

APPENDIX 1

Supporting Information for Noise Modelling

Sample Listing of Traffic Noise Model - Tsing Yi East

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RRRRR 000000 PPPPPP LLL AAAAA NN NN
RR RR 00 00 PP PP LLL AA AA NNN NN
RR RR 00 00 PP PP LLL AA AA NNN NN
RRRRR 00 00 PPPPPP LLL AAAAA NN NN NN
RR RR 00 00 PP PP LLL AA AA NNNN
RR RR 00 00 PP PP LLL AA AA NN NNN
RR RR 00 00 PP PP LLLLLL AA AA NN NN
RR RR 000000 PP LLLLLL AA AA NN NN

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(C) WS ATKINS ENGINEERING SCIENCES
WOODCOTE GROVE
ASHLEY ROAD
EPSOM, SURREY, ENGLAND. KT18 5BW
TELEPHONE EPSOM (0372) 726140

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=====
== R O P L A N == VERSION 8.06 == KRT == WS ATKINS ES AUG 91 ==
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roadNoise licensed to ELAN - WS ATKINS CHINA
Licensed from 25-APR-97 to 25-APR-47
Last used at - 10:33:35 on 3-MAR-99
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Filename - C:\Schroder\1_proj\2746_r9\Ty-east\New-26a.mas
PRI= .0 .0
READING EPV-006.FLO .0 ON UNIT 99 .0

R U N N A M E: Tsing Yi Road (Lower)

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* * R O P L A N 8 * * * R U N N A M E : Tsing Yi Road (Lower)
RETURNING TO UNIT 5 ON UNIT 99
READING NEW-EB.SEG ON UNIT 99
RETURNING TO UNIT 5 ON UNIT 99
READING NEW-WB.SEG ON UNIT 99
RETURNING TO UNIT 5 ON UNIT 99
READING R_MAY-1.BAR ON UNIT 99
RETURNING TO UNIT 5 ON UNIT 99
READING R_MAY-3.BAR ON UNIT 99
RETURNING TO UNIT 5 ON UNIT 99
READING R_TE.CO.BAR ON UNIT 99
RETURNING TO UNIT 5 ON UNIT 99
READING N-EB.A.BAR ON UNIT 99
RETURNING TO UNIT 5 ON UNIT 99
READING MF-POD.BAR ON UNIT 99
RETURNING TO UNIT 5 ON UNIT 99
READING CLIFF.BAR ON UNIT 99
RETURNING TO UNIT 5 ON UNIT 99
READING N-WB.A.BAR ON UNIT 99
RETURNING TO UNIT 5 ON UNIT 99
READING ALL-CT9.REC ON UNIT 99

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TYTC2
 HEIGHT OF RECEIVER ABOVE DATUM= 58.0 HEIGHT ABOVE LOCAL GROUND LEVEL= 16.0

SEGMENT NUMBER	DIST ANCE	ANGLE OF VIEW	HT OF C/WAY	AV OF PROP	HT OF PROP	PER CENT SOFT	SPD CHNG	SCRN ANGL	MAJOR BARRIER NO.	HT ATT	BASIC NOISE LEVEL	LOW FLOW	SURFACE	GRADIENT	ANGLE VIEW	CORRECTIONS HARD GRND	SOFT EXCE	BARRIER	RET CUT	REFLECTION	SEGMENT TOTAL	
100.0	144.6	3.5	5.2	8.3	0	6.0	3.5	500	6.2	-1.7	75.6	0	-1.0	1.1	-17.1	-10.6	0	-1.7	0	2.5	48.8	
101.0	140.0	2.1	6.6	8.3	0	6.1	2.1	501	7.5	-1.4	75.6	0	-1.0	1.1	-19.4	-10.4	0	-1.4	0	2.5	47.0	
102.0	125.8	2.1	7.4	8.3	0	6.2	2.1	502	8.4	-1.2	75.6	0	-1.0	1.1	-19.3	-10.0	0	-1.1	0	2.5	47.8	
103.0	98.1	2.0	8.4	8.3	0	6.1	2.0	503	9.4	-.8	75.6	0	-1.0	1.1	-19.6	-9.1	0	-.7	0	2.5	48.8	
104.0	80.8	2.1	9.3	8.3	0	5.7	2.1	504	10.3	-.5	75.6	0	-1.0	1.0	-19.3	-8.4	0	-.3	0	2.5	50.1	
105.0	36.7	1.2	10.1	8.3	0	6.2	1.2	505	11.4	0	75.6	0	-1.0	1.1	-21.9	-6.2	0	0	0	2.5	50.1	
106.0			.6	ANGLE CUT-OFF																		
107.0			.6	ANGLE CUT-OFF																		
108.0	27.6	2.1	12.9	8.3	0	6.0	2.1	608	14.9	0	75.6	0	-1.0	1.1	-19.4	-5.7	0	0	0	2.5	53.1	
109.0	51.8	5.4	13.8	8.3	0	6.5	5.4	608	15.1	0	75.5	0	-1.0	1.2	-15.3	-7.0	0	0	0	2.5	55.9	
110.0	63.7	9.2	14.8	8.3	0	6.7	9.2	609	15.9	0	75.5	0	-1.0	1.2	-12.9	-7.6	0	0	0	2.5	57.7	
111.0	74.9	14.3	15.8	8.3	0	6.8	14.3	610	16.8	0	75.5	0	-1.0	1.2	-11.0	-8.1	0	0	0	2.5	59.1	
112.0	77.0	17.4	16.8	8.3	0	6.7	17.4	611	17.7	0	75.5	0	-1.0	1.2	-10.1	-8.2	0	0	0	2.5	59.9	
113.0	75.3	15.4	17.8	8.3	0	7.6	15.4	611	18.1	0	75.5	0	-1.0	1.4	-10.7	-8.2	0	0	0	2.5	59.5	
114.0	68.5	1.0	18.9	8.3	0	6.7	1.0	612	19.0	0	75.5	0	-1.0	1.2	-22.5	-7.9	0	0	0	2.5	47.8	
115.0			.0	ANGLE CUT-OFF																		
116.0			.0	ANGLE CUT-OFF																		
117.0			.0	ANGLE CUT-OFF																		
118.0			.0	ANGLE CUT-OFF																		
119.0			.5	ANGLE CUT-OFF																		
120.0			.4	ANGLE CUT-OFF																		
121.0			.0	ANGLE CUT-OFF																		
122.0			.1	ANGLE CUT-OFF																		
123.0			.7	ANGLE CUT-OFF																		
124.0			.0	ANGLE CUT-OFF																		
125.0			.0	ANGLE CUT-OFF																		
126.0			.0	ANGLE CUT-OFF																		
127.0			.0	ANGLE CUT-OFF																		
128.0			.6	ANGLE CUT-OFF																		
129.0			.6	ANGLE CUT-OFF																		
130.0			.7	ANGLE CUT-OFF																		
131.0			.7	ANGLE CUT-OFF																		
132.0			.0	ANGLE CUT-OFF																		
133.0			.0	ANGLE CUT-OFF																		
134.0			1.0	ANGLE CUT-OFF																		
135.0			.8	ANGLE CUT-OFF																		
136.0			.0	ANGLE CUT-OFF																		
137.0			.0	ANGLE CUT-OFF																		
138.0			.9	ANGLE CUT-OFF																		
139.0			.8	ANGLE CUT-OFF																		
140.0			.0	ANGLE CUT-OFF																		
200.0	154.5	3.7	5.2	8.3	0	6.6	3.7	500	6.5	-.3	72.9	0	-1.0	1.1	16.9	10.8	0	.3	0	2.5	47.5	
201.0	151.2	2.3	6.6	8.3	0	6.2	2.3	501	7.8	-.3	73.0	0	-1.0	1.0	-18.9	10.7	0	.2	0	2.5	45.7	
202.0	131.4	2.1	7.4	8.3	0	6.8	2.1	503	9.2	-.1	72.9	0	-1.0	1.1	-19.2	10.2	0	-.1	0	2.5	46.0	
203.0	108.1	2.1	8.4	8.3	0	6.7	2.1	504	10.1	0	72.9	0	-1.0	1.1	-19.3	9.4	0	0	0	2.5	46.8	
204.0	83.8	2.2	9.3	8.3	0	6.0	2.2	505	11.2	0	73.0	0	-1.0	1.0	-19.1	8.5	0	0	0	2.5	47.9	

SEGMENT NUMBER	DIST ANCE	ANGLE OF VIEW	HT OF C/WAY	AV OF PROP	HT	PER CENT SOFT	SPD CHNG	SCRN ANGL	MAJOR BARRIER NO.	HT ATT	BASIC NOISE LEVEL	LOW FLOW	SURFACE	GRADIENT	VIEW ANGLE	HARD GRND	SOFT EXCE	BARRIER	RET CUT	REFLECTION	SEGMENT TOTAL	
205.0	44.1	1.5	10.1	8.3	8.3	.0	5.9	1.5	608	14.5	.0	73.0	.0	-1.0	1.0	-20.8	-6.6	.0	.0	.0	2.5	48.1
206.0	26.3	1.2	11.1	8.3	.3	.0	6.3	1.2	607	14.0	.0	72.9	.0	-1.0	1.0	-21.9	-5.7	.0	.0	.0	2.5	47.8
207.0																						
208.0	23.1	1.9	12.9	8.3	.0	.0	6.3	1.9	607	14.1	.0	72.9	.0	-1.0	1.0	-19.8	-5.5	.0	.0	.0	2.5	50.1
209.0	40.7	4.7	13.8	8.3	.0	.0	6.8	4.7	608	14.8	.0	72.9	.0	-1.0	1.1	-15.8	-6.4	.0	.0	.0	2.5	53.3
210.0	57.2	9.3	14.8	8.3	.0	.0	7.1	9.3	609	15.7	.2	72.9	.0	-1.0	1.2	-12.9	-7.3	.0	-.2	.0	2.5	55.2
211.0	63.8	15.4	15.8	8.3	.0	.0	7.0	15.4	610	16.7	.2	72.9	.0	-1.0	1.2	-10.7	-7.6	.0	-.2	.0	2.5	57.1
212.0	68.3	19.5	16.8	8.3	.0	.0	7.3	19.5	611	17.6	.3	72.9	.0	-1.0	1.2	-9.7	-7.9	.0	-.3	.0	2.5	57.7
213.0	66.8	16.7	17.8	8.3	.0	.0	7.6	16.7	611	18.1	.3	72.9	.0	-1.0	1.2	-10.3	-7.8	.0	-.2	.0	2.5	57.3
214.0																						
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243.0																						

TYTC2

REPEAT NO. 4

CATEGORY	LEVEL	CATEGORY	LEVEL	CATEGORY	LEVEL	CATEGORY	LEVEL
1.0	68.5						

QTCL HEIGHT OF RECEIVER ABOVE DATUM= 50.0 HEIGHT ABOVE LOCAL GROUND LEVEL= .0

SEGMENT NUMBER	DIST ANCE	ANGLE OF VIEW	HT OF C/WAY	AV OF PROP	HT OF PROP	PER CENT SOFT	SPD CHNG	SCRN ANGL	MAJOR NO.	BARRIER HT	ATT	BASIC LEVEL	NOISE LEVEL	LOW FLOW	SURFACE	GRAD IENT	ANGLE VIEW	CORRECTIONS HARD GRND	SOFT EXCE	BARRIER	RET CUT	REFL TION	MENT TOTAL
100.0	321.3	5.6	5.2	.3	.0	6.0	5.6	5.0	500	6.1	4.7	75.6	75.6	.0	-1.0	1.1	-15.1	-13.8	.0	-4.7	.0	2.5	44.6
101.0	317.7	3.0	6.6	.3	.0	6.1	3.0	501	501	7.4	4.6	75.6	75.6	.0	-1.0	1.1	-17.7	-13.8	.0	-4.6	.0	2.5	42.1
102.0	306.6	3.1	7.4	.3	.0	6.2	3.1	502	502	8.3	4.5	75.6	75.6	.0	-1.0	1.1	-17.6	-13.6	.0	-4.5	.0	2.5	42.5
103.0	283.7	3.2	8.4	.3	.0	6.1	3.2	503	503	9.2	4.4	75.6	75.6	.0	-1.0	1.1	-17.6	-13.3	.0	-4.4	.0	2.5	42.9
104.0	268.4	3.5	9.3	.3	.0	5.7	3.5	504	504	10.1	4.3	75.6	75.6	.0	-1.0	1.0	-17.1	-13.1	.0	-4.3	.0	2.5	43.6
105.0	224.9	3.0	10.1	.3	.0	6.2	3.0	505	505	11.0	3.9	75.6	75.6	.0	-1.0	1.1	-17.8	-12.3	.0	-3.9	.0	2.5	44.2
106.0	196.4	3.0	11.1	.3	.0	6.1	3.0	506	506	11.9	3.8	75.6	75.6	.0	-1.0	1.1	-17.8	-11.8	.0	-3.8	.0	2.5	44.8
107.0	159.8	2.7	11.9	.3	.0	6.4	2.7	507	507	12.9	3.1	75.5	75.5	.0	-1.0	1.1	-18.3	-10.9	.0	-3.1	.0	2.5	45.8
108.0	132.4	2.8	12.9	.3	.0	6.0	2.8	508	508	13.8	2.5	75.6	75.6	.0	-1.0	1.1	-18.1	-10.1	.0	-2.4	.0	2.5	47.6
109.0	89.2	2.3	13.8	.3	.0	6.5	2.3	509	509	14.8	1.6	75.5	75.5	.0	-1.0	1.2	-18.9	-8.5	.0	-1.5	.0	2.5	49.3
110.0	61.7	1.9	14.8	.3	.0	6.7	1.9	510	510	15.9	.9	75.5	75.5	.0	-1.0	1.2	-19.7	-7.2	.0	-1.5	.0	2.5	50.8
111.0																							
112.0																							
113.0																							
114.0	29.7	3.2	18.9	.3	.0	6.7	3.2	5	41.0	-1		75.5	75.5	.0	-1.0	1.2	-17.5	-4.9	.0	-1	.0	2.5	55.7
115.0	41.3	6.3	19.9	.3	.0	6.8	6.3	5	41.0	-3		75.5	75.5	.0	-1.0	1.2	-14.5	-5.8	.0	-3	.0	2.5	57.6
116.0	46.6	11.6	20.9	.3	.0	6.7	11.6	5	41.0	-9		75.5	75.5	.0	-1.0	1.2	-11.9	-6.2	.0	-9	.0	2.5	59.2
117.0	48.7	44.7	22.4	.3	.0	6.8	44.7	4	41.0	-3.7		75.5	75.5	.0	-1.0	1.2	-6.0	-6.4	.0	-3.5	.0	2.5	62.3
118.0	48.7	59.0	25.5	.3	.0	6.9	59.0	4	41.0	-4.2		75.5	75.5	.0	-1.0	1.2	-4.8	-6.4	.0	-4.2	.0	2.5	62.8
119.0	44.8	3.5	28.0	.3	.0	6.7	3.5	3	41.0	-2.2		75.5	75.5	.0	-1.0	1.2	-17.1	-6.1	.0	-2.2	.0	2.5	52.8
120.0																							
121.0																							
122.0																							
123.0																							
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126.0																							
127.0																							
128.0																							
129.0																							
130.0																							
131.0																							
132.0	249.7	1.5	50.7	.3	.0	6.8	1.5	528	51.3	-4.6		75.5	75.5	.0	-1.0	1.2	-20.7	-12.8	.0	4.6	.0	2.5	40.1
133.0	294.2	1.6	52.8	.3	.0	7.2	1.6	529	53.3	-5.0		75.5	75.5	.0	-1.0	1.3	-20.5	-13.4	.0	5.0	.0	2.5	39.4
134.0	378.1	1.0	54.3	.3	.0	6.2	1.0	529	54.4	-5.0		75.6	75.6	.0	-1.0	1.1	-22.4	-14.5	.0	5.0	.0	2.5	36.3
135.0																							
136.0	420.3	6.3	59.8	.3	.0	6.9	6.3	531	56.4	-5.0		75.5	75.5	.0	-1.0	1.2	-14.6	-15.0	.0	5.0	.0	2.5	43.6
137.0	433.0	4.5	67.9	.3	.0	6.8	4.5	532	64.5	-5.0		75.5	75.5	.0	-1.0	1.2	-16.0	15.1	.0	4.9	.0	2.5	42.2
138.0																							
139.0																							
140.0	392.9	1.7	77.8	.3	.0	5.4	1.7	536	78.3	-5.5		75.6	75.6	.0	-1.0	1.0	-20.2	-14.7	.0	5.4	.0	2.5	37.8
200.0	330.8	5.5	5.2	.3	.0	6.6	5.5	500	6.2	-2.1		72.9	72.9	.0	1.0	1.1	-15.1	14.0	.0	2.1	.0	2.5	44.3
201.0	328.1	3.2	6.6	.3	.0	6.2	3.2	501	7.5	-2.0		73.0	73.0	.0	1.0	1.0	-17.5	-13.9	.0	2.0	.0	2.5	42.1
202.0	312.7	3.0	7.4	.3	.0	6.8	3.0	502	8.4	-2.0		72.9	72.9	.0	1.0	1.1	-17.7	13.7	.0	2.0	.0	2.5	42.1
203.0	293.4	3.1	8.4	.3	.0	6.7	3.1	503	9.3	-1.8		72.9	72.9	.0	1.0	1.1	17.6	13.5	.0	1.8	.0	2.5	42.6
204.0	271.8	3.5	9.3	.3	.0	6.0	3.5	504	10.2	-1.7		73.0	73.0	.0	-1.0	1.0	-17.1	13.1	.0	1.7	.0	2.5	43.6

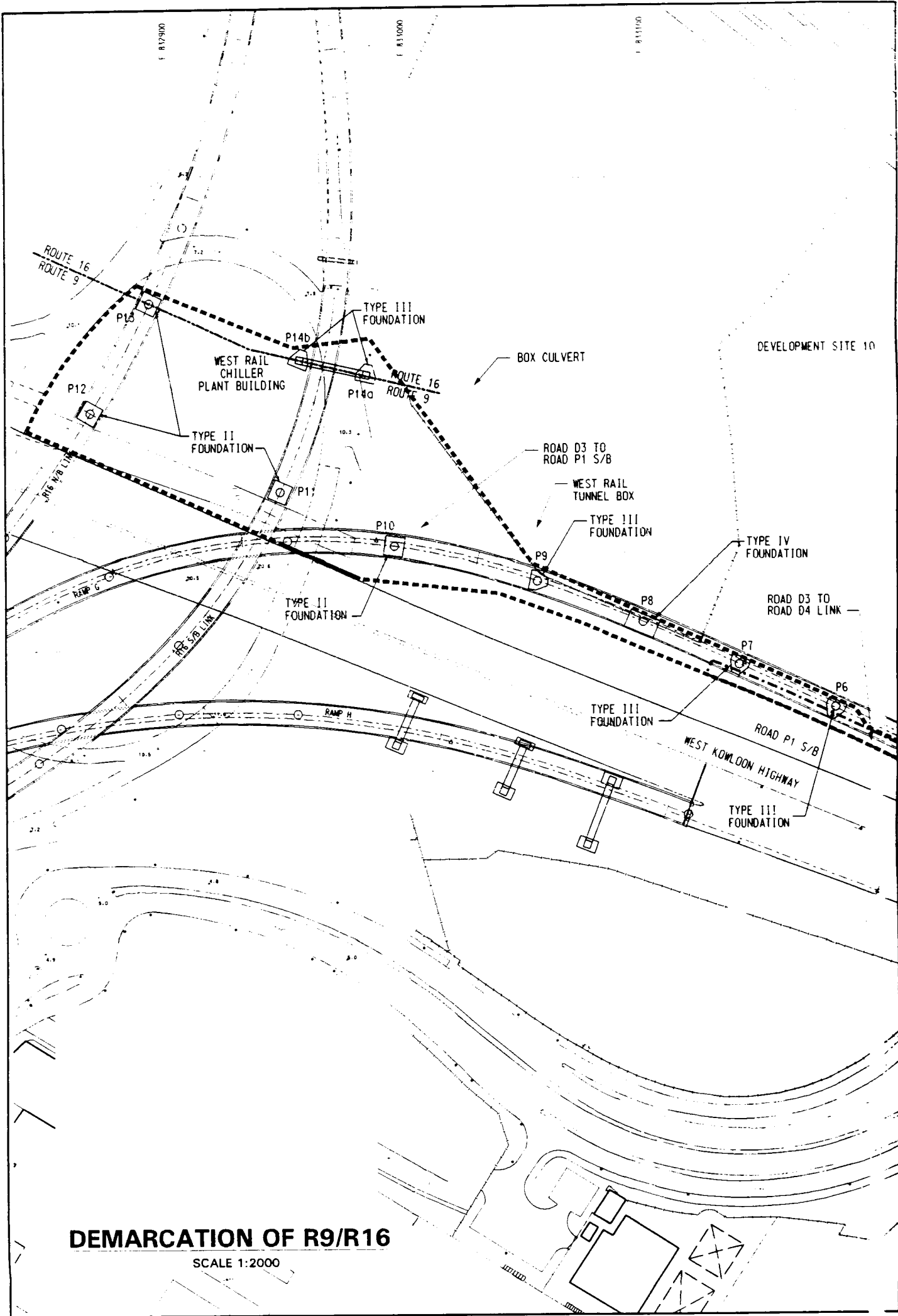
QTC1

SEGMENT NUMBER	DIST ANCE	ANGLE OF VIEW	HT OF C/WAY	AV OF PROP	HT OF HT	PER CENT SOFT	SPD CHNG	SCRN ANGL	MAJOR BARRIER NO.	HT ATT	BASIC NOISE LEVEL	LOW FLOW	SURFACE	GRADIENT	ANGLE VIEW	HARD GRND	SOFT EXCE	BARRIER	RET CUT	REFLECTION	SEGMENT TOTAL
205.0	232.2	3.4	10.1	.3	.0	5.9	3.4	505	11.1	1.5	73.0	.0	-1.0	1.0	-17.3	12.5	.0	-1.5	.0	2.5	44.2
206.0	212.4	3.3	11.1	.3	.0	6.3	3.3	506	12.1	1.4	72.9	.0	-1.0	1.0	-17.4	12.1	.0	-1.3	.0	2.5	44.6
207.0	165.5	2.9	11.9	.3	.0	6.3	2.9	507	13.1	1.0	72.9	.0	-1.0	1.0	-17.9	11.0	.0	-.9	.0	2.5	45.6
208.0	134.8	2.8	12.9	.3	.0	6.3	2.8	508	14.0	-.6	72.9	.0	-1.0	1.0	-18.1	10.2	.0	-.5	.0	2.5	46.6
209.0	103.3	2.7	13.8	.3	.0	6.8	2.7	510	15.7	-.2	72.9	.0	-1.0	1.1	-18.3	9.1	.0	-.1	.0	2.5	48.0
210.0	65.2	2.0	14.8	.3	.0	7.1	2.0	5	41.0	.0	72.9	.0	-1.0	1.2	-19.5	7.4	.0	.0	.0	2.5	48.7
211.0	43.1	1.8	15.8	.3	.0	7.0	1.8	5	41.0	.0	72.9	.0	-1.0	1.2	-20.1	6.0	.0	.0	.0	2.5	49.5
212.0					.6	ANGLE CUT-OFF															
213.0					.6	ANGLE CUT-OFF															
214.0	21.5	2.4	18.9	.3	.0	7.3	2.4	5	41.0	-.2	72.9	.0	-1.0	1.2	-18.7	4.2	.0	-.2	.0	2.5	52.5
215.0	29.4	4.9	19.9	.3	.0	7.3	4.9	5	41.0	-.4	72.9	.0	-1.0	1.2	-15.6	4.9	.0	-.5	.0	2.5	54.6
216.0	38.0	10.7	20.9	.3	.0	7.1	10.7	5	41.0	-1.5	72.9	.0	-1.0	1.2	-12.3	5.6	.0	-1.6	.0	2.5	56.1
217.0	40.5	52.3	22.4	.3	.0	6.9	52.3	4	41.0	-7.8	72.9	.0	-1.0	1.1	-5.4	5.8	.0	-6.9	.0	2.5	57.4
218.0	40.4	61.4	25.5	.3	.0	7.4	61.4	3	41.0	-8.6	72.9	.0	-1.0	1.2	-4.7	5.8	.0	-8.6	.0	2.6	56.6
219.0					.0	ANGLE CUT-OFF															
220.0					.0	ANGLE CUT-OFF															
221.0					.0	ANGLE CUT-OFF															
222.0					.0	ANGLE CUT-OFF															
223.0					.2	ANGLE CUT-OFF															
224.0					.0	ANGLE CUT-OFF															
225.0					.0	ANGLE CUT-OFF															
226.0					.0	ANGLE CUT-OFF															
227.0					.0	ANGLE CUT-OFF															
228.0					.5	ANGLE CUT-OFF															
229.0					.4	ANGLE CUT-OFF															
230.0					.3	ANGLE CUT-OFF															
231.0					.6	ANGLE CUT-OFF															
232.0					.7	ANGLE CUT-OFF															
233.0					.7	ANGLE CUT-OFF															
234.0					.9	ANGLE CUT-OFF															
235.0	424.1	1.1	55.6	.3	.0	6.5	1.1	529	52.7	-1.1	72.9	.0	-1.0	1.1	-22.3	-15.0	.0	-1.0	.0	2.5	37.2
236.0					.8	ANGLE CUT-OFF															
237.0	472.9	1.9	58.1	.3	.0	7.3	1.9	529	54.3	-1.4	72.9	.0	-1.0	1.2	-19.8	-15.5	.0	-1.4	.0	2.5	38.9
238.0	465.5	3.2	61.2	.3	.0	7.5	3.2	531	56.4	-1.4	72.9	.0	-1.0	1.2	-17.5	-15.4	.0	-1.4	.0	2.5	41.3
239.0	466.6	5.0	67.3	.3	.0	7.4	5.0	532	62.2	-1.4	72.9	.0	-1.0	1.2	-15.6	-15.4	.0	-1.4	.0	2.5	43.2
240.0	480.3	1.0	72.3	.3	.0	7.4	1.0	533	68.2	-1.5	72.9	.0	-1.0	1.2	-22.5	-15.5	.0	-1.5	.0	2.5	36.1
241.0					1.0	ANGLE CUT-OFF															
242.0					1.0	ANGLE CUT-OFF															
243.0	506.8	1.8	77.9	.3	.0	5.5	1.8	536	77.0	-4.2	73.0	.0	-1.0	.9	-20.0	-15.8	.0	-3.6	.0	2.5	36.0

QTC1

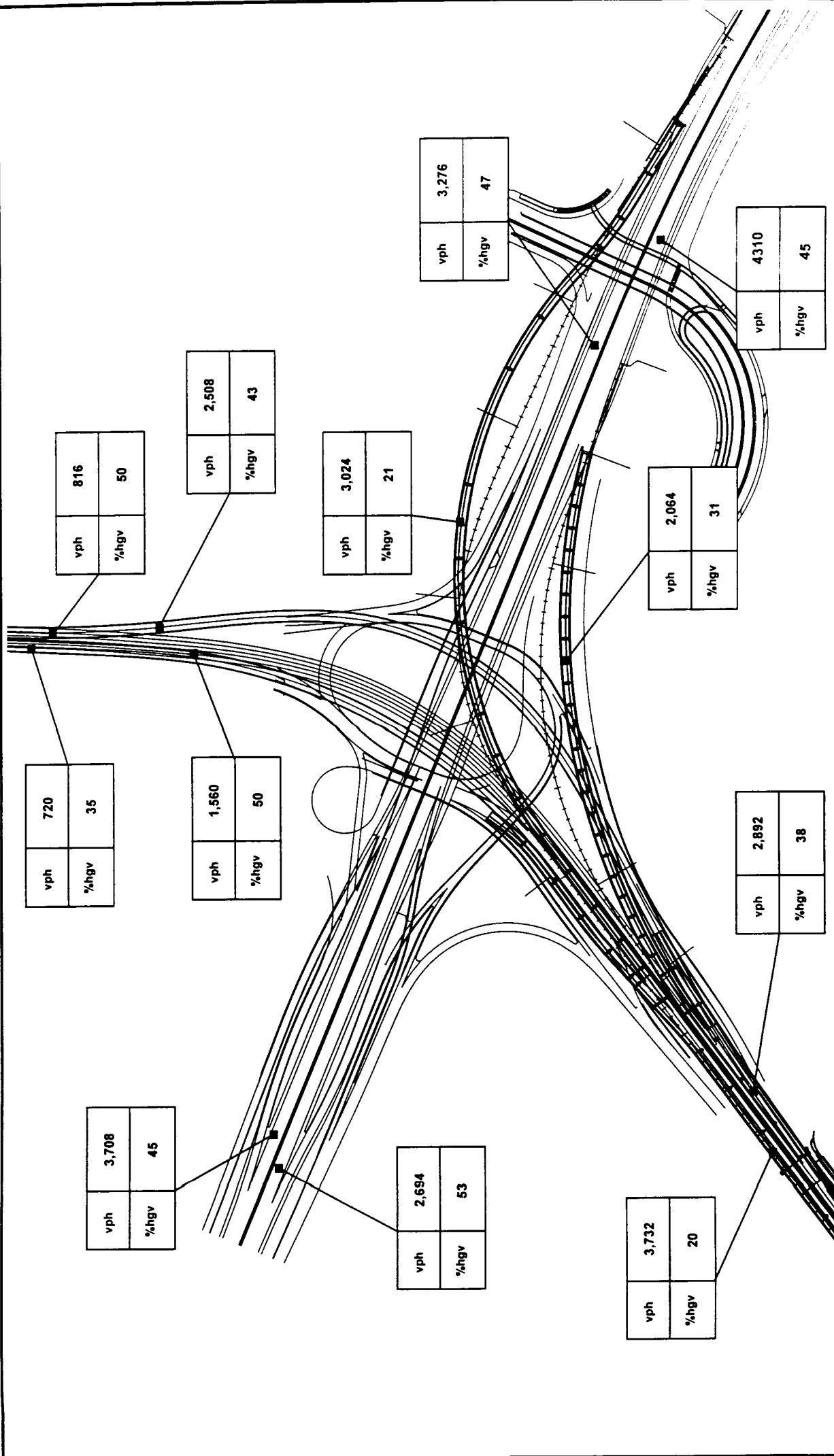
CATEGORY	LEVEL	CATEGORY	LEVEL	CATEGORY	LEVEL	CATEGORY	LEVEL
1.0	69.3						



REPEAT CALC. NO. 1 - RECEIVER HT 53.0 INCREMENT 3.0

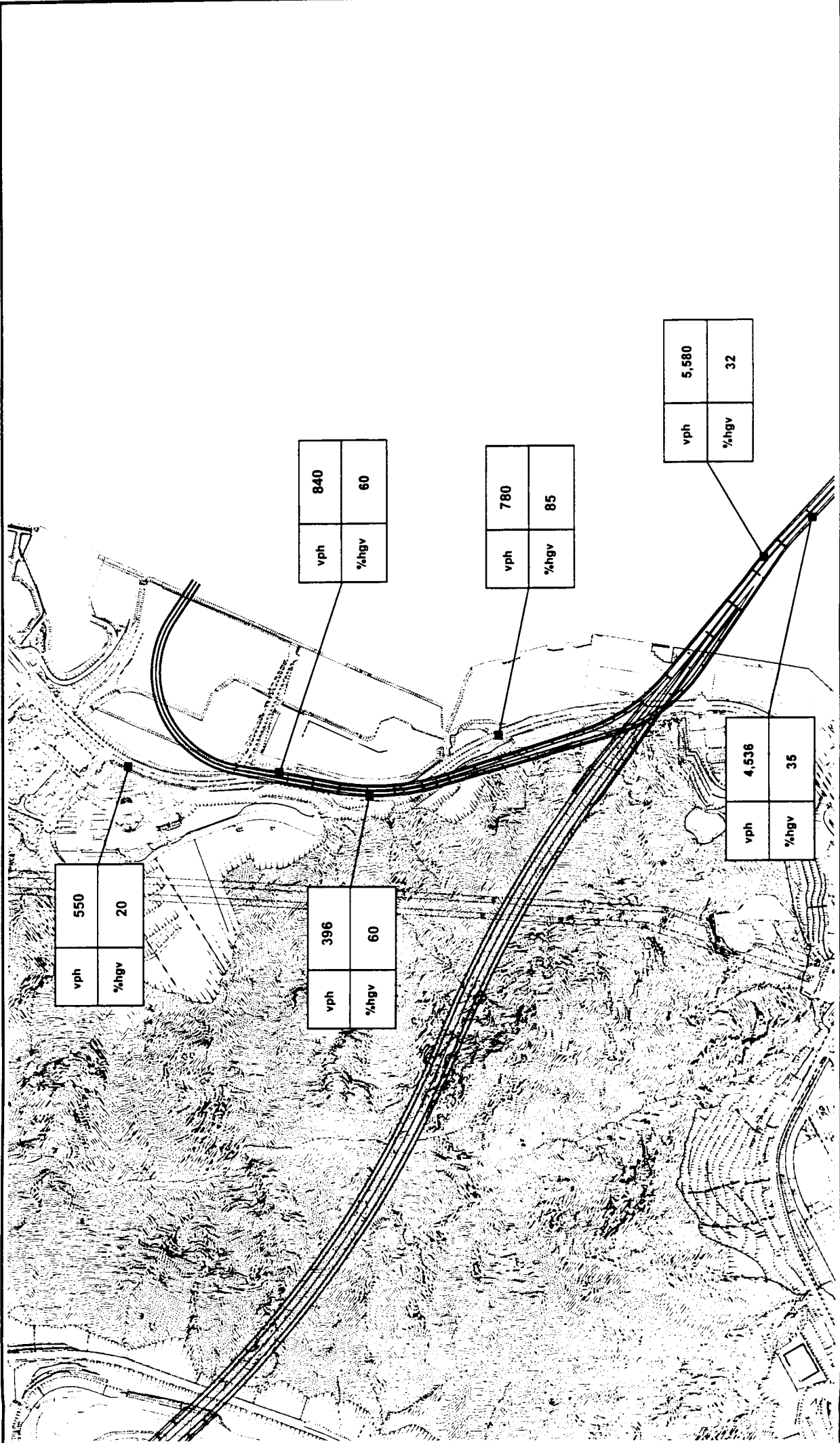


DEMARCATIION OF R9/R16

SCALE 1:2000



 Highways Department	Route 9 Between Tsing Yi and Cheung Sha Wan Detailed Feasibility Study		安建顧問公司 Atkins China Ltd <small>a member of the WSP Atkins group of companies</small> 		Title Traffic Flows and % Heavy Goods Vehicles for Lai Wan Interchange
	Scale 1:5000		Date APR 99	Figure No	



Highways Department

**Route 9
Between Tsing Yi and Cheung Sha Wan
Detailed Feasibility Study**

**安建顧問公司
Atkins China Ltd**

a member of the WS Atkins group of companies



Title		Traffic Flows and % Heavy Goods Vehicles for CT9 Sliproad	
Scale	1:10,000	Date	APR 99
			Figure No