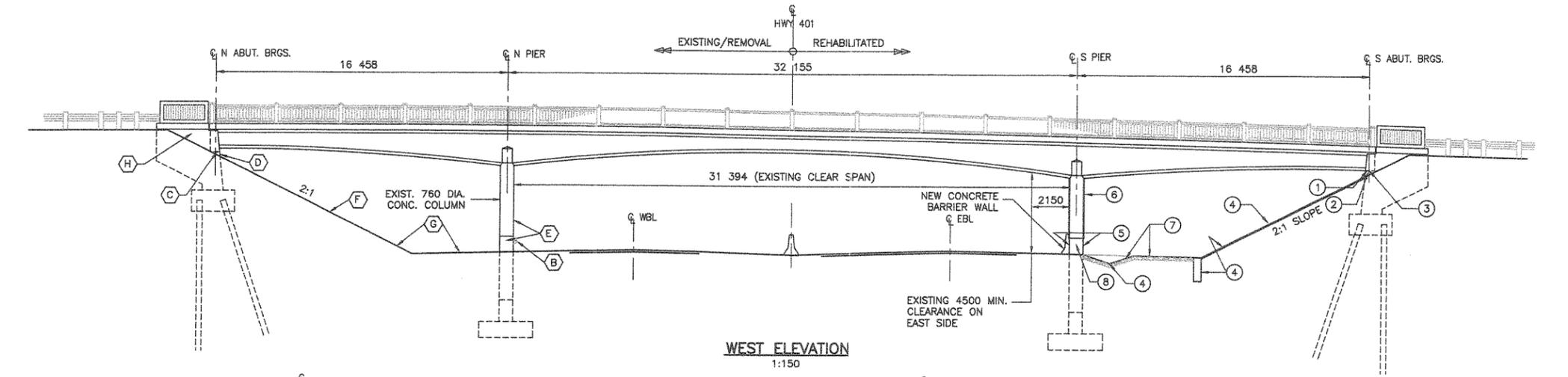
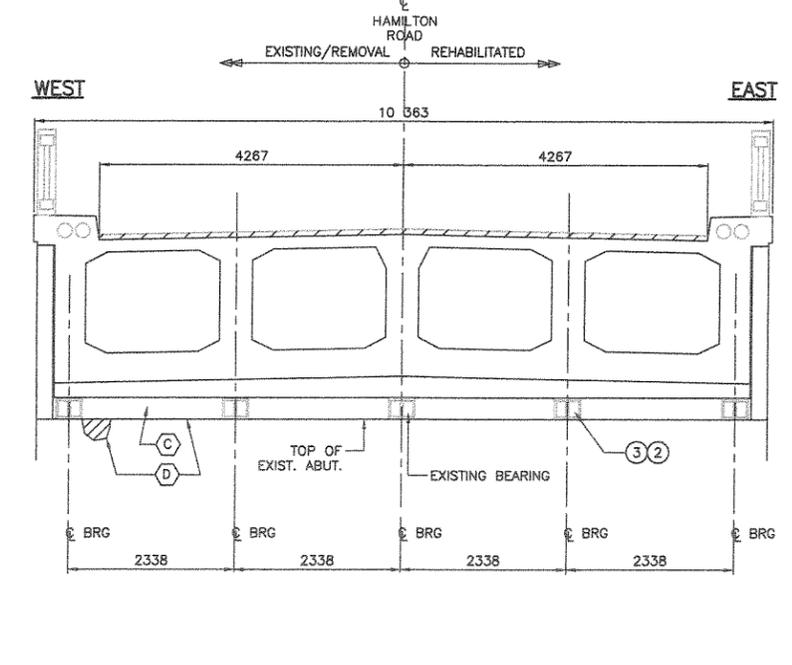


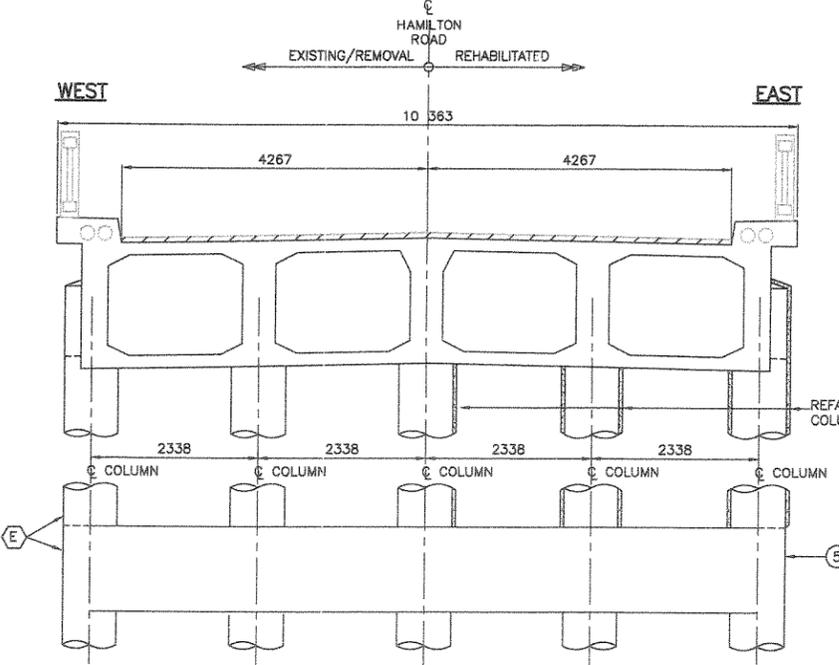
PLAN  
1:150



WEST ELEVATION  
1:150



SCALE 1:50



SCALE 1:50

**REMOVALS:**

- (A) INSTALL TEMPORARY TRAFFIC STAGING AS SHOWN ON THE CONSTRUCTION STAGING DRAWING.
- (B) REMOVE STEEL BEAM GUIDE RAIL AT ENDS OF PIER GRADE BEAM.
- (C) REMOVE DEBRIS FROM ABUTMENT SEAT.
- (D) REMOVE AND DISPOSE OF EXISTING LOOSE AND DELAMINATED CONCRETE AT ABUTMENT SEAT AND STEM.
- (E) REMOVE AND DISPOSE OF EXISTING LOOSE DELAMINATED CONCRETE AT PIER COLUMNS AND BOTH FACES AND ENDS OF GRADE BEAM.
- (F) REMOVE AND DISPOSE OF PRECAST SLOPE PAVING UNITS.
- (G) REMOVE AND DISPOSE OF VEGETATION AT PRECAST CONCRETE SLOPE PAVING AREA.
- (H) REMOVE PAINT AND GRAFFITI FROM ALL LOCATIONS ON WINGWALLS.

**LIST OF DRAWINGS:**

- R1-1. GENERAL ARRANGEMENT
- R1-2. REPAIR DETAILS 1
- R1-3. REPAIR DETAILS 2
- R1-4. DETAILS OF CONCRETE SLOPE PAVING
- R1-5. STANDARD DETAILS

**REFERENCE DRAWINGS:**

ORIGINAL BRIDGE DRAWINGS TWP #8-233-1-A TO #8-233-4-A, PREPARED BY THE DEPARTMENT OF HIGHWAYS-ONTARIO, DATED OCTOBER 1958.

**APPLICABLE STANDARD DRAWINGS:**

OPSD-4010.00 GUIDE RAIL AND CHANNEL ANCHORAGE

REVISIONS	DESCRIPTION

DESIGN N.W. CHK L.T. CODE CHBDC-2000/LOAD CL-625-ON DATE MAR. 2006  
DRAWN B.K. CHK S.T. SITE 21-233 DWG R1-1

**METRIC**  
DIMENSIONS ARE IN METRES  
AND/OR MILLIMETRES  
UNLESS OTHERWISE SHOWN

DIST No 43  
CONT No 2006-4016  
WP No 4073-01-00

**HAMILTON-HOPE BRIDGE**  
HWY 401 BOUNDARY ROAD UNDERPASS  
GENERAL ARRANGEMENT



**SHEET**  
288

**CH2MHILL**

**GENERAL NOTES:**

1. CLASS OF CONCRETE: 30 MPa
2. CLEAR COVER TO REINFORCING STEEL:  
• UNLESS OTHERWISE NOTED..... 70±20mm
3. REINFORCING STEEL:  
REINFORCING STEEL SHALL BE GRADE 400 UNLESS OTHERWISE SPECIFIED.  
BAR MARKS WITH PREFIX 'C' DENOTE COATED BARS. UNLESS SHOWN OTHERWISE, TENSION LAP SPLICES SHALL BE CLASS 'B'. BAR HOOKS SHALL HAVE STANDARD HOOK DIMENSIONS USING MINIMUM BEND DIAMETERS, WHILE STIRRUPS AND TIES SHALL HAVE MINIMUM HOOK DIMENSIONS. ALL HOOKS SHALL BE IN ACCORDANCE WITH THE STRUCTURAL STANDARD DRAWINGS SS12-1 AND SS12-2, UNLESS INDICATED OTHERWISE.

**CONSTRUCTION NOTES:**

1. THE CONTRACTOR SHALL VERIFY ALL RELEVANT DIMENSIONS, ELEVATIONS, AND DETAILS ON SITE AND REPORT ANY DISCREPANCIES TO THE CONTRACT ADMINISTRATOR BEFORE COMMENCING WORK.
2. TYPICAL AREAS OF REPAIR ARE INDICATED ON DRAWINGS. WHERE REPAIR LIMITS ARE NOT SHOWN, LIMITS SHALL BE IDENTIFIED BY THE CONTRACT ADMINISTRATOR.
3. WHERE INDICATED ON DRAWING THAT A SAWCUT IS REQUIRED TO DELINEATE AREAS OF CONCRETE REMOVAL, THE SAWCUT SHALL BE 25mm DEEP OR TO THE FIRST LAYER OF REINFORCING STEEL, WHICHEVER IS LESS.
4. FOR TRAFFIC AND CONSTRUCTION STAGING LAYOUTS SEE HIGHWAY DRAWINGS

**SCOPE OF WORK:**

THE GENERAL SCOPE OF REHABILITATION WORK OUTLINED BELOW AND DESIGNATED ON THIS DRAWING SHALL BE CONSIDERED SYMMETRICAL ABOUT THE CENTRELINE OF THE STRUCTURE, UNLESS NOTED OTHERWISE.

**NEW CONSTRUCTION AND REPAIRS:**

- ① REPAIR LOCAL DETERIORATION AT ABUTMENT SEAT.
- ② ABRASIVE BLAST CLEAN EXISTING BEARINGS.
- ③ LUBRICATE EXISTING BEARINGS.
- ④ RECONSTRUCT CONCRETE SLOPE PAVING AND TOE WALL.
- ⑤ REPAIR LOCAL DETERIORATION AT PIER GRADE BEAM.
- ⑥ REPAIR AND REFACE PIER COLUMNS IN STAGES.
- ⑦ INSTALL RIPRAP WITHIN LIMITS IDENTIFIED ON DRAWINGS.
- ⑧ INSTALL STEEL BEAM GUIDERAIL AT THE END OF STAGE ONE.



DRAWING NOT TO BE SCALED  
100 mm ON ORIGINAL DRAWING

FILE LOCATION: \troops\Proj\UMEngineering\122522Hwy401\Gaming\510-CADD\Structural\Final\_Submission\...  
 DRAWING NAME: Hamilton\_IGA.dwg  
 REVISIONS BY: Ben  
 DATE PLOTTED: Mar 15/06 14:32:52  
 MODIFIED: Mar 15/06 14:31:13

**METRIC**  
DIMENSIONS ARE IN METRES  
AND/OR MILLIMETRES  
UNLESS OTHERWISE SHOWN

DIST  
CONT No 2006-4016  
WP No 4073-01-00



GAGES CREEK CULVERT  
HIGHWAY 401  
CULVERT TREATMENT  
GENERAL ARRANGEMENT

SHEET  
293

UMA | AECOM

**GENERAL NOTES:**

1. RETAINED SOIL SYSTEM (SLOPE)  
APPLICATION: SLOPE  
PERFORMANCE: MEDIUM  
APPEARANCE: MEDIUM
2. CONSTRUCTION NOTES  
THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS OF THE EXISTING WORK AND ALL DETAILS ON SITE AND REPORT ANY DISCREPANCIES TO THE CONTRACT ADMINISTRATOR BEFORE PROCEEDING WITH THE WORK.  
THE CONTRACTOR IS FULLY RESPONSIBLE FOR ADEQUATE PROTECTION OF EXISTING EARTH SLOPES, UTILITIES, SERVICES, STRUCTURES, ROADWAYS, ETC. DURING CONSTRUCTION OPERATIONS. CONTRACTORS METHOD OF PROTECTION TO BE REVIEWED BY QUALITY VERIFICATION ENGINEER AND SUBMITTED TO CONTRACT ADMINISTRATOR.  
ROADWAY PROTECTION SHALL BE DESIGNED TO PERFORMANCE LEVEL 2 IN ACCORDANCE WITH THE SPECIFICATIONS.  
THE CONTRACTOR SHALL PROVIDE AND INSTALL TEMPORARY PROTECTION BARRIER ON TOP OF CULVERT TO PREVENT ANY DEBRIS FROM FALLING INTO GAGES CREEK.  
BENCHING INTO THE EXISTING SLOPE IN ACCORDANCE OF OPSS 208.010.

**SUGGESTED CONSTRUCTION SEQUENCE**

1. INSTALL TEMPORARY ROADWAY PROTECTION.
2. INSTALL TEMPORARY CREEK PROTECTION - HEAVY DUTY SILT FENCE BARRIER.
3. INSTALL RETAINED SOIL SYSTEM ON BOTH SIDES OF THE CULVERT.
4. HYDRO SEED THE SLOPE TO ALLOW VEGETATION TO ESTABLISH ITSELF.
5. INSTALL AN EROSION CONTROL BLANKET OVER THE FACE OF THE SLOPE AND FASTEN TO EXISTING CULVERT ARCH WHERE APPLICABLE.
6. REMOVE TEMPORARY ROADWAY AND CREEK PROTECTION.
7. THE CONTRACTOR SHALL ENSURE THE PROTECTION OF THE SLOPE UNTIL THE SLOPES VEGETATION HAS ESTABLISHED ENOUGH TO PREVENT THE EROSION OF THE SLOPE.

**LEGEND**

- EXISTING TRAFFIC LANE
- PROPOSED TRAFFIC LANE

**LIST OF DRAWINGS**

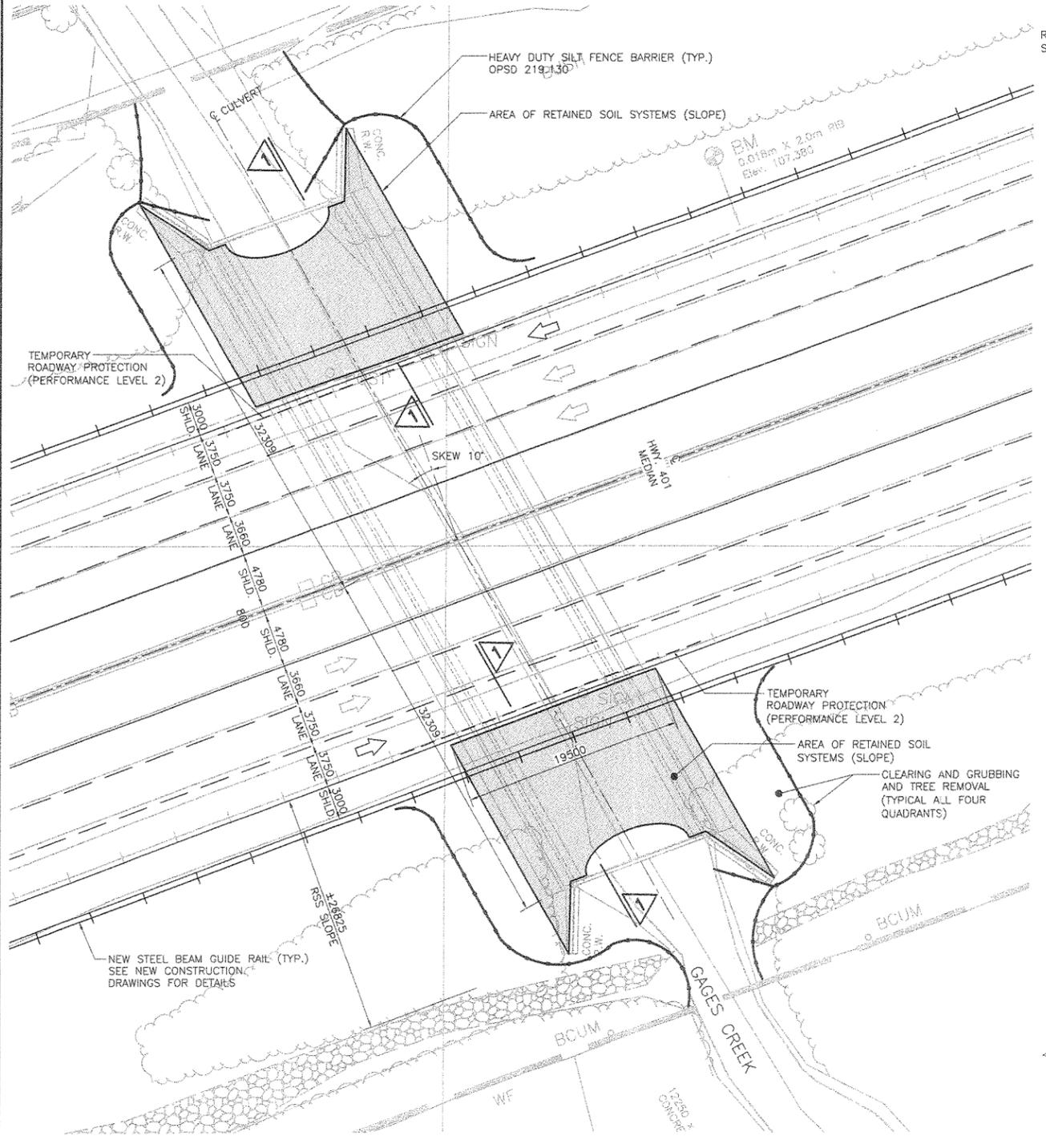
1. GENERAL ARRANGEMENT
2. BOREHOLE DRAWING

**REFERENCE DRAWINGS**

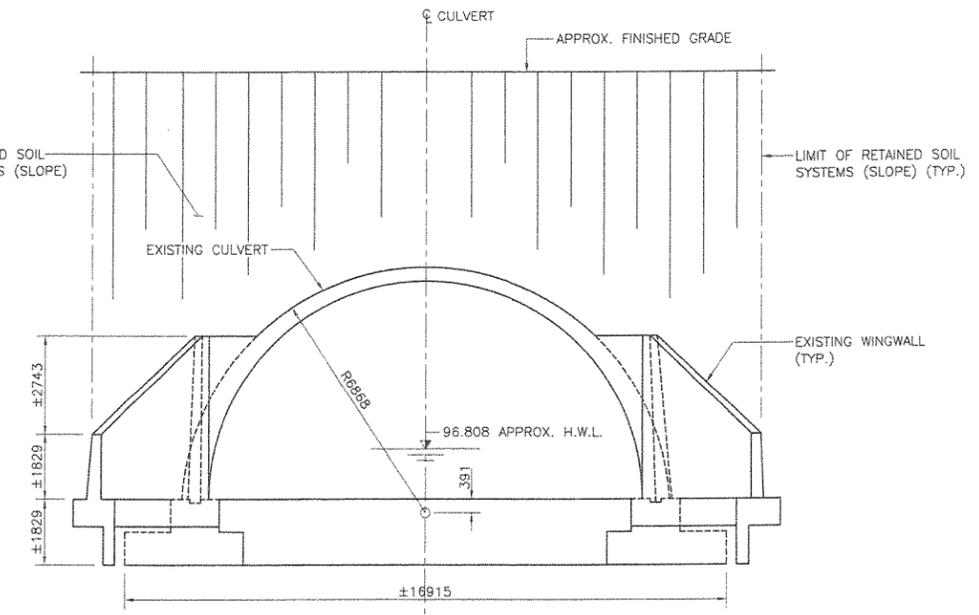
ORIGINAL CULVERT DRAWINGS TWP #8-234-1-A - #8-234-3-A PREPARED FOR THE DEPARTMENT OF HIGHWAYS-ONTARIO DATED SEPTEMBER 1958.

**APPLICABLE STANDARD DRAWINGS**

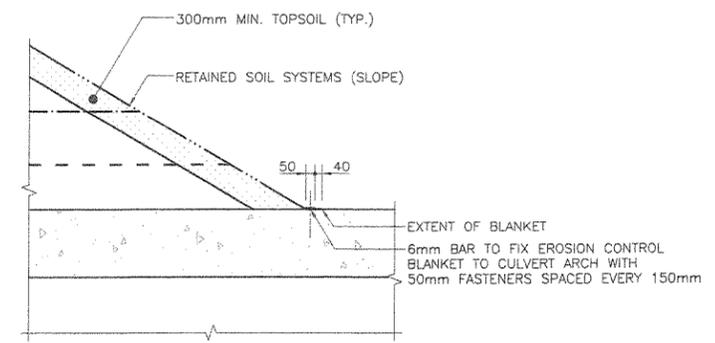
- OPSD 208.010 BENCHING OF EARTH SLOPES
- OPSD 219.130 HEAVY DUTY SILT FENCE BARRIER



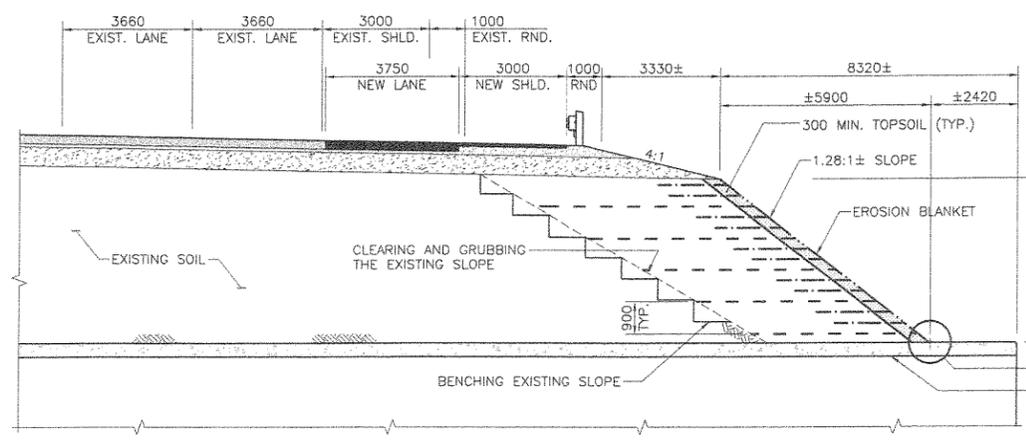
**PLAN**  
SCALE: 1:250



**ELEVATION**  
SCALE: 1:100



**DETAIL 'A'**  
SCALE: 1:20



**SECTION**  
SCALE: 1:100 (TYPICAL)  
DRAWING NOT TO BE SCALED  
100mm ON ORIGINAL DRAWING

REVISIONS	DESCRIPTION

DESIGN	P.K. CHK	S.B. CODE	CHBDC-00	CL-625-ONT	DATE	04.01.12
DRAWN	A.B. CHK	S.B. SITE	#21-234		DWG	1

DRAWING NAME: 2538-172-00-05-S-1293\_ST.dwg  
 SAVED BY: Aborr  
 PLOT DATE: 3/20/2006 2:52 PM  
 SAVED DATE: 3/20/2006 1:33 PM  
 MINISTRY OF TRANSPORTATION, ONTARIO  
 10-0-707 08-05

METRIC  
DIMENSIONS ARE IN METRES  
AND/OR MILLIMETRES  
UNLESS OTHERWISE SHOWN.  
STATIONS ARE IN  
KILOMETRES + METRES.

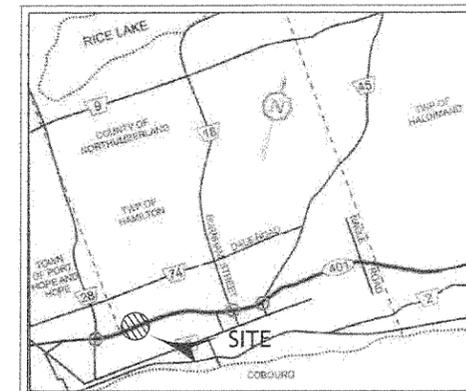
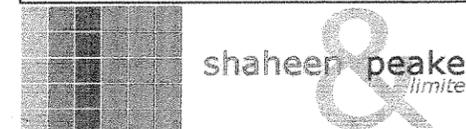
DIST 43  
CONT No 2006-4016  
WP No 4073-01-00



GAGES CREEK CULVERT  
HIGHWAY 401  
CULVERT TREATMENT  
BORE HOLE LOCATIONS & SOIL STRATA

SHEET  
294

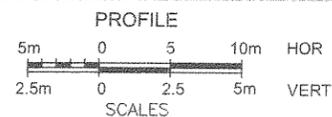
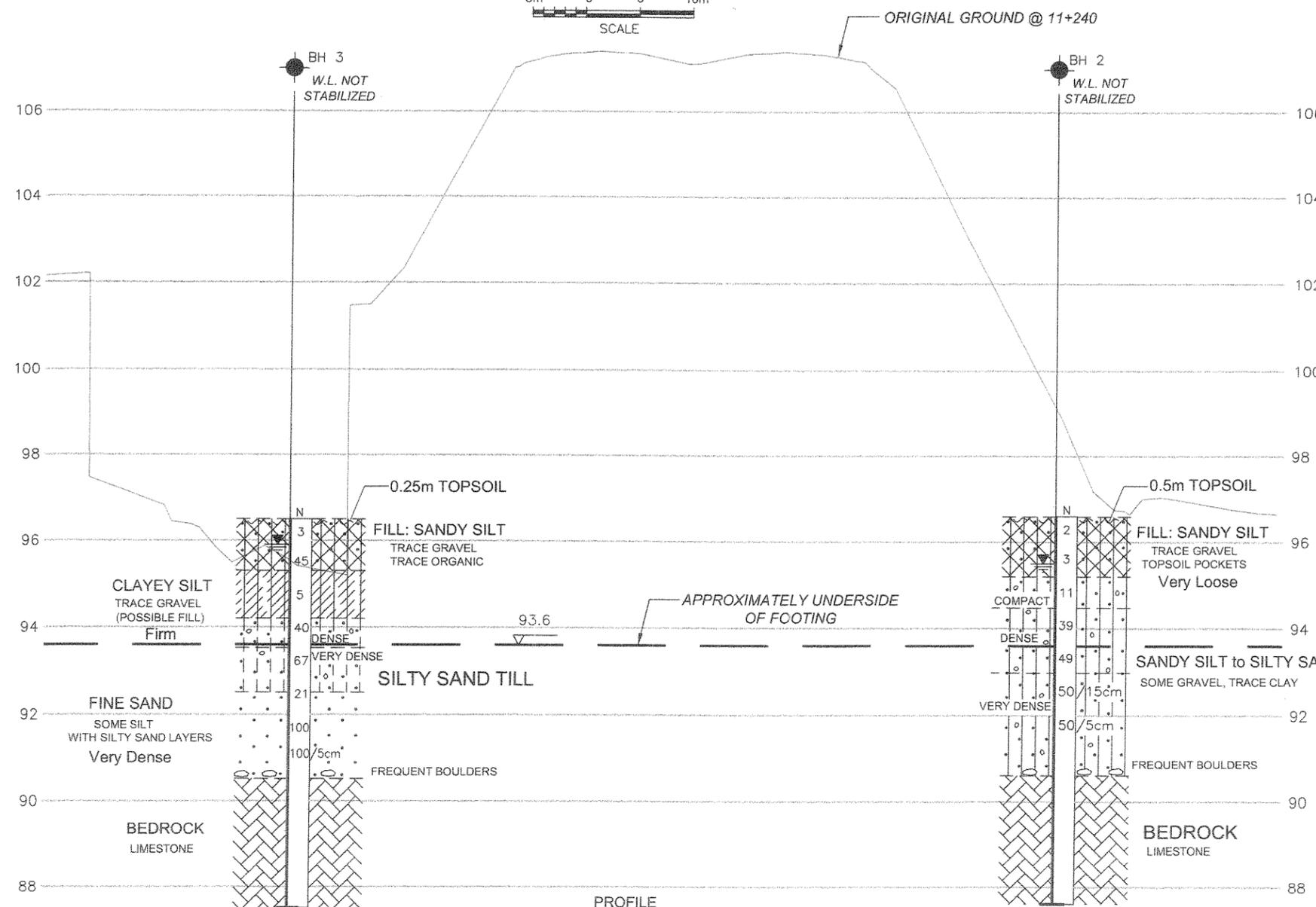
UMA | AECOM



KEY PLAN  
N.T.S

NOTES:

- FOR DETAILED SUBSURFACE CONDITIONS REFER TO RECORD OF BOREHOLE SHEETS.



LEGEND

- Bore Hole
- N Blows/0.3m (Std. Pen. Test, 475 J/blow)
- ▽ Water Level at Time of Investigation Mar. and Apr., 2003

No.	ELEVATION	CO-ORDINATES	
		NORTH	EAST
BH1	96.0	4 871 430.9	404 276.9
BH2	96.6	4 871 367.9	404 313.3
BH3	96.5	4 871 435.6	404 288.4

NOTE

The boundaries between soil strata have been established only at Bore Hole locations. Between Bore Holes the boundaries are assumed from geological evidence.

NOTE: The complete foundation investigation and design report for this project and other related documents may be examined at the Engineering Materials Office, Downsview. Information contained in this report and related documents is specifically excluded in accordance with the conditions of Section GC 2.01 of OPS Gen. Cond.



REV.	DATE	BY	DESCRIPTION

Geocres No.

HWY No	401	DIST	43
SUBM'D	ZO	CHECKED RM	DATE July 2004
DATE		SITE	#21-234
DRAWN	JZ	CHECKED	APPROVED DWG 2

DRAWING NAME:   
 CREATED:   
 MODIFIED:   
 MODDATE:   
 MINISTRY OF TRANSPORTATION, ONTARIO   
 PR-C-727   
 BR-05

**METRIC**  
DIMENSIONS ARE IN METRES  
AND/OR MILLIMETRES  
UNLESS OTHERWISE SHOWN

DIST  
CONT No 2006-4016  
WP No 4073-01-00

**THEATRE ROAD OVERPASS  
HIGHWAY 401  
BRIDGE WIDENING  
GENERAL ARRANGEMENT**

SHEET  
295

UMA | AECOM

**GENERAL NOTES:**

- CLASS OF CONCRETE: 30MPa (UNLESS SPECIFIED OTHERWISE)
- CLEAR COVER TO REINFORCING STEEL:  
FOOTINGS 100mm±25mm  
DECK - TOP 70mm±20mm  
- BOT. 50mm±20mm  
REMAINDER 70mm±20mm (UNLESS SPECIFIED OTHERWISE)
- REINFORCING STEEL:  
REINFORCING STEEL SHALL BE GRADE 400 UNLESS SPECIFIED OTHERWISE.  
BAR MARKS WITH PREFIX 'C' DENOTE COATED BARS.  
UNLESS SHOWN OTHERWISE, TENSION LAP SPLICES SHALL BE CLASS B.

BAR HOOKS SHALL HAVE STANDARD HOOK DIMENSIONS USING MINIMUM BEND DIAMETERS, WHILE STIRRUPS AND TIES SHALL HAVE MINIMUM HOOK DIMENSIONS. ALL HOOKS SHALL BE IN ACCORDANCE WITH THE STRUCTURAL STANDARD DRAWINGS SS12-1 AND SS12-2, UNLESS INDICATED OTHERWISE.

- RETAINED SOIL SYSTEM:  
APPLICATION: WALL  
PERFORMANCE: HIGH  
APPEARANCE: HIGH

- CONSTRUCTION NOTES:  
BACKFILL SHALL BE PLACED SIMULTANEOUSLY BEHIND BOTH ABUTMENTS KEEPING THE HEIGHT OF THE BACKFILL APPROXIMATELY THE SAME. AT NO TIME SHALL THE DIFFERENCE IN ELEVATION BE GREATER THAN 500mm.

BACKFILL BEHIND ABUTMENT WALLS SHALL BE DONE SIMULTANEOUSLY WITH RSS RETAINING WALL BACKFILL ONLY AFTER CAST-IN-PLACE CONCRETE TOPPING HAS REACHED 70% OF ITS DESIGN STRENGTH.

THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS OF THE EXISTING WORK AND ALL DETAILS ON SITE AGAINST THE PROPOSED WORK AND REPORT ANY DISCREPANCIES TO THE CONTRACT ADMINISTRATOR BEFORE PROCEEDING WITH THE WORK.

EXISTING CONCRETE BARRIER WALL TO BE REMOVED BY SAWCUT AND SPECIAL CARE TO BE GIVEN SO AS NOT TO DAMAGE THE DECK REINFORCING STEEL.

SAWCUTS IN CONCRETE WHERE DESIGNATED SHALL BE 25mm DEEP OR TO THE FIRST LAYER OF REINFORCING, WHICHEVER IS LESS.

ROADWAY PROTECTION SHALL BE DESIGNED TO PERFORMANCE LEVEL 2 IN ACCORDANCE WITH THE SPECIFICATIONS.

BENCH INTO THE EXISTING SLOPES IN ACCORDANCE WITH OPSS 208.010.

- ALL CROSS-FALLS AND ELEVATIONS ON EXISTING CONCRETE DECK AND APPROACH SLABS SHALL BE ESTABLISHED BY THE CONTRACTOR TO MATCH EXISTING, PRIOR TO CONSTRUCTING ABUTMENTS, UNLESS SPECIFIED OTHERWISE.

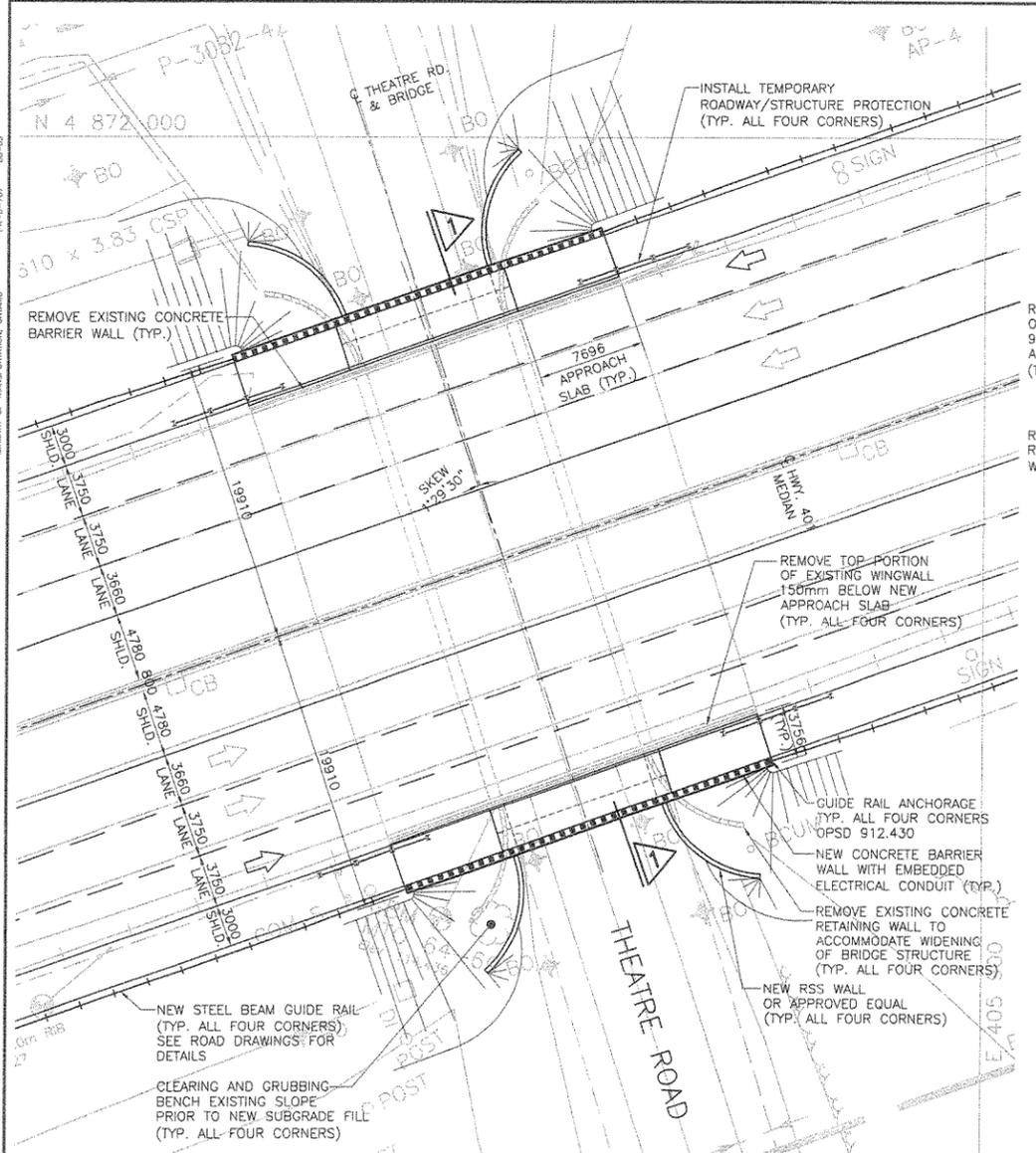
- THE CONTRACTOR SHALL SUBMIT A DEWATERING SCHEME TO THE CONTRACT ADMINISTRATOR FOR REVIEW AT LEAST TWO WEEKS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION WORKS.

- THE CONTRACTOR SHALL NOTE THAT UNTIL CAST-IN-PLACE DECK TOPPING CONCRETE HAS REACHED 70% OF ITS DESIGN STRENGTH, THERE IS NO STRUCTURAL CONNECTION BETWEEN ABUTMENTS AND DECK. THE CONTRACTOR SHALL ENSURE AND MAINTAIN STABILITY OF THE BRIDGE STRUCTURE DURING CONSTRUCTION

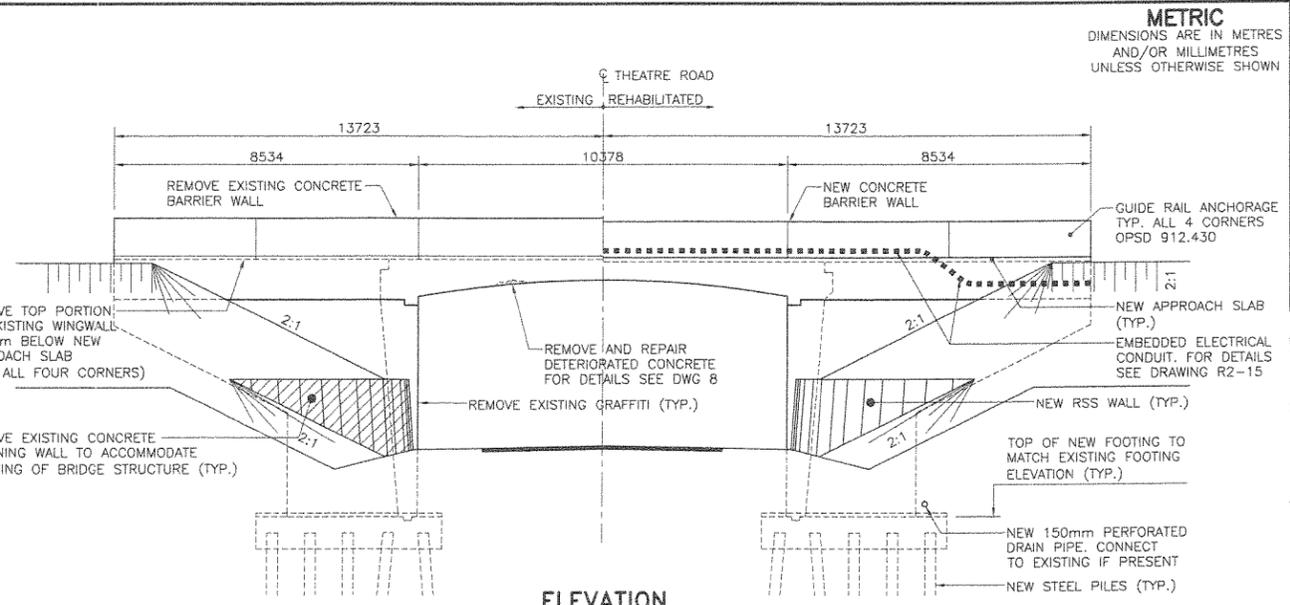
**REFERENCE DRAWINGS:**

ORIGINAL BRIDGE DRAWINGS TWP #8-242-1-A TO #8-242-6-A, PREPARED BY THE DEPARTMENT OF HIGHWAYS-ONTARIO, DATED SEPTEMBER 1958.

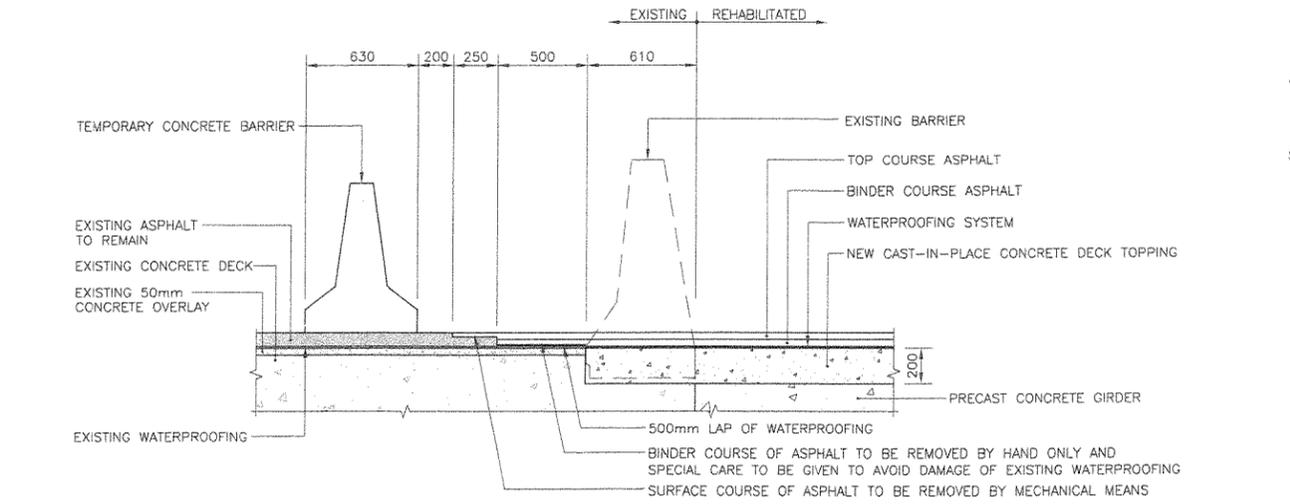
REHABILITATION (AS-BUILT) DRAWINGS SITE #21-242 DRAWINGS 1 TO 4A PREPARED BY DELCAN ENGINEERS, PLANNERS & ARCHITECTS, DATED APRIL 1997.



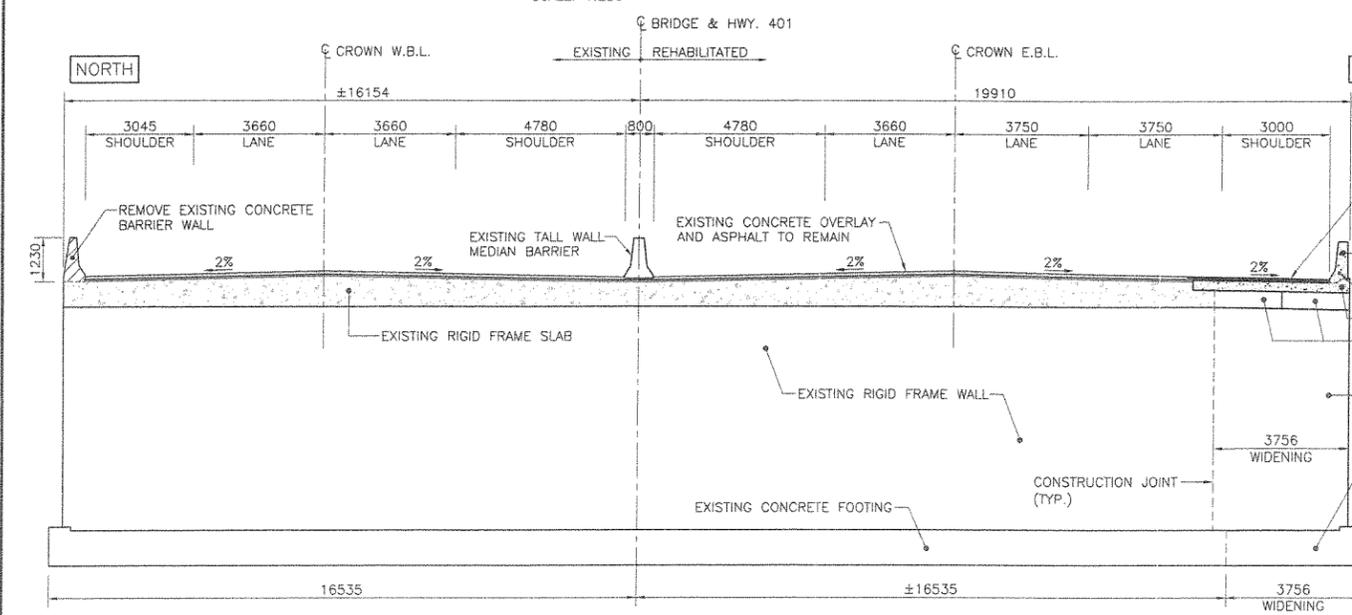
**PLAN**  
SCALE: 1:250



**ELEVATION**  
SCALE: 1:100



**TYPICAL NEW PAVING DETAIL**  
SCALE: 1:20



**SECTION**  
SCALE: 1:100

NOTE: PILES NOT SHOWN FOR CLARITY.

**APPLICABLE STANDARD DRAWINGS:**

- OPSD 208.010 BENCHING OF EARTH SLOPES
- OPSD 912.430 GUIDE RAIL SYSTEM - STEEL BEAM STRUCTURE CONNECTION
- OPSD 2302.040 EMBEDDED WORK IN STRUCTURE NEW JERSEY TYPE CONCRETE BARRIER WALL
- OPSD 3501.000 MINIMUM GRANULAR BACKFILL REQUIREMENTS - ABUTMENTS
- OPSD 4601.000 LOCATION OF SITE NUMBER & DATE FIGURES (ONLY RE-INSTATE SITE NUMBERS)

**LIST OF DRAWINGS:**

- R2-1 GENERAL ARRANGEMENT
- R2-2 BOREHOLE LOCATIONS AND SOIL STRATA
- R2-3 BOREHOLE LOCATIONS AND SOIL STRATA
- R2-4 FOOTINGS AND PILES
- R2-5 WINGWALLS
- R2-6 RIGID FRAME - CAST IN PLACE
- R2-7 PRECAST DECK
- R2-8 MISCELLANEOUS DETAILS
- R2-9 BARRIER WALL
- R2-10 APPROACH SLAB
- R2-11 PILE DRIVING CONTROL
- R2-12 RSS WALLS
- R2-13 HOOK DIMENSIONS
- R2-14 SPLICE & DRIVING SHOE DETAILS
- R2-15 EMBEDDED WORK IN STRUCTURE
- R2-16 QUANTITY SHEET I
- R2-17 QUANTITY SHEET II

**LEGEND:**

- REMOVALS
- EXISTING TRAFFIC LANE
- PROPOSED TRAFFIC LANE



DRAWING NOT TO BE SCALED  
100mm ON ORIGINAL DRAWING

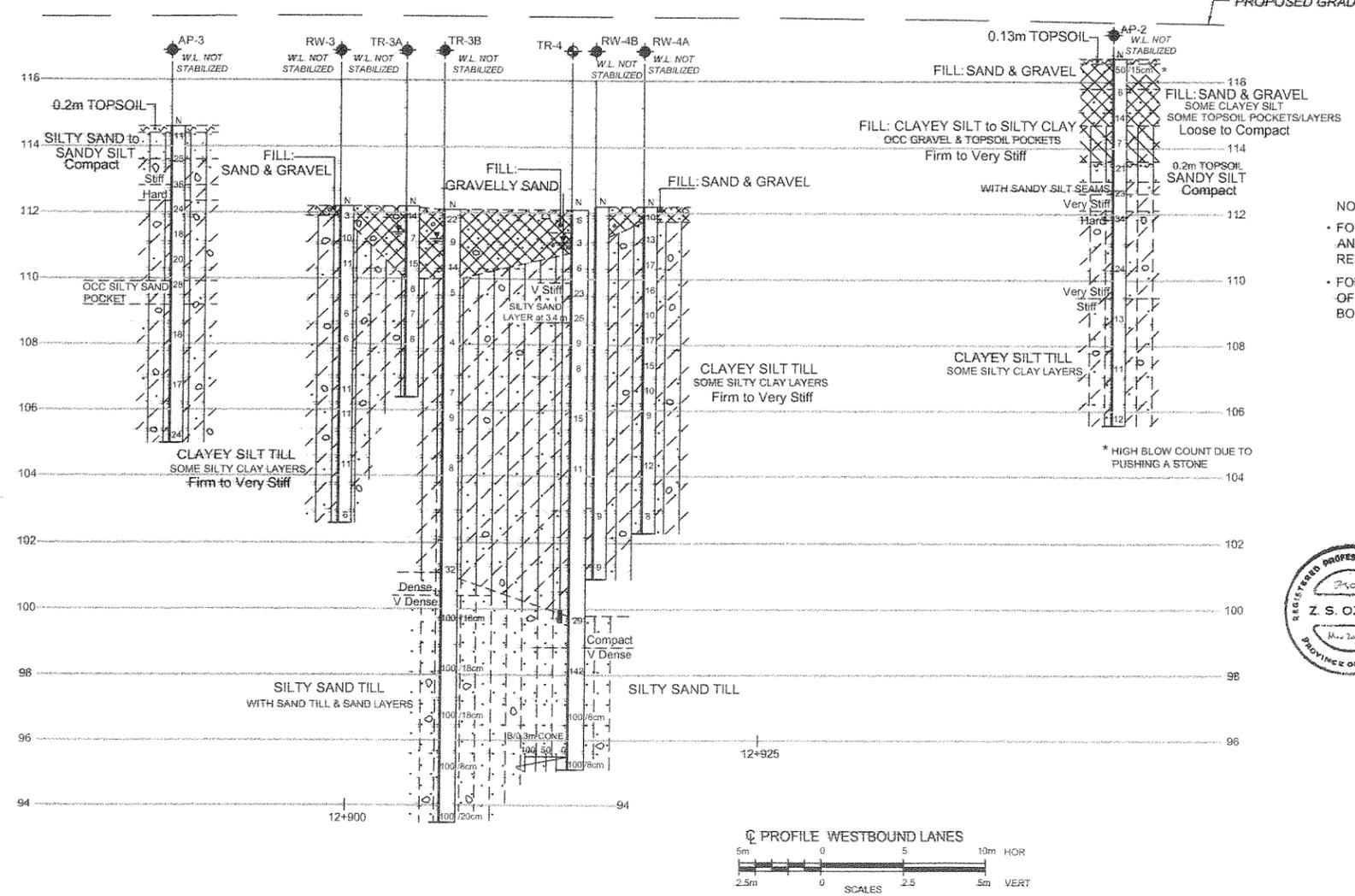
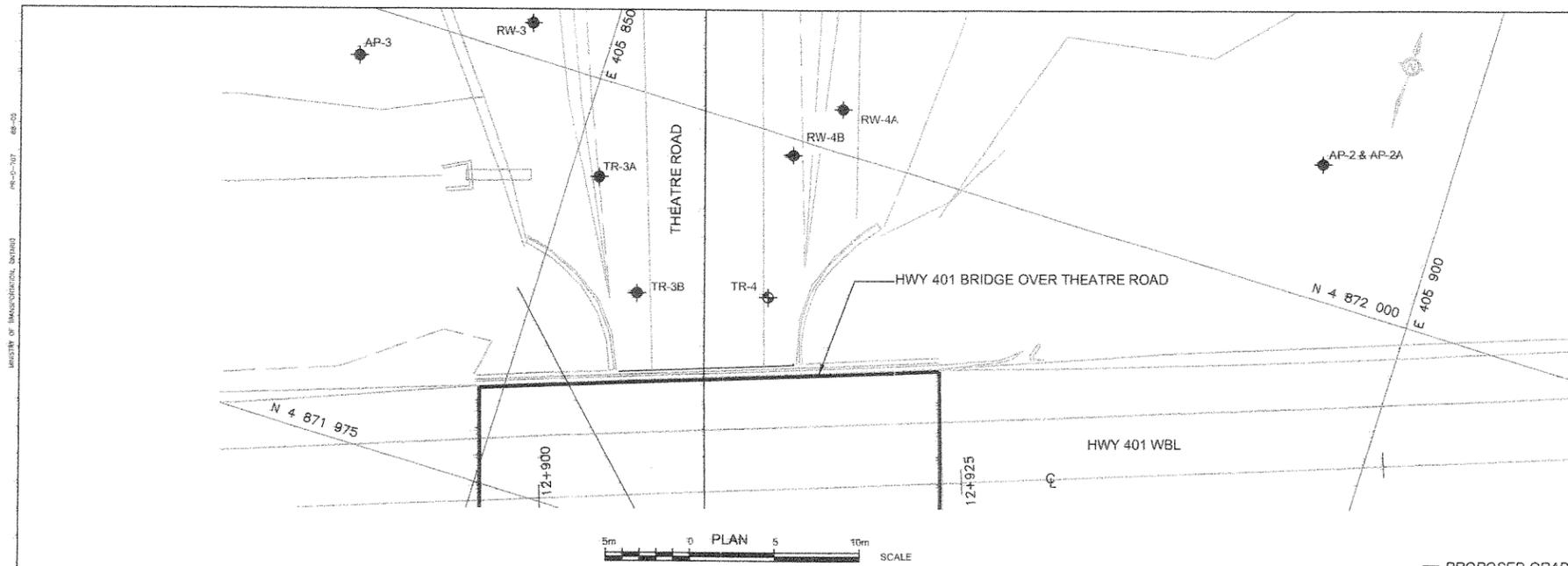
REVISIONS	DESCRIPTION

DESIGN	P.K. CHK	S.B. CODE	CHBDC-00	CL-625-ONT	DATE	04.01.12
DRAWN	A.B. CHK	S.B. SITE	#21-242		DWG	R2-1

DRAWING NAME: 2538-172-00-05-S-1295\_S1.dwg  
 SAVED DATE: 3/20/2006 1:33 PM  
 PLOT DATE: 3/20/2006 2:53 PM

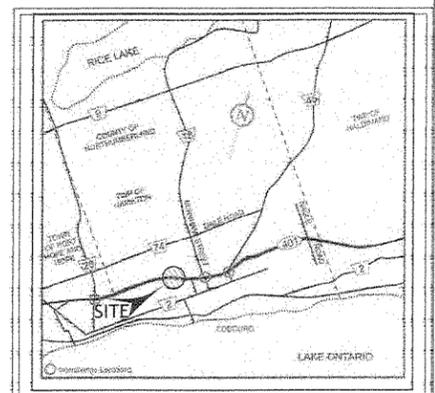
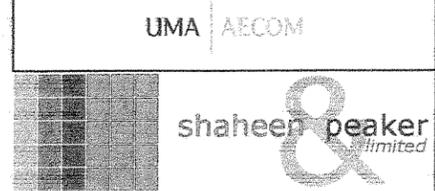
MINISTRY OF INFRASTRUCTURE, DEVELOPMENT AND COMMUNITARIAN AFFAIRS

DRAWING NAME: MODIFIED; CREATED: MODIFIED; DATE: MODIFIED; TIME: MODIFIED



METRIC  
DIMENSIONS ARE IN METRES  
AND/OR MILLIMETRES  
UNLESS OTHERWISE SHOWN.  
STATIONS ARE IN  
KILOMETRES + METRES.

DIST	43	
CONT No	2006-4016	
WP No	4073-01-00	
THEATRE ROAD OVERPASS HIGHWAY 401		SHEET
BORE HOLE LOCATIONS & SOIL STRATA		296



- NOTES:
- FOR DETAILED SUBSURFACE CONDITIONS AND DYNAMIC CONE PENETRATION TESTS REFER TO RECORD OF BOREHOLE SHEETS.
  - FOR SUBSURFACE CONDITIONS OF BH AP-2A REFER TO RECORD OF BOREHOLE SHEET.

LEGEND

- Bore Hole
- Bore Hole
- Blows/0.3m (Std. Pen. Test, 475 J/blow)
- Water Level at Time of Investigation Sep., 2003
- Water Level in Piezometer
- Piezometer

No.	ELEVATION	CO-ORDINATES	
		NORTH	EAST
RW-3	112.2	4 872 002.0	405 845.2
AP-3	114.6	4 871 997.1	405 836.0
TR-3A	112.2	4 871 994.4	405 851.7
TR-3B	112.1	4 871 988.5	405 855.9
TR-4	112.1	4 871 990.6	405 863.4
RW-4A	112.2	4 872 010.8	405 866.3
RW-4B	112.2	4 871 999.0	405 862.3
AP-2	116.7	4 872 007.8	405 892.5
AP-2A	116.7	4 872 007.3	405 892.3

**NOTE**  
The boundaries between soil strata have been established only at Bore Hole locations. Between Bore Holes the boundaries are assumed from geological evidence.

NOTE: The complete foundation investigation and design report for this project and other related documents may be examined at the Engineering Materials Office, Downsview. Information contained in this report and related documents is specifically excluded in accordance with the conditions of Section 66.2.01 of OPS Gen. Cond.



DATE	BY	DESCRIPTION

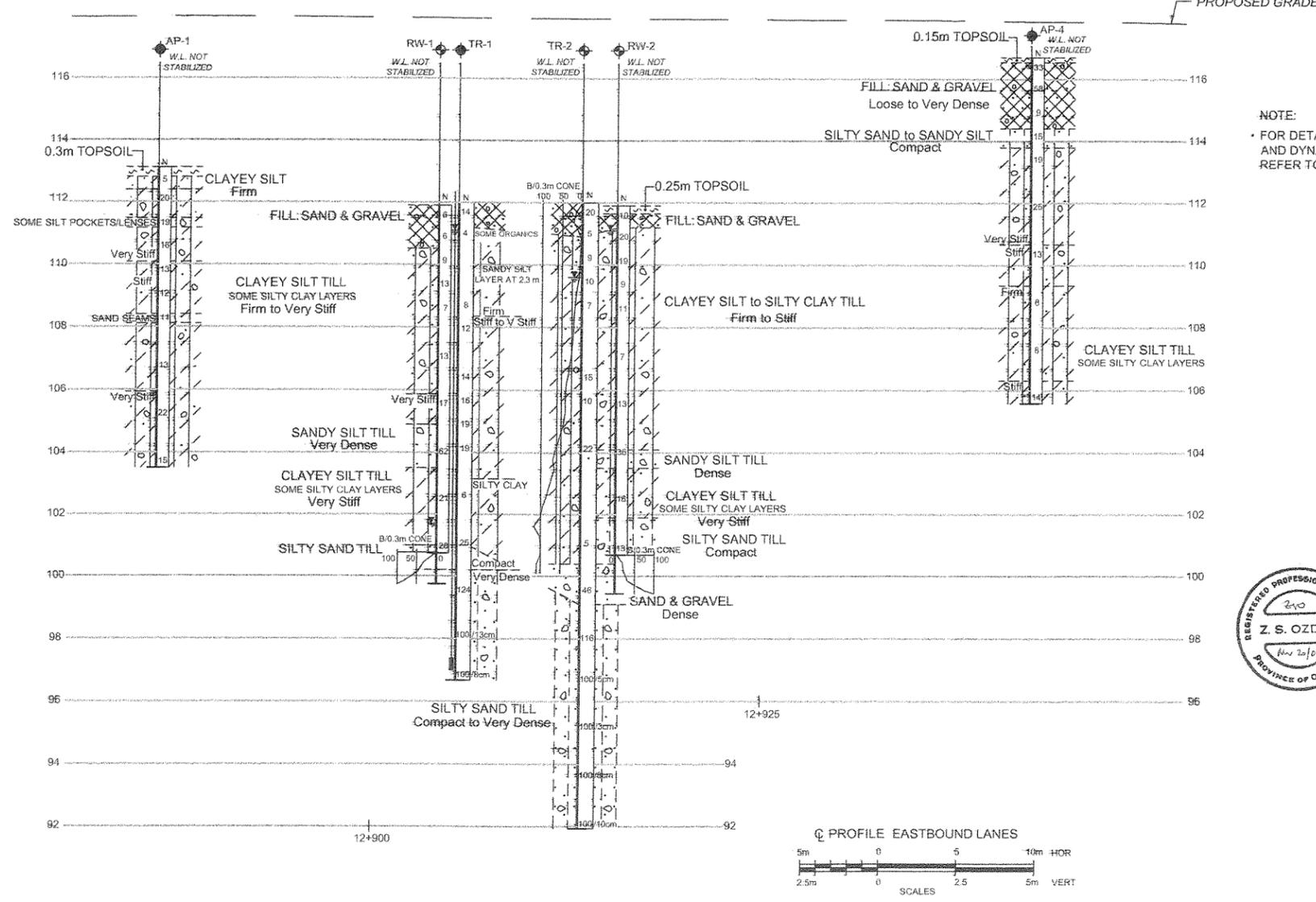
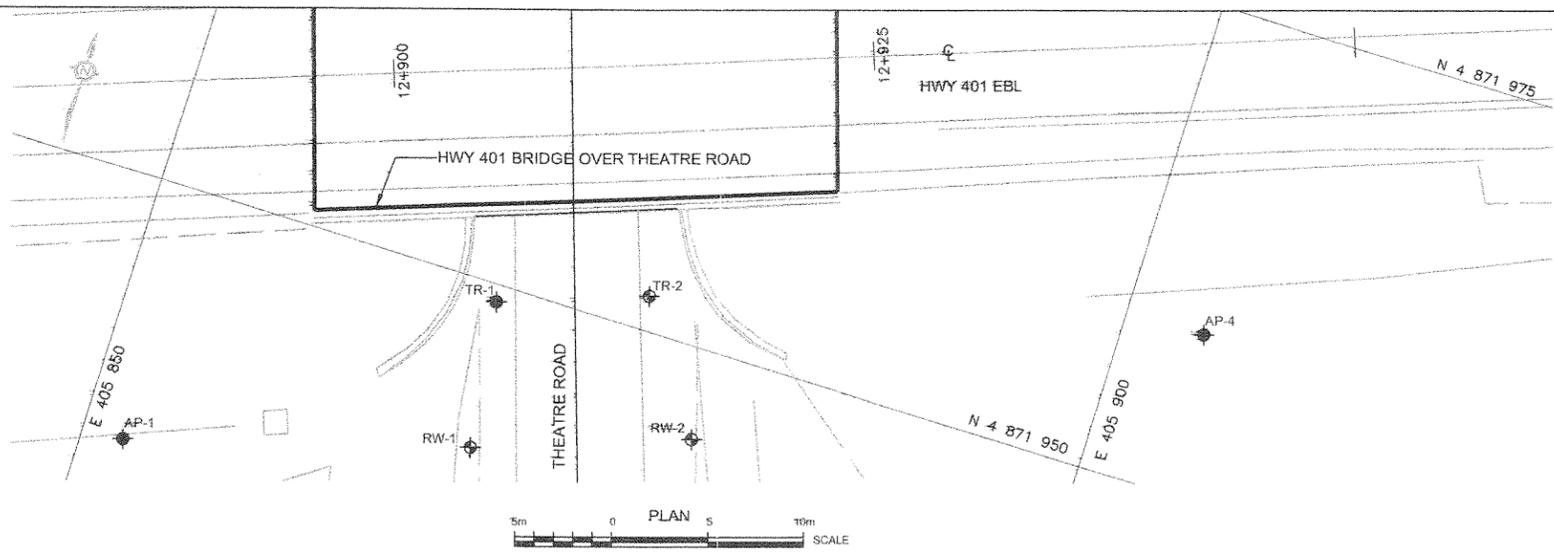
Geocres No. \_\_\_\_\_

HWY No	401	DIST	43
SUB'D	ZO	CHECKED RM	DATE July 2004
DRAWN	JZ	CHECKED	APPROVED

Site #21-234  
DWG 1

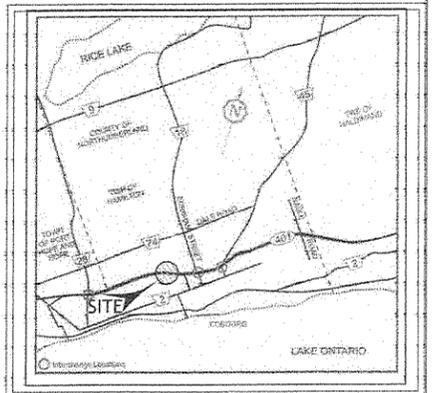
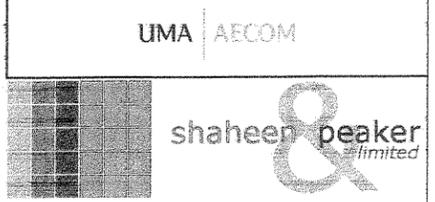
MINISTRY OF TRANSPORTATION, ONTARIO

DRAWING NAME:   
 CREATED:   
 MODIFIED:   
 DATE:   
 TIME:



**METRIC**  
DIMENSIONS ARE IN METRES  
AND/OR MILLIMETRES  
UNLESS OTHERWISE SHOWN.  
STATIONS ARE IN  
KILOMETRES + METRES.

DIST	43	
CONT No	2006-4016	
WP No	4073-01-00	SHEET
THEATRE ROAD OVERPASS HIGHWAY 401		297
BORE HOLE LOCATIONS & SOIL STRATA		



KEY PLAN  
N.T.S.

NOTE:  
FOR DETAILED SUBSURFACE CONDITIONS  
AND DYNAMIC CONE PENETRATION TESTS  
REFER TO RECORD OF BOREHOLE SHEETS.

LEGEND			
	Bore Hole		
	Bore Hole		
	N	Blows/0.3m (Std. Pen. Test, 475 J/blow)	
		Water Level at Time of Investigation	Sep., 2003
		Water Level In Piezometer	
	Piezometer		
CO-ORDINATES			
No.	ELEVATION	NORTH	EAST
AP-1	113.1	4 871 936.6	405 852.1
RW-1	111.9	4 871 941.6	405 869.5
TR-1	112.0	4 871 949.1	405 868.6
TR-2	112.0	4 871 951.7	405 876.0
RW-2	111.9	4 871 945.4	405 880.5
AP-4	116.7	4 871 958.4	405 904.2

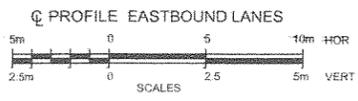
**NOTE**  
The boundaries between soil strata have been established only at Bore Hole locations. Between Bore Holes the boundaries are assumed from geological evidence.

NOTE: The complete foundation investigation and design report for this project and other related documents may be examined at the Engineering Materials Office, Downsview. Information contained in this report and related documents is specifically excluded in accordance with the conditions of Section GC 2.01 of OPS Gen. Cond.

REV.	DATE	BY	DESCRIPTION

Geocres No.

HWY No	401	DIST	43
SUBM'D	ZO	CHECKED	RM
DATE	July 2004	SITE	#21-234
DRAWN	JZ	CHECKED	-
APPROVED		DWG	2





METRIC  
DIMENSIONS ARE IN METRES  
AND/OR MILLIMETRES  
UNLESS OTHERWISE SHOWN

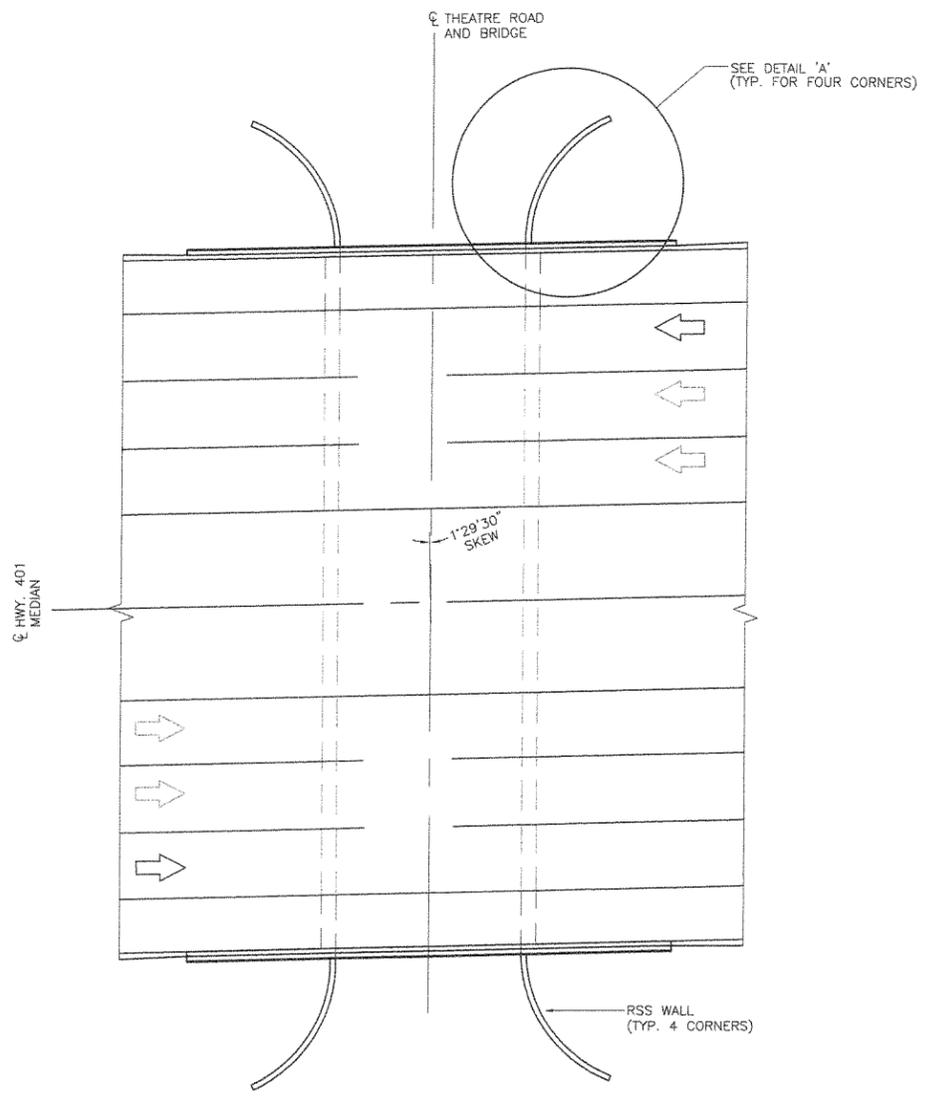
DIST  
CONT No 2006-4016  
WP No 4073-01-00



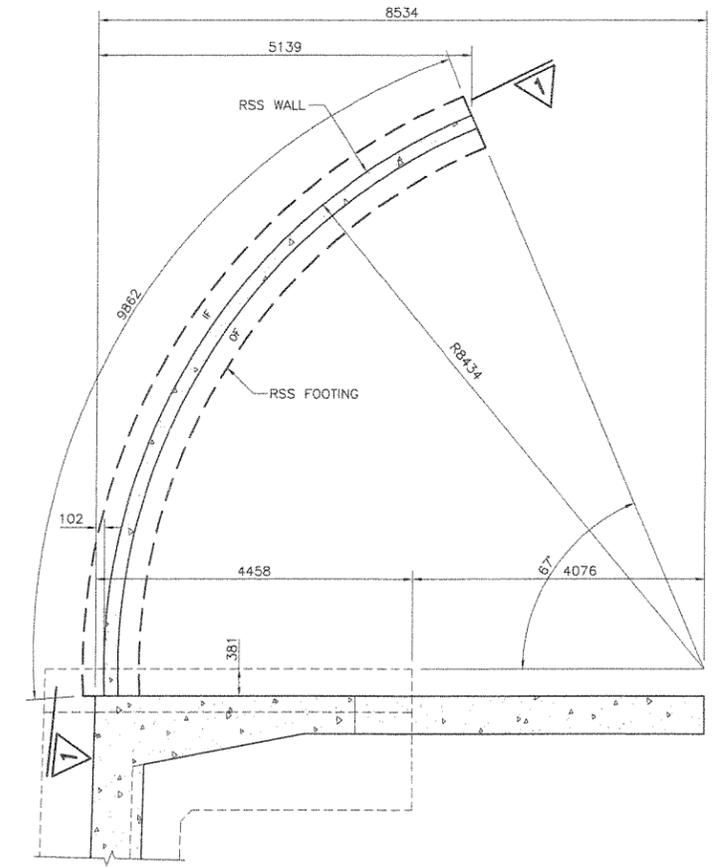
THEATRE ROAD OVERPASS  
HIGHWAY 401  
BRIDGE WIDENING  
RSS WALLS

SHEET  
306

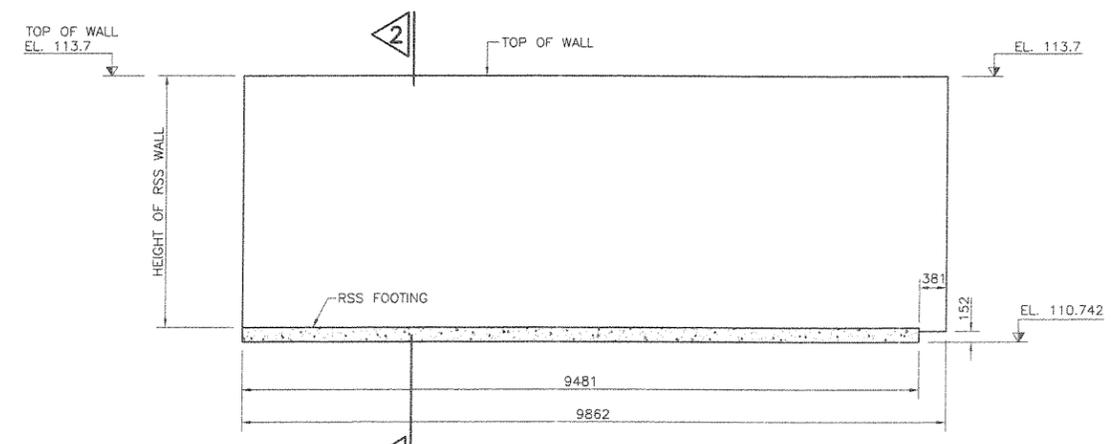
UMA | AECOM



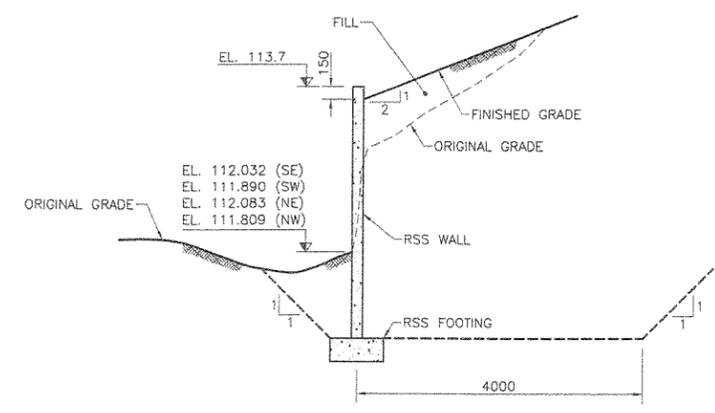
**RSS WALL PLAN**  
SCALE: 1:200



**DETAIL A**  
SCALE: 1:50



**SECTION 1**  
SCALE: 1:50



**SECTION 2**  
SCALE: 1:50

DRAWING NOT TO BE SCALED  
100mm ON ORIGINAL DRAWING



REVISIONS	DESCRIPTION

DESIGN	P.K. CHK	S.B. CODE	CHBDC-00	CL-625-ONT	DATE	04.01.12
DRAWN	A.B. CHK	S.B. SITE	#21-242		DWG	R2-12

DRAWING NAME: 2538-172-00\_05-S-1306\_ST.dwg  
 SAVED DATE: 3/9/2006 2:45 PM  
 PLOT DATE: 3/20/2006 1:54 PM  
 MINISTRY OF TRANSPORTATION, ONTARIO  
 PR-02-707 88-05

**METRIC**  
DIMENSIONS ARE IN METRES  
AND/OR MILLIMETRES  
UNLESS OTHERWISE SHOWN

**DIST**  
CONT No 2006-4016  
WP No 4073-01-00

**SHEET**  
310

**COBOURG CREEK WEST  
HIGHWAY 401  
CULVERT EXTENSION  
GENERAL ARRANGEMENT**

UMA | AECOM

**GENERAL NOTES**

- CLASS OF CONCRETE 30 MPa
- CLEAR COVER TO REINFORCING STEEL  
FOOTINGS 100 ± 25  
REMAINDER 70 ± 20 (UNLESS OTHERWISE NOTED)
- REINFORCING STEEL SHALL BE GRADE 400 UNLESS OTHERWISE SPECIFIED.  
BAR MARKS WITH PREFIX 'C' DENOTE COATED BARS.  
UNLESS SHOWN OTHERWISE, TENSION LAP SPLICES SHALL BE CLASS B.  
BAR HOOKS SHALL HAVE STANDARD DIMENSIONS USING MINIMUM BEND DIAMETERS, WHILE STIRRUPS AND TIES SHALL HAVE MINIMUM HOOK DIMENSIONS. ALL HOOKS SHALL BE IN ACCORDANCE WITH THE STRUCTURAL STANDARD DRAWINGS SS12-1 AND SS12-2, UNLESS INDICATED OTHERWISE.
- CONSTRUCTION NOTES  
BACKFILL SHALL BE PLACED SIMULTANEOUSLY BEHIND BOTH SIDES OF CULVERT KEEPING THE HEIGHT OF THE BACKFILL APPROXIMATELY THE SAME. AT NO TIME SHALL THE DIFFERENCE IN ELEVATION BE GREATER THAN 500mm.  
BACKFILL TO CULVERT AND WING WALLS TO BE IN ACCORDANCE WITH SP902S01.  
FOOTINGS TO BE CAST ON UNDISTURBED SOIL.  
NO CONCRETE SHALL BE PLACED FOR ANY FOOTINGS UNTIL THE DEPTH OF THE EXCAVATION AND THE CHARACTER OF THE FOUNDATION HAVE BEEN REVIEWED BY THE QUALITY VERIFICATION ENGINEER.  
THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS OF THE EXISTING WORK AND ALL DETAILS ON SITE AND REPORT ANY DISCREPANCIES TO THE CONTRACT ADMINISTRATOR BEFORE PROCEEDING WITH THE WORK.  
ROADWAY PROTECTION SHALL BE DESIGNED TO PERFORMANCE LEVEL 2 IN ACCORDANCE WITH THE SPECIFICATIONS.  
THE CONSTRUCTION WORK WITHIN THE CREEK MUST BE DONE BETWEEN JULY 1ST AND SEPTEMBER 15TH.  
CONSTRUCTION SEQUENCE ON THIS DRAWING CAN BE MODIFIED ONLY WHEN THE CONTRACTOR SUBMITS A MODIFIED CONSTRUCTION SEQUENCE TO THE CONTRACT ADMINISTRATOR AND IT IS APPROVED BY THE CONTRACT ADMINISTRATOR.

**CONSTRUCTION SEQUENCE**

- INSTALL ROADWAY PROTECTION AS PER OP53 539.  
INSTALL COFFER DAM AS PER OP55 577, ON ONE SIDE (EITHER EAST OR WEST).
- REMOVE SPECIFIED PORTION OF EXISTING CULVERT WALL.  
REMOVE WING WALLS INCLUDING WING WALL FOOTINGS.  
EXISTING CULVERT FOOTING AND BAFFLE WALLS TO REMAIN.
- CONSTRUCT NEW CULVERT FOOTING, WING WALL FOOTING, A PORTION OF CULVERT WALL AND WING WALL.
- MODIFY COFFERDAM AND CONSTRUCT A PORTION OF NEW BAFFLE WALL.
- REMOVE COFFERDAM.
- REPEAT STEP 1 TO 5 FOR CONSTRUCTION OF OPPOSITE SIDE.
- CONSTRUCT REMAINING CULVERT WALL AND BACKFILL.

**REFERENCE DRAWINGS**

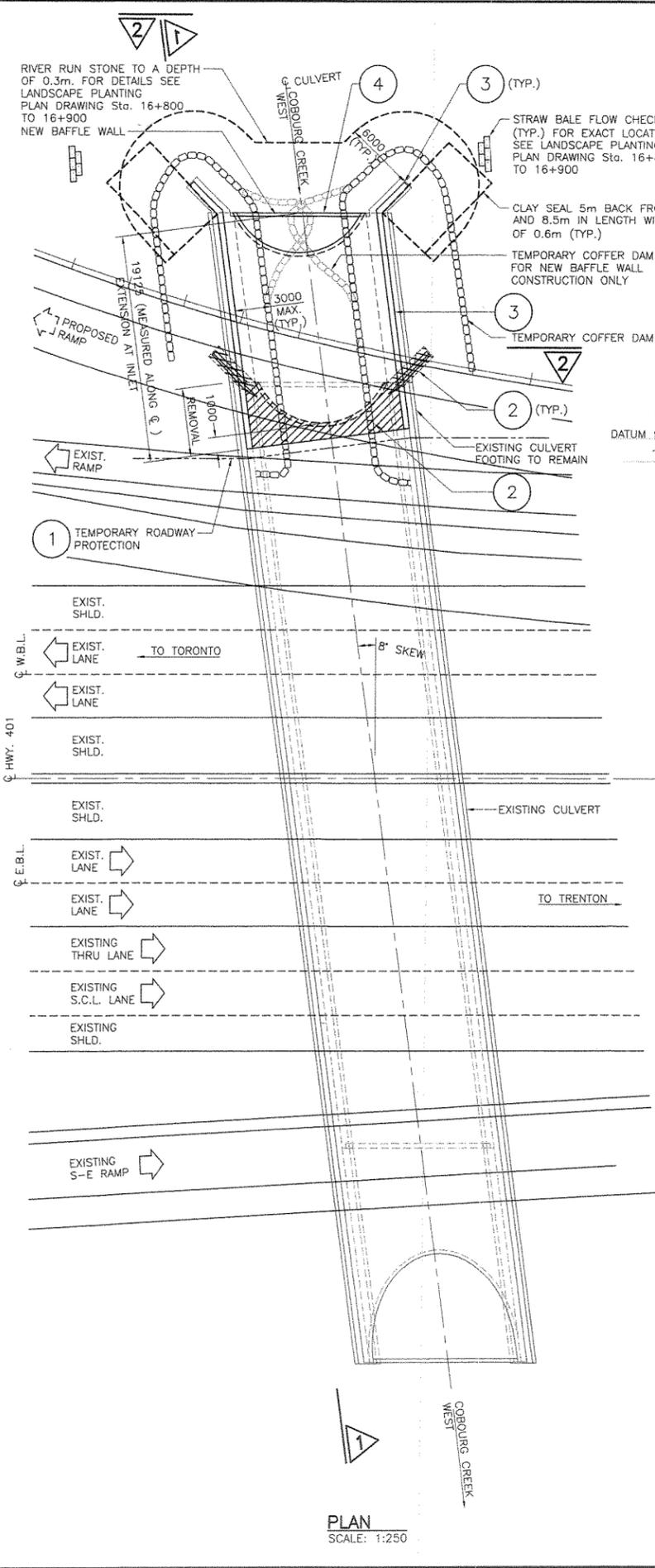
ORIGINAL BRIDGE DRAWINGS TWP #8-244-MT04A  
PREPARED BY THE DEPARTMENT OF HIGHWAYS-ONTARIO  
DATED JANUARY 1958.

**APPLICABLE STANDARD DRAWINGS**

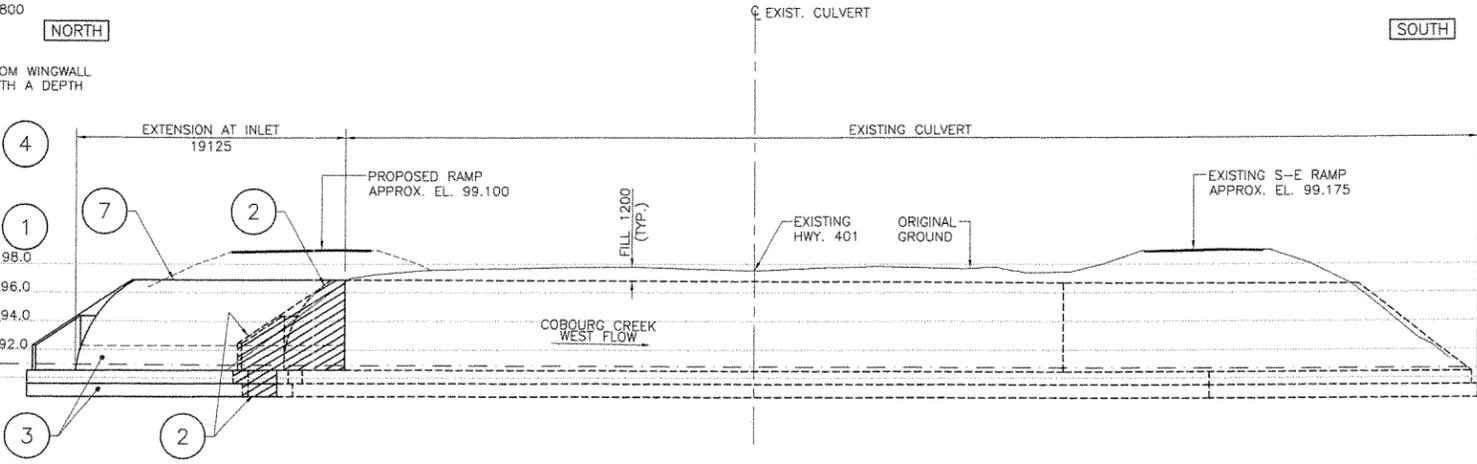
- OPSD 4601.000 LOCATION OF SITE NUMBER & DATE FIGURES
- OPSD 4670.000 TYPICAL JOINT DETAILS
- OPSD 202.030 EMBANKMENT WIDENING FOR GUIDE RAIL END TREATMENTS AND TRANSITIONS
- OPSD 219.130 HEAVY DUTY SILT FENCE BARRIER

REVISIONS	DESCRIPTION

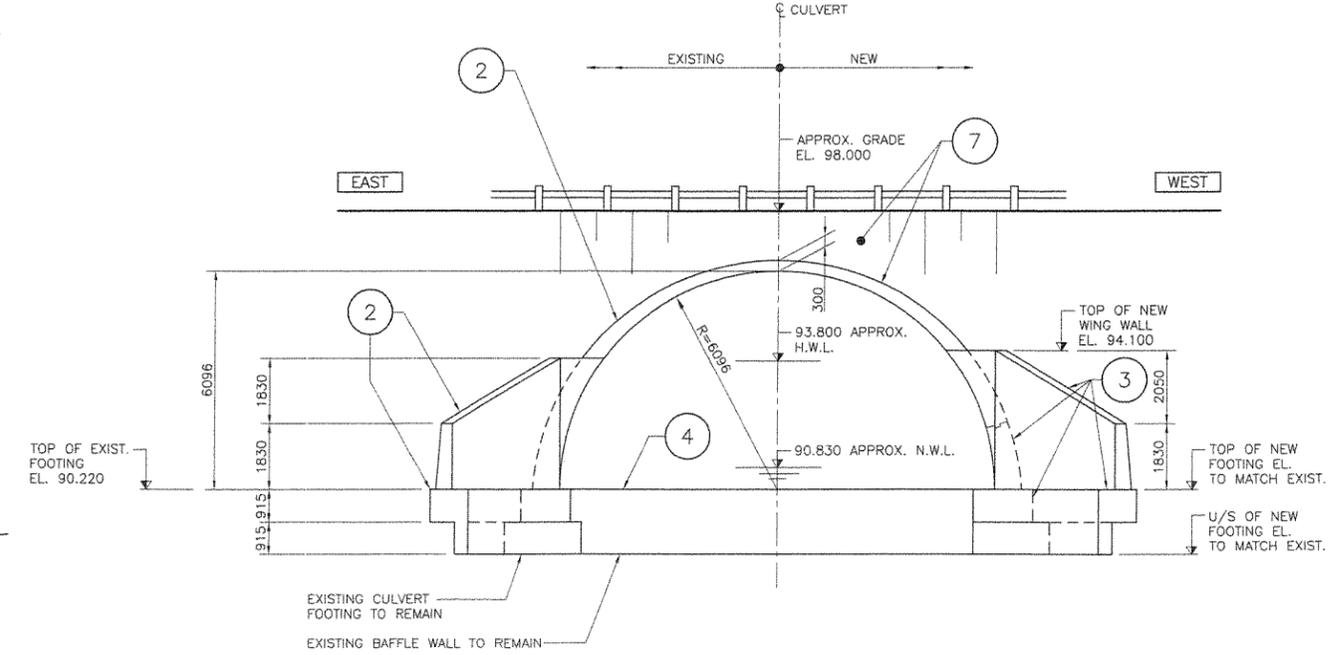
DESIGN	P.K. CHK	S.B. CODE	CHBDC-00	CL-625-ONT	DATE	04.01.19
DRAWN	A.B. CHK	S.B. SITE	#21-244		DWG	1



**PLAN**  
SCALE: 1:250



**ELEVATION**  
SCALE 1:250



**INLET**  
SCALE 1:125

**LEGEND**

	REMOVALS		EXISTING TRAFFIC LANE
			PROPOSED TRAFFIC LANE

- LIST OF DRAWINGS**
- GENERAL ARRANGEMENT
  - BORE HOLE LOCATIONS & SOIL STRATA
  - REMOVALS
  - DETAILS OF STEEL REINFORCEMENT
  - HOOK DIMENSIONS



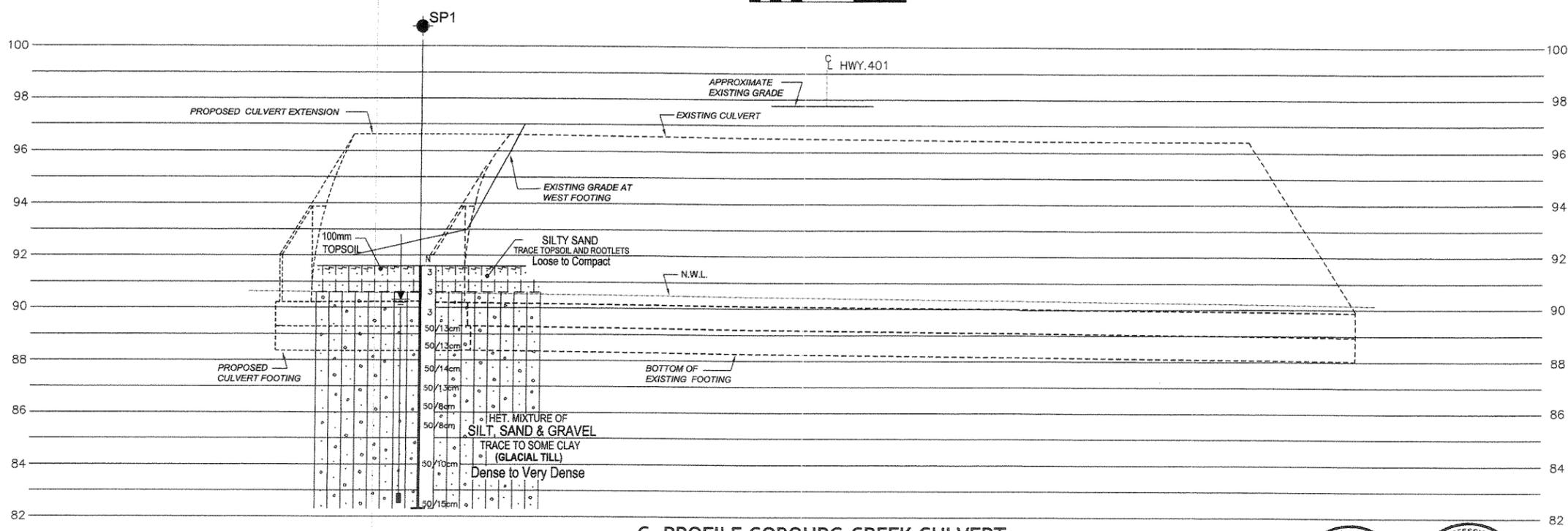
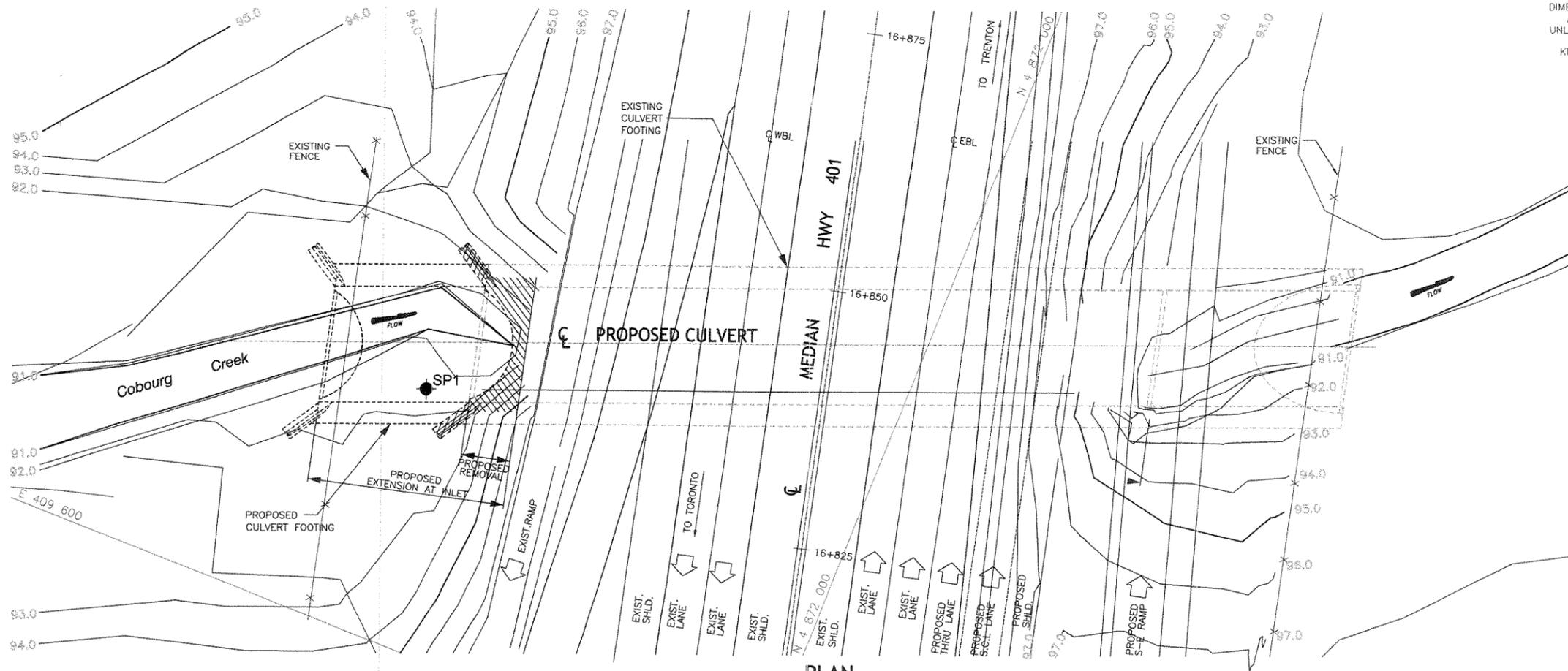
DRAWING NOT TO BE SCALED  
100mm ON ORIGINAL DRAWING

DRAWING NAME: 2536-172-00\_05-S-1310-ST.dwg  
 SAVED BY: Aobrt  
 PLOT DATE: 3/20/2006 1:56 PM  
 SAVED DATE: 3/20/2006 10:15 AM  
 MINISTRY OF TRANSPORTATION, ONTARIO  
 PR-D-707

MINISTRY OF TRANSPORTATION, ONTARIO  
 PR-D-707 8E-05  
 2004/01/20 13:14:20  
 MODIFIED:  
 S11.DWG  
 CREATED:

METRIC  
 DIMENSIONS ARE IN METRES  
 AND/OR MILLIMETRES  
 UNLESS OTHERWISE SHOWN.  
 STATIONS ARE IN  
 KILOMETRES + METRES.

DIST	43	
CONT	2006-4016	
WP No.	4073-01-00	
COBOURG CREEK WEST HIGHWAY 401 CULVERT EXTENSION BORE HOLE LOCATIONS & SOIL STRATA		<b>SHEET</b> 311
		

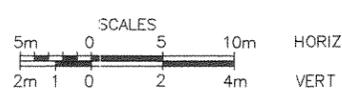


LEGEND			
	Bore Hole		
	Dynamic Cone Penetration Test (Cone)		
	Bore Hole & Cone		
	Blows/0.3m (Std Pen Test, 475 J/blow)		
	Blows/0.3m (60' Cone, 475 J/blow)		
	W L at time of investigation November 2002		
	W L in Piezometer		
	Piezometer		

No.	ELEVATION	CO-ORDINATES	
		NORTH	EAST
SP1	92.0	4 871 975.2	409 665.2
SP2	91.6	4 872 043.1	409 624.4
SP3	97.6	4 871 995.5	409 659.9

**NOTE**  
 The boundaries between soil strata have been established only at Bore Hole locations. Between Bore Holes the boundaries are assumed from geological evidence.

NOTE: The complete foundation investigation and design report for this project and other related documents may be examined at the Engineering Materials Office, Downsview. Information contained in this report and related documents is specifically excluded in accordance with the conditions of Section GC 2.01 of OPS Gen. Cond.



REV.	DATE	BY	DESCRIPTION

Geocres No. \_\_\_\_\_

HWY No	401	DIST	43
SUBM'D RA	CHECKED ZO	DATE	Jan. 2004
DRAWN	JTW	CHECKED RA	APPROVED
		SITE	#21-244
		DWG	2