

# LIST OF DRAWINGS IN THIS CONTRACT

## COVER SHEET

1 OF 25 KEY PLAN  
 2 OF 25 Plan & Profile 6+500 to 7+100  
 3 OF 25 Plan & Profile 7+100 to 7+700  
 4 OF 25 Plan & Profile 7+700 to 8+300  
 5 OF 25 Plan & Profile 8+300 to 8+900  
 6 OF 25 Plan & Profile 8+900 to 9+500  
 7 OF 25 Plan & Profile 9+500 to 10+000  
 8 OF 25 Plan & Profile 10+000 to 10+700  
 9 OF 25 Plan & Profile 10+700 to 11+300  
 10 OF 25 Plan & Profile 11+300 to 11+900  
 11 OF 25 Plan & Profile 11+900 to 12+500  
 12 OF 25 Plan & Profile 12+500 to 13+100

13 OF 25 Plan & Profile 13+100 to 13+700  
 14 OF 25 Plan & Profile 13+700 to 14+300  
 15 OF 25 Plan & Profile 14+300 to 14+900  
 16 OF 25 Plan & Profile 14+900 to 15+500  
 17 OF 25 Plan & Profile 15+500 to 16+100  
 18 OF 25 Plan & Profile 16+100 to 16+700  
 19 OF 25 Plan & Profile 16+700 to 17+300  
 20 OF 25 Plan & Profile 17+300 to 17+900  
 21 OF 25 Plan & Profile 17+900 to 18+500  
 22 OF 25 Plan & Profile 18+500 to 19+100  
 23 OF 25 Plan & Profile 19+100 to 19+700  
 24 OF 25 Plan & Profile 19+700 to 19+808  
 25 OF 25 Typical Highway Cross Section

# KOUCHIBOUGUAC NATIONAL PARK

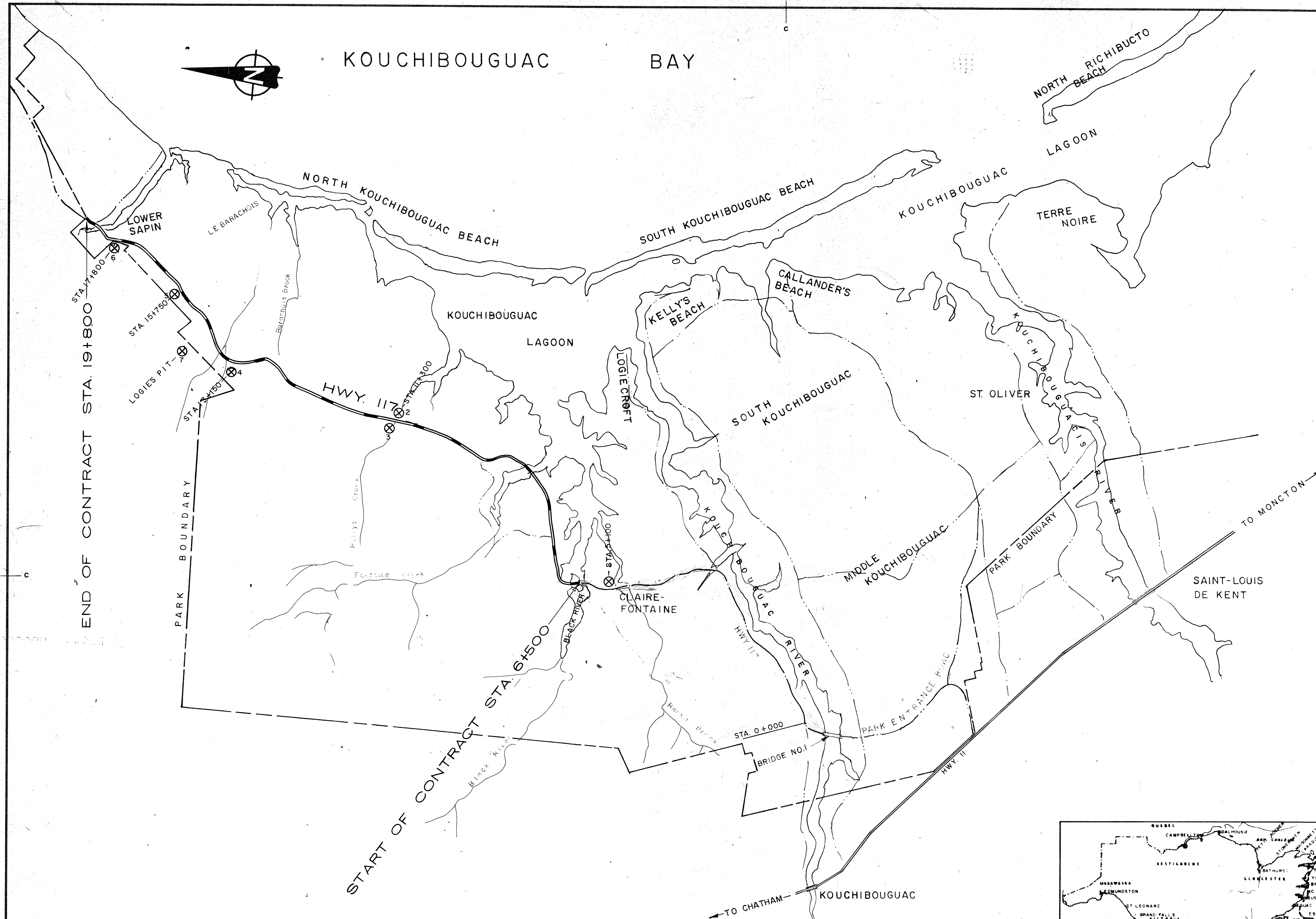
UPGRADING HIGHWAY 117 Km 6.5 to 19.8



324043

DEPT. OF PUBLIC WORKS  
 OF CANADA

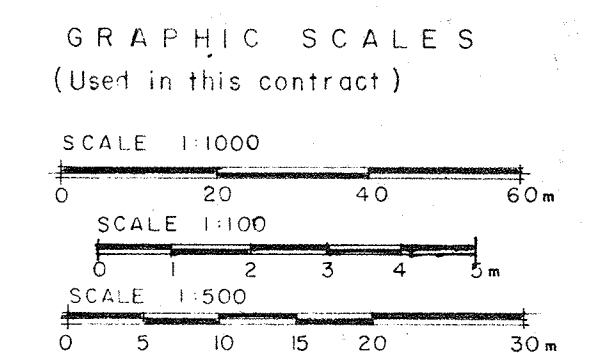




# PLAN OF SITE

SCALE 1:50 000

⊗ DESIGNATES LOCATION OF BORROW & DISPOSAL PITS



revisions date

A	A detail no. no. du détail	A
C	B location drawing no. sur dessin no.	B C
	C drawing no. dessin no.	

project project

UPGRADING HWY. 117

KOUCHIBOUGUAC

NATIONAL PARK

Kent Co., N.B.

drawing dessin

## KEY PLAN

designed *A. McLeod P.Eng.* conçu

date drawn *B.M. P.Eng.* dessiné

date *8/12/23* reviewed *A. McLeod P.Eng.* examiné

date *8/12/22* approved *A. McLeod P.Eng.* approuvé

date *8/12/23* Tender *W.F. Lord P.Eng.* Soumission

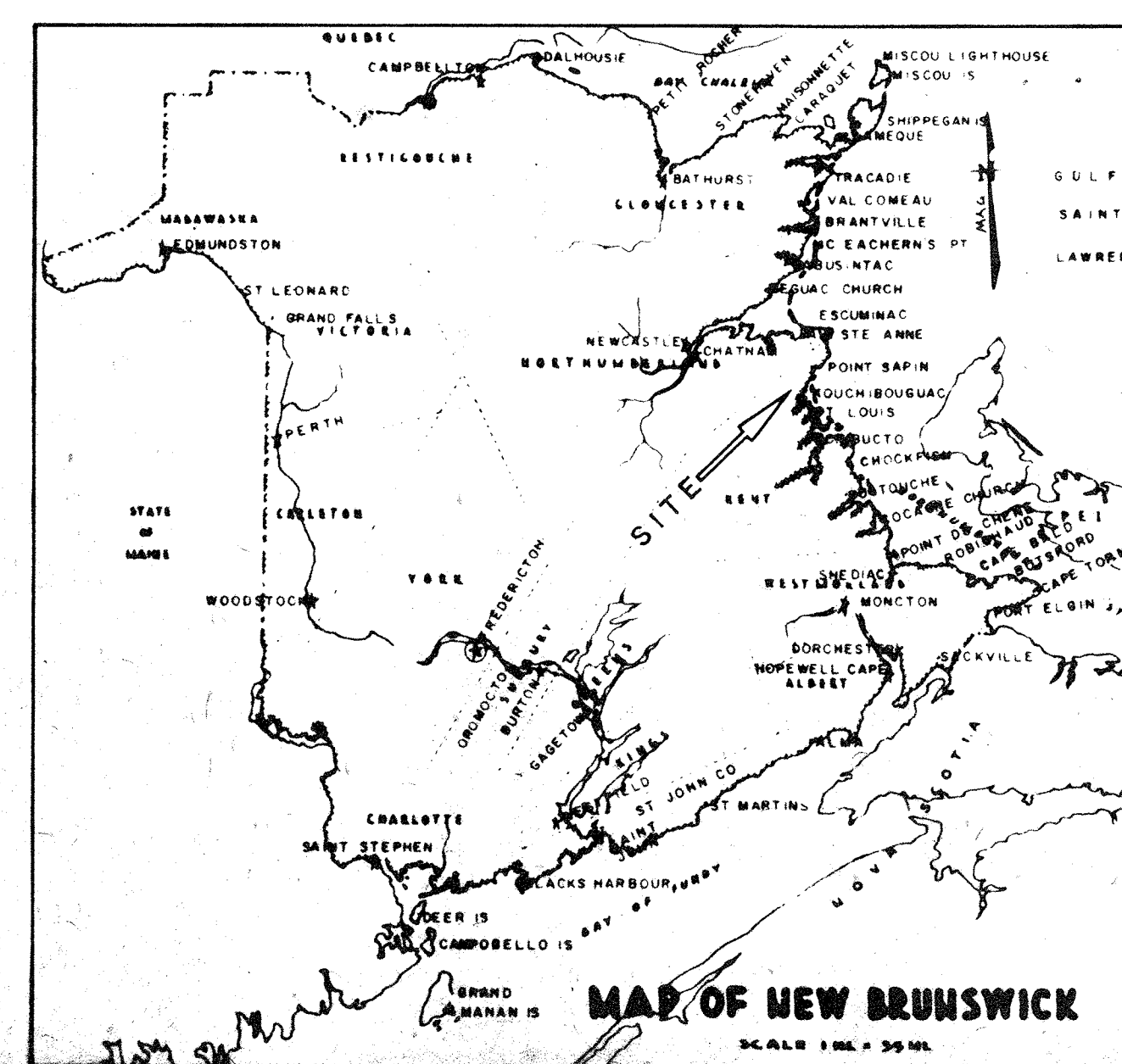
PWC Project Manager Administrateur de projets TPC

project number no. du projet

324043

drawing no. no. du dessin

1 OF 25





SUB SURFACE SURVEYS

CONSULTING  
GEOTECHNICAL ENGINEERS  
FREDERICTON N.B.

LEGEND

- R — DITCH GRADES RIGHT SIDE
- " — LEFT SIDE
- B.H. BOREHOLE
- P123 UTILITY POLE
- FARM CROSSING CULVERT
- HIGHWAY CULVERT
- UNDERGROUND CONDUIT
- GUIDERAIL

SCALES —  
Horiz — 1 : 1000  
Vert. — 1 : 100

revisions \_\_\_\_\_ date \_\_\_\_\_

A	A detail no.	A
	no. du détail	
	B location drawing no.	
C	C drawing no.	B C
	dessin no.	

project  
**UPGRADING HWY. 117**  
**KOUCHIBOUGUAC NATIONAL PARK**

Kent Co. N.B.

drawing \_\_\_\_\_ dessin \_\_\_\_\_

Km 6.5 to 19.8

PLAN - PROFILE

designed *A. McRae, P.Eng.* conçu \_\_\_\_\_

date \_\_\_\_\_

drawn *B. McRae* dessiné \_\_\_\_\_

date *11/12/22* reviewed *A. McRae, P.Eng.* examiné \_\_\_\_\_

date *11-12-22* approved \_\_\_\_\_ approuvé \_\_\_\_\_

date \_\_\_\_\_

Tender *W.F. Lord, P.Eng.* Soumission \_\_\_\_\_

PWC Project Manager *11-12-23* Administrateur de projets TPC \_\_\_\_\_

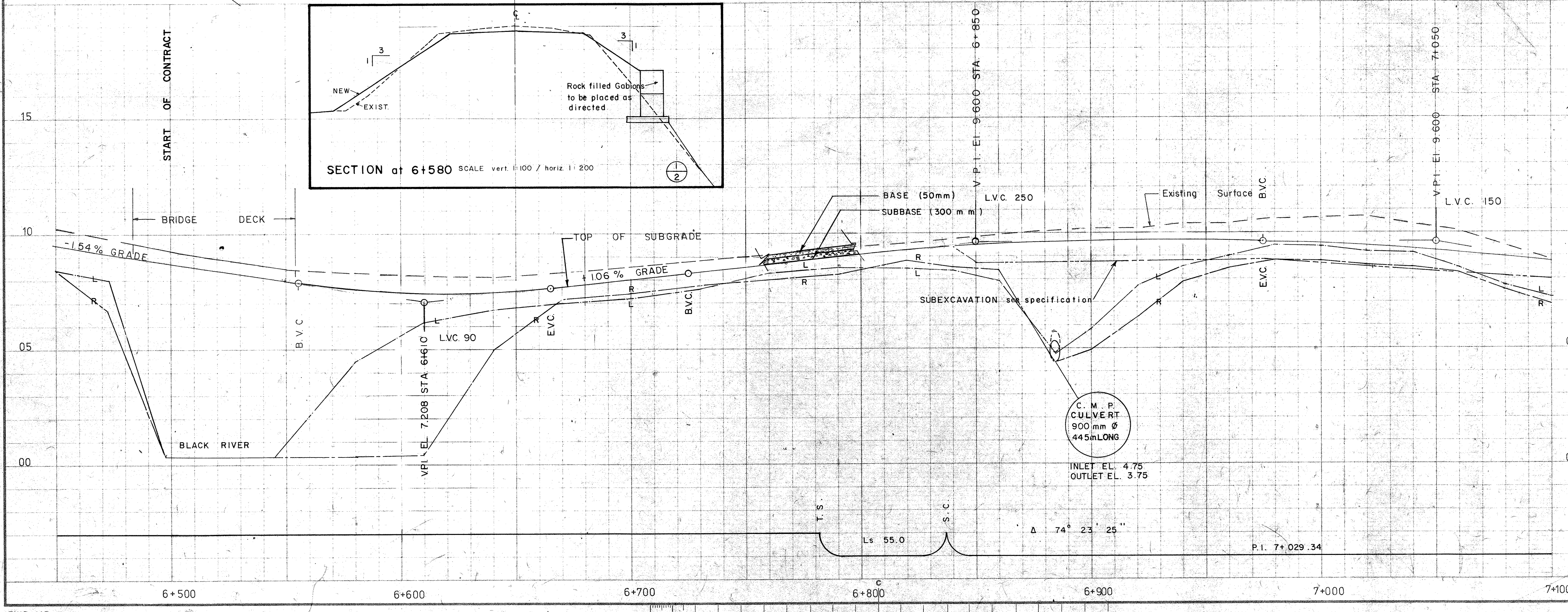
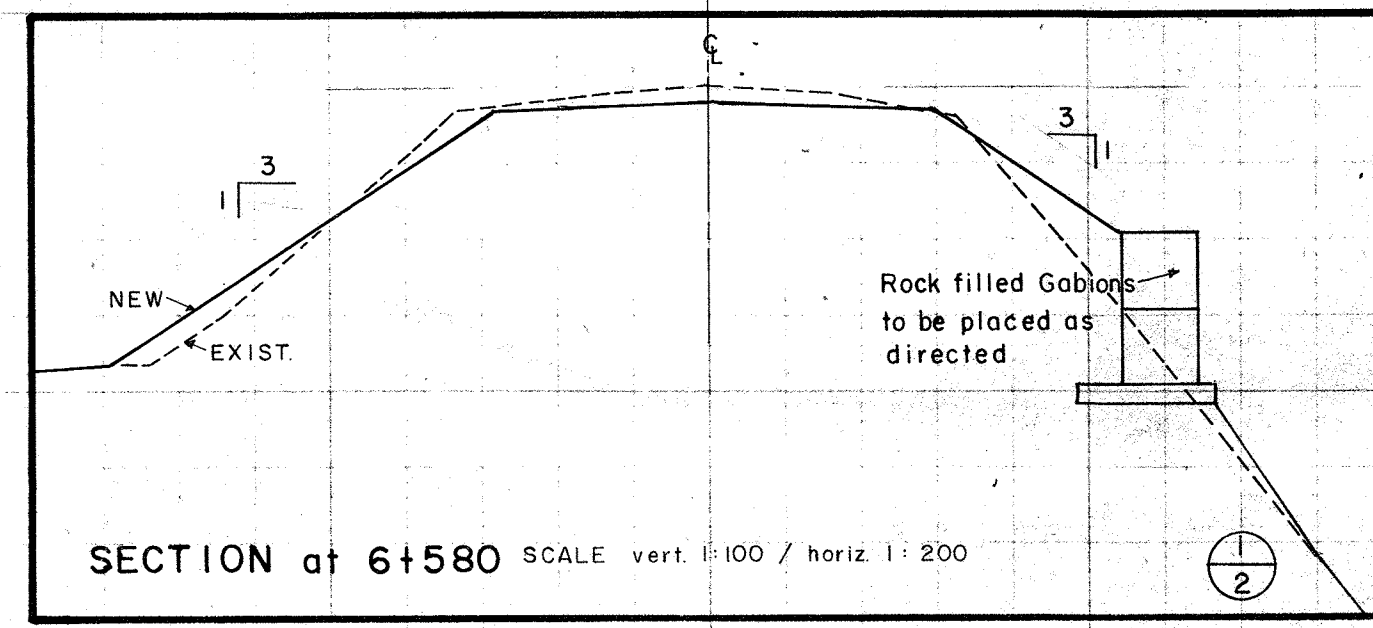
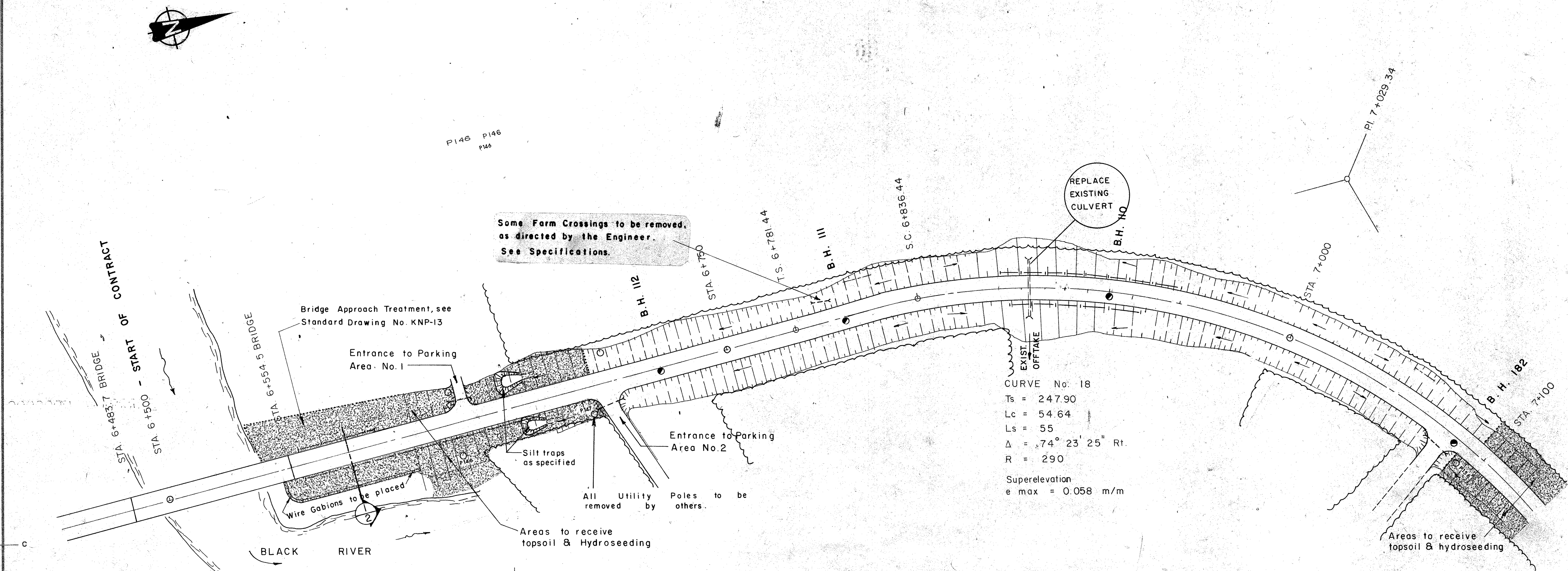
project number \_\_\_\_\_ no. du projet \_\_\_\_\_

**324043**

drawing no. \_\_\_\_\_ no. du dessin \_\_\_\_\_

2 OF 25

Local Plan no. 36





SUB SURFACE SURVEYS

CONSULTING  
GEOTECHNICAL ENGINEERS  
FREDERICTON N.B.

LEGEND

- R --- DITCH GRADES RIGHT SIDE
- L --- " " LEFT SIDE
- B.H. BOREHOLE
- P 123 O UTILITY POLE
- FARM CROSSING-CULVERT
- ===== HIGHWAY CULVERT
- UNDERGROUND CONDUIT
- GUIDERAIL

SCALES  
Horiz = 1 : 1000  
Vert. = 1 : 100

revisions date

A detail no.  
B location drawing no.  
C drawing no.  
A B C

project project

UPGRADING HWY 117  
KOUCHIBOUGUAC  
NATIONAL PARK

Kent Co., N.B.

drawing dessin

Km. 6.5 to 19.8  
PLAN-PROFILE

designed A. McLaughlin P. Eng. conçu

date

drawn B. McLaughlin dessin

date 11/11/81

reviewed G. McLaughlin P. Eng. examiné

date 11-12-22

approved W. F. Lord P. Eng. approuvé

date 11-12-23

Tender W. F. Lord, P. Eng. soumission

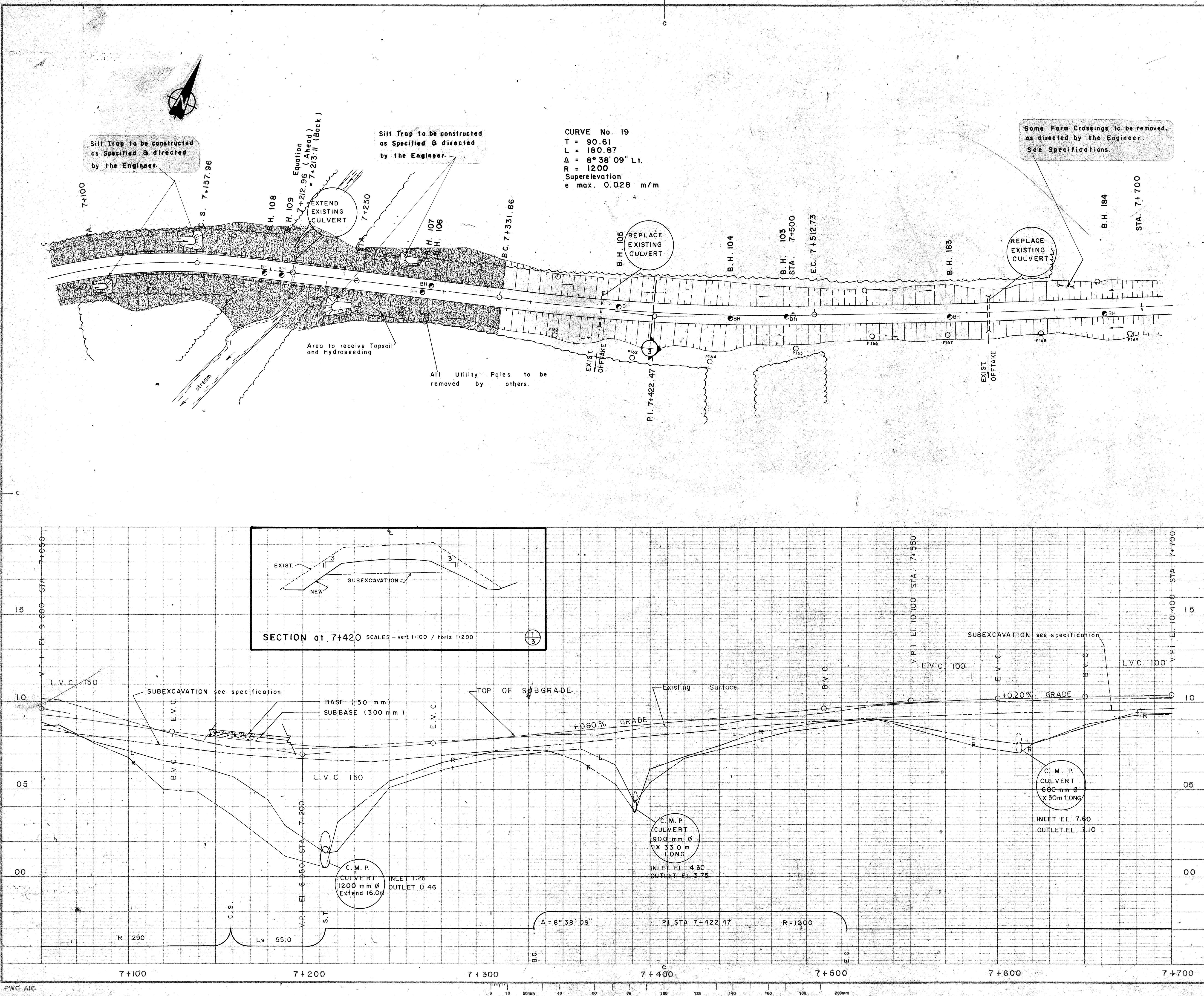
PWC Project Manager Administrateur de projets TPC

project number no. du projet

324043

drawing no. no. du dessin

3 OF 25





SUB SURFACE SURVEYS

CONSULTING  
GEOTECHNICAL ENGINEERS

FREDERICTON N.B.

LEGEND

- R --- DITCH GRADES RIGHT SIDE
- L --- " LEFT SIDE
- B.H. ● BOREHOLE
- P123 ○ UTILITY POLE
- FARM CROSSING CULVERT
- === HIGHWAY CULVERT
- UNDERGROUND CONDUIT
- GUIDERAIL

SCALES  
Horiz. 1 : 1000  
Vert. 1 : 100

revisions date

A detail no.  
no. du détail  
B location drawing no.  
sur dessin no.  
C drawing no.  
dessin no.

project project

UPGRADING HWY.117  
KOUCHIBOUGUAC  
NATIONAL PARK

Kent Co., N.B.

drawing dessin

Km 6.5 to 19.8.

PLAN - PROFILE

designed A. McLaughlin P. Eng. conçu

date date

drawn B. McLaughlin dessiné

date 11/11/2011 reviewed L.P.D.

date 11/12/22 reviewed B. McLaughlin P. Eng.

date 11/12/22 approved

date 11/12/23 approved

Tender W.F.LORD, R. Eng. soumission

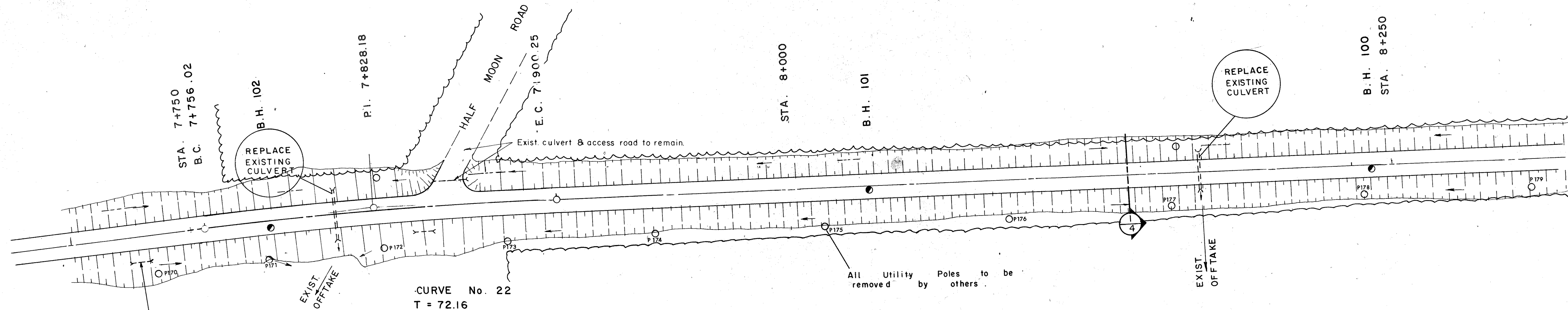
PWC Project Manager 11-12-23 Administrateur de projets TPC

project number no. du projet

324043

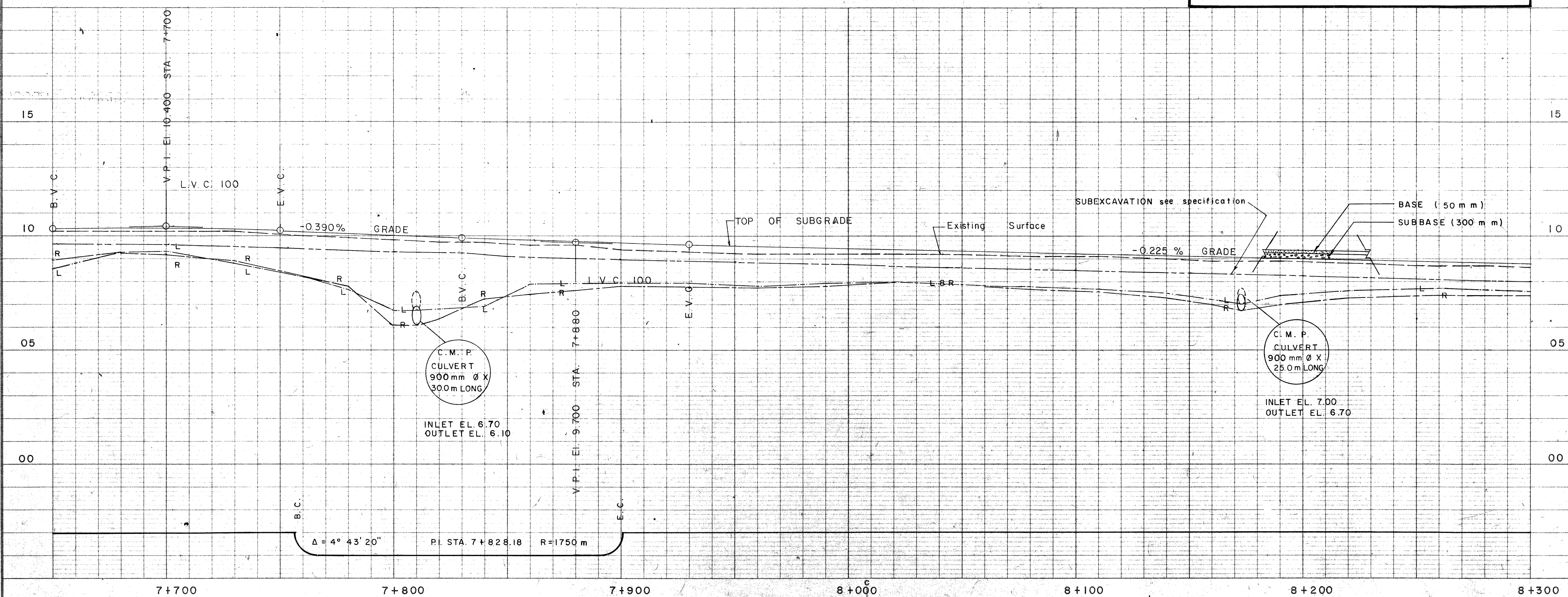
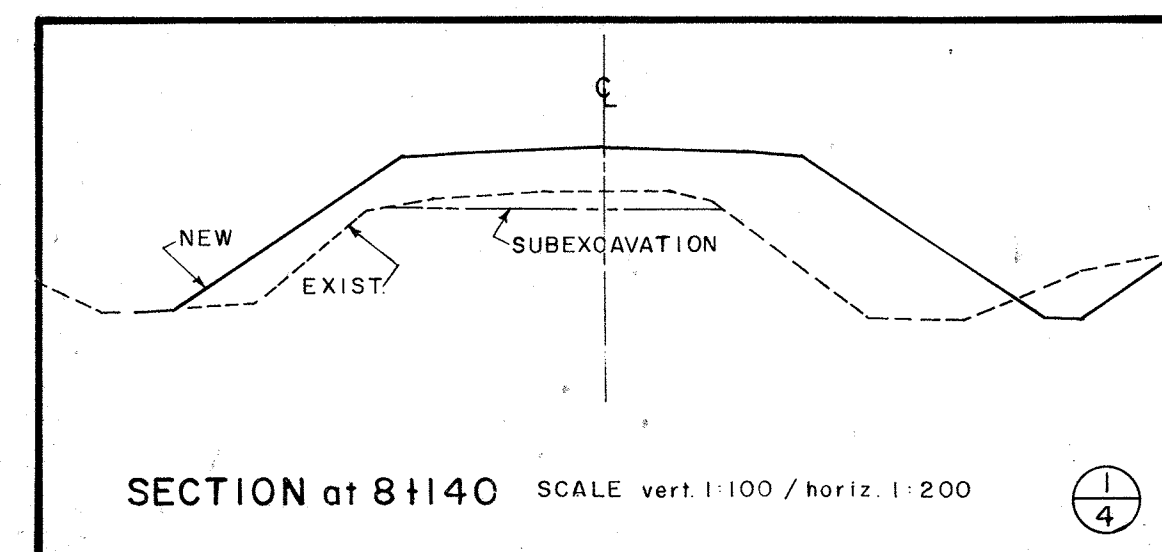
drawing no. no. du dessin

4 of 25

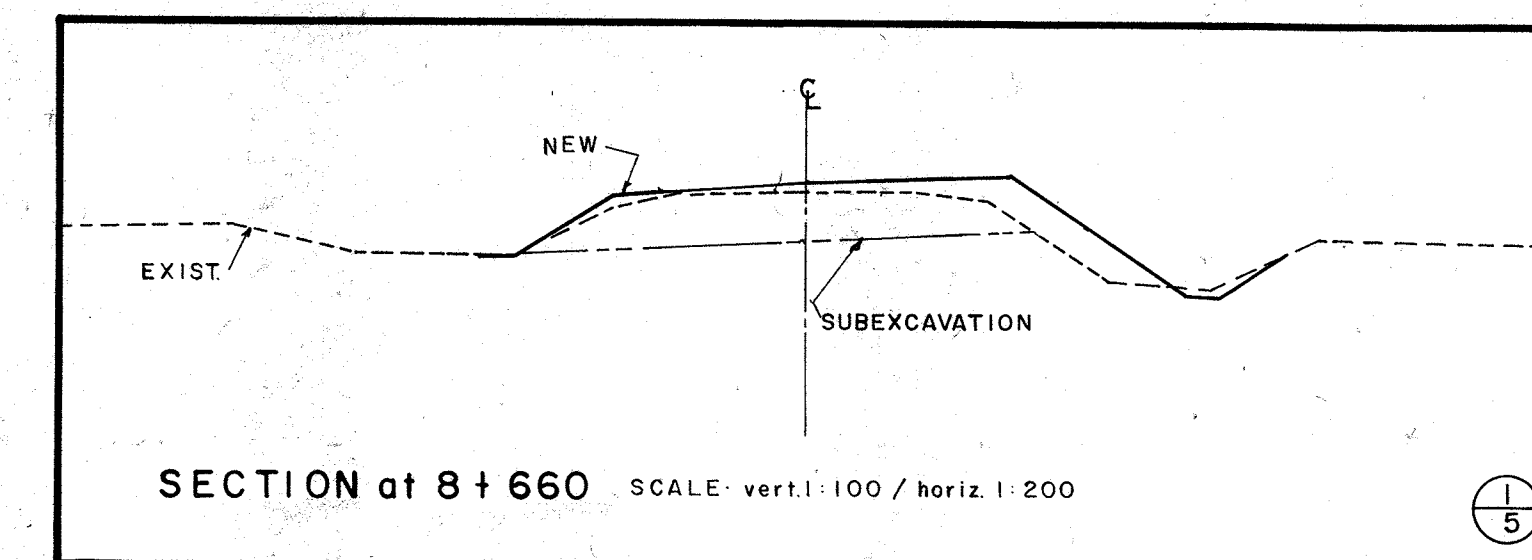


CURVE No. 22  
T = 72.16  
L = 144.23  
 $\Delta = 4^\circ 43' 20''$  Rt.  
R = 1750  
Superelevation  
e max. 0.022 m/m

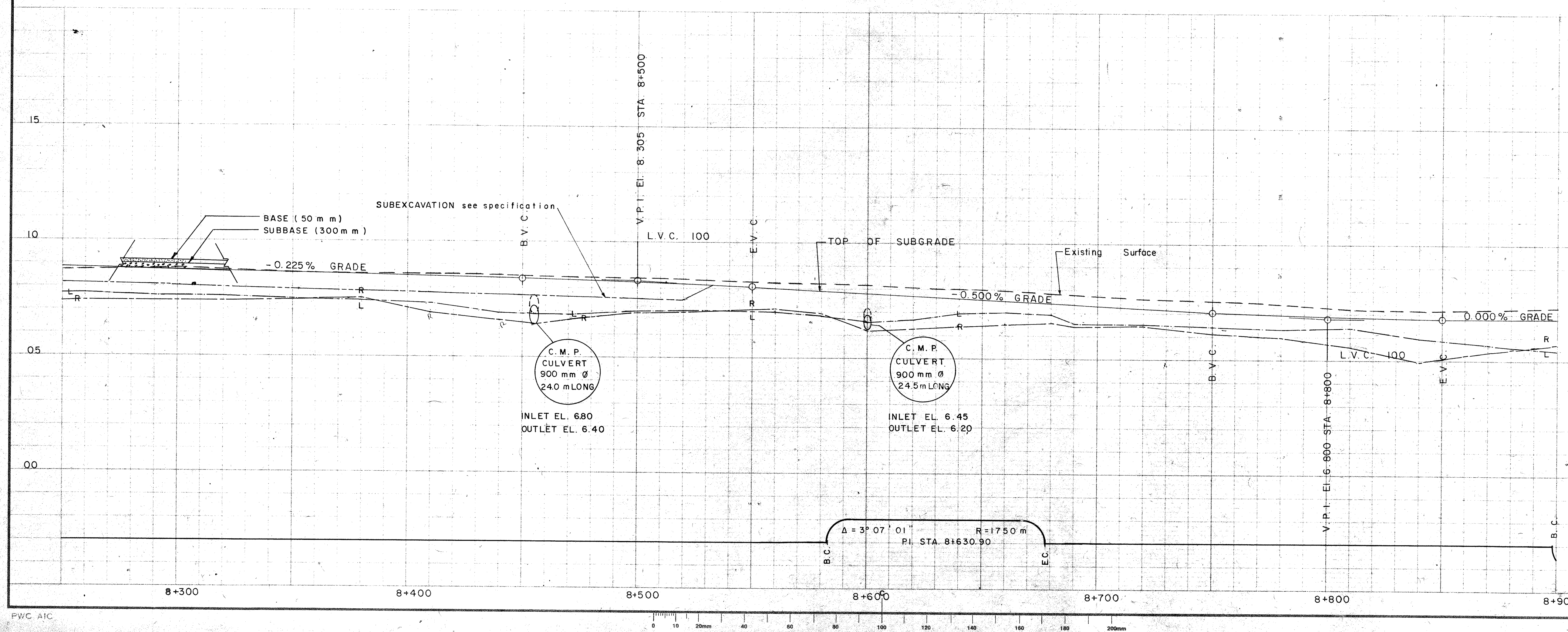
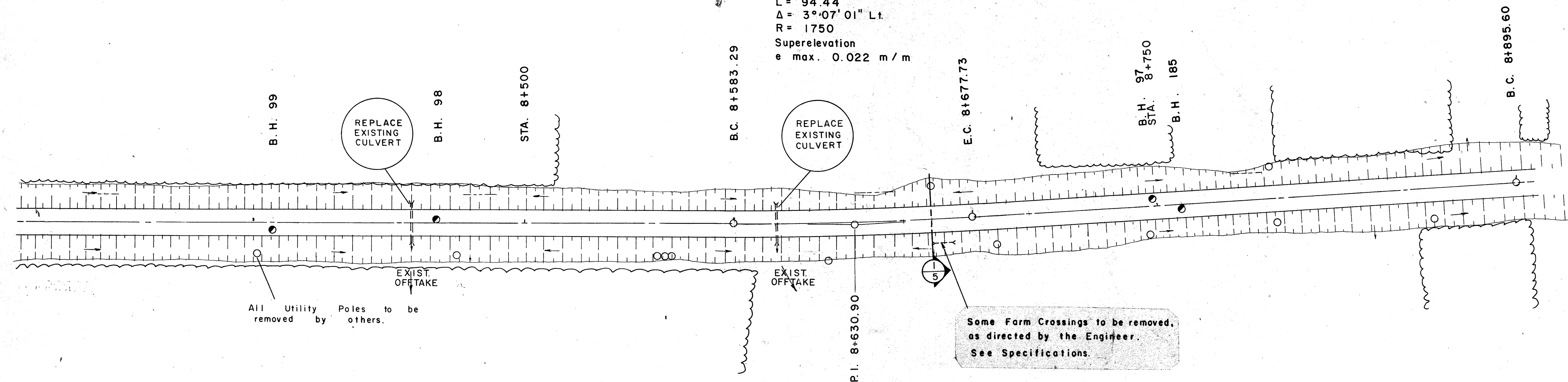
All Utility Poles to be removed by others.







CURVE No. 24  
T = 47.61  
L = 94.44  
 $\Delta = 3^\circ 07' 01''$  Lt.  
R = 1750  
Superelevation  
e max. 0.022 m/m



SUB SURFACE SURVEYS

CONSULTING  
GEOTECHNICAL ENGINEERS  
FREDERICTON N.B.

LEGEND

- R — DITCH GRADES RIGHT SIDE
- L — " " LEFT SIDE
- B.H. BOREHOLE
- UTILITY POLE
- X — FARM CROSSING CULVERT
- — — HIGHWAY CULVERT
- — — UNDERGROUND CONDUIT
- — — GUIDERAIL

SCALES  
Horiz — 1 : 1000  
Vert. — 1 : 100

revisions date

A	A detail no. no. du détail	A
C	B location drawing no. sur dessin no.	B C
	C drawing no. dessin no.	

project  
UPGRADING HWY. 117  
KOUCHIBOUGUAC  
NATIONAL PARK

Kent Co. N. B.

drawing  
dessein

Km 6.5 to 19.8

PLAN - PROFILE

designed  
conçu

date

drawn  
dessiné

date

reviewed  
examiné

date

approved  
approuvé

date

Tender  
Soumission

W. FLORD, P. ENG.  
81-12-23

PWC Project Manager  
Administrateur de projets TPC

project number  
no. du projet

324043

drawing no.  
no. du dessin



SUB SURFACE SURVEYS

CONSULTING  
GEOTECHNICAL ENGINEERS  
FREDERICTON N.B.

LEGEND

- DITCH GRADES RIGHT SIDE
- " " LEFT SIDE
- B.H. BOREHOLE
- UTILITY POLE
- FARM CROSSING CULVERT
- HIGHWAY CULVERT
- UNDERGROUND CONDUIT
- GUIDERAIL

SCALES  
Horiz. 1 : 1000  
Vert. 1 : 100

revisions date

A	A
C	B C

project  
UPGRADING HWY. 117  
KOUCHIBOUGUAC  
NATIONAL PARK  
Kent Co., N. B.

drawing  
Km 6.5 to 19.8  
PLAN-PROFILE

designed *A. McLaughlin, P.Eng.*  
date  
drawn *B. McLaughlin, P.Eng.*  
date *8/12/23*  
reviewed *A. McLaughlin, P.Eng.*  
date *8/12/23*  
approved *A. McLaughlin, P.Eng.*  
date  
Tender *W. F. Lord, P.Eng.*  
PWC Project Manager *W. F. Lord, P.Eng.*  
project number  
**324043**  
drawing no. 6 of 25

CURVE 26  
Ts = 130.24  
Lc = 153.16  
Ls = 50  
Δ = 36° 22' 30" Lt.  
R = 320  
Superelevation  
e max. 0.056 m/m

CURVE No. 25  
T = 88.87  
L = 177.60  
Δ = 8° 28' 15" Rt.  
R = 1200 m  
Superelevation  
e max. 0.028 m/m

Silt Trap to be constructed  
as Specified & directed  
by the Engineer.

See Standard Drawing No. KNP-9  
for Bridge Approaches Treatment.

Rock Filled Wire Gabions  
to be placed. See specifications  
& Standard Drawing KNP-10

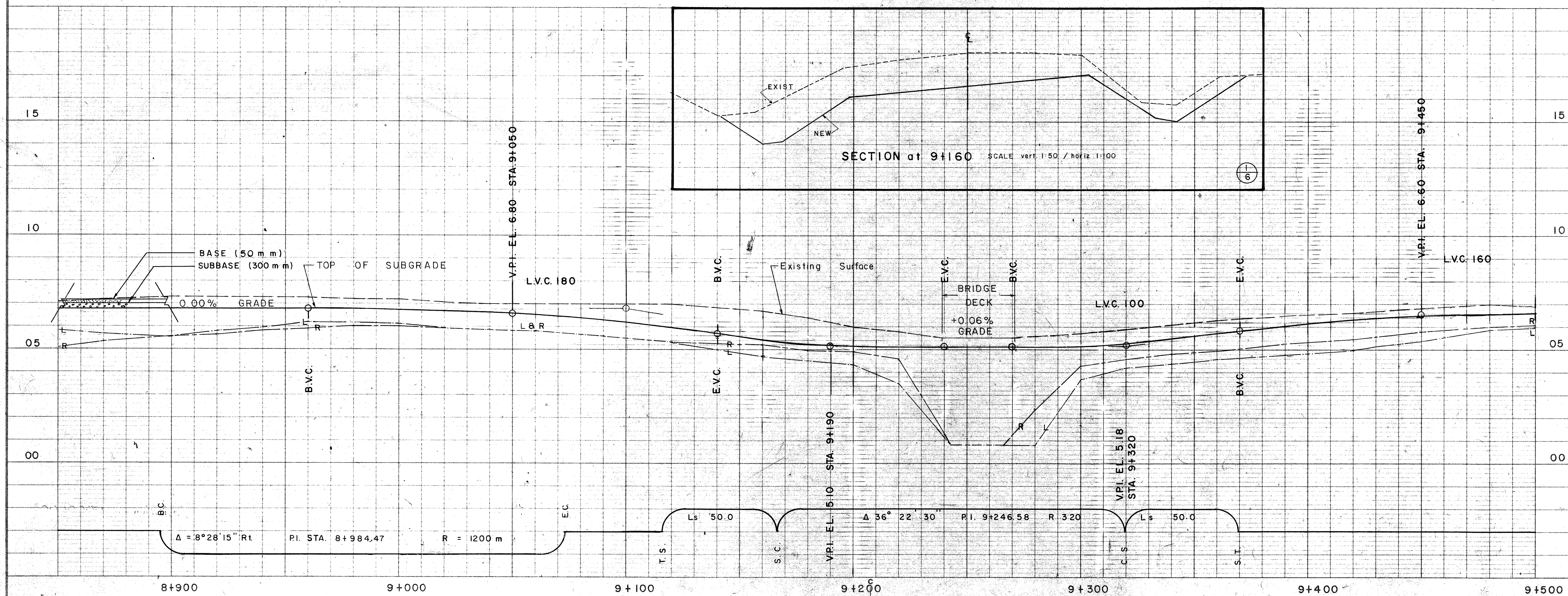
Silt Trap to be constructed  
as Specified & directed  
by the Engineer.

All Utility Poles to be  
removed by others.

Culvert & Access Road  
to remain

CLAIRE  
FONTAINE  
RIVER

SECTION at 9+160 SCALE vert. 1:50 / horiz. 1:100





SUB SURFACE SURVEYS  
CONSULTING  
GEOTECHNICAL ENGINEERS  
FREDERICTON N.B.

LEGEND

- R --- DITCH GRADES RIGHT SIDE
- L --- DITCH GRADES LEFT SIDE
- B.H. BOREHOLE
- UTILITY POLE
- FARM CROSSING CULVERT
- HIGHWAY CULVERT
- UNDERGROUND CONDUIT

SCALES  
Horiz. 1 : 1000  
Vert. 1 : 100

revisions date

A	A detail no. no. du détail	A
C	B location drawing no. sur dessin no.	B
	C drawing no. dessin no.	C

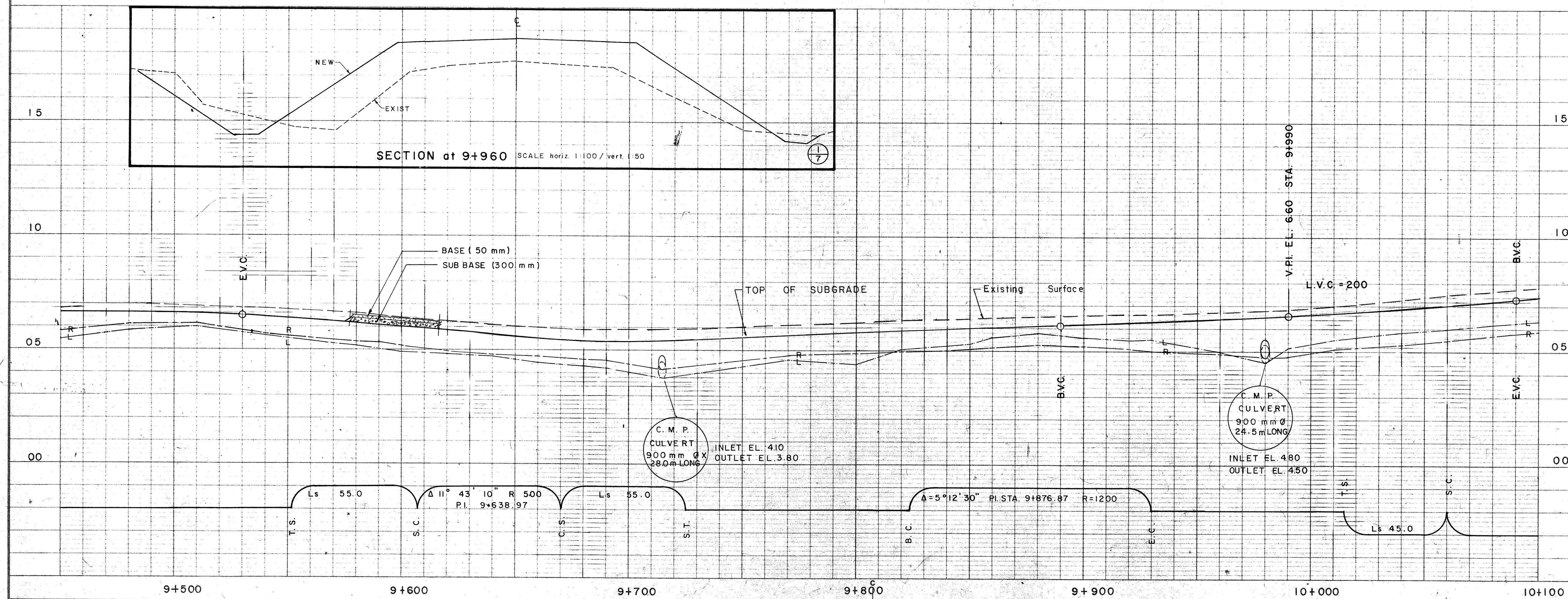
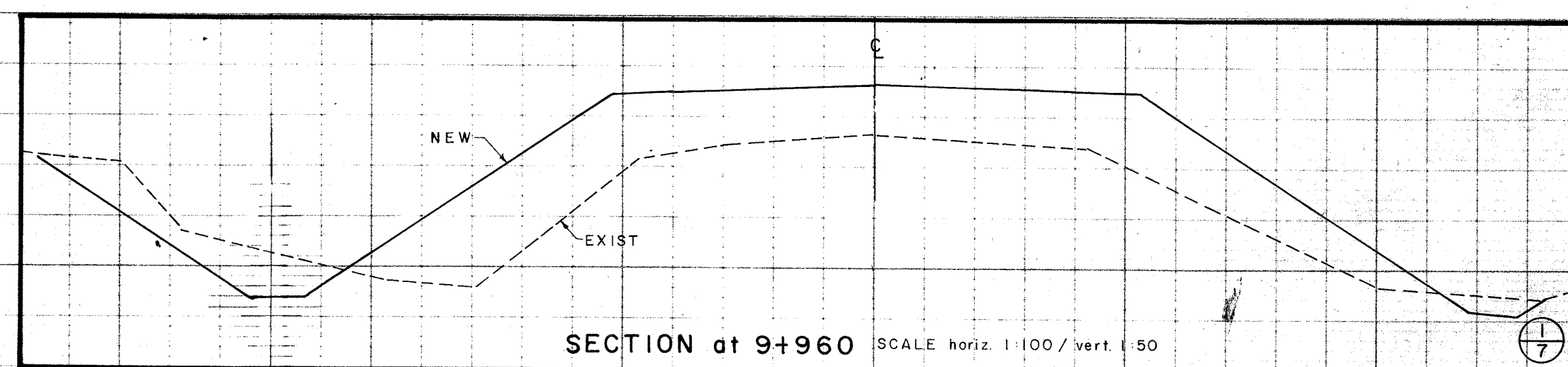
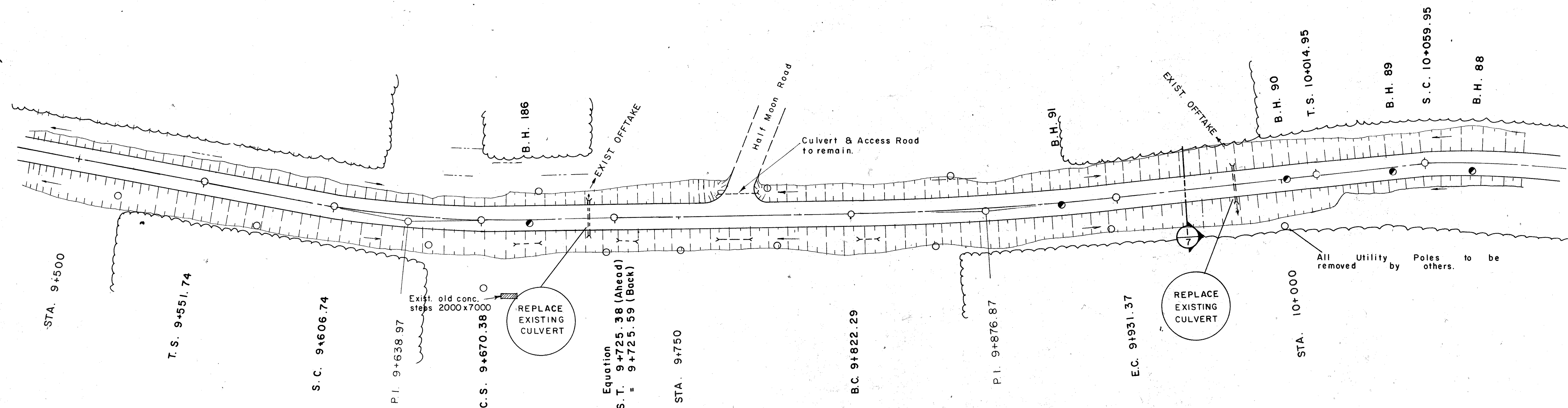
project  
UPGRADING HWY. 117  
KOUCHIBOUGUAC  
NATIONAL PARK  
Kent Co., N.B.

drawing  
Km 6.5 to 19.8  
PLAN - PROFILE

designed *A. McRobb, P.Eng.* conçu  
date  
drawn *B. McRobb* dessiné  
date *August 1993* examiné  
reviewed *A. McRobb, P.Eng.* examiné  
date *8-12-93*  
approved *A. McRobb, P.Eng.* approuvé  
date  
Tender *W.F. Lord, P.Eng.* Soumission  
PWC Project Manager *W.F. Lord, P.Eng.* Administrateur de projets TPC  
project number  
**324043**  
drawing no. no. du dessin  
**7 of 25**

CURVE 27  
Ts = 87.05  
Lc = 63.64  
Ls = 55  
Δ = 11° 43' 10" Lt.  
R = 500  
Superelevation  
e max. 0.046 m/m

CURVE No. 28  
T = 54.58  
L = 109.08  
Δ = 5° 12' 30" Lt.  
R = 1200  
Superelevation  
e max 0.028 m/m





SUB SURFACE SURVEYS

CONSULTING  
GEOTECHNICAL ENGINEERS  
FREDERICTON N.B.

LEGEND

- R — DITCH GRADES RIGHT SIDE
- L — DITCH GRADES LEFT SIDE
- B.H. BOREHOLE
- UTILITY POLE
- X — FARM CROSSING CULVERT
- H — HIGHWAY CULVERT
- U — UNDERGROUND CONDUIT

SCALES  
Horiz. — 1 : 1000  
Vert. — 1 : 100

revisions \_\_\_\_\_ date \_\_\_\_\_

A C	A detail no. no. du détail B location drawing no. sur dessin no. C drawing no. dessin no.	A B C
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project  
**UPGRADING HWY 117  
KOUCHIBOUGUAC  
NATIONAL PARK**

Kent Co. N. B.

drawing \_\_\_\_\_ dessin \_\_\_\_\_

Km 6.5 to 19.8  
PLAN - PROFILE

designed *A. McRae P.Eng.* conçu

date \_\_\_\_\_

drawn *B. McRae P.Eng.* dessiné

date *10-12-22* reviewed *A. McRae P.Eng.* examiné

date \_\_\_\_\_ approved *A. McRae P.Eng.* approuvé

date \_\_\_\_\_

Tender *W.F. Lord P.Eng.* Soumission

PWC Project Manager *W.F. Lord P.Eng.* Administrateur de projets TPC

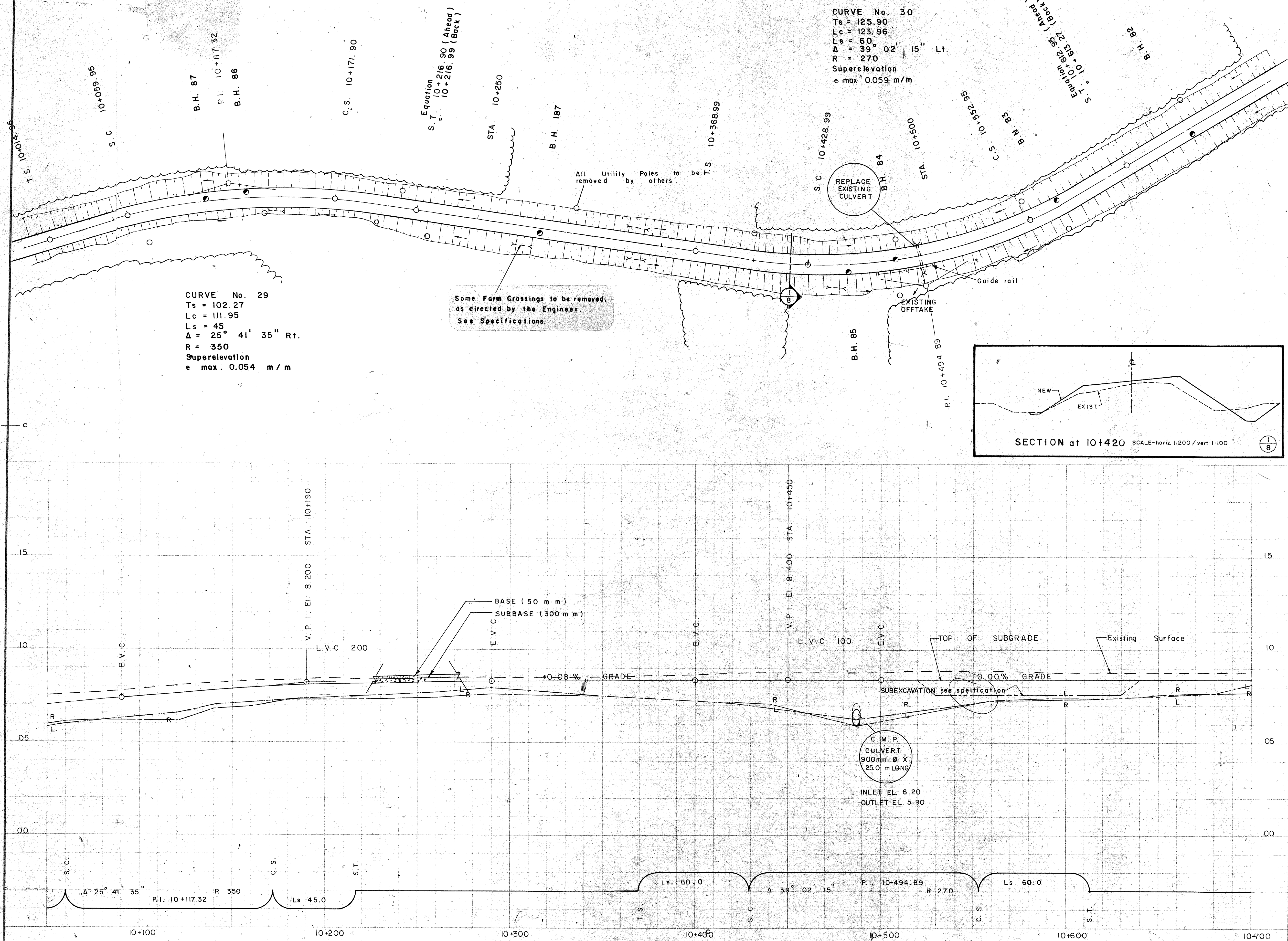
project number \_\_\_\_\_ no. du projet

**324043**

drawing no. \_\_\_\_\_ no. du dessin

8 of 25

Local Plan no. 36





SUB SURFACE SURVEYS

CONSULTING  
GEOTECHNICAL ENGINEERS  
FREDERICTON N.B.

LEGEND

- R --- DITCH GRADES RIGHT SIDE
- L --- " " LEFT SIDE
- B.H. BOREHOLE
- O UTILITY POLE
- >--> FARM CROSSING CULVERT
- ===== HIGHWAY CULVERT
- UNDERGROUND CONDUIT

SCALES  
Horiz. 1:1000  
Vert. 1:100

revisions date

A	A detail no. no. du détail	A
C	B location drawing no. sur dessin no.	B/C
	C drawing no. dessin no.	

project projet

UPGRADING HWY. 117  
KOUCHIBOUGUAC  
NATIONAL PARK

Kent Co. N.B.

drawing dessin

Km 6.5 to 19.8

PLAN - PROFILE

designed *A. McNeil P.Eng.* conçu

date

drawn *B. McNeil* dessiné

date *11-12-23* reviewed *A. McNeil P.Eng.* examiné

date *01-12-22*

approved *W.F. Lord P.Eng.* approuvé

date

Tender *W.F. Lord P.Eng.* 81-12-23 Soumission

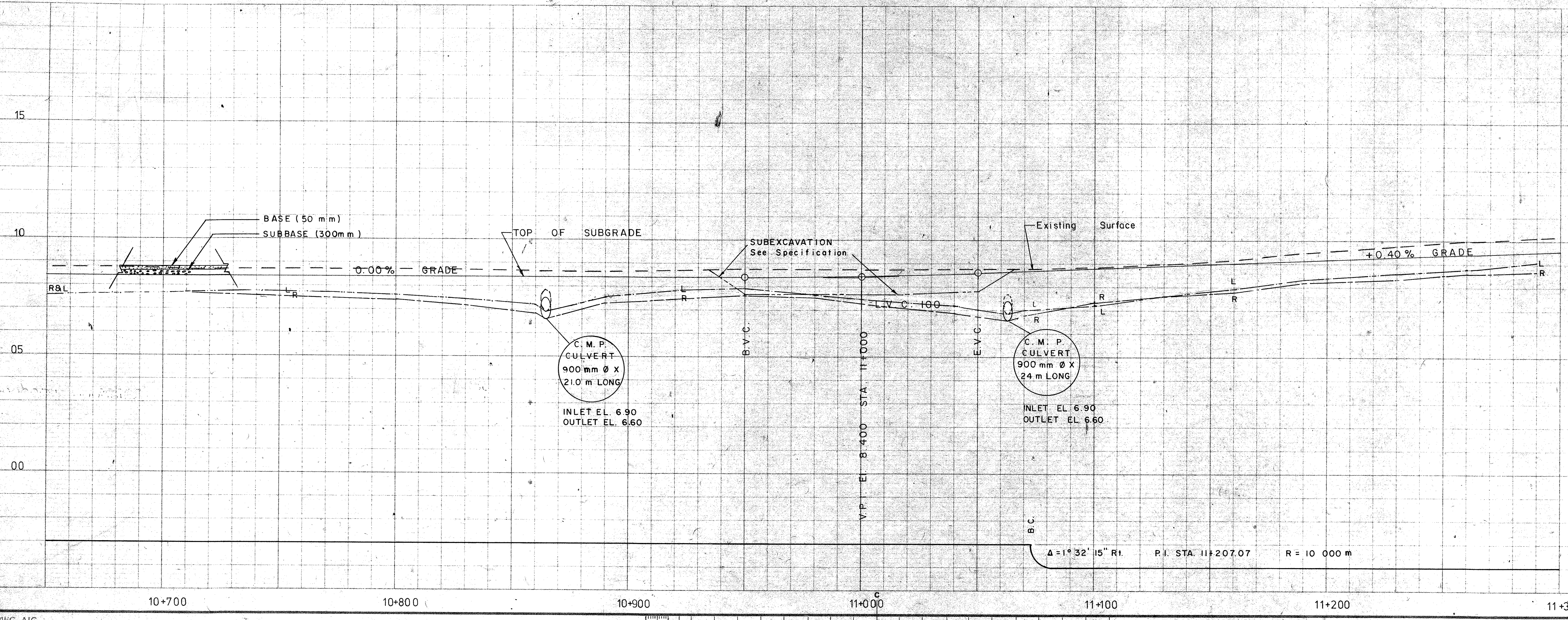
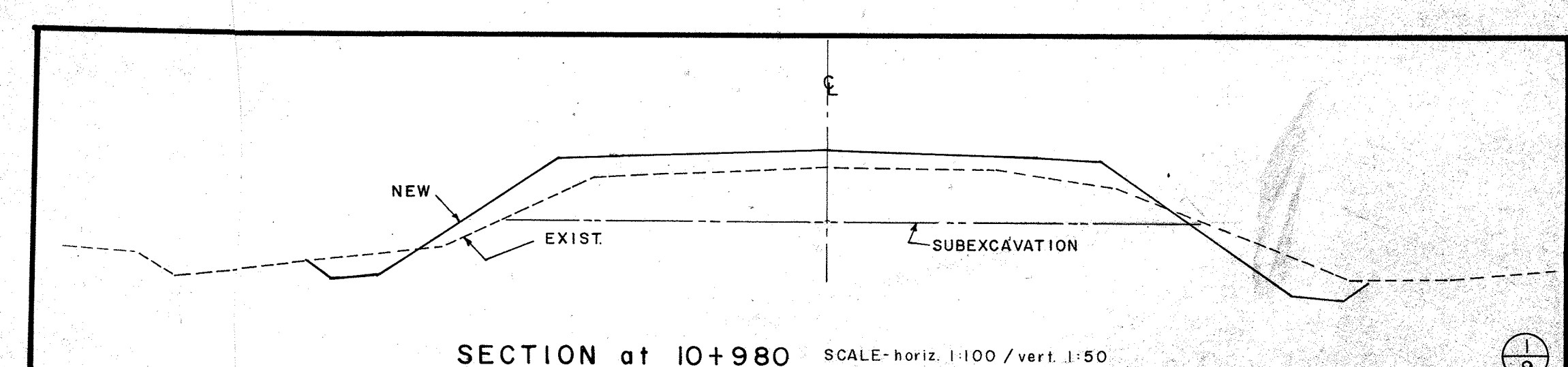
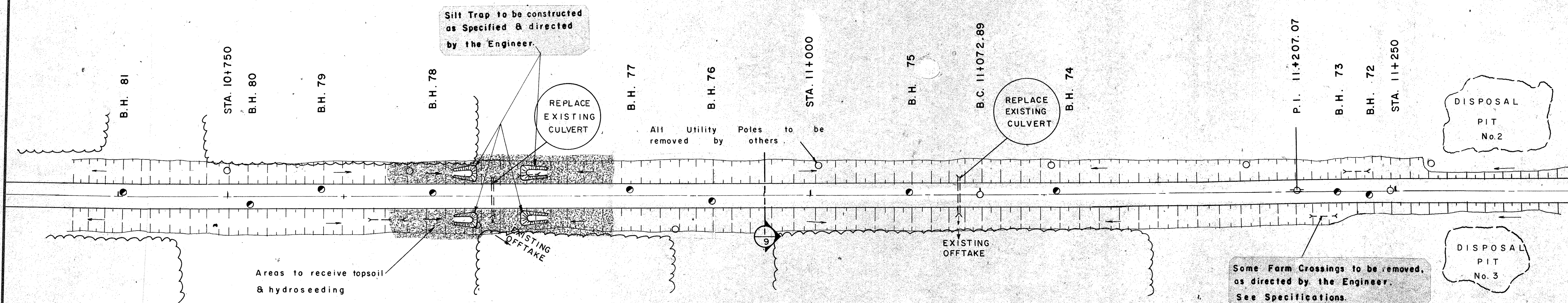
PWC Project Manager Administrateur de projets TPC

project number no. du projet

324043

drawing no. no. du dessin

9 of 25





SUB SURFACE SURVEYS

CONSULTING  
GEOTECHNICAL ENGINEERS  
FREDERICTON N.B.

LEGEND

- R --- DITCH GRADES RIGHT SIDE
- L --- " " LEFT SIDE
- B.H. BOREHOLE
- UTILITY POLE
- FARM CROSSING CULVERT
- HIGHWAY CULVERT
- UNDERGROUND CONDUIT

SCALES  
Horiz. 1:1000  
Vert. 1:100

revisions date

A	A detail no. no. du détail	A
C	B location drawing no. sur dessin no.	B
	C drawing no. dessin no.	C

project  
UPGRADING HWY. 117

KOUCHIBOUGAUC  
NATIONAL PARK

Kent Co. N.B.

Km 6.5 to 19.8  
PLAN - PROFILE

designed *A. M. Lord, P. Eng.* conçu

date

drawn *B. M. Lord, P. Eng.* dessiné

date *8-12-22* reviewed *A. M. Lord, P. Eng.* examiné

date *8-12-22* approved *A. M. Lord, P. Eng.* approuvé

date *8-12-23* approved *W. F. Lord, P. Eng.* approuvé

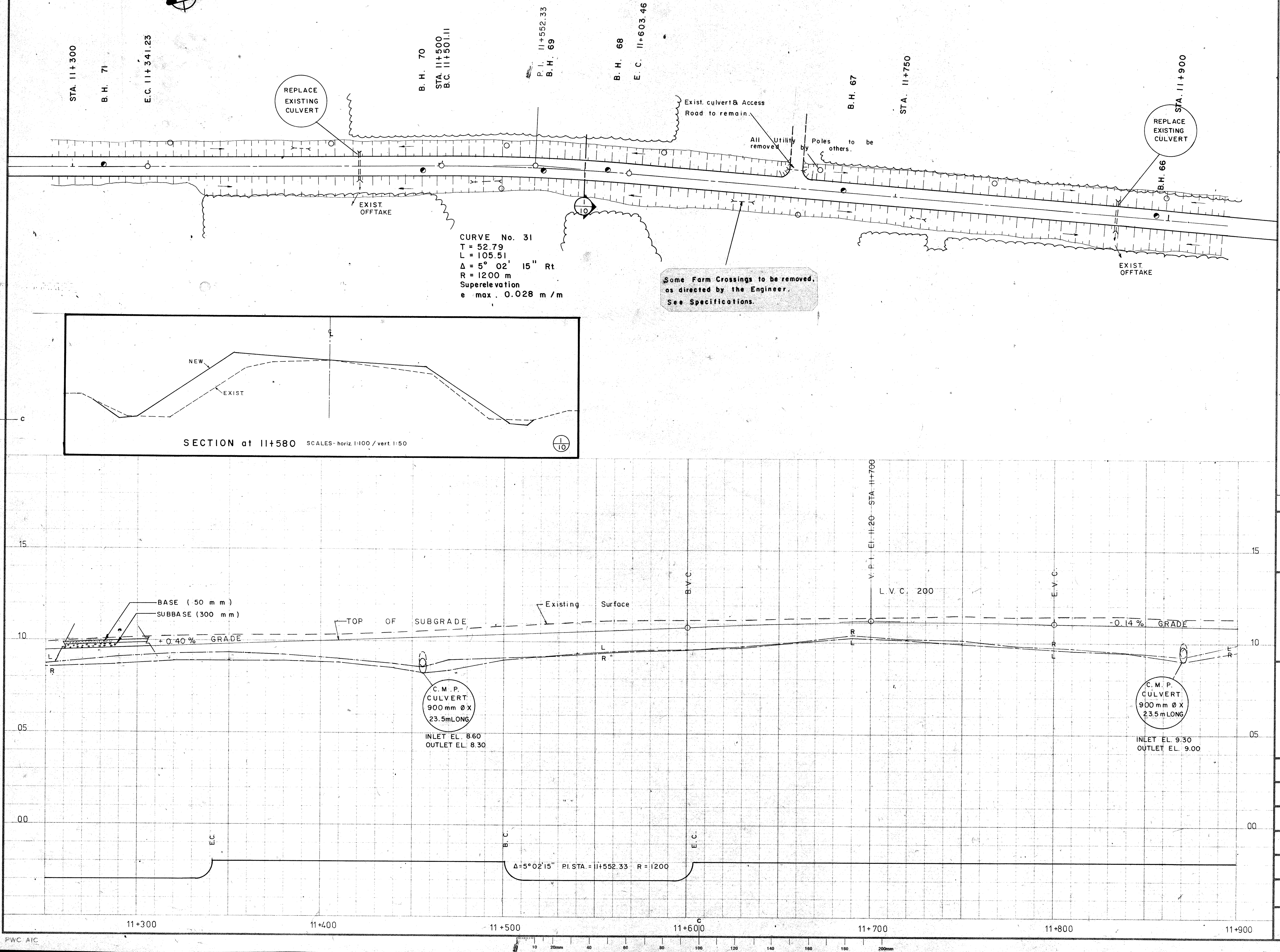
Tender *W. F. Lord, P. Eng.* Soumission

PWC Project Manager *W. F. Lord, P. Eng.* Administrateur de projets TPC

project number *324043* no. du projet

drawing number *10 of 25* no. du dessin

Local Plan no. 36





SUB SURFACE SURVEYS

CONSULTING  
GEOTECHNICAL ENGINEERS  
FREDERICTON N.B.

LEGEND

- R — DITCH GRADES RIGHT SIDE
- L — DITCH GRADES LEFT SIDE
- B.H. BOREHOLE
- UTILITY POLE
- X — FARM CROSSING CULVERT
- X — HIGHWAY CULVERT
- — — UNDERGROUND CONDUIT

SCALES  
Horiz. — 1 : 1000  
Vert. — 1 : 100

revisions

A detail no.  
no. du détail  
B location drawing no.  
sur dessin no.  
C drawing no.  
dessin no.

project

UPGRADING HWY. 117  
KOUCHIBOUGUAC  
NATIONAL PARK

Kent Co. N. B.

drawing

Km 6.5 to 19.8

PLAN - PROFILE

designed *A. McLaughlin P. Eng.* conçu

date

drawn *B. M. C.* dessiné

date *81-12-22* reviewed *A. McLaughlin P. Eng.* examiné

date *81-12-22* approved *A. McLaughlin P. Eng.* approuvé

date

Tender *W. F. Lord, P. Eng.* Soumission

PWC Project Manager *W. F. Lord, P. Eng.* Administrateur de projets TPC

project number

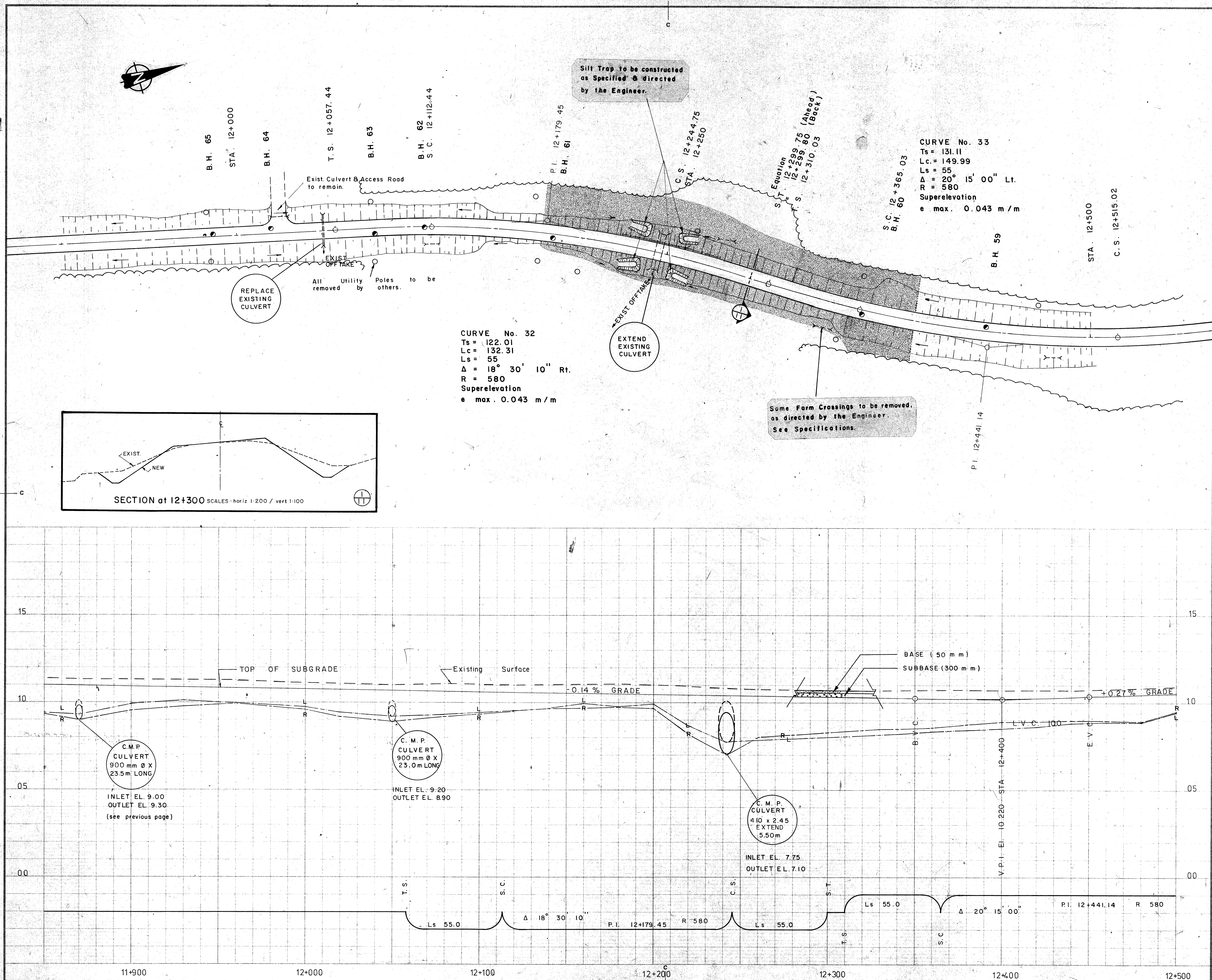
no. du projet

324043

drawing no.

no. du dessin

11 of 25





SUB SURFACE SURVEYS

CONSULTING  
GEOTECHNICAL ENGINEERS  
FREDERICTON, N.B.

LEGEND

- R — DITCH GRADES RIGHT SIDE
- L — DITCH GRADES LEFT SIDE
- B.H. BOREHOLE
- UTILITY POLE
- FARM CROSSING CULVERT
- === HIGHWAY CULVERT
- UNDERGROUND CONDUIT

SCALES —  
Horiz. — 1 : 1000  
Vert. — 1 : 100

revisions	date
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project

UPGRADING HWY. 117  
KOUCHIBOUGUAC  
NATIONAL PARK

Kent Co. N.B.

drawing

Km 6.5 to 19.8  
PLAN - PROFILE

designed *A. McLaughlin, P.Eng.*

date

drawn *B. McLaughlin*

date *11/28/06*

reviewed *A. McLaughlin, P.Eng.*

date *12-01-06*

approved *D. McLaughlin, P.Eng.*

date *12-01-06*

Tender *W.F. Lord, P.Eng.*

PWC Project Manager *Administrateur des projets TPC*

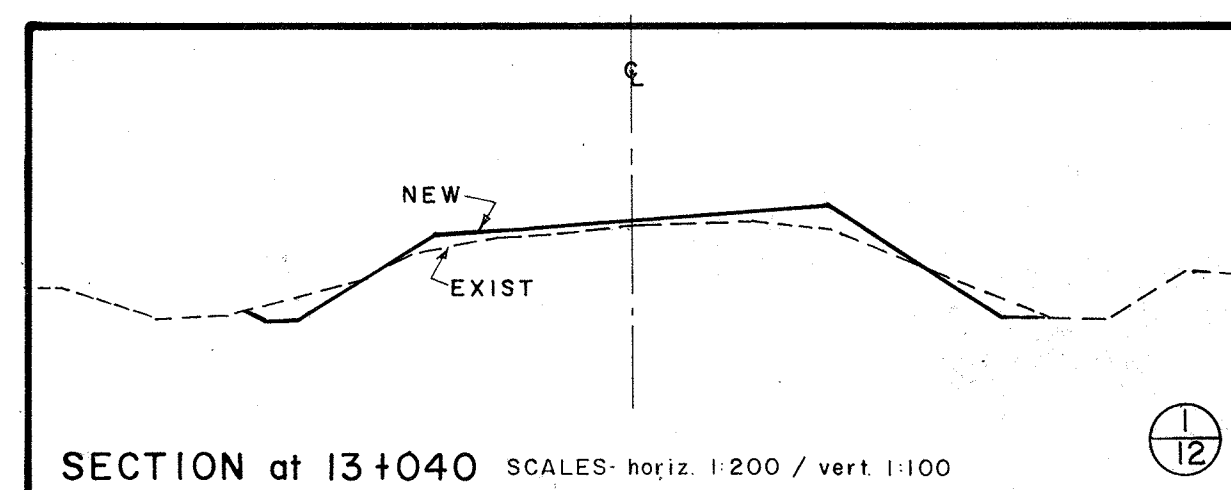
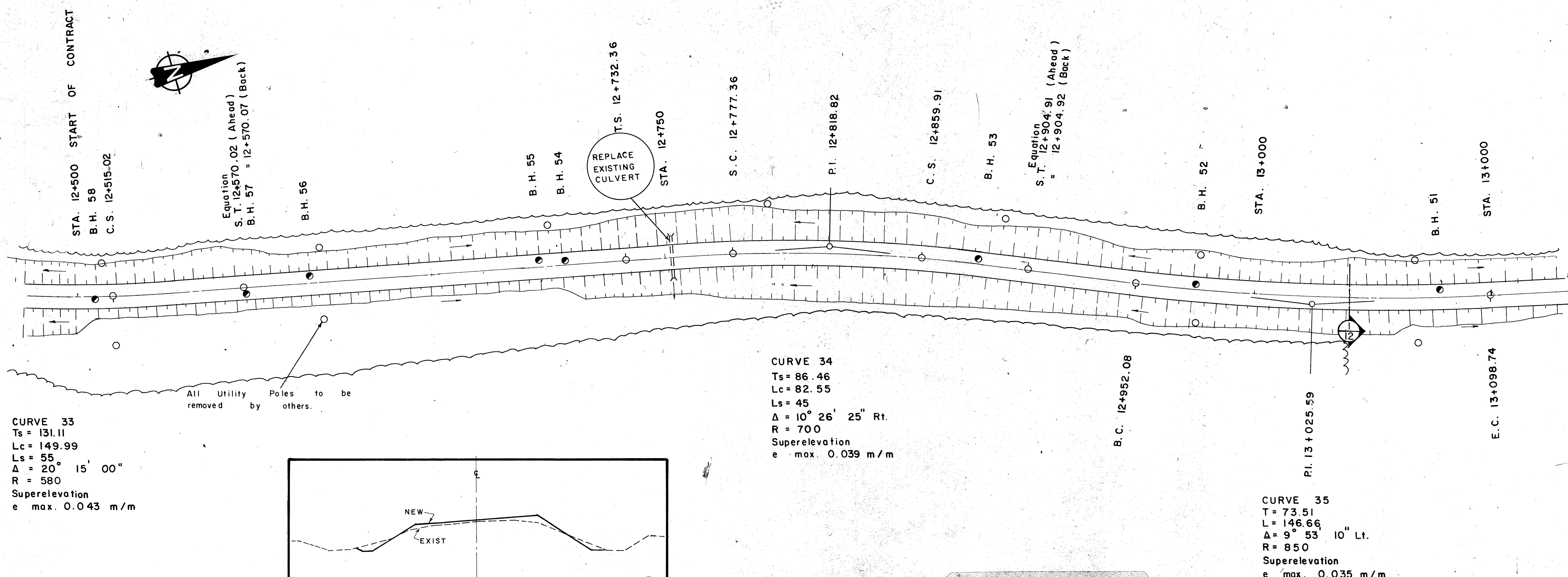
project number

324043

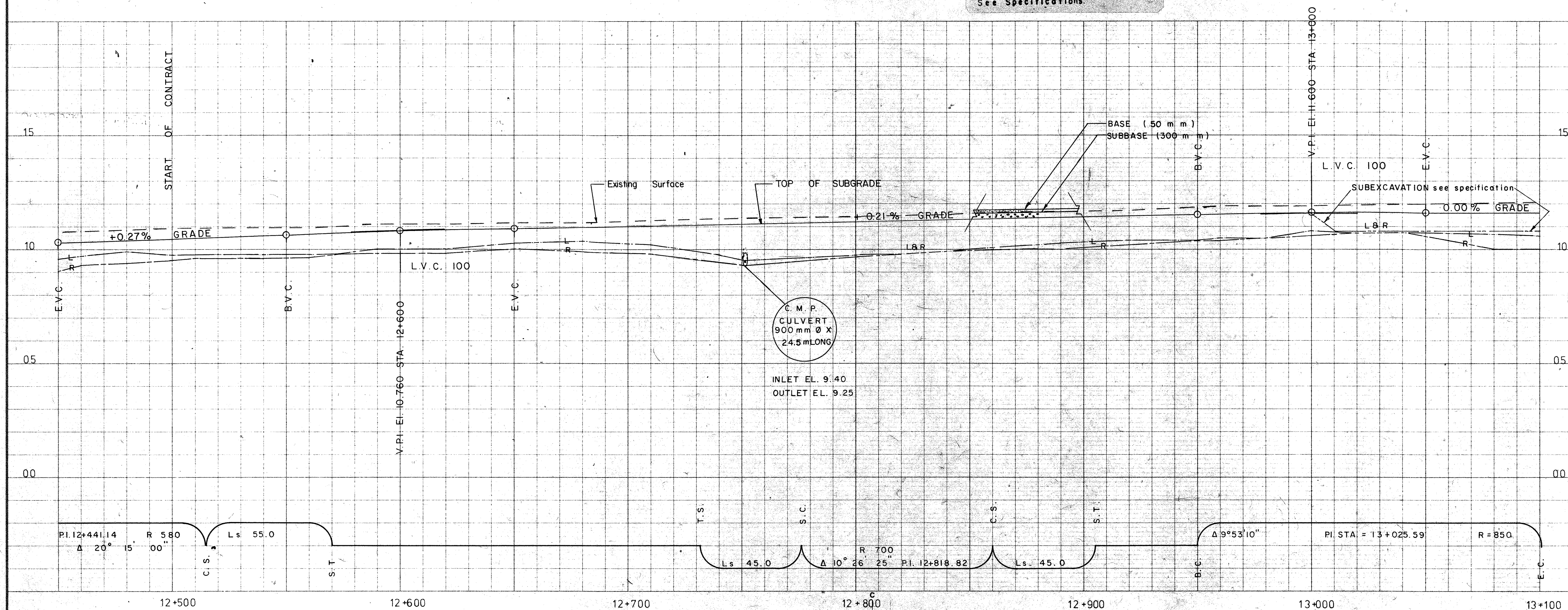
drawing no

12 OF 25

LOCAL PLAN NO. 36



Some Farm Crossings to be removed,  
as directed by the Engineer.  
See Specifications.





SUB SURFACE SURVEYS  
CONSULTING  
GEOTECHNICAL ENGINEERS  
FREDERICTON N.B.

LEGEND

- R — DITCH GRADES RIGHT SIDE
- L — DITCH GRADES LEFT SIDE
- B.H. BOREHOLE
- UTILITY POLE
- FARM CROSSING CULVERT
- ===== HIGHWAY CULVERT
- UNDERGROUND CONDUIT

SCALES  
Horiz. - 1 : 1000  
Vert. - 1 : 100

revisions date

A detail no.  
no. du détail  
B location drawing no.  
sur dessin no.  
C drawing no.  
dessin no.

project project

UPGRADING HWY. 117  
KOUCHIBOUGUAC  
NATIONAL PARK

Kent Co. N.B.

drawing dessin

Km 6.5 to 19.8  
PLAN - PROFILE

designed conçu

date

drawn dessiné

date reviewed examiné

date approved approuvé

date

Tender W.F.LORD, P. ENG. Submission

PWC Project Manager Administrateur de projets TPC

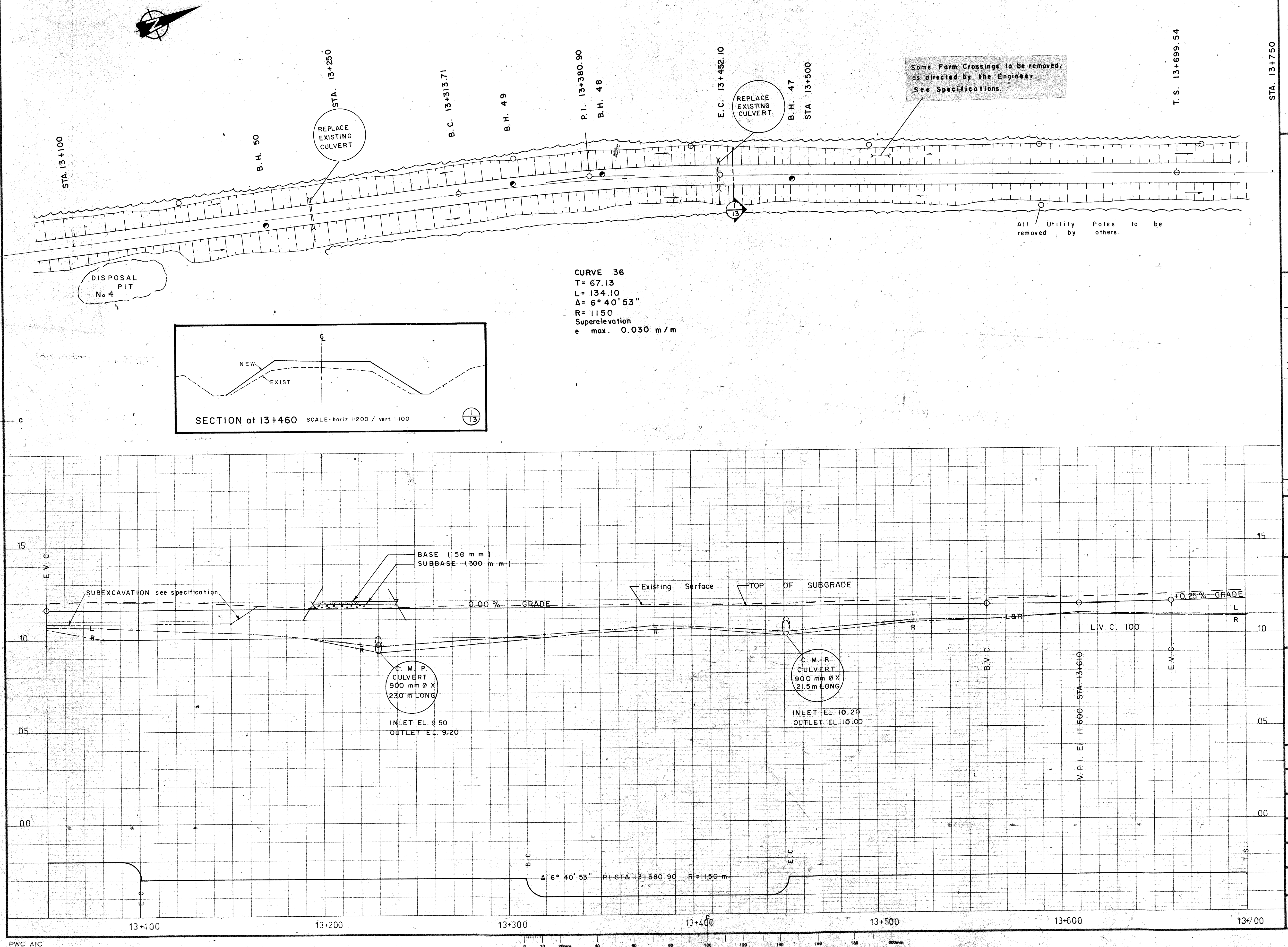
project number no. du projet

324043

drawing no. no. du dessin

13 OF 25

local plan no. 36





SUB SURFACE SURVEYS

CONSULTING  
GEOTECHNICAL ENGINEERS

FREDERICTON N.B.

LEGEND

- DITCH GRADES RIGHT SIDE
- " " LEFT SIDE
- B.H. BOREHOLE
- UTILITY POLE
- >—> FARM CROSSING CULVERT
- ===== HIGHWAY CULVERT
- UNDERGROUND CONDUIT

SCALES—  
Horiz. — 1 : 1000  
Vert. — 1 : 100

revisions date

A	A detail no. no. du détail	A
C	B location drawing no. sur dessin no.	B C
	C drawing no. dessin no.	

UPGRADING HWY. 117  
KOUCHIBOUGUAC  
NATIONAL PARK

Kent Co. N.B.

drawing dessin

Km 6.5 to 19.8  
PLAN - PROFILE

designed A. McNeil P.E. conçu

date

drawn B. McNeil dessiné

date 02-01-13

reviewed A. McNeil P.E. examiné

date 02-01-06

approved D. W. Jones, P.E. approuvé

date 02-01-13

Tender W. F. Lord, P. Eng. soumission

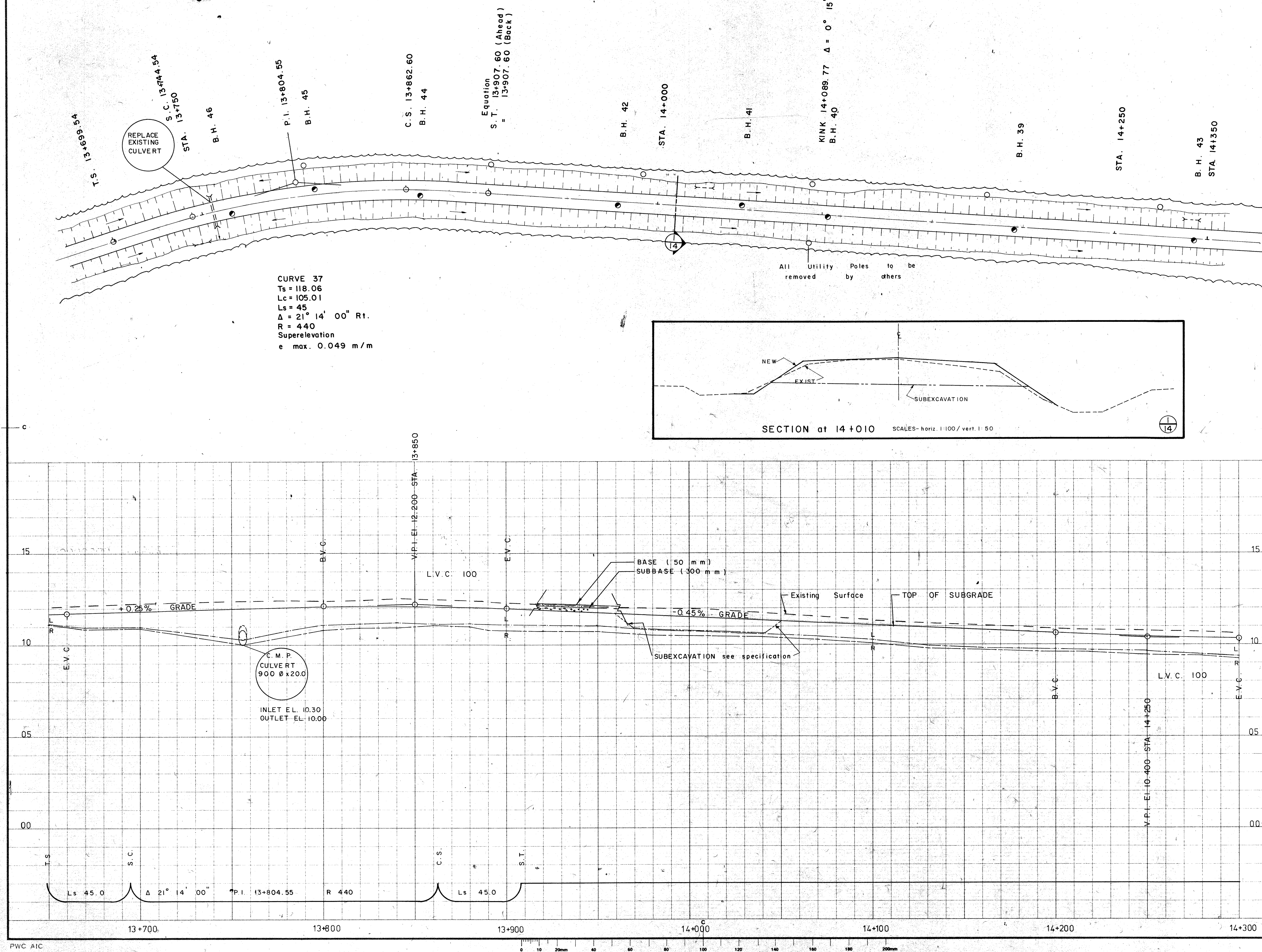
PWC Project Manager Administrateur de projets TPC

project number no. du projet

324043

drawing no. no. du dessin

14 OF 25





SUB SURFACE SURVEYS

CONSULTING  
GEOTECHNICAL ENGINEERS

FREDERICTON N.B.

LEGEND

- R — DITCH GRADES RIGHT SIDE
- L — DITCH GRADES LEFT SIDE
- B.H. BOREHOLE
- UTILITY POLE
- X — FARM CROSSING CULVERT
- = — HIGHWAY CULVERT
- — — UNDERGROUND CONDUIT

SCALES —  
Horiz. — 1 : 1000  
Vert. — 1 : 100

revisions date

A	A detail no.	A	A detail no.
C	C location drawing no.	B	B location drawing no.
	C drawing no.	C	C drawing no.

project  
UPGRADING HWY. 117

KOUCHIBOUGUAC  
NATIONAL PARK

Kent Co. N.B.

drawing no.

Km 6.5 to 19.8  
PLAN - PROFILE

designed *A. McLaughlin P. Eng.* concei

date

drawn *B. McLaughlin* dessine

date *82-01-13*

reviewed *A. McLaughlin P. Eng.* examiné

date *82-01-06*

approved *A. McLaughlin P. Eng.* approuvé

date *82-01-13*

Tender *W. F. Lord P. Eng.* Submission

PWC Project Manager Admin. strateur de projets PWC

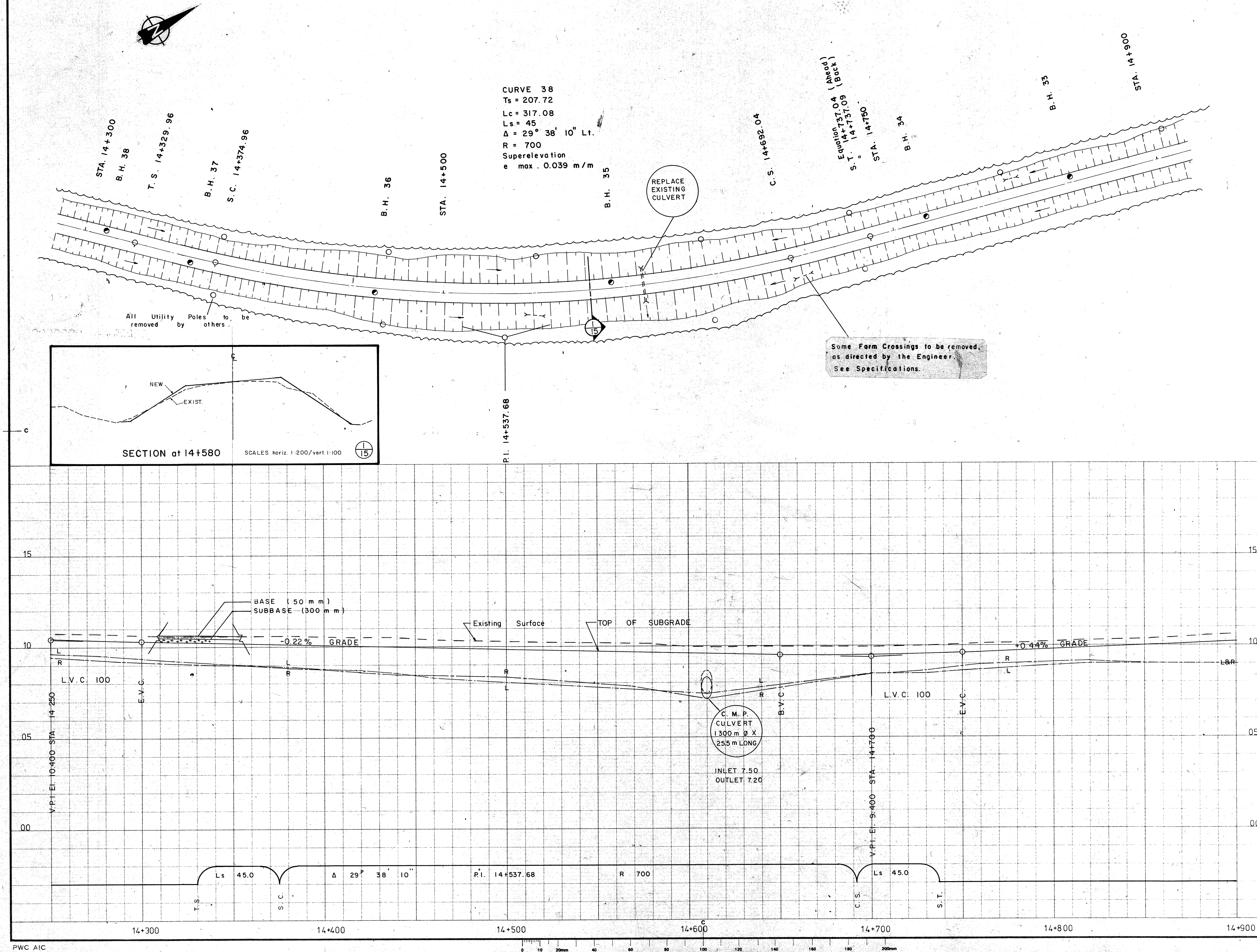
project number no. du projet

324043

drawing no. no. du dessin

15 OF 25

local plan no. 36



SECTION at 14+580

SCALES horiz. 1:200/vert. 1:100



SUB SURFACE SURVEYS

CONSULTING  
GEOTECHNICAL ENGINEERS

FREDERICTON N.B.

LEGEND

- R — DITCH GRADES RIGHT SIDE
- L — " " LEFT SIDE
- B.H. BOREHOLE
- UTILITY POLE
- > < FARM CROSSING CULVERT
- ===== HIGHWAY CULVERT
- UNDERGROUND CONDUIT

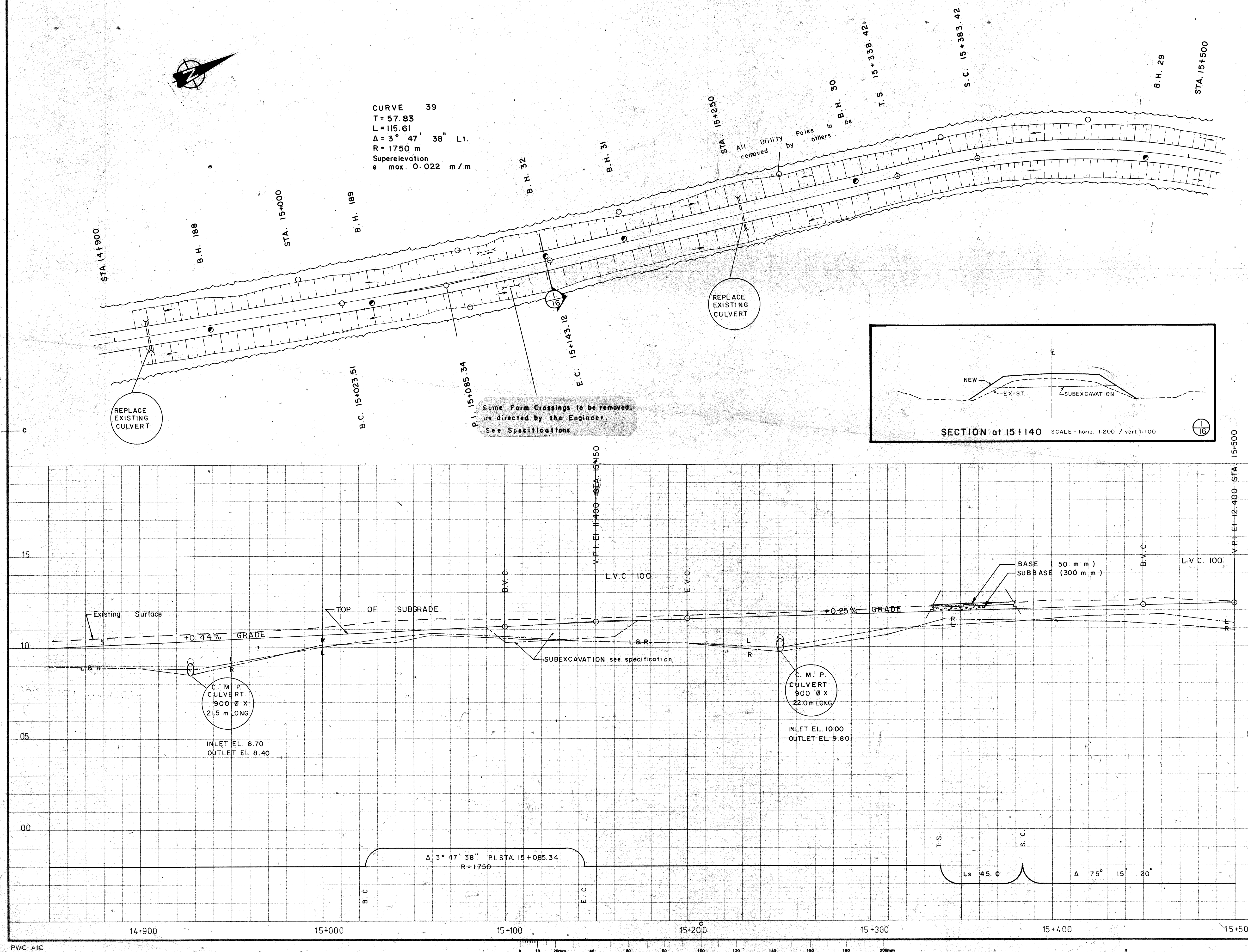
SCALES—  
Horiz. — 1 : 1000  
Vert. — 1 : 100

revisions	date
A	A detail no.
C	C drawing no.

project  
**UPGRADING HWY. 117  
KOUCHIBOUGUAC  
NATIONAL PARK**  
Kent Co. N.B.

Km 6.5 to 19.8  
PLAN - PROFILE

designed *A. McArthur P. Eng.*  
date  
drawn *B. McArthur P. Eng.*  
date *82-01-06*  
reviewed *A. McArthur P. Eng.*  
date  
approved *W. F. Lord P. Eng.*  
date *82-01-13*  
Tender *W. F. Lord P. Eng.*  
PWC Project Manager *W. F. Lord P. Eng.*  
Project number **324043**  
drawing no. 16 OF 25





SUB SURFACE SURVEYS

CONSULTING  
GEOTECHNICAL ENGINEERS

FREDERICTON, N. B.

LEGEND

- R --- DITCH GRADES RIGHT SIDE
- L --- DITCH GRADES LEFT SIDE
- B.H. BOREHOLE
- UTILITY POLE
- > FARM CROSSING CULVERT
- > HIGHWAY CULVERT
- > UNDERGROUND CONDUIT

SCALES  
Horiz. - 1 : 1000  
Vert. - 1 : 100

revisions date

A	A detail no. no. du détail	A
C	B location drawing no. sur dessin no.	B
	C drawing no. dessin no.	C

UPGRADING HWY. 117  
**KOUCHIBOUGUAC  
NATIONAL PARK**

Kent Co. N. B.

drawing dessin

Km 6.5 to 19.8  
PLAN - PROFILE

designed *A. McArthur P. Eng.* conçu

date

drawn *B. M. C.* dessiné

date *02-01-06* *P. J. O'NEILL & ASSOCIATES LTD.*

reviewed *A. McArthur P. Eng.* examiné

date *02-01-06*

approved *A. McArthur P. Eng.* approuvé

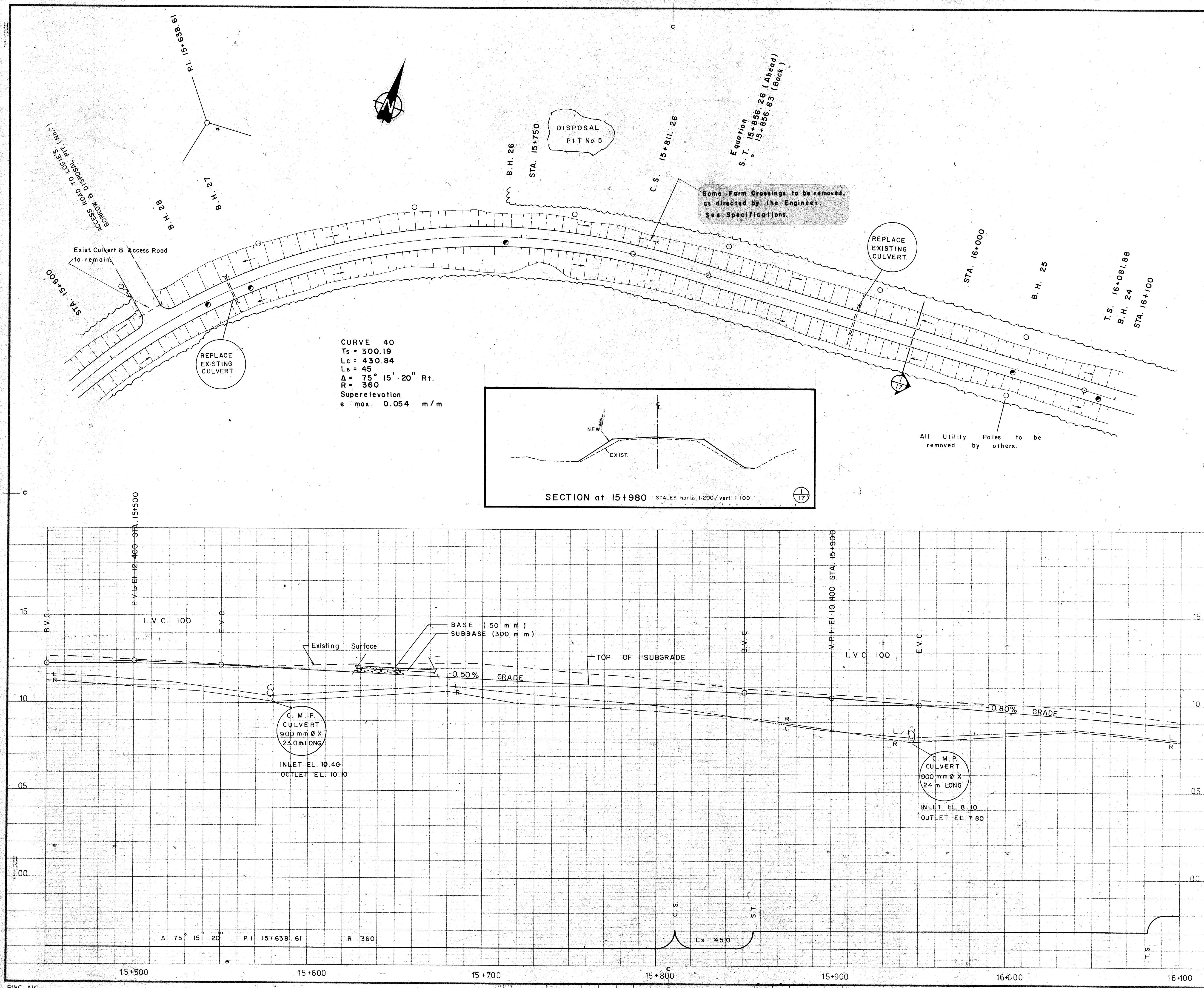
date *02-01-13*

Tender *W. F. Lord, P. Eng.* Soumission

PWC Project Manager *82-01-13* Administrateur de projets PWC

project number **324043** no. du projet

drawing no. 17 OF 25 no. du dessin





SUB SURFACE SURVEYS

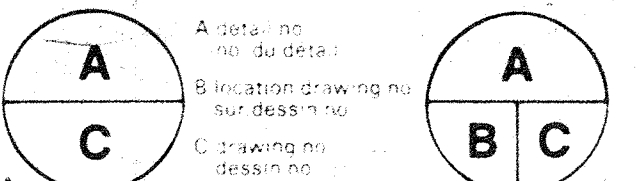
CONSULTING  
GEOTECHNICAL ENGINEERS

FREDRICKTON N.B.

LEGEND

- R --- DITCH GRADES RIGHT SIDE
- L --- " " " " LEFT SIDE
- B.H. BOREHOLE
- UTILITY POLE
- >--- FARM CROSSING CULVERT
- ===== HIGHWAY CULVERT
- UNDERGROUND CONDUIT

SCALES  
Horiz. - 1:1000  
Vert. - 1:100

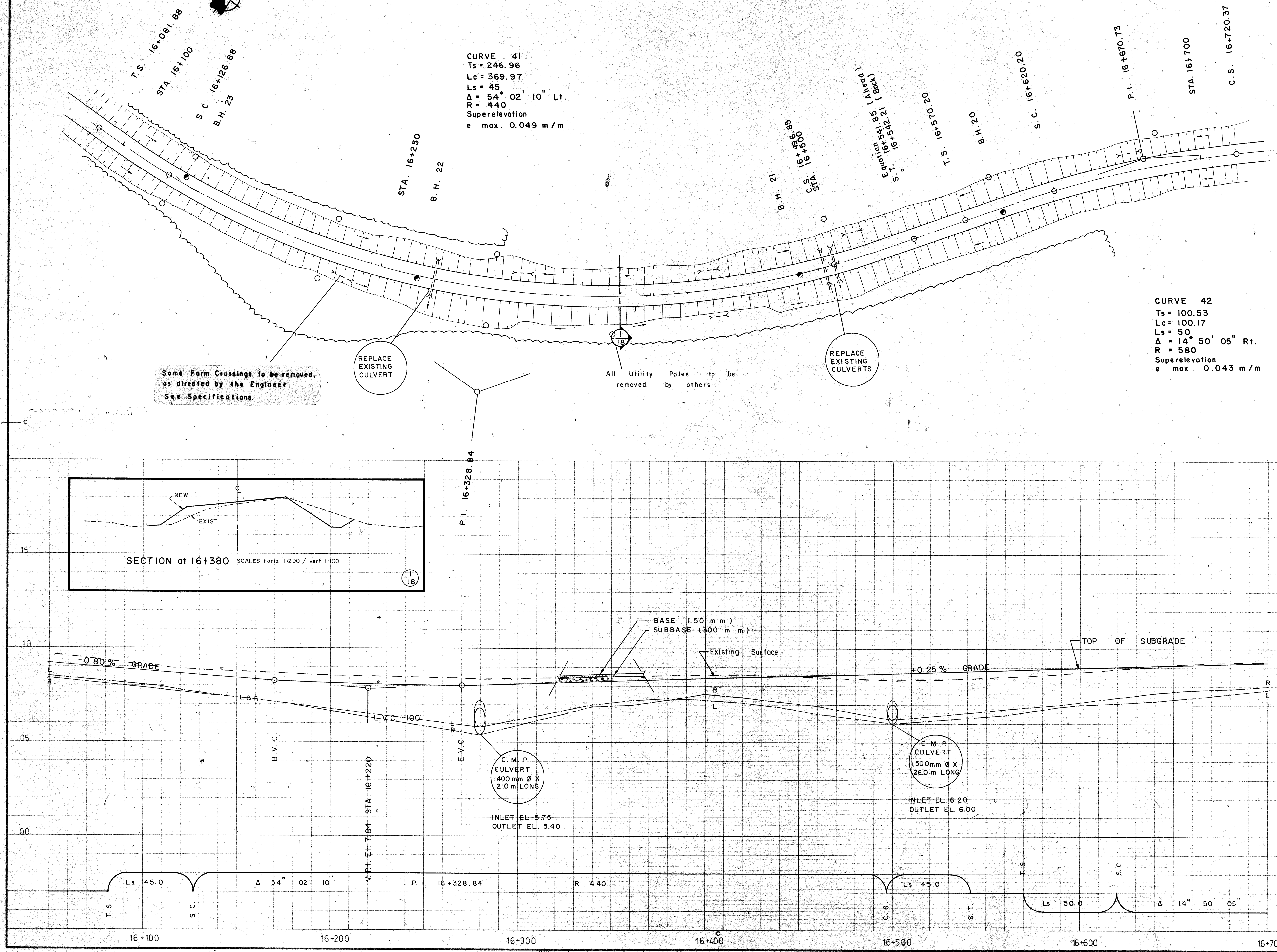


UPGRADING HWY. 117  
KOUCHIBOUGUAC  
NATIONAL PARK

Kent Co. N.B.

Km 6.5 to 19.8  
PLAN - PROFILE

designed *A. McRobb P.Eng.* checked  
date  
drawn *B. McRobb* designed  
date *AUGUST 2006* SURVEYS & CONSULTANTS LTD.  
reviewed *A. McRobb P.Eng.* examined  
date *02-01-06*  
approved *Dr. Dennis P. Eng.* approved  
date *02-01-13*  
Tender *W.F. LORRY P. Eng.* submission  
PWC Project Manager *W.F. LORRY P. Eng.* Administrator de projets TPC  
project number  
**324043**  
drawing no. 18 OF 25





SUB SURFACE SURVEYS

CONSULTING  
GEOTECHNICAL ENGINEERS  
FREDERICTON N.B.

LEGEND

- R --- DITCH GRADES RIGHT SIDE
- L --- " " LEFT SIDE
- B.H. BOREHOLE
- UTILITY POLE
- X --- FARM CROSSING CULVERT
- ===== HIGHWAY CULVERT
- UNDERGROUND CONDUIT

SCALES  
Horiz. 1:1000  
Vert. 1:100

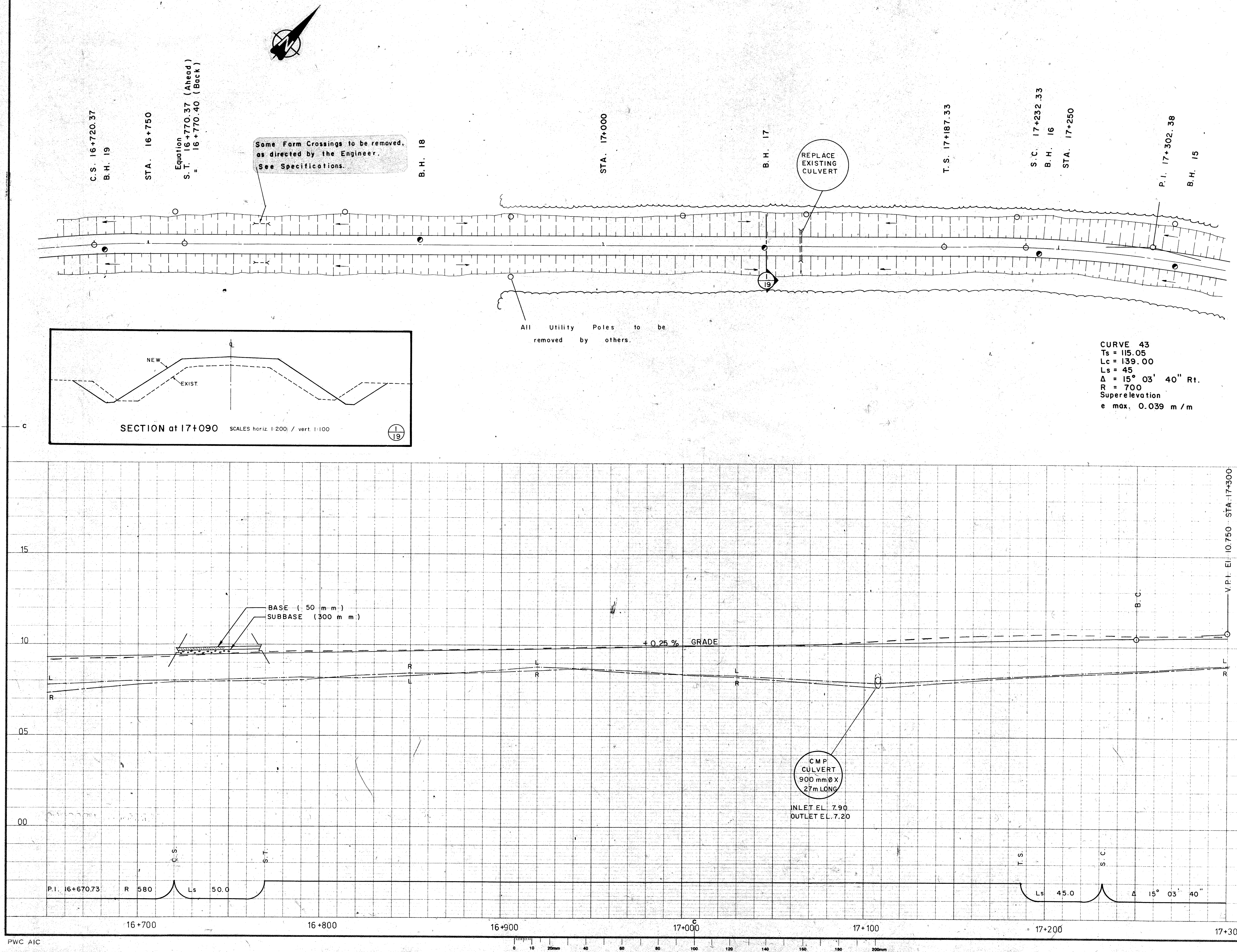
DESIGNED	DATE
<b>A</b>	<b>A</b>
<b>C</b>	<b>B C</b>

UPGRADING HWY 117  
KOUCHIBOUGUAC  
NATIONAL PARK

Kent Co. N.B.

Km 6.5 to 19.8  
PLAN - PROFILE

DESIGNED	DATE
<i>A. McRae P.Eng.</i>	
DRAWN	DATE
<i>B. McRae</i>	
DATE	DATE
<i>82-01-13</i>	
APPROVED	DATE
<i>A. McRae P.Eng.</i>	
TENDER	DATE
<i>W.F. Lord, P.Eng.</i>	
PWC PROJECT MANAGER	DATE
<i>82-01-13</i>	
PROJECT NUMBER	DATE
<b>324043</b>	
DRAWING NO.	DATE
<b>19 OF 25</b>	





SUB SURFACE SURVEYS

CONSULTING  
GEOTECHNICAL ENGINEERS

FREDERICTON N. B.

LEGEND

- DITCH GRADES RIGHT SIDE
- DITCH GRADES LEFT SIDE
- B.H. BOREHOLE
- UTILITY POLE
- FARM CROSSING CULVERT
- HIGHWAY CULVERT
- UNDERGROUND CONDUIT

SCALES  
Horiz. - 1:1000  
Vert. - 1:100

revisions date

A	A detail no. / no. du détail	A
C	B location drawing no. / sur dessin no.	B
	C drawing no. / dessin no.	C

UPGRADING HWY. 117  
KOUCHIBOUGUAC  
NATIONAL PARK

Kent Co. N. B.

drawing dessin

Km 6.5 to 19.8  
PLAN - PROFILE

designed A. McLaughlin, P. Eng. conçu

date

drawn B. McLaughlin, P. Eng. dessiné

date 02-01-06

reviewed A. McLaughlin, P. Eng. examiné

date 02-01-06

approved W. F. Lord, P. Eng. approuvé

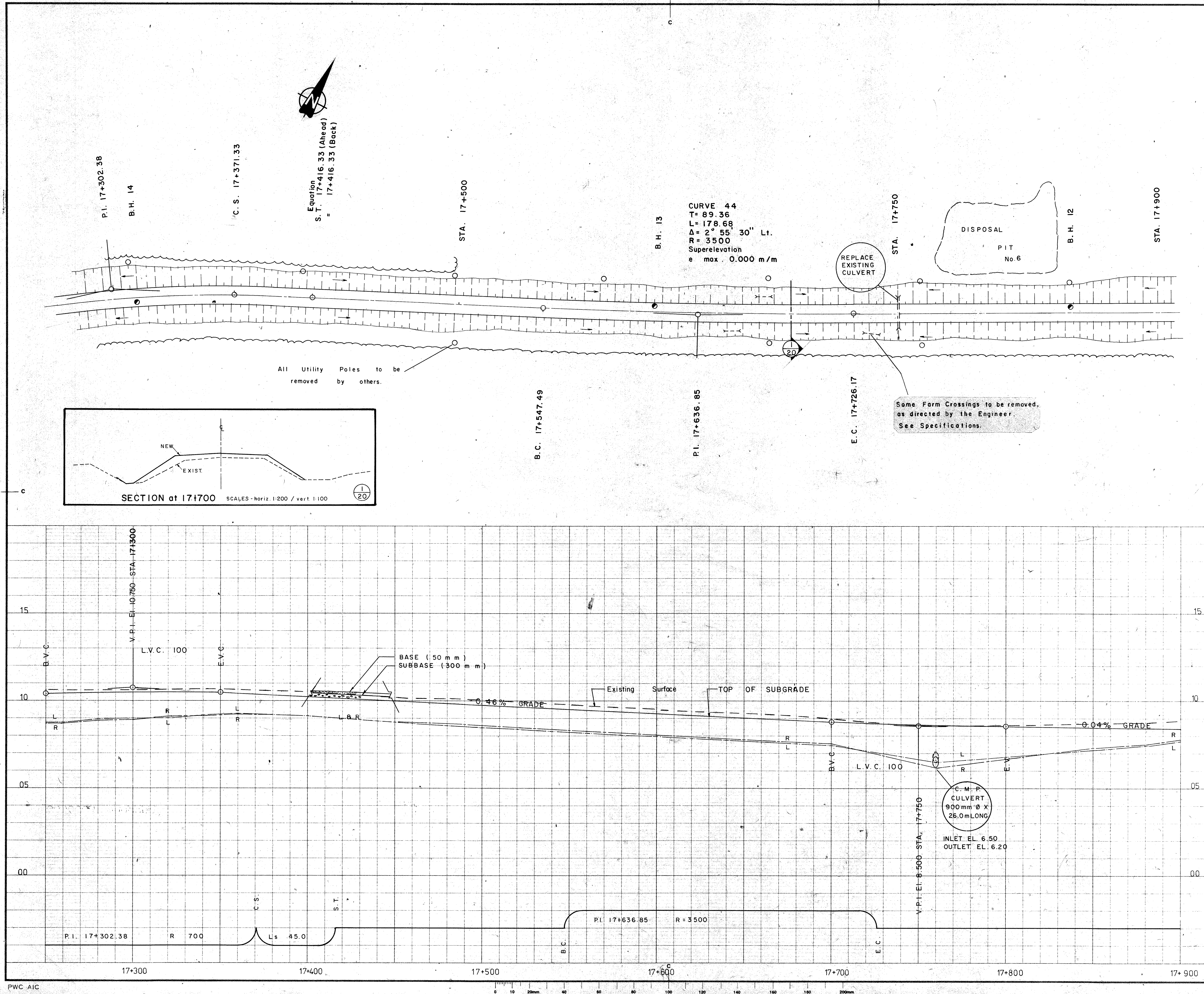
date 02-01-13

Tender W. F. Lord, P. Eng. soumission

PWC Project Manager Administrateur de projets PWC

project number 324043 no. du projet

drawing 20 OF 25 no. du dessin





SUB SURFACE SURVEYS

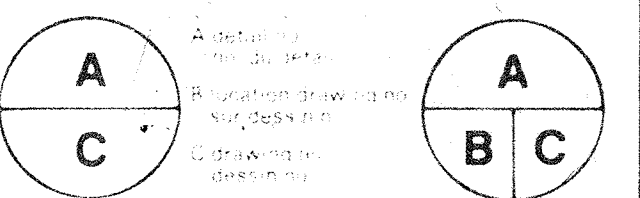
CONSULTING  
GEOTECHNICAL ENGINEERS

FREDERICTON N. B.

LEGEND

- R — DITCH GRADES RIGHT SIDE
- L — " " LEFT SIDE
- B.H. BOREHOLE
- UTILITY POLE
- FARM CROSSING CULVERT
- ===== HIGHWAY CULVERT
- UNDERGROUND CONDUIT

SCALES  
Horiz. - 1:1000  
Vert. - 1:100



UPGRADING HWY. 117  
KOUCHIBOUGUAC  
NATIONAL PARK

Kent Co. N. B.

Km 6.5 to 19.8  
PLAN - PROFILE

A. McArthur P. Eng.

B. McArthur P. Eng.

A. McArthur P. Eng.

82-01-06

82-01-13

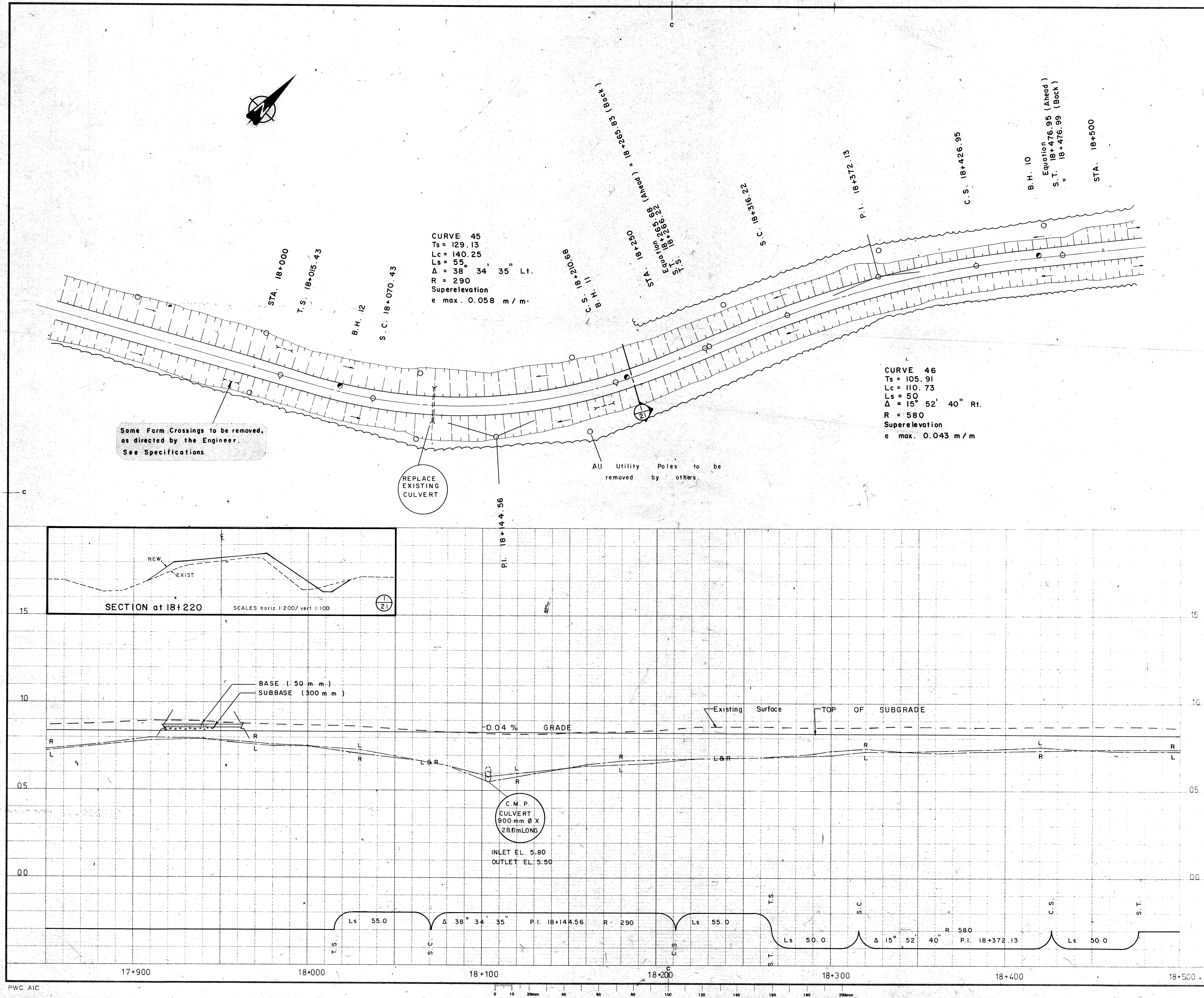
W.F. Lord, P. Eng.

82-01-13

324043

21 OF 25

local plan no. 36





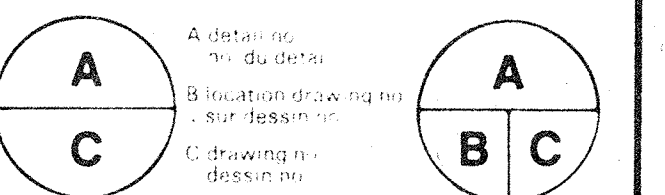
SUB SURFACE SURVEYS

CONSULTING  
GEOTECHNICAL ENGINEERS  
FREDERICTON N.B.

LEGEND

- R — DITCH GRADES RIGHT SIDE
- L — " " " " LEFT SIDE
- B.H. BOREHOLE
- UTILITY POLE
- X — FARM CROSSING CULVERT
- H — HIGHWAY CULVERT
- U — UNDERGROUND CONDUIT

SCALES —  
Horiz. — 1 : 1000  
Vert. — 1 : 100



UPGRADING HWY. 117  
KOUCHIBOUGUAC  
NATIONAL PARK

Kent Co. N.B.

Km 6.5 to 19.8  
PLAN - PROFILE

designed	A. McArthur, P.Eng.	conçu
date		
drawn	B. McArthur	dessiné
date		
reviewed	A. McArthur, P.Eng.	examiné
date	02-01-06	
approved	Dr. Peter Peng	approuvé
date	02-01-13	
Tender	W.F. Lord, P.Eng. Submission	
PWC Project Manager	Administrateur de projets PWC	
project number	324043	no du projet
drawing no.	22 OF 25	no du dessin

CURVE 48  
Ts = 130.28  
Lc = 166.31  
Ls = 45  
Δ = 27° 31' 00" Lt.  
R = 440  
Superelevation  
e max. 0.049 m/m

CURVE 47  
Ts = 102.82  
Lc = 104.67  
Ls = 50  
Δ = 15° 16' 45" Rt.  
R = 580  
Superelevation  
e max. 0.043 m/m

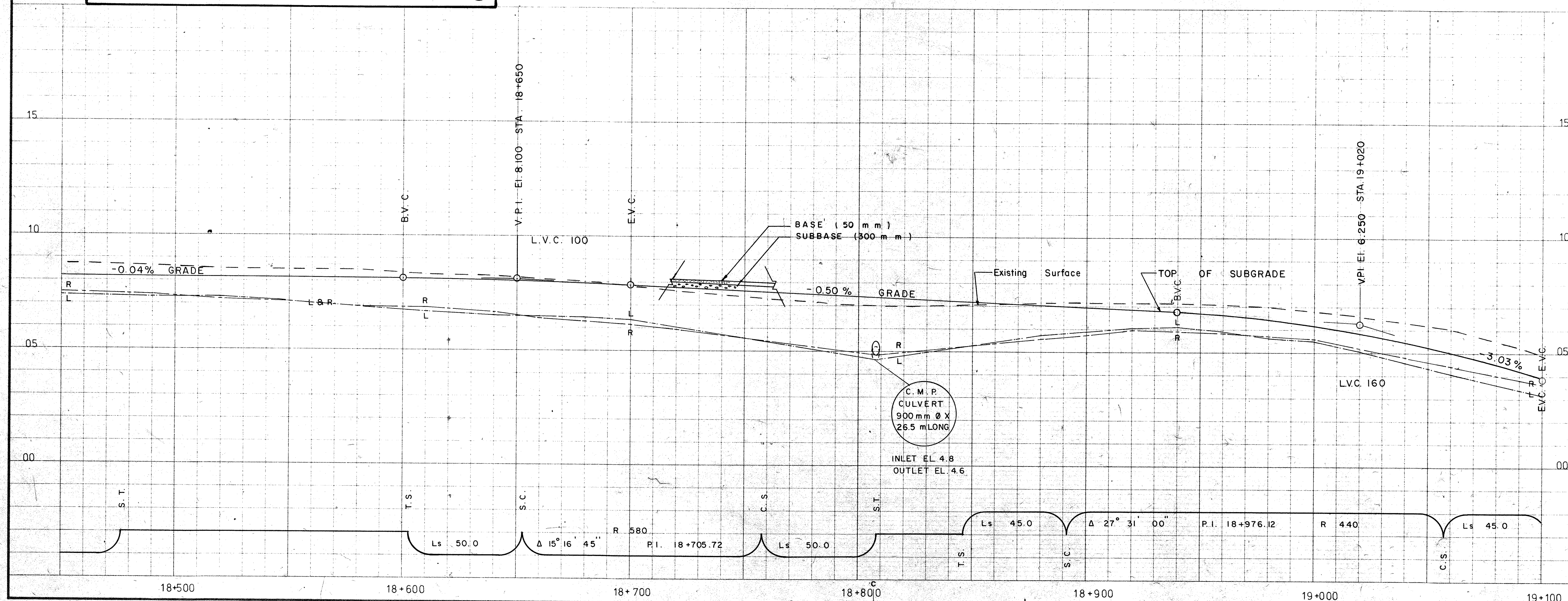
REPLACE  
EXISTING  
CULVERT

Some Farm Crossings to be removed,  
as directed by the Engineer.  
See Specifications.

SECTION at 18+720

SCALES horiz. 1:200 / vert. 1:100

1/22





LEGEND

- R — DITCH GRADES RIGHT SIDE
- L — DITCH GRADES LEFT SIDE
- B.H. BOREHOLE
- UTILITY POLE
- F — FARM CROSSING CULVERT
- H — HIGHWAY CULVERT
- U — UNDERGROUND CONDUIT

SCALES —  
Horiz. — 1 : 1000  
Vert. — 1 : 100

revisions date

A	A detail no. no. du détail	A	A detail no. no. du détail
C	C location drawing no. sur dessin no.	B	B location drawing no. sur dessin no.
	C drawing no. dessin no.	C	C drawing no. dessin no.

project  
UPGRADING HWY. 117

KOUCHIBOUGUAC  
NATIONAL PARK

Kent Co. N. B.

drawing dessin

Km 6.5 to 19.8  
PLAN - PROFILE

designed A. McArthur P.Eng. conçu

date

drawn B. McArthur P.Eng. dessiné

date MARCH 1982 SURVEYS & CONSULTANTS LTD. examiné

reviewed A. McArthur P.Eng. examiné

date 82-01-06

approved B. McArthur P.Eng. approuvé

date 82-01-13

Tender W. F. Lord P.Eng. soumission

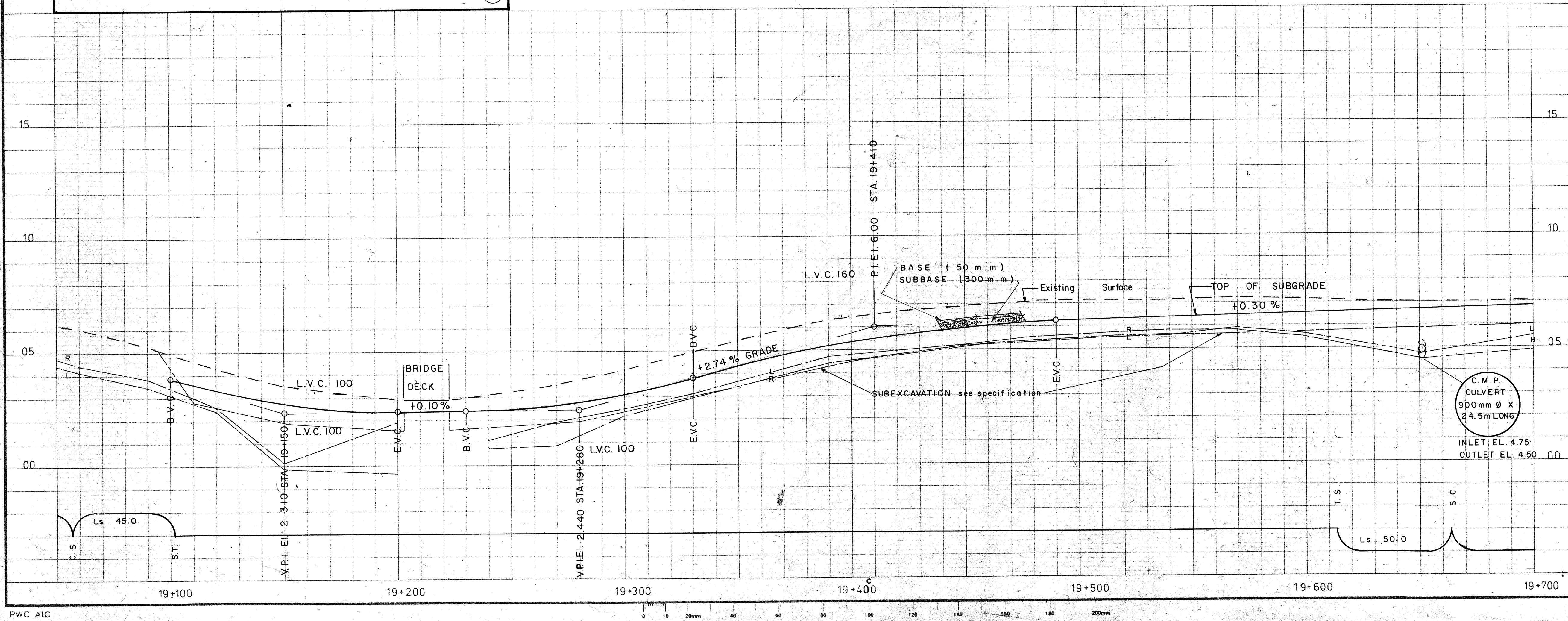
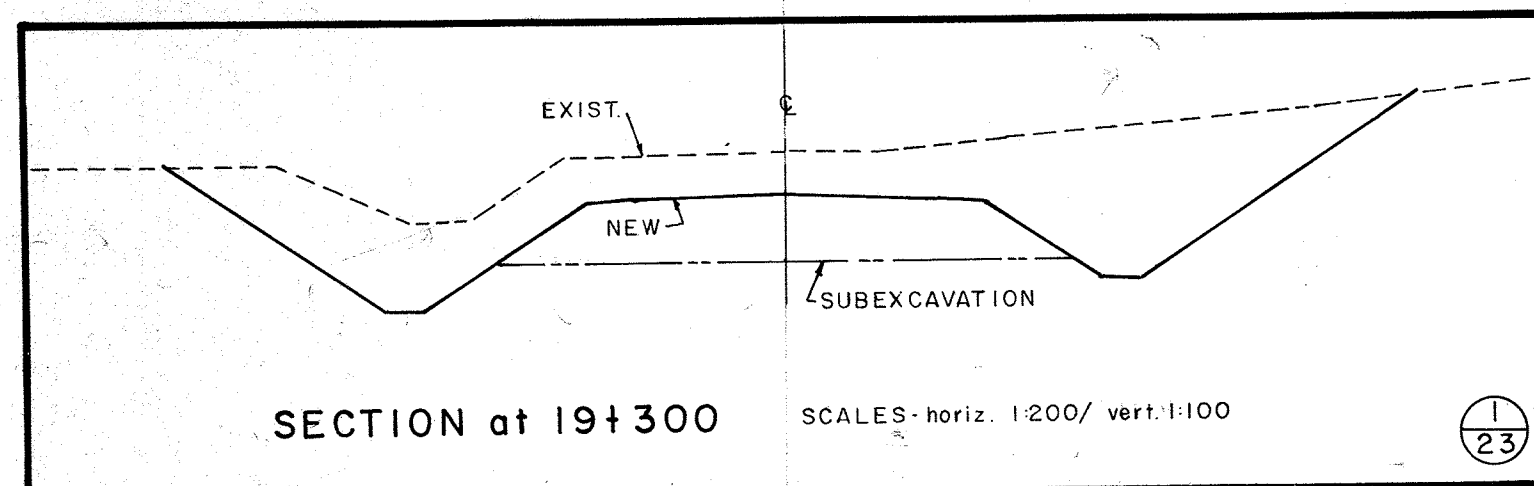
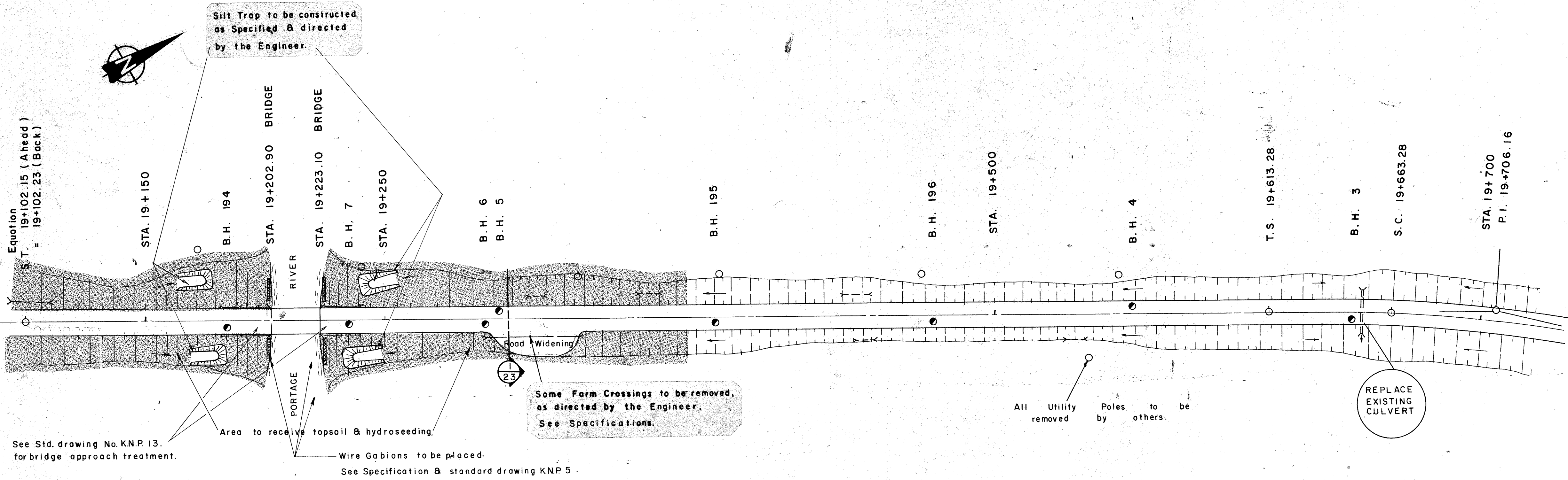
PWC Project Manager Administrateur de projets TPC

project number no. du projet

324043

drawing no. no. du dessin

23 OF 25  
local plan no. 36





SUB SURFACE SURVEYS  
CONSULTING  
GEOTECHNICAL ENGINEERS  
FREDERICTON N.B.

- LEGEND**
- R — DITCH GRADES RIGHT SIDE
  - L — " " LEFT SIDE
  - B.H. BOREHOLE
  - UTILITY POLE
  - FARM CROSSING CULVERT
  - === HIGHWAY CULVERT
  - UNDERGROUND CONDUIT

**SCALES**  
Horiz. — 1 : 1000  
Vert. — 1 : 100

revisions	date

A C	A B C
--------	-------------

project

UPGRADING HWY. 117  
**KOUCHIBOUGUAC  
NATIONAL PARK**

Kent Co. N. B.

drawing

Km 65 to 19.8  
PLAN - PROFILE

designed *A. McArthur P.Eng.*

date

drawn *B. McArthur*

date *82-01-13*

reviewed *A. McArthur P.Eng.*

date *82-01-06*

approved *W.F. Lord P.Eng.*

date *82-01-13*

Tender *W.F. Lord P.Eng.*

PWC Project Manager

project number

**324043**

drawing no

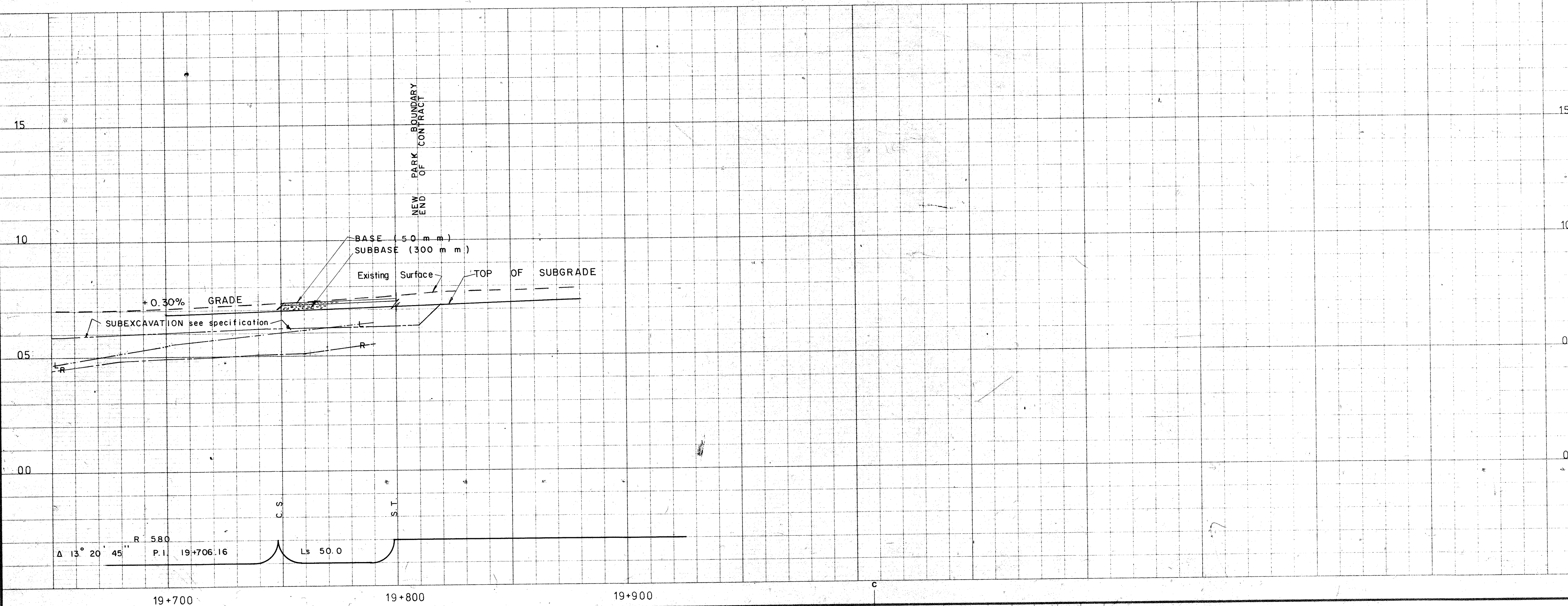
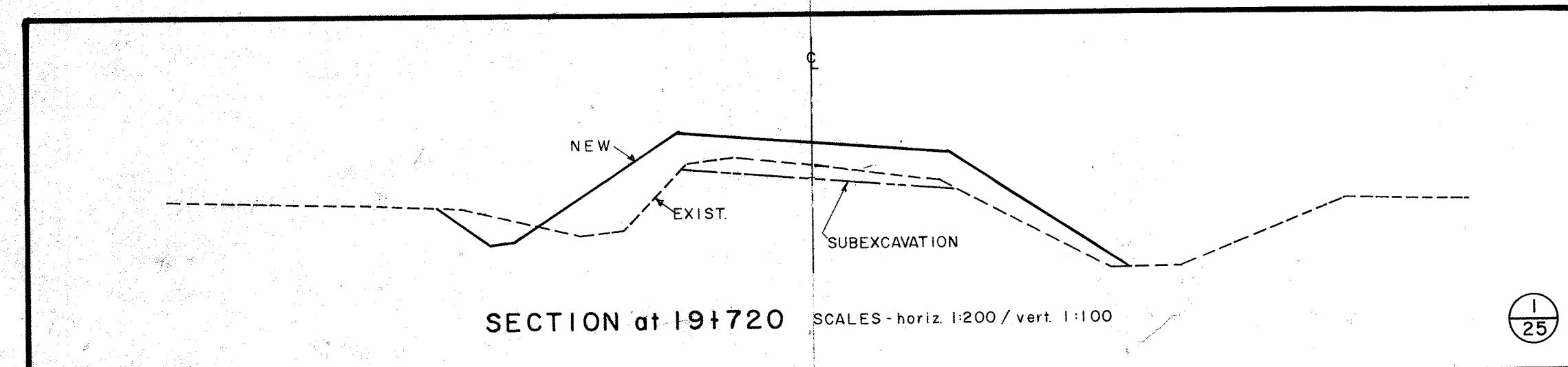
24 OF 25

local plan no. 36

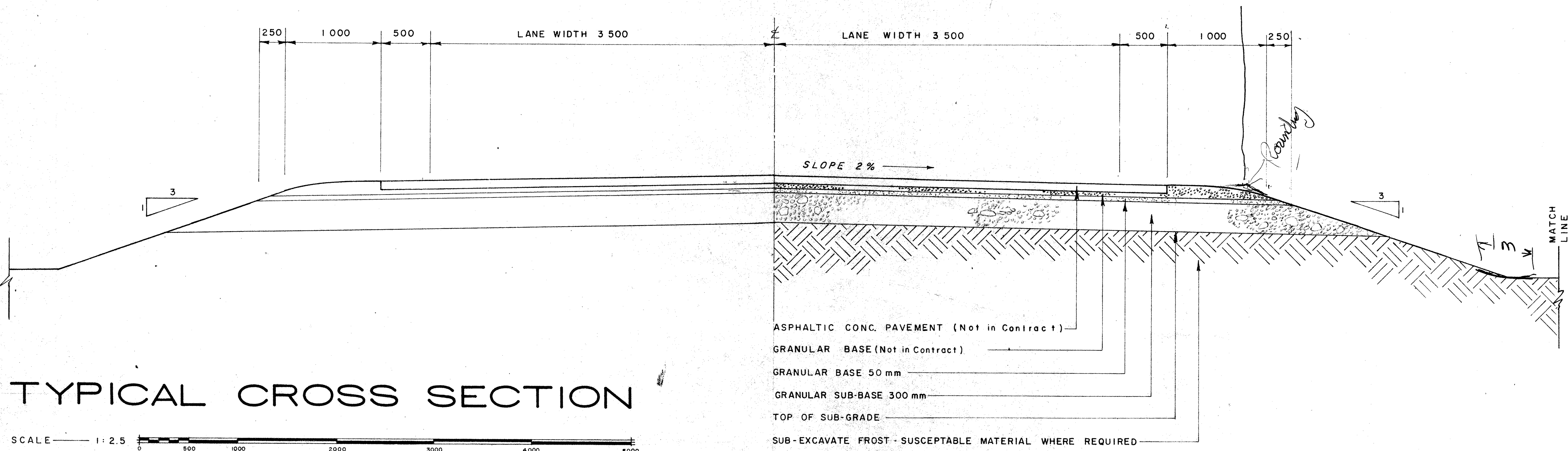
P.I. 19+706.16  
B.H. 2  
C.S. 19+748.38  
STA. 19+750  
B.H. 1  
Equation  
S.T. 19+798.38 (Ahead)  
= 19+798.41 (Back)  
19+808 NEW PARK  
BOUNDARY  
OF  
CONTRACT

CURVE 49  
Ts = 92.88  
Lc = 85.10  
Ls = 50  
Δ = 13° 20' 45" Rt.  
R = 580  
Superelevation  
e max. 0.043 m/m

Some Farm Crossings to be removed,  
as directed by the Engineer.  
See Specifications.







# TYPICAL CROSS SECTION

SCALE 1:2.5

revisions date

A detail no. no. du détail  
B location drawing no. sur dessin no.  
C drawing no. dessin no.

project projet

UPGRADING HWY. 117

KOUCHIBOUGUAC NATIONAL PARK

KENT Co., N.B.

drawing dessin

TYPICAL CROSS SECTION

designed conçu

date 83-05-06

drawn dessiné

date 16 MAY 83

reviewed examiné

date 83-05-16

approved approuvé

date 83-05-16

Tender W.F. LORD, P. Eng. Soumission

PWC Project Manager 83-05-16 Administrateur de projets TPC

project number no. du projet

324043

drawing no. no. du dessin

25 OF 25