

**MATERIALAB CONSULTANTS LIMITED**

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Report No.: 0165/15/ED/0310

**MONTHLY ENVIRONMENTAL MONITORING & AUDIT  
REPORT (Rev. 1)**

**January 2016**

**Client:** China Harbour Engineering Co., Ltd.

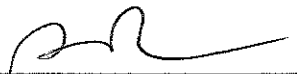
**Project:** Contract No. HY/2013/03  
Hong Kong-Zhuhai-Macao Bridge  
Hong Kong Boundary Crossing Facilities -  
Vehicle Clearance Plazas and  
Ancillary Buildings and Facilities

**Report No.:** 0165/15/ED/0310

Prepared by: Sandra Pang

Reviewed by: Bong Yu

Certified by:

  
Arthur Cheng  
Environmental Team Leader

16 February 2016

By Fax (3468 2076) and By Post

AECOM Asia Co. Ltd.  
The PRE's Office  
5 Ying Hei Road, Tung Chung, Lantau  
Hong Kong

Attention: Mr. Michael Tovey

Dear Sir,

**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/2013/03 – HZMB HKBCF – Vehicle Clearance Plazas and  
Ancillary Buildings and Facilities  
Monthly Environmental Monitoring & Audit Report for January 2016**

Reference is made to the Environmental Team's submission of Monthly Environmental Monitoring & Audit Report for January 2016 (Rev. 1) certified by the ET Leader (ET's ref.: "MCL/ED/0083/2016/C" dated 16 February 2016) and provided to us via e-mail on 16 February 2016.

We are pleased to inform you that we have no adverse comment on the captioned report. We write to verify the captioned submission in accordance with Condition 5.4 of the Environmental Permit No. EP-353/2009/I.

Thank you very much for your attention and please feel free to contact the undersigned should you require further information.

Yours faithfully,  
For and on behalf of  
Ramboll Environ Hong Kong Limited



Raymond Dai  
Independent Environmental Checker

c.c.	HyD	Mr. Matthew Fung	(By Fax: 3188 6614)
	HyD	Mr. Ken Woo	(By Fax: 3188 6614)
	MCL	Mr. Arthur Cheng	(By Fax: 2450 8032)
	CHEC	Mr. Johnason Ko	(By Fax: 2887 3014)

Internal: DY, YH, CL, JLau, ENPO Site

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Date 16 February 2016  
Our Ref. MCL/ED/0083/2016/C

Ramboll Environ Hong Kong Limited  
(formerly ENVIRON Hong Kong Limited)  
Room 2403, 24/F, Jubilee Centre,  
18 Fenwick Street, Wan Chai,  
Hong Kong

BY HAND

Attn.: Mr. Raymond Dai, IEC

Dear Sir,

**EP Condition 5.4 – Monthly EM&A Report for  
Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities –  
Vehicle Clearance Plazas and Ancillary Buildings and Facilities (Contract No. HY/2013/03)**

Pursuant to Condition 5.4 of the Environmental Permit (EP-353/2009/I) for the captioned project, we are pleased to submit the certified Monthly EM&A Report for January 2016 (Rev.1) for your verification.

Should you require further information, please do not hesitate to contact our Ms Sandra Pang at 3565 4156 or the undersigned at 3565 4115.

Yours faithfully,  
for and on behalf of  
MATERIALAB CONSULTANTS LIMITED



Arthur Cheng  
Environmental Team Leader

AC/by

c.c. AECOM – Mr. P.K. Lee, Mr. W.S. Ng, Ms. Miranda Wong  
RAMBOLL ENVIRON – Mr. Ray Yan, Mr. Andy Wong  
CHEC – Mr. Marko Chan

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### EXECUTIVE SUMMARY

This Monthly Environmental Monitoring and Audit (EM&A) Report is prepared for Contract No. HY/2013/03 “Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Vehicle Clearance Plazas and Ancillary Buildings and Facilities” (hereafter referred to as “the Contract”) for the Highways Department of Hong Kong Special Administrative Region (HKSAR). The Contract was awarded to China Harbour Engineering Co. Limited (hereafter referred to as “the Contractor”) and MaterialLab Consultants Limited (MCL) was appointed as the Environmental Team (ET) by the Contractor.

The Contract is part of the “Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities” (HZMB HKBCF) Project which is a “Designated Project” under Schedule 2 of the Environmental Impact Assessment (EIA) Ordinance (Cap. 499) and for which an EIA Report (Register No. AEIAR-145/2009) was prepared and approved. The current Environmental Permit (EP) for HKBCF, namely No. EP-353/2009/I, was issued on 17 July 2015. These documents are available through the EIA Ordinance Register.

Commencement of the Contract took place on 10 April 2015 while the construction works and the EM&A programme of this Contract commenced on 29 August 2015.

MaterialLab Consultants Limited (MCL) has been appointed by the Contractor to implement the Environmental Monitoring & Audit (EM&A) programme for the Contract in accordance with the Updated EM&A Manual for HKBCF (Version 1.0) and will be providing environmental team services for the Contract.

This is the 5<sup>th</sup> Monthly EM&A Report for the Contract which summaries findings of the EM&A programme during the reporting period from 1 January 2016 to 31 January 2016 (the “reporting period”). The monthly EM&A programme was undertaken in accordance with the Updated EM&A Manual for HKBCF (Version 1.0). It should be noted that the air quality and noise monitoring works for the Contract are covered by Contract No. HY/2010/02 “Hong Kong-Zhuhai-Macao Bridge HKBCF – Reclamation Works” and Contract No. HY/2011/03 “Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between Scenic Hill and HKBCF”. The ET of the Contract or another ET of the HZMB project is required to conduct impact air quality monitoring at AMS6 and AMS7 and noise monitoring at NMS2 and NMS3B as part of EM&A programme if these monitoring stations are no longer covered under Contract No. HY/2010/02 and HY/2011/03. However, this is subject to ENPO’s final decision on which ET should carry out the monitoring work at these stations.

The dates of site inspection during the reporting period are listed below:

Environmental Site Inspection: 7, 14, 20 and 28 January 2016.

### Breaches of Action and Limit Levels

Summary of Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level at AMS6 shall be referred to the monthly EM&A report prepared by Contract No. HY/2011/03.

There was no Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at station AMS7 by the Environmental Team of Contract No. HY/2010/02 during the reporting period.

There was no Action and Limit Level exceedance for noise recorded at station NMS2 and station NMS3B by the Environmental Team of Contract No. HY/2010/02 during the reporting period.

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There was no marine works conducted during the reporting period and therefore, no water quality impact monitoring result is reported.

There was no marine works during the reporting period and therefore, no ecology monitoring result is reported.

### **Complaint Log**

There were no complaints received in relation to the environmental impact during the reporting period.

### **Notifications of Summons and Successful Prosecutions**

There were no notifications of summons or prosecutions received during this reporting period.

### **Reporting Changes**

The relocation of air monitoring station AMS7A (Chu Kong Air-Sea Union Transportation Co. Ltd.) back to the original location AMS7 (Hong Kong SkyCity Marriott Hotel) was approved by EPD. The relocation was completed in 30 December 2015 and the air monitoring at AMS7 was started from January 2016.

### **Future Key Issues**

The future key issues to be undertaken in the upcoming month are:

- Site Investigation at Portion A1, J & G;
- Piling at Portion A1, STP, Pumping Station, B & G (Bridge A1, AS2, A6 & A7a);
- Building at Portion A1, B & G;
- Drainage at Portion B & G; and
- CUE Construction at Portion B.

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## 1. INTRODUCTION

### 1.1 Background

1.1.1 Materialab Consultants Limited was commissioned by China Harbour Engineering Co. Limited (also referred to as “the Contractor”) to undertake the Environmental Team (ET) services (including environmental monitoring and audit (EM&A)) for Contract No. HY/2013/03 “Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Vehicle Clearance Plazas and Ancillary Buildings and Facilities” (“the Contract”) for the Highways Department of Hong Kong Special Administrative Region (HKSAR).

1.1.2 The Contract is part of Hong Kong–Zhuhai–Macao Bridge Hong Kong Boundary Crossing Facilities (HKBCF) which is “Designated Projects”, under Schedule 2 of the Environmental Impact Assessment Ordinance (EIAO) (Cap 499) and for which an EIA Report (Register No. AEIAR-145-2009) was prepared and approved. The current Environmental Permit (EP) for HKBCF, namely No. EP- 353/2009/I, was issued on 17 July 2015. These documents are available through the EIA Ordinance. The general layout of the Project area is shown in **Appendix A**.

1.1.3 This is the fifth EM&A report to document the findings of site inspection activities and EM&A programme carried out by the Contractor from 1 January 2016 to 31 January 2016 (reporting period) under Contract No. HY/2013/03 and is submitted to fulfil Condition 5.4 of the EP.

### 1.2 Project Description

1.2.1 The works to be executed under this Contract include the following major items:

- a. Cargo clearance facilities including kiosks for clearance of good vehicles, customs inspection platforms, X-ray building, etc.;
- b. Passenger related facilities including processing kiosks and examination facilities for private cars and coaches, annexure for examination of accompanying passengers of private cars, etc.;
- c. Accommodation/offices for the facilities (like fire station, police station, buildings for Immigration Department [ImmD], Hong Kong Customs and Excise Department [C&ED], Agriculture, Fisheries and Conservation Department [AFCD], Food and Environmental Hygiene Department [FEHD], Department of Health [DofH] etc.) of the Government departments providing services in connection with the HKBCF;
- d. Provision of transport and miscellaneous facilities inside the HKBCF including public transport interchange (PTI), transport drop-off and pick-up areas, vehicle holding areas, passenger queuing areas, road networks, footbridges, fencing, sewerage and drainage systems, sewage treatment plant and treated effluent disposal facilities, water supply system, building services works, electronic system, and traffic control and information system including traffic control and surveillance system (TCSS), etc.;
- e. Provision of roads connecting the BCF to the Hong Kong Link Road (HKLR), the Tuen Mun – Chek Lap Kok Link (TM-CLKL) and the Hong Kong International Airport (HKIA), expect the part of road works in HKIA entrusted to the HKLR project; and
- f. Reprovisioning of the affected HKIA’s facilities, expect those affected by the Automated People Mover (APM) system such as the existing east rescue berth.

### 1.3 Project Organisation



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1.3.1 The Project Organisation for Environmental Works is shown in **Appendix B**. The contact person and telephone numbers of key personnel for the captioned project are shown in Table 1.1:

Table 1.1 Contact Persons and Telephone Numbers of Key Personnel

Party	Position	Contact Person	Telephone No.	Fax No.
Engineer or Engineer's Representative (AECOM Asia Co. Ltd.)	Chief Resident Engineer	Mr. Michael Tovey	3985 7470	3902 8800
Environmental Project Office / Independent Environmental Checker (Ramboll Environ Hong Kong Limited)	Environmental Project Office Leader	Mr. Y. H. Hui	3547 2133	3465 2899
	Independent Environmental Checker (IEC)	Mr. Raymond Dai	3465 2888	34652899
	Environmental Site Supervisor	Mr. Ray Yan	5181 8165	3465 2899
Contractor (China Harbour Engineering Co. Ltd)	Site Agent	Mr. Paul Pui	9125 0700	2512 0427
	Environmental Officer	Mr. Marko Chan	9427 2879	2512 0427
Environmental Team (Materialab Consultants Limited)	Environmental Team Leader (ETL)	Mr. Arthur Cheng	3565 4115	2450 8032
24-hr Complaint Hotline	--	--	5236 7111	--

1.3.2 The Contract HY/2013/03 has commenced on 10 April 2015. The commencement of construction works and the EM&A programme have commenced on 29 August 2015.

## 1.4 Construction Programme

1.4.1 The construction programme is provided in **Appendix C**.

## 1.5 Construction Works Undertaken during the Reporting Period

1.5.1 The construction works of this Contract commenced on 29 August 2015. During this reporting period, the following major site activities were commenced:

- Site Investigation at Portion A1, J & G;
- Piling at Portion A1, STP, Pumping Station, B & G (Bridge A1, AS2, A6 & A7a);
- Building at Portion A1 & G;
- Drainage at Portion B;
- CUE Construction at Portion B; and
- Marine sediment excavation activities from the land-based works and corresponding disposal at the designated disposal sites within Hong Kong as allocated by the Marine Fill Committee.

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**2. AIR QUALITY MONITORING**

**2.1 Monitoring Locations**

2.1.1 The air quality monitoring works for the Contract are covered by Contract No. HY/2010/02 “Hong Kong-Zhuhai-Macao-Bridge HKBCF – Reclamation Works” and Contract No. HY/2011/03 “Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between Scenic Hill and HKBCF”. The ET of the Contract or another ET of the HZMB project is required to conduct impact air quality monitoring at AMS6 and AMS7 as part of EM&A programme if these air quality monitoring stations are no longer covered under Contract No. HY/2010/02 and HY/2011/03. **Figure 1** shows the locations of air monitoring stations. The relocation of air monitoring station AMS7A (Chu Kong Air-Sea Union Transportation Co. Ltd.) back to the original location AMS7 (Hong Kong SkyCity Marriott Hotel) was approved by EPD. The relocation was completed in 30 December 2015 and the air monitoring at AMS7 was started from January 2016.

Table 2.1 Air Quality Monitoring Location

Air Monitoring Station	Location
AMS6	Dragonair/CNAC (Group) Building (A80)
AMS7	Hong Kong SkyCity Marriott Hotel

**2.2 Monitoring Requirements**

2.2.1 The monitoring requirements, equipment, parameters, frequency and duration, methodology, schedule, and meteorological information are described in the monthly EM&A Reports prepared for Contract No. HY/2010/02 and HY/2011/03.

2.2.2 The Action and Limit levels for 1-hr TSP and 24-hr TSP are summarized in Table 2.2.

Table 2.2 Action and Limit Levels for Air Quality

Monitoring Station	Action Level (µg/m³)	Limit Level (µg/m³)
<b>1 hour TSP</b>		
AMS6	360	500
AMS7	370	
<b>24 hours TSP</b>		
AMS6	173	260
AMS7	183	

2.2.3 The event and action plan is provided in **Appendix D**.

2.2.4 If exceedance(s) at these stations is/are recorded by the ET of the Contract or referred by the other ET under the HZMB project to the Contract, the ET of the Contract will carry out an investigation and findings will be reported in the monthly EM&A Report.

**2.3 Monitoring Results**

2.3.1 The monitoring results for AMS6 and AMS7 are reported in the monthly EM&A Reports prepared for Contract No. HY/2011/03 and HY/2010/02 respectively.

2.3.2 Summary of Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level at AMS6 shall be referred to the monthly EM&A report prepared by Contract No. HY/2011/03.

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2.3.3 There was no Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at station AMS7 by the Environmental Team of Contract No. HY/2010/02 during the reporting period.

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### 3. NOISE MONITORING

#### 3.1 Monitoring Locations

3.1.1 The noise monitoring works for the Contract are covered by Contract No. HY/2010/02 "Hong Kong-Zhuhai-Macao Bridge HKBCF – Reclamation Works". The ET of the Contract or another ET of the HZMB project is required to conduct noise monitoring at NMS2 and NMS3B as part of EM&A programme if these monitoring stations are no longer covered under Contract No. HY/2010/02. **Figure 2** shows the locations of noise monitoring stations.

Table 3.1 Construction Noise Monitoring Location

ID No.	Description
NMS2	Seaview Crescent
NMS3B	Site Boundary of Site Office Area at WA2

#### 3.2 Monitoring Requirements

3.2.1 The monitoring requirements, monitoring equipment, monitoring parameters, frequency and duration, monitoring methodology and monitoring schedule are detailed in the monthly EM&A Reports prepared for Contract No. HY/2010/02.

3.2.2 The Action and Limit Levels for construction noise are defined in Table 3.2.

Table 3.2 Action and Limit Level for Construction Noise

Monitoring Station	Action Level	Limit Level
<b>For the Time Period 0700-1900 hrs. on Normal Weekdays</b>		
NMS2	When one documented complaint is received	75.0 dB (A) Leq (30 min.)
NMS3B		70.0 dB (A) Leq (30 min.)*

Notes: If works are to be carried out during restricted hours, the conditions stipulated in the construction noise permit issued by the Noise Control Authority have to be followed.

\* Reduce to 70 dB(A) for schools and 65 dB(A) during school examination period

#### 3.3 Monitoring Results

3.3.1 The monitoring results for NMS2 and NMS3B are reported in the monthly EM&A Reports prepared for Contract No. HY/2010/02. No noise exceedances were recorded at stations NMS2 and NMS3B by the ET of Contract No. HY/2010/02 during the reporting period.

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### 4. WATER QUALITY MONITORING

- 4.1 There was no marine works conducted during the reporting period and therefore, no relevant monitoring result is reported. However, ET of the Contract shall closely monitor on the status of marine works, which shall conduct monitoring when marine works commence in the future.
- 4.2 The ET of the Contract is required to conduct impact water quality monitoring as part of EM&A programme if water quality monitoring is no longer covered by another ET of the HZMB project. The ETL shall review and obtain IEC, ENPO and EPD agreement on the contract specific water quality monitoring works at least a month before the commencement of any marine works.

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### **5. ECOLOGY MONITORING**

- 5.1 There was no marine works conducted which impacted to the ecology during the reporting period and therefore, no relevant monitoring result is reported. However, ET of the Contract shall closely monitor on the status of marine works, which shall conduct monitoring when marine works commence in the future.
- 5.2 The ET of the Contract is required to conduct ecology monitoring as part of EM&A programme if ecology monitoring is no longer covered by another ET of the HZMB project. The ETL shall review and obtain IEC, ENPO, AFCD and EPD agreement on the contract specific marine ecology monitoring works at least a month before the commencement of any marine works.

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## 6. ENVIRONMENTAL SITE INSPECTION AND AUDIT

### 6.1 Site Inspection

- 6.1.1 Site audits were carried out by ET on weekly basis to monitor the implementation of proper environmental management practices and mitigation measures in the Project site.
- 6.1.2 The joint site audits were conducted on 7, 14, 20 and 28 January 2016 by the representatives of Engineer, Contractor, ET and IEC (IEC for 20 January 2016).
- 6.1.3 Particular observations during the site inspection and corrective actions undertaken by the Contractor are described below:

#### 31 December 2015

1. CHEC was reminded to remove the construction wastes accumulated in the tray at CUE works area. The observation was closed on 7 January 2016.
2. CHEC was reminded to remove the stagnant water accumulated at CUE works area. The observation was closed on 7 January 2016.

#### 7 January 2016

1. CHEC was reminded to maintain good housekeeping practice at CUE works area. Subsequently, good housekeeping practice was maintained on site. The observation was closed on 14 January 2016.
2. CHEC was reminded to remove the stagnant water at Area 1. Subsequently, stagnant water was removed on site. The observation was closed on 28 January 2016.
3. CHEC was reminded to properly store chemicals at CUE works area. Subsequently, chemicals were stored properly on site. The observation was closed on 14 January 2016.

#### 14 January 2016

1. CHEC was reminded to remove the stagnant water at CUE works area. Subsequently, stagnant water was removed on site. The observation was closed on 28 January 2016.
2. CHEC was reminded to remove the stagnant water at Area 1. Subsequently, stagnant water was removed on site. The observation was closed on 28 January 2016.

#### 20 January 2016

1. CHEC was reminded to maintain good housekeeping practice at CUE works area. Subsequently, good housekeeping practice was maintained on site. The observation was closed on 28 January 2016.

#### 28 January 2016

1. CHEC was reminded to clear and prevent the oil spillage from generator's drip tray at CUE works area. Follow-up actions for outstanding observation will be checked in the upcoming site inspections and reported in the coming reporting period.
2. CHEC was reminded to clear and prevent the oil spillage on site at STP works area. Follow-up actions for outstanding observation will be checked in the upcoming site inspections and reported in the coming reporting period.
3. CHEC was reminded to cover the excavated marine sediment properly with tarpaulin sheets at STP works area. Follow-up actions for outstanding observation will be checked in the upcoming site inspections and reported in the coming reporting period.

### 6.2 Advice on the Solid and Liquid Waste Management Status

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- 6.2.1 The Contractor registered as a chemical waste producer for the Contract. Sufficient numbers of receptacles were available for general refuse collection and sorting.
- 6.2.2 The monthly summary of waste flow table is detailed in **Appendix E**.
- 6.2.3 4.022 (in'000m<sup>3</sup>) of excavated marine sediment and 0.073 (in'000m<sup>3</sup>) of Non-inert C & D Wastes were generated in this reporting period.
- 6.2.4 The excavated marine mud from the land-based works was disposed of at the designated disposal sites within Hong Kong as allocated by the Marine Fill Committee. The Contractor shall ensure no spilling and overflowing of materials during loading / unloading / transportation is allowed.
- 6.2.5 The Contractor was reminded that chemical waste containers should be properly treated and stored temporarily in designated chemical waste storage area on site in accordance with the Code of Practice on the Packing, Labelling and Storage of Chemical Waste.

### 6.3 Environmental Licenses and Permits

- 6.3.1 The valid environmental licenses and permits during the reporting period are summarized in **Appendix F**.

### 6.4 Implementation Status of Environmental Mitigation Measures

- 6.4.1 In response to the site audit findings, the Contractor carried out corrective actions.
- 6.4.2 A summary of the Implementation Schedule of Environmental Mitigation Measures (EMIS) is presented in **Appendix G**. All necessary mitigation measures at this stage of works were implemented properly.
- 6.4.3 Implementation status of Regular Marine Travel Route Plan (RMTRP) was checked. Training of marine travel route for marine vessels operator was given to relevant staff and relevant records were kept properly. The marine traffic records and geographical plots of all the vessels tracks overlaid on HK base map shall be provided at monthly interval to ER, ETL, IEC/ENPO to demonstrate the conformance of the vessel to the proposed route.

### 6.5 Summary of Exceedance of the Environmental Quality Performance Limit

- 6.5.1 Summary of Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level at AMS6 shall be referred to the monthly EM&A report prepared by Contract No. HY/2011/03.
- 6.5.2 There was no Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at station AMS7 by the Environmental Team of Contract No. HY/2010/02 during the reporting period.
- 6.5.3 There was no Action and Limit Level exceedance for noise recorded at station NMS2 and station NMS3B by the Environmental Team of Contract No. HY/2010/02 during the reporting period.
- 6.5.4 There was no marine works conducted during the reporting period and therefore, no relevant monitoring result is reported.



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Report No.: 0165/15/ED/0310

6.5.5 There was no marine works during the reporting period and therefore, no ecology monitoring result is reported.

### 6.6 Summary of Complaints, Notification of Summons and Successful Prosecution

6.6.1 There were no complaints received in relation to the environmental impact during the reporting period. The details of cumulative statistics of Environmental Complaints are provided in **Appendix H**.

6.6.2 There was no notification for summons or prosecutions received in relation to the environmental impact during this reporting period.

6.6.3 Statistics on environmental complaints, notifications of summons and successful prosecutions are provided in **Appendix H**.

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### 7. FUTURE KEY ISSUES

#### 7.1 Construction Programme for the Coming Months

7.1.1 As informed by the Contractor, the following are the major construction activities anticipated in February 2016:

- Site Investigation at Portion A1, J & G;
- Piling at Portion A1, STP, Pumping Station, B & G (Bridge A1, AS2, A6 & A7a);
- Building at Portion A1, B & G;
- Drainage at Portion B & G; and
- CUE Construction at Portion B.

#### 7.2 Environmental Site Inspection Schedule for the Coming Month

7.2.1 The tentative schedule for weekly site inspections for February 2016 is provided in **Appendix I**.

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### 8. CONCLUSIONS

- 8.1 Commencement of the Contract took place on 10 April 2015. The commencement date for construction works and the EM&A programme of the Contract commenced on 29 August 2015.
- 8.2 Summary of Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level at AMS6 shall be referred to the monthly EM&A report prepared by Contract No. HY/2011/03.
- 8.3 There was no Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at station AMS7 by the Environmental Team of Contract No. HY/2010/02 during the reporting period.
- 8.4 There was no Action and Limit Level exceedance for noise recorded at station NMS2 and station NMS3B by the Environmental Team of Contract No. HY/2010/02 during the reporting period.
- 8.5 There was no marine works conducted during the reporting period and therefore, no water quality impact monitoring result is reported.
- 8.6 There was no marine works during the reporting period and therefore, no ecology monitoring result is reported.
- 8.7 Environmental site inspections were carried out on 7, 14, 20 and 28 January 2016. Recommendations on remedial actions were given to the Contractor for the deficiencies identified during the site inspections.
- 8.8 There were no complaints received in relation to the environmental impact during the reporting period.
- 8.9 There were no notifications of summons or prosecutions received during the reporting period.

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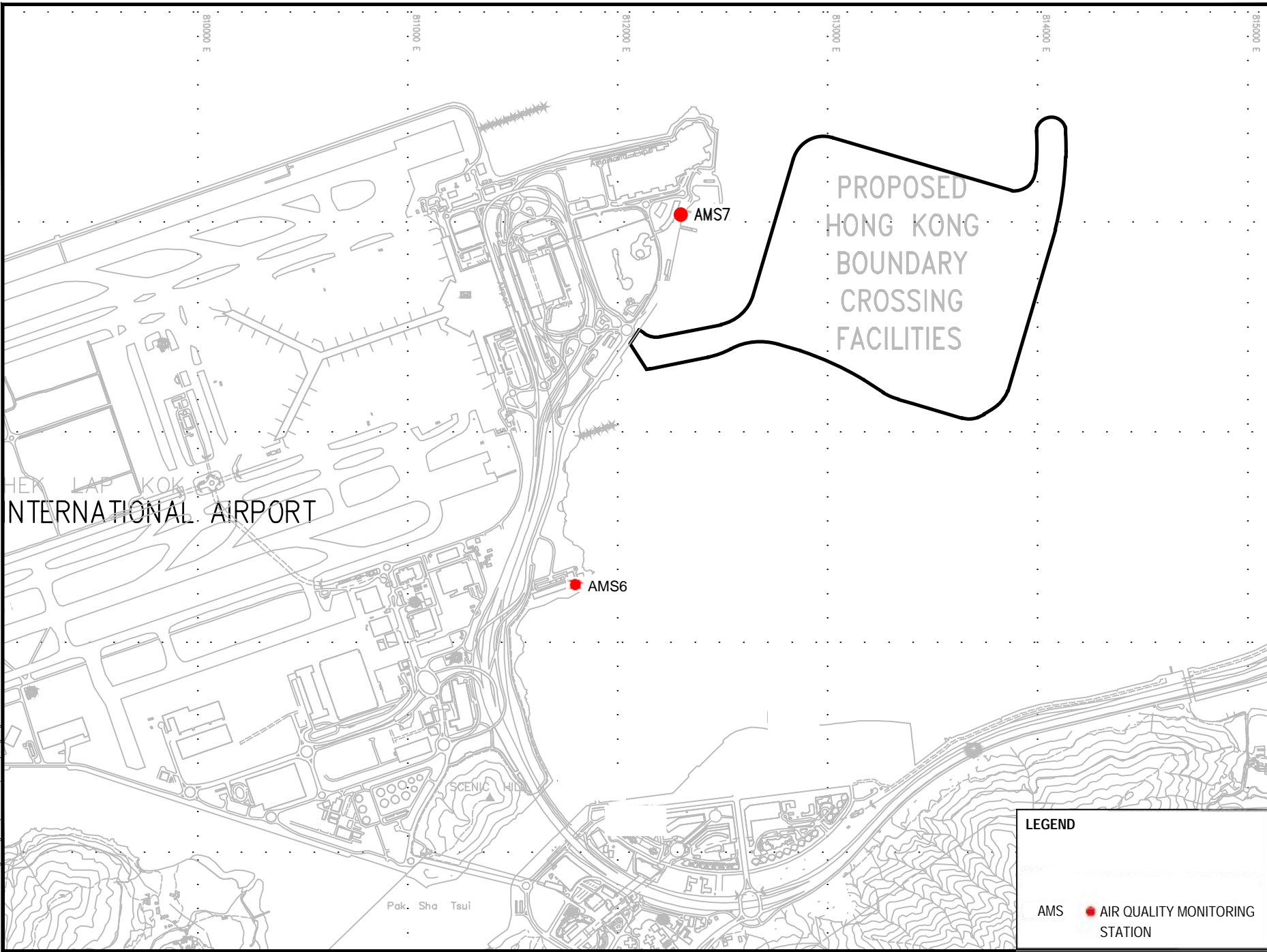
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Report No.: 0165/15/ED/0310

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### **Figure 1**

#### **Air Quality Monitoring Stations**



**LEGEND**

AMS    ● AIR QUALITY MONITORING STATION

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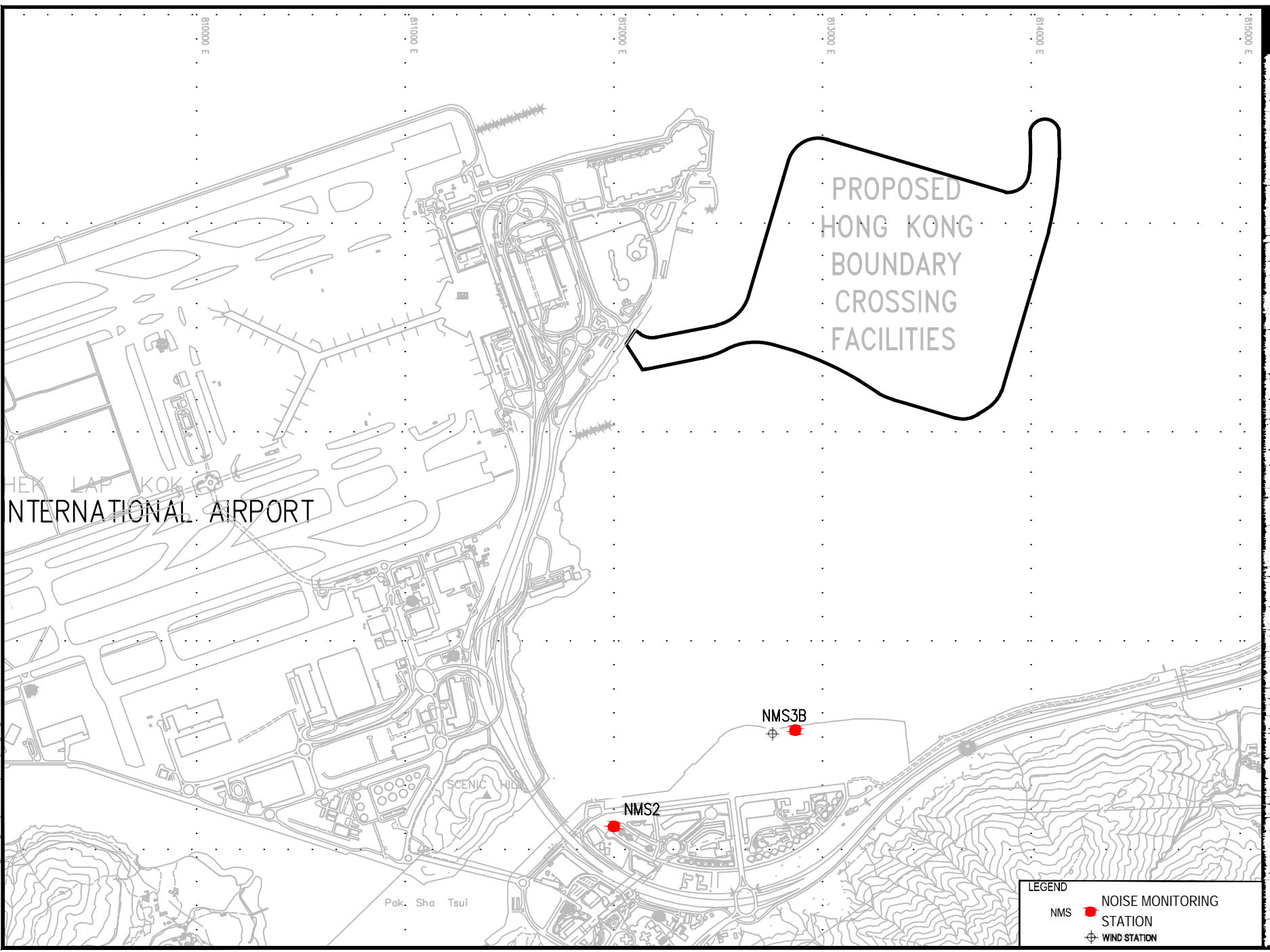
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### **Figure 2**

### **Noise Monitoring Stations**



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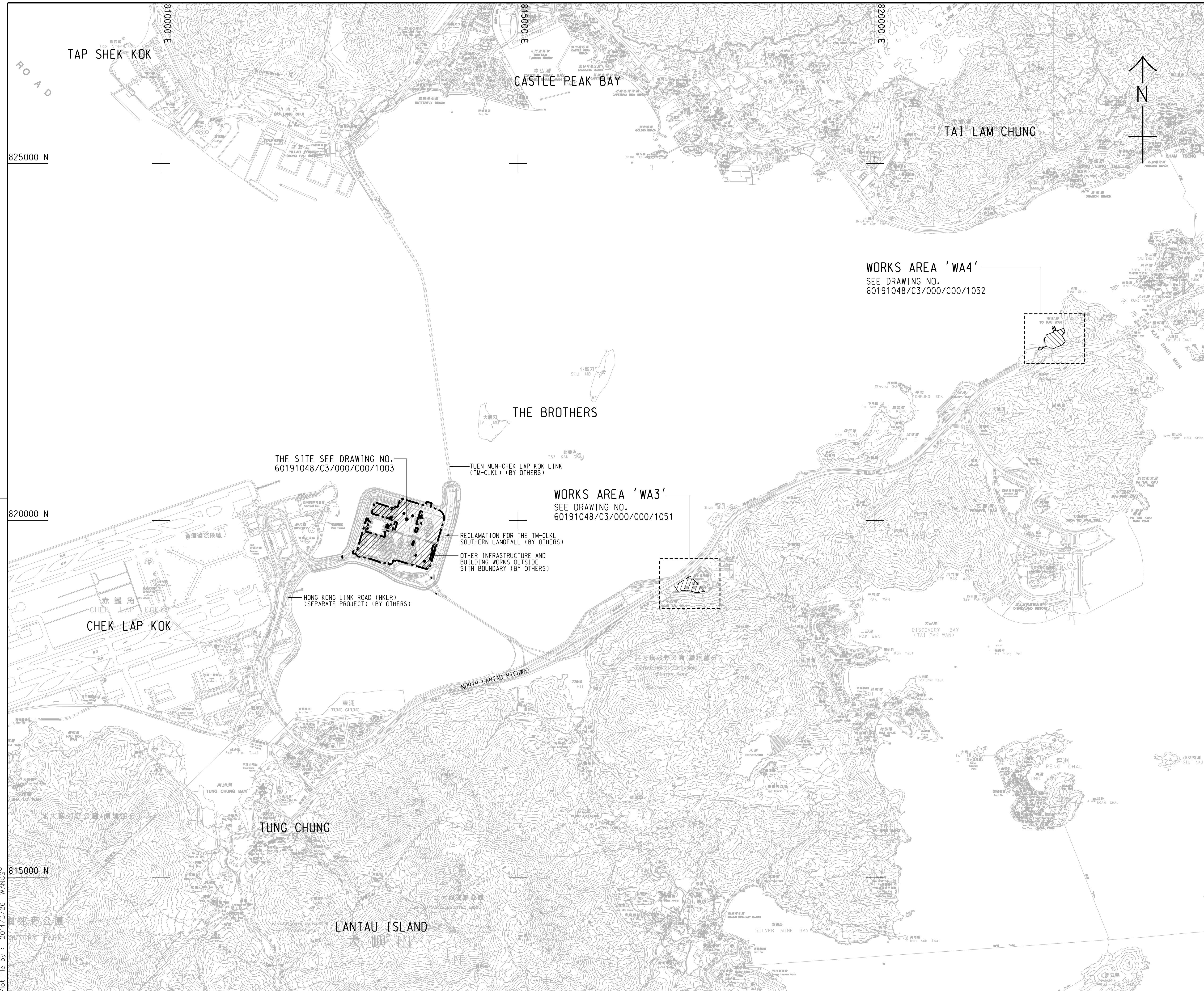
Report No.: 0165/15/ED/0310

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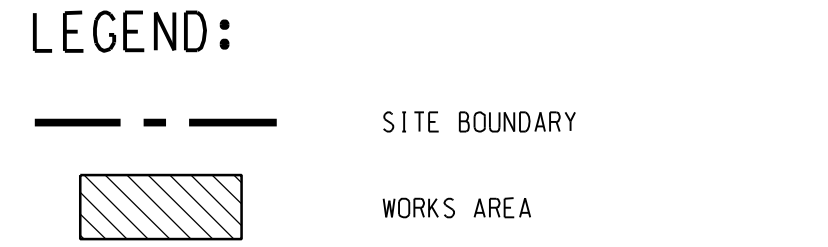
### **Appendix A**

#### **Location of Works Areas**





- NOTES:**
- COORDINATES ARE RELATED TO HONG KONG METRIC GRID (1980).
  - DIMENSIONS ARE IN MILLIMETER AND CHAINAGE ARE IN METRES UNLESS OTHERWISE SHOWN.
  - THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NOS. 60191048/C3/000/C00/1051 TO 1053.



THE SITE SEE DRAWING NO. 60191048/C3/000/C00/1003

TUEN MUN-CHEK LAP KOK LINK (TM-CKLK) (BY OTHERS)

WORKS AREA 'WA3'  
SEE DRAWING NO. 60191048/C3/000/C00/1051

RECLAMATION FOR THE TM-CKLK SOUTHERN LANDFALL (BY OTHERS)  
OTHER INFRASTRUCTURE AND BUILDING WORKS OUTSIDE SITE BOUNDARY (BY OTHERS)

HONG KONG LINK ROAD (HKLR) (SEPARATE PROJECT) (BY OTHERS)

WORKS AREA 'WA4'  
SEE DRAWING NO. 60191048/C3/000/C00/1052

- TENDER DRAWING		BSC	SCI	MAR. 14
REV. 修改	DESCRIPTION 內容摘要	D.C. 審核	C.C. 校對	DATE 日期

**路政署 HIGHWAYS DEPARTMENT**  
**港珠澳大橋香港工程管理處**  
 Hong Kong - Zhuhai - Macao Bridge Hong Kong Project Management Office

HONG KONG-ZHUHAI-MACAO BRIDGE  
 HONG KONG BOUNDARY CROSSING FACILITIES  
 - VEHICLE CLEARANCE PLAZAS AND  
 ANCILLARY BUILDINGS AND FACILITIES

**SITE LOCATION PLAN**

**AECOM** + +  
**Rogers Stirk Harbour + Partners** Aedas  
 BURO HAPPOLD ATKINS ADI + +

DRG. NO. 60191048/C3/000/C00/1000  
 圖紙編號

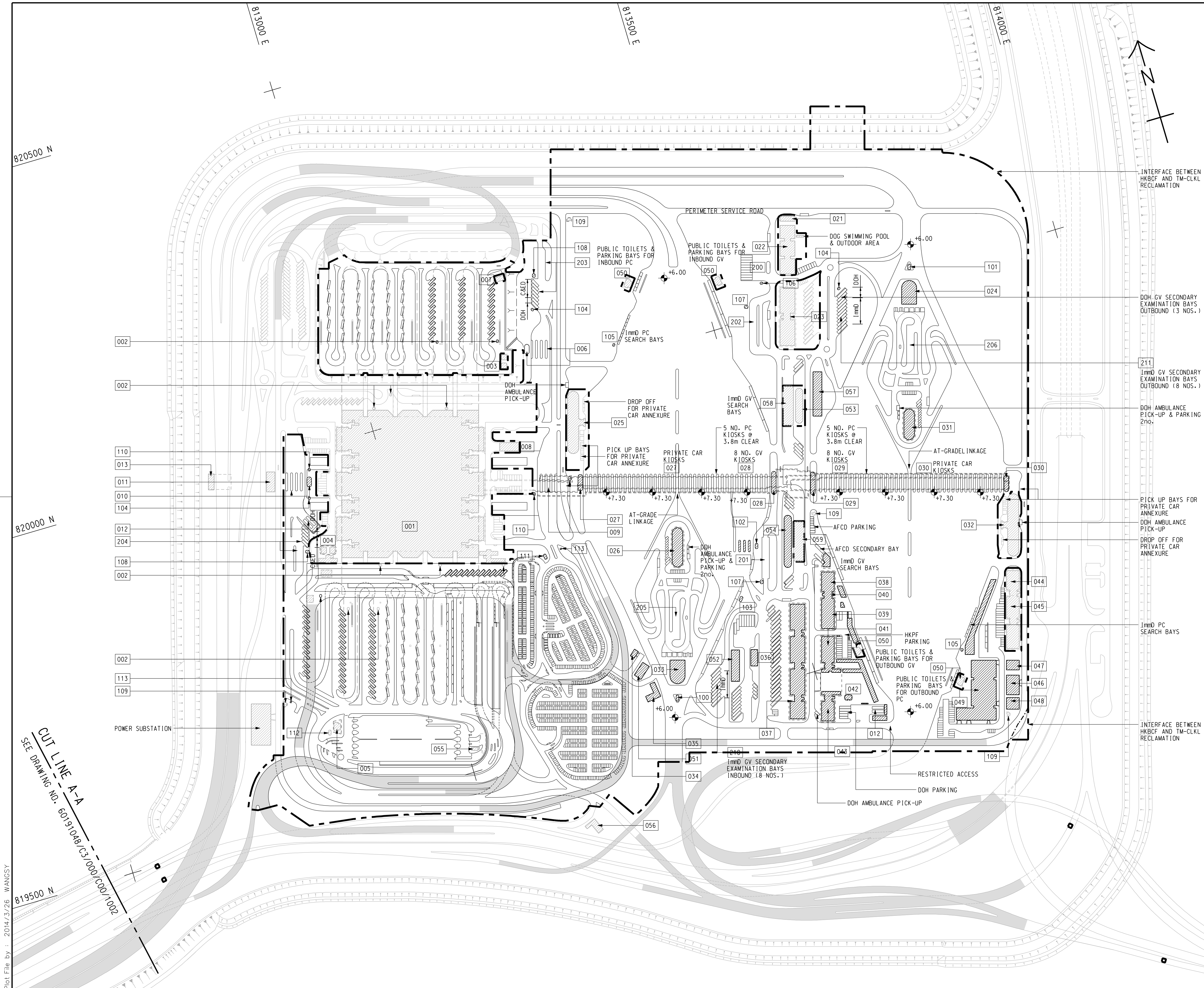
DESIGNED BY 設計	CONTRACT NO. 合約編號	P. Dir. APPROVED 批准人
BWCW	HY/2013/03	TKH

DRAWN BY 繪圖	STATUS 階段
WSY	

SCALE 比例 A1 1 : 25000  
 DIMENSIONS ARE IN 尺寸單位 METRES  
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**NOTE:**  
 1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING NO. 60191048/C3/000/C00/1003.

**LEGEND:**

- SITE BOUNDARY
- VIADUCT
- BUILDING/FACILITIES

CUT LINE A-A  
 SEE DRAWING NO. 60191048/C3/000/C00/1002

REV.	DESCRIPTION	DATE
01	TENDER DRAWING	MAR. 14

路政署  
**HIGHWAYS DEPARTMENT**  
 港珠澳大橋香港工程管理處  
 Hong Kong - Zhuhai - Macao Bridge Hong Kong Project Management Office

HONG KONG-ZHUHAI-MACAO BRIDGE  
 HONG KONG BOUNDARY CROSSING FACILITIES  
 VEHICLE CLEARANCE PLAZAS AND  
 ANCILLARY BUILDINGS AND FACILITIES

**Figure 1-1**  
**Current Layout Plan**

SHEET 1 OF 2

**AECOM** +  
**Rogers Stirk Harbour + Partners** +  
**Aedas** +  
**BURO HAPPOLD** +  
**ATKINS** +  
**ADI** +

DRG. NO. 60191048/C3/000/C00/1001  
 圖紙編號

DESIGNED BY BWCW CONTRACT NO. HY/2013/03 P. DIR. APPROVED TKH

DRAWN BY WSY STATUS 補放

SCALE 1:2500  
 比例尺

DIMENSIONS ARE IN METRES  
 尺寸單位 公尺

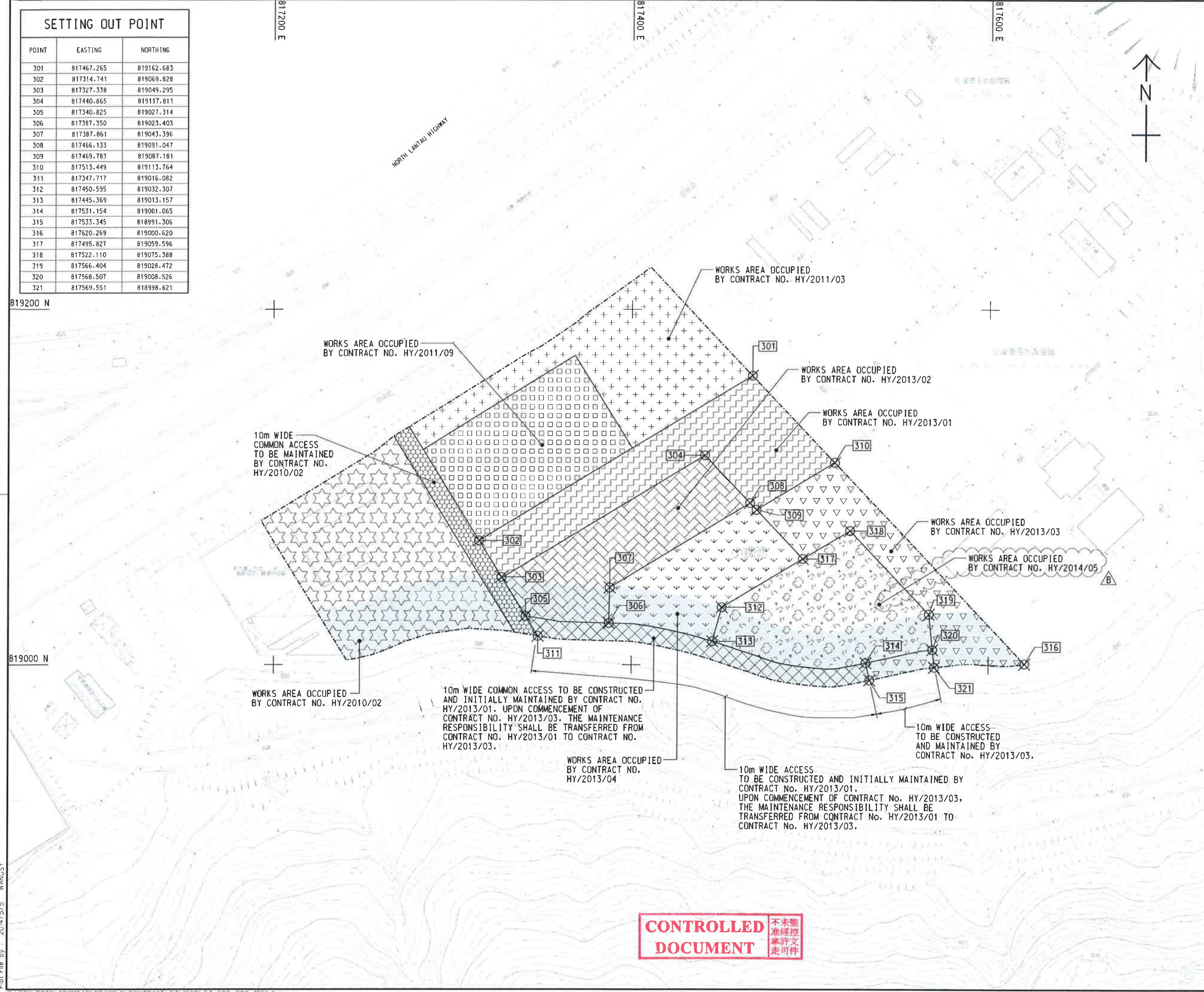
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SETTING OUT POINT		
POINT	EASTING	NORTHING
301	817467.265	819162.683
302	817314.741	819069.828
303	817327.338	819049.295
304	817440.865	819117.811
305	817340.825	819027.314
306	817387.350	819023.403
307	817387.861	819043.396
308	817466.133	819091.047
309	817469.783	819087.181
310	817513.449	819113.764
311	817347.717	819016.082
312	817450.595	819032.307
313	817445.369	819013.157
314	817531.154	819001.065
315	817533.345	818991.306
316	817620.269	819000.620
317	817495.827	819059.596
318	817522.110	819075.388
319	817566.404	819028.472
320	817568.507	819008.526
321	817569.551	818998.621



**NOTES:**

- COORDINATES ARE RELATED TO HONG KONG METRIC GRID (1980).
- DIMENSIONS ARE IN MILLIMETER AND CHAINAGE ARE IN METRES UNLESS OTHERWISE SHOWN.

**LEGEND:**

	WORKS AREA BOUNDARY
	PORTION 3.1
	PORTION 3.2
	PORTION 3.3
	PORTION 3.4
	PORTION 3.5
	PORTION 3.6
	PORTION 3.7
	PORTION 3.8
	PORTION 3.9
	PORTION 3.10
	NON-BUILDING AREA 8200m <sup>2</sup> (WHOLE)

**FOR CONSTRUCTION**

C	WORKING DRAWING	BWCW SCI	MAY. 15
B	TENDER ADDENDUM NO. 2	BWCW SCI	MAY. 14
A	TENDER ADDENDUM NO. 1	BWCW SCI	APR. 14
-	TENDER DRAWING	BWCW SCI	MAR. 14
REV.	DESCRIPTION	REV. NO.	DATE

**HONG KONG HIGHWAYS DEPARTMENT**  
 香港特別行政區交通事務局  
 港珠澳大橋香港工務管理處  
 Hong Kong - Zhuhai - Macao Bridge Hong Kong Project Management Office

HONG KONG-ZHUHAI-MACAO BRIDGE  
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WORKS AREA WA3

**AECOM** +  
**Aedas** +  
 Rogers Stirk Harbour + Partners  
 BURO HAPPOLD ATKINS ADI +

DRG. NO. 60191048/C3/000/C00/1051C  
 圖紙編號

DESIGNED BY BWCW	CONTRACT NO. HY/2013/03	A. BY APPROVED TKH
DRAWN BY WSY	STATUS WD	<b>WORKING DRAWING</b>
SCALE A1 1 : 1000	© COPYRIGHT RESERVED	

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 不准未經核准修改  
 不准未經核准修改

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SETTING OUT POINT

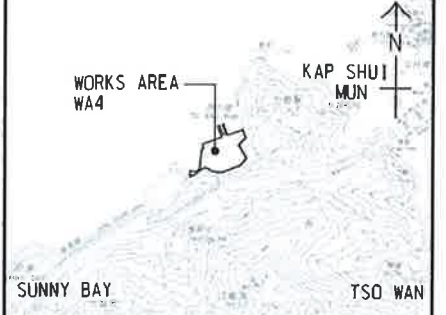
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405	822629.428	822607.359
406	822526.988	822529.813
407	822618.348	822567.950
408	822542.232	822489.581
409	822584.983	822507.426
410	822606.866	822516.561
411	822560.278	822441.956
412	822602.949	822460.010
413	822621.914	822467.959
414	822624.130	822470.998
415	822651.725	822508.856
416	822644.758	822521.192

822600 N

822400 N

822400 E

822600 E



LOCATION PLAN  
SCALE 1 : 25000

NOTES:

- COORDINATES ARE RELATED TO HONG KONG METRIC GRID (1980).
- DIMENSIONS ARE IN MILLIMETER AND CHAINAGE ARE IN METRES UNLESS OTHERWISE SHOWN.

LEGEND:

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[Symbol: Diagonal lines \]	PORTION 4.2
[Symbol: Triangles pointing up]	PORTION 4.3
[Symbol: Triangles pointing down]	PORTION 4.4
[Symbol: Diagonal lines / and \]	PORTION 4.5
[Symbol: Stippled pattern]	PORTION 4.6
[Symbol: Horizontal lines]	PORTION 4.7
[Symbol: Vertical lines]	PORTION 4.8
[Symbol: Dotted pattern]	PORTION 4.9

**CONTROLLED DOCUMENT** 不准隨意複製  
不准隨意修改  
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**FOR CONSTRUCTION**

REV. NO.	DESCRIPTION	DATE	BY	CHECKED
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B	TENDER ADDENDUM NO. 2	MAY. 14	BWCW	SCI
A	TENDER ADDENDUM NO. 1	APR. 14	BWCW	SCI
-	TENDER DRAWING	MAR. 14	BWCW	SCI

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WORKS AREA WA4

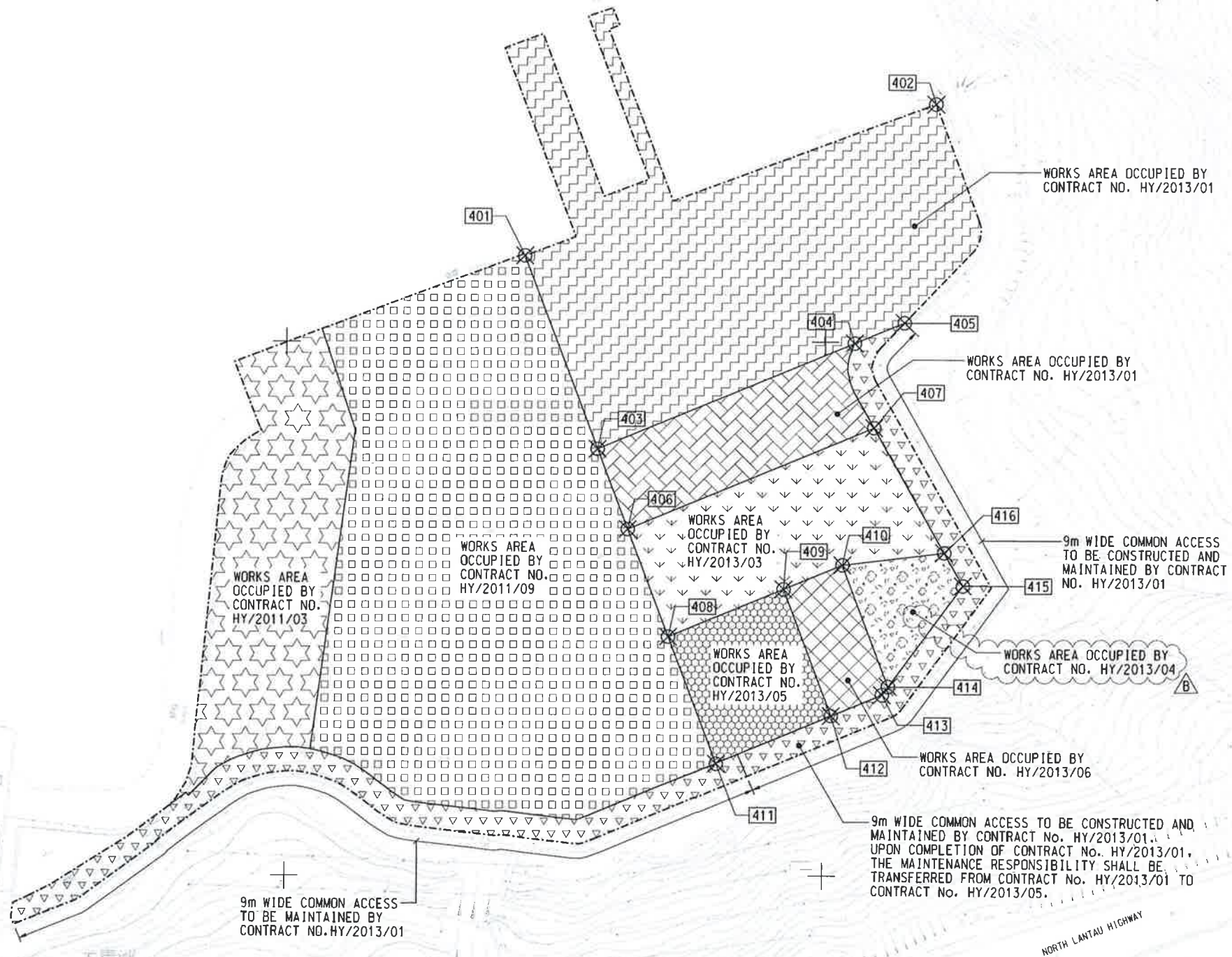
**AECOM** +  
Rogers Stirk Harbour + Partners  
**Aedas** +  
BURO HAPPOLD ATKINS ADI +

DRG. NO. 60191048/C3/000/C00/1052C  
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DESIGNED BY BWCW CONTRACT NO. HY/2013/03 P. DIR. APPROVED TKH  
CHECKED BY WSY STATUS WORKING DRAWING

SCALE 1:1000  
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9m WIDE COMMON ACCESS TO BE MAINTAINED BY CONTRACT NO. HY/2013/01

9m WIDE COMMON ACCESS TO BE CONSTRUCTED AND MAINTAINED BY CONTRACT No. HY/2013/01. UPON COMPLETION OF CONTRACT No. HY/2013/01, THE MAINTENANCE RESPONSIBILITY SHALL BE TRANSFERRED FROM CONTRACT No. HY/2013/01 TO CONTRACT No. HY/2013/05.

NORTH LANTAU HIGHWAY

大靑洲

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### **Appendix B**

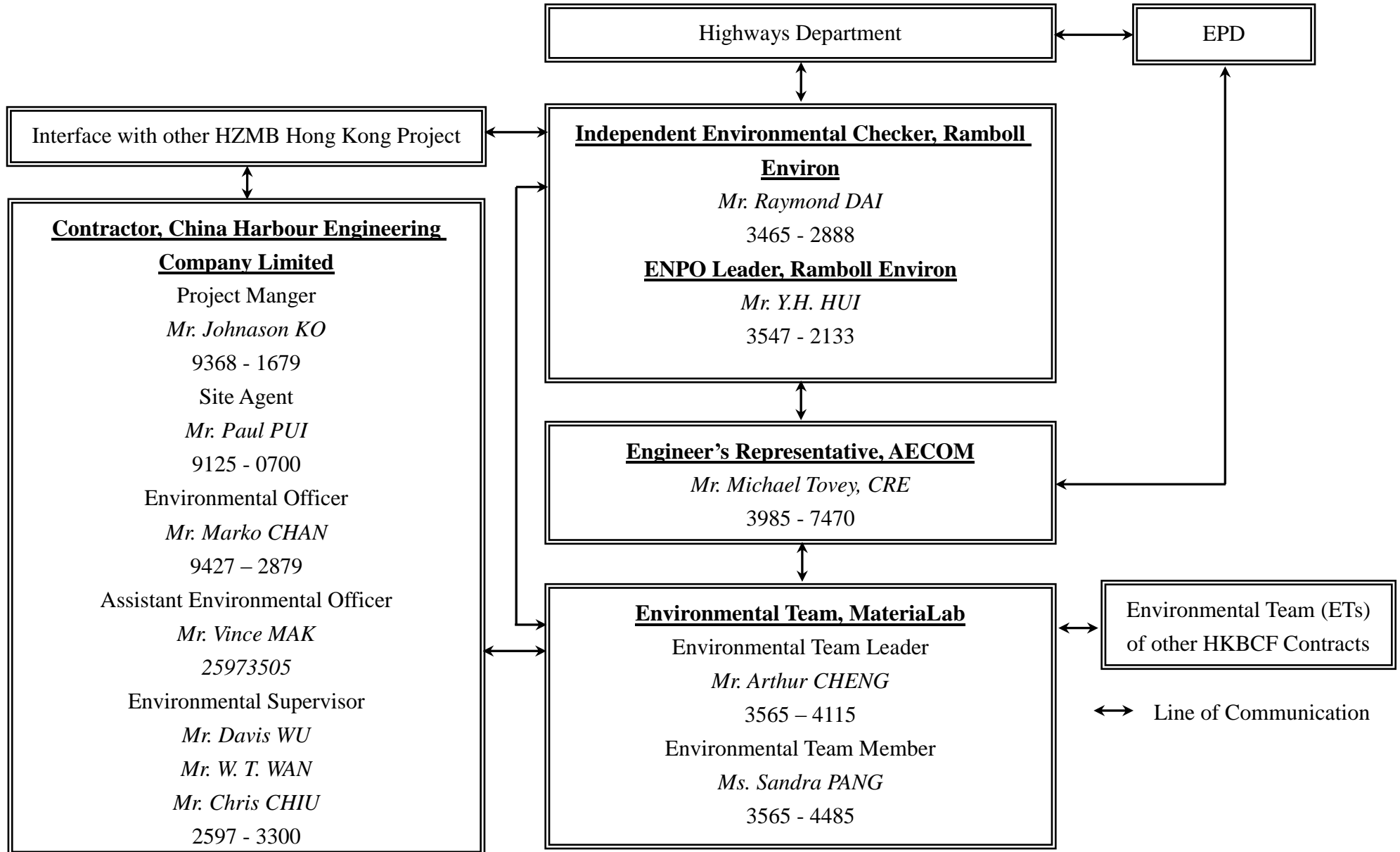
#### **Project Organization for Environmental Works**

# CHINA HARBOUR ENGINEERING COMPANY LIMITED



Contract No. HY/2013/03 Hong Kong-Zhuhai-Macao Bridge, Hong Kong Boundary Crossing Facilities – Vehicle Clearance Plazas and Ancillary Buildings and Facilities

## Projects Organization for Environmental Works



## **MATERIALAB CONSULTANTS LIMITED**

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### **Appendix C**

### **Construction Programme**



Activity ID	Activity Name	Original Duration	Remaining Duration	% Complete	Start	Finish	Total Float	2016						
								Jan	Feb	Mar	Apr	May		
<b>HKBCF - VCP DRMs Programme, (IWP 04), UD 310116</b>														
<b>CONTRACT DATES</b>														
<b>Key Dates</b>														
A1040	KD4 Achievement of Stage 3B of the Works (250 days; 15 Dec. 15)	0	0	0%		31-Jan-16*	-46		◆	KD4 Achievement of Stage 3B of the Works (250 days; 15 Dec. 15)				
<b>Site Access &amp; Possession</b>														
<b>Possession of Portion of Site</b>														
A0010	Possession of Portion A1 (<= 70 days)	0	0	0%		31-Mar-16*	-287		◆	Possession of Portion A1 (<= 70 days)				
A0020	Possession of Portion A2 (<= 75 days)	0	0	0%		31-Mar-16*	-282		◆	Possession of Portion A2 (<= 75 days)				
A0030	Possession of Portion B (<=100 days)	0	0	0%		31-Mar-16*	-257		◆	Possession of Portion B (<=100 days)				
A0060	Possession of Portion E (<=160 days)	0	0	0%		01-Apr-16*	-198		◆	Possession of Portion E (<=160 days)				
A0090	Possession of Portion H1 (<=273 days)	0	0	0%		31-Jan-16*	-23		◆	Possession of Portion H1 (<=273 days)				
A0100	Possession of Portion H2 (<=273 days)	0	0	0%		31-Mar-16*	-84		◆	Possession of Portion H2 (<=273 days)				
<b>Section/Stage Subject to Excision</b>														
A0710	Contract Date for Section IA (273 days, latest date when the Engineer may order)	0	0	100%	04-Jan-16 A				◆	Contract Date for Section IA (273 days, latest date when the Engineer may order)				
A0720	Contract Date for Section IB (273 days, latest date when the Engineer may order)	0	0	100%	04-Jan-16 A				◆	Contract Date for Section IB (273 days, latest date when the Engineer may order)				
A0730	Contract Date for Section IIA (345 days, latest date when the Engineer may order)	0	0	0%	19-Mar-16*		0		◆	Contract Date for Section IIA (345 days, latest date when the Engineer may order)				
A0740	Contract Date for Section IIB (100 days, latest date when the Engineer may order)	0	0	0%	31-Jan-16*		-197		◆	Contract Date for Section IIB (100 days, latest date when the Engineer may order)				
A0750	Contract Date for Section IIC (320 days, latest date when the Engineer may order)	0	0	0%	23-Feb-16*		0		◆	Contract Date for Section IIC (320 days, latest date when the Engineer may order)				
A0760	Contract Date for Section III (273 days, latest date when the Engineer may order)	0	0	0%	31-Jan-16*		-24		◆	Contract Date for Section III (273 days, latest date when the Engineer may order)				
A0810	Contract Date for Section IX (270 days, latest date when the Engineer may order)	0	0	0%	31-Jan-16*		-27		◆	Contract Date for Section IX (270 days, latest date when the Engineer may order)				
A0820	Contract Date for Section X (270 days, latest date when the Engineer may order)	0	0	100%	04-Jan-16 A				◆	Contract Date for Section X (270 days, latest date when the Engineer may order)				
A0830	Contract Date for Stage 20 (270 days, latest date when the Engineer may order)	0	0	0%	31-Jan-16*		-27		◆	Contract Date for Stage 20 (270 days, latest date when the Engineer may order)				
A0840	Contract Date for Stage 21 (270 days, latest date when the Engineer may order)	0	0	0%	31-Jan-16*		-27		◆	Contract Date for Stage 21 (270 days, latest date when the Engineer may order)				
A0850	Contract Date for Stage 22 (270 days, latest date when the Engineer may order)	0	0	0%	31-Jan-16*		-27		◆	Contract Date for Stage 22 (270 days, latest date when the Engineer may order)				
A0860	Contract Date for Stage 23 (270 days, latest date when the Engineer may order)	0	0	100%	04-Jan-16 A				◆	Contract Date for Stage 23 (270 days, latest date when the Engineer may order)				
A0870	Contract Date for Stage 24 (270 days, latest date when the Engineer may order)	0	0	100%	04-Jan-16 A				◆	Contract Date for Stage 24 (270 days, latest date when the Engineer may order)				
<b>PRELIMINARY</b>														
A0610	Mobilization of Plant	70	30	57.14%	10-Apr-15 A	29-Feb-16*	-256							
<b>Precast Yard for Bridge Segment</b>														
A0620	Engineering Service and Factory Preparation	120	71	40.83%	01-Dec-15 A	30-Apr-16	-138							
<b>PORTION A1</b>														
<b>Portion A1 Structures</b>														
<b>Bridge A9</b>														
<b>Bored Pile</b>														

■ Actual Work  
■ Remaining Work  
■ Critical  
◆ Milestone

Date	Revision	Checked	Approved
30-Nov-15	Initial Works Programme Rev. 3, 3MRP	ZJ	
31-Dec-15	DRMs updated as of 31 Dec. 2015, 3MRP	ZJ	
30-Jan-16	DRMs updated as of 31 Jan. 2016, 3MRP	ZJ	



**HZMB HK Boundary Crossing Facilities - Vehicle Clearance Plazas and Ancillary Buildings and Facilities**

28-Jan-16

Activity ID	Activity Name	Original Duration	Remaining Duration	% Complete	Start	Finish	Total Float	2016				
								Jan	Feb	Mar	Apr	May
S91015	Bored piles for P904, A905, 4nos	58	58	0%	01-Apr-16	11-Jun-16	18					
<b>Box Culvert D</b>												
<b>Bored Pile</b>												
SD0040	Bored Piling for Box Culvert D 45 nr. (8 no. done)	128	102	20%	05-Oct-15 A	04-Aug-16	-34					
SD0080	Box Culvert D Pile Testing (Stage 1)	7	7	0%	01-Apr-16	09-Apr-16	-34					
SD0090	Box Culvert D Pile Testing (Stage 2)	7	7	0%	26-Apr-16	04-May-16	-34					
<b>Box Culvert D Construction</b>												
SD0060	Box Culvert D Construction (Stage 1)	50	50	0%	11-Apr-16	10-Jun-16	139					
<b>049 - Sewage Treatment Plant, Portion A1 &amp; A2</b>												
A04940	Bored Piling (39 Nr.)	148	144	2.5%	29-Dec-15 A	30-Jul-16	-202					
<b>Portion A1 Buildings</b>												
<b>036 - Weigh Station</b>												
A03630	Super Structure	90	0	100%	06-Oct-15 A	12-Jan-16 A						
A03640	Finishing	120	102	15%	13-Jan-16 A	03-Aug-16	178					
A03670	BS for Office Accomodation (Stage 8)	90	72	20%	13-Jan-16 A	28-Jun-16	118					
A03690	Other BS + E&M Instaalation	180	126	30%	02-Nov-15 A	31-Aug-16	224					
<b>037 C&amp;ED Tower Cum Inbound Cargo Examination Building (Portion A1 &amp; B)</b>												
A03720	Substructure	50	13	75%	13-Oct-15 A	16-Apr-16	-158					
A03730	Super Structure	110	88	20%	02-Jan-16 A	02-Aug-16	-158					
A03790	Other BS + E&M Installation	235	212	10%	15-Dec-15 A	11-May-17	22					
<b>041 Fire Station Cum Ambulance Deport</b>												
A04100	Excavation + Blinding	14	14	0%	01-Apr-16	18-Apr-16	-144					
A04110	Substructure	84	84	0%	20-Apr-16	30-Jul-16	-145					
<b>042 Drill Tower</b>												
A04210	Driven Piles 16 Nr.	15	15	0%	01-Apr-16	19-Apr-16	-145					
A04220	Piling Test	10	10	0%	20-Apr-16	30-Apr-16	-70					
<b>052 - Transforms (Zone 4)</b>												
A05230	Fitting out works in Tx Room to CLP (KD4)	55	0	100%	02-Nov-15 A	27-Jan-16 A						
A05235	Energisation by CLP	50	50	0%	01-Feb-16	06-Apr-16	292					
A05240	BS Installation (KD9)	66	40	40%	02-Nov-15 A	21-Mar-16	215					
A05250	Finishing (KD10)	87	61	30%	14-Dec-15 A	19-Apr-16	215					
A05260	Completion of remaining works	66	66	0%	19-Apr-16	09-Jul-16	269					
<b>External Works for Portion A1</b>												
<b>Drainage Works</b>												
B00010	Initial Survey	6	6	0%	17-Aug-15 A	08-Apr-16	-231					
SG0020	Drainage Works (4210m & 76MHs)	250	248	1%	16-Sep-15 A	22-May-17	-127					

- █ Actual Work
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HZMB HK Boundary Crossing Facilities - Vehicle Clearance Plazas and Ancillary Buildings and Facilities

28-Jan-16

Activity ID	Activity Name	Original Duration	Remaining Duration	% Complete	Start	Finish	Total Float	2016					
								Jan	Feb	Mar	Apr	May	
SG0030	Sewerage (1063m & 30MHs)	250	250	0%	01-Apr-16	02-Feb-17	-41						
<b>PORTION A2</b>													
<b>External Works for Portion A2</b>													
<b>Drainage Works</b>													
B00020	Initial Survey	6	6	0%	01-Apr-16	08-Apr-16	-199						
<b>PORTION B</b>													
<b>Portion B Structures</b>													
<b>027 - Staff Subway</b>													
C02710	ELS + Blind (Bay 4 - 19) (16 Bay)	47	38	20%	27-Oct-15 A	18-Mar-16	-68						
C02720	Bay 4 - 13 Construction - Base Slab	21	15	30%	03-Nov-15 A	20-Feb-16	-27						
C02730	Bay 4 - 13 Construction - Wall + Top Slab	30	24	20%	15-Dec-15 A	02-Mar-16	-20						
C02740	Bay 14-19 Construction - Base Slab	21	19	10%	06-Jan-16 A	25-Feb-16	-31						
C02750	Bay 14-19 Construction - Wall + Top Slab	30	30	0%	01-Feb-16	09-Mar-16	-26						
C02760	Internal Finishes & Cable Containment (KD1)	30	30	0%	03-Mar-16	11-Apr-16	-15						
C02770	BS + E&M Installation for ACVSS (Stage 1)	30	30	0%	14-Mar-16	21-Apr-16	-15						
<b>029 - Staff Subway</b>													
C02910	ELS + Blind (Seg. 28-36) (9 Bay)	40	40	0%	18-Mar-16	10-May-16	-68						
C02920	Seg. 28-32 Construction - Base Slab	22	22	0%	13-Apr-16	10-May-16	-68						
C02940	Seg. 33-36 Construction - Base Slab	21	21	0%	13-Apr-16	09-May-16	-68						
<b>Portion B Buildings</b>													
<b>027/028 Inbound Kiosks &amp; 029 Outbound Kiosks</b>													
A02700	Submission & Approval for Steel Works	50	50	0%	01-Feb-16	06-Apr-16	-114						
A02710	Pre-fabrication for the Steel Kiosks	100	100	0%	07-Apr-16	05-Aug-16	-114						
<b>027/028 Inbound Kiosks &amp; 029 Outbound Kiosks, Section IX, Subject to Excision</b>													
B02730	Submission & Approval for Steel Works	75	75	0%	01-Feb-16	06-May-16	1						
<b>026 Inbound IMMD and DOH Secondary Screening Building</b>													
A02610	Excavation + Blinding (PL test 5-8/1/16)	10	0	100%	12-Jan-16 A	16-Jan-16 A							
A02620	Raft Foundation	40	32	20%	18-Jan-16 A	21-Nov-16	-189						
<b>054 Inbound Fixed X-ray Building</b>													
A05420	Excavation + Blinding (PL test 12- 16/1/16)	10	0	100%	20-Jan-16 A	25-Jan-16 A							
A05430	Substructure	50	50	0%	26-Jan-16 A	01-Jun-16	-197						
<b>038 AFCD Office</b>													
A03810	Excavation + Blinding	7	7	0%	28-Apr-16	06-May-16	-130						
<b>039 Police Main Building</b>													
A03910	Excavation + Blinding	12	12	0%	01-Apr-16	15-Apr-16	-197						
A03920	Substructure	70	70	0%	16-Apr-16	11-Jul-16	-197						
<b>040 Incident Control Tower</b>													
A04010	Excavation + Blinding	10	10	0%	16-Apr-16	27-Apr-16	-137						
<b>102 HKPF UVSS Monitor Room</b>													
A10200	Excavation + Blinding	7	7	0%	16-Apr-16	23-Apr-16	11						
<b>103 Police Inspection Post</b>													

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								Jan	Feb	Mar	Apr	May	
A10310	Excavation + Blinding	5	5	0%	11-Apr-16	15-Apr-16	-100						
<b>057 Transformers (Zone 2)</b>													
A05710	Excavation + Blinding	10	10	0%	01-Apr-16	13-Apr-16	-207						
A05720	Raft Foundation	52	52	0%	14-Apr-16	16-Jun-16	-207						
<b>107 - C&amp;ED Mobile X-ray Operation Office (Cargo), Portion B</b>													
C10710	Excavation + Blinding	7	7	0%	01-Apr-16	09-Apr-16	-189						
C10720	Raft Foundation	32	32	0%	11-Apr-16	19-May-16	-189						
<b>113 - Field Kiosk for Access Control, Portion B</b>													
B11310	Excavation + Blinding	7	7	0%	16-Apr-16	23-Apr-16	-53						
B11320	Raft Foundation	32	32	0%	25-Apr-16	02-Jun-16	-53						
<b>External Works for Portion B</b>													
<b>Drainage Works</b>													
SG1540	Drainage Works (7812m & 168MHs)	300	291	3%	17-Dec-15 A	22-Mar-17	-94						
SG3580	Sewerage (1175m & 32MHs)	300	297	1%	02-Jan-16 A	29-Mar-17	-105						
<b>Waterpipe Laying</b>													
SW1550	Fresh Water Main Laying (1972m)	300	300	0%	29-Apr-16	05-May-17	-105						
SW1560	Flushing Water Main Laying (1851m)	300	300	0%	29-Apr-16	05-May-17	-105						
<b>Duct Laying for Utilities/Telecom Cabling, TCSS &amp; Lighting</b>													
SU5300	Duct Laying for Utilities/Telecom Cabling	300	300	0%	29-Apr-16	05-May-17	-105						
<b>Sign Gantry ADS 306A &amp; ADS 306B</b>													
SS0070	Sign Gantry ADS 306B SI Drilling, 2 Nr.	6	0	100%	11-Jan-16 A	27-Jan-16 A							
SS0110	Sign Gantry ADS306A SI Drilling, 2 Nr.	7	0	100%	11-Jan-16 A	30-Jan-16 A							
SS5230	Submission and approval for Sign Gantry	147	147	0%	01-Apr-16	26-Sep-16	-147						
<b>PORTION C</b>													
<b>Portion C Buildings</b>													
<b>010 - Inbound Coach Kiosk &amp; Staff Subway Entrance</b>													
A01010	Substructure and Staircase Construction	60	60	0%	22-Mar-16	06-Jun-16	-157						
<b>009 - Shuttle Bus Kiosk &amp; Staff Subway Entrance</b>													
A00910	ELS + Blinding (Bay 0-3) (4 bay)	42	42	0%	01-Apr-16	23-May-16	-179						
<b>PORTION E</b>													
<b>External Works for Portion E</b>													
<b>Drainage Works</b>													
B00060	Initial Survey	6	6	0%	02-Apr-16	09-Apr-16	-27						
<b>PORTION G, H1 &amp; H2</b>													
<b>Portion G Structures</b>													
<b>Bridge A1</b>													
<b>Bored Pile</b>													
S10110	Predrill SI, 10 nos.	30	0	100%	07-Dec-15 A	09-Jan-16 A							
S10120	Bore pile, 10 nos.	58	58	0%	01-Feb-16	15-Apr-16	53						
S10140	Pile Testing	7	7	0%	28-Apr-16	06-May-16	53						
<b>Bridge A2</b>													
<b>Bored Pile</b>													

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Activity ID	Activity Name	Original Duration	Remaining Duration	% Complete	Start	Finish	Total Float	2016				
								Jan	Feb	Mar	Apr	May
S21410	Bore pile + P301 + P601, (6 + 4) Nr., 6 no. done	73	29	60%	26-Nov-15 A	09-Mar-16	-110					
S21820	Pile Testing	7	7	0%	19-Mar-16	31-Mar-16	81					
<b>Pile Cap</b>												
S21850	Cap - Pier P205	30	30	0%	31-Mar-16	07-May-16	81					
<b>Bridge A6</b>												
<b>Bored Pile</b>												
S63510	Bore pile for P606, A607/A711, 6 Nr.	46	46	0%	01-Feb-16	31-Mar-16	-155					
S63520	Bore pile for other 8 Nr. (P602/P2)	58	57	1%	11-Jan-16 A	11-Jun-16	-155					
S63720	Pile Testing for 606, A607/A711	7	7	0%	13-Apr-16	20-Apr-16	-125					
S63725	Pile Testing for P601	7	7	0%	22-Mar-16	02-Apr-16	-110					
<b>Pile Cap</b>												
S63410	Cap - P606, P607/711	40	40	0%	21-Apr-16	08-Jun-16	-125					
S63420	Cap - P601	30	30	0%	02-Apr-16	10-May-16	-110					
<b>Bridge A7a, A7b, A7c</b>												
<b>Bored Pile</b>												
S74150	Predrill SI for P701, P702 - P705, 10 Nr.	30	30	0%	01-Feb-16	09-Mar-16	8					
S74160	Bore Piling for P706, P707, P712, 6 Nr. (2 Nr. done)	44	26	40%	14-Dec-15 A	06-Sep-16	-138					
S74170	Bore Piling for A701, P702 - P705, 10 Nr. (1 Nr. done)	42	38	10%	20-Nov-15 A	24-Sep-16	-116					
<b>Bridge A8</b>												
<b>Bored Pile</b>												
S86130	Bore pile P802, P803, A804, 6 Nr.	87	87	0%	13-Apr-16	27-Jul-16	-22					
<b>Portion G Buildings</b>												
<b>033 Inbound Private Car Exam Building</b>												
A03300	Excavation + Blinding (PL Test 20 - 23/1/16)	10	9	10%	25-Jan-16 A	21-Jun-16	-46					
<b>035 - Sewage Pumping Station, Portion G</b>												
A03525	Approval of Rockhead & Founding	14	0	100%	11-Jan-16 A	25-Jan-16 A						
A03530	Bored piling (5 nr.)	46	46	0%	26-Jan-16 A	12-Apr-16	-22					
A03540	Sheet Piling as ELS for Wet Well	12	12	0%	13-Apr-16	26-Apr-16	-22					
A03550	Pile Testing, 5 Nr.	7	7	0%	27-Apr-16	05-May-16	-22					
<b>051 Transformers (Zone 5)</b>												
A05100	Excavation + Blinding (PL test 20 - 23/1/16)	5	4	20%	27-Jan-16 A	03-Jun-16	-151					
<b>External Works for Portion G, H1 &amp; H2</b>												
<b>Sign Gantry DS40, DS41 &amp; DS75</b>												
SS0050	Sign Gantry DS75 SI Drilling, 2 Nr.	7	0	100%	08-Dec-15 A	08-Jan-16 A						
SS0170	Submission and approval for Sign Gantry	90	90	0%	01-Feb-16	25-May-16	-44					
<b>PORTION J</b>												
<b>Portion J Structure</b>												
<b>030 Outbound Private Car &amp; GV Kiosks</b>												
A03010	Submission & Approval for Steel Works	60	60	0%	01-Feb-16	18-Apr-16	-33					
A03020	Pre-fabrication for the Steel Kiosks	84	84	0%	19-Apr-16	29-Jul-16	-33					

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HZMB HK Boundary Crossing Facilities - Vehicle Clearance Plazas and Ancillary Buildings and Facilities

28-Jan-16

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								Jan	Feb	Mar	Apr	May	
<b>030 Outbound Kiosks, Section IX, Subject to Excision</b>													
C03010	Submission & Approval for Steel Works	100	100	0%	01-Feb-16	06-Jun-16	-24						
<b>External Works for Portion J</b>													
<b>Sign Gantry DS104</b>													
SS0130	Sign Gantry DS104 SI Drilling, 2 Nr.	12	0	100%	18-Dec-15 A	04-Jan-16 A							
<b>PORTION N</b>													
<b>Portion N Structure</b>													
<b>Box Culvert B</b>													
<b>Bored Pile</b>													
SB0510	Box B - Predrill SI, 30 nos.	30	14	53.33%	01-Dec-15 A	19-Feb-16	105						

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## **MATERIALAB CONSULTANTS LIMITED**

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The logo for MaterialLab, featuring the word "MaterialLab" in a bold, sans-serif font. The text is centered between two thick, horizontal black bars.

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Report No.: 0165/15/ED/0310

### **Appendix D**

#### **Event / Action Plan**

**Appendix D –**

**Event / Action Plan for Air Quality and Noise Monitoring**

Event / Action Plan for Air Quality

Event	Action			
	ET	IEC	ER	Contractor
<b>Action Level</b>				
1. Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures;  2. Inform IEC and ER;  3. Repeat measurement to confirm finding;  4. Increase monitoring frequency to daily.	1. Check monitoring data submitted by ET;  2. Check Contractor's working method.	1. Notify Contractor.	1. Rectify any unacceptable practice;  2. Amend working methods if appropriate.

Event	Action			
	ET	IEC	ER	Contractor
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> <li>1. Identify source;</li> <li>2. Inform IEC and ER;</li> <li>3. Advise the ER on the effectiveness of the proposed remedial measures;</li> <li>4. Repeat measurements to confirm findings;</li> <li>5. Increase monitoring frequency to daily;</li> <li>6. Discuss with IEC and Contractor on remedial actions required;</li> <li>7. If exceedance continues, arrange meeting with IEC and ER;</li> <li>8. If exceedance stops, cease additional monitoring.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method;</li> <li>3. Discuss with ET and Contractor on possible remedial measures;</li> <li>4. Advise the ER on the effectiveness of the proposed remedial measures;</li> <li>5. Supervise Implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. Ensure remedial measures properly implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Submit proposals for remedial to ER within 3 working days of notification;</li> <li>2. Implement the agreed proposals;</li> <li>3. Amend proposal if appropriate.</li> </ol>



Event	Action			
	ET	IEC	ER	Contractor
<b>Limit Level</b>				
1. Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform ER, Contractor and EPD; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily; 5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ER on the effectiveness of the proposed remedial measures; 5. Supervise implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate.

Event	Action			
	ET	IEC	ER	Contractor
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> <li>1. Notify IEC, ER, Contractor and EPD;</li> <li>2. Identify source;</li> <li>3. Repeat measurement to confirm findings;</li> <li>4. Increase monitoring frequency to daily;</li> <li>5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented;</li> <li>6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken;</li> <li>7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results;</li> <li>8. If exceedance stops, cease additional monitoring.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss amongst ER, ET, and Contractor on the potential remedial actions;</li> <li>2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly;</li> <li>3. Supervise the implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented;</li> <li>4. Ensure remedial measures properly implemented;</li> <li>5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial actions to IEC within 3 working days of notification;</li> <li>3. Implement the agreed proposals;</li> <li>4. Resubmit proposals if problem still not under control;</li> <li>5. Stop the relevant portion of works as determined by the ER until the exceedances abated.</li> </ol>

Event / Action Plan for Construction Noise Monitoring

Event	Action			
	ET	IEC	ER	Contractor
Action Level	<ol style="list-style-type: none"> <li>1. Notify IEC and Contractor;</li> <li>2. Identify source, investigate the causes of exceedance and propose remedial measures;</li> <li>3. Report the results of investigation to the IEC,ER and Contractor;</li> <li>4. Discuss with the Contractor and formulate remedial measures;</li> <li>5. Increase monitoring frequency to check mitigation effectiveness.</li> </ol>	<ol style="list-style-type: none"> <li>1. Review the analysed results submitted by the ET;</li> <li>2. Review the proposed remedial measures by the Contractor and advise the ER accordingly;</li> <li>3. Supervise the implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. Require Contractor to propose remedial measures for the analysed noise problem;</li> <li>4. Ensure remedial measures are properly implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Submit noise mitigation proposals to IEC;</li> <li>2. Implement noise mitigation proposals.</li> </ol>

Event	Action			
	ET	IEC	ER	Contractor
Limit Level	<ol style="list-style-type: none"> <li>1. Inform IEC, ER, EPD and Contractor;</li> <li>2. Identify source;</li> <li>3. Repeat measurements to confirm findings;</li> <li>4. Increase monitoring frequency;</li> <li>5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented;</li> <li>6. Inform IEC, ER and EPD the causes and actions taken for the exceedances;</li> <li>7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results;</li> <li>8. If exceedance stops, cease additional monitoring.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss amongst ER, ET, and Contractor on the potential remedial actions;</li> <li>2. Review Contractors remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly;</li> <li>3. Supervise the implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. Require Contractor to propose remedial measures for the analysed noise problem;</li> <li>4. Ensure remedial measures properly implemented;</li> <li>5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial actions to IEC within 3 working days of notification;</li> <li>3. Implement the agreed proposals;</li> <li>4. Resubmit proposals if problem still not under control;</li> <li>5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.</li> </ol>

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### **Appendix E**

### **Waste Flow Table**



### Monthly Summary of Waste Flow Table for 2016 (year)

Name of Person completing the Record: Marko Chan

Month	Actual Quantities of Inert C&D Materials Generated Monthly					Actual Quantities of Non-inert C&D Wastes Generated Monthly				
	Total Quantity Generated	Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Metals	Paper/ cardboard packaging	Plastics	Chemical Waste	Others, e.g. general refuse
		(see Note 1)						(see Note 2)		
	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000 Kg)	(in '000 Kg)	(in '000 Kg)	(in '000 Kg)	(in '000m <sup>3</sup> )
Jan	4.022 <sup>(3)</sup>	0	0	0	4.022 <sup>(3)</sup>	0	0	0	0	0.073
Feb										
Mar										
Apr										
May										
Jun										
Jul										
Aug										
Sept										
Oct										
Nov										
Dec										
<b>Total</b>	<b>4.022</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>4.022</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.073</b>

Notes:

- (1) Broken concrete for recycling into aggregates.
- (2) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.
- (3) Marine Disposal to CMP2 under Dumping at Sea Ordinance.

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### **Appendix F**

#### **Environmental Licenses and Permits**

**Appendix F - Environmental Permit / Licences Summary for Contract No. HY/2013/03**

(update: 19/01/2016)

Item	Permit/Licence Registration	Permit No.	Work Area	Application Date	Issue Date	Valid Date		Status	Remark
						From	To		
1	Environmental Permit Pursuant to Environmental Impact Assessment Ordinance	EP-353/2009/I	HKBCF	30-Jun-15	17-Jul-15	17-Jul-15	Nil	Valid	
2	Notification Pursuant to Section 3(1) of The Air Pollution Control (Construction Dust) Regulation	Ref No. 387703	Main Site Area	02-Apr-15	15-Apr-15	15-Apr-15	Nil	Valid	
3	Notification Pursuant to Section 3(1) of The Air Pollution Control (Construction Dust) Regulation	Ref No. 387735	Works Area WA3	02-Apr-15	15-Apr-15	15-Apr-15	Nil	Valid	
4	Billing A/C for Construction Waste Disposal Pursuant to Section 6 & 9 of the Waste Disposal (Charges for Disposal of Construction waste) Regulation	A/C No. 7022228	Main Site Area, WA3 & 4	14-Apr-15	06-May-15	06-May-15	Nil	Valid	
5	Registration as Waste Producer Pursuant to Waste Disposal (Chemical Waste) (General) Regulation	5213-951-C1186-28	Main Site Area	24-Apr-15	01-Jun-15	01-Jun-15	Nil	Valid	
6	Registration as Waste Producer Pursuant to Waste Disposal (Chemical Waste) (General) Regulation	5213-974-C3597-03	Works Area WA4	24-Apr-15	01-Jun-15	01-Jun-15	Nil	Valid	
7	Water Discharge License Pursuant to Water Pollution Control Ordinance (Cap 358)	WT00022180-2015	Works Area WA3	28-Apr-15	04-Aug-15	03-Aug-15	31-Aug-20	Valid	
8	Water Discharge License Pursuant to Water Pollution Control Ordinance (Cap 358)	WT00022391-2015	Main Site Area	05-May-15	04-Sept-15	04-Sept-15	30-Sept-20	Valid	
9	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS1203-15	CUE	20-Oct-15	03-Nov-15	02-Nov-15	31-Jan-16	Superseded By GW-RS1388-15	
10	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS1315-15	Portion G	12-Nov-15	26-Nov-15	28-Nov-15	28-Feb-16	Valid	
11	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	PP-RS0029-15	Drill Tower	27-Nov-15	11-Dec-15	14-Dec-15	13-Apr-16	Valid	
12	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS1388-15	Main Site Area	02-Dec-15	16-Dec-15	21-Dec-15	18-Mar-16	Valid	
13	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0035-16	Main Site Area	31-Dec-15	14-Jan-16	18-Jan-16	17-Mar-16	Valid	



Item	Permit/Licence Registration	Permit No.	Work Area	Application Date	Issue Date	Valid Date		Status	Remark
						From	To		
14	Permit issued Under the Dumping at Sea Ordinance	EP/MD/16-121	South of Brothers (CMP2)	26-Oct-15	17-Dec-15	18-Dec-15	17-Jan-16	Valid until 17-Jan-16	
15	Permit issued Under the Dumping at Sea Ordinance	EP/MD/16-161	South of Brothers (CMP2)	29-Dec-15	15-Jan-16	20-Jan-16	19-Feb-16	Valid	

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### **Appendix G**

#### **Implementation Schedule for Environmental Mitigation Measures (EMIS)**

## Appendix G – Implementation Schedule of Environmental Mitigation Measures (EMIS)

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
<b>Air Quality</b>				
S5.5.6.1	A1	1) The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	All construction sites	V
S5.5.6.2	A2	2) Proper watering of exposed spoil should be undertaken throughout the construction phase: <ul style="list-style-type: none"> <li>Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading;</li> <li>Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads;</li> <li>A stockpile of dusty material should not extend beyond the pedestrian barriers, fencing or traffic cones.</li> <li>The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle;</li> <li>Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores;</li> </ul>	All construction sites	V
S5.5.6.2	A2	<ul style="list-style-type: none"> <li>When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period;</li> <li>The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials,</li> <li>Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously;</li> <li>Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet;</li> <li>Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding;</li> <li>Any skip hoist for material transport should be totally enclosed by impervious sheeting;</li> <li>Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top</li> </ul>	All construction sites	V
S5.5.6.2	A2	<ul style="list-style-type: none"> <li>Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed;</li> <li>Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally</li> </ul>	All construction sites	N/A

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
		enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and <ul style="list-style-type: none"> <li>Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site r part of the construction site where the exposed earth lies</li> </ul>		
S5.5.6.3	A3	3) The Contractor should undertake proper watering on all exposed spoil (with at least 8 times per day) throughout the construction phase.	All construction sites	√
S5.5.6.4	A4	4) Engineer to incorporate the controlled measures into the Particular Specification (PS) for the civil work. The PS should also draw the contractor's attention to the relevant latest Practice Notes issued by EPD.	All construction sites	√
S5.5.6.4	A5	5) Implement regular dust monitoring under EM&A programme during the construction stage.	Selected Representative dust monitoring station	√
S5.5.7.1	A6	The following mitigation measures should be adopted to prevent fugitive dust emissions for concrete batching plant; <ul style="list-style-type: none"> <li>Loading, unloading, handling, transfer or storage of any dusty materials should be carried out in totally enclosed system;</li> <li>All dust-laden air or waste gas generated by the process operations should be properly extracted and vented to fabric filtering system to meet the emission limits for TSP;</li> <li>Vents for all silos and cement/pulverised fuel ash (PFA) weighing scale should be fitted with fabric filtering system;</li> <li>The materials which may generate airborne dusty emissions should be wetted by water spray system;</li> <li>All receiving hoppers should be enclosed on three sides up to 3m above unloading point;</li> <li>All conveyor transfer points should be totally enclosed;</li> <li>All access and route roads within the premises should be paved and wetted; and</li> <li>Vehicle cleaning facilities should be provided and used by all concrete trucks before leaving the premises to wash off any dust on the wheels and/or body</li> </ul>	Selected Representative dust monitoring station	N/A
S5.5.2.7	A7	The following mitigation measures should be adopted to prevent fugitive dust emissions at barging point: <ul style="list-style-type: none"> <li>All road surface within the barging facilities will be paved;</li> <li>Dust enclosures will be provided for the loading ramp;</li> <li>Vehicles will be required to pass through designated wheels wash facilities; and</li> <li>Continuous water spray at the loading points</li> </ul>	All construction sites	√
<b>Construction Nose (Air borne)</b>				
S6.4.10	N1	1) Use of good site practices to limit noise emissions by considering the following: <ul style="list-style-type: none"> <li>only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme;</li> <li>machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum;</li> <li>plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs;</li> <li>silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works;</li> </ul>	All construction sites	√

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
		<ul style="list-style-type: none"> <li>mobile plant should be sited as far away from NSRs as possible and practicable;</li> <li>material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.</li> </ul>		
S6.4.11	N2	2) Install temporary hoarding located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period.	All construction sites	V
S6.4.12	N3	3) Install movable noise barriers (typically density@14kg/m acoustic mat or full enclosure close to noisy plants including compressor, generators, saw.	For plant items listed in Appendix 6D of the EIA report at all construction sites	N/A
S6.4.13	N4	4) Select "Quiet plants" which comply with the BS 5228 Part 1 or TM standards.	For plant items listed in Appendix 6D of the EIA report at all construction site	V
S6.4.14	N5	5) Sequencing operation of construction plants where practicable	All construction sites where practicable	V
S5.1	N6	6) Implement a noise monitoring under EM&A programme.	Selected representative noise monitoring station	V
<b>Sediment</b>				
S7.3	S1	1) The requirements as recommended in ETWB TC 34/2002 Management of Dredged/Excavated Sediment shall be included in the Particular Specification as appropriate.	All construction sites	V
<b>Waste Management (Construction Waste)</b>				
S8.3.8	WM1	<p><b>Construction and Demolition Material</b></p> <p>The following mitigation measures should be implemented in handling the waste:</p> <ul style="list-style-type: none"> <li>Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement;</li> <li>Carry out on-site sorting;</li> <li>Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate;</li> <li>Implement a trip-ticket system for each works contract to ensure that the disposal of C&amp;D materials are properly documented and verified; and</li> <li>Implement an enhanced Waste Management Plan similar to E7WBTC (Works) No. 19/2005 - "Environmental Management on Construction Sites" to encourage on-site sorting of C&amp;D materials and to minimize their generation during the course of construction.</li> <li>In addition, disposal of the C&amp;D materials onto any sensitive locations such as agricultural lands, etc. should be avoided. The Contractor shall propose the final</li> </ul>	All construction sites	V

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
		disposal sites to the Project Proponent and get its approval before implementation		
S8.3.9-S8.3.11	WM2	<u>C&amp;D Waste</u> <ul style="list-style-type: none"> <li>• Standard formwork or pre-fabrication should be used as far as practicable in order to minimise the arising of C&amp;D materials. The use of more durable formwork or plastic facing for the construction works should be considered. Use of wooden hoardings should not be used, as in other projects. Metal hoarding should be used to enhance the possibility of recycling. The purchasing of construction materials will be carefully planned in order to avoid over ordering and wastage.</li> <li>• The Contractor should recycle as much of the C&amp;D materials as possible on-site. Public fill and C&amp;D waste should be segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. Where practicable, concrete and masonry can be crushed and used as fill. Steel reinforcement bar can be used by scrap steel mills. Different areas of the sites should be considered for such segregation and storage.</li> </ul>	All construction sites	V
S8.2.12-S8.3.15	WM3	<u>Chemical Waste</u> <ul style="list-style-type: none"> <li>• Chemical waste that is produced, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, should be handled in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.</li> <li>• Containers used for the storage of chemical wastes should be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; have a capacity of less than 450 liters unless the specification has been approved by the EPD; and display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the regulation.</li> <li>• The storage area for chemical wastes should be clearly labeled and used solely for the storage of chemical waste; enclosed on at least 3 sides; have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20 % of the total volume of waste stored in that area, whichever is the greatest; have adequate ventilation; covered to prevent rainfall entering; and arranged so that incompatible materials are adequately separated.</li> <li>• Disposal of chemical waste should be via a licensed waste collector; be to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Centre which also offers chemical waste collection service and can supply the necessary storage containers; or be to a reuser of the waste, under approval from the EPD.</li> </ul>	All construction sites	V
S8.3.16	WM4	<u>Sewage</u> <ul style="list-style-type: none"> <li>• Adequate numbers of portable toilets should be provided for the workers. The portable toilets should be maintained in a state which will not deter the workers from utilizing these portable toilets. Night soil should be collected by licensed collectors regularly.</li> </ul>	All construction sites	V
S8.3.17	WM5	<u>General Refuse</u> <ul style="list-style-type: none"> <li>• General refuse generated on-site should be stored in enclosed bins or compaction units separately from construction and chemical wastes.</li> <li>• A reputable waste collector should be employed by the Contractor to remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to minimize odour, pest and litter impacts. Burning of refuse on construction sites is prohibited by</li> </ul>	All construction sites	V

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
		<p>law.</p> <ul style="list-style-type: none"> <li>• Aluminium cans are often recovered from the waste stream by individual collectors if they are segregated and made easily accessible. Separate labelled bins for their deposit should be provided if feasible.</li> <li>• Office wastes can be reduced through the recycling of paper if volumes are large enough to warrant collection. Participation in a local collection scheme should be considered by the Contractor.</li> <li>• Training should be provided to workers about the concepts of site cleanliness and appropriate waste management procedure, including reduction, reuse and recycling of wastes.</li> </ul>		
<b>Water Quality ( Construction Phase)</b>				
S9.11.1.7	W2	<p><u>Land Works</u></p> <p>General construction activities on land should also be governed by standard good working practice. Specific measures to be written into the works contracts should include:</p> <ul style="list-style-type: none"> <li>• wastewater from temporary site facilities should be controlled to prevent direct discharge to surface or marine waters;</li> <li>• sewage effluent and discharges from on-site 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;</li> <li>• 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;</li> <li>• 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;</li> <li>• temporary access roads should be surfaced with crushed stone or gravel;</li> <li>• rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities;</li> <li>• measures should be taken to prevent the washout of construction materials, soil, silt or debris into any drainage system;</li> <li>• open stockpiles of construction materials (e.g. aggregates and sand) on site should be covered with tarpaulin or similar fabric during rainstorms;</li> <li>• 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;</li> <li>• discharges of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system;</li> </ul>	Land-based works area	V
S9.11.1.7	W2	<ul style="list-style-type: none"> <li>• 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;</li> <li>• wheel wash overflow shall be directed to silt removal facilities before being discharged to the storm drain;</li> <li>• the section of construction road between the wheel</li> </ul>	Land-based works area	V

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
		<p>washing bay and the public road should be surfaced with crushed stone or coarse gravel;</p> <ul style="list-style-type: none"> <li>• wastewater generated from concreting, plastering, Internal decoration, cleaning work and other similar activities, shall be screened to remove large objects;</li> <li>• 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;</li> <li>• the contractors shall prepare an oil / chemical cleanup plan and ensure that leakages or spillages are contained and cleaned up immediately;</li> <li>• waste oil should be collected and stored for recycling or disposal, in accordance with the Waste Disposal Ordinance;</li> <li>• 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; and</li> <li>• surface run-off from bunded areas should pass through oil/grease traps prior to discharge to the stormwater system.</li> </ul>		
<b>Ecology (Construction Phase)</b>				
S10.7	E4	<ul style="list-style-type: none"> <li>• Watering to reduce dust generation; prevention of siltation of freshwater habitats; Site runoff should be desilted, to reduce the potential for suspended sediments, organics and other contaminants to enter streams and standing freshwater</li> </ul>	Land-based works areas	V
S10.7	E5	<ul style="list-style-type: none"> <li>• Good site practices, including strictly following the permitted works hours, using quieter machines where practicable, and avoiding excessive lightings during night time</li> </ul>	Land-based works areas	V
S10.7	E8	<ul style="list-style-type: none"> <li>• Control vessel speed</li> <li>• Skipper training</li> <li>• Predefined and regular routes for working vessels; avoid Brother Islands.</li> </ul>	Marine Traffic	V
<b>Fisheries</b>				
S11.7	F4	<ul style="list-style-type: none"> <li>• Maritime Oil Spill Response Plan (MOSRP);</li> <li>• Contingency plan.</li> </ul>	HKBCF	V
<b>Landscape &amp; Visual (Detailed Design Phase)</b>				
S14.3.3.1	LV1	<p>General design measures include:</p> <ul style="list-style-type: none"> <li>• Roadside planting and planting along the edge of the HKBCF Island is proposed;</li> <li>• Transplanting of mature trees in good health and amenity value where appropriate and reinstatement of areas disturbed during construction by compensatory hydro-seeding and planting;</li> <li>• Protection measures for the trees to be retained during construction activities;</li> <li>• Optimizing the sizes and spacing of the bridge columns;</li> <li>• Fine-tuning the location of the bridge columns to avoid visually-sensitive locations;</li> <li>• Providing planting area around peripheral of HKBCF for tree planting screening effect;</li> <li>• Providing salt-tolerant native trees along the planter strip at affected seawall and newly reclaimed coastline;</li> <li>• For HKBCF, providing aesthetic architectural design on the related buildings (e.g. similar materials for PCB building facade to Airport buildings, roof planting and subtle materials for other facilities buildings and so on), and the related infrastructure (e.g. parapet planting and</li> </ul>	HKBCF	V



EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
		transparent cover for elevated footbridges) to provide harmonious atmosphere of the HKBCF; and <ul style="list-style-type: none"> <li>• Fine-tuning the sizes of the structural members to minimize the bulkiness of buildings and adjustment of building arrangement to minimise disturbance to surrounding vegetation in the HKBCF.</li> </ul>		
<b>Landscape &amp; Visual (Construction Phase)</b>				
S14.3.3.3	LV2	Mitigate both Landscape and Visual Impacts G1. Grass-hydroseed bare soil surface and stock pile areas. G2. Add planting strip and automatic irrigation system if appropriate at some portions of bridge footbridge to screen bridge and traffic. G3. Not applicable as this is for HKLR. G4. For HKBCF, providing aesthetic architectural design on the related buildings (e.g. similar materials for PCB building facade to Airport buildings, roof planting and subtle materials for other facilities buildings and so on), and the related infrastructure (e.g. parapet planting and transparent cover for elevated footbridges) to provide harmonious atmosphere of the HKBCF G5. Vegetation reinstatement and upgrading to disturbed areas G6. Maximizing new tree shrub and other vegetation planting to compensate tree felled and vegetation removed G7. Providing planting area around peripheral of HKBCF for tree planting screening effect; G8. Plant salt-tolerant native and shrubs etc along the planter strip at affected seawall. G9. Reserve of loose natural granite rocks for re-use, Provide new coastline to adopt "natural-look" by means of using armour rocks in the form of natural rock materials and planting strip area accommodating screen buffer to enhance "natural-look" of the new coastline.	HKBCF	N/A
S14.3.3.3	LV3	<u>Mitigate Visual Impacts</u> V1. Minimize time for construction activities during construction period. V2. Provide screen hoarding at the portion of the project site / works areas / storage areas near VSRs who have close low-level views to the Project during HKBCF construction.	HKBCF	N/A
<b>EM&amp;A</b>				
S15.2.2	EM1	An Independent Environmental Checker needs to be employed as per the EM&A Manual	All construction sites	V
S15.5 – S15.6	EM2	1) An Environmental Team needs to be employed as per the EM&A Manual. 2) Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures. 3) An environmental impact monitoring needs to be implementing by the Environmental Team to ensure all the requirements given in the EM&A Manual are fully complied with.	All construction sites	V

Legend: V = implemented;

x = not implemented;

N/A = not applicable

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### **Appendix H**

#### **Statistics on Environmental Complaints, Notification of Summons and Successful Prosecutions**

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Appendix H –

Statistics on Environmental Complaints, Notifications of Summons and Successful Prosecutions

Reporting Period	Cumulative Statistics		
	Complaints	Notifications of Summons	Successful Prosecutions
This reporting period	0	0	0
From commencement date of construction to end of reporting month	1	0	0

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1-15 Kwai Fung Crescent, Kwai Fong,  
Hong Kong.

Tel : (852)-24508238  
Fax : (852)-24508032  
Email : mcl@fugro.com.hk

The logo for MaterialLab, featuring the word "MaterialLab" in a bold, sans-serif font. The text is white and is set against a black rectangular background that has horizontal bars extending from the top and bottom edges.

Report No.: 0165/15/ED/0310

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### **Appendix I**

#### **Environmental Site Inspection Schedule**

**MATERIALAB CONSULTANTS LIMITED**

Room 723 & 725, 7/F, Block B,  
 Profit Industrial Building,  
 1-15 Kwai Fung Crescent, Kwai Fong,  
 Hong Kong.

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**MaterialLab**

Report No.: 0165/15/ED/0310

**Contract No. HY/2013/03**  
**HZMB HKBCF – Vehicle Clearance Plazas and Ancillary Buildings and Facilities**  
**Weekly Environmental Site Inspection Schedule**

**Environmental Site Inspection Schedule for January 2016**

Jan-2016						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1 Public Holiday	2
3	4	5	6	7 Environmental Site Inspection	8	9
10	11	12	13	14 Environmental Site Inspection	15	16
17	18	19	20 Environmental Site Inspection	21	22	23
24	25	26	27	28 Environmental Site Inspection	29	30
31						

**Tentative Environmental Site Inspection Schedule for February 2016**

Feb-2016						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2	3	4 Environmental Site Inspection	5	6
7	8 Public Holiday	9 Public Holiday	10 Public Holiday	11	12 Environmental Site Inspection	13
14	15	16	17	18 Environmental Site Inspection	19	20
21	22	23	24	25	26 Environmental Site Inspection	27
28	29					