



AUES JOB No.: TCS00715/14

**TUEN MUN - CHEK LAP KOK LINK
CONTRACT NO. HY/2013/12 –
NORTHERN CONNECTION TOLL PLAZA AND
ASSOCIATED WORKS**

**5TH ANNUAL ENVIRONMENTAL MONITORING AND
AUDIT (EM&A) REVIEW REPORT – NOVEMBER 2018
TO OCTOBER 2019**

PREPARED FOR
CRBC AND KADEN JOINT VENTURE

Date	Reference No.	Prepared By	Certified By
25 March 2021	TCS00715/14/600/R0730v2	 Ben Tam (Environmental Consultant)	 T.W. Tam (Environmental Team Leader)

AECOM Asia Company Limited
Supervising Officer's Representative Office
No. 8 Mong Fat Street, Tuen Mun, New Territories, Hong Kong

Attention: Mr. Roger Man

Dear Mr. Man,

**Re: Agreement No. CE 48/2011 (EP)
Environmental Project Office for the
HZMB Hong Kong Link Road, HZMB Hong Kong Boundary Crossing Facilities, and
Tuen Mun-Chek Lap Kok Link – Investigation**

**Contract No. HY/2013/12
TM-CLKL – Northern Connection Toll Plaza and Associated Works
5th Annual EM&A Report for November 2018 - October 2019**

Reference is made to the Environmental Team's submission of the Annual EM&A report for November 2018 - October 2019 (ET's ref.: "TCS00715/14/600/R0730v2" dated 25 March 2021) certified by the ET Leader and provided to us via e-mail on 25 March 2021.

Please be informed that we have no adverse comments on the captioned submission.

Thank you for very much your attention. Please feel free to contact the undersigned or the ENPO Leader, Mr. Y H Hui, should you require further information.

Yours sincerely,
For and on behalf of
Ramboll Hong Kong Limited


Manson Yeung
Independent Environmental Checker
Tuen Mun-Chek Lap Kok Link

C.c.

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EXECUTIVE SUMMARY

ES01 In August 2014, CRBC-Kaden Joint Venture (*hereafter “CRBC-Kaden JV”*) has been awarded the *Contract No. HY/2013/12 -Northern Connection Toll Plaza and Tunnel Section of the Tuen Mun – Chek Lap Kok Link* (*hereinafter called “the Contract”*) by the Highways Department (HyD). The construction phase of the Contract was commenced on **23 October 2014**.

ES02 Before the Contract commencement, the baseline air quality monitoring was carried out by the ET of HY/2012/08 from **16th to 31st October 2013**. A set of Action and Limit Levels (A/L Levels) of air quality performance criteria was proposed by ET of HY/2012/08 which has been verified by IEC and endorsed by EPD. The Action and Limit Levels of the air quality adopted for the Contract is shown in *Table ES-01*.

Table ES-01 Action and Limit Levels of Air Quality Monitoring

Monitoring Station	24-hour TSP, ($\mu\text{g}/\text{m}^3$)		1-hour TSP, ($\mu\text{g}/\text{m}^3$)	
	Action Level	Limit Level	Action Level	Limit Level
ASR1	213	260	331	500
ASR5	238	260	340	500
AQMS1	213	260	335	500
ASR6	238	260	338	500
ASR10	214	260	337	500

ES03 In September 2013, baseline survey for Pitcher Plant has been conducted within the project area by a suitably qualified ecologist. In mid-September 2014, Contract HY/2013/12 has also conducted a one-off survey to confirm the number of existing Pitcher Plant. For cultural heritage, a condition survey for the grave was conducted on **23 September 2014**. The Baseline Monitoring Report for the Contract was submitted on **7 October 2014** for IEC’s verification and **25 November 2014** for EPD’s endorsement.

ES04 This is the **5th** Annual EM&A Review Report for the “*Tuen Mun - Chek Lap Kok Link - Northern Connection Toll Plaza and Associated Works*” under Environmental Permit No. EP-354/2009/D (*hereinafter “the EP”*), covering the period from **1 November 2018 to 31 October 2019** (*hereinafter “Reporting Period”*).

SUMMARY OF EM&A ACTIVITIES FOR THE REPORTING PERIOD

ES05 In the Reporting Period, the EM&A activities is summarized in *Table ES-02*.

Table ES-02 Summary EM&A Activities Undertaken in the Reporting Period

Environmental Aspect	Environmental Monitoring Parameters / Inspection	Sub-total Occasions				Total
		1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	
Air Quality	1-hour TSP	450	435	465	450	1800
	24-hour TSP	150	145	155	150	600
Cultural heritage inspection	Grave G1	13	13	13	13	52
Landfill Gas Monitoring	Oxygen; Methane & Carbon Dioxide	76 days	69 days	51 days	47 days	243 days
Landscape & Visual	Landscape & Visual Monitoring	13	13	13	13	52
Joint Site Inspection / Audit	IEC, ET, the Contractor and RE joint site Environmental Inspection and Auditing	13	13	13	13	52

BREACH OF ACTION AND LIMIT (A/L) LEVELS

- ES06 In accordance with the air quality measurement results by the ET of Contract HY/2012/08 total 23 Action Level and 3 Limit Level exceedances of 1-hour TSP were recorded; 2 Action Level exceedance of 24-hour TSP was recorded in the Reporting Period.
- ES07 For landfill gas monitoring, the concentration of all parameters were detected within the acceptable levels. Moreover, no noise complaint was received in the Reporting Period. *Table ES-03* is summarized breach of environmental performance criteria.

Table ES-03 Action and Limit (A/L) Levels Breach Summarized in the Reporting Period

Environmental Aspect	Monitoring Parameters	Action Level	Limit Level	Event & Action		
				NOE Issued	Investigation	Corrective Actions
Air Quality	1-hour TSP	23	3	18	18	0
	24-hour TSP	2	0	2*	2*	0
Landfill Gas Monitoring	Oxygen	0	0	0	0	0
	Methane	0	0	0	0	0
	Carbon Dioxide	0	0	0	0	0

*NOE and IR for 23 May 2019 was included for both 1 & 24-Hr exceedance

ENVIRONMENTAL COMPLAINT

- ES08 One (1) environmental complaint was received in the fifth annual of Reporting Period. The complaint received on 22 May 2019 regarding construction dust created at construction area near River Trade Terminal and Chu Kong Warehouse. The statistics of environmental complaint is listed in *Table ES-04*.

Table ES-04 Statistical Summary of Environmental Complaints

Reporting Period	Complaint Nature				Total Registered
	Water Quality	Construction Dust	Construction Noise	Others	
1 November 2018 – 31 October 2019	NA	22 May 2019	NA	NA	1

- ES09 Complaint investigation was conducted by the ET and the corresponding investigation report for the complaint was submitted to relevant parties. Based on investigation results, the complaint was not project related.

NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

- ES10 No environmental summons or successful prosecutions were recorded in the Reporting Period.

SITE INSPECTION

- ES11 For past twelve months, total 52 occasions joint site inspection were carried out by the RE, IEC, ET and the Contractor. For joint site inspections, no non-compliance was observed. However, 91 observations/reminders were recorded within the past twelve months.
- ES12 During each occasion of site inspection, Pitcher Plants of ecology and grave of culture heritage were also to inspect and audit.

FUTURE KEY ISSUES

- ES13 Construction dust emission would be a key environmental issue during construction work of the Contract at dry season. Dust mitigation measures such as watering at least 12 times per day on all exposed soil within the Project site and associated work areas in Tuen Mun area throughout the

construction period should be implemented in accordance with the EP requirement.

- ES14 Muddy water or other water pollutants from sites surface flow to public area should be avoided. Water quality mitigation measures to prevent surface runoff to impact public areas should be fully implemented.

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1 INTRODUCTION

1.1 CONTRACT BACKGROUND

1.1.1 CRBC-Kaden Joint Venture (hereafter “CRBC-Kaden JV”) is commissioned by the Highways Department (HyD) as the Main Contractor of the Contract No. HY/2013/12 – Northern Connection Toll Plaza and Tunnel Section ((hereafter “the Contract”) and this Contract is part of the Tuen Mun – Chek Lap Kok Link (TM-CLK Link Project). TM-CLK Link Project is a Designated Project under the latest Environmental Permit number EP-354/2009/D issued on 13 March 2015. The layout Plan of the Project and the Contract are showed in [Appendix A](#) and [Appendix B](#) respectively.

1.1.2 The works of the Contract mainly include:-

- a. construction of an approximately 5.4 hectares toll plaza and an associated footbridge;
- b. construction of associated carriageways including approximately 0.74 kilometre land viaducts, and an approximately 230 metres vehicular underpass to connect the toll plaza and the roundabout at Lung Mun Road/Lung Fu Road;
- c. site formation for the construction of the toll plaza, including associated slope works and natural terrain hazard mitigation measures;
- d. modification and realignment of the existing Lung Mun Road and Lung Fu Road; and
- e. associated waterworks, drainage, sewerage and landscaping works, etc..

1.1.3 AECOM Asia Company Limited as the Resident Engineer (RE) and Ramboll Hong Kong Limited as the Independent Environmental Checker (IEC) and Environmental Project Office (ENPO) were employed by the HyD. For implementation of the environmental monitoring and audit (EM&A) programme under the Contract, CRBC-Kaden JV has appointed Action-United Environmental Services & Consulting (AUES) as the Environmental Team (ET) to responsible relevant environmental monitoring work.

1.1.4 Construction phase of the Contract was commenced on **23 October 2014**. This is the Fifth (5th) Annual EM&A Review Report to summarize the monitoring results and inspection findings with the Contractor performance from **1 November 2018** to **31 October 2019** (hereinafter “Reporting Period”) for the past twelve months.

1.2 REPORT STRUCTURE

1.2.1 The Annual Environmental Monitoring and Audit (EM&A) Review Report is structured into the following sections:-

Section 1 *Introduction*

Section 2 *Contract Organization and Construction Progress and Environmental Submissions*

Section 3 *Summary of Impact Monitoring Requirements under the Contract*

Section 4 *Air Quality Monitoring*

Section 5 *Ecology Monitoring*

Section 6 *Cultural Heritage*

Section 7 *Landscape and Visual*

Section 8 *Landfill gas hazard Monitoring*

Section 9 *Waste Management*

Section 10 *Inspection and Auditing*

Section 11 *Environmental Complaint and Non-Compliance*

Section 12 *Implementation Status of Mitigation Measures*

Section 13 *Conclusions and Recommendations*

2 CONTRACT ORGANIZATION AND CONSTRUCTION PROGRESS AND ENVIRONMENTAL SUBMISSIONS

2.1 CONTRACT ORGANIZATION

2.1.1 The Contract organization and contact details of key personnel are shown in [Appendix C](#).

2.2 CONSTRUCTION PROGRESS

2.2.1 In the Reporting Period, the major construction activity conducted under the Contract is summarized in below. Moreover, the master construction program of the Contract is enclosed in [Appendix D](#).

- Instrumentation and Monitoring;
- Surface Drainage on Slope C, D & E and Portion H;
- Retaining Structure TP_G at Portion H;
- E & M Works at Retaining Wall B;
- Laying Water Main at Portion G;
- Construction of Manhole and Sewer Culvert at Portion G and H;
- Road and Drainage Works at LMR Central Median;
- Installation of VE panels at RW_B;
- Road pavement works at +19mPD platform, Lung Mun Road, Butterfly Beach, Vehicular Underpass, TD1&2, Bridge G&H, RW-E and HAS;
- Installation of Sign Gantries;
- Landscape planting works on slopes;
- Sewerage works at Ho Yeung Street;
- Installation of Screen Barrier.

2.3 SUMMARY OF ENVIRONMENTAL SUBMISSIONS

2.3.1 In according to the EP, the required documents have submitted to EPD for retention which listed in below:

- Monitoring Plan on construction dust (submission refer to Contract HY/2012/08)
- Landscape and Visual Plan (not yet endorsed by EPD)
- Waste Management Plan (endorsed by the EPD on 16 March 2015)
- Baseline Monitoring Report (not yet endorsed by EPD)

2.3.2 Summary of the relevant permits, licenses, and/or notifications on environmental protection as obtained by the Contract in the past twelve months is presented in *Table 2-1*.

Table 2-1 Status of Environmental Licenses and Permits of the Contract

No.	Type of Permit/ License	Reference/ License No.	Date of Issue	Date of Expiry
1	Air pollution Control (Construction Dust) Regulation	377719	06-08-2014	N/A
2	Chemical Waste Producer Registration - Waste Producers Number	5117422C389301	03-09-2014	N/A
3	Water Pollution Control Ordinance -Variation of Effluent Discharge License	WT00023973-2016	25-10-2017	30-09-2019
4	Waste Disposal Regulation - Billing Account for Disposal of Construction Waste	7020460	01-08-2014	N/A
5	CNP for Multiple Task	GW-RW0154-18	25-05-2018	24-11-2018
		GW-RW0480-18	25-11-2018	24-05-2019
		GW-RW0230-19	30-05-2019	24-11-2019
6	CNP for Tunnel	GW-RW0140-18	23-05-2018	22-11-2018
		GW-RW0478-18	23-11-2018	22-05-2019
7	CNP for Portion H	GW-RW0155-18	25-05-2018	17-11-2018
		GW-RW0479-18	18-11-2018	17-05-2019
		GW-RW0203-19	18-05-2019	17-11-2019
8	CNP for Lung Mun Road	GW-RW0334-18	13-08-2018	17-11-2018
		GW-RW0475-18	19-11-2018	02-12-2018
		GW-RW0530-18	25-12-2018	02-03-2019
		GW-RW0103-19	15-03-2019	30-04-2019
		GW-RW0200-19	16-05-2019	05-06-2019
		GW-RW0344-19	27-07-2019	01-10-2019
		GW-RW0491-19	11-10-2019	15-12-2019
9	CNP for Lung Fu Road	GW-RW0334-18	13-08-2018	17-11-2018
		GW-RW0436-18	29-10-2018	01-12-2018
		GW-RW0531-18	27-12-2018	02-03-2019
		GW-RW0162-19	17-04-2019	05-06-2019
		GW-RW0341-19	26-07-2019	28-09-2019
		GW-RW0490-19	11-10-2019	14-12-2019

Note: CNP is Control Noise Permit

3 SUMMARY OF IMPACT MONITORING REQUIREMENTS UNDER THE CONTRACT

3.1 GENERAL

3.1.1 In view of the construction works under the Contract, the major construction activities are land-based. In accordance with the Project EM&A Manual requirements, environmental aspect monitoring should be conducted including air quality, ecological (Pitcher plant), cultural heritage and site inspections during construction period. In addition, landscape and visual (L&V) monitoring, landfill gas monitoring and audit of the contractor’s implementation of the construction noise and land-based water quality pollution control measures are also required for the Contract.

3.1.2 A summary of construction phase EM&A requirements are presented in the sub-sections below.

3.2 AIR QUALITY MONITORING PARAMETERS

3.2.1 The construction phase air quality monitoring shall cover the following parameters:

- 1-hour TSP; and
- 24-hour TSP

3.3 MONITORING LOCATION

3.3.1 The air quality monitoring stations for impact monitoring are listed in **Table 3.1** and illustrated in **Appendix E**.

Table 3-1 Designated Air Quality Monitoring Stations under the Contract

ID	Location	Air monitoring station Description
ASR1	Tuen Mun Fireboat Station	EM&A Manual
ASR5	Pillar Point Fire Station	EM&A Manual
AQMS1	Previous River Trade Golf	Enhanced TSP Level under EP condition 2.4
ASR6	Butterfly Beach Laundry	Enhanced TSP Level under EP condition 2.4
ASR10	Butterfly Beach Park	Enhanced TSP Level under EP condition 2.4

3.4 MONITORING FREQUENCY

General Requirement

3.4.1 For regular impact monitoring, the sampling frequency of at least once in every six days shall be strictly observed at five of the designated monitoring stations for 24-hr TSP monitoring. For 1-hr TSP monitoring, the sampling frequency of at least three times in every six days should be undertaken at five locations when the highest dust impact occurs. The stations to be monitored should be selected based on the prevailing wind direction and their proximity to the active construction works.

Special Requirement

3.4.2 As per Condition 2.4 of the EP of TM-CLKL, an enhanced monitoring plan on TSP level at Tuen Mun (“the Enhanced TSP Monitoring Plan”) is required to be submitted to the DEP for approval at least 1 month before the commencement of construction of the Project. Details of the Enhanced TSP Monitoring Plan under Contract No. HY/2012/08 could be found from the project website. The air quality monitoring work under this Contract will follow the monitoring requirement of enhanced TSP monitoring under the project.

3.4.3 The air quality monitoring requirements for the Contract is shown in **Table 3-2**.

Table 3-2 Enhanced TSP Monitoring Plan – Construction Phase

Condition	Monitoring Parameter	Monitoring Location	Frequency	Monitoring Requirement
General	1-hour TSP	ASR1, ASR5, AQMS1, ASR6, ASR10	3 times per day every six days	Throughout the Northern Connection, toll plaza and tunnel buildings construction works
	24-hour TSP	ASR1, ASR5, AQMS1, ASR6, ASR10	Daily every six days	
Special	1-hour TSP	ASR1, ASR5, AQMS1, ASR6, ASR10	3 times per day every three days	<p><u>Northern Connection</u> During excavation works for launching shaft, excavation work for Cut and Cover Tunnel and Cut and Cover Tunnel Construction</p> <p><u>Toll Plaza</u> During excavation, slope works, construction of road and superstructures and wind erosion from open sites and stockpiling areas</p> <p><u>Tunnel Buildings</u> During excavation, foundation works, construction of superstructures and wind erosion from open sites and stockpiling areas</p>
	24-hour TSP	ASR1, ASR5, AQMS1, ASR6, ASR10	Daily every three days	

3.5 DERIVATION OF ACTION/LIMIT (A/L) LEVELS

3.5.1 The baseline monitoring results formed the basis for determining the air quality criteria for the impact monitoring. The ET shall compare the impact monitoring results with air quality criteria set up for 24-hour TSP and 1-hour TSP. Based on results of the approved Baseline Monitoring Report of HyD Contract HY/2012/08, the proposed Action and Limit Levels are shown in *Tables 3-3*.

Table 3-3 TSP Action and Limit Levels for Impact Air Quality Monitoring

Air Quality Monitoring Stations	24-hour TSP ($\mu\text{g}/\text{m}^3$)		1-hour TSP ($\mu\text{g}/\text{m}^3$)	
	Action Level	Limit Level	Action Level	Limit Level
ASR1	213	260	331	500
ASR5	238	260	340	500
AQMS1	213	260	335	500
ASR6	238	260	338	500
ASR10	214	260	337	500

3.5.2 Should non-compliance of the environmental quality criteria occurs, remedial actions will be triggered according to the Event and Action Plan which presented in *Appendix F*.

3.6 OTHER ENVIRONMENTAL ASPECTS

Noise

- 3.6.1 The TM-CLKL EIA study concluded that no existing noise sensitive receiver (NSR) was identified within the Study Area at Tuen Mun. Therefore, no planned NSR designated at the Project sites of Tuen Mun. Based upon this, no noise monitoring is necessary for construction phase under the Contract.
- 3.6.2 Regular site inspections and audits will be carried out during the construction phase in order to confirm compliance with the regulatory requirements and conformity of the Contractor with regard to noise control and contract conditions.

Water Quality

- 3.6.3 No marine works will be undertaken under the Contract. Based upon this, no water quality monitoring is necessary for construction phase.

Ecology

- 3.6.4 Since the Works of the Contract would not generate marine ecological impact, no dolphin monitoring under the Contract was conducted.
- 3.6.5 During construction phase, the ET will perform Pitcher Plants inspection at least once every week to report the growth condition (only undertaken at Establish period) and protection measures.

Landscape and Visual

- 3.6.6 According to EIA recommendation, site inspection and audit shall be required to be undertaken in the operation stage. Measures to mitigate landscape and visual impacts during construction should be checked and monitored by a Registered Landscape Architect to ensure compliance with the intended aims of the mitigation measures in accordance with the EM&A Manual.

Cultural Heritage

- 3.6.7 Grave G1 of heritage resources is situated near the proposed toll plaza in Tuen Mun. Site inspections should be undertaken at least once per week throughout the construction period to ensure compliance with the intended aims of recommended mitigation measures.

Monitoring and Measurement of Landfill Gas

- 3.6.8 During EIA study, landfill gas hazards are likely to be generated from the Pillar Point Valley (PPV) Landfill. Hence, regular landfill gas monitoring is recommended during construction of the proposed toll plaza. Safety Officer or an approved and appropriated qualified person should be carried out the monitoring works to make sure the area free of landfill gas before any man enters in the area.

3.6.9 Depending on the results of the measurements, actions required will vary and should be set down by the Safety Officer or other appropriately qualified person. As a minimum these should encompass those actions specified as follow:

Table 3-4 Actions in the Event of Landfill Gas being Detected in Excavation / Confined Area

Parameter	Measurement	Action
Oxygen	< 19%	- Ventilate to restore oxygen to > 19%
	< 18%	- Stop work - Evacuate personnel / prohibit entry - Increase ventilation to restore to > 19%
Methane	> 10% LEL (> 0.5% v/v)	- Prohibit hot work - Ventilate to restore methane to < 10% LEL
	> 20% LEL (>1% v/v)	- Stop work - Evacuate personnel / prohibit entry - Increase ventilation to restore to < 10%
Carbon Dioxide	> 0.5%	- Ventilate to restore oxygen to < 0.5%
	> 1.5%	- Stop work - Evacuate personnel / prohibit entry - Increase ventilation to restore to < 0.5%

4 AIR QUALITY MONITORING

4.1 GENERAL

4.1.1 According to the Updated EM&A Manual and the Enhanced Total Suspended Particulates (TSP) Monitoring Plan, the air quality impact monitoring was conducted at the five air quality monitoring stations during the Reporting Period by the ET of Contract HY/2012/08. Sharing of impact air quality monitoring data between HY/2012/08 and HY/2013/12 is agreed by all relevant parties. Therefore the Contract is not required to conduct its own dust monitoring exercise until the Contract HY/2012/08 is ended.

4.2 AIR QUALITY MONITORING RESULTS IN REPORTING PERIOD

4.2.1 In the Reporting Period, total 1,800 of 1-hr TSP measurements and 600 events of 24-hours TSP monitoring at five proposed locations were carried out by the ET of Contract HY/2012/08. Detailed air quality monitoring results and statistical analysis of the trends of air quality data during the Reporting Period can be referred to the Monthly EM&A Reports (from November 2018 to October 2019) and the Fifth Annual EM&A Review Report (November 2018 to October 2019) prepared by the ET of Contract HY/2012/08.

4.3 SUMMARY OF ACTION AND LIMIT (A/L) LEVELS EXCEEDANCE (NON-COMPLIANCE)

4.3.1 According to the air quality monitoring result provided by Contract HY/2012/08, total 23 Action Level and 3 Limit Level exceedances of 1-hour TSP were recorded; 2 Action Level exceedances of 24-hour TSP were recorded in the Reporting Period. Notification on Exceedances (NOEs) were issued after receiving the monitoring result from the Contract HY/2012/08. The summary of air quality exceedance is shown in *Table 4-1*.

Table 4-1 Summary of Air Quality Monitoring Exceedance

Date of Exceedance	Monitoring Station	Air Quality Parameter	Result	Exceed
6 November 2018	ASR1	1Hr TSP	376 µg/m ³	Action Level
12 November 2018	ASR1	1Hr TSP	395 µg/m ³	Action Level
12 November 2018	ASR5	1Hr TSP	371 µg/m ³	Action Level
12 November 2018	ASR5	1Hr TSP	425 µg/m ³	Action Level
12 November 2018	ASR5	1Hr TSP	377 µg/m ³	Action Level
12 November 2018	ASR6	1Hr TSP	343 µg/m ³	Action Level
9 December 2018	ASR1	1Hr TSP	346 µg/m ³	Action Level
12 December 2018	ASR1	1Hr TSP	414 µg/m ³	Action Level
18 December 2018	ASR6	1Hr TSP	478 µg/m ³	Action Level
8 January 2019	ASR5	1Hr TSP	354 µg/m ³	Action Level
11 January 2019	ASR1	1Hr TSP	335 µg/m ³	Action Level
11 January 2019	ASR5	1Hr TSP	398 µg/m ³	Action Level
17 January 2019	ASR1	1Hr TSP	519 µg/m ³	Limit Level
17 January 2019	ASR5	1Hr TSP	354 µg/m ³	Action Level
26 January 2019	ASR5	1Hr TSP	399 µg/m ³	Action Level
16 February 2019	ASR1	24Hr TSP	237 µg/m ³	Action Level
27 March 2019	ASR1	1Hr TSP	412 µg/m ³	Action Level
30 March 2019	ASR1	1Hr TSP	374 µg/m ³	Action Level
11 May 2019	ASR1	1Hr TSP	339 µg/m ³	Action Level
23 May 2019	ASR1	1Hr TSP	408 µg/m ³	Action Level
23 May 2019	ASR1	24Hr TSP	217 µg/m ³	Action Level

Date of Exceedance	Monitoring Station	Air Quality Parameter	Result	Exceed
10 July 2019	ASR6	1Hr TSP	372 $\mu\text{g}/\text{m}^3$	Action Level
28 July 2019	ASR1	1Hr TSP	646 $\mu\text{g}/\text{m}^3$	Limit Level
28 July 2019	ASR5	1Hr TSP	410 $\mu\text{g}/\text{m}^3$	Action Level
20 September 2019	ASR1	1Hr TSP	539 $\mu\text{g}/\text{m}^3$	Limit Level
14 October 2019	ASR1	1Hr TSP	363 $\mu\text{g}/\text{m}^3$	Action Level
17 October 2019	ASR1	1Hr TSP	354 $\mu\text{g}/\text{m}^3$	Action Level
17 October 2019	ASR1	1Hr TSP	385 $\mu\text{g}/\text{m}^3$	Action Level

4.4 AIR QUALITY EXCEEDANCE INVESTIGATION

- 4.4.1 Investigation for the 1-hour and 24-hour TSP exceedance was undertaken upon received the monitoring results by the ET.
- 4.4.2 For the exceednances in the reporting period, the investigation reports were submitted to all relevant parties and concluded that those exceedances are unlikely related to the Contract work and no corrective action was required accordingly. The detailed investigation reports and findings can be referred to the Monthly EM&A Reports of the contract.

5 ECOLOGY MONITORING

5.1 GENERAL

5.1.1 According to the EM&A Manual requirements, regularly inspection for Pitcher Plants at least once every week to report its growth and protection measure situation shall be conducted during construction period.

5.1.2 Total 181 pitcher plants were transplanted to final receptor site and the rest of the Pitcher Plant individuals (certified dead by the specialist) were not transplanted and were treated as general refuse. All the transplantation of pitcher plant from the nursery site to final receptor site was completed on 10th September 2015.

5.2 PITCHER PLANTS INSPECTION

5.2.1 A total **52** occasions of inspection were carried out by the Contractor and ET during the Reporting Period.

5.2.2 Establishment period for the pitcher plants was completed at the end of September 2016, the joint site completion of Establishment period visit with AFCD was undertaken on 23 September 2016 and the final pitcher plants report was submitted to AFCD on early December 2016. Therefore after 23 September 2016, only the integrity of the protection fence was checked to fulfill the EIA requirement. During each inspection, the protection mitigation measures were checked at the final receptor area to make sure no site activities were undertaken inside the protection zone. Besides, no construction activities were observed to be carried out at the surrounding of the final receptor area. The condition of chain link fence is good and no repair or maintenance is required.

5.2.3 No matter the completion of establishment period, the Contractor should properly maintain the fencing along the receptor area to avoid disturbance to the pitcher plants under the EIA requirement.

6 CULTURAL HERITAGE

6.1 GENERAL

6.1.1 According to the EM&A Manual requirements, regular inspection for heritage resource Grave G1 shall be audited by the ET at least once every week to ensure recommended mitigation measures implemented during construction period. The aim of the survey is prevention of any possible damage to the grave and to ensure that proposed mitigation measures are implemented. The broad scope of the audit will involve supervision of the following:

- Non-contact effects of the engineering works, such as vibration from pneumatic drills which could cause damage, such as foundation or wall cracks and loosening of tiles or fixtures; and
- Contact between the historic structures and equipment and materials associated with the engineering works.

6.1.2 Specifically, the monitoring programme will entail the following tasks:

- The extent of the agreed works areas should be regularly checked during the construction phase to ensure the buffer is being maintained; and
- Ensure no stockpiling or equipment storage is affecting the structure.

6.1.3 In the event of non-compliance the responsibilities of the relevant parties is detailed in the Event/ Action Plan in [Appendix F](#).

6.2 GRAVE INSPECTION

6.2.1 In this Reporting Period, there are total **52 occasions** to carry out the Grave G1 inspection. During site inspection, buffer zone was observed between the working area and the Grave and no construction material or equipment was stored nearby the Grave.

6.2.2 Since construction works very close to buffer zone of the Grave G1, cultural heritage mitigation measures and protection measures as provided by the Contractor, therefore has fully implemented in accordance with EM&A Manual requirements

7 LANDSCAPE AND VISUAL

7.1 GENERAL

7.1.1 According to EM&A Manual requirements, monitoring of Contractor's operations during construction period to report on Contractor's compliance should be carried out on weekly basis. Measure to mitigate landscape and visual impact during construction should be checked and monitored by a Registered Landscape Architect to ensure compliance with the intended aims of the mitigation measures. Moreover, the progress of the engineering works shall be regularly reviewed on site to identify the earliest practical opportunities for the landscape works to be undertaken.

7.2 LANDSCAPE AND VISUAL INSPECTION

7.2.1 In this Reporting Period, Registered Landscape Architect with the Contractor had undertaken a total of **52** occasions of inspection.

7.2.2 During the Reporting Period, most of the landscape works such as planting was not yet commenced, but some transplanting works was commenced on 22 May 2017. Existing trees on boundary of the project area were properly protected and no damage of the existing trees were record in this Reporting Period. Felled trees during construction were collected by a licensed collector for recycling. The detailed inspection checklists can be referred to relevant Monthly EM&A Reports of the Contract.

8 LANDFILL GAS HAZARD MONITORING

8.1 GENERAL

8.1.1 During EIA study, landfill gas hazards are likely to be generated from the Pillar Point Valley (PPV) Landfill. Hence, regular landfill gas monitoring is recommended during construction of the proposed toll plaza.

8.1.2 During construction, a Safety Officer should be appointed to carry out the monitoring works. The monitoring frequency and areas to be monitored should be set down prior to commencement of ground-works either by the Safety Officer or an approved and appropriated qualified person. The routine monitoring should be carried out in all excavations, manholes, chambers, relocation of monitoring wells and any other confined spaces that may have been created. All measurements in excavations should be made with the extended monitoring tube located not more than 10 mm from the exposed ground surface. Monitoring should be performed properly to make sure that the area is free of landfill gas before any man enters in the area.

8.1.3 For excavations deeper than 1m, measurements should be carried out:

- at the ground surface before excavation commences;
- immediately before any worker enters the excavation;
- at the beginning of each working day for the entire period the excavation remains open; and
- periodically through the working day whilst workers are in the excavation.

8.1.4 For excavations between 300mm and 1m deep, measurements should be carried out:

- directly after the excavation has been completed; and
- periodically whilst the excavation remains open

8.1.5 For excavations less than 300mm deep, monitoring may be omitted, at the discretion of the Safety Officer or other appropriately qualified person.

8.1.6 To ensure the accuracy of the monitoring data, zeroing of the gas analyser shall be undertaken at the start of each day's monitoring. As part of the QA/QC, calibration of the gas analyser shall be conducted at least once every two weeks according to the specification of the manufacturer's operation manual.

8.1.7 The landfill consultation zone was divided into 6 monitoring zones. The landfill gas monitoring zones are summarized in Table 8-1 and the layout plan for the monitoring zone is illustrated in [Appendix E](#).

Table 8-1 Landfill Gas Monitoring Zone

ID	Location	Excavation >300mm deep undertaken in this reporting period
TD1	TD1, Retaining Wall A, Grave G1 and Subway	No
RW-B	Retaining Wall B	No
RW-F	Retaining Wall F	No
S&U	Slope and Underpass	No
BW	Bridge Works (G2, H1)	No
LMR	Lung Mun Road	Yes (till 25 September 2019)

8.2 LANDFILL GAS MONITORING RESULT

8.2.1 A BIOGAS 5000 gas analyser was used for the landfill gas monitoring. In the past twelve months, landfill gas monitoring was conducted at monitoring zone LMR between November 2018 and 25 September 2019 due to the excavation works within the landfill consultation zone was temporarily completed.

8.2.2 There were total 243 monitoring days carried out by the Safety Officer or an approved and qualified persons. Landfill gas measurement results in the past twelve months are summarized in Table 8-2. Moreover, graphical plot are attached in [Appendix G](#).

Table 8-2 Summary of Landfill Gas Measurement Results in this Annual for TD1 & LMR

Para.	Action Level	Limit Level	In Period	Detectable at LMR	
				Min	Max
Methane	>10% LEL (>0.5% v/v)	>20% LEL (>1% v/v)	Nov 2018 to Jan 2019	0.1%	0.1%
			Feb 2019 to Apr 2019	0.1%	0.1%
			May 2019 to Jul 2019	0.1%	0.1%
			Aug 2019 to Oct 2019	0.1%	0.1%
Oxygen	<19%	<18%	Nov 2018 to Jan 2019	20.8%	21.0%
			Feb 2019 to Apr 2019	20.8%	21.0%
			May 2019 to Jul 2019	20.7%	21.0%
			Aug 2019 to Oct 2019	20.8%	21.0%
Carbon Dioxide	>0.5%	>1.5%	Nov 2018 to Jan 2019	0.1%	0.2%
			Feb 2019 to Apr 2019	0.1%	0.2%
			May 2019 to Jul 2019	0.1%	0.2%
			Aug 2019 to Oct 2019	0.1%	0.2%

8.2.3 The measurement results shown that slightly methane concentration was detected and all oxygen concentration was measured between 20.7% and 21.0% and Carbon Dioxide was between 0.1 % and 0.2 %. No corrective action was required accordingly.

9 WASTE MANAGEMENT

9.1 GENERAL WASTE MANAGEMENT

9.1.1 Waste management was carried out by an on-site Environmental Officer or an Environmental Supervisor from time to time. The effective management of waste arisings during the construction phase will be monitored through the site audit programme. The aims of the waste audit are:

- to ensure the waste arising from the works are handled, stored, collected, transferred and disposed of in an environmentally acceptable manner; and
- to encourage the reuse and recycling of material.

9.1.2 In addition to the site inspections, the ET shall review the documentation procedures prepared by the Waste Coordinator once a week to ensure proper records are being maintained and procedures undertaken in accordance with the Waste Management Plan.

9.2 RECORDS OF WASTE QUANTITIES

9.2.1 All types of waste arising from the construction work are classified into the following:

- Construction & Demolition (C&D) Material;
- Chemical Waste;
- General Refuse; and
- Excavated Soil.

9.2.2 In the past twelve months, total quantities of waste disposal are summarized in *Tables 9-1* and *9-2*.

Table 9-1 Summary of Quantities of Inert C&D Materials

Type of Waste	Quantity				Total	Disposal Location
	Nov 2018 – Jan 2019	Feb 2019 – Apr 2019	May 2019 – Jul 2019	Aug 2019 – Oct 2019		
Reused in this Contract (Inert) (‘000m ³)	0	0	0	0	0	-
Reused in other Projects (Inert) (‘000m ³)	0	0	0	0	0	<ul style="list-style-type: none"> • TM-CLKL C2 HY/2012/08 • Lam Tei Quarry • Eco Park K.wah Recycle Facilities • Lung Kwu Tan Tailor Recycled Aggregates • Laintang BCP
Disposal as Public Fill (Inert) (‘000m ³)	15.808	3.045	6.409	1.599	26.861	Tuen Mun Area 38

Table 9-2 Summary of Quantities of C&D Wastes

Type of Waste	Quantity				Total	Disposal Location
	Nov 2018 – Jan 2019	Feb 2019 – Apr 2019	May 2019 – Jul 2019	Aug 2019 – Oct 2019		
Recycled Metal (‘000kg)	0	0	0	0	0	-
Recycled Paper / Cardboard Packing (‘000kg)	0	0	0	0	0	-
Recycled Plastic (‘000kg)	0	0	0	0	0	-
Chemical Wastes (‘000kg)	0	0	0	0	0	-
General Refuses (‘000m ³)	0.632	0.359	1.06	0.547	2.598	WENT

- 9.2.3 To control the site performance on waste management, the Contractor shall ensure that all solid and liquid waste management works are fully in compliance with the relevant license/permit requirements, such as the effluent discharge license and the chemical waste producer registration. The Contractor is also reminded to implement the recommended environmental mitigation measures according to the Environmental Monitoring and Audit Manual.

10 INSPECTION AND AUDITING

10.1 SITE INSPECTION

10.1.1 According to the approved EM&A Manual, the environmental site inspection shall be formulated by ET Leader. Weekly environmental site inspections should carry out to confirm the environmental performance.

Findings / Deficiencies During Reporting Period

10.1.2 In the past twelve months, total 52 events of joint site inspection to evaluate site environmental performance has been carried out by the RE, ET and the Contractor. Moreover, IEC or ENPO attended total 12 occasions' joint site inspection. The quantity of reminders/observations is summarized in **Table 10-1**.

Table 10-1 Summary of Reminders/Observations of Site Inspection for the Annual

Reporting Period	Date of site inspection	Nos. of findings / reminders	Follow-Up Status
November 2018	6 th , 13 th , 20 th and 27 th November 2018	9	Completed
December 2018	4 th , 11 th , 18 th and 28 th December 2018	9	Completed
January 2019	3 rd , 8 th , 15 th , 22 nd and 29 th January 2019	7	Completed
February 2019	8 th , 12 th , 19 th and 26 th February 2019	6	Completed
March 2019	5 th , 12 th , 19 th and 26 th March 2019	10	Completed
April 2019	4 th , 9 th , 16 th , 23 th and 30 th April 2019	9	Completed
May 2019	8 th , 14 th , 21 st and 28 th May 2019	8	Completed
June 2019	4 th , 11 th , 18 th and 25 th June 2019	5	Completed
July 2019	2 nd , 9 th , 16 th , 23 rd and 30 th July 2019	11	Completed
August 2019	6 th , 13 th , 20 th and 27 th August 2019	6	Completed
September 2019	3 rd , 10 th , 17 th , 25 th and 30 th September 2019	6	Completed
October 2019	8 th , 15 th , 22 nd and 29 th October 2019	5	Completed

10.1.3 In the past twelve months, there are no non-compliance recorded, however, **91** observations/reminders were recorded during the site inspections. The minor deficiencies found in the weekly site inspections were in general rectified within the specified deadlines. The environmental performance of the Project was therefore considered satisfactory.

Inspection Checklist for Vulnerable to Contaminated Water Discharge

10.1.4 Following the complaint about discharge of milky water to Bufferfuly Beach on 2 September 2015, the Contractor proposed to carry out inspection of wastewater treatment facilities, concerned discharge points, drainage inlets and outlets daily during typhoon or wet season and once per week at dry season.

10.1.5 In addition, specific inspections would also be conducted before and after adverse weather to ensure necessary remedial works would be carried out timely. Should incidental contaminated water discharge be found at the inlet of the associated drainage system, a specific inspection of the relevant drainage pipes would be conducted for traces of deposit, and follow up actions would be taken when necessary.

10.1.6 The inspection for vulnerable to contaminated water discharge was conducted by the Contractor daily during wet season (April to July 2019) and weekly during dry season (November 2018 to March 2019). As requested by the EPD, the associated inspection checklist should be presented in the respective Monthly EM&A Report. As the permanent drainage system was fully commissioned in July 2019, the temporary drainage inspection has been terminated since then.

11 ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

11.1 ENVIRONMENTAL COMPLAINT, SUMMONS AND PROSECUTION

11.1.1 For the Contract, no summons and prosecution was received in the Reporting Period. However, there are one environmental complaint and 36 exceedances of action / limit levels recorded during the Reporting Period. The statistical summary table of environmental exceedance, complaint, summons and prosecution is presented in *Tables 11-1, 11-2, 11-3 and 11-4*.

Table 11-1 Statistical Summary of Environmental Exceedance

Reporting Period	Environmental Aspect		Exceedance Statistics	
			Action	Limit
1 November 2018 – 31 October 2019	Air Quality	1-hour TSP	23	3
		24-hour TSP	2	0
	Landfill Gas	Methane	0	0
		Oxygen	0	0
		Carbon Dioxide	0	0

Table 11-2 Statistical Summary of Environmental Complaints

Reporting Period	Complaint Nature				Total Registered
	Water Quality	Construction Dust	Construction Noise	Others	
1 November 2018 – 31 October 2019	NA	22 May 2019	NA	NA	1

Table 11-3 Statistical Summary of Environmental Summons

Reporting Period	Environmental Summons Statistics			
	Cumulative	Complaint Nature		
		Air	Noise	Water
1 November 2018 – 31 October 2019	0	NA	NA	NA

Table 11-4 Statistical Summary of Environmental Prosecution

Reporting Period	Environmental Prosecution Statistics			
	Cumulative	Complaint Nature		
		Air	Noise	Water
1 November 2018 – 31 October 2019	0	NA	NA	NA

11.2 SUMMARY RECORD OF ALL COMPLAINTS, ACTION AND WORKING PROCEDURES

11.2.1 During the complaint investigation work, the Contractor was co-operated with the ET in providing all the necessary information and assistance for completion of the investigation. Investigation reports for the complaints have completed by the ET and submitted to all relevant parties and they are summarized in below.

Complaint received on 22 May 2019:

A complaint was received on 22 May 2019 to complaint that “投訴地盤的大塵滋擾，地盤位置在屯門內河碼頭及珠江倉旁邊，正在興建一條由屯門通往機場的隧道，煩請跟進及回覆”。 After the investigation it was concluded that the complaint was not project related. The detailed investigation report can be referred to the Monthly EM&A Reports (**May 2019**) of the contract.

12 IMPLEMENTATION STATUS OF MITIGATION MEASURES

12.1 GENERAL REQUIREMENTS

- 12.1.1 The environmental mitigation measures that recommended in the Environmental Mitigation Measures Implementation Schedule (EMMIS) in the Project EM&A Manual covered the issues of Air Quality, Cultural Heritage, Ecology, Landfill Gas Hazard, Landscape & Visual, Noise, Water and Waste and they are presented in [Appendix H](#).
- 12.1.2 In the past twelve months, environmental mitigation measures generally implemented by the Contract are listed in [Table 12-1](#).

Table 12-1 Environmental Mitigation Measures

Issues	Environmental Mitigation Measures
Air Quality	<ul style="list-style-type: none"> • Maintain damp / wet surface on access road • Keep slow speed in the sites • All vehicles must use wheel washing facility before off site • Sprayed water during rock breaking works • During transportation by truck, materials loaded lower than the side and tail boards, and covered before transport • Compacted all soil stockpiles • Part of the exposed slopes covered geotextile net
Cultural Heritage	<ul style="list-style-type: none"> • Set a buffer zone between the working area and the Grave • All construction materials and equipment store far from the Grave • Inspection the Grave to ensure provision mitigation measures effective
Ecology	<ul style="list-style-type: none"> • Wire fencing provided for temporary protect Pitcher Plants • Undertake weekly inspection of Pitcher Plants
Landfill Gas Hazard	<ul style="list-style-type: none"> • Landfill Gas measurement undertake during trench excavation
Water Quality	<ul style="list-style-type: none"> • Temporary drainage system provide for surface runoff prevent discharge to public area • Wastewater to be treated by sedimentation tank before discharge.
Noise	<ul style="list-style-type: none"> • No operation of powered mechanical equipment is allowed during restricted hours from 19:00 to 07:00 on the following day and whole day during Sunday and public holiday without construction noise permit (CNP) • Keep good maintenance of plants • The noisy plants or works provide mobile noise barriers • Shut down the plants when not in use
Waste and Chemical Management	<ul style="list-style-type: none"> • On-site sorting prior to disposal • Follow requirements and procedures of the “Trip-ticket System” • Predict required quantity of concrete accurately • Collect the unused fresh concrete at designated locations in the sites for subsequent disposal
General	<ul style="list-style-type: none"> • The site was generally kept tidy and clean.

13 CONCLUSIONS AND RECOMMENDATIONS

13.1 CONCLUSIONS

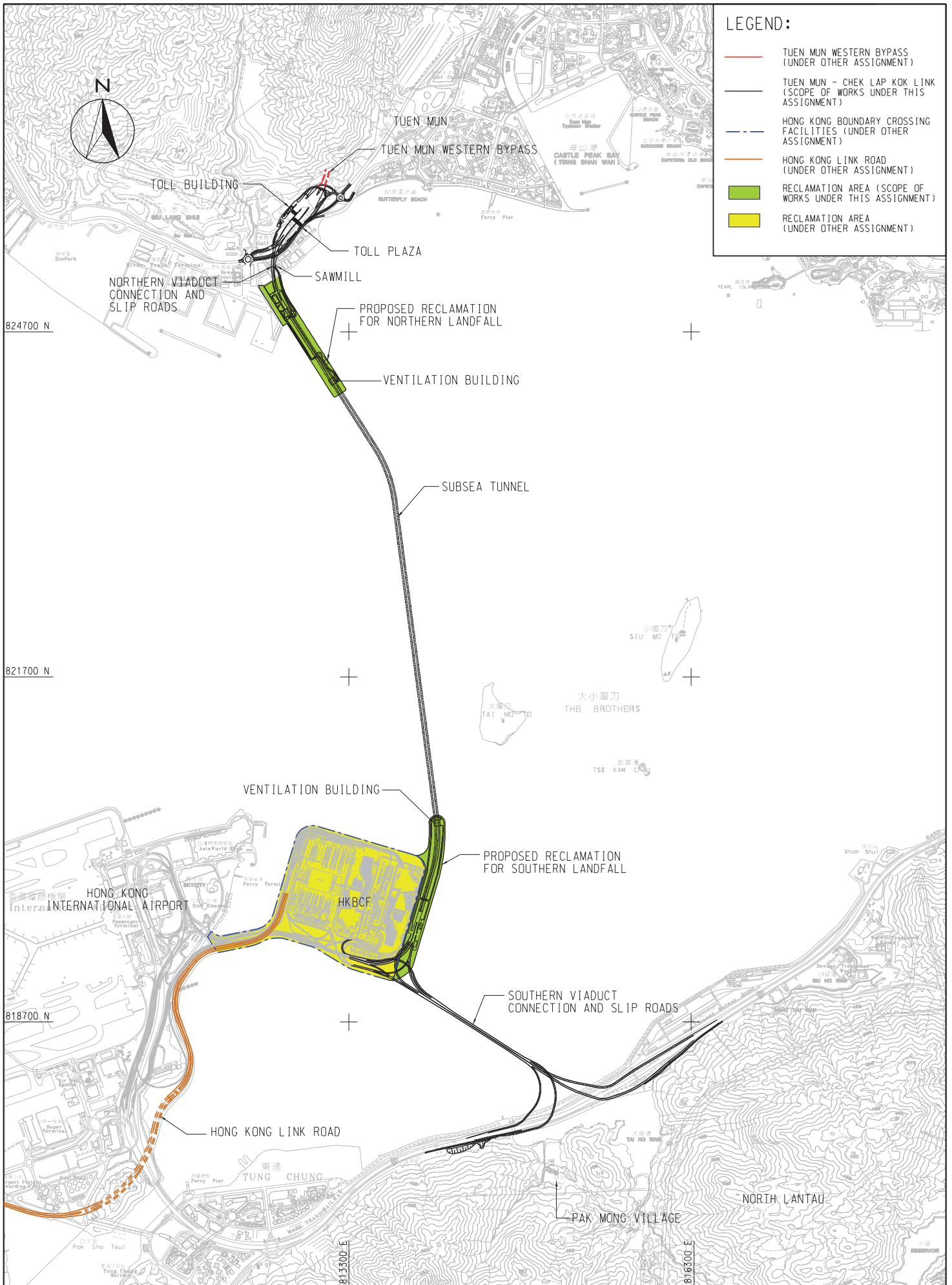
- 13.1.1 This is 5th Annual EM&A Review Report presenting the monitoring results and inspection findings for the Reporting Period from **1 November 2018 to 31 October 2019**.
- 13.1.2 In the Reporting Period, total 23 Action Level and 3 Limit Level exceedances of 1-hour TSP were recorded; 2 Action Level exceedance of 24-hour TSP was recorded.
- 13.1.3 Site inspection for landscape and visual was conducted on weekly basis by the Landscape Architect to ensure the compliance of the intended aims of the mitigation measures. Most of the landscape works such as planting was not yet commenced.
- 13.1.4 Landfill gas monitoring was conducted at LMR between November 2018 and October 2019 while excavation works was undertaken in the consultation zone by the Safety Officer. The monitoring results shown no exceedances were triggered.
- 13.1.5 No notifications of summons or successful prosecution were received during the Reporting Period. However, one complaint about the air quality issue was received during the Reporting Period. Investigations were conducted and the complaint was not project related.
- 13.1.6 Joint site inspection by the RE, ET and CRBC-Kaden JV was carried in accordance with the EM&A Manual. Moreover, the IEC attended a total of **12** joint site inspections during the Reporting Period. No non-compliance was recorded during the site inspection but **total 91** observations/reminders were recorded in the past twelve months. All the deficiencies were rectified before next site inspection date.
- 13.1.7 A total **52** occasions of Pitcher Plant inspection were carried out by the Contractor and ET during the Reporting Period at the final receptor site. Establishment period for the pitcher plants was completed at the end of September 2016, the joint site completion of Establishment period visit with AFCD was undertaken on 23 September 2016 and the final pitcher plants report was submitted to AFCD on early December 2016. Therefore after 23 September 2016, only the integrity of the protection fence was checked to fulfil the EIA requirement. During each inspection, the protection mitigation measures were checking at the final receptor area to make sure no site activities was undertaken inside the protection zone. Besides, no construction activities were observed to be carried out at the surrounding of the final receptor area. The condition of chain link fence is good and no repair or maintenance is required.
- 13.1.8 For cultural heritage in the past twelve months, the buffer zone between the working area and the Grave was observed and no construction material or equipment was stored nearby.

13.2 RECOMMENDATIONS

- 13.2.1 The construction phase monitoring programme ensured that any environmental impact to the receivers would be readily detected and timely actions could be taken to rectify any non-compliance. Assessment and analysis of monitoring results collected demonstrated the environmental acceptability of the Project. The regular site inspection and waste audit ensured that all the mitigation measures on waste management were effectively implemented.
- 13.2.2 The EM&A programme effectively monitored the environmental impacts from the construction phase of the Project and no particular recommendation was advised for the improvement of the programme.
- 13.2.3 It is considered that the environmental acceptability of the Contract in the past twelve months was satisfactory and acceptable.

Appendix A

Project Layout Plan



LEGEND:

- TUEN MUN WESTERN BYPASS (UNDER OTHER ASSIGNMENT)
- TUEN MUN - CHEK LAP KOK LINK (SCOPE OF WORKS UNDER THIS ASSIGNMENT)
- HONG KONG BOUNDARY CROSSING FACILITIES (UNDER OTHER ASSIGNMENT)
- HONG KONG LINK ROAD (UNDER OTHER ASSIGNMENT)
- RECLAMATION AREA (SCOPE OF WORKS UNDER THIS ASSIGNMENT)
- RECLAMATION AREA (UNDER OTHER ASSIGNMENT)

PROJECT NO. 60044963

AECOM

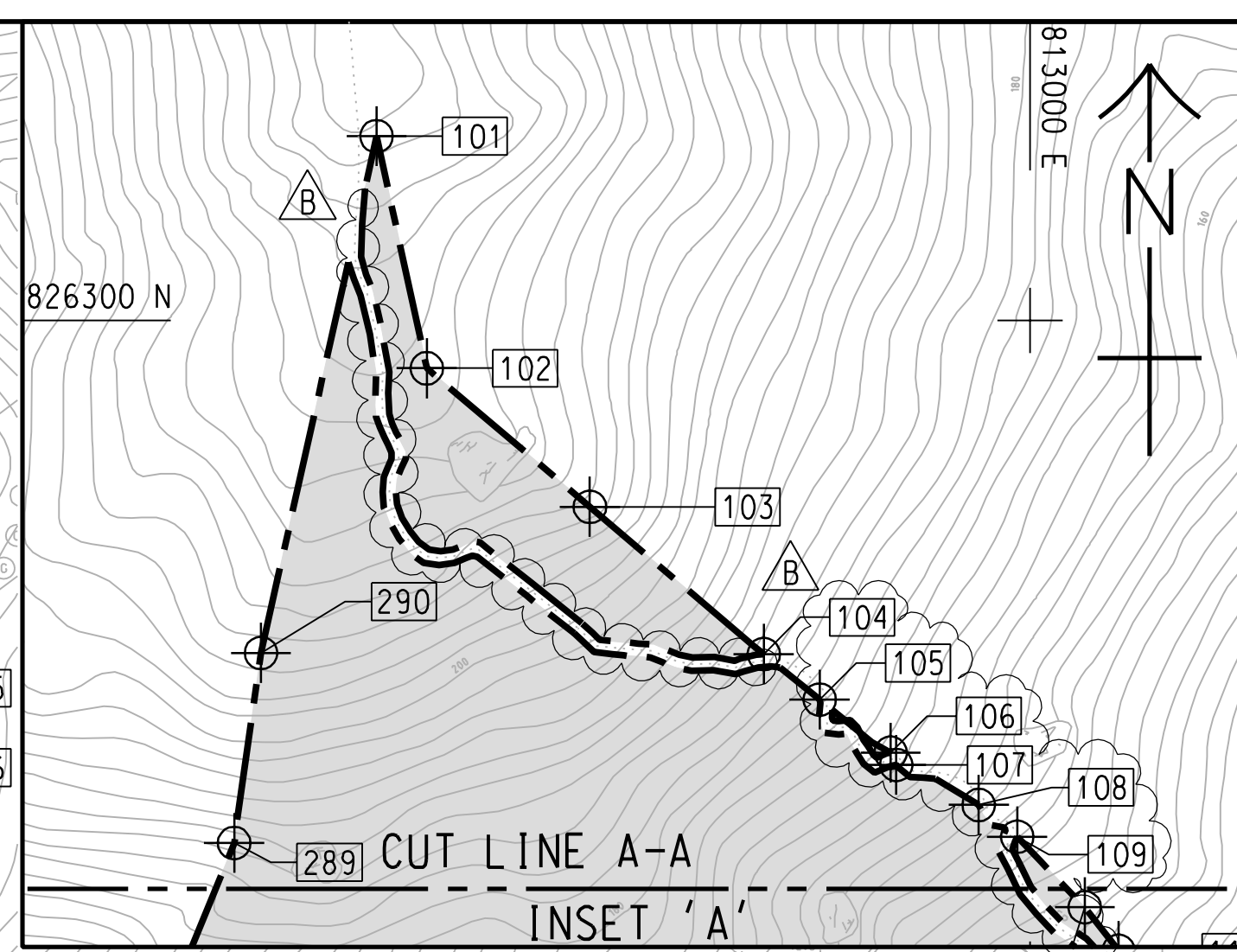
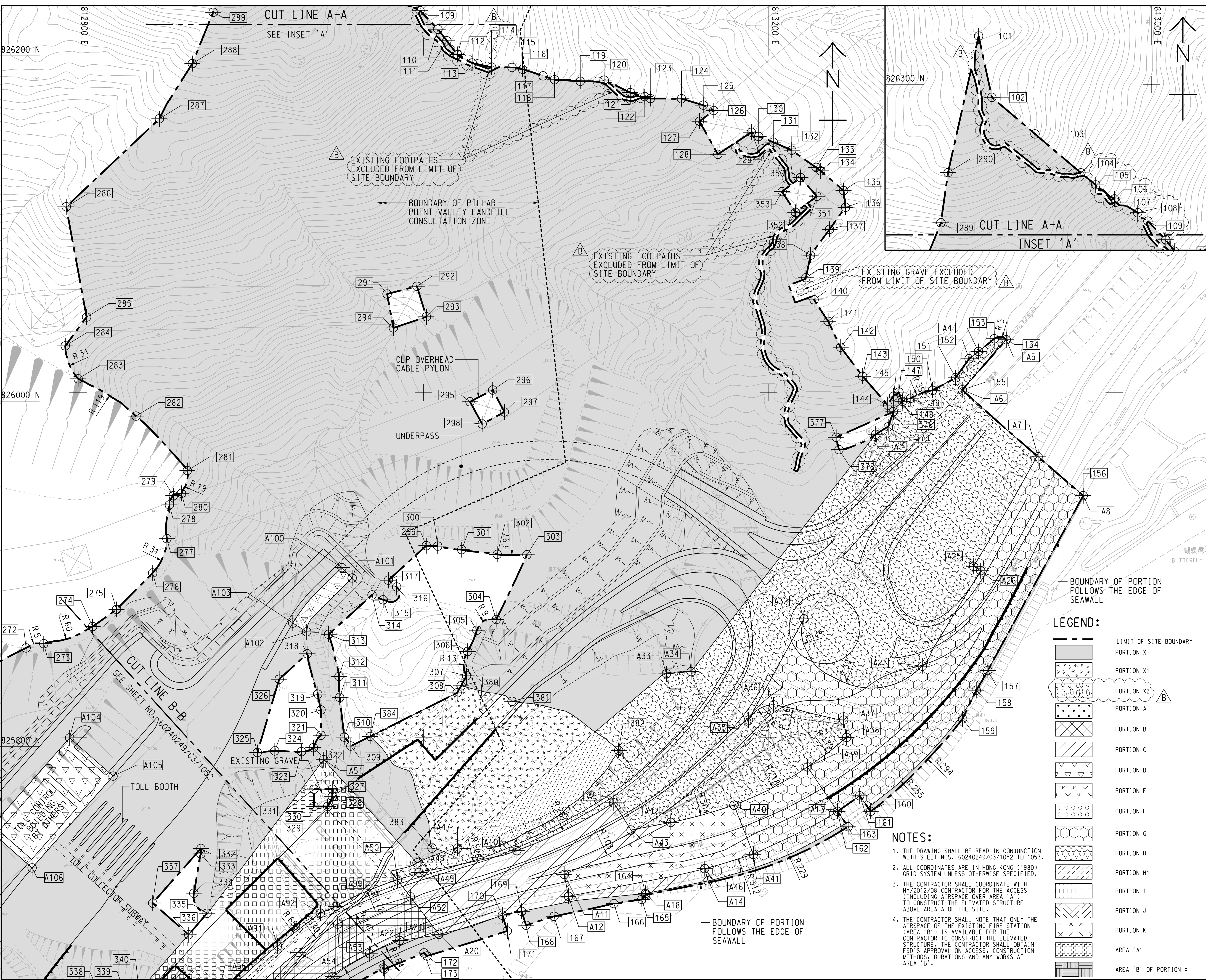
AGREEMENT NO. CE 52/2007(HY)
 TUEN MUN - CHEK LAP KOK LINK - INVESTIGATION
GENERAL LAYOUT OF TM-CLKL

SCALE	A3 1:30000	DATE	JUL. 2009
CHECK	--	DRAWN	WYP
JOB No.	60044963	DRAWING No.	Fig 2.1
		REV	A

Appendix B

Layout Plan of the Contract

Project Management Initials: Designer: PI Checked: ALCF Approved: CWN ISO A1 594mm x 841mm
 Plot File by: LINDO 2014/05/19 PATH: P:\Projects\60240249\DRAWING\CONTRACT\C3\1005C3_05E1.dgn



LEGEND:

- LIMIT OF SITE BOUNDARY
- PORTION X
- PORTION X1
- PORTION X2
- PORTION A
- PORTION B
- PORTION C
- PORTION D
- PORTION E
- PORTION F
- PORTION G
- PORTION H
- PORTION H1
- PORTION I
- PORTION J
- PORTION K
- AREA 'A'
- AREA 'B' OF PORTION X

- NOTES:**
1. THE DRAWING SHALL BE READ IN CONJUNCTION WITH SHEET NOS. 60240249/C3/1052 TO 1053.
 2. ALL COORDINATES ARE IN HONG KONG (1980) GRID SYSTEM UNLESS OTHERWISE SPECIFIED.
 3. THE CONTRACTOR SHALL COORDINATE WITH HY/2012/08 CONTRACTOR FOR THE ACCESS (INCLUDING AIRSPACE OVER AREA 'A') TO CONSTRUCT THE ELEVATED STRUCTURE ABOVE AREA A OF THE SITE.
 4. THE CONTRACTOR SHALL NOTE THAT ONLY THE AIRSPACE OF THE EXISTING FIRE STATION (AREA 'B') IS AVAILABLE FOR THE CONTRACTOR TO CONSTRUCT THE ELEVATED STRUCTURE. THE CONTRACTOR SHALL OBTAIN FSD'S APPROVAL ON ACCESS, CONSTRUCTION METHODS, DURATIONS AND ANY WORKS AT AREA 'B'.

AECOM

PROJECT
 項目
TUEN MUN - CHEK LAP KOK LINK - NORTHERN CONNECTION TOLL PLAZA AND ASSOCIATED WORKS

CONTRACT TITLE
 TUEN MUN - CHEK LAP KOK LINK - NORTHERN CONNECTION TOLL PLAZA AND ASSOCIATED WORKS

CLIENT
 業主

 路政署 HIGHWAYS DEPARTMENT
 港務大樓香港工程管理局
 Hong Kong - Zhuhai - Macao Bridge
 Hong Kong Project Management Office

CONSULTANT
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 分判工程顧問公司

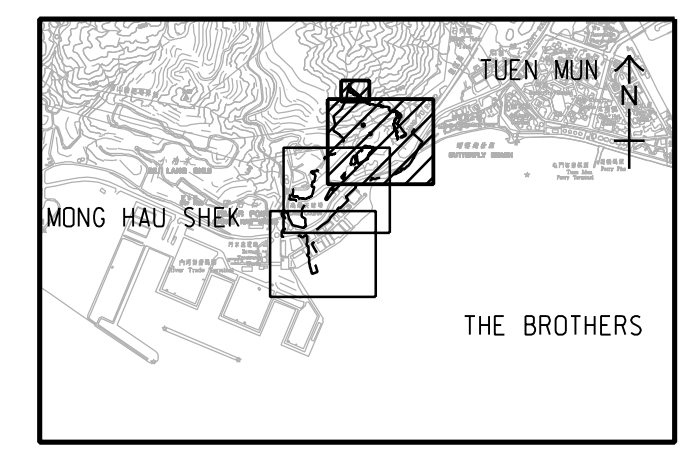
ISSUE/REVISION
 修訂

I/R	DATE	DESCRIPTION	CHK.
B	MAR. 14	TENDER ADDENDUM NO. 2	CWN
A	FEB. 14	TENDER ADDENDUM NO. 1	CWN
-	JAN. 14	TENDER DRAWING	CWN

SCALE
 比例
 A1 1:1000

DIMENSION UNIT
 尺寸單位
 METRES

KEY PLAN
 索引圖
 1:50000



PROJECT NO.
 項目編號
 60240249

CONTRACT NO.
 合約編號
 HY/2013/12

SHEET TITLE
 圖紙名稱
PORTIONS OF SITE AND SITE BOUNDARY SETTING OUT PLAN

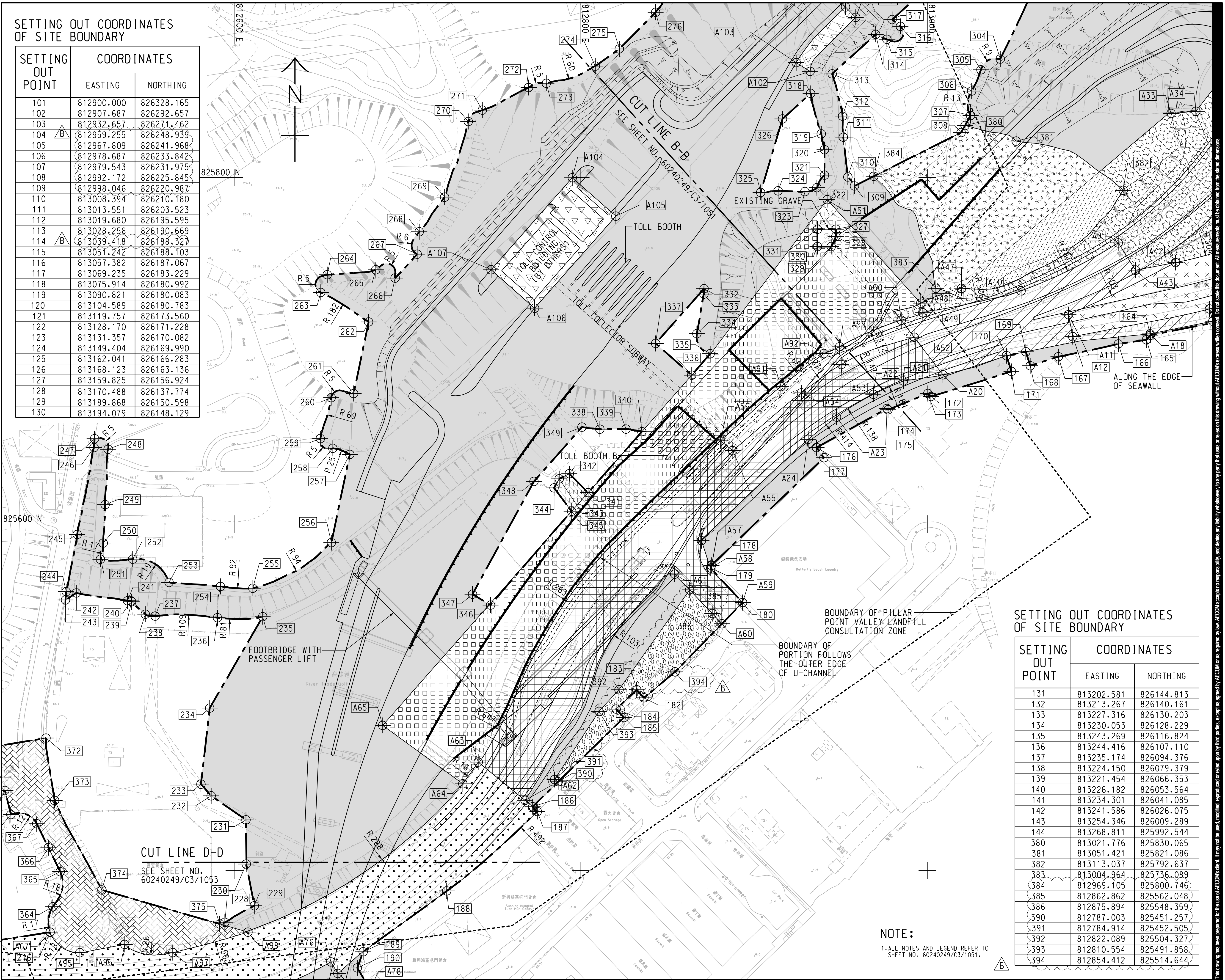
SHEET NUMBER
 圖紙編號
 60240249/C3/1051B

SHEET 1 OF 3

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SETTING OUT COORDINATES OF SITE BOUNDARY

SETTING OUT POINT	COORDINATES	
	EASTING	NORTHING
101	812900.000	826328.165
102	812907.687	826292.657
103	812932.657	826271.462
104	812959.255	826248.939
105	812967.809	826241.968
106	812978.687	826233.842
107	812979.543	826231.975
108	812992.172	826225.845
109	812998.046	826220.987
110	813008.394	826210.180
111	813013.551	826203.523
112	813019.680	826195.595
113	813028.256	826190.669
114	813039.418	826188.327
115	813051.242	826188.103
116	813057.382	826187.067
117	813069.235	826183.229
118	813075.914	826180.992
119	813090.821	826180.083
120	813104.589	826180.783
121	813119.757	826173.560
122	813128.170	826171.228
123	813131.357	826170.082
124	813149.404	826169.990
125	813162.041	826166.283
126	813168.123	826163.136
127	813159.825	826156.924
128	813170.488	826137.774
129	813189.868	826150.598
130	813194.079	826148.129



SETTING OUT COORDINATES OF SITE BOUNDARY

SETTING OUT POINT	COORDINATES	
	EASTING	NORTHING
131	813202.581	826144.813
132	813213.267	826140.161
133	813227.316	826130.203
134	813230.053	826128.229
135	813243.269	826116.824
136	813244.416	826107.110
137	813235.174	826094.376
138	813224.150	826079.379
139	813221.454	826066.353
140	813226.182	826053.564
141	813234.301	826041.085
142	813241.586	826026.075
143	813254.346	826009.289
144	813268.811	825992.544
380	813021.776	825830.065
381	813051.421	825821.086
382	813113.037	825792.637
383	813004.964	825736.089
384	812969.105	825800.746
385	812862.862	825562.048
386	812875.894	825548.359
390	812787.003	825451.257
391	812784.914	825452.505
392	812822.089	825504.327
393	812810.554	825491.858
394	812854.412	825514.644

NOTE:
1. ALL NOTES AND LEGEND REFER TO SHEET NO. 60240249/C3/1051.



PROJECT
TUEN MUN - CHEK LAP KOK LINK

CONTRACT TITLE
TUEN MUN - CHEK LAP KOK LINK - NORTHERN CONNECTION TOLL PLAZA AND ASSOCIATED WORKS

CLIENT
路政署
HIGHWAYS DEPARTMENT
港務大樓香港工程管理局
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Project Management Office

CONSULTANT
AECOM Asia Company Ltd.
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SUB-CONSULTANTS
分列工程顧問公司

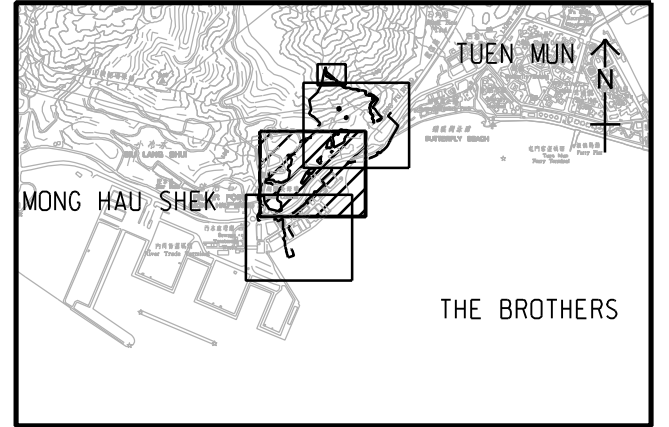
ISSUE/REVISION

I/R	DATE	DESCRIPTION	CHK.
B	MAR. 14	TENDER ADDENDUM NO. 2	CWN
A	FEB. 14	TENDER ADDENDUM NO. 1	CWN
-	JAN. 14	TENDER DRAWING	CWN

STATUS

SCALE
比例: A1 1:1000
DIMENSION UNIT
尺寸單位: METRES

KEY PLAN
索引圖: 1:50000

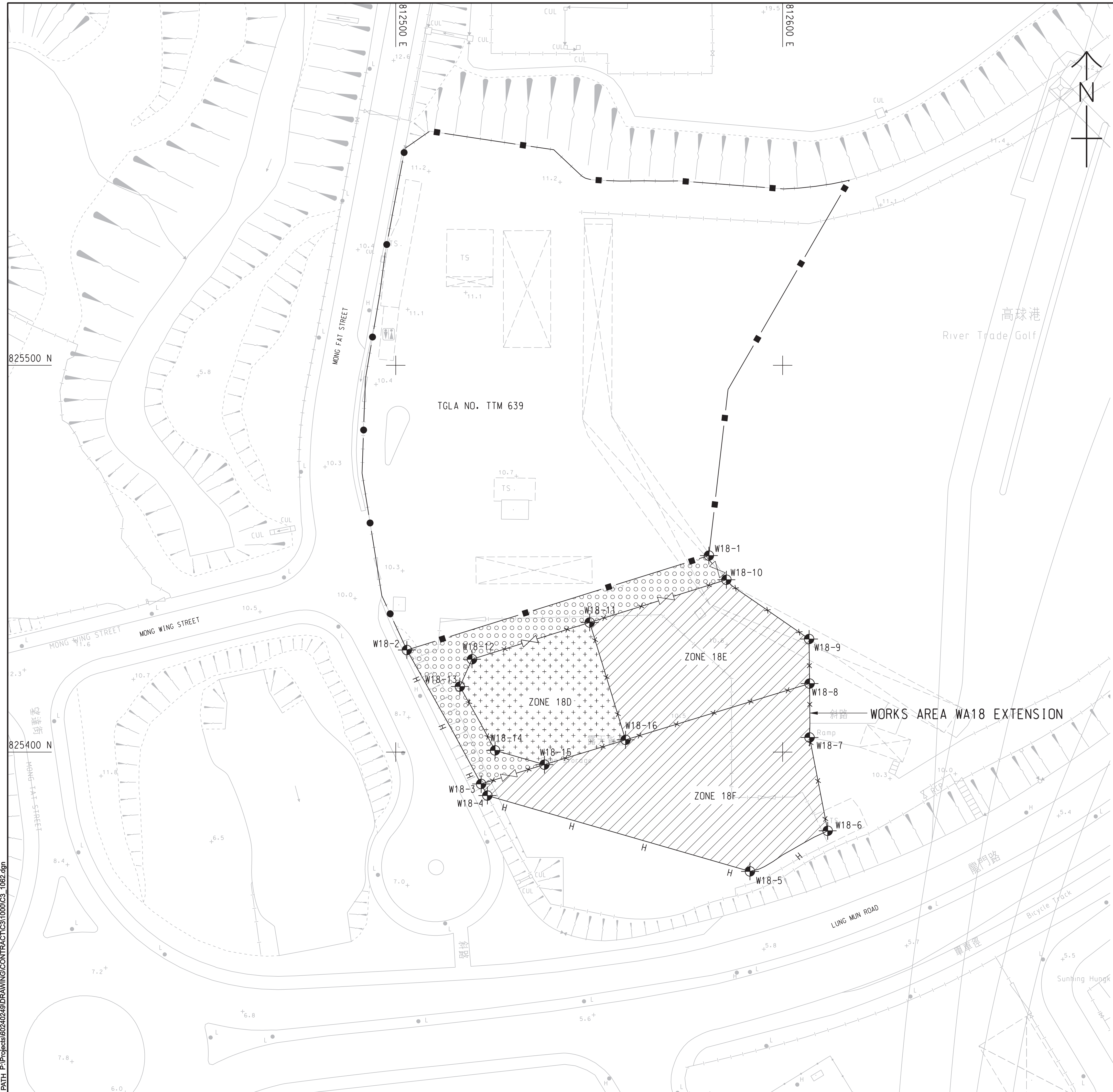


PROJECT NO.
項目編號: 60240249
CONTRACT NO.
合約編號: HY/2013/12

SHEET TITLE
圖紙名稱: PORTIONS OF SITE AND SITE BOUNDARY SETTING OUT PLAN

SHEET NUMBER
圖紙編號: 60240249/C3/1052B

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NOTES:

- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE WORKS AREA KEY PLAN IN SHEET NO. 60240249/C3/1000.
- DEMARCATON OF THE WORKS AREA SHALL BE DETERMINED ON SITE.
- REFER TO HIGHWAYS DEPARTMENT STANDARD DRAWING NOS. H6110 AND H6111 FOR DETAILS OF HOARDING.
- REFER TO HIGHWAYS DEPARTMENT STANDARD DRAWING NOS. H6121 AND H6122 FOR DETAILS OF CHAIN LINK FENCE.
- REFER TO HIGHWAYS DEPARTMENT STANDARD DRAWING NO. H6121 FOR DETAILS OF GATE.
- CHAIN LINK FENCE SHALL BE ERRECTED ALONG THE WORKS AREA BOUNDARY. THE ALIGNMENT AND EXTENT OF HOARDING AND CHAIN LINK FENCE SHOWN ARE INDICATIVE ONLY AND SHALL BE CONFIRMED BY THE ENGINEER.
- THE LOCATION AND WIDTH OF GATE SHOWN ARE INDICATIVE ONLY AND SHALL BE CONFIRMED BY THE ENGINEER.
- THE SETTING OUT INFORMATION AND WORKS AREA CONDITIONS SHOWN IN THIS DRAWING ARE FOR REFERENCE ONLY. THE WORKS AREA BOUNDARY SHALL BE IN ACCORDANCE WITH THE ENGINEERING CONDITIONS FOR TEMPORARY GOVERNMENT LAND ALLOCATION NO. GLA-TM 639. IN CASE OF DISCREPANCY BETWEEN THE BOUNDARY SHOWN ON THIS DRAWING AND THE BOUNDARY INDICATED ON THE ENGINEERING CONDITIONS, THE LATTER SHALL PREVAIL.
- THE WORKS AREAS SHOWN ON THIS DRAWING ARE TO BE SHARED-USED AMONG THE TM-CLKL RELATED CONTRACTS. THE AREAS HATCHED WITH ARE TENTATIVELY ALLOCATED FOR THE USE BY THE CONTRACT.
- THE COMMON AREA SHALL BE CONCRETE PAVED BY THE CONTRACTOR.
- ZONE 18F SHALL BE USED FOR THE SITE ACCOMMODATION OF THE ENGINEER. ZONE 18E SHALL BE USED FOR SITE ACCOMMODATION OF THE CONTRACTOR.
- ZONE 18D IS TO BE USED BY THE CONTRACTOR OF CONTRACT NO. HY/2012/08-TUEN MUN-CHEK LAP KOK LINK-NORTHERN CONNECTION SUB-SEA TUNNEL SECTION TO STORE PLANT AND EQUIPMENT ASSOCIATED WITH THE TBM TUNNELS FROM THE DATE FOR COMMENCEMENT OF THE WORKS TO 126 DAYS FROM THE DATE FOR COMMENCEMENT OF THE WORKS. THE CONTRACTOR SHALL LIAISE AND PROVIDE FREE AND UNOBSTRUCTED 24-HOUR ACCESS FOR THE CONTRACTOR OF CONTRACT NO. HY/2012/08 TO ZONE 18D. THE CONTRACTOR SHALL BE GIVEN THE POSSESSION OF ZONE 18D IN ACCORDANCE WITH APPENDIX TO FORM OF TENDER-P.3.

LEGEND:

- WORKS AREA FOR THE CONTRACT
- COMMON AREA (MAINTAINED UNDER THE CONTRACT) TO BE SHARED-USED WITH OTHER CONTRACTS
- AREA TO BE USED BY THE CONTRACTOR OF CONTRACT NO. HY/2012/08 AND WORKS AREA FOR THIS CONTRACT TO BE EARLY HANDED OVER BY THE CONTRACTOR (SEE NOTES NO. 12 ABOVE)
- HOARDING AND GATE (TO BE ERRECTED AND MAINTAINED UNDER THIS CONTRACT)
- EXISTING CHAIN LINK FENCE MAINTAINED BY OTHERS
- CHAIN LINK FENCE AND GATE (TO BE ERRECTED AND MAINTAINED UNDER THIS CONTRACT)
- EXISTING HOARDING AND GATE MAINTAINED BY OTHERS

SETTING OUT CO-ORDINATES OF WORKS AREA WA18 EXTENSION

POINT	CO-ORDINATES	
	EASTING	NORTHING
W18-1	812580.934	825450.791
W18-2	812502.880	825426.380
W18-3	812522.068	825391.750
W18-4	812523.679	825388.756
W18-5	812591.556	825369.151
W18-6	812611.638	825379.647
W18-7	812606.954	825403.769
W18-8	812606.951	825417.705
W18-9	812606.832	825429.231
W18-10	812585.456	825444.557
W18-11	812550.126	825433.508
W18-12	812519.715	825423.997
W18-13	812516.580	825416.947
W18-14	812525.682	825400.438
W18-15	812538.435	825396.754
W18-16	812559.404	825403.166



PROJECT
 項目
TUEN MUN - CHEK LAP KOK LINK

CONTRACT TITLE
 TUEN MUN - CHEK LAP KOK LINK - NORTHERN CONNECTION TOLL PLAZA AND ASSOCIATED WORKS

CLIENT
 業主
 路政署
HIGHWAYS DEPARTMENT
 港務處大樓香港工程發展處
 Hong Kong - Zhuhai - Macao Bridge
 Hong Kong Project Management Office

CONSULTANT
 工程師有限公司
AECOM Asia Company Ltd.
 www.aecom.com

SUB-CONSULTANTS
 分判工程師有限公司

ISSUE/REVISION

REV	DATE	DESCRIPTION	CHK.
B	MAR. 14	TENDER ADDENDUM NO. 2	CWN
A	FEB. 14	TENDER ADDENDUM NO. 1	CWN
-	JAN. 14	TENDER DRAWING	CWN

STATUS
 階段

SCALE
 比例
 A1 1:500

DIMENSION UNIT
 尺寸單位
 METRES

KEY PLAN
 索引圖

PROJECT NO.
 項目編號
 60240249

CONTRACT NO.
 合約編號
 HY/2013/12

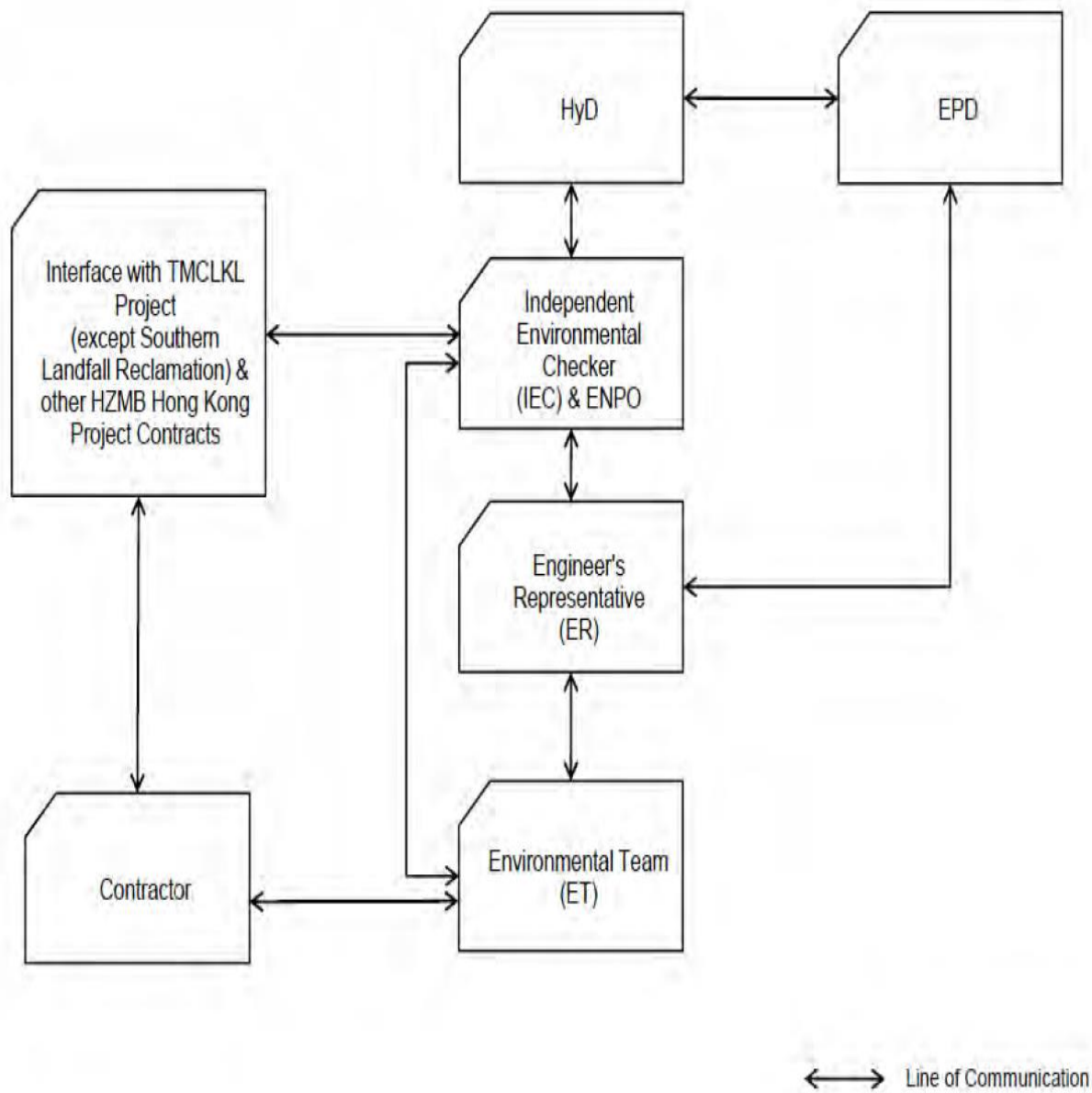
SHEET TITLE
 圖紙名稱
WORKS AREA AND HOARDING PLAN

SHEET NUMBER
 圖紙編號
 60240249/C3/1062B

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Appendix C

Organization of the Contract



Project Organization chart

Organization chart of the Contractor

Contact Details of Key Personnel for the Contract HY/2013/12

Organization	Project Role	Name of Key Staff	Tel No	Fax No.
HyD	Employer	Mr. Patrick Ng	2762 3669	3188 6614
AECOM	Principal Resident Engineer	Mr. S.W. Fok	2218 7209	2218 7399
AECOM	Chief Resident Engineer	Mr. Roger Man	2293 6388	2218 7399
AECOM	Resident Engineer (S&E)	Mr. Kelvin Yeung	22187289	2218 7399
Ramboll	Environmental Project Office Leader (ENPO Leader)	Mr. YH Hui	3465 2850	3465 2899
Ramboll	Independent Environmental Checker (IEC)	Dr. FC Tsang	3465 2851	3465 2899
CKJV	Deputy Project Manager	Mr. Raymond Suen	2253 8309	2253 8399
CKJV	Site Agent	Mr. Wilson Lau	2253 8300	2253 8399
CKJV	Safety and Environmental Manager	Mr. Winson Chung	2273 3185	2375 3655
CKJV	Environmental Officer	Mr. Thomas Tang	2253 8300	2253 8399
CKJV	Environmental Supervisor	Mr. Tommy Law	2253 8300	2253 8399
CKJV	Environmental Supervisor	Mr. Alex Li	2253 8300	2253 8399
AUES	Environmental Team Leader	Mr. T. W. Tam	2959 6059	2959 6079
AUES	Environmental Consultant	Miss Nicola Hon	2959 6059	2959 6079
AUES	Environmental Consultant	Mr. Ben Tam	2959 6059	2959 6079
HKL	Registered Landscape Architect	Kenneth Ng	2866 3903	--

Legend:

HyD (Employer) – Highways Department

AECOM (Engineer) – AECOM Asia Co. Ltd.

CKJV (Main Contractor) – CRBC-Kaden Joint Venture

Ramboll (ENPO and IEC) – Ramboll Hong Kong Limited

AUES (ET) – Action-United Environmental Services & Consulting

HKL(RLA) – Hong Kong Landscape

Appendix D

Master Construction Program

Activity ID	Activity Name	2018			2019		
		Oct	Nov	Dec	Jan	Feb	
HY/2013/12 TMCLK Northern Connection Toll Plaza and Associated-Works Programme-Rev.4A Monthly Update							
Achievement of Stages/ Completion of Sections							
KD10110	KD2 - Stage 2 Completion Civil provisions for E&M/TCSS (H1/G1/G2, abutment w/in Area A)	E&M/TCSS (H1/G1/G2, abutment w/in Area A)					Achievement of Stages/ C
KD10210	KD11 - Sec 8 Completion All Preservation & Protection to Existing Trees	◆ KD11 - Sec 8 Completion All Preservation &					
KD10140	KD4 - Sec 1 Completion TD1, TD2, RW_B, H1f, TC Subway & Bridge, Footbridge	◆ KD4 - Sec 1 Completion TD1, TD2, RW_B,					
KD10180	KD8 - Sec 5 Completion All Remainders of the Works except Works under Sec 1 thru 4	◆ KD8 - Sec 5 Completion All Remainders of th					
KD10150	KD5 - Sec 2 Completion Bridges G1, G2 & H2, Civil provisions for E&M/TCSS in Area A, Portion A/F/X	◆ KD5 - Sec 2 Completion I					
Dismantling of HY/2012/04 Project Office at WA6							
DM10055	Demolition Works						
Toll Plaza Decking TD1-Section 1							
Completion of TD1 in Section 1							
Road pavement and road furniture							
TD121020	Road pavement and remain furniture	Road pavement and remain furniture					
Completion of TD1 in Section 1							
TD121030	Achievement of KD-4(section 1) for TD1	▼ Completion of TD1 in Section 1					◆ Achievement of KD-4(section 1) for TD1
TD121040	KD-4	◆ KD-4					
Toll Plaza Decking TD2-Section 1							
Field Works							
Completion of TD2							
TD220710	Achievement of KD-4(Section 1) for TD2	◆ Achievement of KD-4(Section 1) for TD2					
TD220250	Remaining works(Including Earthing System,Lightning Protection System)	Remaining works(Including Earthing System,					
Toll Plaza Footbridge-Section 1							
Miscellaneous Works							
TFB1450	Remaining works(Fences, Handrailing, Guard-railing, Gates,etc)	Remaining works(Fences, Handrailing, Guard					
Completion of footbridge in section 1							
TFB1460	Achievement of KD-4 (Section 1) for footbridge	◆ Achievement of KD-4 (Section 1) for footbrid					
TFB1470	KD-4	◆ KD-4					
Retaining Structure RW_B-Section 1							
Site Formation - Retaining Structure RW_B							
Achievement of KD-4 (Section 1) for RW_B							

█ Remaining Level of Effort █ Critical Remaining Work
█ Actual Work ◆ Milestone
█ Remaining Work ▼ Summary

**CRBC - Kaden JV
Three-Month Rolling Programme**

Date	Revision	Checked	Approved
27-11-18	4		

Activity ID	Activity Name	2018			2019	
		Oct	Nov	Dec	Jan	Feb
RWB10630	Finishing works including feature wall	Finishing works including feature wall				
RWB10660	Achievement of KD-4(Section 1) for RW_B	◆ Achievement of KD-4(Section 1) for RW_B				
RWB10670	KD-4(Section 1)	◆ KD-4(Section 1)				
RWB10650	Road works	Road works				
Toll Collector Subway & Associated Works-Section 1		Toll Collector Subway & Associated Works-S				
Toll Collector Bridge (Portion I)-Section 1		Toll Collector Bridge (Portion I)-Section 1				
Completion of Toll Collector Bridge in Section 1		Completion of Toll Collector Bridge in Section				
TCS1310	Finishing work,louver works	Finishing work,louver works				
TCS1330	Drainage works,Completion civil provision works for TCSS and E&M	Drainage works,Completion civil provision works for TCSS and E&M				
TCS1350	Achievement of KD-4 (Section 1) for toll collector bridge	◆ Achievement of KD-4 (Section 1) for toll collector bridge				
TCS1640	KD-4-Section 1 Completion TD1,TD2,RW_B,H1f,TC Subway&bridge,Footbridge	◆ KD-4-Section 1 Completion TD1,TD2,RW_B				
Toll Collector Subway & Associate Works (Portion I)-Section 1		Toll Collector Subway & Associate Works (Portion I)-Section 1				
Completion of Section 1 for Toll collector subway(Portion I)		Completion of Section 1 for Toll collector subway				
TCS1550	Internal finishing works	Internal finishing works				
TCS1660	KD-4-Section 1 Completion TD1,TD2,RW_B,H1f,TC Subway&bridge,Footbridge	◆ KD-4-Section 1 Completion TD1,TD2,RW_B				
TCS1570	Achievement of KD4 (Section 1) for toll collector subway(portion I)	◆ Achievement of KD4 (Section 1) for toll collector subway(portion I)				
TCS1560	Remaining works(Doors, Windows,etc.)	Remaining works(Doors, Windows,etc.)				
Toll Collector Subway (Portion X)-Section 5		Toll Collector Subway (Portion X)-Section 5				
Section 5		Section 5				
TCS1200	Drainage works and street furniture installation for TCSS and E&M installation	Drainage works and street furniture installation for TCSS and E&M installation				
TCS1210	Finishing works	Finishing works				
TCS1230	Achievement of KD-8(Section 5)for toll collector subway(Portion X)	◆ Achievement of KD-8(Section 5)for toll collector subway(Portion X)				
TCS1670	KD-8-(Section 5)	◆ KD-8-(Section 5)				
TCS1220	Miscellaneous	Miscellaneous				
Bridge G2		Bridge G2				
Completion of Bridge G2		Completion of Bridge G2				
BG23110	Drainage works	Drainage works				
BG23120	Road work	Road work				

█ Remaining Level of Effort █ Critical Remaining Work
█ Actual Work ◆ Milestone
█ Remaining Work ▼ Summary

CRBC - Kaden JV
Three-Month Rolling Programme

Date	Revision	Checked	Approved
27-11-18	4		

Activity ID	Activity Name	2018			2019		
		Oct	Nov	Dec	Jan	Feb	
BG23150	KD-5			◆ KD-5			
BG23130	Remaining works(include Lightning Protection System,Earthing System,etc)						◆ Remaining works(include Lightning Protection System, Earthing System, etc)
BG23140	Achievement of KD-5(Section 2)for Bridge G2			◆ Achievement of KD-5(Section 2)for Bridge G2			
Bridge G1							Bridge G1
Achievement of KD-2(Stage 2) for Bridge G1							
BG112700	Achievement of KD-2(Stage 2)for Bridge G1						
BG112710	KD-2						
Completion of Bridge G1							Completion of Bridge G1
BG112720	Drainage work						Drainage work
BG112730	Road Work						Road Work
BG112740	Miscellaneous Works						Miscellaneous Works
BG112750	Achievement of KD-5(Section 2)for Bridge G1					◆ Achievement of KD-5(Section 2)for Bridge G1	
BG112760	KD-5					◆ KD-5	
Bridge H1-Section 2							Bridge H1-Section 2
Achievement of KD-2(Stage 2) for Bridge H1							
BH12710	KD-2						
Completion of Bridge H1							Completion of Bridge H1
BH12400	Drainage work						Drainage work
BH12410	Road Work						Road Work
BH12640	Miscellaneous Works						Miscellaneous Works
BH12740	KD-5					◆ KD-5	
BH12660	Achievement of KD-5(Section 2)for Bridge H1					◆ Achievement of KD-5(Section 2)for Bridge H1	
Culvert 2 & Culvert 3 and Existing Box Culvert							Culvert 2 & Culvert 3 and Existing Box Culvert
Culvert 2							Culvert 2
CCE20170	Bay 17A						Bay 17A
CCE20180	MH1						MH1
Existing Sewer Box Culvert							Existing Sewer Box Culvert
MH2-MH3							MH2-MH3

█ Remaining Level of Effort █ Critical Remaining Work
█ Actual Work ◆ Milestone
█ Remaining Work ⇨ Summary

**CRBC - Kaden JV
Three-Month Rolling Programme**

Date	Revision	Checked	Approved
27-11-18	4		

Activity ID	Activity Name	2018			2019	
		Oct	Nov	Dec	Jan	Feb
CCE20250	Abandon the existing culvert with foam concrete					
MH1-MH8						
CCE20260	Achievement of KD-3(Stage 3) for Sewer Box Culvert					
CCE20270	KD-3					
Site Formation - Retaining Structure RW_A						
Achievement of KD-8 (Section 5) for RW_A						
RWA20202	Road Works					
RWA20220	KD-8					
RWA20204	Remaining Works(Movement joint,etc.)					
RWA20210	Achievement of KD-8(Section 5) for RW_A					
Retaining Structure RW_E						
Achievement of KD-2(Stage 2) for RW_E						
RWE20230	Achievement of KD-2(Stage 2) for RW_E					
RWE20260	KD-2					
Achievement of KD-5 (Section 2) for RW_E						
RWE20240	Remaining works(Door, etc.)					
RWE20250	Achievement of KD-5(Section 2) for RW_E					
RWE20270	KD-5					
Site Formation - Retaining Structure for Slope TP_F						
Achievement of KD-8 (Section 5) for TP_F						
RWF31410	Remaining works(Brickwork and Blockwork,etc)					
RWF31420	Achievement of KD-8(section 5) for TP_F					
RWF31490	KD-8					
Site Formation - Retaining Structure for Slope TP_G						
MJ17 -End						
RWG1030	Blinding Layer					
RWG1040	Base slab					
RWG1050	Wall					

█ Remaining Level of Effort █ Critical Remaining Work
█ Actual Work ◆ Milestone
█ Remaining Work ▼ Summary

**CRBC - Kaden JV
Three-Month Rolling Programme**

Date	Revision	Checked	Approved
27-11-18	4		

Activity ID	Activity Name	2018			2019	
		Oct	Nov	Dec	Jan	Feb
RWG1060	Backfilling			Backfilling		
MJ16-MJ17		MJ16-MJ17				
RWG1080	Blinding Layer	Blinding Layer				
RWG1090	Base slab		Base slab			
RWG1100	Wall			Wall		
RWG1110	Backfilling				Backfilling	
MJ15-MJ16		MJ15-MJ16				
RWG1130	Blinding Layer	Blinding Layer				
RWG1140	Base slab	Base slab				
RWG1115	Civil Works for TCSS and E&M			Civil Works for TCSS and E&M		
RWG1150	Wall			Wall		
RWG1160	Backfilling				Backfilling	
MJ14-MJ15		MJ14-MJ15				
RWG1270	Excavation	Excavation				
RWG1280	Blinding Layer		Blinding Layer			
RWG1290	Base slab		Base slab			
RWG1300	Wall			Wall		
RWG1310	Backfilling				Backfilling	
MJ13-MJ14		MJ13-MJ14				
RWG1220	Excavation	Excavation				
RWG1230	Blinding Layer		Blinding Layer			
RWG1240	Base slab		Base slab			
RWG1250	Wall			Wall		
MJ12-MJ13		MJ12-MJ13				
RWG1170	Excavation	Excavation				
RWG1180	Blinding Layer		Blinding Layer			
RWG1190	Base slab		Base slab			

Remaining Level of Effort	Critical Remaining Work
Actual Work	Milestone
Remaining Work	Summary

CRBC - Kaden JV
Three-Month Rolling Programme

Date	Revision	Checked	Approved
27-11-18	4		

Activity ID	Activity Name	2018			2019	
		Oct	Nov	Dec	Jan	Feb
RWG1200	Wall					Wall
MJ11-MJ12						
RWG1320	Excavation					
RWG1330	Blinding Layer					
RWG1340	Base slab					Base slab
RWG1350	Wall					
CH285-MJ11						
RWG1370	Excavation					
RWG1380	Blinding Layer					
RWG1390	Base slab					
RWG1400	Wall					
Achievement of KD-3(Stage 3) for TP_G						
RWG1425	Achievement of KD-3(Stage 3) for TP-G					▼ Achievement of KD-3(Stage 3) for TP_G ◆ Achievement of KD-3(Stage 3) for TP-G
RWG1445	KD-3					◆ KD-3
Site Formation - Slope TP_E & Associated Works						
Achievement of KD-8(Section 5) for Slope E						
TPE65320	Remaining works include landscape works and establishment works					Remaining works include landscape works and establishment works
TPE65330	Achievement of KD-8(Section 5) for slope E					◆ Achievement of KD-8(Section 5) for slope E
TPE65360	KD-8(Section 5)					◆ KD-8(Section 5)
Natural Terrain Hazard Mitigation Measures						
Achievement of KD-8(Section 5)						
NTH10140	KD-8					▼ Natural Terrain Hazard Mitigation Measures ▼ Achievement of KD-8(Section 5) ◆ KD-8
Vehicular Underpass TN-01						
Achievement of KD-8 (Section 5) for TN-01						
UDP20640	Road works and Remaining works(Sundry Metalwork,etc)					Road works and Remaining works(Sundry Metalwo
UDP20650	Achievement of KD-8(Section 5)for Vehicular Underpass					◆ Achievement of KD-8(Section 5)for Vehicular Unde
UDP20670	KD-8(Section 5)					◆ KD-8(Section 5)
Road and Drainage Work ,Utilities Works at for Lung Fu Road Roundabout						

Remaining Level of Effort Critical Remaining Work
 Actual Work ◆ Milestone
 Remaining Work ▼ Summary

**CRBC - Kaden JV
Three-Month Rolling Programme**

Date	Revision	Checked	Approved
27-11-18	4		

Activity ID	Activity Name	2018			2019	
		Oct	Nov	Dec	Jan	Feb
Section 3						
Utilites installation ,road and drainage works (TTA Stage 2)						
LFR10750	HKC Cable	[Blue bar from Oct to Nov]				
LFR10760	Pubic Lighting	[Blue bar from Oct to Nov]				
LFR10770	CLP + CRD	[Blue bar from Oct to Nov]				
LFR10780	TraxComm	[Blue bar from Oct to Nov]				
LFR10680	PCCW	[Blue bar from Oct to Nov]				
LFR10690	Hutchison Global Communication Cable	[Blue bar from Oct to Nov]				
LFR10700	Hong Kong Boaroband Network	[Blue bar from Oct to Nov]				
LFR10710	Wharf T&T Duct and Joint Box	[Blue bar from Oct to Nov]				
LFR10720	New World Telecom	[Blue bar from Oct to Nov]				
LFR10730	Town Gas	[Blue bar from Oct to Nov]				
LFR10740	Smartone Cable	[Blue bar from Oct to Nov]				
LFR10660	Drainage Work	[Blue bar from Oct to Nov]				
LFR10670	DN700,800	[Blue bar from Oct to Nov]				
LFR10790	Irrigation System	[Red bar from Dec to Jan]				
LFR10800	TTA Stage 2-1	[Red bar from Dec to Jan]				
LFR10630	Street Furniture	[Blue bar from Oct to Nov] [Red bar from Dec to Jan]				
LFR10640	Sign Gantry	[Red bar from Dec to Jan]				
LFR10650	E&M, TCSS	[Blue bar from Oct to Nov] [Red bar from Dec to Jan]				
Utilites installation ,road and drainage works (TTA Stage 2-1)						
LFR10220	CLP+ CRD	[Red bar from Dec to Jan]				
LFR10230	DN450	[Red bar from Dec to Jan]				
LFR10240	Road Pavement	[Red bar from Dec to Jan]				
LFR10250	Landscapping	[Red bar from Dec to Jan]				
Road and Drainage Work ,Utilities Works at Lung Mun Road						
Lung Mun Road (Westbound)						
Ho Suen Street South						

█ Remaining Level of Effort █ Critical Remaining Work
█ Actual Work ◆ Milestone
█ Remaining Work ▾ Summary

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Date	Revision	Checked	Approved
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Activity ID	Activity Name	2018			2019	
		Oct	Nov	Dec	Jan	Feb
LMRWA1250	Wharf T&T Duct and Joint Box	Wharf T&T Duct and Joint Box				
LMRWA1260	New World Telecom	New World Telecom				
LMRWA1270	Town Gas	Town Gas				
LMRWA1241	Street Furniture(Including eastbound)	Street Furniture(Inclu				
LMRWA1242	Sign Gantry(Including eastbound)	Sign Gantry(Includin				
LMRWA1280	Smartone Cable	Smartone Cab				
LMRWA1290	HKC Cable	HKC Cable				
Lung Mun Road (Eastbound)						
LMREA1000	Drainage Work	Drainage Work				
LMREA1020	DN700 CHD 0 - 17	DN700 CHD 0 - 17				
LMREA1030	DN700 CHR 0 - 46	DN700 CHR 0 - 46				
LMREA1040	CLP	CLP				
LMREA1050	Hutchison Global Communication Cable	Hutchison Global Communication Cable				
LMREA1060	PCCW	PCCW				
LMREA1070	Road Pavement	Road Pavement				
Utilites installation ,road and drainage works for East Portal						
EPA1160	Irrigation System	Utilites installation ,road and drainage works f Irrigation System				
Utilites installation ,road and drainage works near portion D						
TOLLA1150	Irrigation System	Utilites installation ,road and drainage works n Irrigation System				
TOLLA1160	Landscapping	Landscapping				
TOLLA1170	Footpath Pavement	Footpath Pavement				
Sewage, Irrigation and Road& Drainage Works						
SAI10020	Sewage, irrigation and road&drainage works - RW_B-north side	Sewage, Irrigation and R Sewage, irrigation and road&drainage works - RW_B-north side				
SAI10040	Sewage, irrigation and road&drainage works -G1&H1-north side	Sewage, irrigation and road&drainage works -G1&H1-north side				
SAI10030	Sewage, irrigation and road&drainage works - RW_B-south side	Sewage, irrigation and road&drainage works - RW_B-south side				
SAI10050	Sewage, irrigation and road&drainage works - G1&H1-south side	Sewage, irrigation and ro				
Section 6						

█ Remaining Level of Effort █ Critical Remaining Work
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Date	Revision	Checked	Approved
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Activity ID	Activity Name	2018			2019	
		Oct	Nov	Dec	Jan	Feb
SEC61000	Landscape softworks in KD-1 area	Landscape softworks in KD-1 area				
SEC61020	Landscape softworks in KD-2 area					
SEC61040	Landscape softworks in KD-3 area					
Section 8		▼ Section 8				
SEC81050	KD-11	◆ KD-11				
Achievement of Key Dates		▶ Achievement of Key				
AK10150	Achievement of KD-2(Stage 2)for Bridge G1					
AK10230	Achievement of KD-2(Stage 2) for RW_E					
AK10100	Achievement of KD-4 (Section 1) for Toll Collector Bridge	◆ Achievement of KD-4 (Section 1) for Toll Collector Br				
AK10350	Achievement of KD-8(Section 5) for slope D	◆ Achievement of KD-8(Section 5) for slope D				
AK10310	Achievement of KD-8(Section 5) for slope B	◆ Achievement of KD-8(Section 5) for slope B				
AK10290	Achievement of KD-8(Section 5) for slope A	◆ Achievement of KD-8(Section 5) for slope A				
AK10330	Achievement of KD-8(Section 5) for slope C	◆ Achievement of KD-8(Section 5) for slope C				
AK10260	Achievement of KD-8(section 5) for TP_F	◆ Achievement of KD-8(section 5) for TP_F				
AK10390	Achievement of KD-8(Section 5)for Vehicular Underpass	◆ Achievement of KD-8(Section 5)for Vehicular Unde				
AK10050	Achievement of KD-4 (Section 1) for Footbridge	◆ Achievement of KD-4 (Section 1) for Footbrid				
AK10070	Achievement of KD-4(Section 1) for RW_B	◆ Achievement of KD-4(Section 1) for RW_B				
AK10110	Achievement of KD4 (Section 1) for Toll Collector Subway(portion I)	◆ Achievement of KD4 (Section 1) for Toll Coll				
AK10130	Achievement of KD-8(Section 5)for Toll Collector Subway(Portion X)	◆ Achievement of KD-8(Section 5)for Toll Coll				
AK10145	Achievement of KD-5(Section 2)for Bridge G2	◆ Achievement of KD-5(Section 2)for Bridge G				
AK10220	Achievement of KD-8(Section 5) for RW_A	◆ Achievement of KD-8(Section 5) for RW_A				
AK10240	Achievement of KD-5(Section 2) for RW_E	◆ Achievement of KD-5(Section 2) for RW_E				
AK10370	Achievement of KD-8(Section 5) for slope E	◆ Achievement of KD-8(Section 5) for slope E				
AK10010	Achievement of KD-4(section 1) for TD1	◆ Achievement of KD-4(section 1) for TD1				
AK10030	Achievement of KD-4(Section 1) for TD2	◆ Achievement of KD-4(Section 1) for TD2				
AK10480	Achievement of KD-8(Section 5)for Road and drainage works near east portal	◆ Achievement of KD-8(Section 5)for Road an				

█ Remaining Level of Effort █ Critical Remaining Work
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Activity ID	Activity Name	2018			2019	
		Oct	Nov	Dec	Jan	Feb
AK10430	Achievement of KD-3(Stage 3) for RW_G			◆ Achievement of KD-3(Stage 3) for RW_G		
AK10200	Achievement of KD-3(Stage 3) for Sewer Box Culvert			◆ Achievement of KD-3(Stage 3) for Se		
AK10400	Achievement of KD-3(Stage 3) for Roundabout works			◆ Achievement of KD-3(Stage		
AK10160	Achievement of KD-5(Section 2)for Bridge G1			◆ Achievement of KD-5(Se		
AK10180	Achievement of KD-5(Section 2)for Bridge H1			◆ Achievement of KD-5(Se		
AK10455	Achievement of KD-3(Stage 3) for Road and draiange Works under TD1					◆ Achievement of KD-

█ Remaining Level of Effort █ Critical Remaining Work
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**CRBC - Kaden JV
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Date	Revision	Checked	Approved
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Activity ID	Activity Name	2019				
		Jan	Feb	Mar	Apr	May
HY/2013/12 TMCLK Northern Connection Toll Plaza and Associated-Works Programme-Rev.4A Monthly Update						
Achievement of Stages/ Completion of Sections						
KD10150	KD5 - Sec 2 Completion Bridges G1, G2 & H2, Civil provisions for E&M/TCSS in Area A, Portion A/F/X					
KD10140	KD4 - Sec 1 Completion TD1, TD2, RW_B, H1f, TC Subway & Bridge, Footbridge					
KD10210	KD11 - Sec 8 Completion All Preservation & Protection to Existing Trees					◆ KD11 - Sec 8 Completion All Preserva
KD10180	KD8 - Sec 5 Completion All Remainders of the Works except Works under Sec 1 thru 4					◆ KD8 - Sec 5 Completion All Remaind
Dismantling of HY/2012/04 Project Office at WA6						
DM10060	Completion of Demolition					
Toll Plaza Decking TD1-Section 1						
Completion of TD1 in Section 1						
Completion of TD1 in Section 1						
TD121030	Achievement of KD-4(section 1) for TD1					
TD121040	KD-4					
Toll Plaza Decking TD2-Section 1						
Field Works						
Completion of TD2						
TD220710	Achievement of KD-4(Section 1) for TD2					
Toll Plaza Footbridge-Section 1						
Completion of footbridge in section 1						
TFB1460	Achievement of KD-4 (Section 1) for footbridge					
TFB1470	KD-4					
Retaining Structure RW_B-Section 1						
Site Formation - Retaining Structure RW_B						

█ Remaining Level of Effort █ Critical Remaining Work
█ Actual Work ◆ Milestone
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Date	Revision	Checked	Approved
26-02-19	4		

Activity ID	Activity Name	2019				
		Jan	Feb	Mar	Apr	May
Achievement of KD-4 (Section 1) for RW_B		Achievement of KD-4 (Section 1) for RW_B				
RWB10660	Achievement of KD-4(Section 1) for RW_B	Achievement of KD-4(Section 1) for RW_B				
RWB10670	KD-4(Section 1)	Section 1)				
Toll Collector Subway & Associated Works-Section 1		Toll Collector Subway & Associated Works-Section 1				
Toll Collector Bridge (Portion I)-Section 1		Toll Collector Bridge (Portion I)-Section 1				
Completion of Toll Collector Bridge in Section 1		Completion of Toll Collector Bridge in Section 1				
TCS1640	KD-4-Section 1 Completion TD1,TD2,RW_B,H1f,TC Subway&bridge,Footbridge	Section 1 Completion TD1,TD2,RW_B,H1f,TC Subway&bridge				
Toll Collector Subway & Associate Works (Portion I)-Section 1		Toll Collector Subway & Associate Works (Portion I)-Section 1				
Completion of Section 1 for Toll collector subway(Portion I)		Completion of Section 1 for Toll collector subway(Portion I)				
TCS1660	KD-4-Section 1 Completion TD1,TD2,RW_B,H1f,TC Subway&bridge,Footbridge	Section 1 Completion TD1,TD2,RW_B,H1f,TC Subway&bridge				
TCS1570	Achievement of KD4 (Section 1) for toll collector subway(portion I)	Achievement of KD4 (Section 1) for toll collector subway(portion I)				
Toll Collector Subway (Portion X)-Section 5		Toll Collector Subway (Portion X)-Section 5				
Section 5		Section 5				
TCS1230	Achievement of KD-8(Section 5)for toll collector subway(Portion X)	◆ Achievement of: KD-8(Section 5)for t				
TCS1670	KD-8-(Section 5)	◆ KD-8-(Section 5)				
TCS1220	Miscellaneous	Miscellaneous				
Bridge G2		Bridge G2				
Completion of Bridge G2		Completion of Bridge G2				
BG23150	KD-5	Completion of Bridge G2				
BG23140	Achievement of KD-5(Section 2)for Bridge G2	Achievement of KD-5(Section 2)for Bridge G2				
Bridge G1		Bridge G1				
Completion of Bridge G1		Completion of Bridge G1				
BG112750	Achievement of KD-5(Section 2)for Bridge G1	Achievement of KD-5(Section 2)for Bridge G1				

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Activity ID	Activity Name	2019				
		Jan	Feb	Mar	Apr	May
BG112760	KD-5		◆ KD-5			
Bridge H1-Section 2		H1-Section 2				
Completion of Bridge H1		Completion of Bridge H1				
BH12740	KD-5					
BH12640	Miscellaneous Works					
BH12660	Achievement of KD-5(Section 2)for Bridge H1					
Culvert 2 & Culvert 3 and Existing Box Culvert		Culvert 2 & Culvert 3 and Existing				
Culvert 2		Culvert 2				
CCE20180	MH1					
CCE20170	Bay 17A					
Existing Sewer Box Culvert		Existing Sewer Box Culvert				
MH2-MH3		MH2-MH3				
CCE20250	Abandon the existing culvert with foam concrete					
MH1-MH8		MH1-MH8				
CCE20260	Achievement of KD-3(Stage 3) for Sewer Box Culvert					
CCE20270	KD-3					
Site Formation - Retaining Structure RW_A		Site Formation - Retaining Structure				
Achievement of KD-8 (Section 5) for RW_A		Achievement of KD-8 (Section 5) for				
RWA20202	Road Works					
RWA20220	KD-8					
RWA20204	Remaining Works(Movement joint,etc.)					
RWA20210	Achievement of KD-8(Section 5) for RW_A					
Retaining Structure RW_E		Retaining Structure RW_E				

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Activity ID	Activity Name	2019				
		Jan	Feb	Mar	Apr	May
Achievement of KD-5 (Section 2) for RW_E		ment of KD-5 (Section 2) for RW_E				
RWE20250	Achievement of KD-5(Section 2) for RW_E	ment of KD-5(Section 2) for RW_E				
RWE20270	KD-5	▼ Site Formation - Retaining Structure fo ▼ Achievement of KD-8 (Section 5) for ◆ KD-8				
Site Formation - Retaining Structure for Slope TP_F						
Achievement of KD-8 (Section 5) for TP_F						
RWF31490	KD-8					
Site Formation - Retaining Structure for Slope TP_G						
MJ17 -End		▼ MJ17 -End Backfilling				
RWG1060	Backfilling					
MJ16-MJ17		▼ MJ16-MJ17 Backfilling				
RWG1110	Backfilling					
MJ15-MJ16		▼ MJ15-MJ16 Backfilling Civil Works for TCSS and E&M				
RWG1150	Wall					
RWG1160	Backfilling					
RWG1115	Civil Works for TCSS and E&M					
MJ14-MJ15		▼ MJ14-MJ15 Wall Backfilling				
RWG1300	Wall					
RWG1310	Backfilling					
MJ13-MJ14		▼ MJ13-MJ14 Wall Backfilling				
RWG1250	Wall					
RWG1260	Backfilling					
MJ12-MJ13		▼ MJ12-MJ13 Wall				
RWG1200	Wall					

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Activity ID	Activity Name	2019				
		Jan	Feb	Mar	Apr	May
RWG1210	Backfilling	Backfilling				
MJ11-MJ12		MJ11-MJ12				
RWG1350	Wall					
RWG1340	Base slab	Base slab				
RWG1360	Backfilling	Backfilling				
CH285-MJ11						
RWG1390	Base slab					
RWG1400	Wall					
RWG1410	Backfilling	Backfilling				
RWG1420	Pavement and Remaining works	Backfilling				
Achievement of KD-3(Stage 3) for TP_G						
RWG1425	Achievement of KD-3(Stage 3) for TP-G					
RWG1445	KD-3					
Site Formation - Slope TP_E & Associated Works		<ul style="list-style-type: none"> Site Formation - Slope TP_E & Assoc Achievement of KD-8(Section:5) for S KD-8(Section 5) Natural Terrain Hazard Mitigation Mea Achievement of KD-8(Section:5) 				
Achievement of KD-8(Section 5) for Slope E						
TPE65360	KD-8(Section 5)					
Natural Terrain Hazard Mitigation Measures						
Achievement of KD-8(Section 5)						
NTH10140	KD-8	KD-8				
Vehicular Underpass TN-01		Vehicular Underpass TN-01				
Achievement of KD-8 (Section 5) for TN-01		Achievement of KD-8 (Section 5) for				
UDP20670	KD-8(Section 5)	KD-8(Section 5)				
UDP20640	Road works and Remaining works(Sundry Metalwork,etc)	Road works and Remaining works(Su				

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Activity ID	Activity Name	2019				
		Jan	Feb	Mar	Apr	May
UDP20650	Achievement of KD-8(Section 5)for Vehicular Underpass					◆ Achievement of KD-8(Section 5)for V
Road and Drainage Work ,Utilities Works at for Lung Fu Road Roundabout						
Section 3						
Utilites installation ,road and drainage works (TTA Stage 2)						
LFR10650	E&M, TCSS	▶ Utilites installation ,road and drainage				
LFR10630	Street Furniture	▶ E&M, TCSS				
LFR10640	Sign Gantry	▶ Street Furniture				
Utilites installation ,road and drainage works (TTA Stage 2-1)						
LFR10220	CLP+ CRD	▶ Sign Gantry				
LFR10230	DN450	▶ CLP+ CRD				
LFR10240	Road Pavement	▶ DN450				
LFR10250	Landscapping	▶ Road Pa				
LFR10260	Footpath Pavement	▶ Landscapping				
Road and Drainage Work ,Utilities Works at Lung Mun Road						
Lung Mun Road (Westbound)						
Ho Suen Street South						
LMRWA1270	Town Gas	▶ Ho Suen St				
LMRWA1280	Smartone Cable	▶ Town Gas				
LMRWA1290	HKC Cable	▶ Smartone Cable				
LMRWA1300	Pubic Lighting	▶ HKC Cable				
LMRWA1310	CLP	▶ Pubic Lighting				
LMRWA1320	TraxComm	▶ CLP				
LMRWA1330	Irrigation System	▶ TraxComm				
					▶ Irrigation System	

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Activity ID	Activity Name	2019				
		Jan	Feb	Mar	Apr	May
LMRWA1340	Road Pavement	Road Pavement				
LMRWA1241	Street Furniture(Including eastbound)	Street Furniture(Inclu				
LMRWA1242	Sign Gantry(Including eastbound)	Sign Gantry(Includ				
LMRWA1370	Footpath Pavement	Footpath Pa				
Lung Mun Road (Eastbound)		Lung Mun Road (E				
LMREA1070	Road Pavement	Road Pavement				
LMREA1090	Footpath Pavement	Footpath Pavement				
Utilites installation ,road and drainage works for East Portal		Utilites installation ,road and drainage works for East				
EPA1160	Irrigation System	Irrigation System				
Utilites installation ,road and drainage works near portion D		Utilites installation ,road and drainage works near port				
TOLLA1170	Footpath Pavement	Footpath Pavement				
Sewage, Irrigation and Road& Drainage Works		Sewage, Irrigation and Road& Drainage Works				
SAI10050	Sewage, irrigation and road&drainage works - G1&H1-south side	Sewage, irrigation and road&drainage works - G1&				
Section 6		Section				
SEC61000	Landscape softworks in KD-1 area	Landscape softworks in KD-1 area				
SEC61020	Landscape softworks in KD-2 area	Landscape softw				
SEC61040	Landscape softworks in KD-3 area	Lansca				
Section 8		▼ Section 8				
SEC81050	KD-11	◆ KD-11				
Achievement of Key Dates		Achievemen				
AK10430	Achievement of KD-3(Stage 3) for RW_G					
AK10145	Achievement of KD-5(Section 2)for Bridge G2	ment of KD-5(Section 2)for Bridge G2				
AK10160	Achievement of KD-5(Section 2)for Bridge G1	ment of KD-5(Section 2)for Bridge G1				

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Activity ID	Activity Name	2019				
		Jan	Feb	Mar	Apr	May
AK10180	Achievement of KD-5(Section 2)for Bridge H1	ment of KD-5(Section 2)for Bridge H1				
AK10240	Achievement of KD-5(Section 2) for RW_E	ment of KD-5(Section 2) for RW_E				
AK10050	Achievement of KD-4 (Section 1) for Footbridge	ement of KD-4 (Section 1) for Footbridge				
AK10070	Achievement of KD-4(Section 1) for RW_B	ement of KD-4(Section 1) for RW_B				
AK10110	Achievement of KD4 (Section 1) for Toll Collector Subway(portion I)	ement of KD4 (Section 1) for Toll Collector Subway(portion I)				
AK10100	Achievement of KD-4 (Section 1) for Toll Collector Bridge	ement of KD-4 (Section 1) for Toll Collector Bridge				
AK10010	Achievement of KD-4(section 1) for TD1	ement of KD-4(section 1) for TD1				
AK10030	Achievement of KD-4(Section 1) for TD2	ement of KD-4(Section 1) for TD2				
AK10350	Achievement of KD-8(Section 5) for slope D		◆ Achievement of KD-8(Section:5) for s			
AK10310	Achievement of KD-8(Section 5) for slope B		◆ Achievement of KD-8(Section:5) for s			
AK10290	Achievement of KD-8(Section 5) for slope A		◆ Achievement of KD-8(Section:5) for s			
AK10330	Achievement of KD-8(Section 5) for slope C		◆ Achievement of KD-8(Section:5) for s			
AK10370	Achievement of KD-8(Section 5) for slope E		◆ Achievement of KD-8(Section:5) for s			
AK10260	Achievement of KD-8(section 5) for TP_F		◆ Achievement of KD-8(section 5) for T			
AK10400	Achievement of KD-3(Stage 3) for Roundabout works		◆ Achievement of KD-3(Stage 3) for Ro			
AK10480	Achievement of KD-8(Section 5)for Road and drainage works near east portal		◆ Achievement of KD-8(Section 5)for R			
AK10390	Achievement of KD-8(Section 5)for Vehicular Underpass		◆ Achievement of KD-8(Section 5)for V			
AK10130	Achievement of KD-8(Section 5)for Toll Collector Subway(Portion X)		◆ Achievement of KD-8(Section 5)for T			
AK10220	Achievement of KD-8(Section 5) for RW_A		◆ Achievement of KD-8(Section 5) for I			
AK10200	Achievement of KD-3(Stage 3) for Sewer Box Culvert		◆ Achievement of KD-3(Stage 3) f			
AK10455	Achievement of KD-3(Stage 3) for Road and draiange Works under TD1			◆ Achievement of KI		
AK10460	Achievement of KD-6(Section 3) for Road and draiange Works under TD1				◆ Achievemen	

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		May	Jun	Jul	Aug	Sep

HY/2013/12 TMCLK Northern Connection Toll Plaza and Associated-Works Programme-Rev.4A Monthly Update

Achievement of Stages/ Completion of Sections

KD10210	KD11 - Sec 8 Completion All Preservation & Protection to Existing Trees
KD10190	KD9 - Sec 6 Completion All Landscape Softworks
KD10180	KD8 - Sec 5 Completion All Remainders of the Works except Works under Sec 1 thru 4
KD10160	KD6 - Sec 3 Completion All Works w/in Portions A, B, C, E, G, H, H1, J & K except Works under Sec 1/2//6/7/8

▼ Achievement of Stage				
◆ KD11 - Sec 8 Completion All Preserva				
◆ KD9 - Sec 6 Completion All Landsc				
◆ KD8 - Sec 5 Completion All Remain				
◆ KD6 - Sec 3 Comple				

Toll Collector Subway & Associated Works-Section 1

Toll Collector Subway (Portion X)-Section 5

Section 5

TCS1670	KD-8-(Section 5)
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▼ Toll Collector Subway & Associated W				
▼ Toll Collector Subway (Portion X)-Sec				
▼ Section 5				
◆ KD-8-(Section 5)				

Site Formation - Retaining Structure RW_A

Achievement of KD-8 (Section 5) for RW_A

RWA20220	KD-8
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▼ Site Formation - Retaining Structure F				
▼ Achievement of KD-8 (Section 5) for F				
◆ KD-8				

Site Formation - Retaining Structure for Slope TP_F

Achievement of KD-8 (Section 5) for TP_F

RWF31490	KD-8
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▼ Site Formation - Retaining Structure for				
▼ Achievement of KD-8 (Section 5) for T				
◆ KD-8				

Site Formation - Retaining Structure for Slope TP_G

CH285-MJ11

RWG1420	Pavement and Remaining works
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▼ Site Formation - Retaining Structure for				
▼ CH285-MJ11				
▼ Pavement and Remaining works				

Achievement of KD-6(Section 3) for TP_G

RWG1435	Achievement of KD-6(Section) for TP-G
RWG1455	KD-6

▼ Achievement of KD-6(Section 3) for T				
◆ Achievement of KD-6(Section) for TP-				
◆ KD-6				

Site Formation - Slope TP_A & Associated Works

▼ Site Formation - Slope TP_A & Associ				
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■ Remaining Level of Effort ■ Critical Remaining Work
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Activity ID	Activity Name	2019				
		May	Jun	Jul	Aug	Sep
Achievement of KD-8 (Section 5) for Slope A			▼ Achievement of KD-8 (Section 5) for S			
TPA41880	Achievement of KD-8(Section 5) for slope A		◆ Achievement of KD-8(Section 5) for sl			
Site Formation - Slope TP_B & Associated Works			▼ Site Formation - Slope TP_B & Associ			
Achievement of KD-8 (Section 5) for Slope B			▼ Achievement of KD-8 (Section 5) for S			
TPB41800	Achievement of KD-8(Section 5) for slope B		◆ Achievement of KD-8(Section 5) for sl			
Site Formation - Slope TP_C & Associated Works			▼ Site Formation - Slope TP_C & Associ			
Achievement of KD-8 (Section 5) for Slope C			▼ Achievement of KD-8 (Section 5) for S			
TPC51340	Achievement of KD-8(Section 5) for slope C		◆ Achievement of KD-8(Section 5) for sl			
Site Formation - Slope TP_D & Associated Works			▼ Site Formation - Slope TP_D & Associ			
Achievement of KD-8 (Section 5) for Slope D			▼ Achievement of KD-8 (Section 5) for S			
TPD51380	Achievement of KD-8(Section 5) for slope D		◆ Achievement of KD-8(Section 5) for sl			
Site Formation - Slope TP_E & Associated Works			▼ Site Formation - Slope TP_E & Associ			
Achievement of KD-8(Section 5) for Slope E			▼ Achievement of KD-8(Section 5) for S			
TPE65360	KD-8(Section 5)		◆ KD-8(Section 5)			
Natural Terrain Hazard Mitigation Measures			▼ Natural Terrain Hazard Mitigation Mea			
Achievement of KD-8(Section 5)			▼ Achievement of KD-8(Section 5)			
NTH10140	KD-8		◆ KD-8			
Vehicular Underpass TN-01			▼ Vehicular Underpass TN-01			
Achievement of KD-8 (Section 5) for TN-01			▼ Achievement of KD-8 (Section 5) for T			
UDP20670	KD-8(Section 5)		◆ KD-8(Section 5)			
UDP20640	Road works and Remaining works(Sundry Metalwork,etc)		■ Road works and Remaining works(Sur			
UDP20650	Achievement of KD-8(Section 5)for Vehicular Underpass		◆ Achievement of KD-8(Section 5)for Ve			
Road and Drainage Work ,Utilities Works at for Lung Fu Road Roundabout			▼ Road and Drainage V			

■ Remaining Level of Effort ■ Critical Remaining Work
■ Actual Work ◆ Milestone
■ Remaining Work ▼ Summary

**CRBC - Kaden JV
Three-Month Rolling Programme**

Date	Revision	Checked	Approved
26-Jun-19	4		

Activity ID	Activity Name	2019				
		May	Jun	Jul	Aug	Sep
Section 3		Section 3				
Utilites installation ,road and drainage works (TTA Stage 2-1)		Utilites installation ,rc				
LFR10220	CLP+ CRD	CLP+ CRD				
LFR10230	DN450	DN450				
LFR10240	Road Pavement	Road Pavement				
LFR10250	Landscapping	Landscapping				
LFR10260	Footpath Pavement	Footpath Pavement				
Road and Drainage Work ,Utilities Works at Lung Mun Road		Road and Drainage Work .				
Lung Mun Road (Westbound)		Lung Mun Road (Westbou				
Ho Suen Street South		Ho Suen Street South				
LMRWA1350	TTA for eastbound					
LMRWA1241	Street Furniture(Including eastbound)	Street Furniture(Including eastbound)				
LMRWA1242	Sign Gantry(Including eastbound)	Sign Gantry(Including eastbound)				
LMRWA1270	Town Gas	Town Gas				
LMRWA1280	Smartone Cable	Smartone Cable				
LMRWA1290	HKC Cable	HKC Cable				
LMRWA1300	Pubic Lighting	Pubic Lighting				
LMRWA1310	CLP	CLP				
LMRWA1320	TraxComm	TraxComm				
LMRWA1330	Irrigation System	Irrigation System				
LMRWA1340	Road Pavement	Road Pavement				
LMRWA1370	Footpath Pavement	Footpath Pavement				
Lung Mun Road (Eastbound)		Lung Mun Road (Eastbound)				

█ Remaining Level of Effort █ Critical Remaining Work
█ Actual Work ◆ Milestone
█ Remaining Work ▼ Summary

CRBC - Kaden JV
Three-Month Rolling Programme

Date	Revision	Checked	Approved
26-Jun-19	4		

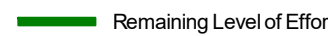

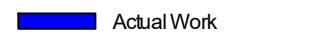
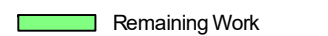
Activity ID	Activity Name	2019				
		May	Jun	Jul	Aug	Sep
LMREA1000	Drainage Work					
LMREA1020	DN700 CHD 0 - 17					
LMREA1030	DN700 CHR 0 - 46					
LMREA1050	Hutchison Global Communication Cable					
LMREA1090	Footpath Pavement					
Utilites installation ,road and drainage works for East Portal						
EPA1160	Irrigation System					
Section 6						
SEC61000	Lanscape softworks in KD-1 area					
SEC61020	Lanscape softworks in KD-2 area					
SEC61040	Lanscape softworks in KD-3 area					
SEC61050	KD-9					
Section 7						
SEC71000	Construction of all Establishment Works for all landscape works-1st batch					
Section 8						
SEC81050	KD-11					
Achievement of Key Dates						
AK10455	Achievement of KD-3(Stage 3) for Road and draiange Works under TD1					
AK10480	Achievement of KD-8(Section 5)for Road and drainage works near east portal					
AK10440	Achievement of KD-6(Section 3) for RW_G					
AK10390	Achievement of KD-8(Section 5)for Vehicular Underpass					
AK10460	Achievement of KD-6(Section 3) for Road and draiange Works under TD1					
AK10420	Achievement of KD-6(Section 3) for Roundabout works					

█ Remaining Level of Effort █ Critical Remaining Work
█ Actual Work ◆ Milestone
█ Remaining Work ▼ Summary

CRBC - Kaden JV
Three-Month Rolling Programme

Date	Revision	Checked	Approved
26-Jun-19	4		

Activity ID	Activity Name	2019				
		Jul	Aug	Sep	Oct	Nov
HY/2013/12 TMCLK Northern Connection Toll Plaza and Associated-Works Programme-Rev.4A Monthly Update						
Achievement of Stages/ Completion of Sections						
KD10210	KD11 - Sec 8 Completion All Preservation & Protection to Existing Trees					▼ Achievement of Stages/ Comple ◆ KD11 - Sec 8 Completion All Preserva
KD10190	KD9 - Sec 6 Completion All Landscape Softworks					◆ KD9 - Sec 6 Completion All Landscap
KD10160	KD6 - Sec 3 Completion All Works w/in Portions A, B, C, E, G, H, H1, J & K except Works under Sec 1/2//6/7/8					◆ KD6 - Sec 3 Completion All W
KD10180	KD8 - Sec 5 Completion All Remainders of the Works except Works under Sec 1 thru 4					◆ KD8 - Sec 5 Completion All Re
Toll Collector Subway & Associated Works-Section 1						
Toll Collector Subway (Portion X)-Section 5						
Section 5						
TCS1670	KD-8-(Section 5)					▼ Toll Collector Subway & Associated W ▼ Toll Collector Subway (Portion X)-Sec ▼ Section 5 ◆ KD-8-(Section 5)
Site Formation - Retaining Structure RW_A						
Achievement of KD-8 (Section 5) for RW_A						
RWA20220	KD-8					▼ Site Formation - Retaining Structure F ▼ Achievement of KD-8 (Section 5) for F ◆ KD-8
Site Formation - Retaining Structure for Slope TP_F						
Achievement of KD-8 (Section 5) for TP_F						
RWF31490	KD-8					▼ Site Formation - Retaining Structure fo ▼ Achievement of KD-8 (Section 5) for T ◆ KD-8
Site Formation - Retaining Structure for Slope TP_G						
Achievement of KD-6(Section 3) for TP_G						
RWG1455	KD-6					▼ Site Formation - Retaining Structure fo ▼ Achievement of KD-6(Section 3) for T ◆ KD-6
Site Formation - Slope TP_A & Associated Works						
Achievement of KD-8 (Section 5) for Slope A						
TPA41880	Achievement of KD-8(Section 5) for slope A					▼ Site Formation - Slope TP_A & Associ ▼ Achievement of KD-8 (Section 5) for S ◆ Achievement of KD-8(Section 5) for sl
Site Formation - Slope TP_B & Associated Works						
Achievement of KD-8 (Section 5) for Slope B						
TPB41800	Achievement of KD-8(Section 5) for slope B					▼ Site Formation - Slope TP_B & Associ ▼ Achievement of KD-8 (Section 5) for S ◆ Achievement of KD-8(Section 5) for sl
Site Formation - Slope TP_C & Associated Works						
Achievement of KD-8 (Section 5) for Slope C						

 Remaining Level of Effort	 Critical Remaining Work
 Actual Work	◆ Milestone
 Remaining Work	▼ Summary

CRBC - Kaden JV
Three-Month Rolling Programme

Date	Revision	Checked	Approved
26-Aug-19	4		

Activity ID	Activity Name	2019				
		Jul	Aug	Sep	Oct	Nov
TPC51340	Achievement of KD-8(Section 5) for slope C		◆ Achievement of KD-8(Section 5) for slope C			
Site Formation - Slope TP_D & Associated Works			▼ Site Formation - Slope TP_D & Associated Works			
Achievement of KD-8 (Section 5) for Slope D			▼ Achievement of KD-8 (Section 5) for Slope D			
TPD51380	Achievement of KD-8(Section 5) for slope D		◆ Achievement of KD-8(Section 5) for slope D			
Site Formation - Slope TP_E & Associated Works			▼ Site Formation - Slope TP_E & Associated Works			
Achievement of KD-8(Section 5) for Slope E			▼ Achievement of KD-8(Section 5) for Slope E			
TPE65360	KD-8(Section 5)		◆ KD-8(Section 5)			
Natural Terrain Hazard Mitigation Measures			▼ Natural Terrain Hazard Mitigation Measures			
Achievement of KD-8(Section 5)			▼ Achievement of KD-8(Section 5)			
NTH10140	KD-8		◆ KD-8			
Vehicular Underpass TN-01			▼ Vehicular Underpass TN-01			
Achievement of KD-8 (Section 5) for TN-01			▼ Achievement of KD-8 (Section 5) for TN-01			
UDP20670	KD-8(Section 5)		◆ KD-8(Section 5)			
Road and Drainage Work ,Utilities Works at for Lung Fu Road Roundabout			▼ Road and Drainage Work ,Utilities Works at for Lung Fu Road Roundabout			
Section 3			▼ Section 3			
Utilites installation ,road and drainage works (TTA Stage 2-1)			▼ Utilites installation ,road and drainage works (TTA Stage 2-1)			
LFR10220	CLP+ CRD		■ CLP+ CRD			
LFR10230	DN450		■ DN450			
LFR10240	Road Pavement		■ Road Pavement			
LFR10250	Landscapping		■ Landscapping			
LFR10260	Footpath Pavement		■ Footpath Pavement			
Road and Drainage Work ,Utilities Works at Lung Mun Road			▼ Road and Drainage Work ,Utilities Works at Lung Mun Road			
Lung Mun Road (Westbound)			▼ Lung Mun Road (Westbound)			
Ho Suen Street South			▼ Ho Suen Street South			
LMRWA1270	Town Gas		■ Town Gas			
LMRWA1280	Smartone Cable		■ Smartone Cable			

■ Remaining Level of Effort ■ Critical Remaining Work
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■ Remaining Work ▼ Summary

CRBC - Kaden JV
Three-Month Rolling Programme

Date	Revision	Checked	Approved
26-Aug-19	4		

Activity ID	Activity Name	2019				
		Jul	Aug	Sep	Oct	Nov
LMRWA1290	HKC Cable	█ HKC Cable				
LMRWA1300	Pubic Lighting	█ Pubic Lighting				
LMRWA1310	CLP	█ CLP				
LMRWA1320	TraxComm	█ TraxComm				
LMRWA1330	Irrigation System	█ Irrigation System				
LMRWA1340	Road Pavement	█ Road Pavement				
LMRWA1370	Footpath Pavement	█ Footpath Pavement				
Lung Mun Road (Eastbound)						
LMREA1020	DN700 CHD 0 - 17					
LMREA1030	DN700 CHR 0 - 46					
LMREA1040	CLP					
LMREA1050	Hutchison Global Communication Cable					
LMREA1060	PCCW					
LMREA1070	Road Pavement					
Section 6		▼ Section 6				
SEC61000	Lanscape softworks in KD-1 area	█ Lanscape softworks in KD-1 area				
SEC61020	Lanscape softworks in KD-2 area	█ Lanscape softworks in KD-2 area				
SEC61040	Lanscape softworks in KD-3 area	█ Lanscape softworks in KD-3 area				
SEC61050	KD-9	◆ KD-9				
Section 7		▼ Section 7				
SEC71000	Construction of all Establishment Works for all landscape works-1st batch	█				
Section 8		▼ Section 8				
SEC81050	KD-11	◆ KD-11				
Achievement of Key Dates		▼ Achievement of Key Dates				

█ Remaining Level of Effort █ Critical Remaining Work
█ Actual Work ◆ Milestone
█ Remaining Work ▼ Summary

CRBC - Kaden JV
Three-Month Rolling Programme

Date	Revision	Checked	Approved
26-Aug-19	4		

Activity ID	Activity Name	2019				
		Jul	Aug	Sep	Oct	Nov
AK10420	Achievement of KD-6(Section 3) for Roundabout works			◆ Achievement of KD-6(Section 3)		
AK10460	Achievement of KD-6(Section 3) for Road and draiange Works under TD1			◆ Achievement of KD-6(Section 3)		

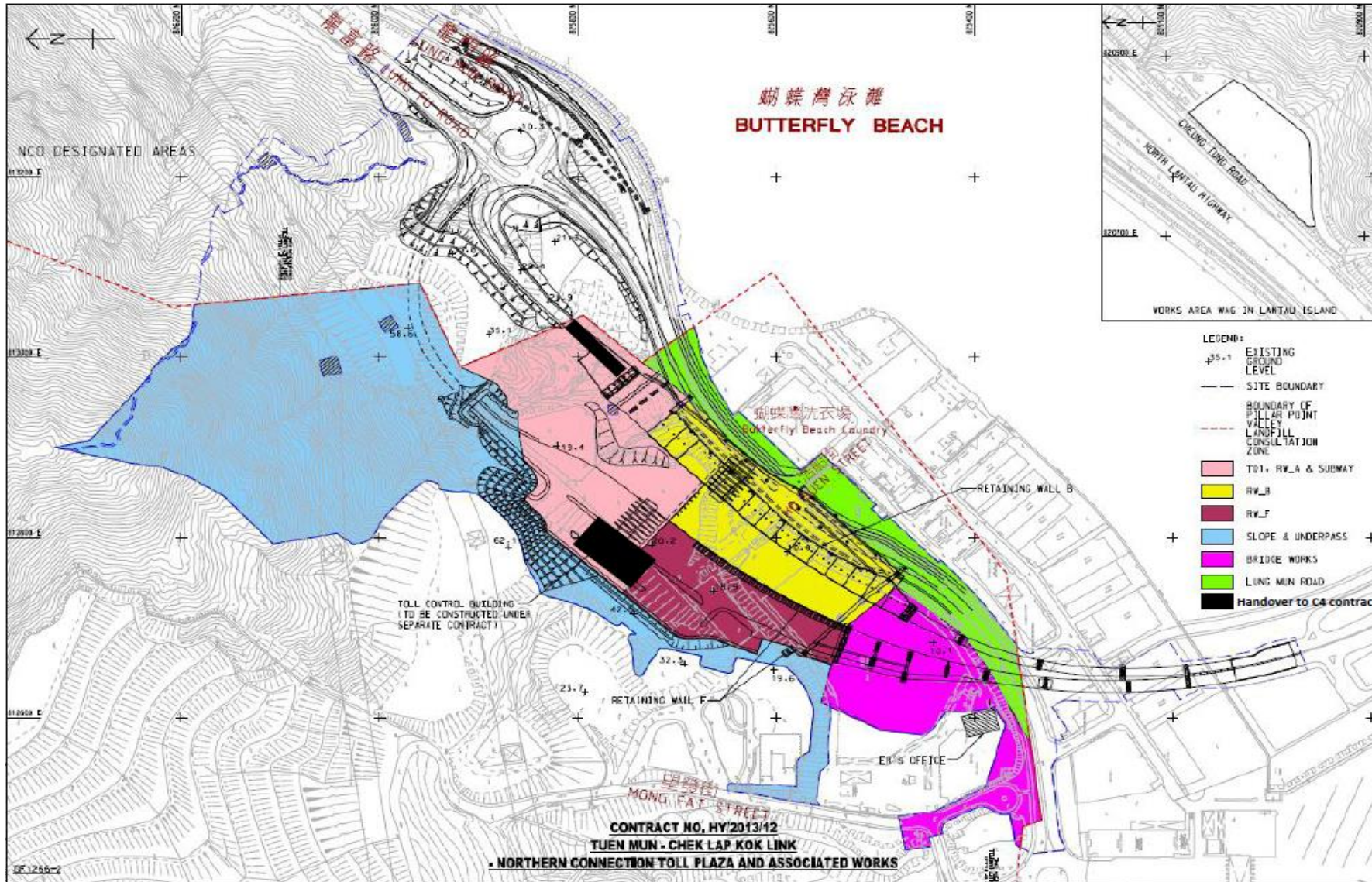
█ Remaining Level of Effort █ Critical Remaining Work
█ Actual Work ◆ Milestone
█ Remaining Work ▼ Summary

CRBC - Kaden JV
Three-Month Rolling Programme

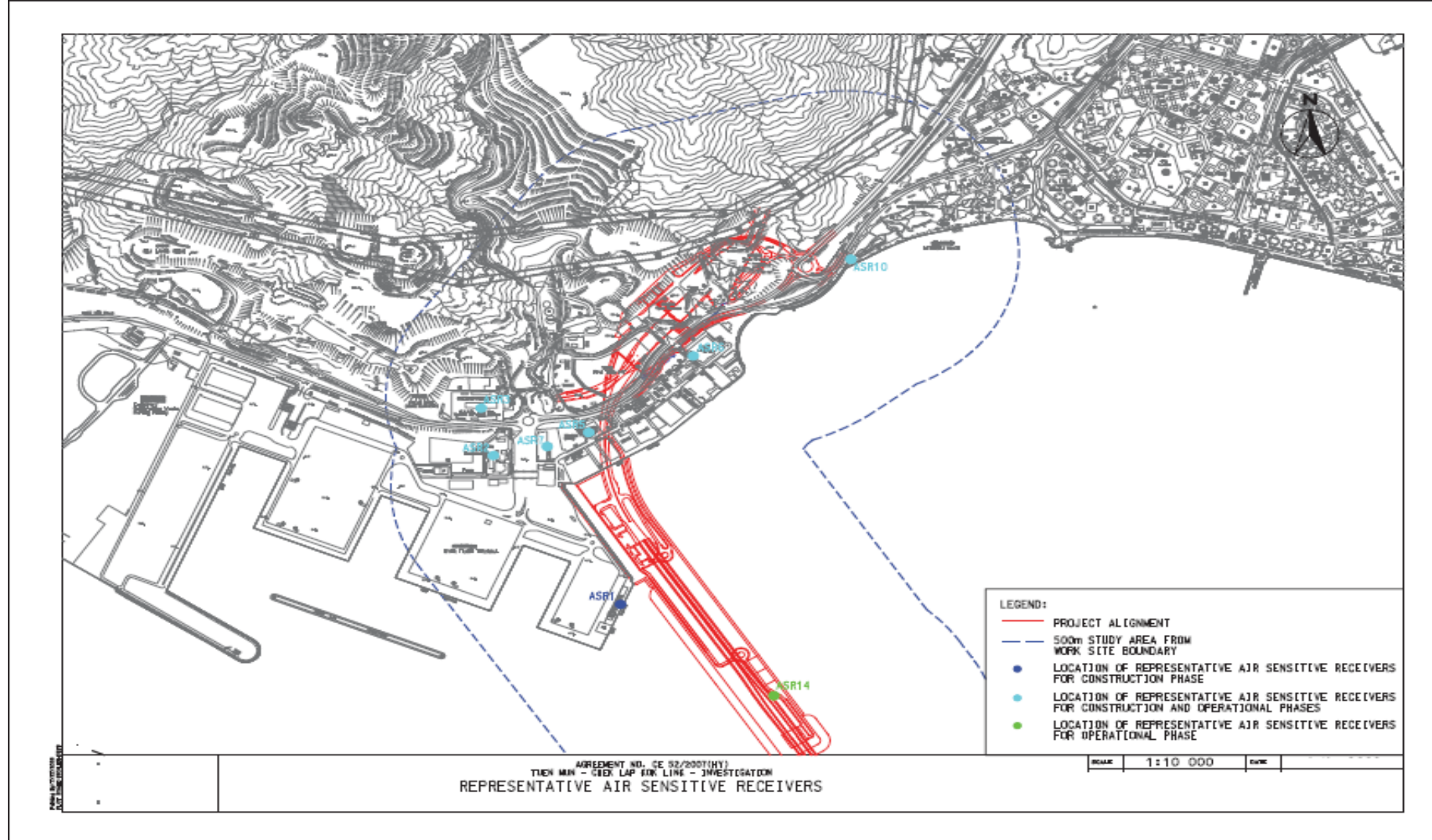
Date	Revision	Checked	Approved
26-Aug-19	4		

Appendix E

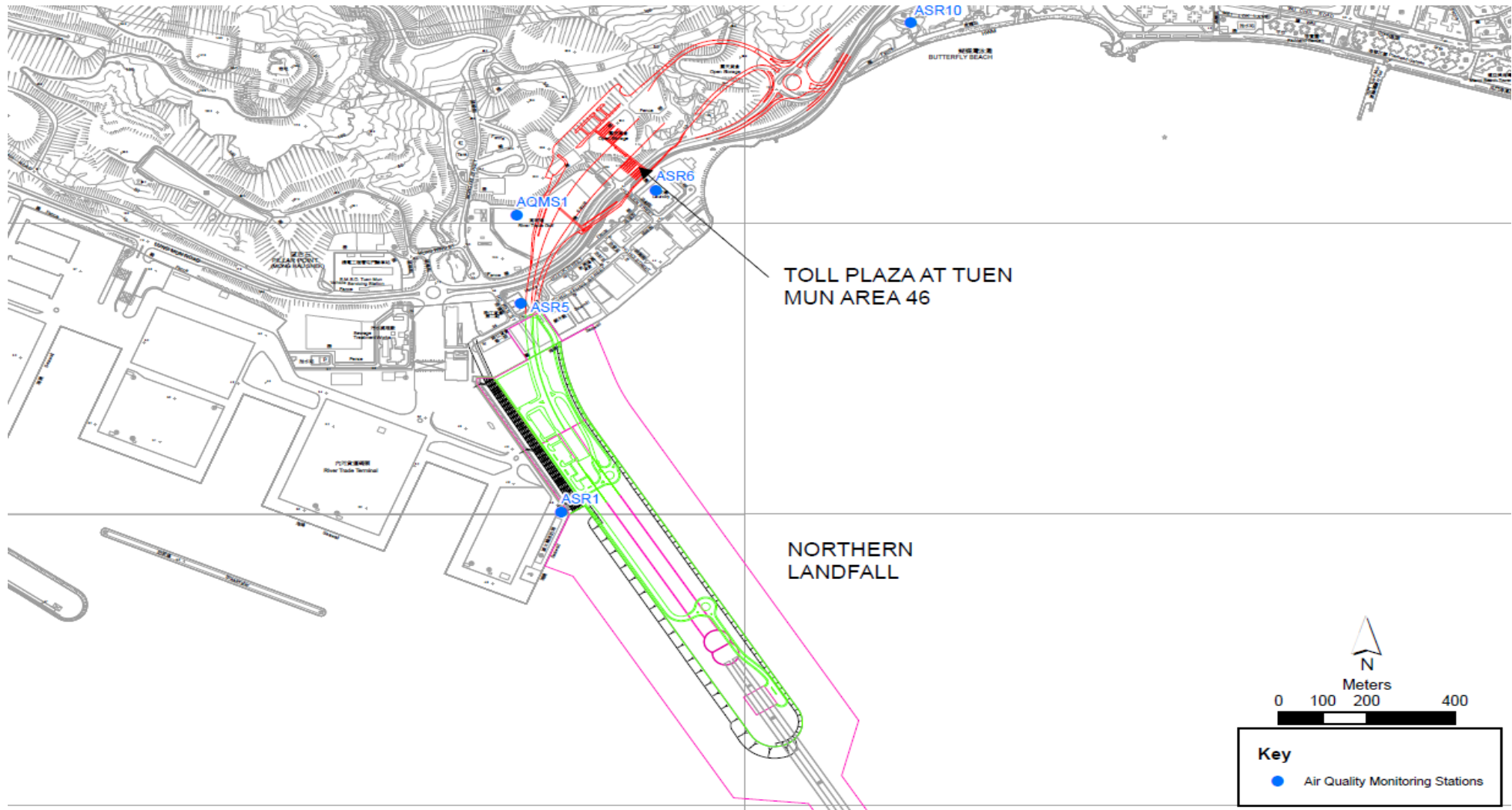
Monitoring Locations for the Contract



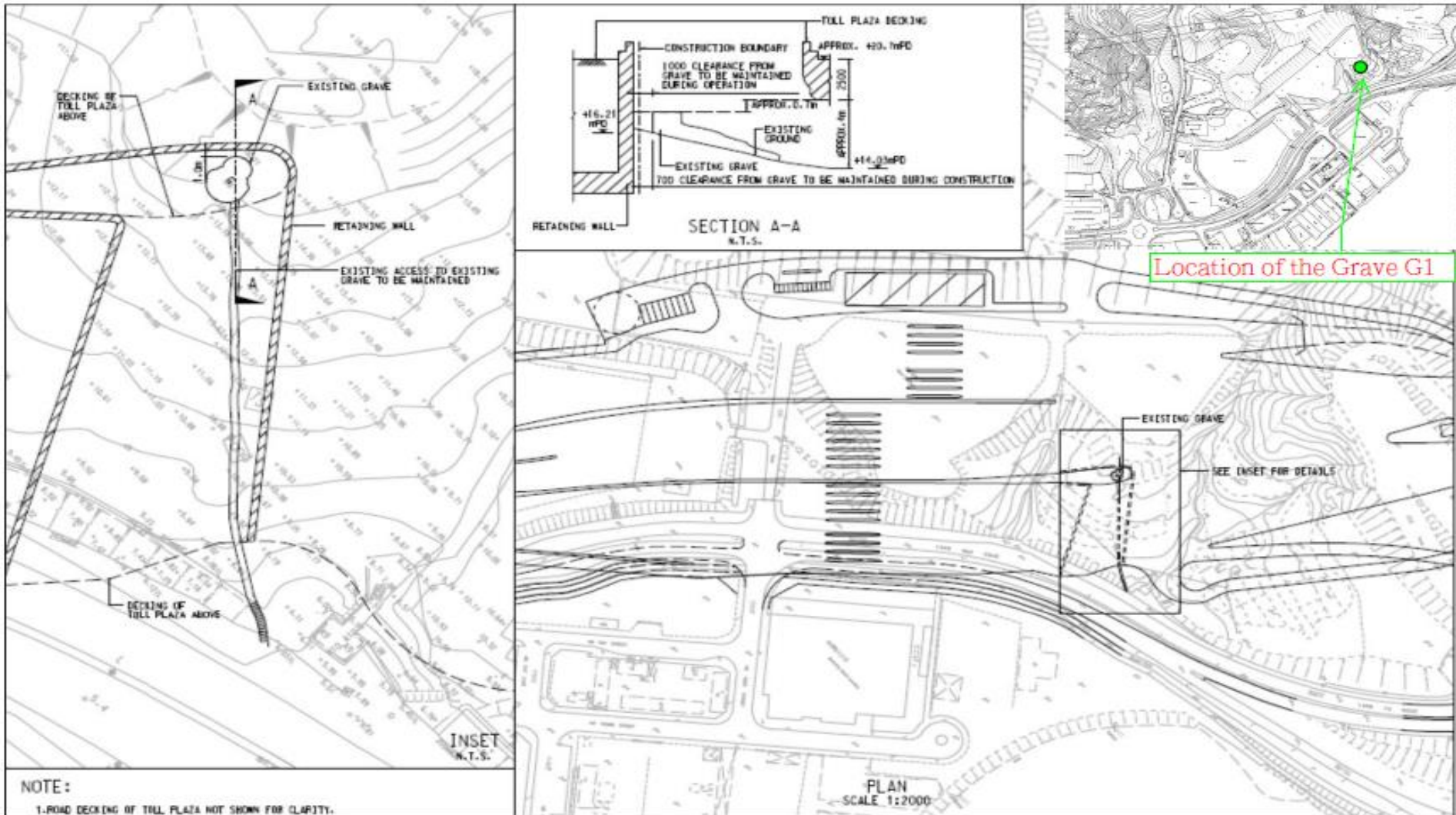
Layout of landfill gas monitoring zone



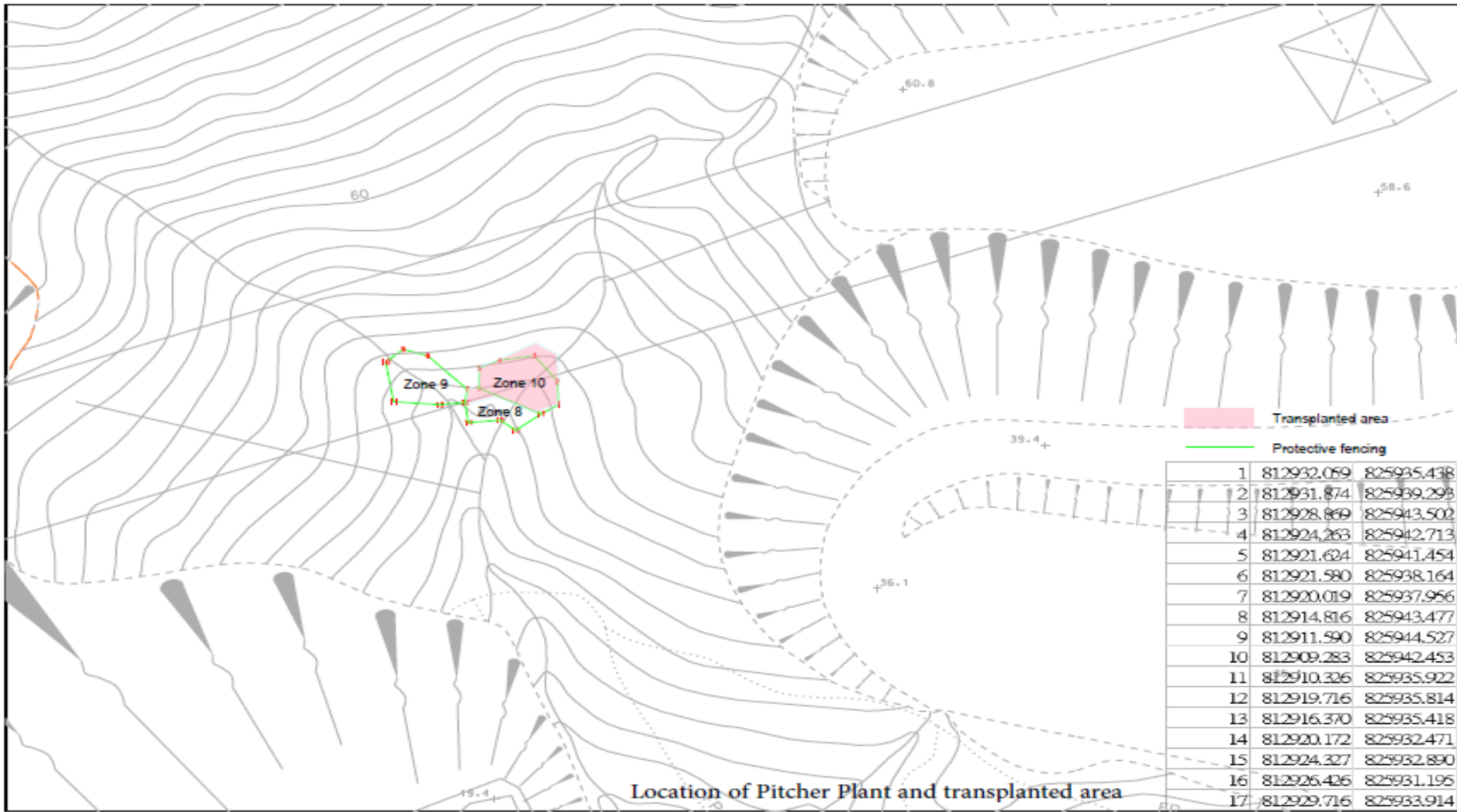
Representative Air Sensitive Receivers



Air Quality Monitoring Location



Location of the Grave G1



Location of the pitcher plants final receptor site

Appendix F

Event and Action Plan

Event and Action Plan for Air Quality

EVENT	ACTION			
	ET ⁽¹⁾	IEC ⁽¹⁾	SOR ⁽¹⁾	Contractor(s)
Action Level				
Exceedance recorded	<ol style="list-style-type: none"> 1 Identify the source. 2 Repeat measurements to confirm findings. If two consecutive measurements exceed Action Level, the exceedance is then confirmed. 3 Inform the IEC and the SOR 4 Investigate the cause of exceedance and check Contractor's working procedures to determine possible mitigation to be implemented. 5 If the exceedance is confirmed to be Project related after investigation, increase monitoring frequency to daily. 6 Discuss with the IEC and the Contractor on remedial actions required. 7 If exceedance continues, arrange meeting with the IEC and the SOR. 8 If exceedance stops, cease additional monitoring. 	<ol style="list-style-type: none"> 1 Check monitoring data submitted by the ET. 2 Check the Contractor's working method. 3 If the exceedance is confirmed to be Project related after investigation, discuss with the ET and the Contractor on possible remedial measures. 4 Advise the SOR on the effectiveness of the proposed remedial measures. 5 Supervisor implementation of remedial measures. 	<ol style="list-style-type: none"> 1 Confirm receipt of notification of failure in writing. 2 Notify the Contractor. 3 Ensure remedial measures properly implemented. 	<ol style="list-style-type: none"> 1 Rectify any unacceptable practice. 2 Amend working methods if appropriate 3 If the exceedance is confirmed to be Project related, submit proposals for remedial actions to IEC within 3 working days of notification 4 Implement the agreed proposals 5 Amend proposal if appropriate.
Limit Level				
Exceedance recorded	<ol style="list-style-type: none"> 1. Identify the source. 2. Repeat measurement to confirm finding. If two consecutive measurements exceed Limit Level, the exceedance is then confirmed. 3. Inform the IEC, the SOR, the DEP and the Contractor. 4. Investigate the cause of exceedance and check Contractor's working procedures to determine possible mitigation to be implemented. 5. If the exceedance is confirmed to be Project related after investigation, increase monitoring frequency to daily. 6. Carry out analysis of the Contractor's working procedures to determine possible mitigation to be implemented. 7. Arrange meeting with the IEC and the SOR to discuss the remedial actions to be taken. 8. Assess effectiveness of the Contractor's remedial actions and keep the IEC, the DEP and the SOR informed of the results. 9. If exceedance stops, cease additional monitoring. 	<ol style="list-style-type: none"> 1 Check monitoring data submitted by the ET. 2 Check Contractor's working method. 3 If the exceedance is confirmed to be Project related after investigation, discuss with the ET and the Contractor on possible remedial measures. 4 Advise the SOR on the effectiveness of the proposed remedial measures. 5 Supervisor implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing. 2. Notify the Contractor. 3. If the exceedance is confirmed to be Project related after investigation, in consultation with the IEC, agree with the Contractor on the remedial measures to be implemented. 4. Ensure remedial measures are properly implemented. 5. If exceedance continues, consider what activity of the work is responsible and instruct the Contractor to stop that activity of work until the exceedance is abated. 	<ol style="list-style-type: none"> 1 Take immediate action to avoid further exceedance. 2 If the exceedance is confirmed to be Project related after investigation, submit proposals for remedial actions to IEC within 3 working days of notification. 3 Implement the agreed proposals. 4 Amend proposal if appropriate. 5 Stop the relevant activity of works as determined by the SOR until the exceedance is abated.

Event and Action Plan for Landscape and Visual Impact

EVENT ACTION LEVEL	ACTION			
	ET	IEC	ER	Contractor
Design Check	<ul style="list-style-type: none"> Check final design conforms to the requirements of EP and prepare report. 	<ul style="list-style-type: none"> Check report. Recommend remedial design if necessary 	<ul style="list-style-type: none"> Undertake remedial design if necessary 	
Non- conformity on one occasion	<ul style="list-style-type: none"> Identify Source Inform IEC and ER Discuss remedial actions with IEC, ER and Contractor Monitor remedial actions until rectification has been completed 	<ul style="list-style-type: none"> Check report Check Contractor's working method Discuss with ET and Contractor on possible remedial measures Advise ER on effectiveness of proposed remedial measures. Check implementation of remedial measures 	<ul style="list-style-type: none"> Notify Contractor Ensure remedial measures are properly implemented 	<ul style="list-style-type: none"> Amend working methods Rectify damage and undertake any necessary replacement
Repeated Non-conformity	<ul style="list-style-type: none"> Identify Source Inform IEC and ER Increase monitoring frequency Discuss remedial actions with IEC, ER and Contractor Monitor remedial actions until rectification has been completed If nonconformity stops, cease additional monitoring 	<ul style="list-style-type: none"> Check monitoring report Check Contractor's working method Discuss with ET and Contractor on possible remedial measures Advise ER on effectiveness of proposed remedial measures Supervise implementation of remedial measures 	<ul style="list-style-type: none"> Notify Contractor Ensure remedial measures are properly implemented 	<ul style="list-style-type: none"> Amend working methods Rectify damage and undertake any necessary replacement

Event / Action Plan for Cultural Heritage

Action Level	ET	IC (E)	ER	Contractor
Non-conformity on one occasion	<ol style="list-style-type: none"> 1. Identify Source 2. Inform the IEC and the ER 3. Discuss remedial actions with the IEC, the ER and the Contractor 4. Monitor remedial actions until rectification has been completed 	<ol style="list-style-type: none"> 1. Check report 2. Check the Contractor's working method 3. Discuss with the ET and the Contractor on possible remedial measures 4. Advise the ER on effectiveness of proposed remedial measures. 5. Check implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Notify Contractor 2. Ensure remedial measures are properly implemented 	<ol style="list-style-type: none"> 1. Amend working methods 2. Rectify damage and undertake any necessary replacement
Repeated Non-conformity	<ol style="list-style-type: none"> 1. Identify Source 2. Inform the IC(E) and the ER 3. Increase monitoring frequency 4. Discuss remedial actions with the IC(E), the ER and the Contractor 5. Monitor remedial actions until 6. rectification has been completed 7. If exceedance stops, cease additional monitoring 	<ol style="list-style-type: none"> 1. Check monitoring report 2. Check the Contractor's working method 3. Discuss with the ES and the Contractor on possible remedial measures 4. Advise the ER on effectiveness of proposed remedial measures 5. Supervise implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Notify the Contractor 2. Ensure remedial measures are properly implemented 	<ol style="list-style-type: none"> 1. Amend working methods 2. Rectify damage and undertake any necessary replacement

Note:

ET – Environmental Specialist, IEC – Independent Environmental Checker, ER – Engineer's Representative

Event / Action Plan for General Ecology

Action Level	ET	IEC	ER	Contractor
Non-conformity on one occasion	<ul style="list-style-type: none"> Identify Source Inform the IEC and the ER Discuss remedial actions with the IEC, the ER and the Contractor Monitor remedial actions until rectification has been completed 	<ul style="list-style-type: none"> Check report Check the Contractor's working method Discuss with the ET and the Contractor on possible remedial measures Advise the ER on effectiveness of proposed remedial measures. Check implementation of remedial measures. 	<ul style="list-style-type: none"> Notify Contractor Ensure remedial measures are properly implemented Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the works in the case of a serious nonconformity until situation rectified. 	<ul style="list-style-type: none"> Amend working methods Rectify damage and undertake any necessary replacement
Repeated Non conformity	<ul style="list-style-type: none"> Identify Source Inform the IC(E) and the ER Increase monitoring frequency Discuss remedial actions with the IC(E), the ER and the Contractor Monitor remedial actions until rectification has been completed If exceedance stops, cease additional monitoring 	<ul style="list-style-type: none"> Check monitoring report Check the Contractor's working method Discuss with the ES and the Contractor on possible remedial measures Advise the ER on effectiveness of proposed remedial measures Supervise implementation of remedial measures 	<ul style="list-style-type: none"> Notify the Contractor Ensure remedial measures are properly implemented Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the works in the case of a serious nonconformity until situation rectified. 	<ul style="list-style-type: none"> Amend working methods Rectify damage and undertake any necessary replacement

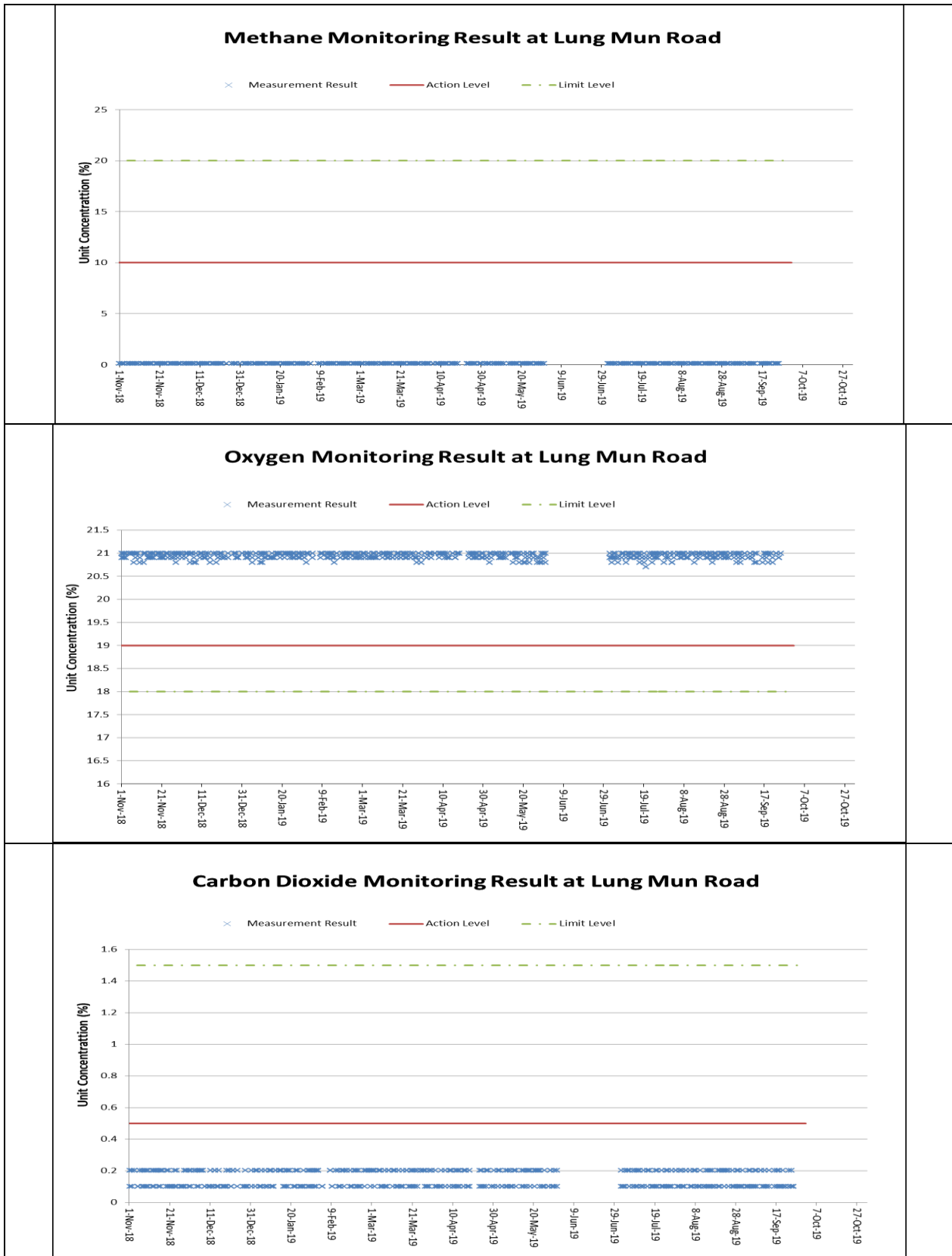
Note: ET – Environmental Specialist, IC(E) – Independent Checker (Environmental), ER – Engineer's Representative

Appendix G

Graphical Plot of Monitoring Results

I. Landfill Gas

GRAPHICAL PLOT OF LANDFILL GAS MONITORING RESULTS



Annotation:

During this reporting period, major construction activity at Lung Mun Road and the specified works included excavation, blinding, formworking, steel-fixing, concreting and backfilling. The weather condition varied from sunny to rainy. The monitoring data was provided by the Contractor followed to their QA/QC control.

Appendix H

Environmental Mitigation Measures Implementation Schedule (EMMIS)

CONTRACT NO. HY/2013/12

**TUEN MUN – CHECK LAP KOK LINK – NORTHERN CONNECTION TOLL PLAZA AND ASSOCIATED WORKS
ENVIRONMENTAL MITIGATION AND ENHANCEMENT MEASURE IMPLEMENTATION SCHEDULE**

Air Quality									
EIA reference	EM&A Manual reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status *
						D	C	O	
4.8.1	3.8	An effective watering programme of twice daily watering with complete coverage, is estimated to reduce by 50%. This is recommended for all areas in order to reduce dust levels to a minimum;	All areas / throughout construction period	Contractor	TMEIA Avoid smoke impacts and disturbance		Y		✓
4.8.1	3.8	Watering of the construction sites in Lantau for 8 times/day and in Tuen Mun for 12 times/day to reduce dust emissions by 87.5% and 91.7% respectively and shall be undertaken.	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		✓
4.8.1	3.8	The Contractor shall, to the satisfaction of the Engineer, install effective dust suppression measures and take such other measures as may be necessary to ensure that at the Site boundary and any nearby sensitive receiver, dust levels are kept to acceptable levels.	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		✓
4.8.1	3.8	The Contractor shall not burn debris or other materials on the works areas.	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		✓
4.8.1	3.8	In hot, dry or windy weather, the watering programme shall maintain all exposed road surfaces and dust sources wet.	All unpaved haul roads / throughout construction period in hot, dry or windy weather	Contractor	TMEIA Avoid smoke impacts and disturbance		Y		✓
4.8.1	3.8	Where breaking of oversize rock/concrete is required, watering shall be implemented to control dust. Water spray shall be used during the handling of fill material at the site and at active cuts, excavation and fill sites where dust is likely to be created.	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		✓
4.8.1	3.8	Open dropping heights for excavated materials shall be controlled to a maximum height of 2m to minimise the fugitive dust arising from unloading.	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		✓

CONTRACT NO. HY/2013/12

**TUEN MUN – CHECK LAP KOK LINK – NORTHERN CONNECTION TOLL PLAZA AND ASSOCIATED WORKS
ENVIRONMENTAL MITIGATION AND ENHANCEMENT MEASURE IMPLEMENTATION SCHEDULE**

4.8.1	3.8	During transportation by truck, materials shall not be loaded to a level higher than the side and tail boards, and shall be dampened or covered before transport.	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		✓
4.8.1	3.8	Materials having the potential to create dust shall not be loaded to a level higher than the side and tail boards, and shall be covered by a clean tarpaulin. The tarpaulin shall be properly secured and shall extend at least 300mm over the edges of the side and tail boards.	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		✓
4.8.1	3.8	No earth, mud, debris, dust and the like shall be deposited on public roads. Wheel washing facility shall be usable prior to any earthworks excavation activity on the site.	construction period	Contractor	TMEIA Avoid dust generation		Y		△
4.8.1	3.8	Areas of exposed soil shall be minimized to areas in which works have been completed shall be restored as soon as is practicable.	All exposed surfaces / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		✓
4.8.1	3.8	All stockpiles of aggregate or spoil shall be enclosed or covered and water applied in dry or windy condition.	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		△
4.11	Section 3	EM&A in the form of 1 hour and 24 hour dust monitoring and site audit	All representative existing ASRs / throughout construction period	Contractor	EM&A Manual		Y		✓ Monitoring for 1 hour and 24 hour dust monitoring were undertaken by the ET of Contract HY/2012/08

Cultural Heritage

EIA reference	EM&A Manual reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
						D	C	O	
11.8	Section 9	EM&A in the form of audit of the mitigation measures	All areas / throughout construction period	Highways Department	EIAO-TM		Y		✓

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Ecology									
EIA reference	EM&A Manual reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
						D	C	O	
7.13#	6.3, 6.5#	Fencing or other physical barriers for protection of Pitcher Plant around Zones 8, 9 and 10 and the temporary nursery site	Tuen Mun Area 46 shrubland/ Detailed/ Prior to construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓
7.13	6.5	Audit Pitcher Plant protection measures	Tuen Mun Area 46	Contractor	TMEIA		Y		✓
7.13	6.5	The loss of habitat shall be supplemented by enhancement planting in accordance with the landscape mitigation schedule.	All areas / As soon as accessible	Contractor	TMEIA		Y		✓
7.13	6.5	Spoil heaps shall be covered at all times.	All areas / Throughout construction period	Contractor	TMEIA		Y		✓
7.13	6.5	Avoid damage and disturbance to the remaining and surrounding natural habitat	All areas / Throughout construction period	Contractor	TMEIA		Y		✓
7.13	6.5	Placement of equipment in designated areas within the existing disturbed land	All areas / Throughout construction period	Contractor	TMEIA		Y		✓
7.13	6.5	Disturbed areas to be reinstated immediately after completion of the works.	All areas / Throughout construction period	Contractor	TMEIA		Y		✓
7.13	6.5	Construction activities should be restricted to the proposed works boundary	All areas / Throughout construction	Contractor	TMEIA		Y		✓
Landfill Gas Hazard Assessment									
EIA reference	EM&A Manual reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
						D	C	O	
14.12.2	14.2	<i>Appointment of Safety Officer</i> Appoint a properly trained safety officer and provide with appropriate equipment to measure and monitor LFG hazard. The monitoring frequency and areas to	Construction Stage	Contractor	EPD/TR8/97 - Landfill Gas Hazard Assessment		Y		✓

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		be monitored should be set down prior to commencement of ground-works either by the Safety Officer or an approved and appropriately qualified person.			Guidance Note				
14.12.2	-	<u>Safety Measures - Excavation</u> Staff should receive appropriate training on working in areas susceptible to landfill gas, fire and explosion hazards. Excavation procedures and code of practice should be implemented.	Construction Stage	Contractor	EPD/TR8/97 - Landfill Gas Hazard Assessment Guidance Note		Y		✓
14.12.2	-	<u>Safety Measures – Welding, Flame- Cutting and Hot works</u> Hot works should be confined to open areas away from any trench or excavation. Should hot works must be carried out in trenches or confined space, “permit to work” procedures should be followed.	Construction Stage	Contractor	EPD/TR8/97 - Landfill Gas Hazard Assessment Guidance Note		Y		✓
14.12.2	-	<u>Safety Measures – Enclosed Spaces</u> Site offices or buildings located within PPV Landfill Consultation Zone which have the capacity to accumulate landfill gas, then they should either be located in an area which has been proven to be free of landfill gas; or be raised clear of the ground by a minimum of 500mm.	Site office, building, tunnel, subway, confined area / Construction Stage	Contractor	EPD/TR8/97 - Landfill Gas Hazard Assessment Guidance Note		Y		✓
14.12.2	-	<u>Safety Measures – Electrical Equipment</u> Any electrical equipment, such as motors and extension cords, should be intrinsically safe.	Construction Stage	Contractor	EPD/TR8/97 - Landfill Gas Hazard Assessment Guidance Note		Y		✓
14.12.2	-	<u>Safety Measures – Piping</u> During piping assembly or conduiting construction, all valves/seals should be closed immediately after installation. As construction progresses, all valves/seals should be closed as installed to prevent the migration of gases through the pipeline/conduit. All piping/conduiting should be capped at the end of	Services & utilities / Construction Stage	Contractor	EPD/TR8/97 - Landfill Gas Hazard Assessment Guidance Note		Y		✓

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		each working day.							
14.12.2	-	<u>Safety Measures – Fire Safety</u> Adequate fire safety equipments should be provided on site. Workers and visitors should be notified of the potential fire hazards. Safety notices should be posted around the site warning the anger and potential hazards.	Construction Stage	Contractor	EPD/TR8/97 - Landfill Gas Hazard Assessment Guidance Note		Y		✓
14.12.1	-	<u>Safety Measures – Confined Spaces</u> Precautionary measures should include ensuring that staff members are aware of the potential hazards of working in confined spaces, and that appropriate monitoring procedures are in place to prevent hazards in confined spaces.	Confined space / Construction Stage	Contractor	EPD/TR8/97 - Landfill Gas Hazard Assessment Guidance Note		Y		✓
14.12.1	-	<u>Monitoring</u> Periodically during ground-works within the Consultation Zone, the works area should be monitored for methane, carbon dioxide and oxygen using appropriately calibrated portable gas detection equipment. Depending on the results of the measurements, actions required will vary. As a minimum these should encompass those actions specified in Table 14.8 of the EIA Report or Table 14.1 of the EM&A Manual.	Construction Stage	Contractor	EPD/TR8/97 - Landfill Gas Hazard Assessment Guidance Note		Y		✓

Landscape and Visual

EIA reference	EM&A Manual reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
						D	C	O	
10.9	7.6	Existing trees on boundary of the Project Area shall be carefully protected during construction. Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees,	All areas/detailed design/ during construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓

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		including trees in contractor's works areas. (Tree protection measures will be detailed at Tree Removal Application stage) (CM1)							
10.9	7.6	Trees unavoidably affected by the works shall be transplanted where practical. Trees will be transplanted straight to their final receptor site and not held in a temporary nursery. A detailed Tree Transplanting Specification shall be provided in the Contract Specification. Sufficient time for necessary tree root and crown preparation periods shall be allowed in the project programme (CM2)	All areas/detailed design/ during construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓
10.9	7.6	Hillside and roadside screen planting to proposed roads, associated structures and slope works (CM3)	All areas/detailed design/ during Construction/ post construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓
10.9	7.6	Hydroseeding or sheeting of soil stockpiles with visually unobtrusive material (in earth tone) (CM4)	All areas/detailed design/ during Construction/ post construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓
10.9	7.6	Screening of construction works by hoardings around works area in visually unobtrusive colours, to screen works (CM5)	All areas/detailed design/ during Construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓
10.9	7.6	Control night-time lighting and glare by hooding all lights (CM6)	All areas/detailed design/ during Construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓
10.9	7.6	Ensure no run-off into water body adjacent to the Project Area (CM7)	All areas/detailed design/ during Construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓
10.9	7.6	Avoidance of excessive height and bulk of buildings and structures (CM8)	All areas/detailed design/ during Construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓
10.9	7.6	Recycle/Reuse all felled trees and vegetation, e.g. mulching (CM9)	All areas/detailed design/ during Construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓
10.9	7.6	Compensatory tree planting shall be provided to the satisfaction of relevant Government departments.	All areas/detailed design/ during	Design Consultant/	TMEIA	Y	Y		✓

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		Required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Felling Application process under ETWBTC 3/2006 (CM10)	Construction	Contractor					
10.9	7.6	Re-vegetation of affected woodland/shrubland with native species (OM1)	All areas/detailed design/ during Construction/ post construction	Design Consultant/ Contractor	TMEIA	Y	Y	Y	✓* maintenance agent : HyD
10.9	7.6	Tall buffer screen tree / shrub / climber planting where appropriate should be incorporated to soften hard engineering structures and facilities (OM2)	All areas/detailed design/ during Construction/ post construction	Design Consultant/ Contractor	TMEIA	Y	Y	Y	✓* maintenance agent : HyD & LCSD
10.9	7.6	Streetscape elements (e.g. paving, signage, street furniture, lighting etc.) shall be sensitively designed in a manner that responds to the local context, and minimises potential negative landscape and visual impacts. Lighting units should be directional and minimize unnecessary light spill (OM3)	All areas/detailed design/ during Construction/ post construction	Design Consultant/ Contractor	TMEIA	Y	Y	Y	✓* maintenance agent : HyD
10.9	7.6	Structure, ornamental tree / shrub / climber planting should be provided along roadside amenity strips, central dividers and newly formed slopes to enhance the townscape quality and further greenery enhancement (OM4)	All areas/detailed design/ during Construction/ post construction	Design Consultant/ Contractor	TMEIA	Y	Y	Y	✓* maintenance agent : HyD & LCSD
10.9	7.6	Aesthetically pleasing design (visually unobtrusive and non-reflective) as regard to the form, material and finishes shall be incorporated to all buildings, engineering structures and associated infrastructure facilities (OM5)	All areas/detailed design/ during Construction/ post construction	Design Consultant/ Contractor	TMEIA	Y	Y	Y	✓* maintenance agent : HyD & ArchSD
10.9	7.6	Avoidance of excessive height and bulk of buildings and structures (OM6)	All areas/detailed design/ during Construction/ post construction	Design Consultant/ Contractor	TMEIA	Y	Y	Y	✓* maintenance agent : HyD & ArchSD
Waste									
EIA reference	EM&A Manual	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or	Implementation Stages		Status	

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	reference				Requirement	D	C	O	
12.6		The Contractor shall identify a coordinator for the management of waste.	Contract mobilisation	Contractor	TMEIA		Y		✓
12.6		The Contractor shall prepare and implement a Waste Management Plan which specifies procedures such as a ticketing system, to facilitate tracking of loads and to ensure that illegal disposal of wastes does not occur, and protocols for the maintenance of records of the quantities of wastes generated, recycled and disposed. A recording system for the amount of waste generated, recycled and disposed (locations) should be established.	Contract mobilisation	Contractor	TMEIA, Works Branch Technical Circular No. 5/99 for the Trip-ticket System for Disposal of Construction and Demolition Material		Y		✓
12.6		The Contractor shall apply for and obtain the appropriate licenses for the disposal of public fill, chemical waste and effluent discharges.	Contract mobilisation	Contractor	TMEIA, Land (Miscellaneous Provisions) Ordinance (Cap 28); Waste Disposal Ordinance (Cap 354); Dumping at Sea Ordinance (Cap 466); Water Pollution Control Ordinance.		Y		✓
12.6	8.1	Training shall be provided to workers about the concepts of site cleanliness and appropriate waste	Contract mobilisation	Contractor	TMEIA		Y		△

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		management procedures including waste reduction, reuse and recycling							
12.6	8.1	The extent of cutting operation should be optimised where possible. Earth retaining structures and bored pile walls should be proposed to minimize the extent of cutting.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Inert C&D materials from the toll plaza cut slopes shall be reused for construction of the raised platform for the toll plaza where possible.	Tol Plaza / toll plaza construction period	Contractor	TMEIA		Y		✓
12.6	8.1	The site and surroundings shall be kept tidy and litter free.	All areas / throughout construction period	Contractor	TMEIA		Y		△
12.6	8.1	No waste shall be burnt on site.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	The Contractor shall be prohibited from disposing of C&D materials at any sensitive locations. The Contractor should propose the final disposal sites in the EMP and WMP for approval before implementation.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Stockpiled material shall be covered by tarpaulin and /or watered as appropriate to prevent windblown dust/ surface run off.	All areas / throughout construction period	Contractor	TMEIA		Y		△
12.6	8.1	Excavated material in trucks shall be covered by tarpaulins to reduce the potential for spillage and dust generation.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Wheel washing facilities shall be used by all trucks leaving the site to prevent transfer of mud onto public roads.	All areas / throughout construction period	Contractor	TMEIA		Y		△
12.6	8.1	Standard formwork or pre-fabrication should be used as far as practicable so as to minimise the C&D materials arising. The use of more durable formwork/ plastic facing for construction works should be considered. The use of wooden hoardings should be avoided and metal hoarding should be used to facilitate recycling. Purchasing of construction	All areas / throughout construction period	Contractor	TMEIA		Y		✓

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		materials should avoid over-ordering and wastage.							
12.6	8.1	The Contractor should recycle as many C&D materials (this is a waste section) as possible on-site. The public fill and C&D waste should be segregated and stored in separate containers or skips to facilitate the reuse or recycling of materials and proper disposal. Where practicable, the concrete and masonry should be crushed and used as fill materials. Steel reinforcement bar should be collected for use by scrap steel mills. Different areas of the sites should be considered for segregation and storage activities.	All areas / throughout construction period	Contractor	TMEIA		Y		△
12.6	8.1	All falsework will be steel instead of wood.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Chemical waste producers should register with the EPD. Chemical waste should be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes as follows: <ul style="list-style-type: none"> • suitable for the substance to be held, resistant to corrosion, maintained in good conditions and securely closed; • Having a capacity of <450L unless the specifications have been approved by the EPD; and • Displaying a label in English and Chinese according to the instructions prescribed in Schedule 2 of the Regulations. • Clearly labelled and used solely for the storage of chemical wastes; • Enclosed with at least 3 sides; • Impermeable floor and bund with capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in the area, whichever is greatest; • Adequate ventilation; 	All areas / throughout construction period	Contractor	TMEIA		Y	△	

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		<ul style="list-style-type: none"> Sufficiently covered to prevent rainfall entering (water collected within the bund must be tested and disposed of as chemical waste, if necessary); and Incompatible materials are adequately separated. 							
12.6	8.1	Waste oils, chemicals or solvents shall not be disposed of to drain,	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Adequate numbers of portable toilets should be provided for on-site workers. Portable toilets should be maintained in reasonable states, which will not deter the workers from utilising them.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Night soil should be regularly collected by licensed collectors.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	General refuse arising on-site should be stored in enclosed bins or compaction units separately from C&D and chemical wastes. Sufficient dustbins shall be provided for storage of waste as required under the Public Cleansing and Prevention of Nuisances By-laws. In addition, general refuse shall be cleared daily and shall be disposed of to the nearest licensed landfill or refuse transfer station. Burning of refuse on construction sites is prohibited.	All areas / throughout construction period	Contractor	TMEIA		Y		△
12.6	8.1	All waste containers shall be in a secure area on hardstanding;	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Training shall be provided to workers about the concepts of site cleanliness and appropriate waste management procedure, including waste reduction, reuse and recycling.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Office wastes can be reduced by recycling of paper if such volume is sufficiently large to warrant collection. Participation in a local collection scheme by the Contractor should be advocated. Waste separation facilities for paper, aluminum cans, plastic bottles, etc should be provided on-site.	Site Offices/ throughout construction period	Contractor	TMEIA		Y		✓
12.6	Section 8	EM&A of waste handling, storage, transportation, disposal procedures and documentation through the	All areas / throughout construction period	Contractor	EM&A Manual		Y		✓

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		site audit programme shall be undertaken.							
Water Quality									
EIA reference	EM&A Manual reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
						D	C	O	
Land Works									
6.10	-	Wastewater from temporary site facilities should be controlled to prevent direct discharge to surface or marine waters.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Sewage effluent and discharges from onsite kitchen facilities shall be directed to Government sewer in accordance with the Requirements of the WPCO or collected for disposal offsite. The use of soakaways shall be avoided.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Storm drainage shall be directed to storm drains via adequately designed sand/silt removal facilities such as sand traps, silt traps and sediment basins. Channels, earth bunds or sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		◇
6.10	-	Silt removal facilities, channels and manholes shall be maintained and any deposited silt and grit shall be removed regularly, including specifically at the onset of and after each rainstorm.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		△
6.10	-	Temporary access roads should be surfaced with crushed stone or gravel.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		△
6.10	-	Measures should be taken to prevent the washout of construction materials, soil, silt or debris into any drainage system.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓

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6.10	-	Open stockpiles of construction materials (e.g. aggregates and sand) on site should be covered with tarpaulin or similar fabric during rainstorms.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	5.8	Manholes (including any newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		△
6.10	-	Discharges of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	All vehicles and plant should be cleaned before they leave the construction site to ensure that no earth, mud or debris is deposited by them on roads. A wheel washing bay should be provided at every site exit.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Section of construction road between the wheel washing bay and the public road should be surfaced with crushed stone or coarse gravel.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Wastewater generated from concreting, plastering, internal decoration, cleaning work and other similar activities, shall be screened to remove large objects.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Vehicle and plant servicing areas, vehicle wash bays and lubrication facilities shall be located under roofed areas. The drainage in these covered areas shall be connected to foul sewers via a petrol interceptor in accordance with the requirements of the WPCO or collected for off site disposal.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	The Contractor shall prepare an oil / chemical cleanup plan and ensure that leakages or spillages are contained and cleaned up immediately.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Waste oil should be collected and stored for recycling or disposal, in accordance with the Waste Disposal Ordinance.	All areas/ throughout construction period	Contractor	TM-EIAO Waste Disposal Ordinance		Y		✓

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6.10	-	All fuel tanks and chemical storage areas should be provided with locks and be sited on sealed areas. The storage areas should be surrounded by bunds with a capacity equal to 110% of the storage capacity of the largest tank.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		△
6.10	Section 5	All construction works shall be subject to routine audit to ensure implementation of all EIA recommendations and good working practice.	All areas/ throughout construction period	Contractor	EM&A Manual		Y		✓

Remarks:

- ✓ Compliance of Mitigation Measures
- < > Compliance of Mitigation Measures but need improvement.
- × Non-compliance of Mitigation Measures
- ▲ Non-compliance of Mitigation Measures but rectified by Contractor
- △ Deficiency of Mitigation Measures but rectified by Contractor
- N/A Not Applicable in Reporting Period
- # Amended against condition 3.13 of EP-354/2009/C
- * In Progress and subject to approved L&V Plan

Legend: D=Design, C=Construction, O=Operation

Note: Funding Agent for all mitigation measures will be the Highways Department of the Hong Kong SAR Government