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## 5 AIR QUALITY IMPACTS

### 5.1 Legislation and Standards

- 5.1.1 For the criteria as regards air quality impact assessment, reference shall be made to the Hong Kong Planning Standards and Guidelines (HKPSG), the Air Pollution Control Ordinance (APCO) (Cap.311), and Annex 4 of the Technical Memorandum on Environmental Impact Assessment Process (TM-EIAO).
- 5.1.2 The APCO (Cap.311) provides the power for controlling air pollutants from a variety of stationary and mobile sources and encompasses a number of Air Quality Objectives (AQOs). In addition to the APCO, the following overall policy objectives are laid down in Chapter 9 of the Hong Kong Planning Standards and Guidelines (HKPSG) as follows:
- (a) Limit the contamination of the air in Hong Kong, through land use planning and through the enforcement of the APCO, to safeguard the health and well-being of the community; and
  - (b) Ensure that the AQO for 7 common air pollutants are met as soon as possible.
- 5.1.3 Currently, the AQOs stipulate limits on concentrations for 7 pollutants including sulphur dioxide (SO<sub>2</sub>), Total Suspended Particulates (TSP), Respirable Suspended Particulates (RSP), Nitrogen Dioxide (NO<sub>2</sub>), Carbon Monoxide (CO), photochemical oxidants, and Lead (Pb). The AQOs are listed in the table below.

Table 5-1 Hong Kong Air Quality Objectives (HKAQO)

Pollutant	Limits on Concentration, ug/m <sup>3</sup> [1] (ppm in brackets)				
	1-hr [2]	8-hr [3]	24-hr [3]	Monthly [4]	Annual [4]
Sulphur Dioxide	800 (0.3)		350 (0.13)		80 (0.03)
Total Suspended Particulates	500 [7]		260		80
Respirable Suspended Particulates [5]			180		55
Carbon Monoxide	30,000 (26.2)	10,000 (8.7)			
Nitrogen Dioxide	300 (0.16)		150 (0.08)		80 (0.04)
Photochemical Oxidants (as ozone) [6]	240				
Lead				1.5	

Notes:

- [1] Measured at 298K and 101.325 kPa.
- [2] Not to be exceeded more than three times per year.
- [3] Not to be exceeded more than once per year.
- [4] Arithmetic mean.
- [5] Respirable suspended particulates means suspended particulates in air with a nominal aerodynamic diameter of 10 micrometres or smaller.
- [6] Photochemical oxidants are determined by measurement of ozone only.
- [7] Not an AQO but is a criterion for evaluating air quality impacts as stated in Annex 4 of *TM-EIAO*.

- 5.1.4 The key air emission source from HKLR and HKBCF is obviously the road traffic (ie vehicular emission). In this regard, air pollutants of concern would include nitrogen dioxide (NO<sub>2</sub>) and respirable suspended particulates (RSP), and they

have been assessed in this study. The emissions as regards other pollutants such as CO etc from road traffic are insignificant.

## 5.2 Ambient Air Quality Condition and Previous Monitoring Levels

- 5.2.1 Existing air sensitive receivers in the vicinity of the project include various developments (residential, commercial etc) and village houses along the northern coast of Lantau (see **Section 5.3**). Key existing air pollution sources that may bear upon the air quality in Tung Chung/North Lantau include the roads (notably North Lantau Highway), the Chek Lap Kok Airport i.e. Hong Kong International Airport, Black Point Power Station, Castle Peak Power Station and the Lamma Power Station. Other regional emission sources beyond HK would also have certain influence on the background air quality level. Details of air pollution emission sources are discussed in **Sections 5.5 & 5.6**.
- 5.2.2 Historical air quality monitoring data from the nearest monitoring station, namely the Tung Chung station operated by EPD, have been examined. The latest 5 published years of air quality monitoring data, i.e. 2004 to 2008 at Tung Chung Monitoring Station are tabulated in the table below.

Table 5-2 Air Quality Monitoring Data (Tung Chung Station, 2004-2008)

Pollutant	Year	Highest 1-Hour Average ( $\mu\text{g}/\text{m}^3$ )	Highest Daily Average ( $\mu\text{g}/\text{m}^3$ )	Annual Average ( $\mu\text{g}/\text{m}^3$ )
SO <sub>2</sub>	2004	432	115	27
	2005	301	121	21
	2006	393	209	25
	2007	259	95	23
	2008	266	91	18
	5-year mean <sup>[3]</sup>	330 (41%)	126 (36%)	23(29%)
	AQO – SO <sub>2</sub>	800	350	80
NO <sub>2</sub>	2004	289	<b>166</b>	52
	2005	268	147	46
	2006	253	<b>157</b>	47
	2007	248	127	46
	2008	256	134	49
	5-year mean <sup>[3]</sup>	263 (88%)	146 (97%)	48(60%)
	AQO – NO <sub>2</sub>	300	150	80
TSP	2004	N/M	176	72
	2005	N/M	<b>261</b>	65
	2006	N/M	160	75
	2007	N/M	240	70
	2008	N/M	198	69
	5-year mean <sup>[3]</sup>	N/M	207(80%)	71 (89%)
	AQO - TSP	N/M	260	80
CO	2004	3940	3385	799
	2005	5730	4541	923



Pollutant	Year	Highest 1-Hour Average ( $\mu\text{g}/\text{m}^3$ )	Highest Daily Average ( $\mu\text{g}/\text{m}^3$ )	Annual Average ( $\mu\text{g}/\text{m}^3$ )
	2006	3670	260	782
	2007	3920	3514	820
	2008	2820	2566	860
	5-year mean <sup>[3]</sup>	4016(13%)	2853(29%)	837
	AQO - CO	30,000	10,000	N/A
RSP	2004	389	<u>209</u>	<u>62</u>
	2005	366	<u>217</u>	<u>57</u>
	2006	314	<u>254</u>	<u>56</u>
	2007	NM	<u>199</u>	54
	2008	243	146	52
	5-year mean <sup>[3]</sup>	328	<u>205(113%)</u>	<u>56(102%)</u>
	AQO - RSP	N/A	180	55
O <sub>3</sub>	2004	<u>403</u>	138	48
	2005	<u>357</u>	140	38
	2006	<u>302</u>	107	37
	2007	<u>308</u>	117	40
	2008	<u>310</u>	146	41
	5-year mean <sup>[3]</sup>	<u>336 (140%)</u>	130	41
	AQO - O <sub>3</sub>	240	N/A	N/A

Note:

[1] N/M - Not Measured

[2] Monitoring results exceeded AQO are shown as underlined characters.

[3] % of AQO is provided in the bracket. The 5-year mean is the average of the yearly maximum.

n.a Not applicable since there is no HKAQO for this parameter.

- 5.2.3 It can be seen from the above table that the highest 1-hour NO<sub>2</sub> concentration has gradually decreased from 289 $\mu\text{g}/\text{m}^3$  in 2004 to 256 $\mu\text{g}/\text{m}^3$  in 2008, against a criterion of 300 $\mu\text{g}/\text{m}^3$ . A similar trend is also observed for the daily NO<sub>2</sub> concentration, which has decreased from 166 $\mu\text{g}/\text{m}^3$  in 2004 to 134 $\mu\text{g}/\text{m}^3$  in 2008. The maximum daily NO<sub>2</sub> concentration at 2004 and 2006, however, exceeded the criterion of 150 $\mu\text{g}/\text{m}^3$ . The annual NO<sub>2</sub> remains relatively steady in the range of 46 - 52 $\mu\text{g}/\text{m}^3$ , without any exceedance of the criterion of 80 $\mu\text{g}/\text{m}^3$ .
- 5.2.4 For RSP, the maximum daily concentration exceeded the AQO (in the range of 199-254 $\mu\text{g}/\text{m}^3$  in 2004 – 2007, against the AQO of 180 $\mu\text{g}/\text{m}^3$ ), but the concentration became AQO-compliant in 2008, being the lowest among the last 5 years. The annual RSP concentration shows a decreasing trend, with the 2008 annual RSP concentration being 52 $\mu\text{g}/\text{m}^3$  without exceeding the criterion of 55 $\mu\text{g}/\text{m}^3$ .
- 5.2.5 The maximum hourly concentration of O<sub>3</sub> from 2004 – 2008 has been relatively high, in the range of 302 – 403 $\mu\text{g}/\text{m}^3$ , against the AQO of 240 $\mu\text{g}/\text{m}^3$ . However, the proposed project will not generate any O<sub>3</sub>. Hence, O<sub>3</sub> is not a pollutant to be assessed in this EIA.
- 5.2.6 For SO<sub>2</sub> and CO, the pollutant level are relatively low, in the order of less than 41% and less than 13% of the corresponding hourly AQOs respectively. Hence,

SO<sub>2</sub> and CO will not be assessed in this EIA.

- 5.2.7 For suspended particulates, road traffic emissions will mainly contribute to RSP. Hence, RSP will be included in the operation phase air quality assessment. However, the construction phase of the project will involve the emission of fugitive dusts, and hence TSP will be assessed for construction phase air quality impact.

### 5.3 Air Sensitive Receivers & Pollution Sources

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#### 5.3.1 Air Sensitive Receivers

- 5.3.1.1 With reference to EIA Study Brief No. ESB-110/2003 for HKLR and ESB-183/2008 for HKBCF, the study area for air quality impact assessment should generally be defined by a distance of 500m from the boundary of the project site. Further, it should be extended to include major emission sources that may have a bearing on the environmental acceptability of the project. The study will also review the air quality impacts on the areas and other sensitive receivers beyond 500m from the site boundary, which may be potentially affected by the Project.

- 5.3.1.2 In accordance with Annex 12 of the TM-EIAO, Air Sensitive Receivers (ASRs) include domestic premises, hotel, hostel, hospital, clinic, nursery, temporary housing accommodation, school, educational institution, office, factory, shop, shopping centre, place of public worship, library, court of law, sports stadium or performing arts centre. Any other premises or places with which, in terms of duration or number of people affected, has a similar sensitivity to the air pollutants as the aforesaid premises and places would also be considered as a sensitive receiver.

- 5.3.1.3 Representative ASRs within a distance of 500m from the project boundary (including the proposed alignment, reclamation and the associated facilities) have been identified. Since there are some ASRs located outside the 500m range, representative ASRs beyond 500m from the project boundary have therefore been included in the assessment.

- 5.3.1.4 These ASRs include both the existing and planned developments. Existing ASRs are identified by means of reviewing topographic maps, aerial photos, land status plans, supplemented by site inspections; they include scattered village houses generally in 1 to 3-storeys high, as well as residential / commercial developments in Tung Chung/North Lantau.

- 5.3.1.5 Planned/committed ASRs are identified by making reference to relevant Outline Zoning Plans (OZP), Outline Development Plans, Layout Plans and other published plans in relation to the development on North Lantau, including:

- Tung Chung Town Centre Area OZP (No. S/I-TCTC/13);
- Tung Chung Town Centre Area Layout Plan - Lantau Island (No. L/I-TCTC/1C);
- North Lantau New Town Phase IIB Area (Part) Layout Plan (No. L/I-TCIIB/1C).

- 5.3.1.6 The relevant stakeholders were also approached to obtain latest information on planning application, layout and building height. The major planned uses in the vicinity of the area include:

- Tung Chung East and West Further Developments (whilst there are no confirmed development layout, this EIA has included indicative locations to assess the future air quality impacts);
- Possible tourism initiatives in Lantau (including the possible Theme Park and the Sunny Bay Tourism node as indicated in the Concept Plan for Lantau);

- Lantau Logistics Park; and
- The possible transport hub at MTRCL Siu Ho Wan Depot.

5.3.1.7 The locations of the representative ASRs for air quality assessment during the implementation of the project are illustrated in **Figure 5.1**, and are summarised in the table below. ASRs at eastern coast of Tung Chung East Future Development, LLP, MTR Siu Ho Wan Depot etc are considered in the EIA for TMCLKL.

Table 5-3 Representative ASRs for Air Quality Impact Assessment

ASR ID	Description	Area	No. of Storey (approx)	Urban /Rural [1]	Land use [2]
A93	Sha Lo Wan House No. 1	Sha Lo Wan <sup>[A]</sup>	1-3	Rural	Res
A94	Sha Lo Wan House No. 5		1-3	Rural	Res
A95	Sha Lo Wan House No. 9		1-3	Rural	Res
A96	Tin Hau Temple at Sha Lo Wan		1-3	Rural	Res
A97	San Shek Wan	San Shek Wan <sup>[A]</sup>	1-3	Rural	Res
A98	Sham Wat House No. 39	Sham Wat <sup>[A]</sup>	1-3	Rural	Res
A99	Sham Wat House No. 30		1-3	Rural	Res
A90	Tin Sum	Tin Sum <sup>[A]</sup>	1-3	Rural	Res
A91	Kau Liu		1-3	Rural	Res
A92	San Tau		1-3	Rural	Res
A59	Ma Wan Chung	Ma Wan Chung <sup>[A]</sup>	1-3	Rural	Res
A41	One Citygate	Existing Tung Chung Town (South of NLH) <sup>[A]</sup>	5	Urban	Res
A42	One Citygate Bridge		10	Urban	Res
A43	Fu Tung Shopping Centre		4	Urban	Com
A44	Tung Chung Health Centre		3	Urban	GIC
A45	Ching Chung Hau Po Woon Primary School		7	Urban	GIC
A46	Po On Commercial Association Wan Ho Kan Primary School		7	Urban	GIC
A47	Po Leung Kuk Mrs. Ma Kam Min Cheung Fook Sien College		7	Urban	GIC
A48	Wong Cho Bau Secondary School		7	Urban	GIC
A49	Tung Chung Wan Telephone Exchange		5	Urban	GIC
A50	Yu Tung Court - Hei Tung House		33	Urban	Res
A51	Yu Tung Court - Hor Tung House		36	Urban	Res
A52	Fu Tung Estate - Tung Ma House		30	Urban	Res
A53	Fu Tung Estate - Tung Shing House		30	Urban	Res
A54	Tung Chung Crescent Block 1		28	Urban	Res
A55	Tung Chung Crescent Block 3		30	Urban	Res
A56	Tung Chung Crescent Block 5		33	Urban	Res
A57	Tung Chung Crescent Block 7	39	Urban	Res	
A58	Tung Chung Crescent Block 9	43	Urban	Res	
A60	Yat Tung Estate - Shun Yat House	35	Urban	Res	
A51	Yu Tung Court - Hor Tung House	36	Urban	Res	
A61	Yat Tung Estate - Mei Yat House	35	Urban	Res	
A62	Yat Tung Estate - Hong Yat House	35	Urban	Res	
A63	Yat Tung Estate - Ping Yat House	35	Urban	Res	

ASR ID	Description	Area	No. of Storey (approx)	Urban /Rural [1]	Land use [2]
A64	Yat Tung Estate - Fuk Yat House		35	Urban	Res
A65	Yat Tung Estate - Ying Yat House		35	Urban	Res
A66	Yat Tung Estate - Sui Yat House		35	Urban	Res
P3	Planned Park near One Citygate		1	Urban	OS
A1	Caribbean Coast Block 1 – Facing NLH	Existing Tung Chung Town (North of NLH) [A]	47	Urban	Res
A2	Caribbean Coast Block 1 – Facing BCF		47	Urban	Res
A3	Caribbean Coast Block 5 – Facing NLH		49	Urban	Res
A4	Caribbean Coast Block 5 – Facing BCF		49	Urban	Res
A5	Caribbean Coast Block 6 – Facing NLH		51	Urban	Res
A6	Caribbean Coast Block 6 – Facing BCF		51	Urban	Res
A7	Caribbean Coast Block 9 – Facing NLH		52	Urban	Res
A8	Caribbean Coast Block 9 – Facing BCF		52	Urban	Res
A9	Caribbean Coast Block 11 – Facing NLH		52	Urban	Res
A10	Caribbean Coast Block 11 – Facing BCF		52	Urban	Res
A11	Caribbean Coast Block 16 – Facing NLH		51	Urban	Res
A12	Caribbean Coast Block 16 – Facing BCF		51	Urban	Res
A13	Caribbean Coast (Phase 5)		3	Urban	Res
A14	Caribbean Coast (Phase 5)		3	Urban	Res
A15	Ho Yu College		7	Urban	GIC
A16	Ho Yu Primary School		7	Urban	GIC
A17	Coastal Skyline Block 1 – Facing NLH		50	Urban	Res
A18	Coastal Skyline Block 1 – Facing HKLR		50	Urban	Res
A19	Coastal Skyline Block 5 – Facing NLH		50	Urban	Res
A20	Coastal Skyline Block 5 – Facing HKLR		50	Urban	Res
A21	La Rossa B – Facing NLH		56	Urban	Res
A22	La Rossa B – Facing HKLR		56	Urban	Res
A23	LeBleu No.1		1-3	Urban	Res
A24	LeBleu No.31		1-3	Urban	Res
A25	LeBleu No.99		1-3	Urban	Res
A26	LeBleu No.2		1-3	Urban	Res
A27	LeBleu No.22		1-3	Urban	Res
A28	LeBleu No.88		1-3	Urban	Res
A29	LeBleu Deux		1-3	Urban	Res
A30	LeBleu Deux		1-3	Urban	Res
A31	LeBleu Deux		1-3	Urban	Res
A32	LeBleu Deux		1-3	Urban	Res
A33	Seaview Crescent Block 5 – Facing NLH		50	Urban	Res
A34	Seaview Crescent Block 5 – Facing HKLR	50	Urban	Res	
A35	Seaview Crescent Block 3 – Facing NLH	49	Urban	Res	
A36	Seaview Crescent Block 3 – Facing HKLR	49	Urban	Res	
A37	Seaview Crescent Block 1 – Facing NLH	49	Urban	Res	
A38	Seaview Crescent Block 1 – Facing HKLR	49	Urban	Res	

ASR ID	Description	Area	No. of Storey (approx)	Urban /Rural [1]	Land use [2]
A39	Ling Liang Church E Wun Secondary School	[B]	7	Urban	GIC
A40	Ling Liang Church Sau Tak Primary School		7	Urban	GIC
A101	Novotel Citygate Hong Kong		30	Urban	Com
P4	Planned Community Hall and Library		5	Urban	GIC
P5	Planned District Open Space		1	Urban	OS
P6	Planned District Open Space		1	Urban	OS
A100	Man Tung Road Park		1	Urban	OS
A67	Aviation Security Company Limited	Airport Island <sup>[A]</sup>	10	Rural	Com
A68	Tradeport Logistics Centre		10	Rural	Com
A69	Tradeport Logistics Centre		10	Rural	Com
A70	Cathay Pacific City		10	Rural	Com
A71	Cathay Pacific City		10	Rural	Com
A72	Chek Lap Kok Fire Station		3	Rural	Com
A73	LSG Sky Chefs		10	Rural	Com
A74	LSG Sky Chefs		10	Rural	Com
A75	Cathay Pacific Catering Services		10	Rural	Com
A76	Cathay Pacific Catering Services		10	Rural	Com
A77	Airport Police Station		3	Rural	Com
A78	Gate Gourmet Catering Building		10	Rural	Com
A79	CNAC Tower		10	Rural	Com
A80	Dragonair Tower		10	Rural	Com
A81	Regal Airport Hotel		30	Rural	Com
A82	SkyCity Nine Eagles Golf Course		1	Rural	OS
A83	SkyCity Nine Eagles Golf Course		1	Rural	OS
A84	SkyCity Nine Eagles Golf Course		1	Rural	OS
A85	Hong Kong SkyCity Marriott Hotel		30	Rural	Com
A86	Hong Kong SkyCity Marriott Hotel		30	Rural	Com
A87	AsiaWorld-Expo		5	Rural	Com
A88	AsiaWorld-Expo		5	Rural	Com
A89	Government Flying Services Headquarters		10	Rural	GIC
A102	Terminal 2 Sky Plaza		5	Rural	GIC
A103	SkyCity Nine Eagles Golf Course		1	Rural	OS
A104	SkyCity Nine Eagles Golf Course		1	Rural	OS
A105	Hong Kong Business Aviation Centre		10	Rural	Com
A106	DHL Central Asia Hub	10	Rural	Com	
P1	Tung Chung East Development	Planned ASRs <sup>[B]</sup>	-	Urban	Res
P2	Tung Chung East Development		-	Urban	Res
P7	Tung Chung West Development		-	Urban	Res
P8	Tung Chung West Development		-	Urban	Res
P9	Tung Chung West Development		-	Urban	Res
P10	Tung Chung West Development		-	Urban	Res
P11	Tung Chung West Development		-	Urban	Res

ASR ID	Description	Area	No. of Storey (approx)	Urban /Rural [1]	Land use [2]
P12	Future CAD Headquarters ((Road side)		10	Urban	GIC
P13	Future CAD Headquarters (5m setback)		10	Urban	GIC

Notes:

- [A] For both construction and operation phase assessment.
- [B] For operation phase assessment only.

- [1] Classified into urban and rural categories
- [2] Res – residential; Com – Commercial; OS – Open Space; GIC – Government/Institution
- [3] The planning for the future Tung Chung East and West Further Development is still pending
- [4] The ASRs in the eastern coast of Tung Chung East Future Development, Lantau Logistic Park and the MTRCL Siu Ho Wan Depot are assessed in the EIA Report for TMCLKL.

### 5.3.2 Air Pollution Sources

5.3.2.1 Both construction and operation of the project would inevitably generate air pollutants with potential impacts on neighbouring sensitive receivers. These air pollutant emission sources include:

<u>Phase</u>	<u>Air Pollution Sources</u>
Construction	<ul style="list-style-type: none"> <li>• Fugitive dust from various construction activities, including excavation, stockpiling, barging, infrastructure works etc</li> <li>• Fugitive dust from concrete batching plant (near Siu Ho Wan Sewage Treatment Works) and To Kau Wan (near Toll Plaza of NLH)</li> <li>• Cut-and-cover section of the APM tunnel on the airport island</li> </ul>
Operation	<ul style="list-style-type: none"> <li>• Vehicular emissions from road traffic, including vehicles on roads, or at the HKBCF facilities (such as kiosks, loading/unloading bays).</li> </ul>

5.3.2.2 It should be noted that marine works such as dredging, underwater filling during reclamation, and installation of viaduct decks would not significantly generate fugitive dust.

### 5.4 Potential Concurrent Projects

5.4.1 As discussed in **Section 1**, the tentative commissioning year of the project is 2015 for HKLR and 2015/2016 (Phase 1/Phase 2) for HKBCF. All concurrent projects, which may have cumulative environmental impacts during its operation period, have been identified and discussed in **Section 1**. The following table summarises the concurrent projects that would have cumulative air quality impacts during the construction and operation phases of the project.

Table 5-4 Key Concurrent Projects for Air Quality Assessment

Phase	Key Concurrent Projects	Remark
Construction	Lantau Logistics Park	Possible concurrent construction with HKLR and HKBCF
	Tuen Mun-Chek Lap Kok Link	Possible concurrent construction with HKLR and HKBCF
Operation	Lantau Logistics Park	Traffic induced has been included
	Possible LLP Extension or other compatible uses	Traffic induced has been included

Phase	Key Concurrent Projects	Remark
	FutureTung Chung East & West Developments	Traffic induced has been included
	Road P1 in North Lantau (for the section from Sham Shui Kok to Sunny bay)	Traffic induced has been included
	Container Terminal 10	Emission from additional marine vessels
	Sunny Bay Tourism Node	Traffic induced has been included
	Theme Park Extension at Penny's Bay	Traffic induced has been included
	Commercial developments on Airport Island	Traffic induced has been included
	MTRCL Siu Ho Wan Depot	Traffic induced has been included
	Castle Peak Power Station	Chimney emission has been included
	Black Point Power Station	Chimney emission has been included
	Lamma Power Station	Chimney emission has been included
	Hong Kong International Airport	Emissions from aircraft and other facilities has been included
	Sludge Treatment Facilities	Emission from incineration and any other related activities
	Tuen Mun-Chek Lap Kok Link	Vehicular emission has been included
	HZMB Main Bridge	Vehicular emission has been included
	Eco Park	Chimney emission has been included
	Green Island Garment	Chimney emission has been included
	STF	Chimney emission has been included

5.4.2 It should be noted that the traffic forecast for HKLR and HKBCF has in fact already taken account of traffic generated by the planned developments as tabulated above. Hence, the vehicular emission model has also covered all the traffic emissions from these planned developments as well.

## 5.5 Construction Dust Assessment

### 5.5.1 Potential Sources of Dust

5.5.1.1 A review has been conducted on the construction methodology (see **Section 4** for details) for various works areas. Construction dust will be potentially generated from the mainly land-based construction works including the following activities:

- Filling;
- Soil excavation activities;
- Backfilling;
- Surcharge and temporary storage of spoil on site;
- Construction of portals and cut-&-cover tunnel;
- Construction of infrastructure and utilities;
- Loading and unloading of excavated materials / fill materials at barging facility; and
- Concrete batching plant.

- 5.5.1.2 Other marine based construction activities such as seawall construction, dredging, marine bored piling, viaduct deck construction etc would have insignificant fugitive dust generation and hence would not be included in this quantitative assessment. **Figure 5.2a** shows the location of these dust emission sources.
- 5.5.1.3 According to the latest design information, the Passenger Clearance Building (PCB) on the HKBCF will be commissioned in 2015. Hence, during the period Late 2015 – Late 2016, the passengers and workers at the PCB will be in relatively close proximity to the remaining construction activities for the works in the northern portion of HKBCF as shown on **Figure 1.2**. The construction dust model would include all the concurrent construction activities (see S.5.5.3).
- 5.5.2 Emission Inventory
  - 5.5.2.1 Fugitive dust impact assessments will be carried out based on conservative assumptions of general construction activities which include the following:
    - Heavy construction activities including site clearance, ground excavation, construction of the associated facilities, haul road etc;
    - Wind erosion of all open sites, including stockpile and barging area;
    - Loading/unloading from trucks at barging point and stockpiles; and
    - Concrete batching plant.
  - 5.5.2.2 The prediction of dust emissions is based on typical values and emission factors from United States Environmental Protection Agency (USEPA) Compilation of Air Pollution Emission Factors (AP-42), 5th Edition. Calculation of dust emission factors is given in **Appendix 5A**. References of the calculations of dust emission factors for different dust generating activities are listed below. For easy reference, the locations of ASRs assessment points and worksites, and the dust emission rates input into the model are presented in **Appendix 5B**.

Table 5-5 References of Dust Emission Factors for Different Activities

Activities	Reference <sup>[1]</sup>	Operating Sites	Equations and Assumptions
Heavy construction activities including land clearance, ground excavation, cut and fill operations, construction of the facilities, haul road, etc	S.13.2.3.3	All construction and excavation sites	E = 1.2 tons/acre/month of activity or = 2.69Mg/hectare/month of activity
Wind Erosion	S.11.9, Table 11.9.4	All construction sites, any stockpile areas, barging area (all open sites)	E = 0.85 Mg/hectare/yr (24 hour emission)
Loading/Unloading at barging points and any stockpile	S13.2.4	Barging point and/or any stockpiles	$E = k(0.0016) \frac{\left(\frac{U}{2.2}\right)^{1.3}}{\left(\frac{M}{2}\right)^{1.4}} (kg / megagram)$ <p>k is particle size multiplier U is average wind speed M is material moisture content</p>

[1] (USEPA) Compilation of Air Pollution Emission Factors (AP-42), 5th Edition

- 5.5.2.3 Dust emission from construction vehicle movement will generally be limited within the confined worksites area and the equation in AP-42 S.13.2.3.3 has taken this factor into account. Watering facilities will be provided at every designated



vehicular exit point. Since all vehicles will be washed at exit points and vehicle loaded with the dusty materials will be covered entirely by clean impervious sheeting before leaving the construction site, dust nuisance from construction vehicle movement outside the worksites is unlikely to be significant.

- 5.5.2.4 If stockpiling is adopted, it is recommended that vehicles will move to the stockpiling areas where C&D materials will be unloaded immediately. The vehicles will then be washed again before leaving the stockpiles in order to minimise generation of dusty materials. Therefore, the major dust generating activities at stockpiling areas will be originated mainly from wind erosion and loading/unloading of materials; and these will be assumed in the fugitive dust modelling.
- 5.5.2.5 For the calculation of 1-hr and 24-hr TSP concentration, an active operating area of 30% has been assumed at any one time. Dust suppression measures and estimated mitigation efficiencies will be incorporated into the dust emission calculations. With reference to Section 11.2.4.4 of AP-42 4th Edition, dust emissions from construction areas could be reduced by 50% by twice daily watering with complete coverage of active construction areas. Dust generated from vehicle traffic on unpaved site roads (if any) would be reduced by lowering the vehicle travelling speed. The percentage dust reduction will be estimated in accordance with Section 13.2.2.2 of AP-42 5th Edition. For the calculation of annual TSP construction, the active works area over the entire year would be less than for a typical hour and typical day. On this basis, it is considered that a 10% active operating area would be a more representative assumption. The active operating area for 1-hr, 24-hr and annual concentration has been agreed by the Engineer.
- 5.5.2.6 There would also be concrete batching plant at temporary works area at Tai Ho (near Siu Ho Wan Sewage Treatment Works) and To Kau Wan (near Toll Plaza of NLH) (see **Figure 5.2b**). The total capacity of these 2 concrete batching plants is 3,600m<sup>3</sup>/day and are located at more than 2 km from the existing ASRs in Tung Chung and Airport Island. In addition, these concrete batching plant are controlled under the Specified Process and hence sufficient mitigation measures would be implemented to control the emission of dust. The Contractor is also required to demonstrate by calculation that the design of his concrete batching plant would not cause unacceptable impacts. A list of the mitigation measures to be implemented by the contractor is given in **Section 5.5.7**. Hence, the impacts from these concrete batching plants would have insignificant cumulative impacts and not be quantified in this EIA.
- 5.5.2.7 There will be a maximum of 2 barges operating at the barging point to the south of Scenic Hill at any one time. Good site practices including the following would be implemented.
- a. All road surface within the barging facilities will be paved.
  - b. Dust enclosures will be provided for the loading ramp.
  - c. Vehicles will be required to pass through designated wheels wash facilities.
  - d. Continuous water spray at the loading points.
- 5.5.2.8 These good site practices would be able to reduce the generation of dust at barging point by at least 90%.
- 5.5.3 Assessment Methodology
- 5.5.3.1 Dust impact assessment will be undertaken using the Fugitive Dust Model (FDM) as approved by USEPA and EPD. It is a well-known Gaussian Plume model designed for computing air dispersion model for fugitive dust sources. Modelling parameters including dust emission factors, particles size distributions, surface roughness, etc are referred to in EPD's "Guideline on choice of models and model parameters" and USEPA's AP-42. The density of dust will be assumed to be 2.5g/m<sup>3</sup>. The 5-year mean of the annual averaged TSP concentration will be

taken as the background concentration. According to EPD’s monitoring data for Tung Chung Station, the 5-year average 1-hr TSP concentration is 71ug/m<sup>3</sup> and this would be taken as the background concentration for fugitive dust modelling.

- 5.5.3.2 During daytime working hours (7am to 7pm), it is assumed that dust emissions would be generated from all dust generating activities and site erosion. Subject to the need of construction work at night-time and on weekend/holiday, it is assumed that dust emissions would only be generated from site erosion during night-time non-working hours (7pm to 7am of the next day).
- 5.5.3.3 The worst-case 1-hour, worst-case 24-hour average and annual TSP concentrations will be calculated based on real meteorological data (for Year 2007) on wind direction, wind speed, temperature and stability collected from the nearest weather station, the Chek Lap Kok Airport meteorological station.
- 5.5.3.4 Fugitive dust modelling will be conducted at heights 1.5m above local ground level. Since all the dust generating sources are at ground level, this assessment height would represent the worst-case scenario. Both the unmitigated and mitigated scenarios for the project will be presented. The following parameters had been adopted in the FDM model.

Table 5-6 Summary of Particles Size Distribution

Activities	Average value of particle size range <sup>[1]</sup>				
	1.25um	3.75um	7.5um	12.5um	22.5um
<ul style="list-style-type: none"> <li>• Heavy construction activities including filling, land clearing, ground excavation, cut and fill operations, construction of the facilities</li> <li>• Wind Erosion</li> <li>• Loading / unloading at barging points and surcharge / stockpile</li> </ul>	7.2%	19.9%	20.3%	17.6%	35.1%

[1] S13.2.4.3 of USEPA AP-42

- 5.5.3.5 The concurrent construction of TMCLKL, HKBCF, LLP, etc have been included in the cumulative assessment. It should be noted that the marine viaduct section of HKLR and TMCLKL would mainly be viaduct structure and there would not be any major excavation. Similarly, the slope cutting and realignment of Cheung Tung Road under TMCLKL project are relatively small scale and more than 2 km from the existing ASRs in Tung Chung. Hence, it is anticipated that the cumulative dust impacts caused by the slope work, road realignment of Cheung Tung Road, and marine viaduct section of HKLR and TMCLKL would not be significant.
- 5.5.4 Assessment Results - “Unmitigated” Scenario
  - 5.5.4.1 The maximum predicted 1-hour, 24-hour and annual TSP levels for construction of and other concurrent projects are summarised in **Table 5-7**.
  - 5.5.4.2 The maximum predicted TSP hourly concentration is 2,443µg/m<sup>3</sup> at the planned CAD Headquarters. These predicted concentrations have exceeded the 1-hr TSP criterion. The 24-hr concentration and the annual concentration for some ASRs also exceed the respective criteria.

**Table 5-7 Maximum Predicted TSP concentrations under the “Unmitigated” scenario**

ASR	Description	Concentration Unmitigated Scenario, ug/m <sup>3</sup>		
		1-hr <sup>[1]</sup>	24-hr <sup>[2]</sup>	Annual average <sup>[3]</sup>
A87	AsiaWorld-Expo	<b>2,218</b>	235	<b>85</b>
A85	Hong Kong SkyCity Marriott Hotel	<b>2,257</b>	230	<b>87</b>
A82	SkyCity Nine Eagles Golf Course	<b>2,018</b>	233	<b>92</b>
A102	Terminal 2 Sky Plaza	<b>2,066</b>	<b>371</b>	<b>99</b>
P12	Planned CAD Headquarters Site (Roadside)	<b>2,443</b>	<b>455</b>	<b>110</b>
A79	CNAC Tower	<b>1,704</b>	253	<b>93</b>
A71	Cathay Pacific City	<b>1,741</b>	<b>260</b>	<b>82</b>
A67	Aviation Security Company Limited	<b>918</b>	145	76
A2	Caribbean Coast Block 1 - BCF Facade	<b>901</b>	182	75
A30	LeBleu Deux	<b>815</b>	136	75
A59	Ma Wan Chung	<b>574</b>	112	74

Notes

- [1] An hourly averaged TSP concentration of 500µg/m<sup>3</sup> should not be exceeded
- [2] A 24-hour averaged TSP concentration of 260µg/m<sup>3</sup> should not be exceeded
- [3] An annual averaged TSP concentration of 80µg/m<sup>3</sup> should not be exceeded
- [4] Bold figures indicate the predicted TSP levels has exceeded EPD's standards

5.5.5 Assessment Results - “Mitigated” Scenario

5.5.5.1 The unmitigated TSP concentrations in **Table 5-7** above are high at some ASRs. However, under a good site practice with regular watering, dust suppression could be achieved. In accordance with USEPA AP-42, watering twice a day could generally reduce dust emission by half and hence the dust concentration by 50%. Hence, on the same basis, watering 4 times a day would achieve a dust removal efficiency of 75% (ie 100% - 100%/4). Similarly, watering 8 times a day would achieve a dust removal efficiency of 87.5% (ie 100% - 100%/8). In addition, using aggregates to pave the haul roads would also help to mitigate the dust generation. Assessment results indicate that the following watering measures is required to control the fugitive dust impacts:

- 8 times / day along within all work sites (an dust removal efficiency of 87.5%).

5.5.5.2 With the above watering throughout the construction phase, the 1-hour, 24-hour and annual TSP levels are predicted as shown in the table below. Details of the assessment results are given in **Appendix 5B** and the contours are given in **Figure 5.3..**

**Table 5-8 Maximum Predicted TSP concentrations under the “Mitigated” scenario**

ASR	Description	Concentration Mitigated Scenario, ug/m <sup>3</sup>		
		1-hr <sup>[1]</sup>	24-hr <sup>[2]</sup>	Annual average <sup>[3]</sup>
A87	AsiaWorld-Expo	339	93	73
A85	Hong Kong SkyCity Marriott Hotel	344	92	73
A82	SkyCity Nine Eagles Golf Course	314	95	74
A102	Terminal 2 Sky Plaza	320	111	75
P12	Planned CAD Headquarters Site (Roadside)	367	122	76
A79	CNAC Tower	275	95	74
A71	Cathay Pacific City	280	96	73
A67	Aviation Security Company Limited	177	81	72
A2	Caribbean Coast Block 1 - BCF Facade	175	85	72
A30	LeBleu Deux	164	79	72
A59	Ma Wan Chung	134	77	71

## Notes

- [1] An hourly averaged TSP concentration of 500 $\mu\text{g}/\text{m}^3$  should not be exceeded  
 [2] A 24-hour averaged TSP concentration of 260 $\mu\text{g}/\text{m}^3$  should not be exceeded  
 [3] An annual averaged TSP concentration of 80 $\mu\text{g}/\text{m}^3$  should not be exceeded  
 [4] Bold figures indicate the predicted TSP levels has exceeded EPD's standards

5.5.5.3 It should be noted that there would still be some minor construction works being conducted at the north of the HKBCF when the PCB is occupied in late 2015 and late 2016. Given that the minor construction work such as roadwork/structure/paving and the fact that the PCB would be air-conditioned, the filters of the air-conditioning system will serve to reduce construction dust to the remaining construction work. Hence, there would be insignificant fugitive dust impacts on the PCB.

5.5.5.4 Results indicate that by increasing frequency of watering as described above, the predicted cumulative 1-hour, 24-hour and annual TSP levels at all ASRs will comply with the TM-EIA and HKAQO. Hence, there would be no adverse cumulative dust impact caused. Pollution contours are presented in **Figure 5.3**. There will not be any air sensitive landuses exposed to impacts higher than the criterion. (For 1-hr TSP contours, it can be seen that the 500 $\mu\text{g}/\text{m}^3$  contour could encroach onto the existing CLP power substation and the electrical Switching Station which are not frequently manned and hence are not considered as sensitive to air quality. Part of the existing Marine Cargo Terminal berth would also be within the 500 $\mu\text{g}/\text{m}^3$  contour. However, the berth would stop operation once the construction work in the vicinity commences. Hence it is also not considered as sensitive to air quality.)

5.5.5.5 The construction dust impacts on ASR at LLP, MTR Siu Ho Wan Depot etc are assessed in the EIA for TMCLKL and have been confirmed to be comply with the legislative requirements and hence there is no residual construction dust impacts.

5.5.6 Recommended Mitigation Measures for Fugitive Dust

5.5.6.1 The Contractor is obliged to follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation. It stipulates the construction dust control requirements for both Notifiable (e.g. site formation) and Regulatory (e.g. road opening) Works to be carried out by the Contractor.

5.5.6.2 In accordance with the Air Pollution Control (Construction Dust) Regulation, the following dust suppression measures should also be incorporated by the Contractor to control the dust nuisance throughout the construction phase:

- Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading;
- Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads;
- A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones;
- The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle;
- Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores;

- When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period;
  - The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials;
  - Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously;
  - Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet;
  - Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding;
  - Any skip hoist for material transport should be totally enclosed by impervious sheeting;
  - Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides;
  - Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed;
  - Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and
  - Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shortcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies.
- 5.5.6.3 For the barging facilities to the south of Scenic Hill, the following good site practice is required.
- a. All road surface within the barging facilities will be paved.
  - b. Dust enclosures will be provided for the loading ramp.
  - c. Vehicles will be required to pass through designated wheel wash facilities.
  - d. Continuous water spray at the loading point.
- 5.5.6.4 By implementing these control measures and with good construction site practice, it is anticipated that dust impacts will be insignificant. It is recommended that the Contractor should undertake proper watering on all exposed spoil (with at least 8 times per day) throughout the construction phase.
- 5.5.6.5 These requirements should be incorporated into the Contract Specification for the civil work. In addition, an audit and monitoring programme during the construction phase should be implemented by the Contractor to ensure that the construction dust impacts are controlled to within the HKAQO. Detailed requirements for the audit and monitoring programme are given separately in the EM&A manual.

#### 5.5.7 Recommended Mitigation Measures for Concrete Batching Plant

5.5.7.1 It should also be noted that in accordance with EPD's Best Practicable Means Requirements for Cement Works (Concrete Batching Plant), the following mitigation measures should be adopted to prevent fugitive dust emissions for concrete batching plant:

- Loading, unloading, handling, transfer or storage of any dusty materials should be carried out in totally enclosed system;
- All dust-laden air or waste gas generated by the process operations should be properly extracted and vented to fabric filtering system to meet the emission limits for TSP;
- Vents for all silos and cement/pulverised fuel ash (PFA) weighing scale should be fitted with fabric filtering system;
- The materials which may generate airborne dusty emissions should be wetted by water spray system;
- All receiving hoppers should be enclosed on three sides up to 3m above unloading point;
- All conveyor transfer points should be totally enclosed;
- All access and route roads within the premises should be paved and wetted; and
- Vehicle cleaning facilities should be provided and used by all concrete trucks before leaving the premises to wash off any dust on the wheels and/or body.

#### 5.5.8 Residual Impacts for Fugitive Dust

5.5.8.1 No residual dust impacts are expected with the adoption of appropriate dust mitigation measures, which will be implemented during the construction phase.

### 5.6 Operational Air Quality Assessment

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#### 5.6.1 Assessment Approach

5.6.1.1 Taking account of the air pollution control measures recommended in the Pearl River Delta Regional Air Quality Management Plan, which has been jointly drawn up by the governments of HKSAR and Guangdong in 2003 (see **Section 5.6.3**), the assessment for cumulative operational air quality has adopted the following approach:

- A regional model viz. Pollutants in the Atmosphere and the Transport over Hong Kong (PATH, a regional air quality prediction model developed by EPD) is used to quantify the impacts from various sources including those in Pearl River Delta Economic Zone (PRDEZ), the Hong Kong International Airport, power plants in HKSAR and roads beyond North Lantau etc.
- A near-field dispersion model is used i.e. CALINE4 for line sources to quantify the air quality impacts at local scale from open road emission and idling emission at HKBCF. Another near-field model ISCST3 is used to assess point and volume sources to quantify the air quality impacts at local scale from portals and ventilation buildings.

5.6.1.2 **Appendix 5C** illustrates the extent of the roads within the study area (i.e. in North Lantau) that would be included in near-field model. As discussed in **Section 5.6.1.1**, the pollutant dispersion from these roads has been predicted using CALINE4. Another model EmFAC-HK has been adopted to calculate the total vehicular tailpipe emission from roads within North Lantau.

- 5.6.2 Determination of Assessment Year
  - 5.6.2.1 In accordance with the EIA Study Brief, the assessment year for air pollution impacts shall be calculated based on the highest emission strength from the project within the next 15 years upon commencement. The selected assessment year should therefore represent the highest emission scenario for HKLR and other proposed roads under HKBCF.
  - 5.6.2.2 Given the operation nature of the project, NO<sub>2</sub> is the pollutant of primary concern. The worst assessment year has therefore been determined based on the highest total NO<sub>x</sub> emission scenario using the EmFAC–HK. The approach for EmFAC–HK modelling is presented in **Section 5.6.10**.
  - 5.6.2.3 Traffic forecast for 2015, 2016, 2021 and 2031 have been conducted, which has been submitted to TD and without any adverse comments. Sensitivity tests have therefore been undertaken to examine the worst case scenario for the following selected years:
    - Year 2015 – HKLR commissioning year and HKBCF Phase 1 commissioning year;
    - Year 2016 - HKBCF Phase 2 commissioning year;
    - Year 2021 - Intermediate year between 2016 and 2031; and
    - Year 2031 - 15 years after HKBCF Phase 2 commissioning.
  - 5.6.2.4 Results for the above 4 scenarios are compared in the following table. It can therefore be concluded that the highest emission scenario is Year 2031.

**Table 5-9 Sensitivity Test for Determination of Assessment Year**

Emission Category	Year for Sensitivity Tests (Figures below are NO <sub>x</sub> emissions in terms of Tonne / day)			
	2015 <sup>[1]</sup>	2016	2021	2031
HKLR	0.2660	0.2812	0.3329	0.5237
HKBCF and Associated Roads				
Cross-boundary	0.1060	0.1145	0.1307	0.1978
Local traffic	0.0528	0.0893	0.0853	0.0929
Idling Emission on HKBCF	0.0218	0.0211	0.0317	0.0572
<b>Total</b>	<b>0.4466</b>	<b>0.5061</b>	<b>0.5806</b>	<b>0.8716</b>

[1] The original sensitivity test was conducted for 2014. Subsequent to the sensitivity test, the HKLR commissioning year and the HKBCF Phase 1 commissioning year has been changed to 2015. Given the slight change from 2014 to 2015 and the fact that the emission factors for 2015 are slightly less than that for 2014, it is more conservative to use the emission for 2014. It is therefore considered that it would not change the assessment year as 2031.

- 5.6.3 Emissions within Pearl River Delta Economic Zone (PRDEZ)
  - 5.6.3.1 The Study of Air Quality in the Pearl River Delta Region conducted in Year 2000 had recommended various mitigation strategies to control and improve the regional air quality problems. In December 2003, the governments of HKSAR and Guangdong jointly drew up the Pearl River Delta Regional Air Quality Management Plan, with a view to meeting the emission reduction targets recommended in the Study of Air Quality in the Pearl River Delta Region. The Pearl River Delta Air Quality Management and Monitoring Special Panel has also been set up under the Hong Kong/Guangdong Joint Working Group on Sustainable Development and Environmental Protection to follow-up on the tasks under the Management Plan.
  - 5.6.3.2 A Mid-term Review Study on Pearl River Delta Regional Air Quality Management Plan was commissioned by EPD (of HKSAR Government) and the Guangdong Environmental Protection Bureau (GPEPB) in Nov 2006 to update the regional pollutant emission for 2003 and 2010 Control Scenario, as well as to review the

effect of control measures committed by the governments. The updated data from this Mid-term Review Study forms the basis for projection of PRDEZ emission in this EIA.

- 5.6.3.3 In addition, the Guangdong Province government also prepared the 珠江三角洲環境保護規劃 in Jun 2006 which also outlined the plan to control and reduce their emission up to 2020. With such measures, the resulted 2020 PRDEZ emission data are significantly lower than the 2010 PRDEZ emission data from the Mid-term Review Study.
- 5.6.3.4 Given the best available emission inventory for 2010 from the Mid-Term Review and the 2020 inventory compiled from 珠江三角洲環境保護規劃, it is considered that a prudent approach would be to interpolate from these 2 sets of inventory to generate the 2015 inventory and to assume that the regional emission would then be capped within the assessment period of this project ie up to 2031. *(Note: In accordance with the 珠江三角洲環境保護規劃, with the measures therein, the PRDEZ emission will in fact continue to reduce all the way to 2020. However, for a conservative assessment, it is assumed that the PRDEZ emission is capped at 2015 level as far as this EIA is concerned.)* A summary of the 2031 PRDEZ emission inventory is given in **Appendix 5D**.
- 5.6.4 Emissions from Hong Kong International Airport
- 5.6.4.1 A review of the operation activities on the Chek Lap Kok Airport reveals that there are 6 key groups of emission sources, including
- Aircraft movements;
  - Ground Support Equipment (GSE);
  - Auxiliary Power Units (APUs);
  - Engine Run-Up Facility;
  - Fuel Tanks; and
  - Aircraft Maintenance.
- 5.6.4.2 The respective stakeholders for the above-mentioned sources have been consulted to obtain relevant latest operation information. The key assumptions adopted to compile the emission inventory are described in the paragraphs below. The operation information provided by the airport operator (i.e. the Airport Authority) is summarised in **Appendix 5E**.

#### **Aircraft Movements**

- 5.6.4.3 Aircraft movements could be considered as comprising 4 main operation modes, viz. take-off, climb-out, final approach and idling/taxi-ing. Each mode would have different Emission Index (EI), fuel consumption rates and duration. The pollutant emissions from these modes would be a product of the EI, fuel consumption rates and the duration.
- 5.6.4.4 The latest operation information for aircraft movements including Landing-Takeoff Cycle (LTO), aircraft mix and the duration of idling/taxi-ing for 2020 (year when the airport would reach its capacity) had been collected from the airport operator (i.e. the Airport Authority).
- 5.6.4.5 Since there is no information on the EIs, fuel consumption rates and the duration for different types of aircrafts (except the taxi-ing and idling time), reference is made to international reference such as USEPA's "Evaluation of Air Pollutant Emissions from Subsonic Commercial Jet Aircraft", FAA's "Emission and Dispersion Modelling System" and the ICAO Engine database.
- 5.6.4.6 The airport operator has also advised that the airport would reach its full operation capacity (in terms of passenger and cargo handling) by Year 2020, which is 20 years earlier than the assumed year of reaching capacity adopted in



the New Airport Master Plan 1991 (NAMP 1991). It is therefore assumed that the pollutant emission after Year 2020 would remain the same as that predicted for Year 2020. The updated emission inventory is given in **Appendix 5D**.

#### **Ground Support Equipment**

- 5.6.4.7 Other than the emissions from aircrafts, the GSE (mostly diesel-driven) would also generate air pollutants. According to the information available, GSE include tractors, belt loaders, catering trucks etc. Information/data as regards typical load factors and operation duration for the GSE have been obtained from the airport operator.
- 5.6.4.8 The emission factors for GSE have been extracted from the FAA's and EDMS's emission database. **Appendix 5D** presents the predicted GSE emission for Year 2020 and it is assumed that the emission would be capped from 2020 onwards.
- 5.6.4.9 It is assumed that all the GSE would be manoeuvring within the apron area. Hence the emission from GSE would be modelled as an area source covering the entire apron area. The temporal profile for GSE emissions is assumed to be the same as that for aircraft emissions.

#### **Auxiliary Power Units**

- 5.6.4.10 Auxiliary power units (APUs) would also generate air pollutants. Information/data as regards typical load factors and operation duration for APUs have been obtained from the airport operator too. Reference has been made to the EDMS database for APUs for different types of aircrafts for Year 2020 (assumed to be capped to Year 2031; see **Appendix 5D**).
- 5.6.4.11 It is assumed that all the APUs would be manoeuvring within the apron area. Hence the emission from APUs would be modelled as an area source covering the entire apron area and at an elevated level to take account of thermal plume rise. The temporal profile for APU emissions is assumed to be the same as that for aircraft emissions.

#### **Engine Run-Up Facility**

- 5.6.4.12 The existing engine run-up facility is located in the western part of the airport island. Operation information is however not available. In order to conduct a more conservative assessment, it is assumed that all the aircrafts tested would be 747-400, and each test would consist of 5 LTO cycles. In addition, it is further assumed that there would be 3 times of testing each week. A summary of the predicted emission is given in **Appendix 5D**.
- 5.6.4.13 The facility would be modelled as an area source. And it is assumed that the temporal profile would be constant throughout the year.

#### **Fuel Tanks**

- 5.6.4.14 The existing fuel tank farm is located to the southeast corner of the Airport Island near the Scenic Hill, with a total of 9 fuel tanks. Three new tanks are being installed to the west of the existing fuel tank farm. All the tanks have fixed roofs and are freely vented.
- 5.6.4.15 Emissions from the total 12 no. fuel tanks have been estimated using the Emissions and Dispersion Modeling System (EDMS). The results indicate that the annual VOC emission from all fuel tanks would be 8 tonne for Year 2031 (see **Appendix 5D**). The fuel tank farms have been modelled as point sources. It is assumed that the temporal profile would be constant throughout the year.

#### **Aircraft Maintenance**

- 5.6.4.16 It is understood that the main sources of VOC from aircraft maintenance are the paint shops and the aircraft hangers. However, air extraction systems have been

installed to extract the VOC to water scrubbers before discharging to the atmosphere. It is therefore anticipated that the VOC emission through the scrubbers should be insignificant. Hence the PATH model has not included any emissions from the aircraft maintenance facility.

5.6.5 Emissions from Power Stations within HKSAR

5.6.5.1 In accordance with the information from the power stations in HKSAR, about 28% of the electricity is currently generated from natural gas. It is also noted from their publication (eg annual reports) that they have plans to increase the utilisation of natural gas to 50% by early next decade. It is therefore considered reasonable to assume that, by the time of 2015, the utilisation rate of natural gas within HKSAR should have reached 50%. It is also assumed that after Year 2015, the emission would be capped at the same level as 2015. This should be an assumption on the prudent side, as the trend of increase in utilisation of natural gas ought not reverse after Year 2015. An estimate of the emission with a natural gas utilisation rate of 50% is given in **Appendix 5D**.

5.6.6 Industrial Sources within HKSAR

5.6.6.1 The emissions from other industrial sources have also been considered. Estimation has been made by projecting from the emission level for 2010 in the Mid-Term Review to the emission level for 2015. A summary of the industrial emission sources within HKSAR for 2031 is given in **Appendix 5D**.

5.6.6.2 Other specific emission sources have been updated based on their respective best available information. A summary of the specific industrial emission sources within HKSAR for 2031 is given in **Appendix 5D**. The assumptions for updating these specific industrial emission sources are given below:

<u>Emission Group</u>	<u>Key Assumptions in Updating Emission Inventory</u>
Ecopark	<ul style="list-style-type: none"> <li>Based on their approved EIA Report.</li> </ul>
Integrated Waste Management Facilities	<ul style="list-style-type: none"> <li>According to the project proponent, there is no information as regards its implementation; hence it is not included in the emission inventory in this EIA.</li> </ul>
Organic Waste Facilities	<ul style="list-style-type: none"> <li>Ditto.</li> </ul>
Sludge Treatment Facility	<ul style="list-style-type: none"> <li>Based on their approved EIA Report (ref: EIA-155/2008)</li> </ul>
Green Island Cement Facilities	<ul style="list-style-type: none"> <li>Based on their Specified Process Licence.</li> </ul>

5.6.7 Marine Emission within HKSAR

5.6.7.1 In the original PATH model developed by EPD, the marine emission sources in Hong Kong were apportioned into 2 counties including:

- |                   |   |
|-------------------|---|
| Hong Kong Harbour | <ul style="list-style-type: none"> <li>Marine emissions from vessels within the Victoria Harbour</li> </ul>           |
| HK Waters         | <ul style="list-style-type: none"> <li>Marine emissions from vessels from area beyond the Victoria Harbour</li> </ul> |

5.6.7.2 Marine emission inventory for the Control Scenario of Year 2010 in the Mid-term Review Study will be adopted as the basis for emission projection. The emission from marine vessels are apportioned into different categories including supporting ships, international ferry, river trade, ocean going vessels, anchorage and other ships based on the emission breakdown of the above-mentioned 2010 Control Scenario.

5.6.7.3 For emission projection, reference has been made to the Study on Hong Kong Port – Master Plan 2020 – Final Strategic Environmental Assessment – Part 2

(Port 2020 Study). Accordingly, the growth factors tabulated below have been adopted.

Table 5-10 Growth Factor for Marine Vessels from 1997 to 2020

Emission Source		% Increase from Yr 1997			
		Ocean Going Ships	Ferries	River Trades	Tug & Tow
Hong Kong harbour	1997 – 2020 (as in Port 2020 Study)	99	0	145	-62
	Equiv annual growth rate (assuming linear growth)	3.04	0.00	3.97	-4.12
Hong Kong waters	1997 – 2020 (as in Port 2020 Study)	162	0	145	-62
	Equiv annual growth rate (assuming linear growth)	4.28	0.00	3.97	-4.12
Container Terminal CT 1-9	1997 – 2020 (as in Port 2020 Study)	113.00	* TEU trend		
	Equiv annual growth rate (assuming linear growth)	3.34			
Container Terminal CT 10	1997 – 2020 (as in Port 2020 Study)	182.00	* TEU trend		
	Equiv annual growth rate (assuming linear growth)	4.61			

Note:

- (1) Data (with CT10 at Tsing Yi) are extracted from Study on Hong Kong Port – Master Plan 2020 – Final Strategic Environmental Assessment – Part 2 (Port 2020 Study)

- 5.6.7.4 The emission for the assessment year 2031 can then be determined based on the 2010 emission and the equivalent annual growth factors; the result is presented in **Appendix 5D**.
- 5.6.8 Vehicular Emissions within HKSAR beyond those on Lantau
- 5.6.8.1 For roads beyond Lantau, the emissions are predicted using EPD's EmFAC-HK model which takes into account the exhaust technology, number of trips, different vehicle classes, different speed fraction etc of the entire Hong Kong region. The vehicle-kilometer-travelled (VKT) were forecast by Arup's in-house Territory Transport Model (accepted by Transport Department).
- 5.6.8.2 Whereas detailed assessment on the traffic for roads in Lantau/Airport has been conducted under the traffic impact assessments for HKLR and HKBCF, the traffic for roads beyond Lantau can only make reference to territory-wide traffic forecast. For these roads beyond Lantau, the territory wide traffic forecast is only available for Year 2030, though all the major planned highway infrastructure projects have been included. It is also considered that the territory wide traffic for 2031 would be very similar to that of 2030. Moreover, any impacts due to these "beyond-Lantau roads" on the sensitive receivers relevant to the EIAs of HKLR & HKBCF ought to be relatively minor. Hence the 2030 territory-wide traffic figures are considered to be acceptable to assess the impacts due to these "beyond-Lantau roads". A summary of the projected 2030 (equivalent to 2031) vehicular emission from HK roads other than those on Lantau is given in **Appendix 5D**.
- 5.6.9 Other Emission Sources
- 5.6.9.1 The emissions from other emission sources (eg Non-Road mobile sources, VOC containing sources etc) have also been considered by projecting from the emission level for 2010 in the Mid-Term Review to the emission level for 2015. A summary of the other emission sources within HKSAR for 2031 is given in **Appendix 5D**.

- 5.6.10 Road Emission within Lantau and Airport Island
- 5.6.10.1 For road emissions within Lantau/Airport for Year 2031, EmFAC-HK was used to calculate the vehicular tailpipe emission instead of using the traditional fleet average emission factors. EmFAC-HK (ref [http://www.epd.gov.hk/epd/english/environmentinhk/air/guide\\_ref/emfac.html](http://www.epd.gov.hk/epd/english/environmentinhk/air/guide_ref/emfac.html)) is a more versatile model giving more refined estimates, and is appropriate for the current study from an air quality assessment point of view. It can readily calculate the vehicular emissions for different projected scenarios for different future years, while the traditional fleet average emission factors commonly used in other projects can only provide emission factors up to Year 2011 and cannot take into account the implementation of fuel with better quality.
- 5.6.10.2 In accordance with the current legislation, cross-boundary vehicles must go through the vehicle-registration process in Hong Kong. In addition, all motor vehicles seeking first registration in Hong Kong must comply with the requirements of the Air Pollution Control (Vehicle Design Standards) (Emission) Regulations. Since there is no program on policy review, it is assumed that the first registration policy is still applicable for this assessment. This implies that cross-boundary vehicles (mainly on the HKLR and the HKBCF) will perform as Hong Kong vehicles of similar types as far as tailpipe emission is concerned.
- 5.6.10.3 According to the latest implementation programme of the emission standards for diesel vehicles, the following emission standards should be adopted for calculation of emissions from diesel vehicles registered in Hong Kong irrespective of whether they need to travel to/from Macao and Mainland China:
- (i) Diesel vehicles < 3.5 tonnes: Euro IV by 2007
  - (ii) Diesel vehicles > 3.5 tonnes: Euro IV by 2007, Euro V by 2010
- 5.6.10.4 A recently published diesel fuel analysis result by the Macao Authority shows that their fuel quality is very close to the current fuel in Hong Kong (<http://www.ambiente.gov.mo/tchinese/08/2005/05.asp>). In addition, Mainland China Authorities announced to implement Euro IV and V standards (for diesel fuel) by 2010 and 2012 respectively (<http://sysadm.blog.51cto.com/180447/30805> and <http://www.chinarhy.com/chinarhy/2008/200810/2008-10-22/2563.html>). The fuel properties will also be in line with the implementation of these standards. Therefore the maximum sulphur content will be 0.005% and 0.001% by 2010 and 2012 respectively.
- 5.6.10.5 In consideration of the above, it should be reasonable to assume that cross-boundary vehicles will perform similarly to Hong Kong vehicles in terms of pollutant emission. All vehicles have therefore been considered as Hong Kong vehicles in this assessment.
- 5.6.10.6 Other developments in the Concept Plan of Lantau, such as Tung Chung East Development, Tung Chung West Development, Lantau Logistics Park, tourism node at Sunny Bay, etc. have already been taken into account in developing the traffic data. The traffic profile is determined from the existing Annual Traffic Census (ATC) data, supplemented by the results of traffic survey.
- 5.6.10.7 The air quality assessment under this EIA has also taken into account other factors including the vehicle population, hourly temperature and humidity, traffic speed etc. **Appendix 5F-1** presents the key assumptions for the EmFAC modelling and **Appendix 5F-2** gives the estimation of the vehicular emission factors for NO<sub>x</sub> and RSP (including the composite vehicle emission factors for each road link).
- 5.6.11 Vehicular Emission Kiosks and Loading / Unloading Bays
- 5.6.11.1 As discussed in **Section 5.3.2**, vehicular emission at kiosks and loading / unloading bays also need to be considered. Considerations have been given to the number of vehicles at the kiosks and the loading / unloading bays. A summary of the estimated emissions at 2031 is given below (see **Appendix 5G**).

Table 5-11 Summary of Emission at Kiosks and Loading / Unloading Bays

Activities	Emission Factor, (g/hr)	
	NO <sub>x</sub>	RSP
<b><i>Kiosks</i></b>		
Car (Inbound)	270.1	Negligible
Car (Outbound)	178.1	Negligible
Goods Vehicle (Inbound)	438	17
Goods Vehicle (Outbound)	370	14
Bus (Inbound)	47	2
Bus (Outbound)	40	2
<b><i>Loading Bay</i></b>		
Bus (Inbound)	1247	48
Bus (Outbound)	1056	41
<b><i>Unloading Bay</i></b>		
Bus (Inbound)	312	12
Bus (Outbound)	264	10

#### 5.6.12 Vehicular Emission from TMCLKL

5.6.12.1 The vehicular emission from TMCLKL is provided by the EIA Consultant of TMCLKL. A summary of their emission factors is given in **Appendix 5H**.

#### 5.6.13 Other Vehicular Emission

5.6.13.1 The traffic forecast has included all the induced traffic from planned developments such as LLP, Tung Chung East and West Future Developments. In addition, the vehicular emission from the 2 ventilation buildings for the HZMB Main Bridge have also been included for assessing the cumulative air quality impacts.

#### 5.6.14 Dispersion Modelling Methodology

5.6.14.1 The PATH model was previously used in the Study of Air Quality in the Pearl River Delta Region (Consultancy Agreement no. CE 106/98), in which regional air quality was predicted up to Year 2015.

5.6.14.2 There are three core modules in the PATH model, namely:

- MM5 - Conditioning for Meteorology, Terrain, Landuse;
- EMS-95 - Emission Inventory;
- SAQM - Pollutants Transport & Chemistry Modelling.

Detailed descriptions of these modules are given in Technical Annex 7 of the CE 106/98 Study.

5.6.14.3 **Input for MM5 Module** – A complete set of MM5 Module data (at 1.5km grid) for 2003 has been compiled and provided by EPD. This is the best available set of meteorological information for the entire Pearl River Estuary and HKSAR for PATH modelling, satisfying the requirement under Annex B-1 of the EIA Study Brief. This set of data has been adopted for assessing the impacts for the assessment year.

5.6.14.4 **Input for EMS-95 Module** – EMS-95 consists of 5 main emission modules for point, area, biogenic, motor vehicle and marine sources. Point and area emission data are processed through EMS-95. The resultant output comprises hourly emission files, spatially allocated over the model domain grids, and then

speciated i.e. processed in a suitable format for use in the air quality model emission preprocessor.

- 5.6.14.5 The steps involved in running EMS-95 consists of running firstly the grid definition model, followed by the point, area and biogenics mode, and then the speciation model.
- 5.6.14.6 **SAQM Module** – The output data from MM5 and EMS-95 are processed through the SAQM module. The SAQM model time-step is set to one hour, and is run in a one-way nested mode. The boundary and initial conditions are derived from the largest 40.5 km domain and used as input to the 13.5 km domain, and subsequently to 4.5km and 1.5km domains.
- 5.6.15 Prediction of Open Road Emission
  - 5.6.15.1 Whereas the traffic emissions for roads beyond Lantau are covered by the PATH modelling already, the traffic emissions for roads in Lantau/Airport are assessed separately by near-field modelling. The USEPA approved line source air dispersion model, CALINE4, developed by the California Department of Transport is used to assess the dispersion of traffic emissions impact from existing and planned roads in the Lantau/Airport area.
  - 5.6.15.2 The hourly emission rates for each vehicle class (in gram per mile per vehicle) are obtained by dividing the emissions for the four road categories calculated in the EmFAC-HK by the total vehicle travelled miles. The composite emission factors in CALINE4 model are then calculated, as illustrated in **Appendix 5G**.
  - 5.6.15.3 Grid-specific composite real meteorological data are adopted, including:
    - Relevant temperature, wind speed, direction and mixing height from the MM5 model; and
    - Stability class from a separate model PCRAMMET.
  - 5.6.15.4 Meteorological data were extracted from PATH model for input into the CALINE4 and ISCST3 models, and processed by capping the mixing height to 129m as per the real meteorological data. As regards the treatment of calm hours, the approach of the "Guideline on Air Quality on Air Quality Models Version 05" has been adopted.
  - 5.6.15.5 Ozone Limiting Method (OLM) was adopted for conversion of NO<sub>x</sub> to NO<sub>2</sub>, using the predicted O<sub>3</sub> and NO<sub>2</sub> levels from PATH.
  - 5.6.15.6 The surface roughness height is closely related to the land use characteristics, and the surface roughness is estimated as 10 percent of the average height of physical structures within 1km study area. The surface roughness and the wind standard deviation are estimated in accordance with the "Guideline on Air Quality Models (Revised), 1986", as summarized in the table below.

Table 5-12 Summary of Surface Roughness and Wind Standard Deviation

Period / Location/ Parameters		Assumptions
Tung Chung	Surface roughness (cm)	370
	Wind standard deviation (degrees)	1) 43 for A & B Stability Classes; 2) 33 for C Stability Class; 3) 24 for D Stability Class; 4) 14 for E Stability Class; and 5) 7.2 for F Stability Class.
Lantau & Airport Island	Surface roughness (cm)	50
	Wind standard deviation (degrees)	1) 29 for A & B Stability Classes; 2) 22 for C Stability Class; 3) 16 for D Stability Class; 4) 9.5 for E Stability Class; and 5) 5 for F Stability Class.

- 5.6.15.7 Owing to the constraint of the CALINE4 model in modelling elevated roads higher than 10m, the road heights of elevated road sections in excess of 10m high above local ground or water surface will be set to 10m in the CALINE4 model as the worst-case assumption.
- 5.6.15.8 For barriers along roads (eg the existing noise barriers along the NLH near existing Tung Chung area see **Figure 5.4g**), the line source has been modelled at the tip of the barrier and the mixing width will be limited to the actual uncovered road width. The road type of the concerned section was set to the “fill” option.
- 5.6.15.9 As regards the dispersion of emission from kiosks and loading/unloading bays on HKBCF, the Parking Lot mode in the CALINE4 would be used to simulate the dispersion.
- 5.6.16 Prediction of Portal and Ventilation Building Emissions
  - 5.6.16.1 The USEPA approved ISCST3 model was adopted for modelling of emission from portals and ventilation buildings. Similar to the assessment of open road emission, the ISCST3 model has adopted the grid-specific composite real meteorological data as that adopted for CALINE4 modelling. The tunnels and portals in the proposed project include the following:

Table 5-13 Summary of Tunnel Ventilation

Tunnel	Length	Ventilation	Portal Dim	Other Details for VB
<p><u><b>HKLR</b></u> Under Scenic Hill (See <b>Figures 5.4a to f</b>)</p>	1.1km	Ventilation Building  (70% pollutants discharged from vent building, 30% via portals)	<p><u><i>In-Bound</i></u> Height : 5.85m (above local ground) Width : 12m</p> <p><u><i>Out-Bound</i></u> Height : 5.85m Width : 15.6m</p>	Flow rate : 133m <sup>3</sup> /s Discharge vel : 5m/s Height above local road : 5m Diameter: 5.8m
<p><u><b>HKBCF</b></u> Road link (with tunnel section) from HKBCF to Airport (See <b>Figures 5.4a to f</b>)</p>	~0.9km	Horizontal Jet Fans  (100% pollutants discharged from tunnel exit)	Height : 7m (above local ground) Width : 11.3m	(Not required for modelling)

Note: Details of the ventilation building for TMCLKL are separately provided by the EIA Consultant of TMCLKL (see Appendix 5I).

- 5.6.16.2 For tunnels, the effect of portal emission will be considered. The hourly emission rate will be obtained by multiplying the emission strength (g/km/veh) by the products of traffic flow (veh/hr) and tunnel/enclosure length (km). The emission split between the tunnel portal and ventilation building will be 30% / 70% according to the latest design. For tunnels using jet fans, all the emission would be assumed at the exit of the tunnel.
- 5.6.16.3 The portal emission was assessed in accordance with the PIARC guideline assuming a jet effect to discharge to the first 100-250m of the open road section in the direction of the vehicular movements in 10 sources, with 2/3 of the total emission strength for the first five sources and 1/3 of the total emission strength for the remaining 5 sources. The emission was then modeled as volume sources by ISCST3. **Appendix 5I** presents the calculations for the tunnel portal emission.

- 5.6.16.4 Emissions from the ventilation buildings (including those for HKBCF, TMCLKL, HZMB Main Bridge) were assessed by the ISCST3 model as point sources.
- 5.6.16.5 Ozone Limiting Method (OLM) was used for conversion of NO<sub>x</sub> to NO<sub>2</sub> based on the O<sub>3</sub> level from PATH direct (i.e. no residual O<sub>3</sub> is considered after vehicular emission interaction). As a conservative approach, OLM is applied separately to the following groups of emission sources:
- Open roads;
  - West bound portal and ventilation building of the tunnel under Scenic Hill;
  - Eastbound portal of the tunnel under Scenic Hill;
  - Tunnel portals for the road link (with tunnel section) from HKBCF to Airport;
  - Southern tunnel portal for the southern landfall of TMCLKL;
  - Ventilation building for the southern landfall of TMCLKL;
  - Tunnel portals and ventilation building of the HZMB Main Bridge.
- 5.6.16.6 The ventilation design of the tunnels for HKLR and HKBCF would be designed to meet EPD's guidelines for Air Quality Inside Tunnel.
- 5.6.17 Prediction of Cumulative Air Quality Impacts
- 5.6.17.1 The cumulative pollutant concentrations are computed by combining the predicted concentration from PATH, CALINE4 and ISCST on an hourly basis. All the predictions including maximum 1-hour, 24-hour average and annual average for NO<sub>2</sub> and RSP from 1.5m to 20m above local ground or higher level for some ASRs are given in **Appendix 5J**. A summary of these predictions at the worst hit levels is presented in the tables below.

Table 5-14A Predicted Maximum 1-hour Concentrations

Locations	NO <sub>2</sub> , ug/m <sup>3</sup>
Sham Wat (A98 – A99)	214 - 218
Sha Lo Wan (A93 – A96)	232 - 246
San Tau Area (A90 – A92)	212 - 228
Ma Wan Chung (A59, A60 – A66)	197 - 202
San Shek Wan (A97)	219
Tung Chung Town - South of NLH (A41 – A58, P3)	195 - 243
Tung Chung Town – North of NLH (A1 – A40, A100 – A101, P4 – P6)	192 - 206
Airport Island (A67 – A89, A102 – A106, P12 – P13)	203 - 271
Tung Chung East Further Development (P1 – P2)	191 - 201
Tung Chung West Further Development (P7 – P11)	200 - 210
AQO	300
% of AQO	90
Margin below AQO	29

Table 5-14B Predicted Maximum Daily Concentrations

Locations	NO <sub>2</sub> , ug/m <sup>3</sup>	RSP, ug/m <sup>3</sup>
Sham Wat (A98 – A99)	96 - 110	89 - 91
Sha Lo Wan (A93 – A96)	130 - 134	95 - 96
San Tau Area (A90 – A92)	108 - 109	90
Ma Wan Chung (A59, A60 – A66)	100 - 105	90
San Shek Wan (A97)	110	92



Locations	NO <sub>2</sub> , ug/m <sup>3</sup>	RSP, ug/m <sup>3</sup>
Tung Chung Town - South of NLH (A41 – A58, P3)	103 - 119	90 - 92
Tung Chung Town – North of NLH (A1 – A40, A100 – A101, P4 – P6)	93 - 127	91 - 92
Airport Island (A67 – A89, A102 -- A106, P12 – P13)	110 - 131	90 - 96
Tung Chung East Further Development (P1 – P2)	94 - 107	91 - 92
Tung Chung West Further Development (P7 – P11)	99 - 109	89 - 91
<b>AQO</b>	<b>150</b>	<b>180</b>
<b>% of AQO</b>	<b>89</b>	<b>53</b>
<b>Margin below AQO</b>	<b>16</b>	<b>84</b>

Table 5-14C Predicted Annual Concentrations

Locations	NO <sub>2</sub> , ug/m <sup>3</sup>	RSP, ug/m <sup>3</sup>
Sham Wat (A98 – A99)	22 - 26	43 - 45
Sha Lo Wan (A93 – A96)	44 - 47	47
San Tau Area (A90 – A92)	31 - 33	45
Ma Wan Chung (A59, A60 – A66)	23 - 25	44
San Shek Wan (A97)	27	45
Tung Chung Town - South of NLH (A41 – A58, P3)	26 - 54	44 - 47
Tung Chung Town – North of NLH (A1 – A40, A100 – A101, P4 – P6)	26 - 43	44 - 46
Airport Island (A67 – A89, A102 -- A106, P12 – P13)	34 - 51	45 - 48
Tung Chung East Further Development (P1 – P2)	24 - 27	44
Tung Chung West Further Development (P7 – P11)	25 - 36	44 - 46
<b>AQO</b>	<b>80</b>	<b>55</b>
<b>% of AQO</b>	<b>68</b>	<b>87</b>
<b>Margin below AQO</b>	<b>26</b>	<b>7</b>

- 5.6.17.2 It can be seen from the above tables that the predicted pollutant concentrations at all the representative ASRs do satisfy the Air Quality Objectives.
- 5.6.17.3 For the ASRs on the eastern coast of Tung Chung East Future Development, LLP and the MTR Siu Ho Wan Depot, the EIA Report for TMCLKL has confirmed that all the existing and planned receivers would comply with the relevant criteria and there are no residual air quality impacts.
- 5.6.17.4 In order to identify any potential landuse constraints along the alignment of HKLR and in the vicinity of the HKBCF (within area more influenced by HKLR and HKBCF), the use of pollution contours has been considered.
- 5.6.17.5 For the HKLR section along the airport channel, there are no planned sensitive uses on airport island. The village houses to the south of the alignment include San Shek Wan, Sha Lo Wan and San Tau would mainly retain as village type developments and representative ASRs have been assessed. Results indicated that all the predicted concentrations are well within the criteria. The receivers are also about at least 100m far away from the HKLR. Hence, it is considered that pollution contours are not required.
- 5.6.17.6 For the HKLR alignment along the eastern coast of airport island and near to the HKBCF, there would be some planned developments closer to the project boundary. These planned developments include the CAD Headquarter and other landuse to the south of AsiaExpo. Pollution contours would therefore be useful for identify any landuse constraints. Further analysis of the results for discrete ASRs suggests that, for the maximum predicted RSP concentrations (for 24-hr

average and annual) are dominated by the background concentration (up to 98%) instead of the contribution from the traffic on the roadwork. For the annual NO<sub>2</sub>, the predicted concentration is relatively low, only constitute about 28-68% of the AQO. It is therefore considered that contours for RSP and annual NO<sub>2</sub> would not provide useful information for identifying landuse constraints. Hence, pollution contours would only be generated for 1-hr NO<sub>2</sub> and 24-hr NO<sub>2</sub>.

- 5.6.17.7 For the Tung Chung area, analysis has revealed that higher concentrations are predicted for the ASRs closer to the NLH. Receivers away from NLH would be subject to much lower pollution concentrations. Due to the influence of the emission from the airport, the predicted pollution concentrations for ASRs such as the Citygate would be slightly higher than the developments to the east of the Tung Chung New Town. Hence, it is considered appropriate to have the contours for the area near Citygate. Similar to the situation for ASRs along the eastern coast of the airport island, only 1-hr and 24-hr NO<sub>2</sub> pollution contours would be presented.
- 5.6.17.8 The pollution contours on the concerned areas are presented in **Figures 5.5a to c**. It can be seen from these contours that other than a small portion of the planned highway maintenance area along the eastern coastline of airport island (reclaimed under the HKLR), the air quality impacts caused by HKLR and HKBCF would not impose any constraints and the neighbouring landuse. Since the planned highway maintenance area along the eastern coastline would not have any air sensitive uses, it would not impose any landuse constraints.

## 5.7 Conclusion

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- 5.7.1 An air quality impact assessment has been conducted for both the construction and operational phases. The fugitive dust assessment for the construction phase has concluded that 8 times/day watering in all works areas would be required to control the fugitive dust impact.
- 5.7.2 For the assessment of operational phase air quality, a combination of regional wide model (PATH) and near field dispersion models (CALINE4 and ISCST3) has been used. This approach allows a more realistic prediction taking into consideration of the regional meteorological patterns, terrain effect and complex photochemical reactions. The PATH model also takes into account the Pearl River Delta Regional Air Quality Management Plan drawn up by the HKSAR and the Guangdong Provincial Government.
- 5.7.3 Sensitivity tests have been undertaken to identify the highest emission scenario from this Project, given the combination of vehicular emission factors and the projected traffic flow. It is concluded that the worst-case assessment scenario is Year 2031. Emissions for various pollutant sources have therefore been updated for the assessment year.
- 5.7.4 For open road emissions within North Lantau, the dispersion was modelled by CALINE4. EmFAC-HK model was adopted to calculate the vehicular tailpipe emission, taking into account the latest implementation program of the emission standards for diesel vehicles and fuel quality in Macao and Mainland China.
- 5.7.5 The effect of emission from portals and ventilation buildings has been modelled using ISCST, taking the length of each tunnel and its ventilation scheme into account.
- 5.7.6 The results show that the predicted cumulative pollution concentrations at all identified ASRs will comply with the Air Quality Objectives. There will be no landuse constraints. Hence, it is concluded that there will not be any residual air quality impacts.

APPENDIX 5A

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**Calculation of Fugitive  
Dust Emission Factors**

**Calculation of Emission factor for Wind Erosion**

According to Section 11.9 of AP-42

$E = 0.85\text{Mg/hectare/yr}$  (ref : AP-42 S11.9, Table 11.9.4)

Where

E = Emission Factor

Assume

**Daytime:**

Percentage active operating area (%)	10	for calculation of TSP annual average concentration
Mitigation efficiency (%)	87.50%	87.5% efficiency for watering 8 times daily
E (g/sqm/day)	0.002910959	calculated as in AP-42 (S11.9, Table 11.9.4)
E (g/sq.m/s)	<b>0.0000000337</b>	calculated, 24-hour emission

Percentage active operating area (%)	30	usual practice for typical construction site
Mitigation efficiency (%)	87.50%	87.5% efficiency for watering 8 times daily
E (g/sqm/day)	0.008732877	calculated as in AP-42 (S11.9, Table 11.9.4)
E (g/sq.m/s)	<b>0.0000001011</b>	calculated, 24-hour emission

**Nighttime:**

Percentage active operating area (%)	10	for calculation of TSP annual average concentration
Mitigation efficiency (%)	0	0% for Do-nothing
E (g/sqm/day)	0.023287671	calculated as in AP-42 (S11.9, Table 11.9.4)
E (g/sq.m/s)	<b>0.0000002695</b>	calculated, 24-hour emission

Percentage active operating area (%)	30	usual practice for typical construction site
Mitigation efficiency (%)	0	0% for Do-nothing
E (g/sqm/day)	0.069863014	calculated as in AP-42 (S11.9, Table 11.9.4)
E (g/sq.m/s)	<b>0.0000008086</b>	calculated, 24-hour emission

**Calculation of Emission factor for Heavy Construction**

According to Section 13.2.3 of AP-42

E = 1.2tons/acre/month of activity (ref : AP-42 S13.2.3.3)  
 or = 2.69Mg/hectare/month of activity

Where

E = Emission Factor

Assume

**Daytime:**

Percentage active operating area (%)	10	for calculation of TSP annual average concentration
Mitigation efficiency (%)	87.50%	87.5% efficiency for watering 8 times daily
E (g/sq.m/day)	0.1293	Assume 26 working days per month and 12 working hours a day
E (g/sq.m/s)	<b>0.0000029937</b>	calculated, 12 working hours per day

Percentage active operating area (%)	30	usual practice for typical construction site
Mitigation efficiency (%)	87.50%	87.5% efficiency for watering 8 times daily
E (g/sq.m/day)	0.3880	Assume 26 working days per month and 12 working hours a day
E (g/sq.m/s)	<b>0.0000089810</b>	calculated, 12 working hours per day

**Daytime (Unmitigated):**

Percentage active operating area (%)	10	for calculation of TSP annual average concentration
Mitigation efficiency (%)	0.0%	0% for Do-nothing
E (g/sq.m/day)	1.0346	Assume 26 working days per month and 12 working hours a day
E (g/sq.m/s)	<b>0.0000239494</b>	calculated, 12 working hours per day

Percentage active operating area (%)	30	usual practice for typical construction site
Mitigation efficiency (%)	0.0%	0% for Do-nothing
E (g/sq.m/day)	3.1038	Assume 26 working days per month and 12 working hours a day
E (g/sq.m/s)	<b>0.0000718483</b>	calculated, 12 working hours per day

**Calculation of Emission factor for Material Handling**

According to Section 13.2.4 of AP-42

$$E = k(0.0016) \frac{\left(\frac{U}{2.2}\right)^{1.3}}{\left(\frac{M}{2}\right)^{1.4}} \text{ (kg / megagram )}$$

where

- E = Emission Factor in kg/megagram (Ref. AP42 S13.2.4)
- k = Particle size multiplier, k = 0.74 as defined according to Table 2 of S13.2.4
- U = Average wind speed at Tung Chung from 2002 to 2006 (i.e. ~4.689m/s)
- M = material moisture content; 2% is assumed in the equation

$$E = 0.74 \times (0.0016) \times (4.689/2.2)^{1.3} / (2/2)^{1.4}$$

$$= 0.00317 \text{ kg/megagram}$$

No. of trucks loading/unloading at each barging point =	10 per hour	(assume 20 trucks per hour will be loaded and unloaded)
Average carrying capacity for each truck =	24 tonne	
Quantity of excavated materials loading at barging point =	240 megagram per hour per barging point	
Total number of barging point=	2	

**Daytime:**

Mitigation efficiency (%)	90.00%	*90% reduction
E =	0.00032	kg/megagram
	= 76.0800	g/hour
	= 0.0211	g/s

Mitigation efficiency (%)	0.00%	0% for Do-nothing
E =	0.00317	kg/megagram
	= 760.8000	g/hour
	= 0.2113	g/s

**\* Note:**

- 90% reduction by
  - a. All road surface within the barging facility will be paved
  - b. Dust enclosures will be provided for the loading ramp
  - c. Vehicles will be required to pass through designated wheel washing facilities before leaving the barging facility
  - d. Continuous water spray for the loading point

APPENDIX 5B

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**Locations and Details of  
Worksites for Fugitive  
Dust Assessment**

Location and Details of Worksites for Fugitive Dust Assessment

Parameters for 1 hr and 24 hr TSP Concentration Calculation

Source ID	Source Type	Emission Rate (g/s/m <sup>2</sup> )						Dimension (m)		Coordinates of centroid		Height	Angle
		Heavy Construction		Wind Erosion		Barging Point							
		Daytime	Nighttime	Daytime	Nighttime	Daytime	Nighttime	X	Y	X	Y		
1	Area	0.000008981	-	0.00000101	0.00000809	-	-	1170	784	813232	819610	0	-16.0
2	Area	0.000008981	-	0.00000101	0.00000809	-	-	395	140	812345	819417	0	12.0
3	Area	0.000008981	-	0.00000101	0.00000809	-	-	90	195	812102	819394	0	12.0
4	Area	0.000008981	-	0.00000101	0.00000809	-	-	120	410	811903	819167	0	-39.0
5	Area	0.000008981	-	0.00000101	0.00000809	-	-	110	210	811777	818864	0	0.0
6	Area	0.000008981	-	0.00000101	0.00000809	-	-	105	360	811843	818572	0	20.0
7	Area	0.000008981	-	0.00000101	0.00000809	-	-	100	180	811921	818300	0	0.0
8	Area	0.000008981	-	0.00000101	0.00000809	-	-	110	150	811832	818146	0	-30.0
9	Area	0.000008981	-	0.00000101	0.00000809	-	-	90	40	811734	818176	0	18.0
10	Area	0.000008981	-	0.00000101	0.00000809	-	-	95	150	811740	818026	0	-30.0
11	Area	0.000008981	-	0.00000101	0.00000809	-	-	160	160	811618	818087	0	-21.0
12	Area	0.000008981	-	0.00000101	0.00000809	-	-	90	360	811626	817791	0	-16.5
13	Area	0.000008981	-	0.00000101	0.00000809	-	-	85	165	811572	817928	0	-18.0
14	Area	0.000008981	-	0.00000101	0.00000809	-	-	90	70	811097	817093	0	26.0
17	Area	0.000008981	-	0.00000101	0.00000809	-	-	1150	535	816385	819272	0	23.0
18	Area	0.000008981	-	0.00000101	0.00000809	-	-	900	200	817452	819582	0	51.5
19	Area	0.000008981	-	0.00000101	0.00000809	-	-	155	360	814055	820311	0	-1.5
20	Area	0.000008981	-	0.00000101	0.00000809	-	-	140	1090	813903	819577	0	-16.0
21	Area	0.000008981	-	0.00000101	0.00000809	-	-	1170	310	813382	820136	0	-16.0
22	Area	0.000008981	-	0.00000101	0.00000809	-	-	275	20	812028	820003	0	39.0
23	Area	0.000008981	-	0.00000101	0.00000809	-	-	275	20	811815	819828	0	33.0

Source ID	Source Type	Emission Rate (g/s)						Dimension (m)		Coordinates		Height	Width
		Heavy Construction		Wind Erosion		Barging Point							
		Daytime	Nighttime	Daytime	Nighttime	Daytime	Nighttime	X	Y	X	Y		
15	Point	-	-	-	-	0.021133333	-	0	0	810801	816956	0	0.0
16	Point	-	-	-	-	0.021133333	-	0	0	810873	816932	0	0.0

Source ID	Source Type	Emission Rate (g/s/m)						Coordinates of starting point		Coordinates of ending point		Height	Width
		Heavy Construction		Wind Erosion		Barging Point							
		Daytime	Nighttime	Daytime	Nighttime	Daytime	Nighttime	X	Y	X	Y		
24	Line	0.000269431	-	0.000003032	0.000024258	-	-	811747	820050	811897	819624	0	30
25	Line	0.000404147	-	0.000004548	0.000036387	-	-	811897	819624	812037	819480	0	45
26	Line	0.000116753	-	0.000001314	0.000010512	-	-	811897	819624	811850	819423	0	13
27	Line	0.000152678	-	0.000001718	0.000013746	-	-	811850	819423	811663	819129	0	17
28	Line	0.000377204	-	0.000004245	0.000033961	-	-	811663	819129	811578	818752	0	42
29	Line	0.000431090	-	0.000004852	0.000038813	-	-	811578	818752	811358	818064	0	48



Location and Details of Worksites for Fugitive Dust Assessment

Parameters for annual TSP Concentration Calculation

Source ID	Source Type	Emission Rate (g/s/sq.m)						Dimension (m)		Coordinates of centroid		Height	Angle
		Heavy Construction		Wind Erosion		Barging Point		X	Y	X	Y		
		Daytime	Nighttime	Daytime	Nighttime	Daytime	Nighttime						
1	Area	0.000002994	-	0.000000034	0.000000270	-	-	1170	784	813232	819610	0	-16.0
2	Area	0.000002994	-	0.000000034	0.000000270	-	-	395	140	812345	819417	0	12.0
3	Area	0.000002994	-	0.000000034	0.000000270	-	-	90	195	812102	819394	0	12.0
4	Area	0.000002994	-	0.000000034	0.000000270	-	-	120	410	811903	819167	0	-39.0
5	Area	0.000002994	-	0.000000034	0.000000270	-	-	110	210	811777	818864	0	0.0
6	Area	0.000002994	-	0.000000034	0.000000270	-	-	105	360	811843	818572	0	20.0
7	Area	0.000002994	-	0.000000034	0.000000270	-	-	100	180	811921	818300	0	0.0
8	Area	0.000002994	-	0.000000034	0.000000270	-	-	110	150	811832	818146	0	-30.0
9	Area	0.000002994	-	0.000000034	0.000000270	-	-	90	40	811734	818176	0	18.0
10	Area	0.000002994	-	0.000000034	0.000000270	-	-	95	150	811740	818026	0	-30.0
11	Area	0.000002994	-	0.000000034	0.000000270	-	-	160	160	811618	818087	0	-21.0
12	Area	0.000002994	-	0.000000034	0.000000270	-	-	90	360	811626	817791	0	-16.5
13	Area	0.000002994	-	0.000000034	0.000000270	-	-	85	165	811572	817928	0	-18.0
14	Area	0.000002994	-	0.000000034	0.000000270	-	-	90	70	811097	817093	0	26.0
17	Area	0.000002994	-	0.000000034	0.000000270	-	-	1150	535	816385	819272	0	23.0
18	Area	0.000002994	-	0.000000034	0.000000270	-	-	900	200	817452	819582	0	51.5
19	Area	0.000002994	-	0.000000034	0.000000270	-	-	155	360	814055	820311	0	-1.5
20	Area	0.000002994	-	0.000000034	0.000000270	-	-	140	1090	813903	819577	0	-16.0
21	Area	0.000002994	-	0.000000034	0.000000270	-	-	1170	310	813382	820136	0	-16.0
22	Area	0.000002994	-	0.000000034	0.000000270	-	-	275	20	812028	820003	0	39.0
23	Area	0.000002994	-	0.000000034	0.000000270	-	-	275	20	811815	819828	0	33.0

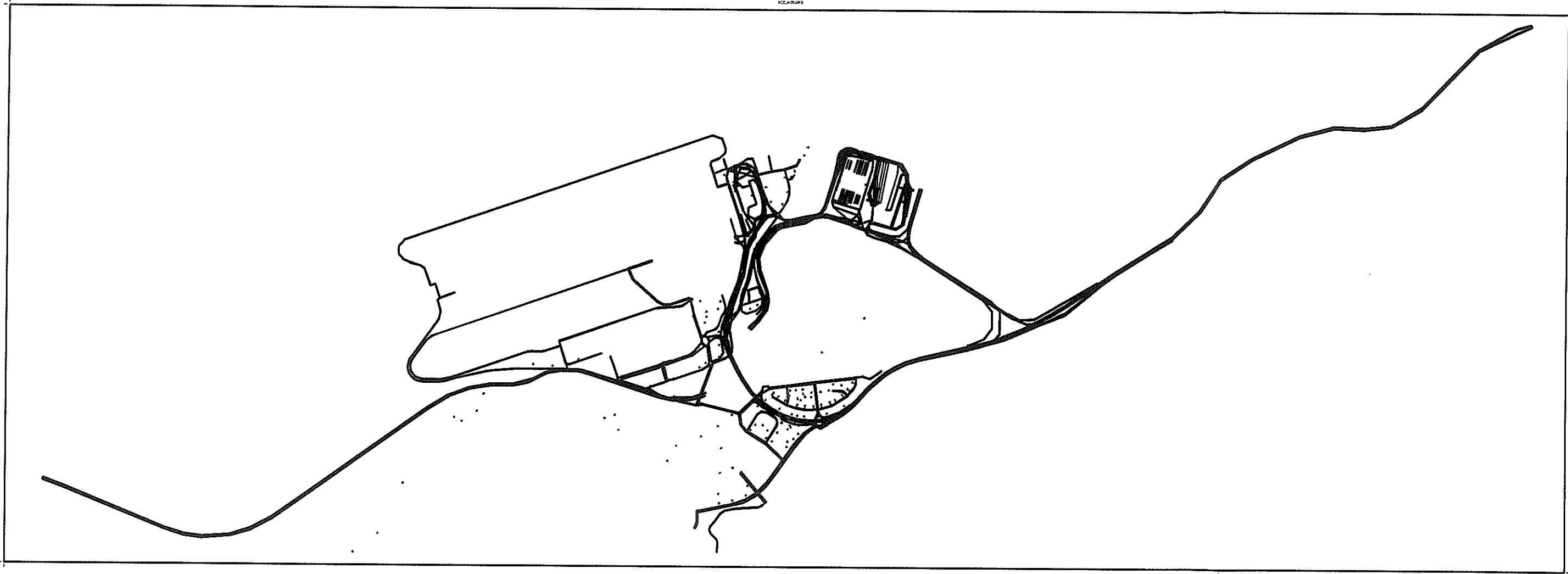
Source ID	Source Type	Emission Rate (g/s)						Dimension (m)		Coordinates		Height	Width
		Heavy Construction		Wind Erosion		Barging Point		X	Y	X	Y		
		Daytime	Nighttime	Daytime	Nighttime	Daytime	Nighttime						
15	Point	-	-	-	-	0.021133333	-	0	0	810801	816956	0	0.0
16	Point	-	-	-	-	0.021133333	-	0	0	810873	816932	0	0.0

Source ID	Source Type	Emission Rate (g/s/m)						Coordinates of starting point		Coordinates of ending point		Height	Width
		Heavy Construction		Wind Erosion		Barging Point		X	Y	X	Y		
		Daytime	Nighttime	Daytime	Nighttime	Daytime	Nighttime						
24	Line	0.000089810	-	0.000001011	0.000008086	-	-	811747	820050	811897	819624	0	30
25	Line	0.000134716	-	0.000001516	0.000012129	-	-	811897	819624	812037	819480	0	45
26	Line	0.000038918	-	0.000000438	0.000003504	-	-	811897	819624	811850	819423	0	13
27	Line	0.000050893	-	0.000000573	0.000004582	-	-	811850	819423	811663	819129	0	17
28	Line	0.000125735	-	0.000001415	0.000011320	-	-	811663	819129	811578	818752	0	42
29	Line	0.000143697	-	0.000001617	0.000012938	-	-	811578	818752	811358	818064	0	48

APPENDIX 5C  

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**Extent of Road Not  
Included in PATH**



APPENDIX 5C - EXTENT OF ROAD NOT INCLUDED IN PATH

APPENDIX 5D

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**2031 Emission Inventory**

**Project** : HKBCF and HKLR  
**Title** : Summary of 2031 Emission Inventory

Emission Group	Annual Emission (2031), Tonne / Yr			
	SO <sub>2</sub>	NO <sub>x</sub>	RSP	VOC
Power Plant, Industry, Transportation, VOC Containing Product and others in PRDEZ	394,369	440,991	204,162	173,260
Aircraft Take – Off, Climb Out, Approach, Idling / Taxing	446	8,665	100	1,140
Ground support Equipment	70	189	52	18
Auxillary Power Units	24	156	0	20
Engine Run-up Facilities	1	31	0	2
Fuel Tanks	0	0	0	8
HKSAR - Power Plant	11,698	17,375	737	420
HK Industry (see Note 1)	1,399	7,121	820	4,762
HK Marine	7,169	36,151	1,539	1,536
HK Roads (except those on Lantau)	359	7,337	296	3,665
Petrol car and evaporation of petrol	0	0	0	1,263
Tire wear and brake	0	0	854	0
Non-Road Mobile Source	0.1	26	3	3
VOC Containing Sources	0	0	0	18,939
Commercial & domestic fuel combustion	6	1,982	137	98
Others	0	17	9	334

Note: Emission from the proposed project and other roads on Lantau are separately quantified.

Note 1 : Emission from EcoPark, STF, Green Island Cement have been included in the emission inventory.

APPENDIX 5E

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**Airport Operation  
Information**

**Project** : HKBCF – Air Quality Assessment  
**Title** : Air port Operational Information for 2020

<u>Parameters</u>	<u>Values</u>
Annual Aircraft Movement	: 420, 845
Annual Passenger	: 87 Millions
Runway Mode	: Mixed
Aircraft Fleet Mix	: See Table C2-2
Taxi Time	: See Table C2-3
Percentage Break-Down of LTOs	: See Table C2-4
Annual LTO	: 210,423
Departure Queue Length	: See Table C2-5
GSE Assignment	: See Table C3-1
Aircraft Hourly Operational Profile	: See Table C7-1
Aircraft Daily Operational Profile	: See Table C7-2

**Table C2-2 Aircraft Fleet Mix**

Aircraft Category	Aircraft type	Year 2000		Year 2020	
		Percentage of Total	Percentage of Category	Percentage of Total	Percentage of Category
747	B747-400		68.8		65.8
	B747-200F		15.7		13.1
	B747-400F		6.6		5.5
	B747-200C		6.3		13.1
	B747-100		1.9		1.8
	Others		0.7		0.7
	<b>Total</b>		<b>30.8</b>		<b>30.9</b>
Other Wide Body	A330		22.6		25.0
	A340-300		17.5		15.4
	A300-600		13.9		1.4
	B777-200		13.5		20.9
	B777-300		9.9		15.4
	B767-300ER		7.5		3.5
	MD-11		4.2		4.0
	MD-11-11F		3.5		3.4
	A330-300		2.4		2.7
	DC10-40		1.3		0
	A310-300		0.9		4.1
	B767-200ER		0.8		0.4
	A310		0.6		2.5
	Others		1.4		1.3
<b>Total</b>		<b>44.7</b>		<b>51.9</b>	
Narrow Body	A320		34.1		43.1
	B757-200		16.4		19.6
	B737-300		10.7		5.2
	B737-800		9.5		4.6
	MD-90-30		7.5		11.4
	A320-100		7.4		9.4
	B737-500		5.8		2.8
	MD-80-82		2.4		0
	B737-400		2.1		1.0
	B737-100		0.8		0.4
	Gulfstream II/III		0.7		0.6
	B757-200F		0.5		0.6
	Others		2.1		1.3
<b>Total</b>		<b>24.5</b>		<b>12.5</b>	
New Large Aircraft	A380			4.7	

a The percentage of LTOs of this category over annual LTOs of all aircraft

b The percentage of LTOs of this aircraft type over LTOs of the entire category



**Table C2-3 Taxi Time**

Scenario	Taxi Time (min)
Year 2000 <sup>a</sup>	21.0
Year 2020	27.8

a. Derived from the "chock on/off" data, which contains the time of landing, chock on (arrive at a gate), chock off (depart from a gate) and takeoff. Thus actual queue time is included.  
 Taxi time is calculated using the following equation:  
 Taxi-in Time = TimeChock on - TimeLanding  
 Taxi-out Time = TimeTakeoff - TimeChock off  
 Taxi Time = Taxi-in Time + Taxi-out Time  
 Taxi Time is calculated for each aircraft for 5 days selected from the chock on/off dataset, and an average is calculated, which is 21.0 as shown in this table.

**Table C2-4 Percentage Break-Down of LTOs Based on Routes (Runway-Taxiway Combinations)<sup>a, b</sup>**

Year	Arrival Runway				Departure Runway	
	07L	07R	25L	25R	07L	07R
Year 2000	30.0	30.0	20.0	20.0	60.0	40.0
Year 2020	14.4	9.6	9.6	6.4	30.0	30.0
Year 2020	21.6	14.4	14.4	9.6	20.0	20.0

a. A "route" is a combination of arrival runway, taxiways and departure runway, which from the model point of view, represents a series of area sources (segments of runways and taxiways). For example, route "07L-NG1-07R" represents the route of an aircraft which arrives at runway 07L, stops at the gate NG1 (on the north side of the existing passenger terminal building), and departs at the runway 07R.

b. The notation for each route is as following:

Runways - 07R/25L, 07L/25R

Gate Areas: NG1 - all gates at the north side of the existing passenger terminal building  
 SG1 - all gates at the south side of the existing passenger terminal building  
 CG - the cargo gate  
 NG2 - all gates at the north side of the proposed midfield terminal building  
 SG2 - all gates at the south side of the proposed midfield terminal building

**Table C2-5 Departure Queue Length**

Scenario	Peak Queue Time (minutes)	Peak Queue Length (meters)
Year 2000	16 <sup>a</sup>	740 <sup>b</sup>
Year 2020	29 <sup>c</sup>	1,628 <sup>d</sup>

- a. The queue time is estimated based on taxi-out time which already includes the queue time. Assuming that the longest taxi-out time is resulting from queuing, while the shortest taxi-out time is due to lack of queuing. The queue time is estimated as the difference between the highest accumulative 5% taxi-out time and the lowest accumulative 5% taxi-out time.
- b. The one-way runway capacity is 35 movements per hour, thus 1.7 minutes per aircraft. Therefore, the peak hour queue time of 16 minutes is equivalent to 10 aircraft waiting in line. Assuming all these aircraft are of the size of Boeing 747, which is 71 meters long, plus 3 meters cushion space, the total queue length is 740 meters.
- c. The peak queue time and queue length is derived based on the difference between the runway capacity and the peak hour aircraft movements. The two-way runway capacity is 75 aircraft movements per hour. The two-way peak hour aircraft movement is 97. The difference is 22 movements. Assuming all the difference is due to the departure, i.e. the queue consists 22 aircraft. According to the one-way capacity of runway, which is 45 aircraft movements, it takes 1.3 minutes for each aircraft to depart. Therefore, it will take 29 minutes for 22 aircraft in queue to takeoff, i.e., the peak queue time is 29 minutes.
- d. Assuming all of the 22 queuing aircraft are of the size of Boeing 747, which is 71 meters, and plus a cushion space of 3 meters, the peak hour queue length is 1628 meters.

**Table C3-1 GSE Assignment – Commercial**

A300-600	7	8	26	120	35	35	92	-	20	32	25	12	-	-
A300-600F	7	8	26	108	46	-	80	100	-	32	25	7	-	-
A300-B4	7	8	26	108	46	35	92	-	20	32	25	7	-	-
A310	7	8	26	108	46	35	92	-	20	32	25	7	-	-
A310-200	7	8	26	108	46	35	92	-	20	32	25	7	-	-
A310-200F	7	8	26	108	46	-	80	100	-	32	25	7	-	-
A310-300	7	8	26	108	46	35	92	-	20	32	25	7	-	-
A319	7	8	26	34.4	39.3	16.6	-	-	16.4	20	15	12	-	-
A320/320-100	7	8	26	75	48	20	-	-	15	12	15	12	-	-
A330/330-300	7	8	26	108	46	35	92	-	20	32	25	7	-	-
A340-300	7	8	26	108	46	35	92	-	20	32	25	7	-	-
A380	7	8	26	108	46	35	92	-	20	32	25	7	-	-
B707-300	7	8	26	34.4	39.3	16.6	-	-	-	20	15	12	-	-
B727-200/200F	7	8	26	45	45	20	-	-	15	12	15	12	-	-
B737-100	7	8	26	34.4	39.3	16.6	-	-	16.4	20	15	12	-	-
B737-200/200C	7	8	26	15.8	35	13.8	-	-	13.6	18.4	15	12	-	-
B737-300	7	8	26	68	48	20	-	-	10	12	15	12	-	-
B737-400	7	8	26	75	48	20	-	-	18	12	15	12	-	-
B737-500	7	8	26	15.8	35	13.8	-	-	13.6	18.4	15	12	-	-
B737-800	7	8	26	45	45	20	-	-	15	12	15	12	-	-
B747-100/100SR	7	8	26	108	46	35	92	-	20	32	25	7	-	-
B747-200C	7	8	26	108	46	35	92	100	20	32	25	7	-	-
B747-300	7	8	26	108	46	35	92	-	20	32	25	7	-	-
B747-400	7	8	26	108	46	35	92	-	20	32	25	7	-	-
B747-SP	7	8	26	108	46	35	80	-	20	32	25	7	-	-
B747-200F/400F	7	8	26	108	46	-	80	100	-	32	25	7	-	-
B757-200/200F	7	8	26	43	40.5	20.9	-	-	24	25	15	12	-	-
B767-200ER	7	8	26	108	46	35	80	-	20	32	25	7	-	-
B767-300ER	7	8	26	108	46	35	80	-	20	32	25	7	-	-
B777-200	7	8	26	108	46	35	80	-	20	32	25	7	-	-
B777-300	7	8	26	108	46	35	80	-	20	32	25	7	-	-
Beech King Air 200	-	-	-	35	-	-	-	-	-	-	-	-	10	40
Canadair reg 100	-	5	26	15.3	21.3	-	-	-	10	-	15	-	28	-
Citation V	-	5	-	-	-	-	-	-	-	-	-	-	20	40
CL-600	-	5	-	35	30	-	-	-	10	-	15	-	20	50
DC-10-30/40	7	8	26	108	46	35	80	-	20	32	25	7	-	-
DC-10F	7	8	26	108	46	-	80	100	-	32	25	7	-	-
DC-8/8-50F	7	8	26	34.4	39.3	16.6	-	-	16.4	20	15	12	-	-
DO328	-	5	26	35	30	10	-	-	10	-	15	-	20	-
F28-4000	-	5	26	75	48	-	-	-	15	-	15	12	20	-
Falcon 20/30	-	5	-	-	-	-	-	-	-	-	-	-	20	40
Fokker 100	7	8	26	75	41	20	-	-	10	13.2	15	7	-	-
Gulfstream II	-	5	-	35	30	-	-	-	10	-	15	-	20	50
Gulfstream IV	-	5	26	7	30	-	-	-	10	-	15	-	20	-
HS125	-	5	-	-	-	-	-	-	-	-	-	-	20	40
JLR6	7	8	26	108	46	35	80	-	20	32	15	7	-	-
L-100 HERCULES	-	8	26	-	-	-	-	-	-	20	-	-	-	-
L-1011-1	7	8	26	108	46	35	92	-	20	32	41.5	7	-	-
Leapjet 35/36	-	-	-	-	-	-	-	-	-	-	-	-	10	40
MD-11	7	8	26	108	46	35	92	-	20	32	41.5	7	-	-
MD-11-11F	7	8	26	108	46	-	80	100	-	32	40	7	-	-
MD-80-82/83	7	8	26	34.4	39.3	16.6	-	-	16.4	20	24.6	12	-	-
MD-80-30	7	8	26	34.4	39.3	16.6	-	-	16.4	20	24.6	12	-	-
Piper PA 28	-	-	-	-	-	-	-	-	-	-	-	-	10	-
Tu-154	7	8	26	75	48	-	-	-	15	12	15	-	10	-

**Table C3-1 GSE Assignment - Military**

C-17A	10	20	10
G5-galaxy	10	120	10
KC-10A/135-R	10	120	10

Table C3-1 GSE Assignment Details						
AIR_NAME	ENG_NAME	GSE_NAME	OPERATION TIME (min)	HORSEPOWER	LOADFACTOR	REFERENCE
A310-200	JT9D-7R4E1	Air Start	7.00	425	0.9000	ACE 180
A310-200F	CF6-80A3	Air Start	7.00	425	0.9000	ACE 180
B727-200F	JT8D-15	Baggage Tractor	75.00	71	0.5500	
B727-200F	JT8D-15	Aircraft Tractor	8.00	88	0.8000	Stewart & Stevenson TUG GT-35, Douglas TBL-180
A300-600F	CF6-80C2A5F	Water Service	7.00	160	0.2000	
A300-600F	CF6-80C2A5F	Lavatory Truck	25.00	195	0.2500	Wollard TLS-770 / F350
A300-600F	CF6-80C2A5F	Cargo Loader	100.00	133	0.5000	FMC Commander 30
A300-600F	CF6-80C2A5F	Baggage Tractor	108.00	107	0.5500	
A300-600F	CF6-80C2A5F	Aircraft Tractor	8.00	340	0.8000	Stewart & Stevenson TUG T-750
A300-B4	CF6-80C2A5	Water Service	7.00	160	0.2000	
A300-B4	CF6-80C2A5	Lavatory Truck	25.00	195	0.2500	Wollard TLS-770 / F350
A300-B4	CF6-80C2A5	Hydrant Truck	32.00	235	0.7000	
A300-B4	CF6-80C2A5	Catering Truck	20.00	210	0.5300	Hi-Way F650
A300-B4	CF6-80C2A5	Belt Loader	46.00	107	0.5000	
A300-B4	CF6-80C2A5	Baggage Tractor	108.00	107	0.5500	
A300-B4	CF6-80C2A5	Aircraft Tractor	8.00	340	0.8000	Stewart & Stevenson TUG T-750
A310-200	JT9D-7R4E1	Lavatory Truck	25.00	195	0.2500	Wollard TLS-770 / F350
A310-200	JT9D-7R4E1	Hydrant Truck	32.00	235	0.7000	
A310-200	JT9D-7R4E1	Catering Truck	20.00	210	0.5300	Hi-Way F650
A310-200	JT9D-7R4E1	Belt Loader	46.00	107	0.5000	
A310-200	JT9D-7R4E1	Baggage Tractor	108.00	107	0.5500	
A310-200	JT9D-7R4E1	Aircraft Tractor	8.00	340	0.8000	Stewart & Stevenson TUG T-750
A310-200F	CF6-80A3	Lavatory Truck	25.00	195	0.2500	Wollard TLS-770 / F350
A310-200F	CF6-80A3	Hydrant Truck	32.00	235	0.7000	
A310-200F	CF6-80A3	Cargo Loader	80.00	80	0.5000	FMC Commander 15
A310-200F	CF6-80A3	Belt Loader	46.00	107	0.5000	
A310-200F	CF6-80A3	Baggage Tractor	108.00	107	0.5500	
A310-200F	CF6-80A3	Aircraft Tractor	8.00	340	0.8000	Stewart & Stevenson TUG T-750
A310-300	CF6-80C2A8	Lavatory Truck	25.00	195	0.2500	Wollard TLS-770 / F350
A310-300	CF6-80C2A8	Hydrant Truck	32.00	235	0.7000	
A310-300	CF6-80C2A8	Catering Truck	20.00	210	0.5300	Hi-Way F650
A310-300	CF6-80C2A8	Belt Loader	46.00	107	0.5000	
A310-300	CF6-80C2A8	Baggage Tractor	108.00	107	0.5500	
A310-300	CF6-80C2A8	Aircraft Tractor	8.00	340	0.8000	Stewart & Stevenson TUG T-750
A310-300	CF6-80C2A8	Air Start	7.00	620	0.9000	ACE 180
A319	CFM56-5B6/P	Lavatory Truck	15.00	160	0.2500	Wollard TLS-770 / F350
A319	CFM56-5B6/P	Hydrant Truck	20.00	235	0.7000	
A319	CFM56-5B6/P	Catering Truck	16.40	210	0.5300	Hi-Way F650
A319	CFM56-5B6/P	Belt Loader	39.30	107	0.5000	
A319	CFM56-5B6/P	Baggage Tractor	34.40	107	0.5500	
A319	CFM56-5B6/P	Aircraft Tractor	8.00	275	0.8000	Stewart & Stevenson TUG GT-50H
A320	V2500-A1	Lavatory Truck	15.00	160	0.2500	Wollard TLS-770 / F350
A320	V2500-A1	Hydrant Truck	12.00	235	0.7000	
A320	V2500-A1	Catering Truck	15.00	210	0.5300	Hi-Way F650
A320	V2500-A1	Belt Loader	48.00	107	0.5000	
A320	V2500-A1	Baggage Tractor	75.00	107	0.5500	
A320	V2500-A1	Aircraft Tractor	8.00	275	0.8000	Stewart & Stevenson TUG GT-50H

**Table C7-1 Aircraft Hourly Operational Profiles**

Hour	Weights of Aircraft		Weights of Flight	
	Year 2000	Year 2020	Year 2000	Year 2020
1	0.19	0.03	0.60	0.31
2	0.06	0.00	0.50	1.00
3	0.04	0.00	0.39	0.38
4	0.09	0.14	0.38	0.83
5	0.02	0.00	0.38	0.00
6	0.10	0.00	0.28	0.13
7	0.14	0.24	0.27	0.44
8	0.12	0.40	0.41	0.44
9	0.45	0.72	0.52	0.25
10	0.58	0.99	0.57	0.25
11	0.74	0.99	0.75	0.19
12	0.80	0.95	0.77	0.44
13	0.97	0.99	0.80	0.25
14	1.00	0.96	0.71	0.38
15	0.91	0.99	0.71	0.25
16	0.86	1.00	0.79	0.19
17	0.87	0.99	0.85	0.25
18	0.81	0.93	0.82	0.44
19	0.78	0.95	0.72	0.44
20	0.73	0.93	0.81	0.50
21	0.68	0.93	0.92	0.50
22	0.51	0.70	1.00	0.50
23	0.49	0.76	0.88	0.50
24	0.25	0.57	0.65	0.50

a. Derived from chock on/off data of year 2000 provided by AAHK.

**Table C7-2 Aircraft Daily Operational Profile<sup>a</sup>**

Weights	0.89	0.87	0.94	0.99	0.98	1.00	0.95
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a. Derived from chock on/off data of year 2000. Same profile is used for the Year 2020.

APPENDIX 5F-1

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**Key Assumptions for  
EmFAC Modelling**

Technology fraction for EMFAC-HK input

Year	PC+LGV(1) petrol							
	Index				Percentage			
1986-1991	1				100			
1992	1		8		0.3092		99.6908	
1993	1		8		0.3709		99.6291	
1994	1		8		0.4505		99.5495	
1995	1	8	9	10	0.1484	38.4656	0.589	60.797
1996	9		10		0.2359		99.7641	
1997	9	10	13		0.1189	19.7582		80.1229
1998	9		13		0.4465		99.5535	
1999	9	13	15		0.323	98.8155		0.8615
2000	13		15		98.0571		1.9429	
2001	15		23		1.7455		98.2545	
2002	18		23		0.4479		99.5521	
2003	18		23		0.2867		99.7133	
2004-2005	18		23		0.3545		99.6455	
2006	18		24		0.3545		99.6455	
2007-2031	24		28		99.6455		0.3545	

Year	PC+LGV(3) diesel							
	Index				Percentage			
1986	171		179		35.7143		64.2857	
1987	171		179		17.2414		82.7586	
1988	171		179		24.2424		75.7576	
1989	171		179		27.8481		72.1519	
1990	171		179		15.4639		84.5361	
1991	171		179		44.1176		55.8824	
1992	171		179		20.3571		79.6429	
1993	171		179		27.6623		72.3377	
1994	171		179		33.3841		66.6159	
1995	171	173	179	181	12.2768	43.5268	22.0982	22.0982
1996	173		181		62.5		37.5	
1997	173		181		74.4949		25.5051	
1998	173		181		57.7586		42.2414	
1999	175	181	182		1.3699	52.0548		46.5753
2000-2001	182				100			
2002	176		183		4.5455		95.4555	
2003	176		183		50		50	
2004-2006	183				100			
2007-2031	184				100			



Year	LGV4			
	Index		Percentage	
1986-1994	179		100	
1995	179	181	28.2443	71.7557
1996-1998	181		100	
1999	181	182	47.2756	52.7244
2000-2001	182		100	
2002-2006	183		100	
2007-2031	184		100	

Year	LGV6			
	Index		Percentage	
1986-1994	121		100	
1995	121	122	28.8876	71.1124
1996	121		100	
1997	122	127	22.3546	77.644
1998-2000	127		100	
2001	127	128	79.199	20.801
2002-2006	128		100	
2007-2009	132		100	
2010-2031	133		100	

Year	PLB5					
	Index			Percentage		
1986-1994	187			100		
1995	187	189		20.354	79.646	
1996-1997	189			100		
1998	189	190		75.7225	24.2775	
1999-2000	190			100		
2001	18	190		75.7225	24.2775	
2002	18	190		10.1124	89.8876	
2003	18	190	191	71.5812	5.7692	22.6496
2004	18	191		56.0	44.0	
2005-2006	18	191		56.0	44.0	
2007-2031	28	192		56.0	44.0	

Year	HGV7				HGV8			
	Index		Percentage		Index		Percentage	
1986-1994	124		100		155		100	
1995	124	125	29.7952	70.2048	154	155	72.6897	27.3103
1996	125		100		154		100	
1997	125	126	21.978	78.022	154	157	22.2447	77.7553
1998-2000	126		100		157		100	
2001	126	129	75.25	24.75	157	159	84.2345	15.7655
2002-2006	129		100		159		100	
2007-2009	130		100		160		100	
2010-2031	131		100		161		100	

Year	FBDD									
	Index					Percentage				
1986-1994	217					100				
1995	217		219	225		28.6432		70.3599	0.9969	
1996	219			225		98.6029		1.3971		
1997	219	220	229	225	227	30.7569	53.9117	4.3603	0.4358	10.5353
1998-2000	220		221	227		78.3516		6.337	15.3114	
2001	220	221	222	223	227	63.0742	5.1014	16.9394	2.5592	12.3259
2002-2006	222		223			86.875		13.125		
2007-2009	224					100				
2010-2031	226					100				

Year	MC			
	Index		Percentage	
1986-1988	263			100
1999	263		266	73.1777
2000-2031	266			100

Year	Taxi		
	Index		Percentage
1986-2002	13		100
2003	13	23	64.4578
2004-2005	23		100
2006-2031	24		100

Year	LGV4		
	Index		Percentage
1986-1994	179		100
1995	179	181	20.6349
1996-1998	181		100
1999	181	182	33.3333
2000-2001	182		100
2002-2006	183		100
2007-2031	184		100

Year	Private Light Bus>3.5t					
	Index			Percentage		
1986-1994	187			100		
1995	187	189		15.2174	84.7826	
1996-1997	189			100		
1998	189	190		82.1918	17.8082	
1999-2000	190			100		
2001	18	190		4.8387	95.1613	
2002	18	190		60.7143	39.2857	
2003	18	190	191	50.0	21.0526	28.9474
2004	28	192		56.0	44.0	
2005-2006	18	191		56.0	44.0	
2007-2031	28	192		56.0	44.0	

Year	NFB6		
	Index		Percentage
1986-1994	121		100
1995	121	122	82.5472 17.4528
1996	121		100
1997	122	127	24.6862 75.3138
1998-2000	127		100
2001	127	128	15.0579 84.9421
2002-2006	128		100
2007-2009	132		100
2010-2031	133		100

Year	NFB7				NFB8			
	Index		Percentage		Index		Percentage	
1986-1994	124		100		155		100	
1995	124	125	24.9258	75.0742	154	155	48.7179	51.2821
1996	125		100		154		100	
1997	125	126	28.839	71.161	154	157	25.4902	74.5098
1998-2000	126		100		157		100	
2001	126	129	81.5287	18.4713	157	159	67.7632	32.2368
2002-2006	129		100		159		100	
2007-2009	130		100		160		100	
2010-2031	131		100		161		100	

Year	FBDD									
	Index					Percentage				
1986-1994	217					100				
1995	217	219		225		28.6432	70.3599		0.9969	
1996	219			225		98.6029			1.3971	
1997	219	220	229	225	227	30.7569	53.9117	4.3603	0.4358	10.5353
1998-2000	220		221	227		78.3516		6.337	15.3114	
2001	220	221	222	223	227	63.0742	5.1014	16.9394	2.5592	12.3259
2002-2006	222		223			86.875			13.125	
2007-2009	224					100				
2010-2031	226					100				

Hourly Relative Humidity Data (%) in Year 2007

	1st hour	2nd hour	3rd hour	4th hour	5th hour	6th hour	7th hour	8th hour	9th hour	10th hour	11th hour	12th hour	13th hour	14th hour	15th hour	16th hour	17th hour	18th hour	19th hour	20th hour	21st hour	22nd hour	23rd hour	24th hour	
1-Jan-00	76	76	76	79	81	80	78	76	78	78	77	76	71	60	58	61	62	62	61	69	73	69	71	75	71
2-Jan-00	74	77	76	79	78	78	79	78	77	76	71	60	56	58	59	65	71	74	70	75	78	60	77	79	
3-Jan-00	80	80	82	87	92	92	90	86	84	80	81	76	75	78	76	77	79	80	79	80	75	73	73	74	
4-Jan-00	75	74	73	75	77	76	75	76	74	70	70	67	65	64	64	62	67	58	59	58	58	60	60	60	
5-Jan-00	64	65	62	66	66	67	69	68	65	63	62	59	58	52	54	58	59	53	54	52	56	56	55	57	
6-Jan-00	57	58	59	64	63	65	64	64	59	55	51	45	43	39	38	35	34	36	38	40	36	34	36	34	
7-Jan-00	37	38	40	43	43	43	44	44	41	36	36	34	35	32	33	30	31	32	33	34	42	51	31	32	
8-Jan-00	36	36	38	37	33	33	34	32	30	30	26	26	25	26	32	33	35	39	42	43	45	38	40	39	
9-Jan-00	40	50	53	40	40	38	35	38	33	27	28	28	29	33	35	33	31	37	44	40	43	50	56	54	
10-Jan-00	47	31	37	44	39	44	38	44	37	36	37	38	37	43	43	45	45	47	47	49	52	84	65	66	
11-Jan-00	64	64	65	65	65	67	68	63	62	61	61	62	61	62	63	70	69	69	71	70	71	73	76	73	
12-Jan-00	76	76	76	79	80	82	75	74	73	72	77	80	77	75	72	76	74	80	81	70	72	72	71	69	
13-Jan-00	66	73	67	64	64	64	67	66	64	60	56	57	60	58	55	53	55	55	58	70	69	72	76	80	
14-Jan-00	77	78	76	80	80	77	76	73	70	68	64	62	63	61	60	60	64	68	70	69	72	64	71	76	
15-Jan-00	80	79	76	77	77	75	79	79	78	74	70	80	55	49	51	65	71	74	65	52	55	82	70	75	
16-Jan-00	76	78	73	72	69	70	71	67	50	68	66	65	61	59	60	56	61	61	61	66	54	71	79	81	
17-Jan-00	84	88	90	92	95	94	94	91	91	91	92	92	93	90	91	89	83	88	91	91	87	82	86	83	
18-Jan-00	79	82	77	79	77	75	70	68	66	66	66	67	66	65	65	66	64	66	66	66	70	72	73	74	
19-Jan-00	67	73	69	70	69	72	71	71	66	66	67	68	65	65	66	64	66	66	66	66	70	72	73	74	
20-Jan-00	74	75	75	75	80	83	81	81	83	85	87	88	92	95	93	95	91	91	92	94	90	83	82	80	
21-Jan-00	81	81	81	84	83	81	81	83	85	87	88	92	95	93	95	91	91	92	94	90	83	83	82	80	
22-Jan-00	85	80	80	84	86	83	84	84	84	83	83	79	76	74	73	78	79	81	82	83	84	85	85	87	
23-Jan-00	87	88	93	88	87	84	82	83	80	80	80	81	81	77	71	71	72	85	65	66	66	63	69	66	
24-Jan-00	67	70	70	66	65	66	68	65	61	60	57	56	53	53	55	56	55	54	53	63	69	63	65	62	
25-Jan-00	81	72	69	62	64	64	65	62	62	60	61	60	58	59	57	57	59	60	63	64	63	73	70	61	
26-Jan-00	81	70	75	71	69	67	68	65	64	65	58	59	55	54	51	55	55	49	50	46	47	48	51	53	
27-Jan-00	55	55	60	62	64	64	62	62	60	57	55	53	50	54	51	48	43	42	41	44	34	24	23	21	
28-Jan-00	24	27	26	30	32	30	29	31	30	29	26	24	21	22	22	22	24	24	29	34	29	24	23	22	
29-Jan-00	24	30	25	33	32	35	37	39	33	22	20	17	23	16	19	27	32	42	48	41	46	46	48	37	
30-Jan-00	49	51	59	66	63	64	63	64	61	47	51	47	37	37	29	34	27	44	43	39	38	43	42	40	
31-Jan-00	42	47	46	52	49	56	51	40	31	25	24	21	28	20	35	31	30	39	46	41	40	48	43	41	
1-Feb-00	44	42	45	55	60	56	50	32	32	30	27	26	23	29	29	35	21	23	26	26	31	24	28	20	
2-Feb-00	25	23	28	35	31	32	34	31	27	23	20	22	28	29	24	24	19	27	42	35	36	38	51	62	
3-Feb-00	71	73	72	77	78	78	77	75	69	60	53	48	45	48	50	55	52	57	63	61	52	54	55	58	
4-Feb-00	61	66	68	71	76	77	70	71	56	46	34	36	37	46	48	46	47	49	46	45	58	52	49	49	
5-Feb-00	54	59	65	69	75	77	79	54	54	46	45	46	50	53	57	56	63	64	70	68	65	66	67	71	
6-Feb-00	75	75	80	81	85	82	85	83	73	65	65	63	60	58	60	60	60	60	56	60	63	68	69	67	
7-Feb-00	77	78	76	78	76	68	80	80	69	60	66	67	66	61	49	45	49	55	69	75	74	74	76	76	
8-Feb-00	67	69	63	68	68	74	69	71	93	89	79	65	62	67	66	63	66	67	73	77	76	79	80	82	
9-Feb-00	77	92	89	88	89	91	91	84	88	83	85	85	83	81	76	76	76	77	76	79	82	80	79	83	
10-Feb-00	84	90	85	87	89	92	91	93	89	79	65	62	67	66	63	66	67	73	77	76	79	80	82	83	
11-Feb-00	78	80	80	84	85	84	82	81	82	78	72	72	71	68	56	70	68	71	70	71	71	72	73	72	
12-Feb-00	71	73	74	77	78	76	81	77	71	70	62	62	62	60	61	64	67	72	74	75	78	78	80	79	
13-Feb-00	81	84	85	81	81	82	88	79	77	78	73	68	66	66	66	67	72	75	80	85	85	87	86	83	
14-Feb-00	86	89	89	90	84	91	89	87	80	75	77	78	77	76	75	67	70	73	75	72	74	78	74	79	
15-Feb-00	81	80	82	87	86	85	84	82	81	82	81	85	81	79	76	74	77	78	80	80	79	85	82	85	
16-Feb-00	86	88	89	90	91	91	89	87	84	82	78	82	81	77	78	78	79	83	83	85	87	87	88	82	
17-Feb-00	82	85	83	81	86	81	81	79	76	79	73	72	76	77	82	78	74	76	77	73	50	75	76	74	
18-Feb-00	76	72	75	82	87	89	89	81	82	85	76	68	69	69	68	74	78	74	74	82	88	90	89	91	
19-Feb-00	91	93	92	92	89	91	91	88	81	78	77	77	79	78	79	82	83	83	85	83	84	82	84	84	
20-Feb-00	87	87	87	87	88	87	88	86	83	80	81	74	74	72	72	75	76	79	83	83	83	84	80	81	
21-Feb-00	83	83	88	88	88	87	87	83	80	80	75	73	74	70	72	71	76	81	82	82	82	86	86	83	
22-Feb-00	86	88	88	86	86	85	84	83	84	85	90	86	93	88	83	85	82	83	77	75	78	79	82	82	
23-Feb-00	82	77	85	84	88	88	88	87	83	80	80	75	73	74	70	72	71	76	81	82	82	86	82	82	
24-Feb-00	89	74	73	75	75	72	70	67	58	71	60	56	59	60	73	76	77	80	82	83	84	82	81	82	
25-Feb-00	83	84	88	94	91	89	92	88	66	66	60	62	62	62	61	65	68	67	67	68	68	70	72	72	
26-Feb-00	79	78	81	74	73	73	73	72	68	66	66	66	60	62	62	61	65	68	67	67	68	68	70	72	
27-Feb-00	24	74	74	74	72	74	72	66	60	44	41	54	53	53	55	60	61	69	69	70	70	72	73	74	
28-Feb-00	80	77	75	76	80	74	74	72	73	69	60	62	60	62	58	63	61	67	70	73	73	76	78	79	
1-Mar-00	81	84	80	81	81	81	80	76	79	76	77	79	79	72	69	68	67	71	73	71	71	75	75	75	
2-Mar-00	75	77	78	77	75	73	74	72	69	65	64	62	62	65	61	63	63	70	74	85	85	83	83	80	
3-Mar-00	82	84	85	85	87	86	85	82	74	67	62	58	55	52	53	55	60	67	65	72	75	74	74	86	
4-Mar-00	85	86	85	86	90	90	87	88	86	89	84	75	75	74	72	78	73	80	79	82	79	79	87	77	
5-Mar-00	81	85	82	88	89	71	66	61	60	58	56	56	61	60	66	68	63	78	76	80	84	80	77	77	
6-Mar-00	91	86	76	72	75	60	62	65	62	63	62	65	60	62	62	62	63	65	74	77	75	75	75	75	
7-Mar-00	74	74	73	73	74	89	83	84	78	74	75	79	74												

	1st hour	2nd hour	3rd hour	4th hour	5th hour	6th hour	7th hour	8th hour	9th hour	10th hour	11th hour	12th hour	13th hour	14th hour	15th hour	16th hour	17th hour	18th hour	19th hour	20th hour	21st hour	22nd hour	23rd hour	24th hour	
4-May-00	80	78	86	85	87	87	88	87	82	83	80	85	85	86	86	88	87	89	85	89	89	85	90	87	80
5-May-00	87	84	82	90	94	95	93	89	94	94	95	91	86	81	75	76	73	79	76	79	87	88	81	80	
6-May-00	81	85	87	84	87	89	88	82	77	62	67	57	36	33	36	36	34	34	48	48	40	50	56	62	
7-May-00	59	62	66	63	63	74	68	62	54	47	30	49	31	27	29	27	27	22	25	31	25	56	68	70	
8-May-00	76	76	80	81	82	81	77	66	63	59	33	35	24	37	43	42	53	61	68	72	73	73	75	77	
9-May-00	76	77	77	78	77	78	73	67	62	59	35	55	56	56	56	59	61	65	68	70	72	73	76	74	
10-May-00	75	75	74	74	75	74	72	68	61	61	59	54	53	53	54	57	61	64	68	70	52	51	60	65	
11-May-00	69	76	77	75	76	75	78	75	72	68	61	57	54	54	55	55	58	61	64	67	70	71	75	75	
12-May-00	76	75	76	77	76	76	70	68	64	66	61	62	61	62	61	61	63	65	67	71	70	72	76	74	
13-May-00	78	74	78	74	79	77	76	64	59	59	57	64	63	65	60	59	63	68	71	75	75	76	76	75	
14-May-00	75	79	81	79	73	78	75	71	66	61	64	58	63	58	60	62	59	69	71	70	70	87	70	74	
15-May-00	74	73	77	77	77	77	73	74	68	68	59	63	54	58	57	57	60	71	75	77	78	79	79	79	
16-May-00	76	78	74	70	79	77	77	74	70	67	62	57	56	57	58	58	60	66	86	77	77	76	83	78	
17-May-00	74	80	70	64	75	70	66	66	64	61	54	45	45	46	48	52	59	59	68	71	71	77	78	75	
18-May-00	81	74	76	78	78	83	79	80	73	71	61	60	50	54	57	61	65	83	91	85	81	89	83	88	
19-May-00	85	89	87	86	84	80	79	81	76	68	63	63	70	69	83	96	93	91	90	87	85	81	85	87	
20-May-00	89	87	89	89	90	94	95	90	92	92	91	91	91	90	91	86	82	84	85	84	85	85	84	85	
21-May-00	86	86	86	86	93	90	89	84	83	81	78	87	88	93	92	93	91	88	88	87	89	89	89	87	
22-May-00	90	91	92	90	92	94	91	92	88	90	89	93	89	88	84	81	81	83	88	85	86	86	89	80	
23-May-00	89	90	93	93	92	92	91	89	85	84	77	68	62	66	66	65	70	71	77	75	76	75	76	79	
24-May-00	79	84	81	81	85	85	83	79	76	68	62	60	65	64	70	71	77	75	76	76	75	75	76	79	
25-May-00	79	81	80	79	79	78	77	73	69	68	66	72	64	59	54	54	58	63	69	70	74	73	77	79	
26-May-00	75	75	76	80	82	76	75	72	72	71	71	73	71	72	73	72	74	77	74	75	76	81	81	83	
27-May-00	80	82	90	84	83	76	75	81	75	70	70	65	88	93	91	87	87	81	85	79	83	81	83	82	
28-May-00	84	85	87	87	87	85	85	78	74	74	72	83	91	80	81	79	78	78	82	81	83	83	82	82	
29-May-00	81	83	86	86	86	84	79	74	67	74	72	71	69	67	61	62	62	62	68	67	73	78	75	74	
30-May-00	81	82	81	81	82	82	81	74	66	63	58	66	68	62	59	63	65	66	73	73	74	76	79	75	
31-May-00	76	78	81	81	82	84	90	88	86	82	78	72	72	71	64	68	74	77	76	78	78	78	78	73	
1-Jun-00	74	78	75	76	78	77	74	75	72	72	70	65	59	57	59	63	66	67	70	73	74	74	75	84	
2-Jun-00	79	81	84	82	81	83	83	78	75	70	66	63	67	62	66	66	67	69	70	72	72	72	74	75	
3-Jun-00	76	78	78	78	76	76	76	72	69	76	68	68	61	57	59	59	65	65	65	70	73	75	76	73	
4-Jun-00	75	79	78	81	80	79	76	72	71	67	60	61	57	56	51	58	67	72	72	74	73	73	71	72	
5-Jun-00	75	77	79	83	85	86	80	79	65	69	66	63	56	56	57	60	68	72	74	75	72	73	76	75	
6-Jun-00	79	80	82	75	79	79	76	76	74	74	79	64	61	64	66	73	71	73	73	75	78	76	78	77	
7-Jun-00	75	77	84	81	85	82	87	85	79	78	79	76	80	78	73	72	75	76	76	79	80	77	79	77	
8-Jun-00	76	79	79	79	82	80	80	85	89	86	91	88	88	78	80	76	76	82	86	81	75	78	80	78	
9-Jun-00	77	78	79	80	81	81	79	78	74	71	68	70	73	74	76	76	83	83	85	83	78	80	76	78	
10-Jun-00	79	78	97	93	95	94	92	85	80	93	89	93	93	89	91	90	84	83	83	85	87	84	85	85	
11-Jun-00	84	88	89	89	85	85	87	82	85	81	80	79	76	77	72	71	77	80	74	76	78	76	80	80	
12-Jun-00	82	84	87	85	87	86	84	80	81	83	82	77	73	74	75	77	77	78	84	84	84	87	87	80	
13-Jun-00	80	76	80	81	80	80	77	76	75	72	71	69	67	67	67	72	71	72	76	73	75	81	81	81	
14-Jun-00	72	81	75	91	86	81	82	82	81	84	87	77	88	84	81	78	83	76	77	73	76	81	82	81	
15-Jun-00	81	90	90	91	90	93	95	92	86	85	78	74	72	74	70	70	68	74	74	75	78	79	78	79	
16-Jun-00	85	87	85	91	90	93	95	92	86	85	78	74	72	74	70	70	68	74	74	75	78	79	78	79	
17-Jun-00	85	80	86	87	84	87	89	80	80	76	69	69	67	64	61	61	63	67	73	76	74	76	77	74	
18-Jun-00	84	82	86	85	86	84	84	79	69	69	67	64	61	61	63	67	73	76	74	76	77	77	75	74	
19-Jun-00	81	85	83	81	86	88	85	76	74	67	63	68	69	62	60	64	62	63	68	69	69	74	78	72	
20-Jun-00	84	78	79	79	79	80	84	75	67	63	70	71	66	64	58	60	60	65	69	66	65	64	69	72	
21-Jun-00	73	75	76	79	84	80	78	77	69	65	71	68	63	63	64	62	60	63	69	75	75	76	77	76	
22-Jun-00	74	82	84	79	80	79	78	52	75	69	65	64	62	57	62	65	68	74	74	75	78	77	78	70	
23-Jun-00	79	78	78	78	76	77	76	75	73	69	61	53	55	59	61	61	57	64	67	72	73	70	71	75	
24-Jun-00	72	71	77	78	73	76	78	79	75	70	65	55	58	53	57	56	62	67	68	71	67	69	72	73	
25-Jun-00	74	69	74	82	82	80	80	76	66	63	62	58	54	59	50	63	69	72	72	72	72	76	73	75	
26-Jun-00	72	82	78	80	79	79	75	73	70	73	65	62	66	63	66	66	71	73	93	81	80	89	78	79	
27-Jun-00	77	77	78	90	86	86	82	80	78	76	81	80	70	70	68	72	74	76	74	73	76	79	89	93	
28-Jun-00	94	94	93	92	94	92	94	94	98	91	87	88	86	87	87	83	78	79	81	81	80	81	81	82	
29-Jun-00	84	83	88	95	95	94	91	88	78	78	85	77	73	78	77	84	78	83	81	81	81	81	81	81	
30-Jun-00	86	87	86	88	79	88	84	84	77	82	81	84	85	73	78	80	88	81	88	85	85	85	83	81	
1-Jul-00	89	86	80	83	90	89	85	75	83	82	81	78	73	78	80	80	78	80	82	85	86	85	86	81	
2-Jul-00	83	79	76	84	84	85	84	83	77	73	73	68	65	64	66	69	80	83	88	87	84	84	80	77	
3-Jul-00	78	82	85	86	84	83	83	73	73	74	70	65	70	79	75	70	69	73	73	78	79	80	83	80	
4-Jul-00	79	80	83	83	80	83	83	69	73	69	64	65	65	65	66	64	72	66	70	78	78	73	80	79	
5-Jul-00	79	80	83	81	74	78	79	76	74	74	75	73	76	73	76	77	77	83	81	81	78	78	80	78	
6-Jul-00	79	76	77	79	81	84	85	85	82	73	78	73	76	76	71	69	69	68	75	72	75	75	76	74	
7-Jul-00	81	78	78	75	80	79	85	74	67	67	64	60	62	58	59	63	62	69	76	77	78	75	76	75	
8-Jul-00	79	77	76	79	81	75	71	74	76	74	70	67	63	64	63	66	70	69	71	74					

	1st hour	2nd hour	3rd hour	4th hour	5th hour	6th hour	7th hour	8th hour	9th hour	10th hour	11th hour	12th hour	13th hour	14th hour	15th hour	16th hour	17th hour	18th hour	19th hour	20th hour	21st hour	22nd hour	23rd hour	24th hour
6-Sep-00	68	64	71	66	74	68	69	67	64	63	63	61	60	59	56	61	60	59	64	65	67	69	71	74
7-Sep-00	70	71	75	74	77	77	79	70	65	65	60	59	56	64	66	58	67	68	68	68	70	77	73	74
8-Sep-00	77	80	79	77	78	82	77	75	72	65	59	57	50	53	51	56	60	64	68	74	74	77	77	76
9-Sep-00	79	79	80	79	78	78	76	75	72	67	63	63	60	61	61	64	66	70	69	68	73	74	76	75
10-Sep-00	77	77	79	78	78	79	76	75	72	67	63	63	60	61	61	64	66	70	69	68	73	74	76	75
11-Sep-00	73	67	76	76	76	77	76	71	64	50	56	54	51	52	60	60	63	67	70	71	70	74	72	89
12-Sep-00	84	67	88	86	83	79	71	60	54	50	50	46	46	45	47	49	51	58	65	71	70	72	72	73
13-Sep-00	74	76	76	73	69	67	61	52	52	47	41	37	39	40	41	51	51	54	57	57	55	55	58	58
14-Sep-00	63	69	67	65	64	77	64	57	65	61	67	55	54	53	50	57	55	57	62	64	65	65	70	67
15-Sep-00	73	69	71	73	76	70	70	72	73	72	72	66	53	56	54	58	70	63	61	61	71	68	68	75
16-Sep-00	73	75	79	78	84	76	69	71	85	60	64	70	62	72	63	65	69	69	76	75	74	74	79	76
17-Sep-00	76	79	85	82	82	81	82	76	68	64	62	66	61	60	56	52	57	61	68	65	66	70	66	56
18-Sep-00	61	65	65	64	51	49	50	56	53	43	42	48	44	45	44	45	50	50	53	50	54	52	55	57
19-Sep-00	55	55	57	58	67	62	61	61	59	57	54	52	51	52	50	50	55	55	58	48	49	44	40	40
20-Sep-00	43	45	44	44	43	44	43	43	43	43	43	42	41	42	45	50	50	53	51	51	51	56	54	57
21-Sep-00	53	63	65	68	65	60	56	55	53	52	48	52	50	56	54	59	56	57	59	68	66	62	89	62
22-Sep-00	59	65	64	65	64	63	64	62	57	55	50	51	50	50	50	50	50	50	53	55	55	55	56	58
23-Sep-00	59	60	61	67	73	68	71	72	77	80	79	78	72	76	68	71	73	83	79	83	84	85	88	89
24-Sep-00	90	93	94	85	83	88	90	84	90	89	92	87	81	85	93	90	85	85	83	84	83	87	83	82
25-Sep-00	83	82	84	86	86	87	86	84	86	83	74	77	84	84	83	81	78	78	82	81	80	80	80	80
26-Sep-00	80	80	79	81	81	81	78	72	66	63	65	64	55	48	50	49	50	49	50	52	64	67	71	73
27-Sep-00	76	77	79	80	78	79	79	73	69	65	58	55	54	64	64	62	63	66	68	71	72	75	76	76
28-Sep-00	77	77	77	77	78	75	77	72	68	63	59	56	58	56	57	64	65	64	62	62	64	68	69	70
29-Sep-00	75	79	77	78	79	78	75	70	64	66	64	64	67	67	67	71	73	83	79	83	84	85	88	89
30-Sep-00	75	75	77	78	82	82	82	82	68	62	59	48	48	48	48	50	53	58	71	73	73	71	71	71
1-Oct-00	72	74	73	70	69	67	65	60	58	57	53	49	47	48	48	50	53	58	88	81	81	78	83	86
2-Oct-00	66	78	87	72	88	82	74	75	70	69	68	68	68	64	68	75	69	80	86	88	81	81	78	83
3-Oct-00	81	81	85	91	85	84	86	86	87	85	81	74	70	70	71	73	72	72	74	72	83	79	79	75
4-Oct-00	76	73	75	75	79	83	84	80	78	75	73	70	69	64	63	58	55	60	61	59	62	67	68	71
5-Oct-00	75	75	77	79	78	82	80	71	71	64	62	57	55	48	47	46	51	55	54	54	64	71	71	59
6-Oct-00	72	81	79	78	76	82	80	71	71	64	62	57	55	48	47	46	51	55	54	54	64	71	71	59
7-Oct-00	73	67	74	73	65	69	68	64	58	55	52	49	52	48	47	45	50	49	54	58	61	60	59	50
8-Oct-00	81	69	61	67	71	71	72	72	70	70	69	67	64	63	55	62	55	62	55	53	61	58	58	61
9-Oct-00	59	57	60	61	63	61	61	59	54	51	48	47	43	41	41	43	44	46	47	49	51	49	49	52
10-Oct-00	80	75	57	62	57	58	58	58	55	54	53	52	53	53	53	57	59	63	65	64	65	67	62	81
11-Oct-00	80	78	76	75	73	73	71	68	67	64	62	53	56	57	59	59	58	65	68	70	74	75	75	76
12-Oct-00	77	77	79	78	77	78	76	76	71	71	71	68	64	79	77	76	73	72	72	70	70	71	70	68
13-Oct-00	66	64	59	61	60	62	64	60	60	58	51	52	55	53	53	54	63	71	71	79	71	72	74	73
14-Oct-00	74	72	72	74	75	82	79	75	66	61	58	56	54	55	54	55	55	56	59	68	67	65	57	58
15-Oct-00	59	59	61	63	62	62	63	59	58	56	54	52	53	51	52	50	51	52	64	56	56	56	55	58
16-Oct-00	58	58	58	60	60	60	60	57	53	54	50	48	46	45	48	42	43	46	47	48	50	53	53	53
17-Oct-00	53	54	52	54	53	50	50	49	47	44	46	47	45	45	44	46	55	56	61	62	62	65	64	68
18-Oct-00	61	74	69	71	62	64	66	64	64	59	56	55	55	45	50	55	60	61	62	62	63	34	36	34
19-Oct-00	72	74	75	76	79	77	78	77	58	48	46	40	42	38	36	31	40	39	38	39	45	49	51	55
20-Oct-00	39	43	41	43	46	51	53	41	40	42	38	36	38	39	45	49	51	55	60	62	60	62	63	63
21-Oct-00	67	69	67	74	77	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89
22-Oct-00	68	72	72	74	77	78	74	69	61	59	54	54	51	60	57	59	61	66	67	71	71	71	71	71
23-Oct-00	73	71	74	75	77	78	74	69	61	59	54	54	51	60	57	59	61	66	67	71	71	71	71	71
24-Oct-00	72	72	74	75	77	78	74	69	61	59	54	54	51	60	57	59	61	66	67	71	71	71	71	71
25-Oct-00	75	75	76	74	74	76	78	74	69	70	61	59	56	61	60	59	60	69	66	65	70	66	70	72
26-Oct-00	76	75	77	78	78	80	83	77	85	59	55	59	54	51	49	52	59	63	66	65	65	68	74	73
27-Oct-00	74	74	73	75	75	75	75	72	62	59	59	58	51	60	60	63	64	70	74	75	76	72	74	79
28-Oct-00	76	78	77	74	73	75	74	69	64	62	63	59	60	63	61	64	64	69	74	74	74	75	71	71
29-Oct-00	73	74	74	73	76	71	69	64	59	59	46	44	39	40	41	45	56	68	68	68	70	71	72	69
30-Oct-00	74	75	73	74	79	70	78	76	72	67	65	60	58	60	58	65	69	85	88	84	83	87	85	85
31-Oct-00	91	89	88	87	90	91	90	88	84	82	78	73	73	68	68	69	75	76	85	84	91	89	87	87
1-Nov-00	91	90	91	90	89	89	91	92	89	87	92	90	87	85	80	80	83	81	80	81	81	83	77	72
2-Nov-00	69	80	89	90	82	79	72	68	69	71	64	60	59	56	58	58	59	57	55	54	55	57	57	57
3-Nov-00	55	53	54	54	54	54	54	53	50	50	50	49	49	45	48	46	46	46	46	46	46	46	46	46
4-Nov-00	53	55	56	54	54	55	53	45	42	42	42	43	42	39	38	41	42	42	42	42	42	42	42	42
5-Nov-00	67	49	47	46	45	44	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43
6-Nov-00	45	47	47	48	49	50	50	51	49	48	47	47	45	45	45	45	45	45	45	45	45	45	45	45
7-Nov-00	54	51	51	52	51	49	49	48	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47
8-Nov-00	79	78	87	84	70	66	71	77	73	74	76	73	71	63	65	69	64	66	69	67	67	67	67	67
9-Nov-00	82	80	84	88	52	52	53	49	47	43	49	48	46	43	47	41	42	60	63	59	70	74	74	70
10-Nov-00	75	73	74	75	71	78	79	59	47	44	46	44	42	44	47	49	58	63	65	64	70</			

	1st hour	2nd hour	3rd hour	4th hour	5th hour	6th hour	7th hour	8th hour	9th hour	10th hour	11th hour	12th hour	13th hour	14th hour	15th hour	16th hour	17th hour	18th hour	19th hour	20th hour	21st hour	22nd hour	23rd hour	24th hour
<b>Hourly Averaged Relative Humidity</b>																								
12 months RH average 4yr (%)	74.1	75.2	75.8	76.4	76.5	76.3	75.3	72.6	69.2	66.7	64.6	62.8	61.6	61.2	61.6	62.2	63.7	66.5	68.8	69.7	70.7	71.6	72.5	72.6
Month Jan average 4yr (%)	63.4	65.5	65.5	66.7	66.7	66.8	66.1	65.1	62.5	60.0	58.8	57.1	55.9	55.0	55.4	56.2	57.2	58.3	59.9	59.9	60.1	62.0	62.4	61.1
Month Feb average 4yr (%)	74.6	76.1	77.1	78.1	79.8	78.7	78.8	75.3	71.4	67.6	63.7	62.7	63.4	63.3	63.1	64.3	65.0	68.2	70.1	70.2	71.6	71.9	72.7	73.6
Month March average 4yr (%)	80.9	82.6	82.7	83.3	83.5	83.0	82.7	80.8	78.5	75.7	73.5	72.0	70.9	70.9	70.8	71.1	71.3	73.0	75.2	76.3	77.8	78.8	80.1	79.5
Month Apr average 4yr (%)	77.6	78.9	78.4	79.9	79.8	79.5	77.2	75.1	71.8	71.5	69.7	67.4	67.2	66.5	66.3	66.3	67.9	68.8	72.3	73.9	73.9	75.6	76.2	76.0
Month May average 4yr (%)	78.0	79.3	80.5	80.1	81.0	81.3	79.6	76.6	72.1	69.5	66.5	65.7	63.2	62.8	63.9	63.7	64.0	67.1	71.0	72.6	72.7	75.0	77.1	77.5
Month Jun average 4yr (%)	79.3	80.5	82.2	83.6	83.4	83.7	82.0	80.0	76.2	74.4	73.3	70.8	70.1	67.9	68.6	69.8	71.5	74.2	76.7	77.1	77.4	77.2	79.0	79.1
Month Jul average 4yr (%)	76.4	76.5	77.9	78.2	79.2	79.3	78.6	74.5	71.1	67.9	65.9	63.0	61.4	61.6	60.2	61.7	63.5	66.8	71.2	73.0	73.2	73.7	74.0	74.5
Month Aug average 4yr (%)	80.5	81.7	83.5	84.6	83.7	84.1	83.1	80.8	78.4	76.4	75.0	72.4	70.3	68.2	68.9	70.0	72.4	75.0	78.6	77.3	78.5	78.9	80.5	80.9
Month Sept average 4yr (%)	72.4	73.8	74.7	74.0	75.2	74.5	72.6	69.9	66.9	64.4	62.5	61.2	58.3	58.8	59.7	61.1	62.4	64.7	67.2	68.2	69.0	69.9	70.6	71.0
Month Oct average 4yr (%)	70.1	71.0	70.8	71.1	71.0	71.5	70.6	66.6	62.8	60.1	57.2	55.0	54.2	54.2	55.5	56.2	58.5	62.9	64.7	65.7	67.0	67.2	68.0	68.0
Month Nov average 4yr (%)	63.8	64.0	64.4	64.4	63.3	62.2	61.0	57.8	54.4	51.6	50.3	48.2	46.8	47.3	49.5	48.7	51.1	55.2	56.0	57.0	59.7	60.1	60.8	60.4
Month Dec average 4yr (%)	71.8	72.5	72.0	72.3	72.2	71.5	70.9	68.7	64.6	60.9	58.9	58.0	57.9	57.0	57.1	57.7	59.6	62.7	64.8	65.3	66.9	68.3	68.2	69.2



Hourly Temperature Data (°C) in Year 2007																								
	1st hour	2nd hour	3rd hour	4th hour	5th hour	6th hour	7th hour	8th hour	9th hour	10th hour	11th hour	12th hour	13th hour	14th hour	15th hour	16th hour	17th hour	18th hour	19th hour	20th hour	21st hour	22nd hour	23rd hour	24th hour
1-Jan-00	18.5	18.3	18	17.4	16.9	17.3	17.7	17.9	19	20.7	21.4	21.1	22.2	21.9	21.7	21.5	21.8	21.2	20.3	19.8	20	19.2	20	20
2-Jan-00	19.5	19.1	19.1	18.9	18.8	18.8	18.8	19.1	19.6	19.7	20.7	21.3	22.2	21.6	21.5	20.2	20.3	19.8	20.4	20	20	19.9	19.9	19.6
3-Jan-00	19.5	19.5	19.4	19.2	18.6	18.7	18.7	19.1	19.5	20.4	19.9	20.8	20.9	20.6	21.3	21.3	20.9	19.7	20.2	20.4	20.2	19.9	19.6	19.2
4-Jan-00	17.9	17.9	17.3	16.6	16.2	15.8	15.9	15.7	15.4	15.9	16.7	17.1	17.4	16.1	18.4	18.5	18.5	19.1	18.2	17.9	17.2	16.6	16.5	16.3
5-Jan-00	15.3	14.9	14.7	14.6	13.8	13.1	12.7	12.7	13.3	14.3	15.1	15.6	15.2	17.9	18.2	17.5	17.9	18.3	18	18	17.1	16.3	15.6	15.1
6-Jan-00	14.7	14.1	13.7	13.1	12.6	12.2	11.9	11.8	12.5	13.7	14.3	16.1	16.8	17.6	17.1	17.4	16.9	16.2	15.4	14.8	14.1	13.5	13.3	13
7-Jan-00	12.5	12.1	11.6	11.5	11.4	11.4	11.4	11.8	11.9	12.9	13.7	14.4	15.2	16	17	16.8	16.8	16.5	16	15.5	14.3	12.8	14.4	14.4
8-Jan-00	13.4	12.9	12.2	12	11.8	11.2	10.6	10.8	11.4	12.4	13.3	13.9	14.9	15.8	15.8	16.1	16.2	15.7	14.1	15	14.1	14.6	13.4	13
9-Jan-00	13	12	11.4	12.5	12.1	11.7	11.5	11.6	12.5	14	14.5	15.5	16.2	16.5	16.3	16.5	16.8	15.7	14.2	15	14.9	14.6	13.8	14
10-Jan-00	14.4	15.4	15.1	14.6	14.8	14.8	15.2	14.9	15.8	16.7	17.1	17.7	18.1	16.9	17.6	17.2	17.3	17.2	17.6	17.8	17.6	17.5	17.4	17.5
11-Jan-00	17.4	17.5	17.4	17.4	17.5	17.3	16.8	17	17.5	18.4	18.8	18.5	18.9	18.7	18.6	17.5	18	18.4	18.6	18.9	18.8	18.5	18.3	18.6
12-Jan-00	18.4	18.1	18	17.9	17.8	17.6	17.9	18	17.9	17.9	17.7	17.7	18	18.5	18.7	18.5	18.7	18.6	18.6	18.6	18.7	18.4	18.4	18.6
13-Jan-00	18	18.1	18.9	18.7	18.5	18.4	18.2	18.2	18.9	18.8	18.3	18.3	18.3	18.8	18.8	18.8	18.8	18.8	18.8	18.8	18.8	18.8	18.8	18.8
14-Jan-00	17.5	17.4	17.4	17.7	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5
15-Jan-00	19.3	19.3	19.2	19.1	19.3	19.5	19.3	19.9	20.9	20.3	20.9	21.1	22.5	22.9	22.8	23.4	22.9	22.5	22.2	22.9	22.7	22.2	21.5	21.4
16-Jan-00	20.4	20	19.9	18.9	18.7	18.4	17.7	17.9	17.5	17.2	17.3	17.2	15.6	16.3	16.3	15.8	15.2	15.4	14.6	14.3	13.8	14.1	13.6	13.9
17-Jan-00	14	13.6	13.6	13.5	13.4	13.3	13.3	13.2	14	14.7	14.9	15.8	16.4	16.8	17.2	17.9	17.9	17.5	17.5	17.7	16.4	15.6	16.1	16.2
18-Jan-00	16.2	16.1	16	15.9	15.8	15	15.1	15.1	15.3	15.5	15.5	15.1	17	17.1	17.3	17.1	17	17.1	16.5	16.8	15.6	15.4	16.5	17.2
19-Jan-00	17	16.9	16.8	16.5	15.9	16.4	16	16.4	17.5	17.7	17.6	17.9	18.4	18.4	18.6	18.8	18.4	18.5	18.5	18.8	18.5	17.5	18	18.1
20-Jan-00	17.1	17.2	17.1	16	16	16	16.2	15.9	15.5	15.6	15.3	15	14.5	14.4	14.1	14.3	14.3	14.2	13.7	14.1	14.6	14.6	14.6	14.7
21-Jan-00	14.6	14.3	14.5	14.7	14.7	15	14.7	15.1	15.6	15.4	17.1	17.3	17.9	17.8	18	16.6	16.5	16	15.6	15.2	15.2	15.1	15.2	15.3
22-Jan-00	15.6	15.9	15.4	15.6	15.6	15.9	16.1	15.8	15.3	15.8	15.3	15.2	15	15.7	15.2	16.9	16.5	17.3	16.9	16.3	16	15.4	14.5	13.8
23-Jan-00	13.2	12.7	12.4	12.1	11.8	11.7	11.6	11.8	12.4	12.8	13.6	13.9	14.8	15.6	15.8	15.3	15.4	15.5	15.3	14.1	13.2	13.7	13.5	14.1
24-Jan-00	13.8	12.8	13.5	13.8	13.5	13.6	13.2	12.7	13.4	14	14.3	14.4	14.4	14.8	15.5	15.8	15.6	15.7	15.7	15.9	15.6	14.2	14	14.8
25-Jan-00	14.7	13.1	12.5	13	13.7	13.4	13	13.2	13.8	14.4	14.9	16	16.1	16.3	16.8	16.7	17.1	17.4	17	16.6	15.5	14.3	13.4	12.3
26-Jan-00	11.4	11.1	10.6	10.5	10.6	10.8	11.1	11.3	12.2	12.9	13.8	14.9	16.5	16.7	17.4	17.7	18.8	18.3	17.6	17.5	17.2	16.6	16.4	16.2
27-Jan-00	15.4	15.1	15.1	14.5	13.9	13.6	13.7	13.6	14.1	14.7	15.9	16.8	17.7	19	18.5	19.2	18.4	17.9	17	16.5	16.2	15.4	15.2	15.2
28-Jan-00	14.5	13.6	13.5	11.2	11.2	10.4	9.8	10.2	13.7	14.9	16	17.2	17.2	17.9	18.3	18	17.6	16.3	14.2	14.2	13.2	12.3	12.9	14
29-Jan-00	14.3	14.4	14	13.6	11.3	11.5	11.7	12.6	15	16.1	16.6	17.1	18.2	19.3	19.3	19.9	19.9	19.7	16.9	16.7	16.3	16	15.6	15.2
30-Jan-00	15.1	14.1	14.1	12.7	13.3	12.6	13.4	16.2	18.2	19.1	19.7	20.6	20.5	21	21	20.4	20	19	16.8	17.8	16.5	17	16.1	17.2
1-Feb-00	15.5	15.7	15.1	14.7	14.2	15.9	17.6	17	17.3	18	18.6	19.8	20	19.7	20.3	19.7	20.2	19.4	19.1	18.3	16.6	17.1	16.1	16.7
2-Feb-00	15	14.6	13.4	12.2	12	11.5	11.2	12.8	14.8	15.8	17.1	17.4	17.5	18.4	18.8	19.5	19	17.7	15.2	15.4	15.9	14.5	15.1	16.1
3-Feb-00	15.3	15.1	14.8	14.2	13.8	13.6	13.7	14.1	15.2	16.8	17.6	18	19	18.8	18.4	18.5	18.5	17.2	15.7	15.3	16	16.1	16.9	16.9
4-Feb-00	15.1	15.2	15	14.7	14.7	14.7	14.8	17	17.3	18.3	20.4	20.4	21.5	21	19.9	19.9	19.6	20	19.7	18.5	18.3	18.3	18.7	18.7
5-Feb-00	16.1	18	17.7	17.7	17.1	16.6	18	19.1	20.1	21.4	22.5	22.1	22.5	21.4	22.2	21.2	20.9	19.3	19.6	19.2	18.1	19.3	18.9	18.9
6-Feb-00	18.3	18.3	18.7	18.8	16.9	16.9	16.8	17.6	19.3	20.9	21.3	21.5	22	22.4	22.6	22.8	22.5	22.8	21.6	20.7	20.5	20.4	21.1	21.1
7-Feb-00	20	20.1	19.4	19.5	19.4	19.8	18.8	19	20.9	23.2	24.8	24.6	24.5	25	25.4	24.6	25	24.5	23	22.3	21.9	21.8	21.5	21.5
8-Feb-00	21	20.8	21.2	20.4	20.5	19.8	20.1	20.1	21.2	21.3	22.3	24.1	25.4	25.2	25.4	25.1	24.8	24.2	23.4	23.4	23.4	23.2	22.4	22.6
9-Feb-00	22.2	20.5	20.9	20.2	20.4	20.2	20.3	20.4	20.8	22.3	24.7	25.1	24.5	25.4	25.7	25.2	24.7	23.8	22.6	22.6	22.4	22	21.6	21.3
10-Feb-00	21	20.2	20.3	19.5	20.2	20.1	19.9	20.2	20.4	21	20.7	20.7	21	21.4	21.9	22.1	21.7	21.5	21.6	21.4	21	21.4	21.6	20.7
11-Feb-00	20.9	20.5	20.2	19.9	19.9	19.5	19.5	19.5	19.4	19.8	20.8	20.5	20.3	20.6	21	20.5	20.1	19.6	19.6	19.5	19.7	19.6	19.7	19.8
12-Feb-00	19.9	19.4	19.2	19	18.8	19	18.5	18.6	19.5	20.3	21.7	22.5	23.2	23.6	23.2	22.8	22.1	21	20.5	20.7	19.8	20	20.1	21
13-Feb-00	20.9	20.8	20.4	21.5	21.5	21.4	22.2	22.6	22.4	23.4	24.3	25.1	24.6	24.7	24.3	23.8	23.7	23.2	22.3	21.8	21.9	21.6	21.6	22.2
14-Feb-00	21.6	21	20.8	20.4	21.1	20.4	19.7	20.8	22.3	23.2	23.2	23.2	23.9	23	23.4	23.7	24.3	23.5	23	22.9	23	23.1	22.3	22.2
15-Feb-00	21.4	21.8	21.5	20	19.4	19.6	19.4	19.6	19.7	19.9	19.5	18.9	19	19.4	19.8	20.3	19.9	20	19.9	20.2	20.6	20	20.7	20.5
16-Feb-00	20.3	19.9	19.8	18.9	18.9	18.8	19.4	20	20.9	21.5	22.7	22	22.6	23.9	23.6	23.6	23.2	22.1	22	21.8	21.8	22	21.8	22.5
17-Feb-00	22.5	22.1	22.4	22.7	21.9	22.6	22.6	23	23.9	23.5	24.1	24.3	24.1	24	23.4	23.9	24.5	24.1	23.8	24.3	23.6	23.9	23.8	23.9
18-Feb-00	23.9	24.2	23.8	22.8	22	22.2	21.8	23.1	23.4	22.8	24	24.1	24.9	25.4	25.2	24.7	24.3	24.4	24.3	23.3	20.6	19.9	20.1	19.7
19-Feb-00	18.6	18.4	19.4	19.1	19.8	19.5	19.7	19.5	20	20.8	21.1	21.4	20.8	20.5	20.9	21.7	21.1	20.7	20	20.5	20.3	20.7	20	20.9
20-Feb-00	18.4	19.4	19.2	19.2	19.2	19.2	19.2	19.6	20.2	20.9	20.5	22.1	22.1	22.5	22.6	21.5	21.9	21.4	20.4	20.5	20.5	20.6	21	20.9
21-Feb-00	18.3	18.9	18.9	18.9	18.7	18.8	18.8	19.2	20.2	20.9	21.2	22.1	22.4	22.3	23.1	22.4	22.6	21.6	20.6	20.2	20.2	20.2	19.8	19.5
22-Feb-00	19.3	19.7	18.2	18.2	17.6	18.3	17.5	19.3	20	22.2	23.4	23.5	23.5	23	22.3	22.1	21.7	21	20.8	20.6	20.8	20.6	20.6	20.6
23-Feb-00	20.6	20.3	19.9	19.4	19	19	19.1	19.4	19.7	20	20.3	21.2	20.7	20.3	20.6	20.1	19.9	19.7	19.4	19.9	20	19.7	19.9	20.1
24-Feb-00	19.7	19.8	19.5																					



	1st hour	2nd hour	3rd hour	4th hour	5th hour	6th hour	7th hour	8th hour	9th hour	10th hour	11th hour	12th hour	13th hour	14th hour	15th hour	16th hour	17th hour	18th hour	19th hour	20th hour	21st hour	22nd hour	23rd hour	24th hour
3-May-00	24.9	24.5	24.2	23.5	22.7	22.2	23.4	24.8	25.6	26.1	27.8	27.7	27.6	29.4	27.5	28	28.7	27.5	26.6	26.5	25.7	25.8	25.4	25.3
4-May-00	25.2	25.2	24.7	24.8	24.8	24.2	25.1	25.3	26.1	25.9	24.3	24	24.2	24	23.6	24	23.7	23.6	23.6	23.6	24	23.5	23.5	24.1
5-May-00	24.4	23.5	23.8	24	23.6	24.1	24.7	23.8	24.9	23.9	24.6	24.6	25.6	28	26.4	26.9	27.1	26.3	26.4	26.6	26.4	26.4	26.4	26.6
6-May-00	25.4	24.7	24.8	23.3	24.9	24.2	24.2	26.4	26.8	27.2	28.1	28	28.1	28	29.7	29.5	30.1	29.8	26.8	25.5	26.4	26	23.6	23.9
7-May-00	23.7	22.6	22.3	22.6	22.7	21.3	25.4	27.5	28.2	29.5	29.9	32.5	32.5	32.6	32	31.7	30.5	29.5	28.7	28.6	26.7	26.4	25.5	25
8-May-00	24.9	24.9	24.9	24.9	24.9	24.9	24.9	24.9	24.9	24.9	24.9	24.9	24.9	24.9	24.9	24.9	24.9	24.9	24.9	24.9	24.9	24.9	24.9	24.9
9-May-00	25.9	24.8	24.8	24.8	24.8	24.7	25.8	26.6	27.5	27.9	29.2	29.7	29.8	30.4	29.3	28.6	28	27.1	26.8	26.5	26.2	26.1	25.9	26.2
10-May-00	25.9	25.7	25.9	25.7	25.6	25.7	26.1	27.1	28.7	28.6	29.4	30.3	30.1	30.1	30.6	29.7	29	28.1	27.5	27.1	27.5	27.4	26.6	26.4
11-May-00	25.6	25.2	25.2	25	24.7	24.9	24.6	25.1	25.6	26.3	26.5	29.4	29.8	29.8	29.5	29.4	28.5	27.8	27.2	26.7	26.2	26.2	25.6	25.9
12-May-00	25.7	26.1	25.8	25.6	25.6	25.6	25.7	27.1	27.8	28.3	27.9	29.1	29.5	29.7	29.8	29.7	29.3	28.6	28.4	27.8	27.1	26.5	26.5	26.4
13-May-00	26.3	26.4	26.4	26.6	26	25.9	26.2	27.3	28.2	28.3	28.1	28.7	28.7	28.7	28.6	28.3	28.8	27.5	26.8	26	25.8	25.6	25.5	25.5
14-May-00	25.3	24.7	24.7	24.6	25.1	24.5	25.3	26.5	27.1	28.1	28.2	29.3	28.9	30.3	29.3	29.3	29.5	28	27.4	27.1	26.9	26.6	26.2	25.8
15-May-00	25.6	26.4	24.8	24.6	24.9	23.9	25.6	26.7	28.2	27.9	30.4	29.3	30.5	30.3	30.2	30.6	30	28	27	26.7	26.7	26.5	26.4	26.3
16-May-00	26.5	26.5	27.2	27.5	26.3	26.9	27	27.8	29	29.7	31	32.3	32.5	32.7	32.5	32.6	31.9	30.1	29.7	29.1	28.6	28.6	28	27.4
17-May-00	27.6	27	26.8	25.4	25.1	25.7	26.1	26.8	27.6	28.7	29.8	30.5	31.3	32.6	32.7	31.8	30.7	31	29.4	29.3	29	28.7	28.6	28.6
18-May-00	28.1	28.5	28.1	27.8	27.8	27.8	28.1	28.3	29.8	30.4	32.2	32.5	34.1	33.8	33.6	31.9	30.8	24.1	25.1	25.8	25.4	25.5	26	25.1
19-May-00	25.9	25.2	25.4	25.7	25.9	25.9	26.1	26.2	27.1	28	29	28.9	28.3	28.9	25.1	24.3	24.5	24.4	24.1	24.2	24.5	24.8	24	24
20-May-00	23.8	23.9	23.8	23.9	24	23.1	22.5	23.1	22.8	22.5	22.4	23.1	22.9	23	23	24.1	24.6	24.2	24.1	24.3	24.3	24.2	24.3	24.2
21-May-00	24	23.9	24	24	23.4	23.7	24.1	24.9	25.3	25.6	26.5	25.5	25.1	24.4	24.6	24.5	25.2	25.4	25.3	25.1	25	25.2	25.1	25.2
22-May-00	25.4	25.2	25.4	25.7	25.4	25.3	25.5	25.5	26	25.6	25.7	25.2	25.7	28	27.3	28.1	28	27.6	26.9	26.9	27.4	27.4	27.1	27.6
23-May-00	27.4	27.1	26.6	26.6	26.8	26.9	27.4	27.9	28.5	28.7	29.7	31.1	32	31.8	31.4	30.8	30.2	29.8	29.4	29.1	29.1	29.3	28.9	29
24-May-00	28.6	28.3	28.4	28.2	27.7	27.8	28.8	29.3	30.3	30.9	31.8	32.2	31.5	31.8	31.2	31.4	30.4	30.3	29.9	29.7	30	29.8	29.7	29.6
25-May-00	29.5	29.2	29.3	29.2	29	29.1	29.7	30.2	31.2	31	31.4	31.1	32.5	32.9	33	33.3	32.6	31.4	30.6	30.3	30.1	29.9	29.6	29.5
26-May-00	29.6	29.5	29.5	29	29.2	28.9	29.4	29.8	30.8	31.2	31.6	31.5	31.4	31.3	30.8	30.8	30.8	30.6	29.9	30	30	30.2	29.5	29.7
27-May-00	29.3	29.1	26.7	26.6	24.9	26.5	26.7	26.9	28.1	29.5	30.4	30.6	31.1	26.7	25.5	25.6	25.3	25.6	26.4	26.4	27	26.8	27	26.4
28-May-00	28.5	26.7	26.5	26.6	26.7	26.9	27.6	29.2	30.2	30.1	30.8	29	26.7	28.7	27.6	28.3	29	28.9	28	28.8	28.2	28.6	28.3	28.3
29-May-00	28.2	28.2	27.4	27.2	27.3	27.5	28.6	29.4	30.5	30	30.4	31	30.5	30.9	32.4	32	31.6	32.4	30.5	29.7	29	28.7	28.9	28.7
30-May-00	28.3	28.1	28.1	28.2	27.7	27.8	28.3	29.8	31	30.9	31.1	31.7	31.4	32.3	32.5	32.4	31.4	31.7	30.2	29.4	29.3	29.3	29.4	29.4
31-May-00	28.9	28.7	28.6	28.5	27.3	27.7	28.1	29.6	30.3	31	31.2	31	30	30.6	30.7	31.5	31.2	30.2	28.6	28.6	28.4	28.5	28.5	28.9
1-Jun-00	29.7	29.2	29.3	29.2	29	29.2	29.3	30.3	31	31.2	32.4	33.1	32.4	33.1	33.2	32.4	31.8	31.1	30.2	30	29.9	29.9	30	29.2
2-Jun-00	29.3	29.1	28.1	28.8	28.9	28.3	29.3	29.8	30.2	31.2	32.2	32.5	32.2	33.1	32.2	32.6	32	31.4	30.9	30.6	30.2	30.1	30.1	29.9
3-Jun-00	29.7	29.5	29.4	29.1	29.2	29.1	29.7	30.3	31.6	31	32.1	32.8	33.3	33.3	33.7	32	32	31.8	30.7	30.2	30	29.9	29.9	30
4-Jun-00	29.8	29.4	29.4	29.3	29.1	29.1	30.1	30.6	31.2	32.1	32.4	33	33.2	33.2	33.1	33.2	31.6	30.7	30.4	30.1	30	29.9	30.2	30
5-Jun-00	29.6	29.5	29.2	28.7	28.6	28.8	29.4	29.8	31.1	31.6	32	32.9	33.2	33.4	33.1	33.1	31	30.5	30.2	30	30	29.7	29.5	29.5
6-Jun-00	29.3	29	29	29	28.9	29.2	29.7	30.3	31.1	31.1	29.3	31.9	32.4	32.7	31.8	30.9	31.1	30.5	30.5	30.2	30	30.1	29.9	29.9
7-Jun-00	30	29.9	29.1	29.3	29	29.2	27	28	28.8	30.5	29.9	30.2	30.2	30.4	30.7	31	30.8	30.3	30.3	30	29.9	30	29.9	29.8
8-Jun-00	30	29.7	29.7	29.7	29.5	29.6	30	29.7	28.7	25.2	28.1	28.7	29.1	30.5	30.3	27.5	28.6	29.5	29.2	29.4	29.7	29.7	29.9	29.6
9-Jun-00	29.6	29.4	29.4	29.2	29.1	29.1	29.5	29.8	30.7	31.1	32	31.7	31.1	30.5	30.3	30.6	27.4	27.7	27.9	29.2	29.7	29.6	29.8	29.7
10-Jun-00	29.6	29.5	29.4	29.5	24.7	25.3	26	25.5	26.7	25.8	26.2	25.5	25.2	25.8	25.5	25.7	26.8	27.4	27.2	27.1	27	27	26.8	27
11-Jun-00	27	26.8	26.8	26.7	27.2	26.8	27.1	28	28	28.4	28.9	29.4	30.2	30.1	31.1	31.1	29.9	29.4	29.4	29.2	29.1	29.2	28.7	28.7
12-Jun-00	28.5	28	27.9	27.7	27.7	27.6	28.1	28.7	28.7	28.6	28.8	29.6	30.5	30.6	30.4	29.8	29.5	29.2	28.3	26.8	27.4	27.9	27.9	28.5
13-Jun-00	28.7	28.5	28.2	28.6	29	29.1	29.6	29.9	30.3	31	31.1	31.6	32	32.6	31.2	31.1	30.6	30.2	30.2	30	26.6	26.6	26.9	26.6
14-Jun-00	27.3	27.2	27.9	24.8	25.4	26.3	27.6	28.4	27.4	27.1	27.2	27.8	26.9	27.5	28.7	28.7	28.2	27.2	25.5	25.2	25.8	26	26.1	26.2
15-Jun-00	25.7	26	26.3	26.1	26.2	25.5	24.9	25.9	26.9	27.1	27.8	28.5	27.9	28.5	29	28.4	29	28.4	27.9	28.6	27.7	28.1	27.7	27.7
16-Jun-00	27.1	26.7	27	26.7	27.2	26.6	27.9	28.5	28.6	29.1	30.2	29.4	30.6	30.5	30.8	29.7	29.7	29.2	28.9	28.7	29.1	29.1	29	28.9
17-Jun-00	28.3	28.6	28.1	27.9	27.7	26.8	27.7	29.1	29.3	29.8	30.4	30.9	29.4	30.2	30	29.5	29.4	28.9	28.7	28.4	28.1	28.1	28	27.5
18-Jun-00	27.4	27.4	26.9	26.9	26.7	26.9	27.1	28.5	30.7	31	30.9	31.1	32.2	31.8	32	32	29.6	29.1	29.1	29.7	28.7	28.4	28.5	28.7
19-Jun-00	28.2	27.9	29.1	28.1	27.8	27.4	28.5	29.3	29.6	31	31.6	31.2	31.4	31.9	32.7	32.5	32.4	32.2	31.5	29.4	29.7	28.7	28.4	28.5
20-Jun-00	28.7	28.5	28.7	28.6	28.2	28.1	28.9	29.2	31	31.7	31.1	31.4	32.2	32.8	32.4	32.5	32.5	31.5	30.8	30	29.7	29.5	29.4	29.2
21-Jun-00	29.5	28.9	28.7	28.9	28.7	28.8	29.5	29.1	30.5	30.6	31.4	31.8	32.5	32.7	33.3	32.5	31.6	31	30.1	29.8	29.5	29.2	29.6	29.2
22-Jun-00	29.1	29	29	28.2	26.5	28.3	29	29.8	30.4	31.2	31.8	33.2	33.4	33.1	32.8	32.9	33.1	31.5	31.1	30.4	30.4	30.3	30.4	30.1
23-Jun-00	30	30	29.7	29.7	29.4	29.6	30.2	30.6	31.1	31.6	32.3	34	34.1	34.8	34.1	34.2	32.5	31.3	30.9	30.4	30.5	30.6	30.2	30.1
24-Jun-00	30	30.1	29.9	29.2	29.2	29.3	29.6	30.2	30.4	32.3	32.7	32.7	33.5	33.5	33.9	33	32	31.2	30.6	30.3	30.3	29.7	29.9	29.7
25-Jun-00	29.9	29.3	29.3	29.1	29.1	28.9	30	30.9																

	1st hour	2nd hour	3rd hour	4th hour	5th hour	6th hour	7th hour	8th hour	9th hour	10th hour	11th hour	12th hour	13th hour	14th hour	15th hour	16th hour	17th hour	18th hour	19th hour	20th hour	21st hour	22nd hour	23rd hour	24th hour	
5-Sep-00	26.5	27	26.5	26.3	26.1	25.9	26	26	26.6	27.5	28.5	28.8	28.6	28.4	29.2	28.1	29.4	28.6	28.2	28.1	27.5	27.4	27.1	27	
6-Sep-00	26.3	26.3	26.5	25.9	25.4	25.6	25.5	25.9	26.3	27.1	27.8	28.1	28.8	28.9	29.2	29.1	28.6	28.4	28.4	28.4	28.3	27.3	27.7	27.5	
7-Sep-00	26.9	26.6	26.2	26	25.6	25.1	26.4	27	28.7	28.4	29.2	29.7	30.5	30	29.4	29.7	29.1	28.9	28.4	28.5	28.1	28	27.9	28	
8-Sep-00	27.1	26.7	26.6	26.9	26.8	26.5	27.1	27.4	27.9	28.8	30.3	30.7	32	31.7	31.7	30.8	30.4	29.5	28.9	28.2	28.2	28.1	28.2	28.7	
9-Sep-00	28.2	28.2	28	27.9	27.6	27.6	27.7	28.4	28.9	28.6	30.2	29.1	29.5	29.3	30	30	29.5	29	28.8	28.9	28.3	28.3	27.9	28.5	
10-Sep-00	28.1	28.1	27	27.6	27.6	27.5	27.7	28.6	28.9	28.7	30.5	30.6	31.3	31	31.3	30.8	29.7	29.7	29	28.7	28.7	28.8	28.5	28.4	
11-Sep-00	28.1	27.9	27.6	27.2	27.2	27.2	27.4	28.3	29.4	30.4	31.5	31.7	32.4	31.9	31.6	31.1	30.8	29.2	28.4	29.7	28.7	28.4	28.7	28.4	
12-Sep-00	28.8	28.8	28.5	28.6	28.7	28.6	28.7	27.9	29.5	30	31	31.3	32	32.1	31.9	31.6	31.4	29.9	28.9	28	28.3	28.1	28	27.9	
13-Sep-00	27.8	28	27.5	27.2	27.2	27	27.4	28.9	29.7	30.9	32.4	32.8	32.9	32.7	32.3	31.5	30.9	30.1	29.6	29.3	29.6	29	29	28.8	
14-Sep-00	28.1	28	27.6	27.1	27	27.1	27.2	28.6	29.7	30.2	30.3	31.5	31.9	32.1	32.8	32.1	31.5	30.9	31	30.9	29.7	29	28.2	28.5	
15-Sep-00	28	27.9	27.7	27	27.5	27.9	28.5	28.7	29.6	29.9	30.4	32	33.8	33.9	33.3	32.8	31.2	30.9	31	30.9	29.7	30.4	30.5	29.5	
16-Sep-00	29.9	29.3	29.2	28.8	28.6	29.1	28.1	28.8	30.9	30.9	30.9	30.9	31.1	29.9	31.2	31	30.8	30.6	28.4	29.2	28.7	28.6	29	28.2	
17-Sep-00	28.7	28.5	27.6	27.6	27	27.2	27.6	28.3	29.1	30.2	31.3	30.3	31.4	31.4	32	32.1	31.6	30.9	30.2	29.7	29	27.8	27.8	28.8	
18-Sep-00	28	27	27.1	28.1	28.3	28.2	27.8	28.1	28.4	29.9	30.3	30	30.7	31.3	31.4	31.5	31	30.5	30	30.2	29.8	29.7	28.9	28.7	
19-Sep-00	28.4	27.9	27.6	27.2	26.6	26.2	26	25.4	27.1	27.3	28.1	28.6	29.6	30.2	30.3	30.3	30.1	29.8	30.5	30.3	30.4	30.1	29.4	29.4	
20-Sep-00	28.8	28.5	28.1	27.7	27.5	27.3	27.2	27.6	28	28.3	28	28.8	30.5	30.8	30.5	29.8	30.5	29.6	29.7	30.1	29.6	30	29.4	28.5	
21-Sep-00	28.4	26.7	26.2	26.3	26.2	27	27.3	27.6	26.5	26.9	30.5	31.1	31	31.2	30.7	30.8	30.3	29.7	29	28.9	30.2	29.1	29.4	29.4	
22-Sep-00	28.9	28.3	27.9	27.5	27.3	27.1	26.8	27.6	28.6	29.6	31.6	31.4	31.6	31.6	32	32	31.6	30.9	30.5	30	29.7	29.3	29.2	28.7	
23-Sep-00	28.3	28	27.7	27	26	26.8	26.2	26.3	25.7	25.5	25.9	26.4	27.2	27.1	28.2	27.7	27.7	26.1	26.2	25.4	25.4	25.4	25	24.7	
24-Sep-00	24.5	24.7	24.7	26.7	27	26.6	26.4	27.4	26.6	26	26.3	27	26.4	26.5	25.4	25.8	26.5	26.4	26.4	26.4	25.9	26.5	26.5	26.6	26.9
25-Sep-00	27.1	27.2	27.1	26.5	26.7	26.7	27	27.7	27.2	28.4	29.7	29	28	27.6	27.9	28.3	28.6	28.4	27.6	27.7	27.8	27.6	27.6	27.6	
26-Sep-00	27.4	27.3	27.1	26.7	26.7	26.7	27.1	28.2	29	29.8	29.5	29.8	30.4	31.8	31.1	31.5	30.8	29.2	29.1	28.7	28.5	28.2	28	28	
27-Sep-00	27.2	26.9	26.9	26.6	26.5	26.5	26.7	28.2	28.9	29.6	30.7	31.4	31.5	30.9	30.7	30.5	30.2	29.5	28.3	27.9	28.3	28.2	27.6	27.7	
28-Sep-00	27.5	27.4	27.2	27	26.8	27	27	26.1	28	30	31.2	32	31	31.7	31	30.6	30.1	29.9	29.7	28.9	28.9	28.4	28.4	28.3	
29-Sep-00	28	27.7	28	27.6	27.8	27.7	27.8	28.2	28.8	29.9	30.9	31	32.1	32.6	31.9	30.9	30.1	30	30.1	30	30.1	30	29.2	29.2	
30-Sep-00	28.7	28.7	28.5	28	27.8	28.8	27.6	29.1	30.1	31.2	31.6	33.4	33.5	33.4	33.7	33.4	32.9	31.4	29.7	29.6	29.6	29.6	29.5	29.6	
1-Oct-00	29.3	28.8	29	29.1	29	29.1	29.1	29.4	30	30.7	31.2	32.7	32.2	31.9	32.4	31.7	31.1	30.2	30.1	29.3	29.6	29.2	29.5	29.5	
2-Oct-00	29.3	27.7	26.5	28.2	26	26.6	27.7	28.1	29	29.5	29.7	30.1	30.8	29.8	29.4	27	26.1	27.1	26.8	27.9	27.9	28.1	27.6	27.1	
3-Oct-00	27.7	27.7	26.6	25.9	26.5	26.7	26	26.1	26.5	26.9	27.6	28.7	29.2	29.2	29	28.8	28.7	28.9	28.1	28.7	27.5	27.9	27.7	28	
4-Oct-00	27.7	27.7	27.4	27.2	27.2	27.2	27.5	28.3	28.2	30	30.8	30.5	31.9	30.6	29.5	29.1	28.7	27.6	27.7	27.4	28	28	27.7	27.7	
5-Oct-00	27.3	26.8	26.2	26.1	26.2	26.3	26.7	27.2	27.8	28.1	28.3	29.4	29.8	30.7	31.4	31.8	31.5	30.7	29.5	29.7	29.8	28.3	27.8	28.2	
6-Oct-00	27.1	27.6	27.4	27.1	26.9	26.5	27.4	28.4	28.9	29.8	30.5	31.4	31.8	32.6	33.1	33	32.8	31.6	31.1	30.6	30.4	29.5	29.5	29.2	
7-Oct-00	28.9	29.2	28.6	28.6	29.7	28.2	28.4	29.1	30.1	30.9	31.7	32.2	32.6	32.8	33	32.2	31.8	30.9	30.7	30.5	30.5	30.3	30	30	
8-Oct-00	29.8	29.1	29.5	28.6	28.4	28.6	28.5	28.6	29.6	29.8	29.6	29.9	30.1	30.8	31.1	32	31.1	30.7	30.2	29.8	29.1	28.8	29.1	27.4	
9-Oct-00	28.9	28.3	28.5	28.2	24.8	24.4	24.6	25.1	26.4	26.8	27.7	28.7	29.5	28.7	29	28.9	28.4	27.8	27.6	27.1	27	27.5	27.3	27.3	
10-Oct-00	24.4	25	26.5	24.8	24.8	24.4	24.4	24.6	25.1	26.4	26.8	27.7	28.7	29.5	28.7	29	28.9	28.4	27.8	27.6	27.1	27	27.5	27.3	
11-Oct-00	26.6	26.6	26.6	25.4	25.4	25.2	25.3	25.6	26.8	26.8	27.7	29.7	29.4	29.5	29.2	29.3	29.1	28.2	27.8	27.5	27.2	27.3	27.1	27.1	
12-Oct-00	27.1	27.1	26.8	26.6	26.5	26.5	26.2	26.6	27.5	27.4	27.2	27.6	29.9	29.5	29.2	29.3	29.1	27.1	26.9	27.1	26.6	26.5	26.6	26.7	
13-Oct-00	26.6	26.7	26.9	26.6	26.4	26.2	26.1	26.6	27.5	27.9	29.1	29.4	28.7	29.2	29.5	29	27.8	27.1	26.6	25.4	26	26.2	26.5	26.5	
14-Oct-00	26.4	26.4	26.2	26.3	26.8	25	25.4	25.7	26.6	27.2	27.7	28.3	28.3	28.5	28.8	28.6	28.6	28.1	27.9	27.2	27.2	26.8	26.8	26.1	
15-Oct-00	25.4	25.1	24.7	24.6	24.4	24	23.8	24.4	25.3	25.5	26.6	27.6	27.3	28	27.8	27.9	27.6	26.9	26.1	25.3	25	24.9	24.8	24.7	
16-Oct-00	24.2	23.8	23.5	23.1	23	23	23.2	23.8	25.1	24.9	25.6	27.2	27.6	27.8	27.6	28.1	27.8	26.7	26.4	26.1	25.7	25.1	24.7	24.2	
17-Oct-00	24	23.3	23	23	22.7	22.7	22.7	23.2	24.2	25.2	25.7	26	26.9	27.1	27.4	27	26	25.6	25.6	25.7	24.7	24.4	23.9	24.7	
18-Oct-00	24.2	24.1	24.3	24.2	23.9	23.5	23.7	23.8	24	25.2	26.1	26.4	26.5	27.7	26.9	26.5	26.7	26.9	26.5	25.7	25.5	24.7	24.9	25	24.6
19-Oct-00	24.2	23.2	23	23.1	22.6	23.1	23.5	24	24.4	25.9	26.4	27.5	28.1	28.3	27.8	28.2	28.4	27.8	26.9	26.8	26.3	26.2	26.3	26.2	
20-Oct-00	23.9	22.9	22.8	22.4	21.7	20.9	20.8	23.5	25.4	26.4	26.7	28.9	28.1	28.7	27.5	27.5	26.5	25.4	25.1	24.9	24.9	24.7	24.5	25.3	
21-Oct-00	24.5	24.2	24	23.6	23.5	23.2	23.2	24	25.1	25.9	26.4	26.5	27.4	27.6	26.9	27	26.1	25.2	24.3	24.3	24.3	24.1	24.5	24.5	
22-Oct-00	24.1	23.5	23.4	23.2	23.4	23.2	23.2	24.5	24.6	25.8	26.9	27	27.8	27.5	27.4	26.8	26.5	26.8	24.7	24.5	24.7	24.6	24.6	24.7	
23-Oct-00	24.3	24.2	23.8	23.7	23.6	23.5	23.5	24.5	24.8	26.4	27.1	27.6	28.6	27.9	29.2	27.6	27.5	28.1	25.7	25.3	25.2	24.9	25	25.2	
24-Oct-00	25	24.7	24.6	24.5	24.3	24.2	24.3	25.2	25.8	27.1	28.1	29.4	29.5	30.3	29.2	28.5	28.4	28.6	26.5	26	25.7	25.6	26	26	
25-Oct-00	25.3	25.2	25.1	25	24.9	24.6	24.5	25.3	26.2	26.7	28.1	29.2	29.9	29.4	29.3	29.3	28.9	28.9	27.2	27.5	26.8	26.6	26.1	26	
26-Oct-00	25.2	25.2	25	24.8	24.5	24.9	25.3	26.2	26.2	27.9	28.6	29.3	29.9	29.6	29.3	29.3	28.9	28.5	26.7	26.8	26.3	26.2	26.5	26.4	
27-Oct-00	25	24.7	24.7	24.6	24.8	24.8	24.7	25.5	26.2	27.3	27.7	27.9	28	29.9	27.7	26.9	26.5	25.2	25.1	25.2	25.2	24.8	24.4	24.5	
28-Oct-00	24.9	24.7	24.6	24.7	24.5	24.3																			

Hourly Averaged Temperature	1st hour	2nd hour	3rd hour	4th hour	5th hour	6th hour	7th hour	8th hour	9th hour	10th hour	11th hour	12th hour	13th hour	14th hour	15th hour	16th hour	17th hour	18th hour	19th hour	20th hour	21st hour	22nd hour	23rd hour	24th hour
12 months Temp average 4yr (deg C)	23.7	23.4	23.2	23.0	22.9	22.8	23.0	23.5	24.2	24.8	25.4	25.9	26.2	26.4	26.4	26.3	25.9	25.3	24.7	24.5	24.3	24.1	24.0	23.9
average 4yr (deg F)	74.6	74.2	73.7	73.4	73.2	73.0	73.3	74.3	75.5	76.6	77.6	78.5	79.2	79.5	79.8	79.3	78.6	77.5	76.5	76.2	75.7	75.5	75.1	
Month Jan	15.9	15.6	15.4	15.1	14.8	14.7	14.6	14.8	15.5	16.1	16.7	17.2	17.7	18.1	18.3	18.2	18.1	17.7	17.2	17.1	16.7	16.4	16.1	16.2
average 4yr (deg C)	15.9	15.6	15.4	15.1	14.8	14.7	14.6	14.8	15.5	16.1	16.7	17.2	17.7	18.1	18.3	18.2	18.1	17.7	17.2	17.1	16.7	16.4	16.1	16.2
average 4yr (deg F)	60.6	60.0	59.7	59.1	58.7	58.5	58.3	59.7	60.0	61.0	62.0	63.0	63.9	64.6	64.9	64.7	64.5	63.8	62.9	62.8	62.1	61.5	61.0	61.2
Month Feb	19.7	19.4	19.1	18.7	18.6	18.7	18.6	19.1	19.8	20.7	21.5	21.9	22.0	22.3	22.2	22.2	21.8	21.2	20.7	20.6	20.3	20.2	20.2	20.3
average 4yr (deg C)	19.7	19.4	19.1	18.7	18.6	18.7	18.6	19.1	19.8	20.7	21.5	21.9	22.0	22.3	22.2	22.2	21.8	21.2	20.7	20.6	20.3	20.2	20.2	20.3
average 4yr (deg F)	67.4	67.0	66.4	65.7	65.5	65.7	65.5	66.3	67.8	69.2	70.7	71.4	71.6	72.1	72.0	71.9	71.3	70.2	69.2	69.1	68.6	68.4	68.3	68.5
Month March	20.5	20.2	20.0	19.8	19.6	19.7	19.7	20.1	20.4	21.1	21.6	22.1	22.4	22.5	22.4	22.2	22.1	21.8	21.4	21.3	21.0	20.9	20.7	20.9
average 4yr (deg C)	20.5	20.2	20.0	19.8	19.6	19.7	19.7	20.1	20.4	21.1	21.6	22.1	22.4	22.5	22.4	22.2	22.1	21.8	21.4	21.3	21.0	20.9	20.7	20.9
average 4yr (deg F)	68.8	68.3	67.9	67.7	67.6	67.5	67.5	68.1	68.7	70.0	71.0	71.8	72.3	72.4	72.3	72.0	71.9	71.2	70.5	70.3	69.8	69.6	69.3	69.6
Month Apr	21.6	21.5	21.3	21.1	21.1	21.0	21.4	21.8	22.5	22.9	23.2	23.7	23.8	24.0	24.1	24.0	23.7	23.2	22.8	22.5	22.2	22.0	21.8	21.8
average 4yr (deg C)	21.6	21.5	21.3	21.1	21.1	21.0	21.4	21.8	22.5	22.9	23.2	23.7	23.8	24.0	24.1	24.0	23.7	23.2	22.8	22.5	22.2	22.0	21.8	21.8
average 4yr (deg F)	70.9	70.6	70.4	70.0	69.9	69.9	70.5	71.3	72.5	73.3	73.8	74.6	74.9	75.2	75.4	75.3	74.7	73.8	73.1	72.4	71.9	71.6	71.3	71.2
Month May	26.2	26.0	25.8	25.7	25.5	25.4	25.9	26.7	27.6	28.0	28.8	29.1	29.4	29.6	29.4	29.3	29.1	28.2	27.5	27.2	27.1	26.9	26.6	26.6
average 4yr (deg C)	26.2	26.0	25.8	25.7	25.5	25.4	25.9	26.7	27.6	28.0	28.8	29.1	29.4	29.6	29.4	29.3	29.1	28.2	27.5	27.2	27.1	26.9	26.6	26.6
average 4yr (deg F)	79.2	78.8	78.4	78.3	77.8	77.6	78.6	80.1	81.6	82.4	83.8	84.4	85.0	85.3	84.9	84.6	84.3	82.8	81.6	81.0	80.8	80.5	79.9	79.8
Month Jun	28.8	28.6	28.2	28.0	28.0	27.9	28.5	29.1	29.7	30.0	30.2	30.7	30.9	31.2	31.2	30.8	30.3	29.8	29.2	29.1	29.0	29.0	28.8	28.7
average 4yr (deg C)	28.8	28.6	28.2	28.0	28.0	27.9	28.5	29.1	29.7	30.0	30.2	30.7	30.9	31.2	31.2	30.8	30.3	29.8	29.2	29.1	29.0	29.0	28.8	28.7
average 4yr (deg F)	83.8	83.4	82.8	82.4	82.4	82.3	83.3	84.3	85.4	85.9	86.4	87.2	87.6	88.2	88.1	87.5	86.6	85.6	84.6	84.4	84.2	84.2	83.8	83.7
Month Jul	29.3	29.2	29.0	29.0	28.9	28.8	29.2	29.9	30.7	31.2	31.8	32.4	32.6	32.7	33.0	32.6	32.0	31.3	30.5	30.1	29.9	29.8	29.7	29.7
average 4yr (deg C)	29.3	29.2	29.0	29.0	28.9	28.8	29.2	29.9	30.7	31.2	31.8	32.4	32.6	32.7	33.0	32.6	32.0	31.3	30.5	30.1	29.9	29.8	29.7	29.7
average 4yr (deg F)	84.7	84.6	84.3	84.2	84.0	83.9	84.5	85.9	87.2	88.1	89.3	90.3	90.8	90.9	91.4	90.7	89.6	88.3	86.9	86.1	85.9	85.7	85.5	85.4
Month Aug	28.2	28.1	27.8	27.6	27.6	27.6	27.8	28.5	28.9	29.4	29.7	30.3	30.6	31.0	31.1	30.7	30.1	29.5	29.1	28.8	28.5	28.5	28.3	28.2
average 4yr (deg C)	28.2	28.1	27.8	27.6	27.6	27.6	27.8	28.5	28.9	29.4	29.7	30.3	30.6	31.0	31.1	30.7	30.1	29.5	29.1	28.8	28.5	28.5	28.3	28.2
average 4yr (deg F)	82.8	82.6	82.1	81.7	81.7	81.7	82.1	83.3	84.1	84.9	85.4	86.5	87.1	87.8	87.9	87.3	86.2	85.1	84.3	83.9	83.3	83.2	82.9	82.8
Month Sept	27.8	27.6	27.4	27.3	27.1	27.0	27.2	27.9	28.5	29.1	29.8	30.1	30.8	30.7	30.8	30.5	30.2	29.6	29.0	28.8	28.7	28.6	28.3	28.2
average 4yr (deg C)	27.8	27.6	27.4	27.3	27.1	27.0	27.2	27.9	28.5	29.1	29.8	30.1	30.8	30.7	30.8	30.5	30.2	29.6	29.0	28.8	28.7	28.6	28.3	28.2
average 4yr (deg F)	82.1	81.7	81.4	81.1	80.7	80.6	80.9	82.3	83.4	84.5	85.6	86.2	87.4	87.2	87.4	86.9	86.4	85.2	84.3	83.9	83.6	83.4	83.0	82.8
Month Oct	25.8	25.6	25.3	25.2	25.0	24.8	24.8	25.4	26.2	26.8	27.5	28.2	28.6	28.8	28.7	28.5	28.1	27.3	26.8	26.6	26.4	26.2	26.0	26.0
average 4yr (deg C)	25.8	25.6	25.3	25.2	25.0	24.8	24.8	25.4	26.2	26.8	27.5	28.2	28.6	28.8	28.7	28.5	28.1	27.3	26.8	26.6	26.4	26.2	26.0	26.0
average 4yr (deg F)	78.5	78.0	77.6	77.3	76.9	76.7	77.7	79.1	80.3	80.3	81.6	82.8	83.5	83.8	83.7	83.4	82.5	81.1	80.2	79.9	79.5	79.2	78.9	78.9
Month Nov	20.8	20.4	20.1	19.9	19.6	19.5	19.4	19.9	20.7	21.6	22.3	23.0	23.6	24.0	23.8	23.8	23.4	22.6	22.2	22.1	21.7	21.5	21.2	21.2
average 4yr (deg C)	20.8	20.4	20.1	19.9	19.6	19.5	19.4	19.9	20.7	21.6	22.3	23.0	23.6	24.0	23.8	23.8	23.4	22.6	22.2	22.1	21.7	21.5	21.2	21.2
average 4yr (deg F)	69.4	68.8	68.1	67.8	67.3	67.0	66.8	67.9	69.3	71.0	72.2	73.5	74.5	75.1	74.8	74.9	74.2	72.6	72.0	71.7	71.1	70.6	70.2	70.2
Month Dec	19.2	18.8	18.6	18.4	18.2	18.2	18.1	18.4	19.3	20.1	20.8	21.3	21.6	21.9	21.9	21.8	21.4	20.7	20.3	20.1	19.8	19.5	19.3	19.3
average 4yr (deg C)	19.2	18.8	18.6	18.4	18.2	18.2	18.1	18.4	19.3	20.1	20.8	21.3	21.6	21.9	21.9	21.8	21.4	20.7	20.3	20.1	19.8	19.5	19.3	19.3
average 4yr (deg F)	66.5	65.9	65.4	65.1	64.8	64.7	64.6	65.2	66.7	68.1	69.5	70.3	70.8	71.4	71.5	71.3	70.5	69.3	68.5	68.1	67.6	67.2	66.8	66.8

Calculation of Space Averaged Speed for HKLR(2031)

Bin	Peak hour				Non-Peak hour			
	MGV, HGV & bus		Others		MGV, HGV & bus		Others	
	VMT	Fraction	VMT	Fraction	VMT	Fraction	VMT	Fraction
0-5		0.0		0.0		0.00		0.0
5-10		0.0		0.0		0.00		0.0
10-15		0.0		0.0		0.00		0.0
15-20		0.0		0.0		0.00		0.0
20-25		0.0		0.0		0.00		0.0
25-30		0.0		0.0		0.00		0.0
30-35		0.0		0.0		0.00		0.0
35-40		0.0		0.0		0.00		0.0
40-45	10198	100.0		0.0	10198	100.00		0.0
45-50		0.0		0.0		0.00		0.0
50-55		0.0		0.0		0.00		0.0
55-60		0.0		0.0		0.00		0.0
60-65		0.0	5639	100.0		0.00	5639	100.0
65-70		0.0		0.0		0.00		0.0
70-75		0.0		0.0		0.00		0.0
75-80		0.0		0.0		0.00		0.0
80-85		0.0		0.0		0.00		0.0
85-90		0.0		0.0		0.00		0.0
Total	10198	100.00	5639	100.00	10198	100.00	5639	100.0



Calculation of Space Averaged Speed for BCF\_XB (2031)

Bin	Peak and Non-peak hour	
	All vehicles	
	VMT	Fraction
0-5		0.0
5-10		0.0
10-15		0.0
15-20		0.0
20-25		0.0
25-30		0.0
30-35	5345	100.0
35-40		0.0
40-45		0.0
45-50		0.0
50-55		0.0
55-60		0.0
60-65		0.0
65-70		0.0
70-75		0.0
75-80		0.0
80-85		0.0
85-90		0.0
Total	5345	100.00

Calculation of Space Averaged Speed for MLH and Airport Road [2011]

Bys	Peak hour																																
	MC-1		MC-3		MC-4		MC-5		MC-6		MC-7		MC-8		MC-10		MC-11		Taxi-3		Taxi-4		Taxi-5		Taxi-6		Taxi-7		Taxi-8		Taxi-10		
	VMY	Fraction	VMY	Fraction	VMY	Fraction	VMY	Fraction	VMY	Fraction	VMY	Fraction	VMY	Fraction	VMY	Fraction	VMY	Fraction	VMY	Fraction	VMY	Fraction	VMY	Fraction	VMY	Fraction	VMY	Fraction	VMY	Fraction	VMY	Fraction	
5-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
10-15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
15-20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
20-25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
25-30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
30-35	606.1	2.5	2.0	0.7	71.2	0.8	28.3	5.1	47.8	0.8	19.3	0.8	56.1	0.8	58.5	5.7	62.2	2.1	178.1	1.0	30.7	0.8	20.4	5.7	35.7	5.8	28.8	5.8	19.3	5.8	2.2	4.6	
35-40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
40-45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
45-50	232.1	0.9	1.8	0.6	55.5	0.7	6.1	1.1	38.8	0.7	2241.0	98.5	6572.2	98.5	862.6	83.7	23.8	1.0	108.8	1.0	4.7	0.8	3.1	0.8	580.0	83.2	453.1	93.4	308.2	93.2	44.5	94.0	
50-55	12517.0	49.7	158.7	45.7	4877.8	55.2	240.5	43.4	3125.7	55.2	0.0	0.0	0.0	0.0	0.0	0.0	1219.0	49.3	5837.1	50.1	251.8	47.8	170.8	47.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
55-60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
60-65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
65-70	11458.8	48.8	120.9	43.2	3655.8	43.2	278.0	50.4	2440.0	43.2	0.0	0.0	0.0	0.0	0.0	0.0	1158.5	47.0	6337.3	47.4	239.3	45.4	182.3	45.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
70-75	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
75-80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
80-85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85-90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	24395.0	100.0	281.3	100.0	8460.4	100.0	554.0	100.0	5650.3	100.0	2275.1	100.0	6672.9	100.0	707.9	100.0	2451.3	100.0	11281.4	100.0	528.5	100.0	356.4	100.0	609.3	100.0	498.0	100.0	328.7	100.0	47.4	100.0	

Assume the vehicles are traveling on MLH at midday speed for the period 07:00 - 23:00 as the % of daily traffic is close to the peak hour

Bys	Non-peak hour																																
	MC-1		MC-3		MC-4		MC-5		MC-6		MC-7		MC-8		MC-10		MC-11		Taxi-3		Taxi-4		Taxi-5		Taxi-6		Taxi-7		Taxi-8		Taxi-10		
	VMY	Fraction	VMY	Fraction	VMY	Fraction	VMY	Fraction	VMY	Fraction	VMY	Fraction	VMY	Fraction	VMY	Fraction	VMY	Fraction	VMY	Fraction	VMY	Fraction	VMY	Fraction	VMY	Fraction	VMY	Fraction	VMY	Fraction	VMY	Fraction	
5-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
10-15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
15-20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
20-25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
25-30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
30-35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
35-40	606.1	2.5	2.0	0.7	71.2	0.8	28.3	5.1	47.8	0.8	19.3	0.8	56.1	0.8	58.5	5.7	62.2	2.1	178.1	1.0	30.7	0.8	20.4	5.7	35.7	5.8	28.8	5.8	19.3	5.8	2.2	4.6	
40-45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
45-50	232.1	0.9	1.8	0.6	55.5	0.7	6.1	1.1	38.8	0.7	2241.0	98.5	6572.2	98.5	862.6	83.7	23.8	1.0	108.8	1.0	4.7	0.8	3.1	0.8	580.0	83.2	453.1	93.4	308.2	93.2	44.5	94.0	
50-55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
55-60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
60-65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
65-70	23558.8	98.8	277.5	89.8	8333.7	89.8	519.5	83.8	5565.5	89.8	0.0	0.0	0.0	0.0	0.0	0.0	2375.5	98.3	18974.4	97.5	491.1	93.3	332.9	93.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
70-75	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
75-80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
80-85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
85-90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	24395.0	100.0	281.3	100.0	8460.4	100.0	554.0	100.0	5650.3	100.0	2275.1	100.0	6672.9	100.0	707.9	100.0	2451.3	100.0	11281.4	100.0	528.5	100.0	356.4	100.0	609.3	100.0	498.0	100.0	328.7	100.0	47.4	100.0	

Calculation of Space Averaged Speed for other roads (1991)

Bin	MC-1		MC-2		MC-3		MC-4		MC-5		MC-6		MC-7		MC-8		MC-9		MC-10		MC-11		MC-12		MC-13		MC-14		MC-15		MC-16		MC-17		MC-18					
	VM	Fraction	VM	Fraction	VM	Fraction	VM	Fraction	VM	Fraction	VM	Fraction	VM	Fraction	VM	Fraction	VM	Fraction	VM	Fraction	VM	Fraction	VM	Fraction	VM	Fraction	VM	Fraction	VM	Fraction	VM	Fraction	VM	Fraction	VM	Fraction				
5-10	120	2.1	3	0.9	97	2.7	12	0.4	85	2.7	28	2.7	16	2.1	18	0.9	12	2.1	41	2.9	8	0.7	5	1.7	5	1.7	8	1.7	7	0.9	5	1.8	1	0.0	0.0	0.0				
10-15	83	1.5	2	0.6	64	1.8	70	0.8	41	1.9	17	0.8	91	1.8	89	0.9	9	1.5	43	2.9	0	0.0	10	1.9	28	3.4	28	3.4	4	0.8	4	0.8	6	1.0	0.0					
15-20	318	5.8	1	0.3	121.8	3.4	131.8	1.5	43	1.9	19	0.8	94	1.9	89	0.9	48	1.5	356	6.4	18	0.8	18	0.8	18	0.8	18	0.8	18	0.8	18	0.8	18	0.8	18	0.8	18	0.8		
20-25	1212.6	22.2	45.9	1.4	298.4	8.6	298.4	3.4	93	4.2	166.9	4.6	107.5	4.6	166.9	4.6	107.5	4.6	323.0	5.9	24	0.5	24	0.5	24	0.5	24	0.5	24	0.5	24	0.5	24	0.5	24	0.5	24	0.5		
25-30	1839.8	33.8	23.9	0.7	997.8	28.8	121.8	1.5	997.8	28.8	121.8	1.5	997.8	28.8	121.8	1.5	997.8	28.8	356.1	6.4	29	0.8	29	0.8	29	0.8	29	0.8	29	0.8	29	0.8	29	0.8	29	0.8	29	0.8	29	0.8
30-35	2822.1	52.2	37.9	1.1	1971.8	59.1	312.2	3.6	166.2	3.6	312.2	3.6	166.2	3.6	312.2	3.6	166.2	3.6	710.0	13.0	18	0.6	18	0.6	18	0.6	18	0.6	18	0.6	18	0.6	18	0.6	18	0.6	18	0.6	18	0.6
35-40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
40-45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
45-50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
50-55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
55-60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
60-65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
65-70	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
70-75	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
75-80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
80-85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
85-90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
90-95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
95-100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total	6074	100.00	119	100.00	3168	100.00	414	100.00	2465	100.00	959	100.00	2843	100.00	1111	100.00	651	100.00	3041	100.00	418	100.00	374	100.00	578	100.00	421	100.00	285	100.00	32	100.00	0.0	0.0	0.0	0.0				

Bin	MC-1		MC-2		MC-3		MC-4		MC-5		MC-6		MC-7		MC-8		MC-9		MC-10		MC-11		MC-12		MC-13		MC-14		MC-15		MC-16		MC-17		MC-18	
	VM	Fraction	VM	Fraction	VM	Fraction	VM	Fraction	VM	Fraction	VM	Fraction	VM	Fraction	VM	Fraction	VM	Fraction	VM	Fraction	VM	Fraction	VM	Fraction	VM	Fraction	VM	Fraction	VM	Fraction	VM	Fraction	VM	Fraction		
5-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
10-15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
15-20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
20-25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
25-30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
30-35	6072.5	100.0	118.7	100.0	3394.2	100.0	478.1	100.0	2405.3	100.0	949.2	100.0	2842.7	100.0	1111.3	100.0	641.3	100.0	3040.3	100.0	418.7	100.0	374	100.0	578	100.0	421	100.0	285	100.0	32	100.0	0.0	0.0	0.0	
35-40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
40-45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
45-50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
50-55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
55-60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
60-65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
65-70	0.0	0.0	0.0	0.0																																



Title : Calculation of no. of trips (MC executable)

		No of trips in the study region for 24 hours				
Gas	MC-1	190.271	109.503	74.873	68.523	79.636
		124.561	247.061	452.425	524.354	399.419
		385.615	406.801	449.663	444.821	429.769
		403.194	428.158	442.887	408.927	369.007
		322.449	313.039	290.843	269.216	
MC-2	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
MC-3	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
MC-4	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
MC-5	5.021	2.812	1.884	1.659	2.073	
	3.223	6.484	11.853	13.801	10.473	
	10.016	10.661	11.700	11.615	11.207	
	10.529	11.179	11.583	10.795	9.712	
	8.415	8.171	7.631	6.968		
MC-6	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
MC-7	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
MC-8	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
MC-9	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
MC-10	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
MC-11	114.795	65.409	43.989	41.673	50.049	
	74.911	151.000	275.630	316.964	241.625	
	236.195	248.271	273.108	270.674	260.079	
	245.848	259.617	268.749	248.699	222.894	
	194.984	189.951	176.832	161.976		
MC-12	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
MC-13	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	

		No of trips in the study region for 24 hours				
Diesel	MC-1	0.000	0.000	0.000	0.000	0.000
		0.000	0.000	0.000	0.000	0.000
		0.000	0.000	0.000	0.000	0.000
		0.000	0.000	0.000	0.000	0.000
		0.000	0.000	0.000	0.000	0.000
	MC-2	0.000	0.000	0.000	0.000	0.000
		0.000	0.000	0.000	0.000	0.000
		0.000	0.000	0.000	0.000	0.000
		0.000	0.000	0.000	0.000	0.000
		0.000	0.000	0.000	0.000	0.000
	MC-3	4.222	2.280	1.378	1.264	1.442
		2.604	5.452	10.647	12.261	9.405
		9.333	9.543	10.647	10.610	10.140
		9.490	10.070	10.472	9.600	8.442
		7.661	7.414	6.859	6.346	
	MC-4	124.121	71.024	48.924	44.651	51.943
		81.241	161.360	295.868	342.655	260.931
		251.734	265.892	294.050	290.674	281.380
		263.219	279.905	289.332	267.286	240.896
		210.269	204.465	189.872	176.059	
	MC-5	3.804	2.095	1.427	1.263	1.615
		2.391	4.776	8.737	10.345	7.750
		7.490	7.922	8.686	8.606	8.290
		7.872	8.259	8.596	7.938	7.203
		6.292	6.183	5.738	5.220	
	MC-6	64.889	37.207	25.578	23.204	26.886
		42.343	84.159	154.478	178.908	136.449
		131.618	138.997	153.450	152.011	146.584
		137.507	145.976	151.085	139.611	125.769
		110.055	106.811	99.206	92.132	
	MC-7	29.796	17.277	11.600	10.602	12.303
		19.544	38.830	71.119	82.225	62.644
		60.470	64.162	70.379	69.786	67.691
		63.169	67.589	69.590	64.369	57.954
		50.397	49.263	45.673	42.345	
	MC-8	87.529	50.217	34.603	31.389	36.811
		57.515	113.659	208.584	241.966	184.173
		177.899	187.563	207.069	205.184	198.017
		185.821	197.243	204.207	188.704	169.923
		148.298	144.121	134.344	124.484	
	MC-9	0.000	0.000	0.000	0.000	0.000
		0.000	0.000	0.000	0.000	0.000
		0.000	0.000	0.000	0.000	0.000
		0.000	0.000	0.000	0.000	0.000
		0.000	0.000	0.000	0.000	0.000
MC-10	50.603	29.279	20.374	18.676	21.649	
	33.017	65.370	119.606	138.694	105.777	
	102.125	107.354	118.800	117.574	113.868	
	106.820	113.108	116.820	108.506	98.417	
	85.009	82.738	77.224	71.409		
MC-11	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
MC-12	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
MC-13	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	
Electric	MC-1	0.000	0.000	0.000	0.000	0.000



Title : Calculation of no. of trips (taxi executable)

		No of trips in the study region for 24 hours				
Gas	Taxi-1	0	0	0	0	0
		0	0	0	0	0
		0	0	0	0	0
		0	0	0	0	0
		0	0	0	0	0
	taxi-2	0	0	0	0	0
		0	0	0	0	0
		0	0	0	0	0
		0	0	0	0	0
		0	0	0	0	0
	taxi-3	24.818	14.285	9.759	8.974	10.34
		16.249	32.285	59.2	68.6	52.209
		50.433	53.216	58.717	58.169	56.142
	52.65	55.99	57.897	53.583	48.204	
	42.101	40.898	37.998	35.297		
taxi-4	0	0	0	0	0	
	0	0	0	0	0	
	0	0	0	0	0	
	0	0	0	0	0	
	0	0	0	0	0	
taxi-5	0	0	0	0	0	
	0	0	1.075	1.293	0.984	
	0.946	1.013	1.075	1.071	1.055	
	1.005	1.04	1.071	1.013	0	
	0	0	0	0	0	
taxi-6	0	0	0	0	0	
	0	0	0	0	0	
	0	0	0	0	0	
	0	0	0	0	0	
	0	0	0	0	0	
taxi-7	0	0	0	0	0	
	0	0	0	0	0	
	0	0	0	0	0	
	0	0	0	0	0	
	0	0	0	0	0	
taxi-8	0	0	0	0	0	
	0	0	0	0	0	
	0	0	0	0	0	
	0	0	0	0	0	
	0	0	0	0	0	
taxi-9	0	0	0	0	0	
	0	0	0	0	0	
	0	0	0	0	0	
	0	0	0	0	0	
	0	0	0	0	0	
taxi-10	0	0	0	0	0	
	0	0	0	0	0	
	0	0	0	0	0	
	0	0	0	0	0	
	0	0	0	0	0	
taxi-11	0	0	0	0	0	
	0	0	0	0	0	
	0	0	0	0	0	
	0	0	0	0	0	
	0	0	0	0	0	
taxi-12	0	0	0	0	0	
	0	0	0	0	0	
	0	0	0	0	0	
	0	0	0	0	0	
	0	0	0	0	0	
taxi-13	0	0	0	0	0	
	0	0	0	0	0	
	0	0	0	0	0	
	0	0	0	0	0	
	0	0	0	0	0	

		No of trips in the study region for 24 hours				
Diesel	taxi-1	0	0	0	0	0
		0	0	0	0	0
		0	0	0	0	0
		0	0	0	0	0
		0	0	0	0	0
	taxi-2	0	0	0	0	0
		0	0	0	0	0
		0	0	0	0	0
		0	0	0	0	0
		0	0	0	0	0
	taxi-3	0	0	0	0	0
		0	0	0	0	0
		0	0	0	0	0
0		0	0	0	0	
0		0	0	0	0	
taxi-4	0	0	0	0	0	
	0	0	7.489	8.66	6.549	
	6.381	6.683	7.426	7.272	7.093	
	6.612	7.068	7.259	6.778	0	
	0	0	0	0	0	
taxi-5	0	0	0	0	0	
	0	0	3.958	4.615	3.465	
	3.369	3.524	3.949	3.911	3.717	
	3.496	3.715	3.908	3.545	0	
	0	0	0	0	0	
taxi-6	18.186	10.872	7.033	6.703	7.97	
	11.994	24.037	43.969	50.536	38.824	
	37.601	39.394	43.751	43.327	41.575	
	39.048	41.575	43.239	39.738	35.797	
	31.565	30.2	28.452	26.101	0	
taxi-7	14.266	8.203	5.458	5.109	5.73	
	9.055	18.904	33.921	39.469	30.421	
	28.666	30.804	33.723	33.39	31.936	
	30.502	31.859	33.351	30.897	28.043	
	23.985	23.377	22.106	19.964	0	
taxi-8	8.528	5.021	3.241	3.038	3.42	
	5.89	11.288	21.384	24.39	18.615	
	18.06	18.814	21.19	20.898	20.338	
	18.72	20.338	20.884	18.895	17.536	
	15.137	14.821	13.565	12.542	0	
taxi-9	0	0	0	0	0	
	0	0	0	0	0	
	0	0	0	0	0	
	0	0	0	0	0	
	0	0	0	0	0	
taxi-10	4.589	2.815	2.093	1.291	2.174	
	3.222	6.036	11.16	13.06	10.717	
	9.87	10.725	11.111	11.106	11.087	
	10.725	11.087	11.106	10.783	8.625	
	8.11	8.11	7.62	6.393	0	
taxi-11	0	0	0	0	0	
	0	0	0	0	0	
	0	0	0	0	0	
	0	0	0	0	0	
	0	0	0	0	0	
taxi-12	0	0	0	0	0	
	0	0	0	0	0	
	0	0	0	0	0	
	0	0	0	0	0	
	0	0	0	0	0	
taxi-13	0	0	0	0	0	
	0	0	0	0	0	
	0	0	0	0	0	
	0	0	0	0	0	
	0	0	0	0	0	
Electric	taxi-1	0	0	0	0	0



Number of trips is zero for the following road categories:

- HKRL
- BCF associated roads (both connecting to Airport and BCF)
- NLH and Airport Roads

HKSAR Hong Kong vehicle population assumed for assessment year 2031 (by Age Groups) to be adopted in Emfac

Age	MC Executable										Taxi								
	MC-1 PC+LGV- petrol	MC-3 PC+LGV <2.5t-diesel	MC-4 LGV2.5-3.5t diesel	MC-5 (G) PLB - petrol	MC-5 (D) PLB - diesel	MC-6 LGV>3.5t - diesel	MC-7 HGV<15t	MC-8 HGV>15t	MC-10 FBDD	MC-11 MC - petrol	Taxi-3 Taxi	Taxi-4(G) PrLB<3.5t- petrol	Taxi-4(D) PrLB<3.5t- diesel	Taxi-5(G) PrLB>3.5t- LPG	Taxi-5(D) PrLB>3.5t- diesel	Taxi-6 NFB<6.4t	Taxi-7 NFB6.4-15t	Taxi-8 NFB>15t	Taxi-10 FBSD
1	33270	5	3308	52	61	1104	571	1553	68	4133	336	0	319	108	80	193	156	207	5
2	27133	2	3158	60	16	1140	556	1585	114	3678	389	0	121	70	29	182	170	203	0
3	26360	1	3013	1075	89	1151	578	1605	50	4186	449	0	266	34	28	157	156	250	3
4	26624	1	2178	673	191	1227	538	1885	177	4277	584	0	225	66	60	202	116	171	7
5	21979	1	1563	333	133	1084	354	1367	191	3808	1483	0	253	90	19	312	128	168	14
6	29019	1	1712	285	42	1390	539	1554	410	3686	2609	0	234	48	34	393	146	172	0
7	32351	3	2102	17	158	1538	428	1526	359	3040	9235	0	189	3	63	438	238	156	3
8	31297	2	2372	0	136	1784	506	2258	381	2160	3002	0	343	2	79	357	157	99	19
9	25779	4	2417	0	174	1353	472	1372	487	2025	73	0	213	0	140	265	205	85	38
10	27820	130	3109	0	167	1437	419	1400	921	1732	0	0	253	0	189	198	223	106	127
11	32658	272	3441	0	196	2268	649	2297	751	1718	4	0	208	0	150	210	212	73	13
12	14995	185	1952	0	122	1785	442	1782	388	1197	2	0	60	0	86	195	306	42	3
13	12173	267	1819	0	116	1535	519	1557	380	894	1	0	75	0	165	147	210	23	17
14	13464	394	2209	0	111	1779	713	1823	318	562	0	0	49	0	141	54	66	5	18
15	8391	460	2466	0	74	2090	927	1837	207	328	0	0	36	0	77	43	30	0	59
16	4786	286	1862	0	29	2022	1043	2150	158	209	0	0	26	0	55	15	44	41	21
17	1900	241	630	0	22	701	674	1400	156	144	0	0	0	0	56	0	64	0	21
18	1101	304	376	0	14	491	289	894	6	109	0	0	0	0	26	0	42	0	1
19	697	207	78	0	4	342	205	634	0	98	0	0	7	0	23	0	13	0	0
20	432	139	25	0	0	233	166	429	0	39	0	0	0	0	10	0	10	0	0
21	247	101	12	0	0	102	79	308	0	28	0	0	0	0	9	0	5	5	0
22	204	61	6	0	0	35	34	81	0	10	0	0	5	0	0	0	2	0	0
23	112	8	3	0	0	5	13	94	0	5	0	0	0	0	3	0	0	0	0
24	53	7	0	0	0	2	4	13	0	5	0	0	0	0	0	0	10	0	0
25	40	7	2	0	0	0	0	7	0	10	0	0	0	0	0	0	0	0	0
26	93	4	0	0	0	0	1	6	0	15	0	0	0	0	0	0	7	0	0
27	102	10	0	0	0	4	1	2	0	20	0	0	0	0	0	0	0	0	0
28	95	5	0	0	0	0	0	3	0	11	0	0	0	0	1	0	0	0	0
29	51	3	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0
30	42	4	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0
31	38	5	0	0	0	0	0	1	0	3	0	0	0	0	0	0	1	0	0
32	31	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
33	24	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
34	31	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0
35	56	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0
36	28	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0
37	18	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	4	0	0
38	35	0	0	0	0	0	0	0	0	3	0	0	0	0	1	0	0	0	0
39	17	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
40	5	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
41	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
42	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
43	7	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
44	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45	18	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0





Summary of VMT for each hour for BCF (cross-boundary vehicles)

Hour	MC-1	MC-3	MC-4	MC-5(G)	MC-5(D)	MC-6	MC-7	MC-8	MC-10	MC-11	Taxi-3	Taxi-4	Taxi-5(L)	Taxi-5(D)	Taxi-6	Taxi-7	Taxi-8	Taxi-10	Total	
0:00	1:00	583	0	5	0	0	54	82	647	0	0	0	0	0	0	0	0	0	0	0
1:00	2:00	405	0	5	0	0	36	59	451	0	0	0	0	0	11	45	153	0	1580	
2:00	3:00	244	0	0	0	0	23	33	271	0	0	0	0	0	7	29	106	0	1098	
3:00	4:00	198	0	0	0	0	18	28	217	0	0	0	0	0	5	18	64	0	659	
4:00	5:00	201	0	0	0	0	18	28	223	0	0	0	0	0	5	16	52	0	534	
5:00	6:00	367	0	2	0	0	33	54	407	0	0	0	0	0	5	16	53	0	545	
6:00	7:00	729	0	5	0	0	64	102	809	0	0	0	0	0	5	29	98	0	995	
7:00	8:00	1273	0	10	0	0	113	179	1404	0	0	0	0	0	13	56	191	0	1969	
8:00	9:00	1599	0	10	0	0	144	226	1768	0	0	0	0	0	24	98	331	0	3431	
9:00	10:00	1563	0	10	0	0	141	221	1726	0	0	0	0	0	29	122	420	0	4318	
10:00	11:00	1727	0	10	0	0	156	243	1911	0	0	0	0	0	29	117	409	0	4215	
11:00	12:00	1893	0	12	0	0	170	266	2093	0	0	0	0	0	34	133	452	0	4666	
12:00	13:00	1957	0	12	0	0	177	274	2162	0	0	0	0	0	34	143	497	0	5108	
13:00	14:00	1953	0	12	0	0	174	274	2159	0	0	0	0	0	39	149	513	0	5284	
14:00	15:00	1659	0	10	0	0	150	233	1833	0	0	0	0	0	36	149	510	0	5267	
15:00	16:00	1775	0	10	0	0	161	249	1963	0	0	0	0	0	34	128	436	0	4483	
16:00	17:00	1875	0	12	0	0	167	264	2070	0	0	0	0	0	34	133	465	0	4790	
17:00	18:00	1979	0	15	0	0	177	279	2188	0	0	0	0	0	34	143	492	0	5059	
18:00	19:00	1904	0	12	0	0	172	269	2106	0	0	0	0	0	39	151	517	0	5345	
19:00	20:00	1845	0	12	0	0	167	259	2039	0	0	0	0	0	36	145	499	0	5144	
20:00	21:00	1591	0	10	0	0	141	226	1758	0	0	0	0	0	34	140	485	0	4981	
21:00	22:00	1376	0	10	0	0	123	194	1520	0	0	0	0	0	29	122	417	0	4294	
22:00	23:00	1062	0	5	0	0	97	151	1175	0	0	0	0	0	27	104	359	0	3713	
23:00	0:00	1041	0	5	0	0	92	146	1150	0	0	0	0	0	21	80	277	0	2870	
Total		30802	0	193	0	0	2767	4340	34050	0	0	0	0	0	587	2347	8069	0	83154	

Note :

[1] The definition of PrLB is defined in Roads Ordinance. This includes light bus for school, handicapped and works unit. Owing to the operation nature, it is reasonable to assume the operation time is between 0700 to 1900. The VMT during the other hours is zero.

Vehicle classes

- MC-1 PC+LGV-petrol
- MC-3 PC+LGV<2.6-diesel
- MC-4 LGV2.6-3.5t-diesel
- MC-5 PLB (LPG/Diesel)
- MC-6 LGV>3.5t-diesel
- MC-7 HGV<15t-diesel
- MC-8 HGV>15t-diesel
- MC-10 Fran DD bus - diesel
- MC-11 Motorcycle - petrol
- Taxi-3 Taxi
- Taxi-4 PrLB<3.5t-diesel
- Taxi-5 PrLB>3.5t (LPG/Diesel)
- Taxi-6 Non-fran bus<6.4t-diesel
- Taxi-7 Non-fran bus<6.4-15t-diesel
- Taxi-8 Non-fran bus>15t-diesel
- Taxi-10 Fran SD bus - diesel

Summary of VMT for each hours for BCF (HK vehicles)

Hour	MC-1	MC-3	MC-4	MC-5(G)	MC-5(D)	MC-6	MC-7	MC-8	MC-10	MC-11	Taxi-3	Taxi-4	Taxi-5(L)	Taxi-5(D)	Taxi-6	Taxi-7	Taxi-8	Taxi-10	Total	
0:00 1:00	983	7	195	11	9	132	52	156	28	99	240									
1:00 2:00	590	4	119	5	4	78	31	95	17	60	143				65	51	35	1	2153	
2:00 3:00	422	3	84	4	3	56	22	67	13	42	104				39	30	21	1	1291	
3:00 4:00	298	0	59	3	2	39	15	47	10	31	72				26	23	15	0	922	
4:00 5:00	319	2	63	3	3	41	16	50	11	32	78				21	16	8	0	646	
5:00 6:00	795	4	158	9	7	106	43	126	23	80	194				21	17	11	0	695	
6:00 7:00	2007	11	403	24	18	270	108	317	55	204	491				52	42	27	1	1740	
7:00 8:00	3403	21	683	40	31	456	183	539	91	346	831	192	27	102	132	106	72	3	4411	
8:00 9:00	3782	25	758	46	34	506	204	598	103	386	925	213	30	113	224	179	121	5	7474	
9:00 10:00	3131	20	627	37	29	420	169	495	85	318	765	176	25	93	248	200	135	6	8312	
10:00 11:00	3238	20	650	39	29	433	174	512	87	329	793	180	26	96	206	165	111	4	6876	
11:00 12:00	3384	21	679	40	31	454	183	536	90	345	828	192	26	101	213	171	116	4	7111	
12:00 13:00	3572	23	716	42	32	478	191	565	94	364	873	201	29	106	224	178	121	5	7435	
13:00 14:00	3553	23	712	42	32	475	191	562	94	362	868	200	28	106	234	188	129	5	7842	
14:00 15:00	3601	23	721	44	32	482	194	569	98	366	881	203	30	106	234	188	128	5	7803	
15:00 16:00	3169	20	635	37	29	425	171	502	86	323	774	178	25	94	237	191	129	5	7913	
16:00 17:00	2945	19	589	36	27	395	158	467	81	299	721	166	24	86	210	168	113	4	6965	
17:00 18:00	3323	20	667	39	30	445	179	527	89	338	812	187	26	99	193	156	105	4	6472	
18:00 19:00	3770	25	757	46	34	504	203	596	103	383	921	212	30	111	219	176	119	5	7301	
19:00 20:00	3213	20	646	38	29	429	173	508	86	328	787				248	199	134	6	8282	
20:00 21:00	3051	20	612	37	28	409	164	482	83	311	747				212	170	114	4	7057	
21:00 22:00	3084	20	618	37	28	414	165	487	83	314	755				201	161	109	4	6705	
22:00 23:00	3017	20	605	36	28	404	162	477	83	307	738				203	163	109	4	6772	
23:00 0:00	2265	15	454	27	20	303	123	360	60	231	553				199	158	108	4	6630	
Total	60918	386	12211	721	546	8154	3273	9640	1650	6197	14894	2300	325	1213	4012	3215	2174	88	133789	

Note :

[1] The definition of PrLB is defined in Roads Ordinance. This includes light bus for school, handicapped and works unit. Owing to the operation nature, it is reasonable to assume the operation time is between 0700 to 1900. The VMT during the other hours is zero.

Vehicle classes

- MC-1 PC+LGV-petrol
- MC-3 PC+LGV<2.6-diesel
- MC-4 LGV2.6-3.5t-diesel
- MC-5 PLB (LPG/Diesel)
- MC-6 LGV>3.5t-diesel
- MC-7 HGV<15t-diesel
- MC-8 HGV>15t-diesel
- MC-10 Fran DD bus - diesel
- MC-11 Motorcycle -petrol
- Taxi-3 Taxi
- Taxi-4 PrLB<3.5t-diesel
- Taxi-5 PrLB>3.5t (LPG/Diesel)
- Taxi-6 Non-fran bus<6.4t-diesel
- Taxi-7 Non-fran bus<6.4-15t-diesel
- Taxi-8 Non-fran bus>15t-diesel
- Taxi-10 Fran SD bus - diesel

Summary of VMT for each hour for PrLB (cross-boundary vehicles)

Hour	MC-1	MC-3	MC-4	MC-5(G)	MC-5(D)	MC-6	MC-7	MC-8	MC-10	MC-11	Taxi-3	Taxi-4	Taxi-5(L)	Taxi-5(D)	Taxi-6	Taxi-7	Taxi-8	Taxi-10	Total
0:00	1987	0	17	0	0	177	269	2122	0	0	0	0	0	0	34	143	488	0	5237
1:00	1372	0	17	0	0	118	194	1482	0	0	0	0	0	0	25	93	337	0	3637
2:00	825	0	0	0	0	76	109	893	0	0	0	0	0	0	17	59	202	0	2181
3:00	674	0	0	0	0	59	93	707	0	0	0	0	0	0	17	51	160	0	1760
4:00	682	0	0	0	0	59	93	733	0	0	0	0	0	0	17	51	168	0	1802
5:00	1246	0	8	0	0	109	177	1339	0	0	0	0	0	0	17	51	168	0	3301
6:00	2475	0	17	0	0	211	337	2653	0	0	0	0	0	0	42	177	606	0	6517
7:00	4327	0	34	0	0	371	589	4606	0	0	0	0	0	0	76	311	1044	0	11358
8:00	5439	0	34	0	0	472	741	5802	0	0	0	0	0	0	93	387	1330	0	14297
9:00	5312	0	34	0	0	463	724	5667	0	0	0	0	0	0	93	387	1330	0	14297
10:00	5868	0	34	0	0	514	800	6273	0	0	0	0	0	0	109	421	1431	0	13960
11:00	6432	0	42	0	0	556	867	6871	0	0	0	0	0	0	109	455	1574	0	15450
12:00	6651	0	42	0	0	581	901	7107	0	0	0	0	0	0	126	471	1625	0	16907
13:00	6634	0	42	0	0	573	901	7090	0	0	0	0	0	0	118	471	1616	0	17446
14:00	5641	0	34	0	0	488	766	6021	0	0	0	0	0	0	109	404	1381	0	14844
15:00	6036	0	34	0	0	531	817	6442	0	0	0	0	0	0	109	421	1473	0	15863
16:00	6373	0	42	0	0	547	867	6804	0	0	0	0	0	0	109	455	1557	0	16755
17:00	6727	0	51	0	0	581	918	7183	0	0	0	0	0	0	126	480	1642	0	17707
18:00	6474	0	42	0	0	564	884	6913	0	0	0	0	0	0	118	463	1583	0	17041
19:00	6272	0	42	0	0	547	850	6694	0	0	0	0	0	0	109	446	1532	0	16494
20:00	5405	0	34	0	0	463	741	5777	0	0	0	0	0	0	93	387	1322	0	14221
21:00	4672	0	34	0	0	404	640	4985	0	0	0	0	0	0	84	328	1137	0	12285
22:00	3612	0	17	0	0	312	497	3857	0	0	0	0	0	0	67	253	876	0	9489
23:00	3536	0	17	0	0	303	480	3773	0	0	0	0	0	0	59	253	867	0	9287
Total	104671	0	665	0	0	9078	14256	111794	0	0	0	0	0	0	1877	7442	25559	0	275342

Note :  
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Vehicle classes

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- MC-6 LGV>3.5t-diesel
- MC-7 HGV<15t-diesel
- MC-8 HGV>15t-diesel
- MC-10 Fran DD bus - diesel
- MC-11 Motorcycle -petrol
- Taxi-3 Taxi
- Taxi-4 PrLB<3.5t-diesel
- Taxi-5 PrLB>3.5t (LPG/Diesel)
- Taxi-6 Non-fran bus<6.4t-diesel
- Taxi-7 Non-fran bus<6.4-15t-diesel
- Taxi-8 Non-fran bus>15t-diesel
- Taxi-10 Fran SD bus - diesel

Summary of VMT for each hour for NLH & Airport Roads (HK vehicles)

Hour	MC-1	MC-3	MC-4	MC-5(G)	MC-5(D)	MC-6	MC-7	MC-8	MC-10	MC-11	Taxi-3	Taxi-4	Taxi-5(L)	Taxi-5(D)	Taxi-6	Taxi-7	Taxi-8	Taxi-10	Total
0:00 1:00	7219	81	2504	99	70	1670	671	1975	208	730	3332								
1:00 2:00	4335	52	1499	55	45	1007	403	1185	131	437	2003				184	142	97	14	19259
2:00 3:00	3086	36	1073	39	31	715	284	843	87	315	1429				110	89	59	14	11577
3:00 4:00	2183	24	760	31	18	507	207	597	63	222	1009				81	60	44	0	8239
4:00 5:00	2339	29	812	31	24	544	217	641	69	236	1080				54	44	29	0	5821
5:00 6:00	5835	67	2027	77	55	1356	545	1601	170	588	2693				59	44	30	0	6243
6:00 7:00	14734	170	5107	189	148	3414	1372	4032	427	1485	6800				147	119	82	14	15587
7:00 8:00	24989	284	8663	328	242	5792	2332	6842	724	2524	11531	541	82	282	371	298	200	31	39306
8:00 9:00	27766	321	9630	368	273	6434	2594	7604	810	2805	12811	601	89	313	625	498	342	47	66667
9:00 10:00	22981	260	7970	305	226	5328	2147	6285	664	2323	10608	497	74	260	697	558	380	55	74107
10:00 11:00	23777	269	8250	317	232	5509	2221	6507	693	2402	10976	513	74	268	580	467	313	45	61333
11:00 12:00	24852	284	8618	328	242	5756	2318	6799	724	2509	11468	535	75	282	596	482	326	45	63456
12:00 13:00	26216	300	9093	343	257	6075	2445	7177	763	2647	12105	564	82	298	624	498	342	47	66301
13:00 14:00	26081	297	9048	343	257	6039	2432	7140	755	2631	12035	558	82	298	655	527	358	54	69959
14:00 15:00	26439	300	9168	350	257	6128	2468	7236	771	2668	12200	565	82	298	668	536	358	54	70546
15:00 16:00	23268	266	8066	305	226	5390	2170	6372	677	2346	10743	499	74	266	668	536	358	54	62082
16:00 17:00	21624	245	7498	287	211	5015	2020	5918	630	2180	9982	468	66	245	586	469	314	45	57706
17:00 18:00	24395	281	8460	319	235	5650	2275	6673	708	2461	11261	527	75	281	542	438	298	39	65084
18:00 19:00	27667	315	9594	361	273	6410	2587	7574	803	2791	12769	594	89	312	609	496	329	47	73823
19:00 20:00	23588	269	8184	305	232	5469	2200	6455	681	2382	10891				696	558	379	55	62953
20:00 21:00	22405	260	7773	296	218	5195	2095	6134	654	2265	10339				592	481	325	45	59813
21:00 22:00	22636	260	7848	296	219	5246	2111	6194	655	2282	10446				563	452	310	45	60391
22:00 23:00	22149	254	7685	289	218	5136	2071	6066	646	2237	10225				571	454	311	45	59124
23:00 0:00	16621	193	5762	218	163	3852	1551	4547	483	1679	7673				558	446	299	45	44354
Total	447186	5117	155091	5876	4371	103636	41736	122399	12995	45146	206410	6462	945	3403	11239	9023	6111	865	1193311

Note :

[1] The definition of PrLB is defined in Roads Ordinance. This includes light bus for school, handicapped and works unit. Owing to the operation nature, it is reasonable to assume the operation time is between 0700 to 1900. The VMT during the other hours is zero.

Vehicle classes

- MC-1 PC+LGV-petrol
- MC-3 PC+LGV<2.6-diesel
- MC-4 LGV2.6-3.5t-diesel
- MC-5 PLB (LPG/Diesel)
- MC-6 LGV>3.5t-diesel
- MC-7 HGV<15t-diesel
- MC-8 HGV>15t-diesel
- MC-10 Fran DD bus - diesel
- MC-11 Motorcycle -petrol
- Taxi-3 Taxi
- Taxi-4 PrLB<3.5t-diesel
- Taxi-5 PrLB>3.5t (LPG/Diesel)
- Taxi-6 Non-fran bus<6.4t-diesel
- Taxi-7 Non-fran bus<6.4-15t-diesel
- Taxi-8 Non-fran bus>15t-diesel
- Taxi-10 Fran SD bus - diesel

Summary of VMT for each hours for other roads

Hour	MC-1	MC-3	MC-4	MC-5(G)	MC-5(D)	MC-6	MC-7	MC-8	MC-10	MC-11	Taxi-3	Taxi-4	Taxi-5(L)	Taxi-5(D)	Taxi-6	Taxi-7	Taxi-8	Taxi-10	Total	
0:00	1:00	2609	48	1544	218	165	1033	415	1218	481	258	1303								
1:00	2:00	1502	26	884	122	91	592	241	699	279	147	750			221	180	116	30	10164	
2:00	3:00	1027	16	609	82	62	407	162	482	194	99	512			132	103	69	18	5832	
3:00	4:00	940	14	555	72	55	369	148	437	178	94	471			86	69	44	14	3980	
4:00	5:00	1092	16	646	90	70	428	171	512	206	113	543			82	64	41	8	3635	
5:00	6:00	1708	30	1011	140	104	674	272	801	314	168	853			97	72	47	14	4243	
6:00	7:00	3388	62	2007	281	207	1340	541	1582	622	340	1695			146	114	80	21	6636	
7:00	8:00	6204	121	3681	515	379	2459	990	2904	1138	620	3109	460	66	292	239	154	39	13210	
8:00	9:00	7191	139	4263	599	449	2848	1145	3368	1319	713	3603	532	79	243	535	428	292	73	24216
9:00	10:00	5477	107	3246	455	336	2172	872	2564	1006	543	2742	402	60	283	615	498	333	85	28062
10:00	11:00	5288	106	3132	435	325	2096	842	2476	972	531	2649	392	58	213	472	384	254	70	21376
11:00	12:00	5579	108	3308	463	344	2213	894	2611	1021	558	2795	410	62	207	457	362	247	64	20637
12:00	13:00	6166	121	3658	508	377	2443	980	2883	1130	614	3084	456	66	216	479	389	257	70	21776
13:00	14:00	6100	120	3616	504	374	2420	972	2856	1118	609	3055	447	66	242	532	425	289	72	24047
14:00	15:00	5894	115	3500	487	360	2334	943	2757	1083	585	2948	436	65	240	527	421	285	72	23803
15:00	16:00	5529	108	3274	457	342	2189	880	2587	1016	553	2765	406	62	215	506	403	278	72	22992
16:00	17:00	5872	114	3482	485	359	2324	941	2746	1076	584	2940	434	64	228	475	385	256	70	21567
17:00	18:00	6074	119	3599	503	373	2405	969	2843	1111	604	3041	446	66	240	506	402	278	72	22906
18:00	19:00	5608	109	3325	469	345	2223	896	2627	1032	559	2814	416	62	240	526	421	285	72	23696
19:00	20:00	5060	96	2997	422	313	2002	807	2365	936	501	2531			483	390	258	70	21904	
20:00	21:00	4422	87	2616	365	273	1752	702	2064	809	438	2211			435	354	239	56	19742	
21:00	22:00	4293	84	2543	355	268	1701	686	2006	787	427	2148			384	303	207	53	17226	
22:00	23:00	3988	78	2362	331	249	1579	636	1870	735	398	1995			367	295	202	53	16743	
23:00	0:00	3692	72	2190	303	227	1467	590	1733	679	364	1854			346	279	185	50	15569	
Total		104702	2013	62046	8660	6447	41474	16695	48992	19243	10419	52412	5236	776	2774	9018	7231	4867	1260	408366

Note :  
 [1] The definition of PrLB is defined in Roads Ordinance. This includes light bus for school, handicapped and works unit. Owing to the operation nature, it is reasonable to assume the operation time is between 0700 to 1900. The VMT during the other hours is zero.

Vehicle classes

- MC-1 PC+LGV-petrol
- MC-3 PC+LGV<2.6-diesel
- MC-4 LGV2.6-3.5l-diesel
- MC-5 PLB (LPG/Diesel)
- MC-6 LGV>3.5l-diesel
- MC-7 HGV<15t-diesel
- MC-8 HGV>15t-diesel
- MC-10 Fran DD bus - diesel
- MC-11 Motorcycle -petrol
- Taxi-3 Taxi
- Taxi-4 PrLB<3.5l-diesel
- Taxi-5 PrLB>3.5l (LPG/Diesel)
- Taxi-6 Non-fran bus<6.4t-diesel
- Taxi-7 Non-fran bus<6.4-15l-diesel
- Taxi-8 Non-fran bus>15l-diesel
- Taxi-10 Fran SD bus - diesel

APPENDIX 5F-2

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**Vehicle Emission  
Factors for 2031  
(including composite  
vehicle emission factor  
for each road link)**

Calculation of NOX Emission Factor (gm/mile/vehicle) for each hours for BCF (HK)

Hour	MC-1	MC-3	MC-4	MC-5	MC-6	MC-7	MC-8	MC-10	MC-11	Taxi-3	Taxi-4	Taxi-5	Taxi-6	Taxi-7	Taxi-8	Taxi-10	
0:00	1:00	0.111	0.222	0.226	0.109	1.300	2.384	3.097	1.877	1.043	0.291	#DIV/0!	#DIV/0!	1.291	2.362	3.099	1.427
1:00	2:00	0.111	0.222	0.226	0.113	1.299	2.382	3.097	1.875	1.045	0.291	#DIV/0!	#DIV/0!	1.290	2.360	3.095	1.357
2:00	3:00	0.111	0.239	0.225	0.104	1.302	2.388	3.101	1.876	1.049	0.292	#DIV/0!	#DIV/0!	1.292	2.364	3.098	#DIV/0!
3:00	4:00	0.112	0.315	0.227	0.110	1.304	2.386	3.103	1.884	1.055	0.293	#DIV/0!	#DIV/0!	1.294	2.364	3.099	#DIV/0!
4:00	5:00	0.112	0.225	0.226	0.109	1.304	2.394	3.108	1.882	1.058	0.294	#DIV/0!	#DIV/0!	1.297	2.373	3.105	#DIV/0!
5:00	6:00	0.113	0.239	0.227	0.105	1.307	2.395	3.113	1.886	1.060	0.295	#DIV/0!	#DIV/0!	1.298	2.375	3.113	1.437
6:00	7:00	0.113	0.233	0.227	0.109	1.308	2.398	3.115	1.888	1.062	0.295	#DIV/0!	#DIV/0!	1.299	2.375	3.115	1.450
7:00	8:00	0.115	0.232	0.229	0.108	1.318	2.417	3.140	1.896	1.050	0.298	0.229	0.198	1.313	2.402	3.150	1.455
8:00	9:00	0.115	0.232	0.229	0.107	1.320	2.421	3.145	1.899	1.048	0.299	0.230	0.198	1.315	2.405	3.155	1.451
9:00	10:00	0.115	0.231	0.229	0.109	1.321	2.422	3.147	1.900	1.045	0.300	0.230	0.198	1.316	2.406	3.157	1.464
10:00	11:00	0.115	0.231	0.229	0.107	1.320	2.420	3.144	1.899	1.039	0.300	0.229	0.197	1.315	2.405	3.154	1.464
11:00	12:00	0.116	0.232	0.229	0.109	1.320	2.420	3.144	1.898	1.035	0.300	0.230	0.199	1.315	2.404	3.153	1.455
12:00	13:00	0.116	0.230	0.229	0.109	1.320	2.420	3.144	1.899	1.034	0.301	0.230	0.197	1.315	2.404	3.154	1.446
13:00	14:00	0.116	0.230	0.229	0.108	1.318	2.417	3.140	1.896	1.029	0.301	0.229	0.198	1.313	2.401	3.149	1.455
14:00	15:00	0.115	0.230	0.228	0.105	1.316	2.412	3.134	1.893	1.026	0.300	0.229	0.195	1.311	2.397	3.144	1.446
15:00	16:00	0.115	0.231	0.228	0.109	1.316	2.413	3.134	1.893	1.026	0.299	0.229	0.197	1.311	2.397	3.144	1.441
16:00	17:00	0.115	0.232	0.228	0.107	1.316	2.413	3.134	1.892	1.028	0.298	0.229	0.196	1.311	2.397	3.144	1.441
17:00	18:00	0.114	0.229	0.228	0.108	1.314	2.410	3.131	1.891	1.029	0.296	0.229	0.197	1.309	2.394	3.140	1.455
18:00	19:00	0.114	0.228	0.228	0.106	1.313	2.407	3.127	1.888	1.030	0.295	0.229	0.196	1.308	2.391	3.136	1.451
19:00	20:00	0.113	0.231	0.228	0.106	1.313	2.407	3.127	1.888	1.031	0.295	#DIV/0!	#DIV/0!	1.308	2.392	3.136	1.441
20:00	21:00	0.114	0.228	0.228	0.107	1.313	2.409	3.129	1.890	1.034	0.295	#DIV/0!	#DIV/0!	1.309	2.392	3.138	1.441
21:00	22:00	0.113	0.231	0.228	0.108	1.312	2.406	3.126	1.888	1.033	0.295	#DIV/0!	#DIV/0!	1.307	2.390	3.136	1.441
22:00	23:00	0.113	0.228	0.228	0.108	1.312	2.405	3.125	1.887	1.034	0.294	#DIV/0!	#DIV/0!	1.307	2.389	3.134	1.441
23:00	0:00	0.111	0.226	0.226	0.108	1.301	2.385	3.099	1.879	1.042	0.291	#DIV/0!	#DIV/0!	1.292	2.363	3.099	1.450
	Day	0.114	0.230	0.228	0.108	1.315	2.411	3.132	1.892	1.037	0.297	0.229	0.197	1.309	2.394	3.140	1.451

Note:

Vehicle classes

- MC-1 PC+LGV-petrol
- MC-3 PC+LGV<2.6-diesel
- MC-4 LGV2.6-3.5t-diesel
- MC-5 PLB (LPG/Diesel)
- MC-6 LGV>3.5t-diesel
- MC-7 HGV<15t-diesel
- MC-8 HGV>15t-diesel
- MC-10 Fran DD bus - diesel
- MC-11 Motorcycle -petrol
- Taxi-3 Taxi
- Taxi-4 PrLB<3.5t-diesel
- Taxi-5 PrLB>3.5t (LPG/Diesel)
- Taxi-6 Non-fran bus<6.4t-diesel
- Taxi-7 Non-fran bus<6.4-15t-diesel
- Taxi-8 Non-fran bus>15t-diesel
- Taxi-10 Fran SD bus - diesel

#DIV/0! means zero VMT



Calculation of RSP Emission Factor (gm/mile/vehicle) for each hours for BCF (HK)

Hour	MC-1	MC-3	MC-4	MC-5	MC-6	MC-7	MC-8	MC-10	MC-11	Taxi-3	Taxi-4	Taxi-5	Taxi-6	Taxi-7	Taxi-8	Taxi-10	
0:00	1:00	0.005	0.074	0.064	0.078	0.062	0.081	0.073	0.043	0.039	0.028	#DIV/0!	#DIV/0!	0.045	0.071	0.067	0.075
1:00	2:00	0.005	0.083	0.063	0.072	0.062	0.080	0.073	0.041	0.038	0.027	#DIV/0!	#DIV/0!	0.046	0.070	0.066	0.000
2:00	3:00	0.005	0.090	0.063	0.078	0.061	0.082	0.073	0.048	0.038	0.028	#DIV/0!	#DIV/0!	0.046	0.071	0.068	#DIV/0!
3:00	4:00	0.005	0.000	0.063	0.074	0.061	0.079	0.072	0.040	0.039	0.028	#DIV/0!	#DIV/0!	0.044	0.069	0.060	#DIV/0!
4:00	5:00	0.005	0.056	0.063	0.078	0.060	0.083	0.072	0.045	0.037	0.027	#DIV/0!	#DIV/0!	0.047	0.073	0.062	#DIV/0!
5:00	6:00	0.005	0.072	0.063	0.072	0.062	0.081	0.073	0.044	0.039	0.027	#DIV/0!	#DIV/0!	0.045	0.071	0.066	0.080
6:00	7:00	0.005	0.081	0.064	0.076	0.062	0.081	0.073	0.044	0.039	0.027	#DIV/0!	#DIV/0!	0.045	0.070	0.066	0.058
7:00	8:00	0.005	0.082	0.066	0.075	0.064	0.084	0.076	0.045	0.039	0.028	0.113	0.133	0.047	0.074	0.068	0.040
8:00	9:00	0.005	0.085	0.066	0.074	0.064	0.084	0.075	0.045	0.039	0.028	0.113	0.132	0.048	0.074	0.069	0.047
9:00	10:00	0.005	0.085	0.066	0.074	0.064	0.084	0.075	0.045	0.039	0.028	0.113	0.132	0.048	0.074	0.069	0.047
10:00	11:00	0.005	0.085	0.066	0.073	0.064	0.084	0.076	0.045	0.039	0.028	0.113	0.132	0.048	0.074	0.068	0.046
11:00	12:00	0.005	0.082	0.066	0.075	0.064	0.084	0.076	0.044	0.039	0.028	0.113	0.132	0.047	0.074	0.069	0.046
12:00	13:00	0.005	0.085	0.066	0.075	0.064	0.084	0.076	0.044	0.039	0.028	0.113	0.132	0.047	0.074	0.069	0.040
13:00	14:00	0.005	0.085	0.066	0.075	0.064	0.083	0.075	0.045	0.039	0.028	0.113	0.132	0.047	0.074	0.068	0.055
14:00	15:00	0.005	0.085	0.066	0.073	0.064	0.083	0.075	0.045	0.039	0.028	0.113	0.133	0.047	0.074	0.069	0.040
15:00	16:00	0.005	0.085	0.066	0.074	0.064	0.084	0.076	0.045	0.039	0.028	0.113	0.131	0.047	0.073	0.069	0.055
16:00	17:00	0.005	0.082	0.066	0.075	0.064	0.084	0.076	0.045	0.039	0.028	0.113	0.131	0.048	0.074	0.069	0.046
17:00	18:00	0.005	0.085	0.066	0.075	0.064	0.084	0.076	0.045	0.039	0.028	0.113	0.132	0.048	0.074	0.068	0.046
18:00	19:00	0.005	0.085	0.066	0.074	0.064	0.084	0.076	0.045	0.039	0.028	0.113	0.131	0.047	0.074	0.069	0.040
19:00	20:00	0.005	0.085	0.066	0.073	0.064	0.083	0.075	0.045	0.039	0.028	0.113	0.132	0.047	0.074	0.069	0.047
20:00	21:00	0.005	0.086	0.066	0.075	0.064	0.084	0.075	0.045	0.039	0.028	#DIV/0!	#DIV/0!	0.047	0.074	0.068	0.046
21:00	22:00	0.005	0.085	0.066	0.075	0.064	0.084	0.076	0.045	0.039	0.028	#DIV/0!	#DIV/0!	0.047	0.074	0.069	0.046
22:00	23:00	0.005	0.086	0.066	0.075	0.064	0.083	0.075	0.045	0.039	0.028	#DIV/0!	#DIV/0!	0.047	0.074	0.069	0.046
23:00	0:00	0.005	0.082	0.063	0.074	0.062	0.081	0.073	0.045	0.039	0.028	#DIV/0!	#DIV/0!	0.047	0.074	0.069	0.046
	Day	0.005	0.084	0.065	0.075	0.064	0.083	0.075	0.045	0.039	0.027	#DIV/0!	#DIV/0!	0.045	0.070	0.065	0.058

Note:

Vehicle classes

- MC-1 PC+LGV-petrol
- MC-3 PC+LGV<2.6-diesel
- MC-4 LGV2.6-3.5t-diesel
- MC-5 PLB (LPG/Diesel)
- MC-6 LGV>3.5t-diesel
- MC-7 HGV<15t-diesel
- MC-8 HGV>15t-diesel
- MC-10 Fran DD bus - diesel
- MC-11 Motorcycle -petrol
- Taxi-3 Taxi
- Taxi-4 PrLB<3.5t-diesel
- Taxi-5 PrLB>3.5t (LPG/Diesel)
- Taxi-6 Non-fran bus<6.4t-diesel
- Taxi-7 Non-fran bus<6.4-15t-diesel
- Taxi-8 Non-fran bus>15t-diesel
- Taxi-10 Fran SD bus - diesel

#DIV/0! means zero VMT

Calculation of NOX Emission Factor (gm/mile/vehicle) for each hours for BCF associated roads (cross-boundary vehicles)

Hour	MC-1	MC-3	MC-4	MC-5	MC-6	MC-7	MC-8	MC-10	MC-11	Taxi-3	Taxi-4	Taxi-5	Taxi-6	Taxi-7	Taxi-8	Taxi-10
0:00	1:00	0.101	#DIV/0!	0.224	#DIV/0!	1.294	2.372	3.078	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
1:00	2:00	0.101	#DIV/0!	0.221	#DIV/0!	1.295	2.371	3.077	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.283	2.363	3.058	#DIV/0!
2:00	3:00	0.101	#DIV/0!	#DIV/0!	#DIV/0!	1.297	2.373	3.081	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.282	2.363	3.057	#DIV/0!
3:00	4:00	0.101	#DIV/0!	#DIV/0!	#DIV/0!	1.296	2.376	3.085	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.289	2.364	3.061	#DIV/0!
4:00	5:00	0.102	#DIV/0!	#DIV/0!	#DIV/0!	1.302	2.379	3.089	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.289	2.366	3.064	#DIV/0!
5:00	6:00	0.102	#DIV/0!	0.223	#DIV/0!	1.302	2.384	3.094	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.289	2.372	3.070	#DIV/0!
6:00	7:00	0.102	#DIV/0!	0.224	#DIV/0!	1.302	2.386	3.095	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.289	2.374	3.074	#DIV/0!
7:00	8:00	0.103	#DIV/0!	0.226	#DIV/0!	1.302	2.385	3.096	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.297	2.376	3.076	#DIV/0!
8:00	9:00	0.103	#DIV/0!	0.227	#DIV/0!	1.304	2.390	3.101	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.296	2.377	3.076	#DIV/0!
9:00	10:00	0.103	#DIV/0!	0.227	#DIV/0!	1.305	2.391	3.103	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.296	2.381	3.081	#DIV/0!
10:00	11:00	0.103	#DIV/0!	0.227	#DIV/0!	1.304	2.388	3.100	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.296	2.382	3.083	#DIV/0!
11:00	12:00	0.103	#DIV/0!	0.226	#DIV/0!	1.304	2.389	3.100	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.296	2.380	3.080	#DIV/0!
12:00	13:00	0.104	#DIV/0!	0.226	#DIV/0!	1.304	2.389	3.100	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.296	2.380	3.080	#DIV/0!
13:00	14:00	0.103	#DIV/0!	0.226	#DIV/0!	1.302	2.385	3.096	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.295	2.381	3.080	#DIV/0!
14:00	15:00	0.103	#DIV/0!	0.227	#DIV/0!	1.300	2.381	3.090	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.294	2.377	3.076	#DIV/0!
15:00	16:00	0.103	#DIV/0!	0.227	#DIV/0!	1.300	2.381	3.090	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.293	2.373	3.070	#DIV/0!
16:00	17:00	0.102	#DIV/0!	0.226	#DIV/0!	1.300	2.381	3.090	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.293	2.373	3.070	#DIV/0!
17:00	18:00	0.102	#DIV/0!	0.225	#DIV/0!	1.298	2.378	3.087	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.293	2.373	3.071	#DIV/0!
18:00	19:00	0.101	#DIV/0!	0.226	#DIV/0!	1.297	2.376	3.083	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.290	2.370	3.067	#DIV/0!
19:00	20:00	0.101	#DIV/0!	0.226	#DIV/0!	1.297	2.376	3.083	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.288	2.368	3.064	#DIV/0!
20:00	21:00	0.101	#DIV/0!	0.227	#DIV/0!	1.298	2.377	3.085	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.290	2.368	3.064	#DIV/0!
21:00	22:00	0.101	#DIV/0!	0.227	#DIV/0!	1.297	2.375	3.082	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.290	2.369	3.065	#DIV/0!
22:00	23:00	0.101	#DIV/0!	0.230	#DIV/0!	1.295	2.374	3.080	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.289	2.366	3.062	#DIV/0!
23:00	0:00	0.101	#DIV/0!	0.230	#DIV/0!	1.295	2.373	3.079	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.286	2.365	3.061	#DIV/0!
Day		0.102	#DIV/0!	0.227	#DIV/0!	1.300	2.382	3.091	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.292	2.373	3.071	#DIV/0!

Note:

Vehicle classes

- MC-1 PC+LGV-petrol
- MC-3 PC+LGV<2.6-diesel
- MC-4 LGV2.6-3.5l-diesel
- MC-5 PLB (LPG/Diesel)
- MC-6 LGV>3.5l-diesel
- MC-7 HGV<15t-diesel
- MC-8 HGV>15t-diesel
- MC-10 Fran DD bus - diesel
- MC-11 Motorcycle -petrol
- Taxi-3 Taxi
- Taxi-4 PrLB<3.5t-diesel
- Taxi-5 PrLB>3.5t (LPG/Diesel)
- Taxi-6 Non-fran bus<6.4t-diesel
- Taxi-7 Non-fran bus<6.4-15t-diesel
- Taxi-8 Non-fran bus>15t-diesel
- Taxi-10 Fran SD bus - diesel

#DIV/0! means zero VMT

Calculation of RSP Emission Factor (gm/mile/vehicle) for each hours for BCF associated roads (cross-boundary vehicles)

Hour	MC-1	MC-3	MC-4	MC-5	MC-6	MC-7	MC-8	MC-10	MC-11	Taxi-3	Taxi-4	Taxi-5	Taxi-6	Taxi-7	Taxi-8	Taxi-10	
0:00	1:00	0.004	#DIV/0!	0.061	#DIV/0!	0.054	0.075	0.069	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.037	0.071	0.062	#DIV/0!
1:00	2:00	0.004	#DIV/0!	0.066	#DIV/0!	0.053	0.076	0.069	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.040	0.072	0.062	#DIV/0!
2:00	3:00	0.004	#DIV/0!	#DIV/0!	#DIV/0!	0.052	0.075	0.069	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.038	0.071	0.062	#DIV/0!
3:00	4:00	0.004	#DIV/0!	#DIV/0!	#DIV/0!	0.050	0.075	0.069	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.038	0.068	0.062	#DIV/0!
4:00	5:00	0.003	#DIV/0!	#DIV/0!	#DIV/0!	0.050	0.075	0.069	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.038	0.068	0.062	#DIV/0!
5:00	6:00	0.004	#DIV/0!	0.056	#DIV/0!	0.054	0.076	0.069	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.038	0.068	0.062	#DIV/0!
6:00	7:00	0.004	#DIV/0!	0.061	#DIV/0!	0.053	0.075	0.069	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.038	0.073	0.062	#DIV/0!
7:00	8:00	0.004	#DIV/0!	0.062	#DIV/0!	0.053	0.075	0.069	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.038	0.071	0.062	#DIV/0!
8:00	9:00	0.004	#DIV/0!	0.059	#DIV/0!	0.053	0.076	0.069	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.038	0.071	0.062	#DIV/0!
9:00	10:00	0.004	#DIV/0!	0.059	#DIV/0!	0.053	0.076	0.069	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.038	0.071	0.062	#DIV/0!
10:00	11:00	0.004	#DIV/0!	0.059	#DIV/0!	0.053	0.076	0.069	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.038	0.071	0.062	#DIV/0!
11:00	12:00	0.004	#DIV/0!	0.059	#DIV/0!	0.053	0.076	0.069	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.038	0.072	0.062	#DIV/0!
12:00	13:00	0.004	#DIV/0!	0.059	#DIV/0!	0.053	0.076	0.069	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.041	0.071	0.062	#DIV/0!
13:00	14:00	0.004	#DIV/0!	0.059	#DIV/0!	0.053	0.076	0.069	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.038	0.071	0.062	#DIV/0!
14:00	15:00	0.004	#DIV/0!	0.059	#DIV/0!	0.053	0.076	0.069	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.039	0.071	0.062	#DIV/0!
15:00	16:00	0.004	#DIV/0!	0.059	#DIV/0!	0.053	0.076	0.069	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.038	0.071	0.062	#DIV/0!
16:00	17:00	0.004	#DIV/0!	0.059	#DIV/0!	0.053	0.076	0.069	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.041	0.072	0.062	#DIV/0!
17:00	18:00	0.004	#DIV/0!	0.061	#DIV/0!	0.053	0.076	0.069	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.041	0.071	0.062	#DIV/0!
18:00	19:00	0.004	#DIV/0!	0.059	#DIV/0!	0.053	0.076	0.069	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.038	0.071	0.062	#DIV/0!
19:00	20:00	0.004	#DIV/0!	0.059	#DIV/0!	0.053	0.076	0.069	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.039	0.071	0.062	#DIV/0!
20:00	21:00	0.004	#DIV/0!	0.059	#DIV/0!	0.053	0.076	0.069	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.041	0.071	0.062	#DIV/0!
21:00	22:00	0.004	#DIV/0!	0.059	#DIV/0!	0.053	0.076	0.069	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.038	0.071	0.063	#DIV/0!
22:00	23:00	0.004	#DIV/0!	0.057	#DIV/0!	0.053	0.076	0.069	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.037	0.071	0.062	#DIV/0!
23:00	0:00	0.004	#DIV/0!	0.057	#DIV/0!	0.053	0.076	0.069	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.037	0.071	0.062	#DIV/0!
	Day	0.004	#DIV/0!	0.058	#DIV/0!	0.053	0.076	0.069	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.039	0.071	0.062	#DIV/0!

Note:

Vehicle classes

- MC-1 PC+LGV-petrol
- MC-3 PC+LGV<2,6-diesel
- MC-4 LGV2,6-3,5t-diesel
- MC-5 PLB (LPG/Diesel)
- MC-6 LGV>3,5t-diesel
- MC-7 HGV<15t-diesel
- MC-8 HGV>15t-diesel
- MC-10 Fran DD bus - diesel
- MC-11 Motorcycle -petrol
- Taxi-3 Taxi
- Taxi-4 PrLB<3,5t-diesel
- Taxi-5 PrLB>3,5t (LPG/Diesel)
- Taxi-6 Non-fran bus<6,4t-diesel
- Taxi-7 Non-fran bus<6,4-15t-diesel
- Taxi-8 Non-fran bus>15t-diesel
- Taxi-10 Fran SD bus - diesel

#DIV/0! means zero VMT

Calculation of NOX Emission Factor (gm/mile/vehicle) for each hours for HKRL (cross-boundary vehicles)

Hour	MC-1	MC-3	MC-4	MC-5	MC-6	MC-7	MC-8	MC-10	MC-11	Taxi-3	Taxi-4	Taxi-5	Taxi-6	Taxi-7	Taxi-8	Taxi-10	
0:00	1:00	0.098	#DIV/0!	0.404	#DIV/0!	2.320	2.500	3.244	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.356	2.491	3.223	#DIV/0!
1:00	2:00	0.098	#DIV/0!	0.404	#DIV/0!	2.320	2.499	3.243	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.357	2.490	3.222	#DIV/0!
2:00	3:00	0.099	#DIV/0!	#DIV/0!	#DIV/0!	2.322	2.503	3.247	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.359	2.494	3.226	#DIV/0!
3:00	4:00	0.099	#DIV/0!	#DIV/0!	#DIV/0!	2.326	2.504	3.251	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.359	2.495	3.230	#DIV/0!
4:00	5:00	0.099	#DIV/0!	#DIV/0!	#DIV/0!	2.329	2.509	3.256	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.359	2.501	3.235	#DIV/0!
5:00	6:00	0.099	#DIV/0!	0.407	#DIV/0!	2.333	2.513	3.261	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.365	2.503	3.240	#DIV/0!
6:00	7:00	0.100	#DIV/0!	0.410	#DIV/0!	2.334	2.514	3.262	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.363	2.505	3.242	#DIV/0!
7:00	8:00	0.100	#DIV/0!	0.407	#DIV/0!	2.334	2.514	3.263	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.364	2.505	3.242	#DIV/0!
8:00	9:00	0.100	#DIV/0!	0.407	#DIV/0!	2.338	2.518	3.268	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.364	2.505	3.242	#DIV/0!
9:00	10:00	0.100	#DIV/0!	0.407	#DIV/0!	2.339	2.520	3.270	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.366	2.509	3.247	#DIV/0!
10:00	11:00	0.100	#DIV/0!	0.407	#DIV/0!	2.337	2.517	3.267	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.366	2.511	3.249	#DIV/0!
11:00	12:00	0.100	#DIV/0!	0.407	#DIV/0!	2.337	2.517	3.267	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.366	2.508	3.246	#DIV/0!
12:00	13:00	0.101	#DIV/0!	0.407	#DIV/0!	2.337	2.517	3.267	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.366	2.508	3.246	#DIV/0!
13:00	14:00	0.101	#DIV/0!	0.407	#DIV/0!	2.334	2.514	3.263	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.366	2.509	3.246	#DIV/0!
14:00	15:00	0.100	#DIV/0!	0.407	#DIV/0!	2.330	2.509	3.257	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.364	2.505	3.242	#DIV/0!
15:00	16:00	0.100	#DIV/0!	0.407	#DIV/0!	2.330	2.509	3.257	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.361	2.501	3.236	#DIV/0!
16:00	17:00	0.100	#DIV/0!	0.407	#DIV/0!	2.330	2.510	3.257	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.361	2.501	3.236	#DIV/0!
17:00	18:00	0.099	#DIV/0!	0.406	#DIV/0!	2.327	2.507	3.253	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.361	2.501	3.236	#DIV/0!
18:00	19:00	0.099	#DIV/0!	0.404	#DIV/0!	2.324	2.504	3.249	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.359	2.498	3.232	#DIV/0!
19:00	20:00	0.099	#DIV/0!	0.404	#DIV/0!	2.325	2.504	3.250	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.358	2.495	3.229	#DIV/0!
20:00	21:00	0.099	#DIV/0!	0.407	#DIV/0!	2.326	2.505	3.251	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.359	2.495	3.229	#DIV/0!
21:00	22:00	0.099	#DIV/0!	0.407	#DIV/0!	2.323	2.503	3.248	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.359	2.496	3.230	#DIV/0!
22:00	23:00	0.098	#DIV/0!	0.404	#DIV/0!	2.322	2.502	3.247	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.358	2.494	3.227	#DIV/0!
23:00	0:00	0.098	#DIV/0!	0.404	#DIV/0!	2.321	2.501	3.245	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.356	2.493	3.226	#DIV/0!
	Day	0.100	#DIV/0!	0.406	#DIV/0!	2.330	2.510	3.258	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.362	2.501	3.237	#DIV/0!

Note:

Vehicle classes

- MC-1 PC+LGV-petrol
- MC-3 PC+LGV<2.6-diesel
- MC-4 LGV2.6-3.5t-diesel
- MC-5 PLB (LPG/Diesel)
- MC-6 LGV>3.5t-diesel
- MC-7 HGV<15t-diesel
- MC-8 HGV>15t-diesel
- MC-10 Fran DD bus - diesel
- MC-11 Motorcycle - petrol
- Taxi-3 Taxi
- Taxi-4 PrLB<3.5t-diesel
- Taxi-5 PrLB>3.5t (LPG/Diesel)
- Taxi-6 Non-fran bus<6.4t-diesel
- Taxi-7 Non-fran bus<6.4-15t-diesel
- Taxi-8 Non-fran bus>15t-diesel
- Taxi-10 Fran SD bus - diesel

#DIV/0! means zero VMT

Calculation of RSP Emission Factor (gm/mile/vehicle) for each hours for HKRL (cross-boundary vehicles)

Hour	MC-1	MC-3	MC-4	MC-5	MC-6	MC-7	MC-8	MC-10	MC-11	Taxi-3	Taxi-4	Taxi-5	Taxi-6	Taxi-7	Taxi-8	Taxi-10	
0:00	1:00	0.003	#DIV/0!	0.042	#DIV/0!	0.036	0.061	0.056	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
1:00	2:00	0.003	#DIV/0!	0.042	#DIV/0!	0.036	0.061	0.056	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.032	0.057	0.050	#DIV/0!
2:00	3:00	0.003	#DIV/0!	#DIV/0!	#DIV/0!	0.036	0.061	0.056	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.032	0.057	0.050	#DIV/0!
3:00	4:00	0.003	#DIV/0!	#DIV/0!	#DIV/0!	0.036	0.050	0.056	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.030	0.058	0.050	#DIV/0!
4:00	5:00	0.003	#DIV/0!	#DIV/0!	#DIV/0!	0.036	0.060	0.056	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.030	0.057	0.050	#DIV/0!
5:00	6:00	0.003	#DIV/0!	0.036	#DIV/0!	0.036	0.061	0.056	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.030	0.057	0.050	#DIV/0!
6:00	7:00	0.003	#DIV/0!	0.042	#DIV/0!	0.036	0.061	0.056	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.030	0.057	0.050	#DIV/0!
7:00	8:00	0.003	#DIV/0!	0.039	#DIV/0!	0.036	0.061	0.056	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.031	0.057	0.050	#DIV/0!
8:00	9:00	0.003	#DIV/0!	0.039	#DIV/0!	0.036	0.061	0.056	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.032	0.057	0.050	#DIV/0!
9:00	10:00	0.003	#DIV/0!	0.039	#DIV/0!	0.036	0.061	0.056	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.031	0.057	0.050	#DIV/0!
10:00	11:00	0.003	#DIV/0!	0.039	#DIV/0!	0.036	0.061	0.056	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.031	0.057	0.050	#DIV/0!
11:00	12:00	0.003	#DIV/0!	0.040	#DIV/0!	0.036	0.061	0.056	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.032	0.057	0.050	#DIV/0!
12:00	13:00	0.003	#DIV/0!	0.040	#DIV/0!	0.036	0.061	0.056	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.032	0.057	0.050	#DIV/0!
13:00	14:00	0.003	#DIV/0!	0.040	#DIV/0!	0.036	0.061	0.056	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.032	0.057	0.050	#DIV/0!
14:00	15:00	0.003	#DIV/0!	0.039	#DIV/0!	0.036	0.061	0.056	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.031	0.057	0.050	#DIV/0!
15:00	16:00	0.003	#DIV/0!	0.039	#DIV/0!	0.036	0.061	0.056	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.032	0.057	0.050	#DIV/0!
16:00	17:00	0.003	#DIV/0!	0.040	#DIV/0!	0.036	0.061	0.056	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.032	0.057	0.050	#DIV/0!
17:00	18:00	0.003	#DIV/0!	0.040	#DIV/0!	0.036	0.061	0.056	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.032	0.057	0.050	#DIV/0!
18:00	19:00	0.003	#DIV/0!	0.040	#DIV/0!	0.036	0.061	0.056	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.032	0.057	0.050	#DIV/0!
19:00	20:00	0.003	#DIV/0!	0.040	#DIV/0!	0.036	0.061	0.056	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.031	0.057	0.050	#DIV/0!
20:00	21:00	0.003	#DIV/0!	0.039	#DIV/0!	0.036	0.061	0.056	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.032	0.057	0.050	#DIV/0!
21:00	22:00	0.003	#DIV/0!	0.039	#DIV/0!	0.036	0.061	0.056	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.031	0.057	0.050	#DIV/0!
22:00	23:00	0.003	#DIV/0!	0.042	#DIV/0!	0.036	0.061	0.056	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.032	0.057	0.050	#DIV/0!
23:00	0:00	0.003	#DIV/0!	0.042	#DIV/0!	0.036	0.061	0.056	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.031	0.057	0.050	#DIV/0!
	Day	0.003	#DIV/0!	0.039	#DIV/0!	0.036	0.061	0.056	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.032	0.057	0.050	#DIV/0!

Note:

Vehicle classes

- MC-1 PC+LGV-petrol
- MC-3 PC+LGV<2.6-diesel
- MC-4 LGV2.6-3.5t-diesel
- MC-5 PLB (LPG/Diesel)
- MC-6 LGV>3.5t-diesel
- MC-7 HGV<15t-diesel
- MC-8 HGV>15t-diesel
- MC-10 Fran DD bus - diesel
- MC-11 Motorcycle -petrol
- Taxi-3 Taxi
- Taxi-4 PrLB<3.5t-diesel
- Taxi-5 PrLB>3.5t (LPG/Diesel)
- Taxi-6 Non-fran bus<6.4t-diesel
- Taxi-7 Non-fran bus<6.4-15t-diesel
- Taxi-8 Non-fran bus>15t-diesel
- Taxi-10 Fran SD bus - diesel

#DIV/0! means zero VMT

Calculation of NOX Emission Factor (gm/mile/vehicle) for each hours for NLH and Airport Road

Hour	MC-1	MC-3	MC-4	MC-5	MC-6	MC-7	MC-8	MC-10	MC-11	Taxi-3	Taxi-4	Taxi-5	Taxi-6	Taxi-7	Taxi-8	Taxi-10	
0:00	1:00	0.111	0.505	0.501	0.228	2.885	2.511	3.262	1.994	1.331	0.290	#DIV/0!	#DIV/0!	1.357	2.481	3.253	1.536
1:00	2:00	0.111	0.504	0.500	0.246	2.884	2.510	3.261	1.993	1.332	0.290	#DIV/0!	#DIV/0!	1.356	2.480	3.251	1.528
2:00	3:00	0.111	0.505	0.501	0.240	2.888	2.513	3.265	1.996	1.338	0.291	#DIV/0!	#DIV/0!	1.358	2.484	3.257	#DIV/0!
3:00	4:00	0.112	0.507	0.502	0.202	2.891	2.516	3.269	1.998	1.342	0.292	#DIV/0!	#DIV/0!	1.360	2.485	3.261	#DIV/0!
4:00	5:00	0.112	0.506	0.503	0.241	2.896	2.520	3.274	2.002	1.348	0.293	#DIV/0!	#DIV/0!	1.362	2.490	3.264	#DIV/0!
5:00	6:00	0.112	0.508	0.503	0.229	2.900	2.524	3.279	2.004	1.352	0.294	#DIV/0!	#DIV/0!	1.364	2.494	3.270	#DIV/0!
6:00	7:00	0.113	0.508	0.504	0.241	2.902	2.525	3.280	2.005	1.353	0.294	#DIV/0!	#DIV/0!	1.364	2.495	3.272	1.542
7:00	8:00	0.109	0.386	0.384	0.189	2.210	2.525	3.281	2.006	1.287	0.284	0.385	0.326	1.364	2.495	3.272	1.541
8:00	9:00	0.109	0.387	0.384	0.190	2.214	2.529	3.286	2.009	1.286	0.284	0.386	0.329	1.367	2.499	3.278	1.545
9:00	10:00	0.109	0.387	0.384	0.190	2.215	2.531	3.288	2.010	1.281	0.285	0.386	0.328	1.367	2.501	3.279	1.544
10:00	11:00	0.109	0.386	0.384	0.188	2.213	2.528	3.285	2.008	1.274	0.285	0.386	0.329	1.366	2.498	3.276	1.542
11:00	12:00	0.109	0.386	0.384	0.189	2.213	2.528	3.285	2.008	1.270	0.285	0.386	0.332	1.366	2.498	3.276	1.543
12:00	13:00	0.110	0.387	0.384	0.191	2.213	2.529	3.285	2.008	1.268	0.286	0.386	0.330	1.366	2.498	3.276	1.543
13:00	14:00	0.109	0.386	0.384	0.190	2.210	2.525	3.281	2.005	1.263	0.286	0.385	0.330	1.364	2.495	3.272	1.541
14:00	15:00	0.109	0.385	0.383	0.188	2.206	2.520	3.275	2.002	1.258	0.285	0.385	0.329	1.362	2.490	3.266	1.538
15:00	16:00	0.109	0.385	0.383	0.189	2.206	2.521	3.275	2.002	1.259	0.284	0.384	0.328	1.362	2.490	3.266	1.538
16:00	17:00	0.109	0.385	0.383	0.188	2.206	2.521	3.275	2.002	1.261	0.283	0.385	0.330	1.362	2.491	3.266	1.540
17:00	18:00	0.108	0.385	0.382	0.188	2.204	2.518	3.271	1.999	1.262	0.282	0.384	0.331	1.360	2.488	3.262	1.537
18:00	19:00	0.107	0.384	0.382	0.191	2.201	2.515	3.267	1.997	1.263	0.280	0.384	0.326	1.359	2.485	3.259	1.536
19:00	20:00	0.107	0.385	0.382	0.191	2.201	2.515	3.268	1.997	1.264	0.280	#DIV/0!	#DIV/0!	1.359	2.485	3.259	1.536
20:00	21:00	0.107	0.385	0.382	0.188	2.202	2.516	3.269	1.998	1.268	0.280	#DIV/0!	#DIV/0!	1.359	2.486	3.260	1.536
21:00	22:00	0.107	0.384	0.382	0.188	2.200	2.514	3.266	1.996	1.267	0.280	#DIV/0!	#DIV/0!	1.358	2.484	3.257	1.533
22:00	23:00	0.107	0.384	0.382	0.190	2.199	2.513	3.264	1.996	1.268	0.280	#DIV/0!	#DIV/0!	1.358	2.483	3.256	1.533
23:00	0:00	0.111	0.505	0.501	0.234	2.886	2.512	3.263	1.995	1.329	0.290	#DIV/0!	#DIV/0!	1.357	2.482	3.255	1.532
	Day	0.109	0.401	0.398	0.195	2.294	2.521	3.276	2.002	1.278	0.284	0.385	0.329	1.362	2.491	3.267	1.539

Note:

Vehicle classes

- MC-1 PC+LGV-petrol
- MC-3 PC+LGV<2.6-diesel
- MC-4 LGV2.6-3.5t-diesel
- MC-5 PLB (LPG/Diesel)
- MC-6 LGV>3.5t-diesel
- MC-7 HGV<15t-diesel
- MC-8 HGV>15t-diesel
- MC-10 Fran DD bus - diesel
- MC-11 Motorcycle -petrol
- Taxi-3 Taxi
- Taxi-4 PrLB<3.5t-diesel
- Taxi-5 PrLB>3.5t (LPG/Diesel)
- Taxi-6 Non-fran bus<6.4t-diesel
- Taxi-7 Non-fran bus<6.4-15t-diesel
- Taxi-8 Non-fran bus>15t-diesel
- Taxi-10 Fran SD bus - diesel

#DIV/0! means zero VMT

Calculation of RSP Emission Factor (gm/mile/vehicle) for each hours for NLH and Airport Road

Hour	MC-1	MC-3	MC-4	MC-5	MC-6	MC-7	MC-8	MC-10	MC-11	Taxi-3	Taxi-4	Taxi-5	Taxi-6	Taxi-7	Taxi-8	Taxi-10	
0:00	1:00	0.005	0.056	0.043	0.056	0.042	0.065	0.059	0.036	0.107	0.028	#DIV/0!	#DIV/0!	0.037	0.057	0.053	0.036
1:00	2:00	0.005	0.056	0.043	0.059	0.042	0.065	0.059	0.036	0.107	0.028	#DIV/0!	#DIV/0!	0.037	0.058	0.054	0.036
2:00	3:00	0.005	0.055	0.043	0.058	0.042	0.065	0.059	0.036	0.107	0.028	#DIV/0!	#DIV/0!	0.037	0.057	0.054	#DIV/0!
3:00	4:00	0.005	0.055	0.043	0.053	0.042	0.065	0.059	0.037	0.107	0.028	#DIV/0!	#DIV/0!	0.037	0.057	0.055	#DIV/0!
4:00	5:00	0.005	0.054	0.043	0.060	0.042	0.065	0.059	0.036	0.107	0.028	#DIV/0!	#DIV/0!	0.037	0.057	0.053	#DIV/0!
5:00	6:00	0.005	0.056	0.043	0.056	0.042	0.065	0.059	0.036	0.107	0.028	#DIV/0!	#DIV/0!	0.037	0.057	0.054	0.036
6:00	7:00	0.005	0.055	0.043	0.058	0.042	0.065	0.059	0.036	0.107	0.028	#DIV/0!	#DIV/0!	0.037	0.057	0.053	0.036
7:00	8:00	0.004	0.056	0.044	0.057	0.043	0.065	0.059	0.036	0.079	0.025	0.077	0.090	0.037	0.057	0.053	0.039
8:00	9:00	0.004	0.056	0.044	0.057	0.043	0.065	0.059	0.036	0.079	0.025	0.077	0.090	0.037	0.057	0.053	0.038
9:00	10:00	0.004	0.056	0.044	0.057	0.043	0.065	0.059	0.036	0.079	0.025	0.077	0.090	0.037	0.057	0.053	0.038
10:00	11:00	0.004	0.056	0.044	0.057	0.043	0.065	0.059	0.036	0.079	0.025	0.077	0.091	0.037	0.057	0.053	0.038
11:00	12:00	0.004	0.056	0.044	0.057	0.043	0.065	0.059	0.036	0.079	0.025	0.077	0.091	0.037	0.057	0.053	0.038
12:00	13:00	0.004	0.056	0.044	0.057	0.043	0.065	0.059	0.036	0.079	0.025	0.077	0.091	0.037	0.057	0.053	0.038
13:00	14:00	0.004	0.056	0.044	0.057	0.043	0.065	0.059	0.036	0.079	0.025	0.077	0.091	0.037	0.057	0.053	0.039
14:00	15:00	0.004	0.056	0.044	0.057	0.043	0.065	0.059	0.036	0.079	0.025	0.076	0.091	0.037	0.057	0.053	0.038
15:00	16:00	0.004	0.056	0.044	0.057	0.043	0.065	0.059	0.036	0.079	0.025	0.076	0.091	0.037	0.057	0.053	0.039
16:00	17:00	0.004	0.056	0.044	0.057	0.043	0.065	0.059	0.036	0.079	0.025	0.077	0.091	0.037	0.057	0.053	0.038
17:00	18:00	0.004	0.056	0.044	0.057	0.043	0.065	0.059	0.036	0.079	0.025	0.076	0.091	0.037	0.057	0.053	0.038
18:00	19:00	0.004	0.056	0.044	0.057	0.043	0.065	0.059	0.036	0.079	0.025	0.077	0.091	0.037	0.057	0.053	0.038
19:00	20:00	0.004	0.056	0.044	0.058	0.043	0.065	0.059	0.036	0.079	0.025	#DIV/0!	#DIV/0!	0.037	0.057	0.053	0.038
20:00	21:00	0.004	0.056	0.044	0.057	0.043	0.065	0.059	0.036	0.079	0.025	#DIV/0!	#DIV/0!	0.037	0.057	0.053	0.038
21:00	22:00	0.004	0.056	0.044	0.057	0.043	0.065	0.059	0.036	0.079	0.025	#DIV/0!	#DIV/0!	0.037	0.057	0.053	0.038
22:00	23:00	0.004	0.056	0.044	0.057	0.043	0.065	0.059	0.036	0.079	0.025	#DIV/0!	#DIV/0!	0.037	0.057	0.053	0.038
23:00	0:00	0.005	0.055	0.043	0.057	0.042	0.065	0.059	0.036	0.107	0.028	#DIV/0!	#DIV/0!	0.037	0.057	0.053	0.038
	Day	0.004	0.056	0.044	0.057	0.043	0.065	0.059	0.036	0.083	0.025	0.076	0.091	0.037	0.057	0.053	0.038

Note:

Vehicle classes

- MC-1 PC+LGV-petrol
- MC-3 PC+LGV<2.6-diesel
- MC-4 LGV2.6-3.5l-diesel
- MC-5 PLB (LPG/Diesel)
- MC-6 LGV>3.5l-diesel
- MC-7 HGV<15t-diesel
- MC-8 HGV>15t-diesel
- MC-10 Fran DD bus - diesel
- MC-11 Motorcycle -petrol
- Taxi-3 Taxi
- Taxi-4 PrLB<3.5t-diesel
- Taxi-5 PrLB>3.5l (LPG/Diesel)
- Taxi-6 Non-fran bus<6.4t-diesel
- Taxi-7 Non-fran bus<6.4-15l-diesel
- Taxi-8 Non-fran bus>15l-diesel
- Taxi-10 Fran SD bus - diesel

#DIV/0! means zero VMT

Calculation of NOX Emission Factor (gm/mile/vehicle) for each hours for other roads

Hour	MC-1	MC-3	MC-4	MC-5	MC-6	MC-7	MC-8	MC-10	MC-11	Taxi-3	Taxi-4	Taxi-5	Taxi-6	Taxi-7	Taxi-8	Taxi-10	
0:00	1:00	0.129	0.228	0.226	0.109	1.300	2.384	3.097	1.877	1.205	0.300	#DIV/0!	#DIV/0!	1.292	2.361	3.097	1.444
1:00	2:00	0.129	0.228	0.226	0.108	1.300	2.383	3.096	1.877	1.216	0.301	#DIV/0!	#DIV/0!	1.291	2.361	3.096	1.442
2:00	3:00	0.131	0.231	0.226	0.110	1.301	2.386	3.100	1.880	1.234	0.302	#DIV/0!	#DIV/0!	1.293	2.364	3.101	1.447
3:00	4:00	0.130	0.230	0.226	0.110	1.303	2.389	3.104	1.882	1.224	0.302	#DIV/0!	#DIV/0!	1.294	2.366	3.104	1.441
4:00	5:00	0.129	0.226	0.226	0.111	1.305	2.393	3.109	1.884	1.194	0.303	#DIV/0!	#DIV/0!	1.297	2.371	3.110	1.450
5:00	6:00	0.129	0.227	0.227	0.108	1.307	2.396	3.113	1.887	1.180	0.303	#DIV/0!	#DIV/0!	1.298	2.374	3.113	1.450
6:00	7:00	0.129	0.228	0.227	0.108	1.307	2.397	3.115	1.888	1.176	0.304	#DIV/0!	#DIV/0!	1.299	2.375	3.115	1.451
7:00	8:00	0.138	0.244	0.243	0.116	1.401	2.569	3.337	2.122	1.135	0.331	0.240	0.205	1.373	2.511	3.294	1.632
8:00	9:00	0.138	0.245	0.243	0.117	1.403	2.573	3.343	2.125	1.143	0.332	0.240	0.204	1.375	2.515	3.299	1.636
9:00	10:00	0.139	0.245	0.244	0.116	1.404	2.575	3.345	2.126	1.158	0.333	0.240	0.204	1.376	2.516	3.301	1.636
10:00	11:00	0.139	0.245	0.243	0.117	1.403	2.572	3.342	2.124	1.161	0.333	0.240	0.204	1.374	2.514	3.298	1.635
11:00	12:00	0.140	0.245	0.243	0.116	1.403	2.572	3.341	2.124	1.163	0.334	0.240	0.203	1.374	2.514	3.298	1.635
12:00	13:00	0.140	0.245	0.243	0.116	1.403	2.572	3.342	2.124	1.163	0.335	0.240	0.205	1.375	2.514	3.298	1.635
13:00	14:00	0.140	0.244	0.243	0.116	1.401	2.569	3.337	2.121	1.160	0.334	0.240	0.205	1.373	2.510	3.294	1.633
14:00	15:00	0.140	0.244	0.243	0.116	1.398	2.564	3.331	2.118	1.159	0.333	0.239	0.203	1.370	2.506	3.288	1.630
15:00	16:00	0.139	0.244	0.243	0.116	1.398	2.564	3.331	2.118	1.157	0.332	0.239	0.202	1.370	2.506	3.288	1.629
16:00	17:00	0.139	0.244	0.243	0.116	1.398	2.564	3.331	2.118	1.161	0.331	0.239	0.203	1.370	2.506	3.288	1.630
17:00	18:00	0.138	0.243	0.242	0.116	1.397	2.561	3.327	2.115	1.160	0.330	0.239	0.204	1.369	2.503	3.284	1.627
18:00	19:00	0.138	0.244	0.242	0.115	1.395	2.558	3.323	2.113	1.165	0.328	0.239	0.202	1.367	2.500	3.280	1.626
19:00	20:00	0.138	0.243	0.242	0.116	1.395	2.559	3.324	2.113	1.172	0.328	#DIV/0!	#DIV/0!	1.367	2.501	3.281	1.627
20:00	21:00	0.130	0.228	0.226	0.109	1.303	2.389	3.104	1.882	1.220	0.302	#DIV/0!	#DIV/0!	1.294	2.367	3.104	1.446
21:00	22:00	0.130	0.227	0.226	0.109	1.302	2.387	3.101	1.880	1.218	0.301	#DIV/0!	#DIV/0!	1.293	2.365	3.102	1.444
22:00	23:00	0.130	0.228	0.226	0.109	1.301	2.386	3.100	1.879	1.216	0.301	#DIV/0!	#DIV/0!	1.293	2.364	3.100	1.444
23:00	0:00	0.129	0.228	0.226	0.109	1.301	2.385	3.099	1.878	1.208	0.301	#DIV/0!	#DIV/0!	1.292	2.363	3.099	1.442
	Day	0.136	0.240	0.238	0.114	1.373	2.518	3.272	2.055	1.171	0.324	0.240	0.204	1.351	2.470	3.241	1.581

Note:

Vehicle classes

- MC-1 PC+LGV-petrol
- MC-3 PC+LGV<2.6-diesel
- MC-4 LGV2.6-3.5t-diesel
- MC-5 PLB (LPG/Diesel)
- MC-6 LGV>3.5t-diesel
- MC-7 HGV<15t-diesel
- MC-8 HGV>15t-diesel
- MC-10 Fran DD bus - diesel
- MC-11 Motorcycle -petrol
- Taxi-3 Taxi
- Taxi-4 PrLB<3.5t-diesel
- Taxi-5 PrLB>3.5t (LPG/Diesel)
- Taxi-6 Non-fran bus<6.4t-diesel
- Taxi-7 Non-fran bus<6.4-15t-diesel
- Taxi-8 Non-fran bus>15t-diesel
- Taxi-10 Fran SD bus - diesel

#DIV/0! means zero VMT



Calculation of RSP Emission Factor (gm/mile/vehicle) for each hours for other roads

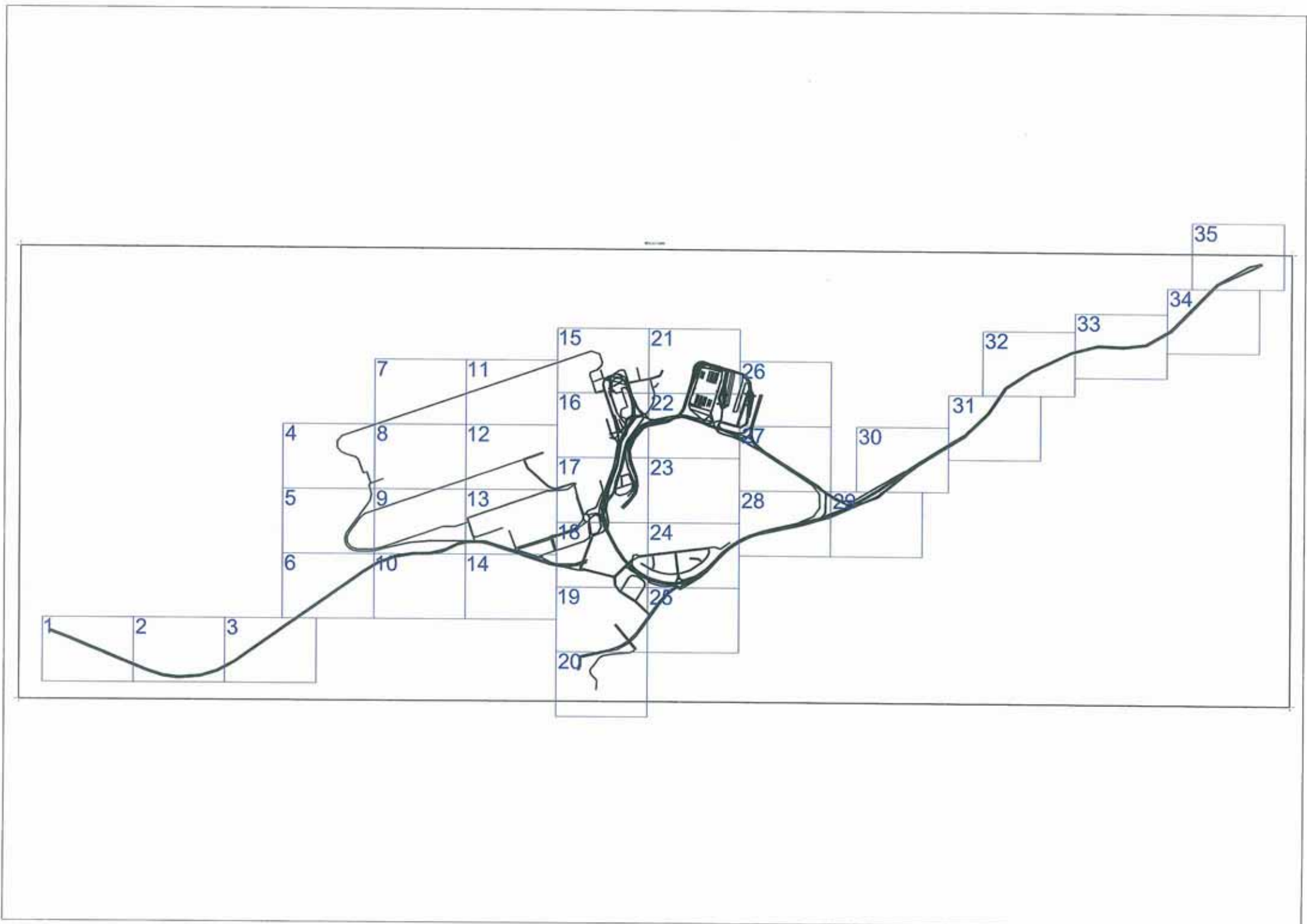
Hour	MC-1	MC-3	MC-4	MC-5	MC-6	MC-7	MC-8	MC-10	MC-11	Taxi-3	Taxi-4	Taxi-5	Taxi-6	Taxi-7	Taxi-8	Taxi-10	
0:00	1:00	0.005	0.081	0.063	0.074	0.062	0.081	0.073	0.044	0.049	0.028	#DIV/0!	#DIV/0!	0.045	0.071	0.065	0.047
1:00	2:00	0.005	0.081	0.063	0.074	0.062	0.081	0.073	0.044	0.048	0.028	#DIV/0!	#DIV/0!	0.045	0.071	0.066	0.049
2:00	3:00	0.005	0.083	0.063	0.074	0.062	0.080	0.073	0.044	0.050	0.028	#DIV/0!	#DIV/0!	0.046	0.070	0.066	0.044
3:00	4:00	0.005	0.084	0.063	0.074	0.062	0.081	0.073	0.044	0.050	0.028	#DIV/0!	#DIV/0!	0.045	0.070	0.065	0.048
4:00	5:00	0.005	0.080	0.063	0.075	0.062	0.081	0.073	0.044	0.056	0.028	#DIV/0!	#DIV/0!	0.045	0.071	0.066	0.049
5:00	6:00	0.005	0.081	0.063	0.073	0.062	0.081	0.073	0.044	0.058	0.028	#DIV/0!	#DIV/0!	0.045	0.070	0.066	0.048
6:00	7:00	0.005	0.081	0.063	0.073	0.062	0.081	0.073	0.044	0.057	0.028	#DIV/0!	#DIV/0!	0.045	0.070	0.066	0.048
7:00	8:00	0.007	0.101	0.079	0.088	0.077	0.101	0.091	0.059	0.059	0.039	0.130	0.150	0.054	0.085	0.079	0.063
8:00	9:00	0.007	0.101	0.079	0.089	0.077	0.101	0.091	0.059	0.056	0.039	0.130	0.149	0.055	0.085	0.079	0.064
9:00	10:00	0.006	0.101	0.079	0.088	0.077	0.101	0.091	0.059	0.056	0.039	0.130	0.149	0.054	0.085	0.079	0.063
10:00	11:00	0.006	0.101	0.079	0.089	0.077	0.101	0.091	0.059	0.052	0.039	0.130	0.149	0.054	0.085	0.079	0.063
11:00	12:00	0.006	0.101	0.079	0.089	0.077	0.101	0.091	0.059	0.051	0.039	0.130	0.149	0.054	0.085	0.079	0.063
12:00	13:00	0.006	0.101	0.079	0.089	0.077	0.101	0.091	0.059	0.050	0.039	0.130	0.149	0.054	0.085	0.079	0.063
13:00	14:00	0.006	0.101	0.079	0.089	0.077	0.101	0.091	0.059	0.050	0.039	0.130	0.150	0.055	0.085	0.079	0.064
14:00	15:00	0.006	0.101	0.079	0.088	0.077	0.101	0.091	0.059	0.049	0.039	0.130	0.150	0.054	0.085	0.079	0.064
15:00	16:00	0.006	0.101	0.079	0.089	0.077	0.101	0.091	0.059	0.050	0.039	0.129	0.149	0.054	0.085	0.079	0.064
16:00	17:00	0.006	0.101	0.079	0.088	0.077	0.101	0.091	0.059	0.050	0.039	0.130	0.149	0.054	0.085	0.079	0.063
17:00	18:00	0.006	0.101	0.079	0.089	0.077	0.101	0.091	0.059	0.050	0.039	0.129	0.149	0.054	0.085	0.079	0.064
18:00	19:00	0.006	0.101	0.079	0.088	0.077	0.101	0.091	0.059	0.051	0.039	0.130	0.150	0.054	0.085	0.079	0.064
19:00	20:00	0.006	0.101	0.079	0.089	0.077	0.101	0.091	0.059	0.050	0.039	0.130	0.149	0.054	0.085	0.079	0.063
20:00	21:00	0.005	0.081	0.063	0.074	0.062	0.081	0.073	0.044	0.049	0.039	#DIV/0!	#DIV/0!	0.054	0.085	0.079	0.062
21:00	22:00	0.005	0.081	0.063	0.074	0.062	0.081	0.073	0.044	0.047	0.028	#DIV/0!	#DIV/0!	0.045	0.070	0.065	0.047
22:00	23:00	0.005	0.081	0.063	0.074	0.062	0.081	0.073	0.044	0.048	0.028	#DIV/0!	#DIV/0!	0.045	0.070	0.065	0.047
23:00	0:00	0.005	0.081	0.063	0.074	0.062	0.081	0.073	0.044	0.048	0.028	#DIV/0!	#DIV/0!	0.045	0.070	0.065	0.048
	Day	0.006	0.096	0.075	0.085	0.073	0.096	0.086	0.055	0.051	0.036	0.130	0.149	0.052	0.081	0.075	0.059

Note:

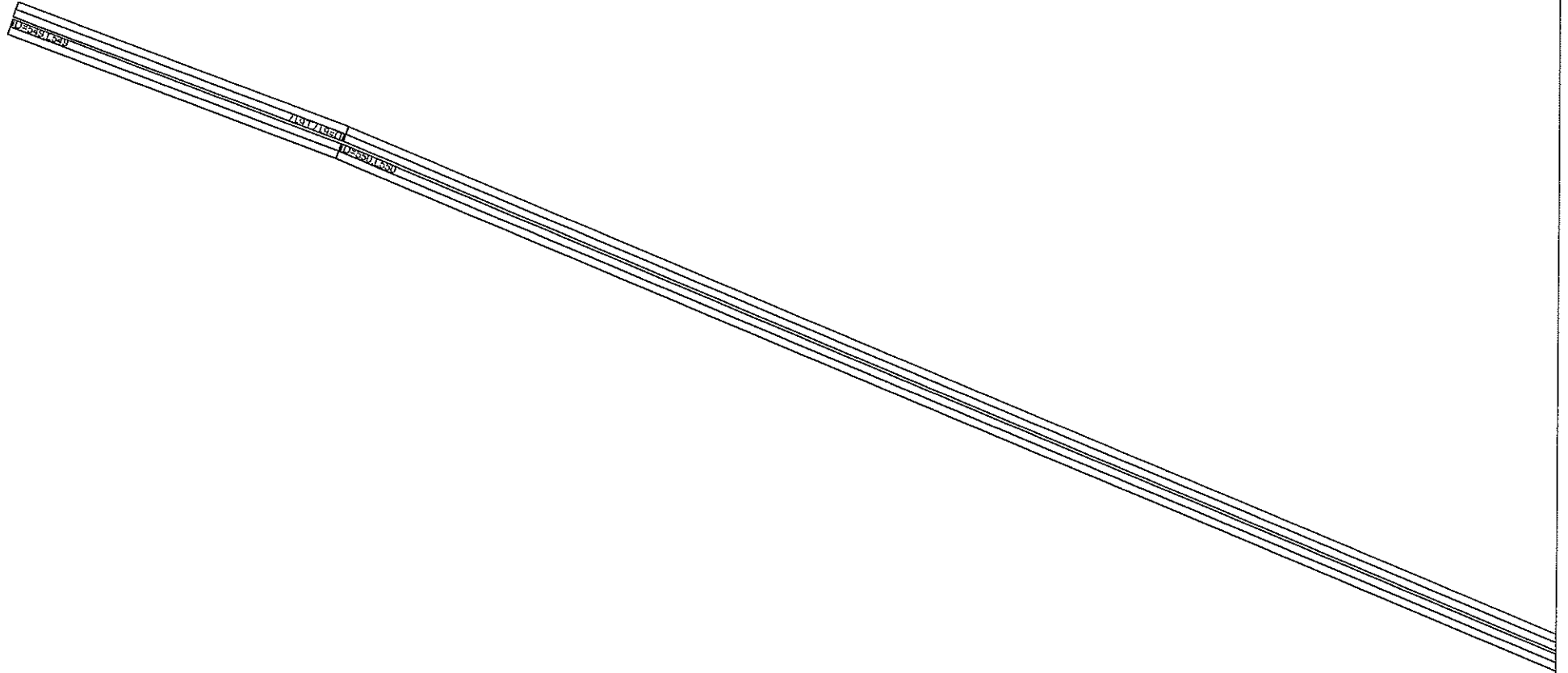
Vehicle classes

- MC-1 PC+LGV-petrol
- MC-3 PC+LGV<2,6-diesel
- MC-4 LGV2.6-3.5t-diesel
- MC-5 PLB (LPG/Diesel)
- MC-6 LGV>3.5t-diesel
- MC-7 HGV<15t-diesel
- MC-8 HGV>15t-diesel
- MC-10 Fran DD bus - diesel
- MC-11 Motorcycle -petrol
- Taxi-3 Taxi
- Taxi-4 PrLB<3,5t-diesel
- Taxi-5 PrLB>3,5t (LPG/Diesel)
- Taxi-6 Non-fran bus<6,4t-diesel
- Taxi-7 Non-fran bus<6,4-15t-diesel
- Taxi-8 Non-fran bus>15t-diesel
- Taxi-10 Fran SD bus - diesel

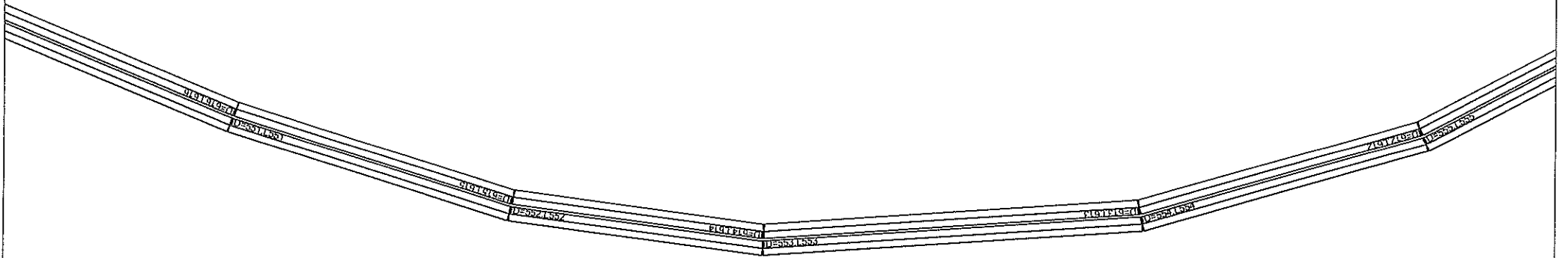
#DIV/0! means zero VMT



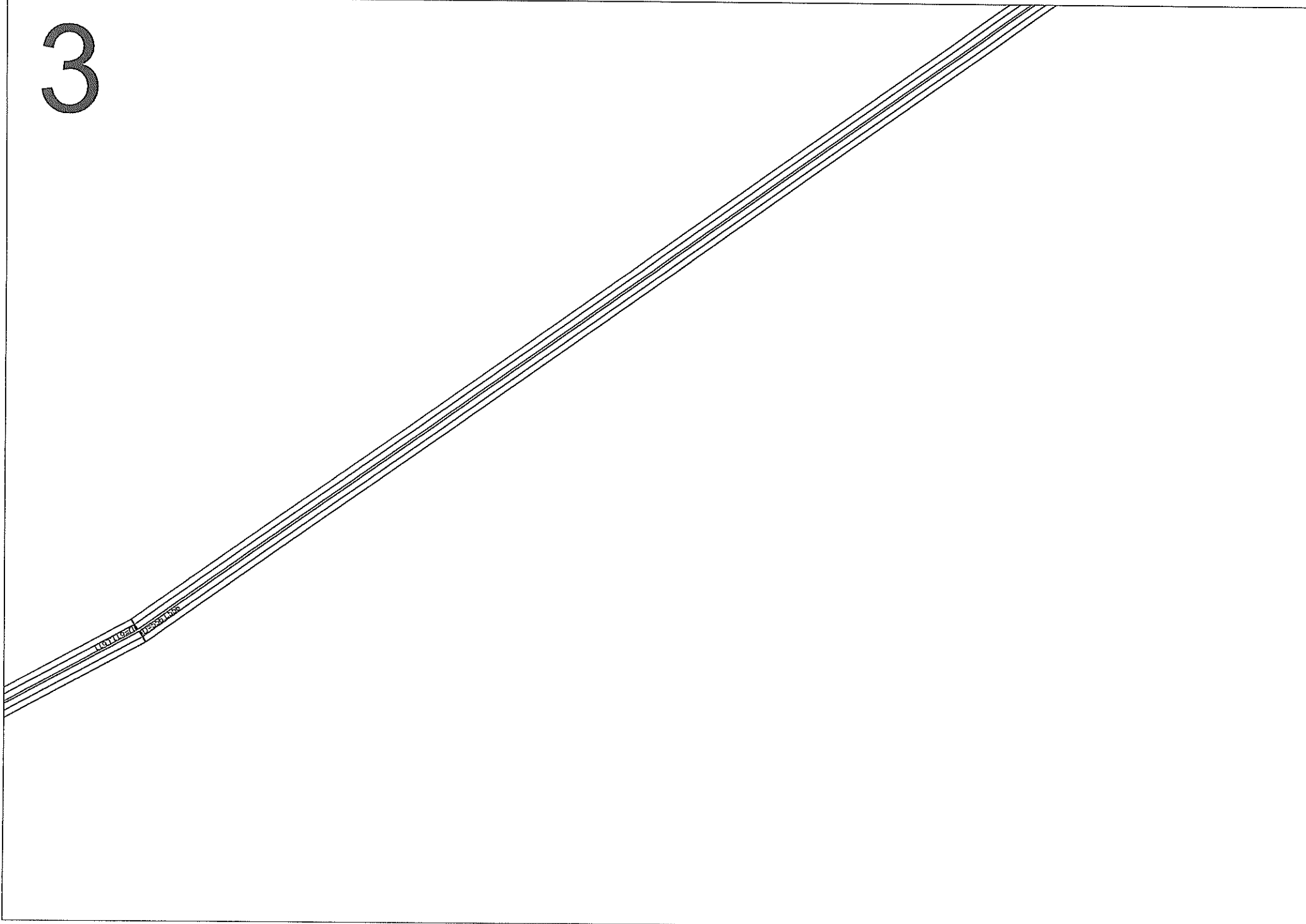
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2



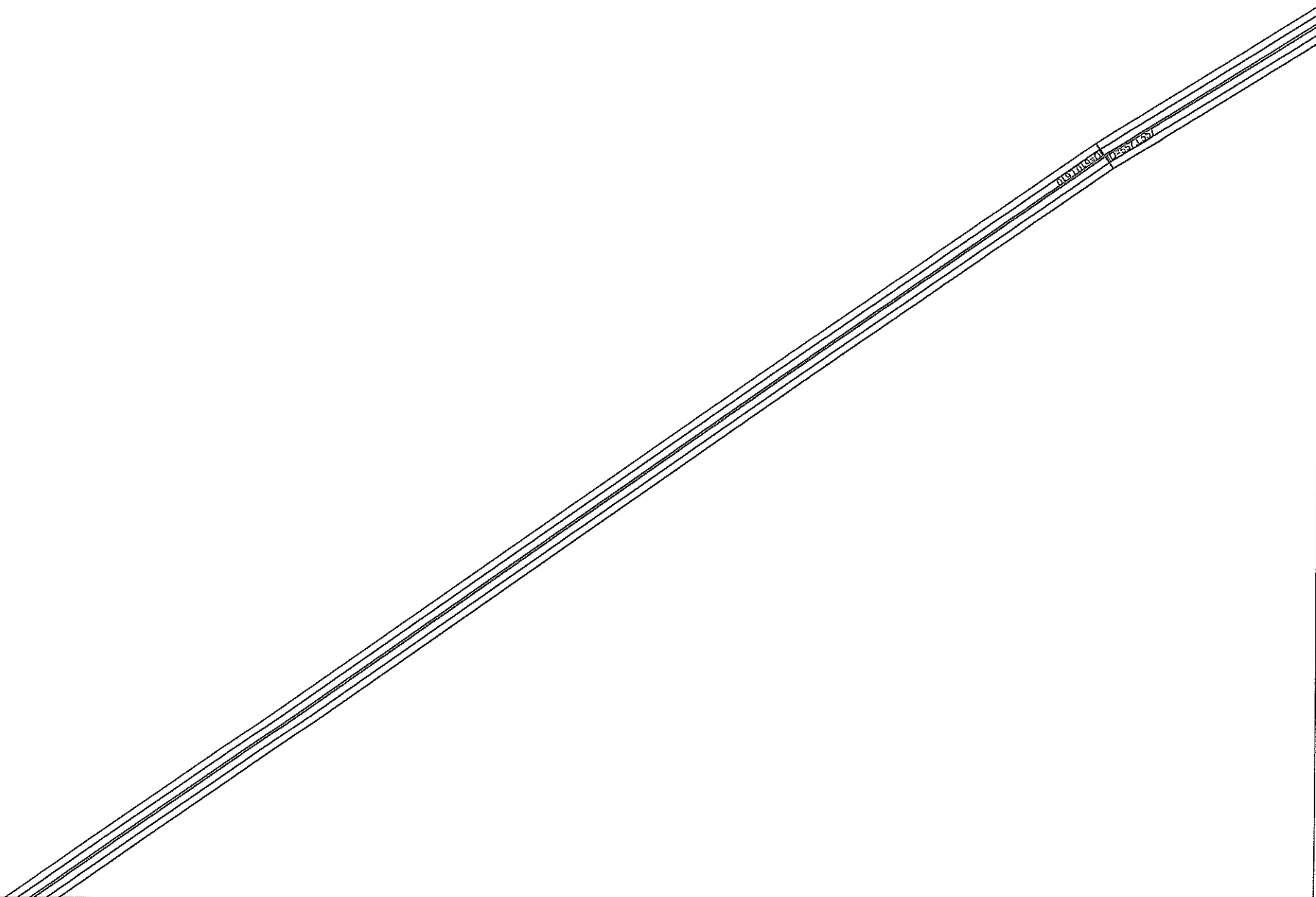
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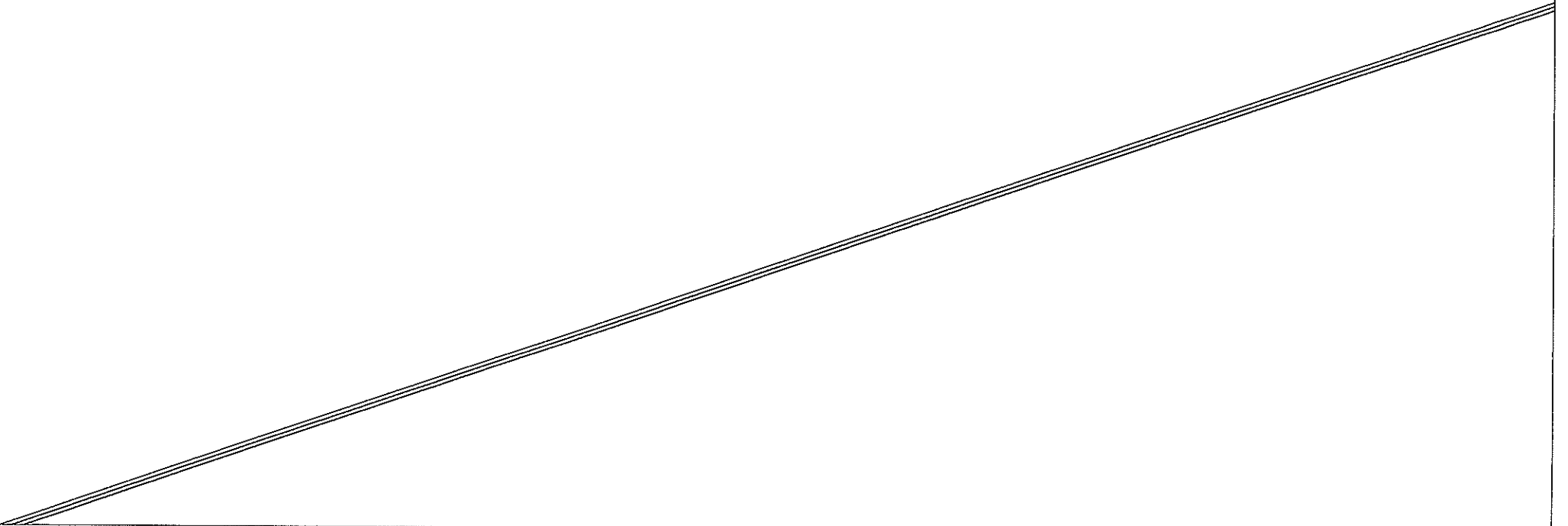


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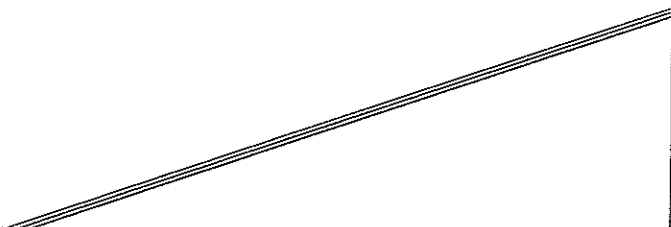




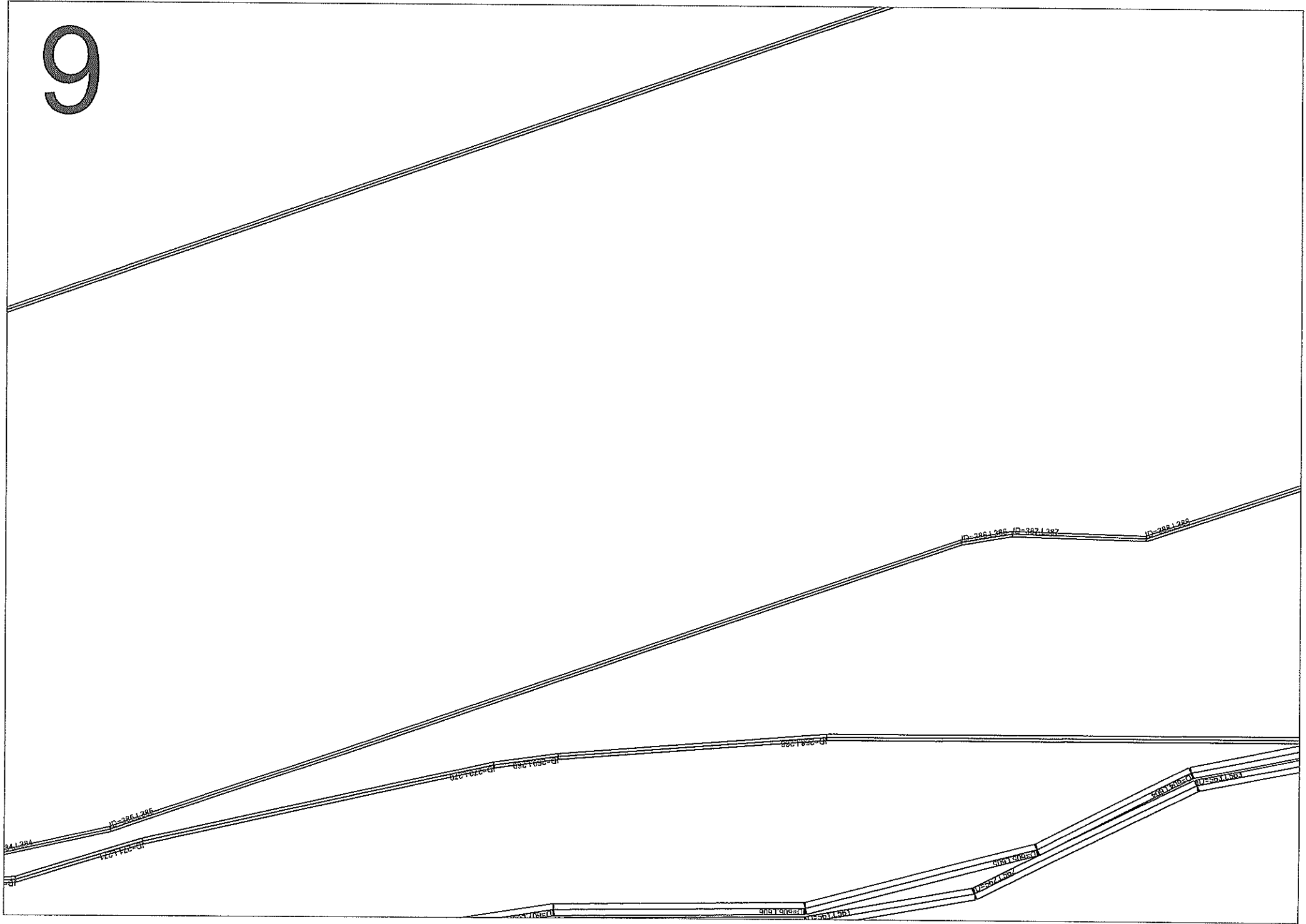
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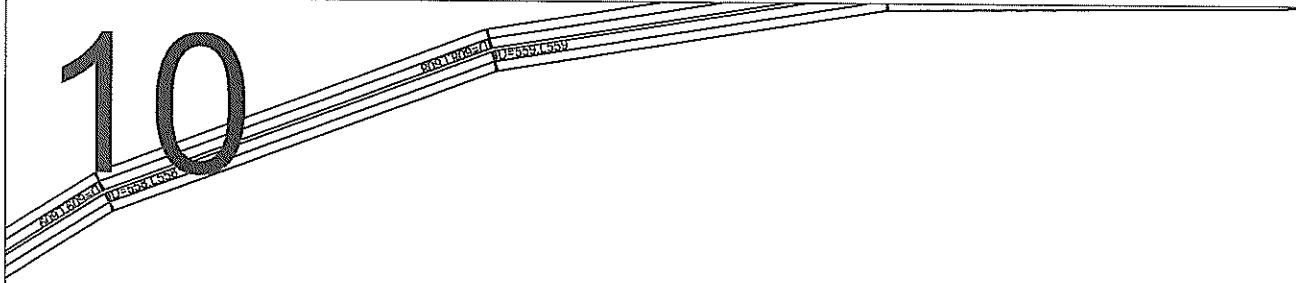
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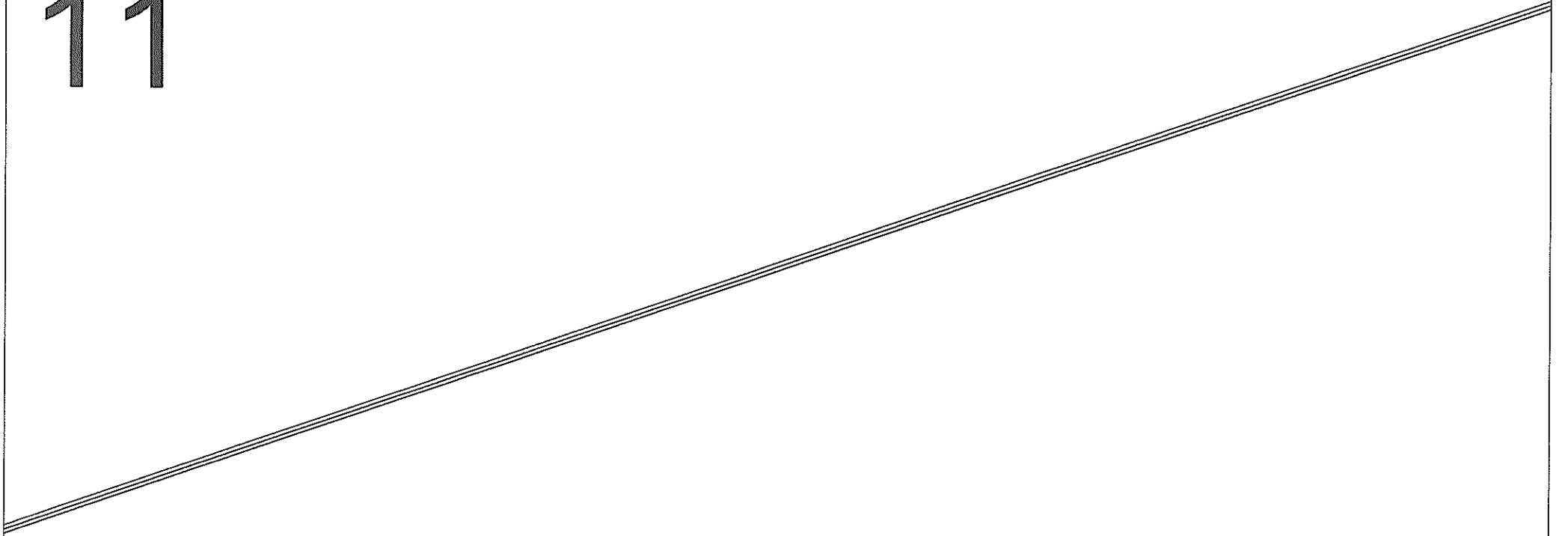
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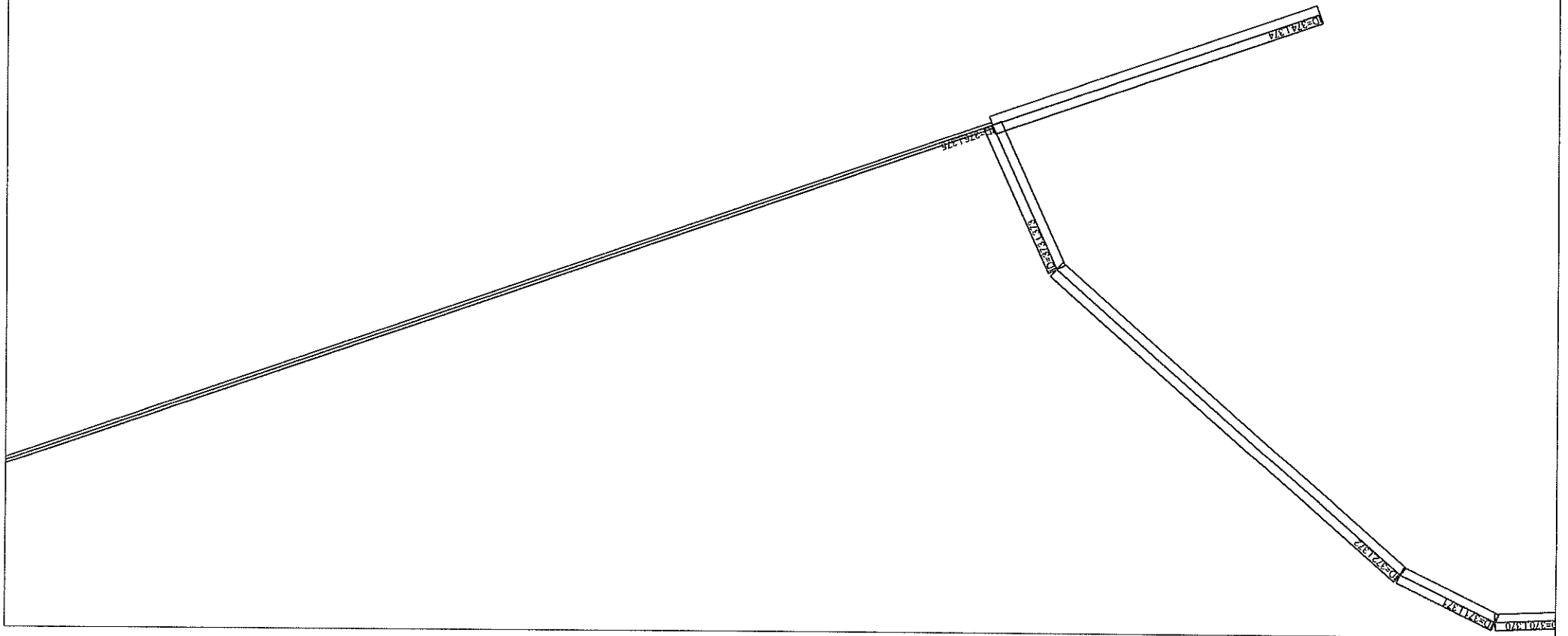
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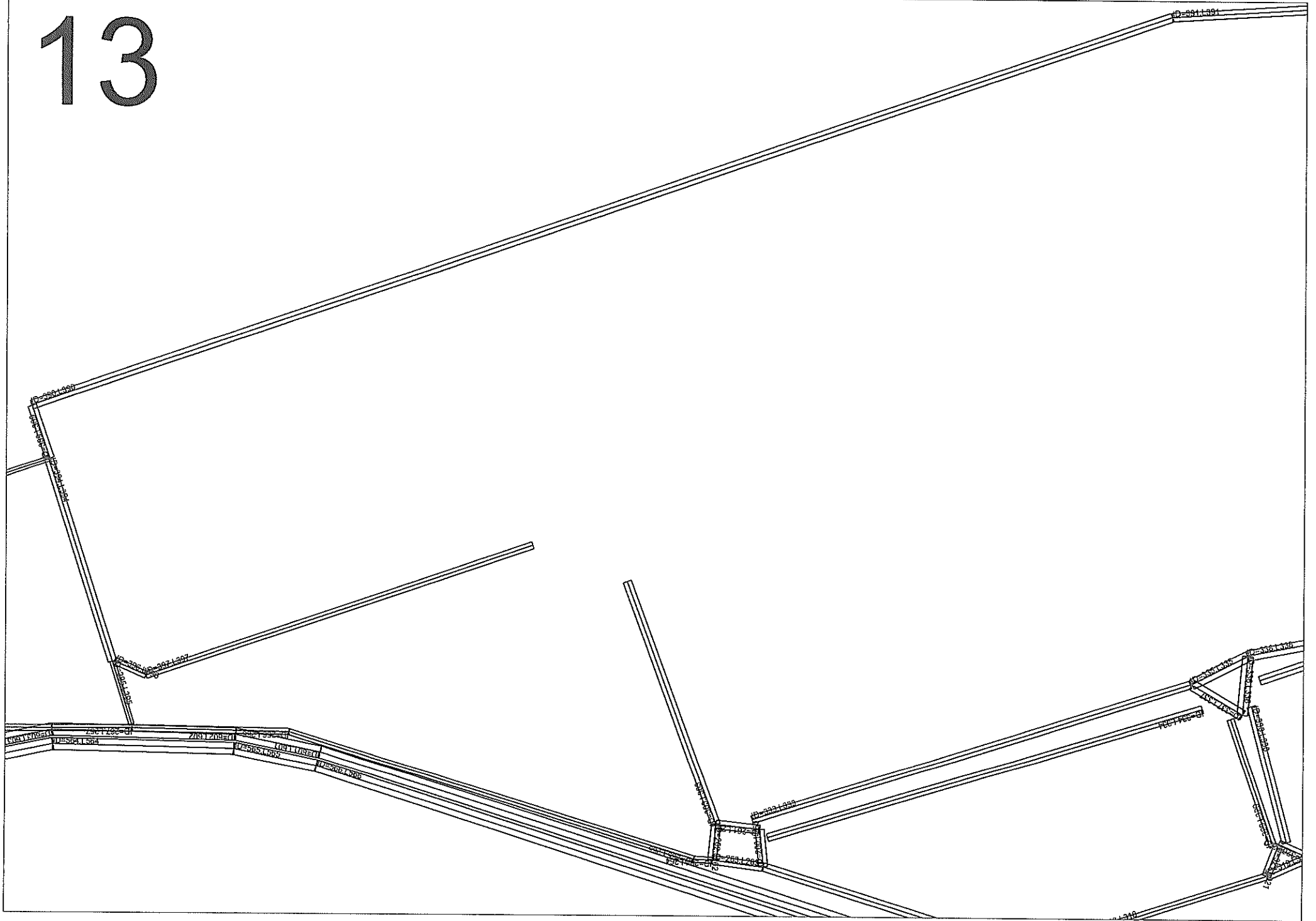
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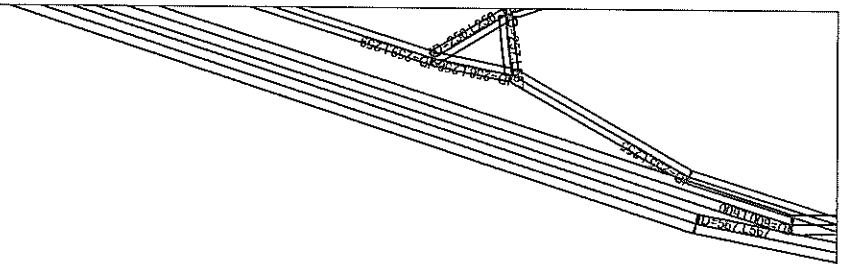
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13



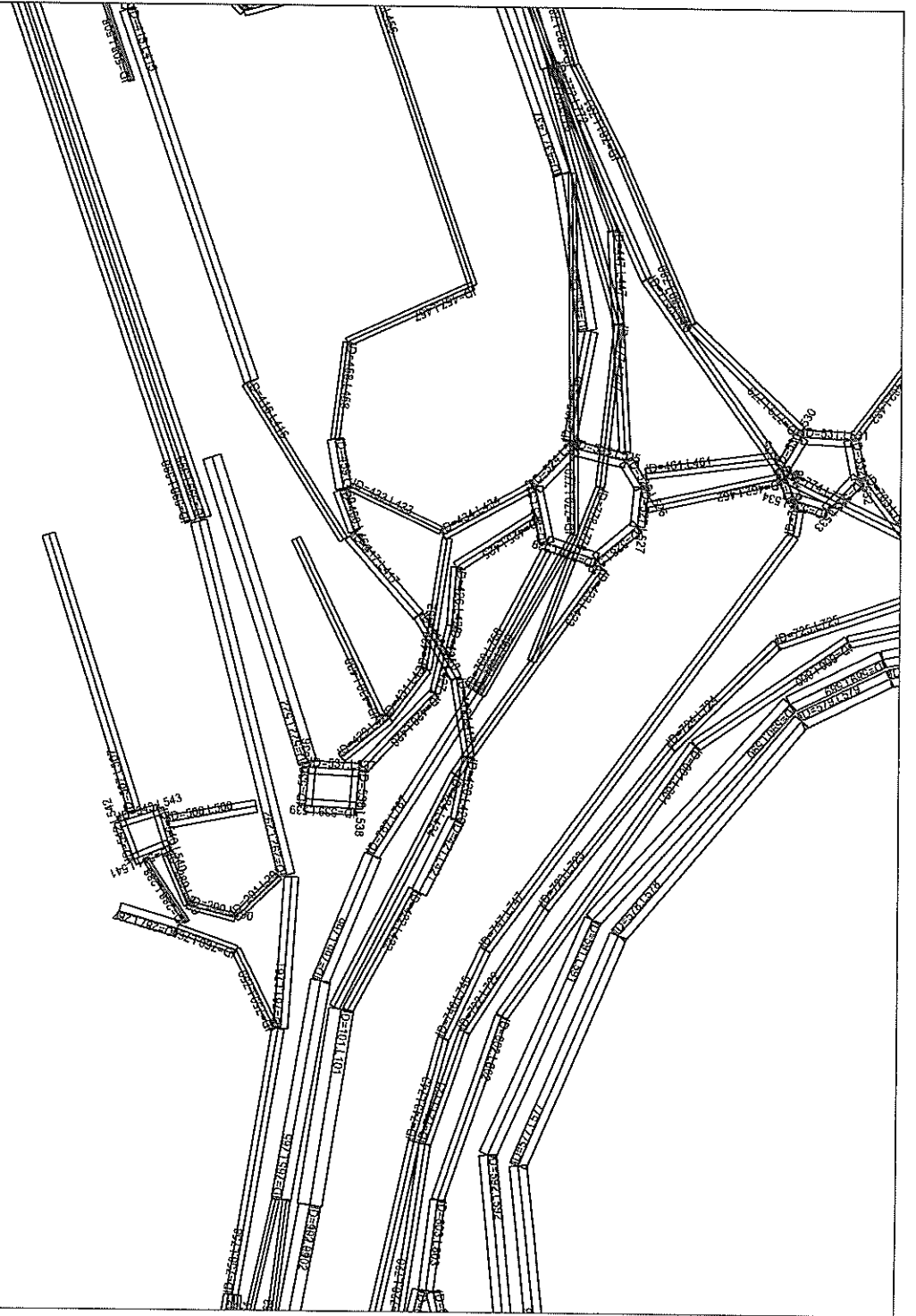
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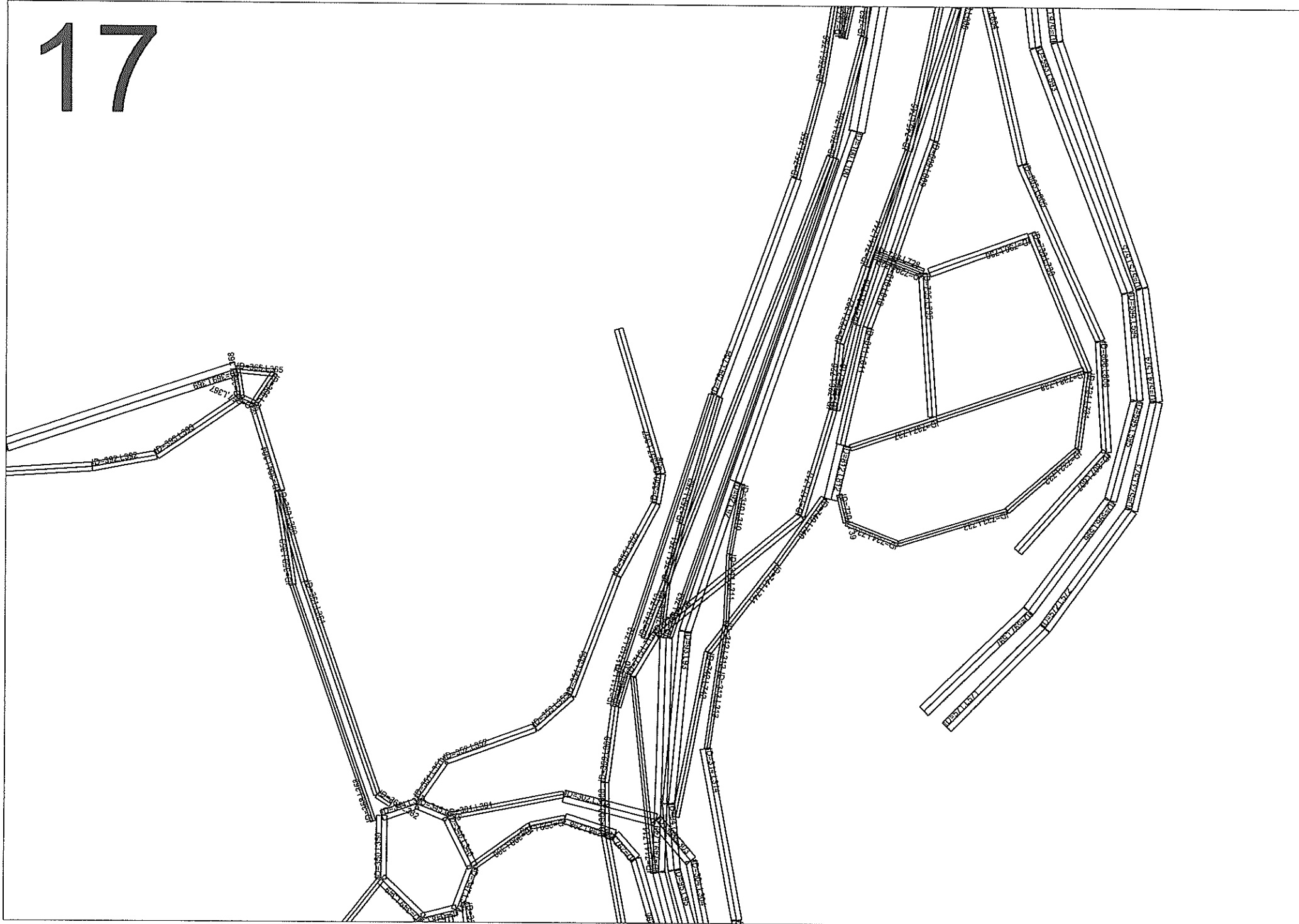




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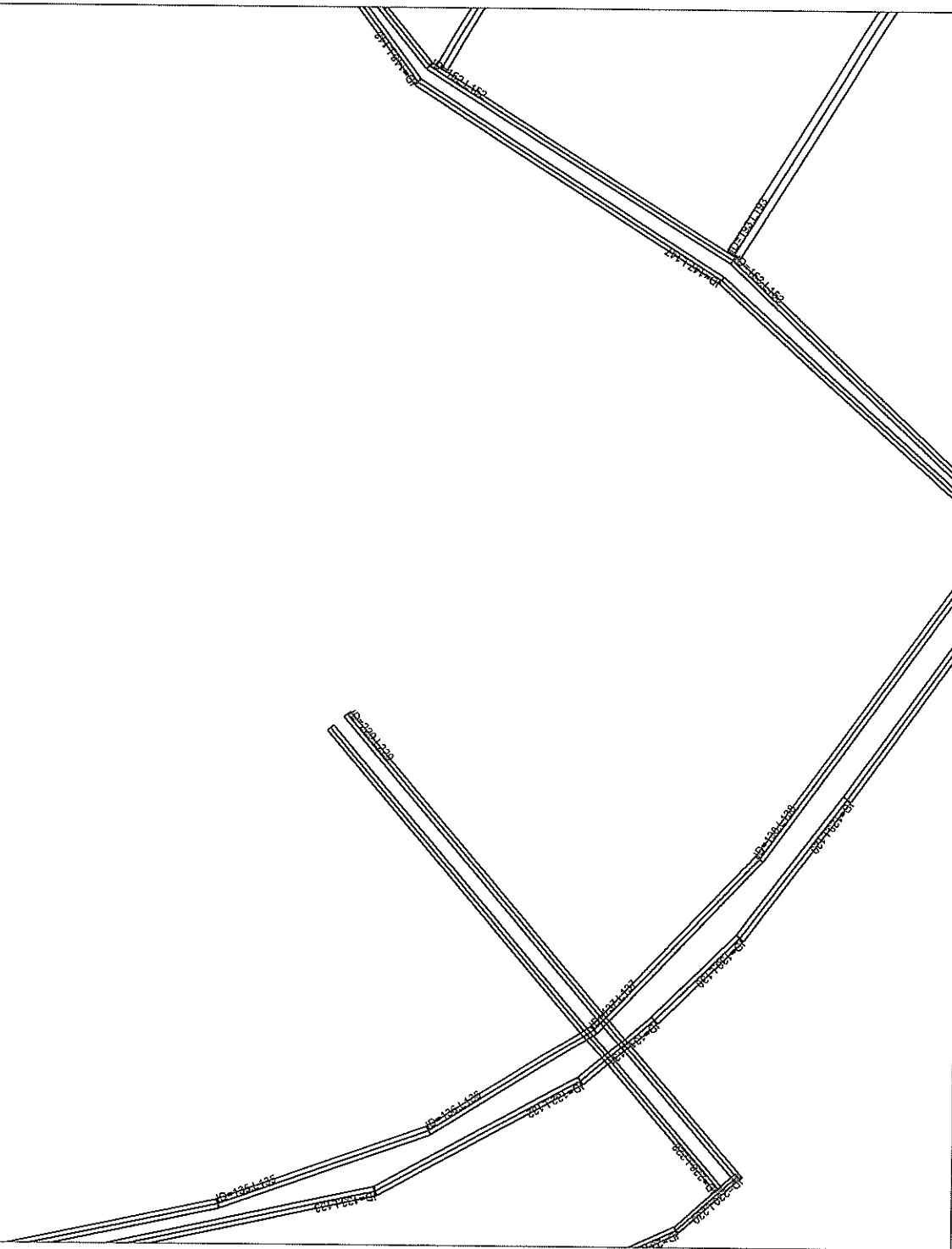


17





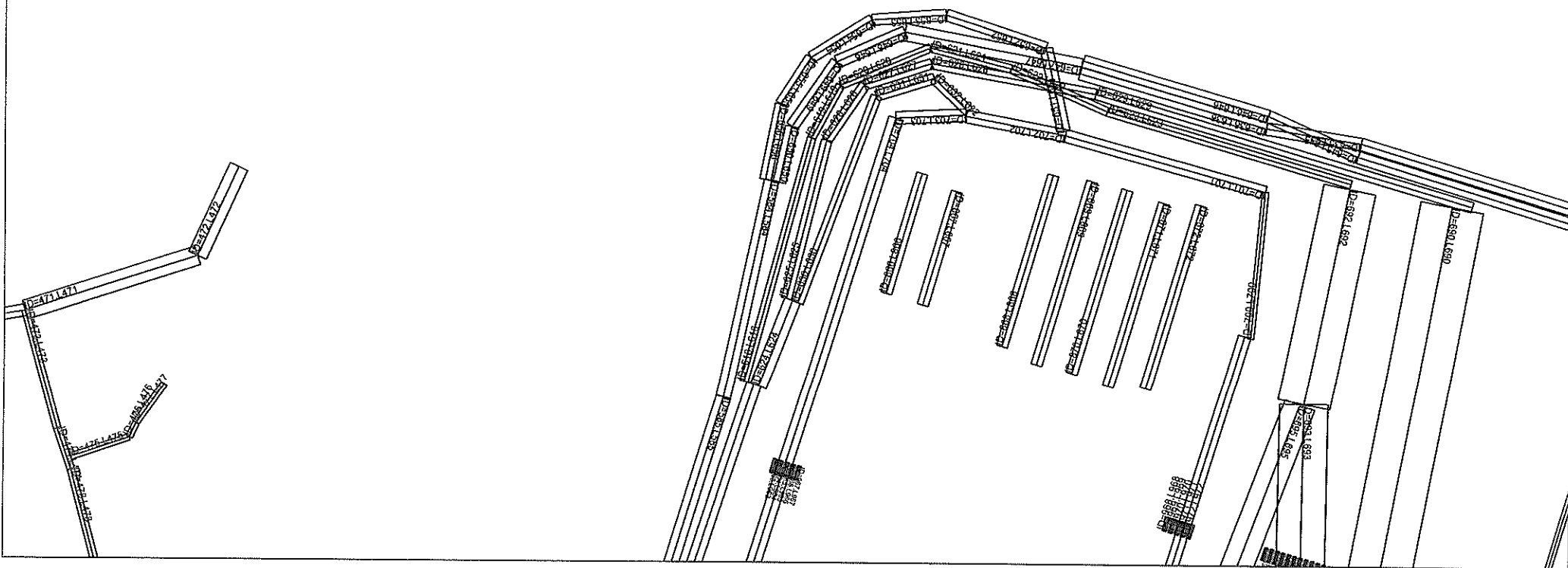
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21

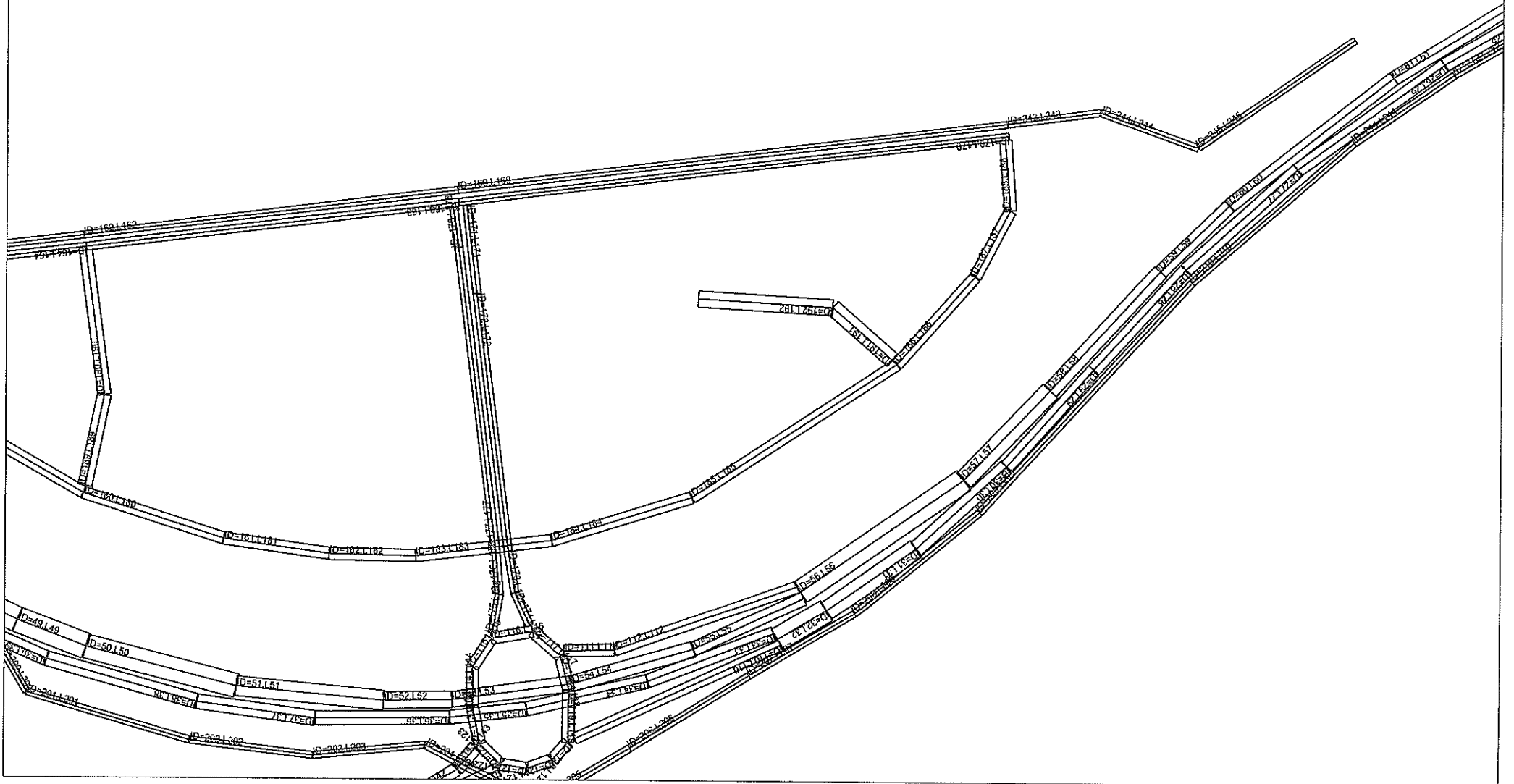




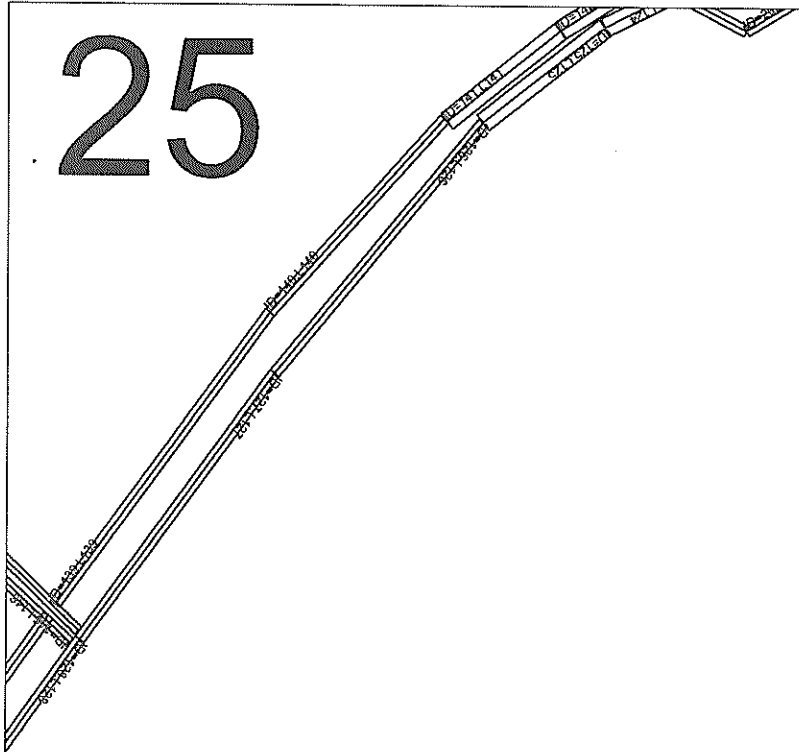


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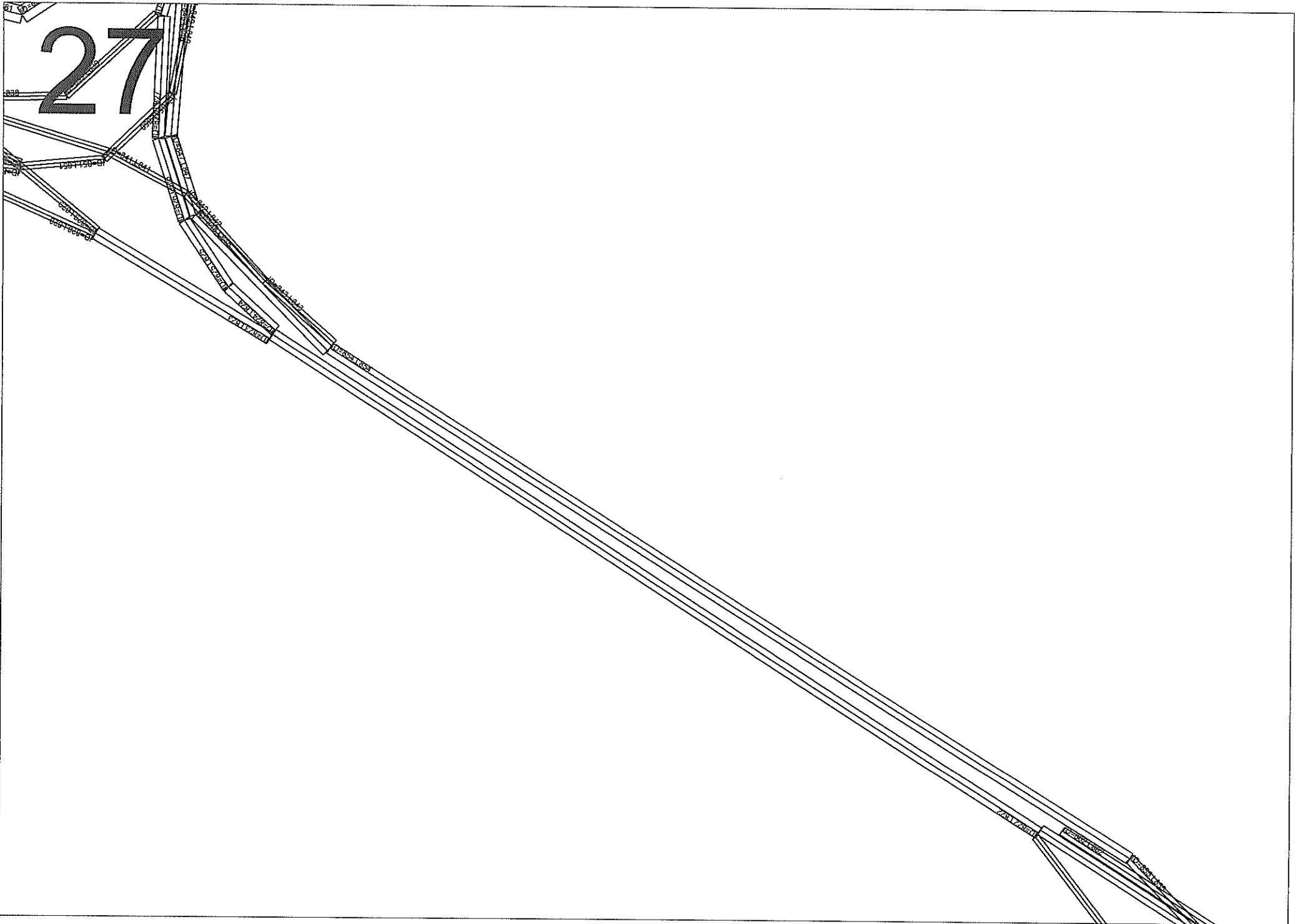


25





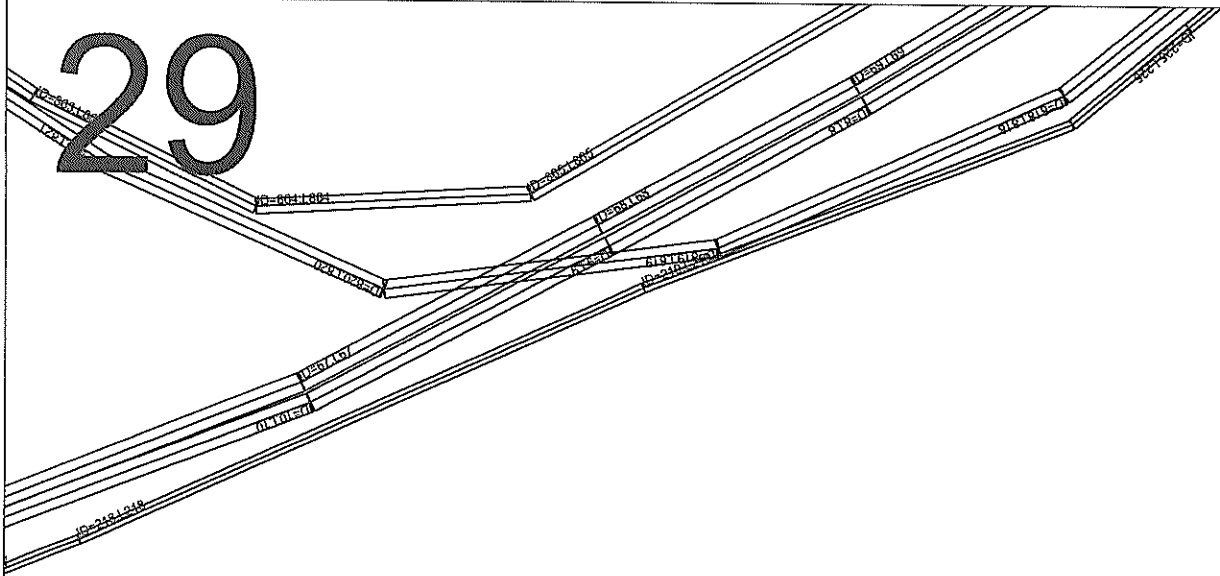
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28



29

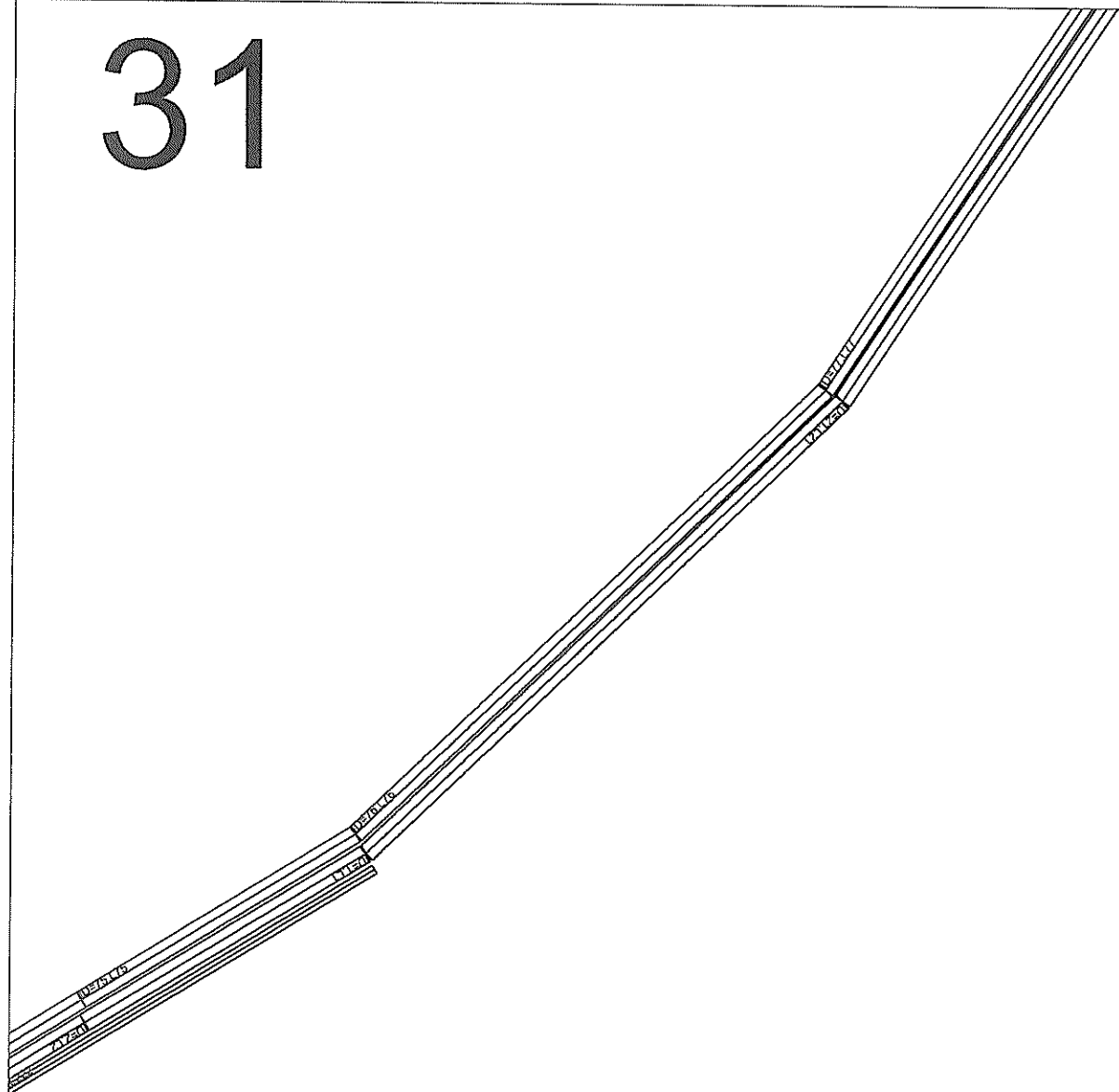


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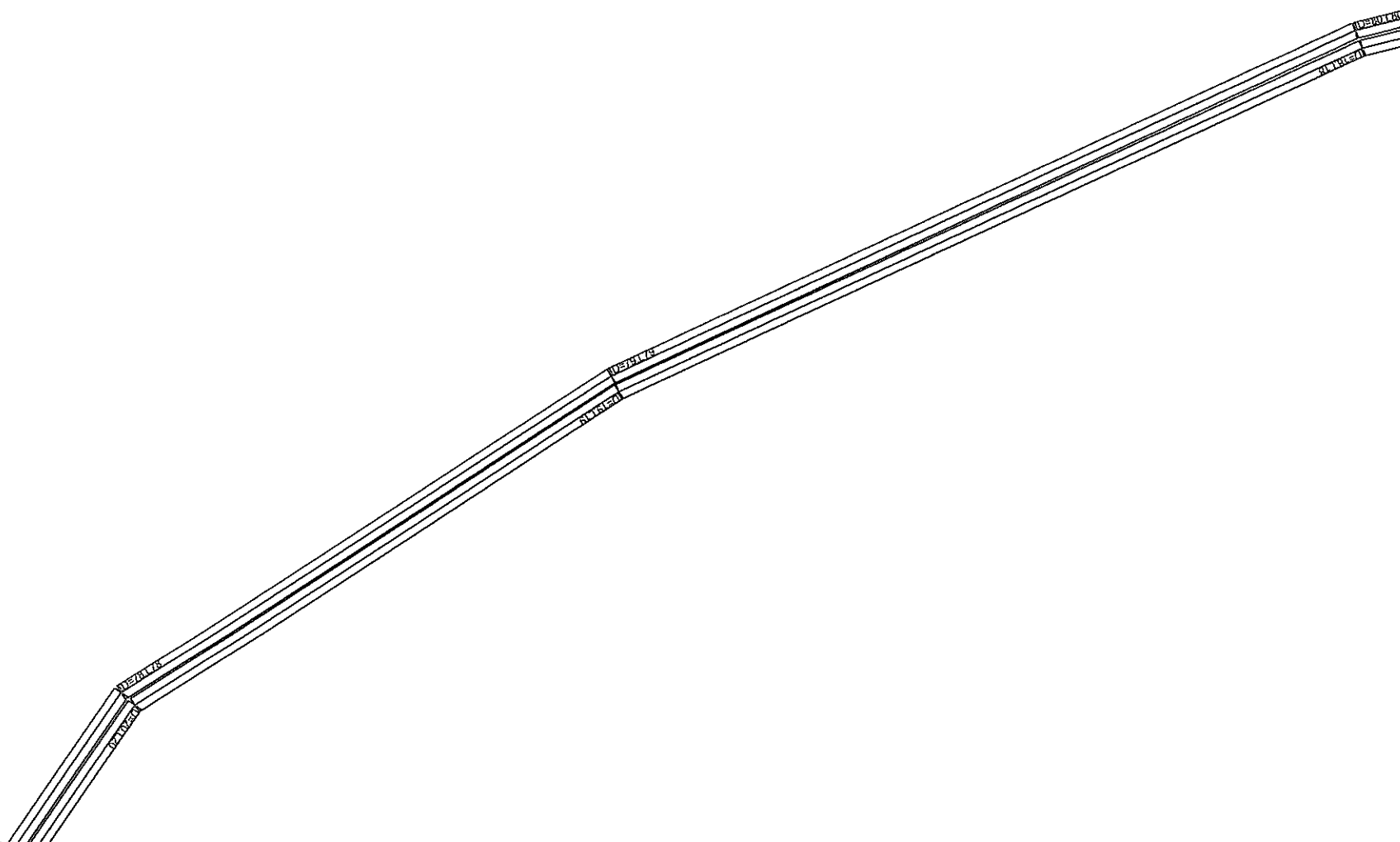




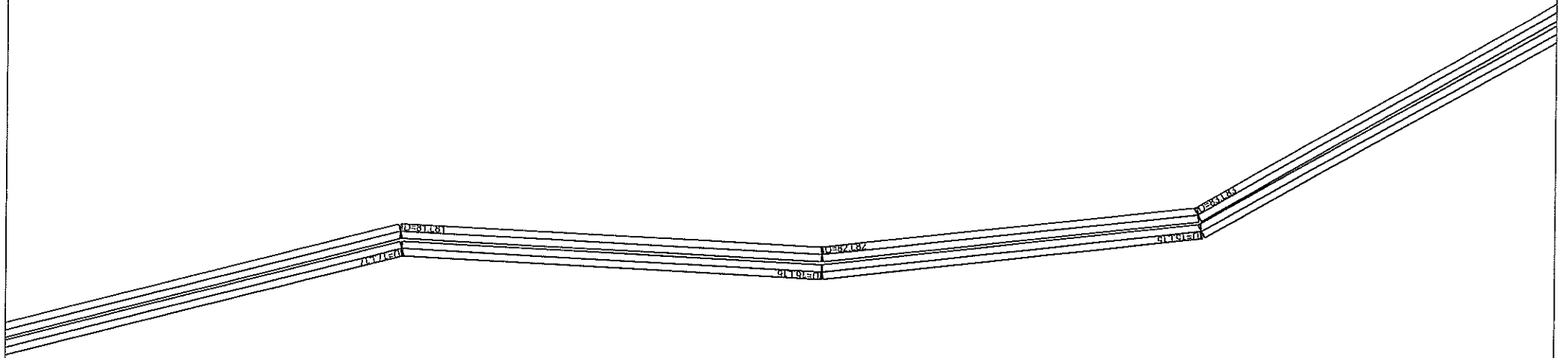
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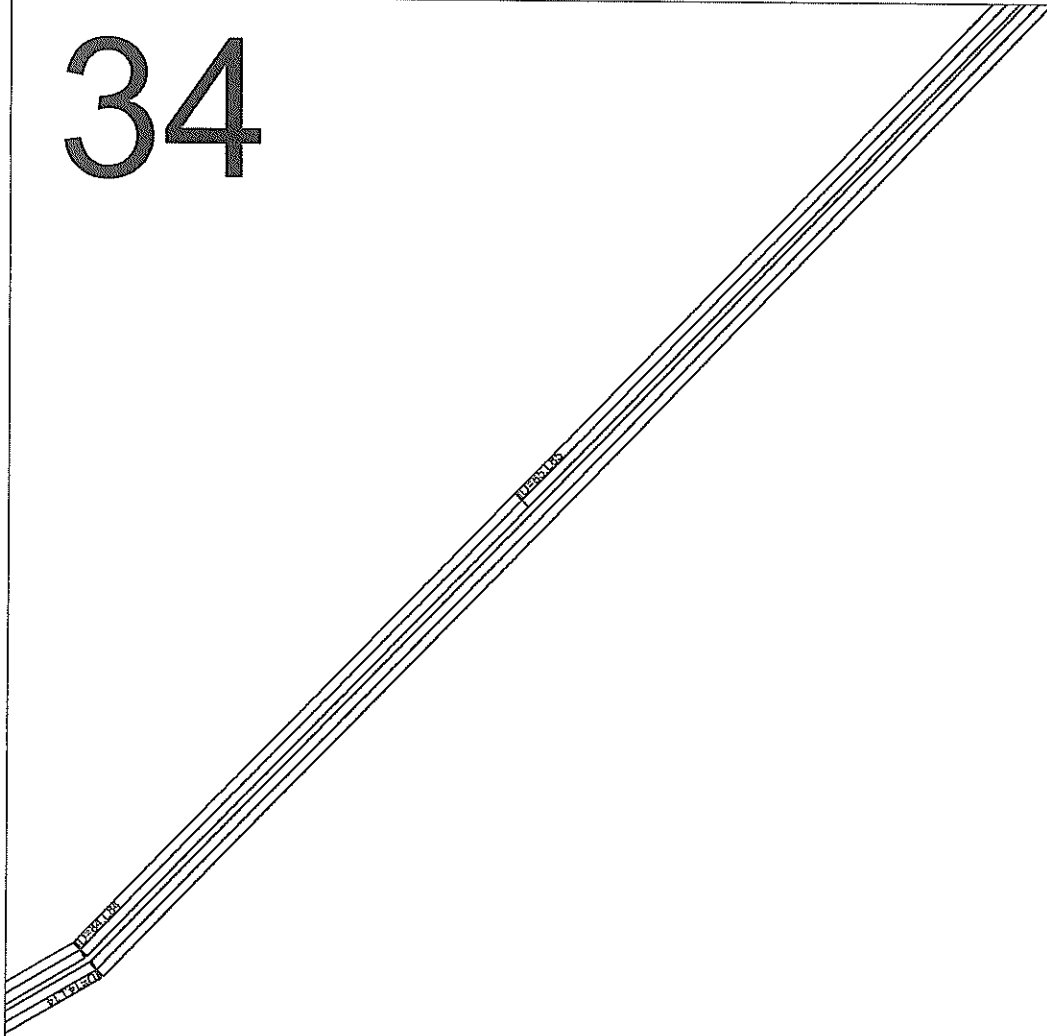
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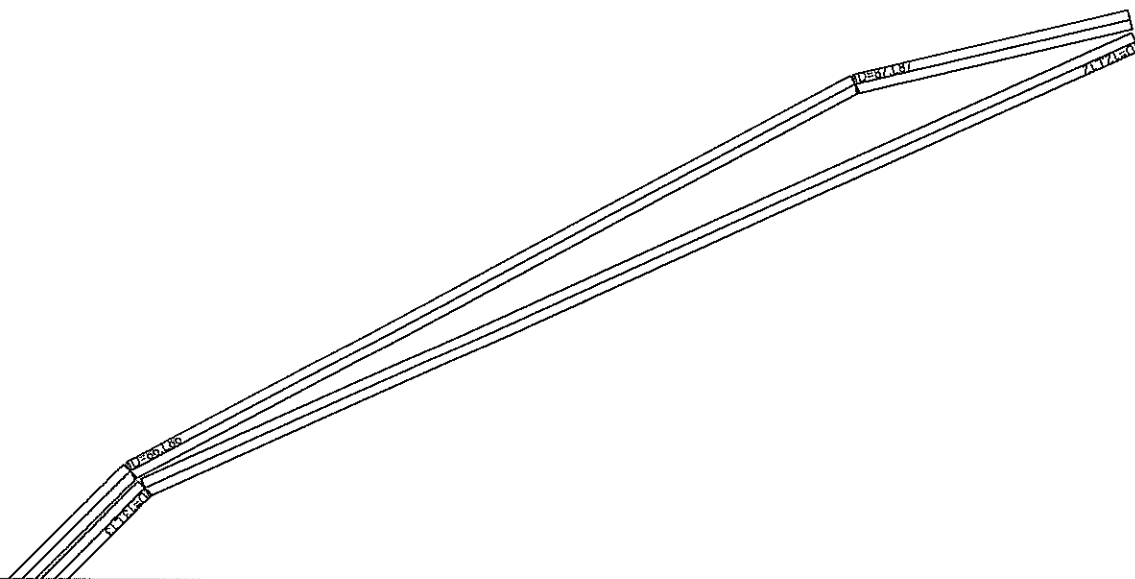
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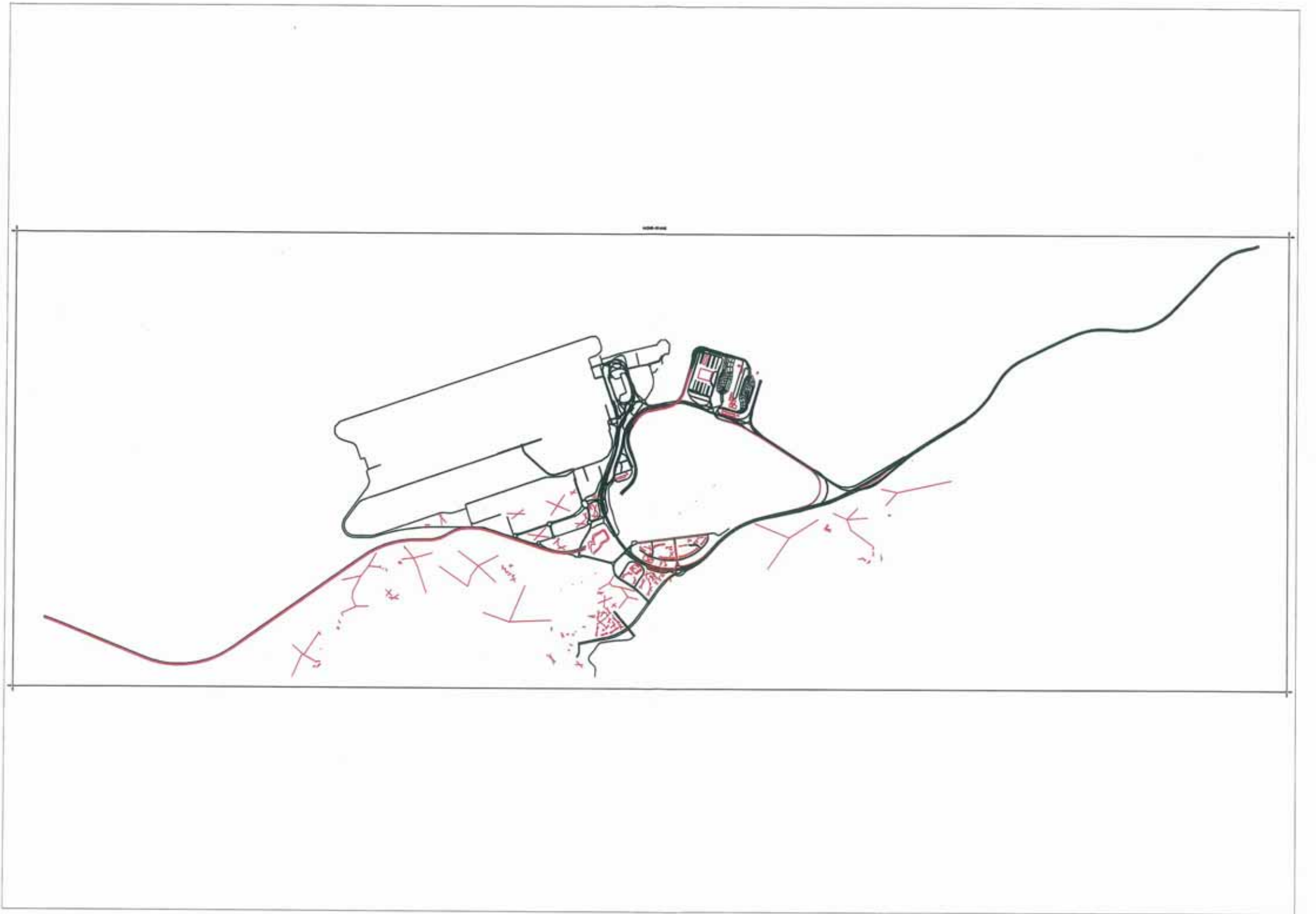


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APPENDIX 5G

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**Vehicle Emission at  
Kiosks, Loading /  
Unloading Bays**

Calculation of Idling Emission Rates

Road Link No.	Description	X1 (m)	Y1 (m)	X2 (m)	Y2 (m)	Length (m)	No. of Bay/Kiosks	Traffic Flow (veh/hr)	Nox (g/hr)	NOx (g/m/hr)	NOx (g/mile/hr)	NOx (g/mile/veh)
L1	Buses/ Coaches Unloading Bay (InBound)	812957.4	820111.7	812991.1	820225.6	119	18	74	160.3	1.349	2171.14	29.317
L2	Buses/ Coaches Unloading Bay (InBound)	813024.2	820208.6	812992.4	820100.8	112	17	70	151.4	1.347	2166.58	30.976
L3	Buses/ Coaches Loading Bay (OutBound)	813068.2	820062.2	813116.3	820225.0	170	26	23	199.0	1.173	1886.83	82.088
L4	Buses/ Coaches Loading Bay (OutBound)	813153.0	820219.1	813101.1	820044.6	182	25	25	214.3	1.178	1894.89	76.550
L5	Buses/ Coaches Loading Bay (OutBound)	813134.8	820036.5	813186.5	820211.4	182	28	25	214.3	1.175	1891.21	76.401
L6	Buses/ Coaches Loading Bay (OutBound)	813221.4	820199.2	813169.4	820024.5	182	28	25	214.3	1.175	1891.22	76.402
L7	Buses/ Coaches Loading Bay (OutBound)	813256.6	820197.3	813204.9	820022.4	182	28	25	214.3	1.175	1890.21	76.361
L8	Buses/ Coaches Loading Bay (InBound)	812869.7	819694.6	812912.3	819839.1	151	23	24	207.8	1.380	2219.84	92.493
L9	Buses/ Coaches Loading Bay (InBound)	812939.1	819831.7	812856.6	819688.6	150	23	24	207.8	1.380	2236.09	93.170
L10	Buses/ Coaches Loading Bay (InBound)	812930.3	819676.7	812973.0	819821.1	151	23	24	207.8	1.380	2219.84	92.493
L11	Buses/ Coaches Loading Bay (InBound)	812956.2	819670.7	812999.7	819813.8	150	23	24	207.8	1.380	2236.09	93.170
L12	Buses/ Coaches Loading Bay (InBound)	812990.9	819658.8	813033.6	819803.2	151	23	24	207.8	1.380	2219.84	92.493
L13	Buses/ Coaches Loading Bay (InBound)	813020.3	819650.1	813062.9	819794.6	151	23	24	207.8	1.380	2219.84	92.493
L14	Buses/ Coaches Unloading Bay (OutBound)	813107.5	819762.0	813072.8	819649.5	118	18	63	135.8	1.153	1855.93	29.580
L15	Buses/ Coaches Unloading Bay (OutBound)	813109.5	819643.7	813141.4	819751.5	112	17	59	128.3	1.141	1835.58	30.976
L16	Cars-Kiosks (InBound)	813238.0	819697.3	813238.7	819885.1	12	1	13	8.2	0.667	1078.85	82.220
L17	Cars-Kiosks (InBound)	813243.6	819698.1	813244.4	819685.4	13	1	13	8.2	0.646	1039.05	79.556
L18	Cars-Kiosks (InBound)	813249.3	819698.4	813250.1	819685.8	13	1	13	8.2	0.646	1039.05	79.556
L19	Cars-Kiosks (InBound)	813255.0	819698.8	813255.8	819686.1	13	1	13	8.2	0.646	1039.05	79.556
L20	Cars-Kiosks (InBound)	813260.7	819699.1	813261.5	819686.5	13	1	13	8.2	0.646	1039.05	79.556
L21	Cars-Kiosks (InBound)	813266.4	819699.5	813267.2	819686.8	13	1	13	8.2	0.646	1039.05	79.556
L22	Cars-Kiosks (InBound)	813272.1	819699.8	813272.9	819687.2	13	1	13	8.2	0.646	1039.13	79.562
L23	Cars-Kiosks (InBound)	813277.8	819700.2	813278.5	819687.5	13	1	13	8.2	0.646	1039.05	79.556
L24	Cars-Kiosks (InBound)	813283.5	819700.5	813284.2	819687.9	13	1	13	8.2	0.646	1039.05	79.556
L25	Cars-Kiosks (InBound)	813289.1	819700.9	813289.9	819688.2	13	1	13	8.2	0.646	1039.04	79.555
L26	Cars-Kiosks (InBound)	813294.8	819701.2	813295.6	819688.6	13	1	13	8.2	0.646	1039.05	79.556
L27	Cars-Kiosks (InBound)	813300.5	819701.6	813301.3	819688.9	13	1	13	8.2	0.646	1039.13	79.562
L28	Cars-Kiosks (InBound)	813306.2	819701.9	813307.0	819689.3	13	1	13	8.2	0.646	1039.05	79.556
L29	Cars-Kiosks (InBound)	813311.9	819702.3	813312.7	819689.6	13	1	13	8.2	0.646	1039.05	79.556
L30	Cars-Kiosks (InBound)	813317.6	819702.6	813318.4	819690.0	13	1	13	8.2	0.646	1039.05	79.556
L31	Cars-Kiosks (InBound)	813321.3	819703.0	813317.7	819858.1	13	1	13	8.2	0.646	1039.03	79.555
L32	Cars-Kiosks (InBound)	813326.8	819688.7	813323.2	819858.5	13	1	13	8.2	0.646	1039.03	79.555
L33	Cars-Kiosks (InBound)	813332.3	819667.0	813328.7	819854.9	13	1	13	8.2	0.646	1039.11	79.561
L34	Cars-Kiosks (InBound)	813337.7	819665.4	813334.1	819853.3	13	1	13	8.2	0.646	1039.06	79.557
L35	Cars-Kiosks (InBound)	813343.2	819663.8	813339.6	819851.7	13	1	13	8.2	0.646	1039.03	79.555
L36	Cars-Kiosks (InBound)	813348.7	819662.2	813345.1	819850.0	13	1	13	8.2	0.646	1039.06	79.557
L37	Cars-Kiosks (InBound)	813354.1	819660.6	813350.5	819848.4	13	1	13	8.2	0.646	1039.03	79.555
L38	Cars-Kiosks (InBound)	813359.6	819659.0	813355.0	819846.8	13	1	13	8.2	0.646	1039.06	79.557
L39	Cars-Kiosks (InBound)	813365.1	819657.4	813361.5	819845.2	13	1	13	8.2	0.646	1039.03	79.555
L40	Cars-Kiosks (InBound)	813370.5	819655.7	813366.9	819843.6	13	1	13	8.2	0.646	1039.14	79.563
L41	Cars-Kiosks (InBound)	813376.0	819654.1	813372.4	819842.0	13	1	13	8.2	0.646	1039.03	79.555
L42	Cars-Kiosks (InBound)	813381.5	819652.5	813377.9	819840.4	13	1	13	8.2	0.646	1039.06	79.557
L43	Cars-Kiosks (InBound)	813386.9	819650.9	813383.3	819838.7	13	1	13	8.2	0.646	1039.03	79.555
L44	Cars-Kiosks (InBound)	813392.4	819649.3	813388.8	819837.1	13	1	13	8.2	0.646	1039.06	79.557
L45	Cars-Kiosks (InBound)	813397.9	819647.7	813394.3	819835.5	13	1	13	8.2	0.646	1039.03	79.555
L46	Cars-Kiosks (InBound)	813403.3	819646.0	813399.7	819833.9	13	1	13	8.2	0.646	1039.11	79.561
L47	Cars-Kiosks (InBound)	813408.8	819644.4	813405.2	819832.3	13	1	13	8.2	0.646	1039.11	79.561
L48	Cars-Kiosks (InBound)	813414.3	819642.8	813410.7	819830.7	13	1	13	8.2	0.646	1039.03	79.555
L49	Goods Vehicles/ Container Trucks-Kiosks (InBound)	813377.4	819677.7	813373.2	819663.6	15	1	68	54.7	3.731	6002.51	88.111
L50	Goods Vehicles/ Container Trucks-Kiosks (InBound)	813383.3	819676.0	813379.1	819661.9	15	1	68	54.7	3.730	6002.00	88.104
L51	Goods Vehicles/ Container Trucks-Kiosks (InBound)	813389.2	819674.2	813385.0	819660.1	15	1	68	54.7	3.730	6002.00	88.104
L52	Goods Vehicles/ Container Trucks-Kiosks (InBound)	813395.4	819672.4	813391.2	819658.3	15	1	68	54.7	3.730	6002.11	88.105
L53	Goods Vehicles/ Container Trucks-Kiosks (InBound)	813401.6	819670.5	813397.5	819656.5	15	1	68	54.7	3.730	6002.11	88.105
L54	Goods Vehicles/ Container Trucks-Kiosks (InBound)	813407.9	819668.7	813403.7	819654.6	15	1	68	54.7	3.730	6002.00	88.104
L55	Goods Vehicles/ Container Trucks-Kiosks (InBound)	813414.1	819666.9	813409.9	819652.8	15	1	68	54.7	3.730	6002.11	88.105
L56	Goods Vehicles/ Container Trucks-Kiosks (InBound)	813419.7	819665.2	813415.5	819651.1	15	1	68	54.7	3.730	6002.00	88.104
L57	Goods Vehicles/ Container Trucks-Kiosks (OutBound)	813682.1	819852.2	813686.3	819866.3	15	1	62	46.2	3.151	5069.74	82.102
L58	Goods Vehicles/ Container Trucks-Kiosks (OutBound)	813687.7	819850.6	813691.8	819864.6	15	1	62	46.2	3.151	5069.51	82.098
L59	Goods Vehicles/ Container Trucks-Kiosks (OutBound)	813693.9	819848.7	813698.1	819862.8	15	1	62	46.2	3.151	5069.41	82.097
L60	Goods Vehicles/ Container Trucks-Kiosks (OutBound)	813700.2	819846.9	813704.3	819861.0	15	1	62	46.2	3.151	5069.51	82.098
L61	Goods Vehicles/ Container Trucks-Kiosks (OutBound)	813706.4	819845.0	813710.5	819859.1	15	1	62	46.2	3.151	5069.51	82.098
L62	Goods Vehicles/ Container Trucks-Kiosks (OutBound)	813712.6	819843.2	813716.8	819857.3	15	1	62	46.2	3.151	5069.51	82.098
L63	Goods Vehicles/ Container Trucks-Kiosks (OutBound)	813718.2	819841.6	813722.3	819855.6	15	1	62	46.2	3.151	5069.51	82.098
L64	Goods Vehicles/ Container Trucks-Kiosks (OutBound)	813724.4	819839.7	813728.6	819853.8	15	1	62	46.2	3.151	5069.51	82.098
L65	Cars-Kiosks (OutBound)	813783.8	819815.3	813783.1	819827.5	12	1	11	5.4	0.440	708.18	63.852
L66	Cars-Kiosks (OutBound)	813789.5	819815.6	813788.8	819827.9	12	1	11	5.4	0.440	708.18	63.852
L67	Cars-Kiosks (OutBound)	813795.2	819816.0	813794.5	819828.2	12	1	11	5.4	0.440	708.18	63.852
L68	Cars-Kiosks (OutBound)	813800.9	819816.3	813800.2	819828.6	12	1	11	5.4	0.440	708.18	63.852
L69	Cars-Kiosks (OutBound)	813806.6	819816.7	813805.8	819828.9	12	1	11	5.4	0.440	708.18	63.852
L70	Cars-Kiosks (OutBound)	813812.3	819817.0	813811.5	819829.3	12	1	11	5.4	0.440	708.18	63.852
L71	Cars-Kiosks (OutBound)	813818.0	819817.4	813817.2	819829.6	12	1	11	5.4	0.440	708.18	63.852
L72	Cars-Kiosks (OutBound)	813823.7	819817.7	813822.9	819830.0	12	1	11	5.4	0.440	708.18	63.847
L73	Cars-Kiosks (OutBound)	813829.4	819818.1	813828.6	819830.3	12	1	11	5.4	0.440	708.18	63.852
L74	Cars-Kiosks (OutBound)	813835.0	819818.4	813834.3	819830.7	12	1	11	5.4	0.440	708.18	63.852
L75	Cars-Kiosks (OutBound)	813840.7	819818.8	813840.0	819831.0	12	1	11	5.4	0.440	708.18	63.852
L76	Cars-Kiosks (OutBound)	813846.4	819819.2	813845.7	819831.4	12	1	11	5.4	0.440	708.18	63.852
L77	Cars-Kiosks (OutBound)	813852.1	819819.5	813851.4	819831.7	12	1	11	5.4	0.440	708.18	63.852
L78	Cars-Kiosks (OutBound)	813857.8	819819.9	813857.0	819832.1	12	1	11	5.4	0.440	708.18	63.847
L79	Cars-Kiosks (OutBound)	813863.5	819820.2	813862.7	819832.4	12	1	11	5.4	0.440	708.18	63.852



Calculation of Idling Emission Rates

Road Link No.	Description	X1	Y1	X2	Y2	Length (m)	No. of Bay/Kiosks	Traffic Flow (veh/hr)	RSP	RSP	RSP	RSP
		(m)	(m)	(m)	(m)				(g/hr)	(g/m/hr)	(g/mile/hr)	(g/mile/veh)
L1	Buses/ Coaches Unloading Bay (InBound)	812957.4	820111.7	812991.1	820225.6	119	18	74	6.2	0.052	83.55	1.128
L2	Buses/ Coaches Unloading Bay (InBound)	813024.2	820208.8	812992.4	820100.8	112	17	70	5.8	0.052	83.38	1.192
L3	Buses/ Coaches Loading Bay (OutBound)	813068.2	82062.2	813116.3	820225.0	170	26	23	7.7	0.045	72.61	3.159
L4	Buses/ Coaches Loading Bay (OutBound)	813153.0	820219.1	813101.1	820044.6	182	28	25	8.2	0.045	72.92	2.946
L5	Buses/ Coaches Loading Bay (OutBound)	813134.8	820036.5	813186.5	820211.4	182	28	25	8.2	0.045	72.78	2.940
L6	Buses/ Coaches Loading Bay (OutBound)	813221.4	820199.2	813169.4	820024.5	182	28	25	8.2	0.045	72.78	2.940
L7	Buses/ Coaches Loading Bay (OutBound)	813256.6	820197.3	813204.9	820022.4	182	28	25	8.2	0.045	72.74	2.939
L8	Buses/ Coaches Loading Bay (InBound)	812869.7	819694.6	812912.3	819839.1	151	23	24	8.0	0.053	85.43	3.559
L9	Buses/ Coaches Loading Bay (InBound)	812939.1	819831.7	812895.6	819588.6	150	23	24	8.0	0.053	86.05	3.585
L10	Buses/ Coaches Loading Bay (InBound)	812930.3	819676.7	812973.0	819821.1	151	23	24	8.0	0.053	85.43	3.559
L11	Buses/ Coaches Loading Bay (InBound)	812956.2	819670.7	812999.7	819813.8	150	23	24	8.0	0.053	86.05	3.585
L12	Buses/ Coaches Loading Bay (InBound)	812990.9	819658.8	813033.6	819803.2	151	23	24	8.0	0.053	85.43	3.559
L13	Buses/ Coaches Loading Bay (InBound)	813020.3	819650.1	813062.9	819794.6	151	23	24	8.0	0.053	85.43	3.559
L14	Buses/ Coaches Unloading Bay (OutBound)	813107.5	819762.0	813072.8	819549.5	118	18	63	5.2	0.044	71.42	1.138
L15	Buses/ Coaches Unloading Bay (OutBound)	813109.5	819643.7	813141.4	819751.5	112	17	59	4.9	0.044	70.64	1.192
L16	Cars-Kiosks (InBound)	813238.0	819697.3	813238.7	819685.1	12	1	13	0.0	0.000	0.00	0.000
L17	Cars-Kiosks (InBound)	813243.6	819698.1	813244.4	819685.4	13	1	13	0.0	0.000	0.00	0.000
L18	Cars-Kiosks (InBound)	813249.3	819698.4	813250.1	819685.8	13	1	13	0.0	0.000	0.00	0.000
L19	Cars-Kiosks (InBound)	813255.0	819698.8	813255.8	819686.1	13	1	13	0.0	0.000	0.00	0.000
L20	Cars-Kiosks (InBound)	813260.7	819699.1	813261.5	819686.5	13	1	13	0.0	0.000	0.00	0.000
L21	Cars-Kiosks (InBound)	813266.4	819699.5	813267.2	819686.8	13	1	13	0.0	0.000	0.00	0.000
L22	Cars-Kiosks (InBound)	813272.1	819699.8	813272.9	819687.2	13	1	13	0.0	0.000	0.00	0.000
L23	Cars-Kiosks (InBound)	813277.8	819700.2	813278.5	819687.5	13	1	13	0.0	0.000	0.00	0.000
L24	Cars-Kiosks (InBound)	813283.5	819700.5	813284.2	819687.9	13	1	13	0.0	0.000	0.00	0.000
L25	Cars-Kiosks (InBound)	813289.1	819700.9	813289.9	819688.2	13	1	13	0.0	0.000	0.00	0.000
L26	Cars-Kiosks (InBound)	813294.8	819701.2	813295.6	819688.6	13	1	13	0.0	0.000	0.00	0.000
L27	Cars-Kiosks (InBound)	813300.5	819701.6	813301.3	819688.9	13	1	13	0.0	0.000	0.00	0.000
L28	Cars-Kiosks (InBound)	813306.2	819701.9	813307.0	819689.3	13	1	13	0.0	0.000	0.00	0.000
L29	Cars-Kiosks (InBound)	813311.9	819702.3	813312.7	819689.6	13	1	13	0.0	0.000	0.00	0.000
L30	Cars-Kiosks (InBound)	813317.6	819702.6	813318.4	819690.0	13	1	13	0.0	0.000	0.00	0.000
L31	Cars-Kiosks (InBound)	813323.3	819703.0	813317.7	819689.8	13	1	13	0.0	0.000	0.00	0.000
L32	Cars-Kiosks (InBound)	813326.8	819688.7	813323.2	819685.5	13	1	13	0.0	0.000	0.00	0.000
L33	Cars-Kiosks (InBound)	813332.3	819687.0	813328.7	819685.4	13	1	13	0.0	0.000	0.00	0.000
L34	Cars-Kiosks (InBound)	813337.7	819685.4	813334.1	819685.3	13	1	13	0.0	0.000	0.00	0.000
L35	Cars-Kiosks (InBound)	813343.2	819683.8	813339.6	819685.1	13	1	13	0.0	0.000	0.00	0.000
L36	Cars-Kiosks (InBound)	813348.7	819682.2	813345.1	819685.0	13	1	13	0.0	0.000	0.00	0.000
L37	Cars-Kiosks (InBound)	813354.1	819680.6	813350.5	819684.8	13	1	13	0.0	0.000	0.00	0.000
L38	Cars-Kiosks (InBound)	813359.6	819685.9	813356.0	819684.8	13	1	13	0.0	0.000	0.00	0.000
L39	Cars-Kiosks (InBound)	813365.1	819685.4	813361.5	819684.5	13	1	13	0.0	0.000	0.00	0.000
L40	Cars-Kiosks (InBound)	813370.5	819685.7	813366.9	819684.3	13	1	13	0.0	0.000	0.00	0.000
L41	Cars-Kiosks (InBound)	813376.0	819685.1	813372.4	819684.2	13	1	13	0.0	0.000	0.00	0.000
L42	Cars-Kiosks (InBound)	813381.5	819685.2	813377.9	819684.0	13	1	13	0.0	0.000	0.00	0.000
L43	Cars-Kiosks (InBound)	813385.9	819685.9	813383.3	819683.7	13	1	13	0.0	0.000	0.00	0.000
L44	Cars-Kiosks (InBound)	813392.4	819684.9	813388.8	819683.1	13	1	13	0.0	0.000	0.00	0.000
L45	Cars-Kiosks (InBound)	813397.9	819684.7	813394.3	819683.5	13	1	13	0.0	0.000	0.00	0.000
L46	Cars-Kiosks (InBound)	813403.3	819684.6	813399.7	819683.9	13	1	13	0.0	0.000	0.00	0.000
L47	Cars-Kiosks (InBound)	813408.8	819684.4	813405.2	819683.3	13	1	13	0.0	0.000	0.00	0.000
L48	Cars-Kiosks (InBound)	813414.3	819684.8	813410.7	819683.7	13	1	13	0.0	0.000	0.00	0.000
L49	Goods Vehicles/ Container Trucks-Kiosks (InBound)	813377.4	819677.7	813373.2	819663.6	15	1	68	2.1	0.143	229.94	3.375
L50	Goods Vehicles/ Container Trucks-Kiosks (InBound)	813383.3	819676.0	813379.1	819661.9	15	1	68	2.1	0.143	229.92	3.375
L51	Goods Vehicles/ Container Trucks-Kiosks (InBound)	813389.2	819674.2	813385.0	819660.1	15	1	68	2.1	0.143	229.92	3.375
L52	Goods Vehicles/ Container Trucks-Kiosks (InBound)	813395.4	819672.4	813391.2	819658.3	15	1	68	2.1	0.143	229.93	3.375
L53	Goods Vehicles/ Container Trucks-Kiosks (InBound)	813401.6	819670.5	813397.5	819656.5	15	1	68	2.1	0.143	229.93	3.375
L54	Goods Vehicles/ Container Trucks-Kiosks (InBound)	813407.9	819668.7	813403.7	819654.6	15	1	68	2.1	0.143	229.92	3.375
L55	Goods Vehicles/ Container Trucks-Kiosks (InBound)	813414.1	819666.9	813409.9	819652.8	15	1	68	2.1	0.143	229.93	3.375
L56	Goods Vehicles/ Container Trucks-Kiosks (InBound)	813419.7	819665.2	813415.5	819651.1	15	1	68	2.1	0.143	229.92	3.375
L57	Goods Vehicles/ Container Trucks-Kiosks (OutBound)	813682.1	819652.2	813686.3	819668.3	15	1	62	1.8	0.121	194.21	3.145
L58	Goods Vehicles/ Container Trucks-Kiosks (OutBound)	813687.7	819650.6	813691.8	819664.6	15	1	62	1.8	0.121	194.20	3.145
L59	Goods Vehicles/ Container Trucks-Kiosks (OutBound)	813693.9	819648.7	813698.1	819662.8	15	1	62	1.8	0.121	194.20	3.145
L60	Goods Vehicles/ Container Trucks-Kiosks (OutBound)	813700.2	819646.9	813704.3	819661.0	15	1	62	1.8	0.121	194.20	3.145
L61	Goods Vehicles/ Container Trucks-Kiosks (OutBound)	813706.4	819645.0	813710.5	819659.1	15	1	62	1.8	0.121	194.20	3.145
L62	Goods Vehicles/ Container Trucks-Kiosks (OutBound)	813712.6	819643.2	813716.8	819657.3	15	1	62	1.8	0.121	194.20	3.145
L63	Goods Vehicles/ Container Trucks-Kiosks (OutBound)	813718.2	819641.6	813722.3	819655.6	15	1	62	1.8	0.121	194.20	3.145
L64	Goods Vehicles/ Container Trucks-Kiosks (OutBound)	813724.4	819639.7	813728.6	819653.8	15	1	62	1.8	0.121	194.20	3.145
L65	Cars-Kiosks (OutBound)	813783.8	819615.3	813783.1	819627.5	12	1	11	0.0	0.000	0.00	0.000
L66	Cars-Kiosks (OutBound)	813789.5	819615.6	813788.8	819627.9	12	1	11	0.0	0.000	0.00	0.000
L67	Cars-Kiosks (OutBound)	813795.2	819616.0	813794.5	819628.2	12	1	11	0.0	0.000	0.00	0.000
L68	Cars-Kiosks (OutBound)	813800.9	819616.3	813800.2	819628.6	12	1	11	0.0	0.000	0.00	0.000
L69	Cars-Kiosks (OutBound)	813806.6	819616.7	813805.8	819628.9	12	1	11	0.0	0.000	0.00	0.000
L70	Cars-Kiosks (OutBound)	813812.3	819617.0	813811.5	819629.3	12	1	11	0.0	0.000	0.00	0.000
L71	Cars-Kiosks (OutBound)	813818.0	819617.4	813817.2	819629.6	12	1	11	0.0	0.000	0.00	0.000
L72	Cars-Kiosks (OutBound)	813823.7	819617.7	813822.9	819630.0	12	1	11	0.0	0.000	0.00	0.000
L73	Cars-Kiosks (OutBound)	813829.4	819618.1	813828.6	819630.3	12	1	11	0.0	0.000	0.00	0.000
L74	Cars-Kiosks (OutBound)	813835.0	819618.4	813834.3	819630.7	12	1	11	0.0	0.000	0.00	0.000
L75	Cars-Kiosks (OutBound)	813840.7	819618.8	813840.0	819631.0	12	1	11	0.0	0.000	0.00	0.000
L76	Cars-Kiosks (OutBound)	813846.4	819619.2	813845.7	819631.4	12	1	11	0.0	0.000	0.00	0.000
L77	Cars-Kiosks (OutBound)	813852.1	819619.5	813851.4	819631.7	12	1	11	0.0	0.000	0.00	0.000
L78	Cars-Kiosks (OutBound)	813857.8	819619.9	813857.0	819632.1	12	1	11	0.0	0.000	0.00	0.000
L79	Cars-Kiosks (OutBound)	813863.5	819620.2	813862.7	819632.4	12	1	11	0.0	0.000	0.00	0.000
L80	Cars-Kiosks (OutBound)	813869.2	819674.7	813690.8	819668.9	13	1	11	0.0	0.000	0.00	0.000
L81	Cars-Kiosks (OutBound)	813692.7	819673.1	813696.2	819685.2	13						

APPENDIX 5H

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**Vehicle Emission  
Factors for TMCLKL**



Emission Factors of RSP (g/mile/veh) for Each Hours of Trunk Road with Speed Limit of 80

Emission Factors	PC-p	LGV3	LGV4	PLB	LGV6	HGV7	HGV8	FBDD	MC	taxi	PV4	PV5	NFB6	NFB7	NFB8	FBSD
Hr1	0.003717	0.066253	0.049687	0	0.048241	0.064803	0.058531	0.035584	0.042342	0.021531	0	0	0.03632	0.056419	0.052808	0
Hr2	0.003741	0	0.04972	0	0.048341	0.06484	0.058514	0.035584	0.043195	0.021537	0	0	0.036548	0.056346	0.052808	0
Hr3	0.003708	0	0.049583	0	0.04811	0.06471	0.058548	0.035567	0.043443	0.021504	0	0	0.036042	0.056109	0.052492	0
Hr4	0.003713	0	0.048394	0	0.04715	0.064893	0.058473	0.035567	0.044203	0.021334	0	0	0.03622	0.056153	0.052631	0
Hr5	0.00361	0	0.047106	0	0.04564	0.064904	0.058464	0.036064	0.046236	0.020957	0	0	0.036099	0.056205	0.05308	0
Hr6	0.003666	0	0.046899	0	0.045738	0.064759	0.058551	0.034912	0.047324	0.020944	0	0	0.036807	0.057142	0.051903	0
Hr7	0.003731	0.066253	0.049471	0	0.048196	0.064805	0.058499	0.035357	0.043117	0.021508	0	0	0.036497	0.05634	0.052754	0
Hr8	0.003711	0.064014	0.049578	0	0.048072	0.064813	0.058519	0.035383	0.042907	0.021492	0.036203	0	0.036488	0.056551	0.052499	0
Hr9	0.004171	0.070666	0.053829	0	0.052438	0.07022	0.063355	0.03845	0.041347	0.024127	0.041581	0.103915	0.040495	0.062663	0.058761	0.04214
Hr10	0.004245	0.07284	0.055681	0	0.054132	0.072461	0.065446	0.039598	0.040897	0.024571	0.041581	0.103915	0.041403	0.064132	0.059742	0.044056
Hr11	0.004246	0.07284	0.055829	0	0.054215	0.072572	0.065534	0.039595	0.040604	0.024574	0.04214	0.107267	0.041389	0.064227	0.059546	0.044056
Hr12	0.004238	0.071982	0.056055	0	0.054349	0.072562	0.065577	0.039649	0.040532	0.02454	0.04214	0.103294	0.041181	0.063928	0.059602	0.044056
Hr13	0.004233	0.071982	0.055947	0	0.05449	0.072575	0.065535	0.039656	0.040962	0.024469	0.04214	0.105204	0.041185	0.063924	0.059602	0.044056
Hr14	0.004207	0.069542	0.055854	0	0.054301	0.072465	0.065447	0.039522	0.040951	0.02435	0.041581	0.105204	0.041039	0.063704	0.059194	0.044056
Hr15	0.003957	0.066679	0.053517	0	0.05198	0.069375	0.062699	0.037777	0.041096	0.022893	0.039773	0.099015	0.038883	0.060383	0.056201	0.040225
Hr16	0.004176	0.072351	0.056268	0	0.054777	0.072963	0.065891	0.039656	0.040801	0.024116	0.041581	0.105204	0.040742	0.062887	0.058859	0.044056
Hr17	0.003951	0.067042	0.053424	0	0.051945	0.069477	0.062753	0.037662	0.041046	0.022881	0.041256	0	0.03887	0.060424	0.05612	0.040225
Hr18	0.003857	0.065552	0.051917	0	0.050423	0.067359	0.060873	0.0367	0.042109	0.022316	0.037742	0.104112	0.037826	0.058592	0.054572	0.040225
Hr19	0.003858	0.065552	0.051882	0	0.0505	0.06737	0.060884	0.036676	0.041934	0.022338	0.038838	0.104112	0.037882	0.05886	0.05466	0.040225
Hr20	0.003865	0.065552	0.051873	0	0.050456	0.067387	0.060889	0.036623	0.04175	0.022324	0	0	0.037695	0.058795	0.054598	0.040225
Hr21	0.003854	0.064979	0.051863	0	0.050323	0.067419	0.060858	0.036609	0.042065	0.022279	0	0	0.037745	0.058631	0.054304	0.03218
Hr22	0.003843	0.064979	0.051812	0	0.05034	0.067379	0.060847	0.036609	0.041645	0.022243	0	0	0.037714	0.058509	0.054157	0.03218
Hr23	0.003969	0.068073	0.053491	0	0.051899	0.069515	0.062815	0.037824	0.04075	0.02294	0	0	0.039073	0.060455	0.056298	0.040225
Hr24	0.00396	0.068073	0.05355	0	0.051903	0.069542	0.062814	0.037883	0.040941	0.022949	0	0	0.039086	0.060504	0.056298	0.040225
Daily	0.004017	0.068731	0.053404	0	0.051907	0.069467	0.062746	0.037896	0.041467	0.023236	0.041168	0.103954	0.039286	0.060995	0.056733	0.041705

Emission Factors of NO<sub>x</sub> (g/mile/veh) for Each Hours of Trunk Road with Speed Limit of 80

Emission Factors	PC-p	LGV3	LGV4	PLB	LGV6	HGV7	HGV8	FBDD	MC	taxi	PV4	PV5	NFB6	NFB7	NFB8	FBSD
Hr1	0.103299	0.24135	0.243776	0	1.407947	2.51314	3.264286	2.002483	1.139003	0.269881	0	0	1.361792	2.490293	3.265857	0
Hr2	0.10319	0	0.243997	0	1.407522	2.512133	3.262844	2.001452	1.142498	0.269598	0	0	1.361187	2.489254	3.264207	0
Hr3	0.103153	0	0.243649	0	1.406405	2.511189	3.261634	2.001088	1.143999	0.269612	0	0	1.36057	2.487762	3.263645	0
Hr4	0.103181	0	0.250657	0	1.442796	2.514544	3.26626	2.003628	1.161663	0.269463	0	0	1.362426	2.49125	3.267623	0
Hr5	0.102891	0	0.257758	0	1.486778	2.517269	3.269586	2.005702	1.181783	0.268777	0	0	1.363524	2.49395	3.27108	0
Hr6	0.103261	0	0.258306	0	1.488938	2.521099	3.274861	2.009732	1.186243	0.269723	0	0	1.366073	2.497709	3.276824	0
Hr7	0.104422	0.24135	0.245944	0	1.419924	2.525155	3.2798	2.012275	1.161004	0.272895	0	0	1.368435	2.501817	3.281305	0
Hr8	0.104676	0.245675	0.246217	0	1.418027	2.526357	3.281393	2.013112	1.163843	0.273572	0.09654	0	1.369044	2.503038	3.283138	0
Hr9	0.108471	0.24135	0.245158	0	1.390839	2.482916	3.225545	1.971814	1.118928	0.283551	0.095817	0.174308	1.337279	2.4463	3.203121	1.50748
Hr10	0.109397	0.239176	0.23816	0	1.37266	2.450023	3.182193	1.935996	1.108688	0.285981	0.095817	0.174308	1.325036	2.42427	3.177299	1.476832
Hr11	0.109592	0.239176	0.237865	0	1.372013	2.449671	3.181918	1.936559	1.103574	0.286511	0.095774	0.172393	1.325529	2.42365	3.180752	1.476832
Hr12	0.109586	0.239233	0.236838	0	1.365729	2.447032	3.178098	1.933597	1.096208	0.286499	0.095774	0.174805	1.324684	2.422301	3.17656	1.474917
Hr13	0.10978	0.239233	0.23695	0	1.364385	2.446968	3.178281	1.934538	1.096152	0.286997	0.095774	0.173277	1.324942	2.421386	3.17656	1.474917
Hr14	0.10983	0.242714	0.237168	0	1.366385	2.44773	3.179425	1.936772	1.095023	0.2871	0.095817	0.173277	1.325974	2.423686	3.1806	1.474917
Hr15	0.107703	0.242075	0.237493	0	1.369375	2.451897	3.184128	1.938845	1.109583	0.281494	0.095817	0.17534	1.329275	2.429048	3.189472	1.476832
Hr16	0.109022	0.23865	0.236014	0	1.359328	2.438038	3.166918	1.9282	1.088131	0.284909	0.095817	0.173277	1.322185	2.419165	3.169317	1.471086
Hr17	0.107159	0.24135	0.237624	0	1.368946	2.446708	3.177867	1.935532	1.104135	0.280074	0.09489	0	1.327191	2.425539	3.181019	1.474917
Hr18	0.105935	0.24433	0.239953	0	1.383627	2.480307	3.221223	1.971296	1.120094	0.276854	0.095348	0.170365	1.34328	2.457215	3.225042	1.509395
Hr19	0.105349	0.24284	0.239781	0	1.381641	2.476824	3.216928	1.970039	1.119919	0.275316	0.094321	0.170365	1.340703	2.451855	3.216075	1.50748
Hr20	0.104824	0.24433	0.239952	0	1.38195	2.474096	3.213551	1.967423	1.120202	0.273944	0	0	1.341362	2.45156	3.216192	1.505564
Hr21	0.104657	0.242897	0.239845	0	1.383475	2.474223	3.213965	1.967861	1.125248	0.273505	0	0	1.342199	2.450713	3.222035	1.54464
Hr22	0.104686	0.242897	0.240028	0	1.383072	2.475259	3.215622	1.968539	1.123934	0.273554	0	0	1.343566	2.454103	3.224279	1.54464
Hr23	0.105557	0.239803	0.236743	0	1.365112	2.43853	3.16742	1.928999	1.109916	0.275895	0	0	1.321665	2.417499	3.169364	1.471086
Hr24	0.105457	0.239803	0.236406	0	1.364675	2.437176	3.165844	1.926523	1.111561	0.275647	0	0	1.320852	2.415495	3.167698	1.46917
Daily	0.107107	0.241312	0.239277	0	1.379463	2.464472	3.201072	1.953658	1.114616	0.279951	0.095786	0.173525	1.334926	2.440394	3.201714	1.484827

APPENDIX 5I

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**Tunnel Emission  
Calculations**

**Project:** HKBCF / HKLR EIA  
**Title:** Calculations of Portal Emission and Emission from Ventilation Buildings  
**Year:** 2031  
**Date:** 22-Jul-09  
**Parameter:** Nox emission during peak hour

Tunnel	Direction	Tunnel Length (m)	Tunnel Length (mile)	Traffic Flow (veh/hr)	Emission Factor (g/mile-veh)	Total Emission (g/hr)	Total Emission (g/s)	to Vent Bld (g/s)	to each Portal (g/s)	first 50m (each)	2nd 50m (each)	Remark
HKLR (EB)	EB	1110	0.690	1121	1.926	1489.460	0.414	-	0.124	0.01655	0.00827	
HKLR (WB)	WB	1110	0.690	982	1.961	1328.483	0.369	-	0.111	0.01476	0.00738	
Ventilation Bld_HKLR	-	-	-	-	-	-	-	0.548	-	-	-	70% to vent buildings
BCF HK Tunnel	SB	882	0.548	344	0.502	94.662	0.026	-	0.026	0.00351	0.00175	Jet fan 100%
HZMB-Main Bridge (Eastern)	EB	7000	4.351	1121	1.926	9392.991	2.609	-	0.783	0.10437	0.05218	
HZMB-Main Bridge (Western)	WB	7000	4.351	982	1.961	8377.821	2.327	-	0.698	0.09309	0.04654	
HZMB-Main Bridge Vent Bld (Eastern)	-	-	-	-	-	-	-	1.728	-	-	-	70% to vent buildings
HZMB-Main Bridge Vent Bld (Western)	-	-	-	-	-	-	-	1.728	-	-	-	50%/50% split into 2 vent buildings
TMCLKL (SB)	SB	-	-	-	-	-	-	-	-	0.05170	0.02580	Provided by TMCLKL's Consultant
Ventilation Bld_TMCLKL	-	-	-	-	-	-	-	2.790	-	-	-	

**Project:** HKBCF / HKLR EIA  
**Title:** Calculations of Portal Emission and Emission from Ventilation Buildings  
**Year:** 2031  
**Date:** 22-Jul-09  
**Parameter:** RSP emission during peak hour

Tunnel	Direction	Tunnel Length (m)	Tunnel Length (mile)	Traffic Flow (veh/hr)	Emission Factor (g/mile-veh)	Total Emission (g/hr)	Total Emission (g/s)	to Vent Bld (g/s)	to each Portal (g/s)	first 50m (each)	2nd 50m (each)	Remark
HKLR (EB)	EB	1110	0.690	1121	0.034	26.294	0.007	-	0.002	0.00029	0.00015	70% to vent buildings
HKLR (WB)	WB	1110	0.690	982	0.035	23.711	0.007	-	0.002	0.00026	0.00013	
Ventilation Bld_HKLR	-	-	-	-	-	-	-	0.010	-	-	-	
BCF HK Tunnel	SB	882	0.548	344	0.027	5.091	0.001	-	0.001	0.00019	0.00009	Jet fan 100%
HZMB-Main Bridge (Eastern)	EB	7000	4.351	1121	0.034	165.816	0.046	-	0.014	0.00184	0.00092	70% to vent buildings
HZMB-Main Bridge (Western)	WB	7000	4.351	982	0.035	149.528	0.042	-	0.012	0.00166	0.00083	
HZMB-Main Bridge Vent Bld (Eastern)	-	-	-	-	-	-	-	0.031	-	-	-	
HZMB-Main Bridge Vent Bld (Western)	-	-	-	-	-	-	-	0.031	-	-	-	50%/50% split into 2 vent buildings
TMCLKL (SB)	SB	-	-	-	-	-	-	-	-	0.00170	0.00080	Provided by TMCLKL's Consultant
Ventilation Bld_TMCLKL	-	-	-	-	-	-	-	0.090	-	-	-	

APPENDIX 5J

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**Cumulative Air Quality  
Impacts**

**Grid**                    **7\_22**

<b>ASR Ref in Model</b>	<b>ASR ID</b>	<b>Description</b>	<b>X</b>	<b>Y</b>
ASR 1	A99	Sham Wat House No. 30	806423.9	814974.1

**Grid**                    **8\_23**

<b>ASR Ref in Model</b>	<b>ASR ID</b>	<b>Description</b>	<b>X</b>	<b>Y</b>
ASR 1	A97	San Shek Wan	807086.9	815893.8
ASR 2	A98	Sham Wat House No. 39	806750.0	815223.2

**Grid****8\_24**

<b>ASR Ref in Model</b>	<b>ASR ID</b>	<b>Description</b>	<b>X</b>	<b>Y</b>
ASR 1	A93	Sha Lo Wan House No. 1	808151.3	817083.9
ASR 2	A94	Sha Lo Wan House No. 5	808063.6	816855.2
ASR 3	A95	Sha Lo Wan House No. 9	807864.3	816721.0
ASR 4	A96	Tin Hau Temple at Sha Lo Wan	807763.9	816772.2



**Grid****9\_24**

<b>ASR Ref in Model</b>	<b>ASR ID</b>	<b>Description</b>	<b>X</b>	<b>Y</b>
ASR 1	A89	Government Flying Services Headquarters	808805.5	817481.3
ASR 2	A105	Hong Kong Business Aviation Centre	809063.1	817459.5
ASR 3	A106	DHL Central Asia Hub	809409.1	817546.7

**Grid**

**10\_23**

<b>ASR Ref in Model</b>	<b>ASR ID</b>	<b>Description</b>	<b>X</b>	<b>Y</b>
ASR 1	P7	Tung Chung West Development	810606.4	816208.6
ASR 2	P8	Tung Chung West Development	810721.6	816411.5

**Grid**

**10\_24**

<b>ASR Ref in Model</b>	<b>ASR ID</b>	<b>Description</b>	<b>X</b>	<b>Y</b>
ASR 1	A67	Aviation Security Company Limited	810690.8	817066.5
ASR 2	A68	Tradeport Logistics Centre	811031.8	817451.5
ASR 3	A90	Tin Sum	809900.3	816812.5
ASR 4	A91	Kau Liu	809767.2	816768.7
ASR 5	A92	San Tau	809948.1	816617.4

**Grid**                    **10\_25**

<b>ASR Ref in Model</b>	<b>ASR ID</b>	<b>Description</b>	<b>X</b>	<b>Y</b>
ASR 1	A78	Gate Gourmet Catering Building	811029.6	818336.0

**Grid****11\_23**

<b>ASR Ref in Model</b>	<b>ASR ID</b>	<b>Description</b>	<b>X</b>	<b>Y</b>
ASR 1	A51	Yu Tung Court - Hor Tung House	812192.8	816401.5
ASR 2	A59	Ma Wan Chung	811320.8	816378.5
ASR 3	A60	Yat Tung Estate - Shun Yat House	811477.0	816119.3
ASR 4	A61	Yat Tung Estate - Mei Yat House	811675.9	815882.0
ASR 5	A62	Yat Tung Estate - Hong Yat House	811654.2	815754.3
ASR 6	A63	Yat Tung Estate - Ping Yat House	811475.6	815685.2
ASR 7	A64	Yat Tung Estate - Fuk Yat House	811299.9	815648.4
ASR 8	A65	Yat Tung Estate - Ying Yat House	811286.9	815772.8
ASR 9	A66	Yat Tung Estate - Sui Yat House	811307.5	816050.8

Grid

11\_24

ASR Ref in Model	ASR ID	Description	X	Y
ASR 1	A19	Coastal Skyline Block 5 - NLH Facade	812437.5	816918.6
ASR 2	A20	Coastal Skyline Block 5 - HKLR Facade	812439.3	816948.8
ASR 3	A21	La Rossa B - NLH Facade	812328.3	816934.8
ASR 4	A22	La Rossa B - HKLR Facade	812334.3	816963.7
ASR 5	A23	LeBleu No.1	812344.0	817041.4
ASR 6	A24	LeBleu No.31	812418.3	817105.2
ASR 7	A26	LeBleu No.2	812381.6	817025.2
ASR 8	A27	LeBleu No.22	812439.3	817069.2
ASR 9	A29	LeBleu Deux	812228.4	817073.3
ASR 10	A30	LeBleu Deux	812236.0	817148.2
ASR 11	A31	LeBleu Deux	812314.5	817158.2
ASR 12	A32	LeBleu Deux	812408.6	817170.1
ASR 13	A33	Seaview Crescent Block 5 - NLH Facade	812161.0	816991.5
ASR 14	A34	Seaview Crescent Block 5 - HKLR Facade	812171.2	817018.7
ASR 15	A35	Seaview Crescent Block 3 - NLH Facade	812062.2	817067.2
ASR 16	A36	Seaview Crescent Block 3 - HKLR Facade	812078.0	817072.8
ASR 17	A37	Seaview Crescent Block 1 - NLH Facade	811995.8	817096.3
ASR 18	A38	Seaview Crescent Block 1 - HKLR Facade	812013.9	817120.7
ASR 19	A39	Ling Liang Church E Wun Scondary School	812336.6	816816.4
ASR 20	A40	Ling Liang Church Sau Tak Primary School	812427.7	816809.4
ASR 21	A41	One Citygate	811973.3	816816.5
ASR 22	A42	One Citygate Bridge	812029.9	816826.6
ASR 23	A43	Fu Tung Shopping Centre	812125.8	816722.7
ASR 24	A44	Tung Chung Health Centre	812235.9	816690.5
ASR 25	A45	Ching Chung Hau Po Woon Primary School	812250.3	816660.8
ASR 26	A46	Po On Commercial Assocation Wan Ho Kan Primary School	812207.6	816634.4
ASR 27	A47	Po Leung Kuk Mrs. Ma Kam Min Cheung Fook Sien College	812288.5	816508.7
ASR 28	A48	Wong Cho Bau Secondary School	812352.4	816575.0
ASR 29	A49	Tung Chung Wan Telephone Exchange	812355.7	816690.1
ASR 30	A50	Yu Tung Court - Hei Tung House	812204.6	816472.1
ASR 31	A52	Fu Tung Estate - Tung Ma House	812063.2	816593.0
ASR 32	A53	Fu Tung Estate - Tung Shing House	811995.3	816475.7
ASR 33	A54	Tung Chung Crescent Block 1	811920.2	816519.9

ASR Ref in Model	ASR ID	Description	X	Y
ASR 34	A55	Tung Chung Crescent Block 3	811936.0	816621.3
ASR 35	A56	Tung Chung Crescent Block 5	811872.0	816690.4
ASR 36	A57	Tung Chung Crescent Block 7	811777.0	816694.8
ASR 37	A58	Tung Chung Crescent Block 9	811711.0	816626.1
ASR 38	A69	Tradeport Logistics Centre	811106.1	817513.5
ASR 39	A70	Cathay Pacific City	811287.2	817594.2
ASR 40	A71	Cathay Pacific City	811287.6	817756.1
ASR 41	A100	Man Tung Road Park	811905.5	817023.6
ASR 42	A101	Novotel Citygate Hong Kong	812089.6	816905.3
ASR 43	P3	Planned Park near One Citygate	811806.2	816944.7
ASR 44	P4	Planned Community Hall and Library	812263.1	816837.6
ASR 45	P9	Tung Chung West Development	811056.5	816536.1
ASR 46	P10	Tung Chung West Development	811277.9	816674.8
ASR 47	P11	Tung Chung West Development	811464.2	816825.3

**Grid****11\_25**

<b>ASR Ref in Model</b>	<b>ASR ID</b>	<b>Description</b>	<b>X</b>	<b>Y</b>
ASR 1	A72	Chek Lap Kok Fire Station	811283.1	817931.8
ASR 2	A73	LSG Sky Chefs	811094.8	818050.0
ASR 3	A74	LSG Sky Chefs	811115.4	818125.6
ASR 4	A75	Cathay Pacific Catering Services	811265.4	818232.9
ASR 5	A76	Cathay Pacific Catering Services	811297.4	818334.2
ASR 6	A77	Airport Police Station	811114.1	818195.6
ASR 7	A79	CNAC Tower	811691.2	818235.0
ASR 8	A80	Dragonair Tower	811785.8	818290.8
ASR 9	P12	Planned CAD Headquarters Site (F	811824.1	818457.5
ASR 10	P13	Planned CAD Headquarters Site (5	811819.6	818455.4



**Grid**

11\_26

<b>ASR Ref in Model</b>	<b>ASR ID</b>	<b>Description</b>	<b>X</b>	<b>Y</b>
ASR 1	A81	Regal Airport Hotel	811332.9	820016.4
ASR 2	A82	SkyCity Nine Eagles Golf Course	812111.5	819628.3
ASR 3	A83	SkyCity Nine Eagles Golf Course	812183.2	819796.5
ASR 4	A84	SkyCity Nine Eagles Golf Course	812142.3	819988.4
ASR 5	A85	Hong Kong SkyCity Marriott Hotel	812227.8	819992.0
ASR 6	A86	Hong Kong SkyCity Marriott Hotel	812272.6	820069.9
ASR 7	A87	AsiaWorld-Expo	812398.5	820276.6
ASR 8	A88	AsiaWorld-Expo	812447.3	820389.2
ASR 9	A102	Terminal 2 Sky Plaza	811708.1	819748.3
ASR 10	A103	SkyCity Nine Eagles Golf Course	811878.1	819854.9
ASR 11	A104	SkyCity Nine Eagles Golf Course	811950.6	819660.2

**Grid****12\_24**

<b>ASR Ref in Model</b>	<b>ASR ID</b>	<b>Description</b>	<b>X</b>	<b>Y</b>
ASR 1	A1	Caribbean Coast Block 1 - NLH Facade	813097.7	817252.3
ASR 2	A2	Caribbean Coast Block 1 - BCF Facade	813069.8	817267.9
ASR 3	A3	Caribbean Coast Block 5 - NLH Facade	813027.2	817153.8
ASR 4	A4	Caribbean Coast Block 5 - BCF Facade	813002.9	817174.1
ASR 5	A5	Caribbean Coast Block 6 - NLH Facade	812951.7	817074.6
ASR 6	A6	Caribbean Coast Block 6 - BCF Facade	812931.2	817098.6
ASR 7	A7	Caribbean Coast Block 9 - NLH Facade	812850.8	817007.4
ASR 8	A8	Caribbean Coast Block 9 - BCF Facade	812836.1	817033.7
ASR 9	A9	Caribbean Coast Block 11 - NLH Facade	812777.9	816972.8
ASR 10	A10	Caribbean Coast Block 11 - BCF Facade	812767.0	817000.4
ASR 11	A11	Caribbean Coast Block 16 - NLH Facade	812662.6	816937.6
ASR 12	A12	Caribbean Coast Block 16 - BCF Facade	812656.0	816968.1
ASR 13	A13	Caribbean Coast (Phase 5)	812646.8	817136.5
ASR 14	A14	Caribbean Coast (Phase 5)	812753.8	817156.2
ASR 15	A15	Ho Yu College	812809.8	817242.1
ASR 16	A16	Ho Yu Primary School	812923.1	817227.5
ASR 17	A17	Coastal Skyline Block 1 - NLH Facade	812555.0	816918.3
ASR 18	A18	Coastal Skyline Block 1 - HKLR Facade	812550.8	816944.2
ASR 19	A25	LeBleu No.99	812523.5	817123.8
ASR 20	A28	LeBleu No.88	812518.8	817068.0
ASR 21	P1	Tung Chung East Development	812656.7	817664.7
ASR 22	P5	Planned Distict Open Space	812729.3	816845.9
ASR 23	P6	Planned Distict Open Space	812961.5	816951.5

**Grid**                    **12\_25**

<b>ASR Ref in Model</b>	<b>ASR ID</b>	<b>Description</b>	<b>X</b>	<b>Y</b>
ASR 1	P2	Tung Chung East Development	813218.2	818122.0

**Project** HZMB EIA  
**Title** : Grid 7\_22 (NO2)  
**Scenario** : Assume 50% Utilisation of Natural Gas in HK

ASR Ref	1-hr 1.5m	1-hr 5m	1-hr 10m	1-hr 15m	1-hr 20m	24-hr 1.5m	24-hr 5m	24-hr 10m	24-hr 15m	24-hr 20m	Annual 1.5m	Annual 5m	Annual 10m	Annual 15m	Annual 20m
1	214	214	214	214	214	96	96	96	96	96	22	22	22	22	22

**Project** HZMB EIA  
**Title** : Grid 8\_23 (NO2)  
**Scenario** : Assume 50% Utilisation of Natural Gas in HK

ASR Ref	1-hr 1.5m	1-hr 5m	1-hr 10m	1-hr 15m	1-hr 20m	24-hr 1.5m	24-hr 5m	24-hr 10m	24-hr 15m	24-hr 20m	Annual 1.5m	Annual 5m	Annual 10m	Annual 15m	Annual 20m
1	219	219	219	219	219	110	110	110	110	110	27	27	27	27	27
2	218	218	218	218	218	110	110	110	110	110	26	26	26	26	26

**Project** HZMB EIA

**Title** : Grid 8\_24 (NO2)

**Scenario** : Assume 50% Utilisation of Natural Gas in HK

<b>ASR Ref</b>	<b>1-hr 1.5m</b>	<b>1-hr 5m</b>	<b>1-hr 10m</b>	<b>1-hr 15m</b>	<b>1-hr 20m</b>	<b>24-hr 1.5m</b>	<b>24-hr 5m</b>	<b>24-hr 10m</b>	<b>24-hr 15m</b>	<b>24-hr 20m</b>	<b>Annual 1.5m</b>	<b>Annual 5m</b>	<b>Annual 10m</b>	<b>Annual 15m</b>	<b>Annual 20m</b>
1	246	246	245	243	241	134	134	134	133	132	47	47	47	46	46
2	235	235	235	234	234	131	131	131	131	130	45	45	44	44	44
3	232	232	232	232	232	130	130	130	130	130	44	44	44	44	44
4	233	233	233	233	233	131	131	131	130	130	44	44	44	44	44

**Project** HZMB EIA  
**Title** : Grid 9\_24 (NO2)  
**Scenario** : Assume 50% Utilisation of Natural Gas in HK

ASR Ref	1-hr 1.5m	1-hr 5m	1-hr 10m	1-hr 15m	1-hr 20m	24-hr 1.5m	24-hr 5m	24-hr 10m	24-hr 15m	24-hr 20m	Annual 1.5m	Annual 5m	Annual 10m	Annual 15m	Annual 20m
1	220	220	219	219	218	124	124	124	123	123	40	40	40	39	38
2	221	221	220	219	219	126	125	125	124	123	43	43	42	41	39
3	224	224	223	222	222	127	126	126	125	124	45	43	41	40	39

**Project** HZMB EIA  
**Title** : Grid 10\_23 (NO2)  
**Scenario** : Assume 50% Utilisation of Natural Gas in HK

ASR Ref	1-hr 1.5m	1-hr 5m	1-hr 10m	1-hr 15m	1-hr 20m	24-hr 1.5m	24-hr 5m	24-hr 10m	24-hr 15m	24-hr 20m	Annual 1.5m	Annual 5m	Annual 10m	Annual 15m	Annual 20m
1	207	207	207	207	206	102	101	101	101	101	25	25	25	25	25
2	209	209	209	209	209	104	104	104	104	103	26	26	26	26	26



**Project** HZMB EIA  
**Title** :Grid 10\_24 (NO2)  
**Scenario** : Assume 50% Utilisation of Natural Gas in HK

ASR Ref	1-hr		1-hr		1-hr		24-hr		24-hr		24-hr		Annual		Annual	
	1.5m	5m	10m	15m	20m	1.5m	5m	10m	15m	20m	1.5m	5m	10m	15m	20m	
1	216	216	217	215	221	128	128	128	125	121	44	44	44	41	37	
2	216	216	215	214	214	125	124	122	119	118	44	43	41	39	37	
3	225	225	226	227	228	109	109	109	109	109	33	33	33	33	32	
4	215	215	215	216	216	109	109	109	109	108	32	32	32	32	32	
5	212	212	212	212	212	108	108	108	108	108	31	31	31	31	31	

**Project** HZMB EIA  
**Title** :Grid 10\_25 (NO2)  
**Scenario** : Assume 50% Utilisation of Natural Gas in HK

	1-hr	1-hr	1-hr	1-hr	1-hr	24-hr	24-hr	24-hr	24-hr	24-hr	Annual	Annual	Annual	Annual	Annual
ASR Ref	1.5m	5m	10m	15m	20m	1.5m	5m	10m	15m	20m	1.5m	5m	10m	15m	20m
1	271	271	271	271	271	131	131	130	130	130	49	49	48	48	47

**Project** HZMB EIA  
**Title** : Grid 11\_23 (NO2)  
**Scenario** : Assume 50% Utilisation of Natural Gas in HK

ASR Ref	1-hr	1-hr	1-hr	1-hr	1-hr	24-hr	24-hr	24-hr	24-hr	24-hr	Annual	Annual	Annual	Annual	Annual
	1.5m	5m	10m	15m	20m	1.5m	5m	10m	15m	20m	1.5m	5m	10m	15m	20m
1	195	195	195	195	195	108	108	108	108	107	28	28	27	26	26
2	200	200	200	200	200	105	105	105	104	104	25	25	25	25	25
3	198	198	198	198	197	102	102	102	102	101	25	25	24	24	24
4	198	198	198	197	197	104	104	103	103	102	25	25	25	24	24
5	197	197	197	197	197	102	102	101	101	101	24	24	24	24	23
6	197	197	197	197	197	101	101	100	100	100	24	24	23	23	23
7	198	198	198	198	198	101	101	101	101	100	23	23	23	23	23
8	199	199	199	199	198	102	102	102	101	101	23	23	23	23	23
9	202	202	202	202	202	103	103	103	103	103	24	24	24	24	24

**Project** HZMB EIA  
**Title** : Grid 11\_24 (NO2)  
**Scenario** : Assume 50% Utilisation of Natural Gas in HK

ASR Ref	1-hr	1-hr	1-hr	1-hr	1-hr	24-hr	24-hr	24-hr	24-hr	24-hr	Annual	Annual	Annual	Annual	Annual
	1.5m	5m	10m	15m	20m	1.5m	5m	10m	15m	20m	1.5m	5m	10m	15m	20m
1	204	204	204	203	203	119	119	117	116	114	34	34	33	32	31
2	203	203	203	203	203	118	118	117	115	114	33	33	33	32	31
3	204	204	203	203	203	120	119	118	116	115	34	33	33	32	31
4	203	203	203	203	203	118	118	117	116	114	33	33	32	31	31
5	203	203	202	202	202	117	116	116	115	113	32	32	31	31	30
6	202	202	202	202	202	115	115	115	114	113	32	32	31	31	30
7	203	203	203	203	202	116	116	115	114	113	32	32	32	31	30
8	203	203	203	202	202	116	116	115	114	113	32	32	31	31	30
9	202	202	202	202	202	118	117	116	115	114	32	32	31	31	30
10	202	202	202	202	202	117	117	116	115	114	32	32	31	31	30
11	202	202	202	202	202	116	116	115	114	113	32	32	31	30	30
12	202	202	202	202	202	115	115	114	114	113	32	32	31	30	30
13	203	203	203	203	202	121	120	119	118	116	34	33	32	32	31
14	203	203	202	202	202	120	120	119	117	115	33	33	32	31	30
15	202	202	202	202	202	121	121	120	118	116	33	33	32	32	31
16	202	202	202	202	202	120	120	119	118	116	33	33	32	32	31
17	202	202	202	202	202	122	121	121	119	117	34	34	33	32	31
18	202	202	202	202	202	121	121	120	119	117	34	34	33	32	31
19	206	206	206	205	205	126	125	123	118	114	40	38	36	33	31
20	206	206	206	205	205	125	124	122	118	114	40	39	36	34	32
21	238	219	208	207	206	112	111	111	110	109	47	42	37	34	32
22	243	236	213	211	209	119	117	114	112	110	54	45	36	33	31
23	201	201	201	201	201	109	109	109	108	107	39	38	36	34	32
24	201	201	201	201	201	109	109	109	108	108	38	38	36	34	32
25	201	201	201	200	200	109	108	108	107	107	36	36	35	33	32
26	201	201	200	200	200	107	107	107	107	106	35	34	34	33	32
27	201	201	201	200	200	107	107	106	105	104	33	32	32	31	30
28	201	201	201	200	200	109	109	107	106	105	34	34	33	32	31
29	208	201	201	201	201	111	110	110	109	108	41	40	37	34	32
30	201	201	201	200	200	106	106	105	104	103	31	31	31	30	30
31	200	200	200	200	200	107	107	106	105	105	33	33	32	32	31
32	200	200	200	200	200	109	108	107	106	105	32	31	31	30	30
33	201	201	201	200	200	112	110	108	106	105	34	33	32	31	30
34	201	201	201	201	200	109	108	108	107	106	34	34	33	32	31
35	201	201	201	201	201	108	108	108	107	107	34	34	33	33	32
36	201	201	201	201	201	109	109	108	107	106	34	34	33	32	31

<b>37</b>	201	201	201	201	200	111	110	108	106	105	34	33	32	31	31
<b>38</b>	209	207	205	204	203	119	118	116	114	112	43	42	39	37	35
<b>39</b>	207	206	205	204	203	121	119	114	112	110	47	43	39	36	34
<b>40</b>	206	206	204	203	203	118	118	117	116	114	45	44	40	37	35
<b>41</b>	205	204	202	202	202	127	127	126	122	118	39	38	35	33	31
<b>42</b>	204	204	204	204	203	127	126	125	120	116	39	37	35	32	31
<b>43</b>	212	211	210	209	207	114	113	112	111	110	45	43	38	35	32
<b>44</b>	205	205	205	205	204	126	126	124	119	114	39	38	35	33	31
<b>45</b>	200	200	200	200	200	99	99	99	99	99	30	30	30	29	29
<b>46</b>	210	209	208	206	203	101	101	101	101	101	31	31	31	31	30
<b>47</b>	203	203	203	203	202	109	109	109	108	108	36	36	36	35	33

**Project** HZMB EIA  
**Title** : Grid 11\_25 (NO2)  
**Scenario** : Assume 50% Utilisation of Natural Gas in HK

ASR Ref	1-hr	1-hr	1-hr	1-hr	1-hr	24-hr	24-hr	24-hr	24-hr	24-hr	Annual	Annual	Annual	Annual	Annual
	1.5m	5m	10m	15m	20m	1.5m	5m	10m	15m	20m	1.5m	5m	10m	15m	20m
1	219	218	218	215	214	125	125	125	123	121	51	49	49	42	40
2	218	218	218	217	217	121	121	121	120	120	42	42	42	40	39
3	216	216	216	216	215	122	121	121	121	120	41	41	41	40	39
4	214	214	214	214	213	121	121	121	120	120	43	43	43	41	39
5	215	215	215	214	213	119	119	119	119	119	43	43	43	40	39
6	215	215	215	214	214	121	121	121	121	120	41	40	40	39	39
7	220	217	214	213	213	130	129	128	126	123	43	42	42	40	38
8	220	219	217	213	212	123	123	123	122	122	44	43	43	40	38
9	222	219	219	214	213	123	123	123	122	122	47	45	45	40	38
10	219	217	217	214	213	123	123	123	122	122	46	45	45	40	38

**Project** HZMB EIA  
**Title** : Grid 11\_26 (NO2)  
**Scenario** : Assume 50% Utilisation of Natural Gas in HK

ASR Ref	1-hr 1.5m	1-hr 5m	1-hr 10m	1-hr 15m	1-hr 20m	24-hr 1.5m	24-hr 5m	24-hr 10m	24-hr 15m	24-hr 20m	Annual 1.5m	Annual 5m	Annual 10m	Annual 15m	Annual 20m
1	226	226	226	226	226	120	119	119	119	118	35	35	35	35	34
2	247	247	245	243	241	122	122	121	121	120	41	40	40	39	38
3	239	238	237	236	235	120	119	119	118	118	40	39	38	38	37
4	232	232	232	232	232	119	119	118	118	118	37	37	36	36	36
5	234	234	232	231	231	119	119	118	118	118	38	37	37	36	36
6	229	229	229	229	228	118	118	118	118	117	37	37	37	36	36
7	225	225	225	225	225	117	117	117	117	117	36	36	36	36	35
8	225	225	225	225	225	117	117	117	116	116	35	35	35	35	35
9	235	235	235	235	235	118	118	118	117	117	38	37	37	36	36
10	244	244	243	242	241	121	120	120	119	118	37	37	36	36	35
11	247	247	246	245	244	123	123	122	120	119	39	39	38	38	37

**Project** HZMB EIA  
**Title** : Grid 12\_24 (NO2)  
**Scenario** : Assume 50% Utilisation of Natural Gas in HK

ASR Ref	1-hr 1.5m	1-hr 5m	1-hr 10m	1-hr 15m	1-hr 20m	24-hr 1.5m	24-hr 5m	24-hr 10m	24-hr 15m	24-hr 20m	Annual 1.5m	Annual 5m	Annual 10m	Annual 15m	Annual 20m
1	192	192	192	192	192	105	104	103	100	98	31	31	30	29	27
2	193	192	192	192	192	104	104	102	100	97	31	30	29	28	27
3	193	193	193	193	193	105	104	103	100	97	31	31	30	29	27
4	193	193	193	192	192	104	103	102	100	97	30	30	29	28	27
5	194	194	194	194	194	106	105	103	101	97	32	32	30	29	27
6	193	193	193	193	193	104	104	102	100	97	31	30	29	28	27
7	194	194	194	194	194	106	105	103	101	98	32	31	30	29	27
8	193	193	193	193	193	105	104	103	100	98	30	30	29	28	27
9	194	194	194	193	193	106	105	104	101	98	31	31	30	28	27
10	193	193	193	193	193	105	104	103	100	98	30	30	29	28	27
11	193	193	193	193	193	108	108	105	103	100	31	31	30	28	27
12	193	193	193	193	193	107	106	104	102	99	30	30	29	28	27
13	192	192	192	192	192	101	101	100	99	97	28	28	27	27	26
14	192	192	192	192	192	100	100	99	98	97	28	28	27	27	26
15	193	193	192	192	192	101	101	99	98	96	29	29	28	27	26
16	193	192	192	192	192	102	101	100	99	97	29	29	28	27	26
17	193	193	193	193	193	108	108	106	103	101	32	31	30	29	27
18	193	193	193	193	193	107	107	105	103	100	31	30	29	28	27
19	193	193	192	192	192	103	102	101	100	98	29	28	28	27	26
20	193	193	192	192	192	104	103	102	100	99	29	28	28	27	26
21	191	191	191	191	191	95	95	95	94	94	24	24	24	24	24
22	196	196	195	195	195	115	114	109	103	97	38	37	33	30	27
23	201	201	201	200	200	114	113	107	98	93	43	40	33	29	27



**Project** HZMB EIA  
**Title** :Grid 12\_25 (NO2)  
**Scenario** : Assume 50% Utilisation of Natural Gas in HK

	1-hr	1-hr	1-hr	1-hr	1-hr	24-hr	24-hr	24-hr	24-hr	24-hr	Annual	Annual	Annual	Annual	Annual
ASR Ref	1.5m	5m	10m	15m	20m	1.5m	5m	10m	15m	20m	1.5m	5m	10m	15m	20m
1	201	201	201	201	201	107	107	106	106	105	27	27	27	27	26

**Project** HZMB EIA  
**Title** : Grid 7\_22 (RSP)  
**Scenario** : Assume 50% Utilisation of Natural Gas in HK

ASR Ref	1-hr 1.5m	1-hr 5m	1-hr 10m	1-hr 15m	1-hr 20m	24-hr 1.5m	24-hr 5m	24-hr 10m	24-hr 15m	24-hr 20m	Annual 1.5m	Annual 5m	Annual 10m	Annual 15m	Annual 20m
1	108	108	108	108	108	89	89	89	89	89	43	43	43	43	43

**Project** HZMB EIA  
**Title** Grid 8\_23 (RSP)  
**Scenario** : Assume 50% Utilisation of Natural Gas in HK

ASR Ref	1-hr 1.5m	1-hr 5m	1-hr 10m	1-hr 15m	1-hr 20m	24-hr 1.5m	24-hr 5m	24-hr 10m	24-hr 15m	24-hr 20m	Annual 1.5m	Annual 5m	Annual 10m	Annual 15m	Annual 20m
1	114	114	114	114	114	92	92	92	92	92	45	45	45	45	45
2	113	113	113	113	113	91	91	91	91	91	45	45	45	45	45

**Project** HZMB EIA  
**Title** Grid 8\_24 (RSP)  
**Scenario** : Assume 50% Utilisation of Natural Gas in HK

ASR Ref	1-hr 1.5m	1-hr 5m	1-hr 10m	1-hr 15m	1-hr 20m	24-hr 1.5m	24-hr 5m	24-hr 10m	24-hr 15m	24-hr 20m	Annual 1.5m	Annual 5m	Annual 10m	Annual 15m	Annual 20m
1	130	130	130	129	129	96	96	96	95	95	47	47	47	47	47
2	129	129	129	129	129	95	95	95	95	95	47	47	47	47	47
3	129	129	129	129	129	95	95	95	95	95	47	47	47	47	47
4	129	129	129	129	129	95	95	95	95	95	47	47	47	47	47

**Project** HZMB EIA  
**Title** Grid 9\_24 (RSP)  
**Scenario** : Assume 50% Utilisation of Natural Gas in HK

ASR Ref	1-hr 1.5m	1-hr 5m	1-hr 10m	1-hr 15m	1-hr 20m	24-hr 1.5m	24-hr 5m	24-hr 10m	24-hr 15m	24-hr 20m	Annual 1.5m	Annual 5m	Annual 10m	Annual 15m	Annual 20m
1	115	115	115	115	115	90	90	90	90	90	45	45	45	45	45
2	115	115	115	115	115	91	91	91	91	91	45	45	45	45	45
3	115	115	115	115	115	91	91	91	91	91	45	45	45	45	45

**Project** HZMB EIA  
**Title** Grid 10\_23 (RSP)  
**Scenario** : Assume 50% Utilisation of Natural Gas in HK

ASR Ref	1-hr 1.5m	1-hr 5m	1-hr 10m	1-hr 15m	1-hr 20m	24-hr 1.5m	24-hr 5m	24-hr 10m	24-hr 15m	24-hr 20m	Annual 1.5m	Annual 5m	Annual 10m	Annual 15m	Annual 20m
1	115	115	115	115	115	89	89	89	89	89	44	44	44	44	44
2	115	115	115	115	115	89	89	89	89	89	44	44	44	44	44

**Project** HZMB EIA  
**Title** Grid 10\_24 (RSP)  
**Scenario** : Assume 50% Utilisation of Natural Gas in HK

ASR Ref	1-hr 1.5m	1-hr 5m	1-hr 10m	1-hr 15m	1-hr 20m	24-hr 1.5m	24-hr 5m	24-hr 10m	24-hr 15m	24-hr 20m	Annual 1.5m	Annual 5m	Annual 10m	Annual 15m	Annual 20m
1	116	116	116	116	115	91	91	91	90	90	45	45	45	45	45
2	117	116	116	116	116	91	91	91	90	90	46	45	45	45	45
3	116	116	115	115	115	90	90	90	90	90	45	45	45	45	45
4	116	116	116	116	115	90	90	90	90	90	45	45	45	45	45
5	115	115	115	115	115	90	90	90	90	90	45	45	45	45	45

**Project** HZMB EIA  
**Title** Grid 10\_25 (RSP)  
**Scenario** : Assume 50% Utilisation of Natural Gas in HK

ASR Ref	1-hr 1.5m	1-hr 5m	1-hr 10m	1-hr 15m	1-hr 20m	24-hr 1.5m	24-hr 5m	24-hr 10m	24-hr 15m	24-hr 20m	Annual 1.5m	Annual 5m	Annual 10m	Annual 15m	Annual 20m
1	131	131	131	131	131	96	96	96	96	96	48	48	48	48	48



**Project** HZMB EIA  
**Title** Grid 11\_23 (RSP)  
**Scenario** : Assume 50% Utilisation of Natural Gas in HK

ASR Ref	1-hr 1.5m	1-hr 5m	1-hr 10m	1-hr 15m	1-hr 20m	24-hr 1.5m	24-hr 5m	24-hr 10m	24-hr 15m	24-hr 20m	Annual 1.5m	Annual 5m	Annual 10m	Annual 15m	Annual 20m
1	119	119	119	119	119	90	90	90	90	90	44	44	44	44	44
2	120	120	119	119	119	90	90	90	90	90	44	44	44	44	44
3	120	120	120	120	120	90	90	90	90	90	44	44	44	44	44
4	120	120	120	120	120	90	90	90	90	90	44	44	44	44	44
5	120	120	120	120	120	90	90	90	90	90	44	44	44	44	44
6	120	120	120	120	120	90	90	90	90	90	44	44	44	44	44
7	119	119	119	119	119	90	90	90	90	90	44	44	44	44	44
8	119	119	119	119	119	90	90	90	90	90	44	44	44	44	44
9	119	119	119	119	119	90	90	90	90	90	44	44	44	44	44

**Project** HZMB EIA  
**Title** : Grid 11\_24 (RSP)  
**Scenario** : Assume 50% Utilisation of Natural Gas in HK

ASR Ref	1-hr 1.5m	1-hr 5m	1-hr 10m	1-hr 15m	1-hr 20m	24-hr 1.5m	24-hr 5m	24-hr 10m	24-hr 15m	24-hr 20m	Annual 1.5m	Annual 5m	Annual 10m	Annual 15m	Annual 20m
1	119	119	119	119	119	91	91	91	91	91	45	45	45	45	45
2	119	119	119	119	119	91	91	91	91	91	45	45	45	45	45
3	119	119	119	119	119	91	91	91	91	91	45	45	45	45	45
4	119	119	119	119	119	91	91	91	91	91	45	45	45	45	45
5	119	119	119	119	119	91	91	91	91	91	45	45	45	45	45
6	119	119	119	119	119	91	91	91	91	91	45	45	45	45	45
7	119	119	119	119	119	91	91	91	91	91	45	45	45	45	45
8	119	119	119	119	119	91	91	91	91	91	45	45	45	45	45
9	119	119	119	119	119	91	91	91	91	91	45	45	45	45	45
10	119	119	119	119	119	91	91	91	91	91	45	45	45	45	45
11	119	119	119	119	119	91	91	91	91	91	45	45	45	45	45
12	119	119	119	119	119	91	91	91	91	91	45	45	45	45	45
13	119	119	119	119	119	91	91	91	91	91	45	45	45	45	45
14	119	119	119	119	119	91	91	91	91	91	45	45	45	45	45
15	119	119	119	119	119	91	91	91	91	91	45	45	45	45	45
16	119	119	119	119	119	91	91	91	91	91	45	45	45	45	45
17	119	119	119	119	119	91	91	91	91	91	45	45	45	45	45
18	119	119	119	119	119	91	91	91	91	91	45	45	45	45	45
19	119	119	119	119	119	91	91	91	91	91	46	46	45	45	45
20	119	119	119	119	119	91	91	91	91	91	46	46	45	45	45
21	122	121	120	119	119	92	91	91	91	91	46	46	46	45	45
22	123	121	119	119	119	92	92	91	91	91	47	46	46	45	45
23	121	121	120	119	119	91	91	91	91	91	46	46	46	45	45
24	121	120	120	119	119	91	91	91	91	91	46	46	46	45	45
25	120	120	120	119	119	91	91	91	91	91	46	46	46	45	45
26	120	120	120	120	119	91	91	91	91	91	46	46	46	45	45
27	120	120	120	119	119	91	91	91	91	91	45	45	45	45	45
28	120	120	120	120	119	91	91	91	91	91	45	45	45	45	45
29	121	121	120	119	119	91	91	91	91	91	46	46	46	45	45
30	120	120	120	119	119	91	91	91	91	91	45	45	45	45	45
31	120	120	120	120	119	91	91	91	91	91	45	45	45	45	45
32	120	120	120	120	120	91	91	91	91	91	45	45	45	45	45
33	120	120	120	120	120	91	91	91	91	91	46	45	45	45	45
34	120	120	120	120	120	91	91	91	91	91	45	45	45	45	45
35	121	120	120	120	120	91	91	91	91	91	45	45	45	45	45
36	121	121	121	120	120	91	91	91	91	91	45	45	45	45	45

<b>37</b>	121	121	121	120	120	91	91	91	91	91	45	45	45	45	45
<b>38</b>	120	120	119	119	119	91	91	91	91	91	46	46	46	46	45
<b>39</b>	120	120	120	120	119	92	91	91	91	91	46	46	46	46	45
<b>40</b>	120	120	120	119	119	92	91	91	91	91	46	46	46	46	45
<b>41</b>	119	119	119	119	119	92	91	91	91	91	46	46	46	45	45
<b>42</b>	119	119	119	119	119	92	91	91	91	91	46	46	45	45	45
<b>43</b>	122	121	121	120	120	91	91	91	91	91	46	46	46	45	45
<b>44</b>	119	119	119	119	119	91	91	91	91	91	46	46	45	45	45
<b>45</b>	121	121	121	121	120	91	91	91	91	91	45	45	45	45	45
<b>46</b>	120	120	120	120	120	91	91	91	91	91	45	45	45	45	45
<b>47</b>	121	121	121	121	120	91	91	91	91	91	46	46	46	46	45

**Project** HZMB EIA  
**Title** : Grid 11\_25 (RSP)  
**Scenario** : Assume 50% Utilisation of Natural Gas in HK

ASR Ref	1-hr 1.5m	1-hr 5m	1-hr 10m	1-hr 15m	1-hr 20m	24-hr 1.5m	24-hr 5m	24-hr 10m	24-hr 15m	24-hr 20m	Annual 1.5m	Annual 5m	Annual 10m	Annual 15m	Annual 20m
1	126	126	126	126	126	93	93	93	93	93	46	46	46	46	46
2	125	125	125	125	125	93	93	93	93	93	46	46	46	46	46
3	125	125	125	125	125	93	93	93	93	93	46	46	46	46	46
4	125	125	125	125	125	93	93	93	93	93	46	46	46	46	46
5	125	125	125	125	125	93	93	93	93	93	46	46	46	46	46
6	125	125	125	125	125	93	93	93	93	93	46	46	46	46	46
7	127	127	127	127	127	93	93	93	93	93	46	46	46	46	46
8	127	127	127	127	127	93	93	93	93	93	46	46	46	46	45
9	128	127	127	127	127	93	93	93	93	93	46	46	46	45	45
10	128	127	127	127	127	93	93	93	93	93	46	46	46	45	45

**Project** HZMB EIA  
**Title** : Grid 11\_26 (RSP)  
**Scenario** : Assume 50% Utilisation of Natural Gas in HK

ASR Ref	1-hr 1.5m	1-hr 5m	1-hr 10m	1-hr 15m	1-hr 20m	24-hr 1.5m	24-hr 5m	24-hr 10m	24-hr 15m	24-hr 20m	Annual 1.5m	Annual 5m	Annual 10m	Annual 15m	Annual 20m
1	124	124	124	124	124	95	95	95	95	95	46	46	46	46	46
2	124	124	124	124	124	95	95	95	95	95	46	46	46	46	46
3	124	124	124	124	124	95	95	95	95	95	46	46	46	46	46
4	124	124	124	124	124	95	95	95	95	95	46	46	46	46	46
5	124	124	124	124	124	95	95	95	95	95	46	46	46	46	46
6	124	124	124	124	124	95	95	95	95	95	46	46	46	46	46
7	124	124	124	124	124	95	95	95	95	95	46	46	46	46	46
8	124	124	124	124	124	95	95	95	95	95	46	46	46	46	46
9	124	124	124	124	124	95	95	95	95	95	46	46	46	46	46
10	124	124	124	124	124	95	95	95	95	95	46	46	46	46	46
11	124	124	124	124	124	95	95	95	95	95	46	46	46	46	46

**Project** HZMB EIA  
**Title** : Grid 12\_24 (RSP)  
**Scenario** : Assume 50% Utilisation of Natural Gas in HK

ASR Ref	1-hr 1.5m	1-hr 5m	1-hr 10m	1-hr 15m	1-hr 20m	24-hr 1.5m	24-hr 5m	24-hr 10m	24-hr 15m	24-hr 20m	Annual 1.5m	Annual 5m	Annual 10m	Annual 15m	Annual 20m
1	119	119	119	119	119	91	91	91	91	91	44	44	44	44	44
2	119	119	119	119	119	91	91	91	91	91	44	44	44	44	44
3	119	119	119	119	119	91	91	91	91	91	44	44	44	44	44
4	119	119	119	119	119	91	91	91	91	91	44	44	44	44	44
5	119	119	119	119	119	91	91	91	91	91	44	44	44	44	44
6	119	119	119	119	119	91	91	91	91	91	44	44	44	44	44
7	119	119	119	118	118	91	91	91	91	91	44	44	44	44	44
8	119	119	119	118	118	91	91	91	91	91	44	44	44	44	44
9	118	118	118	118	118	91	91	91	91	91	44	44	44	44	44
10	118	118	118	118	118	91	91	91	91	91	44	44	44	44	44
11	118	118	118	118	118	91	91	91	91	91	44	44	44	44	44
12	118	118	118	118	118	91	91	91	91	91	44	44	44	44	44
13	118	118	118	118	118	91	91	91	91	91	44	44	44	44	44
14	118	118	118	118	118	91	91	91	91	91	44	44	44	44	44
15	119	119	118	118	118	91	91	91	91	91	44	44	44	44	44
16	119	119	119	119	119	91	91	91	91	91	44	44	44	44	44
17	118	118	118	118	118	91	91	91	91	91	44	44	44	44	44
18	118	118	118	118	118	91	91	91	91	91	44	44	44	44	44
19	118	118	118	118	118	91	91	91	91	91	44	44	44	44	44
20	118	118	118	118	118	91	91	91	91	91	44	44	44	44	44
21	118	118	118	118	118	91	91	91	91	91	44	44	44	44	44
22	118	118	118	118	118	91	91	91	91	91	44	44	44	44	44
23	119	119	119	119	119	91	91	91	91	91	45	44	44	44	44

**Project** HZMB EIA  
**Title** : Grid 12\_25 (RSP)  
**Scenario** : Assume 50% Utilisation of Natural Gas in HK

ASR Ref	1-hr 1.5m	1-hr 5m	1-hr 10m	1-hr 15m	1-hr 20m	24-hr 1.5m	24-hr 5m	24-hr 10m	24-hr 15m	24-hr 20m	Annual 1.5m	Annual 5m	Annual 10m	Annual 15m	Annual 20m
1	121	121	121	121	121	92	92	92	92	92	44	44	44	44	44

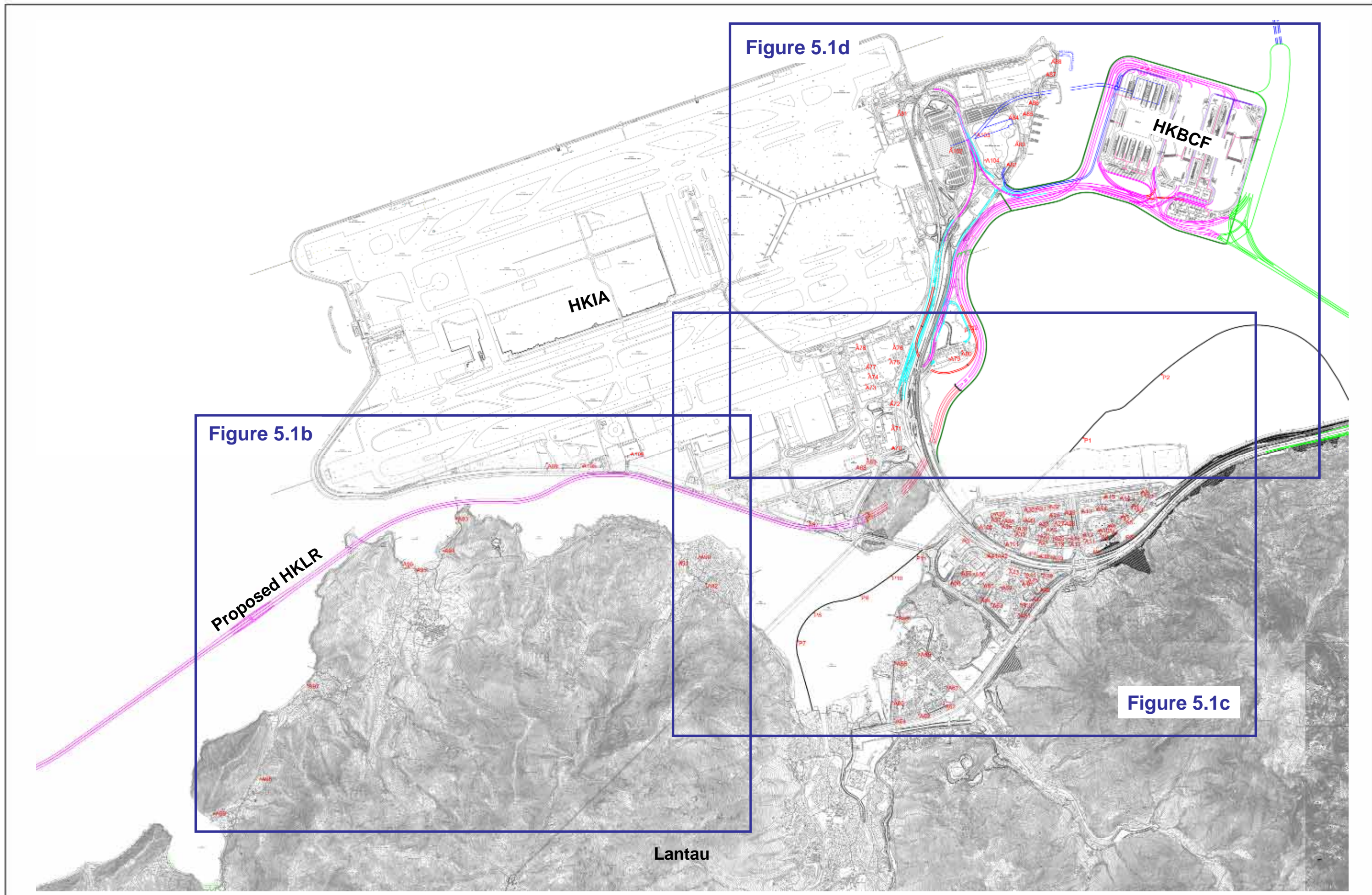
Project HZMB EIA  
 Title Grid 10\_24 (NO2)  
 Scenario : Assume 50% Utilisation of Natural Gas in HK

ASR A67	1-hr 1.5m 216	1-hr 5m 216	1-hr 10m 217	1-hr 15m 215	1-hr 20m 221	1-hr 25m 214	1-hr 30m 213	1-hr 35m 212	1-hr 40m 212	1-hr 45m 212
ASR A67	24-hr 1.5m 128	24-hr 5m 128	24-hr 10m 128	24-hr 15m 125	24-hr 20m 121	24-hr 25m 118	24-hr 30m 115	24-hr 35m 114	24-hr 40m 113	24-hr 45m 113
ASR A67	Annual 1.5m 44	Annual 5m 44	Annual 10m 44	Annual 15m 41	Annual 20m 37	Annual 25m 36	Annual 30m 35	Annual 35m 34	Annual 40m 33	Annual 45m 32
ASR A90	1-hr 1.5m 225	1-hr 5m 225	1-hr 10m 226	1-hr 15m 227	1-hr 20m 228	1-hr 25m 228	1-hr 30m 227	1-hr 35m 225	1-hr 40m 222	1-hr 45m 217
ASR A90	24-hr 1.5m 109	24-hr 5m 109	24-hr 10m 109	24-hr 15m 109	24-hr 20m 109	24-hr 25m 109	24-hr 30m 109	24-hr 35m 109	24-hr 40m 109	24-hr 45m 109
ASR A90	Annual 1.5m 33	Annual 5m 33	Annual 10m 33	Annual 15m 33	Annual 20m 32	Annual 25m 32	Annual 30m 32	Annual 35m 31	Annual 40m 31	Annual 45m 30
ASR A91	1-hr 1.5m 215	1-hr 5m 215	1-hr 10m 215	1-hr 15m 216	1-hr 20m 216	1-hr 25m 215	1-hr 30m 214	1-hr 35m 213	1-hr 40m 212	1-hr 45m 212
ASR A91	24-hr 1.5m 109	24-hr 5m 109	24-hr 10m 109	24-hr 15m 109	24-hr 20m 108	24-hr 25m 108	24-hr 30m 108	24-hr 35m 108	24-hr 40m 108	24-hr 45m 108
ASR A91	Annual 1.5m 32	Annual 5m 32	Annual 10m 32	Annual 15m 32	Annual 20m 32	Annual 25m 31	Annual 30m 31	Annual 35m 31	Annual 40m 30	Annual 45m 30

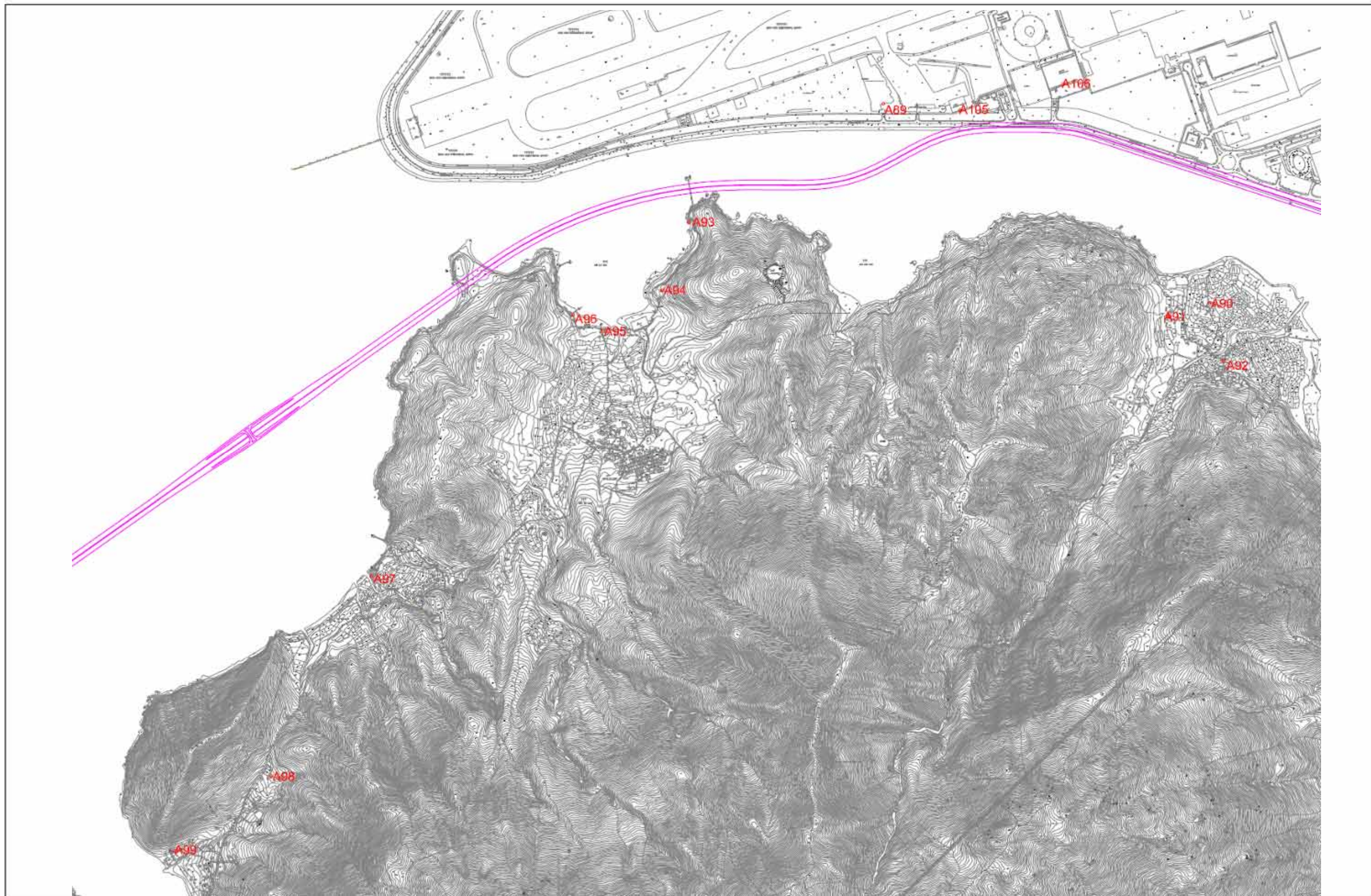


**Project** HZMB EIA  
**Title** Grid 10\_24 (RSP)  
**Scenario** : Assume 50% Utilisation of Natural Gas in HK

ASR A67	1-hr 1.5m 116	1-hr 5m 116	1-hr 10m 116	1-hr 15m 116	1-hr 20m 115	1-hr 25m 115	1-hr 30m 115	1-hr 35m 115	1-hr 40m 115	1-hr 45m 115
ASR A67	24-hr 1.5m 91	24-hr 5m 91	24-hr 10m 91	24-hr 15m 90	24-hr 20m 90	24-hr 25m 90	24-hr 30m 90	24-hr 35m 90	24-hr 40m 90	24-hr 45m 90
ASR A67	Annual 1.5m 45	Annual 5m 45	Annual 10m 45	Annual 15m 45	Annual 20m 45	Annual 25m 45	Annual 30m 45	Annual 35m 45	Annual 40m 45	Annual 45m 45
ASR A90	1-hr 1.5m 116	1-hr 5m 116	1-hr 10m 115	1-hr 15m 115	1-hr 20m 115	1-hr 25m 115	1-hr 30m 115	1-hr 35m 115	1-hr 40m 115	1-hr 45m 115
ASR A90	24-hr 1.5m 90	24-hr 5m 90	24-hr 10m 90	24-hr 15m 90	24-hr 20m 90	24-hr 25m 90	24-hr 30m 90	24-hr 35m 90	24-hr 40m 90	24-hr 45m 90
ASR A90	Annual 1.5m 45	Annual 5m 45	Annual 10m 45	Annual 15m 45	Annual 20m 45	Annual 25m 45	Annual 30m 45	Annual 35m 45	Annual 40m 45	Annual 45m 45
ASR A91	1-hr 1.5m 116	1-hr 5m 116	1-hr 10m 116	1-hr 15m 116	1-hr 20m 115	1-hr 25m 115	1-hr 30m 115	1-hr 35m 115	1-hr 40m 115	1-hr 45m 115
ASR A91	24-hr 1.5m 90	24-hr 5m 90	24-hr 10m 90	24-hr 15m 90	24-hr 20m 90	24-hr 25m 90	24-hr 30m 90	24-hr 35m 90	24-hr 40m 90	24-hr 45m 90
ASR A91	Annual 1.5m 45	Annual 5m 45	Annual 10m 45	Annual 15m 45	Annual 20m 45	Annual 25m 45	Annual 30m 45	Annual 35m 45	Annual 40m 45	Annual 45m 45



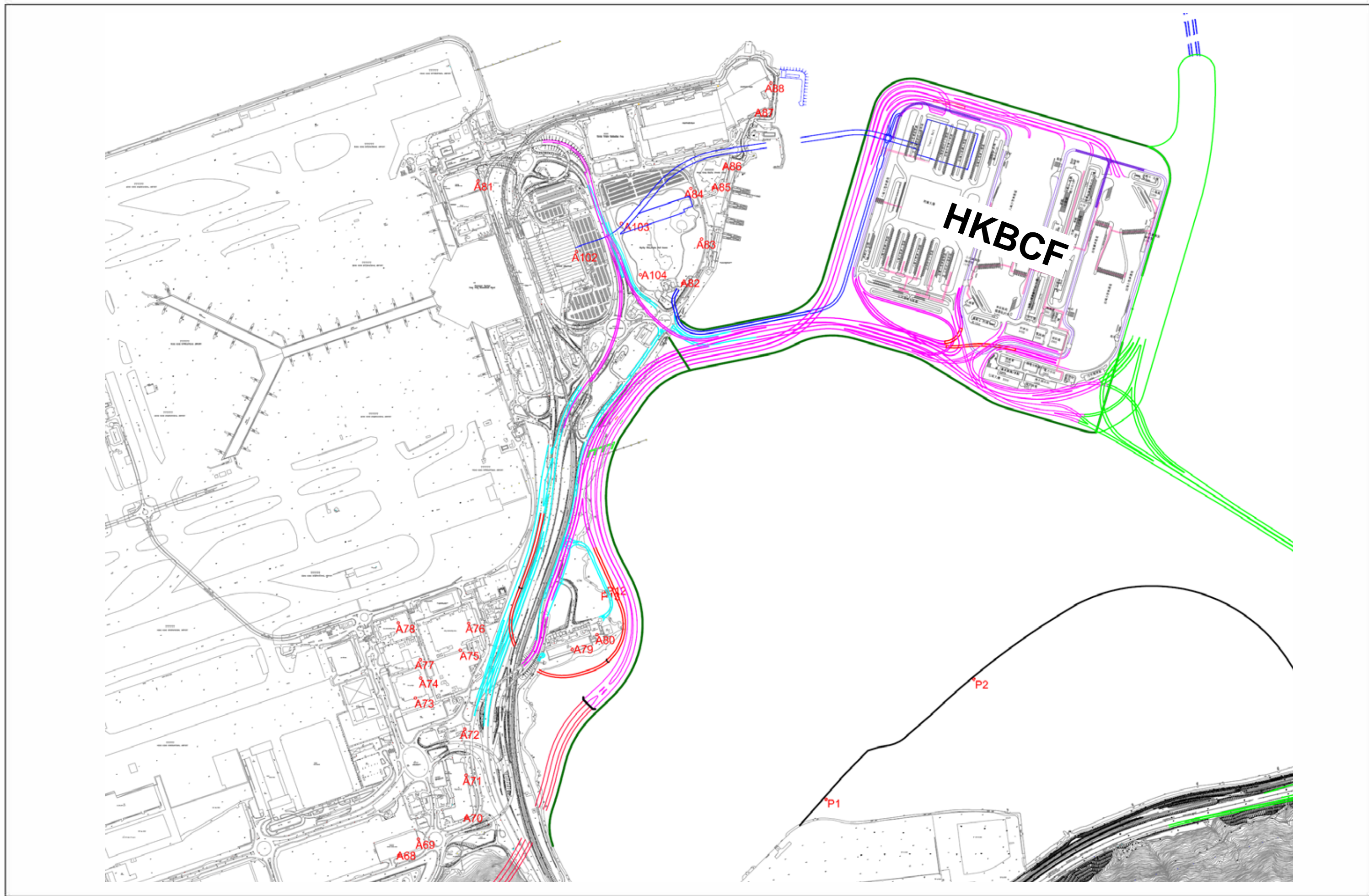




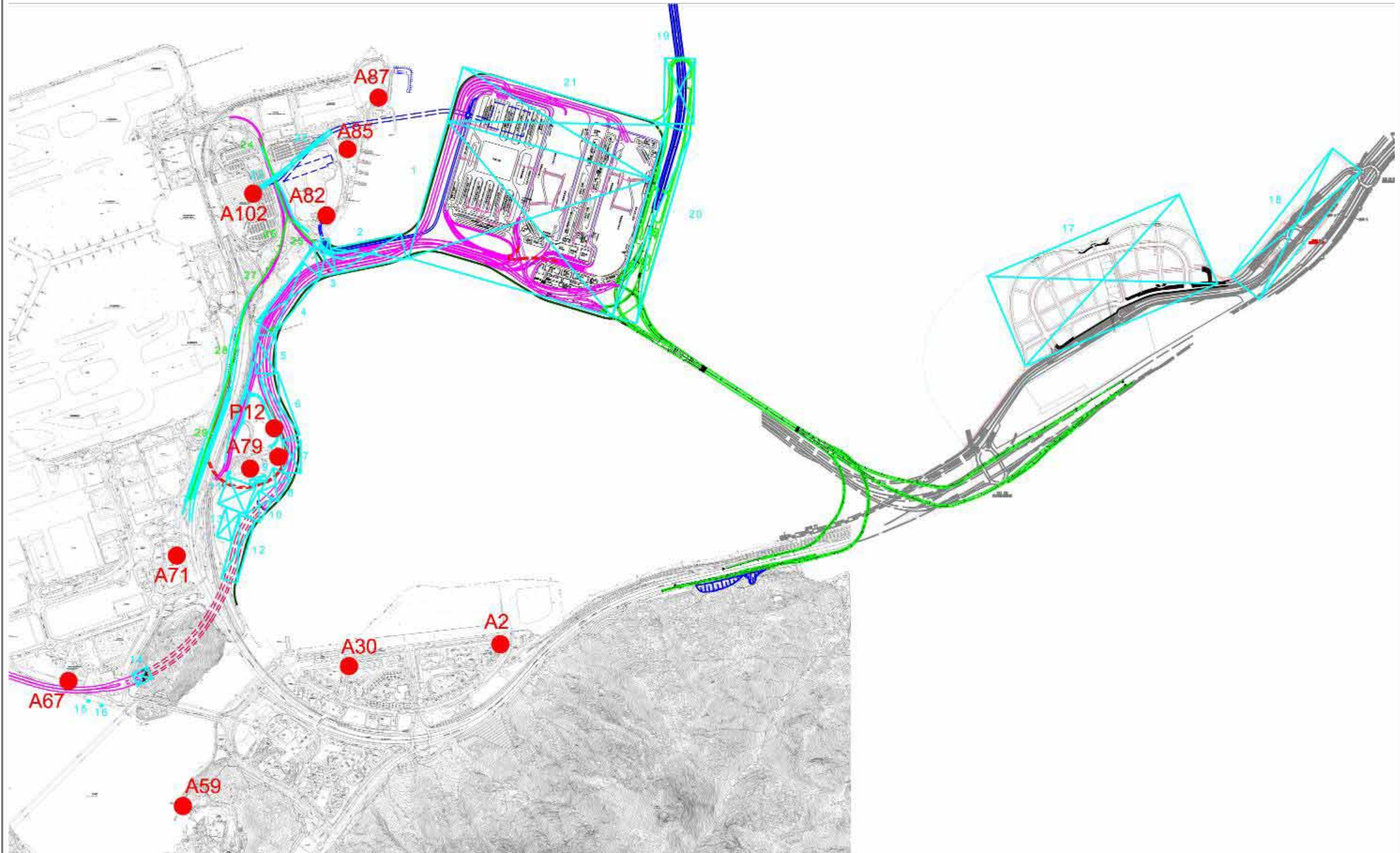




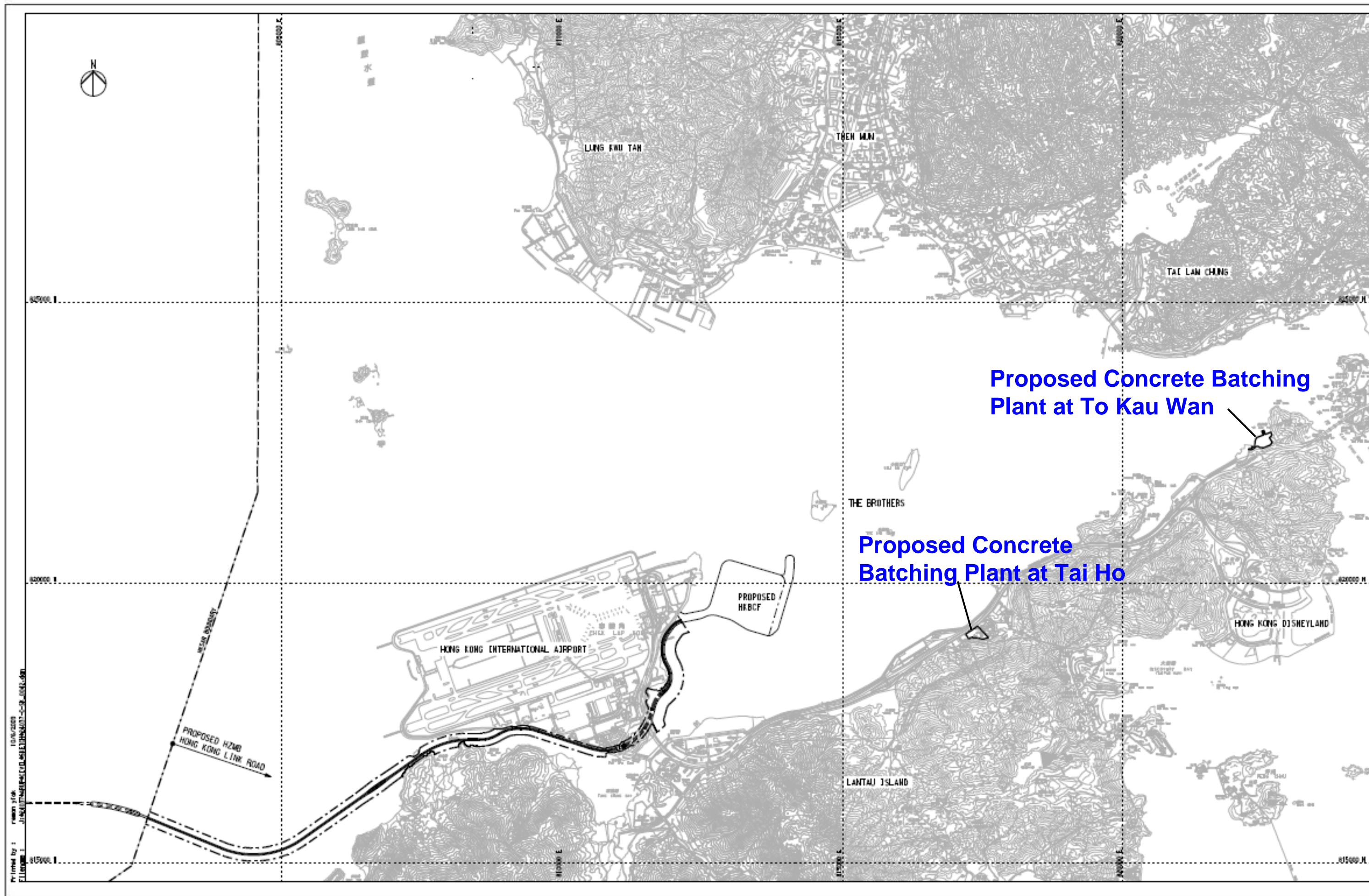






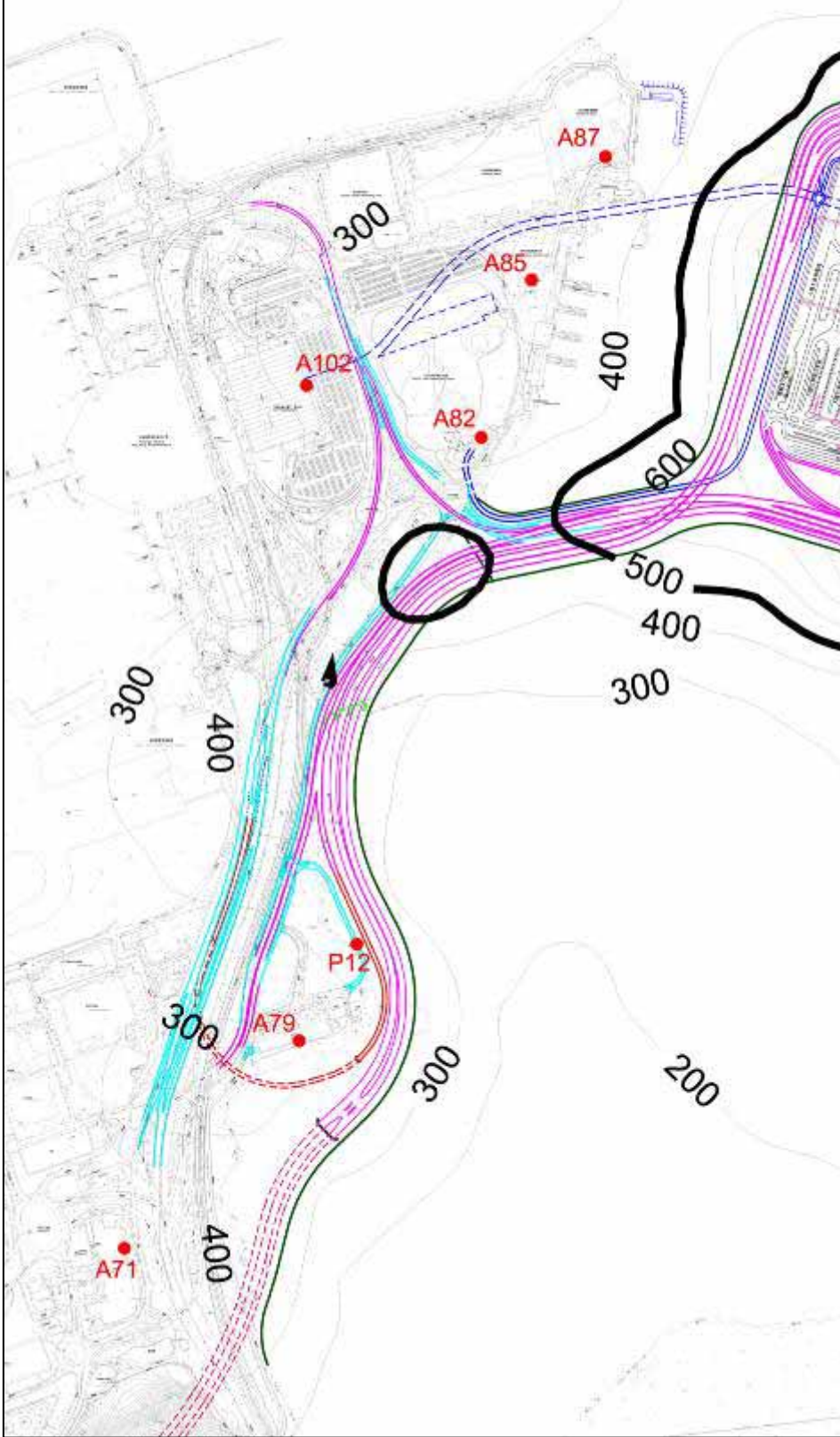




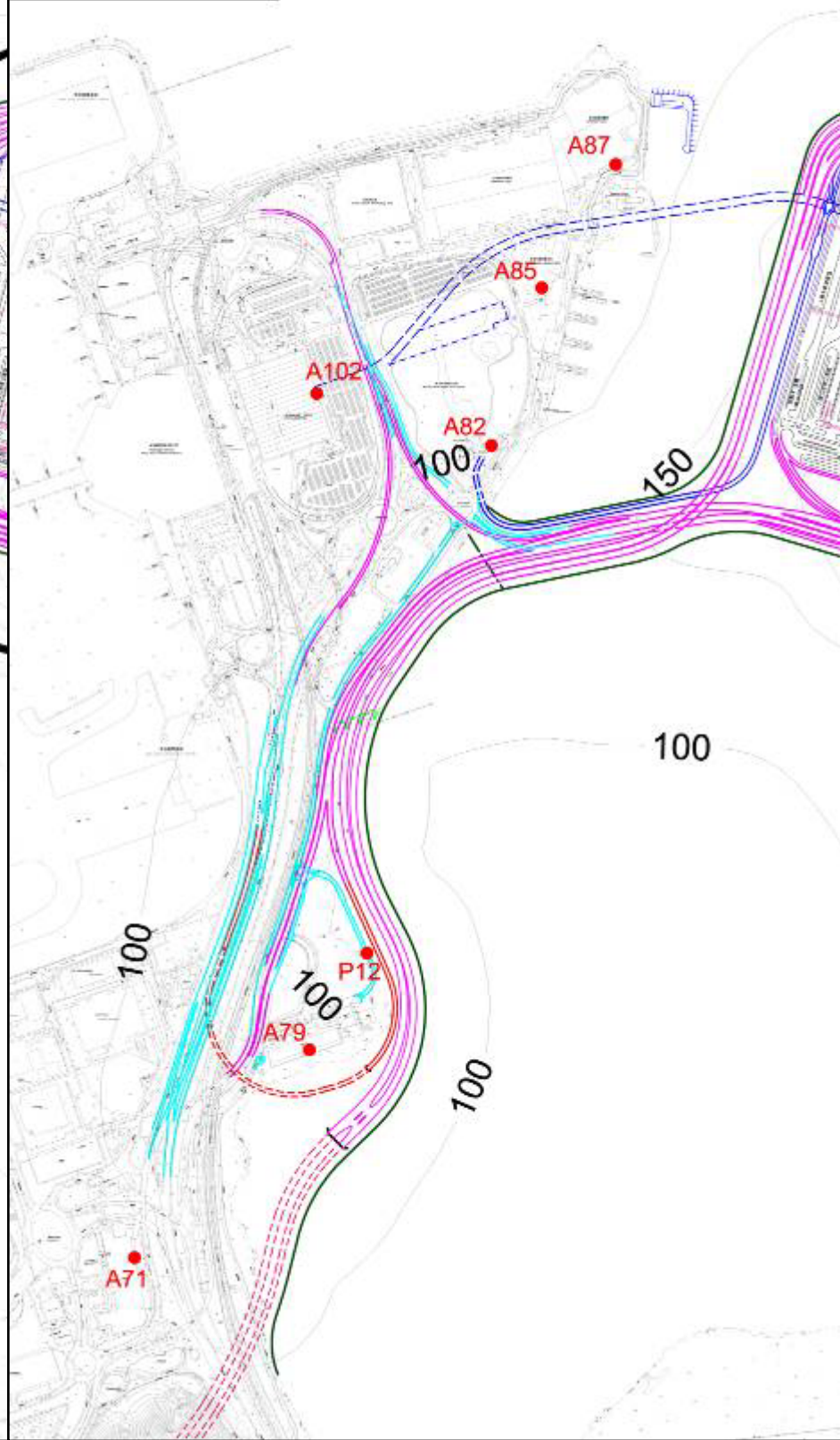




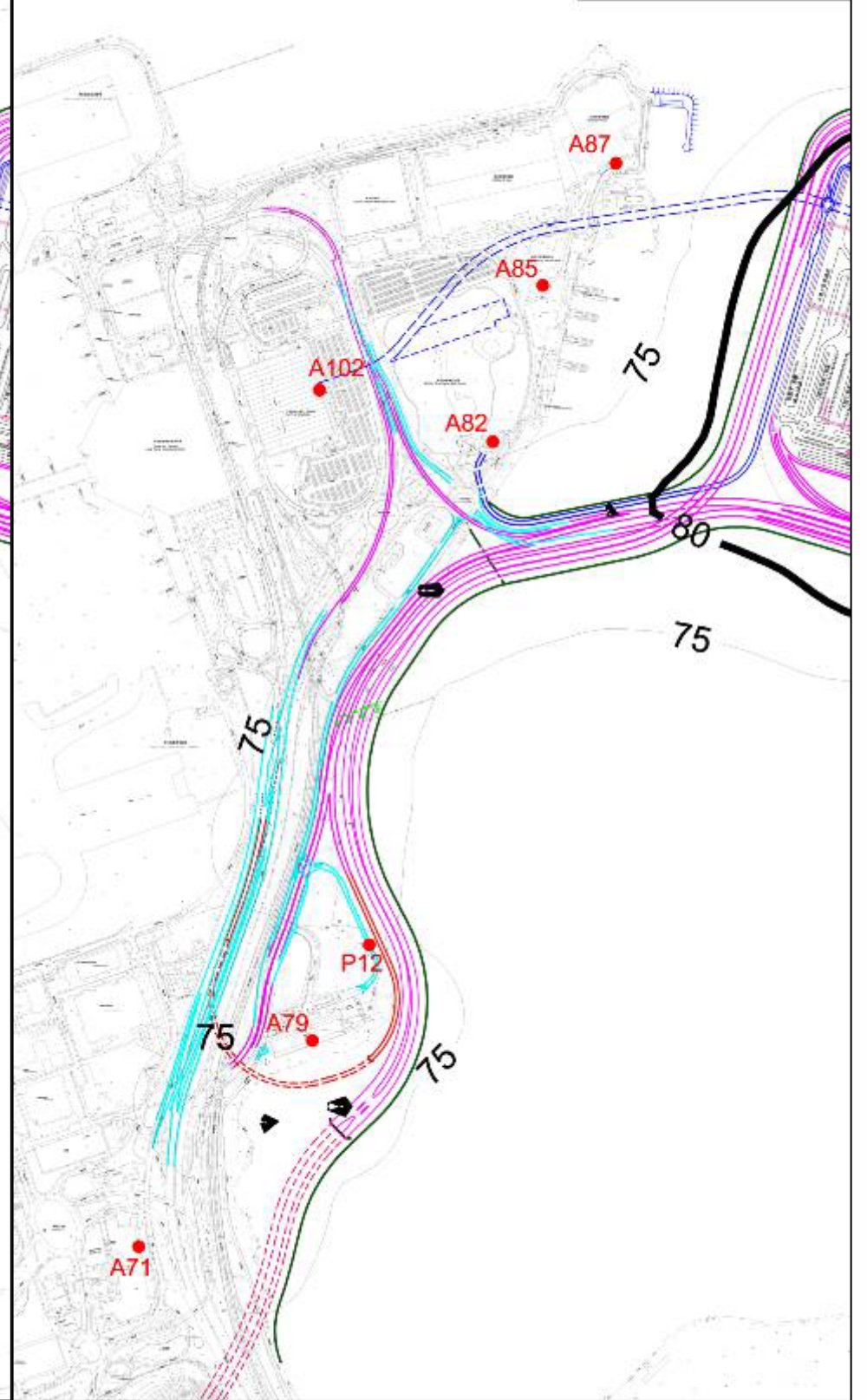
MAX 1 hr TSP  
Criterion : 500ug/m3



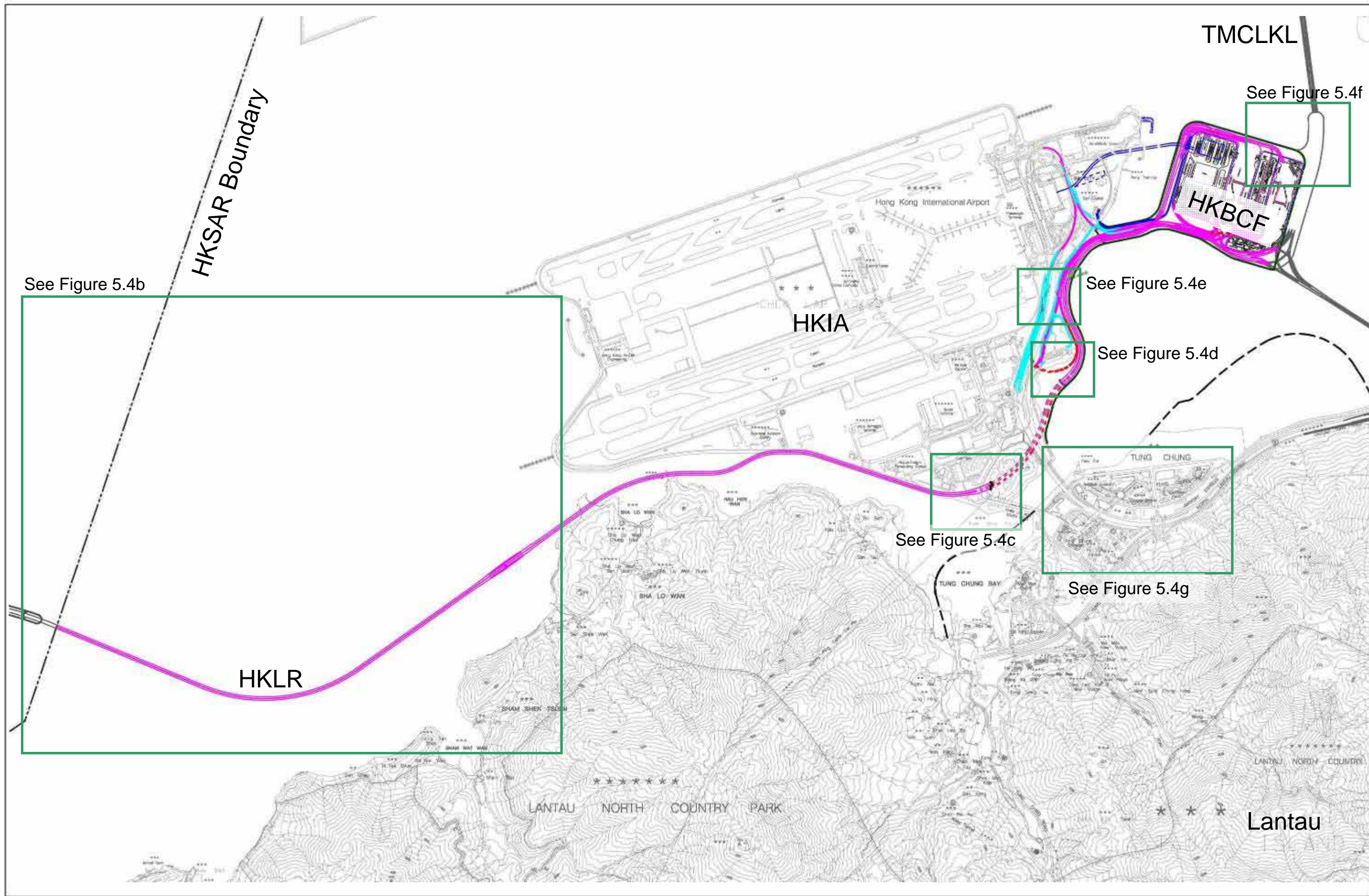
MAX 24 hr TSP  
Criterion : 260ug/m3



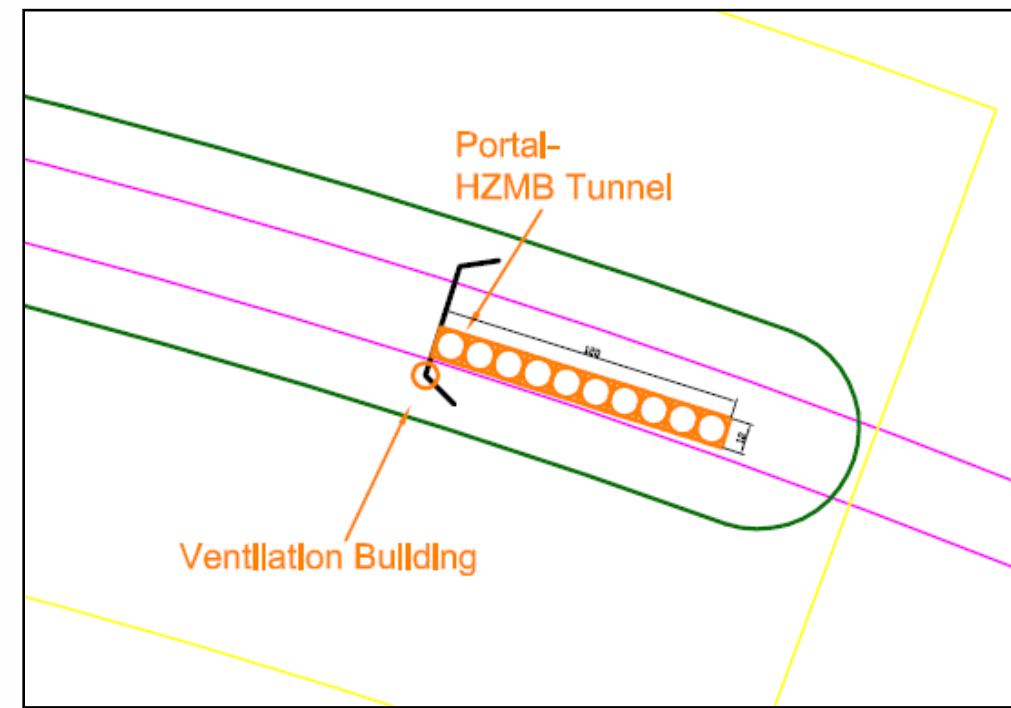
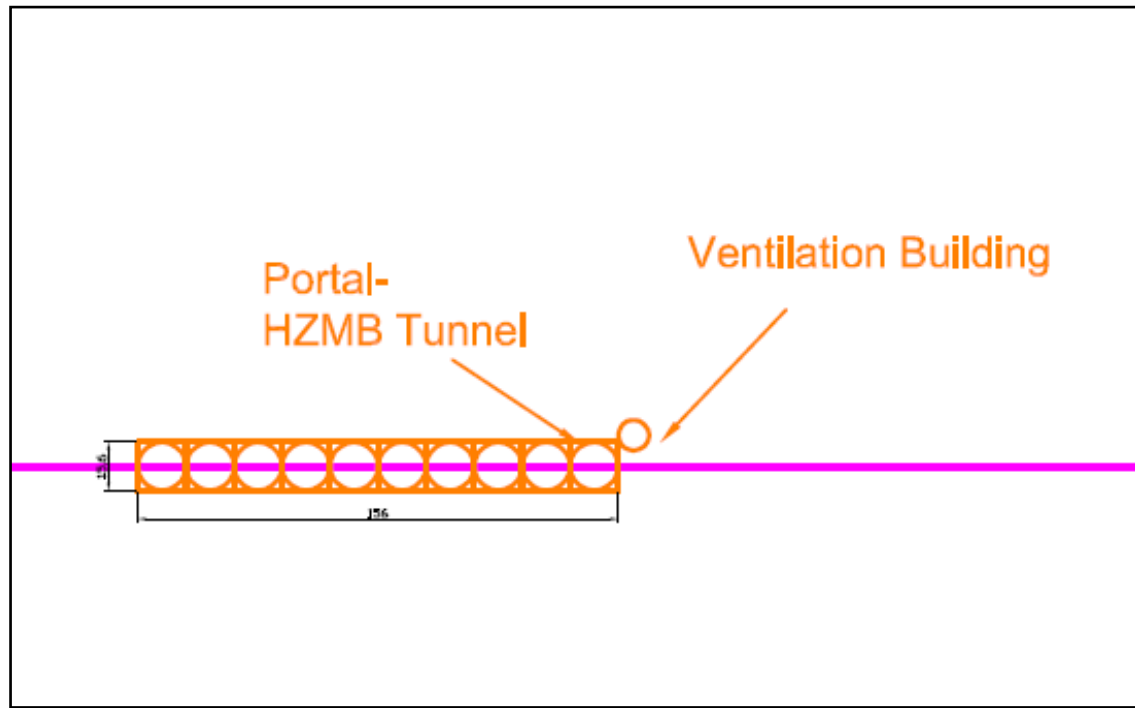
MAX Annual TSP  
Criterion : 80ug/m3





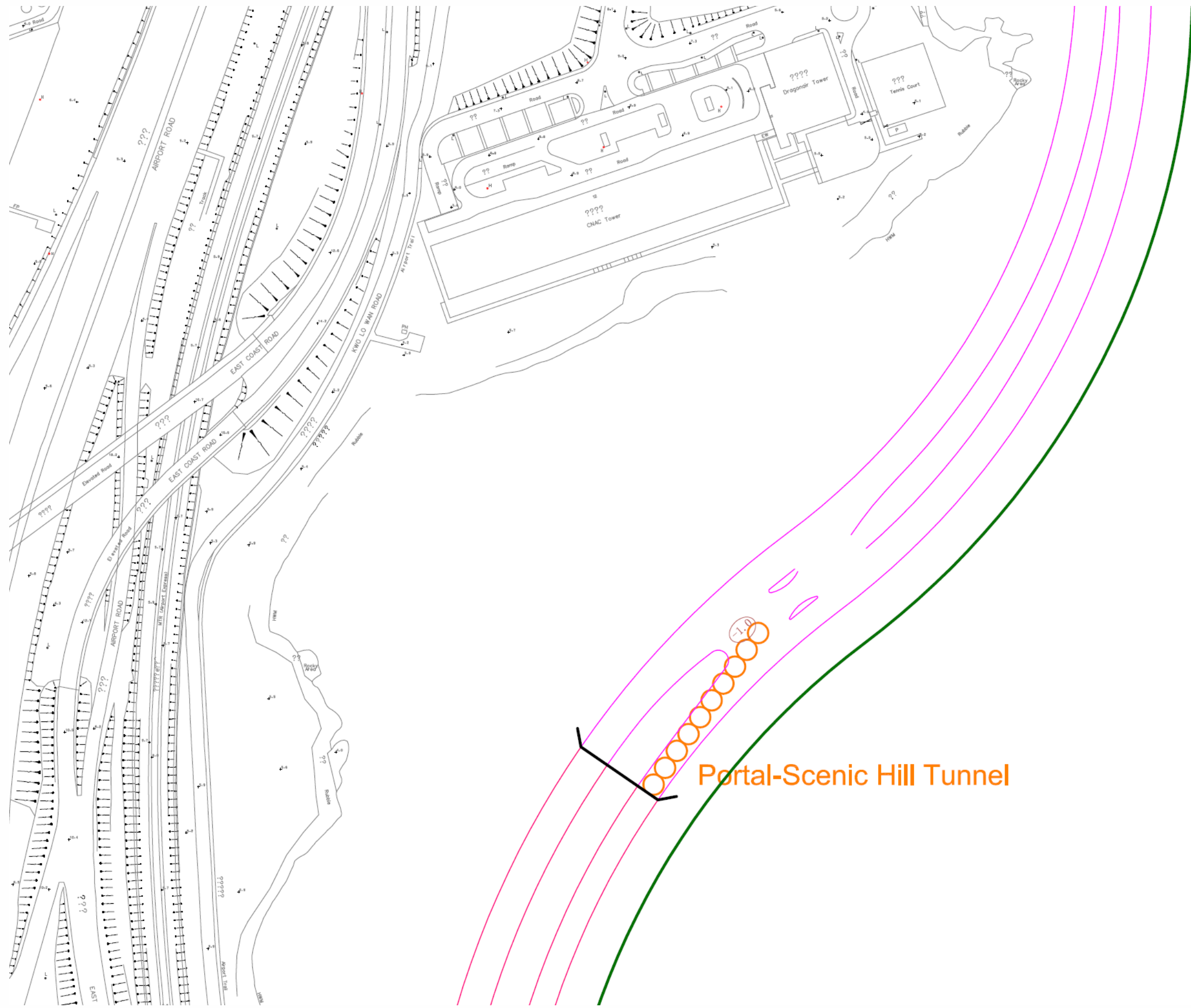


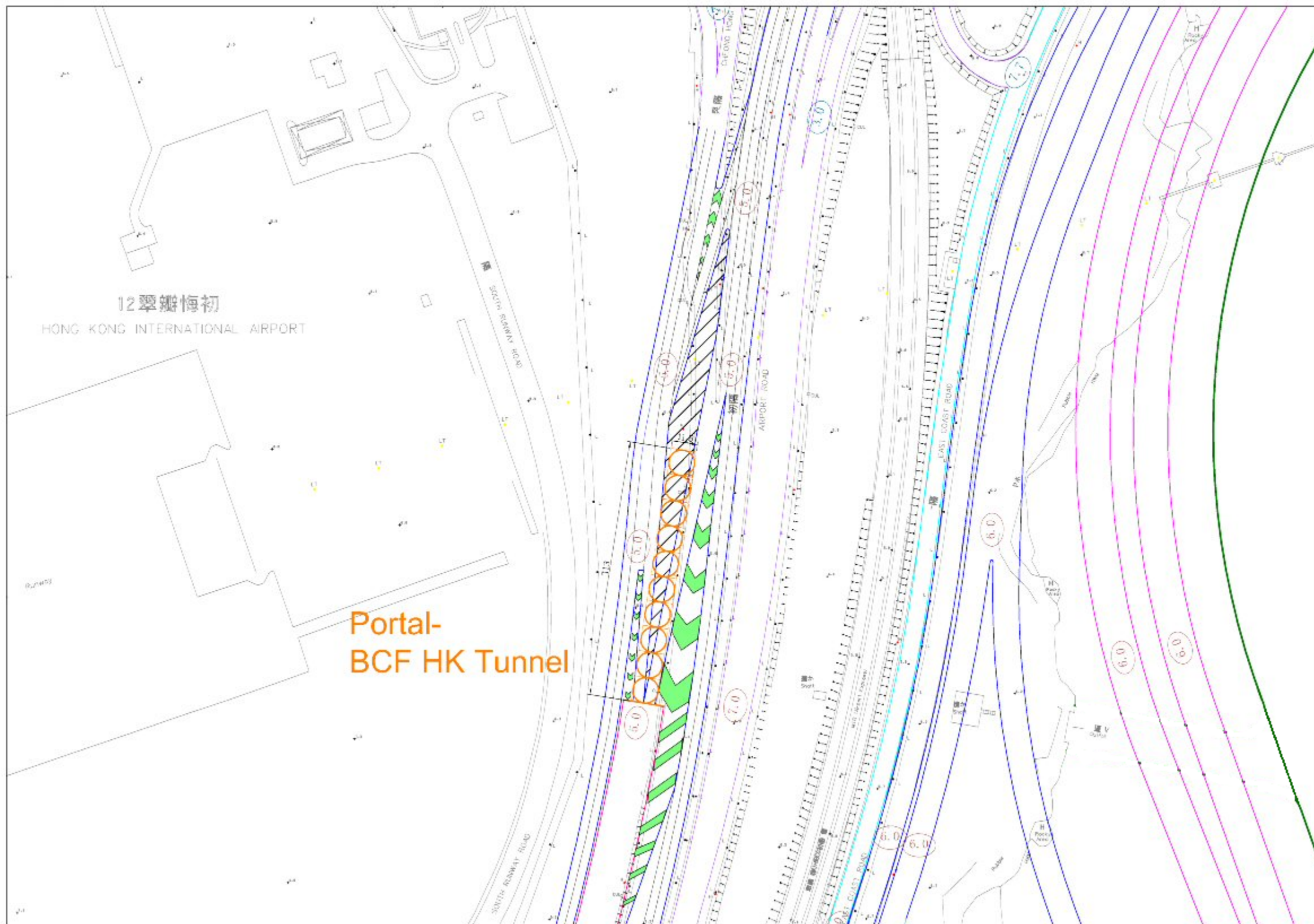




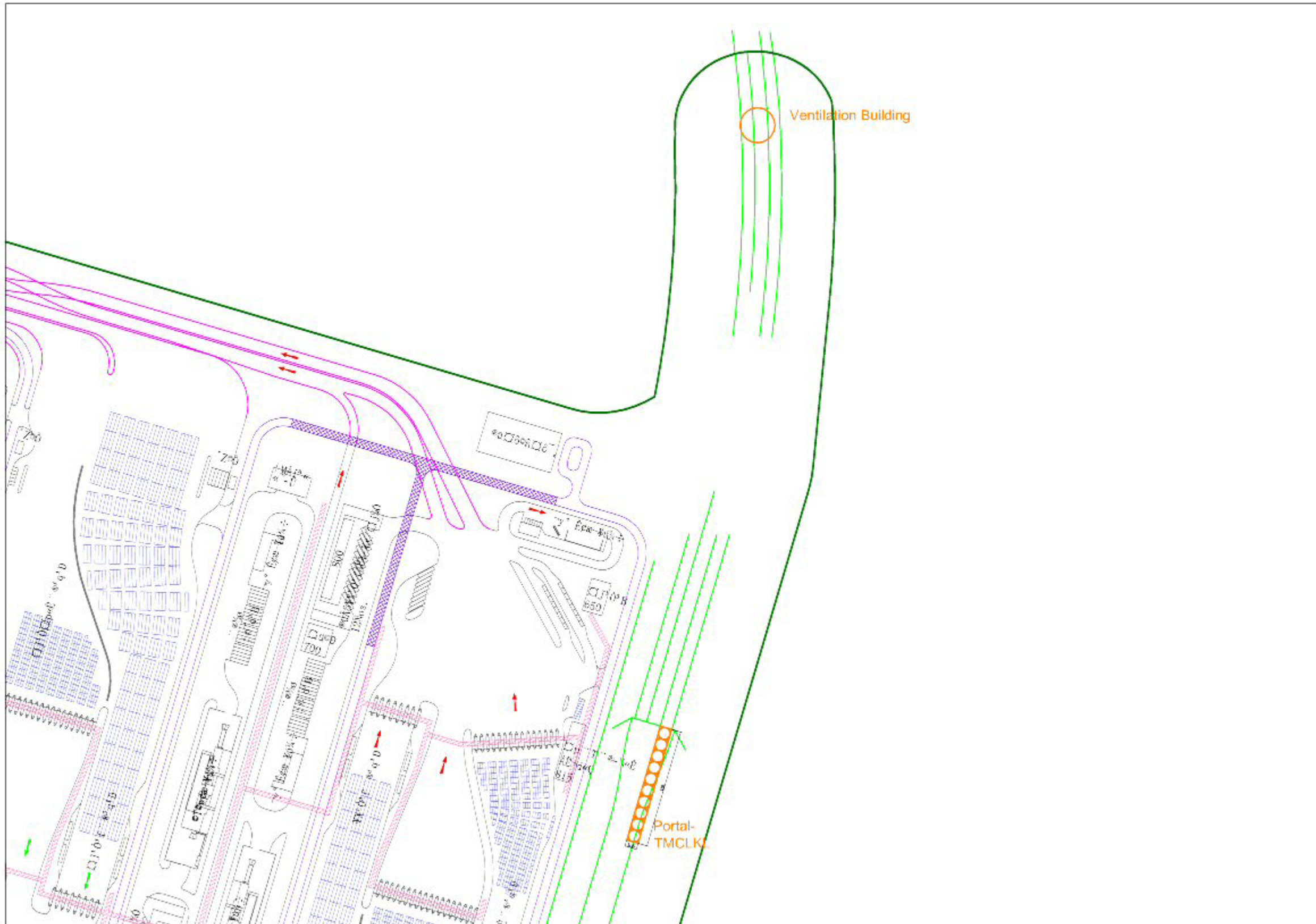




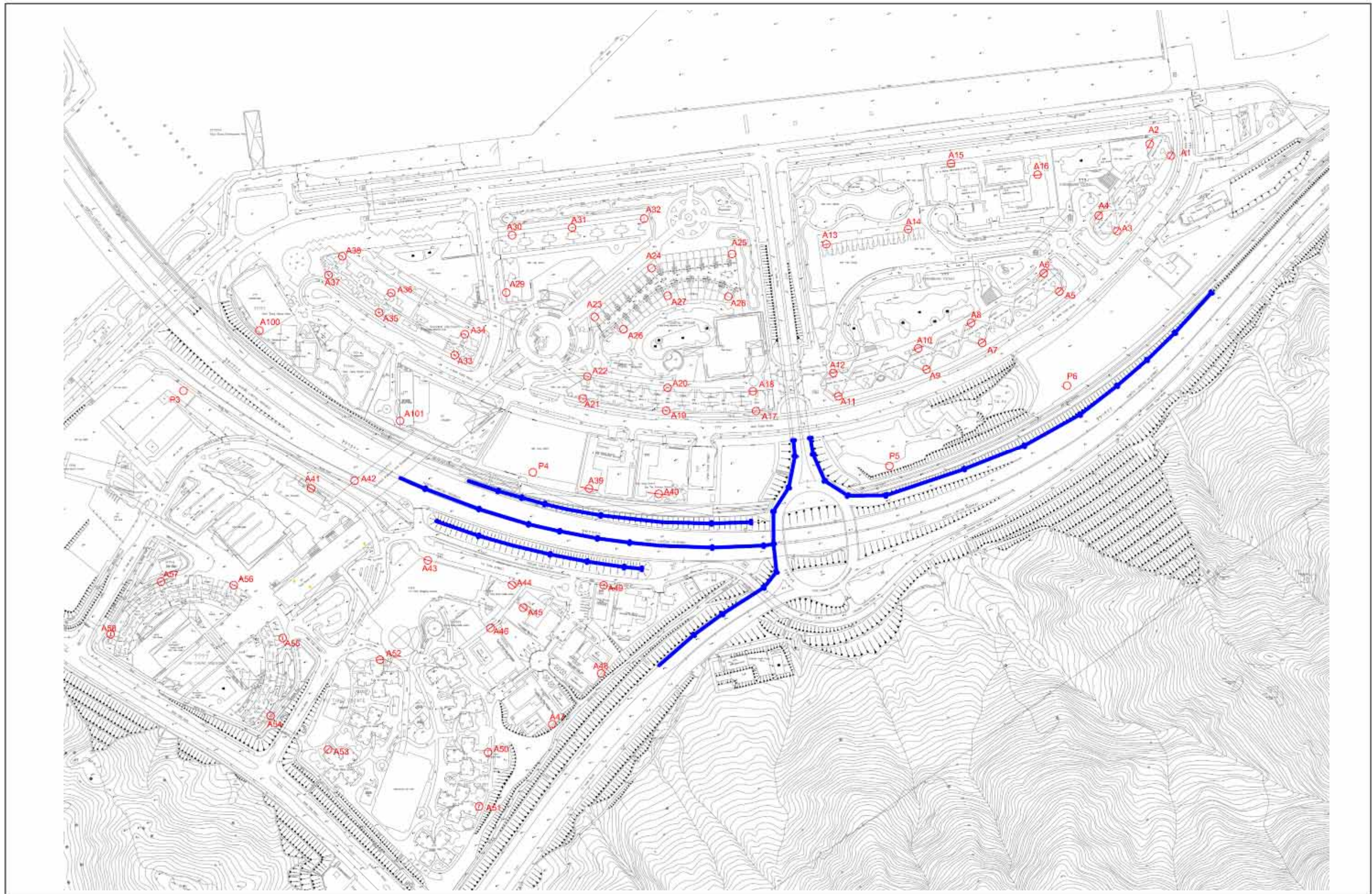




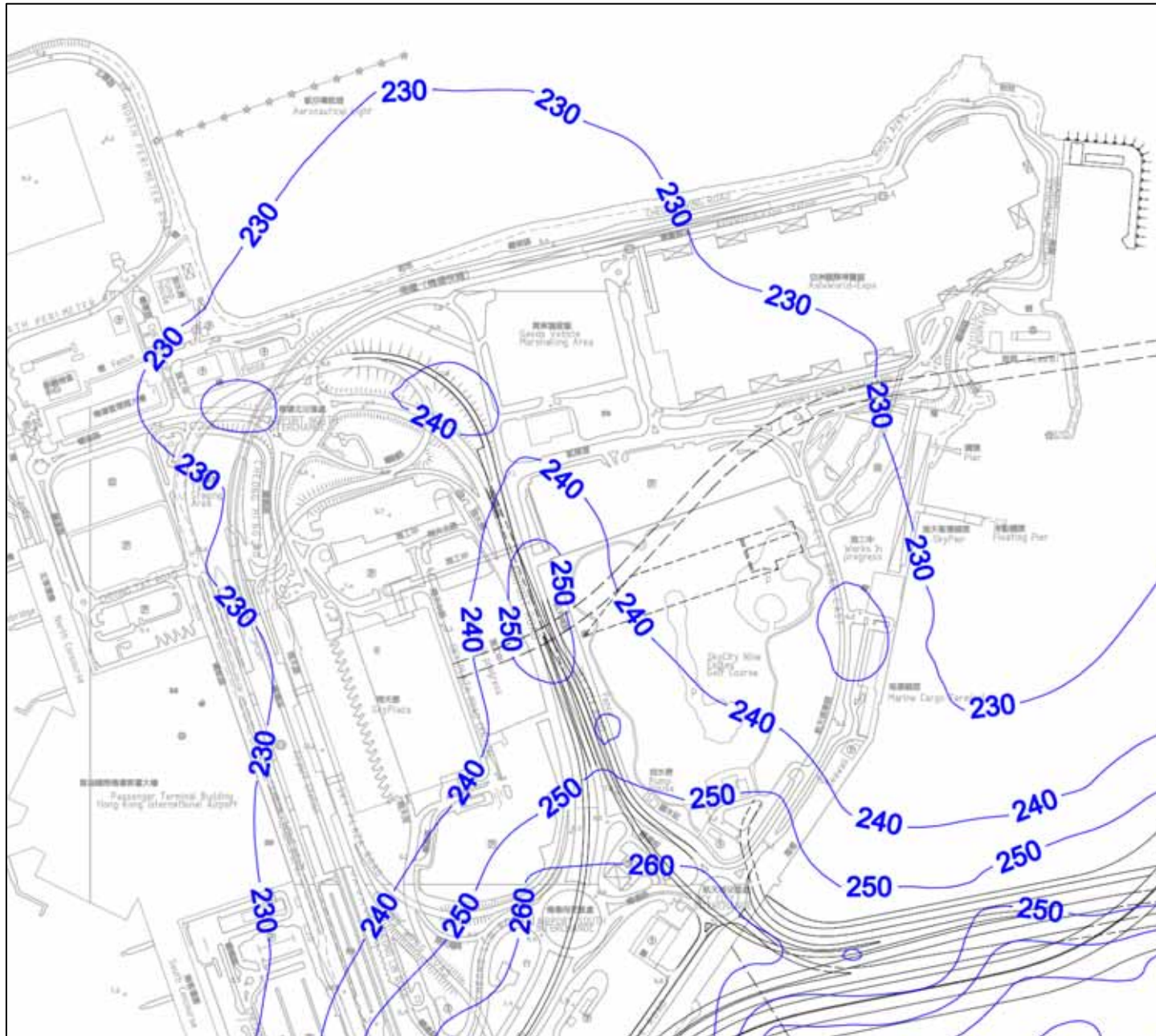




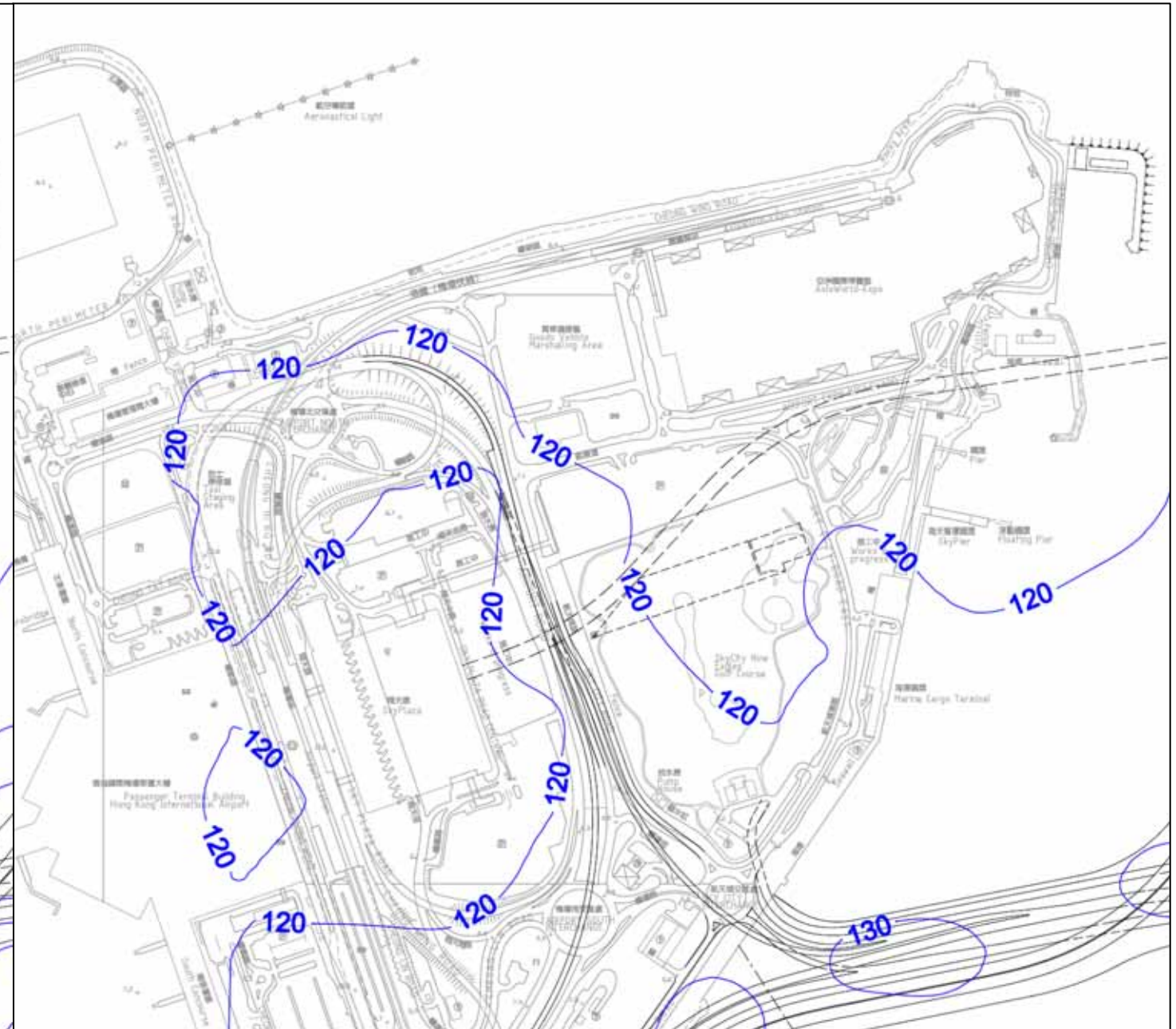






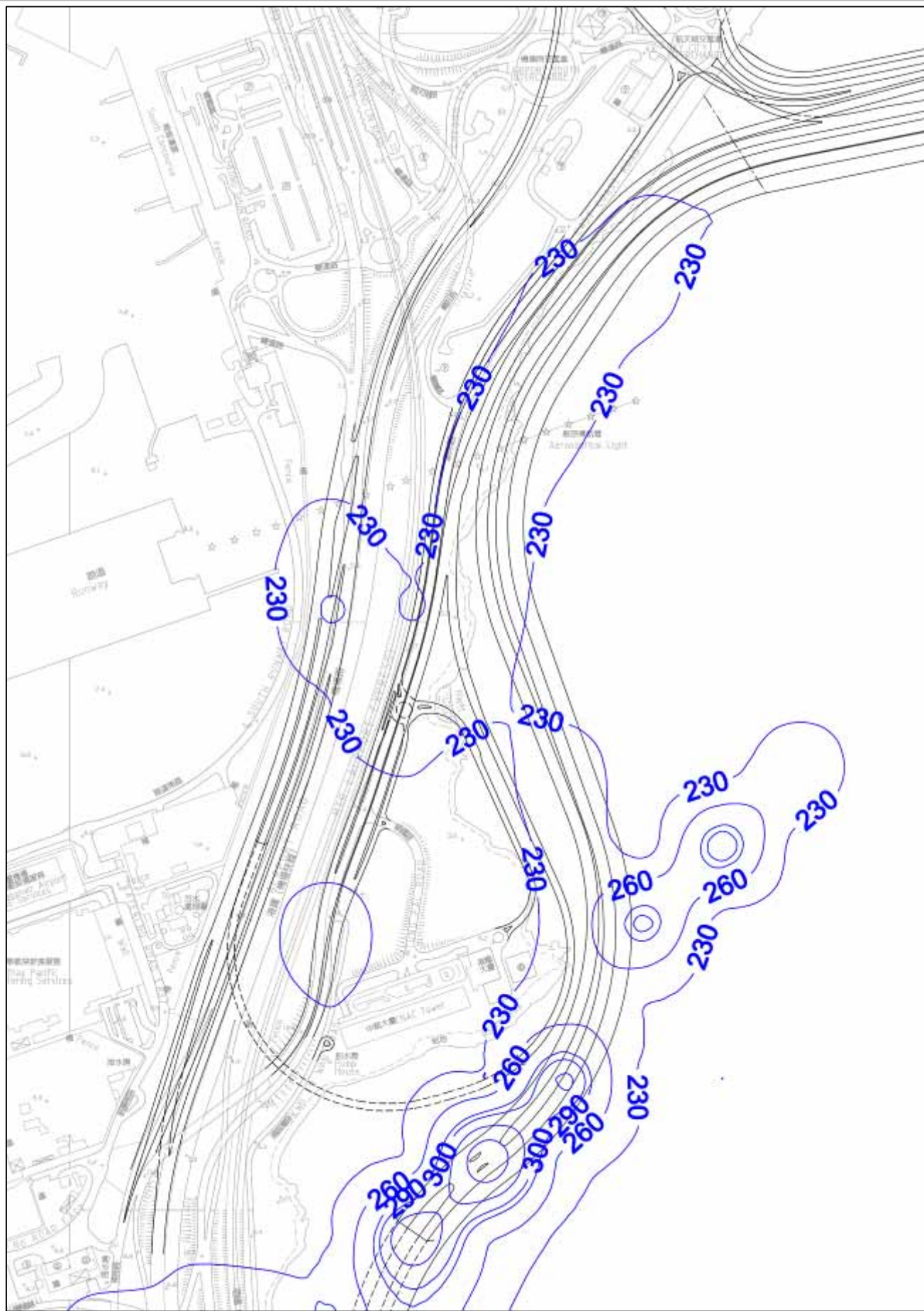


**1-hr NO<sub>2</sub>**

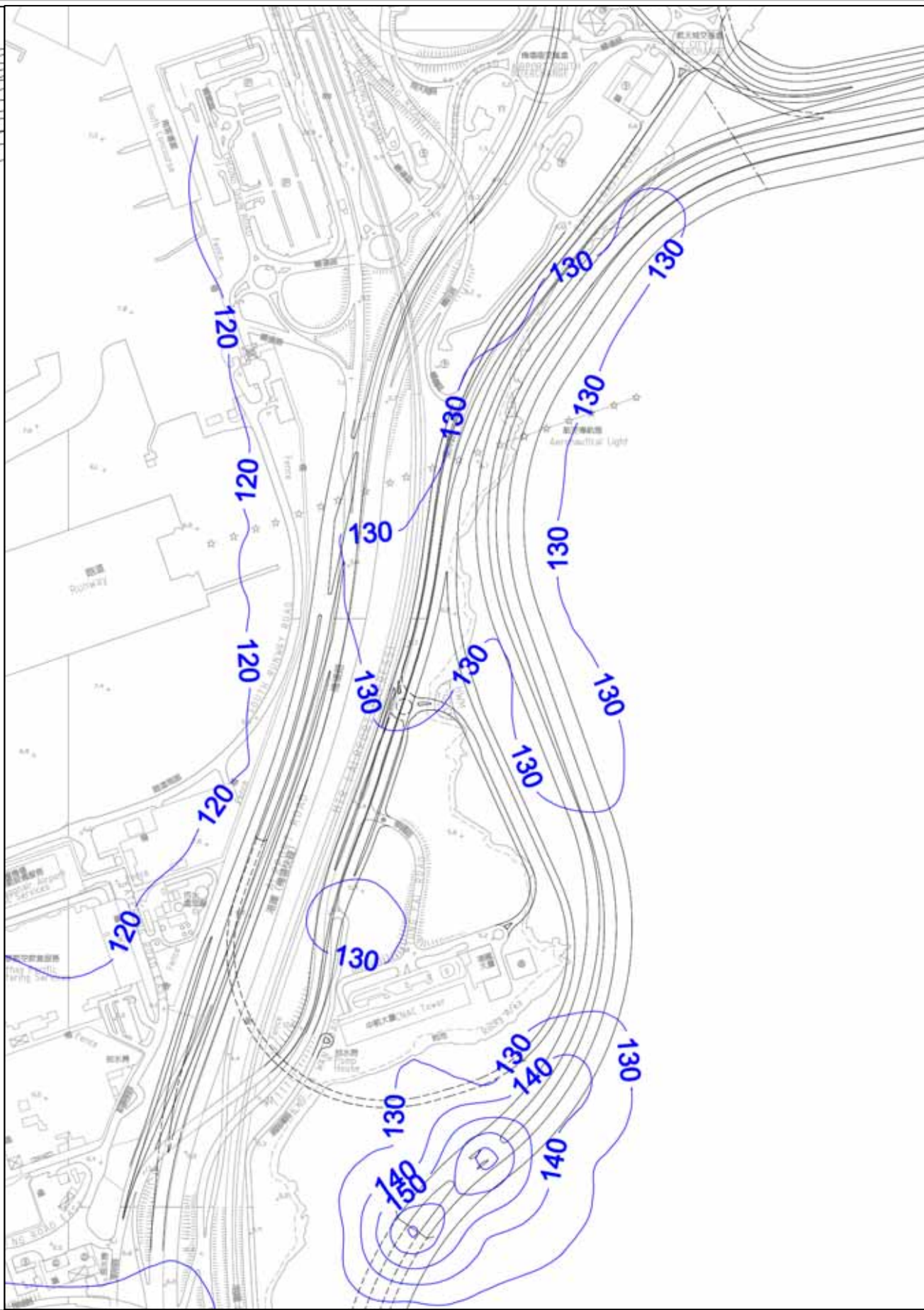


**24-hr NO<sub>2</sub>**



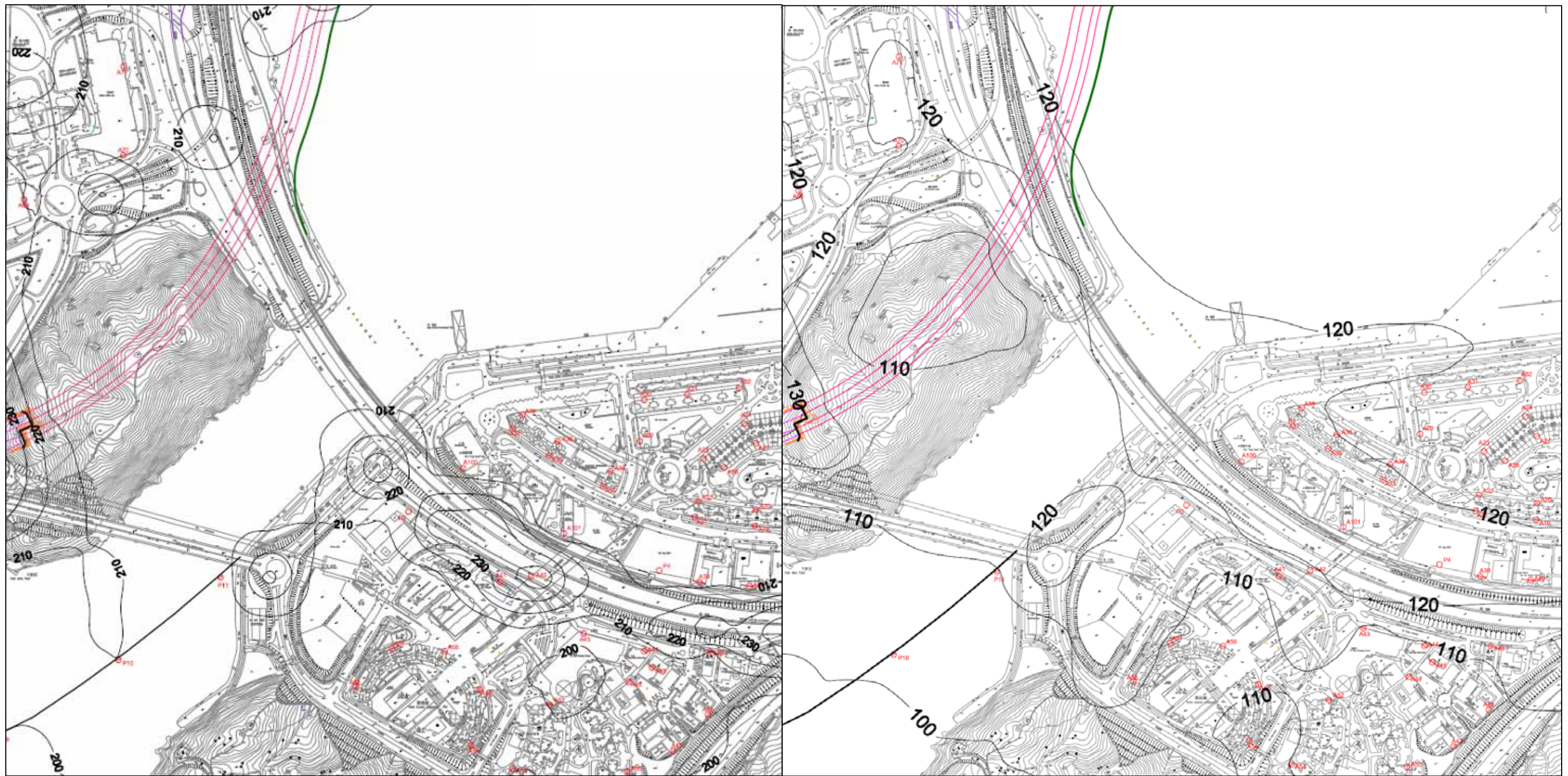


**1-hr NO<sub>2</sub>**



**24-hr NO<sub>2</sub>**





**1-hr NO<sub>2</sub>**

**24-hr NO<sub>2</sub>**