The Regional Municipality of Hamilton-Wentworth

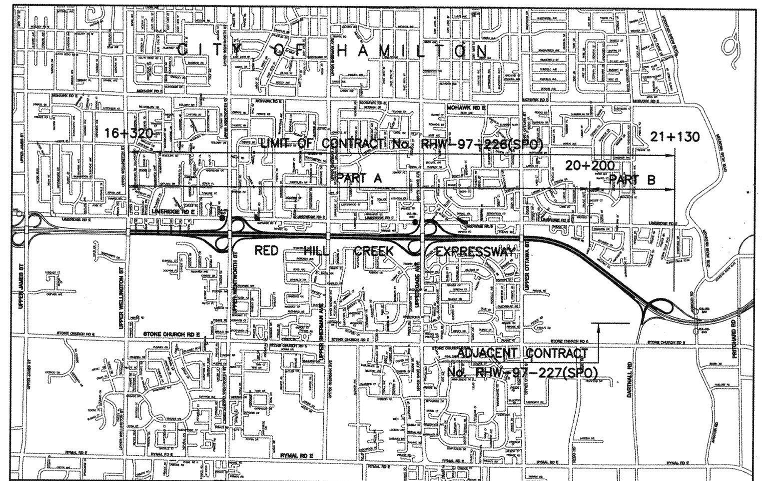
Special Projects Office

RED HILL CREEK EXPRESSWAY
PAVING AND GRANULARS

STA. 16+320 TO STA. 21+130

CONTRACT No. RHW-97-226(SPO)

AS CONSTRUCTED NOV. 15/97



KEY PLAN NOT TO SCALE

WORK : HOT MIX PAVING, GRANULAR, CURB & GUTTER AND LANDSCAPING.

LOCATION : RED HILL CREEK EXPRESSWAY
UPPER WELLINGTON STREET
TO DARTNALL ROAD INTERCHANGE

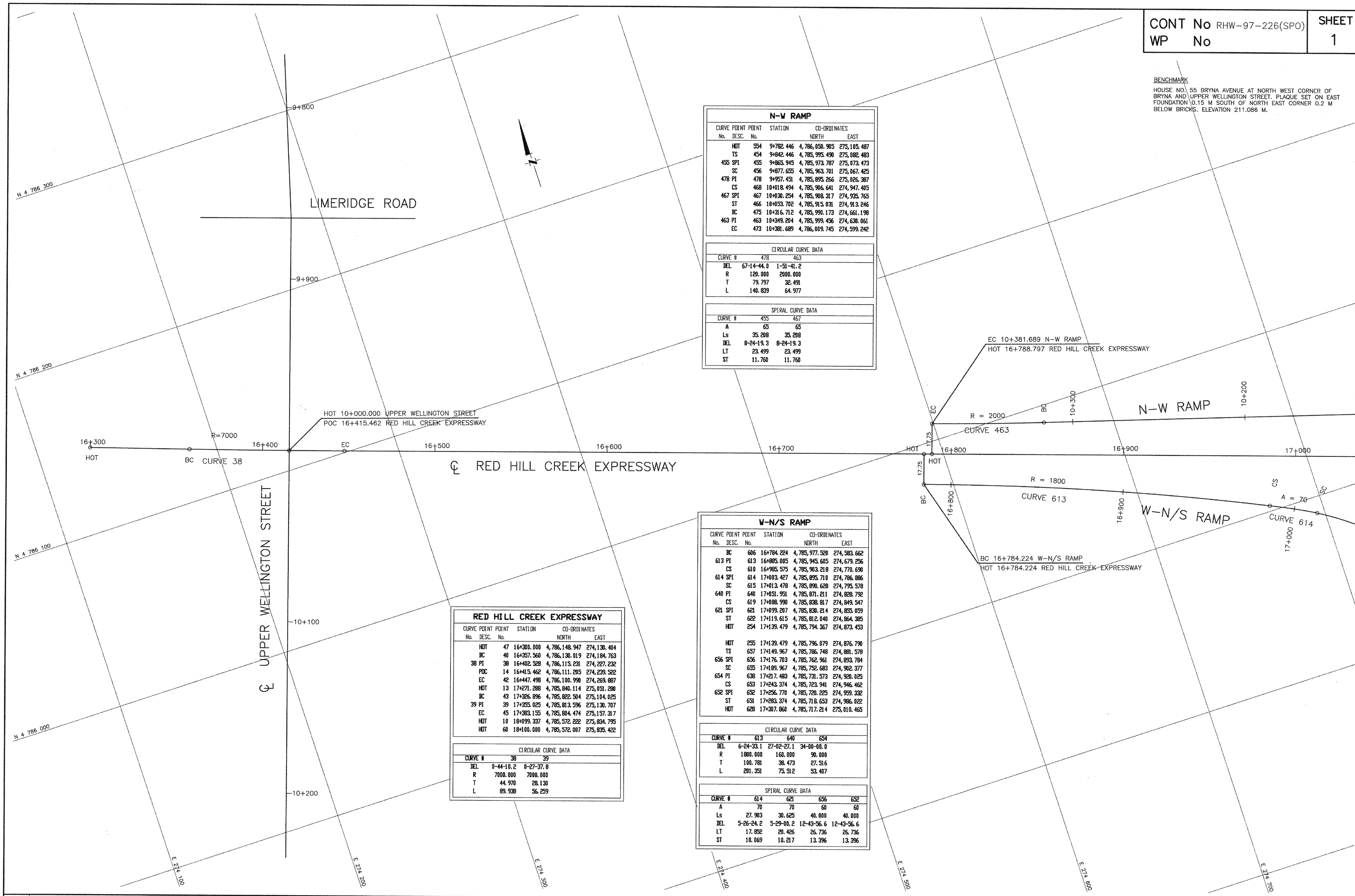
PART A

CONTRACT No. RHW-97-226(SPO)

CONT No RHW-97-226(SPO)	SHEET
WP No	1

BENCHMARK

HOUSE NO. 55 BRYNA AVENUE AT NORTH WEST CORNER OF BRYNA AND UPPER WELLINGTON STREET. PLAQUE SET ON EAST FOUNDATION 0.15 M SOUTH OF NORTH EAST CORNER 0.2 M BELOW BRICKS. ELEVATION 211.086 M.



N-W RAMP

CURVE No.	POINT DESC.	POINT No.	STATION	CO-ORDINATES NORTH	CO-ORDINATES EAST
	HOT	554	9+782.446	4,786,050.905	275,105.487
	TS	454	9+842.446	4,785,995.490	275,082.483
455	SPI	455	9+865.945	4,785,973.787	275,073.473
	SC	456	9+877.655	4,785,963.701	275,067.425
478	PI	478	9+957.451	4,785,895.266	275,026.387
	CS	468	10+018.494	4,785,906.641	274,947.405
467	SPI	467	10+030.254	4,785,908.317	274,935.765
	ST	466	10+053.702	4,785,915.031	274,913.246
	BC	475	10+316.712	4,785,990.173	274,661.198
463	PI	463	10+349.204	4,785,999.456	274,630.061
	EC	473	10+381.689	4,786,009.745	274,599.242

CIRCULAR CURVE DATA

CURVE #	478	463
DEL	67-14-44.0	1-51-41.2
R	120.000	2000.000
T	79.797	32.491
L	140.839	64.977

SPIRAL CURVE DATA

CURVE #	455	467
A	65	65
Ls	35.208	35.208
DEL	8-24-19.3	8-24-19.3
LT	23.499	23.499
ST	11.760	11.760

RED HILL CREEK EXPRESSWAY

CURVE No.	POINT DESC.	POINT No.	STATION	CO-ORDINATES NORTH	CO-ORDINATES EAST
	HOT	47	16+300.000	4,786,148.947	274,130.404
	BC	40	16+357.560	4,786,130.019	274,184.763
38	PI	38	16+402.528	4,786,115.231	274,227.232
	POC	14	16+415.462	4,786,111.205	274,239.522
	EC	42	16+447.498	4,786,100.990	274,269.887
	HOT	13	17+271.288	4,785,840.114	275,051.280
	BC	43	17+326.896	4,785,822.504	275,104.025
39	PI	39	17+355.025	4,785,813.596	275,130.707
	EC	45	17+383.155	4,785,804.474	275,157.317
	HOT	10	18+099.337	4,785,572.222	275,834.795
	HOT	60	18+100.000	4,785,572.007	275,835.422

CIRCULAR CURVE DATA

CURVE #	38	39
DEL	0-44-10.2	0-27-37.8
R	7000.000	7000.000
T	44.970	28.130
L	89.938	56.259

W-N/S RAMP

CURVE No.	POINT DESC.	POINT No.	STATION	CO-ORDINATES NORTH	CO-ORDINATES EAST
	BC	606	16+784.224	4,785,977.520	274,583.662
613	PI	613	16+885.005	4,785,945.605	274,679.256
	CS	610	16+985.575	4,785,903.218	274,770.690
614	SPI	614	17+003.427	4,785,895.710	274,786.886
	SC	615	17+013.478	4,785,890.628	274,795.578
640	PI	640	17+051.951	4,785,871.211	274,828.792
	CS	619	17+088.990	4,785,838.817	274,849.547
621	SPI	621	17+099.207	4,785,830.214	274,855.059
	ST	622	17+119.615	4,785,812.040	274,864.385
	HOT	254	17+139.479	4,785,794.367	274,873.453
	HOT	255	17+139.479	4,785,796.079	274,876.790
	TS	657	17+149.967	4,785,786.748	274,881.578
656	SPI	656	17+176.703	4,785,762.961	274,893.784
	SC	655	17+189.967	4,785,752.683	274,902.377
654	PI	638	17+217.483	4,785,731.573	274,920.025
	CS	653	17+243.374	4,785,723.941	274,946.462
652	SPI	652	17+256.770	4,785,720.225	274,959.332
	ST	651	17+283.374	4,785,718.653	274,986.022
	HOT	628	17+307.860	4,785,717.214	275,010.465

CIRCULAR CURVE DATA

CURVE #	613	640	654
DEL	6-24-33.1	27-02-27.1	34-00-00.0
R	1800.000	160.000	90.000
T	100.781	38.473	27.516
L	201.351	75.512	53.407

SPIRAL CURVE DATA

CURVE #	614	621	656	652
A	70	70	60	60
Ls	27.903	30.625	40.000	40.000
DEL	5-26-24.2	5-29-00.2	12-43-56.6	12-43-56.6
LT	17.852	20.426	26.736	26.736
ST	10.069	10.217	13.396	13.396

No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

DESIGNED BY:	DRAWN BY:	CHECKED BY:
J.K.L.	S.M.	A.J.S

APPROVED	APPROVED
PROJECT DIRECTOR	MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

SPECIAL PROJECTS OFFICE

DATE: JANUARY 1994

RED HILL CREEK EXPRESSWAY
PAVING CONTRACT

HORIZONTAL ALIGNMENT

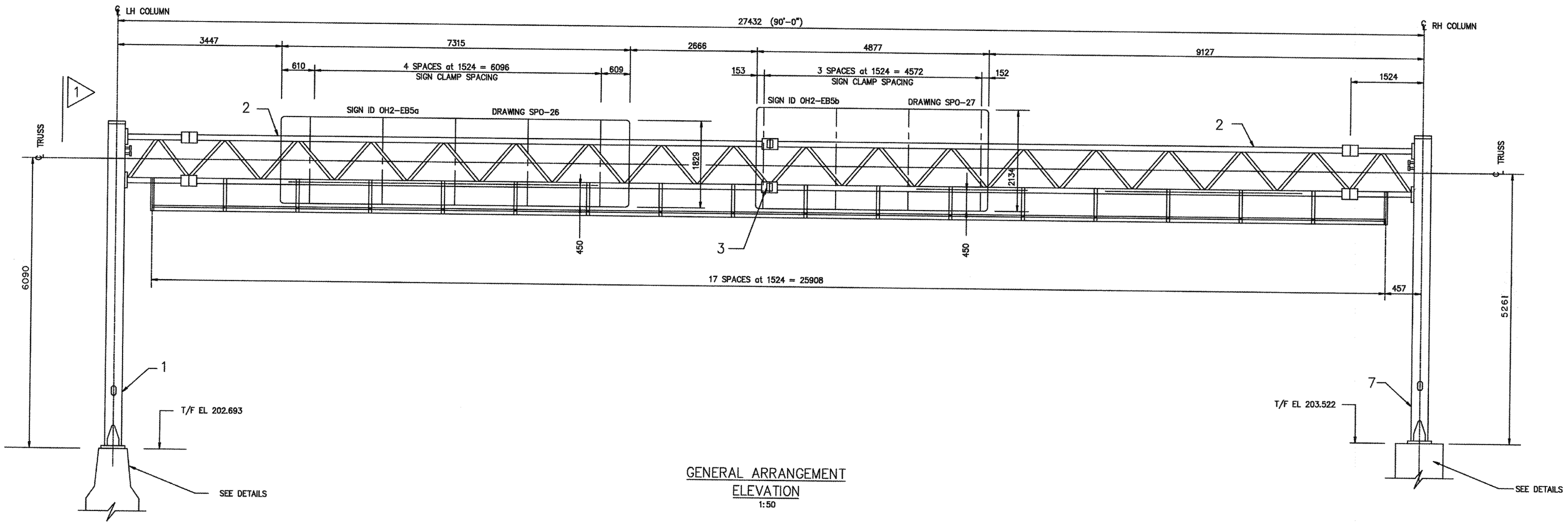
SCALE: HORIZ. 0 10 20 30

HAM0062769_0001

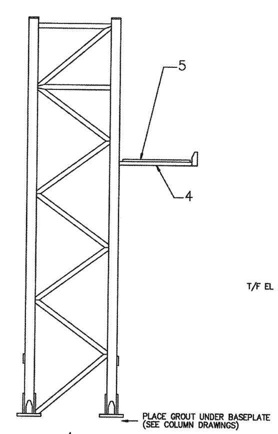
CONT No RHW-97-226(SPO) WP No	SHEET 73

THESE DESIGN DOCUMENTS ARE PREPARED SOLELY FOR THE USE BY THE PARTY WITH WHOM THE DESIGN PROFESSIONAL HAS ENTERED INTO A CONTRACT AND THERE ARE NO REPRESENTATIONS OF ANY KIND MADE BY THE DESIGN PROFESSIONAL TO ANY PARTY WITH WHOM THE DESIGN PROFESSIONAL HAS NOT ENTERED INTO A CONTRACT.

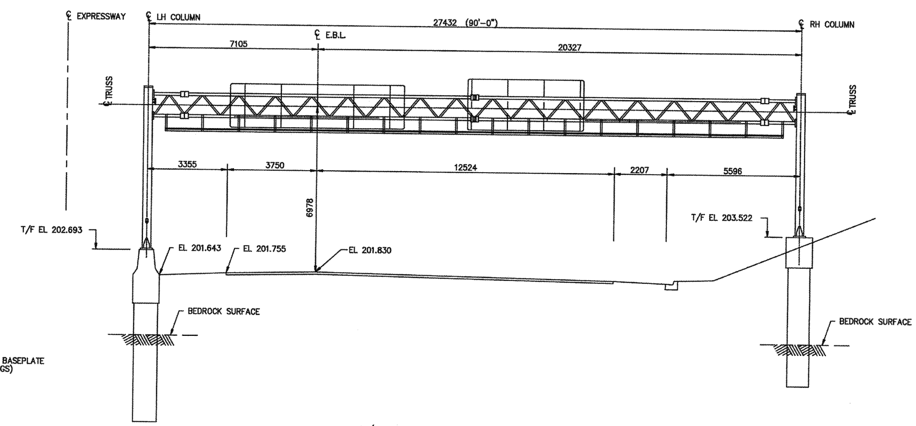
THE LOCATION OF UTILITIES IS APPROXIMATE ONLY AND THE EXACT LOCATION SHOULD BE DETERMINED BY CONSULTING THE MUNICIPAL AUTHORITIES AND UTILITY COMPANIES CONCERNED. THE CONTRACTOR SHALL PROVE THE LOCATION OF UTILITIES AND SHALL BE RESPONSIBLE FOR ADEQUATE PROTECTION FROM DAMAGE.



GENERAL ARRANGEMENT
ELEVATION
1:50



FRONT VIEW
1:50



O/H SIGN No. 3 STA. 18+546.041
RED HILL CREEK EXPRESSWAY E.B.L.
1:100

LIST OF SUBASSEMBLIES				
FIG.	NAME	QTY.	DRAWING REF.	REMARKS
1	COLUMN	1	91-2-5-1	MODIFIED
2	40 FT. TRUSS	2	91-3-40-1	
3	SHEAR RING IN CONNECTOR	4	91-4-5-3	
4	WALK ARM	18	LCM 221-045-6A	
5	GRATING	17	LCM 221-045-7A	
6	SIZE 5 CLAMP	54	BD 221-095-7	FOR WALK ARM 36 : FOR SIGN 18
7	COLUMN	1	91-2-5-1	MODIFIED

STANDARD DRAWING	91-1-90

100 mm ON ORIGINAL DRAWING

No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

PARKER CONSULTANTS

DESIGNED BY	CHECKED BY	DRAWN BY	CHECKED BY
STD		BB	FEW

APPROVED	APPROVED
PROJECT DIRECTOR	MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

SPECIAL PROJECTS OFFICE

DATE: DECEMBER 1996

RED HILL CREEK EXPRESSWAY

ALUMINUM TRUSS SIGN SUPPORT
90' GENERAL ARRANGEMENT

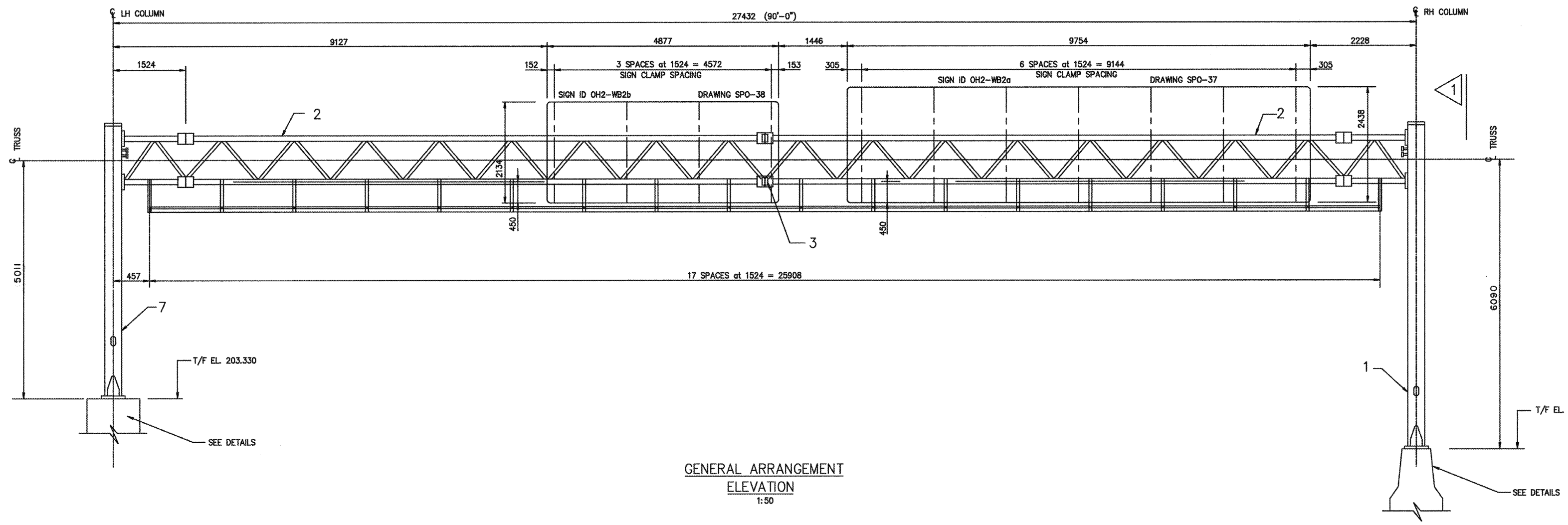
SCALE : AS SHOWN

HAM0062769_0001

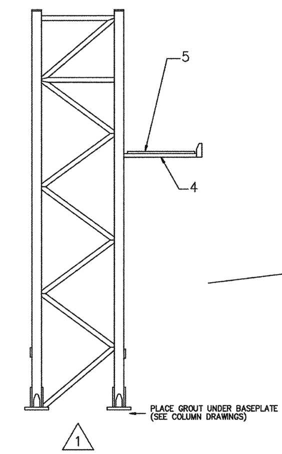
CONT No RHW-97-226(SPO) WP No	SHEET 72

THESE DESIGN DOCUMENTS ARE PREPARED SOLELY FOR THE USE BY THE PARTY WITH WHOM THE DESIGN PROFESSIONAL HAS ENTERED INTO A CONTRACT AND THERE ARE NO REPRESENTATIONS OF ANY KIND MADE BY THE DESIGN PROFESSIONAL TO ANY PARTY WITH WHOM THE DESIGN PROFESSIONAL HAS NOT ENTERED INTO A CONTRACT.

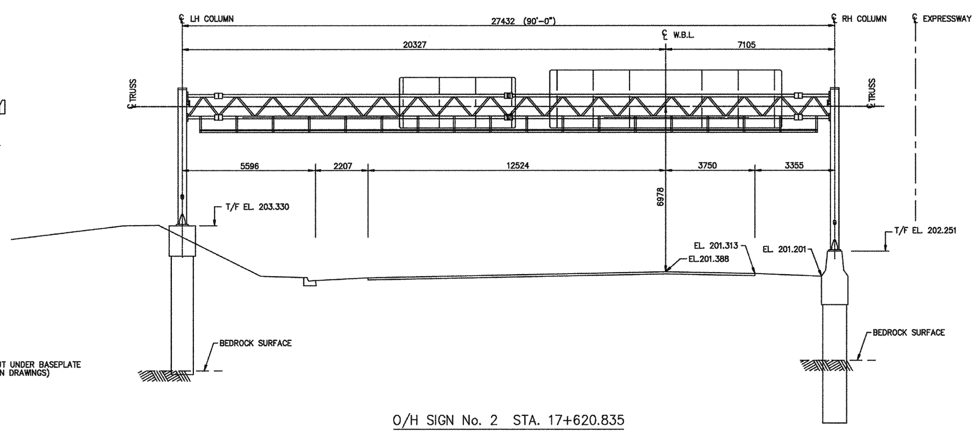
THE LOCATION OF UTILITIES IS APPROXIMATE ONLY AND THE EXACT LOCATION SHOULD BE DETERMINED BY CONSULTING THE MUNICIPAL AUTHORITIES AND UTILITY COMPANIES CONCERNED. THE CONTRACTOR SHALL PROVE THE LOCATION OF UTILITIES AND SHALL BE RESPONSIBLE FOR ADEQUATE PROTECTION FROM DAMAGE.



GENERAL ARRANGEMENT
ELEVATION
1:50



FRONT VIEW
1:50



O/H SIGN No. 2 STA. 17+620.835
RED HILL CREEK EXPRESSWAY W.B.L.
1:100

LIST OF SUBASSEMBLIES

FIG.	NAME	QTY.	DRAWING REF.	REMARKS
1	COLUMN	1	91-2-5-1	MODIFIED
2	40 FT. TRUSS	2	91-3-40-1	
3	SHEAR RING IN CONNECTOR	4	91-4-5-3	
4	WALK ARM	18	LCM 221-045-6A	
5	GRATING	17	LCM 221-045-7A	
6	SIZE 5 CLAMP	58	BD 221-095-7	FOR WALK ARM 36 : FOR SIGN 22
7	COLUMN	1	91-2-5-1	MODIFIED

STANDARD DRAWING	91-1-90

100 mm ON ORIGINAL DRAWING

No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

PARKER CONSULTANTS

DESIGNED BY	CHECKED BY	DRAWN BY	CHECKED BY
STD		BB	FEW

APPROVED	APPROVED
PROJECT DIRECTOR	MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

SPECIAL PROJECTS OFFICE

DATE: DECEMBER 1996

RED HILL CREEK EXPRESSWAY

ALUMINUM TRUSS SIGN SUPPORT
90' GENERAL ARRANGEMENT

SCALE : AS SHOWN

HAM0062769_0001

CONT No RHW-97-226(SPO) | SHEET 71
WP No

THESE DESIGN DOCUMENTS ARE PREPARED SOLELY FOR THE USE BY THE PARTY WITH WHOM THE DESIGN PROFESSIONAL HAS ENTERED INTO A CONTRACT AND THERE ARE NO REPRESENTATIONS OF ANY KIND MADE BY THE DESIGN PROFESSIONAL TO ANY PARTY WITH WHOM THE DESIGN PROFESSIONAL HAS NOT ENTERED INTO A CONTRACT.

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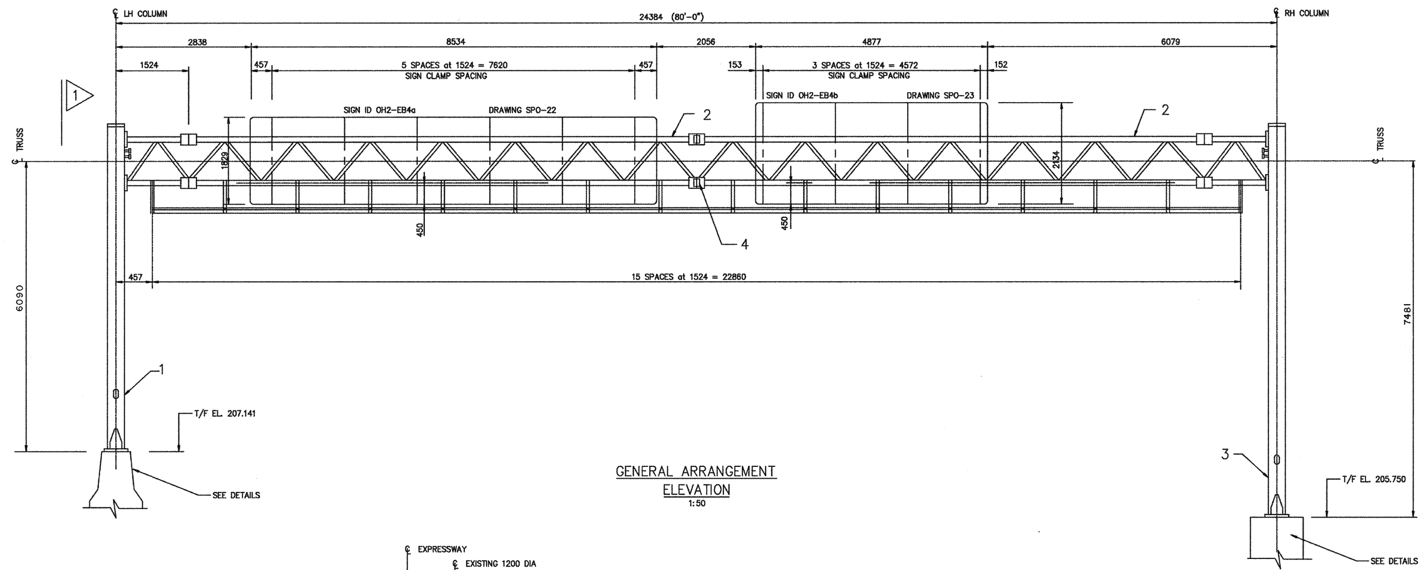
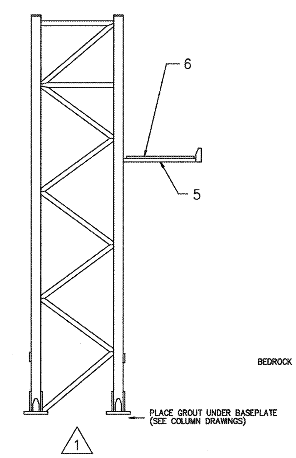
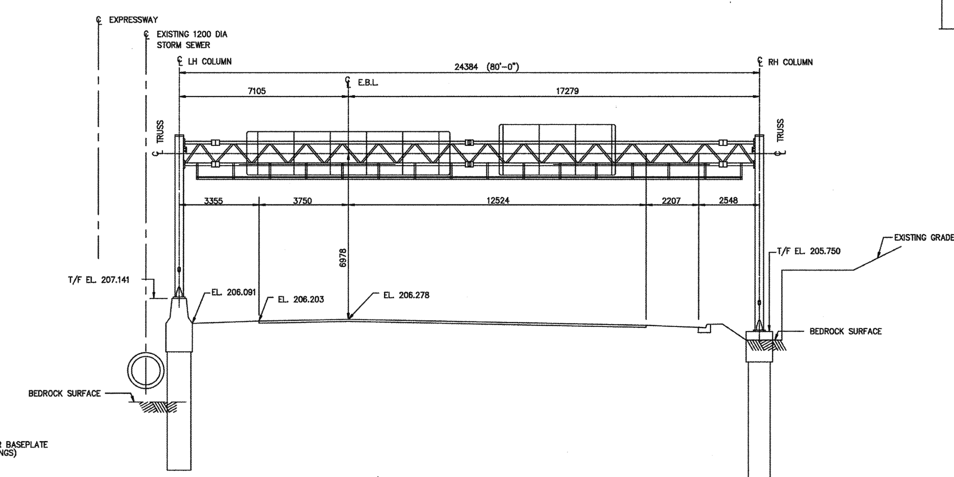


GENERAL ARRANGEMENT ELEVATION
1:50



FRONT VIEW
1:50



O/H SIGN No.1 STA. 16+921.911
RED HILL CREEK EXPRESSWAY E.B.L.
1:100

LIST OF SUBASSEMBLIES

FIG.	NAME	QTY.	DRAWING REF.	REMARKS
1	COLUMN	1	91-2-5-1	MODIFIED
2	35 FT. TRUSS	2	91-3-35-1	
3	COLUMN	1	91-2-5-1	MODIFIED
4	SHEAR RING IN CONNECTOR	4	91-4-5-3	
5	WALK ARM	16	LCM 221-045-6A	
6	GRATING	15	LCM 221-045-7A	
7	SIZE 5 CLAMP	52	BD 221-095-7	FOR WALK ARM 32 FOR SIGN 20

STANDARD DRAWING | 91-1-80

100 mm ON ORIGINAL DRAWING

No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

PARKER CONSULTANTS

DESIGNED BY STD | CHECKED BY | DRAWN BY BB | CHECKED BY FEW

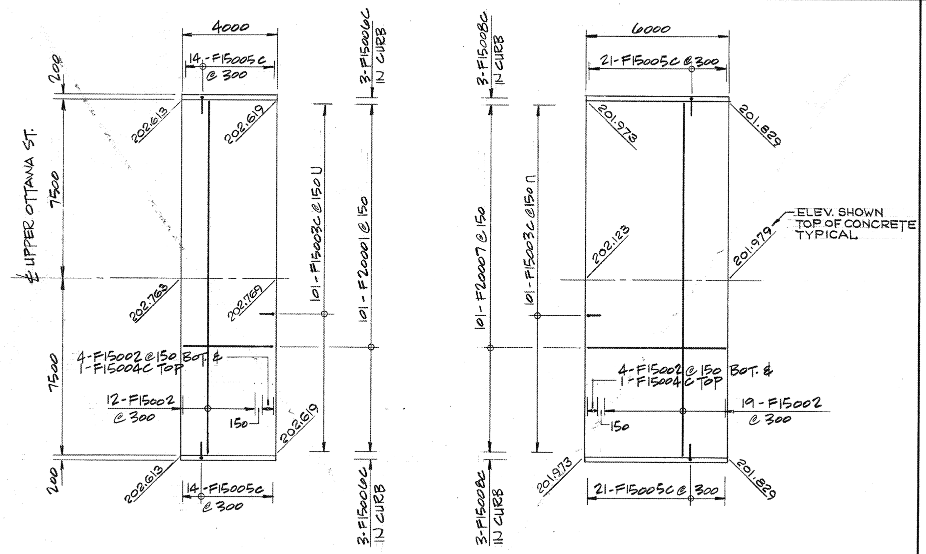
APPROVED — PROJECT DIRECTOR
APPROVED — MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH
SPECIAL PROJECTS OFFICE
DATE: DECEMBER 1996

RED HILL CREEK EXPRESSWAY
ALUMINUM TRUSS SIGN SUPPORT
80' GENERAL ARRANGEMENT
SCALE : AS SHOWN

HAM0062769_0001

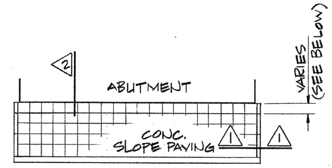
CONT	No RHW-97-226(SPO)	SHEET
WP	No	70



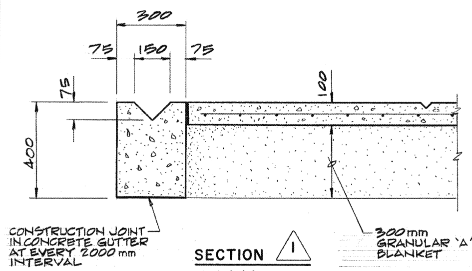
NORTH APPROACH SLAB

SOUTH APPROACH SLAB

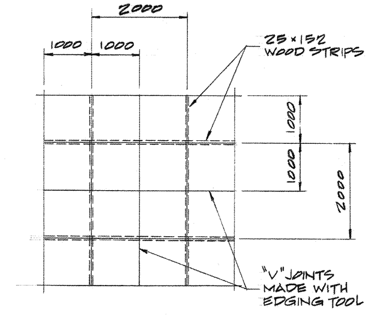
PLAN
1:100



SLOPE PAVING LAYOUT
1:200



SECTION 1
1:10

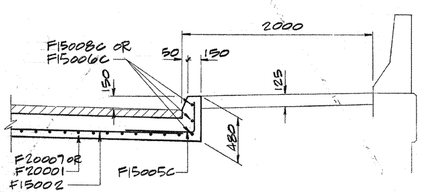


WOOD FRAME & "V" JOINT LAYOUT
1:50

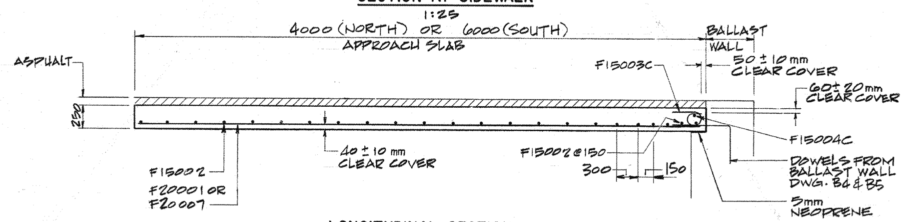
NOTES

CLEAR COVER TO REINFORCING STEEL 70±20mm EXCEPT AS NOTED.

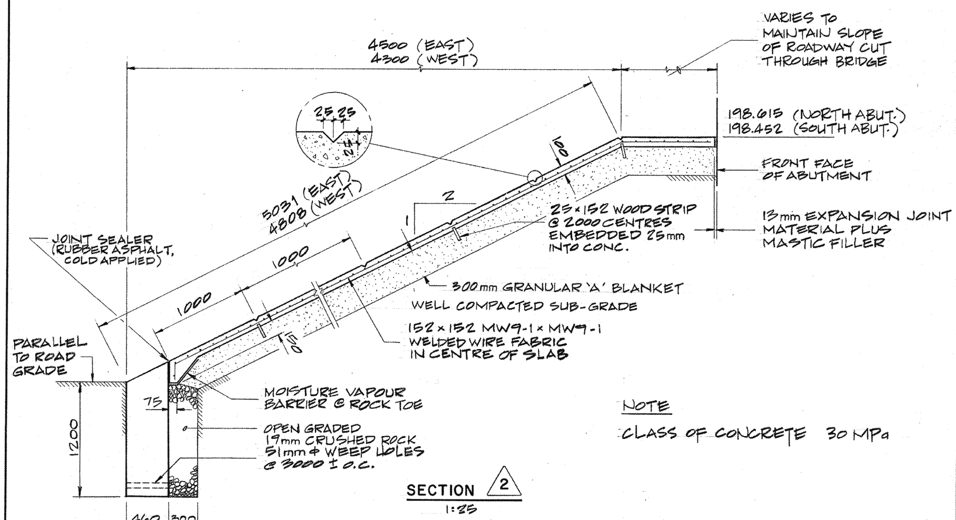
WATERPROOFING AT JOINT BETWEEN BRIDGE AND APPROACH SLAB TO BE IN ACCORDANCE WITH OPSD 508.02.



SECTION AT SIDEWALK
1:25



LONGITUDINAL SECTION
1:25
(SOUTH ABUT. APPROACH SLAB SHOWN)



SECTION 2
1:25

NOTE
CLASS OF CONCRETE 30 MPa

No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
2	ISSUED FOR CONSTRUCTION	APR 15/97	
1	ISSUED FOR CONSTRUCTION	JULY 24/91	T.L.

PARKER CONSULTANTS

DESIGNED BY	DRAWN BY	CHECKED BY
M.T.O. STD.	D.K.J.	J.C.L.

REGISTERED PROFESSIONAL ENGINEER J. C. LOW PROVINCE OF ONTARIO

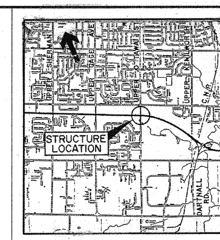
APPROVED — PROJECT DIRECTOR
APPROVED — MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH
FREEWAY PROJECT OFFICE
DATE: JUNE 1991

RED HILL CREEK EXPRESSWAY
UPPER OTTAWA STREET UNDERPASS
APPROACH SLAB & SLOPE PAVING DETAILS
SCALE: AS NOTED
DRAWING B-19

HAM0062769_0001

CONT No RHW-97-226(SPO)	SHEET
WP No	69



GENERAL NOTES

1. CLASS OF CONCRETE

FOOTINGS - ABUTMENTS	20 MPa
- PIER	30 MPa
PIER COLUMNS, DECK AND SIDEWALKS	35 MPa
REMAINDER	30 MPa

2. CLEAR COVER TO REINFORCING STEEL

FOOTINGS	100±25 mm
ABUTMENTS AND WINGWALLS	
FRONT FACE	80±20 mm
BACK FACE	70±20 mm
PIER	80±20 mm
DECK	
TOP	70±20 mm
BOTTOM AND SIDES	50±10 mm
REMAINDER	70±20 mm
UNLESS OTHERWISE NOTED	

3. REINFORCING STEEL

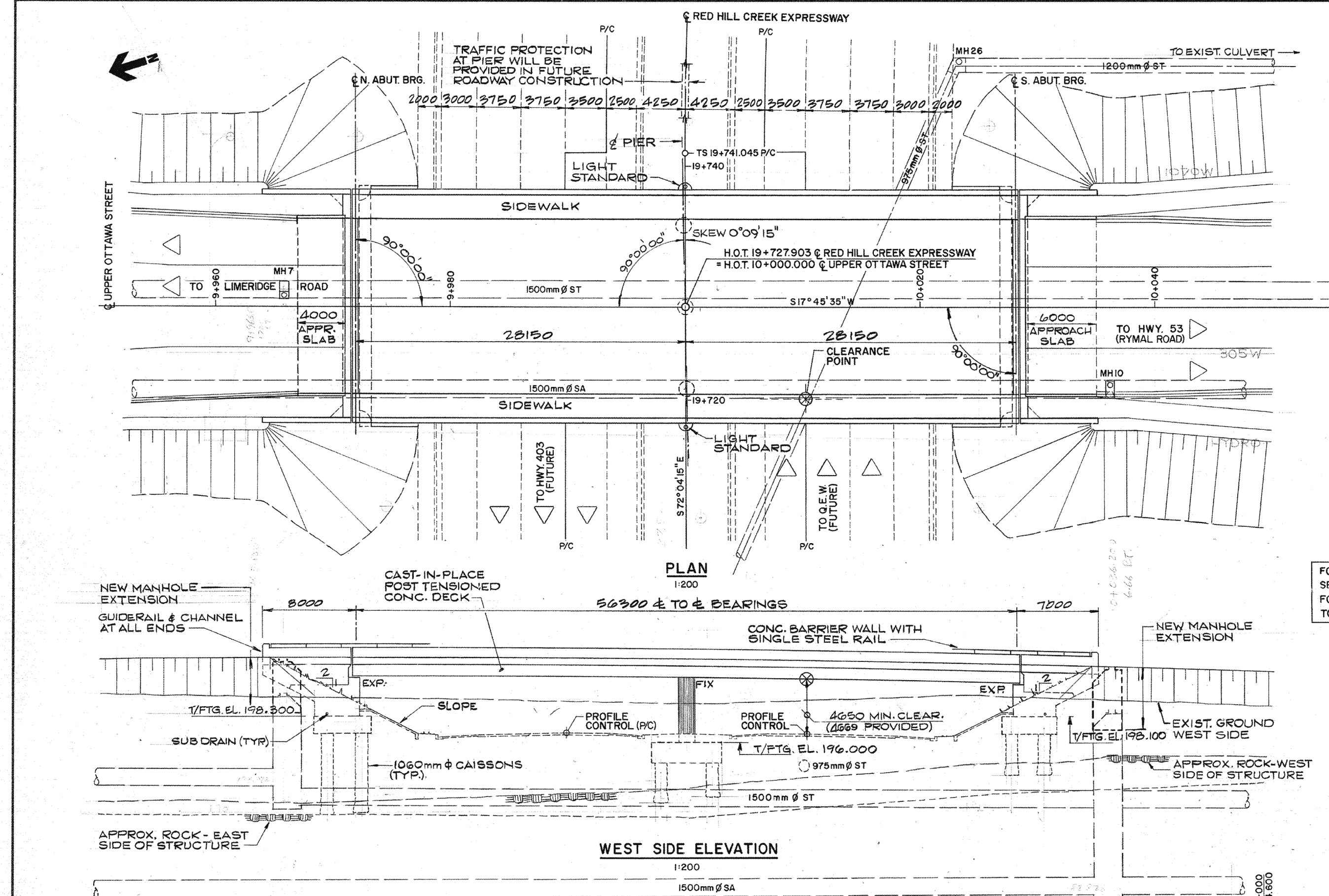
REINFORCING STEEL SHALL BE GRADE 400 UNLESS OTHERWISE SPECIFIED.
BAR MARKS WITH SUFFIX 'C' DENOTE COATED BARS.

4. DESIGN

STRUCTURE DESIGNED ACCORDING TO ONTARIO HIGHWAY BRIDGE DESIGN CODE 1983 - CLASS A.
ROAD FULLY ILLUMINATED

CONSTRUCTION NOTES

THE CONTRACTOR SHALL FINISH THE BEARING SEATS DEAD LEVEL TO THE SPECIFIED ELEVATIONS TO A TOLERANCE OF ±3mm.



FOR MH7 AND MH11 EXTENSIONS SEE SHEET 11
FOR MH10 EXTENSION AND CONNECTION TO EXISTING CULVERT SEE SHEET 12

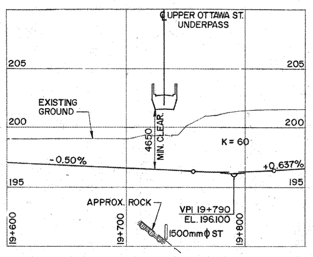
APPLICABLE STANDARD DRAWINGS

OPSD-508.02	SS9-52	DD-3503
OPSD-2302.04	SS16-1	DD-3515
		DD-3950
		DD-3920
		DD-3921
		DD-3922
		DD-3941

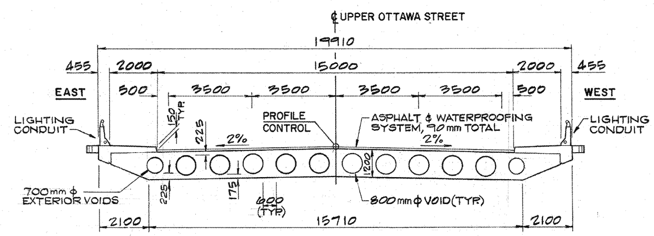
LIST OF DRAWINGS

- B-1 GENERAL ARRANGEMENT
- B-2 CAISSON DETAILS
- B-3 FOUNDATION LAYOUT & FOOTING REINFORCING
- B-4 NORTH ABUTMENT DETAILS
- B-5 SOUTH ABUTMENT DETAILS
- B-6 WINGWALL DETAILS
- B-7 PIER & LIGHTING STANDARD BASE DETAILS
- B-8 DECK LAYOUT AND SCREED ELEVATIONS
- B-9 LONGITUDINAL CABLE ARRANGEMENT
- B-10 TRANSVERSE CABLE DETAILS - I
- B-11 TRANSVERSE CABLE DETAILS - II
- B-12 DECK REINFORCING
- B-13 DECK END BEAM REINFORCING
- B-14 LONGITUDINAL CABLE ANCHORAGE & STRESSING END POCKET REINFORCING
- B-15 PIER BEAM REINFORCING
- B-16 EXPANSION JOINT DETAILS
- B-17 BARRIER WALL DETAILS
- B-18 RAILING DETAILS
- B-19 APPROACH SLAB & SLOPE PAVING DETAILS
- B-20 AS CONSTRUCTED ELEV. & DIM.
- B-21 ELECTRICAL EMBEDDED WORK IN STRUCTURE
- R-1 REINFORCING STEEL SCHEDULE
- R-2 REINFORCING STEEL SCHEDULE
- R-3 REINFORCING STEEL SCHEDULE
- R-4 REINFORCING STEEL SCHEDULE

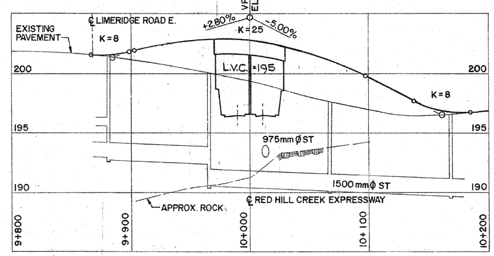
MTO SITE NO. 36-397



EXPRESSWAY PROFILE
1:2000 HORIZ.
1:200 VERT.



TYPICAL CROSS SECTION
1:100



UPPER OTTAWA STREET PROFILE
1:2000 HORIZ.
1:200 VERT.

No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
2	ISSUED FOR CONSTRUCTION	APR 15/97	
1	ISSUED FOR CONSTRUCTION	JULY 24/91	T.L.

PARKER CONSULTANTS

DESIGNED BY S.M.F. | DRAWN BY G.S.N. | CHECKED BY D.C.C.

J.C. LOW — REGISTERED PROFESSIONAL ENGINEER — PROVINCE OF ONTARIO

APPROVED — PROJECT DIRECTOR | APPROVED — MANAGER OF ENGINEERING

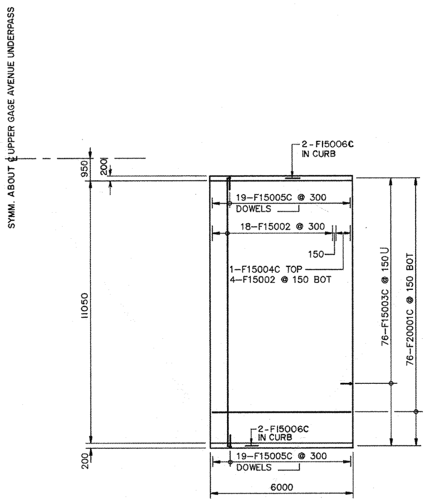
THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH
FREEWAY PROJECT OFFICE
DATE: JUNE 1991

RED HILL CREEK EXPRESSWAY
UPPER OTTAWA STREET UNDERPASS
GENERAL ARRANGEMENT

SCALE: AS NOTED | DRAWING B-1

HAM0062769_0001

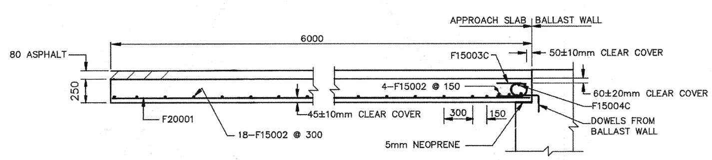
CONT No RHW-97-226(SPO)	SHEET
WP No	68



PLAN

NORTH WEST APPROACH SLAB SHOWN

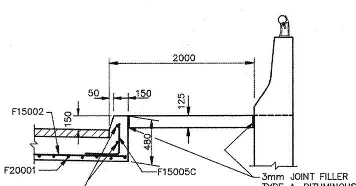
1:100



LONGITUDINAL SECTION

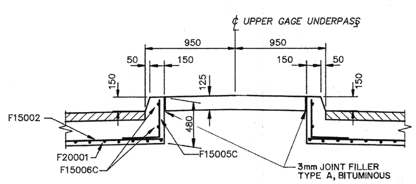
NOTES

CLEAR COVER TO REINFORCING STEEL 70±20mm EXCEPT AS NOTED.



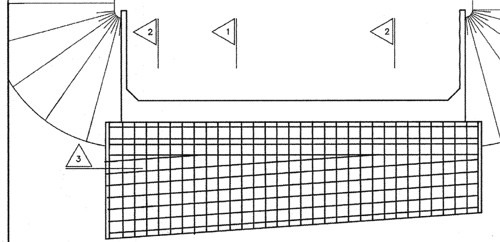
SECTION AT WINGWALL

1:25



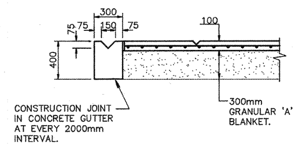
SECTION AT MEDIAN

1:25



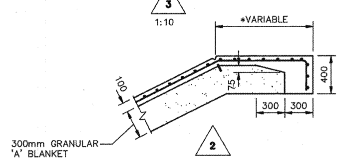
SLOPE PAVING LAYOUT

N.T.S



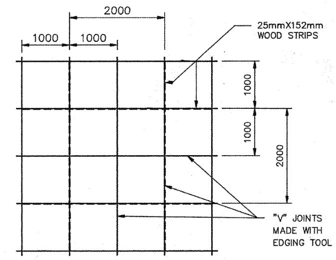
3

1:10



2

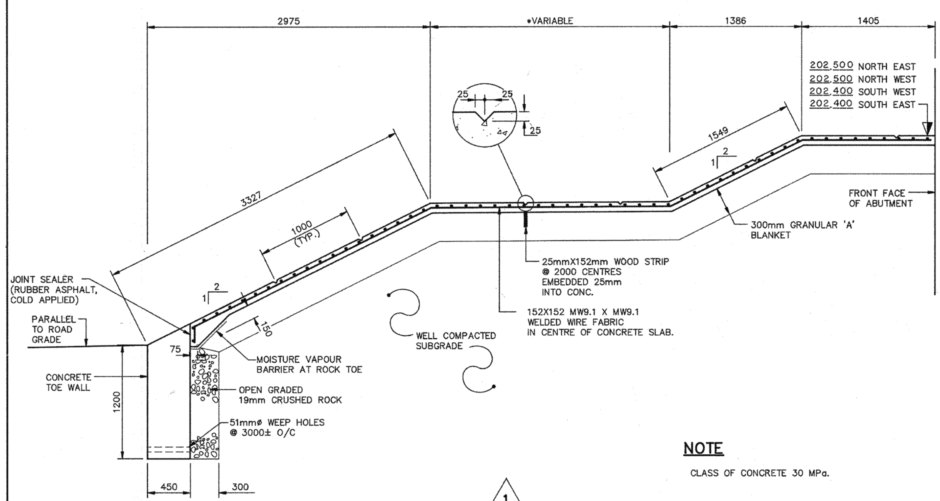
1:25



WOOD FRAME & "V" JOINT LAYOUT

1:50

*VARIES TO MAINTAIN SLOPE OF ROADWAY CUT THROUGH UNDERPASS (___.___ TO ___.___)



1

1:25

NOTE

CLASS OF CONCRETE 30 MPa.

No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

PARKER CONSULTANTS

DESIGNED BY	CHECKED BY	DRAWN BY	CHECKED BY
MTO STD.	MTO STD.	V.J.D	T.A.R.

REGISTERED PROFESSIONAL ENGINEER J.C.LOW 11-18-97 PROVINCE OF ONTARIO

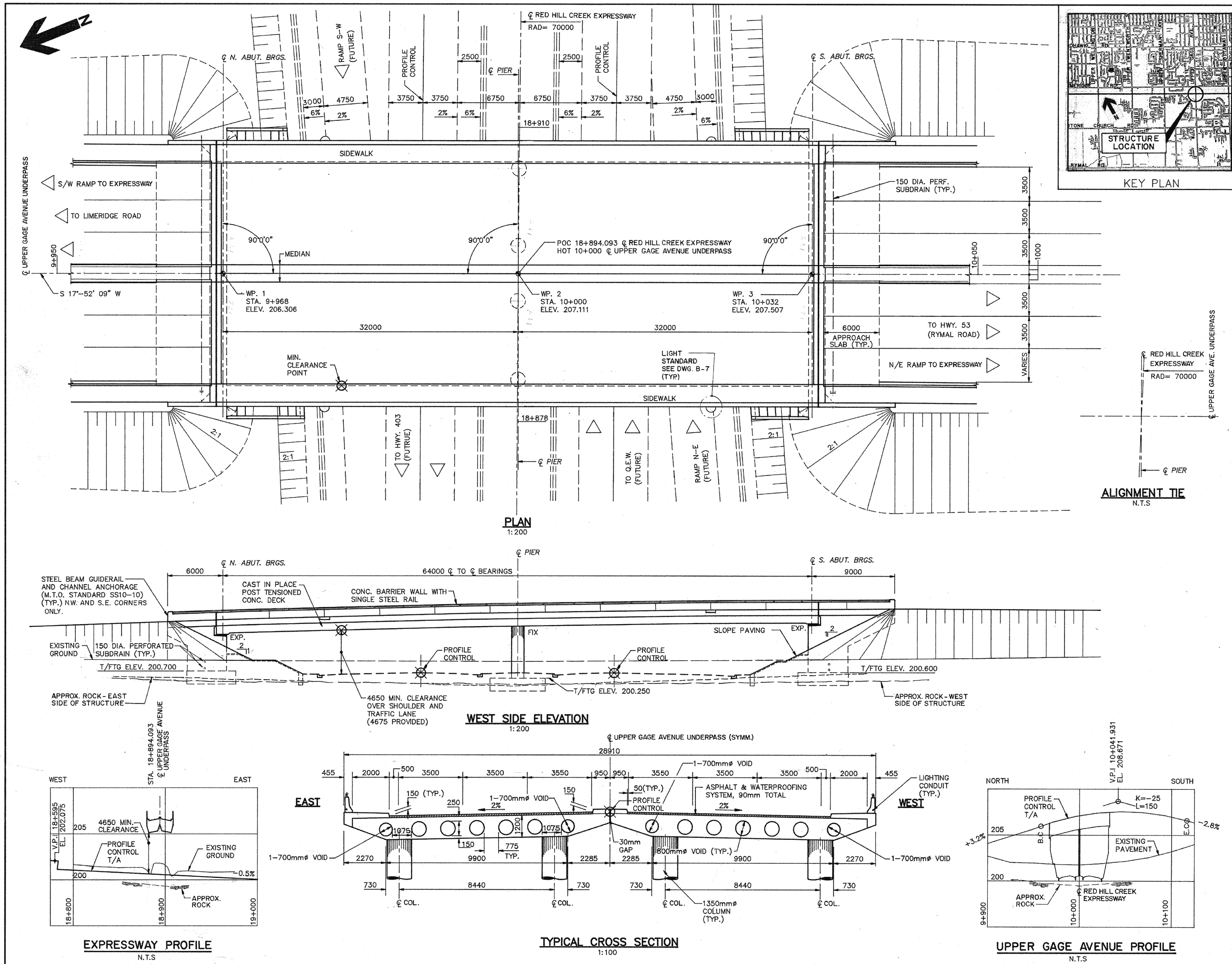
LICENSED PROFESSIONAL ENGINEER T.A.RADULESCU 11.18.97 PROVINCE OF ONTARIO

APPROVED	APPROVED	THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH	RED HILL CREEK EXPRESSWAY
		SPECIAL PROJECT OFFICE	UPPER GAGE AVENUE UNDERPASS APPROACH SLAB & SLOPE DETAILS
PROJECT DIRECTOR	MANAGER OF ENGINEERING	DATE: FEBRUARY, 1993	SCALE: AS NOTED DRAWING: B-19

HAM0062769_0001

CONT No RHW-97-226(SPO)
WP No

SHEET 67



GENERAL NOTES

1. CLASS OF CONCRETE

FOOTINGS	30 MPa
DECK, SIDEWALKS AND MEDIAN	35 MPa
PIER COLUMNS	35 MPa
REMAINDER	30 MPa

2. CLEAR COVER TO REINFORCING STEEL

FOOTINGS	100±25mm
ABUTMENTS AND WINGWALLS	
FRONT FACE	80±20mm
BACK FACE	70±20mm
PIERS	80±20mm
DECK	
TOP	70±20mm
BOTTOM AND SIDES	50±10mm
REMAINDER	
UNLESS OTHERWISE NOTED	70±20mm

3. REINFORCING STEEL
REINFORCING STEEL SHALL BE GRADE 400 UNLESS OTHERWISE SPECIFIED. BAR MARKS WITH SUFFIX 'C' DENOTE COATED BARS.

4. DESIGN
STRUCTURE DESIGNED ACCORDING TO ONTARIO HIGHWAY BRIDGE DESIGN CODE 1991–

CONSTRUCTION NOTES

1. THE CONTRACTOR SHALL FINISH THE BEARINGS SEATS DEAD LEVEL TO THE SPECIFIED ELEVATIONS IN ACCORDANCE WITH OPSS 922.

APPLICABLE STANDARD DRAWINGS

OPSD-508.02	SS9-20	DD-3515
OPSD-2302.04	SS10-10	DD-3920
OPSD-3501.00	SS16-1	DD-3941
OPSD-3921.00	SS16-70	DD-3950
OPSD-3922.00		

LIST OF DRAWINGS

B–1	GENERAL ARRANGEMENT
B–2	FOUNDATION LAYOUT
B–3	NORTH ABUTMENT DETAILS
B–4	NORTH ABUTMENT WINGWALL DETAILS
B–5	SOUTH ABUTMENT DETAILS
B–6	SOUTH ABUTMENT WINGWALL DETAILS
B–7	PIER & LIGHTING STD. BASE DETAILS
B–8	SCREED ELEVATIONS & DECK DETAILS
B–9	LONGITUDINAL CABLE ARRANGEMENT
B–10	TRANSVERSE CABLE DETAILS – I
B–11	TRANSVERSE CABLE DETAILS – II
B–12	DECK REINFORCING
B–13	PIER BEAM REINFORCING
B–14	ABUTMENT BEAM REINFORCING
B–15	LONGITUDINAL CABLE ANCHORAGE & STRESSING END POCKET REINFORCING
B–16	EXPANSION JOINT DETAILS
B–17	BARRIER WALL DETAILS
B–18	RAILING DETAILS
B–19	APPROACH SLAB & SLOPE PAVING DETAILS
B–20	AS CONSTRUCTED ELEV. & DIM.
B–21	ELECT. EMBEDDED WORK IN STRUCTURE
R–1	REINFORCING STEEL SCHEDULE
R–2	REINFORCING STEEL SCHEDULE
R–3	REINFORCING STEEL SCHEDULE

M.T.O SITE NO. 36–405

No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

PARKER CONSULTANTS

DESIGNED BY	CHECKED BY	DRAWN BY	CHECKED BY
H.L	T.A.R	V.J.D	G.R.M

REGISTERED PROFESSIONAL ENGINEER J.C.LOW PROVINCE OF ONTARIO

LICENSED PROFESSIONAL ENGINEER T.A.RADULESCU PROVINCE OF ONTARIO

APPROVED — PROJECT DIRECTOR

APPROVED — MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

SPECIAL PROJECT OFFICE

DATE: FEBRUARY, 1993

RED HILL CREEK EXPRESSWAY

UPPER GAGE AVENUE UNDERPASS

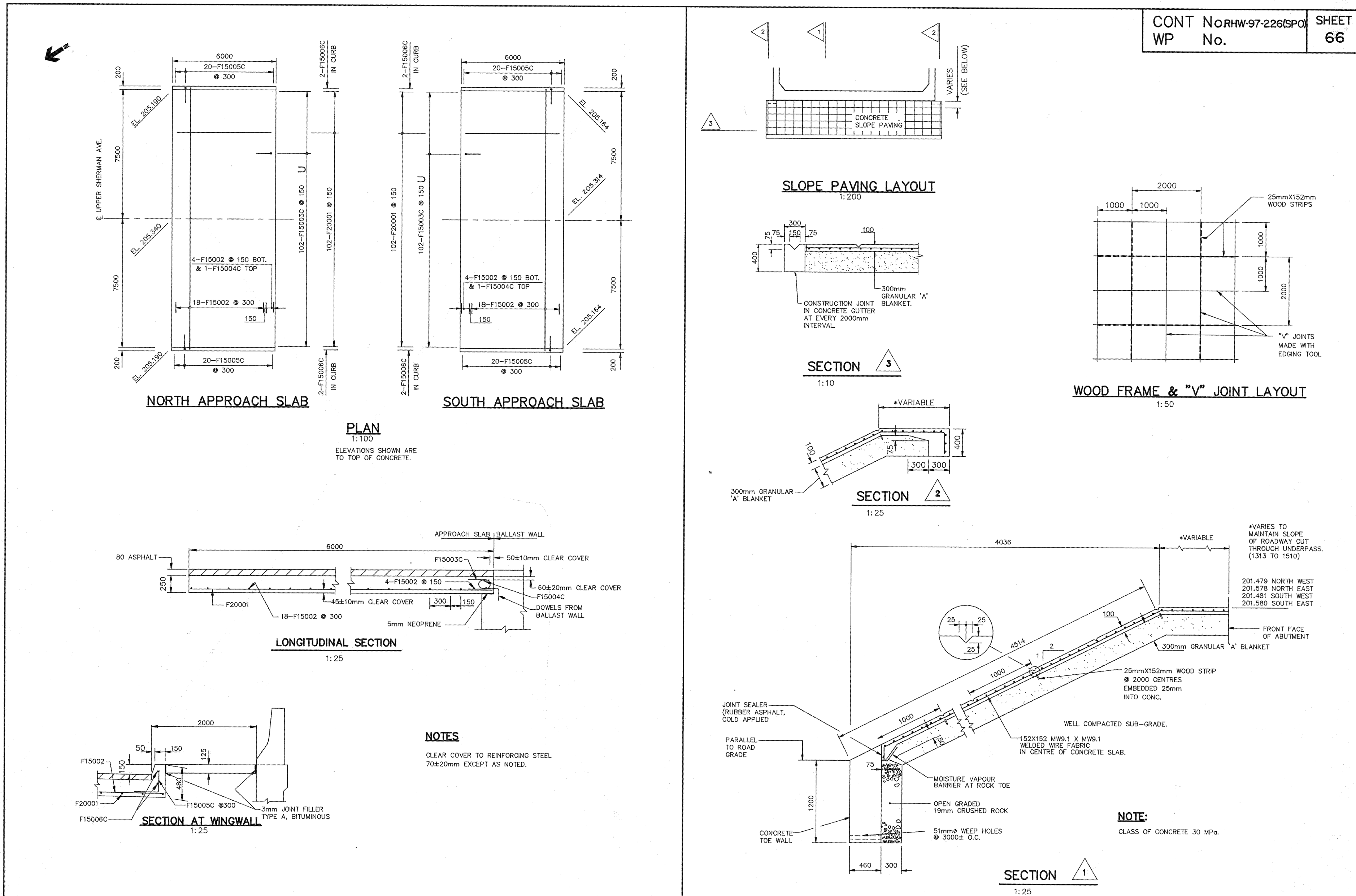
GENERAL ARRANGEMENT

SCALE: AS NOTED

DRAWING: B–1

HAM0062769_0001

CONT No RHW-97-226(SPO) WP No.	SHEET 66



No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
2	ISSUED FOR CONSTRUCTION	APR 15/97	
	ISSUED FOR CONSTRUCTION APRIL 3, 1992		

PARKER CONSULTANTS

DESIGNED BY	CHECKED BY	DRAWN BY	CHECKED BY
MTO STD.	–	V.J.D	TAR

REGISTERED PROFESSIONAL ENGINEER J. C. LOW PROVINCE OF ONTARIO

LICENSED PROFESSIONAL ENGINEER T. A. RADULESCU PROVINCE OF ONTARIO

APPROVED	APPROVED
PROJECT DIRECTOR	MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON–WENTWORTH

FREEWAY PROJECT OFFICE

DATE : FEBRUARY, 1992

RED HILL CREEK EXPRESSWAY

UPPER SHERMAN AVENUE UNDERPASS

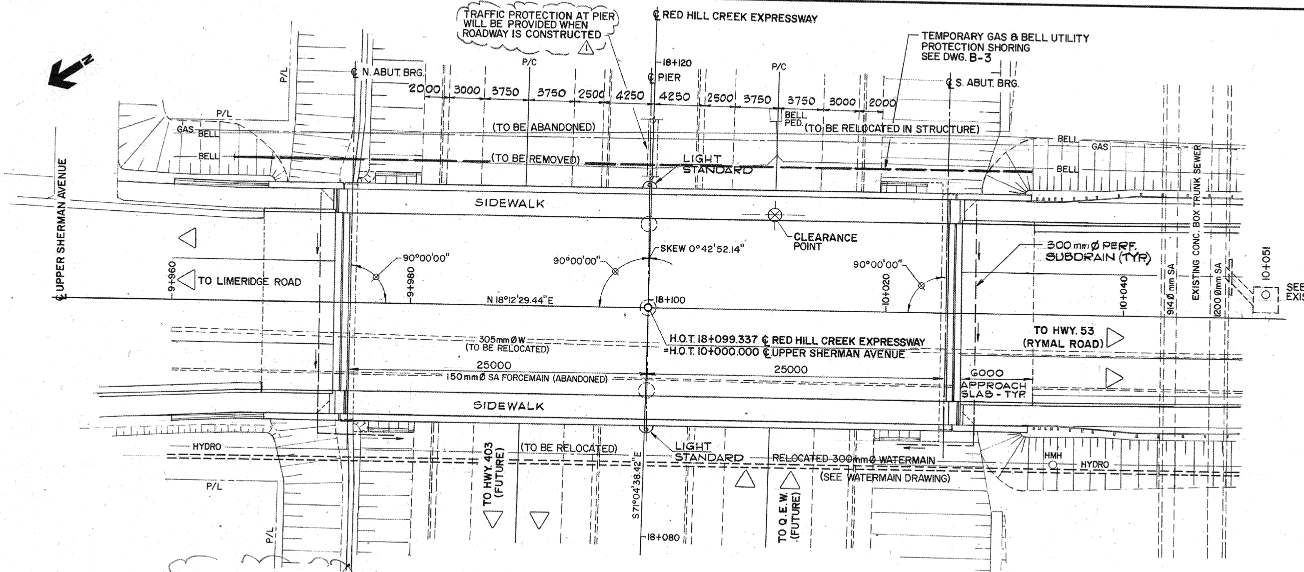
APPROACH SLAB & SLOPE PAVING DETAILS

SCALE: AS NOTED

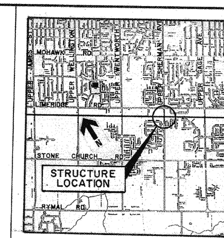
DRAWING B-17

HAM0062769_0001

CONT	No RHW-97-226(SPO)	SHEET
WP	No	65



PLAN
1:200



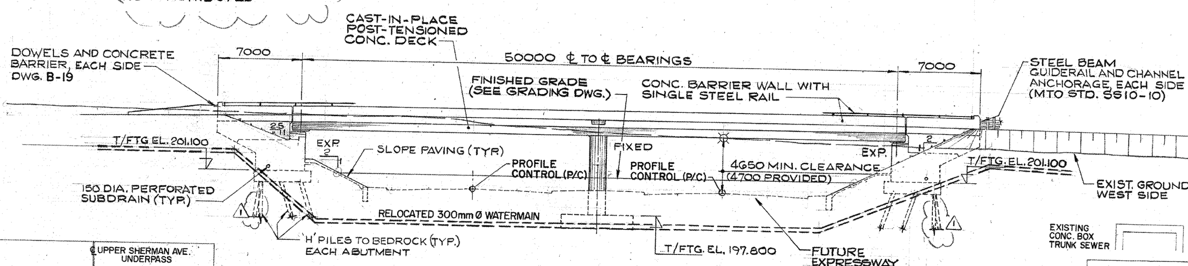
KEY PLAN

GENERAL NOTES

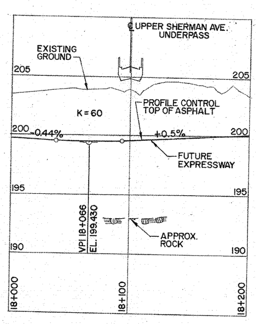
1. **DESIGN**
   STRUCTURE DESIGNED ACCORDING TO ONTARIO HIGHWAY BRIDGE DESIGN CODE 1983-CLASS A. ROAD FULLY ILLUMINATED.
2. **CLASS OF CONCRETE**
   FOOTINGS 30 MPa
   PIER COLUMNS, DECK AND SIDEWALKS 35 MPa
   REMAINDER 30 MPa
3. **CLEAR COVER TO REINFORCING STEEL**
   FOOTINGS 100 ± 25mm
   ABUTMENTS AND WINGWALLS
   FRONT FACE 80 ± 20mm
   BACK FACE 70 ± 20mm
   PIER 80 ± 20mm
   DECK
   TOP 70 ± 20mm
   BOTTOM AND SIDES 50 ± 10mm
   REMAINDER 70 ± 20mm
   UNLESS OTHERWISE NOTED
4. **REINFORCING STEEL**
   REINFORCING STEEL SHALL BE GRADE 400 UNLESS OTHERWISE SPECIFIED.
   BAR MARKS WITH SUFFIX 'C' DENOTE COATED BARS.

CONSTRUCTION NOTES

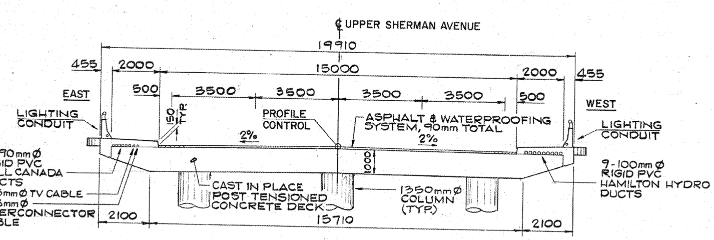
THE CONTRACTOR SHALL FINISH THE BEARING SEATS DEAD LEVEL TO THE SPECIFIED ELEVATIONS IN ACCORDANCE WITH OPSS 922.



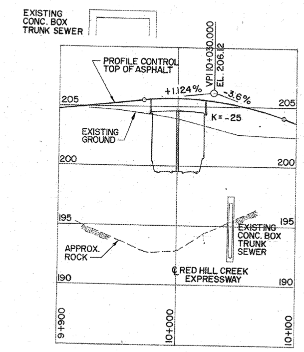
WEST SIDE ELEVATION
1:200



EXPRESSWAY PROFILE
1:2000 HORIZ.
1:200 VERT.



TYPICAL CROSS SECTION
1:100



UPPER SHERMAN AVENUE PROFILE
1:2000 HORIZ.
1:200 VERT.

APPLICABLE STANDARD DRAWINGS

OPSD-2215.02	SS9-20	DD-3615
OPSD-2302.02	SS10-10	DD-3941
OPSD-2302.04	SS16-1	DD-3950
OPSD-3301.00	SS16-70	
OPSD-3501.00		
OPSD-3922.00		

LIST OF DRAWINGS

- B-1. GENERAL ARRANGEMENT
- B-2. FOUNDATION LAYOUT & FOOTING REINFORCING
- B-3. PROTECTION SHORING DETAILS
- B-4. ABUTMENT DETAILS
- B-5. WINGWALL AND PIER DETAILS
- B-6. DECK DETAILS & SCREED ELEVATIONS
- B-7. LONGITUDINAL CABLE LAYOUT
- B-8. TRANSVERSE CABLE LAYOUT - I
- B-9. TRANSVERSE CABLE LAYOUT - II
- B-10. DECK REINFORCING
- B-11. DECK END BEAM REINFORCING
- B-12. LONGITUDINAL CABLE ANCHORAGE & STRESSING END POCKET REINFORCING
- B-13. PIER BEAM REINFORCING
- B-14. EXPANSION JOINT DETAILS
- B-15. BARRIER WALL DETAILS
- B-16. RAILING DETAILS
- B-17. APPROACH SLAB & SLOPE PAVING DETAILS
- B-18. AS CONSTRUCTED ELEV. & DIM.
- B-19. NORTH ABUTMENT BARRIER WALL TRANSITION
- R-1. REINFORCING STEEL SCHEDULE
- R-2. REINFORCING STEEL SCHEDULE

MTO SITE NO. 36-401

No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
3	ISSUED FOR CONSTRUCTION	APR 15/97	
	ISSUED FOR CONSTRUCTION APRIL 3, 1992		
⚠	CONSTRUCTION NOTES		
	PIER PROTECTION, CLASS OF CONC.-FTG.	92-03-25	GSN

PARKER CONSULTANTS

DESIGNED BY	CHECKED BY	DRAWN BY	CHECKED BY
TAR	JCL	GSN	JCL

REGISTERED PROFESSIONAL ENGINEER J. C. LOW PROVINCE OF ONTARIO

LICENSED PROFESSIONAL ENGINEER T. A. RADULESCU PROVINCE OF ONTARIO

APPROVED	APPROVED
PROJECT DIRECTOR	MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

FREEWAY PROJECT OFFICE

DATE: FEBRUARY, 1992

RED HILL CREEK EXPRESSWAY

UPPER SHERMAN AVENUE UNDERPASS

GENERAL ARRANGEMENT

SCALE: AS NOTED

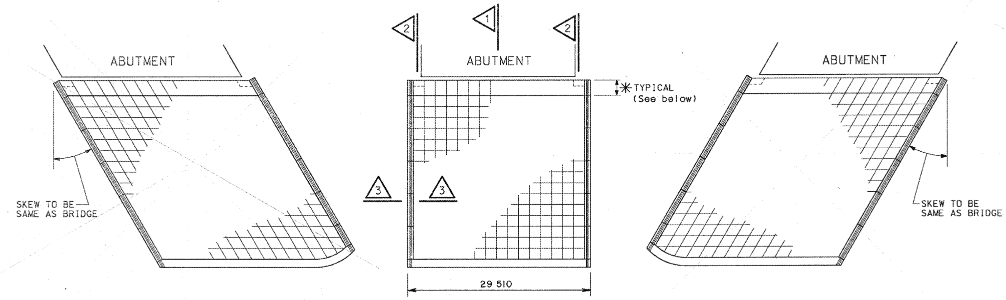
DRAWING B-1

HAM0062769_0001

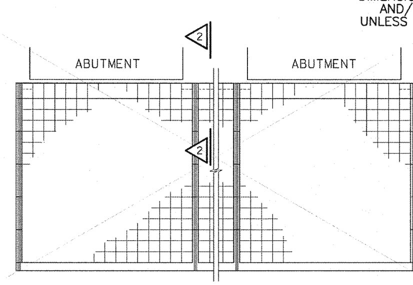
METRIC

DIMENSIONS ARE IN METRES
AND/OR MILLIMETRES
UNLESS OTHERWISE SHOWN

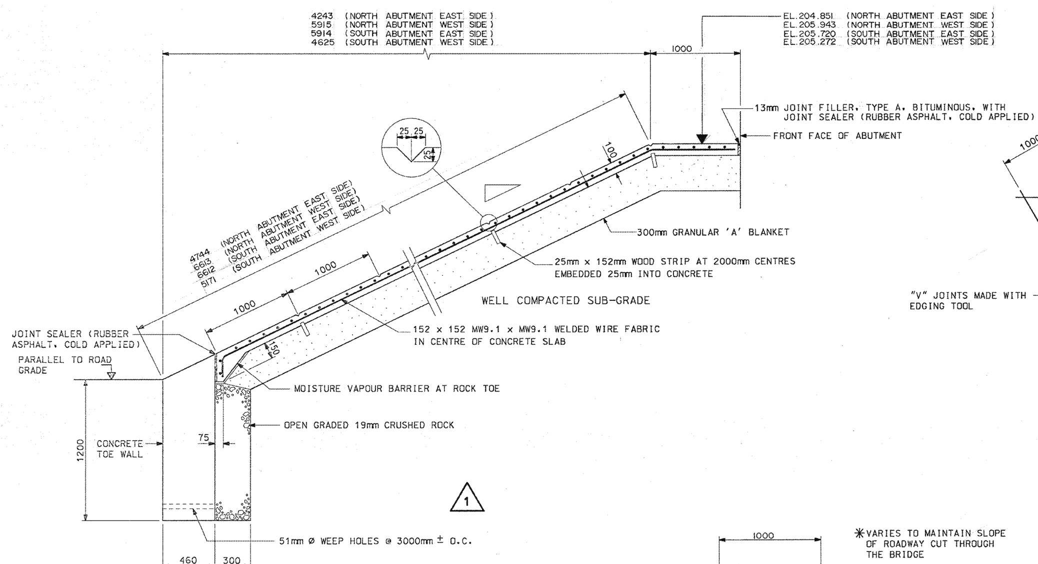
CONT No RHW-97-226(SPO)	SHEET
WP No	64

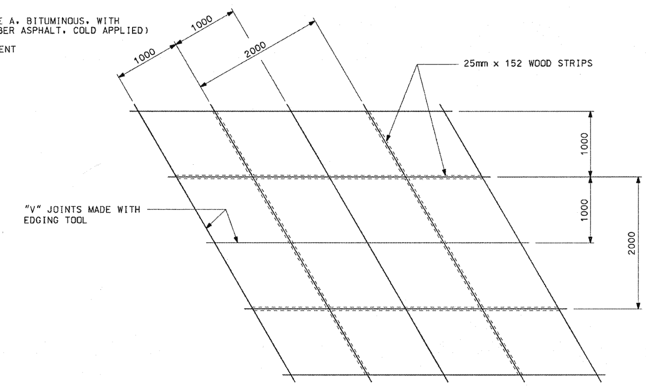


SLOPE PAVING LAYOUTS

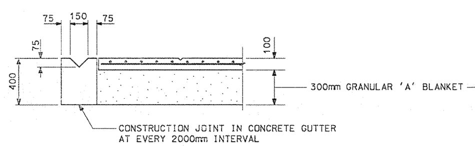


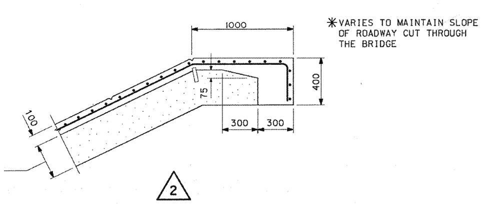
TWIN BRIDGES





WOOD FRAME AND "V" JOINT LAYOUT





NOTES:

- SECTIONS AND DETAILS TYPICAL FOR ALL LAYOUTS.
- FOR BRIDGES WITH SKEW EXCEEDING 45° "V" GROOVES SHALL BE PROVIDED AT 2000mm O.C. OVER WOOD FRAME STRIPS ONLY.
- ELEVATIONS, COORDINATES, CURVE AND ALIGNMENT DATA ARE IN METRES. STATIONS ARE IN KILOMETRES + METRES.

STANDARD DRAWING MARCH 1991	SS116-10

No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
3	**ISSUED FOR CONSTRUCTION**	**APR 15/97**	
2	AS CONSTRUCTED	93.10.29	C.M.
1	ISSUED FOR TENDER	93.02.16	T.W.
0	SUBMITTED FOR MTO APPROVAL	92.12.11	D.L.

PROCTOR & REDFERN LIMITED
CONSULTING ENGINEERS, ARCHITECTS, SCIENTISTS AND PLANNERS
TORONTO, ONTARIO.

E.O. 91226

DESIGNED BY	DRAWN BY	CHECKED BY
STD.		D. L.

APPROVED	APPROVED
PROJECT DIRECTOR	MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

SPECIAL PROJECT OFFICE

DATE DECEMBER 1992

E-W FREEWAY

UPPER WENTWORTH STREET OVERPASS

DETAILS OF CONC. SLOPE PAVING

SCALE

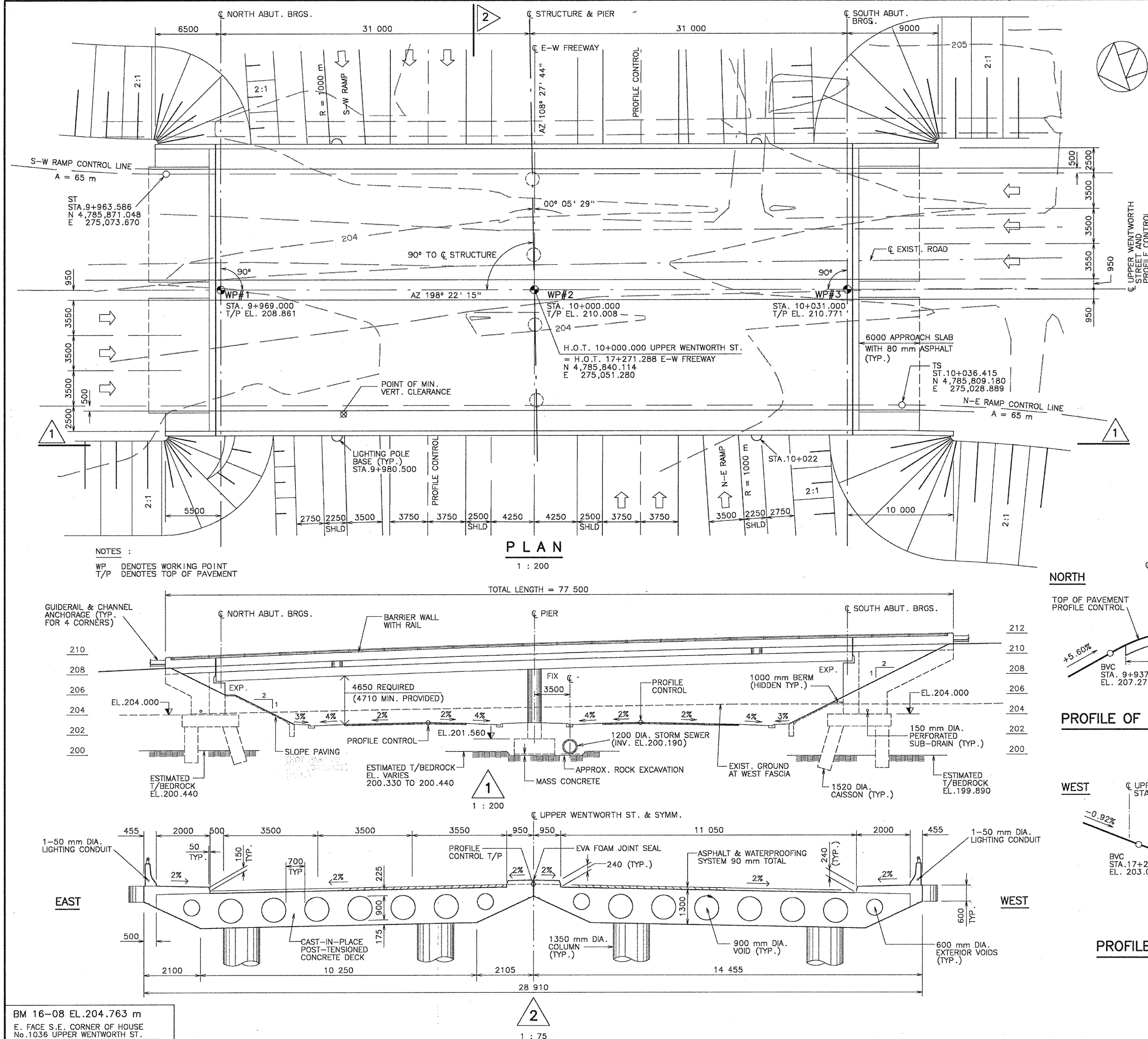
DRAWING B-19

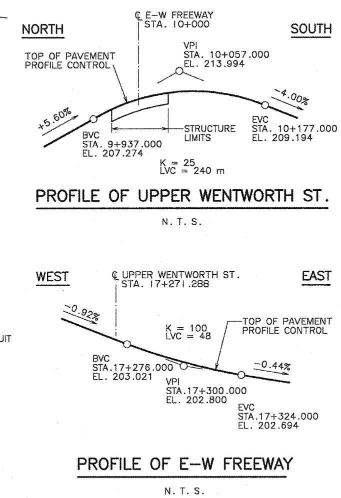
HAM0062769_0001

CONT No RHW-97-226(SPO) | SHEET 63
WP No

METRIC

DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN





NOTES :

1. DESIGN CONFORMS TO ONTARIO HIGHWAY DESIGN CODE 83. DESIGN LIVE LOAD = OHBDC-83, CLASS A.
2. CLASS OF CONCRETE

DECK & PIER COLUMNS	35 MPa
REMAINDER	30 MPa

3. FOR CONCRETE IN CAISSONS, FOOTINGS AND SUBSTRUCTURE USE TYPE 50-SULPHATE RESISTANT PORTLAND CEMENT AS PER CSA STANDARD A5.
4. CLEAR COVER TO REINFORCING STEEL

FOOTINGS	100 ± 25
ABUTMENTS & WINGWALLS	
FRONT FACE	80 ± 20
BACK FACE	70 ± 20
PIERS	80 ± 20
DECK	
TOP	70 ± 20
BOTTOM & SIDES	50 ± 10
REMAINDER	70 ± 20 (UNLESS OTHERWISE SPECIFIED)

5. REINFORCING STEEL SHALL BE GRADE 400 UNLESS OTHERWISE SPECIFIED. BAR MARKS WITH SUFFIX C DENOTE COATED BARS.
6. DESIGN ROCK BEARING CAPACITY AT U.L.S.: 3000 kPa
7. CONSTRUCTION NOTE :
   - THE CONTRACTOR SHALL ESTABLISH THE BEARING SEAT ELEVATIONS BY DEDUCTING THE ACTUAL BEARING THICKNESSES FROM THE TOP OF BEARING ELEVATIONS. IF THE ACTUAL BEARING THICKNESSES ARE DIFFERENT FROM THOSE GIVEN WITH THE BEARING DESIGN DATA, THE CONTRACTOR SHALL ADJUST THE REINFORCING STEEL TO SUIT.

LIST OF DRAWINGS

APPLICABLE STANDARD DRAWING :

OPSD-3501.00 GRANULAR BACKFILL REQUIREMENTS - ABUTMENTS

M.T.O. STRUCTURE SITE No. 36-406

BM 16-08 EL.204.763 m
E. FACE S.E. CORNER OF HOUSE No.1036 UPPER WENTWORTH ST. APPROX. 107 m N. OF LIMERIDGE RD.

No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
4	ISSUED FOR CONSTRUCTION	APR 15/97	
3	AS CONSTRUCTED	93.10.29	C.M.
2	ISSUED FOR TENDER	93.02.16	T.W.
1	SUBMITTED FOR MTO APPROVAL	92.12.11	D.L.
0	SUBMITTED FOR PRELIMINARY MTO APPROVAL	92.11.06	D.L.

PROCTOR & REDFERN LIMITED
CONSULTING ENGINEERS, ARCHITECTS, SCIENTISTS AND PLANNERS
TORONTO, ONTARIO.
E.O. 91226

DESIGNED BY	DRAWN BY	CHECKED BY
D.L.	C.K.	T.W.

REGISTERED PROFESSIONAL ENGINEER 92-12-10 T-F. WONG PROVINCE OF ONTARIO

LICENSED PROFESSIONAL ENGINEER 92-12-10 N. D. LeBLANC PROVINCE OF ONTARIO

APPROVED	APPROVED
PROJECT DIRECTOR	MANAGER OF ENGINEERING

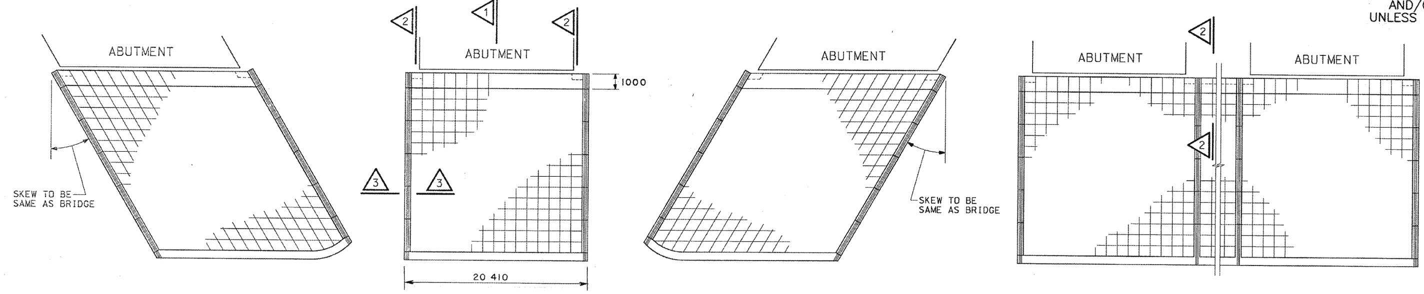
THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH
SPECIAL PROJECT OFFICE
DATE DECEMBER 1992

E-W FREEWAY
UPPER WENTWORTH STREET OVERPASS
GENERAL ARRANGEMENT
SCALE AS NOTED | DRAWING B-1

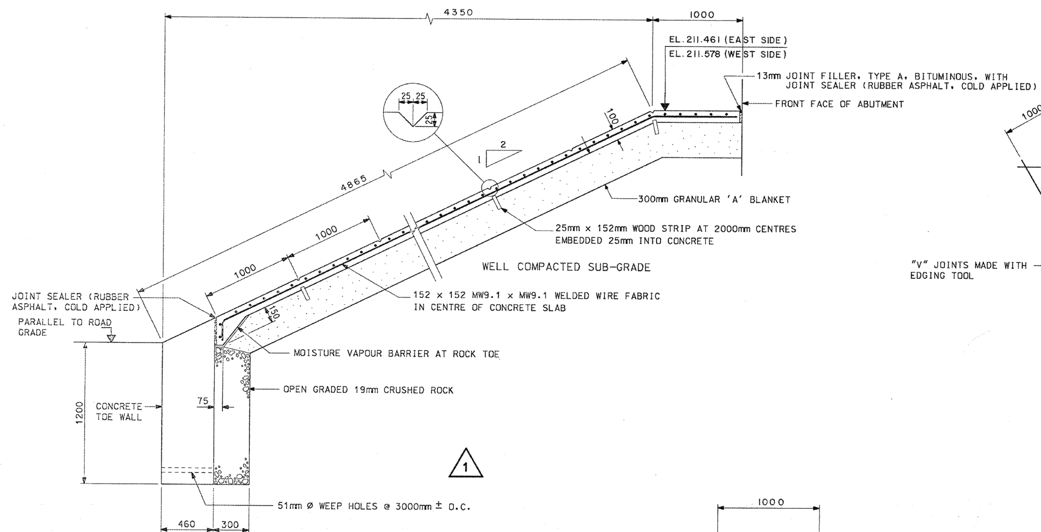
HAM0062769_0001

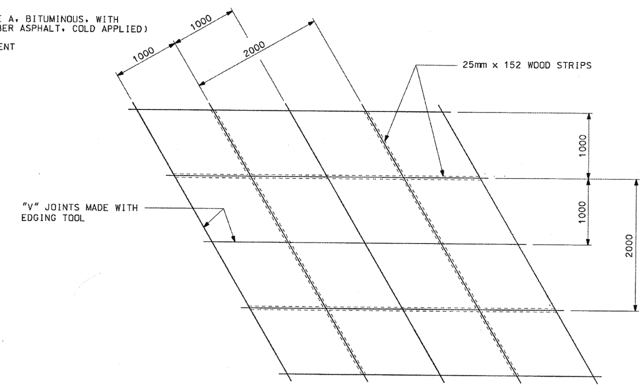
METRIC
DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN

CONT No RHW-97-226(SPO)
WP No
SHEET 62



SLOPE PAVING LAYOUTS

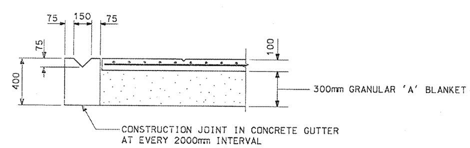


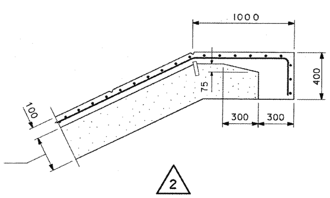


WOOD FRAME AND "V" JOINT LAYOUT

NOTES:

- SECTIONS AND DETAILS TYPICAL FOR ALL LAYOUTS.
- FOR BRIDGES WITH SKEW EXCEEDING 45° "V" GROOVES SHALL BE PROVIDED AT 2000mm O.C. OVER WOOD FRAME STRIPS ONLY.
- ELEVATIONS, COORDINATES, CURVE AND ALIGNMENT DATA ARE IN METRES. STATIONS ARE IN KILOMETRES + METRES.





STANDARD DRAWING MARCH 1991 | SS116-10

No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
3	ISSUED FOR CONSTRUCTION	APR 15/97	
1	AS CONSTRUCTED	93.08.18	C.M.
0	SUBMITTED FOR MTO APPROVAL	92.11.23	D.L.

PROCTOR & REDFERN LIMITED
CONSULTING ENGINEERS, ARCHITECTS, SCIENTISTS AND PLANNERS
TORONTO, ONTARIO.
E.O. 91226
DESIGNED BY STD. | DRAWN BY | CHECKED BY D.L.

APPROVED — PROJECT DIRECTOR
APPROVED — MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH
SPECIAL PROJECT OFFICE
DATE DECEMBER 1992

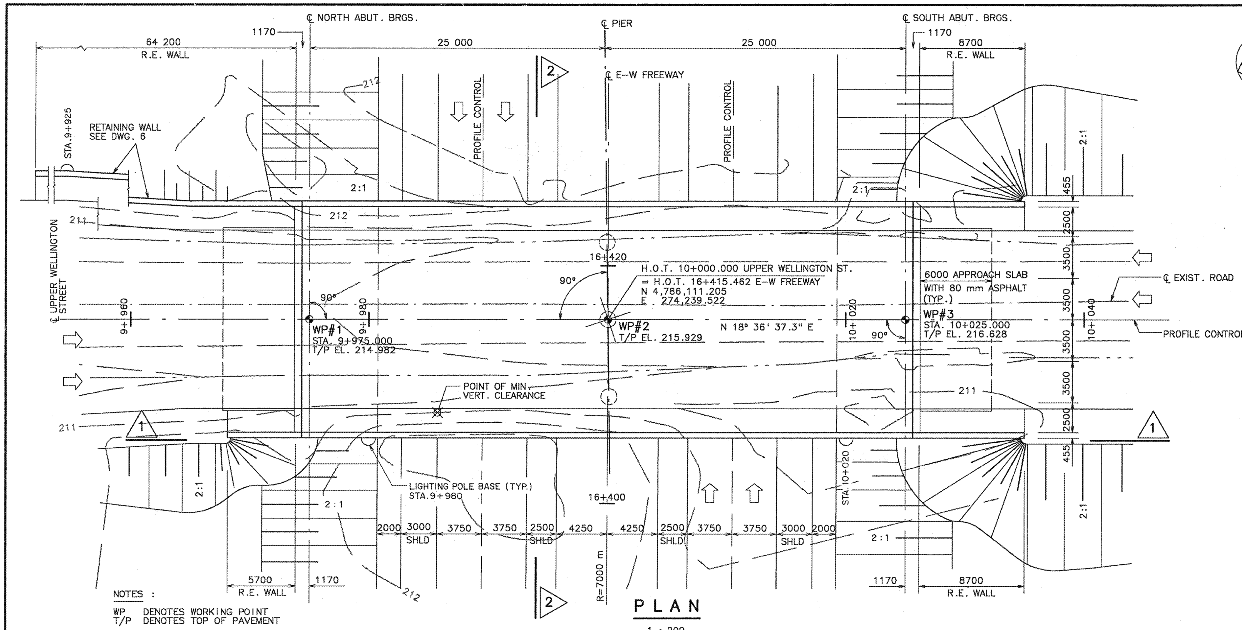
E-W FREEWAY
UPPER WELLINGTON STREET OVERPASS
DETAILS OF CONC. SLOPE PAVING
SCALE
DRAWING B-18

HAM0062769_0001

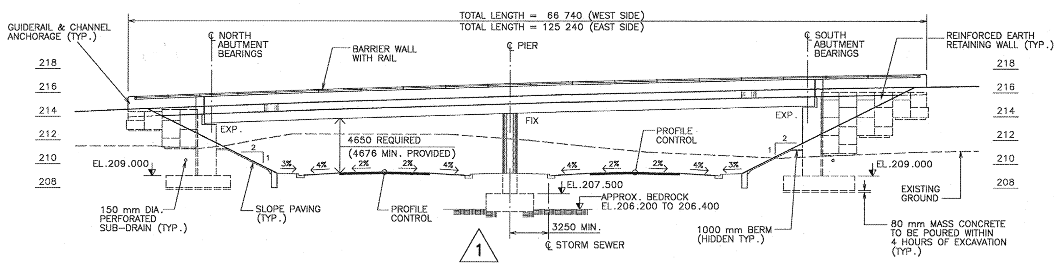
METRIC

DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN

CONT No RHW-97-226(SPO) | WP No | SHEET 61



PLAN
1 : 200



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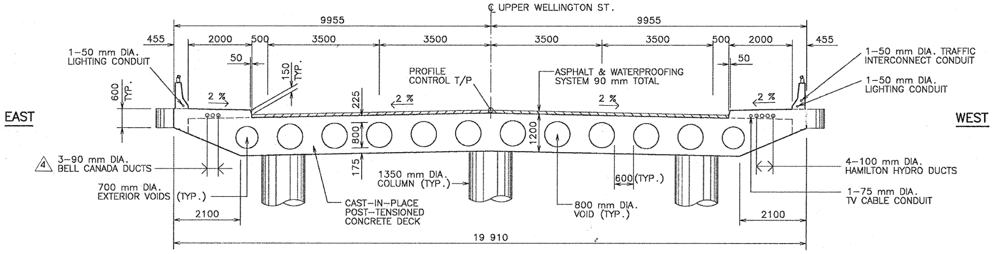

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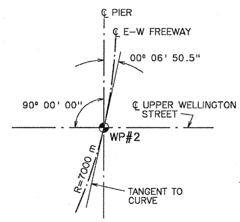
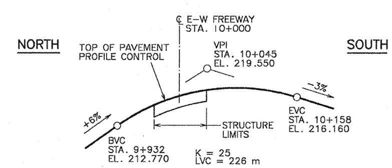


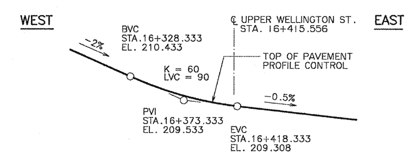
WP #2 LAYOUT

N. T. S.



PROFILE OF UPPER WELLINGTON ST.

N. T. S.



PROFILE OF E-W FREEWAY

N. T. S.

NOTES :

1. DESIGN CONFORMS TO ONTARIO HIGHWAY DESIGN CODE 83. DESIGN LIVE LOAD = OHBDC-83, CLASS A.
2. CLASS OF CONCRETE

DECK & PIER COLUMNS	35 MPa
REMAINDER	30 MPa

3. CLEAR COVER TO REINFORCING STEEL

FOOTINGS	100 ± 25
ABUTMENTS & WINGWALLS	
FRONT FACE	80 ± 20
BACK FACE	70 ± 20
PIERS	80 ± 20
DECK	
TOP	70 ± 20
BOTTOM & SIDES	50 ± 10
REMAINDER	70 ± 20 (UNLESS OTHERWISE SPECIFIED)

4. REINFORCING STEEL SHALL BE GRADE 400 UNLESS OTHERWISE SPECIFIED. BAR MARKS WITH SUFFIX C DENOTE COATED BARS.
5. CONSTRUCTION NOTE :
   - THE CONTRACTOR SHALL ESTABLISH THE BEARING SEAT ELEVATIONS BY DEDUCTING THE ACTUAL BEARING THICKNESSES FROM THE TOP OF BEARING ELEVATIONS. IF THE ACTUAL BEARING THICKNESSES ARE DIFFERENT FROM THOSE GIVEN WITH THE BEARING DESIGN DATA, THE CONTRACTOR SHALL ADJUST THE REINFORCING STEEL TO SUIT.

LIST OF DRAWINGS

APPLICABLE STANDARD DRAWING :

OPSD-3501.00 GRANULAR BACKFILL REQUIREMENTS - ABUTMENTS

M.T.O. STRUCTURE SITE No. 36-404

BM 16-07 EL.211.086 m
HOUSE No.55 BRYNA AVE.
AT N.W. CORNER OF BRYNA
AND UPPER WELLINGTON ST.

No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
5	ISSUED FOR CONSTRUCTION	APR 15/97	
4	BELL DUCTS NOT INSTALLED	94/12/12	
3	AS CONSTRUCTED	93.08.18	C.M.
2	AS PER ADDENDUM No. I	92.12.15	T.W.
1	SUBMITTED FOR MTO APPROVAL	92.11.23	D.L.
0	SUBMITTED FOR PRELIMINARY MTO APPROVAL	92.06.08	D.L.

PROCTOR & REDFERN LIMITED
CONSULTING ENGINEERS, ARCHITECTS, SCIENTISTS AND PLANNERS
TORONTO, ONTARIO.

E.O. 91226

DESIGNED BY D.L. | DRAWN BY C.K. | CHECKED BY T.W.

REGISTERED PROFESSIONAL ENGINEER 92-11-23 T-F. WONG PROVINCE OF ONTARIO

LICENSED PROFESSIONAL ENGINEER N. D. LeBLANC 92-11-23 PROVINCE OF ONTARIO

APPROVED — PROJECT DIRECTOR | APPROVED — MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

SPECIAL PROJECT OFFICE

DATE DECEMBER 1992

E-W FREEWAY

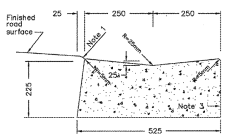
UPPER WELLINGTON STREET OVERPASS

GENERAL ARRANGEMENT

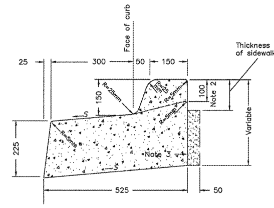
SCALE AS NOTED | DRAWING B-1

HAM0062769_0001

CONT No RHW-97-226(SPO)	SHEET
WP No	60



TANGENT

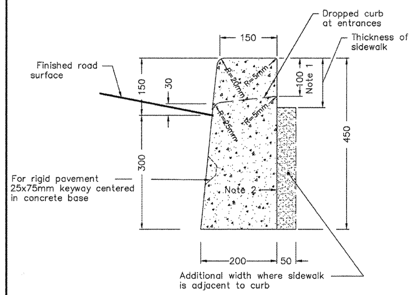


SUPERELEVATED

NOTES:
1 Flexible pavement shall be 5mm above the adjacent edge of gutter.
2 Where sidewalk is continuously adjacent, reduce the dropped curb at entrances to 75mm.
3 For slipforming procedure, a 5% batter is acceptable.
A Treatment at entrances shall conform with OPSD–351.01.
B Outlet treatment shall conform with OPSD–610 Series.
C The length of transition from one curb type to another shall be 3.0m, except in conjunction with guide rail, it shall conform to OPSD–900 Series.
D All dimensions are in millimetres unless otherwise shown.

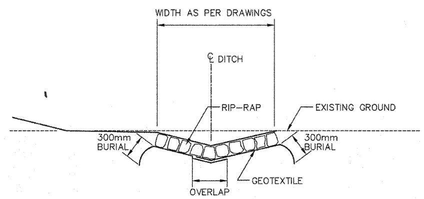
LEGEND:
S – Rate of pavement superelevation in percent, %.

ONTARIO PROVINCIAL STANDARD DRAWING	Date 1990 09 14	Rev
CONCRETE BARRIER CURB WITH STANDARD GUTTER	Date ______	
	OPSD–600.04 Mod	

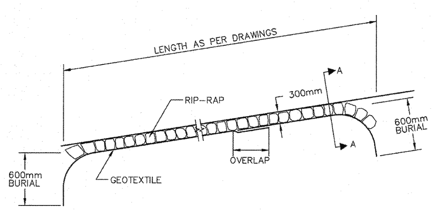


NOTES:
1 Where sidewalk is continuously adjacent, reduce the dropped curb at entrances to 75mm.
2 For slipforming procedure, a 5% batter is acceptable.
A Treatment at entrances shall conform with OPSD–351.01.
B Outlet treatment shall conform with OPSD–610 Series.
C The length of transition from one curb type to another shall be 3.0m, except in conjunction with guide rail, it shall conform to OPSD–900 Series.
D All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Date 1990 09 14	Rev
CONCRETE BARRIER CURB	Date ______	
	OPSD–600.11 MOD	



SECTION A–A



LONGITUDINAL SECTION

RIP RAP DITCH

INSTALLATION WITH GEOTEXTILE

N.T.S.

No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV.15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

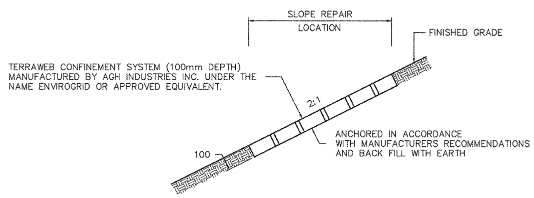
PARKER CONSULTANTS

DESIGNED BY: D.A.Y. | DRAWN BY: D.A.Y. | CHECKED BY: F.E.W.

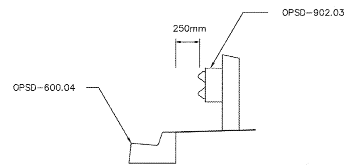
REGISTERED PROFESSIONAL ENGINEER — F. E. WILSON — 16/04/97 — PROVINCE OF ONTARIO

APPROVED	APPROVED	THE REGIONAL MUNICIPALITY OF HAMILTON–WENTWORTH	RED HILL CREEK EXPRESSWAY PAVING CONTRACT
		SPECIAL PROJECTS OFFICE	DETAILS
PROJECT DIRECTOR	MANAGER OF ENGINEERING	DATE: JULY 1996	SCALE:

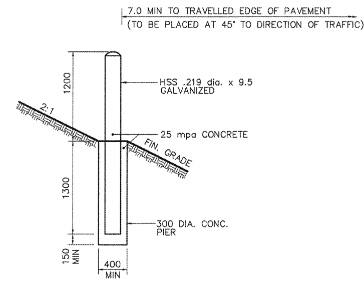
CONT No RHW-97-226(SPO)	SHEET
WP No	59



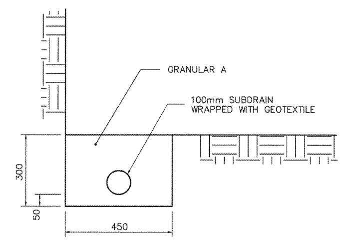
SLOPE FAILURE REPAIR DETAIL



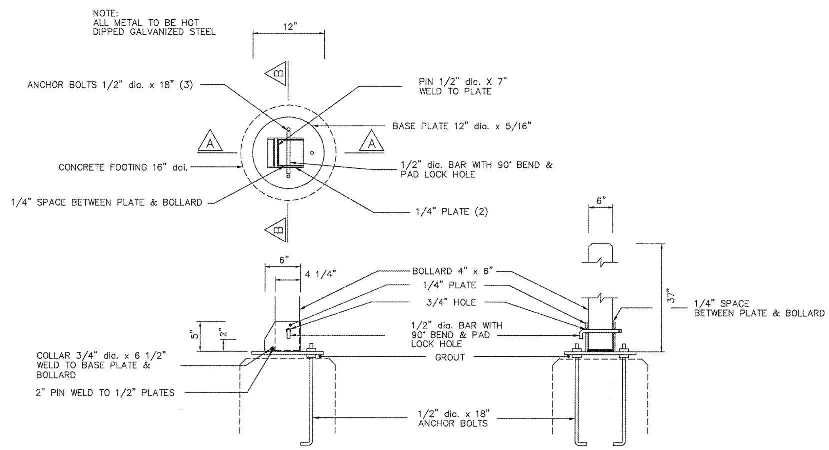
STEEL BEAM GUIDE RAIL MOUNTING LOCATION



TYPICAL BOLLARD DETAIL AT OVERHEAD SIGN LOCATION TYPE II



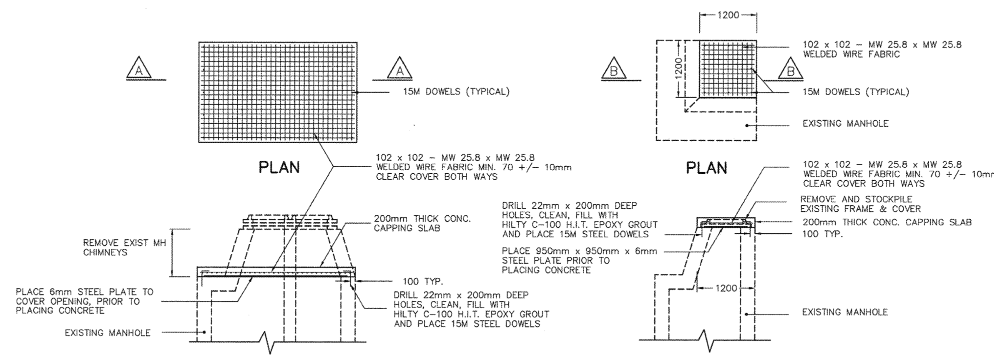
SUBDRAIN DETAIL



SECTION A–A

SECTION B–B

STEEL BOLLARD DETAIL TYPE I



SECTION A–A
FOR 46,47

SECTION B–B
FOR 27,50,51,25,45A

MANHOLE CAPPING

No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

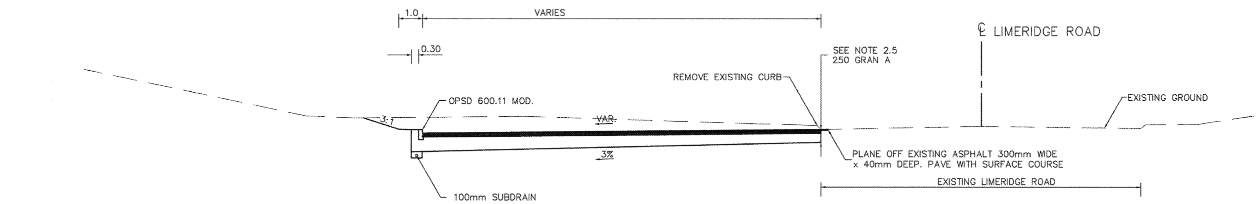
PARKER CONSULTANTS

DESIGNED BY: D.A.Y. | DRAWN BY: D.A.Y. | CHECKED BY: F.E.W.

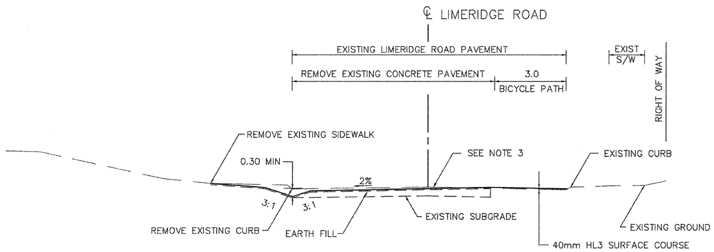
F. E. WILSON — PROFESSIONAL ENGINEER — PROVINCE OF ONTARIO — 16/04/97

APPROVED	APPROVED	THE REGIONAL MUNICIPALITY OF HAMILTON–WENTWORTH	RED HILL CREEK EXPRESSWAY PAVING CONTRACT
		SPECIAL PROJECTS OFFICE	DETAILS
PROJECT DIRECTOR	MANAGER OF ENGINEERING	DATE: JULY 1996	SCALE:

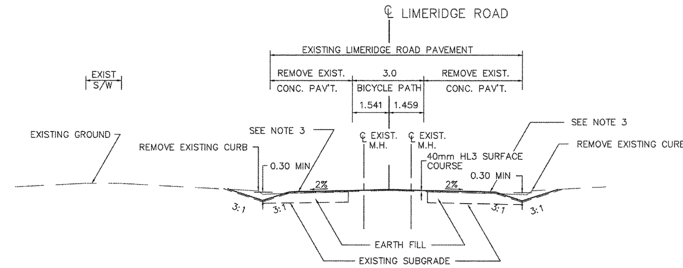
CONT No RHW-97-226(SPO)	SHEET
WP No	58



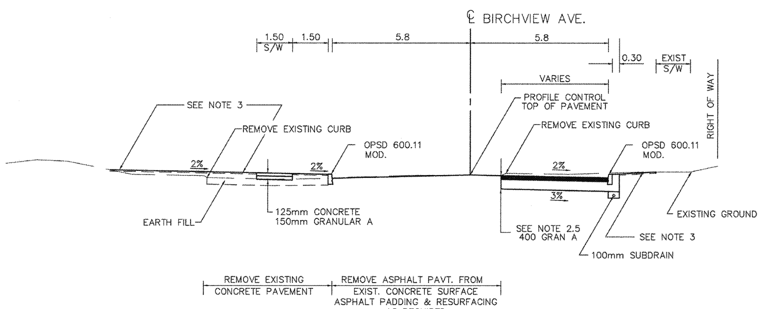
LIMERIDGE ROAD CUL-DE-SACS
VICINITY 16+050 @ UPPER GAGE AVE.
VICINITY 9+950 @ UPPER WENTWORTH ST.



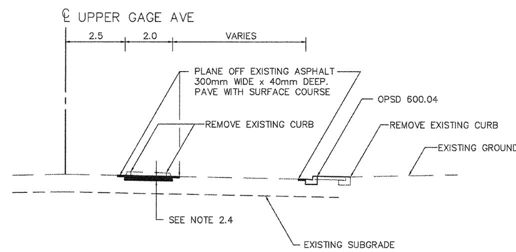
LIMERIDGE ROAD RE-GRADING
VICINITY 14+750 @ UPPER GAGE AVE.



LIMERIDGE ROAD RE-GRADING
VICINITY 10+175 @ UPPER WENTWORTH ST.



BIRCHVIEW AVENUE
VICINITY 14+660



UPPER GAGE AVE.
VICINITY 9+900

NOTES:

1.) THESE TYPICAL SECTIONS ARE TO BE USED IN CONJUNCTION WITH OPSD 200 SERIES

2.) PAVEMENT STRUCTURE:

2.1) EXPRESSWAY & INTERCHANGE RAMP PAVING
40mm HL1 MOD SURFACE COURSE
55mm HL8 (HS) UPPER BINDER COURSE
60mm HL8 (HS) LOWER BINDER COURSE

2.2) PAVED SHOULDERS
SHOULDER PAVEMENT ON EXPRESSWAY AND TANGENT PORTIONS OF INTERCHANGE RAMPS TO CONSIST OF
40mm HL1 MOD SURFACE COURSE
55mm HL8 (HS) BINDER COURSE

SHOULDER PAVEMENT ON CURVE AND SPIRAL PORTIONS OF INTERCHANGE RAMPS TO CONSIST OF
40mm HL1 MOD SURFACE COURSE
55mm HL8 (HS) UPPER BINDER COURSE
60mm HL8 (HS) LOWER BINDER COURSE

2.3) INTERCHANGE RAMP GRADING
40mm HL1 MOD SURFACE COURSE
55mm HL8 (HS) UPPER BINDER COURSE
60mm HL8 (HS) LOWER BINDER COURSE
600mm GRANULAR A

2.4) UPPER GAGE AVE. UPPER WENTWORTH ST.
40mm HL1 MOD SURFACE COURSE
50mm HL8 (HS) UPPER BINDER COURSE
50mm HL8 (HS) MIDDLE BINDER COURSE
50mm HL8 (HS) LOWER BINDER COURSE

2.5) LIMERIDGE RD CUL-DE-SACS / BIRCHVIEW DR.
40mm HL3 SURFACE COURSE
40mm HM5 UPPER BINDER COURSE
40mm HM5 MIDDLE BINDER COURSE
40mm HM5 LOWER BINDER COURSE

3.) FOR GROUND COVER SEE LANDSCAPING DRAWINGS

No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

PARKER CONSULTANTS

DESIGNED BY: D.A.Y. | DRAWN BY: D.A.Y. | CHECKED BY: F.E.W.

REGISTERED PROFESSIONAL ENGINEER F. E. WILSON 14/04/97 PROVINCE OF ONTARIO

APPROVED — PROJECT DIRECTOR

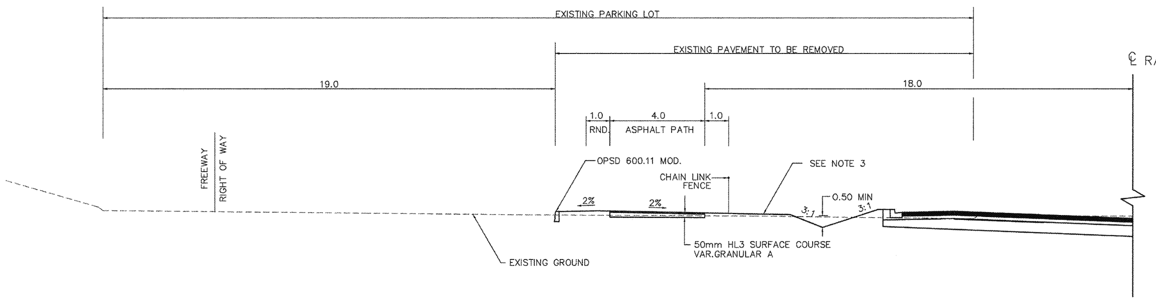
APPROVED — MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH
SPECIAL PROJECTS OFFICE
DATE: MARCH 1996

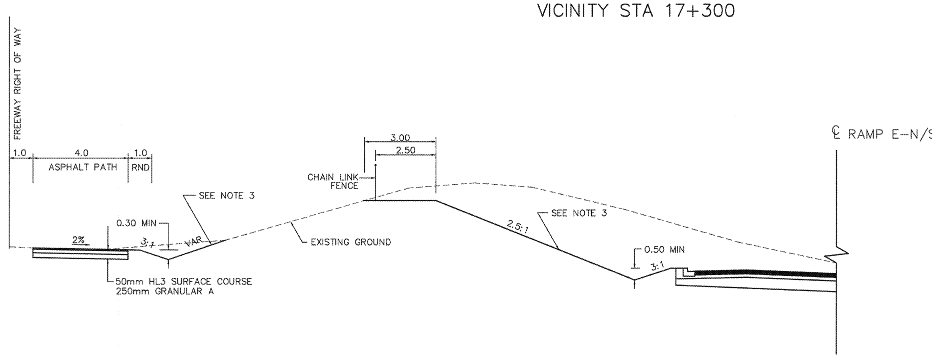
RED HILL CREEK EXPRESSWAY
PAVING CONTRACT
TYPICAL SECTIONS
SCALE:

HAM0062769_0001

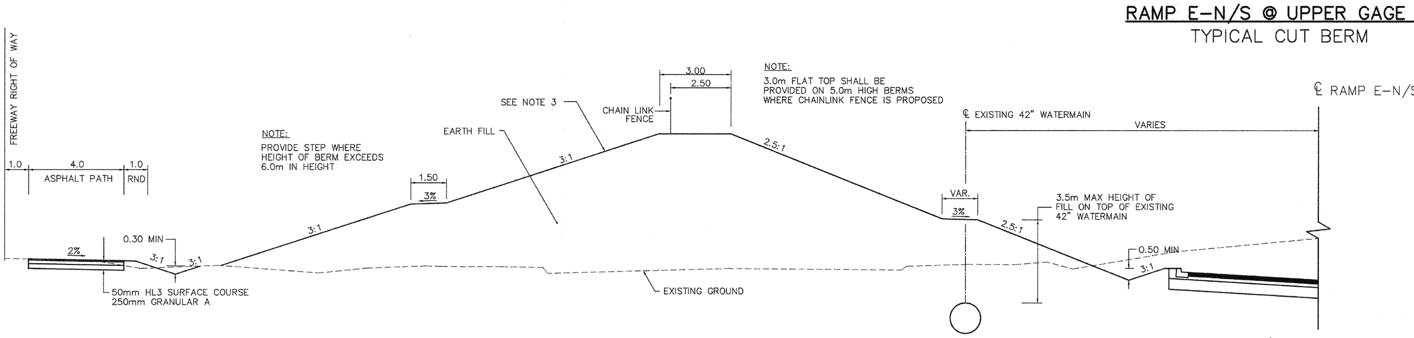
CONT No RHW-97-226(SPO)	SHEET
WP No	57



RAMP E-N/S @ UPPER WENTWORTH ST.
VICINITY STA 17+300



RAMP E-N/S @ UPPER GAGE AVE.
TYPICAL CUT BERM



RAMP E-N/S @ UPPER GAGE AVE.
TYPICAL FILL BERM

NOTES:

1.) THESE TYPICAL SECTIONS ARE TO BE USED IN CONJUNCTION WITH OPSD 200 SERIES

2.) PAVEMENT STRUCTURE:

2.1) EXPRESSWAY & INTERCHANGE RAMP PAVING
40mm HL1 MOD SURFACE COURSE
55mm HL8 (HS) UPPER BINDER COURSE
60mm HL8 (HS) LOWER BINDER COURSE

2.2) PAVED SHOULDERS
SHOULDER PAVEMENT ON EXPRESSWAY AND TANGENT PORTIONS OF INTERCHANGE RAMPS TO CONSIST OF
40mm HL1 MOD SURFACE COURSE
55mm HL8 (HS) BINDER COURSE

SHOULDER PAVEMENT ON CURVE AND SPIRAL PORTIONS OF INTERCHANGE RAMPS TO CONSIST OF
40mm HL1 MOD SURFACE COURSE
55mm HL8 (HS) UPPER BINDER COURSE
60mm HL8 (HS) LOWER BINDER COURSE

2.3) INTERCHANGE RAMP GRADING
40mm HL1 MOD SURFACE COURSE
55mm HL8 (HS) UPPER BINDER COURSE
60mm HL8 (HS) LOWER BINDER COURSE
600mm GRANULAR A

2.4) UPPER GAGE AVE, UPPER WENTWORTH ST.
40mm HL1 MOD SURFACE COURSE
50mm HL8 (HS) UPPER BINDER COURSE
50mm HL8 (HS) MIDDLE BINDER COURSE
50mm HL8 (HS) LOWER BINDER COURSE

2.5) LIMERIDGE RD CUL-DE-SACS / BIRCHVIEW DR.
40mm HL3 SURFACE COURSE
40mm HM5 UPPER BINDER COURSE
40mm HM5 MIDDLE BINDER COURSE
40mm HM5 LOWER BINDER COURSE

3.) FOR GROUND COVER SEE LANDSCAPING DRAWINGS

No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

PARKER CONSULTANTS

DESIGNED BY: D.A.Y. | DRAWN BY: D.A.Y. | CHECKED BY: F.E.W.

REGISTERED PROFESSIONAL ENGINEER F. E. WILSON PROVINCE OF ONTARIO

APPROVED — PROJECT DIRECTOR
APPROVED — MANAGER OF ENGINEERING

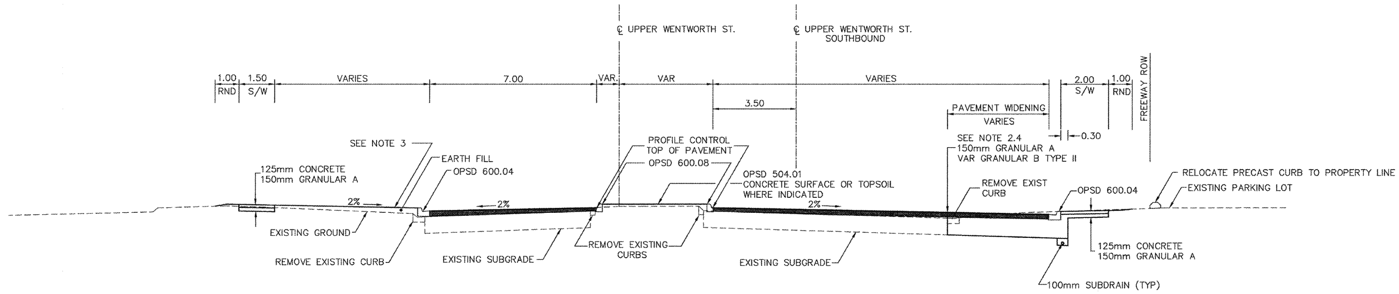
THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH
SPECIAL PROJECTS OFFICE
DATE: MARCH 1996

RED HILL CREEK EXPRESSWAY PAVING CONTRACT
TYPICAL SECTIONS
SCALE:

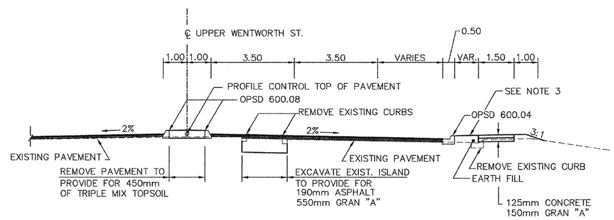
HAM0062769_0001

CONT No RHW-97-226(SPO)
WP No

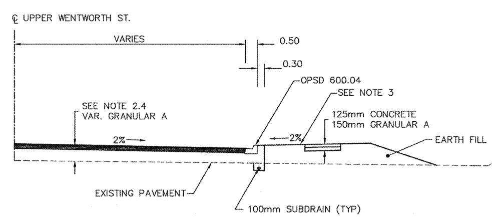
SHEET
56



UPPER WENTWORTH STREET
VICINITY STA 9+825



UPPER WENTWORTH STREET
VICINITY STA 9+900



UPPER WENTWORTH STREET
VICINITY STA 9+875

NOTES:

1.) THESE TYPICAL SECTIONS ARE TO BE USED IN CONJUNCTION WITH OPSD 200 SERIES

2.) PAVEMENT STRUCTURE:

2.1) EXPRESSWAY & INTERCHANGE RAMP PAVING
40mm HL1 MOD SURFACE COURSE
55mm HL8 (HS) UPPER BINDER COURSE
60mm HL8 (HS) LOWER BINDER COURSE

2.2) PAVED SHOULDERS
SHOULDER PAVEMENT ON EXPRESSWAY AND TANGENT PORTIONS OF INTERCHANGE RAMPS TO CONSIST OF
40mm HL1 MOD SURFACE COURSE
55mm HL8 (HS) BINDER COURSE

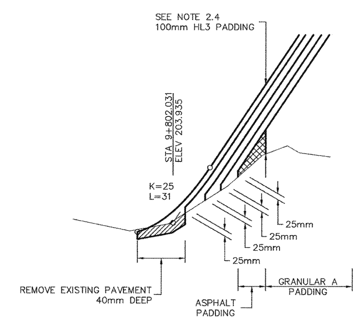
SHOULDER PAVEMENT ON CURVE AND SPIRAL PORTIONS OF INTERCHANGE RAMPS TO CONSIST OF
40mm HL1 MOD SURFACE COURSE
55mm HL8 (HS) UPPER BINDER COURSE
60mm HL8 (HS) LOWER BINDER COURSE

2.3) INTERCHANGE RAMP GRADING
40mm HL1 MOD SURFACE COURSE
55mm HL8 (HS) UPPER BINDER COURSE
60mm HL8 (HS) LOWER BINDER COURSE
600mm GRANULAR A

2.4) UPPER GAGE AVE. UPPER WENTWORTH ST.
40mm HL1 MOD SURFACE COURSE
50mm HL8 (HS) UPPER BINDER COURSE
50mm HL8 (HS) MIDDLE BINDER COURSE
50mm HL8 (HS) LOWER BINDER COURSE

2.5) LIMERIDGE RD CUL-DE-SACS / BIRCHVIEW DR.
40mm HL3 SURFACE COURSE
40mm HM5 UPPER BINDER COURSE
40mm HM5 MIDDLE BINDER COURSE
40mm HM5 LOWER BINDER COURSE

3.) FOR GROUND COVER SEE LANDSCAPING DRAWINGS



TRANSVERSE KEY
WENTWORTH STREET NORTH AND SOUTH
SCALE: 1:500 HOR., 1:5 VERT.

No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

PARKER CONSULTANTS

DESIGNED BY: D.A.Y. | DRAWN BY: D.R.C. | CHECKED BY: F.E.W.

REGISTERED PROFESSIONAL ENGINEER F. E. WILSON 16/04/97 PROVINCE OF ONTARIO

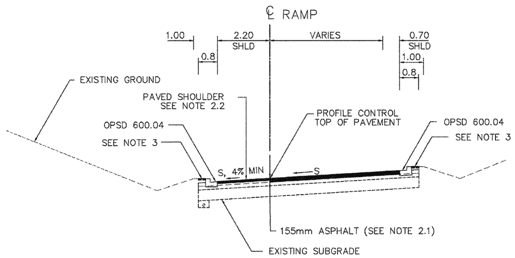
APPROVED — PROJECT DIRECTOR
APPROVED — MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH
SPECIAL PROJECTS OFFICE
DATE: MARCH 1996

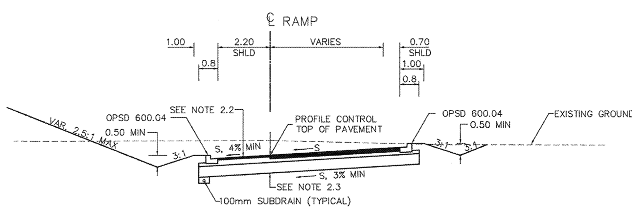
RED HILL CREEK EXPRESSWAY
PAVING CONTRACT
TYPICAL SECTIONS
SCALE:

HAM0062769_0001

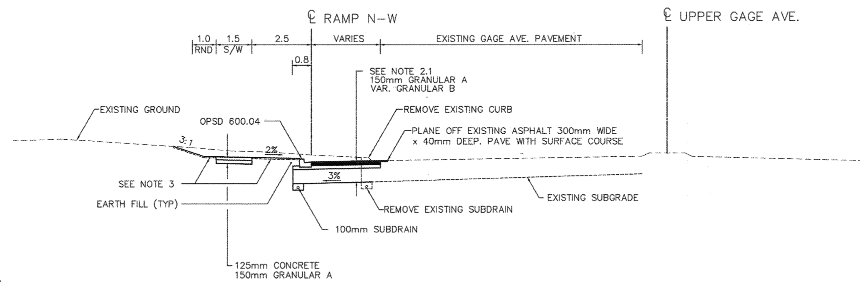
CONT No RHW-97-226(SPO)	SHEET
WP No	55



TYPICAL INTERCHANGE RAMP
PAVING LOCATIONS



TYPICAL INTERCHANGE RAMP
GRADING LOCATIONS



RAMP N-W WIDENING @ UPPER GAGE
VICINITY STA 4+525

NOTES:

1.) THESE TYPICAL SECTIONS ARE TO BE USED IN CONJUNCTION WITH OPSD 200 SERIES

2.) PAVEMENT STRUCTURE:

2.1) EXPRESSWAY & INTERCHANGE RAMP PAVING
40mm HL1 MOD SURFACE COURSE
55mm HL8 (HS) UPPER BINDER COURSE
60mm HL8 (HS) LOWER BINDER COURSE

2.2) PAVED SHOULDERS
SHOULDER PAVEMENT ON EXPRESSWAY AND TANGENT PORTIONS OF INTERCHANGE RAMPS TO CONSIST OF
40mm HL1 MOD SURFACE COURSE
55mm HL8 (HS) BINDER COURSE

SHOULDER PAVEMENT ON CURVE AND SPIRAL PORTIONS OF INTERCHANGE RAMPS TO CONSIST OF
40mm HL1 MOD SURFACE COURSE
55mm HL8 (HS) UPPER BINDER COURSE
60mm HL8 (HS) LOWER BINDER COURSE

2.3) INTERCHANGE RAMP GRADING
40mm HL1 MOD SURFACE COURSE
55mm HL8 (HS) UPPER BINDER COURSE
60mm HL8 (HS) LOWER BINDER COURSE
600mm GRANULAR A

2.4) UPPER GAGE AVE, UPPER WENTWORTH ST.
40mm HL1 MOD SURFACE COURSE
50mm HL8 (HS) UPPER BINDER COURSE
50mm HL8 (HS) MIDDLE BINDER COURSE
50mm HL8 (HS) LOWER BINDER COURSE

2.5) LIMERIDGE RD CUL-DE-SACS / BIRCHVIEW DR.
40mm HL3 SURFACE COURSE
40mm HM5 UPPER BINDER COURSE
40mm HM5 MIDDLE BINDER COURSE
40mm HM5 LOWER BINDER COURSE

3.) FOR GROUND COVER SEE LANDSCAPING DRAWINGS

No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

PARKER CONSULTANTS

DESIGNED BY: D.A.Y. | DRAWN BY: D.A.Y. | CHECKED BY: F.E.W.

REGISTERED PROFESSIONAL ENGINEER F. E. WILSON 14/04/97 PROVINCE OF ONTARIO

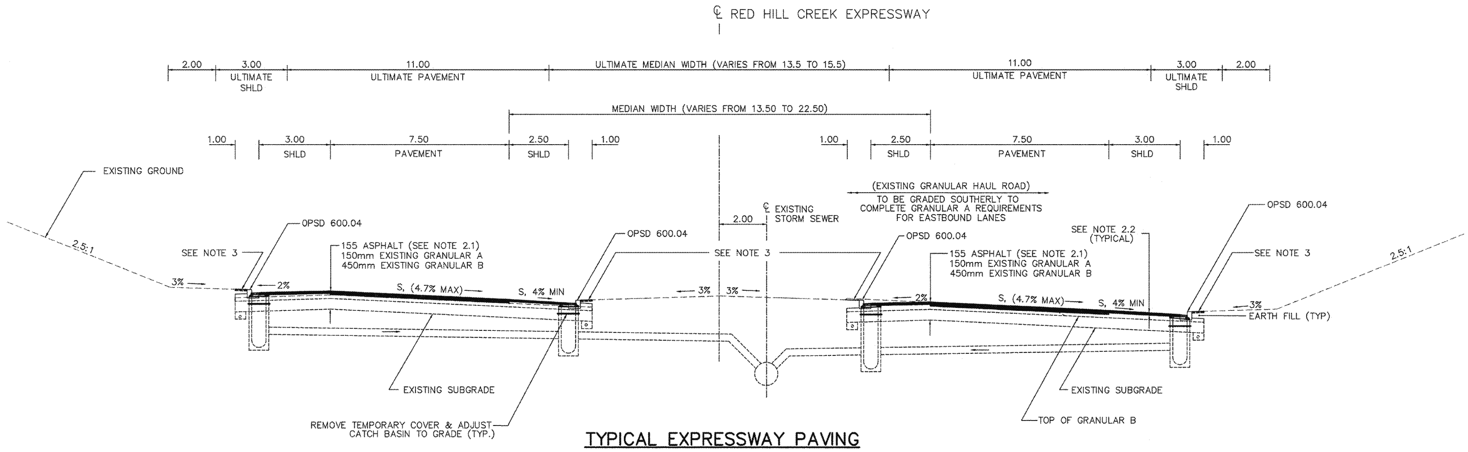
APPROVED — PROJECT DIRECTOR | APPROVED — MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH
SPECIAL PROJECTS OFFICE
DATE: MARCH 1996

RED HILL CREEK EXPRESSWAY
PAVING CONTRACT
TYPICAL SECTIONS
SCALE:

HAM0062769_0001

CONT No RHW-97-226(SPO) WP No	SHEET 54



TYPICAL EXPRESSWAY PAVING
FROM STA 19+700.000 EASTERLY TO STA 20+200.000

NOTES:

1.) THESE TYPICAL SECTIONS ARE TO BE USED IN CONJUNCTION WITH OPSD 200 SERIES

2.) PAVEMENT STRUCTURE:

2.1) EXPRESSWAY & INTERCHANGE RAMP PAVING
40mm HL1 MOD SURFACE COURSE
55mm HL8 (HS) UPPER BINDER COURSE
60mm HL8 (HS) LOWER BINDER COURSE

2.2) PAVED SHOULDERS
SHOULDER PAVEMENT ON EXPRESSWAY AND TANGENT PORTIONS OF INTERCHANGE RAMPS TO CONSIST OF
40mm HL1 MOD SURFACE COURSE
55mm HL8 (HS) BINDER COURSE

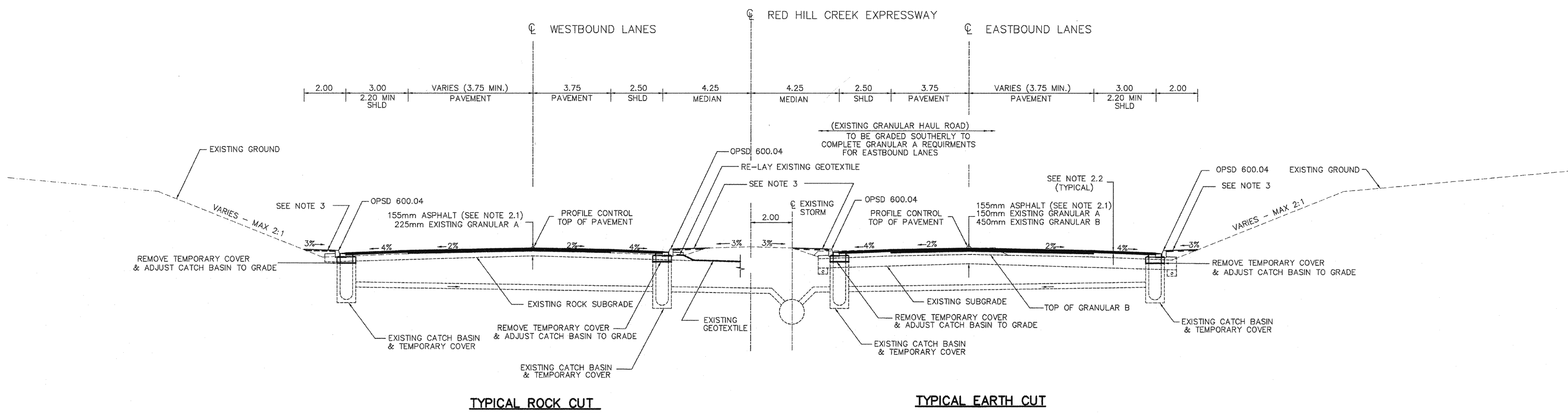
SHOULDER PAVEMENT ON CURVE AND SPIRAL PORTIONS OF INTERCHANGE RAMPS TO CONSIST OF
40mm HL1 MOD SURFACE COURSE
55mm HL8 (HS) UPPER BINDER COURSE
60mm HL8 (HS) LOWER BINDER COURSE

2.3) INTERCHANGE RAMP GRADING
40mm HL1 MOD SURFACE COURSE
55mm HL8 (HS) UPPER BINDER COURSE
60mm HL8 (HS) LOWER BINDER COURSE
150mm GRANULAR A
450mm GRANULAR B TYPE II

2.4) UPPER GAGE AVE. UPPER WENTWORTH ST.
40mm HL1 MOD SURFACE COURSE
50mm HL8 (HS) UPPER BINDER COURSE
50mm HL8 (HS) MIDDLE BINDER COURSE
50mm HL8 (HS) LOWER BINDER COURSE

2.5) LIMERIDGE RD CUL-DE-SACS / BIRCHVIEW DR.
40mm HL3 SURFACE COURSE
40mm HM5 UPPER BINDER COURSE
40mm HM5 MIDDLE BINDER COURSE
40mm HM5 LOWER BINDER COURSE

3.) FOR GROUND COVER SEE LANDSCAPING DRAWINGS



TYPICAL EXPRESSWAY PAVING
UPPER WELLINGTON EASTERLY TO STA. 19+700

No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

PARKER CONSULTANTS

DESIGNED BY: D.A.Y. | DRAWN BY: D.A.Y. | CHECKED BY: F.E.W.

REGISTERED PROFESSIONAL ENGINEER F. E. WILSON 14/09/97 PROVINCE OF ONTARIO

APPROVED — PROJECT DIRECTOR
APPROVED — MANAGER OF ENGINEERING

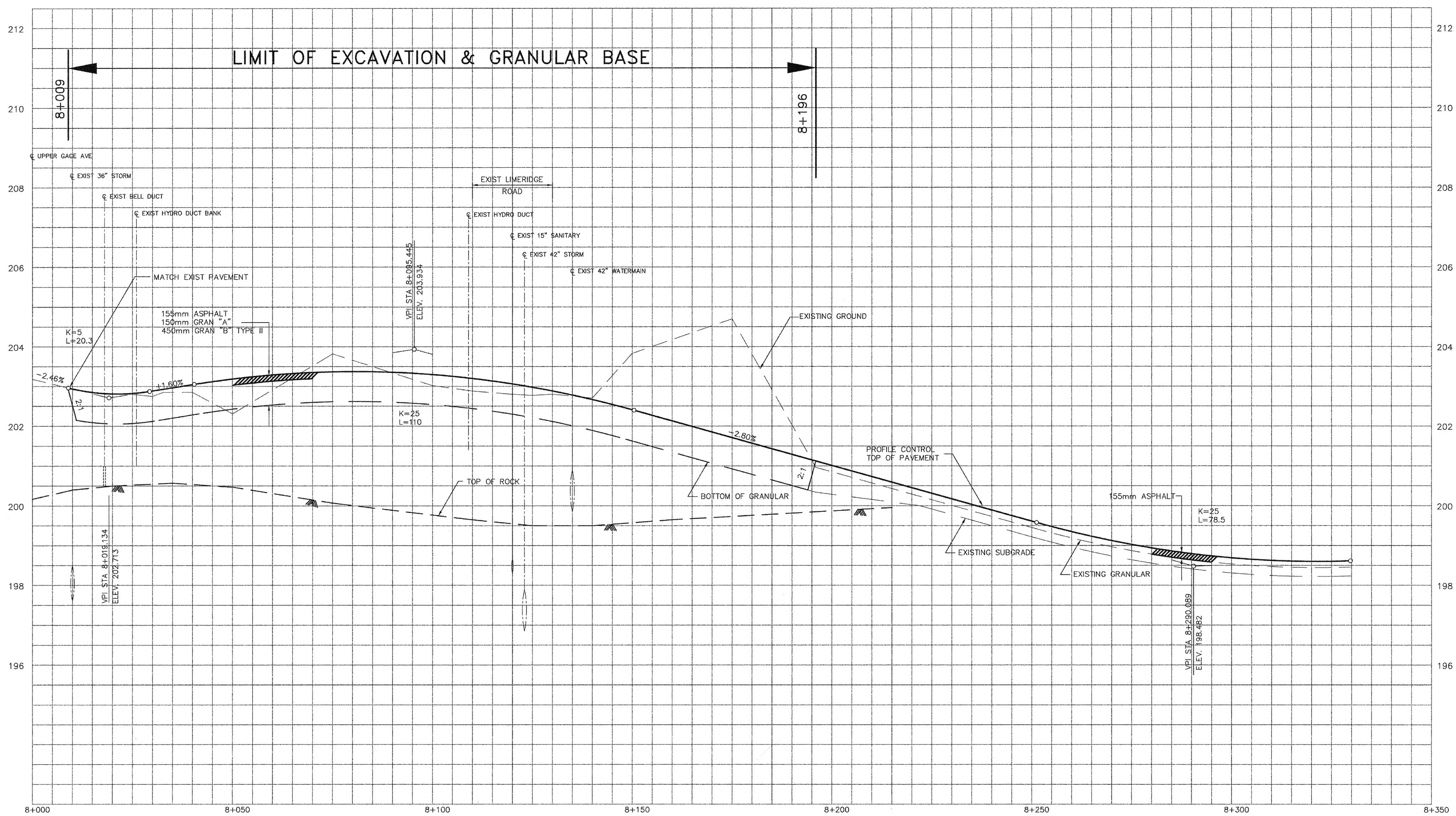
THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH
SPECIAL PROJECTS OFFICE
DATE: MARCH 1996

RED HILL CREEK EXPRESSWAY PAVING CONTRACT
TYPICAL SECTIONS
SCALE:

HAM0062769_0001

CONT No RHW-97-226(SPO)	SHEET
WP No	53

RAMP E-N/S
AT UPPER GAGE AVE.



No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV.15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

PARKER CONSULTANTS

DESIGNED BY: D.A.Y. | DRAWN BY: D.R.C. | CHECKED BY: F.E.W.

REGISTERED PROFESSIONAL ENGINEER — F. E. WILSON — PROVINCE OF ONTARIO

APPROVED — PROJECT DIRECTOR

APPROVED — MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

SPECIAL PROJECTS OFFICE

DATE: OCTOBER, 1996

RED HILL CREEK EXPRESSWAY
MAINLINE GRADING

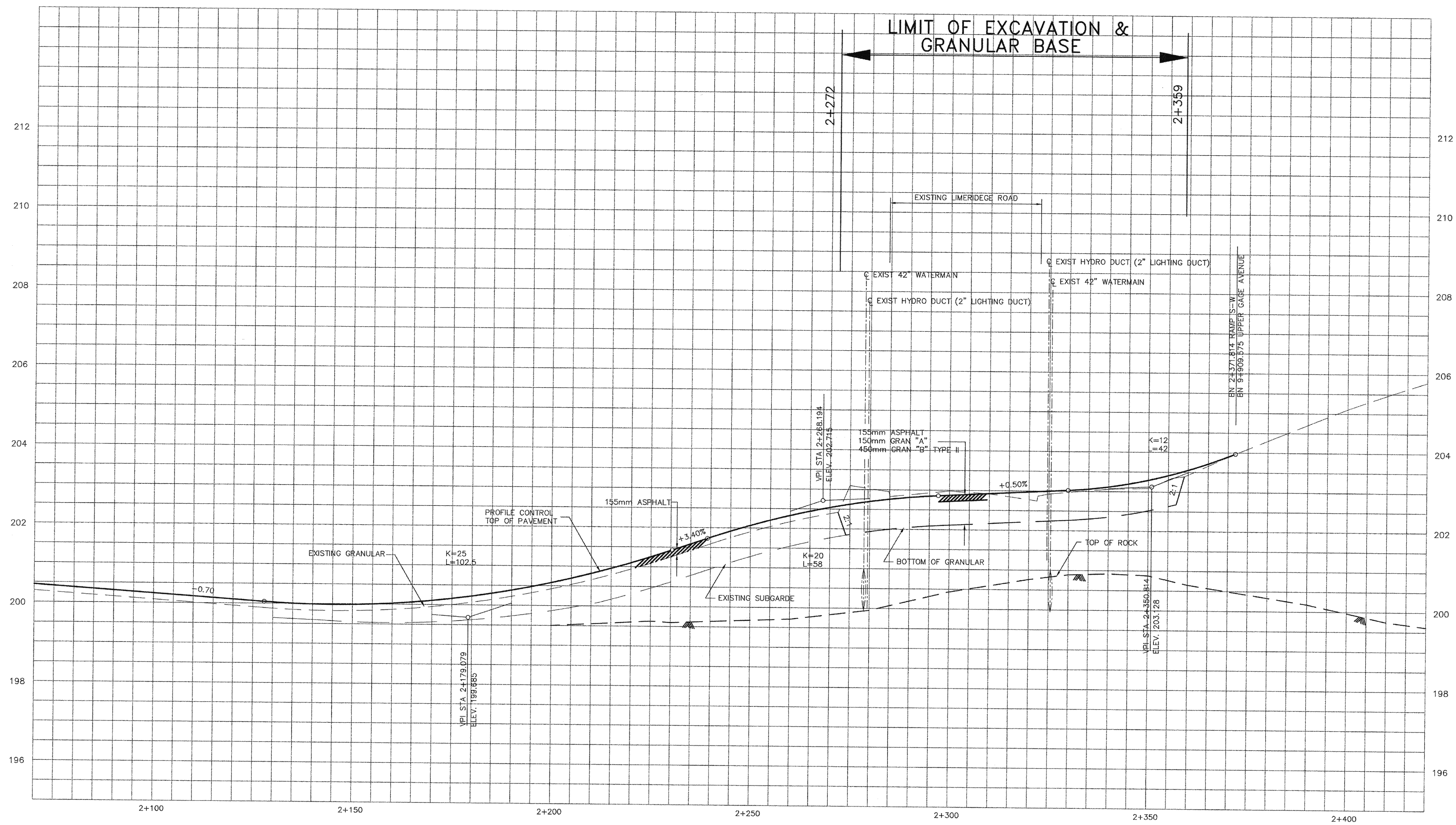
PROFILE
RAMP E-N/S AT UPPER GAGE AVENUE

SCALE:

HAM0062769_0001

CONT No RHW-97-226(SPO)	SHEET
WP No	52

RAMP S-W
AT UPPER GAGE AVE.



No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

PARKER CONSULTANTS

DESIGNED BY: D.A.Y. | DRAWN BY: D.R.C. | CHECKED BY: F.E.W.

REGISTERED PROFESSIONAL ENGINEER
F. E. WILSON
16/04/97
PROVINCE OF ONTARIO

APPROVED	APPROVED
PROJECT DIRECTOR	MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

SPECIAL PROJECTS OFFICE

DATE: OCTOBER, 1996

RED HILL CREEK EXPRESSWAY
MAINLINE GRADING

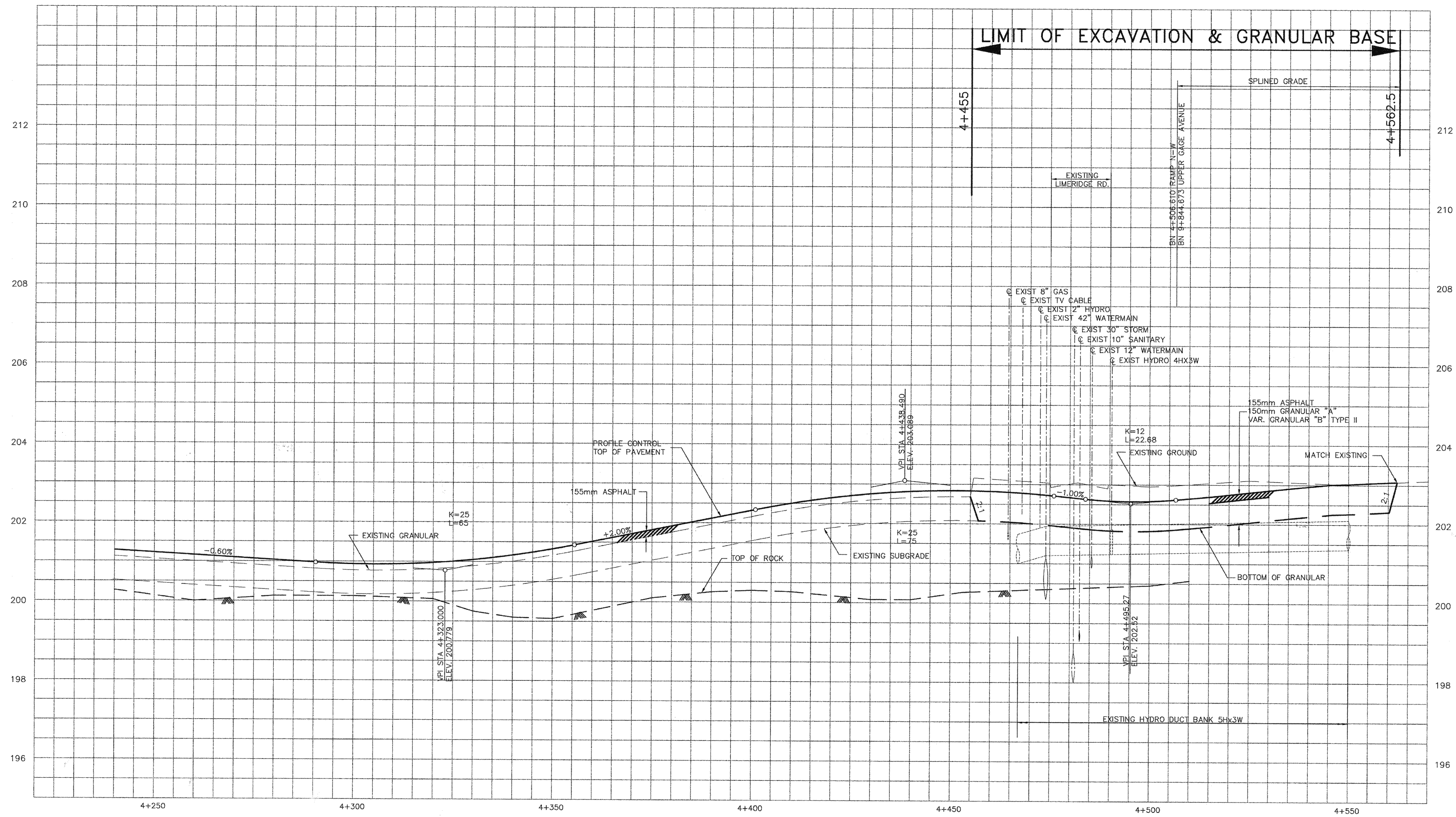
PROFILE
RAMP S-W AT UPPER GAGE AVENUE

SCALE: HORIZ. 0 5 10 15 VERT. 0 0.5 1.0 1.5

HAM0062769_0001

CONT No RHW-97-226(SPO)	SHEET
WP No	51

RAMP N-W
AT UPPER GAGE AVE.



No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

PARKER CONSULTANTS

DESIGNED BY: D.A.Y. | DRAWN BY: D.R.C. | CHECKED BY: F.E.W.

REGISTERED PROFESSIONAL ENGINEER — F. E. WILSON — 14/04/97 — PROVINCE OF ONTARIO

APPROVED — PROJECT DIRECTOR

APPROVED — MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

SPECIAL PROJECTS OFFICE

DATE: OCTOBER, 1996

RED HILL CREEK EXPRESSWAY
MAINLINE GRADING

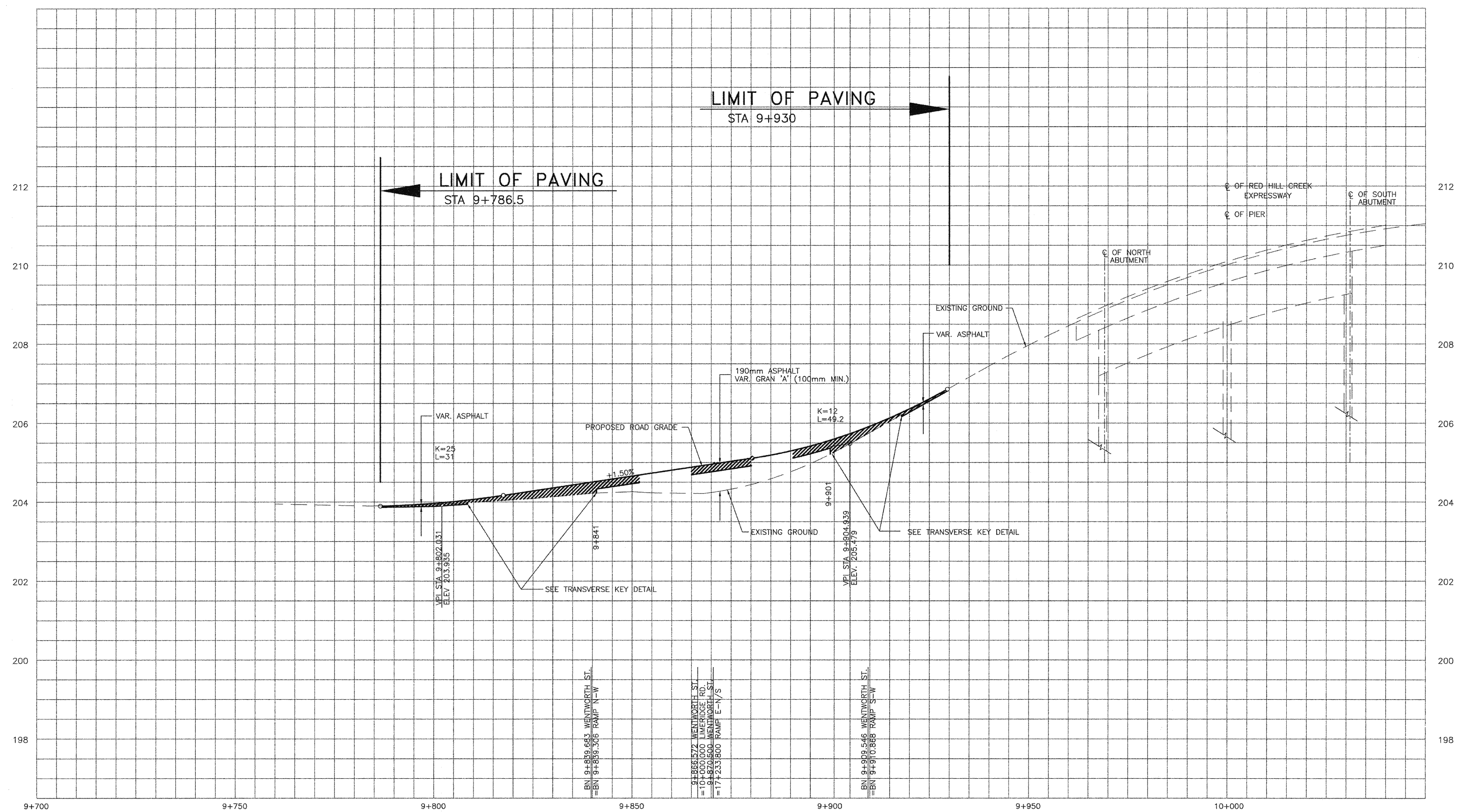
PROFILE
RAMP N-W AT UPPER GAGE AVENUE

SCALE: HORIZ. 0 5 10 15 VERT. 0 0.5 1.0 1.5

HAM0062769_0001

CONT No RHW-97-226(SPO)	SHEET
WP No	50

UPPER WENTWORTH STREET



No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

PARKER CONSULTANTS

DESIGNED BY: D.A.Y. | DRAWN BY: D.R.C. | CHECKED BY: F.E.W.

REGISTERED PROFESSIONAL ENGINEER F. E. WILSON PROVINCE OF ONTARIO

APPROVED	APPROVED
PROJECT DIRECTOR	MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

SPECIAL PROJECTS OFFICE

DATE: OCTOBER, 1996

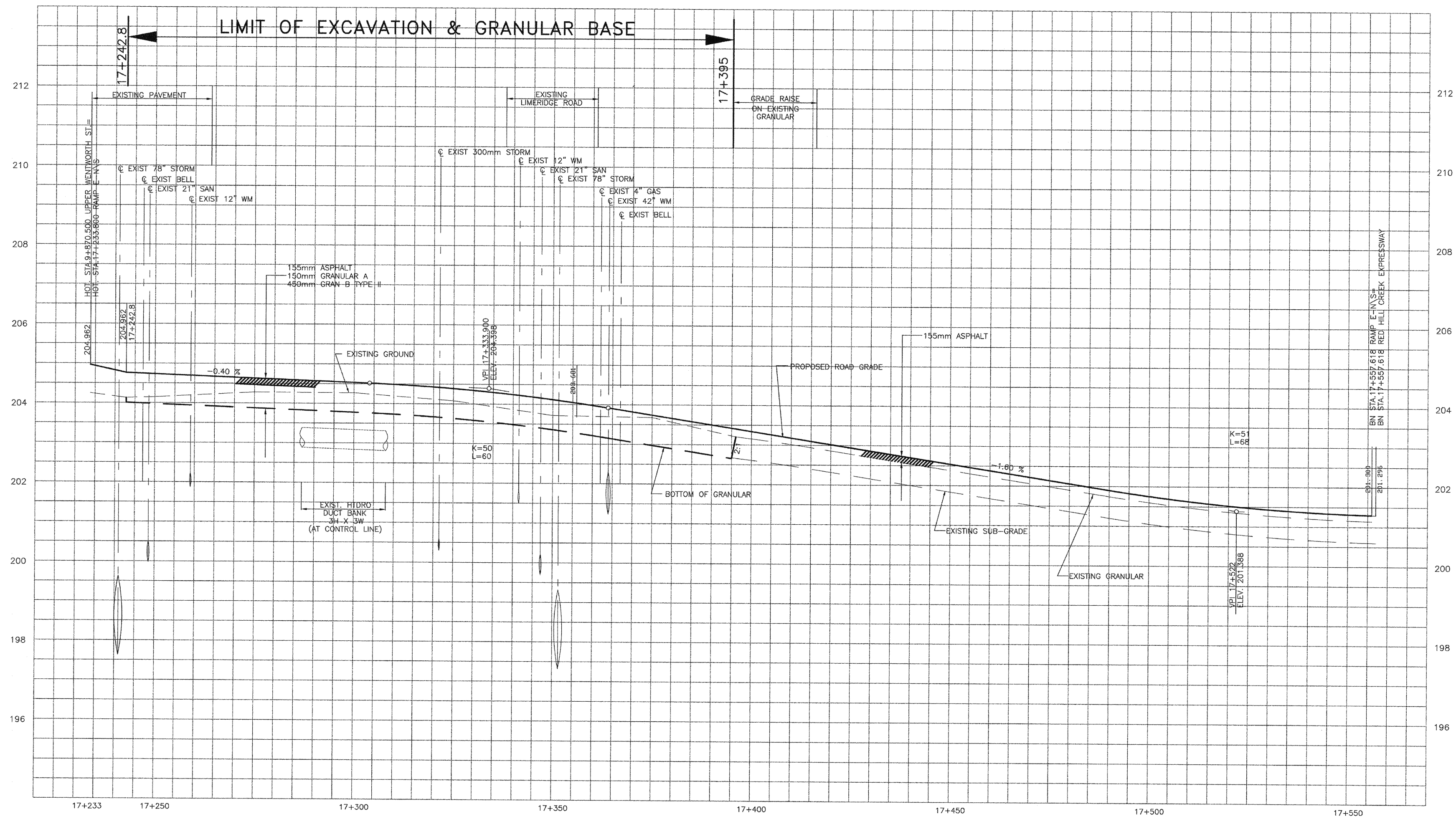
RED HILL CREEK EXPRESSWAY
MAINLINE GRADING

PROFILE
UPPER WENTWORTH STREET

SCALE: HORIZ. 0 5 10 15 VERT. 0 0.5 1.0 1.5

CONT No RHW-97-226(SPO)	SHEET
WP No	49

RAMP E–N/S
AT UPPER WENTWORTH ST.



No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

PARKER CONSULTANTS

DESIGNED BY: D.A.Y. | DRAWN BY: D.R.C. | CHECKED BY: F.E.W.

REGISTERED PROFESSIONAL ENGINEER — F. E. WILSON — PROVINCE OF ONTARIO

APPROVED — PROJECT DIRECTOR

APPROVED — MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON–WENTWORTH

SPECIAL PROJECTS OFFICE

DATE: OCTOBER, 1996

RED HILL CREEK EXPRESSWAY
MAINLINE GRADING

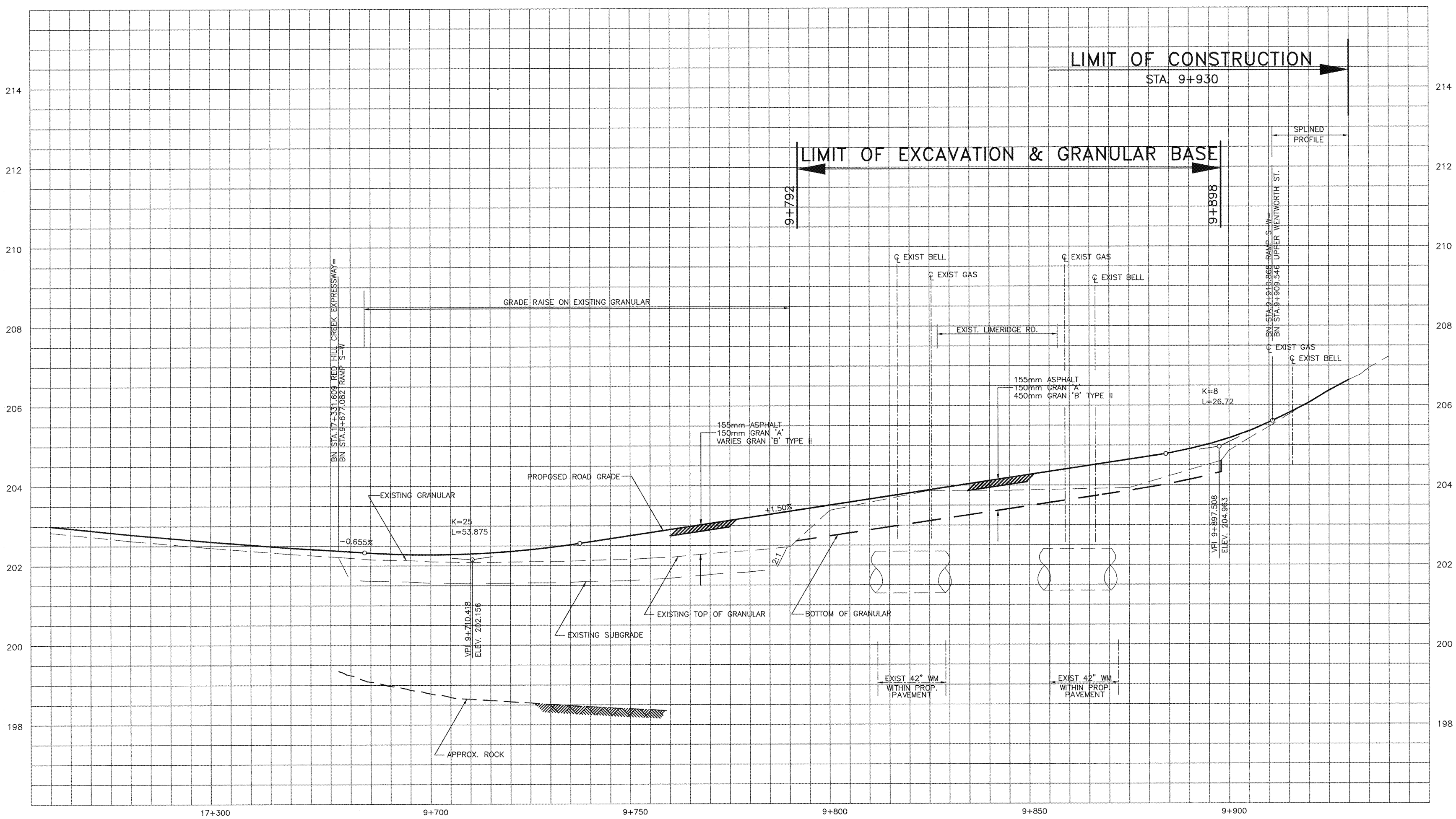
PROFILE
RAMP E–N/S AT UPPER WENTWORTH ST.

SCALE: HORIZ. 0 5 10 15 VERT. 0 0.5 1.0 1.5

HAM0062769_0001

CONT No RHW-97-226(SPO)	SHEET
WP No	48

RAMP S–W
AT UPPER WENTWORTH ST.



No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

PARKER CONSULTANTS

DESIGNED BY: D.A.Y. DRAWN BY: D.R.C. CHECKED BY: F.E.W.

REGISTERED PROFESSIONAL ENGINEER
F. E. WILSON
PROVINCE OF ONTARIO

APPROVED — PROJECT DIRECTOR

APPROVED — MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON–WENTWORTH

SPECIAL PROJECTS OFFICE

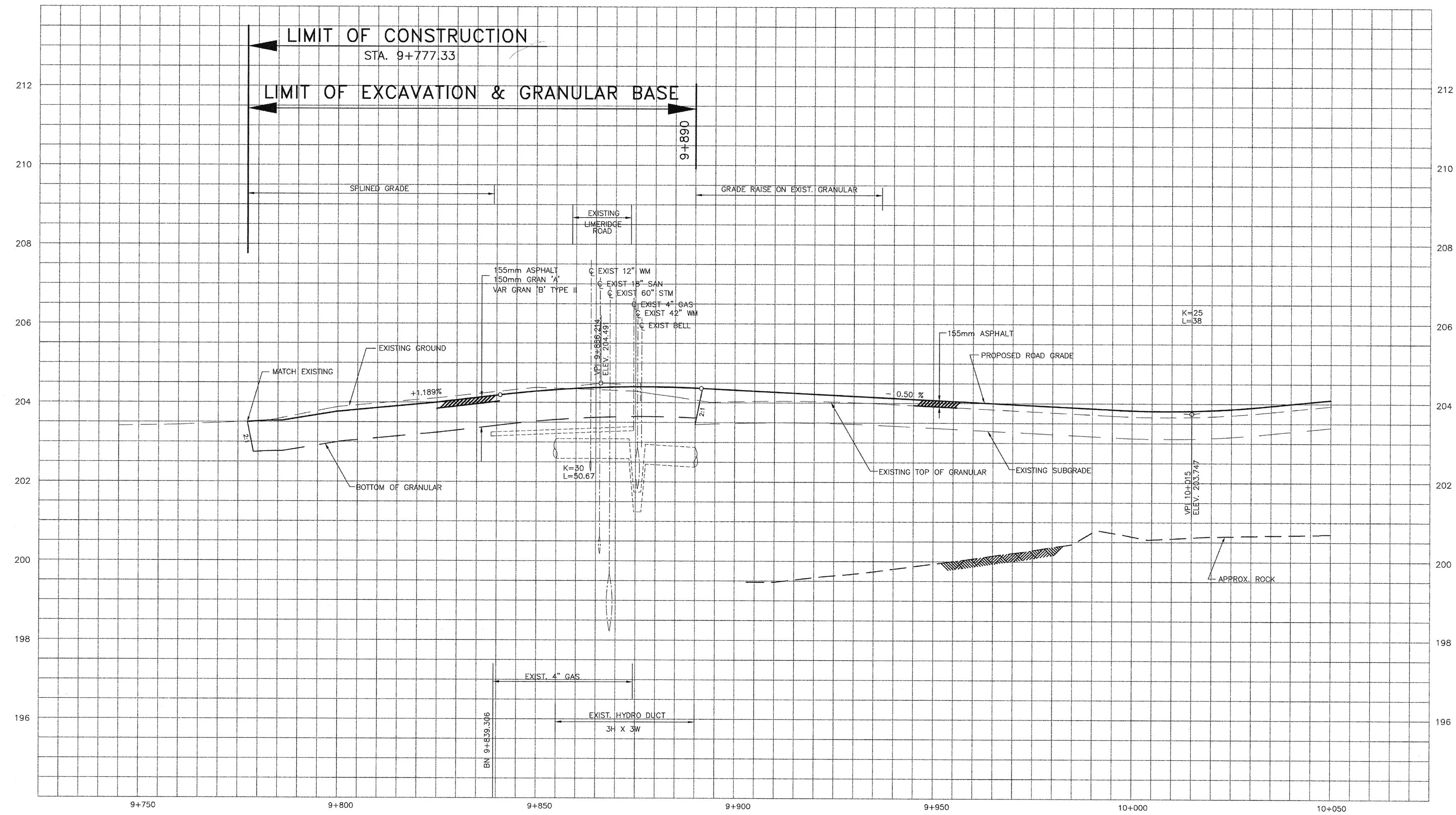
DATE: OCTOBER, 1996

RED HILL CREEK EXPRESSWAY
MAINLINE GRADING
PROFILE
RAMP S–W AT WENTWORTH ST

SCALE: HORIZ. 0 5 10 15 VERT. 0 0.5 1.0 1.5

CONT No RHW-97-226(SPO)	SHEET
WP No	47

RAMP N-W
AT UPPER WENTWORTH ST.



No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

PARKER CONSULTANTS

DESIGNED BY:	DRAWN BY:	CHECKED BY:
D.A.Y.	D.R.C.	G.P.M.

REGISTERED PROFESSIONAL ENGINEER — F. E. WILSON — 16/04/97 — PROVINCE OF ONTARIO

APPROVED	APPROVED
PROJECT DIRECTOR	MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

SPECIAL PROJECTS OFFICE

DATE: SEPTEMBER , 1996

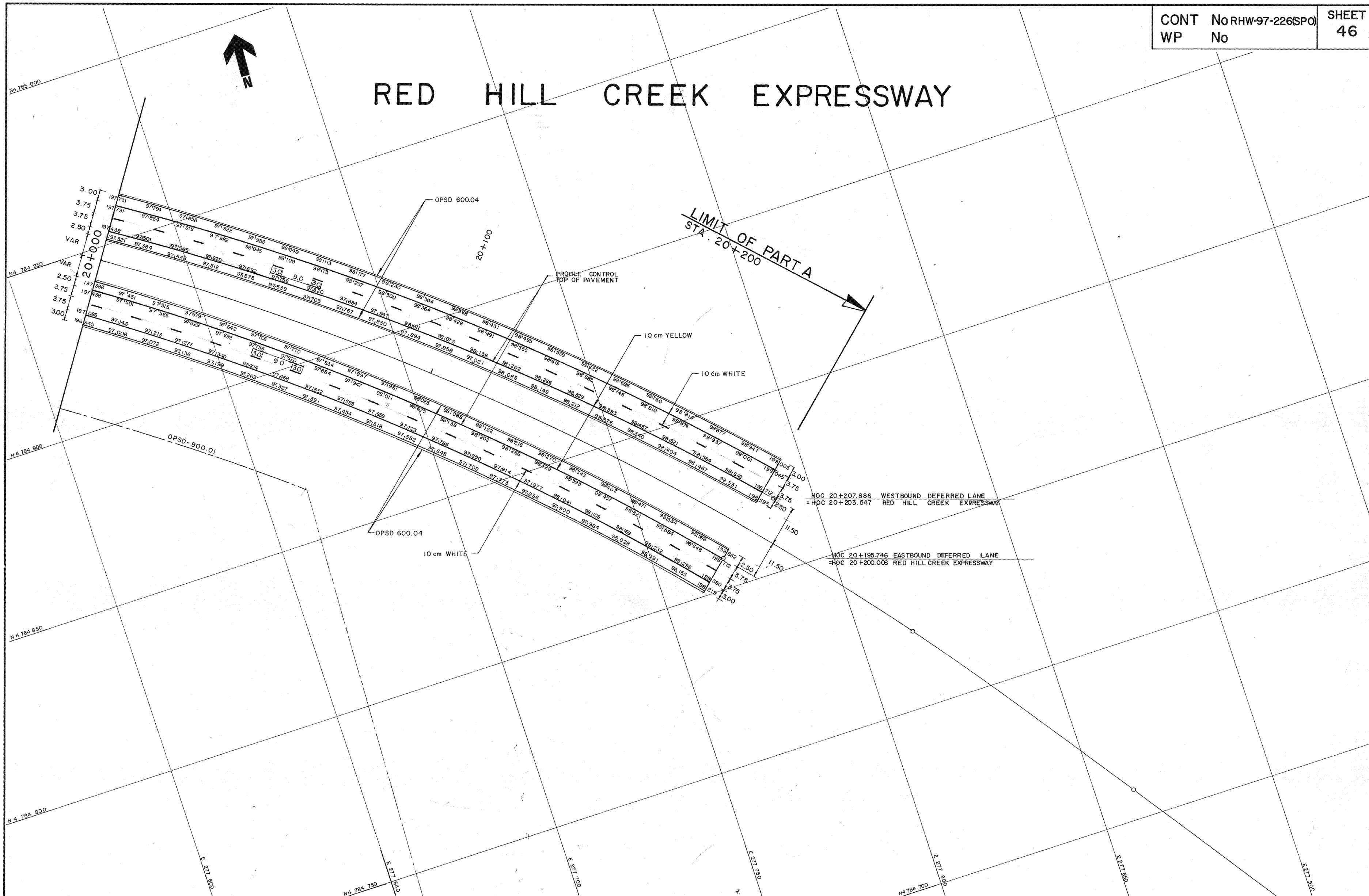
RED HILL CREEK EXPRESSWAY
MAINLINE GRADING

PROFILE
RAMP N-W AT UPPER WENTWORTH ST.

SCALE: HORIZ. 0 5 10 15 VERT. 0 0.5 1.0 1.5

CONT	No RHW-97-226(SPO)	SHEET
WP	No	46

RED HILL CREEK EXPRESSWAY



No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

PARKER CONSULTANTS

DESIGNED BY: D.AY | DRAWN BY: J.AS | CHECKED BY: D.AY

REGISTERED PROFESSIONAL ENGINEER F. E. WILSON PROVINCE OF ONTARIO

APPROVED — PROJECT DIRECTOR

APPROVED — MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

SPECIAL PROJECTS OFFICE

DATE:

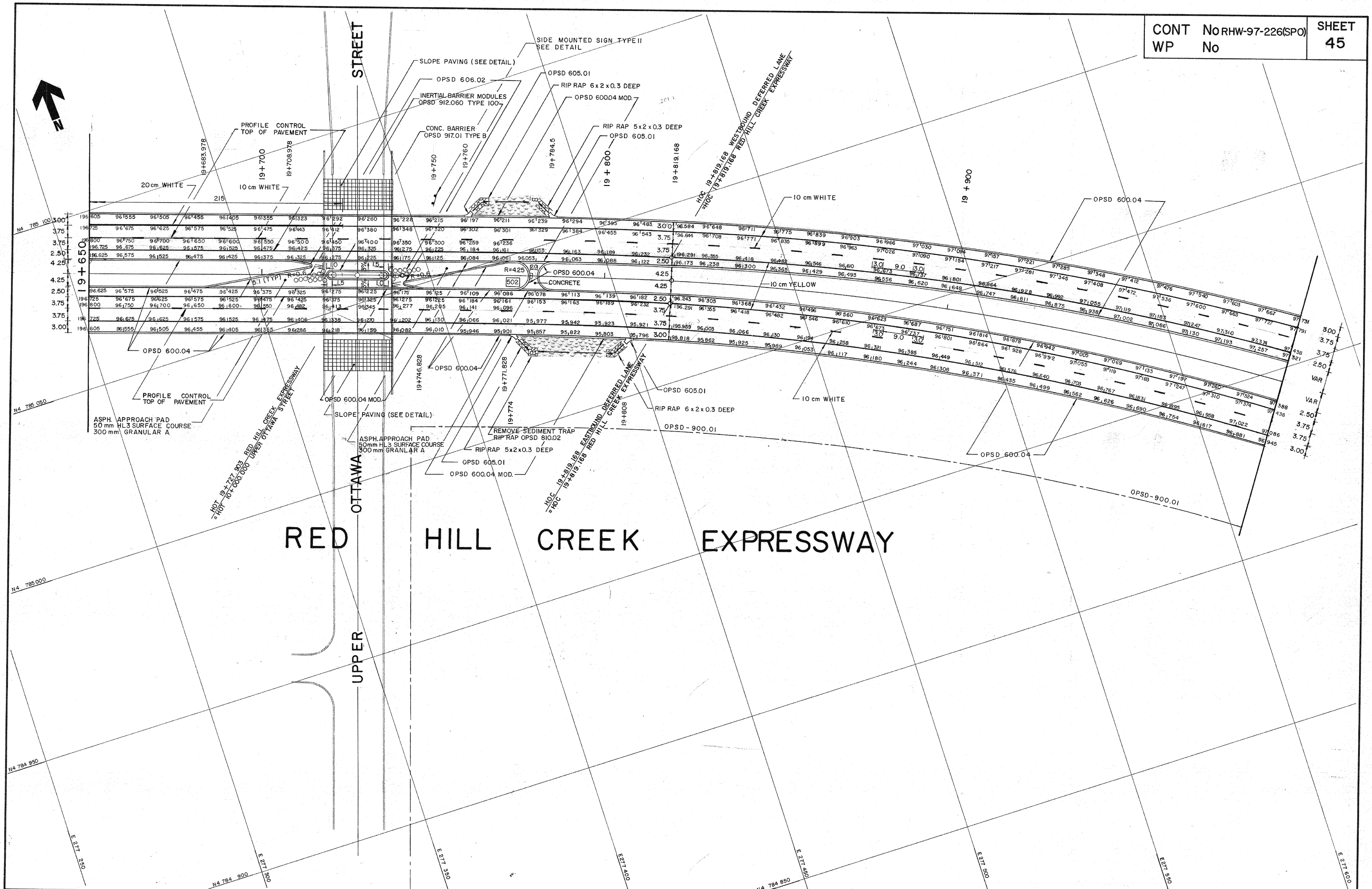
RED HILL CREEK EXPRESSWAY
PAVING CONTRACT

PAVING / CONSTRUCTION DETAILS

SCALE: 0 5 10 20

HAM0062769_0001

CONT No RHW-97-226(SPO)
WP No
SHEET 45



No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

PARKER CONSULTANTS

DESIGNED BY: D.A.Y DRAWN BY: J.A.S CHECKED BY: D.A.Y

REGISTERED PROFESSIONAL ENGINEER E. B. WILSON PROVINCE OF ONTARIO

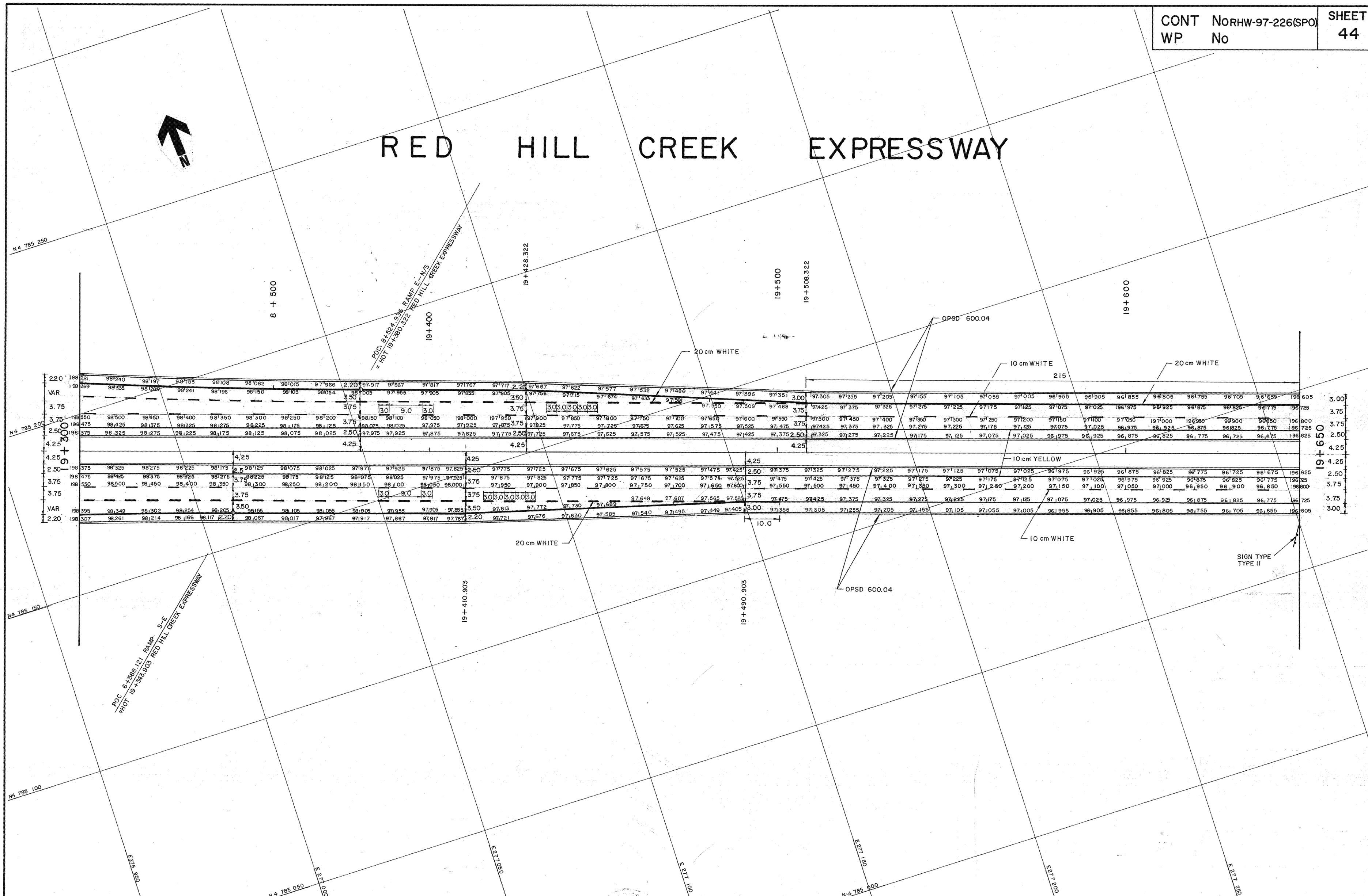
APPROVED — PROJECT DIRECTOR
APPROVED — MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH
SPECIAL PROJECTS OFFICE
DATE:

RED HILL CREEK EXPRESSWAY PAVING CONTRACT
PAVING / CONSTRUCTION DETAILS
SCALE: 0 5 10 20

HAM0062769_0001

CONT	No RHW-97-226(SPO)	SHEET
WP	No	44



	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	
No.	REVISIONS	DATE	INITIAL

PARKER CONSULTANTS

DESIGNED BY: D.A.Y. | DRAWN BY: J.A.S. | CHECKED BY: D.A.Y.

REGISTERED PROFESSIONAL ENGINEER — E. E. WILSON — PROVINCE OF ONTARIO

APPROVED — PROJECT DIRECTOR

APPROVED — MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

SPECIAL PROJECTS OFFICE

DATE:

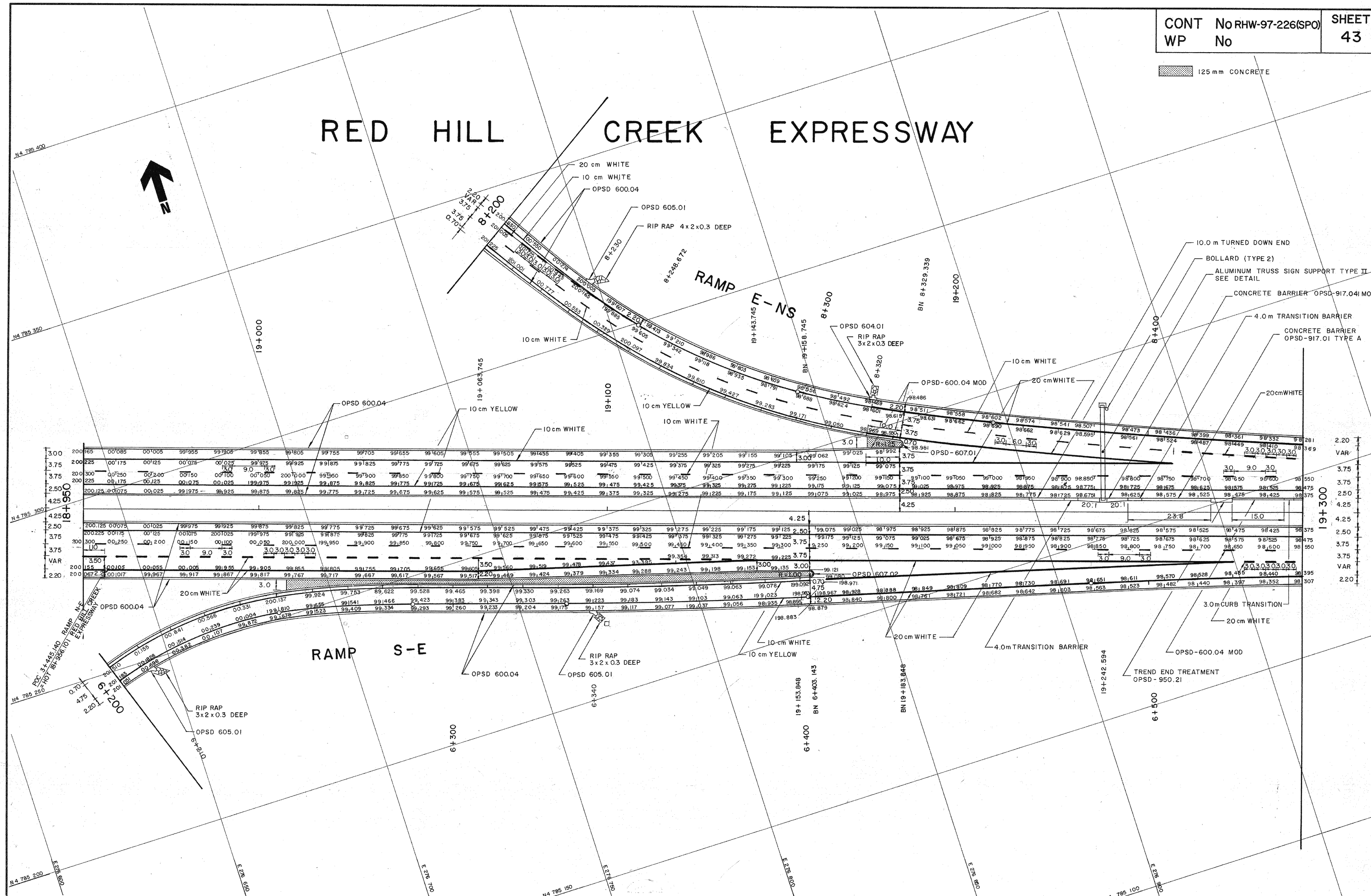
RED HILL CREEK EXPRESSWAY PAVING CONTRACT

PAVING / CONSTRUCTION DETAILS

SCALE: 0 5 10 20

CONT No RHW-97-226(SPO) WP No

SHEET 43



No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

PARKER CONSULTANTS

DESIGNED BY: D.A.Y. DRAWN BY: J.A.S CHECKED BY: D.A.Y.

REGISTERED PROFESSIONAL ENGINEER F. E. WILSON PROVINCE OF ONTARIO

APPROVED PROJECT DIRECTOR

APPROVED MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH
SPECIAL PROJECTS OFFICE
DATE:

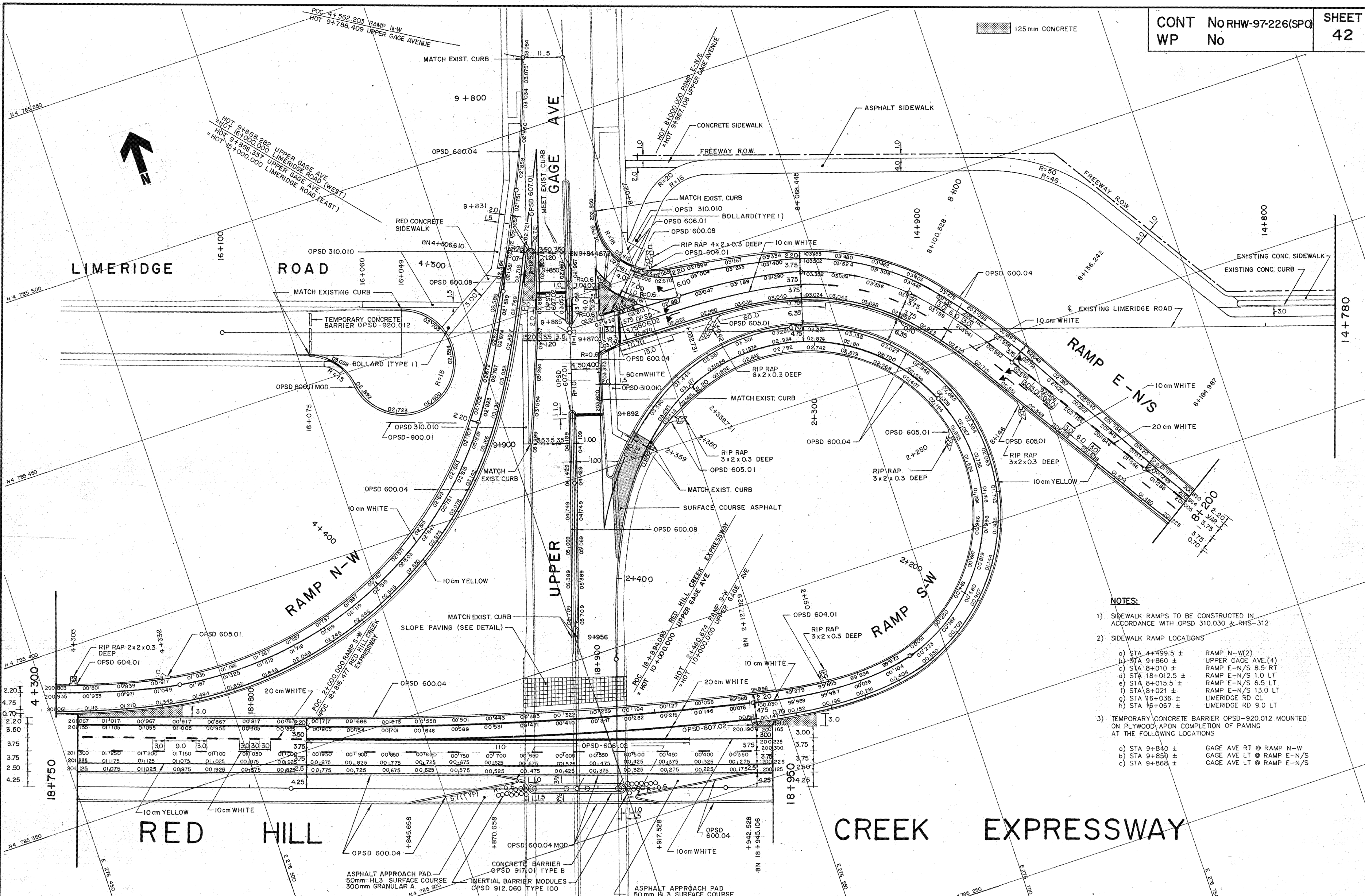
RED HILL CREEK EXPRESSWAY PAVING CONTRACT

PAVING / CONSTRUCTION DETAILS

SCALE: 0 5 10 20

HAM0062769_0001

CONT	No RHW-97-226(SPO)	SHEET
WP	No	42



NOTES:

1) SIDEWALK RAMPS TO BE CONSTRUCTED IN ACCORDANCE WITH OPSD 310.030 & RHS-312

2) SIDEWALK RAMP LOCATIONS

a)	STA 4+499.5 ±	RAMP N-W(2)
b)	STA 9+860 ±	UPPER GAGE AVE.(4)
c)	STA 8+010 ±	RAMP E-N/S 8.5 RT
d)	STA 18+012.5 ±	RAMP E-N/S 1.0 LT
e)	STA 8+015.5 ±	RAMP E-N/S 6.5 LT
f)	STA 8+021 ±	RAMP E-N/S 13.0 LT
g)	STA 16+036 ±	LIMERIDGE RD CL
h)	STA 16+067 ±	LIMERIDGE RD 9.0 LT

3) TEMPORARY CONCRETE BARRIER OPSD-920.012 MOUNTED ON PLYWOOD APON COMPLETION OF PAVING AT THE FOLLOWING LOCATIONS

a)	STA 9+840 ±	GAGE AVE RT @ RAMP N-W
b)	STA 9+850 ±	GAGE AVE LT @ RAMP E-N/S
c)	STA 9+868 ±	GAGE AVE LT @ RAMP E-N/S

No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

PARKER CONSULTANTS

DESIGNED BY: D.A.Y. DRAWN BY: J.A.S. CHECKED BY: D.A.Y.

REGISTERED PROFESSIONAL ENGINEER F. E. WILSON PROVINCE OF ONTARIO

APPROVED — PROJECT DIRECTOR

APPROVED — MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

SPECIAL PROJECTS OFFICE

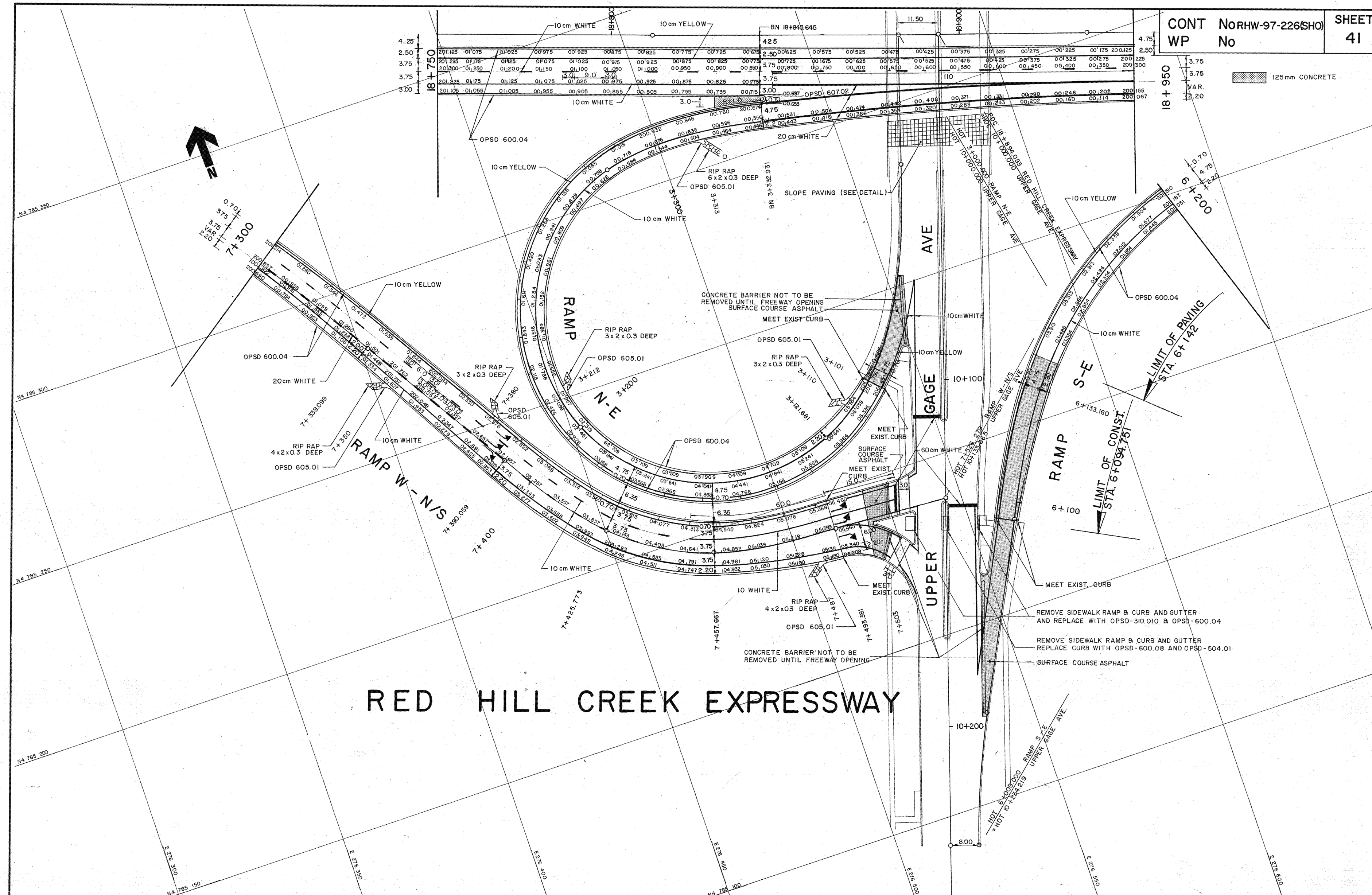
DATE:

RED HILL CREEK EXPRESSWAY
PAVING CONTRACT

PAVING / CONSTRUCTION DETAILS

SCALE: 0 5 10 20

HAM0062769_0001



No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

PARKER CONSULTANTS

DESIGNED BY: D.A.Y DRAWN BY: J.A.S CHECKED BY: D.A.Y

REGISTERED PROFESSIONAL ENGINEER F. E. WILSON PROVINCE OF ONTARIO

APPROVED PROJECT DIRECTOR

APPROVED MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON - WENTWORTH

SPECIAL PROJECTS OFFICE

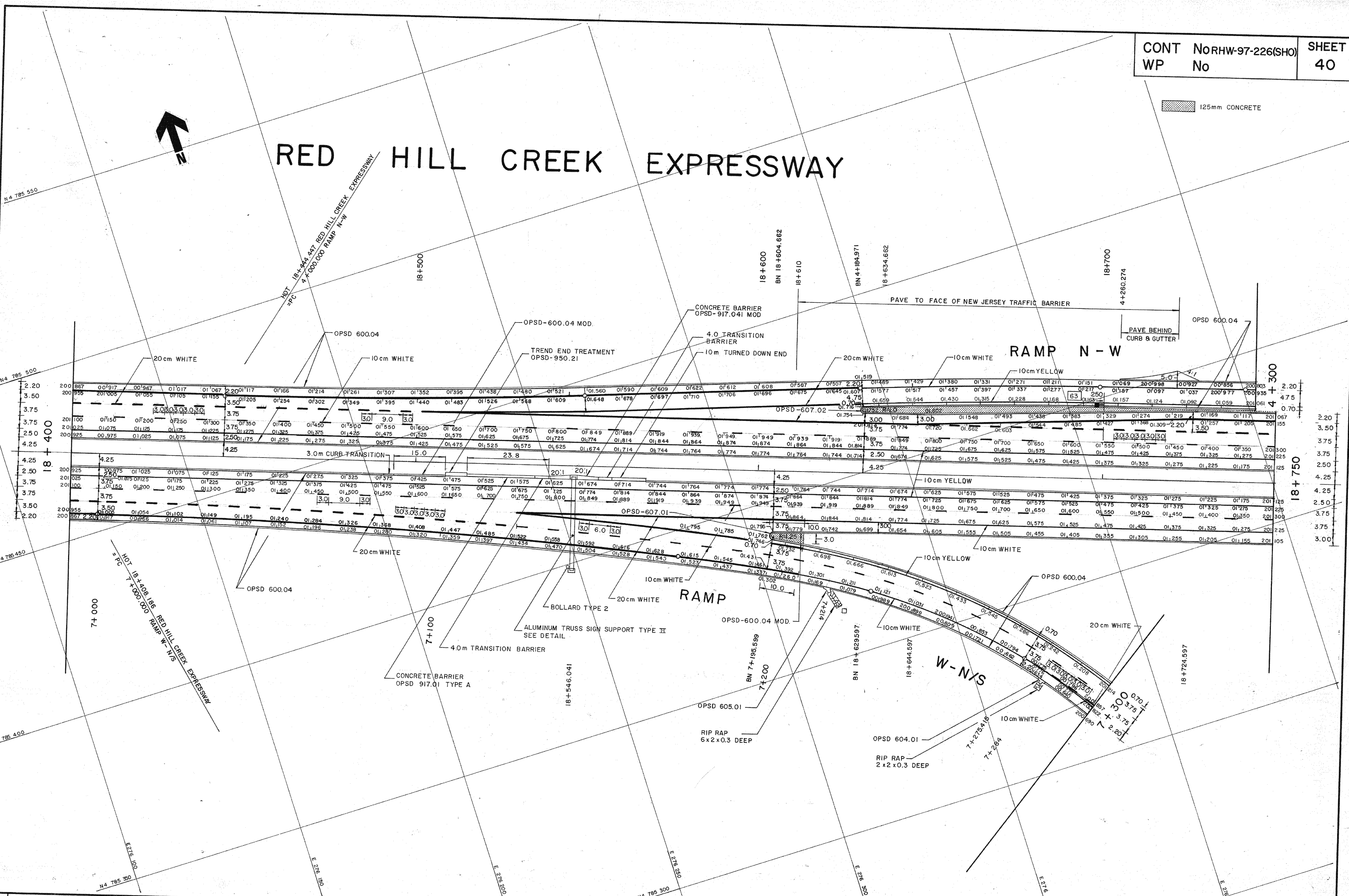
DATE:

RED HILL CREEK EXPRESSWAY
PAVING CONTRACT

PAVING / CONSTRUCTION DETAILS

SCALE: 0 5 10 20

HAM0062769_0001



No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

PARKER CONSULTANTS

DESIGNED BY: D.A.Y. DRAWN BY: J.A.S. CHECKED BY: D.A.Y.

REGISTERED PROFESSIONAL ENGINEER F. E. WILSON PROVINCE OF ONTARIO 16/07/97

APPROVED — PROJECT DIRECTOR

APPROVED — MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

SPECIAL PROJECTS OFFICE

DATE:

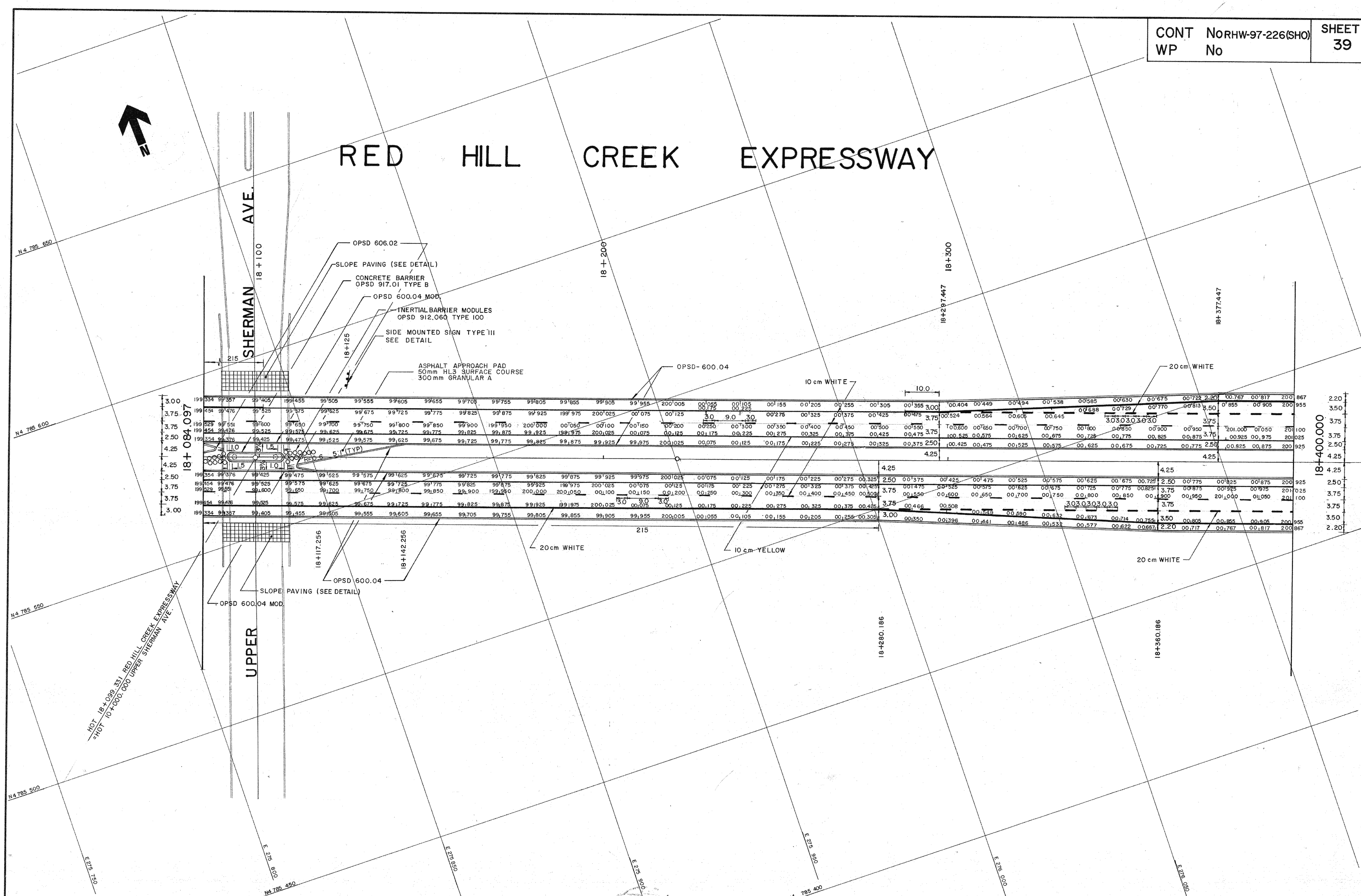
RED HILL CREEK EXPRESSWAY
PAVING CONTRACT

PAVING / CONSTRUCTION DETAILS

SCALE: 0 5 10 20

HAM0062769_0001

CONT	No RHW-97-226(SHO)	SHEET
WP	No	39



No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

PARKER CONSULTANTS

DESIGNED BY: D.A.Y | DRAWN BY: J.A.S | CHECKED BY: D.A.Y

REGISTERED PROFESSIONAL ENGINEER F. E. WILSON PROVINCE OF ONTARIO

APPROVED — PROJECT DIRECTOR
APPROVED — MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH
SPECIAL PROJECTS OFFICE
DATE:

RED HILL CREEK EXPRESSWAY
PAVING CONTRACT

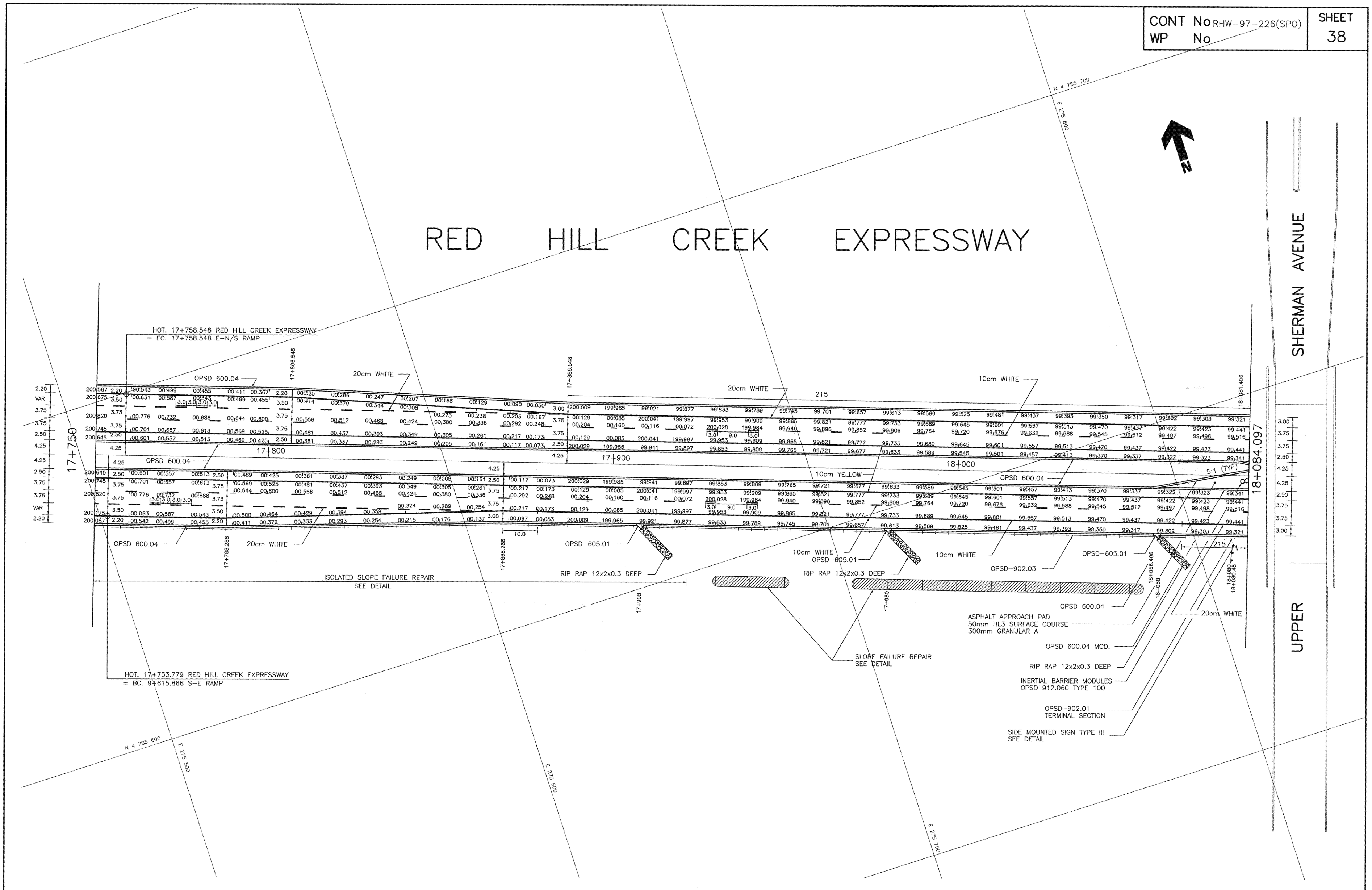
PAVING / CONSTRUCTION DETAILS

SCALE: 0 5 10 20

HAM0062769_0001

CONT No RHW-97-226(SPO)
WP No

SHEET 38



No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

PARKER CONSULTANTS

DESIGNED BY: D.A.Y. | DRAWN BY: D.A.Y. | CHECKED BY: F.E.W.

REGISTERED PROFESSIONAL ENGINEER F. E. WILSON PROVINCE OF ONTARIO

APPROVED — PROJECT DIRECTOR
APPROVED — MANAGER OF ENGINEERING

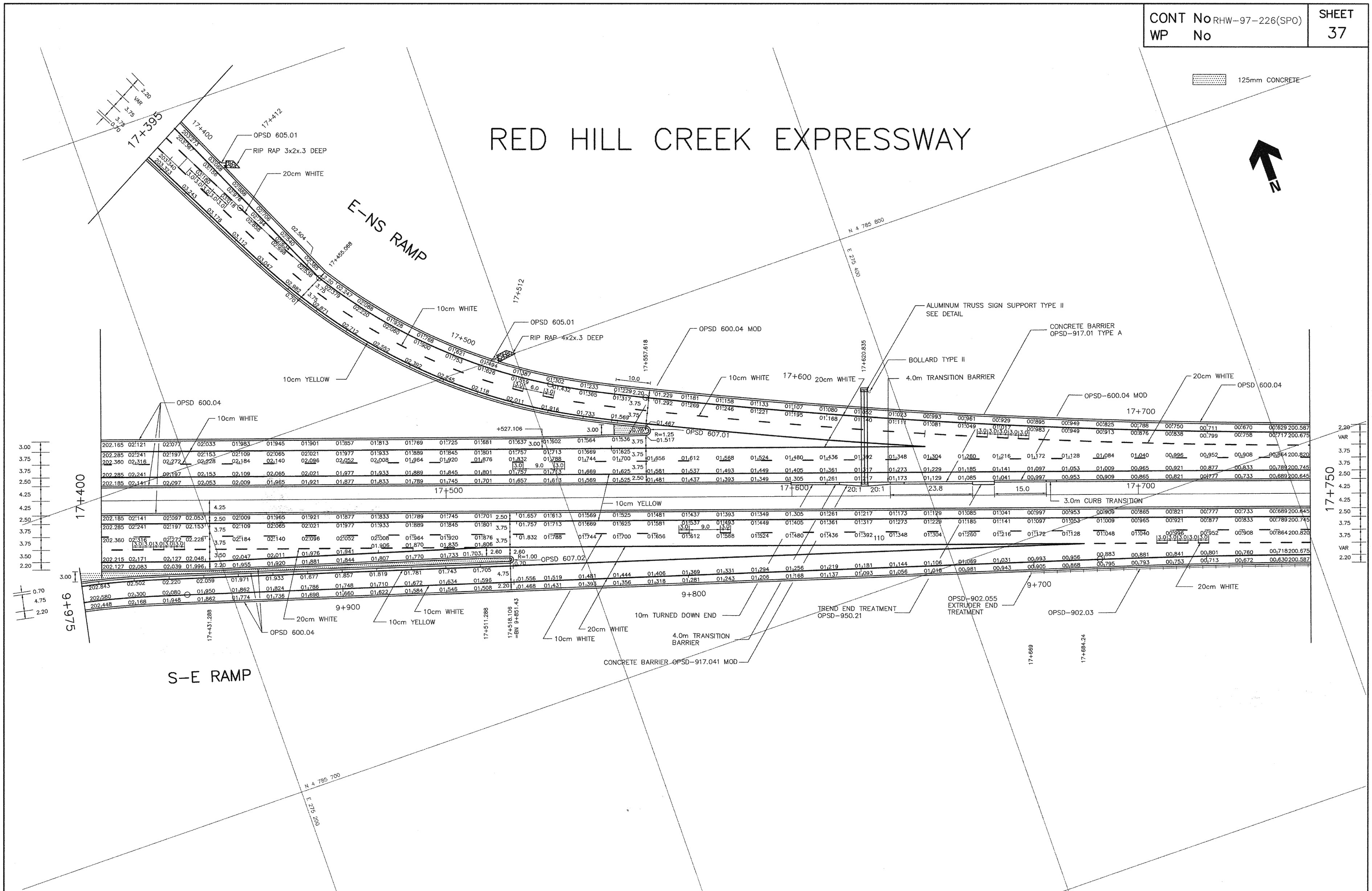
THE REGIONAL MUNICIPALITY OF HAMILTON–WENTWORTH
SPECIAL PROJECTS OFFICE
DATE: MAY 1966

RED HILL CREEK EXPRESSWAY
PAVING CONTRACT
PAVING/CONSTRUCTION DETAILS
SCALE: 0 5 10 15

HAM0062769_0001

CONT No RHW-97-226(SPO)
WP No

SHEET 37



No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

DESIGNED BY: D.A.Y. | DRAWN BY: D.A.Y. | CHECKED BY: F.E.W.

F. E. WILSON — REGISTERED PROFESSIONAL ENGINEER — PROVINCE OF ONTARIO

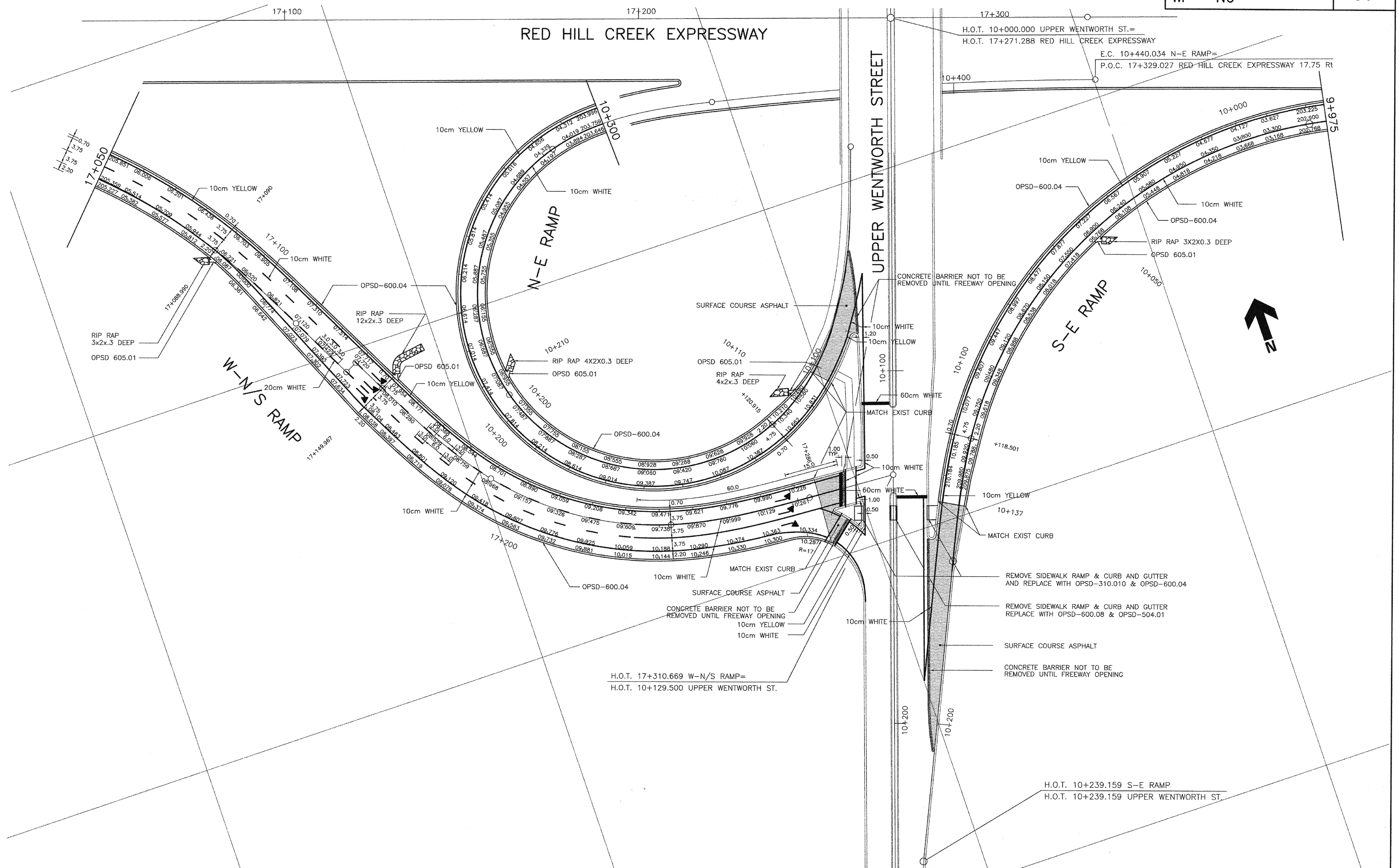
APPROVED — PROJECT DIRECTOR
APPROVED — MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON–WENTWORTH
SPECIAL PROJECTS OFFICE
DATE: MAY 1996

RED HILL CREEK EXPRESSWAY
PAVING CONTRACT
PAVING/CONSTRUCTION DEATAILS
SCALE: HORIZ. 0 5 10 15

HAM0062769_0001

CONT No RHW-97-226(SPO) | SHEET 36
WP No



No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

PARKER CONSULTANTS

DESIGNED BY: D.A.Y. | DRAWN BY: D.A.Y. | CHECKED BY: F.E.W.

REGISTERED PROFESSIONAL ENGINEER F. E. WILSON PROVINCE OF ONTARIO 16/04/97

APPROVED — PROJECT DIRECTOR
APPROVED — MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH
SPECIAL PROJECTS OFFICE
DATE: MAY 1996

RED HILL CREEK EXPRESSWAY
PAVING CONTRACT
PAVING/CONSTRUCTION DETAILS
SCALE:

HAM0062769_0001

CONT No RHW-97-226(SPO)	SHEET
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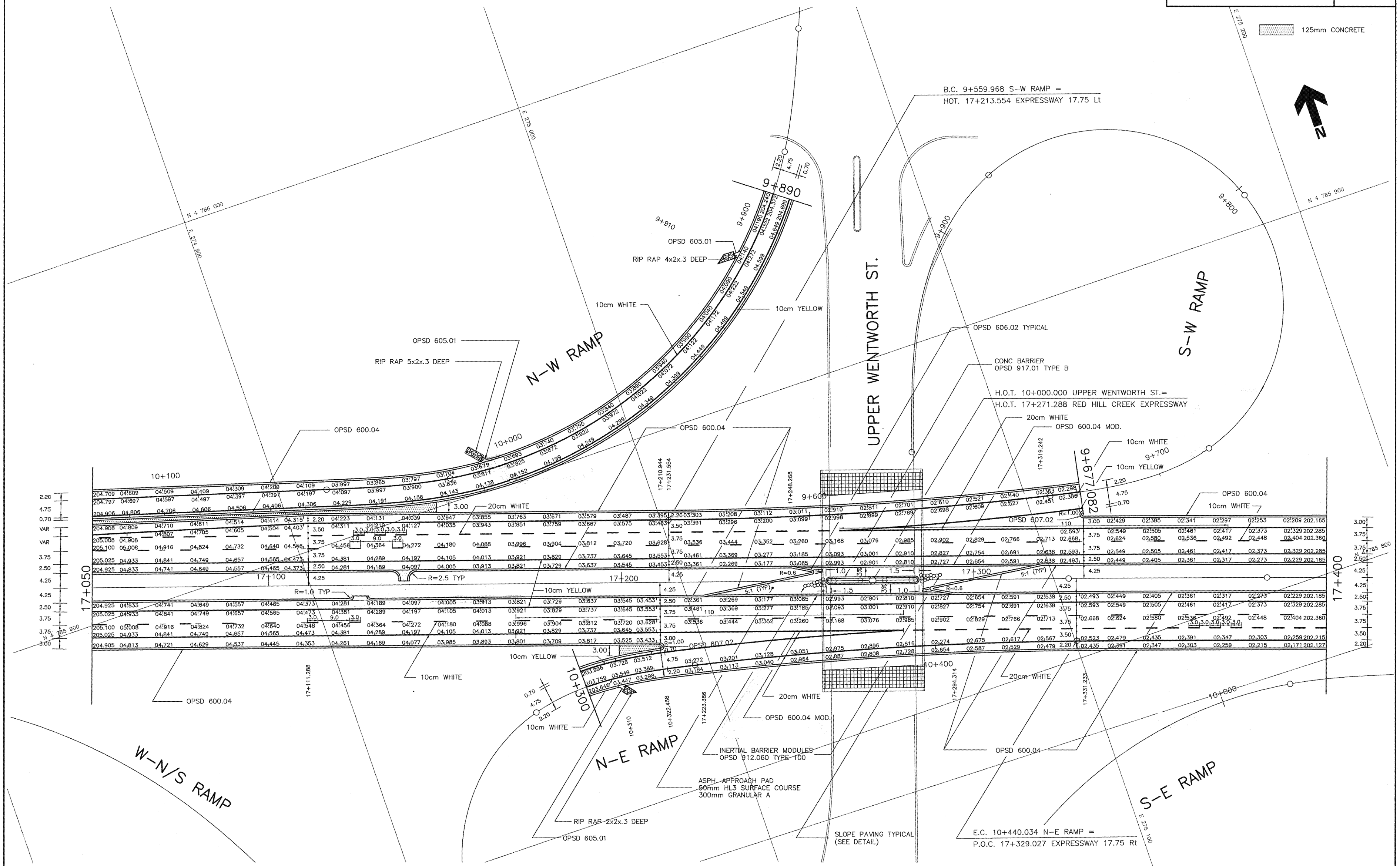


No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

PARKER CONSULTANTS

DESIGNED BY: D.A.Y. | DRAWN BY: D.A.Y. | CHECKED BY: F.E.W.

REGISTERED PROFESSIONAL ENGINEER F. E. WILSON 16/09/97 PROVINCE OF ONTARIO

APPROVED — PROJECT DIRECTOR

APPROVED — MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

SPECIAL PROJECTS OFFICE

DATE: MAY 1996

RED HILL CREEK EXPRESSWAY
PAVING CONTRACT

PAVING/CONSTRUCTION DETAILS

SCALE: 0 5 10 15

HAM0062769_0001

CONT No RHW-97-226(SPO)	SHEET
WP No	34

125mm CONCRETE

NOTES:

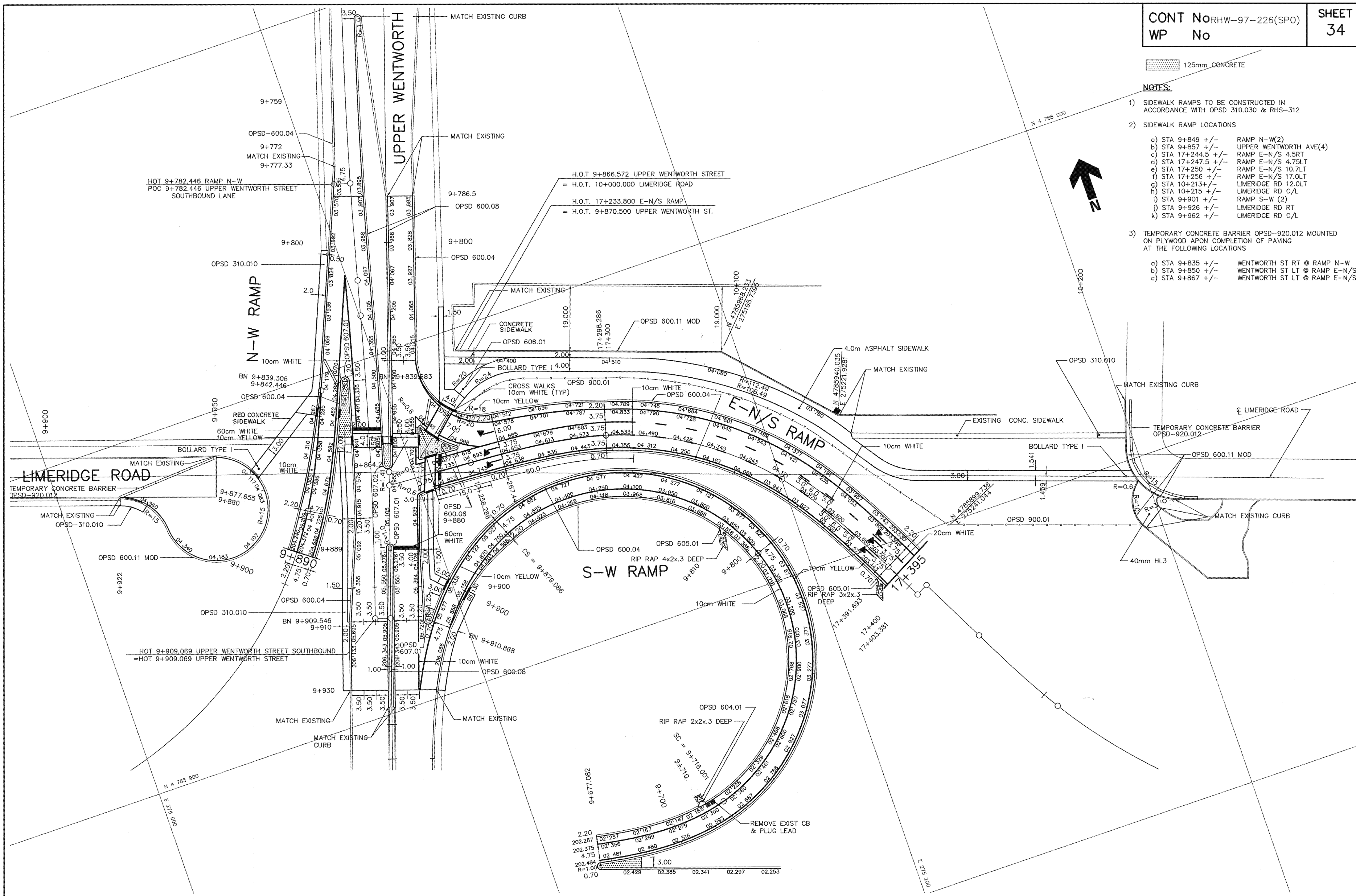
1) SIDEWALK RAMPS TO BE CONSTRUCTED IN ACCORDANCE WITH OPSD 310.030 & RHS-312

2) SIDEWALK RAMP LOCATIONS

a)	STA 9+849 +/-	RAMP N-W(2)
b)	STA 9+857 +/-	UPPER WENTWORTH AVE(4)
c)	STA 17+244.5 +/-	RAMP E-N/S 4.5RT
d)	STA 17+247.5 +/-	RAMP E-N/S 4.75LT
e)	STA 17+250 +/-	RAMP E-N/S 10.7LT
f)	STA 17+256 +/-	RAMP E-N/S 17.0LT
g)	STA 10+213+/-	LIMERIDGE RD 12.0LT
h)	STA 10+215 +/-	LIMERIDGE RD C/L
i)	STA 9+901 +/-	RAMP S-W (2)
j)	STA 9+926 +/-	LIMERIDGE RD RT
k)	STA 9+962 +/-	LIMERIDGE RD C/L

3) TEMPORARY CONCRETE BARRIER OPSD-920.012 MOUNTED ON PLYWOOD APON COMPLETION OF PAVING AT THE FOLLOWING LOCATIONS

a)	STA 9+835 +/-	WENTWORTH ST RT @ RAMP N-W
b)	STA 9+850 +/-	WENTWORTH ST LT @ RAMP E-N/S
c)	STA 9+867 +/-	WENTWORTH ST LT @ RAMP E-N/S



	AS CONSTRUCTED	NOV. 15/97		
1	ISSUED FOR CONSTRUCTION	APR 15/97		
No.	REVISIONS	DATE	INITIAL	

PARKER CONSULTANTS

DESIGNED BY: D.A.Y. | DRAWN BY: D.R.C. | CHECKED BY: F.E.W.

REGISTERED PROFESSIONAL ENGINEER F. E. WILSON 14/04/97 PROVINCE OF ONTARIO

APPROVED — PROJECT DIRECTOR

APPROVED — MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

SPECIAL PROJECTS OFFICE

DATE: JULY 1996

RED HILL CREEK EXPRESSWAY PAVING CONTRACT

PAVING / CONSTRUCTION DETAILS

SCALE:

HAM0062769_0001

CONT No RHW-97-226(SPO)	SHEET
WP No	33

125mm CONCRETE

No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

PARKER CONSULTANTS

DESIGNED BY: D.A.Y. | DRAWN BY: D.A.Y. | CHECKED BY: F.E.W.

REGISTERED PROFESSIONAL ENGINEER F. E. WILSON PROVINCE OF ONTARIO

APPROVED — PROJECT DIRECTOR

APPROVED — MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

SPECIAL PROJECTS OFFICE

DATE: MAY 1996

RED HILL CREEK EXPRESSWAY
PAVING CONTRACT

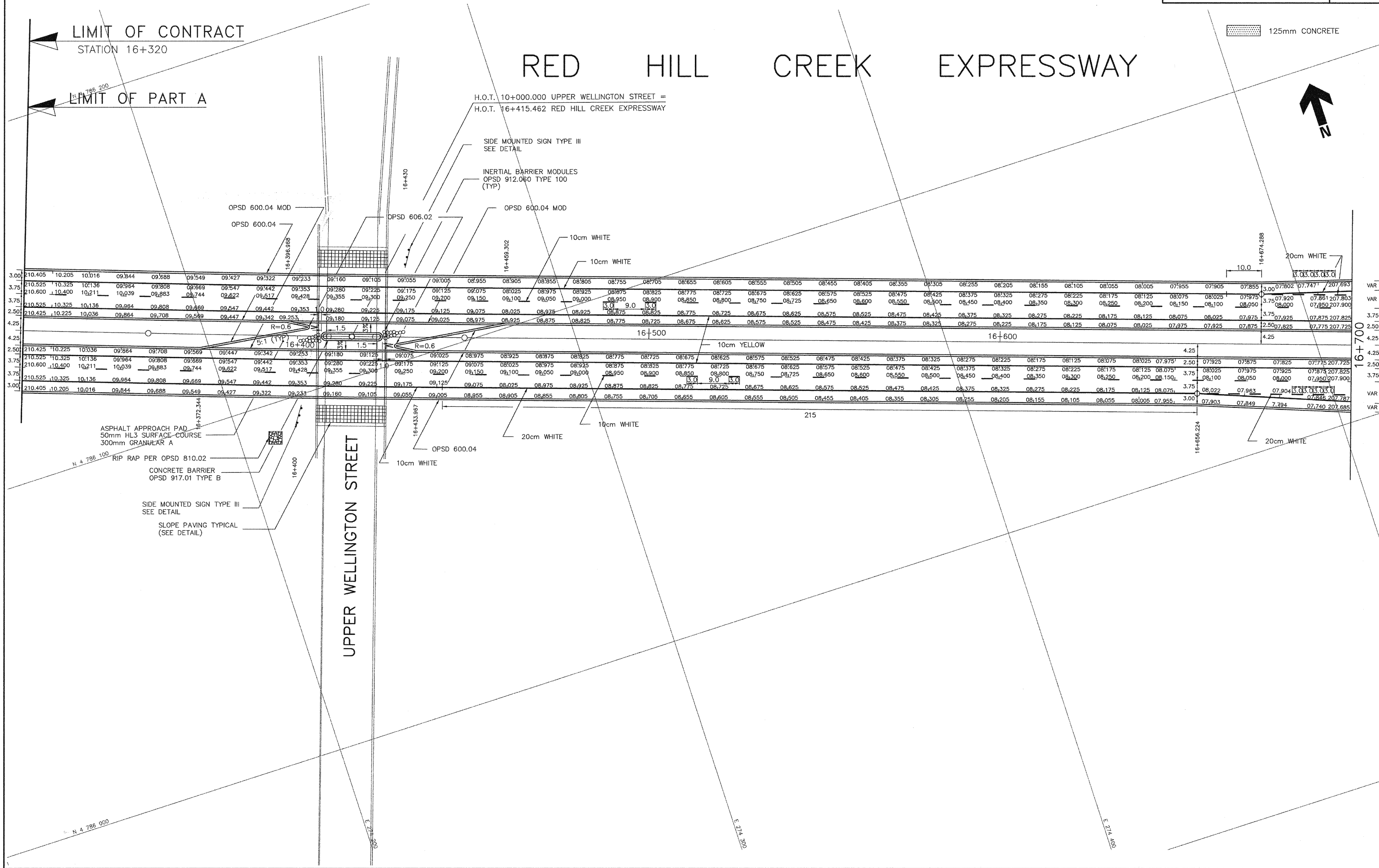
PAVING/CONSTRUCTION DETAILS

SCALE: 0 5 10 15

HAM0062769_0001

CONT No RHW-97-226(SPO)
WP No

SHEET 32



	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	
No.	REVISIONS	DATE	INITIAL

PARKER CONSULTANTS

DESIGNED BY: D.A.Y. | DRAWN BY: D.A.Y. | CHECKED BY: F.E.W.

REGISTERED PROFESSIONAL ENGINEER
F. E. WILSON
16/04/97
PROVINCE OF ONTARIO

APPROVED — PROJECT DIRECTOR

APPROVED — MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

SPECIAL PROJECTS OFFICE

DATE: MAY 1996

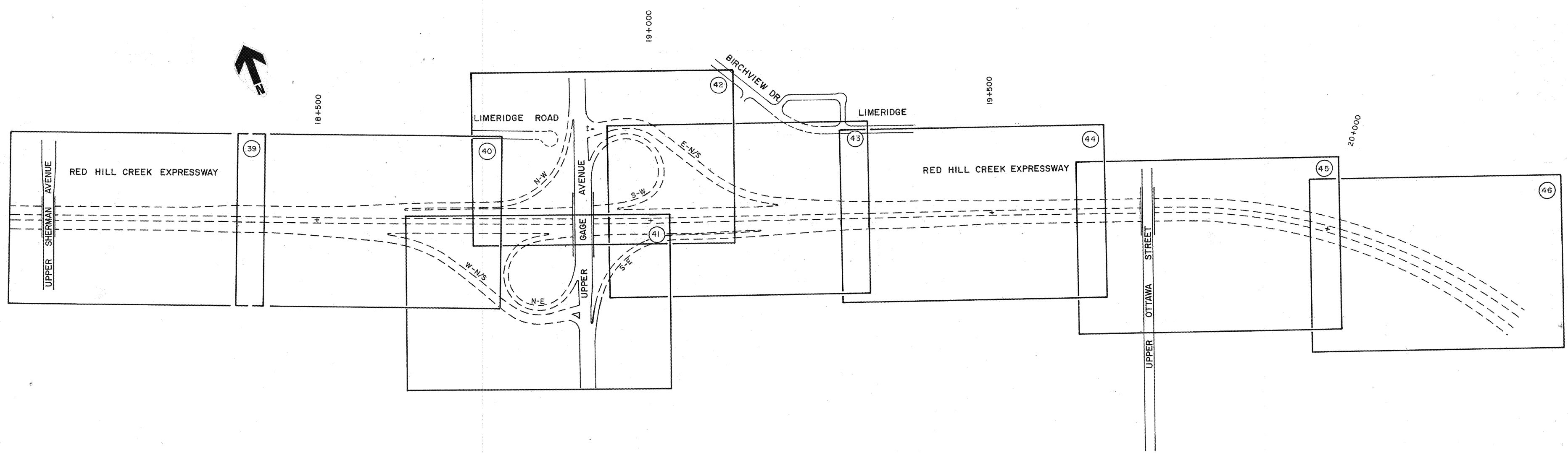
RED HILL CREEK EXPRESSWAY
PAVING CONTRACT

PAVING/CONSTRUCTION DETAILS

SCALE: 0 5 10 15

HAM0062769_0001

CONT No RHW-97-226(SPO)	SHEET
WP No	31



No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

PARKER CONSULTANTS

DESIGNED BY: D.A.Y. | DRAWN BY: P.E.T. | CHECKED BY: D.A.Y.

REGISTERED PROFESSIONAL ENGINEER F. E. WILSON PROVINCE OF ONTARIO 14/04/97

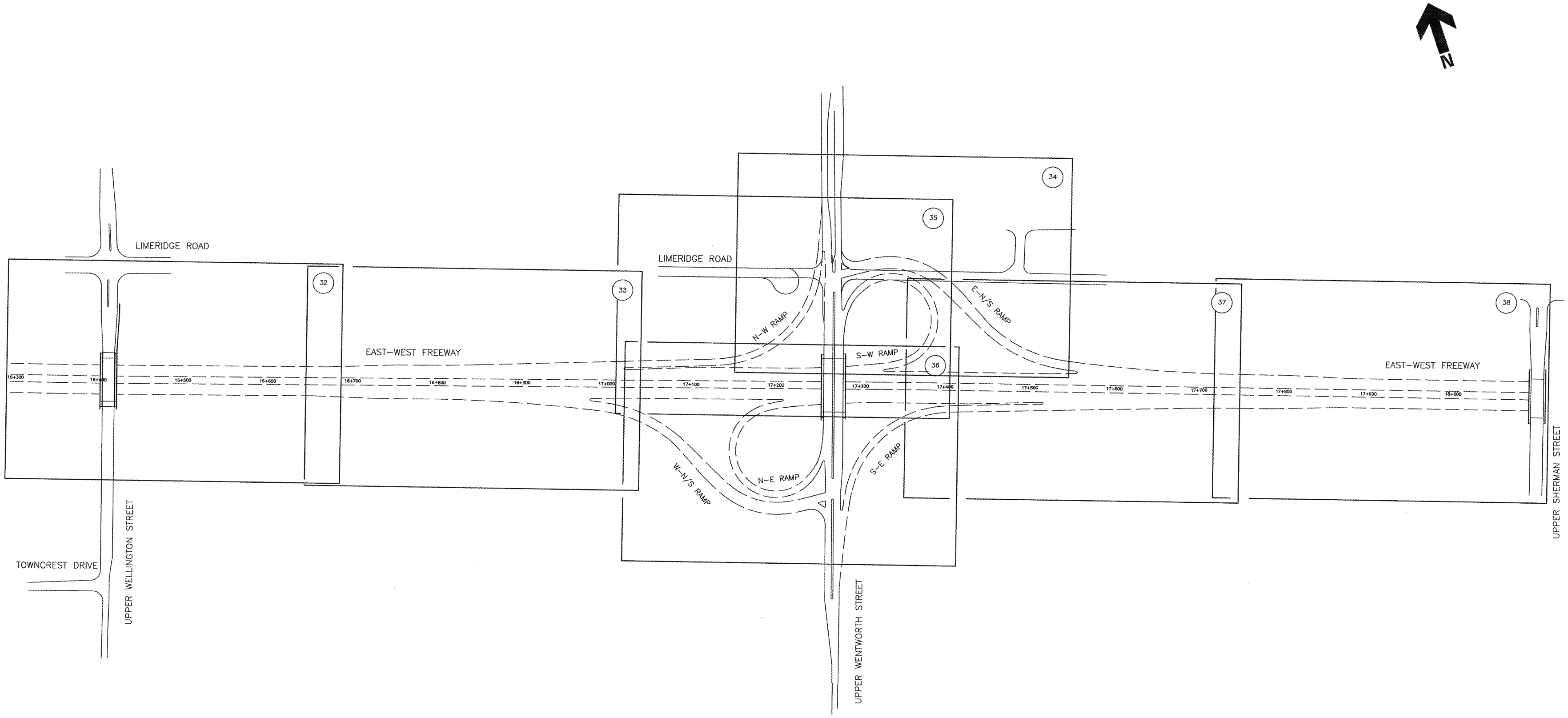
APPROVED PROJECT DIRECTOR | APPROVED MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH
SPECIAL PROJECTS OFFICE
DATE:

RED HILL CREEK EXPRESSWAY
PAVING CONTRACT
SHEET INDEX
PAVING / CONSTRUCTION DETAILS
SCALE: 0 50 100

HAM0062769_0001

CONT No RHW-97-226(SPO)	SHEET
WP No	30



No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

PARKER CONSULTANTS

DESIGNED BY:	DRAWN BY:	CHECKED BY:
D.A.Y.	D.A.Y.	F.E.W.

APPROVED	APPROVED
PROJECT DIRECTOR	MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

SPECIAL PROJECTS OFFICE

DATE: MAY 1996

RED HILL CREEK EXPRESSWAY
PAVING CONTRACT

SHEET INDEX

PAVING/CONSTRUCTION DETAILS

SCALE: 0 25 50 75

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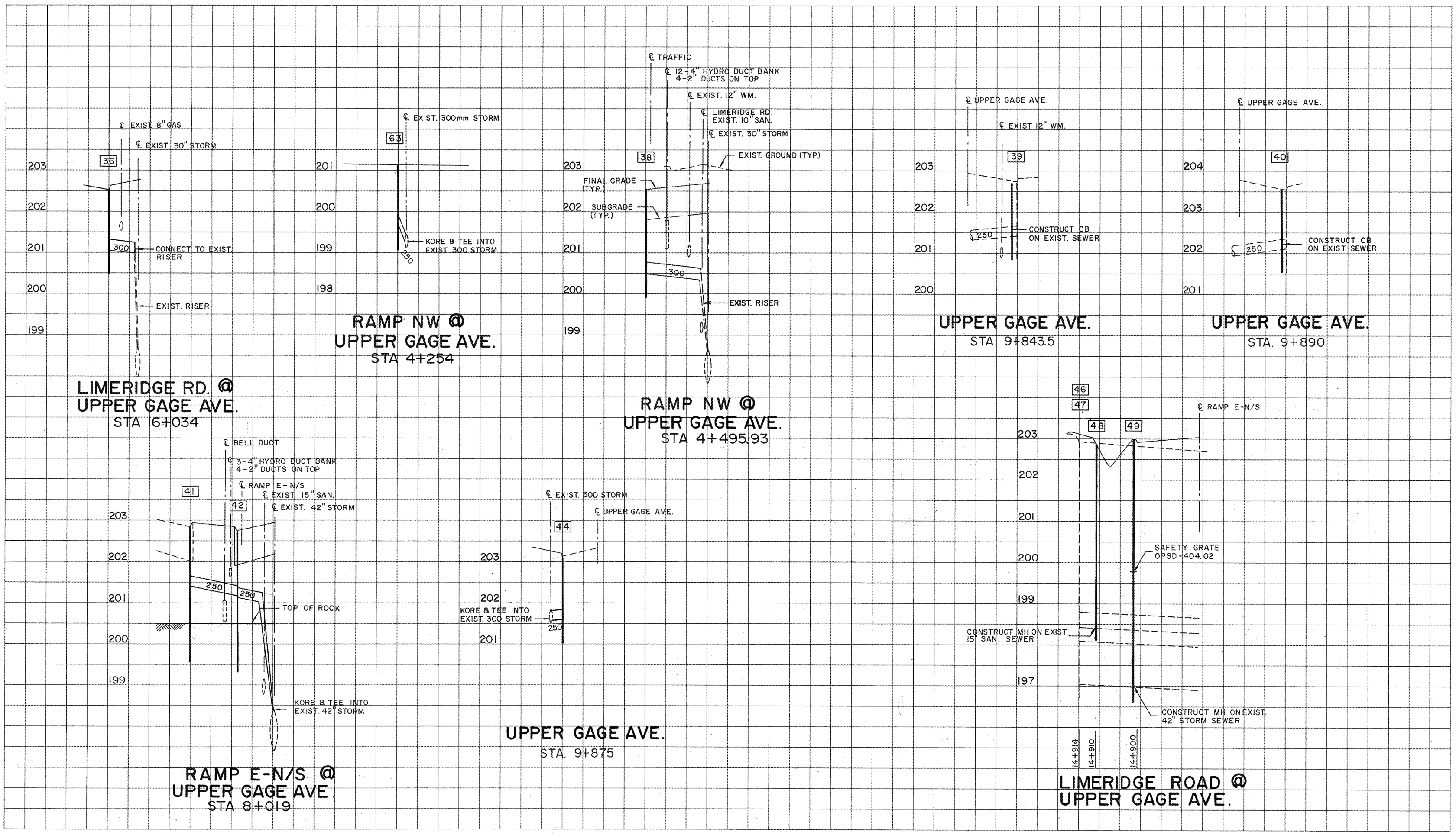
CONT No RHW-97-226(SPO) WP No

SHEET 29

NOTE:

1. LOCATION AND ELEVATION OF UTILITIES SHALL BE CONFIRMED PRIOR TO PLACING DRAINAGE SYSTEMS



No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

PARKER CONSULTANTS

DESIGNED BY: D.A.Y. DRAWN BY: D.A.Y. CHECKED BY: F.E.W.

REGISTERED PROFESSIONAL ENGINEER F. E. WILSON 16/04/97 PROVINCE OF ONTARIO

APPROVED PROJECT DIRECTOR

APPROVED MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

SPECIAL PROJECTS OFFICE

DATE:

RED HILL CREEK EXPRESSWAY PAVING CONTRACT

DRAINAGE PROFILES

SCALE: 0 5 10 20 HOR. 0 0.5 1.0 2.0 VERT.

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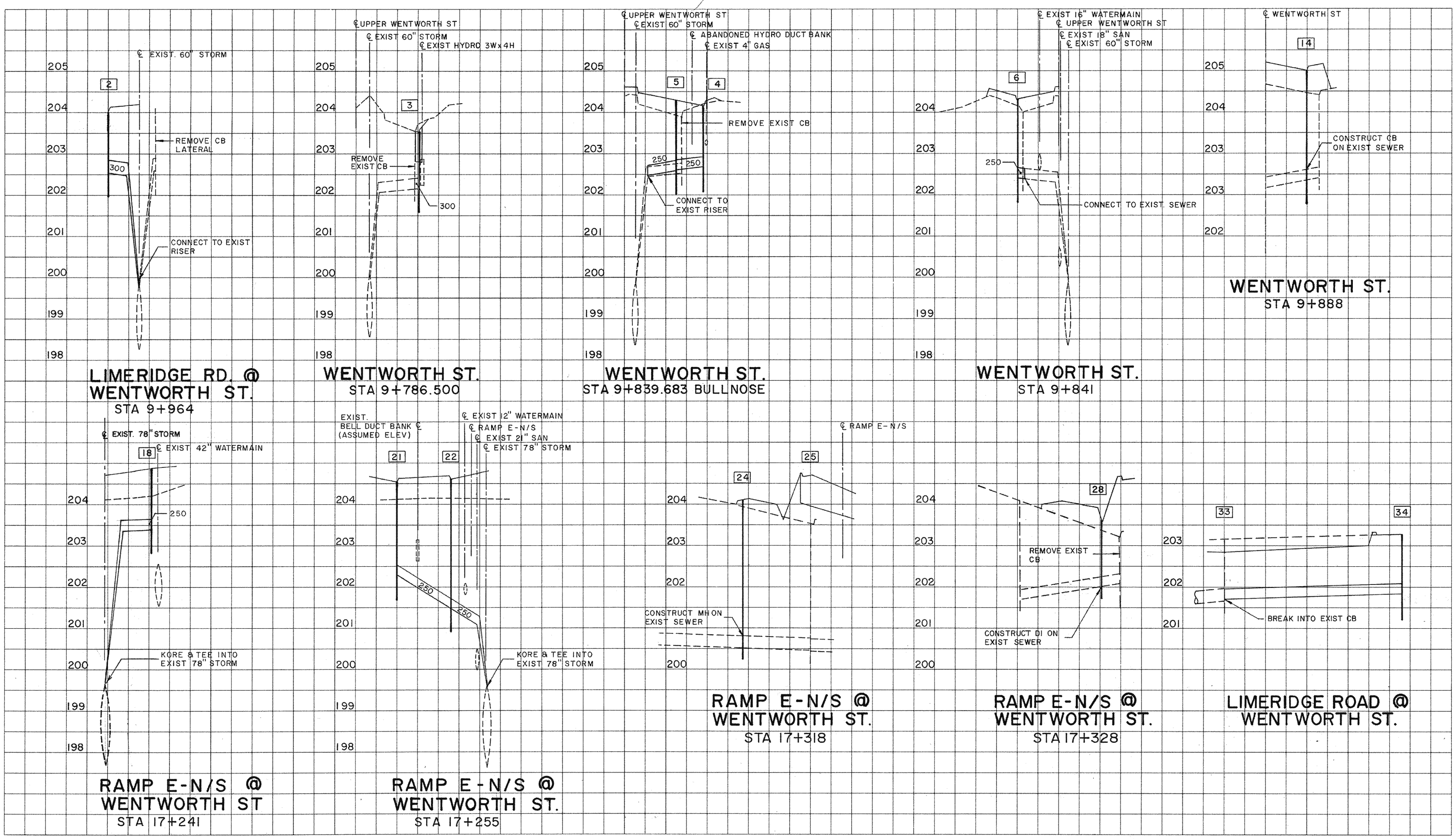
CONT	NoRHW-97-226(SPO)	SHEET
WP	No	28

NOTE:
1. LOCATION AND ELEVATION OF UTILITIES SHALL BE CONFIRMED PRIOR TO PLACING DRAINAGE SYSTEMS



No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

PARKER CONSULTANTS

DESIGNED BY: D.A.Y. | DRAWN BY: D.A.Y. | CHECKED BY: F.E.W.

REGISTERED PROFESSIONAL ENGINEER F. E. WILSON 16/04/97 PROVINCE OF ONTARIO

APPROVED PROJECT DIRECTOR | APPROVED MANAGER OF ENGINEERING | DATE :

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

SPECIAL PROJECTS OFFICE

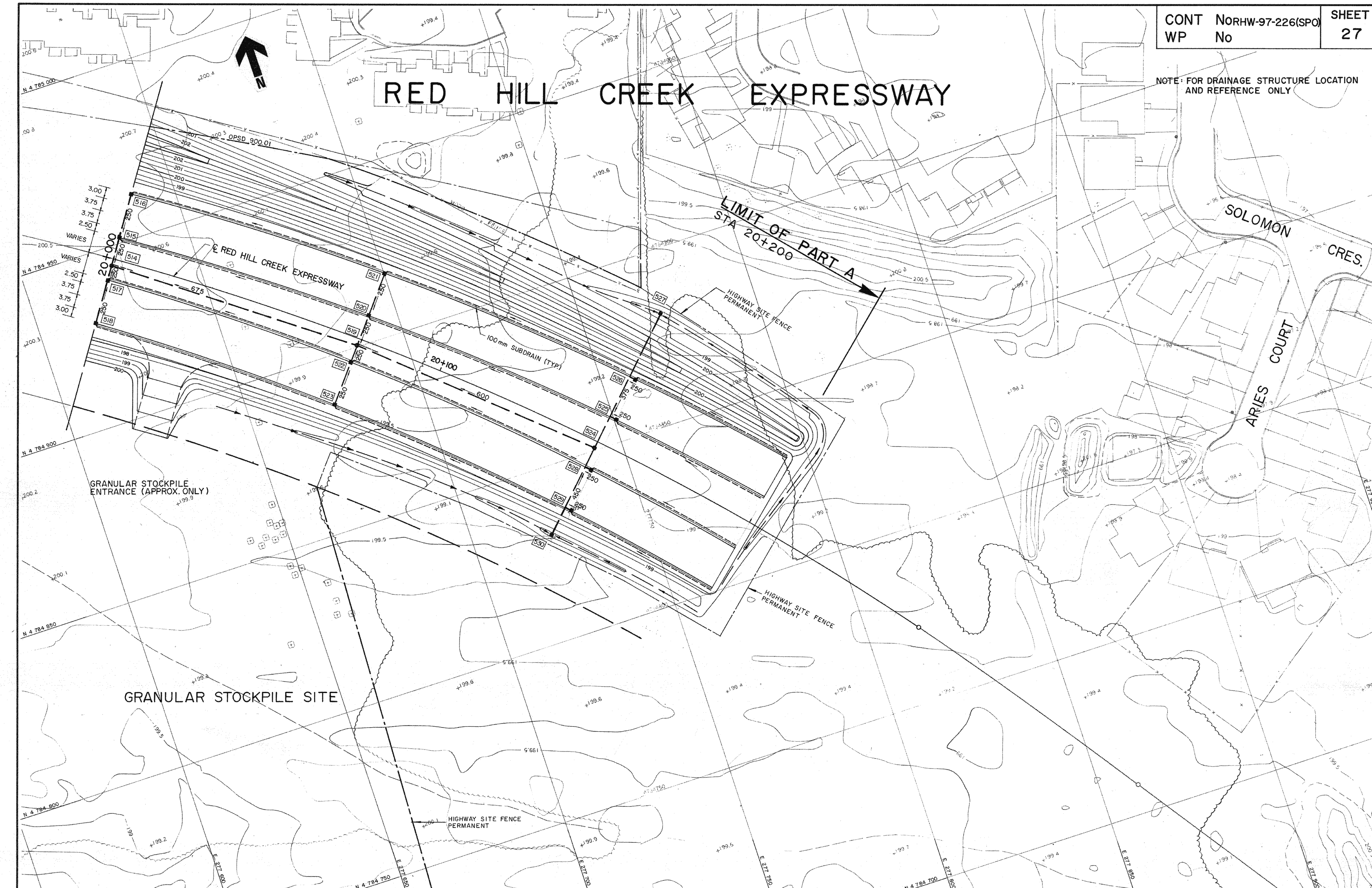
RED HILL CREEK EXPRESSWAY PAVING CONTRACT

DRAINAGE PROFILE

SCALE : 0 5 10 20 HOR. 0 5 10 20 VERT.

HAM0062769_0001

CONT No RHW-97-226(SPO)	SHEET
WP No	27



No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

PARKER CONSULTANTS

DESIGNED BY: D.A.Y. | DRAWN BY: P.V.F. | CHECKED BY: J.P.

REGISTERED PROFESSIONAL ENGINEER F. E. WILSON PROVINCE OF ONTARIO

APPROVED — PROJECT DIRECTOR

APPROVED — MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

SPECIAL PROJECTS OFFICE

DATE: JANUARY, 1994

RED HILL CREEK EXPRESSWAY PAVING CONTRACT

GRADING AND DRAINAGE

SCALE: 0 5 10 20

HAM0062769_0001

CONT	No RHW-97-226(SPO)	SHEET
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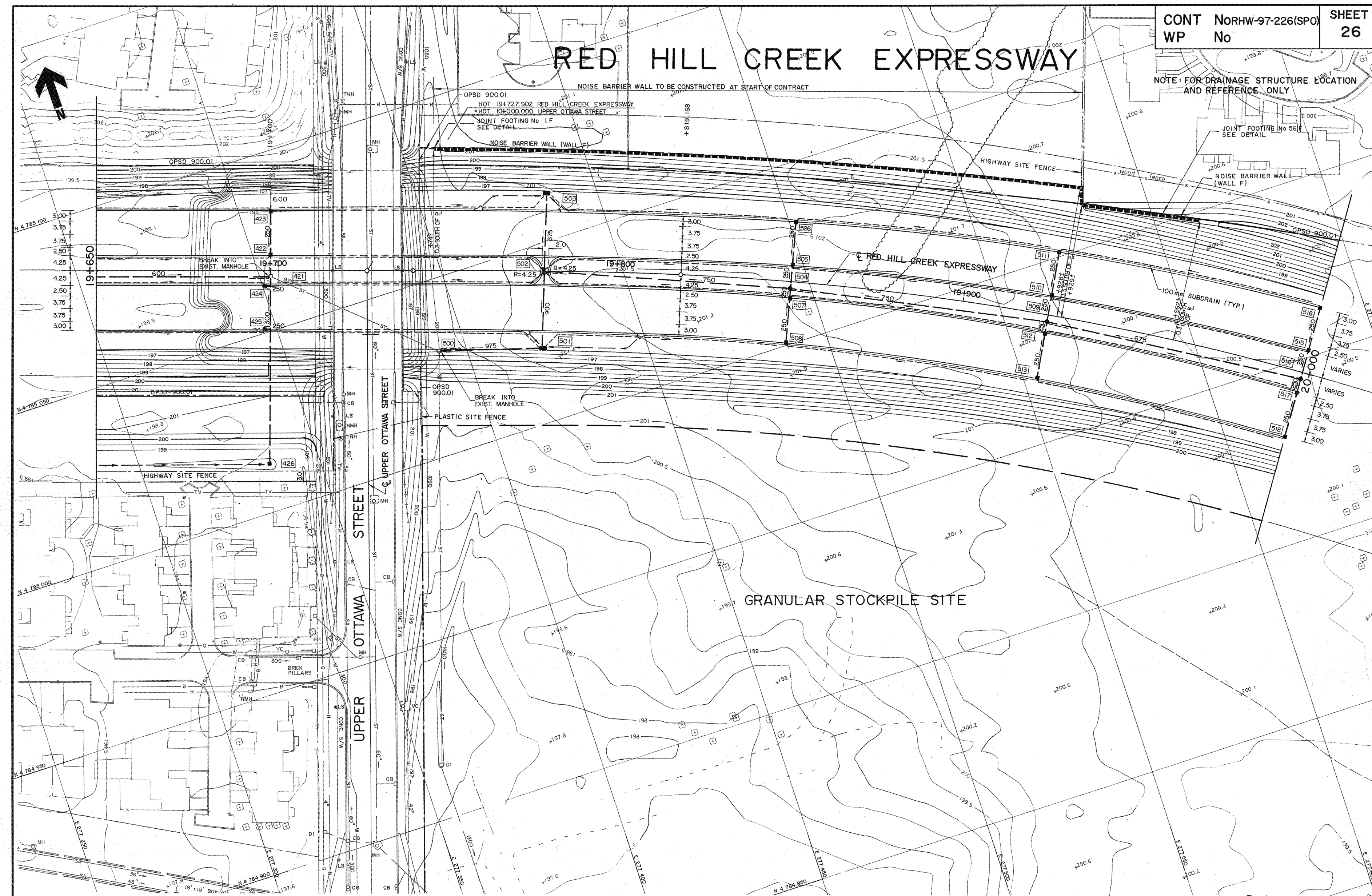


No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

PARKER CONSULTANTS

DESIGNED BY: D.A.Y. | DRAWN BY: P.V.F. | CHECKED BY: J.P.

REGISTERED PROFESSIONAL ENGINEER F. E. WILSON PROVINCE OF ONTARIO

APPROVED — PROJECT DIRECTOR
APPROVED — MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH
SPECIAL PROJECTS OFFICE
DATE: JANUARY, 1994

RED HILL CREEK EXPRESSWAY
PAVING CONTRACT
GRADING AND DRAINAGE
SCALE: 0 5 10 20

HAM0062769_0001

CONT No RHW-97-226(SPO)
WP No
SHEET 25

No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

PARKER CONSULTANTS

DESIGNED BY: D.A.Y. DRAWN BY: P.V.F. CHECKED BY: J.P.

REGISTERED PROFESSIONAL ENGINEER — F. E. WILSON — PROVINCE OF ONTARIO

APPROVED — PROJECT DIRECTOR

APPROVED — MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

SPECIAL PROJECTS OFFICE

DATE: JANUARY, 1994

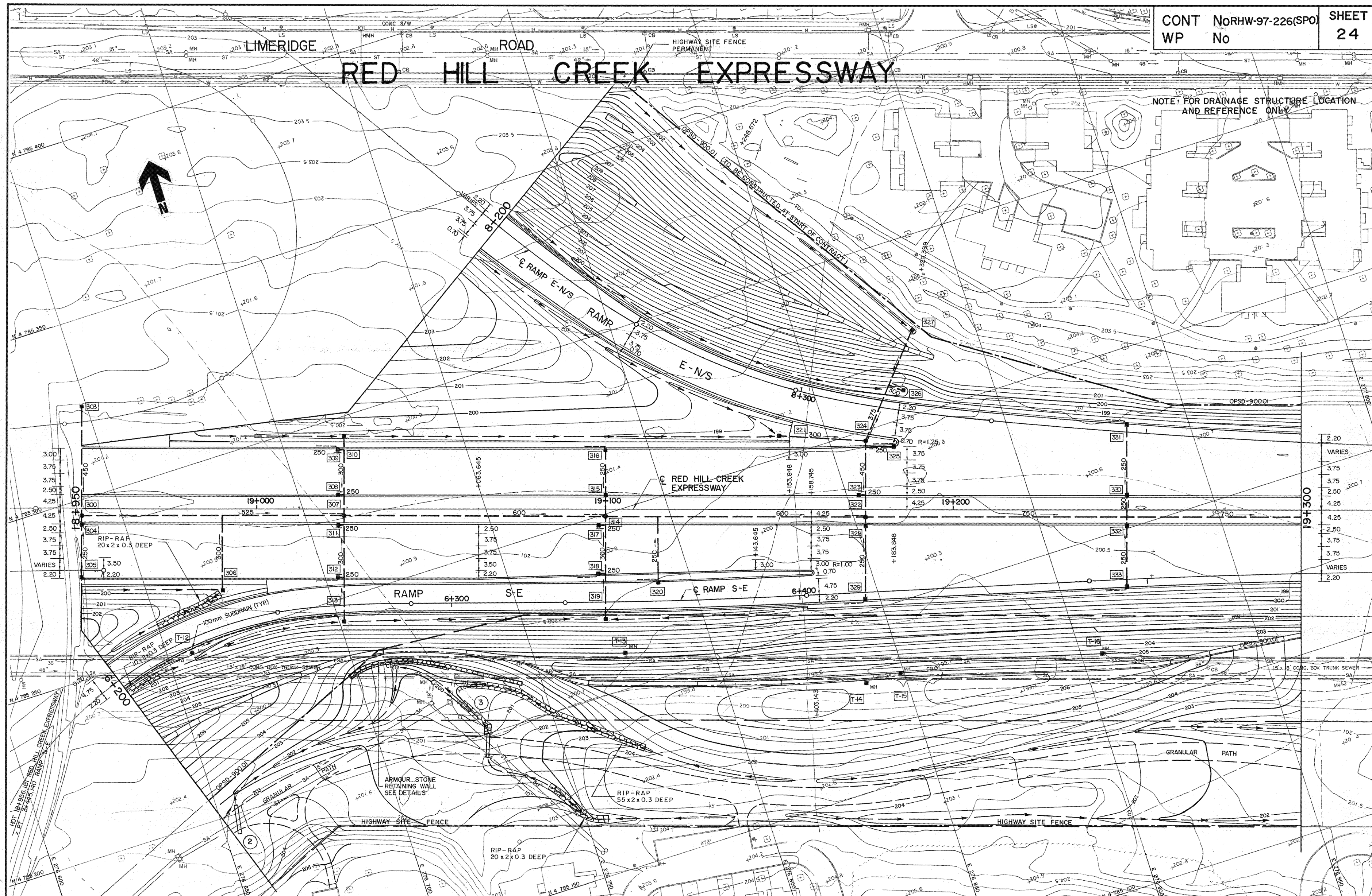
RED HILL CREEK EXPRESSWAY PAVING CONTRACT

GRADING AND DRAINAGE

SCALE: 0 5 10 20

HAM0062769_0001

CONT No RHW-97-226(SPO) SHEET 24
WP No



	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	
No.	REVISIONS	DATE	INITIAL

DESIGNED BY: D.A.Y. DRAWN BY: P.V.F. CHECKED BY: J.P.

PARKER CONSULTANTS

F. E. WILSON — REGISTERED PROFESSIONAL ENGINEER — PROVINCE OF ONTARIO

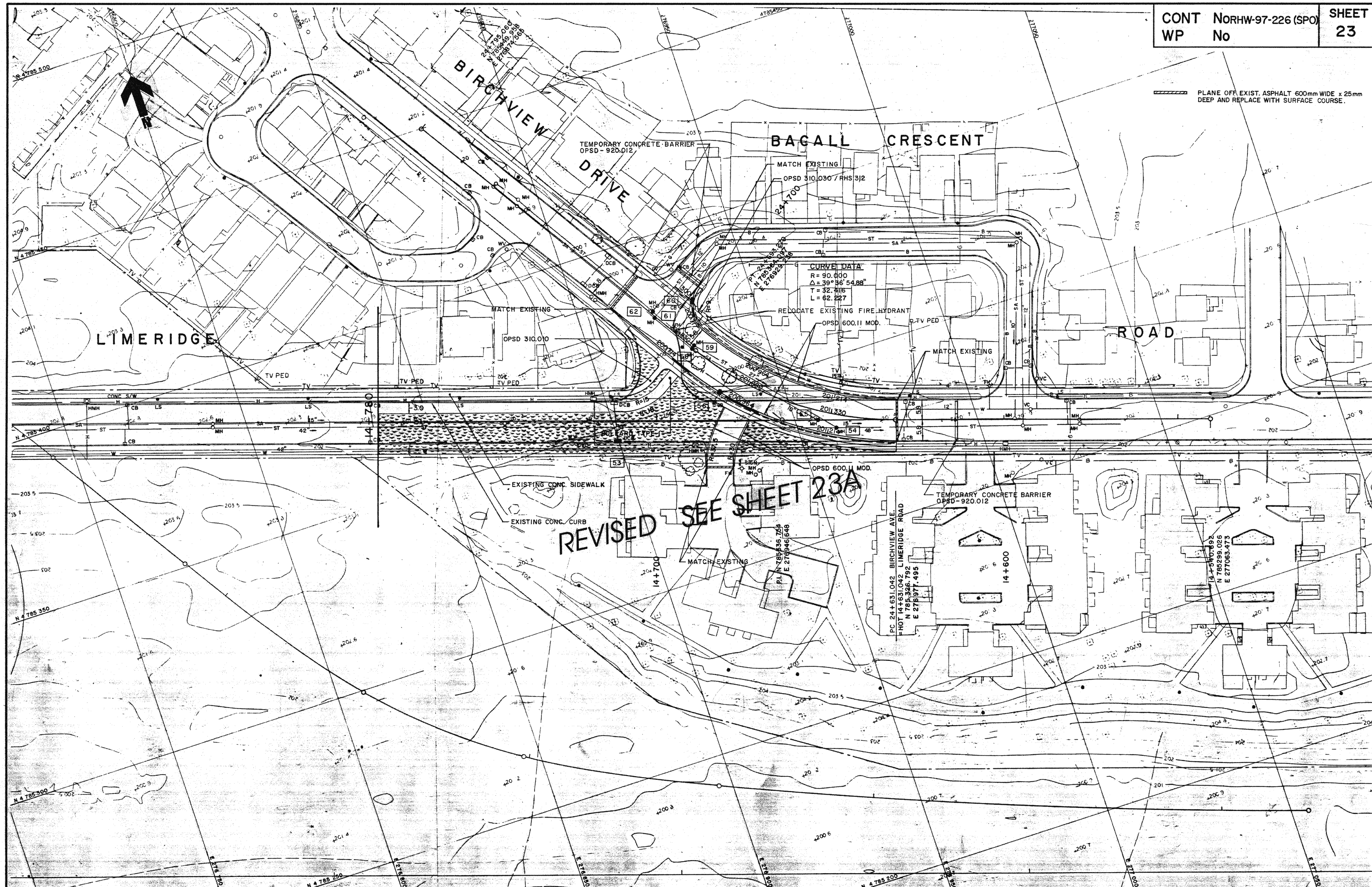
APPROVED — PROJECT DIRECTOR
APPROVED — MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH
SPECIAL PROJECTS OFFICE
DATE: JANUARY, 1994

RED HILL CREEK EXPRESSWAY
PAVING CONTRACT
GRADING AND DRAINAGE
SCALE: 0 5 10 20

HAM0062769_0001

CONT	NORHW-97-226 (SPO)	SHEET
WP	No	23



No.	REVISIONS	DATE	INITIAL
	REVISED SEE SHEET 23A		
1	ISSUED FOR CONSTRUCTION	APR 15/97	

DESIGNED BY: D.A.Y. DRAWN BY: D.A.Y. CHECKED BY: F.E.W.

PARKER CONSULTANTS

REGISTERED PROFESSIONAL ENGINEER F. E. WILSON 16/04/97 PROVINCE OF ONTARIO

APPROVED — PROJECT DIRECTOR

APPROVED — MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

SPECIAL PROJECTS OFFICE

DATE:

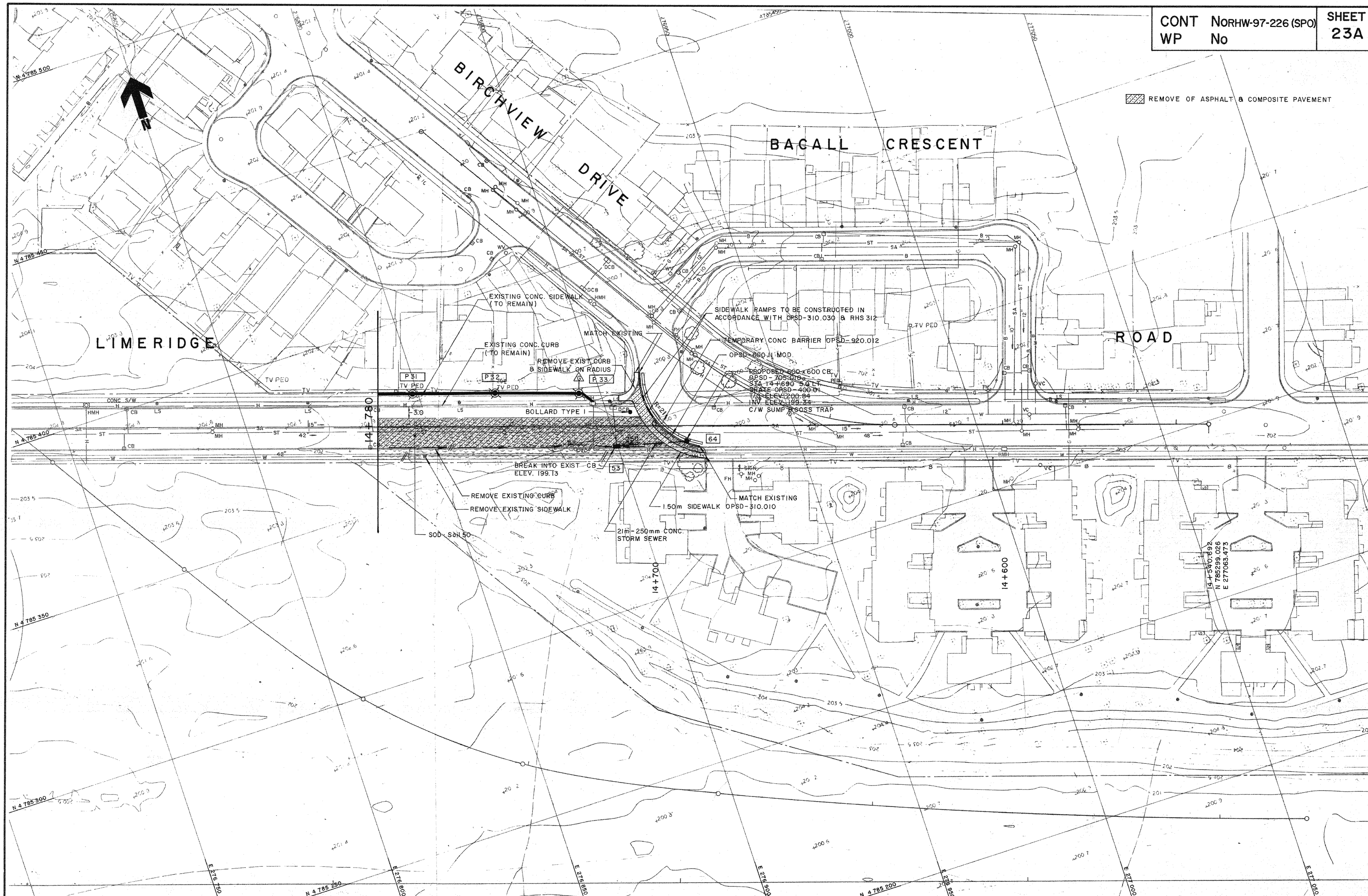
RED HILL CREEK EXPRESSWAY
PAVING CONTRACT

GRADING AND DRAINAGE

SCALE: 0 5 10 20

HAM0062769_0001

CONT	NORHW-97-226 (SPO)	SHEET
WP	No	23A



No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

PARKER CONSULTANTS

DESIGNED BY: D.A.Y. | DRAWN BY: D.A.Y. | CHECKED BY: F.E.W.

REGISTERED PROFESSIONAL ENGINEER F. E. WILSON PROVINCE OF ONTARIO

APPROVED — PROJECT DIRECTOR

APPROVED — MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

SPECIAL PROJECTS OFFICE

DATE :

RED HILL CREEK EXPRESSWAY PAVING CONTRACT

CONSTRUCTION DRAWING

SCALE : 0 5 10 20

HAM0062769_0001

	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	
No.	REVISIONS	DATE	INITIAL

DESIGNED BY: D.A.Y. | DRAWN BY: D.A.Y. | CHECKED BY: F.E.W.

PARKER CONSULTANTS

REGISTERED PROFESSIONAL ENGINEER — F. E. WILSON — PROVINCE OF ONTARIO

APPROVED — PROJECT DIRECTOR

APPROVED — MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

SPECIAL PROJECTS OFFICE

DATE:

RED HILL CREEK EXPRESSWAY
PAVING CONTRACT

GRADING AND DRAINAGE

SCALE: 0 5 10 20

HAM0062769_0001

No.	REVISIONS	DATE	INITIAL
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PARKER CONSULTANTS

DESIGNED BY: D.A.Y. DRAWN BY: P.V.F. CHECKED BY: J.P.

F. E. WILSON — REGISTERED PROFESSIONAL ENGINEER — PROVINCE OF ONTARIO

APPROVED — PROJECT DIRECTOR

APPROVED — MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

SPECIAL PROJECTS OFFICE

DATE: JANUARY, 1994

RED HILL CREEK EXPRESSWAY PAVING CONTRACT

GRADING AND DRAINAGE

SCALE: 0 5 10 20

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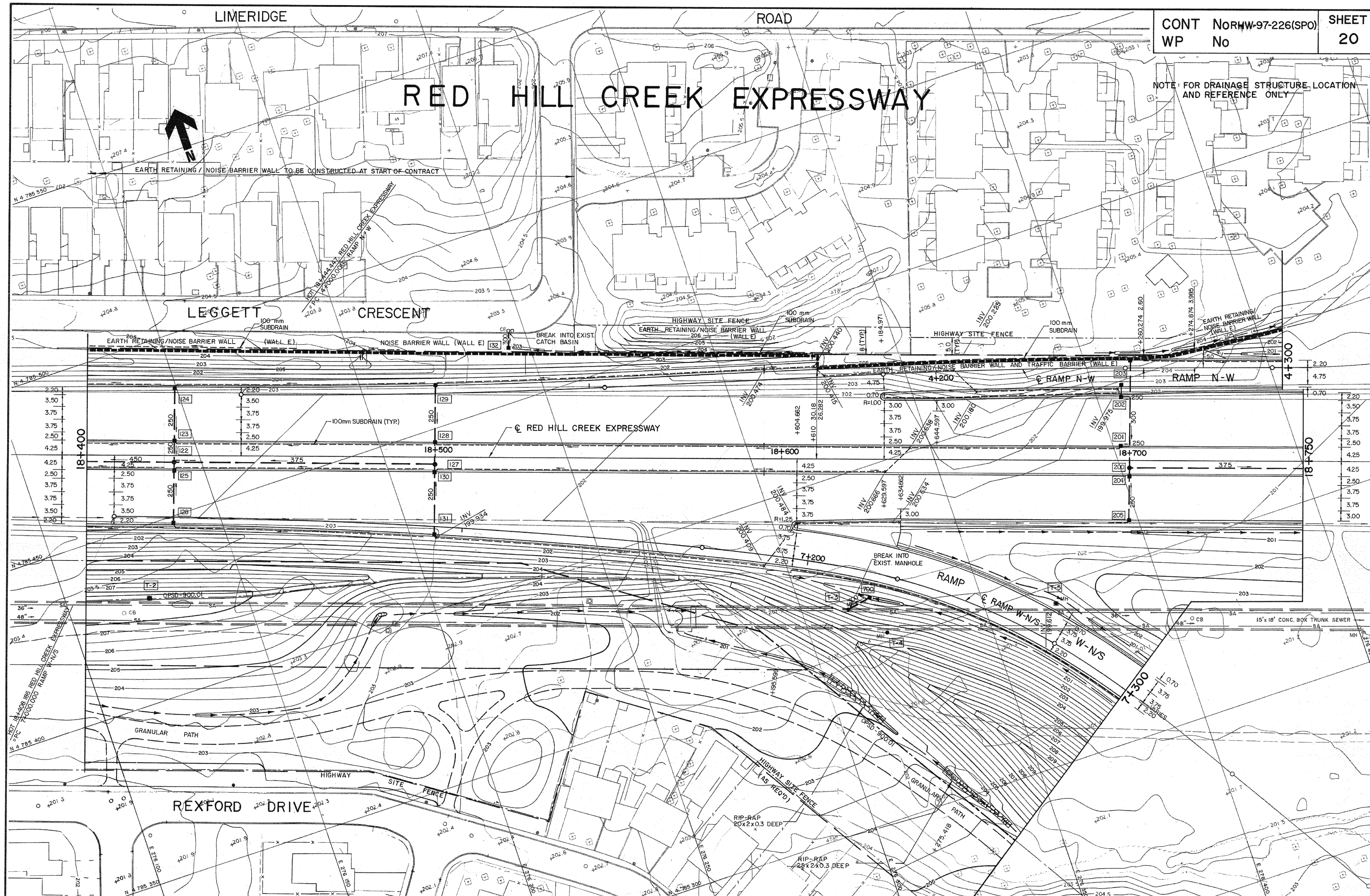


	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	
No.	REVISIONS	DATE	INITIAL

CONT No RHW-97-226(SPO)
WP No
SHEET 20

PARKER CONSULTANTS

DESIGNED BY: D.A.Y. DRAWN BY: P.V.F. CHECKED BY: J.P.

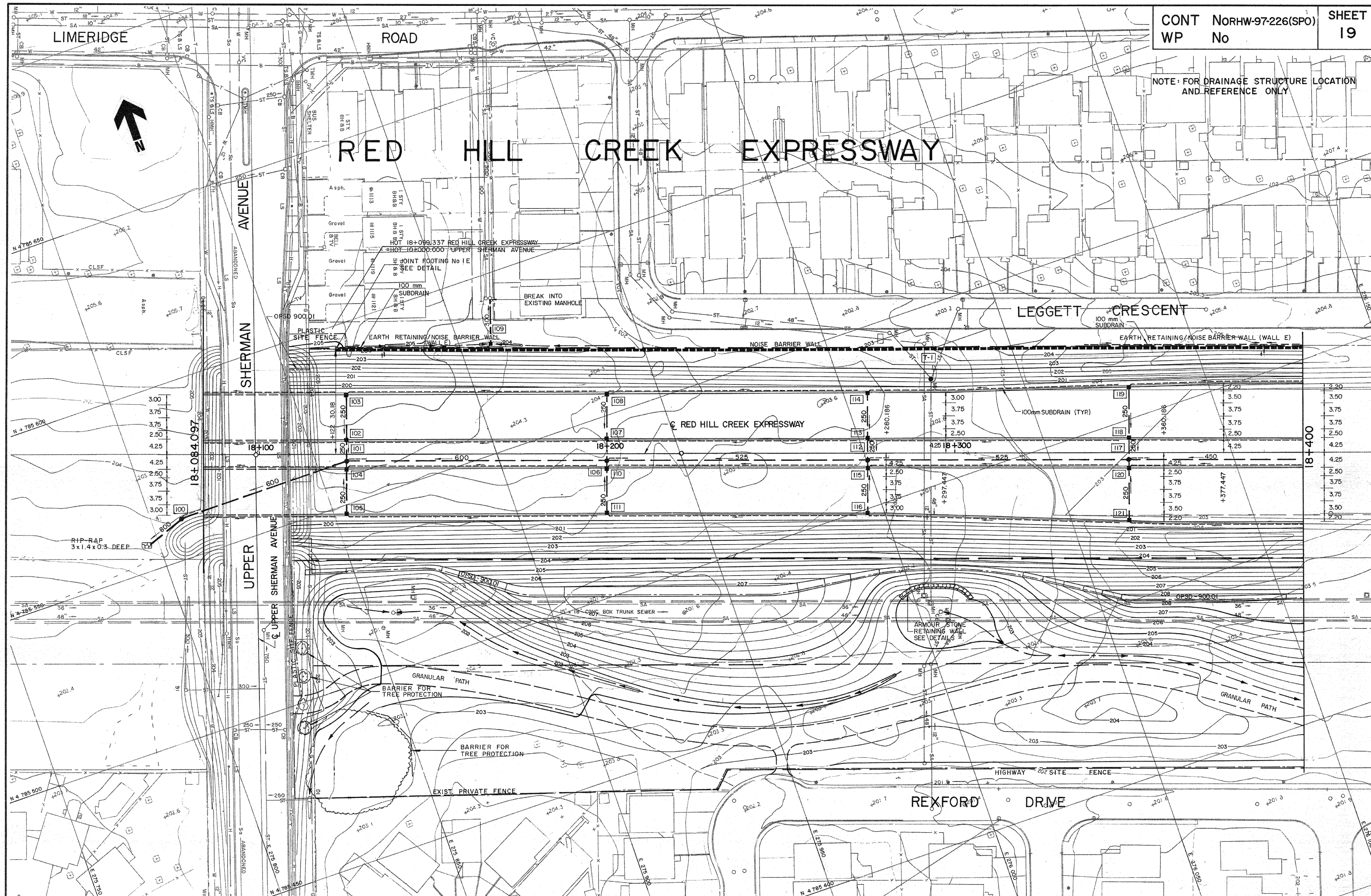
F. E. WILSON

APPROVED — PROJECT DIRECTOR
APPROVED — MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH
SPECIAL PROJECTS OFFICE
DATE: JANUARY, 1994

RED HILL CREEK EXPRESSWAY
PAVING CONTRACT
GRADING AND DRAINAGE
SCALE: 0 5 10 20

CONT NORHW-97-226(SPO)
WP No
SHEET 19



No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

PARKER CONSULTANTS

DESIGNED BY: D.A.Y. DRAWN BY: P.V.F. CHECKED BY: J.P.

REGISTERED PROFESSIONAL ENGINEER F. E. WILSON PROVINCE OF ONTARIO

APPROVED — PROJECT DIRECTOR
APPROVED — MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH
SPECIAL PROJECTS OFFICE
DATE:

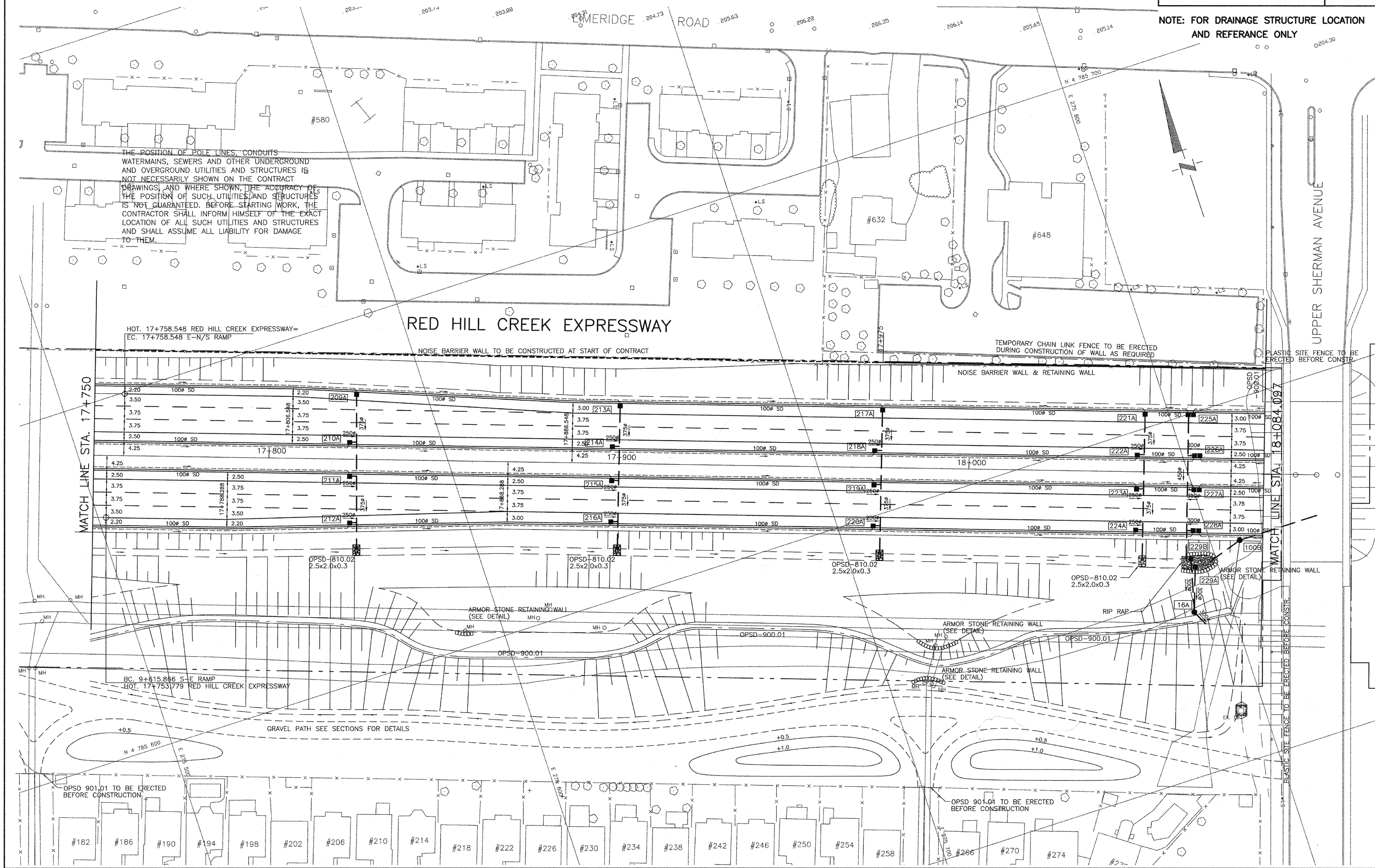
RED HILL CREEK EXPRESSWAY
PAVING CONTRACT
GRADING AND DRAINAGE
SCALE 0 5 10 20

HAM0062769_0001

CONT No RHW-97-226(SPO)
WP No

SHEET 18

NOTE: FOR DRAINAGE STRUCTURE LOCATION AND REFERANCE ONLY



No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

DESIGNED BY: J.K.L. DRAWN BY: S.M. CHECKED BY: A.J.S.

APPROVED — PROJECT DIRECTOR
APPROVED — MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

SPECIAL PROJECTS OFFICE

DATE: JANUARY 1994

RED HILL CREEK EXPRESSWAY PAVING CONTRACT

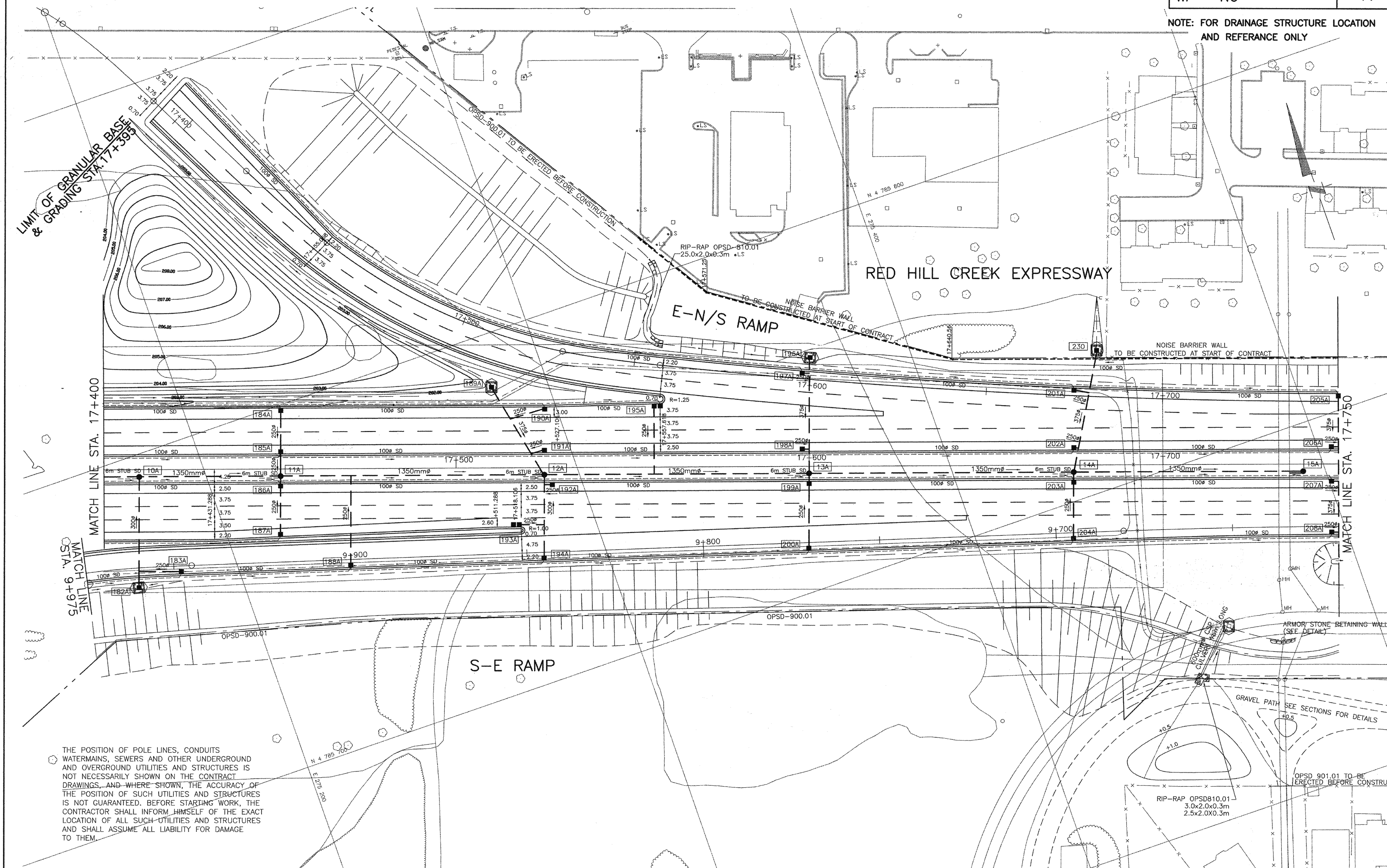
CONSTRUCTION PLAN
STA.17+750 TO STA.18+084.097

SCALE: 0 5 10 15

HAM0062769_0001

CONT No RHW-97-226(SPO)	SHEET
WP No	17

NOTE: FOR DRAINAGE STRUCTURE LOCATION AND REFERANCE ONLY



No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

DESIGNED BY:	DRAWN BY:	CHECKED BY:
J.K.L.	S.M.	A.J.S.

APPROVED	APPROVED
PROJECT DIRECTOR	MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

SPECIAL PROJECTS OFFICE

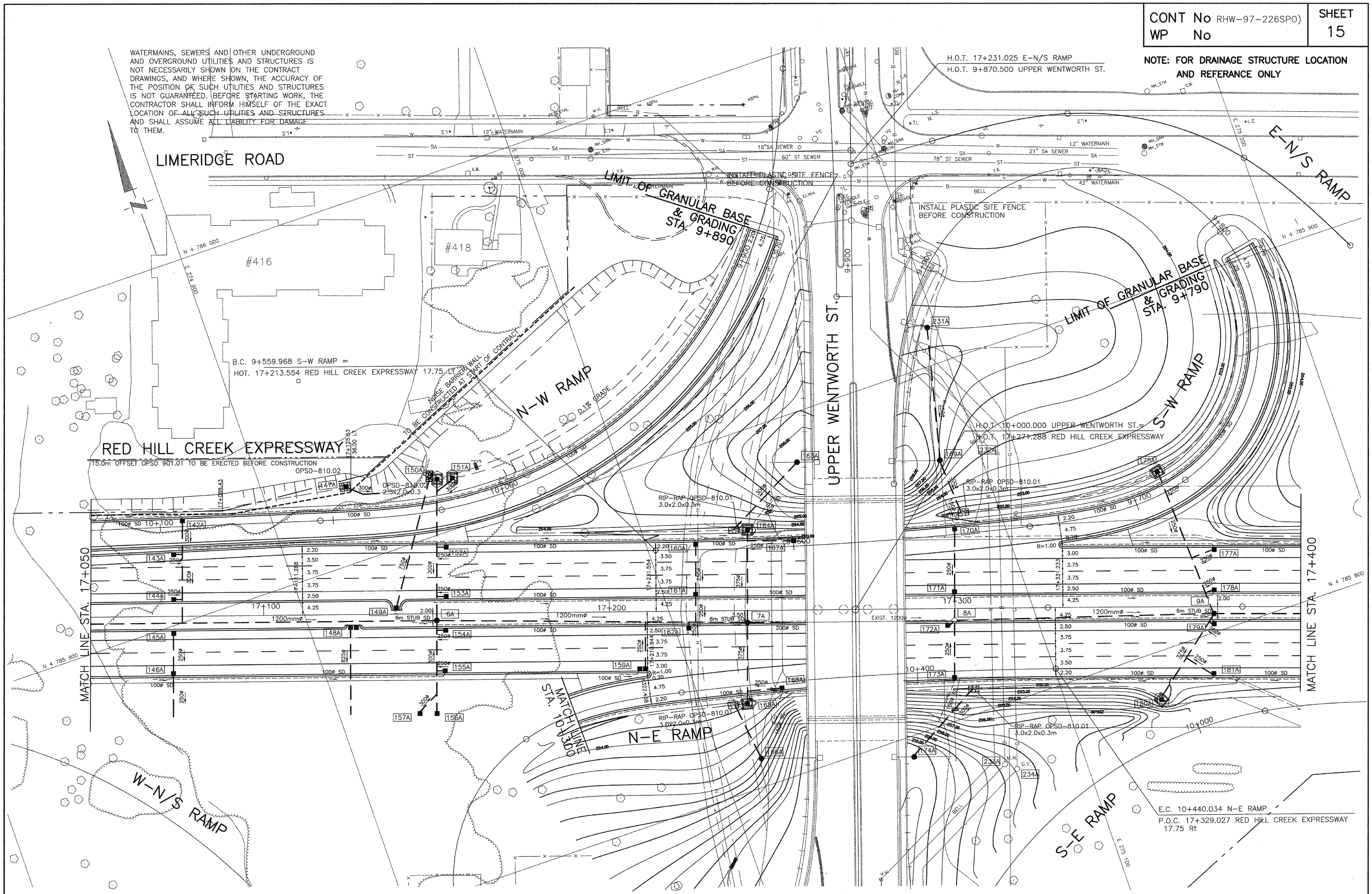
DATE: JANUARY 1994

RED HILL CREEK EXPRESSWAY
PAVING CONTRACT

CONSTRUCTION PLAN
STA. 17+400 TO STA. 17+750

SCALE: HORIZ. 0 5 10 15

HAM0062769_0001



	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	
No.	REVISIONS	DATE	INITIAL

DESIGNED BY: J.K.L. | DRAWN BY: S.M. | CHECKED BY: A.J.S

APPROVED — PROJECT DIRECTOR | APPROVED — MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

SPECIAL PROJECTS OFFICE

DATE: JANUARY 1994

RED HILL CREEK EXPRESSWAY
PAVING CONTRACT

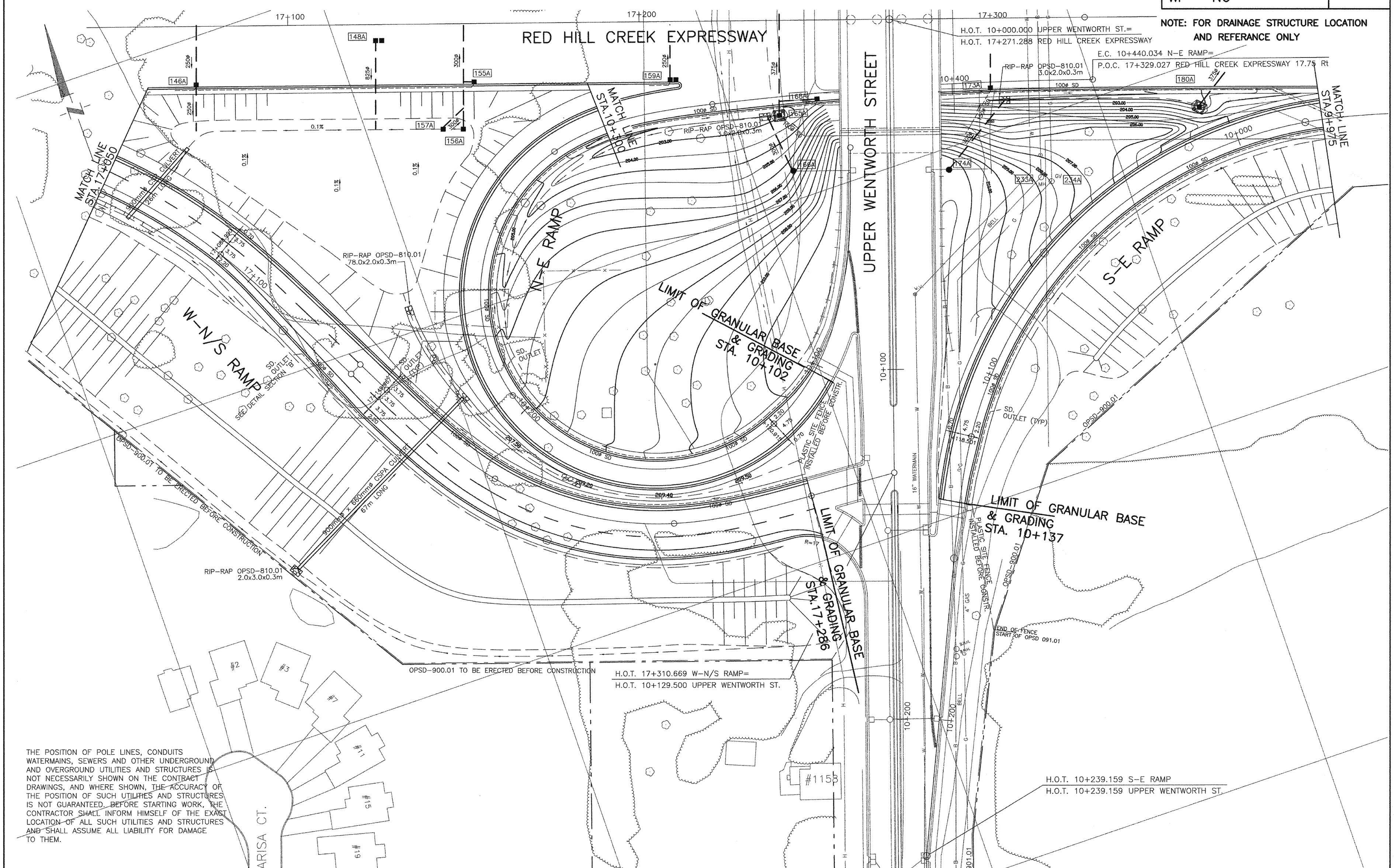
CONSTRUCTION PLAN
STA.17+050 TO STA.17+400

SCALE: 0 5 10 15

HAM0062769_0001

CONT No RHW-97-226(SPO)	SHEET
WP No	16

NOTE: FOR DRAINAGE STRUCTURE LOCATION AND REFERANCE ONLY



THE POSITION OF POLE LINES, CONDUITS WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

DESIGNED BY:	DRAWN BY:	CHECKED BY:
J.K.L.	S.M.	A.J.S.

APPROVED	APPROVED
PROJECT DIRECTOR	MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

SPECIAL PROJECTS OFFICE

DATE: JANUARY 1994

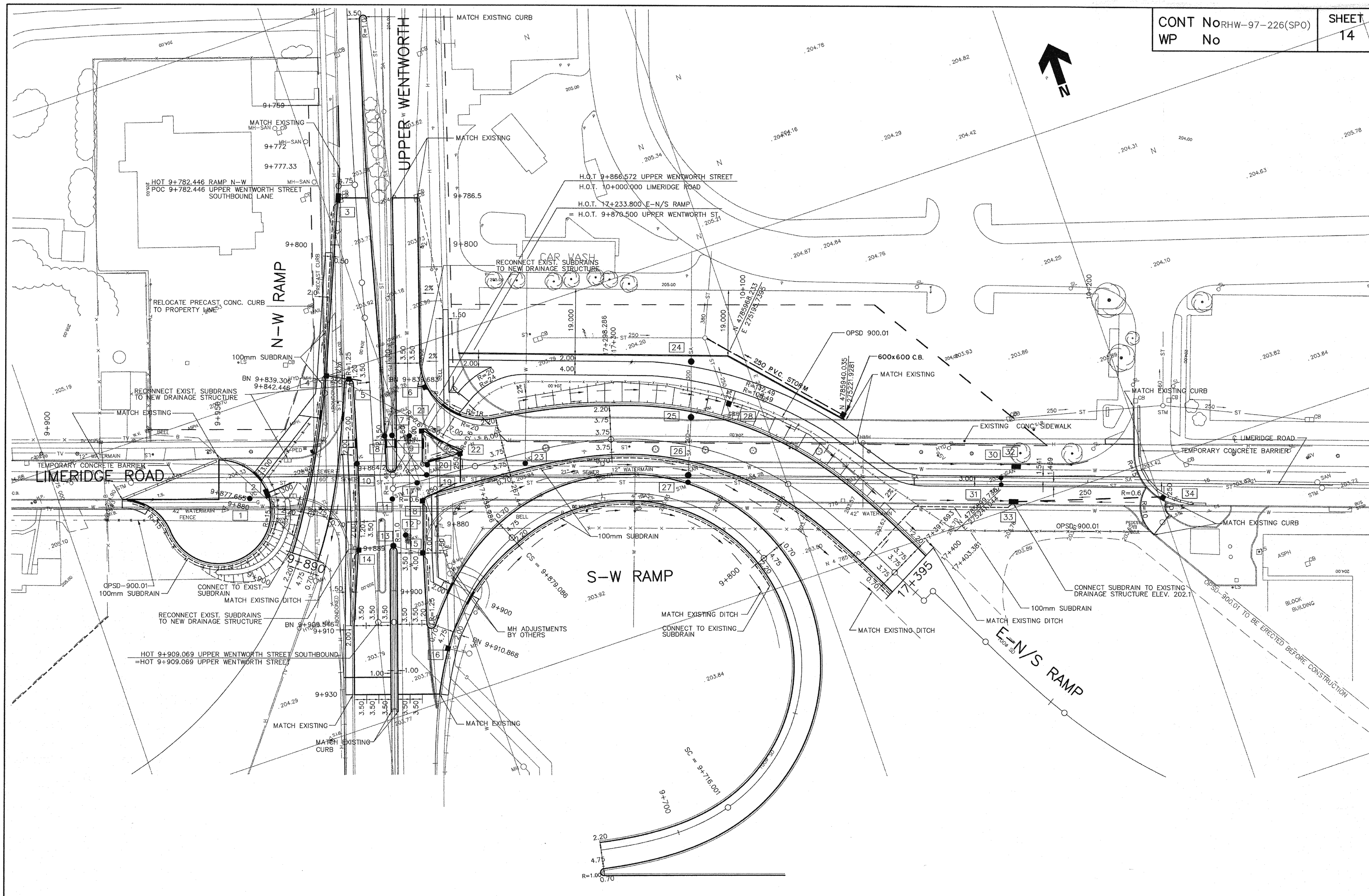
RED HILL CREEK EXPRESSWAY
PAVING CONTRACT

CONSTRUCTION PLAN
RAMP W-N/S, RAMP N-E & RAMP S-E

SCALE: 0 5 10 15

HAM0062769_0001

CONT No RHW-97-226(SPO)	SHEET
WP No	14



No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

PARKER CONSULTANTS

DESIGNED BY: D.A.Y. | DRAWN BY: D.R.C. | CHECKED BY: F.E.W.

REGISTERED PROFESSIONAL ENGINEER F. E. WILSON PROVINCE OF ONTARIO

APPROVED — PROJECT DIRECTOR

APPROVED — MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

SPECIAL PROJECTS OFFICE

DATE: JULY 1996

RED HILL CREEK EXPRESSWAY
PAVING CONTRACT

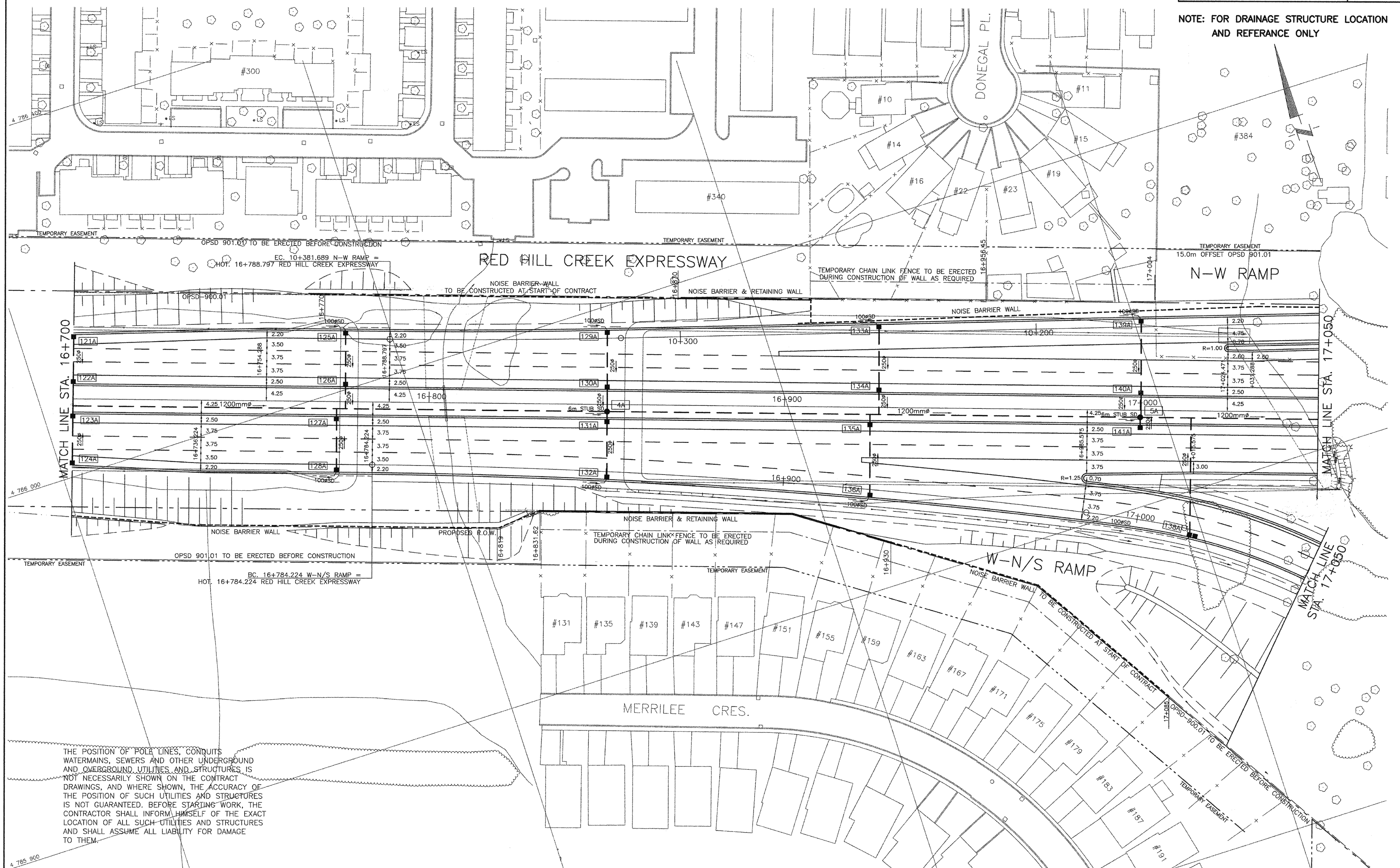
GRADING AND DRAINAGE

SCALE:

HAM0062769_0001

CONT No RHW-97-226(SPO)	SHEET
WP No	13

NOTE: FOR DRAINAGE STRUCTURE LOCATION AND REFERANCE ONLY



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No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

DESIGNED BY: J.K.L. | DRAWN BY: S.M. | CHECKED BY: A.J.S.

APPROVED — PROJECT DIRECTOR

APPROVED — MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

SPECIAL PROJECTS OFFICE

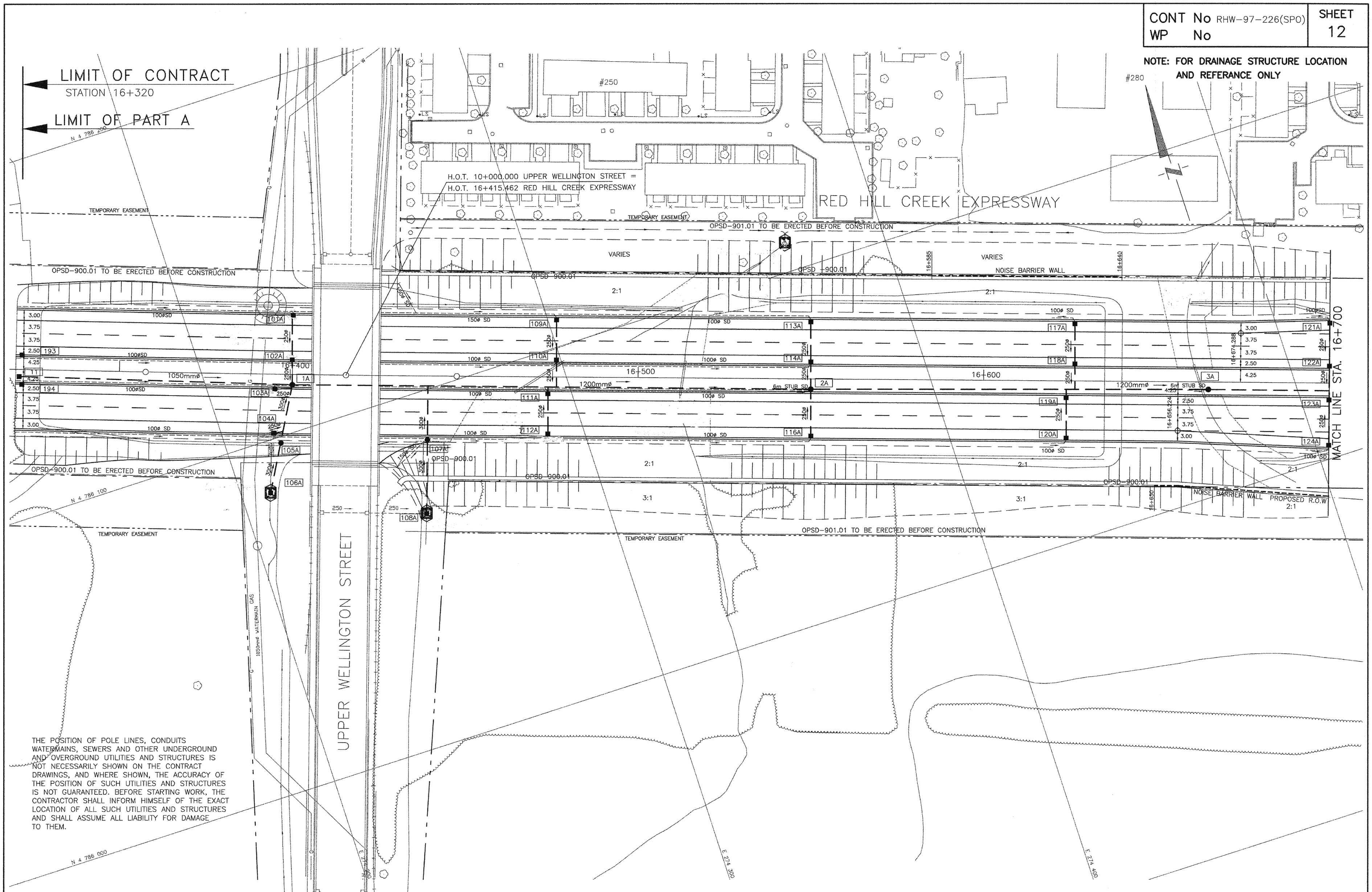
DATE: JANUARY 1994

RED HILL CREEK EXPRESSWAY
PAVING CONTRACT

CONSTRUCTION PLAN
STA.16+700 TO STA.17+050

SCALE: 0 5 10 15

HAM0062769_0001



No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

DESIGNED BY: J.K.L. | DRAWN BY: S.M. | CHECKED BY: A.J.S.

APPROVED — PROJECT DIRECTOR

APPROVED — MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON–WENTWORTH

SPECIAL PROJECTS OFFICE

DATE: JANUARY 1994

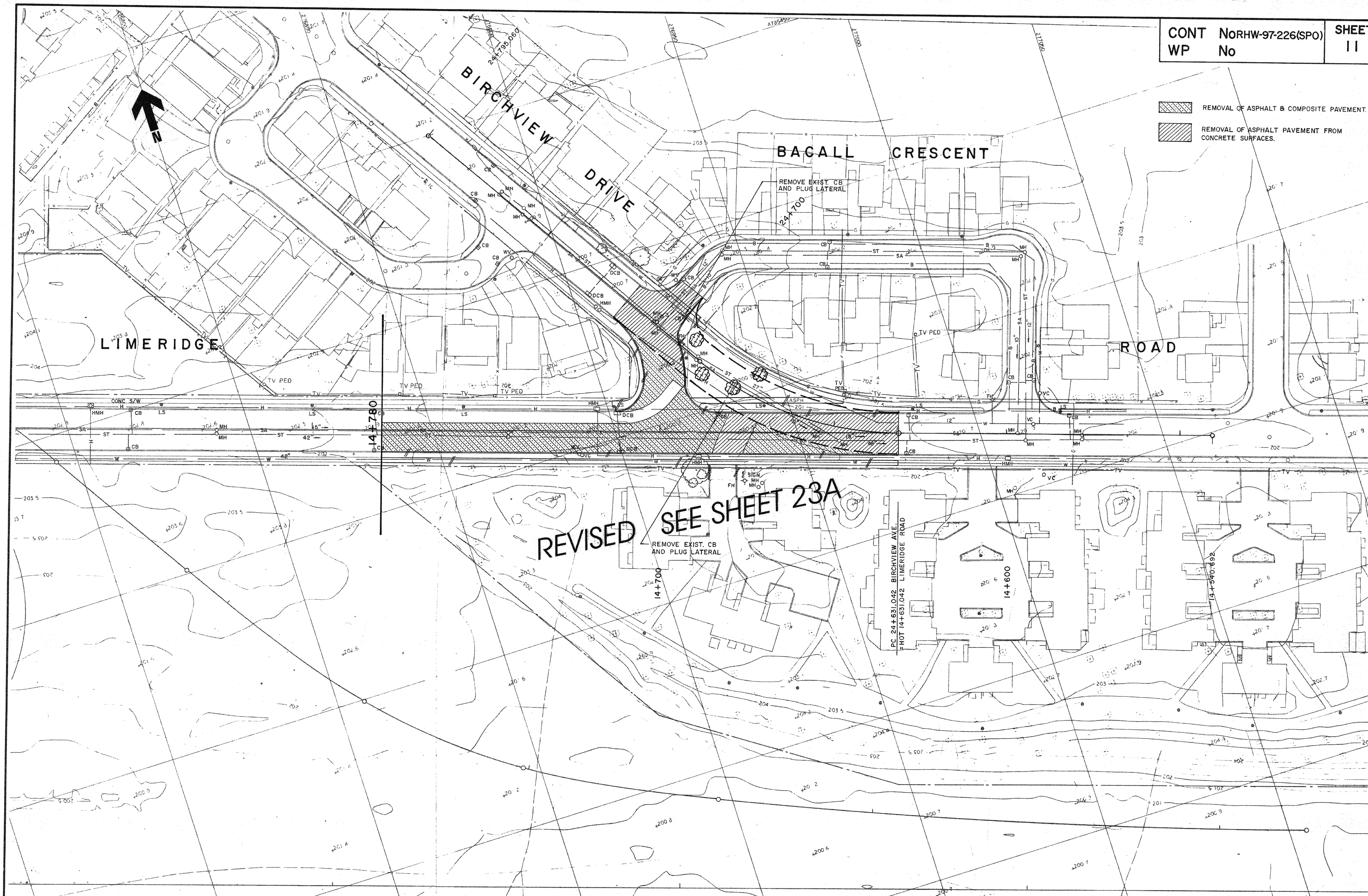
RED HILL CREEK EXPRESSWAY
PAVING CONTRACT

CONSTRUCTION PLAN
STA.16+320 TO STA.16+700

SCALE: 0 5 10 15

HAM0062769_0001

CONT	NoRHW-97-226(SPO)	SHEET
WP	No	11



No.	REVISIONS	DATE	INITIAL
1	ISSUED FOR CONSTRUCTION	APR 15/97	
	REVISED SEE SHEET 23A		

PARKER CONSULTANTS

DESIGNED BY: D.A.Y. | DRAWN BY: D.A.Y. | CHECKED BY: F.E.W.

REGISTERED PROFESSIONAL ENGINEER F. E. WILSON PROVINCE OF ONTARIO

APPROVED — PROJECT DIRECTOR

APPROVED — MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

SPECIAL PROJECTS OFFICE

DATE:

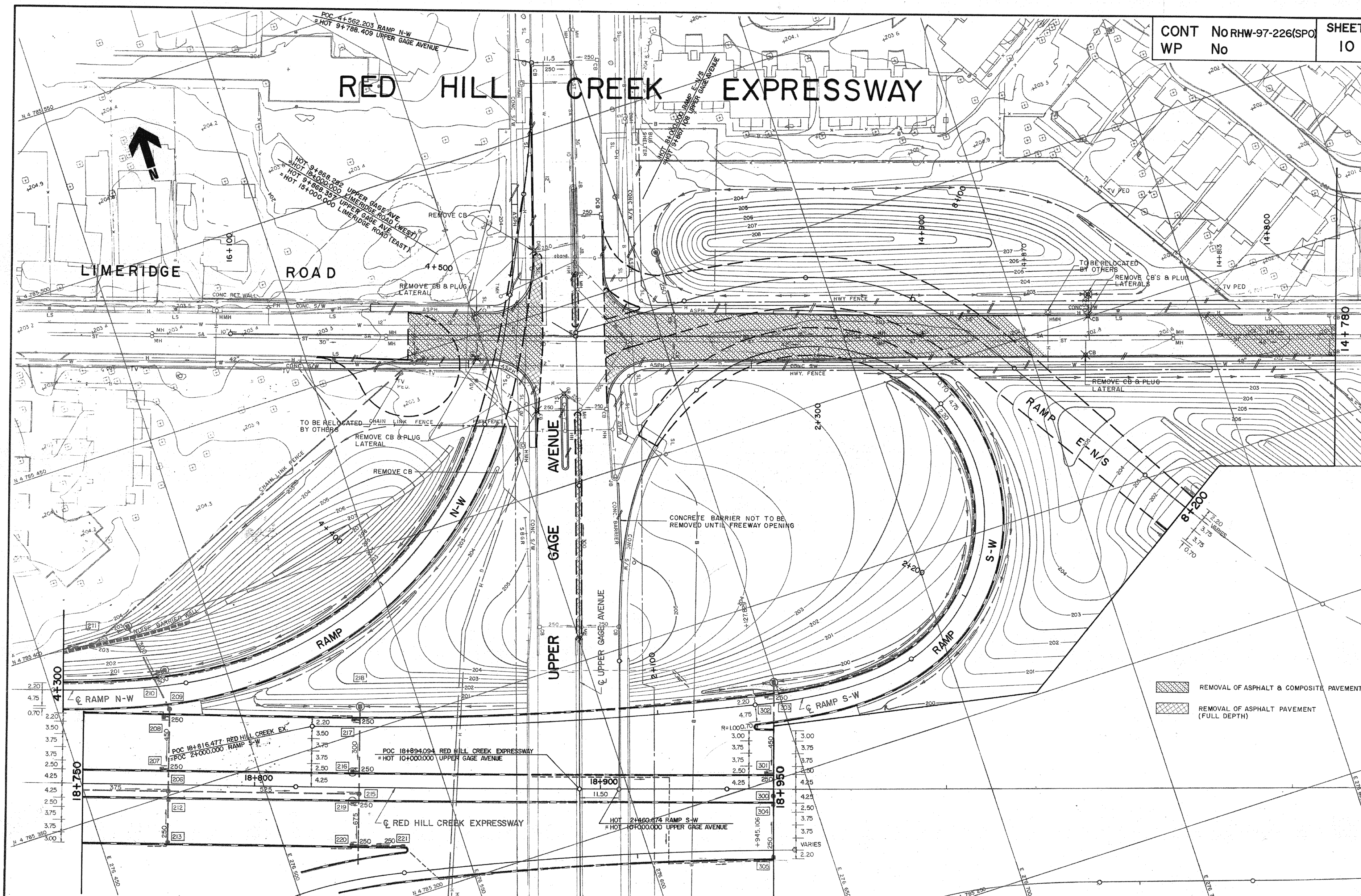
RED HILL CREEK EXPRESSWAY PAVING CONTRACT

REMOVALS

SCALE: 0 5 10 20

HAM0062769_0001

CONT	No RHW-97-226(SPO)	SHEET
WP	No	10



No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

PARKER CONSULTANTS

DESIGNED BY: D.A.Y. | DRAWN BY: D.A.Y. | CHECKED BY: F.E.W.

REGISTERED PROFESSIONAL ENGINEER
F. E. WILSON
11/07/97
PROVINCE OF ONTARIO

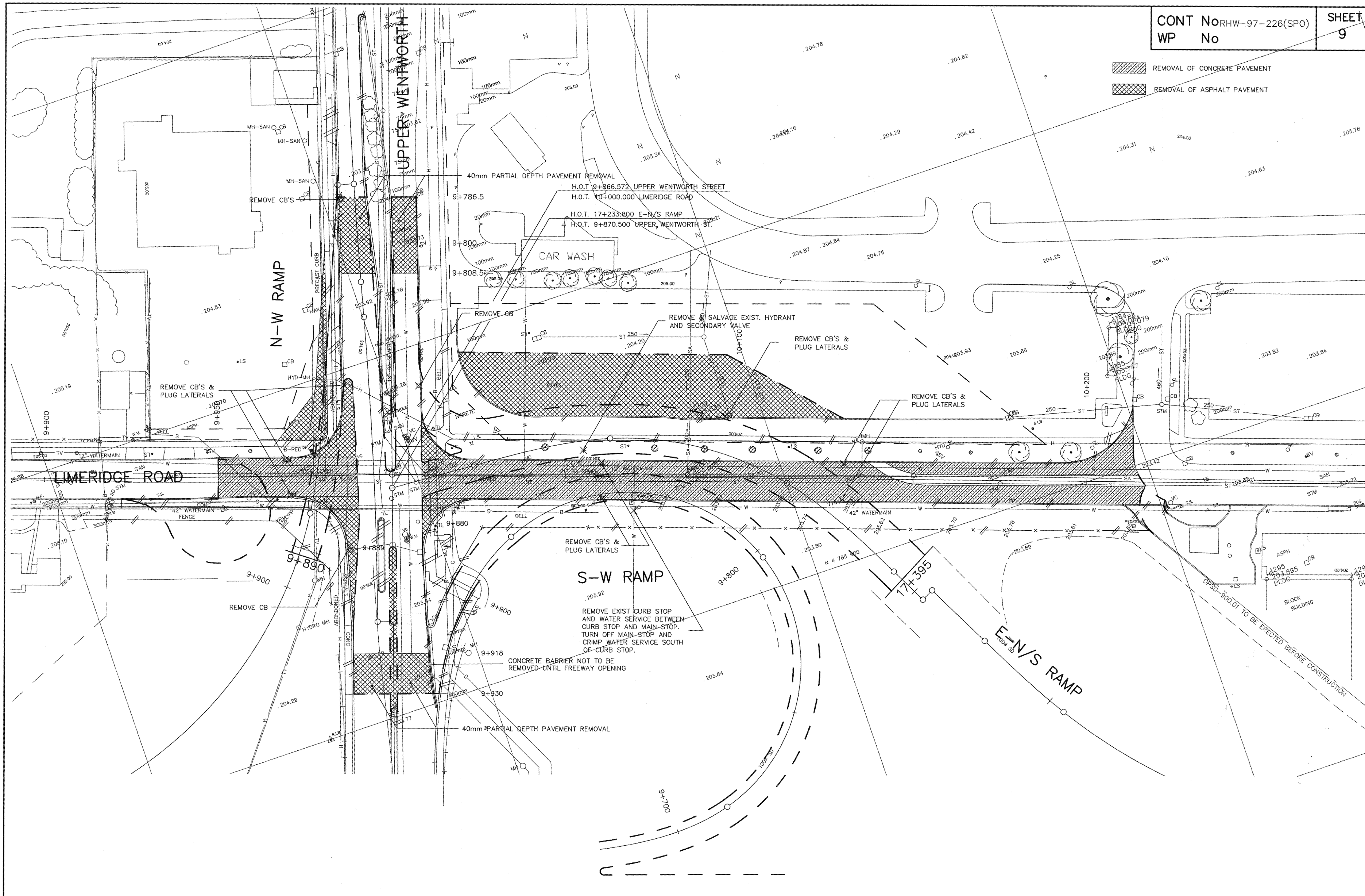
APPROVED — PROJECT DIRECTOR
APPROVED — MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH
SPECIAL PROJECTS OFFICE
DATE:

RED HILL CREEK EXPRESSWAY
PAVING CONTRACT

REMOVALS

SCALE: 0 5 10 20



CONT No RHW-97-226(SPO)
WP No
SHEET 9

No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

PARKER CONSULTANTS

DESIGNED BY: D.A.Y. | DRAWN BY: D.R.C. | CHECKED BY: F.E.W.

REGISTERED PROFESSIONAL ENGINEER F. E. WILSON PROVINCE OF ONTARIO

APPROVED — PROJECT DIRECTOR
APPROVED — MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH
SPECIAL PROJECTS OFFICE
DATE: JULY 1996

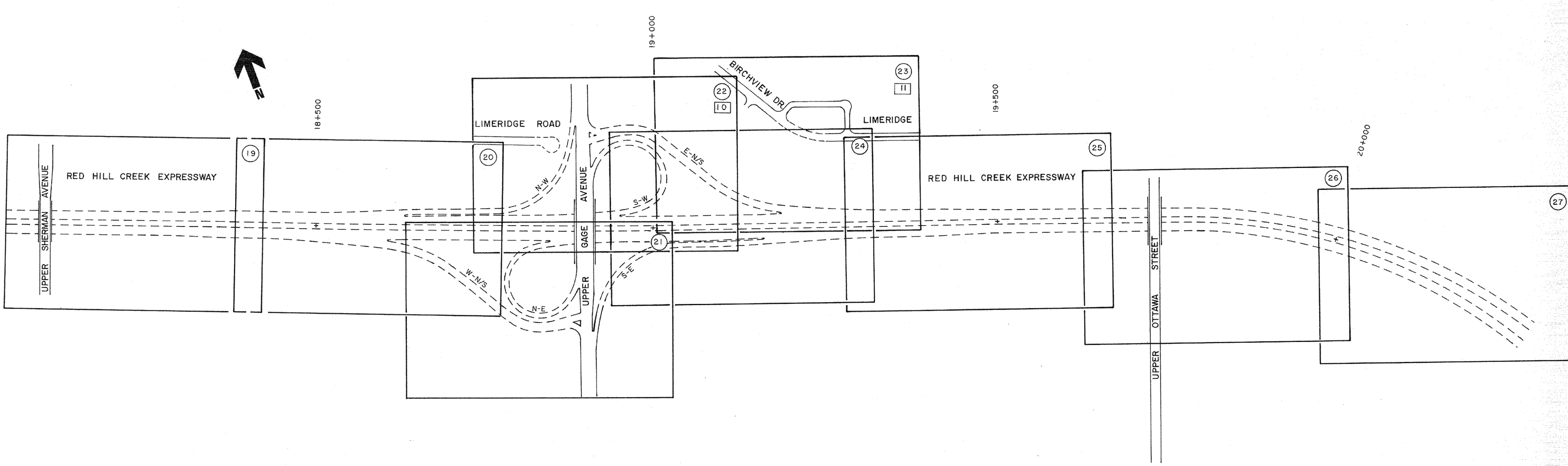
RED HILL CREEK EXPRESSWAY
PAVING CONTRACT
REMOVALS
SCALE:

HAM0062769_0001

CONT	No RHW-97-226(SPO)	SHEET
WP	No	8

(22) GRADING & DRAINAGE PLAN

[10] REMOVAL PLAN



No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

PARKER CONSULTANTS

DESIGNED BY: D.A.Y. | DRAWN BY: P.E.T. | CHECKED BY: D.A.Y.

REGISTERED PROFESSIONAL ENGINEER
F. E. WILSON
PROVINCE OF ONTARIO

APPROVED — PROJECT DIRECTOR

APPROVED — MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

SPECIAL PROJECTS OFFICE

DATE:

RED HILL CREEK EXPRESSWAY
PAVING CONTRACT

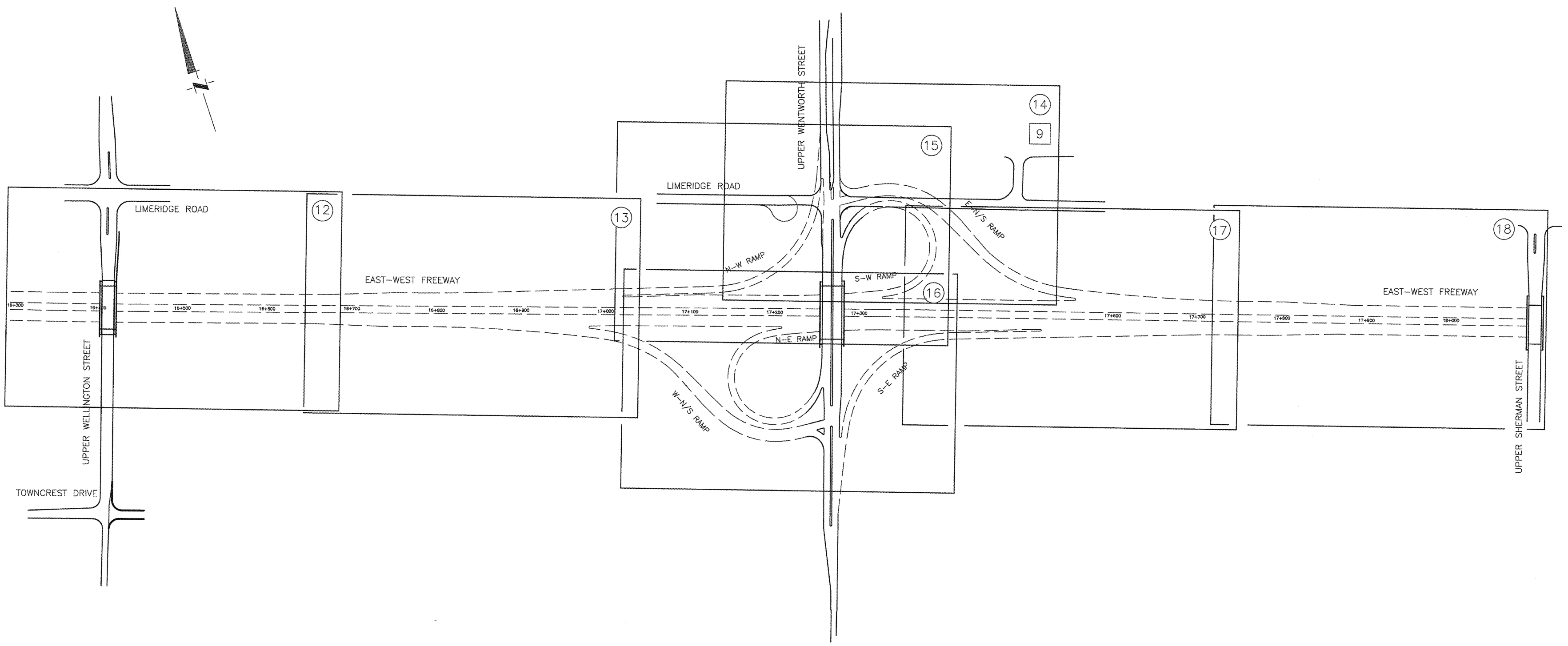
SHEET INDEX

GRADING AND DRAINAGE

SCALE: 0 50 100

HAM0062769_0001

CONT No RHW-97-266(SPO)	SHEET
WP No	7



(14) CONSTRUCTION PLAN

[9] REMOVAL PLAN

No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

DESIGNED BY:	DRAWN BY:	CHECKED BY:
J.K.L.	S.M.	A.J.S.

APPROVED	APPROVED
PROJECT DIRECTOR	MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

SPECIAL PROJECTS OFFICE

DATE: JANUARY 1994

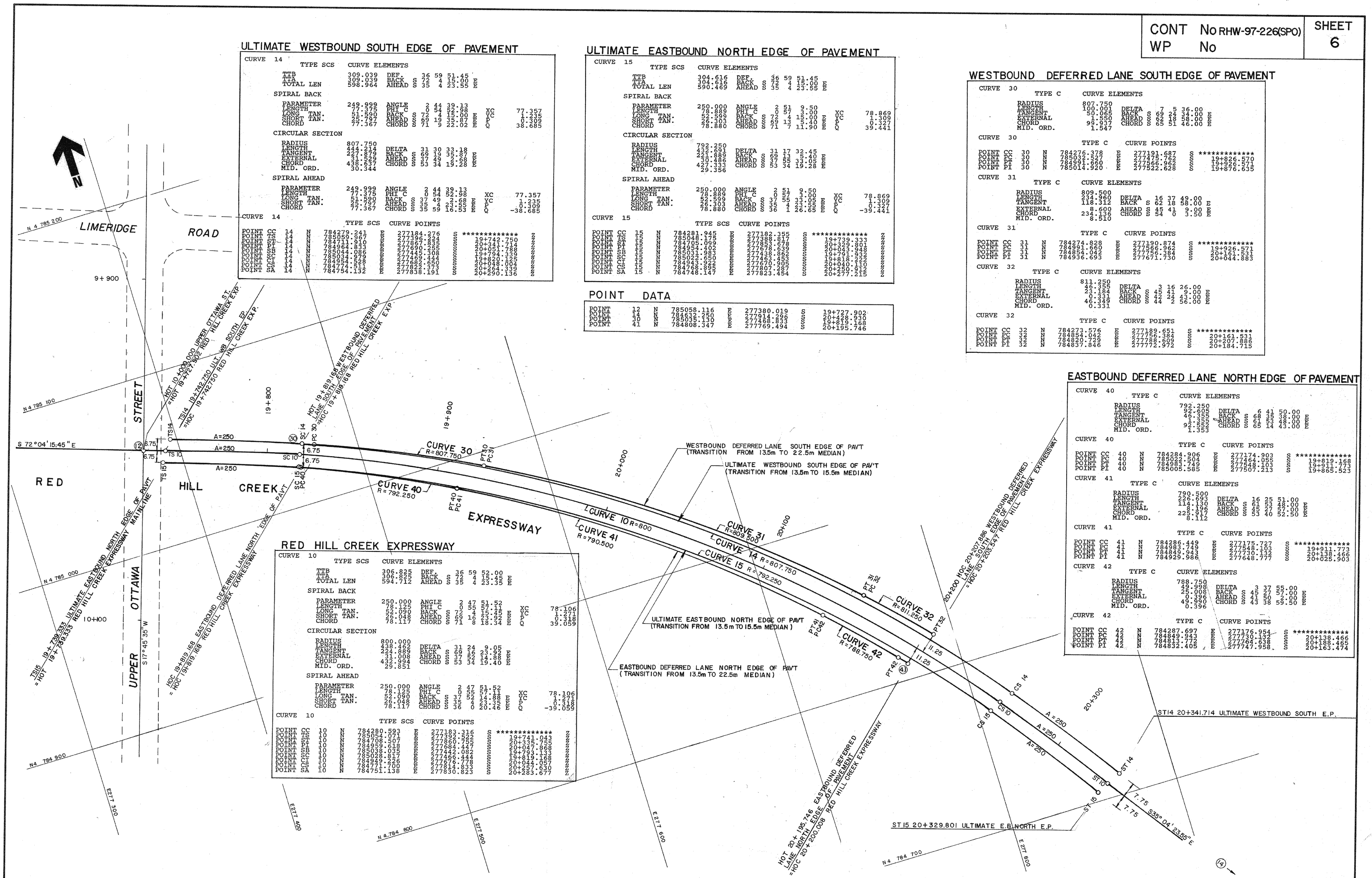
RED HILL CREEK EXPRESSWAY
PAVING CONTRACT

CONSTRUCTION & REMOVAL
KEY PLAN

SCALE: 0 25 50 75

HAM0062769_0001

CONT	No RHW-97-226(SPO)	SHEET
WP	No	6



ULTIMATE WESTBOUND SOUTH EDGE OF PAVEMENT

CURVE 14 — TYPE SCS — CURVE ELEMENTS

TTB	309.039	DEF.	36 59 51.45		
TTA	309.039	BACK	S 72 4 15.00 E		
TOTAL LEN	598.964	AHEAD	S 35 4 23.55 E		
SPIRAL BACK					
PARAMETER	249.999	ANGLE	2 44 39.13		
LENGTH	77.375	PHI C	0 54 52.98	XC	77.357
LONG TAN.	51.590	BACK	S 72 4 15.00 E	YC	1.235
SHORT TAN.	25.797	AHEAD	S 69 19 35.87 E	P	0.309
CHORD	77.367	CHORD	S 71 9 22.02 E	Q	38.685
CIRCULAR SECTION					
RADIUS	807.750				
LENGTH	444.214	DELTA	31 30 33.18		
TANGENT	227.879	BACK	S 69 19 35.87 E		
EXTERNAL	31.529	AHEAD	S 37 49 2.68 E		
CHORD	438.637	CHORD	S 53 34 19.28 E		
MID. ORD.	30.344				
SPIRAL AHEAD					
PARAMETER	249.999	ANGLE	2 44 39.13		
LENGTH	77.375	PHI C	0 54 52.98	XC	77.357
LONG TAN.	51.590	BACK	S 37 49 2.68 E	YC	1.235
SHORT TAN.	25.797	AHEAD	S 35 4 23.55 E	P	0.309
CHORD	77.367	CHORD	S 35 59 16.53 E	Q	-38.685

CURVE 14 — TYPE SCS — CURVE POINTS

POINT	CC	14	N	784279.241	E	277184.276	S	*************	Z
POINT	TS	14	N	785059.967	E	277396.224	S	19+742.750	Z
POINT	ST	14	N	784711.910	E	277867.835	S	20+341.714	Z
POINT	PI	14	N	784964.833	E	277690.255	S	20+051.788	Z
POINT	SB	14	N	785044.086	E	277445.308	S	19+794.339	Z
POINT	SC	14	N	785034.979	E	277469.444	S	19+820.125	Z
POINT	CI	14	N	784954.528	E	277682.650	S	20+048.004	Z
POINT	CS	14	N	784774.511	E	277822.373	S	20+264.339	Z
POINT	SA	14	N	784754.132	E	277838.191	S	20+290.136	Z

ULTIMATE EASTBOUND NORTH EDGE OF PAVEMENT

CURVE 15 — TYPE SCS — CURVE ELEMENTS

TTB	304.616	DEF.	36 59 51.45		
TTA	304.616	BACK	S 72 4 15.00 E		
TOTAL LEN	590.469	AHEAD	S 35 4 23.55 E		
SPIRAL BACK					
PARAMETER	250.000	ANGLE	2 51 9.50		
LENGTH	78.889	PHI C	0 57 3.00	XC	78.869
LONG TAN.	52.599	BACK	S 72 4 15.00 E	YC	1.309
SHORT TAN.	26.303	AHEAD	S 69 13 5.40 E	P	0.327
CHORD	78.880	CHORD	S 71 7 11.90 E	Q	39.441
CIRCULAR SECTION					
RADIUS	792.250				
LENGTH	432.691	DELTA	31 17 32.45		
TANGENT	221.889	BACK	S 69 13 5.40 E		
EXTERNAL	30.486	AHEAD	S 37 55 33.05 E		
CHORD	427.333	CHORD	S 53 34 19.28 E		
MID. ORD.	29.356				
SPIRAL AHEAD					
PARAMETER	250.000	ANGLE	2 51 9.50		
LENGTH	78.889	PHI C	0 57 3.00	XC	78.869
LONG TAN.	52.599	BACK	S 37 55 33.05 E	YC	1.309
SHORT TAN.	26.303	AHEAD	S 35 4 23.55 E	P	0.327
CHORD	78.880	CHORD	S 36 1 26.65 E	Q	-39.441

CURVE 15 — TYPE SCS — CURVE POINTS

POINT	CC	15	N	784281.945	E	277182.355	S	*************	Z
POINT	TS	15	N	785048.175	E	277388.817	S	19+739.333	Z
POINT	ST	15	N	784705.099	E	277853.678	S	20+329.801	Z
POINT	PI	15	N	784954.402	E	277678.639	S	20+043.948	Z
POINT	SB	15	N	785031.983	E	277438.862	S	19+791.932	Z
POINT	SC	15	N	785022.650	E	277463.453	S	19+818.222	Z
POINT	CI	15	N	784943.922	E	277670.905	S	20+040.110	Z
POINT	CS	15	N	784768.895	E	277807.287	S	20+250.912	Z
POINT	SA	15	N	784748.147	E	277823.454	S	20+277.215	Z

POINT DATA

POINT	12	N	785058.116	E	277380.019	S	19+727.902
POINT	14	N	784632.250	E	277914.296	S	20+428.930
POINT	30	N	785035.130	E	277468.833	S	19+819.168
POINT	41	N	784808.347	E	277769.494	S	20+195.746

WESTBOUND DEFERRED LANE SOUTH EDGE OF PAVEMENT

CURVE 30 — TYPE C — CURVE ELEMENTS

RADIUS	807.750		
LENGTH	100.001	DELTA	7 5 36.00
TANGENT	50.065	BACK	S 69 24 34.00 E
EXTERNAL	1.550	AHEAD	S 62 18 58.00 E
CHORD	99.937	CHORD	S 65 51 46.00 E
MID. ORD.	1.547		

CURVE 30 — TYPE C — CURVE POINTS

POINT	CC	30	N	784276.378	E	277191.687	S	*************
POINT	PC	30	N	785032.527	E	277475.762	S	19+826.570
POINT	PT	30	N	784991.660	E	277566.962	S	19+926.571
POINT	PI	30	N	785014.920	E	277522.628	S	19+876.635

CURVE 31 — TYPE C — CURVE ELEMENTS

RADIUS	809.500		
LENGTH	234.960	DELTA	16 37 49.00
TANGENT	118.312	BACK	S 62 18 58.00 E
EXTERNAL	8.600	AHEAD	S 45 41 9.00 E
CHORD	234.136	CHORD	S 54 0 3.50 E
MID. ORD.	8.510		

CURVE 31 — TYPE C — CURVE POINTS

POINT	CC	31	N	784274.828	E	277190.874	S	*************
POINT	PC	31	N	784991.660	E	277566.962	S	19+926.571
POINT	PT	31	N	784854.042	E	277756.384	S	20+161.531
POINT	PI	31	N	784936.693	E	277671.730	S	20+044.883

CURVE 32 — TYPE C — CURVE ELEMENTS

RADIUS	811.250		
LENGTH	46.355	DELTA	3 16 26.00
TANGENT	23.184	BACK	S 45 41 9.00 E
EXTERNAL	0.331	AHEAD	S 42 24 43.00 E
CHORD	46.349	CHORD	S 44 2 56.00 E
MID. ORD.	0.331		

CURVE 32 — TYPE C — CURVE POINTS

POINT	CC	32	N	784273.576	E	277189.651	S	*************
POINT	PC	32	N	784854.042	E	277756.384	S	20+161.531
POINT	PT	32	N	784820.729	E	277788.609	S	20+207.886
POINT	PI	32	N	784837.846	E	277772.972	S	20+184.715

EASTBOUND DEFERRED LANE NORTH EDGE OF PAVEMENT

CURVE 40 — TYPE C — CURVE ELEMENTS

RADIUS	792.250		
LENGTH	92.605	DELTA	6 41 50.00
TANGENT	46.355	BACK	S 68 35 38.00 E
EXTERNAL	1.355	AHEAD	S 61 53 48.00 E
CHORD	92.552	CHORD	S 65 14 43.00 E
MID. ORD.	1.353		

CURVE 40 — TYPE C — CURVE POINTS

POINT	CC	40	N	784284.906	E	277174.903	S	*************
POINT	PC	40	N	785022.504	E	277464.055	S	19+819.168
POINT	PT	40	N	784983.749	E	277548.103	S	19+911.773
POINT	PI	40	N	785005.585	E	277507.213	S	19+865.523

CURVE 41 — TYPE C — CURVE ELEMENTS

RADIUS	790.500		
LENGTH	226.693	DELTA	16 25 51.00
TANGENT	114.130	BACK	S 61 53 48.00 E
EXTERNAL	8.196	AHEAD	S 45 27 57.00 E
CHORD	225.917	CHORD	S 53 40 52.50 E
MID. ORD.	8.112		

CURVE 41 — TYPE C — CURVE POINTS

POINT	CC	41	N	784286.449	E	277175.727	S	*************
POINT	PC	41	N	784983.749	E	277548.103	S	19+911.773
POINT	PT	41	N	784849.943	E	277730.132	S	20+138.466
POINT	PI	41	N	784929.986	E	277648.777	S	20+025.903

CURVE 42 — TYPE C — CURVE ELEMENTS

RADIUS	788.750		
LENGTH	49.998	DELTA	3 37 55.00
TANGENT	25.008	BACK	S 45 27 57.00 E
EXTERNAL	0.396	AHEAD	S 41 50 2.00 E
CHORD	49.990	CHORD	S 43 38 59.50 E
MID. ORD.	0.396		

CURVE 42 — TYPE C — CURVE POINTS

POINT	CC	42	N	784287.697	E	277176.954	S	*************
POINT	PC	42	N	784849.943	E	277730.132	S	20+138.466
POINT	PT	42	N	784813.772	E	277764.638	S	20+188.465
POINT	PI	42	N	784832.405	E	277747.958	S	20+163.474

RED HILL CREEK EXPRESSWAY

CURVE 10 — TYPE SCS — CURVE ELEMENTS

TTB	306.825	DEF.	36 59 52.00		
TTA	306.825	BACK	S 72 4 15.45 E		
TOTAL LEN	594.712	AHEAD	S 35 4 23.35 E		
SPIRAL BACK					
PARAMETER	250.000	ANGLE	2 47 51.52		
LENGTH	78.125	PHI C	0 55 57.11	XC	78.106
LONG TAN.	52.090	BACK	S 72 4 15.45 E	YC	1.271
SHORT TAN.	26.048	AHEAD	S 69 16 23.92 E	P	0.318
CHORD	78.117	CHORD	S 71 8 18.34 E	Q	39.059
CIRCULAR SECTION					
RADIUS	800.000				
LENGTH	438.462	DELTA	31 24 9.05		
TANGENT	224.889	BACK	S 69 16 23.92 E		
EXTERNAL	31.008	AHEAD	S 37 52 14.88 E		
CHORD	432.994	CHORD	S 53 34 19.40 E		
MID. ORD.	29.851				
SPIRAL AHEAD					
PARAMETER	250.000	ANGLE	2 47 51.52		
LENGTH	78.125	PHI C	0 55 57.11	XC	78.106
LONG TAN.	52.090	BACK	S 37 52 14.88 E	YC	1.271
SHORT TAN.	26.048	AHEAD	S 35 4 23.35 E	P	0.318
CHORD	78.117	CHORD	S 36 0 20.46 E	Q	-39.059

CURVE 10 — TYPE SCS — CURVE POINTS

POINT	CC	10	N	784280.593	E	277183.316	S	*************	Z
POINT	TS	10	N	785054.071	E	277392.522	S	19+741.043	Z
POINT	ST	10	N	784708.507	E	277860.755	S	20+335.755	Z
POINT	PI	10	N	784959.618	E	277684.447	S	20+047.868	Z
POINT	SB	10	N	785038.035	E	277442.082	S	19+793.133	Z
POINT	SC	10	N	785028.817	E	277466.444	S	19+819.168	Z
POINT	CI	10	N	784949.226	E	277676.778	S	20+044.057	Z
POINT	CS	10	N	784771.700	E	277814.833	S	20+257.630	Z
POINT	SA	10	N	784751.138	E	277830.823	S	20+283.677	Z

No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

PARKER CONSULTANTS

DESIGNED BY: D.A.Y | DRAWN BY: J.A.S | CHECKED BY: D.A.Y

REGISTERED PROFESSIONAL ENGINEER — F. E. WILSON — PROVINCE OF ONTARIO

APPROVED: PROJECT DIRECTOR | APPROVED: MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH
SPECIAL PROJECTS OFFICE
DATE: JANUARY, 1994

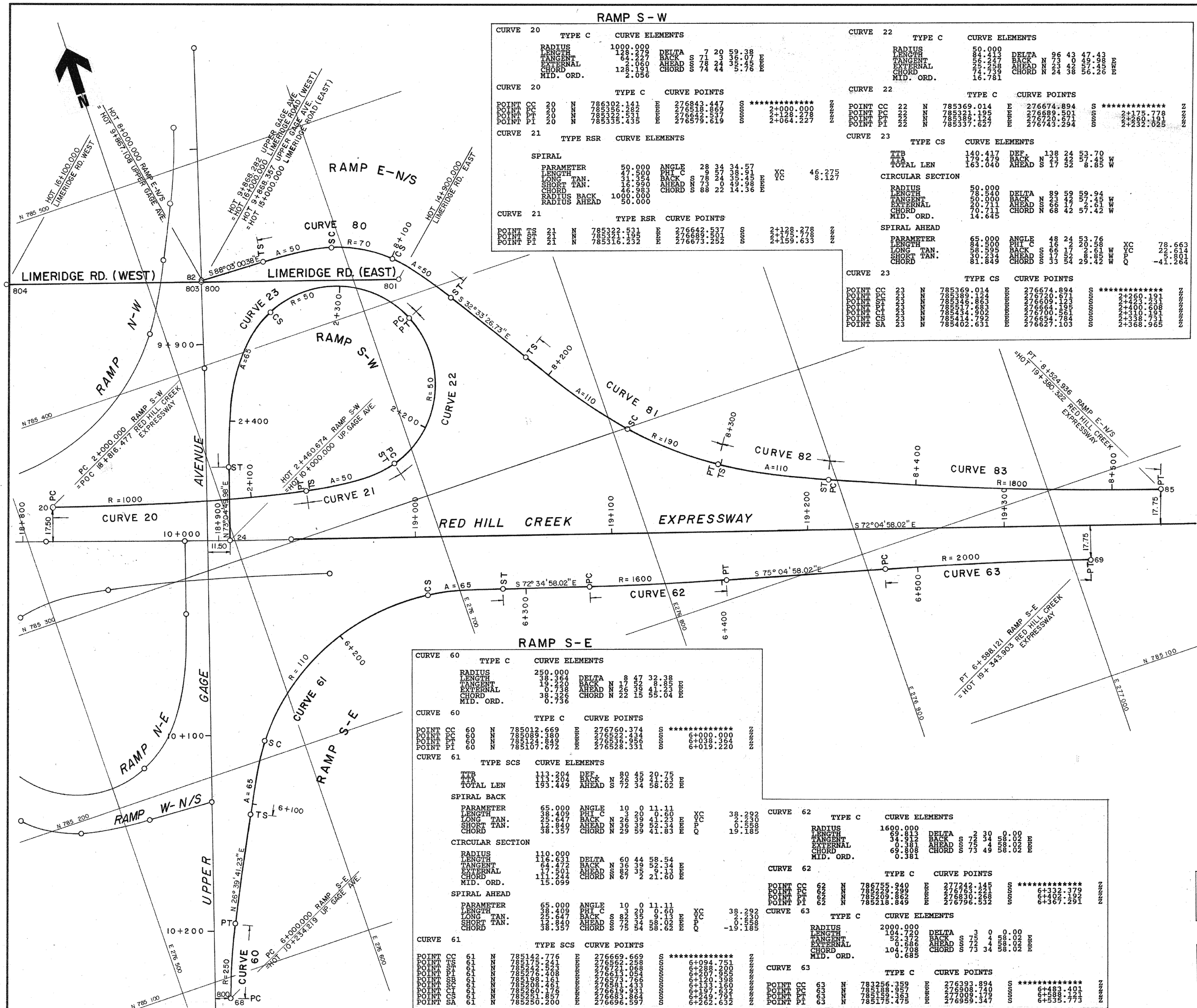
RED HILL CREEK EXPRESSWAY
PAVING CONTRACT

HORIZONTAL ALIGNMENT

SCALE: 0 10 20 40

HAM0062769_0001

CONT	No RHW-97-226(SPO)	SHEET
WP	No	5



RAMP S-W

CURVE 20 — TYPE C — CURVE ELEMENTS

RADIUS	1000.000		
LENGTH	128.279	DELTA	7 20 59.38
TANGENT	64.227	BACK	S 71 3 36.07 E
EXTERNAL	2.060	AHEAD	S 78 24 35.45 E
CHORD	128.191	CHORD	S 74 44 5.76 E
MID. ORD.	2.056		

CURVE 20 — TYPE C — CURVE POINTS

POINT CC	20	N	786302.141	E	276843.447	S	*************	Z
POINT PC	20	N	785356.282	E	276518.869	S	2+000.000	Z
POINT PT	20	N	785322.531	E	276642.537	S	2+128.278	Z
POINT PI	20	N	785335.435	E	276579.619	S	2+064.227	Z

CURVE 21 — TYPE RSR — CURVE ELEMENTS

SPIRAL

PARAMETER	50.000	ANGLE	28 34 34.57		
LENGTH	47.500	PHI C	9 57 38.91	XC	46.275
LONG TAN.	31.354	BACK	S 78 24 35.45 E	YC	8.127
SHORT TAN.	16.990	AHEAD	N 73 0 49.98 E		
CHORD	46.983	CHORD	S 88 22 14.36 E		
RADIUS BACK	1000.000				
RADIUS AHEAD	50.000				

CURVE 21 — TYPE RSR — CURVE POINTS

POINT TS	21	N	785322.531	E	276642.537	S	2+128.278	Z
POINT ST	21	N	785321.195	E	276689.501	S	2+175.778	Z
POINT PI	21	N	785316.232	E	276673.252	S	2+159.633	Z

CURVE 22 — TYPE C — CURVE ELEMENTS

RADIUS	50.000		
LENGTH	84.413	DELTA	96 43 47.43
TANGENT	56.247	BACK	N 73 0 49.98 E
EXTERNAL	25.258	AHEAD	N 23 42 57.45 W
CHORD	74.739	CHORD	N 24 38 56.26 E
MID. ORD.	16.781		

CURVE 22 — TYPE C — CURVE POINTS

POINT CC	22	N	785369.014	E	276674.894	S	*************	Z
POINT PC	22	N	785321.195	E	276689.501	S	2+175.778	Z
POINT PT	22	N	785389.124	E	276720.671	S	2+260.191	Z
POINT PI	22	N	785337.627	E	276743.294	S	2+232.025	Z

CURVE 23 — TYPE CS — CURVE ELEMENTS

TTB	140.417	DEF.	138 24 53.70
TTA	179.479	BACK	N 23 42 57.45 W
TOTAL LEN	163.040	AHEAD	S 17 52 8.85 W

CIRCULAR SECTION

RADIUS	50.000		
LENGTH	78.540	DELTA	89 59 59.94
TANGENT	50.000	BACK	N 23 42 57.45 W
EXTERNAL	20.711	AHEAD	S 66 17 2.61 W
CHORD	70.711	CHORD	N 68 42 57.42 W
MID. ORD.	14.645		

SPIRAL AHEAD

PARAMETER	65.000	ANGLE	48 24 53.76		
LENGTH	84.500	PHI C	16 2 20.58	XC	78.663
LONG TAN.	58.595	BACK	S 66 17 2.61 W	YC	22.614
SHORT TAN.	30.234	AHEAD	S 17 52 8.85 W	P	5.801
CHORD	81.849	CHORD	S 33 54 29.42 W	Q	-41.264

CURVE 23 — TYPE CS — CURVE POINTS

POINT CC	23	N	785369.014	E	276674.894	S	*************	Z
POINT PC	23	N	785389.124	E	276720.671	S	2+260.191	Z
POINT ST	23	N	785346.863	E	276609.123	S	2+423.231	Z
POINT PI	23	N	785517.683	E	276664.195	S	2+400.608	Z
POINT CI	23	N	785434.902	E	276700.561	S	2+310.191	Z
POINT CS	23	N	785414.792	E	276654.784	S	2+338.731	Z
POINT SA	23	N	785402.631	E	276627.103	S	2+368.965	Z

RAMP E-N/S

CURVE 80 — TYPE SCS — CURVE ELEMENTS

TTB	55.040	DEF.	55 29 33.65
TTA	55.040	BACK	S 88 3 0.38 E
TOTAL LEN	103.511	AHEAD	S 32 33 26.73 E

SPIRAL BACK

PARAMETER	50.000	ANGLE	14 36 58.57		
LENGTH	35.714	PHI C	4 52 9.85	XC	35.483
LONG TAN.	23.891	BACK	S 88 3 0.38 E	YC	3.023
SHORT TAN.	11.979	AHEAD	S 73 26 1.81 E	P	0.757
CHORD	35.611	CHORD	S 83 10 50.53 E	Q	17.818

CIRCULAR SECTION

RADIUS	70.000		
LENGTH	32.083	DELTA	26 15 36.50
TANGENT	16.328	BACK	S 73 26 1.81 E
EXTERNAL	1.879	AHEAD	S 47 10 25.30 E
CHORD	31.803	CHORD	S 60 18 13.56 E
MID. ORD.	1.830		

SPIRAL AHEAD

PARAMETER	50.000	ANGLE	14 36 58.57		
LENGTH	35.714	PHI C	4 52 9.85	XC	35.483
LONG TAN.	23.891	BACK	S 47 10 25.30 E	YC	3.023
SHORT TAN.	11.979	AHEAD	S 32 33 26.73 E	P	0.757
CHORD	35.611	CHORD	S 37 25 36.58 E	Q	-17.818

CURVE 80 — TYPE SCS — CURVE POINTS

POINT CC	80	N	785369.014	E	276674.894	S	*************	Z
POINT TS	80	N	785440.337	E	276659.493	S	8+032.731	Z
POINT ST	80	N	785392.074	E	276744.121	S	8+136.242	Z
POINT PI	80	N	785438.464	E	276714.501	S	8+087.771	Z
POINT SB	80	N	785439.524	E	276683.371	S	8+056.622	Z
POINT SC	80	N	785436.109	E	276694.853	S	8+068.445	Z
POINT CI	80	N	785431.453	E	276710.503	S	8+084.773	Z
POINT CS	80	N	785420.353	E	276722.478	S	8+100.528	Z
POINT SA	80	N	785412.210	E	276731.264	S	8+112.507	Z

CURVE 81 — TYPE SC — CURVE ELEMENTS

TTB	71.365	DEF.	24 38 11.34
TTA	43.622	BACK	S 32 33 26.73 E
TOTAL LEN	113.540	AHEAD	S 57 11 38.07 E

SPIRAL BACK

PARAMETER	110.000	ANGLE	9 36 7.92		
LENGTH	63.684	PHI C	3 11 59.80	XC	63.506
LONG TAN.	42.519	BACK	S 32 33 26.73 E	YC	3.550
SHORT TAN.	21.285	AHEAD	S 42 9 34.65 E	P	0.889
CHORD	63.605	CHORD	S 35 45 26.63 E	Q	31.812

CIRCULAR SECTION

RADIUS	190.000		
LENGTH	49.856	DELTA	15 2 3.41
TANGENT	25.072	BACK	S 42 9 34.65 E
EXTERNAL	1.647	AHEAD	S 57 11 38.07 E
CHORD	49.713	CHORD	S 49 40 36.36 E
MID. ORD.	1.633		

CURVE 81 — TYPE SC — CURVE POINTS

POINT CC	81	N	785426.901	E	276948.363	S	*************	Z
POINT TS	81	N	785350.989	E	276770.353	S	8+184.987	Z
POINT PT	81	N	785267.205	E	276845.422	S	8+298.527	Z
POINT PI	81	N	785290.839	E	276808.758	S	8+256.352	Z
POINT SB	81	N	785315.152	E	276793.234	S	8+227.506	Z
POINT SC	81	N	785299.374	E	276807.521	S	8+248.672	Z
POINT CI	81	N	785280.788	E	276824.349	S	8+273.743	Z

CURVE 82 — TYPE RSR — CURVE ELEMENTS

SPIRAL

PARAMETER	110.000	ANGLE	9 29 42.77		
LENGTH	56.962	PHI C	6 1 42.75	XC	56.579
LONG TAN.	36.221	BACK	S 57 11 38.07 E	YC	5.975
SHORT TAN.	20.854	AHEAD	S 66 41 20.84 E		
CHORD	56.894	CHORD	S 63 13 20.82 E		
RADIUS BACK	190.000				
RADIUS AHEAD	1800.000				

CURVE 82 — TYPE RSR — CURVE POINTS

POINT TS	82	N	785267.205	E	276845.422	S	8+298.527	Z
POINT ST	82	N	785241.572	E	276896.215	S	8+355.489	Z
POINT PI	82	N	785255.906	E	276862.950	S	8+319.382	Z

CURVE 83 — TYPE C — CURVE ELEMENTS

RADIUS	1800.000		
LENGTH	169.447	DELTA	5 23 37.18
TANGENT	84.786	BACK	S 66 41 20.84 E
EXTERNAL	1.996	AHEAD	S 72 4 58.02 E
CHORD	169.384	CHORD	S 69 23 9.43 E
MID. ORD.	1.994		

CURVE 83 — TYPE C — CURVE POINTS

POINT CC	83	N	786894.640	E	277608.510	S	*************	Z
POINT PC	83	N	785241.572	E	276896.215	S	8+355.489	Z
POINT PT	83	N	785181.937	E	277054.754	S	8+524.936	Z
POINT PI	83	N	785208.021	E	276974.080	S	8+440.275	Z

RAMP S-E

CURVE 60 — TYPE C — CURVE ELEMENTS

RADIUS	250.000		
LENGTH	38.364	DELTA	8 47 32.38
TANGENT	19.220	BACK	N 17 52 8.85 E
EXTERNAL	0.738	AHEAD	N 26 39 41.23 E
CHORD	38.326	CHORD	N 22 15 55.04 E
MID. ORD.	0.736		

CURVE 60 — TYPE C — CURVE POINTS

POINT CC	60	N	785012.669	E	276760.374	S	*************	Z
POINT PC	60	N	785089.380	E	276522.434	S	6+000.000	Z
POINT PT	60	N	785124.849	E	276536.956	S	6+038.364	Z
POINT PI	60	N	785107.672	E	276528.331	S	6+019.220	Z

CURVE 61 — TYPE SCS — CURVE ELEMENTS

TTB	113.204	DEF.	80 45 20.75
TTA	113.204	BACK	N 26 39 41.23 E
TOTAL LEN	193.449	AHEAD	S 72 34 58.02 E

SPIRAL BACK

PARAMETER	65.000	ANGLE	10 0 11.11		
LENGTH	38.409	PHI C	3 20 0.60	XC	38.292
LONG TAN.	25.647	BACK	N 26 39 41.23 E	YC	2.230
SHORT TAN.	12.840	AHEAD	N 36 39 52.34 E	P	0.558
CHORD	38.357	CHORD	N 29 59 41.83 E	Q	19.185

CIRCULAR SECTION

RADIUS	110.000		
LENGTH	116.631	DELTA	60 44 58.54
TANGENT	64.472	BACK	N 36 39 52.34 E
EXTERNAL	17.501	AHEAD	S 82 35 9.13 E
CHORD	111.244	CHORD	N 67 2 21.60 E
MID. ORD.	15.099		

SPIRAL AHEAD

PARAMETER	65.000	ANGLE	10 0 11.11		
LENGTH	38.409	PHI C	3 20 0.60	XC	38.292
LONG TAN.	25.647	BACK	S 82 35 9.13 E	YC	2.230
SHORT TAN.	12.840	AHEAD	S 72 34 58.02 E	P	0.558
CHORD	38.357	CHORD	S 75 54 58.62 E	Q	-19.185

CURVE 61 — TYPE SCS — CURVE POINTS

POINT CC	61	N	785142.776	E	276669.669	S	*************	Z
POINT TS	61	N	785175.241	E	276562.258	S	6+094.751	Z
POINT ST	61	N	785242.523	E	276721.068	S	6+288.200	Z
POINT PI	61	N	785276.408	E	276613.054	S	6+207.955	Z
POINT SB	61	N	785198.161	E	276573.766	S	6+120.398	Z
POINT SC	61	N	785208.461	E	276581.433	S	6+133.160	Z
POINT CI	61	N	785260.176	E	276619.931	S	6+197.632	Z
POINT CS	61	N	785251.857	E	276683.864	S	6+249.791	Z
POINT SA	61	N	785250.200	E	276696.597	S	6+262.632	Z

CURVE 62 — TYPE C — CURVE ELEMENTS

RADIUS	1600.000		
LENGTH	69.813	DELTA	2 30 0.00
TANGENT	34.912	BACK	S 72 34 58.02 E
EXTERNAL	0.381	AHEAD	S 75 4 58.02 E
CHORD	69.808	CHORD	S 73 49 58.02 E
MID. ORD.	0.381		

CURVE 62 — TYPE C — CURVE POINTS

POINT CC	62	N	786755.940	E	277242.145	S	*************	Z
POINT PC	62	N	785229.299	E	276763.221	S	6+332.379	Z
POINT PT	62	N	785209.862	E	276830.268	S	6+402.192	Z
POINT PI	62	N	785218.849	E	276796.532	S	6+367.291	Z

CURVE 63 — TYPE C — CURVE ELEMENTS

RADIUS	2000.000		
LENGTH	104.720	DELTA	3 0 0.00
TANGENT	52.372	BACK	S 75 4 58.02 E
EXTERNAL	0.686	AHEAD	S 72 4 58.02 E
CHORD	104.708	CHORD	S 73 34 58.02 E
MID. ORD.	0.685		

CURVE 63 — TYPE C — CURVE POINTS

POINT CC	63	N	783256.359	E	276393.894	S	*************	Z
POINT PC	63	N	785188.957	E	276908.740	S	6+483.401	Z
POINT PT	63	N	785159.363	E	277009.179	S	6+588.121	Z
POINT PI	63	N	785175.475	E	276959.347	S	6+535.773	Z

POINT DATA

POINT	20	N	785356.282	E	276518.869	S	2+000.000
POINT	24	N	785311.226	E	276597.634	S	2+460.674
POINT	68	N	785089.380	E	276522.434	S	6+000.000
POINT	69	N	785159.363	E	277009.179	S	6+588.121
POINT	82	N	785441.451	E	276626.781	S	8+000.000
POINT	85	N	785181.937	E	277054.754	S	8+524.936

POINT DATA – LIMERIDGE RD.

POINT	800	N	785440.256	E	276626.417	S	15+000.000
POINT	801	N	785409.525	E	276721.578	S	14+900.000
POINT	803	N	785440.328	E	276626.439	S	16+000.000
POINT	804	N	785472.181	E	276531.648	S	16+100.000

No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

DESIGNED BY: D.A.Y. | DRAWN BY: H.M | CHECKED BY: D.A.Y.

PARKER CONSULTANTS

REGISTERED PROFESSIONAL ENGINEER — F. E. WILSON — PROVINCE OF ONTARIO

APPROVED — PROJECT DIRECTOR

APPROVED — MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

SPECIAL PROJECTS OFFICE

DATE: JANUARY, 1994

RED HILL CREEK EXPRESSWAY
PAVING CONTRACT

HORIZONTAL ALIGNMENT

SCALE: 0 10 20 40

HAM0062769_0001

RAMP W-NS

CURVE 70 — TYPE C — CURVE ELEMENTS

RADIUS	1800.000				
LENGTH	169.454	DELTA	5 23 38.01		
TANGENT	84.790	BACK	S 71 3 36.07 E		
EXTERNAL	1.996	AHEAD	S 65 39 58.06 E		
CHORD	169.392	CHORD	S 68 21 47.07 E		
MID. ORD.	1.994				

CURVE 70 — TYPE C — CURVE POINTS

POINT	CC	70	N	783752.676	E	275536.933	S	*************	Z
POINT	PC	70	N	785455.222	E	276121.172	S	7+000.000	Z
POINT	PT	70	N	785392.763	E	276278.628	S	7+169.454	Z
POINT	PI	70	N	785427.701	E	276201.372	S	7+084.790	Z

CURVE 71 — TYPE RSR — CURVE ELEMENTS

SPIRAL

PARAMETER	110.000	ANGLE	9 29 42.77		
LENGTH	56.962	PHI C	3 28 0.02	XC	56.790
LONG TAN.	36.221	BACK	S 65 39 58.06 E	YC	3.440
SHORT TAN.	20.854	AHEAD	S 56 10 15.29 E		
CHORD	56.894	CHORD	S 62 11 58.04 E		
RADIUS BACK	1800.000				
RADIUS AHEAD	190.000				

CURVE 71 — TYPE RSR — CURVE POINTS

POINT	TS	71	N	785392.763	E	276278.628	S	7+169.454	Z
POINT	ST	71	N	785366.228	E	276328.956	S	7+226.416	Z
POINT	PI	71	N	785377.838	E	276311.632	S	7+205.675	Z

CURVE 72 — TYPE CS — CURVE ELEMENTS

TTB	43.194	DEF.	24 22 41.29
TTA	70.893	BACK	S 56 10 15.29 E
TOTAL LEN	112.683	AHEAD	S 31 47 34.00 E

CIRCULAR SECTION

RADIUS	190.000		
LENGTH	48.999	DELTA	14 46 33.37
TANGENT	24.636	BACK	S 56 10 15.29 E
EXTERNAL	1.591	AHEAD	S 41 23 41.92 E
CHORD	48.863	CHORD	S 48 46 58.61 E
MID. ORD.	1.577		

SPIRAL AHEAD

PARAMETER	110.000	ANGLE	9 36 7.92		
LENGTH	63.684	PHI C	3 11 59.80	XC	63.506
LONG TAN.	42.519	BACK	S 41 23 41.92 E	YC	3.550
SHORT TAN.	21.285	AHEAD	S 31 47 34.00 E	P	0.889
CHORD	63.605	CHORD	S 34 59 33.80 E	Q	-31.812

CURVE 72 — TYPE CS — CURVE POINTS

POINT	CC	72	N	785208.395	E	276223.179	S	*************	Z
POINT	PC	72	N	785366.228	E	276328.956	S	7+226.416	Z
POINT	ST	72	N	785281.925	E	276402.187	S	7+339.099	Z
POINT	PI	72	N	785342.181	E	276364.837	S	7+269.610	Z
POINT	CI	72	N	785352.513	E	276349.421	S	7+251.052	Z
POINT	CS	72	N	785334.032	E	276365.711	S	7+275.415	Z
POINT	SA	72	N	785318.064	E	276379.786	S	7+296.700	Z

CURVE 73 — TYPE SCS — CURVE ELEMENTS

TTB	54.918	DEF.	55 20 17.15
TTA	54.918	BACK	S 31 47 34.00 E
TOTAL LEN	103.323	AHEAD	S 87 7 51.15 E

SPIRAL BACK

PARAMETER	50.000	ANGLE	14 36 58.57		
LENGTH	35.714	PHI C	4 52 9.85	XC	35.483
LONG TAN.	23.891	BACK	S 31 47 34.00 E	YC	3.023
SHORT TAN.	11.979	AHEAD	S 46 24 32.57 E	P	0.757
CHORD	35.611	CHORD	S 36 39 43.85 E	Q	17.818

CIRCULAR SECTION

RADIUS	70.000		
LENGTH	31.894	DELTA	26 6 20.00
TANGENT	16.229	BACK	S 46 24 32.57 E
EXTERNAL	1.857	AHEAD	S 72 30 52.58 E
CHORD	31.619	CHORD	S 59 27 42.58 E
MID. ORD.	1.809		

SPIRAL AHEAD

PARAMETER	50.000	ANGLE	14 36 58.57		
LENGTH	35.714	PHI C	4 52 9.85	XC	35.483
LONG TAN.	23.891	BACK	S 72 30 52.58 E	YC	3.023
SHORT TAN.	11.979	AHEAD	S 87 7 51.15 E	P	0.757
CHORD	35.611	CHORD	S 82 15 41.30 E	Q	-17.818

CURVE 73 — TYPE SCS — CURVE POINTS

POINT	CC	73	N	785260.745	E	276498.563	S	*************	Z
POINT	TS	73	N	785238.612	E	276429.035	S	7+390.059	Z
POINT	ST	73	N	785189.185	E	276512.818	S	7+493.381	Z
POINT	PI	73	N	785191.933	E	276457.968	S	7+444.977	Z
POINT	SB	73	N	785218.305	E	276441.622	S	7+413.950	Z
POINT	SC	73	N	785210.046	E	276450.298	S	7+425.773	Z
POINT	CI	73	N	785198.856	E	276462.052	S	7+442.002	Z
POINT	CS	73	N	785193.980	E	276477.531	S	7+457.667	Z
POINT	SA	73	N	785190.380	E	276488.957	S	7+469.646	Z

POINT DATA

POINT		11	N	785314.755	E	276586.689	S	18+894.094
POINT		30	N	785278.666	E	276640.188	S	3+445.140
POINT		32	N	785318.284	E	276575.744	S	3+000.000
POINT		46	N	785477.031	E	276166.992	S	4+000.000
POINT		72	N	785187.538	E	276545.675	S	7+526.279
POINT		73	N	785455.222	E	276121.172	S	7+000.000
POINT	PT	743	N	785520.084	E	276638.725	S	4+562.203
POINT		200	N	785572.222	E	275834.794		

RAMP N-W

CURVE 40 — TYPE C — CURVE ELEMENTS

RADIUS	2000.000		
LENGTH	104.720	DELTA	3 0 0.00
TANGENT	52.372	BACK	S 71 3 36.07 E
EXTERNAL	0.686	AHEAD	S 74 3 36.07 E
CHORD	104.708	CHORD	S 72 33 36.07 E
MID. ORD.	0.685		

CURVE 40 — TYPE C — CURVE POINTS

POINT	CC	40	N	787368.749	E	276816.147	S	*************	Z
POINT	PC	40	N	785477.031	E	276166.992	S	4+000.000	Z
POINT	PT	40	N	785445.649	E	276266.887	S	4+104.720	Z
POINT	PI	40	N	785460.032	E	276216.528	S	4+052.372	Z

CURVE 41 — TYPE C — CURVE ELEMENTS

RADIUS	1600.000		
LENGTH	69.813	DELTA	2 30 0.00
TANGENT	34.912	BACK	S 74 3 36.07 E
EXTERNAL	0.381	AHEAD	S 71 33 36.07 E
CHORD	69.808	CHORD	S 72 48 36.07 E
MID. ORD.	0.381		

CURVE 41 — TYPE C — CURVE POINTS

POINT	CC	41	N	783885.141	E	275904.605	S	*************	Z
POINT	PC	41	N	785423.621	E	276344.013	S	4+184.930	Z
POINT	PT	41	N	785402.990	E	276410.702	S	4+254.744	Z
POINT	PI	41	N	785414.033	E	276377.583	S	4+219.842	Z

CURVE 42 — TYPE SCS — CURVE ELEMENTS

TTB	116.480	DEF.	82 41 52.06
TTA	116.480	BACK	S 71 33 36.07 E
TOTAL LEN	197.177	AHEAD	N 25 44 31.87 E

SPIRAL BACK

PARAMETER	65.000	ANGLE	10 0 11.11		
LENGTH	38.409	PHI C	3 20 0.60	XC	38.292
LONG TAN.	25.647	BACK	S 71 33 36.07 E	YC	2.230
SHORT TAN.	12.840	AHEAD	S 81 33 47.18 E	P	0.558
CHORD	38.357	CHORD	S 74 53 36.67 E	Q	19.185

CIRCULAR SECTION

RADIUS	110.000		
LENGTH	120.359	DELTA	62 41 29.84
TANGENT	67.002	BACK	S 81 33 47.18 E
EXTERNAL	18.799	AHEAD	N 35 44 42.98 E
CHORD	114.444	CHORD	N 67 5 27.80 E
MID. ORD.	16.055		

SPIRAL AHEAD

PARAMETER	65.000	ANGLE	10 0 11.11		
LENGTH	38.409	PHI C	3 20 0.60	XC	38.292
LONG TAN.	25.647	BACK	N 35 44 42.98 E	YC	2.230
SHORT TAN.	12.840	AHEAD	N 25 44 31.87 E	P	0.558
CHORD	38.357	CHORD	N 29 4 32.47 E	Q	-19.185

CURVE 42 — TYPE SCS — CURVE POINTS

POINT	CC	42	N	785488.429	E	276503.984	S	*************	Z
POINT	TS	42	N	785389.616	E	276450.813	S	4+297.025	Z
POINT	ST	42	N	785457.692	E	276611.902	S	4+494.203	Z
POINT	PI	42	N	785352.772	E	276561.312	S	4+413.505	Z
POINT	SB	42	N	785381.504	E	276475.143	S	4+322.672	Z
POINT	SC	42	N	785379.620	E	276487.844	S	4+335.434	Z
POINT	CI	42	N	785369.789	E	276554.121	S	4+402.436	Z
POINT	CS	42	N	785424.169	E	276593.262	S	4+455.793	Z
POINT	SA	42	N	785434.591	E	276600.763	S	4+468.634	Z

CURVE 743 — TYPE C — CURVE ELEMENTS

RADIUS	250.000		
LENGTH	38.364	DELTA	8 47 32.24
TANGENT	19.220	BACK	N 25 44 31.87 E
EXTERNAL	0.738	AHEAD	N 16 56 59.62 E
CHORD	38.326	CHORD	N 21 20 45.75 E
MID. ORD.	0.736		

CURVE 743 — TYPE C — CURVE POINTS

POINT	CC	743	N	785592.968	E	276399.585	S	*************	Z
POINT	PC	743	N	785484.387	E	276624.774	S	4+523.839	Z
POINT	PT	743	N	785520.084	E	276638.725	S	4+562.203	Z
POINT	PI	743	N	785501.700	E	276633.121	S	4+543.059	Z

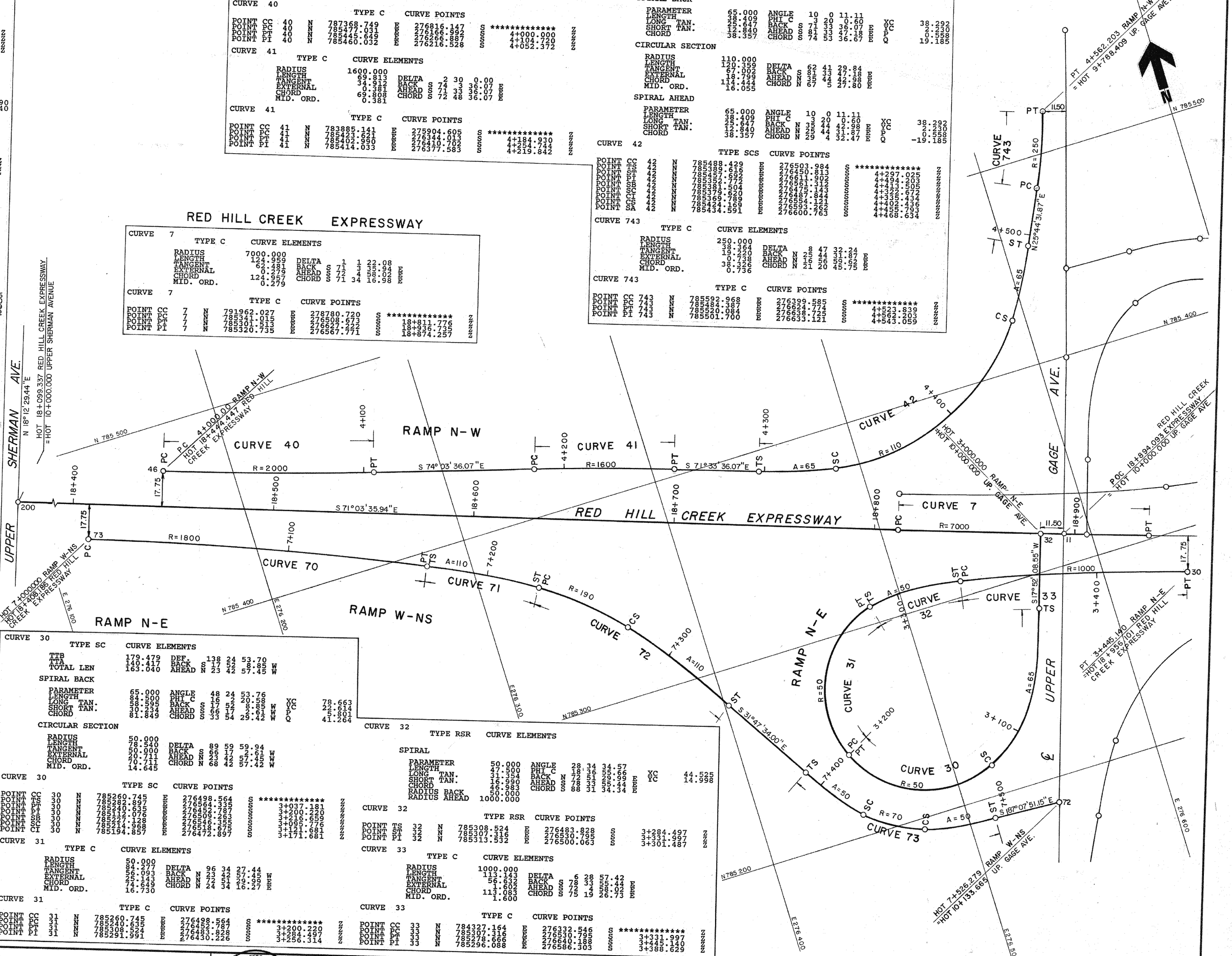
RED HILL CREEK EXPRESSWAY

CURVE 7 — TYPE C — CURVE ELEMENTS

RADIUS	7000.000		
LENGTH	124.959	DELTA	1 1 22.08
TANGENT	62.481	BACK	S 71 3 35.94 E
EXTERNAL	0.279	AHEAD	S 72 4 58.02 E
CHORD	124.957	CHORD	S 71 34 16.98 E
MID. ORD.	0.279		

CURVE 7 — TYPE C — CURVE POINTS

POINT	CC	7	N	791962.027	E	278780.720	S	*************	Z
POINT	PC	7	N	785341.015	E	276508.673	S	18+811.776	Z
POINT	PT	7	N	785301.513	E	276627.222	S	18+936.735	Z
POINT	PI	7	N	785320.735	E	276567.771	S	18+874.257	Z



CONT	No RHW-97-226 (SPO)	SHEET
WP	No	4

No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

PARKER CONSULTANTS

DESIGNED BY: D.A.Y | DRAWN BY: H.M | CHECKED BY: D.A.Y

REGISTERED PROFESSIONAL ENGINEER F. E. WILSON PROVINCE OF ONTARIO

APPROVED PROJECT DIRECTOR | APPROVED MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

SPECIAL PROJECTS OFFICE

DATE: JANUARY, 1994

RED HILL CREEK EXPRESSWAY PAVING CONTRACT

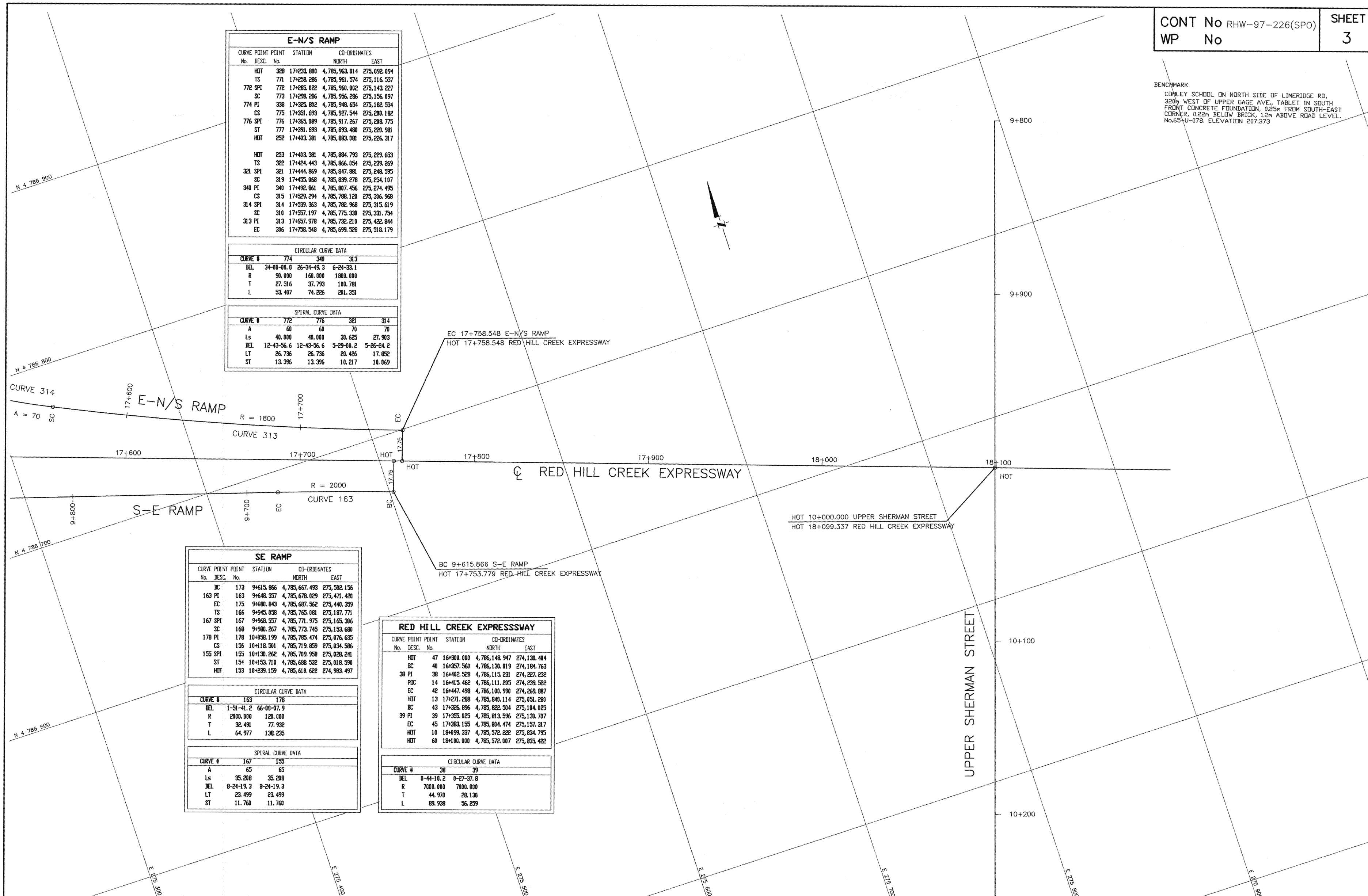
HORIZONTAL ALIGNMENT

SCALE: 0 10 20 40

HAM0062769_0001

CONT No RHW-97-226(SPO) | SHEET 3
WP No

BENCHMARK
COMLEY SCHOOL ON NORTH SIDE OF LIMERIDGE RD, 320m WEST OF UPPER GAGE AVE., TABLET IN SOUTH FRONT CONCRETE FOUNDATION, 0.25m FROM SOUTH-EAST CORNER, 0.22m BELOW BRICK, 1.2m ABOVE ROAD LEVEL. No.65-U-078. ELEVATION 207.373



E-N/S RAMP

CURVE No.	POINT DESC.	POINT No.	STATION	CO-ORDINATES NORTH	EAST
	HOT	328	17+233.800	4,785,963.014	275,092.094
	TS	771	17+258.286	4,785,961.574	275,116.537
772	SPI	772	17+285.022	4,785,960.002	275,143.227
	SC	773	17+298.286	4,785,956.286	275,156.097
774	PI	338	17+325.802	4,785,948.654	275,182.534
	CS	775	17+351.693	4,785,927.544	275,200.182
776	SPI	776	17+365.089	4,785,917.267	275,208.775
	ST	777	17+391.693	4,785,893.480	275,220.981
	HOT	252	17+403.381	4,785,883.081	275,226.317
	HOT	253	17+403.381	4,785,884.793	275,229.653
	TS	322	17+424.443	4,785,866.054	275,239.269
321	SPI	321	17+444.869	4,785,847.881	275,248.595
	SC	319	17+455.068	4,785,839.278	275,254.107
340	PI	340	17+492.861	4,785,807.456	275,274.495
	CS	315	17+529.294	4,785,788.120	275,306.968
314	SPI	314	17+539.363	4,785,782.968	275,315.619
	SC	310	17+557.197	4,785,775.330	275,331.754
313	PI	313	17+657.978	4,785,732.210	275,422.844
	EC	306	17+758.548	4,785,699.528	275,518.179

CIRCULAR CURVE DATA

CURVE #	774	340	313
DEL	34-00-00.0	26-34-49.3	6-24-33.1
R	90.000	160.000	1800.000
T	27.516	37.793	100.781
L	53.407	74.226	201.351

SPIRAL CURVE DATA

CURVE #	772	776	321	314
A	60	60	70	70
Ls	40.000	40.000	30.625	27.903
DEL	12-43-56.6	12-43-56.6	5-29-00.2	5-26-24.2
LT	26.736	26.736	20.426	17.852
ST	13.396	13.396	10.217	10.069

SE RAMP

CURVE No.	POINT DESC.	POINT No.	STATION	CO-ORDINATES NORTH	EAST
	BC	173	9+615.866	4,785,667.493	275,502.156
163	PI	163	9+648.357	4,785,678.029	275,471.420
	EC	175	9+680.843	4,785,687.562	275,440.359
	TS	166	9+945.058	4,785,765.081	275,187.771
167	SPI	167	9+968.557	4,785,771.975	275,165.306
	SC	168	9+980.267	4,785,773.745	275,153.680
178	PI	178	10+058.199	4,785,785.474	275,076.635
	CS	156	10+118.501	4,785,719.859	275,034.586
155	SPI	155	10+130.262	4,785,709.958	275,028.241
	ST	154	10+153.710	4,785,688.532	275,018.590
	HOT	153	10+239.159	4,785,610.622	274,983.497

CIRCULAR CURVE DATA

CURVE #	163	178
DEL	1-51-41.2	66-00-07.9
R	2000.000	120.000
T	32.491	77.932
L	64.977	138.235

SPIRAL CURVE DATA

CURVE #	167	155
A	65	65
Ls	35.208	35.208
DEL	8-24-19.3	8-24-19.3
LT	23.499	23.499
ST	11.760	11.760

RED HILL CREEK EXPRESSSWAY

CURVE No.	POINT DESC.	POINT No.	STATION	CO-ORDINATES NORTH	EAST
	HOT	47	16+300.000	4,786,148.947	274,130.404
	BC	40	16+357.560	4,786,130.019	274,184.763
38	PI	38	16+402.528	4,786,115.231	274,227.232
	POC	14	16+415.462	4,786,111.205	274,239.522
	EC	42	16+447.498	4,786,100.990	274,269.887
	HOT	13	17+271.288	4,785,840.114	275,051.280
	BC	43	17+326.896	4,785,822.504	275,104.025
39	PI	39	17+355.025	4,785,813.596	275,130.707
	EC	45	17+383.155	4,785,804.474	275,157.317
	HOT	10	18+099.337	4,785,572.222	275,834.795
	HOT	60	18+100.000	4,785,572.007	275,835.422

CIRCULAR CURVE DATA

CURVE #	38	39
DEL	0-44-10.2	0-27-37.8
R	7000.000	7000.000
T	44.970	28.130
L	89.938	56.259

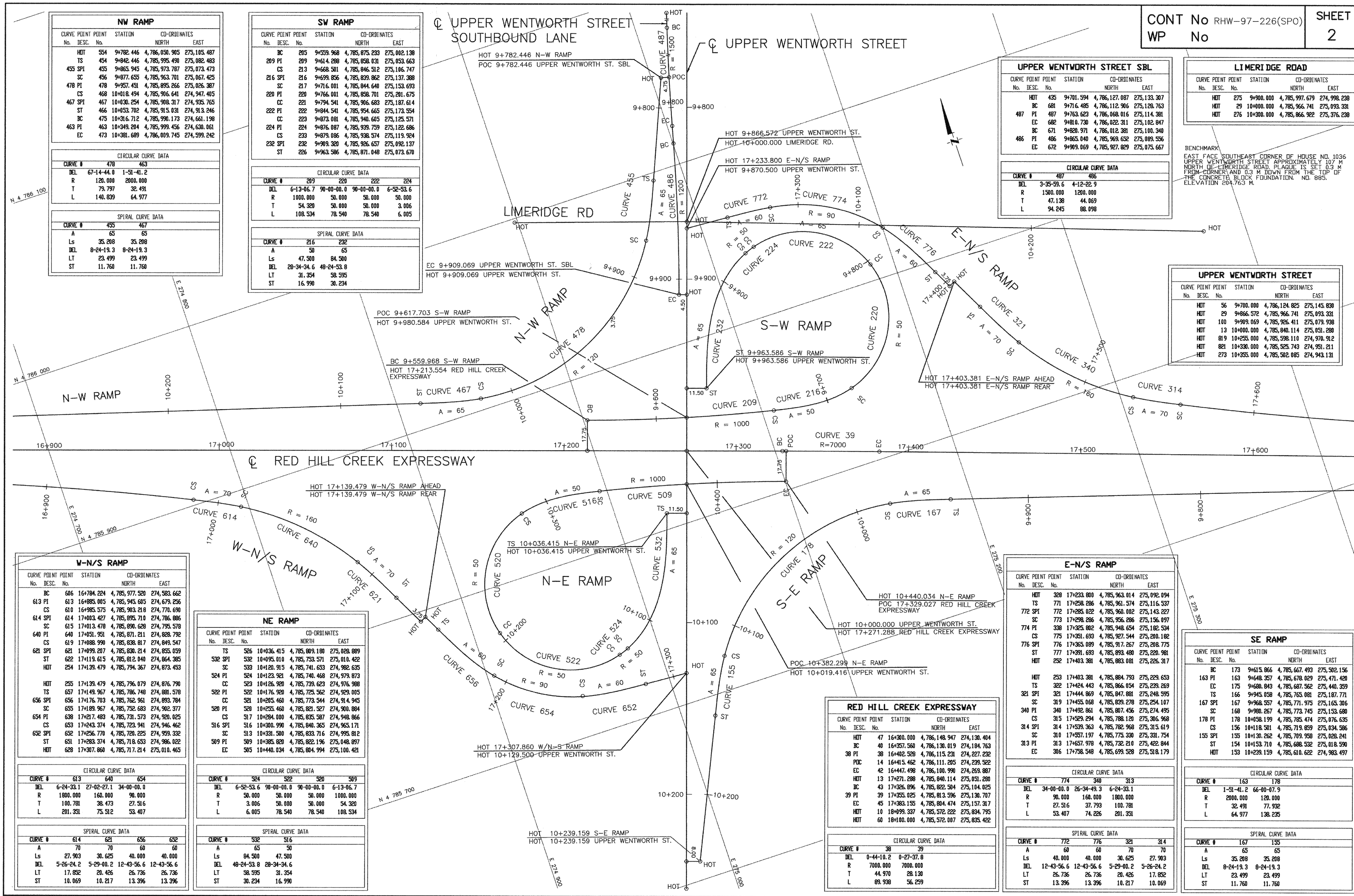
No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	**ISSUED FOR CONSTRUCTION**	APR 15/97	

DESIGNED BY: J.K.L. | DRAWN BY: S.M. | CHECKED BY: A.J.S.

APPROVED — PROJECT DIRECTOR | APPROVED — MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH
SPECIAL PROJECTS OFFICE
DATE: JANUARY 1994

RED HILL CREEK EXPRESSWAY
PAVING CONTRACT
HORIZONTAL ALIGNMENT
SCALE: HORIZ. 0 10 20 30



CONT No RHW-97-226(SPO)
WP No
SHEET 2

NW RAMP

CURVE No.	POINT DESC.	POINT No.	STATION	CO-ORDINATES NORTH	EAST
	HOT	554	9+782.446	4,786,050.905	275,105.487
	TS	454	9+842.446	4,785,995.490	275,082.483
455	SPI	455	9+865.945	4,785,973.787	275,073.473
	SC	456	9+877.655	4,785,963.701	275,067.425
478	PI	478	9+957.451	4,785,895.266	275,026.387
	CS	468	10+018.494	4,785,906.641	274,947.405
467	SPI	467	10+030.254	4,785,908.317	274,935.765
	ST	466	10+053.702	4,785,915.031	274,913.246
	BC	475	10+316.712	4,785,990.173	274,661.198
463	PI	463	10+349.204	4,785,999.456	274,630.061
	EC	473	10+381.689	4,786,009.745	274,599.242

CIRCULAR CURVE DATA

CURVE #	478	463
DEL	67-14-44.0	1-51-41.2
R	120.000	2000.000
T	79.797	32.491
L	140.839	64.977

SPIRAL CURVE DATA

CURVE #	455	467
A	65	65
Ls	35.208	35.208
DEL	8-24-19.3	8-24-19.3
LT	23.499	23.499
ST	11.760	11.760

SW RAMP

CURVE No.	POINT DESC.	POINT No.	STATION	CO-ORDINATES NORTH	EAST
	BC	205	9+559.968	4,785,875.233	275,002.138
209	PI	209	9+614.288	4,785,858.031	275,053.663
	CS	213	9+668.501	4,785,846.512	275,106.747
216	SPI	216	9+699.856	4,785,839.862	275,137.388
	SC	217	9+716.001	4,785,844.640	275,153.693
220	PI	220	9+766.001	4,785,858.701	275,201.675
	CC	221	9+794.541	4,785,906.683	275,187.614
222	PI	222	9+844.541	4,785,954.665	275,173.554
	CC	223	9+873.081	4,785,940.605	275,125.571
224	PI	224	9+876.087	4,785,939.759	275,122.686
	CS	233	9+879.086	4,785,938.574	275,119.924
232	SPI	232	9+909.320	4,785,926.657	275,092.137
	ST	226	9+963.586	4,785,871.048	275,073.670

CIRCULAR CURVE DATA

CURVE #	209	220	222	224
DEL	6-13-06.7	90-00-00.0	90-00-00.0	6-52-53.6
R	1000.000	50.000	50.000	50.000
T	54.320	50.000	50.000	3.006
L	108.534	78.540	78.540	6.005

SPIRAL CURVE DATA

CURVE #	216	232
A	50	65
Ls	47.500	84.500
DEL	28-34-34.6	48-24-53.8
LT	31.354	58.595
ST	16.990	30.234

UPPER WENTWORTH STREET SBL

CURVE No.	POINT DESC.	POINT No.	STATION	CO-ORDINATES NORTH	EAST
	HOT	435	9+701.594	4,786,127.087	275,133.307
	BC	681	9+716.485	4,786,112.906	275,128.763
487	PI	487	9+763.623	4,786,068.016	275,114.381
	EC	682	9+810.730	4,786,022.311	275,102.847
	BC	671	9+820.971	4,786,012.381	275,100.340
486	PI	486	9+865.040	4,785,969.632	275,089.556
	EC	672	9+909.069	4,785,927.829	275,075.667

CIRCULAR CURVE DATA

CURVE #	487	486
DEL	3-35-59.6	4-12-22.9
R	1500.000	1200.000
T	47.138	44.069
L	94.245	88.098

LIMERIDGE ROAD

CURVE No.	POINT DESC.	POINT No.	STATION	CO-ORDINATES NORTH	EAST
	HOT	275	9+900.000	4,785,997.679	274,998.238
	HOT	29	10+000.000	4,785,966.741	275,093.331
	HOT	276	10+300.000	4,785,866.922	275,376.238

UPPER WENTWORTH STREET

CURVE No.	POINT DESC.	POINT No.	STATION	CO-ORDINATES NORTH	EAST
	HOT	56	9+700.000	4,786,124.825	275,145.830
	HOT	29	9+866.572	4,785,966.741	275,093.331
	HOT	100	9+909.069	4,785,926.411	275,079.938
	HOT	13	10+000.000	4,785,840.114	275,051.280
	HOT	819	10+255.000	4,785,598.110	274,970.912
	HOT	821	10+330.000	4,785,525.743	274,951.211
	HOT	273	10+355.000	4,785,502.085	274,943.131

W-N/S RAMP

CURVE No.	POINT DESC.	POINT No.	STATION	CO-ORDINATES NORTH	EAST
	BC	606	16+784.224	4,785,977.528	274,583.662
613	PI	613	16+885.005	4,785,945.605	274,679.256
	CS	610	16+985.575	4,785,903.218	274,770.690
614	SPI	614	17+003.427	4,785,895.710	274,786.886
	SC	615	17+013.478	4,785,890.628	274,795.578
640	PI	640	17+051.951	4,785,871.211	274,828.792
	CS	619	17+088.990	4,785,838.817	274,849.547
621	SPI	621	17+099.207	4,785,830.214	274,855.059
	ST	622	17+119.615	4,785,812.040	274,864.385
	HOT	254	17+139.479	4,785,794.367	274,873.453
	HOT	255	17+139.479	4,785,796.079	274,876.790
	TS	657	17+149.967	4,785,786.748	274,881.578
656	SPI	656	17+176.703	4,785,762.961	274,893.784
	SC	655	17+189.967	4,785,752.377	274,899.377
654	PI	638	17+217.483	4,785,731.573	274,920.025
	CS	653	17+243.374	4,785,723.941	274,944.462
652	SPI	652	17+256.770	4,785,720.225	274,959.332
	ST	651	17+283.374	4,785,718.653	274,986.022
	HOT	628	17+307.860	4,785,717.214	275,010.465

CIRCULAR CURVE DATA

CURVE #	613	640	654
DEL	6-24-33.1	27-02-27.1	34-00-00.0
R	1800.000	160.000	90.000
T	100.781	38.473	27.516
L	201.351	75.512	53.407

SPIRAL CURVE DATA

CURVE #	614	621	656	652
A	70	70	60	60
Ls	27.903	30.625	40.000	40.000
DEL	5-26-24.2	5-29-00.2	12-43-56.6	12-43-56.6
LT	17.852	20.426	26.736	26.736
ST	10.069	10.217	13.396	13.396

NE RAMP

CURVE No.	POINT DESC.	POINT No.	STATION	CO-ORDINATES NORTH	EAST
	TS	526	10+036.415	4,785,809.180	275,028.889
532	SPI	532	10+095.010	4,785,753.571	275,010.422
	SC	533	10+120.915	4,785,741.653	275,002.635
524	PI	524	10+123.921	4,785,740.468	274,979.873
	CC	523	10+126.920	4,785,739.623	274,976.988
522	PI	522	10+176.920	4,785,725.562	274,929.005
	CC	521	10+205.460	4,785,773.544	274,914.945
520	PI	520	10+255.460	4,785,821.527	274,900.884
	CS	517	10+284.000	4,785,835.587	274,948.866
516	SPI	516	10+300.990	4,785,840.365	274,965.171
	SC	513	10+331.500	4,785,833.716	274,995.812
509	PI	509	10+385.820	4,785,822.196	275,048.897
	EC	505	10+440.034	4,785,804.994	275,100.421

CIRCULAR CURVE DATA

CURVE #	524	522	520	509
DEL	6-52-53.6	90-00-00.0	90-00-00.0	6-13-06.7
R	50.000	50.000	50.000	1000.000
T	3.006	50.000	50.000	54.320
L	6.005	78.540	78.540	108.534

SPIRAL CURVE DATA

CURVE #	532	516
A	65	50
Ls	84.500	47.500
DEL	48-24-53.8	28-34-34.6
LT	58.595	31.354
ST	30.234	16.990

RED HILL CREEK EXPRESSWAY

CURVE No.	POINT DESC.	POINT No.	STATION	CO-ORDINATES NORTH	EAST
	HOT	47	16+300.000	4,786,148.947	274,130.404
	BC	40	16+357.560	4,786,130.019	274,184.763
38	PI	38	16+402.528	4,786,115.231	274,227.232
	POC	14	16+415.462	4,786,111.205	274,239.522
	EC	42	16+447.498	4,786,100.990	274,269.887
	HOT	13	17+271.288	4,785,840.114	275,051.280
	BC	43	17+326.896	4,785,822.504	275,104.025
39	PI	39	17+355.025	4,785,813.596	275,130.707
	EC	45	17+383.155	4,785,804.474	275,157.317
	HOT	10	18+099.337	4,785,572.222	275,834.795
	HOT	60	18+100.000	4,785,572.007	275,835.422

CIRCULAR CURVE DATA

CURVE #	38	39
DEL	0-44-10.2	0-27-37.8
R	7000.000	7000.000
T	44.970	28.130
L	89.938	56.259

E-N/S RAMP

CURVE No.	POINT DESC.	POINT No.	STATION	CO-ORDINATES NORTH	EAST
	HOT	328	17+233.800	4,785,963.014	275,092.094
	TS	771	17+258.286	4,785,961.574	275,116.537
772	SPI	772	17+285.022	4,785,960.002	275,143.227
	SC	773	17+298.286	4,785,956.286	275,156.097
774	PI	338	17+325.802	4,785,948.654	275,182.534
	CS	775	17+351.693	4,785,927.544	275,200.182
776	SPI	776	17+365.089	4,785,917.267	275,208.775
	ST	777	17+391.693	4,785,893.480	275,220.981
	HOT	252	17+403.381	4,785,883.081	275,226.317
	HOT	253	17+403.381	4,785,884.793	275,229.653
	TS	322	17+424.443	4,785,866.054	275,239.269
321	SPI	321	17+444.869	4,785,847.881	275,248.595
	SC	319	17+455.068	4,785,839.278	275,254.107
340	PI	340	17+492.861	4,785,807.456	275,274.495
	CS	315	17+529.294	4,785,788.120	275,306.968
314	SPI	314	17+539.363	4,785,782.968	275,315.619
	SC	310	17+557.197	4,785,775.330	275,331.754
313	PI	313	17+657.978	4,785,732.210	275,422.844
	EC	306	17+758.548	4,785,699.528	275,518.179

CIRCULAR CURVE DATA

CURVE #	774	340	313
DEL	34-00-00.0	26-34-49.3	6-24-33.1
R	90.000	160.000	1800.000
T	27.516	37.793	100.781
L	53.407	74.226	201.351

SPIRAL CURVE DATA

CURVE #	772	776	321	314
A	60	60	70	70
Ls	40.000	40.000	30.625	27.903
DEL	12-43-56.6	12-43-56.6	5-29-00.2	5-26-24.2
LT	26.736	26.736	20.426	17.852
ST	13.396	13.396	10.217	10.069

SE RAMP

CURVE No.	POINT DESC.	POINT No.	STATION	CO-ORDINATES NORTH	EAST
	BC	173	9+615.866	4,785,667.493	275,502.156
163	PI	163	9+648.357	4,785,678.029	275,471.420
	EC	175	9+680.843	4,785,687.562	275,440.359
	TS	166	9+945.058	4,785,765.081	275,187.771
167	SPI	167	9+968.557	4,785,771.975	275,165.306
	SC	168	9+980.267	4,785,773.745	275,153.680
178	PI	178	10+058.199	4,785,785.474	275,076.635
	CS	156	10+118.501	4,785,719.859	275,034.586
155	SPI	155	10+130.262	4,785,709.958	275,028.241
	ST	154	10+153.710	4,785,688.532	275,018.590
	HOT	153	10+239.159	4,785,610.622	274,983.497

CIRCULAR CURVE DATA

CURVE #	163	178
DEL	1-51-41.2	66-00-07.9
R	2000.000	120.000
T	32.491	77.932
L	64.977	138.235

SPIRAL CURVE DATA

CURVE #	167	155
A	65	65
Ls	35.208	35.208
DEL	8-24-19.3	8-24-19.3
LT	23.499	23.499
ST	11.760	11.760

No.	REVISIONS	DATE	INITIAL
	AS CONSTRUCTED	NOV. 15/97	
1	ISSUED FOR CONSTRUCTION	APR 15/97	

DESIGNED BY: J.K.L. DRAWN BY: S.M. CHECKED BY: A.J.S.

APPROVED PROJECT DIRECTOR

APPROVED MANAGER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

SPECIAL PROJECTS OFFICE

DATE: JANUARY 1994

RED HILL CREEK EXPRESSWAY
PAVING CONTRACT

HORIZONTAL ALIGNMENT

SCALE: HORIZ. 0 10 20 30

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