Appendix 3.5 Calculations of NO2 Concentration inside the Two Sections of Deckover on Road D1

Section between Area 138L/M and Area 76 R1 Site - Normal speed

Tunnel Parameter

Tunnel length (m), L	=	190
Tunnel height (m), H	=	10
Tunnel width (m), W	=	22
Tunnel size (m2), At	=	H * W
		220
Equivalent diameter (m), dt	=	(4*At/p)^0.5
		16.73657
Effective length of the tunnel (m), Le	=	L + 2*3*dt
		290.4194

Emission Data

		Traffic Breakdown (%)				
	Traffic flow (veh/hr)	P/C	Taxi	Bus	LGV	HGV
Tunnel traffic	4800	51	18	4	9	18
Q (veh/hr)		2448	864	192	432	864
		P/C	Taxi	Bus	LGV	HGV
Emission Factor (g/km) - EURO3		0.71	0.73	6.8	1.23	3.84

Weighted NOX E.F. (g/km/veh) = 1.5674

NO2 emission factor per unit length (g/m/s), w = 0.000418

Vehicle Data

Nominal dimensions of vehicles are given in Transport Planning and Design Manual, Vol. 2 as:

	W	H	L
Cars and Taxi	1.7	1.5	4.6
Bus	2.5	4.6	12
LGV	2.1	1.6	5.2
HGV	2.5	4.6	16

Nominal cross-sectional area (m2)	=	(1.7*1.5*(0.51+0.18))+(2.5*4.6*0.04)+(2.1*1.6*0.09)+(2.5*4.6*0.18)
	=	4.5919
Number of lanes per direction, nl	=	2
Equivalent cross-sectional area for each direction (m2), Av	=	9.1838
Equivalent diameter of vehicle (m), dv	=	(4*Av/p)^0.5
	=	3.41953
Traffic density (traffic flow /s), N	=	1.333333
Average vehicle speed (m/s), v	=	50 km/hr
	=	13.88889
Head to head distance on a lane (m), l	=	2*nl*v/N
	=	41.66667

Diffusion Parameters

Reynolds number, Re	=	(v*dv)/s where s = 15.6*10^-6
	=	3044454
According to Figure 16 (Ohashi and Koso)		
Since l / dt	=	2.489558
D / (N * dt^2 * Re^0.13)	=	0.29
Longitudinal		
diffusion coefficient (m2/s) , D	=	0.29 * (N * dt^2 * Re^0.13)
	=	754.2688

Maximum Concentration of NO2

Cmax (µg/m3)	=	w * Le^2 / (8 * D * At)
(without background)	=	26.55591

Appendix 3.5 Calculations of NO2 Concentration inside the Two Sections of Deckover on Road D1

Section between Area 138L/M and Area 76 R1 Site - Worse case

Tunnel Parameter

Tunnel length (m), L	=	190
Tunnel height (m), H	=	10
Tunnel width (m), W	=	22
Tunnel size (m2), At	=	H * W
		220
Equivalent diameter (m), dt	=	(4*At/p)^0.5
		16.73657
Effective length of the tunnel (m), Le	=	L + 2*3*dt
		290.4194

Emission Data

		Traffic Breakdown (%)				
	Traffic flow (veh/hr)	P/C	Taxi	Bus	LGV	HGV
Tunnel traffic	4800	51	18	4	9	18
Q (veh/hr)		2448	864	192	432	864
		P/C	Taxi	Bus	LGV	HGV
Emission Factor (g/km) - EURO3		0.71	0.73	6.8	1.23	3.84

Weighted NOX E.F. (g/km/veh) = 1.5674

NO2 emission factor per unit length (g/m/s), w = 0.000418

Vehicle Data

Nominal dimensions of vehicles are given in Transport Planning and Design Manual, Vol. 2 as:

	W	H	L
Cars and Taxi	1.7	1.5	4.6
Bus	2.5	4.6	12
LGV	2.1	1.6	5.2
HGV	2.5	4.6	16

Nominal cross-sectional area (m2)	=	(1.7*1.5*(0.51+0.18))+(2.5*4.6*0.04)+(2.1*1.6*0.09)+(2.5*4.6*0.18)
	=	4.5919
Number of lanes per direction, nl	=	2
Equivalent cross-sectional area for each direction (m2), Av	=	9.1838
Equivalent diameter of vehicle (m), dv	=	(4*Av/p)^0.5
	=	3.41953
Equivalent length of each vehicle (m)	=	(4.6*(0.51+0.18))+(12*0.04)+(5.2*0.09)+(16*0.18)
	=	7.002
Distance between vehicle (m)	=	1 (worst case)
Head to head distance on a lane (m), l	=	8.002
Traffic density (traffic flow /s), N	=	1.333333
Average vehicle speed (m/s), v	=	l*N/(2*nl)
	=	2.667333

Diffusion Parameters

Reynolds number, Re	=	(v*dv)/s where s = 15.6*10^-6
	=	584681.2
According to Figure 16 (Ohashi and Koso)		
Since l / dt	=	0.478115
D / (N * dt^2 * Re^0.13)	=	0.13
Longitudinal		
diffusion coefficient (m2/s) , D	=	0.13 * (N * dt^2 * Re^0.13)
	=	272.8442

Maximum Concentration of NO2

Cmax (µg/m3)	=	w * Le^2 / (8 * D * At)
(without background)	=	73.41293

Appendix 3.5 Calculations of NO2 Concentration inside the Two Sections of Deckover on Road D1

Section between Area 138L/M and Area 76 R1 Site - Overall Concentrations

Four assessment points (ASRs P1-P4) at the boundary of the Deckover are chosen (see Figure A3.2).
Using CALINE4 model, the NO2 concentrations at the 4 assessment points at different levels are calculated (see Appendix A3.1). The highest concentration among the four assessment points is assumed to be the background NO2 concentration inside the Deckover section.

Elevation	NO2 Concentrations (ug/m3) at Various Levels			
(mAG)	P1	P2	P3	P4
0	257	265	381	396
5	402	403	243	258
10	247	256	144	150

Therefore, the background concentration inside the Deckover section is 403 ug/m3.

Overall Maximum NO2 concentration inside the Deckover section (Normal Speed) = **26.5 + 403**
= **430 ug/m3**

Overall Maximum NO2 concentration inside the Deckover section (Worse Case) = **73.4 + 403**
= **477 ug/m3**

Appendix 3.5 Calculations of NO2 Concentration inside the Two Sections of Deckover on Road D1

Section between Area 138A/B and Area 65D R1 Site - Normal speed

Tunnel Parameter

Tunnel length (m), L	=	115
Tunnel height (m), H	=	10
Tunnel width (m), W	=	22
Tunnel size (m2), At	=	H * W
		220
Equivalent diameter (m), dt	=	(4*At/p)^0.5
		16.73657
Effective length of the tunnel (m), Le	=	L + 2*3*dt
		215.4194

Emission Data

		Traffic Breakdown (%)				
	Traffic flow (veh/hr)	P/C	Taxi	Bus	LGV	HGV
Tunnel traffic	3400	51	18	4	9	18
Q (veh/hr)		1734	612	136	306	612

	P/C	Taxi	Bus	LGV	HGV
Emission Factor (g/km) - EURO3	0.71	0.73	6.8	1.23	3.84

Weighted NOX E.F. (g/km/veh) = 1.5674

NO2 emission factor per unit length (g/m/s), w = 0.000296

Vehicle Data

Nominal dimensions of vehicles are given in Transport Planning and Design Manual, Vol. 2 as:

	W	H	L
Cars and Taxi	1.7	1.5	4.6
Bus	2.5	4.6	12
LGV	2.1	1.6	5.2
HGV	2.5	4.6	16

Nominal cross-sectional area (m2)	=	(1.7*1.5*(0.51+0.18))+(2.5*4.6*0.04)+(2.1*1.6*0.09)+(2.5*4.6*0.18)
	=	4.5919
Number of lanes per direction, nl	=	2
Equivalent cross-sectional area for each direction (m2), Av	=	9.1838
Equivalent diameter of vehicle (m), dv	=	(4*Av/p)^0.5
	=	3.41953
Traffic density (traffic flow /s), N	=	0.944444
Average vehicle speed (m/s), v	=	50 km/hr
	=	13.88889
Head to head distance on a lane (m), l	=	2*nl*v/N
	=	58.82353

Diffusion Parameters

Reynolds number, Re	=	(v*dv)/s where s = 15.6*10^-6
	=	3044454
According to Figure 16 (Ohashi and Koso)		
Since l / dt	=	3.51467
D / (N * dt^2 * Re^0.13)	=	0.33
Longitudinal		
diffusion coefficient (m2/s) , D	=	0.37 * (N * dt^2 * Re^0.13)
	=	607.9666

Maximum Concentration of NO2

Cmax (µg/m3)	=	w * Le^2 / (8 * D * At)
(without background)	=	12.83996

Appendix 3.5 Calculations of NO2 Concentration inside the Two Sections of Deckover on Road D1

Section between Area 138A/B and Area 65D R1 Site - Worse case

Tunnel Parameter

Tunnel length (m), L	=	115
Tunnel height (m), H	=	10
Tunnel width (m), W	=	22
Tunnel size (m2), At	=	H * W
		220
Equivalent diameter (m), dt	=	(4*At/p)^0.5
		16.73657
Effective length of the tunnel (m), Le	=	L + 2*3*dt
		215.4194

Emission Data

		Traffic Breakdown (%)				
	Traffic flow (veh/hr)	P/C	Taxi	Bus	LGV	HGV
Tunnel traffic	3400	51	18	4	9	18
Q (veh/hr)		1734	612	136	306	612
		P/C	Taxi	Bus	LGV	HGV
Emission Factor (g/km) - EURO3		0.71	0.73	6.8	1.23	3.84

Weighted NOX E.F. (g/km/veh) = 1.5674

NO2 emission factor per unit length (g/m/s), w = 0.000296

Vehicle Data

Nominal dimensions of vehicles are given in Transport Planning and Design Manual, Vol. 2 as:

	W	H	L
Cars and Taxi	1.7	1.5	4.6
Bus	2.5	4.6	12
LGV	2.1	1.6	5.2
HGV	2.5	4.6	16

Nominal cross-sectional area (m2)	=	(1.7*1.5*(0.51+0.18))+(2.5*4.6*0.04)+(2.1*1.6*0.09)+(2.5*4.6*0.18)
	=	4.5919
Number of lanes per direction, nl	=	2
Equivalent cross-sectional area for each direction (m2), Av	=	9.1838
Equivalent diameter of vehicle (m), dv	=	(4*Av/p)^0.5
	=	3.41953
Equivalent length of each vehicle (m)	=	(4.6*(0.51+0.18))+(12*0.04)+(5.2*0.09)+(16*0.18)
	=	7.002
Distance between vehicle (m)	=	1 (worst case)
Head to head distance on a lane (m), l	=	8.002
Traffic density (traffic flow /s), N	=	0.944444
Average vehicle speed (m/s), v	=	l*N/(2*nl)
	=	1.889361

Diffusion Parameters

Reynolds number, Re	=	(v*dv)/s where s = 15.6*10^-6
	=	414149.2
According to Figure 16 (Ohashi and Koso)		
Since l / dt	=	0.478115
D / (N * dt^2 * Re^0.13)	=	0.13
Longitudinal		
diffusion coefficient (m2/s) , D	=	0.15 * (N * dt^2 * Re^0.13)
	=	184.7921

Maximum Concentration of NO2

Cmax (µg/m3)	=	w * Le^2 / (8 * D * At)
(without background)	=	42.24352

Appendix 3.5 Calculations of NO2 Concentration inside the Two Sections of Deckover on Road D1

Section between Area 138A/B and Area 65D R1 Site - Overall Concentrations

Four assessment points (ASRs P5-P8) at the boundary of the Deckover are chosen (see Figure A3.2). Using CALINE4 model, the NO2 concentrations at the 4 assessment points at different levels are calculated (see Appendix A3.1). The highest concentration among the four assessment points is assumed to be the background NO2 concentration inside the Deckover section.

Elevation	NO2 Concentrations (ug/m3) at Various Levels			
(mAG)	P5	P6	P7	P8
0	282	274	136	143
5	204	199	249	240
10	142	140	180	182

Therefore, the background concentration inside the Deckover section is 282 ug/m3.

Overall Maximum NO2 concentration inside the Deckover section (Normal Speed) = **12.8 + 282**
= **295 ug/m3**

Overall Maximum NO2 concentration inside the Deckover section (Worse Case) = **42.2 + 282**
= **325 ug/m3**

Appendix A3.1 Computer Output of CALINE4 Calculation for the Assessment Points near the Deckover

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

               JOB: TKO - NOX (potral)
               RUN: NOX              (WORST CASE ANGLE)
        POLLUTANT: NOX


 I.  SITE VARIABLES

        U=   1.0 M/S              Z0= 100. CM             ALT=     1. (M)
      BRG= WORST CASE             VD=    .0 CM/S
     CLAS=     4 (D)              VS=    .0 CM/S
     MIXH=  500. M               AMB=    .0 PPM
    SIGTH=   18. DEGREES        TEMP= 25.0 DEGREE (C)


 II.  LINK VARIABLES

     LINK      *  LINK COORDINATES (M)   *              EF     H     W
  DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
---------------*-------------------------*---------------------------
0. 1             * 44560 17360 44679 17298 *  BG    5700    318.7   8.3  32.0
1. 2             * 44679 17298 44947 17160 *  BG    5700    318.7  19.5  26.0
2. 3             * 44947 17160 45079 17093 *  BG    5700    318.7  27.5  26.0
3. 4             * 45079 17093 45172 17057 *  BG    5700    318.7  28.0  26.0
4. 5             * 45172 17057 45300 17029 *  BG    5700    318.7  24.0  26.0
5. 6             * 45300 17029 45402 17020 *  BG    5700    318.7  20.0  26.0
6. 7             * 45402 17020 45525 17021 *  BG    5700    318.7  16.0  26.0
7. 8             * 45176 18204 45195 18083 *  BG    1800    218.5   8.5  26.0
8. 9             * 45195 18083 45264 17880 *  BG    1800    218.5  11.3  26.0
9. 10            * 45264 17880 45299 17663 *  AG    1800    218.5    .0  26.0
0. 11            * 45299 17663 45326 17602 *  AG    1800    218.5    .0  26.0
1. 12            * 45333 17607 45383 17552 *  AG     625    240.0    .0  16.0
2. 13            * 45383 17552 45459 17511 *  AG     625    240.0    .0  16.0
3. 14            * 45459 17511 45537 17504 *  AG     625    240.0    .0  16.0
4. 15            * 45319 17597 45364 17539 *  AG     625    240.0    .0  16.0
5. 16            * 45364 17539 45438 17496 *  AG     625    240.0    .0  16.0
6. 17            * 45438 17496 45534 17478 *  AG     625    240.0    .0  16.0
7. 18            * 45326 17602 45377 17548 *  BG     550    169.5   1.9  20.0
8. 19            * 45377 17548 45456 17502 *  BG     550    169.5   5.6  20.0
9. 20            * 45456 17502 45534 17489 *  BG     550    169.5   9.4  20.0
0. 21            * 44343 18173 44367 18100 *  AG    2150    297.5    .0  24.0
1. 22            * 44367 18100 44374 17984 *  FL    2150    297.5   7.5  20.0
2. 23            * 44374 17984 44367 17828 *  FL    2150    297.5   7.5  18.0
3. 24            * 44438 18172 44412 18099 *  AG    3600    225.4    .0  22.0
4. 25            * 44412 18099 44409 18000 *  FL    3600    225.4   7.5  22.0
5. 26            * 44409 18000 44407 17827 *  FL    3600    225.4   7.5  22.0
6. 27            * 44371 17828 44361 17734 *  BG    2000    278.4   4.4  14.0
7. 28            * 44361 17734 44345 17670 *  BG    2000    278.4   7.2  14.0
8. 29            * 44345 17670 44325 17615 *  BG    2000    278.4  10.0  14.0
9. 30            * 44401 17827 44394 17751 *  BG    3450    211.2   8.9  14.0
0. 31            * 44394 17751 44374 17667 *  BG    3450    211.2  11.7  14.0
1. 32            * 44374 17667 44350 17603 *  BG    3450    211.2  14.5  14.0
2. 33            * 44338 17608 44296 17534 *  BG    8500    242.6  15.8  36.0
3. 34            * 44296 17534 44236 17474 *  BG    8500    242.6  13.0  32.0
4. 35            * 44236 17474 44124 17404 *  BG    8500    242.6   8.0  32.0
5. 36            * 44124 17404 44015 17331 *  BG    8500    242.6  14.0  32.0
6. 37            * 44000 17349 44060 17400 *  BG    2400    367.2  15.5  14.0
7. 38            * 44060 17400 44121 17445 *  BG    2400    367.2  16.5  14.0
8. 39            * 44121 17445 44192 17476 *  BG    2400    367.2  12.0  14.0
9. 40            * 44192 17476 44255 17484 *  BG    2400    367.2  13.5  14.0
0. 41            * 44255 17484 44337 17473 *  BG    2400    367.2  23.5  14.0
1. 42            * 44337 17473 44419 17438 *  BG    2400    367.2  15.0  14.0
2. 43            * 44419 17438 44562 17365 *  BG    2400    367.2   9.8  14.0
3. 44            * 44025 17318 44132 17387 *  BG    3100    270.1   8.0  14.0
4. 45            * 44132 17387 44201 17418 *  BG    3100    270.1   8.5  14.0
5. 46            * 44201 17418 44281 17442 *  BG    3100    270.1  17.5  14.0
6. 47            * 44281 17442 44345 17442 *  BG    3100    270.1  11.8  14.0
7. 48            * 44345 17442 44391 17433 *  BG    3100    270.1  10.3  14.0
8. 49            * 44391 17433 44445 17413 *  BG    3100    270.1   9.0  14.0
9. 50            * 44445 17413 44557 17357 *  BG    3100    270.1   8.8  14.0
0. 51            * 44363 17828 44344 17708 *  AG     150    552.5    .0  14.0
1. 52            * 44344 17708 44321 17625 *  AG     150    552.5    .0  14.0
2. 53            * 44321 17625 44302 17564 *  AG     150    552.5    .0  14.0
3. 54            * 44302 17564 44293 17545 *  AG     150    552.5    .0  14.0
4. 55            * 44410 17827 44404 17757 *  FL     150    552.5   5.0  14.0
5. 56            * 44404 17757 44386 17680 *  AG     150    552.5    .0  14.0
6. 57            * 44386 17680 44369 17628 *  AG     150    552.5    .0  14.0
7. 58            * 44369 17628 44346 17584 *  AG     150    552.5    .0  14.0
8. 59            * 44346 17584 44324 17552 *  AG     150    552.5    .0  14.0
9. 60            * 44324 17552 44308 17533 *  AG     150    552.5    .0  14.0
0. 61            * 44299 17539 44255 17484 *  AG     400    509.7    .0  30.0
1. 62            * 44255 17484 44218 17434 *  AG     400    509.7    .0  20.0
2. 63            * 44218 17434 44158 17382 *  AG     400    509.7    .0  20.0
3. 64            * 44158 17382 44047 17295 *  AG     400    509.7    .0  20.0
4. 65            * 44318 17533 44395 17465 *  BG     150    462.8   7.0  14.0
5. 66            * 44395 17465 44444 17433 *  BG     150    462.8   1.3  14.0
6. 67            * 44444 17433 44565 17371 *  BG     150    462.8   5.5  10.0
7. 68            * 44309 17522 44361 17480 *  BG     150    462.8   7.0  14.0
8. 69            * 44361 17480 44405 17423 *  BG     150    462.8   1.3  14.0
9. 70            * 44405 17423 44449 17394 *  BG     150    462.8   3.5  14.0
0. 71            * 44449 17394 44554 17350 *  BG     150    462.8   6.5  14.0
1. 72            * 44707 18172 44706 17835 *  AG    2400    241.4    .0  22.0
2. 73            * 44986 18174 44986 17834 *  AG     650    241.4    .0  22.0
3. 74            * 44700 18630 44711 18573 *  AG    1650    241.4    .0  32.0
4. 75            * 44711 18573 44707 18466 *  AG    1650    241.4    .0  28.0
5. 76            * 44707 18466 44707 18367 *  AG    1650    241.4    .0  24.0
6. 77            * 44707 18367 44703 18173 *  AG    1950    247.2    .0  23.0
7. 78            * 44973 18732 44986 18661 *  AG     600    258.1    .0  26.0
8. 79            * 44986 18661 44987 18432 *  AG     600    258.1    .0  23.0
9. 80            * 44987 18431 44986 18175 *  AG     800    236.3    .0  23.0
0. 81            * 45341 18424 45218 18220 *  FL    1800    252.2   7.3  23.0
1. 82            * 45223 18828 45311 18596 *  FL    1850    235.5   5.0  23.0
2. 83            * 45311 18596 45347 18492 *  FL    1850    235.5   7.3  23.0
3. 84            * 45347 18492 45341 18424 *  FL    1850    235.5   7.3  23.0
4. 85            * 44143 18393 44200 18248 *  FL    2800    210.9   7.3  22.0
5. 86            * 44200 18248 44241 18202 *  FL    2800    210.9   7.3  24.0
6. 87            * 44241 18202 44302 18174 *  FL    2800    210.9   7.3  24.0
7. 88            * 44302 18174 44343 18173 *  FL    2800    210.9   7.3  32.0
8. 89            * 44394 18523 44389 18400 *  FL    4300    274.0   8.0  36.0
9. 90            * 44390 18400 44390 18173 *  BG    4050    254.4  11.7  24.0
0. 91            * 44390 18173 44388 17828 *  BG    4050    254.4  16.3  24.0
1. 92            * 44388 17828 44373 17716 *  BG    4050    254.4  17.2  24.0
2. 93            * 44373 17716 44340 17608 *  BG    4050    254.4  11.9  24.0
3. 94            * 44375 18400 44375 18270 *  FL     150    552.5   7.5  12.0
4. 95            * 44375 18270 44343 18173 *  FL     150    552.5   7.5  12.0
5. 96            * 44406 18400 44405 18266 *  FL     150    552.5   8.0  14.0
6. 97            * 44405 18266 44438 18172 *  FL     150    552.5   5.0  14.0
7. 98            * 45893 19724 45677 19492 *  AG    1850    304.9    .0  26.0
8. 99            * 45677 19492 45606 19424 *  AG    1850    304.9    .0  26.0
9. 100           * 45606 19424 45489 19316 *  AG    2950    318.6    .0  26.0
0. 101           * 45489 19316 45401 19208 *  AG    2950    318.6    .0  26.0
1. 102           * 45893 19724 45980 19652 *  AG    1850    270.7    .0  14.0
2. 103           * 45980 19652 46065 19555 *  FL    1850    270.7   5.0  20.0
3. 104           * 46065 19555 46132 19496 *  AG    1850    270.7    .0  20.0
4. 105           * 46132 19496 46233 19454 *  AG    1850    270.7    .0  20.0
5. 106           * 46233 19454 46250 19427 *  AG    1850    270.7    .0  20.0
6. 107           * 46250 19427 46252 19300 *  AG    1850    270.7    .0  20.0
7. 108           * 46252 19300 46280 19211 *  AG    1850    270.7    .0  20.0
8. 109           * 46280 19211 46323 19129 *  AG    1850    270.7    .0  20.0
9. 110           * 46323 19129 46339 19025 *  AG    1850    270.7    .0  20.0
0. 111           * 46339 19025 46339 18932 *  AG    1850    270.7    .0  20.0
1. 112           * 46342 18932 46341 18882 *  FL    1850    270.7   7.3  20.0
2. 113           * 46341 18882 46338 18791 *  FL    1850    270.7   7.3  20.0
3. 114           * 46338 18791 46337 18711 *  FL    1850    270.7   5.5  20.0
4. 115           * 46337 18711 46345 18561 *  FL    1850    270.7   5.5  20.0
5. 116           * 46341 18562 46338 18461 *  AG    1850    270.7    .0  20.0
6. 117           * 46338 18461 46313 18399 *  AG    1850    270.7    .0  20.0
7. 118           * 46317 18397 46284 18349 *  FL    1850    270.7   8.0  20.0
8. 119           * 46284 18349 46226 18305 *  FL    1850    270.7   8.0  20.0
9. 120           * 46226 18305 46098 18211 *  FL    1850    270.7   8.0  20.0
0. 121           * 45488 20017 45529 19998 *  AG     900    344.0    .0  26.0
1. 122           * 45529 19998 45623 19954 *  AG     900    344.0    .0  26.0
2. 123           * 45623 19954 45893 19725 *  AG     900    344.0    .0  26.0
3. 124           * 45869 20123 45906 20032 *  AG    2650    274.7    .0  14.0
4. 125           * 45906 20032 45988 19938 *  AG    2650    274.7    .0  14.0
5. 126           * 45988 19938 45953 19810 *  AG    2650    274.7    .0  18.0
6. 127           * 45953 19810 45893 19724 *  AG    2650    274.7    .0  22.0
7. 128           * 45516 18986 45563 18919 *  AG    1900    250.1    .0  21.0
8. 129           * 45563 18919 45627 18851 *  AG    1900    250.1    .0  21.0
9. 130           * 45627 18851 45656 18800 *  AG    1900    250.1    .0  21.0
0. 131           * 45656 18800 45694 18696 *  AG    1900    250.1    .0  21.0
1. 132           * 45694 18696 45755 18615 *  AG    1900    250.1    .0  21.0
2. 133           * 45755 18615 45870 18509 *  AG    1900    250.1    .0  21.0
3. 134           * 45870 18509 45910 18460 *  AG    1900    250.1    .0  21.0
4. 135           * 45910 18460 45957 18359 *  AG    1900    250.1    .0  21.0
5. 136           * 45957 18359 46028 18286 *  AG    1900    250.1    .0  21.0
6. 137           * 46028 18286 46096 18214 *  AG    1900    250.1    .0  21.0
7. 138           * 46095 18216 46116 18163 *  AG    1550    295.1    .0  21.0
8. 139           * 46116 18163 46110 18080 *  AG    1550    295.1    .0  21.0
9. 140           * 46110 18080 46059 18008 *  AG    1550    295.1    .0  21.0
0. 141           * 46059 18008 46018 17957 *  AG    1550    295.1    .0  21.0
1. 142           * 46018 17957 46003 17895 *  AG    1550    295.1    .0  21.0
2. 143           * 46003 17895 46011 17831 *  AG    1550    295.1    .0  21.0
3. 144           * 46011 17831 46073 17692 *  AG    1550    295.1    .0  21.0
4. 145           * 44707 18431 44461 18430 *  AG     550    202.2    .0  16.0
5. 146           * 44461 18430 44435 18408 *  AG     550    202.2    .0  16.0
6. 147           * 44435 18408 44435 18373 *  AG     550    202.2    .0  16.0
7. 148           * 44435 18373 44434 18344 *  AG     800    224.0    .0  16.0
8. 149           * 44434 18344 44458 18320 *  AG     800    224.0    .0  16.0
9. 150           * 44458 18320 44706 18319 *  AG     800    224.0    .0  18.0
0. 151           * 44708 18498 44987 18500 *  AG     900    263.1    .0  16.0
1. 152           * 44987 18432 45298 18431 *  AG     700    224.0    .0  16.0
2. 153           * 45298 18431 45342 18424 *  AG     700    224.0    .0  18.0
3. 154           * 44476 17834 44706 17833 *  AG     650    224.0    .0  20.0
4. 155           * 44706 17834 44822 17833 *  DP    1000    305.1  -2.0  22.0
5. 156           * 44822 17833 44865 17833 *  DP    1000    305.1  -4.0  22.0
6. 157           * 44865 17833 44986 17833 *  DP    1000    305.1  -2.0  22.0
7. 158           * 44706 17834 44705 17641 *  AG     650    224.0    .0  20.0
8. 159           * 44986 17833 44988 17684 *  AG     400    531.1    .0  20.0
9. 160           * 43665 18321 43752 18229 *  AG    1250    215.9    .0  16.0
0. 161           * 43752 18229 43813 18193 *  AG    1250    215.9    .0  16.0
1. 162           * 43813 18193 43897 18190 *  AG    1250    215.9    .0  16.0
2. 163           * 43897 18190 43975 18236 *  AG    1250    215.9    .0  16.0
3. 164           * 43975 18236 44144 18398 *  AG    1250    215.9    .0  16.0
4. 165           * 43665 18321 43794 18365 *  AG    1750    236.6    .0  16.0
5. 166           * 43794 18365 43887 18415 *  AG    1750    236.6    .0  16.0
6. 167           * 43887 18415 44041 18551 *  AG    1750    236.6    .0  22.0
7. 168           * 45264 18860 45301 18926 *  AG    3400    303.8    .0  22.0
8. 169           * 45301 18926 45299 19087 *  AG    3400    303.8    .0  22.0
9. 170           * 45299 19087 45398 19209 *  AG    3400    303.8    .0  22.0
0. 171           * 45267 19345 45399 19210 *  AG    1650    271.8    .0  40.0
1. 172           * 45398 19210 45438 19150 *  AG     700    233.0    .0  46.0
2. 173           * 45438 19150 45512 18977 *  AG     700    233.0    .0  44.0
3. 174           * 45267 19345 45398 19210 *  BG    1250    271.8   4.0  16.0
4. 175           * 45398 19210 45438 19150 *  BG    1250    271.8   6.9  16.0
5. 176           * 45438 19150 45512 18977 *  BG    1250    271.8   2.9  16.0
6. 177           * 44041 18551 44107 18469 *  AG    2650    215.9    .0  30.0
7. 178           * 44107 18469 44145 18397 *  AG    2650    215.9    .0  30.0
8. 179           * 44220 18454 44285 18489 *  BG     650    224.6   1.7  20.0
9. 180           * 44285 18489 44355 18513 *  BG     650    224.6   5.1  20.0
0. 181           * 44355 18513 44404 18527 *  BG     650    426.8   8.0  20.0
1. 182           * 44404 18527 44453 18543 *  BG     650    628.9   5.6  20.0
2. 183           * 44144 18397 44220 18454 *  AG    1150    262.0    .0  28.0
3. 184           * 44220 18454 44285 18489 *  AG    1150    262.0    .0  32.0
4. 185           * 44285 18489 44355 18513 *  AG    1150    262.0    .0  32.0
5. 186           * 44355 18513 44404 18527 *  AG    1150    681.4    .0  32.0
6. 187           * 44404 18527 44453 18543 *  AG    2950    535.7    .0  32.0
7. 188           * 44668 18615 44715 18634 *  AG    2950    535.7    .0  30.0
8. 189           * 44715 18634 44762 18651 *  AG    2350    515.8    .0  34.0
9. 190           * 44762 18651 44898 18705 *  AG    2350    310.6    .0  32.0
0. 191           * 44898 18705 44947 18722 *  AG    2350    515.8    .0  28.0
1. 192           * 44947 18722 44994 18739 *  AG    2450    764.3    .0  28.0
2. 193           * 45178 18808 45223 18831 *  AG    2450    764.3    .0  36.0
3. 194           * 45223 18831 45264 18861 *  AG    3400    459.4    .0  36.0
4. 195           * 44041 18551 44185 18646 *  AG    1550    218.1    .0  20.0
5. 196           * 44041 18552 44000 18639 *  AG     900    271.8    .0  26.0
6. 197           * 44000 18639 44022 18727 *  AG     900    271.8    .0  26.0
7. 198           * 44022 18726 44087 18786 *  AG     900    258.3    .0  22.0
8. 199           * 44087 18786 44338 18928 *  AG     900    258.3    .0  22.0
9. 200           * 44338 18928 44393 18948 *  AG     900    258.3    .0  30.0
0. 201           * 44393 18948 44565 19010 *  AG    1300    243.5    .0  26.0
1. 202           * 44565 19010 44838 19109 *  AG    1000    265.3    .0  24.0
2. 203           * 44838 19109 45043 19186 *  AG     550    232.6    .0  24.0
3. 204           * 44533 18772 44640 18807 *  AG    1200    202.2    .0  20.0
4. 205           * 44640 18807 44912 18907 *  AG     650    226.5    .0  20.0
5. 206           * 44912 18907 45022 18950 *  AG    1250    202.2    .0  20.0
6. 207           * 44640 18807 44702 18628 *  AG    1250    252.2    .0  23.0
7. 208           * 44912 18907 44975 18733 *  AG    1300    302.3    .0  23.0
8. 209           * 44565 19010 44640 18807 *  AG     500    226.5    .0  23.0
9. 210           * 44838 19109 44912 18907 *  AG     500    236.3    .0  23.0
0. 211           * 44943 19301 45044 19186 *  AG     850    241.3    .0  26.0
1. 212           * 45044 19186 45115 19095 *  AG     800    252.2    .0  24.0
2. 213           * 45115 19095 45180 18950 *  AG     800    252.2    .0  24.0
3. 214           * 45180 18950 45223 18831 *  AG     800    252.2    .0  24.0
4. 215           * 44438 19158 44406 19047 *  AG    1000    271.0    .0  36.0
5. 216           * 44406 19047 44393 18948 *  AG    1000    271.0    .0  46.0
6. 217           * 44393 18948 44391 18730 *  AG     900    271.8    .0  36.0
7. 218           * 44438 19158 44406 19047 *  BG    1300    242.4   2.1  16.0
8. 219           * 44406 19047 44393 18948 *  BG    1300    242.4   6.1  16.0
9. 220           * 44393 18948 44391 18730 *  BG    1300    242.4   4.0  16.0
0. 221           * 44391 18731 44393 18524 *  AG    2250    252.2    .0  32.0
1. 222           * 45526 17021 45797 17022 *  FL    5700    318.7   8.0  32.0
2. 223           * 45537 17504 45584 17507 *  AG     450    250.1    .0  13.5
3. 224           * 45584 17507 45662 17532 *  AG     450    250.1    .0  13.5
4. 225           * 45662 17532 45864 17611 *  AG     450    250.1    .0  13.5
5. 226           * 45536 17477 45591 17492 *  AG     450    250.1    .0  13.5
6. 227           * 45591 17492 45708 17532 *  AG     450    250.1    .0  13.5
7. 228           * 45708 17532 45871 17594 *  AG     450    250.1    .0  13.5
8. 229           * 45868 17603 46063 17682 *  FL    1450    219.5   6.9  26.0
9. 230           * 46073 17692 46170 17503 *  AG    1950    285.5    .0  26.0
0. 231           * 46170 17503 46208 17408 *  AG    1950    285.5    .0  26.0
1. 232           * 46208 17408 46230 17274 *  AG    2100    246.1    .0  26.0
2. 233           * 46230 17274 46224 17021 *  AG    2100    246.1    .0  32.0
3. 234           * 45534 17490 45616 17507 *  BG     550    169.5  14.0  16.0
4. 235           * 45616 17507 45868 17603 *  BG     550    169.5  11.9  16.0
5. 236           * 45797 17021 46206 17019 *  FL    4200    413.3   8.0  32.0
6. 237           * 46222 17015 46228 16882 *  AG    4200    413.3    .0  34.0
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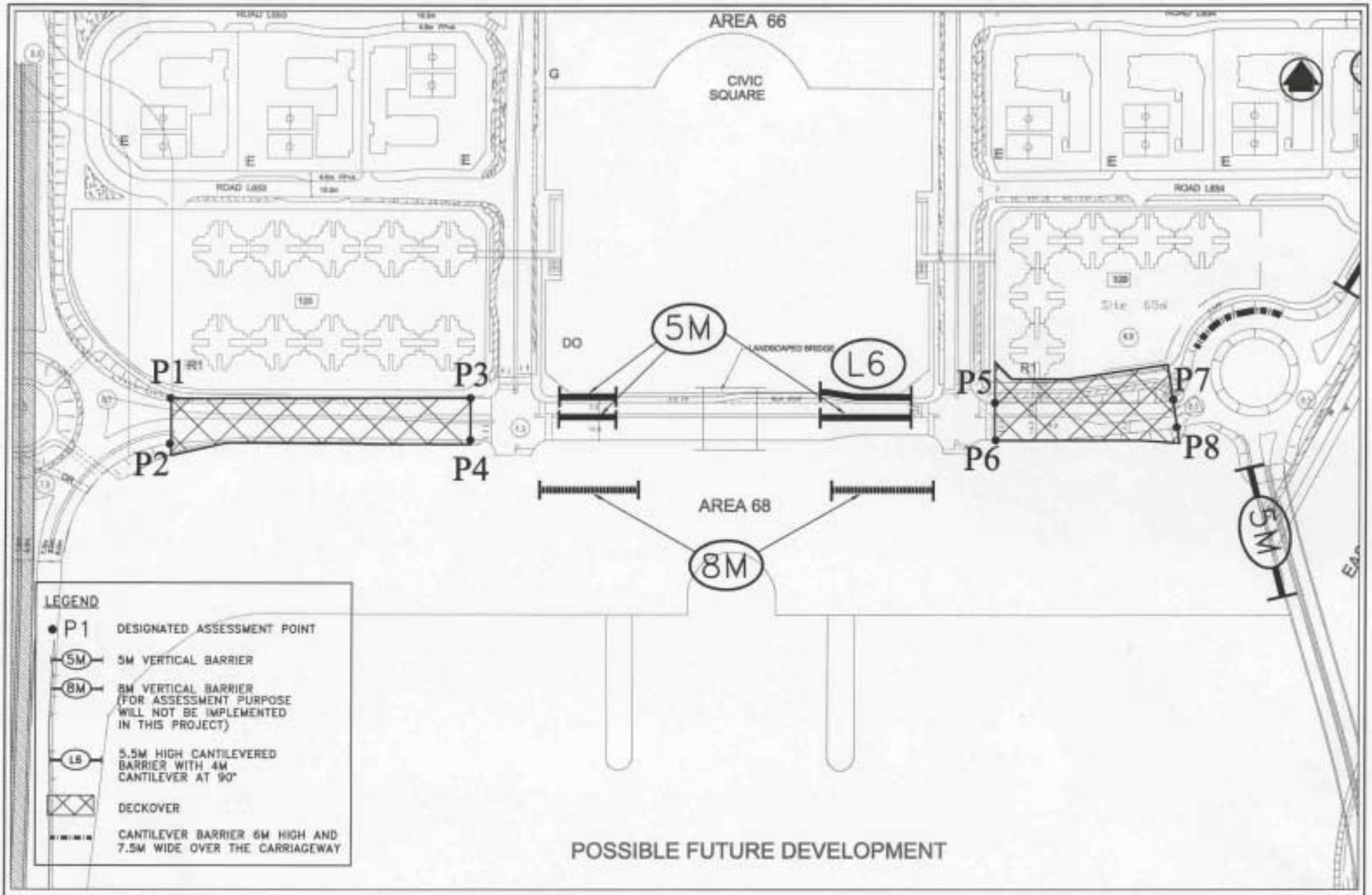
7. 238	*	46228	16882	46268	16774	*	AG	4200	413.3	.0 34.0
8. 239	*	46268	16774	46360	16604	*	AG	4200	413.3	.0 34.0
9. 240	*	46360	16604	46410	16466	*	AG	4200	413.3	.0 34.0
0. 241	*	44385	18169	44435	18170	*	FL	4800	412.0	5.0 28.0
1. 242	*	44435	18170	44486	18170	*	FL	4800	571.7	5.0 28.0
2. 243	*	44677	18172	44727	18173	*	AG	4800	571.7	.0 28.0
3. 244	*	44727	18173	44777	18173	*	FL	2800	521.1	5.0 28.0
4. 245	*	44777	18173	44910	18173	*	AG	2800	247.2	.0 28.0
5. 246	*	44910	18173	44960	18173	*	FL	2800	364.6	5.5 28.0
6. 247	*	44960	18173	45010	18172	*	AG	3400	445.6	.0 28.0
7. 248	*	45124	18177	45169	18198	*	FL	3400	445.6	6.0 28.0
8. 249	*	45170	18198	45215	18218	*	FL	1800	434.9	6.0 28.0

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. P1-0	*	44486	18184	.0
2. P1-5	*	44486	18184	5.0
3. P1-10	*	44486	18184	10.0
4. P2-0	*	44486	18157	.0
5. P2-5	*	44486	18157	5.0
6. P2-10	*	44486	18157	10.0
7. P3-0	*	44676	18187	.0
8. P3-5	*	44676	18187	5.0
9. P3-10	*	44676	18187	10.0
10. P4-0	*	44676	18159	.0
11. P4-5	*	44676	18159	5.0
12. P4-10	*	44676	18159	10.0
13. P5-0	*	45010	18184	.0
14. P5-5	*	45010	18184	5.0
15. P5-10	*	45010	18184	10.0
16. P6-0	*	45010	18160	.0
17. P6-5	*	45010	18160	5.0
18. P6-10	*	45010	18160	10.0
19. P7-0	*	45123	18186	.0
20. P7-5	*	45123	18186	5.0
21. P7-10	*	45123	18186	10.0
22. P8-0	*	45125	18168	.0
23. P8-5	*	45125	18168	5.0
24. P8-10	*	45125	18168	10.0

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	*	BRG (DEG)	*	PRED CONC (PPM)	*	CONC/LINK (PPM) 0	1	2	3	4	5	6	7
1. P1-0	*	249.	*	55.1	*	.0	.0	.0	.0	.0	.0	.0	.0
2. P1-5	*	241.	*	93.5	*	.0	.0	.0	.0	.0	.0	.0	.0
3. P1-10	*	251.	*	52.5	*	.0	.0	.0	.0	.0	.0	.0	.0
4. P2-0	*	283.	*	57.1	*	.0	.0	.0	.0	.0	.0	.0	.0
5. P2-5	*	289.	*	94.0	*	.0	.0	.0	.0	.0	.0	.0	.0
6. P2-10	*	284.	*	54.7	*	.0	.0	.0	.0	.0	.0	.0	.0
7. P3-0	*	114.	*	88.1	*	.0	.0	.0	.0	.0	.0	.0	.0
8. P3-5	*	105.	*	51.2	*	.0	.0	.0	.0	.0	.0	.0	.2
9. P3-10	*	98.	*	24.9	*	.0	.0	.0	.0	.0	.0	.0	.4
10. P4-0	*	71.	*	91.9	*	.0	.0	.0	.0	.0	.0	.0	.0
11. P4-5	*	78.	*	55.2	*	.0	.0	.0	.0	.0	.0	.0	.1
12. P4-10	*	82.	*	26.6	*	.0	.0	.0	.0	.0	.0	.0	.2
13. P5-0	*	261.	*	61.8	*	.0	.0	.0	.0	.0	.0	.0	.0
14. P5-5	*	264.	*	40.9	*	.0	.0	.0	.0	.0	.0	.0	.0
15. P5-10	*	265.	*	24.5	*	.0	.0	.0	.0	.0	.0	.0	.0
16. P6-0	*	282.	*	59.7	*	.0	.0	.0	.0	.0	.0	.0	.0
17. P6-5	*	278.	*	39.5	*	.0	.0	.0	.0	.0	.0	.0	.0
18. P6-10	*	276.	*	24.0	*	.0	.0	.0	.0	.0	.0	.0	.0
19. P7-0	*	75.	*	23.0	*	.0	.0	.0	.0	.0	.0	.0	1.3
20. P7-5	*	84.	*	52.9	*	.0	.0	.0	.0	.0	.0	.0	1.8
21. P7-10	*	76.	*	34.5	*	.0	.0	.0	.0	.0	.0	.0	1.2
22. P8-0	*	54.	*	24.8	*	.0	.0	.0	.0	.0	.0	.0	1.1
23. P8-5	*	52.	*	50.6	*	.0	.0	.0	.0	.0	.0	.0	.9
24. P8-10	*	53.	*	35.1	*	.0	.0	.0	.0	.0	.0	.0	.9



Project	INSTRUCTION NO.CE 3/97-10 EIA FOR ROADS D1, D8 AND D10
Title	DESIGNATED ASSESSMENT POINTS AT THE PORTALS OF THE TWO SECTIONS OF THE DECKOVER
Figure	A3.2
Scale	AS SHOWN
Date	AUG 2001

Maunsell
MAUNSELL ENVIRONMENTAL MANAGEMENT CONSULTANTS LTD