STA. 13+500 TO STA. 17+500 (TOWNSHIP OF NORTH HIMSWORTH)
HIGHWAY 11
ACCESS REVIEW AT THE NORTH ENTRANCE TO POWASSAN
From Highway 534 to Highway 654

METRIC

PLAN
SCALE
200m 0 200m 400m



HIGHWAY 11
G.W.P. 5379 - 06 - 00



DRAWING
SC-3



APPENDIX A

List of Reference Documents



APPENDIX A

LIST OF REFERENCE DOCUMENTS

HIGHWAY 11 ACCESS REVIEW FROM HIGHWAY 534
TO HIGHWAY 654
TOWNSHIPS OF SOUTH HIMSWORTH AND NORTH HIMSWORTH
MUNICIPALITIES OF POWASSAN AND CALLANDER, ONTARIO
GWP NO. 5379-06-00

A. Geological Maps

- Quaternary geology of the North Bay – Mattawan Region, MAP–3–1971, from Geological Survey of Canada, issued 1971, Scale: 0.5 inch to 1 mile.
- Ontario Geological Survey 1979, Northern Ontario Engineering Geology Terrain Study, Data Base Map , North Bay, Map 5041, Scale 1 : 100 000

B. Resource Documents

- Parry Sound District, Parry Sound Soil Survey Report No.31, from the Department of Agriculture, published 1962, Scale 1:126,720 or 1 inch to 2 mile.
- Aggregate Resources Inventory Paper 70 and Map 1C and 3C, District of Parry Sound from the Ontario Geological Survey, Ministry of Natural Resources, issued 1984.

C. MTO Reports

- Preliminary Foundation Investigation report for Proposed Interchange At Highway 11 And 534, District 13 (North Bay) Township of North Himsworth, Regional Municipality of North Bay, WP 84-05-0022, Site between 85-03-18 and 85-03-26, Geocres No. 31L 52 (August 1985 noted on Margin).
- Foundation Investigation Report for Culverts along Hwy.11 from 2.0 km North of Hwy. 534, Northerly 9.9 km, District 13, North Bay, W.P 73-74-00 dated August 1991.
- Preliminary Design Report for Highway 11, Powassan to Callander, District 13, North Bay, WP 269-86-00 dated November1990.
- Hydrogeological Conditions and Potential Municipal Well Interference of Highway 11/Highway 534 Overpass Construction, Town of Powassan, South Himsworth Township, W.P. No. 51-75-00, Geocres No. 31L-64 dated April 1993.



D. Well Records (See Appendix B)

- Water Well Records from Ontario Northern Area provided by the Ministry of Environment from 1946 - 1969.

E. Air Photo

- Photo mosaic of oblique colored aerial photographs taken along the study corridor provided by Stantec Consulting Ltd.
- Aerial Photographs 89-4604, 29-56 and 29-58
- Aerial Photographs 89-4605, 16-247 and 16-248
- Aerial Photographs 89-4606, 19-185 and 19-186
- Aerial Photographs 89-4607, 2-173 and 2-174



APPENDIX B

Water Well Records

PARRY SOUND DISTRICT 48

MUNICIPALITY CONCESSION ETC	LGT	WELL NO	UTM EASTING NORTHING	ELEV FEET	DATE	DRILLER	CSG	KIND OF WATER	WATER FOUND FEET	STAT LVL FEET	PUMP LVL FEET	TEST RATE GPM	TEST TIME HR/MN	WATER USE	CNMR/L/LOG	DEPTHS IN FEET TO WHICH FORMATIONS EXTEND
SCOTTS BLVD NORTH TOWNSHIP																
CCN	1	25	772	626592	1041	06/54	3622	6	FR	15	6	6	17	00	ROTS R	CLAY MSND 0004 GREY GRANT 0025
CCN	2	25	773	626605	1025	12/55	2305	2	FR	90	2	6	5	4/00	TEXACO SERVICE STATION	YLLW MSND 0005 GREY QSNQ 0050 GRVL 0051
CCN	2	25	777	626737	1027	12/60	2305	2	ERY						BUSCH J	GREY MSND 0105 GRANT 0161
CCN	2	25	776	627009	1025	06/65	2305	2	FR	106	4	4	5	12/00	BP SERVICE STATION	QSNQ 0102 GRVL 0106
CCN	2	25	775	627050	1027	05/65	2512	5	FR	91	6	60	11	1/00	GERARD E	MSND 0013 CLAY 0040 MSND STNS 0050 GRANT 0054
CCN	2	25	774	627100	1027	07/60	2305	2	FR	86	8	8	7	3/00	SCHNELEFESKE M	RED MSND 0005 GREY QSNQ 0061 GRANT 0064
CCN	2	26	781	626265	1027	08/61	2305	2	FR	153	4	4	2	2/30	STEELE G	YLLW MSND 0004 GREY MSND 0116 GRVL 0117
CCN	2	26	778	626437	1030	07/60	2305	2	FR	75	5	5	2	2/00	GREY ROCK 0161	MAURIDGE N L
CCN	2	26	780	626390	1030	01/61	2305	2	ERY						GRANT BLDR MSND	0023 GRANT 0065
CCN	2	26	775	626653	1030	01/61	2305	2	ERY						PUBLIC SCHOOL	GREY QSNQ 0113 GRANT 0205
CCN	2	26	782	626742	1030	01/62	2305	2	FR	107	4	4	3	5/00	PUBLIC SCHOOL	GREY MSND 0114 GRANT 0361
CCN	2	27	783	626250	1027	10/60	1443	2	FR	109	6	40	4	2/00	PUBLIC SCHOOL	GREY QSNQ 0095 GRANT BLDR GRVL 0106 RED
CCN	3	24	784	627247	1033	04/64	2305	2	FR	110	75				GRANT 0113	SMALLWELL D
CCN	3	25	786	626417	1030	05/67	1443	2	FR	96	34	31	3	2/00	MSND CLAY 0070 RED GRANT 0081	WARNER N
CCN	3	25	565	626770	1023	11/68	2305	2	FR	128	3	40	4	2/00	PRDG 0038 MSND GRVL 0056 RED GRANT 0141	QUAKOWSKI G
CCN	3	25	785	626950	1040	04/62	2305	2	FR	90	FLW		8	3/00	QSNQ 0085 RED GRANT 0090	LANG L
CCN	3	26	787	626594	1030	07/60	2305	2	FR	67					GREY MSND 0057 GRVL 0060 RED GRANT 0071	TOFFLENTRE C
CCN	3	26	788	626665	1030	11/62	2305	2	FR	ERY			3	1/00	GREY FSND 0117 GRANT 0200	GRABOWSKI S
CCN	4	3	785	624227	1070	05/65	2522	2	FR	97	1	8	2	3/30	GREY QSNQ 0054 GRANT 0108	SCHNELEFE G
CCN	4	25	752	626687	1110	06/65	2522	2	FR	123	6	12	1	24/00	GREY MSND 0103 BLDR GRVL 0107 GRANT 0130	KAUDATZ R
CCN	4	27	753	621750	1030	05/56	2905	6	FR	106	57				GRVL BLDR 0075 MSND BLDR 0100 GREY GRANT 0112	BUSCH E
CCN	7	10	754	631050	1100	05/63	2305	2	FR	104	22		1	24/00	MSND BLDR 0018 GRANT 0085 RED GRANT 0110	GRANT 0150
CCN	7	31	755	630665	1053	08/54	3622	6	FR	32	15	15	4	1/00	GRABOWSKI G	MSND 0015 GREY GRANT 0045
CCN	8	2	1067	633270	930	05/69	1443	2		154	8	46	2	3/00	HEADICK C	GREY MSND 0006 RED GRANT 0177
CCN	8	23	756	625489	1250	07/51	1546	2	FR	80	67		6	ST	YOUNG B V	WHIT CLAY 0010 MSND 0070 GRVL 0077 BLCK
CCN	9	15	757	626814	550	05/55	2512	5	FR	323	63				GRANT 0097	FEWER F
				5101657						155	15	15	3	4/00	MSND BLDR 0107 GREY GRANT 0323	STOREY D
										100	13	131	48/00	DO	GREY CLAY 0025 GRANT 0177	KNLANDSON G
															CLAY 0024 GREY GRANT 0131	

PARRY SECOND DISTRICT 48

MUNICIPALITY CONCESSION ETC	LCT	WELL AC	UTM EASTING NORTHING	ELEV FEET	DATE	DRILLER	CSG KIND DIA OF INS	WATER FOUND FEET	STAT LVL FEET	PUMP LVL FEET	TEST RATE GPM	TIME HR/MIN	WATER USE	CHNER/LCG DEPTHS IN FEET TO WHICH FORMATIONS EXTEND	
SOUTH HINSMORIT TOWNSHIP (CONTINUED.....)															
CCN	9	15	755	626849 5101562	650	05/59	2505	6	FR	170	75	170	2	2/00	CO MSND BLDR 0026 GREY GRNT 0170 RED GRNT 0174
CCN	9	15	758	627600 5101650	550	05/55	2512	5	DRY						RONLANDSON G CLAY 0024 GREY GRNT 0061
CCN	9	16	801	627300 5101490	600	12/61	2512	5	FR	95	35	90	4	2/00	PS SCHUGL CLAY BLDR 0030 BLDR HPAN 0084 RED GRNT 0101
CCN	9	16	802	627250 5101630	901	11/61	2512	5	DRY						SCHUGL FSND 0006 BLUE CLAY 0034 FSND 0040 HPAN BLDR 0046 GREY GRNT 0048
CCN	9	16	800	627494 5101599	525	05/61	2512	5	DRY						SCHUGL BOARD MSND 0004 CLAY 0020 BLDR 0024 GRNT 0250
CCN	9	16	791	627716 5101600	537	09/61	2512	5	DRY						SCHUGL MSND 0003 HPAN 0023 GRNT 0204
CCN	9	16	803	627750 5101250	510	04/63	2305	2	FR	122	70		3	1/00	DO BURNS C H PKDG 0063 RED GRNT 0156
CCN	9	16	804	627650 5100393	515	05/64	2305	2	FR	144	34	34	5	14/00	ST DO PHILLIPS E PKDG 0034 MSND GRVL BLDR 0060
CCN	10	3	805	631745 5104421	925	05/64	2522	2	FR	70	12		3	12/00	ST ROBERTSON G PKDG 0017 GRVL 0035 BLCK ROCK 0130
CCN	10	15	810	624460 5102451	500	01/63	2305	2	FR	176	12		2	4/00	DC BENNINGSON D PKDG 0040 GRNT BLDR MSND 0051 RED GRNT 0198
CCN	10	15	808	624506 5102368	512	10/56	3902	6	FR	105	18	100	10	1/00	CO DO MOORE E TPSL MSND BLDR 0022 RED GRNT 0120
CCN	10	15	805	624601 5102150	915	04/58	3014	2	FR	155	10	16	2	5/00	CO MOORE E L PKDG 0027 GREY GRNT 0163
CCN	10	15	807	627354 5102636	866	07/55	3622	6	FR	30	15	30	2	1/00	CO RONLANDSON S D RED FSND 0023 GREY GRNT 0080
CCN	10	15	806	627475 5102414	915	06/55	2512	5	FR	51	5	51	5	2/00	ST MOORE G CLAY 0018 GREY GRNT 0049 RED GRNT 0051
CCN	10	21	811	625748 5101010	860	02/50	2512	5	FR	94	16				PS MAPLE HILL SCHUGL CLAY 0002 GRNT 0095
CCN	11	15	815	627116 5103286	875	12/54	3635	6	FR	40	20	20	8	1/00	DO HURLBURT F RED MSND 0037 GREY GRNT 0042
CCN	11	15	812	627150 5103185	875	07/52	2512	5	FR	20	26		4	3/00	DC BLSKEY J BLUE CLAY MUCK 0020 GREY MSND 0030 BLUE
CCN	11	15	813	627176 5103100	878	07/52	2512	5	FR	35	46				DC MUCK 0035 GRVL 0036 GREY GRNT 0050
CCN	11	15	814	627196 5103085	880	05/52	2512	5	FR	20	24	24	8	1/00	DC GEDDES J BLUE CLAY MUCK 0020 GREY MSND 0044 GRVL
CCN	11	15	816	627274 5102520	885	05/54	2305	2	FR	53	15	30	7	6/00	DO BGMER E BLUE CLAY SILT 0020 GREY MSND 0049 GRVL
CCN	11	15	816	627274 5102520	885	05/54	2305	2	FR	81	36	36	2	6/00	DO 0050 GREY GRNT 0054 MUMPHREY A PKDG 0032 BLDR GRVL 0052 RED GRNT 0115

PARRY SOUND DISTRICT 48

MUNICIPALITY
CONCESSION
ETC

LTM
WELL EASTING
NORTHING

ELEV
FEET

DATE
DRILLER

CSG KIND
C/A OF
INS

WATER STAT
FOUND LVL
FEET

PUMP TEST
LVL RATE
FEET GPM

WATER
HR/MN USE

OWNER/LOG
DEPTHS IN FEET TO WHICH
FORMATIONS EXTEND

SOUTH HIMSWORDT TOWNSHIP (CONTINUED....)

CCN	11	15	118	627307	880	10/66	3614	2	FR	102	22	60	2	10/00	D0	LAKE J E
CCN	11	16	121	626842	875	05/64	2522	2	FR	55	35		5	15/00	D0	CLAY QSN0 GRVL 0049 RED GRNT 0110
CCN	11	16	119	626980	875	01/60	3014	2	FR	102	12	24	3	2/00	D0	PRDG 0030 QSN0 0055 GRVL 0070
CCN	11	16	118	626590	880	11/68	1443	2	FR	58	21	40	2	2/00	D0	FARLEY A
CCN	11	16	120	627600	876	11/62	2305	2	FR	141	24		1	1/30	D0	GRVL MSND 0075 RED GRNT 0110
CCN	11	16	122	627100	857	04/66	2522	2	FR	160	34		1	36/00	D0	JURON H T
CCN	11	16	123	627176	500	05/66	2305	2	FR	130	62		1	3/30	D0	POLICHUK L
CCN	11	16	117	627240	850	04/65	2522	2	FR	280	40	40	1	24/00	D0	GREY MSND BLDR 0028 RED GRNT 0180
CCN	12	4	124	630530	535	05/54	3622	5	FR	6	6	6	8		D0	BOYCHUK F
CCN	12	13	128	627760	925	11/58	3014	2	FR	58	24	26	2	5/00	D0	BLDR CLAY 0005 GRVL BLDR 0012 GRNT 0138
CCN	12	14	127	626200	925	08/55	3622	6	FR	19	7	12	2	1/00	D0	WARNER G
CCN	12	14	134	627006	875	06/65	2522	2	FR	100	33		2	24/00	D0	MSND GRVL BLDR 0060 RED GRNT 0291
CCN	12	14	131	627006	850	08/64	2522	2	FR	50	30		2	55/55	D0	PIPER C
CCN	12	14	122	627065	500	04/65	2512	5	FR	43	16	38	4	5/00	D0	PRDG 0040 MSND BLDR 0058 GRNT 0131
CCN	12	14	132	627075	870	10/64	2522	2	FR	64	30		1	5/00	D0	KUNKAL V
CCN	12	14	130	627150	857	01/64	2305	2	FR	117	27	27	3	2/30	D0	KELLY V
CCN	12	14	129	627175	850	01/64	2305	2	FR	129	28	28	4	4/30	D0	MSND BLDR 0056 GRNT 0058
CCN	12	14	1005	627206	860	08/68	2305	2	FR	127	18	26	2	4/00	D0	BLDR CLAY 0018 GRVL 0021
CCN	12	15	135	626675	845	07/52	2512	6	FR	24	16	16		1/00	D0	PEEVER M
CCN	12	15	150	626850	865	01/60	3014	2	FR	102	12	18	3	2/00	D0	BLDR GRVL 0025 FSND 0033 GRNT 0105
CCN	12	15	136	627049	900	11/64	2522	2	FR	77	21		1	24/00	D0	GRNT 0057
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CCN	12	15	125	627110	870	11/66	2305	2	FR	129	26	26	2		D0	MSND STNS 0008 GRVL HPAN STNS 0035 MSND
CCN	12	16	136	626550	810	09/52	2512	5	FR	30	15	24	1	1/00	D0	0042 GRVL 0043
CCN	12	16	141	626726	871	04/54	3635	6	FR	57	30	57	4	1/00	D0	DAVIS M
CCN	12	16	140	626760	875	10/52	2512	5	FR	46	20	27	5	2/00	D0	GRVL BLDR 0032 WHIT GRNT 0063
CCN	12	16	139	626800	875	10/52	2512	5	FR	30	18	18	6		D0	GRGULX R
CCN	12	16	138	626762	875	10/52	2512	5	FR	60					D0	BLDR MSND 0045 RED GRNT 0150
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CCN	12	16	139	626762	875	10/52	2512	5	FR	60					D0	BLDR GRVL 0114 RED GRNT 0158
CCN	12	16	139	626762	875	10/52	2512	5	FR	60					D0	KERR L
CCN	12	16	139	626762	875	10/52	2512	5	FR	60					D0	PRDG 0020 BLUE CLAY 0030 GREY QSN0 0046
CCN	12	16	139	626762	875	10/52	2512	5	FR	60					D0	GRVL 0046
CCN	12	16	139	626762	875	10/52	2512	5	FR	60					D0	BARTLAN M
CCN	12	16	139	626762	875	10/52	2512	5	FR	60					D0	FSND 0056 GRVL 0057
CCN	12	16	139	626762	875	10/52	2512	5	FR	60					D0	WHITTAKER L
CCN	12	16	139	626762	875	10/52	2512	5	FR	60					D0	BLUE CLAY 0020 HPAN BLDR CSND 0040 BLDR
CCN	12	16	139	626762	875	10/52	2512	5	FR	60					D0	GRVL 0048
CCN	12	16	139	626762	875	10/52	2512	5	FR	60					D0	WHITE L
CCN	12	16	139	626762	875	10/52	2512	5	FR	60					D0	BLUE CLAY 0030 GRVL QSN0 0036 BLDR HPAN
CCN	12	16	139	626762	875	10/52	2512	5	FR	60					D0	QSN0 0060 GRVL 0061

PARRY SOUND DISTRICT 48

MUNICIPALITY CONCESSION ETC	LGT	BELL NO	EASTING	LTM	ELEV	DATE	DRILLER	CSG	KIND	WATER FOUND FEET	STAT LVL	PUMP LVL	TEST RATE GPM	TEST TIME HR/MN	WATER USE	CMNER/LOG DEPTHS IN FEET TO WHICH FORMATIONS EXTEND
SOUTH HIMSWORD TOWNSHIP (CONTINUED....)																
CCN	12	25	642	623150	860	05/66	2522	2	FR	66	13		2	12/00	DO	PANTLIN J A GREY CLAY 0003 FSND 0007 GREY GRANT 0045 GRANT 0074 DAGENAIS G CLAY 0013 ROCK 0050
CCN	13	2	503	621450	935	08/55	3014	2	FR	50	6	6	4	10/00	ST DO	MOORE W TPSL BLDR 0008 RED GRANT 0051 JONES G BLDR GSND 0025 GRVL 0032 BLDR GRVL 0015 GRVL 0019 GREY GRANT 0065 JONES G BLDR GRVL 0017 GRANT 0163 MCNEILL C MSND STNS 0002 GREY GRANT 0150 WILSON H GRVL BLDR 0029 RED GRANT 0181 MCNEILL C BLDR GRVL 0004 RED GRANT 0273 KUNKEL G BRWN CLAY 0005 GREY GRANT 0080 RED GRANT 0112 CAMPBELL R CLAY 0012 RED GRANT 0112 DHC CLAY FSND 0006 MPAN 0020 GRVL 0060 ROCK 0070 GREY ROCK 0085 BRWN RCLK 0053 GREY ROCK 0174 RED ROCK 0192 RCLK 0235 HUMMEL J GRVL BLDR 0014 RED GRANT 0114 PIPER R J PRDG 0008 RED GRANT 0025 ALSTON JAMES GREY MSND 0017 RED GRANT 0200 FLOYD S FSND 0055 GRANT 0063 LOXTON HARGLO YLLW MSND 0004 RED GRANT 0028 WILLIS A YLLW MSND 0023 GREY MSND GRVL BLDR 0043 RED GRANT 0082 CLOSS J RED MSND 0015 GRVL 0024 RED GRANT 0042 BUSCH E YLLW MSND 0032 RED GRANT 0316 BUSCH E GREY MSND 0016 GRVL BLDR 0025 RED GRANT 0081
CCN	13	6	642	630230	950	11/55	3622	6	FR	30	8	10	6	1/00	DO	
CCN	13	6	644	629450	540	05/55	3014	2	FR	32	22	32	2	3/00	DO	
CCN	13	9	645	629150	540	01/57	2905	6	FR	19	19	60	5	1/00	DO	
CCN	13	10	646	628652	505	04/65	2522	2	FR	156	2		2	24/00	DO	
CCN	13	15	646	628358	510	05/64	2512	5		CRY						
CCN	13	15	647	628360	885	05/64	2512	5	FR	178	22	181	1	1/00	DO	
CCN	13	15	649	628401	875	03/68	2305	2	FR	159	43	59	3	2/45	DO	
CCN	13	22	650	623600	835	01/61	2905	6	FR	60	5	100	1	2/00	DO	
CCN	14	15	573	626200	870	12/68	2305	2	FR	103	18	51	2	3/00	DO	
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CCN	15	6	652	629227	885	06/65	2522	2	FR	91	30	45	1	24/00	ST DO	
CCN	15	12	653	626876	670	07/65	2522		FR	22	6	6	2	24/00	DO	
CCN	15	12	1065	627030	870	05/65	2305	2		176	20	46	2	3/00	DO	
CCN	15	13	654	626500	870	06/65	2522	2	FR	192	33		25	24/00	DO	
CCN	15	13	1067	626800	850	07/65	2305	2	FR	17	4	4	12	2/40	DO	
CCN	15	14	656	626110	695	08/62	2305	2	FR	74	22	34	3	2/00	DO	
CCN	15	14	656	626110	695	08/62	2305	2	FR	76						
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CCN	15	14	1126	626310	900	10/69	2305	2		98	53	45	2	2/00	DO	
CCN	15	14	657	626340	893	05/64	2305	2	FR	106	21	21	2	6/00	DO	
				510680					FR	195						

PARRY SOUND DISTRICT 48

MUNICIPALITY CONVESSION ETC LGT NO WELL EASTING LTM ELEV NORTHING FEET DATE DRILLER INS WATER FEET CSA KIND WATER STAT PUMP TEST TEST TIME WATER USE

OWNER/LOG DEPTHS IN FEET TO WHICH FORMATIONS EXTEND

SOUTH HINSMWORTH TOWNSHIP (CONTINUED.....)

CCN	15	14	1078	626400	880 07/69	2305	2	FR	80	17	30	5	3/00	DO	MCCMARLES REG
CCN	15	15	658	625765	870 05/66	2522	2	FR	74	25		2	10/00	DO	GREY MSND 0005 RED GRNT 0091
CCN	15	20	659	625637	757 09/64	2522	2	FR	35	12		2	10/00	DO	PILGRIM W GREY CLAY 0009 QSN0 0015 MSND BLDR 0031
CCN	16	2	605	626110	870 04/50	2802		FR	65						RED GRNT 0075
CCN	16	4	604	626240	875 04/50	2802	2	FR	40	40					MOORE E
CCN	17	11	661	626600	520 11/67	2305	2			14	14	8	5/30	DO	PROG 0015 GRVL BLDR 0025 GRNT 0072
CCN	17	11	660	626605	500 07/61	3014	2	FR	82	14	18	3	5/00	CO	RIVERS T RGCK 0150
CCN	17	12	662	626244	505 08/64	2522	2	FR	59	15		2	12/00	DO	CHIVERS H
CCN	17	20	663	626225	770 12/63	2305	2	FR	84	13	13	2	2/30	DO	OBON 0020 RGCK 0060
															TURCOTTE G
															MSND GRVL 0004 RED GRNT 0219
															GOLF CLUB
															GREY GRNT 0082
															PEEVER P
															GRVL 0002 GRNT 0067
															BRISSON R
															BLDR GRVL 0020 RED GRNT 0095

SOUTH RIVER VILLAGE

CCN	164	625650	1160 11/45	2801	8											PUC SOUTH RIVER
CCN	165	626600	1150 12/45	2801	8											TPSL MSND 0004 RED GRVL MSND BLDR 0024
																MSND GRVL BLDR 0065 MSND SILT 0095 BLUE
																CLAY 0170 BLUE CLAY MSND 0192 BLUE CLAY
																MSND BLDR 0196
																PUC SOUTH RIVER
																TPSL MSND 0005 MSND GRVL BLDR 0060 MSND
																SILT 0114 MSND 0146 MSND CLAY 0214 CLAY
																MSND BLDR 0248 ROCK 0249

SPENCE TOWNSHIP

CCN	5	20	667	601185	960 09/51	2512	5	FR	71	10		2		PS	SCHOOL AREA
CCN	10	27	656	626750	1085 08/68	2305	2	FR	136	FLM		3		DO	BRN MSND 0010 GREY GRNT 0071
CCN	12	30	554	626746	1198 07/68	2512	5	FR	67		63	11	8/30	PS	RUGEAS F
CCN	14	4	665	605850	645 05/60	2512	5	FR	67	3	62	1	1/00	DO	GREY MSND 0132 GRVL 0136
CCN	14	4	666	605907	550 07/62	2512	5	FR	79	6	50	6	2/00	DO	DNG
CCN	A	78	666	606150	925 10/48	2512	5	FR	83	20				DO	GRNT 0008 RED GRNT 0070
															GRANT E
															CLAY 0014 MSND STNS 0016 GRNT 0062
															LEA E
															MSND 0002 GRNT 0063
															RCSS H
															TPSL 0028 ROCK 0053

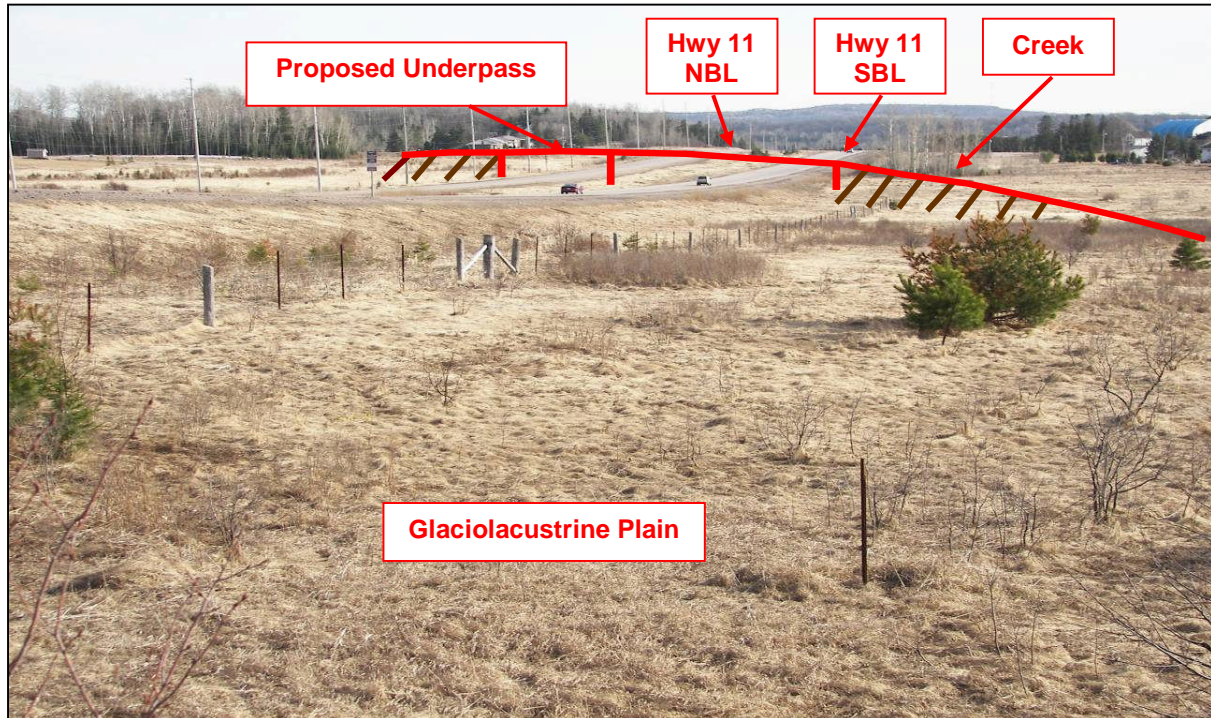
STANAG TOWNSHIP

CCN	2	6	670	621661	1115 12/50	2512	5	FR	106	50		1		DO	TRGLCVE R
CCN	2	18	1058	625900	1100 05/69	2512	5	FR	48	35	46	5	1/00	DO	MSND 0100 CSND GRVL 0106
CCN	3	4	671	624551	1090 07/57	2512	5	FR	22	6	16	3	2/00	DO	RAAFLOUB
CCN	3	15	552	624570	1100 08/67	2305	2	FR	104	6	6	6	3/30	DO	MSND 0003 HPAN 0040 GRVL 0045
															ENESON F
															BLDR HPAN 0018 BLCK GRNT 0022
															EVERARD D E
															MSND GRVL BLDR 0036 RED GRNT 0109

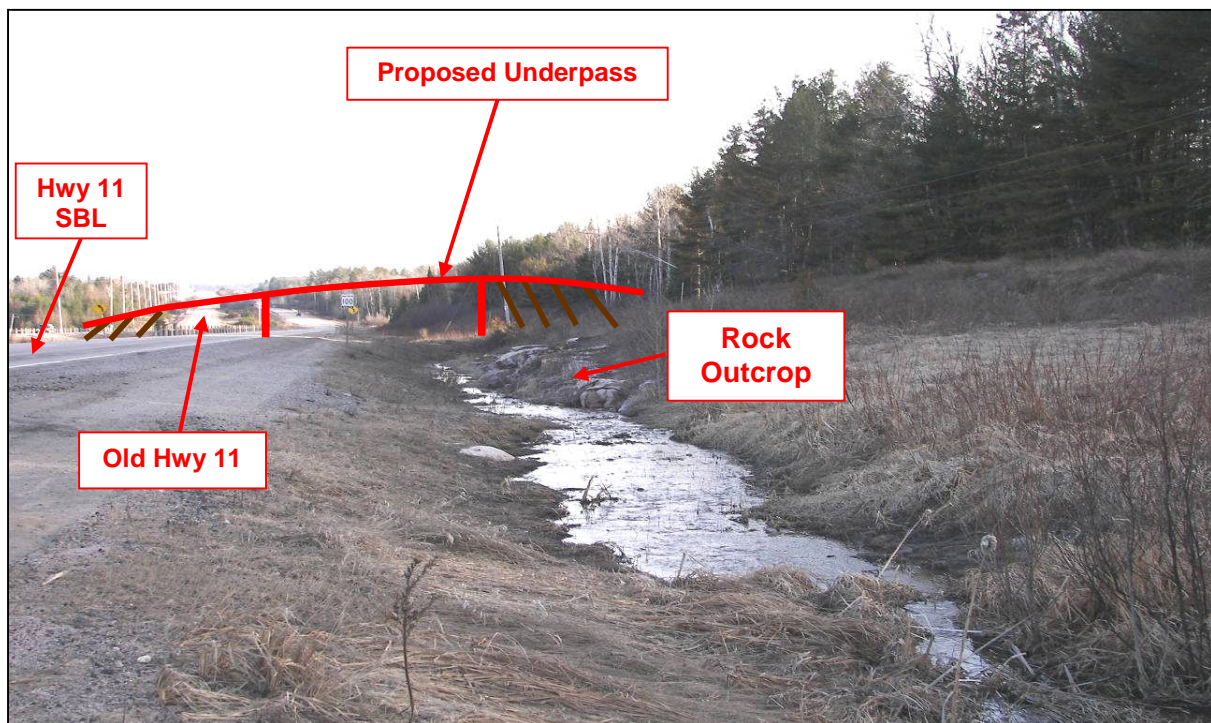


APPENDIX C

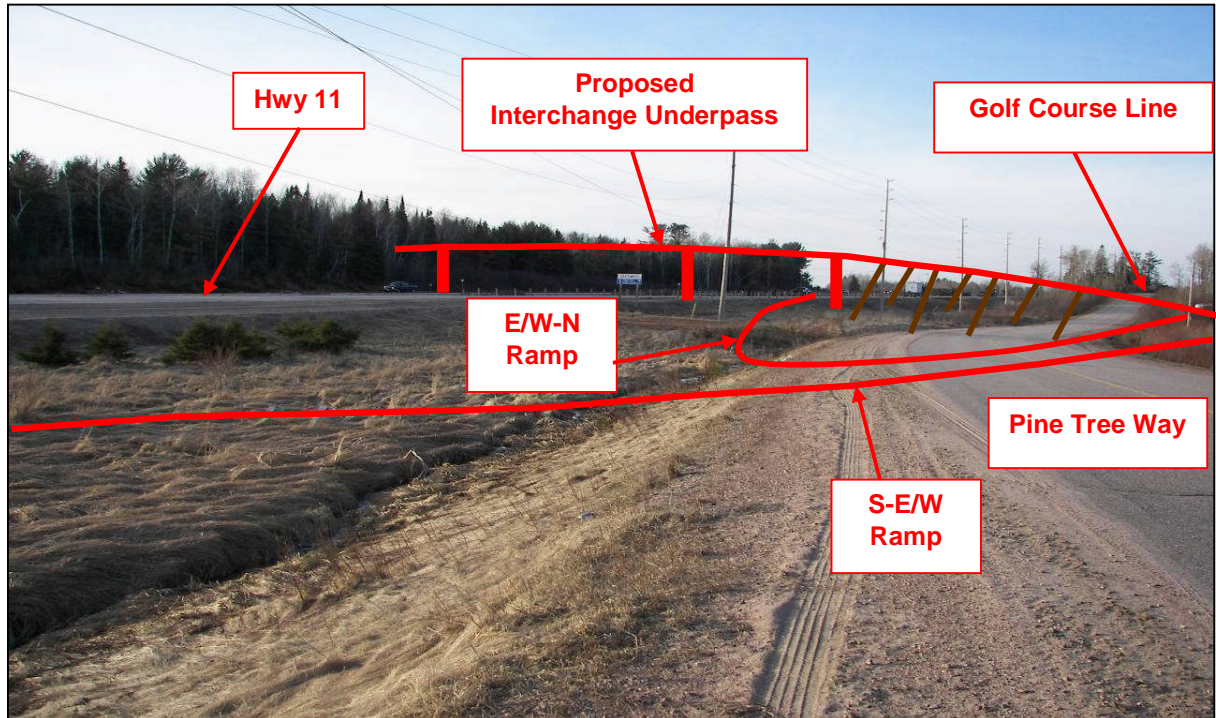
Site Photographs 1 to 20



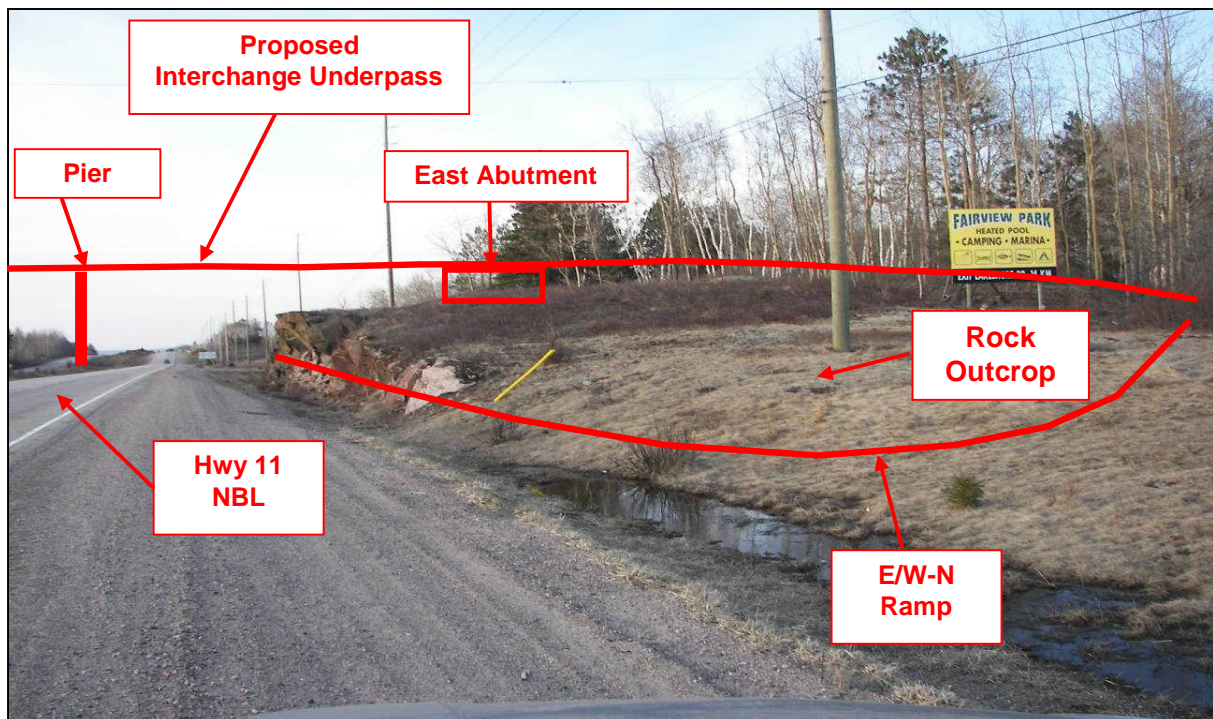
Photograph 1 VIEW: Looking south from south shoulder of McCharles Line. Underpass site is about 100 m north of creek crossing of Highway 11. (April 17, 2008)



Photograph 2 VIEW: Looking south from west ditch of Highway 11 at the Peever Line intersection. Rock exposure noted on west ditch of Highway 11. Proposed interchange underpass will be located south of bedrock exposure. (April 17, 2008)



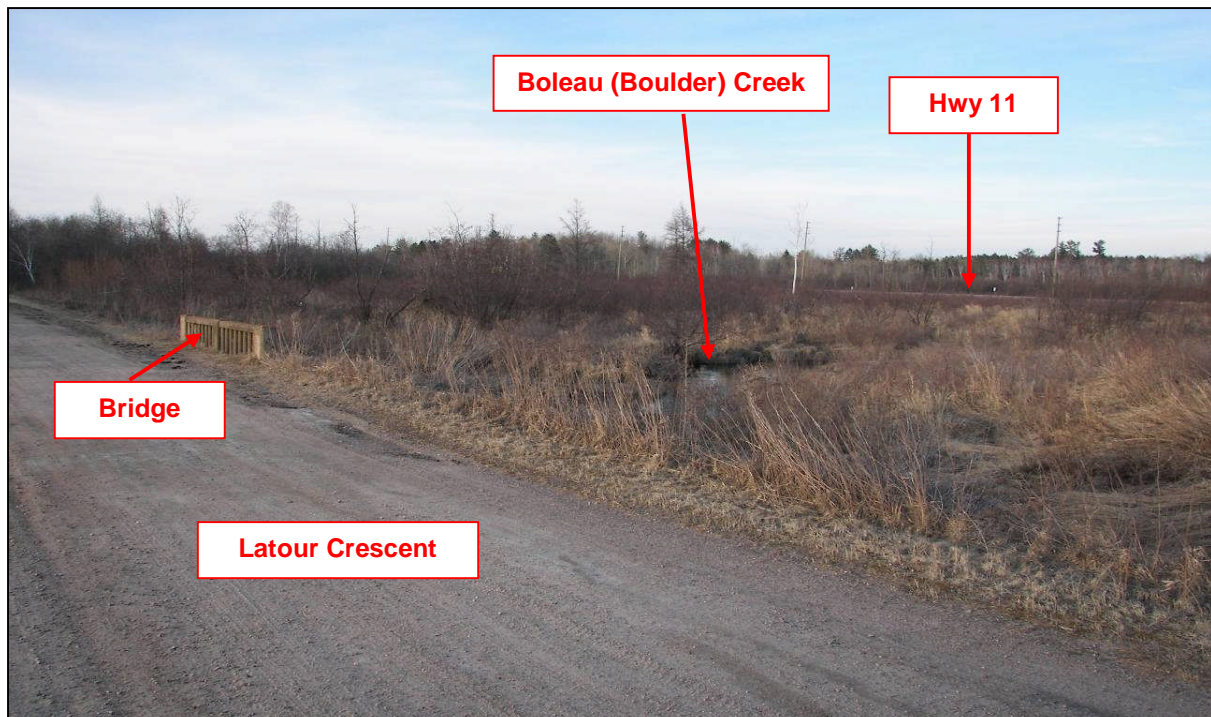
Photograph 3 VIEW: Looking northwest along Pine Tree Way south of Peever Line / Golf Course Line. East ramps and approach embankments are located in glaciolacustrine deposits. (April 17, 2008)



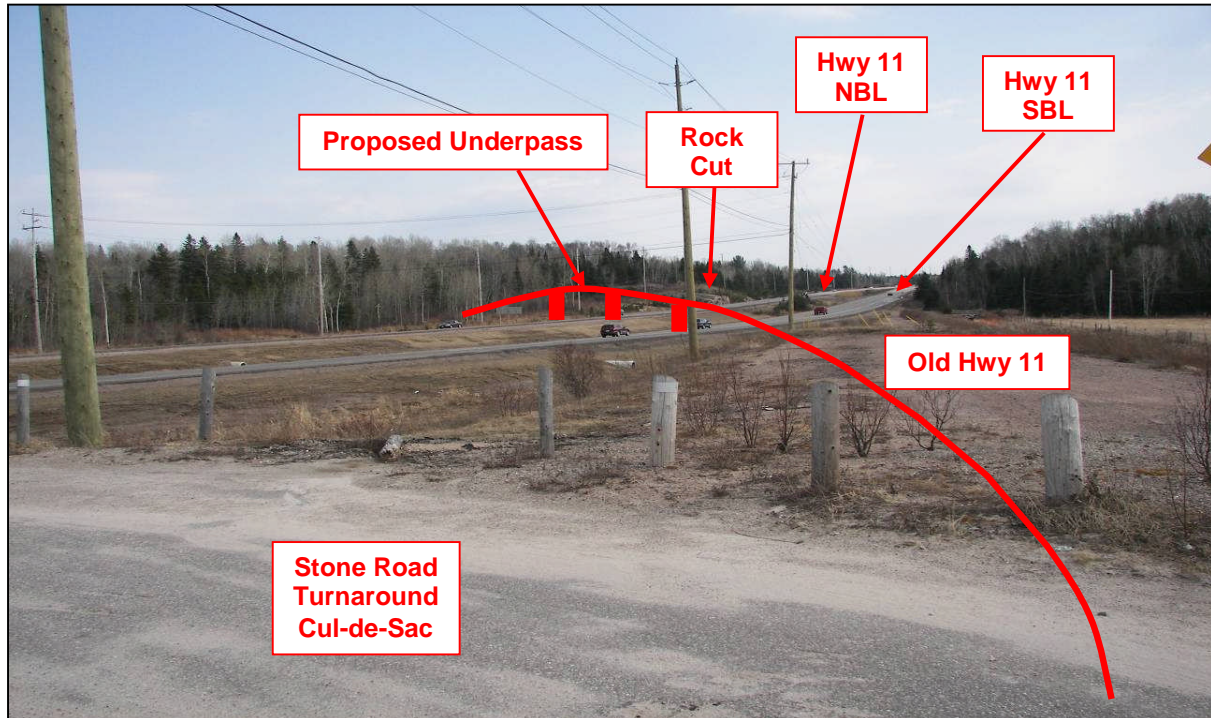
Photograph 4 VIEW: Looking north along east shoulder of Highway 11 NBL about 450 m north of Hills Siding Road. East abutment and E/W-N ramp of proposed interchange are located over a rock outcrop. (April 17, 2008)



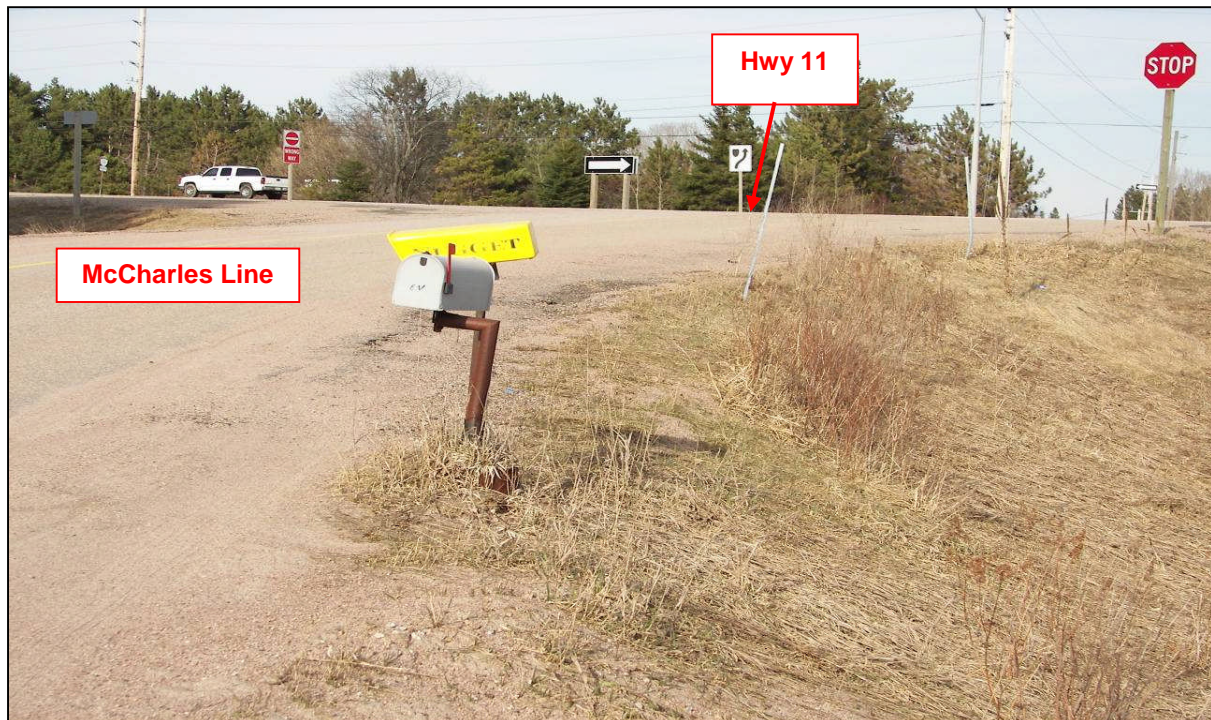
Photograph 5 VIEW: Looking northwesterly from Hills Siding Road across wet swamp/Boleau (Boulder) Creek Floodplain location of underpass (Watson Road/Hills Siding Road). (April 17, 2008)



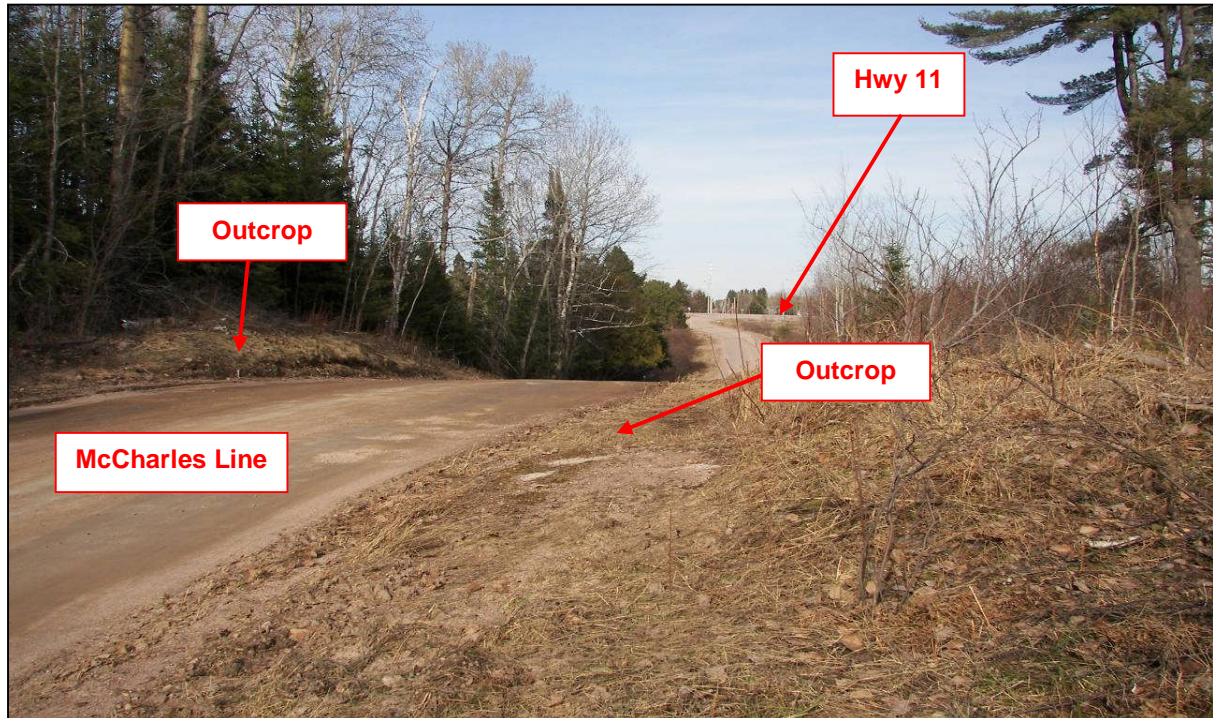
Photograph 6 VIEW: Looking northeast from west shoulder of Latour Crescent at small bridge over Boleau (Boulder) Creek 200 m north of Hills Siding Road proposed interchange to be located to the north of the creek. (April 17, 2008)



Photograph 7 VIEW: Looking south from cul-de-sac at south end of Stone Road (Old Highway 11). Proposed underpass will cross Highway 11 to the north of the rock cut noted on east ditch of Highway 11 NBL. (April 17, 2008)



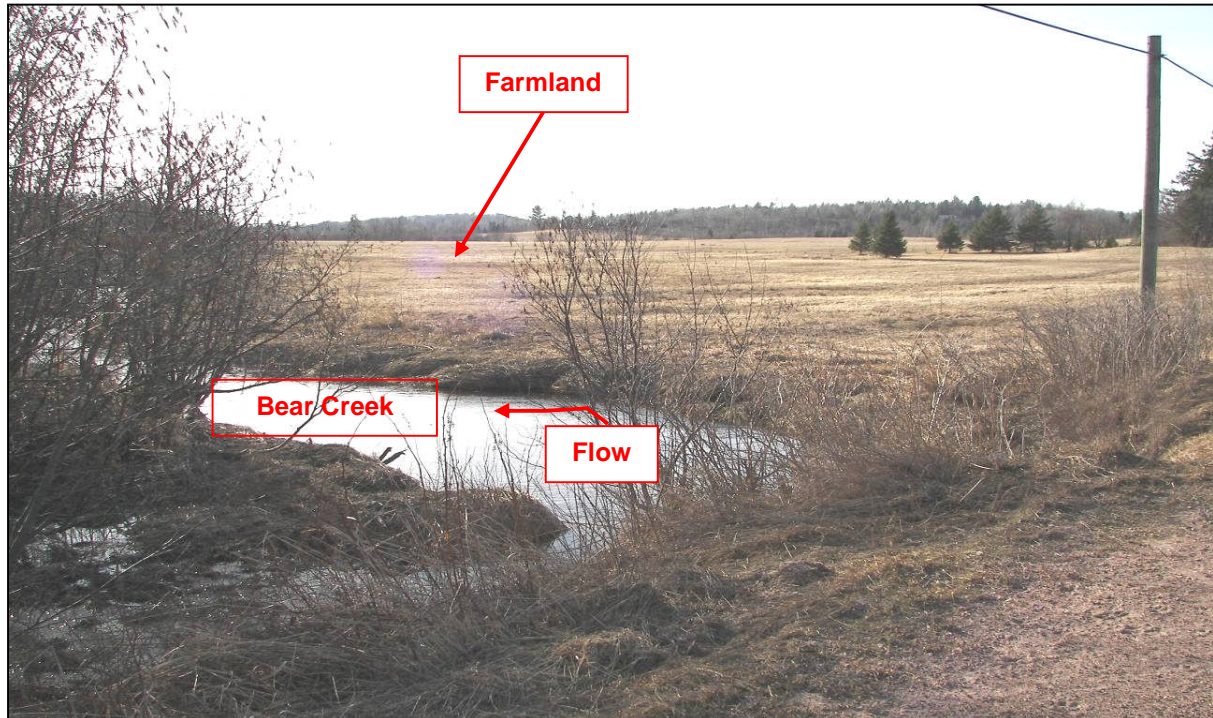
Photograph 8 VIEW: Intersection of McCharles Line and Highway 11 is at a significantly higher grade than the McCharles Line immediately to the west (about 6 m). (April 17, 2008)



Photograph 9 VIEW: Looking east along McCharles Line from about 15 m west of crest. Outcrop visible on north shoulder and on road surface. (April 17, 2008)



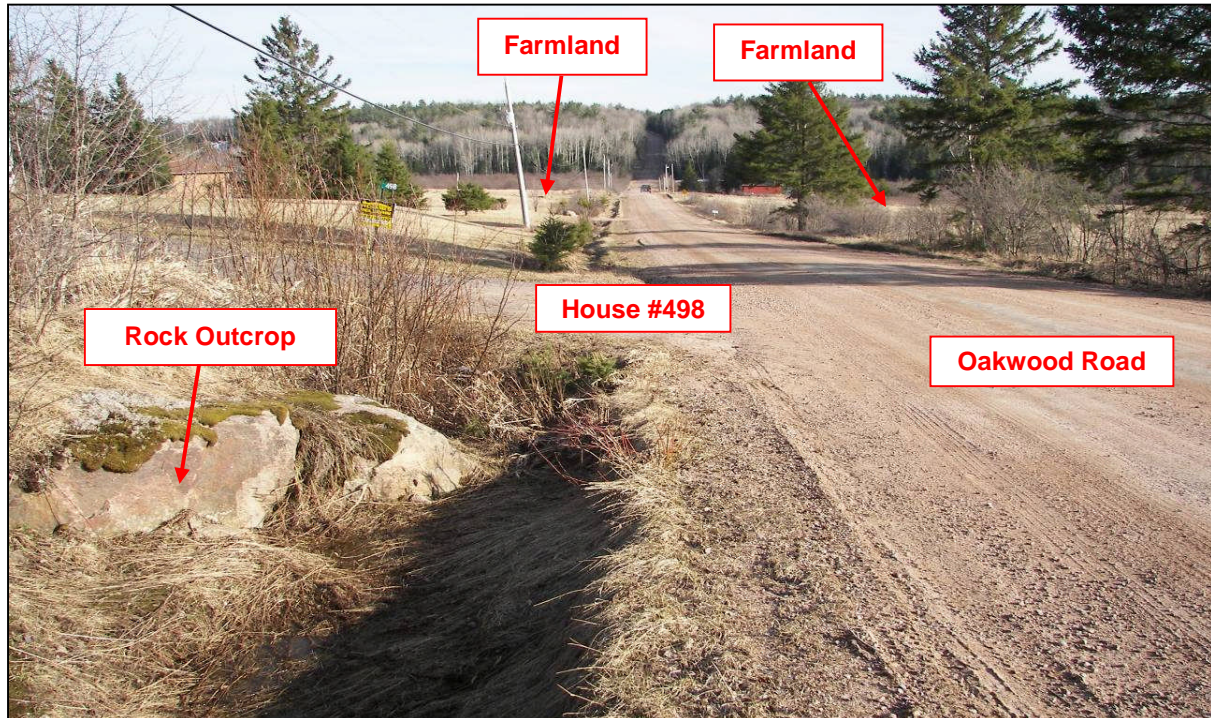
Photograph 10 VIEW: Rock outcrop east of Oakwood Road, 400 m north of McCharles Line. (April 17, 2008)



Photograph 11 VIEW: Looking northwest from Oakwood Road about 1,200 m north of McCharles Line. Farmland established on glaciolacustrine plain beyond road. Bear Creek noted in foreground. (April 17, 2008)



Photograph 12 VIEW: Looking north along Oakwood Road about 1,200 m north of McCharles Line. Road rises in distance to a shallow bedrock ridge. (April 17, 2008)



Photograph 13 VIEW: Looking south from east ditch line of Oakwood Road about 1,630 m north of McCharles Line. View of outcrop in ditch and general view of farmland on both sides of the road. (April 17, 2008)



Photograph 14 VIEW: Looking north along Oakwood Road from about 1,800 m north of McCharles Line. Road grade dips to small creek (at hydro pole) and rises beyond the creek to Peever Line intersection. (April 17, 2008)



Photograph 15 VIEW: Looking east along Peever Line about 50 m east of Oakwood Road. Grade slopes down to crossing of tributary of Bear Creek at mid photo depth. Note gravel road surface in good condition. (April 17, 2008)



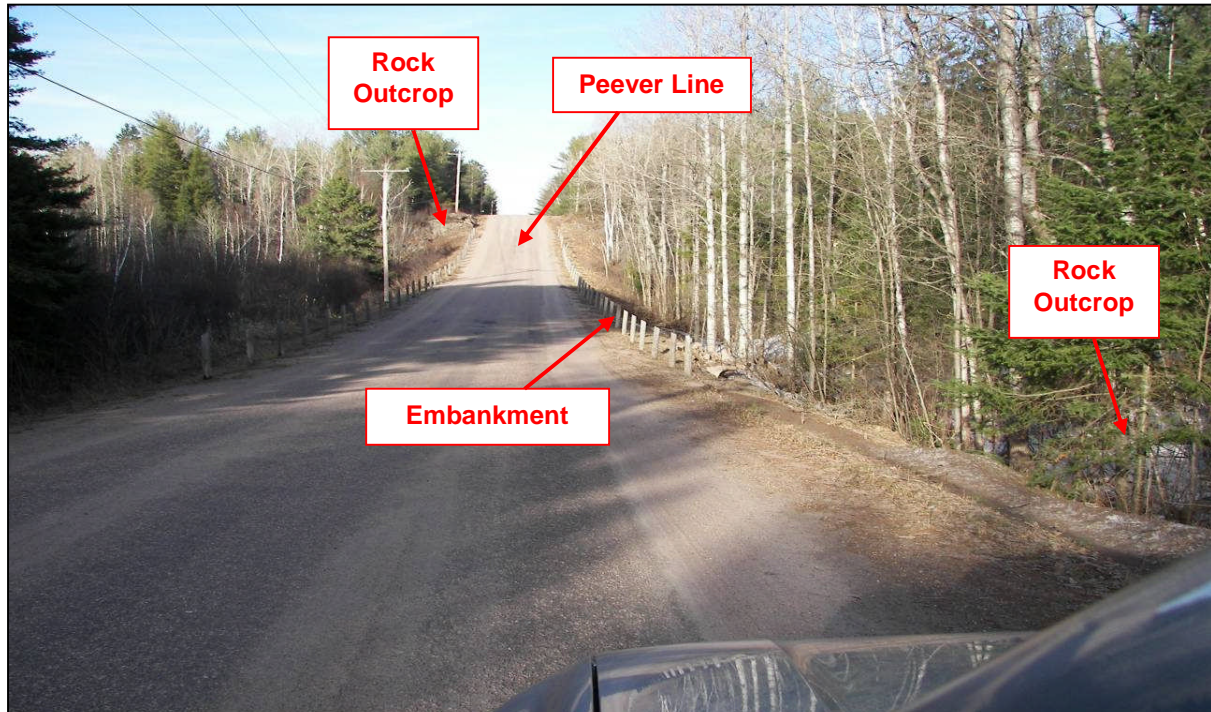
Photograph 16 VIEW: Looking south from north shoulder of Peever Road, 300 m east of Oakwood Road at extensive farmland. (April 17, 2008)



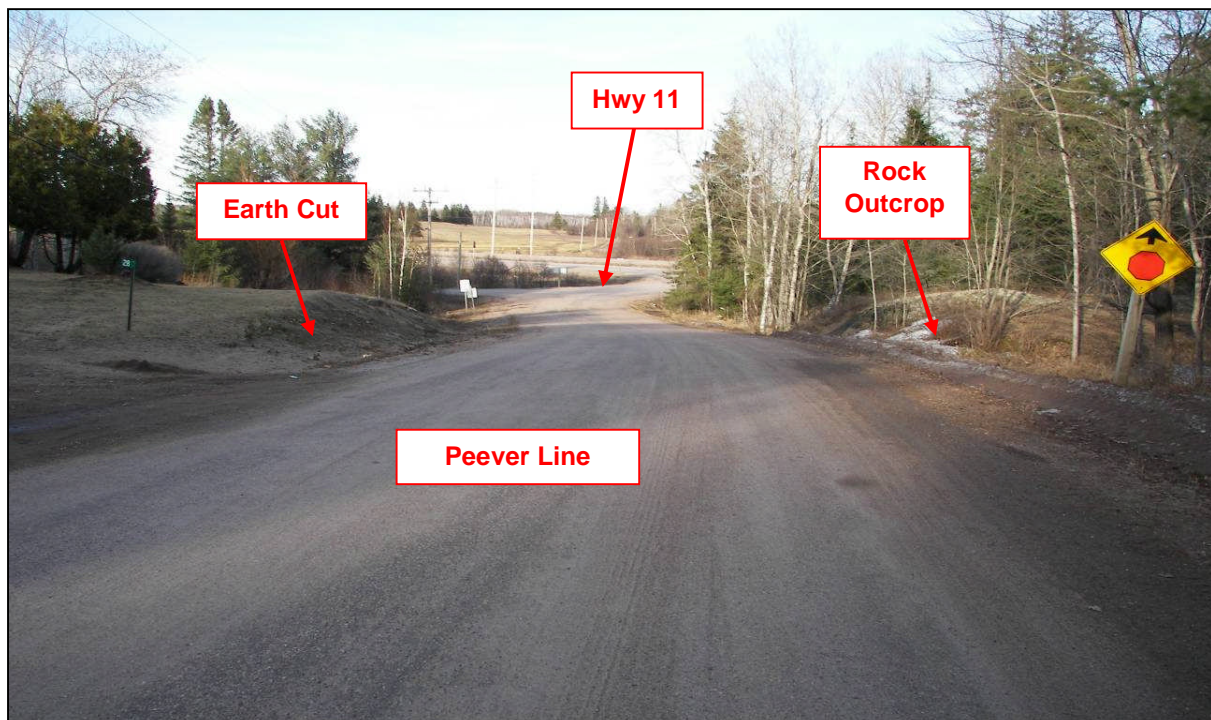
Photograph 17 VIEW: Timber box holding boulders north of Peever Line north shoulder 300 m east of Oakwood Road. Boulders attest to bouldery nature of soil in the area. (April 17, 2008)



Photograph 18 VIEW: Looking east from north ditch line of Peever Line about 600 m east of Oakwood Road near driveway of House #164. Broken rock is from an outcrop extending across roadway. (April 17, 2008)



Photograph 19 VIEW: Looking east along Peever Line at short embankment with wire guide about 850 m east of Oakwood Road. Rock outcrops are visible beyond trees and at crest. Similar crossing noted at 1,100 m east of Oakwood Road. (April 17, 2008)



Photograph 20 VIEW: Looking east along Peever Line about 1,300 m east of Oakwood Road. Note earth cut in north ditch line and outcrop at opposite ditch line. Road is surface treated. (April 17, 2008)