



中國港灣工程有限責任公司

香港代表： 振華工程有限公司

CHINA HARBOUR ENGINEERING COMPANY LIMITED  
HONG KONG REPRESENTATIVE: ZHEN HUA ENGINEERING CO., LTD.

Date : 28 February 2019  
Our Ref. : CHEC300/OUT/2019/02/01.01/046125

By Hand

AECOM Asia Company Limited  
8/F Grand Central Plaza  
Tower 2, 138 Shatin Rural Committee Road  
Shatin, Hong Kong.

Attn.: **Mr. Jason Yu**  
**The Engineer's Representative**

Dear Sir,

**Contract No. HY/2013/03**  
**Hong Kong – Zhuhai – Macao Bridge Hong Kong Boundary Crossing Facilities**  
**Vehicle Clearance Plazas and Ancillary Buildings and Facilities**  
**EP Condition 5.4 – Quarterly EM&A Report (June 2018 – August 2018)**

Pursuant to the Condition 5.4 of the EP-353/2009/K, we are pleased to submit one soft copy and three copies of the certified Quarterly EM&A Report (Rev.1) for June 2018 to August 2018 for your on-ward submission.

Thank you for your kind attention.

Yours faithfully,  
For and on behalf of  
**China Harbour Engineering Co. Ltd.**

  
Johnason Ko  
Project Manager

JK/MC/kt

Encl.

28 February 2019

By Fax (3468 2076) and By Post

AECOM Asia Co. Ltd.  
The PRE's Office  
550 Cheung Tung Road, Lantau  
Hong Kong

Attention: Mr. Jason Yu

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  
Quarterly EM&A Report No.12 for June 2018 to August 2018**

Reference is made to the Environmental Team's submission of Quarterly EM&A Report No.12 for June 2018 to August 2018 certified by the ET Leader (ET's ref.: "MCL/ED/0095/2019/C" dated 27 February 2019) and provided to us via e-mail on 28 February 2019.

We are pleased to inform you that we have no adverse comments on the captioned report.

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 Hong Kong Limited



Ray Yan  
Independent Environmental Checker

c.c.	HyD	Mr. Tony Pang	(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: 2597 3368)

Internal: DY, YH, DF, HW, ENPO Site



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Website : www.fugro.com

Date 27 February 2018  
Our Ref. MCL/ED/0095/2019/C

Ramboll Hong Kong Limited  
(formerly Ramboll Environ Hong Kong Limited)  
21/F, BEA Harbour View Centre  
56 Gloucester Road, Wan Chai  
Hong Kong

BY HAND

Attn.: Mr. Ray Yan, IEC

Dear Sir,

**Quarterly EM&A Report for June 2018 to August 2018  
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 Section 16.4 of the updated EM&A Manual for Hong Kong Boundary Crossing Facilities (Version 1.0) covering the captioned contract, we are pleased to submit the certified Quarterly EM&A Report for June 2018 to August 2018 for your verification.

Should you require further information, please do not hesitate to contact our Mr. Vincent Lu at 3565 4158 or the undersigned at 3565 4115.

Yours faithfully,  
for and on behalf of  
MATERIALAB CONSULTANTS LIMITED

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Arthur Cheng  
Environmental Team Leader

AC/vl

Encl.

c.c. AECOM – Mr. P.K. Lee, Mr. C.Y. Yu  
RAMBOLL ENVIRON – Mr. Harris Wong  
CHEC – Mr. Marko Chan

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Report No.: 0165/15/ED/1132

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**QUARTERLY ENVIRONMENTAL MONITORING & AUDIT  
REPORT**

**June 2018 to August 2018**

**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/1132

Prepared by: Vincent Lu

Reviewed by: Bong Yu

Certified by:

A handwritten signature in black ink, appearing to be "Arthur Cheng", written over a horizontal line.

Arthur Cheng  
Environmental Team Leader

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Report No.: 0165/15/ED/1132

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### EXECUTIVE SUMMARY

This Quarterly 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" (includes the construction works of Contract No. HY/2013/06 "Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Automatic Vehicle Clearance Support System" within Contract No. HY/2013/03 works area) (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 (construction works of Contract No. HY/2013/06 was awarded to ATAL Technologies Limited within Contract No. HY/2013/03 works area) (hereafter referred to as "the Contractor") and MaterialLab Consultants Limited (MCL) was appointed as the Environmental Team (ET) by the Contractor.

Contract No. HY/2013/03 (includes the construction works of Contract No. HY/2013/06 within Contract No. HY/2013/03 works area) 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/K, was issued on 11 April 2016. These documents are available through the EIA Ordinance Register. Commencement of Contract No. HY/2013/03 took place on 10 April 2015 while the construction works and the EM&A programme of Contract No. HY/2013/03 commenced on 29 August 2015 (commencement of Contract No. HY/2013/06 took place on 14 August 2015 while the construction works and the EM&A programme of Contract No. HY/2013/06 within Contract No. HY/2013/03 works area commenced on 13 September 2016).

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 12th Quarterly EM&A Report for the Contract which summaries findings of the EM&A works during the reporting period from 01 June 2018 to 31 August 2018 (includes the findings of the EM&A programme of Contract No. HY/2013/06 within Contract No. HY/2013/03 works area during the reporting period from 01 June 2018 to 31 August 2018) (the "reporting period").

### Environmental Monitoring and Audit Progress

The 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/2013/01 "Hong Kong-Zhuhai-Macao Bridge HKBCF – Passenger Clearance Building" 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 AMS2, AMS3B/AMS3C, AMS6 and AMS7B, noise monitoring at NMS2 and NMS3B/NMS3C (According to the notification from IEC, the air quality monitoring at AMS3B, noise monitoring at NMS3B, and wind data monitoring retrieved from the meteorological station situated at Site Boundary of Site Office Area at Work Area WA2, being carried out by the ET for Contract No. HY/2013/01, under the EM&A programme for the HZMB HKBCF Project have been proposed to be carried out at alternative monitoring stations by the ET for Contract No. HY/2013/04 as a result of the re-location of Site Boundary of Site Office Area at Work Area WA2 to WA3 and suspension of electricity supplies at WA2 after 15 August 2018. The implementation of environmental monitoring for air quality, noise have been conducting by the ET for Contract No. HY/2013/01 of which the air quality monitoring station (AMS3B) and noise monitoring station (NMS3B) have been re-located since 20 August 2018 to air quality monitoring station (AMS3C)

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and noise monitoring station (NMS3C)), water quality monitoring at the locations shown in **Figure 3** and ecological monitoring as shown in **Figure 4** as part of EM&A programme if these monitoring stations are no longer covered under Contract Nos. HY/2013/01 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 for Contract No. HY/2013/03 (includes Contract No. HY/2013/06 within Contract No. HY/2013/03 works area) during the reporting period are listed below:

Environmental Site Inspection:

- 07, 14, 20 and 28 June 2018
- 05, 13, 20 and 26 July 2018
- 02, 06, 17, 23 and 30 August 2018

### 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 is reported in 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 AMS2, AMS3B/AMS3C (AMS3B re-located to AMS3C since 20 August 2018) and AMS7B by the Environmental Team of Contract No. HY/2013/01 during the reporting period.

There was no Action and Limit Level exceedance for noise recorded at station NMS2 and station NMS3B/NMS3C (NMS3B re-located to NMS3C since 20 August 2018) by the Environmental Team of Contract No. HY/2013/01 during the reporting period.

Summary of Action and Limit Level exceedance of water quality at the monitoring stations shown as shown at **Table 2.2** shall be referred to the monthly EM&A report prepared by Contract No. HY/2013/01.

There were Action and Limit Level exceedances recorded at different WQM stations recorded on twenty-seven days by the Environmental Team of Contract No. HY/2013/01 during reporting period. After investigation, it was concluded that all exceedances were not relevant to Contract No. HY/2013/03. There was no Action and Limit Level exceedance recorded on other monitoring dates at the monitoring stations shown at **Table 2.2** by the Environmental Team of Contract No. HY/2013/01 during the reporting period.

Ecological monitoring results at all transects are reported in the EM&A report prepared by Contract No. HY/2013/01.

### Complaint Log

There was one complaint received in relation to the environmental impact during the reporting period.

Log No.	Environmental Complaint Ref. No.	Date of Complaint Receipt	Description
015	ENPO-C0135	13 June 2018	Water pollution

After investigation, Complaint No. 015 was not related to Contract No. HY/2013/03.

### Notifications of Summons and Successful Prosecutions

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



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**Reporting Changes**

According to the notification from IEC, the air quality monitoring at AMS3B, noise monitoring at NMS3B, and wind data monitoring retrieved from the meteorological station situated at Site Boundary of Site Office Area at Work Area WA2, being carried out by the ET for Contract No. HY/2013/01, under the EM&A programme for the HZMB HKBCF Project have been proposed to be carried out at alternative monitoring stations by the ET for Contract No. HY/2013/04 as a result of the re-location of Site Boundary of Site Office Area at Work Area WA2 to WA3 and suspension of electricity supplies at WA2 after 15 August 2018.

The implementation of environmental monitoring for air quality, noise have been conducting by the ET for Contract No. HY/2013/01 of which the air quality monitoring station (AMS3B) and noise monitoring station (NMS3B) have been re-located since 20 August 2018 as shown below:

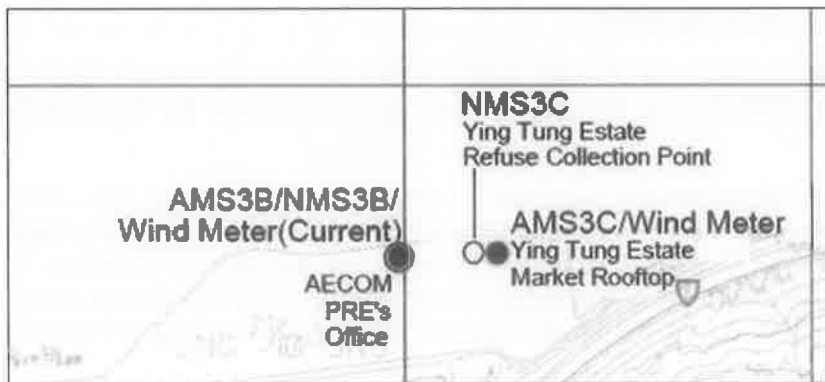
Air Monitoring Station	Location
AMS3B	Site Boundary of Site Office Area at Work Area WA2
AMS3C	Ying Tung Estate Market Rooftop

Remarks: AMS3C is the alternative AQM Station.

Noise Monitoring Station	Location
NMS3B	Site Boundary of Site Office Area at Work Area WA2
NMS3C	Ying Tung Estate Refuse Collection Point

Remarks: NMS3C is the alternative NM Station.

Figure for Current and Alternative AQM and NM Stations:



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### 1. INTRODUCTION

#### 1.1 Basic Project Information

1.1.1 This Quarterly 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" (includes the construction works of Contract No. HY/2013/06 "Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Automatic Vehicle Clearance Support System" within Contract No. HY/2013/03 works area) (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 (construction works of Contract No. HY/2013/06 was awarded to ATAL Technologies Limited within Contract No. HY/2013/03 works area) (hereafter referred to as "the Contractor") and MaterialLab Consultants Limited (MCL) was appointed as the Environmental Team (ET) by the Contractor.

1.1.2 Contract No. HY/2013/03 (includes the construction works of Contract No. HY/2013/06 within Contract No. HY/2013/03 works area) 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/K, was issued on 11 April 2016. These documents are available through the EIA Ordinance Register. Commencement of Contract No. HY/2013/03 took place on 10 April 2015 while the construction works and the EM&A programme of Contract No. HY/2013/03 commenced on 29 August 2015 (commencement of Contract No. HY/2013/06 took place on 14 August 2015 while the construction works and the EM&A programme of Contract No. HY/2013/06 within Contract No. HY/2013/03 works area commenced on 13 September 2016). The works areas of the contract are shown in **Appendix A**.

1.1.3 This is the 12th Quarterly EM&A Report summarising the findings of EM&A activities conducted under Contract No. HY/2013/03 from 01 June 2018 to 31 August 2018 (from 01 June 2018 to 31 August 2018 for the construction works of Contract No. HY/2013/06 within Contract No. HY/2013/03 works area) (the "reporting period") and is submitted to fulfil Condition 16.4 of the Updated EM&A Manual for HKBCF.

#### 1.2 Project Organisation

1.2.1 The organisation chart and lines of communication with respect to the on-site environmental management structure together with the contact information of the key personnel are shown in **Appendix B**. The key personnel contact names and numbers are summarized in **Table 1.1** and **Table 1.2**.

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Table 1.1 Contact Information of Key Personnel (for Contract No. HY/2013/03)

Party	Position	Contact Person	Telephone No.	Fax No.
Engineer or Engineer's Representative (AECOM Asia Co. Ltd.)	Chief Resident Engineer	Mr. W. S. Ng	3958 7400	3902 8800
Environmental Project Office / Independent Environmental Checker (Ramboll Hong Kong Limited)	Environmental Project Office Leader	Mr. Y. H. Hui	3547 2133	3465 2899
	Independent Environmental Checker (IEC)	Mr. Raymond Dai	3465 2888	3465 2899
	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 (MaterialLab Consultants Limited)	Environmental Team Leader (ETL)	Mr. Arthur Cheng	3565 4115	2450 8032
24-hr Complaint Hotline	--	--	5236 7111	--

Table 1.2 Contact Information of Key Personnel (for Contract No. HY/2013/06 within Contract No. HY/2013/03 works area)

Party	Position	Contact Person	Telephone No.	Fax No.
Engineer or Engineer's Representative (AECOM Asia Co. Ltd.)	Chief Resident Engineer	Mr. W. S. Ng	3958 7400	3902 8800
Environmental Project Office / Independent Environmental Checker (Ramboll Hong Kong Limited)	Environmental Project Office Leader	Mr. Y. H. Hui	3547 2133	3465 2899
	Independent Environmental Checker (IEC)	Mr. Raymond Dai	3465 2888	3465 2899
	Environmental Site Supervisor	Mr. Ray Yan	5181 8165	3465 2899
Contractor (ATAL Technologies Limited)	Site Agent	Mr. Eric Yim	2565 3355	3162 5217
	Environmental Officer	Mr. W. Li	2565 3137	3162 5217
Environmental Team (MaterialLab Consultants Limited)	Environmental Team Leader (ETL)	Mr. Arthur Cheng	3565 4115	2450 8032
24-hr Complaint Hotline	--	--	6509 0375	--

**1.3 Construction Programme**

1.3.1 The construction programme for Contract No. HY/2013/03 (includes the construction works of HY/2013/06 within Contract No. HY/2013/03 works area) are provided in **Appendix C**.

**1.4 Construction Works undertaken during the Reporting Period**

1.4.1 A summary of the construction activities undertaken during this reporting period is shown below:

For Contract No. HY/2013/03

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### June 2018

1. Building at Portion A1, B, G, N, J, STP & Pumping Stations;
2. CUE Construction at Portion B, C & J;
3. Drainage & Sewerage Work, Water Main & Cable Duct at Portion A1, B, H1, H2, J, P & G;
4. Fencing work at All site Area;
5. Sewerage Pumping Station at Portion A1 & G;
6. Slope Works at Portion K;
7. Cover Walkway at Portion B, C, J & K;
8. Box Culvert B at Portion N;
9. Shuttle kiosk & Subway at Portion E;
10. Road Work at All site area; and
11. Landscape work at All site area.

### July 2018

1. Building at Portion A1, B, G, N, J, STP & Pumping Stations;
2. CUE Construction at Portion B, C & J;
3. Drainage & Sewerage Work, Water Main & Cable Duct at Portion A1, B, H1, H2, J, P & G;
4. Fencing work at All site Area;
5. Sewerage Pumping Station at Portion A1 & G;
6. Slope Works at Portion K;
7. Cover Walkway at Portion B, C, J & K;
8. Shuttle kiosk & Subway at Portion E;
9. Road Work at All site area; and
10. Landscape work at All site area.

### August 2018

1. Outstanding & Defective Works at All Site Area;

For Contract No. HY/2013/06 within Contract No. HY/2013/03 works area

### June 2018

1. CUE, Kiosk & Building 037.

### July 2018

1. CUE, Kiosk & Building 037.

### August 2018

1. CUE, Kiosk & Building 037.

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## 2. EM&A REQUIREMENTS

### 2.1 Summary of EM&A Requirements

2.1.1 The 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/2013/01 "Hong Kong-Zhuhai-Macao-Bridge HKBCF – Passenger Clearance Building" 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 AMS2, AMS3B/AMS3C, AMS6 and AMS7B, and noise monitoring at NMS2 and NMS3B/NMS3C (According to the notification from IEC, the air quality monitoring at AMS3B, noise monitoring at NMS3B, and wind data monitoring retrieved from the meteorological station situated at Site Boundary of Site Office Area at Work Area WA2, being carried out by the ET for Contract No. HY/2013/01, under the EM&A programme for the HZMB HKBCF Project have been proposed to be carried out at alternative monitoring stations by the ET for Contract No. HY/2013/04 as a result of the re-location of Site Boundary of Site Office Area at Work Area WA2 to WA3 and suspension of electricity supplies at WA2 after 15 August 2018. The implementation of environmental monitoring for air quality, noise have been conducting by the ET for Contract No. HY/2013/01 of which the air quality monitoring station (AMS3B) and noise monitoring station (NMS3B) have been re-located since 20 August 2018 to air quality monitoring station (AMS3C) and noise monitoring station (NMS3C)), water quality monitoring at the locations shown in **Figure 3** and ecological monitoring as shown in **Figure 4** as part of EM&A programme if these monitoring stations are no longer covered under Contract Nos. HY/2013/01 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 ET of the Contract or another ET of the HZMB project is required to conduct impact ecological monitoring at 24 transects as part of EM&A programme if these transects are no longer covered under Contract No. HY/2013/01. The impact ecological monitoring should adopt line-transect vessel survey method. The survey follows pre-set and fixed transect lines in the two areas defined by AFCD as: Northeast Lantau survey area and Northwest Lantau survey area. The co-ordinates for the transect lines and layout map are shown as in **Figure 4**.

2.1.2 A summary of air and noise monitoring locations are presented in **Table 2.1**. The location of air quality and noise monitoring stations are shown as in **Figure 1** and **Figure 2**, respectively.

Table 2.1 Air Quality and Noise Monitoring Locations

Environmental Monitoring	Identification No.	Location Description
Air Quality	AMS2(1) (4)	Tung Chung Development Pier
	AMS3B(1) (4) (6)	Site Boundary of Site Office Area at Work Area WA2
	AMS3C(1) (4) (6)	Ying Tung Estate Market Rooftop
	AMS6(1)	Dragonair/CNAC (Group) Building (A80)
	AMS7B(1) (5)	3RS Site Offices
Noise	NMS2(2)	Seaview Crescent
	NMS3B(2) (3) (7)	Site Boundary of Site Office Area at WA2
	NMS3C(2) (3) (7)	Ying Tung Estate Refuse Collection Point

Remarks:

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- (1) The ET of this Contract should conduct impact air quality monitoring at the AMS listed in the table as part of EM&A programme according to latest notification from ENPO when the monitoring station(s) is/are no longer covered by another ET of the HZMB project.
- (2) The ET of this Contract should conduct impact noise monitoring at the NMS listed in the table as part of EM&A programme according to the latest notification from ENPO when the monitoring station(s) is/are no longer covered by another ET of the HZMB project.
- (3) The Action and Limit Levels for schools will be applied for this alternative monitoring location.
- (4) According to the revised Contract Specific EM&A Manual (Rev. 9), the monitoring results for AMS2 and AMS3B will be reported in the monthly EM&A Reports prepared for Contract Nos. HY/2013/03 start from Feb 2018.
- (5) Air quality monitoring station (AMS7) have been re-located to the alternative air quality monitoring station (AMS7B) since 06 Feb 2018
- (6) Air quality monitoring station (AMS3B) have been re-located to the alternative air quality monitoring station (AMS3C) since 20 Aug 2018
- (7) Noise monitoring station (NMS3B) have been re-located to the alternative noise monitoring station (NMS3C) since 20 Aug 2018

2.1.3 The water monitoring works for the Contract are covered by Contract No. HY/2013/01 "Hong Kong-Zhuhai-Macao-Bridge HKBCF – Passenger Clearance Building". The water quality monitoring station (SR3, SR10A and SR10B(N)) had been slightly re-located since 22 December 2017. A summary of water quality monitoring stations are presented in **Table 2.2**. The location of water quality monitoring stations are shown as in **Figure 3**.

Table 2.2 Water Quality Monitoring Stations

Station	Description	East	North
IS5	Impact Station (Close to HKBCF construction site)	811579	817106
IS(Mf)6	Impact Station (Close to HKBCF construction site)	812101	817873
IS7	Impact Station (Close to HKBCF construction site)	812244	818777
IS8	Impact Station (Close to HKBCF construction site)	814251	818412
IS(Mf)9	Impact Station (Close to HKBCF construction site)	813273	818850
IS10(N)	Impact Station (Close to HKBCF construction site)	812942	820881
IS(Mf)11	Impact Station (Close to HKBCF construction site)	813562	820716
IS(Mf)16	Impact Station (Close to HKBCF construction site)	814328	819497
IS17	Impact Station (Close to HKBCF construction site)	814539	820391
SR3	Sensitive receivers (San Tau SSSI)	810525	816456
SR3(N)	Sensitive receivers (San Tau SSSI)	810689	816591
SR4(N)	Sensitive receivers (Tai Ho)	814705	817859
SR5(N)	Control Station	812569	821475
SR6	Sensitive receivers (Sha Chau and Lung Kwu Chau Marine Park)	805837	821818
SR7	Sensitive receivers (Tai Mo Do)	814293	821431
SR10A	Sensitive receivers (Ma Wan FCZ) 1	823741	823495
SR10A(N) <sup>(1)</sup>	Sensitive receivers (Ma Wan FCZ) 1	823644	823484
SR10B(N)	Sensitive receivers (Ma Wan FCZ) 2	823683	823187
SR10B(N2) <sup>(1)</sup>	Sensitive receivers (Ma Wan FCZ) 2	823689	823159
CS(Mf)3(N)	Control Station	808814	822355
CS(Mf)5	Control Station	817990	821129
CS4	Control Station	810025	824004
CS6	Control Station	817028	823992
CSA <sup>(2)</sup>	Control Station	818103	823064

Note:

<sup>(1)</sup> Additional monitoring station for Ma Wan FCZ

<sup>(2)</sup> Additional control monitoring station for Ma Wan FCZ

Remarks:

The ET of the Contract should conduct impact water quality monitoring at the WQMs listed in the table as part of EM&A programme according to latest notification from ENPO if water quality monitoring is no longer covered by another ET of the HZMB project. The ET of the Contract shall communicate and share the monitoring data to the ET(s) of the other contracts if the

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water quality monitoring station(s) is/are as part of EM&A programme. SR3(N), SR10A(N) and SR10B(N2) are alternative WQM Stations.

## 2.2 Monitoring Requirements

2.2.1 The monitoring requirements, monitoring equipment, monitoring parameters, frequency and duration, monitoring methodology, monitoring schedule, meteorological information are detailed in the monthly EM&A Reports prepared by Contract No. HY/2013/01 and HY/2011/03.

## 2.3 Action and Limit Levels

2.3.1 The Action and Limit Levels for 1-hr TSP and 24-hr TSP are provided in **Table 2.3** and **Table 2.4** respectively.

Table 2.3 Action and Limit Levels for 1-hour TSP

Monitoring Station	Action Level ( $\mu\text{g}/\text{m}^3$ )	Limit Level ( $\mu\text{g}/\text{m}^3$ )
AMS2	374	500
AMS3B	368	
AMS3C	368	
AMS6	360	
AMS7B	370	

Remarks: Air quality monitoring station (AMS3B) have been re-located to the alternative air quality monitoring station (AMS3C) since 20 Aug 2018

Table 2.4 Action and Limit Levels for 24-hour TSP

Monitoring Station	Action Level ( $\mu\text{g}/\text{m}^3$ )	Limit Level ( $\mu\text{g}/\text{m}^3$ )
AMS2	176	260
AMS3B	167	
AMS3C	167	
AMS6	173	
AMS7B	183	

Remarks: Air quality monitoring station (AMS3B) have been re-located to the alternative air quality monitoring station (AMS3C) since 20 Aug 2018

2.3.2 The Action and Limit Levels for construction noise are defined in **Table 2.5**.

Table 2.5 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.)*
NMS3C		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.

Remarks: Noise monitoring station (NMS3B) have been re-located to the alternative noise monitoring station (NMS3C) since 20 Aug 2018

2.3.3 The Action and Limit Levels for Water Quality are provided in **Table 2.6**.

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Table 2.6 Action and Limit Levels for Water Quality

Parameters	Action	Limit
DO in mg/L (Surface, Middle & Bottom)	Surface and Middle 5.0 Bottom 4.7	Surface and Middle = 4.2 (except 5 mg/L for FCZ) Bottom = 3.6
SS in mg/L (depth-averaged) at all monitoring stations and control stations	23.5 and 120% of upstream control station's SS at the same tide of the same day*	34.4 and 130% of upstream control station's SS at the same tide of the same day and 10mg/L for WSD Seawater intakes*
Turbidity in NTU (depth averaged)	27.5 and 120% of upstream control station's turbidity at the same tide of the same day*	47.0 and 130% of upstream control station's turbidity at the same tide of the same day*

\* Remarks: Reference is made to EPD approval of adjustment of water quality assessment criteria issued and became effective on 18 February 2013.

Notes:

- "depth-averaged" is calculated by taking the arithmetic means of reading of all three depths.
- For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
- For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
- All the figures given in the table are used for reference only and the EPD may amend the figures whenever it is considered as necessary.
- The 1%-ile of baseline data for dissolved oxygen (surface and middle) and dissolved oxygen (bottom) are 4.2mg/L and 3.6mg/L respectively.

2.3.4 The Action and Limit Levels for Ecological Monitoring are provided in **Table 2.7** and **Table 2.8**.

Table 2.7 Action and Limit Levels for Ecological Monitoring - Approach to Define Action Level (AL) and Limit Level (LL)

	North Lantau Social Cluster	
	NEL	NWL
Action Level	(STG < 70% of baseline) & (ANI < 70% of baseline)	(STG < 70% of baseline) & (ANI < 70% of baseline)
Limit Level	[(STG < 40% of baseline) & (ANI < 40% of baseline)] AND [(STG < 40% of baseline) & (ANI < 40% of baseline)]	

For North Lantau Social Cluster, action level will be trigger if either NEL or NWL fall below the criteria; limit level will be triggered if both NEL and NWL fall below the criteria.

Table 2.8 Derived Value of Action Level (AL) and Limit Level (LL) for Ecological Monitoring

	North Lantau Social Cluster	
	NEL	NWL
Action Level	(STG < 4.2) & (ANI < 15.5)	(STG < 6.9) & (ANI < 31.3)
Limit Level	[(STG < 2.4) & (ANI < 8.9)] AND [(STG < 3.9) & (ANI < 17.9)]	

The ET of this Contract should conduct impact ecological monitoring as part of EM&A programme according to latest notification from ENPO when the monitoring transect(s) is/are no longer covered by another ET of the HZMB project.

2.3.5 If exceedance(s) at these transect(s) 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 quarterly EM&A Report.

## 2.4 Event and Action Plans

2.4.1 The event and action plans are provided in **Appendix D**.

## 2.5 Mitigation Measures

2.5.1 Environmental mitigation measures for the contract were recommended in the approved EIA Report. **Appendix E** lists the recommended mitigation measures and the implementation status.



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### 3. ENVIRONMENTAL MONITORING AND AUDIT

#### 3.1 Air Quality Monitoring Results

3.1.1 The monitoring results for AMS6 are reported in the monthly EM&A Reports (for June 2018, July 2018 and August 2018) prepared for Contract Nos. HY/2011/03. The monitoring results for AMS2, AMS3B/AMS3C (Air quality monitoring station (AMS3B) have been re-located to the alternative air quality monitoring station (AMS3C) since 20 August 2018) and AMS7B are reported in the monthly EM&A Reports (for June 2018, July 2018 and August 2018) prepared for Contract Nos. HY/2013/01.

3.1.2 Summary of Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level at AMS6 is reported in the monthly EM&A Reports (for June 2018, July 2018 and August 2018) prepared by Contract No. HY/2011/03.

3.1.3 There was no Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at station AMS2, AMS3B/AMS3C (Air quality monitoring station (AMS3B) have been re-located to the alternative air quality monitoring station (AMS3C) since 20 August 2018) and AMS7B by the Environmental Team of Contract No. HY/2013/01 during the reporting period.

#### 3.2 Noise Monitoring Results

3.2.1 The monitoring results for NMS2 and NMS3B/NMS3C (Noise monitoring station (NMS3B) have been re-located to the alternative noise monitoring station (NMS3C) since 20 August 2018) are reported in the monthly EM&A Reports (for June 2018, July 2018 and August 2018) prepared for Contract No. HY/2013/01.

3.2.2 No noise exceedances were recorded at stations NMS2 and NMS3B/NMS3C (Noise monitoring station (NMS3B) have been re-located to the alternative noise monitoring station (NMS3C) since 20 August 2018) by the ET of Contract No. HY/2013/01 during the reporting period.

#### 3.3 Water Quality Monitoring Results

3.3.1 The monitoring and investigation results for the monitoring stations shown in **Table 2.2** were reported in the monthly EM&A Report (for June 2018, July 2018 and August 2018) prepared for Contract No. HY/2013/01. There were Action and Limit Level exceedances recorded at different WQM stations recorded on twenty-seven days. After investigation, it was concluded that all exceedances were not relevant to Contract No. HY/2013/03.

3.3.2 There was no Action and Limit Level exceedance recorded on other monitoring dates at the monitoring stations shown as shown at **Table 2.2** by the Environmental Team of Contract No. HY/2013/01 during the reporting period.

#### 3.4 Ecology Monitoring Results

3.4.1 The dolphin survey results for all transects were reported in the monthly EM&A Reports (for June 2018, July 2018 and August 2018) prepared by Contract No. HY/2013/01. There was no Action and Limit Level exceedance recorded by the Environmental Team of Contract No. HY/2013/01 during the reporting period (June 2018 to August 2018).

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### 3.5 Implementation of Environmental Measures

- 3.5.1 In response to the site audit findings, the Contractor carried out corrective actions. Details of site audit findings and the corrective actions during the reporting period are presented in **Appendix F**.
- 3.5.2 A summary of the Implementation Schedule of Environmental Mitigation Measures (EMIS) is presented in **Appendix E**. All necessary mitigation measures at this stage of works were implemented properly.
- 3.5.3 As confirmed by RSS, all surplus filling materials transported from Contract No. HY/2013/03 to other projects by marine vessels have been completed with the last batch delivered on 07 May 2018.
- 3.5.4 With respect to condition 3.26A of EP-353/2009/K approved by EPD on 11 April 2016, the numbers and operating periods of floating grout production facilities and floating concrete batching plants on-site to review on the compliance to this EP condition were checked. Under Contract No. HY/2013/03, no floating concrete batching plant was operated on-site during the reporting period.
- 3.5.5 As all the works in Box Culvert B had been completed, the silt curtain was uninstalled during the reporting period. The Dolphin Watching Plan (DWP) is no longer applicable.
- 3.5.6 The landscape work of green roof for Contract No. HY/2013/03 was commenced on 07 November 2017. The landscape work of all areas at ground level for Contract No. HY/2013/03 was commenced at early February 2018. Detail commencement date of each building were shown in **Table 3.1**. The implementation of mitigation measures for landscape and visual resources recommended in the EIA Report were monitoring during the reporting period. Landscape and visual mitigation measures in accordance with the EP, EIA and EM&A Manual were implemented by the Contractor.

Table 3.1 Commencement date of green roof for each building

Building No. of Green Roof	Commencement dates of planting for roof greening
037	07 Nov 2017
043	20 Dec 2017
041	27 Dec 2017
026	22 Jan 2018
039	22 Jan 2018
All areas at ground level	Early Feb 2018
031	08 Mar 2018
046	08 Mar 2018

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

- 3.6.1 The Contractor of Contract No. HY/2013/03 registered as a chemical waste producer for the Contract. Sufficient numbers of receptacles were available for general refuse collection and sorting.
- 3.6.2 No extracted marine sediment was treated using cement solidification/stabilisation (Cement S/S) techniques under Contract No. HY/2013/03 during this reporting period. No marine sediment extracted from this Contract was disposed to the Marine Fill Committee (MFC)

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allocated disposal sites directly without treatment during this reporting period. As a practical mean, the disposal operation is managed by one contractor who is also responsible for applying dumping permit and its subsequent extension applications from EPD. Contract No. HY/2013/03 has been assigned to coordinate and arrange for disposal of extracted marine sediment from all three Contracts (Contract Nos. HY/2013/02, HY/2013/03 and HY/2013/04).

- 3.6.3 The barge for disposal of marine sediment was morn at the temporary loading and unloading at the east shore of the HKBCF Island, which has been being used by reclamation contractor (Contract No. HY/2010/02) for reclamation activities. In terms of safety consideration and to avoid mixing of sediment between contracts, each dumping date was allocated to one Contract. The quantity of marine sediment disposed on each date was from one Contract.
- 3.6.4 During dumping, Contractor of Contract No. HY/2013/03 is responsible for transporting the marine sediment from the site area of Contract No. HY/2013/03 to the barge. The estimated quantity of marine sediment in each truck is confirmed by Resident Site Staff of Contract Nos. HY/2013/02, HY/2013/03 and HY/2013/04. The trip tickets for transportation and disposal of marine sediment are collected and checked. Contract No. HY/2013/03 as the dumping permit holder is responsible for reporting to EPD the quantity disposed of as the condition stipulated in the dumping permit. The disposal site allocated to this Project are the Mud Pit CMP Vd of the Confined Marine Sediment Disposal Facility to the East of Sha Chau (ESC).
- 3.6.5 No marine sediment extracted from bored piling from this Contract was disposed to allocated dumping site during this reporting period. As confirmed by RSS, all marine sediments extracted from HY/2013/02, HY/2013/03 and HY/2013/04 have been completed with the last batch disposal on 30 August 2017. The summary of marine sediment disposed during this reporting period is shown in the following table:

Table 3.2 Summary of Marine Sediment Disposed to Dumping Site

Month/Year	Quantity disposed (in'000m <sup>3</sup> )			Total
	HY/2013/02	HY/2013/03	HY/2013/04	
Jun 2018	0.000	0.000	0.000	0.000
Jul 2018	0.000	0.000	0.000	0.000
Aug 2018	0.000	0.000	0.000	0.000
Total	0.000	0.000	0.000	0.000

- 3.6.6 The summary of waste flow table for Contract No. HY/2013/03 (includes Contract No. HY/2013/06 within Contract No. HY/2013/03 works area) is detailed in **Appendix G**.
- 3.6.7 Contract No. HY/2013/03 has been assigned to arrange for delivery of surplus filling materials from Contract No. HY/2013/03 to other projects, including Tuen Mun - Chek Lap Kok Link (TM- CLKL) project of HZMB, the Airport Authority Hong Kong's Three Runway (3RS) Project, Wan Chai Development Phase II project, Contract No. HY/2013/02 of HKBCF and Hong Kong Link Road (HKLR) project of HZMB. As confirmed by RSS, all surplus filling materials delivery to other projects have been completed with the last batch on 07 May 2018. The total transported quantity up to the last batch is 379.48358 (in'000m<sup>3</sup>). The summary of surplus filling materials delivered to other projects up to the end of May 2018 is shown in **Table 3.3**.

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Table 3.3 Summary of Surplus Filling Materials Delivered from Contract No. HY/2013/03 to other projects

Month/Year	Density (in tonnes/m <sup>3</sup> )	Quantity disposed (in '000m <sup>3</sup> )					Total
		To HY/2013/02	To TM-CLKL Project	To 3RS Project	To WDII Project	To HKLR Project	
May 2017	2.3	0	12.637	0	0	0	12.637
Jun 2017	2.63925	0	14.769	11.238	0	0	26.007
Jul 2017	1.9	0	4.406	34.875	10.048	0.760	50.089
Aug 2017	1.9	0.480	0	67.942	2.761	7.455	78.638
Sep 2017	1.9	5.544	0	62.770	0	4.648	72.962
Oct 2017	/	3.384	0	45.92809	0	0	49.31209
Nov 2017	/	5.412	0	5.507	0	0	10.919
Dec 2017	/	12.57173	0	0	0	0	12.57173
Jan 2018	/	10.228	0	0	0	0	10.228
Feb 2018	/	0	0	0	0	0	0
Mar 2018	/	0.45276	0	0	0	0	0.45276
Apr 2018	/	0	42.544	0	0	0	42.544
May 2018	/	0	13.123	0	0	0	13.123
<b>Total</b>	/	<b>38.07249</b>	<b>87.479</b>	<b>228.26009</b>	<b>12.809</b>	<b>12.863</b>	<b>379.48358</b>

Remarks:

- The variation in density is due to different compositions of surplus filling materials
- There may be discrepancies in the total quantities with the quantities of inert C&D materials stated in Appendix G, due to rounding errors
- No density was given from October 2017 to May 2018 due to the direct volume figures as provided and confirmed by the RSS

### 3.7 Environmental Licences and Permits

- 3.7.1 The valid environmental licences and permits for Contract No. HY/2013/03 (includes Contract No. HY/2013/06 within Contract No. HY/2013/03 works area) during the reporting period are summarized in **Appendix H**. The Contractor of Contract No. HY/2013/06 was advised to register as a chemical waste producer when chemical waste is expected to generate for the foreseeable future from the operations (For Registration as Waste Producer Pursuant to Waste Disposal (Chemical Waste) (General) Regulation).

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#### 4. SUMMARY OF EXCEEDANCES, COMPLAINTS, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTION

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

- 4.1.1 Summary of Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level at AMS6 is reported in the monthly EM&A Reports (for June 2018, July 2018 and August 2018) prepared by Contract No. HY/2011/03.
- 4.1.2 There was no Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at station AMS2, AMS3B/AMS3C (Air quality monitoring station (AMS3B) have been re-located to the alternative air quality monitoring station (AMS3C) since 20 August 2018) and AMS7B by the Environmental Team of Contract No. HY/2013/01 during the reporting period.
- 4.1.3 There was no Action and Limit Level exceedance for noise recorded at station NMS2 and station NMS3B/NMS3C (Noise monitoring station (NMS3B) have been re-located to the alternative noise monitoring station (NMS3C) since 20 August 2018) by the Environmental Team of Contract No. HY/2013/01 during the reporting period.
- 4.1.4 There were Action and Limit Level exceedances recorded at different WQM stations recorded on twenty-seven days during the reporting period.

The monitoring and investigation results for the monitoring stations showed in **Table 2.2** are reported in the monthly EM&A Report prepared for Contract No. HY/2013/01.

There was no Action and Limit Level exceedance recorded on other monitoring dates at the monitoring stations shown as shown at **Table 2.2** by the Environmental Team of Contract No. HY/2013/01 during the reporting period.

Although the exceedances were not relevant to Contract No. HY/2013/03, the Contractor was reminded to continue to fully maintain all water quality mitigation measures and prevent any water quality impact to seawater.

- 4.1.5 Ecological monitoring results at all transects are reported in the EM&A report (for the reporting period) prepared by Contract No. HY/2013/01.

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

- 4.2.1 There was one complaint received in relation to the environmental impact during the reporting period. The summary of environmental complaints is presented in **Table 4.1**. The details of cumulative statistics of Environmental Complaints are provided in **Appendix I**.

Table 4.1 Summary of Environmental Complaints for the Reporting Period

Log No.	Environmental Complaint Ref. No.	Date of Complaint Receipt	Description
015	ENPO-C0135	13 June 2018	Water discharge

The complaint (ENPO-C0135) was received by HyD on 13 June 2018 and was referred by HyD to the ENPO. Then the ENPO forwarded the complaint by email to the ET (Materialab Consultants Ltd.) of the Contract No. HY/2013/03 on 25 June 2018. The complainant complained about the construction site of HZMB artificial island. The construction site discharged muddy water into open waters.

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After investigation, the ET of Contract No. HY/2013/03 (including Contract No. HY/2013/06 within Contract No. HY/2013/03) concluded that the captioned complaint is not related to the construction activities of our contract. Nevertheless, the Contractor had been reminded to comply with the requirements stipulated in the Environmental Mitigation Implementation Schedule (EMIS) of the EM&A Manual, in particular:

- **Water Quality:**

**W2-**

1. wastewater from temporary site facilities should be controlled to prevent direct discharge to surface or marine waters;
2. 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;
3. 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;
4. rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities;
5. measures should be taken to prevent the washout of construction materials, soil, silt or debris into any drainage system;
6. open stockpiles of construction materials (e.g. aggregates and sand) on site should be covered with tarpaulin or similar fabric during rainstorms;
7. discharges of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system;
8. surface run-off from bunded areas should pass through oil/grease traps prior to discharge to the stormwater system.

4.2.2 No notification of summons or prosecutions was received during the reporting period.

4.2.3 Statistics on notifications of summons and successful prosecutions are summarized in **Appendix I**.

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### 5. COMMENTS, RECOMMENDATIONS AND CONCLUSIONS

#### 5.1 Comments

5.1.1 According to the environmental site inspections undertaken during the reporting period, the following recommendations were provided:

For Contract No. HY/2013/03

1. CHEC was reminded to clean the U channel on site;
2. CHEC was reminded to provide bunding on site to prevent overflow due to the heavy rain;
3. CHEC was reminded to remove the chemical on site;
4. CHEC was reminded to increase watering for the paved road on site;
5. CHEC was reminded to remove the construction waste accumulated on site;
6. CHEC was reminded to remove the stagnant water accumulated on site;
7. CHEC was reminded to provide proper cover for the stockpile on site;
8. CHEC was reminded to provide a new NRMM label for the generator on site;
9. CHEC was reminded to provide drip tray for the hydraulic machine on site;
10. CHEC was reminded to provide proper bunding for the gullies on site; and
11. CHEC was reminded to remove the general waste accumulated on site.

For Contract No. HY/2013/06 within Contract No. HY/2013/03 works area

1. The Contractor was reminded to remove the general waste accumulated in their work area on site.

5.1.2 A summary of the Implementation Schedule of Environmental Mitigation Measures (EMIS) is presented in **Appendix E**. All necessary mitigation measures at this stage of works were implemented properly.

#### 5.2 Recommendations

5.2.1 With implementation of the recommended environmental mitigation measures, the contract's environmental impacts were considered environmentally acceptable. The weekly environmental site inspections ensured that all the environmental mitigation measures recommended were effectively implemented.

5.2.2 The recommended environmental mitigation measures, as included in the EM&A programme, effectively minimize the potential environmental impacts from the contract. Also, the EM&A programme effectively monitored the environmental impacts from the construction activities and ensure the proper implementation of mitigation measures. No particular recommendation was advised for the improvement of the programme.

#### 5.3 Conclusions

5.3.1 Commencement of Contract No. HY/2013/03 took place on 10 April 2015 and the construction works of Contract No. HY/2013/03 commenced on 29 August 2015 (commencement of Contract No. HY/2013/06 took place on 14 August 2015 and the construction works of Contract No. HY/2013/06 commenced on 13 September 2016 within Contract No. HY/2013/03 works area). This is the 12th Quarterly EM&A Report summarising the findings of EM&A activities conducted under Contract No. HY/2013/03 from 01 June 2018 to 31 August 2018 (includes the findings of EM&A activities conducted under Contract No. HY/2013/06 within Contract No. HY/2013/03 works area from 01 June 2018 to 31 August 2018).

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- 5.3.2 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 Reports (for June 2018, July 2018 and August 2018) prepared by Contract No. HY/2011/03.
- 5.3.3 There was no Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at station AMS2, AMS3B/AMS3C (Air quality monitoring station (AMS3B) have been re-located to the alternative air quality monitoring station (AMS3C) since 20 August 2018) and AMS7B by the Environmental Team of Contract No. HY/2013/01 during the reporting period.
- 5.3.4 There was no Action and Limit Level exceedance for noise recorded at station NMS2 and station NMS3B/NMS3C (Noise monitoring station (NMS3B) have been re-located to the alternative noise monitoring station (NMS3C) since 20 August 2018) by the Environmental Team of Contract No. HY/2013/01 during the reporting period.
- 5.3.5 There were Action and Limit Level exceedances recorded at different WQM stations recorded on twenty-seven days by the Environmental Team of Contract No. HY/2013/01 during reporting period. After investigation, it was concluded that all exceedances were not relevant to Contract No. HY/2013/03. There was no Action and Limit Level exceedance recorded on other monitoring dates at the monitoring stations shown as shown at **Table 2.2** by the Environmental Team of Contract No. HY/2013/01 during the reporting period.
- 5.3.6 Ecological monitoring results at all transects are reported in the EM&A report prepared by Contract No. HY/2013/01.
- 5.3.7 Environmental site inspection was carried out on 07, 14, 20 and 28 June 2018, 05, 13, 20 and 26 July 2018, 02, 06, 17, 23 and 30 August 2018 (includes Contract No. HY/2013/06 within Contract No. HY/2013/03 works area). Recommendations on remedial actions were given to the Contractors for the deficiencies identified during the site inspections.
- 5.3.8 There was one complaint received in relation to the environmental impact during the reporting period. After investigation, the complaint was not related to Contract No. HY/2013/03.
- 5.3.9 There were no notifications of summons or prosecutions received during the reporting period.



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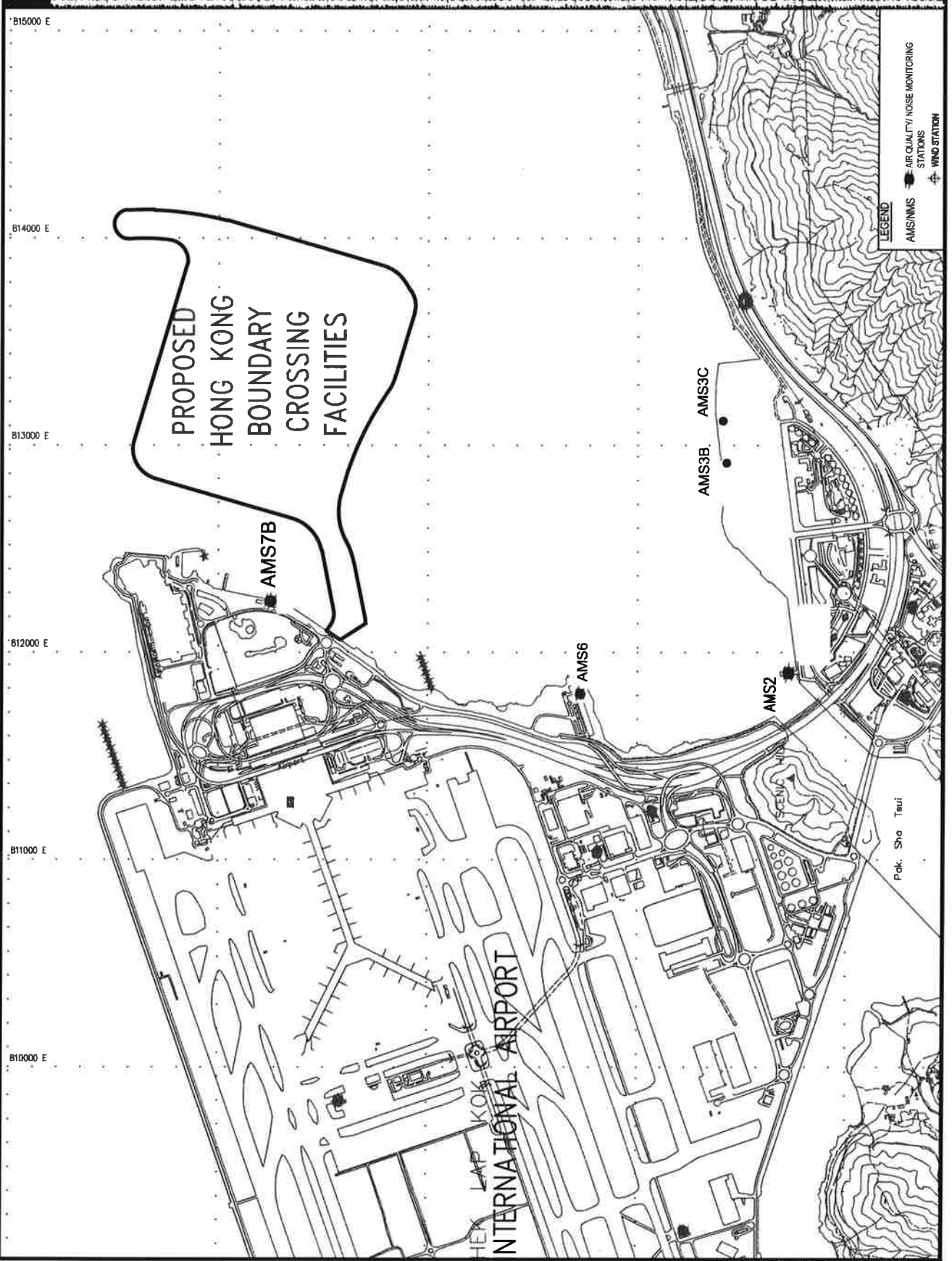
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### **Figure 1**

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



**LEGEND**

- AMS/NMS AIR QUALITY/NOISE MONITORING STATIONS
- WIND STATION

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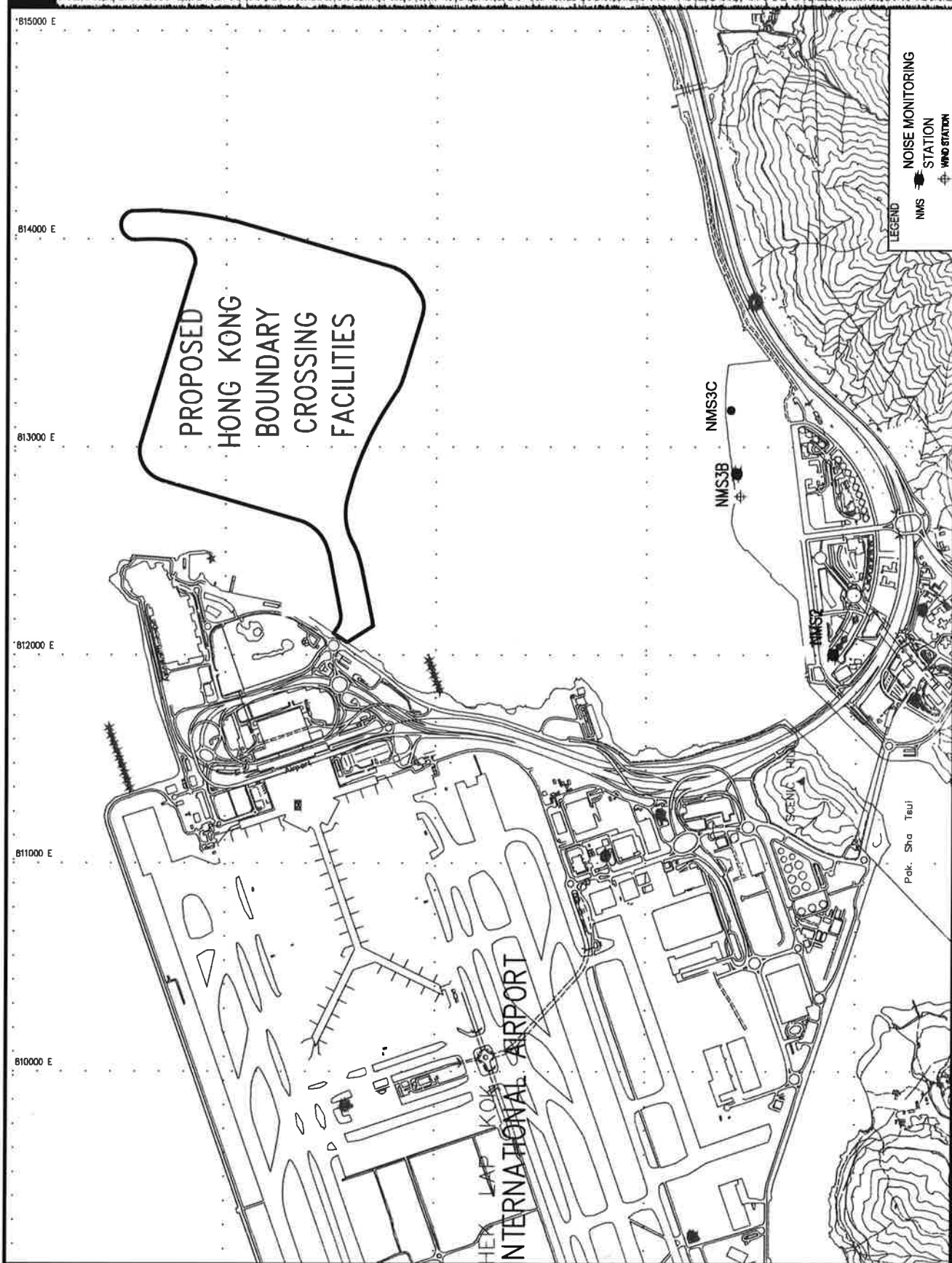
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### **Figure 2**

### **Noise Monitoring Stations**



LEGEND

NOISE MONITORING STATION

WIND STATION

NMS

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**Figure 3**  
**Water Quality Monitoring Stations**



- LEGEND**
- IS    ●    IMPACT STATIONS
  - CS    □    CONTROL / FAR FIELD STATIONS
  - SR    ▲    SENSITIVE RECEIVERS STATIONS

**FIGURE 4.1 – LOCATION OF WATER QUALITY MONITORING STATIONS**

**SETTING OUT SCHEDULE**

MONITORING STATIONS	CO-ORDINATES	
	EASTING	NORTHING
IS5	811519	817106
IS(MF)16	812101	817873
IS7	812244	818777
IS8	814251	818412
IS(MF)9	813273	818850
IS10	812577	820670
IS10(N)	812942	820455
IS(MF)11	813562	820716
IS(MF)16	814328	819497
IS17	814559	820391
SR3(N)	810689	816591
SR4(N)	814705	817859
SR5	811489	820455
SR5(N)	812569	821475
SR6	805837	821818
SR7	814293	821431
SR10A(N)	823644	823484
SR10B(N2)	823689	823159
CS1(MF)13	809989	821117
CS(MF)13(N)	808814	822355
CS(MF)15	817990	821129
CS4	810025	824004
CS6	817028	823992
CSA	818103	823064

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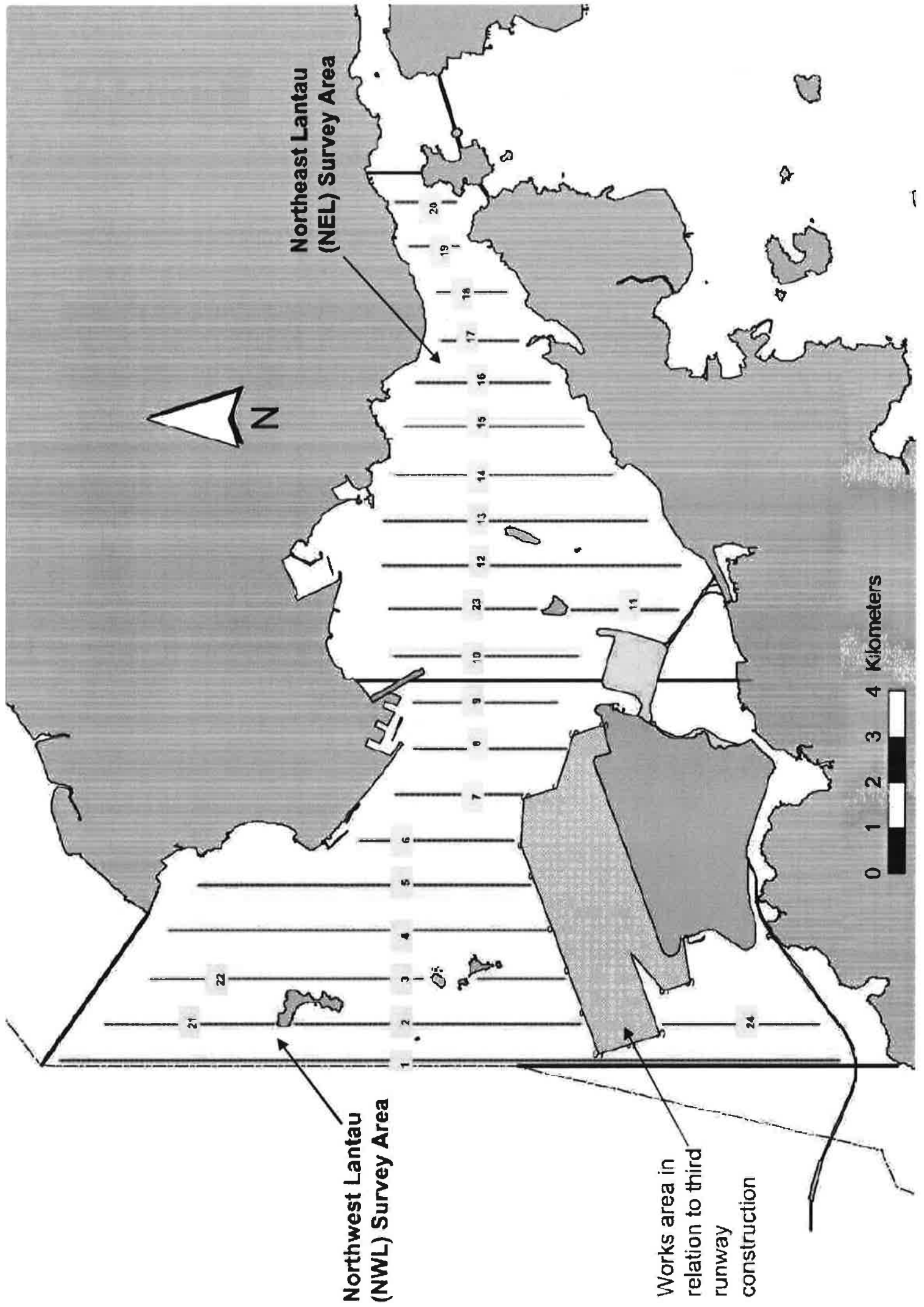
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### **Figure 4**

#### **Ecological Monitoring Transect Line and Layout Map**



Northeast Lantau (NEL) Survey Area



0 1 2 3 4 Kilometers

Northwest Lantau (NWL) Survey Area

Works area in relation to third runway construction



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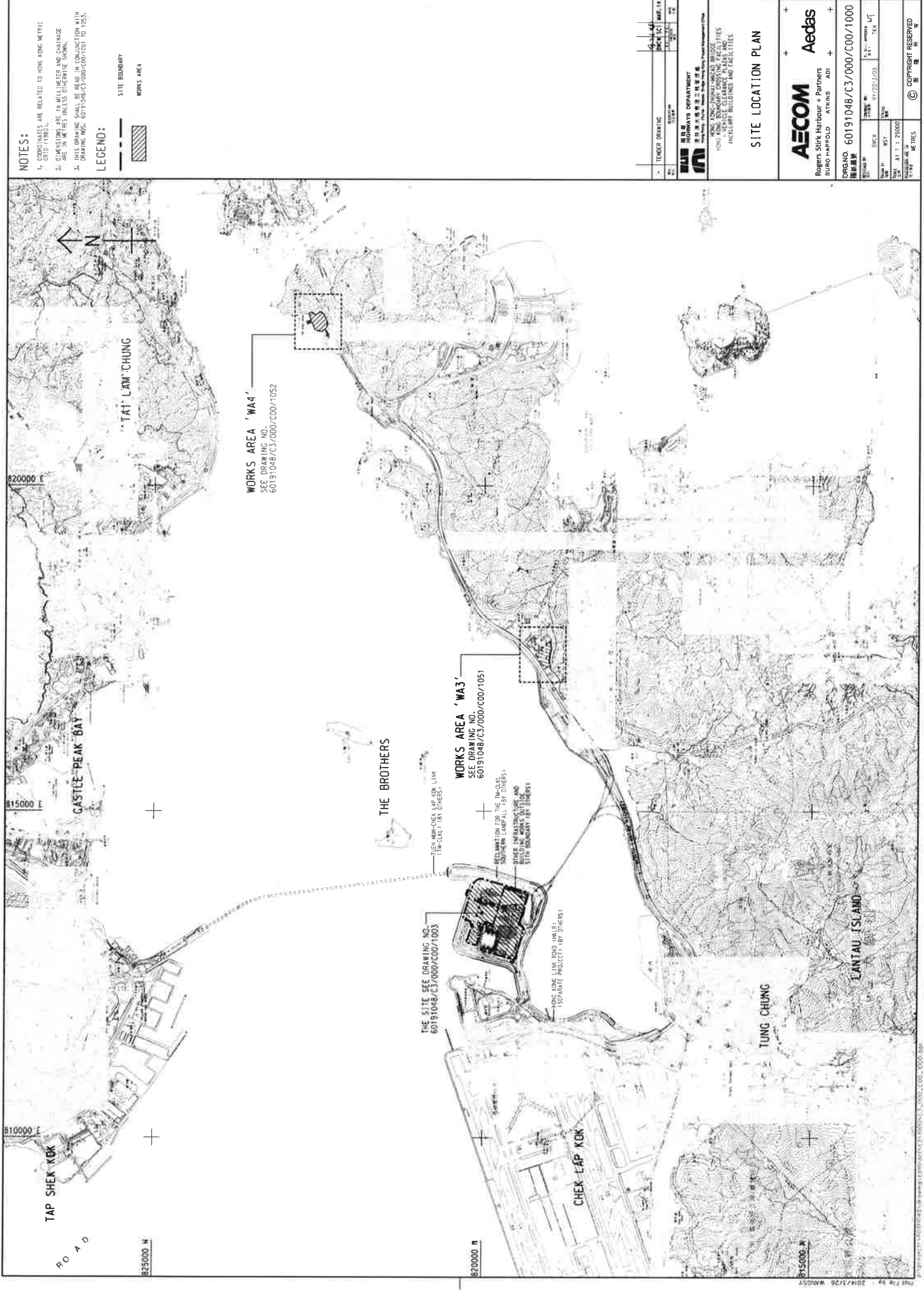
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### **Appendix A**

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



**NOTES:**

1. COORDINATES ARE RELATED TO HONG KONG METRIC
2. DIMENSIONS IN METERS AND DIMENSIONS IN FEET UNLESS OTHERWISE SPECIFIED
3. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NOS. 60191048/C3/000/C00/1051 TO 1053.

**LEGEND:**

- SITE BOUNDARY
- ▨ WORKS AREA

TECHER DRAWING	DATE	NO.



HONG KONG SPECIAL ADMINISTRATIVE REGION  
 HONG KONG POLICE DEPARTMENT  
 AIRCRAFT BUILDINGS AND FACILITIES

**SITE LOCATION PLAN**

**AECOM** Rogers Stirk Harbour + Partners  
**Aedas** Bruno Zevi + Partners

PROJECT NO. 60191048/C3/000/C00/1000  
 DRAWING NO. 60191048/C3/000/C00/1051

DATE: 11/2013  
 SCALE: AS SHOWN

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**NOTE:**  
 1. ALL DRAWINGS TO BE READ IN CONJUNCTION WITH  
 DRAWING NO. 60191048/C3/000/C00/1001.



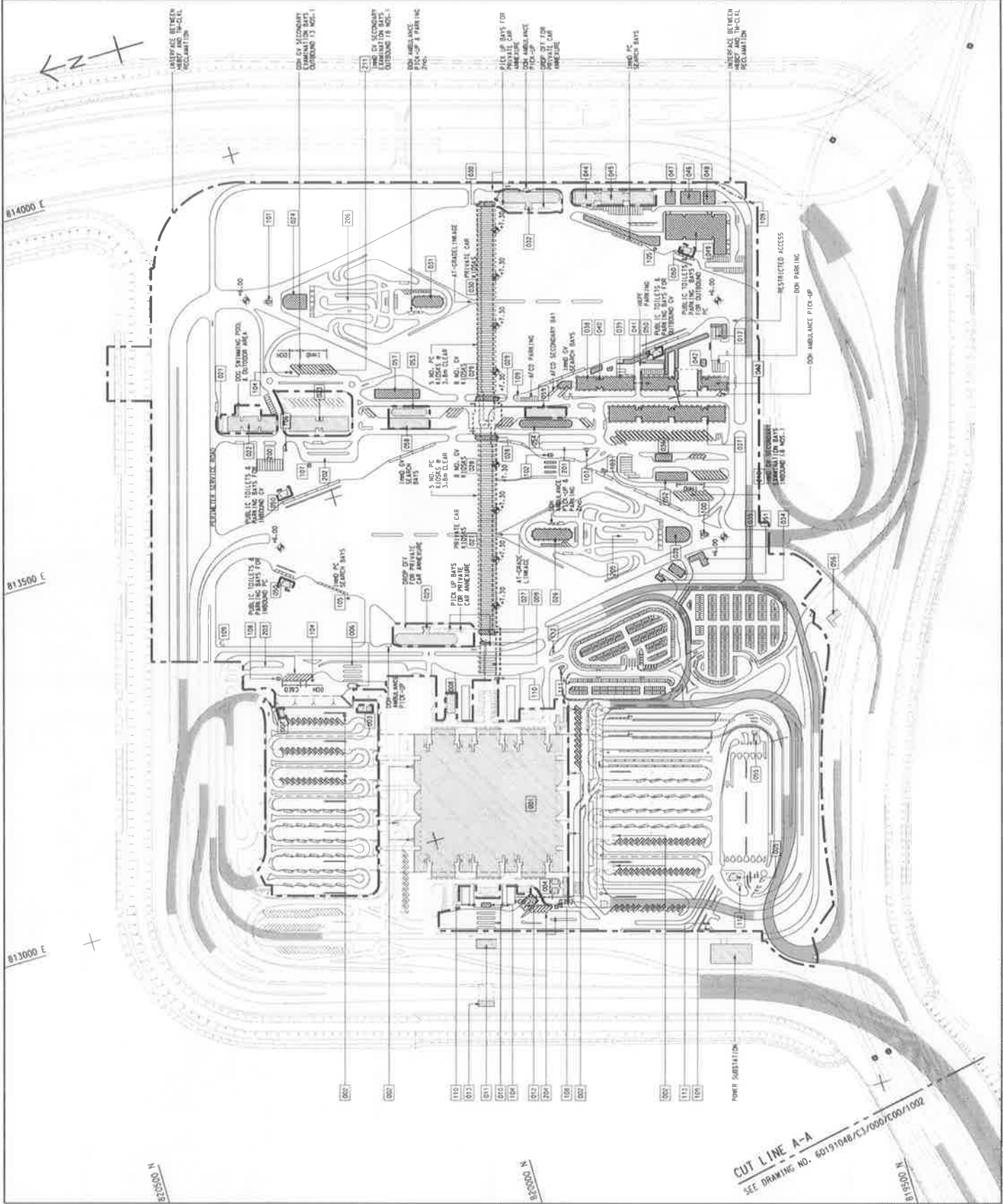
TENDER DRAWING  
 SHEET NO. 104.14  
 DATE 11/11/2009  
 PROJECT NO. 60191048/C3/000/C00/1001

**TRANSIT**  
**ROADWAYS DEPARTMENT**  
 HONG KONG SPECIAL ADMINISTRATIVE REGION  
 HONG KONG BOUNDARY CROSSING FACILITIES  
 ANCILLARY BUILDINGS AND FACILITIES

Figure 1-1  
 Current Layout Plan  
 SHEET 1 OF 2

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

DRAWING NO. 60191048/C3/000/C00/1001  
 SHEET NO. 104.14  
 DATE 11/11/2009  
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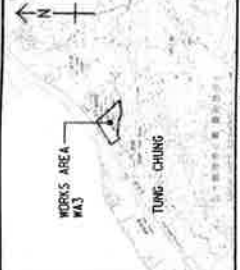
CUT LINE A-A  
 SEE DRAWING NO. 60191048/C3/000/C00/1002

POINT	EASTING	NORTHING
301	81767.265	819166.683
302	817314.741	819066.829
303	817327.339	819046.285
304	817460.865	819117.617
305	817500.825	819021.314
306	817381.350	819021.483
307	817387.861	819043.395
308	817466.133	819091.042
309	817463.783	819097.181
310	817515.449	819112.784
311	817347.717	819016.082
312	817450.535	819032.308
313	817463.368	819012.152
314	817521.154	819001.065
315	817520.249	819006.622
316	817495.827	819051.591
317	817527.110	819055.363
318	817564.404	819028.472
319	817564.507	819004.323
320	817564.551	819004.521

817200 E

817400 E

817600 E

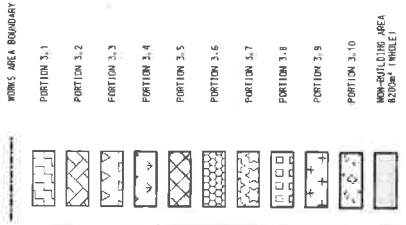


LOCATION PLAN  
SCALE 1:2500

NOTES:

- COORDINATES ARE RELATED TO HONG KONG METRIC GRID (1980).
- IMPERIAL UNITS ARE IN MILLIMETERS AND DECIMALS ARE IN METRES UNLESS OTHERWISE SHOWN.

LEGEND:



FOR CONSTRUCTION

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2	TENDER ADDENDUM NO. 2	REV. 01	DATE: 14/01/14
3	TENDER ADDENDUM NO. 1	REV. 01	DATE: 14/01/14
4	TENDER DRAWING	REV. 01	DATE: 14/01/14



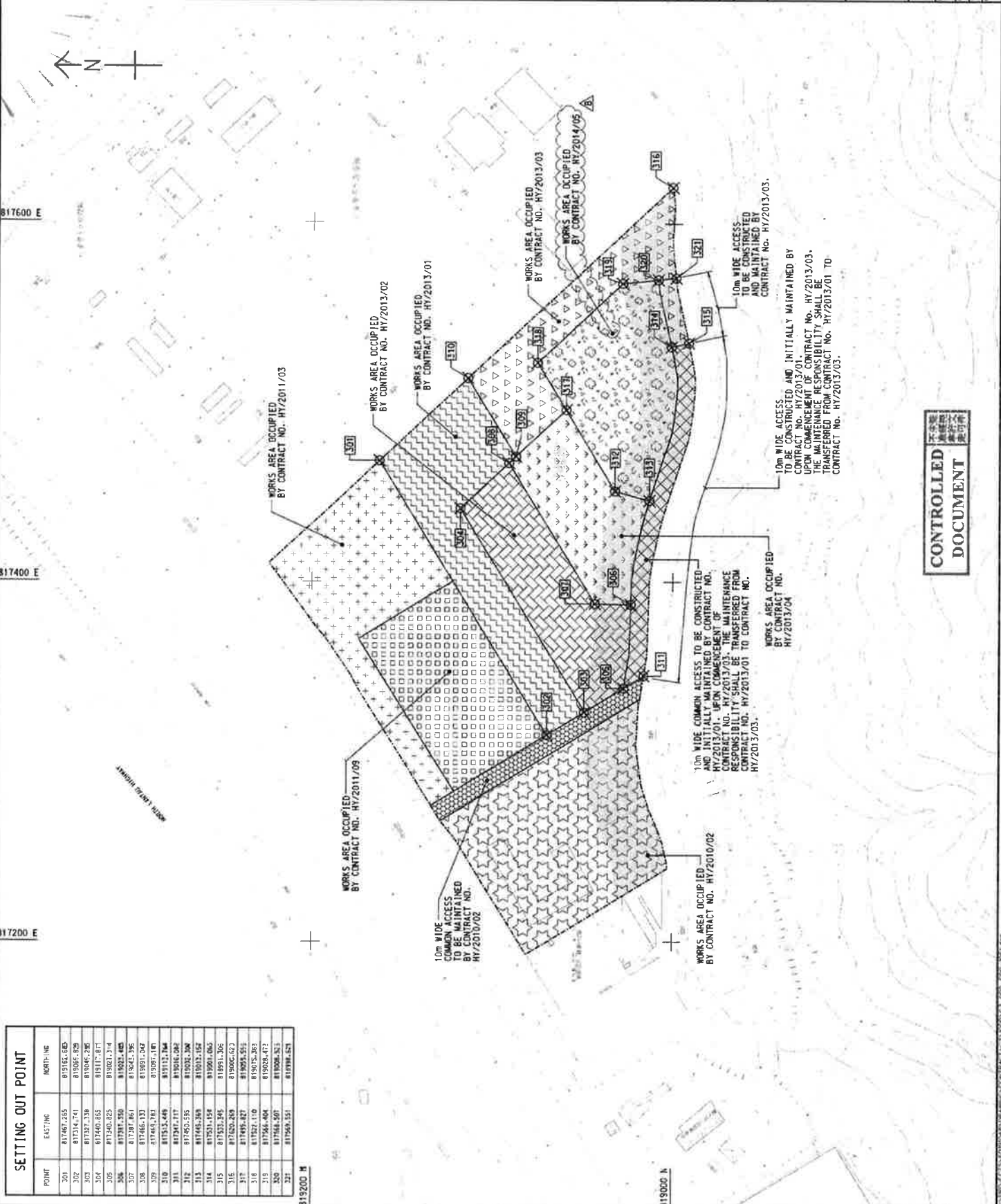
HONG KONG DEPARTMENT OF LANDS AND SURVEY  
HONG KONG SPECIAL ADMINISTRATIVE REGION  
NON-BUILDING CONSTRUCTION FACILITIES  
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WORKS AREA WA3

**AECOM**  
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CONTROLLED DOCUMENT

POINT	EASTING	NORTHING
401	822408.153	822532.215
402	822402.593	822584.415
403	822318.809	822591.840
404	822105.970	822591.842
405	822021.428	822507.255
406	822234.380	822528.812
407	822511.248	822687.950
408	822542.232	822481.281
409	822584.083	822507.428
410	822508.865	822516.261
411	822405.278	822461.296
412	822402.243	822480.200
413	822521.914	822467.929
414	822827.120	822470.298
415	822831.725	822508.858
416	822844.758	822527.192

822400 E  
822400 E

**LOCATION PLAN**  
SCALE 1 : 25000

**NOTES:**

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- DIMENSIONS ARE IN MILLIMETER AND CHAINAGE ARE IN METERS (UNLESS OTHERWISE STATED).

**LEGEND:**

**WORKS AREA BOUNDARY**

- PORTION 4.1
- PORTION 4.2
- PORTION 4.3
- PORTION 4.4
- PORTION 4.5
- PORTION 4.6
- PORTION 4.7
- PORTION 4.8
- PORTION 4.9

**CONTROLLED DOCUMENT**

**FOR CONSTRUCTION**

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C	WORKING DRAWING	12/01/11	MA.15
B	TRIGGER AGREEMENT NO. 2	12/01/11	MA.14
A	TRIGGER AGREEMENT NO. 1	12/01/11	MA.14
	TRIGGER DRAWING	12/01/11	MA.14
RD			

**WORKS AREA WA4**

**AECOM**  
Aedas

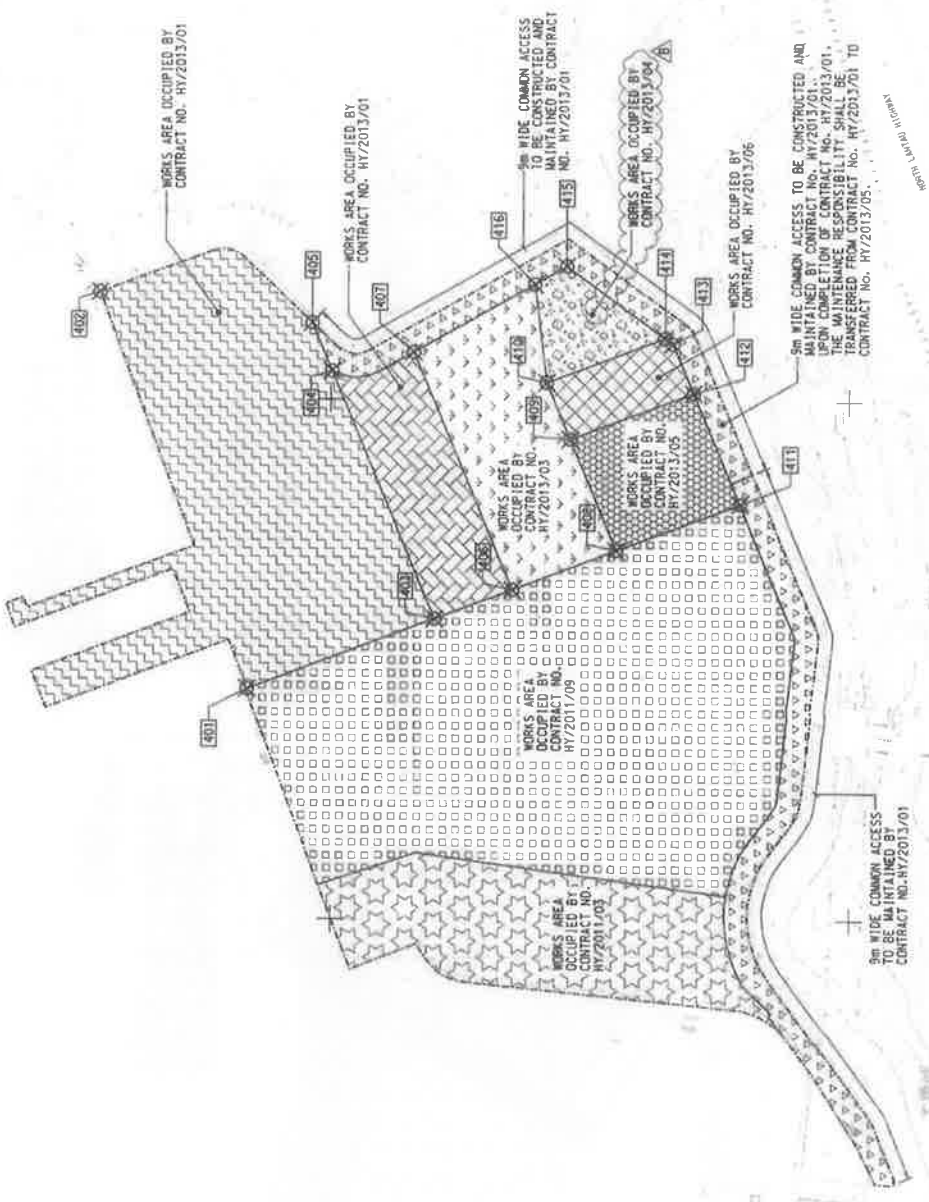
Regent Silk Harbour + Partners  
Rafiq Habibullah Aiyon ADI

PROJECT NO. 60191046/C3/000/C00/1052C

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### **Appendix B**

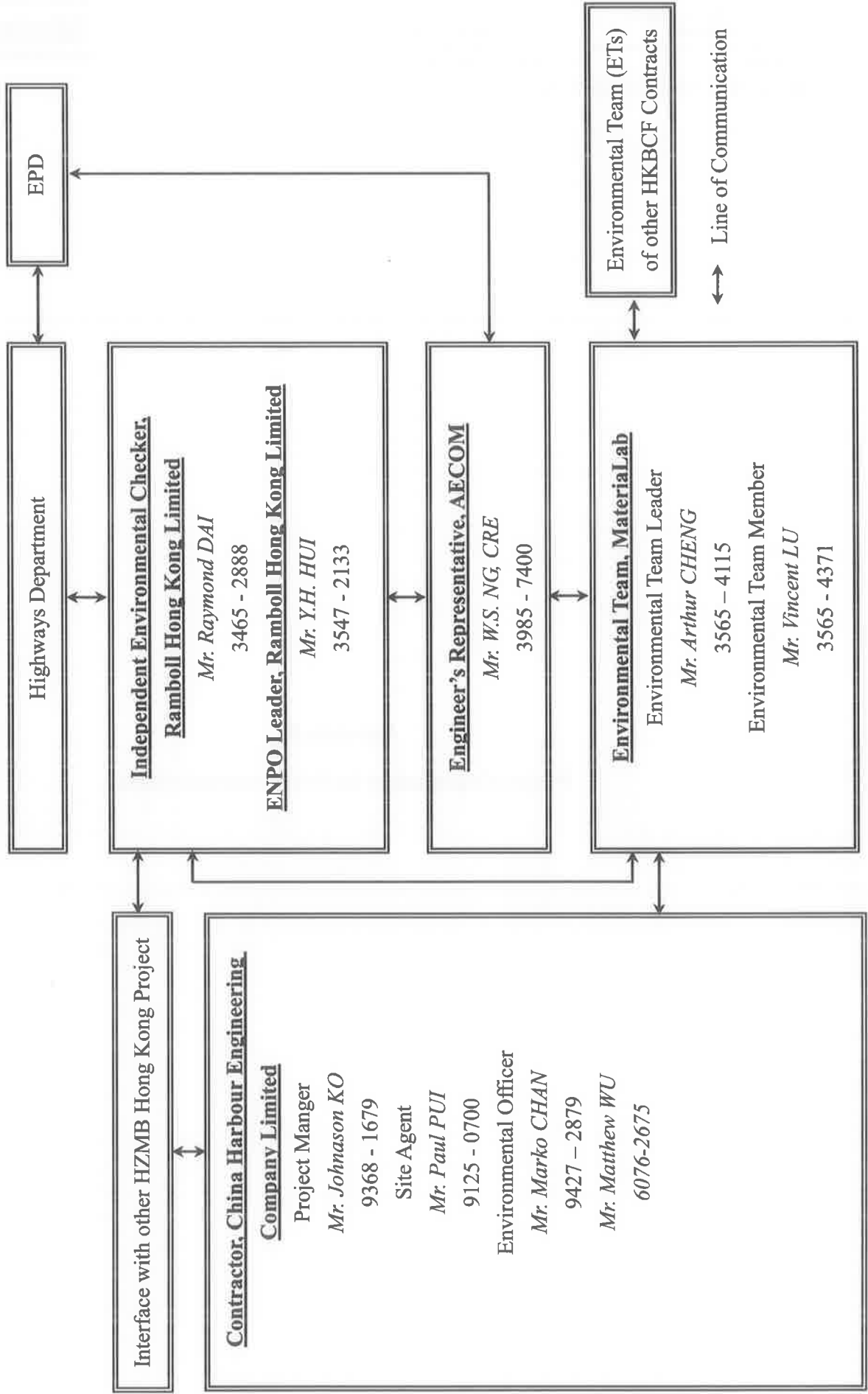
#### **Project Organization for Environmental Works**



**CHINA HARBOUR ENGINEERING COMPANY LIMITED**

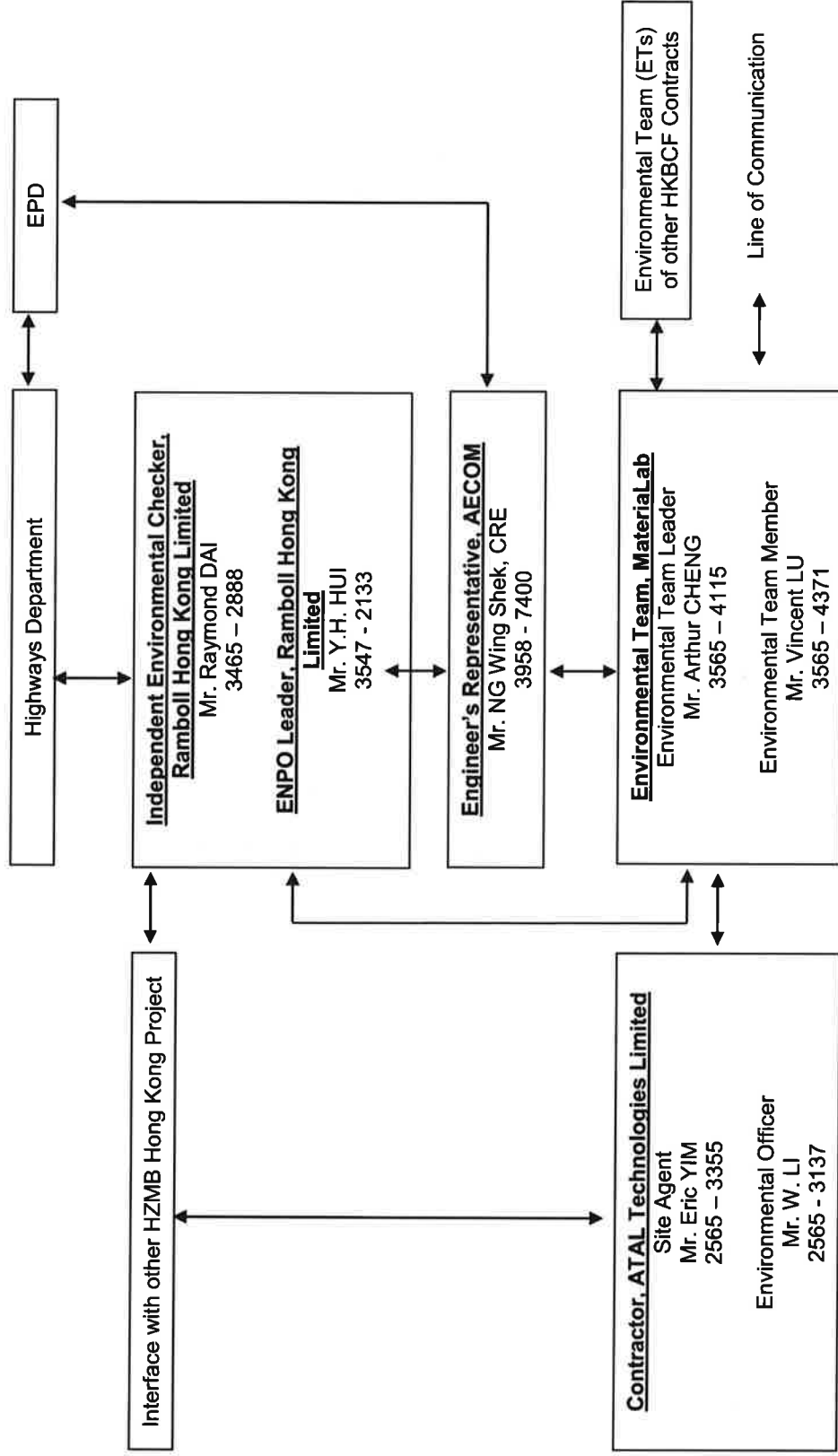
Contract No. HY/2013/03 Hong Kong-Zhuhai-Macao Bridge, Hong Kong Boundary Crossing Facilities – Vehicle Clearance Plazas and Ancillary Buildings and Facilities

**Projects Organization for Environmental Works**



Contract No. HY/2013/06 (within Contract No. HY/2013/03 works area)  
 Hong Kong-Zhuhai-Macao Bridge, Hong Kong Boundary Crossing Facilities – Automatic Vehicle Clearance Support System

Projects Organization for Environmental Works





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### **Appendix C**

### **Construction Programme**

		2018											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>HKBCF - VCP &amp; Ancillary Buildings and Facilities, DWP5</b>													
<b>Related Variations to Buildings</b>													
<b>General</b>													
R3210	049 - SS Cattedradderhandrail												
R3230	039 - Detention Room												
R3240	037 - Lead in Pipe												
R3250	037 - Sanitary Filling												
R3260	037/041/043/046/047 Relocation of Water Tanks												
R3280	Floor Drainage at Pump Room & Meter Room												
R3300	Door Schedules and Master Key												
R3310	Ancillary Building Planers (012, 034, 035, 043, 046, 047, 048, 049, 060)												
R3430	040, 042 Aviation Obstacle Lights												
R3450	FRP Panel Above Water Tanks for FSI												
R3460	SS Case in Water Stand Green Roof												
R3470	039 Detention Room Revision												
R3480	041 HVAC Revision (VO184)												
R3500	048 SS Chequer Plate												
R3550	053, 054, 100, 101 CCTV & Door Force Opening												
R3520	Buildings 039/047/048/060/114, Ventilation and Lighting for WSD												
R3560	Buildings 040 Gap Filling at Staircase												
R3570	Buildings 041 FSD Crest and Name Plate												
<b>Modification to Other Blocks of 027, 028, 029 &amp; 030 (6+6)</b>													
K670	Open up baffle ceiling and raised floor for C6 and Re-installment after												
K680	Installation of AVCSS for C&ED												
K690	Instatement of EDU and Intercom for DH												
<b>Related Variations to Other Works</b>													
<b>General</b>													
R3380	Revised Attenuation Ponds Drainage & Outflow Outlet												
R3390	Irrigation Pump Room and Turf Cell												
R3560	Radiation Detection Provisions for EMSD												
R570	Modification and Reinstatement of Drawpitt Cover and Road Pavement												
<b>T&amp;C of Works</b>													
D550	T&C for E&M Works (Lighting/Signs), Water Mains/Flush & UU Cable (Late												
D560	T&C of ELV systems in Location 1.7/ABC, 1.8 and in C2, C3 & C4 site delia												
R1120	T&C for external works (Drainage/Sewerage & Road Furnish)												
R3330	Late Access to Location 1.8 delayed by C1 Contractor												
R3340	Late Access to Location 1.7A, 1.7B & 1.7C delayed by C8 Contractor												
<b>Landscape Works</b>													
R2620	Laying of Top Soil												
R2860	Completion of Landscape Works												
R3350	Double Handling of Soil Material for Public Fill Mixing and Top Soil												
R3360	Attenuation Pond and Drainage												
R3370	Landscape Works at Rock Slope of South of Nough PTI												
R3410	Landscape at Pg. J22												
R3420	Irrigation Water Point for Water Wagon												

Actual Work	Milestone	Date	Revision	Checked	Approved
█	◆	31-Mar-18	3MRP, updated as of 31 Mar. 2018	ZJ	ZJ
█	◆	30-Apr-18	3MRP, updated as of 31 Apr. 2018	ZJ	ZJ
█	◆	31-May-18	3MRP, updated as of 31 May 2018	ZJ	ZJ

3MRP, AS OF 31 May 2018  
VEHICLE CLEARANCE PLAZAS AND ANCILLARY BUILDINGS AND FACILITIES

Activity ID	Activity Name
<b>Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities - Automatic Vehicle Clearance Support System (AVCSS)</b>	
<b>Key Dates</b>	
<b>Interface Activities</b>	
<b>Site and Facility Inspection</b>	
JS1200	Pre Site and Facility Inspection by Contractor at Location 4 - Deg2
JS1210	Joint Site and Facility Inspection with Interface Contractor at Location 4 - Deg2
JS1620	Pre Site and Facility Inspection by Contractor at Location 14 - Deg2
JS1630	Joint Site and Facility Inspection with Interface Contractor at Location 14 - Deg2
JS1760	Pre Site and Facility Inspection by Contractor at Location 18 - Deg1
JS1770	Joint Site and Facility Inspection with Interface Contractor at Location 18 - Deg1
JS1780	Pre Site and Facility Inspection by Contractor at Location 18 - Deg2
JS1790	Joint Site and Facility Inspection with Interface Contractor at Location 18 - Deg2
<b>Access Dates</b>	
AD1000	Location 1(PCB (001) Basement)-Deg1 (270d)
AD1010	Location 1(PCB (001) Basement)-Deg2 (380d)
AD1020	Location 1(PCB (001) ELV Room (Grid Line E3))-Deg1 (270d)
AD1030	Location 1(PCB (001) ELV Room (Grid Line E3))-Deg2 (380d)
AD1040	Location 2(PCB (001) First Floor Main Server Room)-Deg1 (330d)
AD1050	Location 2(PCB (001) First Floor Main Server Room)-Deg2 (380d)
AD1060	Location 2(PCB (001) First Floor Main Server Room) - For Server Installation - Deg2 (400d)
AD1070	Location 2(PCB (001) Ground Floor ELV Room (Grid Line E3)) - Deg1 (330d)
AD1080	Location 2(PCB (001) Ground Floor DOH Port Health Control Room (Grid Line B05)) - Deg1 (330d)
AD1090	Location 2(PCB (001) Ground Floor DOH Port Health Control Room (Grid Line B05)) - Deg2 (480d)
AD1130	Location 3(Inbd Cargo Exam Bldg (037) Platform Control Room)-Deg2 (500d)
AD1150	Location 3(Inbd Cargo Exam Bldg (037) Inspector Offices 128,129,130,131,128,129,14)
AD1170	Location 3a(Inbd Cargo Exam Bldg (037) ROCARS Room)-Deg2 (480d)
AD1190	Location 3a(Inbd Cargo Exam Bldg (037) Main Server Room)-Deg2 (480d)
AD1200	Location 3a(Inbd Cargo Exam Bldg (037) Main Server Room) - For Server Installation - Deg2 (480d)
AD1220	Location 4(Outbd Cargo Exam Bldg (023))-Deg2 (660d)
AD1240	Location 4a(Outbd Cargo Exam Bldg (023))-Deg2 (630d)
AD1270	Location 6(Common Utility Enclosure & Staff Subway)-Deg1 (400d)
AD1290	Location 7(Common Utility Enclosure & Staff Subway)-Deg1 (270d)
AD1300	Location 8(Inbd Private Car Annex (025))-Deg1 (430d)
AD1310	Location 8(Inbd Private Car Annex (025))-Deg2 (580d)
AD1320	Location 8(Inbd Private Car Annex (025) Canopy)-Deg1 (430d)
AD1330	Location 8(Inbd Private Car Annex (025) Canopy)-Deg2 (580d)
AD1340	Location 9(Outbd Private Car Annex (032))-Deg1 (520d)
AD1350	Location 9(Outbd Private Car Annex (032))-Deg2 (660d)
AD1360	Location 9(Outbd Private Car Annex (032) Canopy)-Deg1 (520d)
AD1370	Location 9(Outbd Private Car Annex (032) Canopy)-Deg2 (660d)
AD1501	Location 12(Inbd Private Car Kiosks(027))-Deg1 (410d) Phase 2
AD1510	Location 12(Inbd Private Car Kiosks(027))-Deg2 (480d) Phase 1
AD1511	Location 12(Inbd Private Car Kiosks(027))-Deg2 (480d) Phase 2
AD1521	Location 12(Inbd Private Car Kiosks(027) Canopy)-Deg1 (400d) Phase 2

Programme No.: HZMB-DW/P  
Data Date: 14-Aug-15

summary

- Actual Level of Effort
- Primary Baseline
- Actual Work
- Remaining Work
- Critical Remaining Work
- Baseline Milestone
- Milestone

**Hong Kong-Zhuhai-Macao Bridge  
Hong Kong Boundary Crossing  
Facilities - Automatic Vehicle  
Clearance Support System (AVCSS)**

2015			2016			2017			2018			2019		
Q2	Q3	Q4	Q1	Q2	Q3	Q1	Q2	Q3	Q1	Q2	Q3	Q1	Q2	Q3
<p>23-Jun-17, Site and Facility Inspection</p> <p>Pre Site and Facility Inspection by Contractor at Location 4 - Deg2</p> <p>Joint Site and Facility Inspection with Interface Contractor at Location 4 - Deg2</p> <p>Pre Site and Facility Inspection by Contractor at Location 14 - Deg2</p> <p>Joint Site and Facility Inspection with Interface Contractor at Location 14 - Deg2</p> <p>Pre Site and Facility Inspection by Contractor at Location 18 - Deg1</p> <p>Joint Site and Facility Inspection with Interface Contractor at Location 18 - Deg1</p> <p>Pre Site and Facility Inspection by Contractor at Location 18 - Deg2</p> <p>Joint Site and Facility Inspection with Interface Contractor at Location 18 - Deg2</p> <p>24-Aug-17, Access Dates</p> <p>Location 1(PCB (001) Basement)-Deg1 (270d), 31-May-17</p> <p>Location 1(PCB (001) Basement)-Deg2 (380d), 15-Jun-17</p> <p>Location 1(PCB (001) ELV Room (Grid Line E3))-Deg1 (270d), 15-Jun-17</p> <p>Location 1(PCB (001) ELV Room (Grid Line E3))-Deg2 (380d), 15-Jun-17</p> <p>Location 2(PCB (001) First Floor Main Server Room)-Deg1 (330d), 15-Jun-17</p> <p>Location 2(PCB (001) First Floor Main Server Room)-Deg2 (380d), 15-Jun-17</p> <p>Location 2(PCB (001) First Floor Main Server Room) - For Server Installation - Deg2 (400d), 15-Jun-17</p> <p>Location 2(PCB (001) Ground Floor ELV Room (Grid Line E3)) - Deg1 (330d), 15-Jun-17</p> <p>Location 2(PCB (001) Ground Floor DOH Port Health Control Room (Grid Line B05)) - Deg1 (330d), 15-Jun-17</p> <p>Location 2(PCB (001) Ground Floor DOH Port Health Control Room (Grid Line B05)) - Deg2 (480d), 15-Jun-17</p> <p>Location 3(Inbd Cargo Exam Bldg (037) Platform Control Room)-Deg2 (500d), 15-Jun-17</p> <p>Location 3(Inbd Cargo Exam Bldg (037) Inspector Offices 128,129,130,131,128,129,14), 15-Jun-17</p> <p>Location 3a(Inbd Cargo Exam Bldg (037) ROCARS Room)-Deg2 (480d), 15-Jun-17</p> <p>Location 3a(Inbd Cargo Exam Bldg (037) Main Server Room)-Deg2 (480d), 15-Jun-17</p> <p>Location 3a(Inbd Cargo Exam Bldg (037) Main Server Room) - For Server Installation - Deg2 (480d), 15-Jun-17</p> <p>Location 4(Outbd Cargo Exam Bldg (023))-Deg2 (660d), 15-Jun-17</p> <p>Location 4a(Outbd Cargo Exam Bldg (023))-Deg2 (630d), 15-Jun-17</p> <p>Location 6(Common Utility Enclosure &amp; Staff Subway)-Deg1 (400d), 15-Jun-17</p> <p>Location 7(Common Utility Enclosure &amp; Staff Subway)-Deg1 (270d), 15-Jun-17</p> <p>Location 8(Inbd Private Car Annex (025))-Deg1 (430d), 15-Jun-17</p> <p>Location 8(Inbd Private Car Annex (025))-Deg2 (580d), 15-Jun-17</p> <p>Location 8(Inbd Private Car Annex (025) Canopy)-Deg1 (430d), 15-Jun-17</p> <p>Location 8(Inbd Private Car Annex (025) Canopy)-Deg2 (580d), 15-Jun-17</p> <p>Location 9(Outbd Private Car Annex (032))-Deg1 (520d), 15-Jun-17</p> <p>Location 9(Outbd Private Car Annex (032))-Deg2 (660d), 15-Jun-17</p> <p>Location 9(Outbd Private Car Annex (032) Canopy)-Deg1 (520d), 15-Jun-17</p> <p>Location 9(Outbd Private Car Annex (032) Canopy)-Deg2 (660d), 15-Jun-17</p> <p>Location 12(Inbd Private Car Kiosks(027))-Deg1 (410d) Phase 2, 15-Jun-17</p> <p>Location 12(Inbd Private Car Kiosks(027))-Deg2 (480d) Phase 1, 15-Jun-17</p> <p>Location 12(Inbd Private Car Kiosks(027))-Deg2 (480d) Phase 2, 15-Jun-17</p> <p>Location 12(Inbd Private Car Kiosks(027) Canopy)-Deg1 (400d) Phase 2, 15-Jun-17</p>														

Date	Revision	Checked	Approved
14-Nov-16	Rev: 0	W/C	LC
10-Mar-17	Rev: 1.0a	W/C	LC
5-May-17	Rev: 1.0b	W/C	LC

Activity ID	Activity Name	2015				2016				2017				2019			
		Q2	Q3	Q4		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	
AD1530	Location 12(Inbnd Private Car Kiosks(027) Canopy)-Deg2 (4800d) Phase 1																
AD1531	Location 12(Inbnd Private Car Kiosks(027) Canopy)-Deg2 (4800d) Phase 2																
AD1540	Location 12(Inbnd GV Kiosks (028))-Deg1 (4000d) Phase 1																
AD1541	Location 12(Inbnd GV Kiosks (028))-Deg1 (4000d) Phase 2																
AD1550	Location 12(Inbnd GV Kiosks (028))-Deg2 (4800d) Phase 1																
AD1551	Location 12(Inbnd GV Kiosks (028))-Deg2 (4800d) Phase 2																
AD1560	Location 12(Inbnd GV Kiosks (028) Canopy)-Deg1 (4000d) Phase 1																
AD1561	Location 12(Inbnd GV Kiosks (028) Canopy)-Deg1 (4000d) Phase 2																
AD1570	Location 12(Inbnd GV Kiosks (028) Canopy)-Deg2 (4800d) Phase 1																
AD1571	Location 12(Inbnd GV Kiosks (028) Canopy)-Deg2 (4800d) Phase 2																
AD1580	Location 12(Outbd GV Kiosks (029))-Deg1 (4000d) Phase 1																
AD1581	Location 12(Outbd GV Kiosks (029))-Deg1 (4000d) Phase 2																
AD1590	Location 12(Outbd GV Kiosks (029))-Deg2 (4800d) Phase 1																
AD1591	Location 12(Outbd GV Kiosks (029))-Deg2 (4800d) Phase 2																
AD1600	Location 12(Outbd GV Kiosks (029) Canopy)-Deg1 (4000d) Phase 1																
AD1601	Location 12(Outbd GV Kiosks (029) Canopy)-Deg1 (4000d) Phase 2																
AD1610	Location 12(Outbd GV Kiosks (029) Canopy)-Deg2 (4800d) Phase 1																
AD1611	Location 12(Outbd GV Kiosks (029) Canopy)-Deg2 (4800d) Phase 2																
AD1620	Location 13(Outbd Private Car Kiosks (030))-Deg1 (4800d) Phase 1																
AD1630	Location 13(Outbd Private Car Kiosks (030))-Deg2 (5500d) Phase 1																
AD1640	Location 13(Outbd Private Car Kiosks (030) Canopy)-Deg1 (4800d) Phase 1																
AD1650	Location 13(Outbd Private Car Kiosks (030) Canopy)-Deg2 (5500d) Phase 1																
AD1660	Location 14(Future-Outbd/Inbnd Private Car Kiosks)-Deg1 (6100d)																
AD1670	Location 14(Future-Outbd/Inbnd Private Car Kiosks)-Deg2 (6800d)																
AD1700	Location 16(Outbd Traffic Control Kiosk (1011))-Deg1 (4000d)																
AD1710	Location 16(Outbd Traffic Control Kiosk (1011))-Deg2 (4800d)																
AD1740	Location 18(Outbd Private Car Exam Bldg(024))-Deg1 (-)																
AD1750	Location 18(Outbd Private Car Exam Bldg(024))-Deg2 (6700d)																
AD1760	(by C03) Underground Ducting (UUD1.1) between CUE and Inbd Cargo Exam Bldg (0																
AD1790	(by C03) (UUD1.2) between Inbd Cargo Exam Bldg South (037(S)) and DOH Cargo C																
AD1800	(by C03) (UUD2) between Inbd Cargo Exam Bldg North (037(N)) and Inbd Vehicle Cle																
AD1810	(by C03) (UUD9.1) b/w Inbd Cargo Exam Bldg S (037(S)) & Inbd PC Exam Bldg(033) ;																
AD1820	(by C03) (UUD9.3) between Inbd Private Car Exam Bldg (033) and Inbd Vehicle Clear																
AD1830	(by C03) (UUD9.2) between Inbd Private Car Exam Bldg (033) and Inbd Vehicle Clear																
AD1840	(by C03) (UUD3.2) b/w Outbd Car Exam Bldg (023) and Outbd PC Exam Bldg (024) a																
AD1850	(by C03) (UUD4.1) between Outbd Private Car Exam Bldg (024) and Outbd Vehicle Cle																
AD1870	(by C03) (UUD5) between Outbd Car Exam Bldg South (023(S)) and Outbd Vehicle Cle																
AD1880	(by C03) Inbound Vehicle Clearance Plaza																
AD1910	(by C03) Outbound Vehicle Clearance Plaza																
AD1920	(by C03) Outbound Vehicle Clearance Plaza																

**Interfaces Provisions**  
**Mobilization Provisions**  
**WAA Site Erection & Servicing**

Programme No.: HZMB-DWP/  
 Data Date: 14-Aug-15

summary

	Actual Level of Effort
	Primary Baseline
	Actual Work
	Remaining Work
	Critical Remaining Work
	Baseline Milestone
	Milestone

**Hong Kong-Zhuhai-Macao Bridge**  
**Hong Kong Boundary Crossing**  
**Facilities - Automatic Vehicle**  
**Clearance Support System (AVCSS)**

Date	Revision	Checked	Approved
14-Nov-16	Rev: 0	WC	LC
10-Mar-17	Rev: 1.0a	WC	LC
5-May-17	Rev: 1.0b	WC	LC

22-Oct-17, Mobilization Provisions

Activity Name	2015				2016				2017				2018				2019			
	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
<b>Detailed Design Specification</b>																				
<b>Construction Design and Management</b>																				
<b>Supply/Manufacture Mock-up Items</b>																				
<b>Supply/Manufacture prototypes</b>																				
<b>Software Design, Coding and Testing</b>																				
<b>Coding</b>																				
<b>Software System Integration</b>																				
<b>Prototype &amp; Software Simulation Tests</b>																				
<b>Procurement - Phase 1 / Section 1</b>																				
<b>Supply/Manufacture products for FAT</b>																				
<b>Factory Acceptance Test (FAT)</b>																				
<b>Supply/Manufacture Equipment</b>																				
<b>Delivery and Bench Acceptance Test for Phase 1/ Section 1</b>																				
<b>Installation - Phase 1 / Section 1</b>																				
<b>Location 1(PCB 001) Basement</b>																				
EM1920 L1(001)IBF - Cable Laying and termination at Location 1 and Location 2																				
<b>Location 1(PCB 001) ELV Room (Grid Line E3)</b>																				
EM1940 L1(001)ELV Rm - Cable Laying and termination at Location 1 and Location 2																				
<b>Location 2(PCB 001) Ground Floor ELV Room (Grid Line E3)</b>																				
EM1960 L2(001)ELV Rm - Cable Laying and termination at Location 1 and Location 2																				
<b>Location 2(PCB 001) Ground Floor DOH Port Health Control Room (Grid Line BD5)</b>																				
EM1080 L2(001)Health Ctrl Rm - Cable Laying and termination at Location 1 and Location 2																				
EM1100 L2(001)Health Ctrl Rm - Cable Splicing and Testing and Labeling																				
EM1120 L2(001)Health Ctrl Rm - Intercom and PA system installation																				
EM1140 L2(001)Health Ctrl Rm - Intercom and PA system tuning																				
<b>Location 2(PCB 001) First Floor Main-Server Room</b>																				
EM1000 L2(001)Main Server Rm - Cable Laying and termination at Location 1 and Location 2																				
EM1020 L2(001)Main Server Rm - Cable Splicing and Testing and Labeling																				
EM1040 L2(001)Main Server Rm - AVCSS Network and Server installation																				
EM1060 L2(001)Main Server Rm - AVCSS Network and Server Tuning																				
<b>Location 3(Inbd Cargo Exam Bldg (037) MDF Room)</b>																				
<b>Location 3(Inbd Cargo Exam Bldg (037) ELV Room)</b>																				
EM2020 L3(037)Inspec Offices - Cable Laying and termination in Location 3 and Location 3a																				
EM2040 L3(037)Inspec Offices - Cable Splicing and Testing and Labeling																				
EM2060 L3(037)Inspec Offices - AVCSS SURCON WS and 55" LCD Installation																				
EM2080 L3(037)Inspec Offices - VTS WS Installation																				
EM2100 L3(037)Inspec Offices - SURCON and WS Tuning																				
<b>Location 3(Inbd Cargo Exam Bldg (037) Platform Control Room)</b>																				
EM1160 L3(037)PLF Ctrl Rm - Cable Laying and termination in Location 3 and Location 3a																				
EM1180 L3(037)PLF Ctrl Rm - Cable Splicing and Testing and Labeling																				
EM1200 L3(037)PLF Ctrl Rm - AVCSS SYSCON WS and 55" TV Wall Installation																				
EM1220 L3(037)PLF Ctrl Rm - AVCSS SYSCON WS Tuning																				

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- Primary Baseline
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- Critical Remaining Work
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- Milestone

Hong Kong-Zhuhai-Macao Bridge  
Hong Kong Boundary Crossing  
Facilities - Automatic Vehicle  
Clearance Support System (AVCSS)

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5-May-17	Rev: 1.0b	WC	LC

01-Sep-17, Installation - Phase 1 / Section 1

22-Jun-17, Location 1(PCB 001) Basement

- L1(001)IBF - Cable Laying and termination at Location 1
- L1(001)ELV Rm - Cable Laying and termination at Location 1
- L1(001)ELV Rm - Cable Laying and termination at Location 1
- L2(001)ELV Rm - Cable Laying and termination at Location 2
- L2(001)ELV Rm - Cable Laying and termination at Location 2
- L2(001)ELV Rm - Cable Laying and termination at Location 2
- L2(001)Health Ctrl Rm - Cable Laying and termination at Location 1 and Location 2
- L2(001)Health Ctrl Rm - Cable Splicing and Testing and Labeling
- L2(001)Health Ctrl Rm - Intercom and PA system installation
- L2(001)Health Ctrl Rm - Intercom and PA system tuning

21-Aug-17, Location 2(PCB 001) First Floor Main-Server Room

- L2(001)Main Server Rm - Cable Laying and termination at Location 1 and Location 2
- L2(001)Main Server Rm - Cable Splicing and Testing and Labeling
- L2(001)Main Server Rm - AVCSS Network and Server installation
- L2(001)Main Server Rm - AVCSS Network and Server Tuning

07-Aug-17, Location 3(Inbd Cargo Exam Bldg (037) Platform Control Room)

- L3(037)Inspec Offices - Cable Laying and termination in Location 3 and Location 3a
- L3(037)Inspec Offices - Cable Splicing and Testing and Labeling
- L3(037)Inspec Offices - AVCSS SURCON WS and 55" LCD Installation
- L3(037)Inspec Offices - VTS WS Installation
- L3(037)Inspec Offices - SURCON and WS Tuning

07-Aug-17, Location 3(Inbd Cargo Exam Bldg (037) ELV Room)

- L3(037)PLF Ctrl Rm - Cable Laying and termination in Location 3 and Location 3a
- L3(037)PLF Ctrl Rm - Cable Splicing and Testing and Labeling
- L3(037)PLF Ctrl Rm - AVCSS SYSCON WS and 55" TV Wall Installation
- L3(037)PLF Ctrl Rm - AVCSS SYSCON WS Tuning

Activity ID	Activity Name	2015			2016			2017			2018			2019		
		Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>Location 3a (Inbd Cargo Exam Bldg (037) ROCARS Room)</b>																
EM1240	L3a(037) ROCARS Rm - Cable Laying and Termination in Location 3 and Location 3a															
EM1260	L3a(037) ROCARS Rm - Cable Splicing and Testing and Labeling															
EM1280	L3a(037) ROCARS Rm - AVCSS SYSCON and SURCON and Intercom Installation															
EM1300	L3a(037) ROCARS Rm - VTS WS Installation															
EM1320	L3a(037) ROCARS Rm - VID WS Installation															
EM1340	L3a(037) ROCARS Rm - SURCON and WS Tuning															
<b>Location 3a (Inbd Cargo Exam Bldg (037) Main Server Room)</b>																
EM2120	L3a(037) Main Server Rm - Cable Laying and Termination in Location 3 and Location 3a															
EM2140	L3a(037) Main Server Rm - Cable Splicing and Testing and Labeling															
EM2160	L3a(037) Main Server Rm - AVCSS Server Installation															
EM2180	L3a(037) Main Server Rm - VTS Server Installation															
EM2200	L3a(037) Main Server Rm - Servers Tuning															
<b>Location 4a (Outbd Cargo Exam Bldg (023) MDF Room)</b>																
EM2240	L4a(023) ROCARS Rm - Cable Splicing and Testing and Labeling															
EM2260	L4a(023) ROCARS Rm - AVCSS SYSCON and SURCON and Intercom Installation															
EM2280	L4a(023) ROCARS Rm - VTS WS Installation															
EM2300	L4a(023) ROCARS Rm - SYSCON and WS Tuning															
<b>Location 5 (Common Utility Enclosure &amp; Staff Subway)</b>																
EM2341	L5(CUE) - Cable Laying between Location 5 and Location 6															
EM2361	L5(CUE) - Cable Laying between Location 5 and Location 7															
EM2380	L5(CUE) - Cable Splicing and Testing and Labeling															
<b>Location 6 (Common Utility Enclosure &amp; Staff Subway)</b>																
EM2400	L6(CUE) - Cable Laying between Location 6 and Location 6															
EM2420	L6(CUE) - Cable Splicing and Testing and Labeling															
EM2440	L7(CUE) - Cable Laying between Location 5 and Location 7															
EM2460	L7(CUE) - Cable Splicing and Testing and Labeling															
<b>Location 12 (Inbd Private Car Kiosks, GV Kiosks (027, 028, 029))</b>																
<b>Inbd Private Car Kiosks(027) - 9 nos (Phase 1)</b>																
EM1500	L12(027)(9nos P1) - Cable Splicing and Testing and Labeling															
EM1520	L12(027)(9nos P1) - AVCSS/MOM Kiosk Equipment Installation (9 nos)															
EM1541	L12(027)(9nos P1) - XDB installation (18 nos)															
EM1542	L12(027)(9nos P1) - ODB installation (5 nos)															
EM1543	L12(027)(9nos P1) - ODB installation (2 nos)															
EM1544	L12(027)(9nos P1) - ODB installation (2 nos)															
EM1560	L12(027)(9nos P1) - Loop installation (45 nos)															
<b>Inbd Goods Vehicle Kiosks(028) - 5 nos (Phase 1)</b>																
EM1620	L12(028)(5nos P1) - Cable Laying and Termination															
EM1640	L12(028)(5nos P1) - Cable Splicing and Testing and Labeling															
EM1660	L12(028)(5nos P1) - AVCSS/MOM Kiosk Equipment Installation (5 nos)															
EM1681	L12(028)(5nos P1) - XDB installation (10 nos)															
EM1682	L12(028)(5nos P1) - ODB installation (3 nos)															
EM1683	L12(028)(5nos P1) - ODB installation (2 nos)															

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Hong Kong-Zhuhai-Macao Bridge  
Hong Kong Boundary Crossing  
Facilities - Automatic Vehicle  
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14-Nov-16	Rev: 0	WC	LC
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Activity ID	Activity Name	2015			2016			2017			2018			2019		
		Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
EM1700	L12(028)(5nos P1) - A/OP Installation (5 nos)															
EM1720	L12(028)(5nos P1) - Loop installation (25 nos)															
EM1740	L12(029)(5nos P1) - Cable Containment in Kiosks															
EM1760	L12(029)(5nos P1) - Cable Laying and termination															
EM1780	L12(029)(5nos P1) - Cable Splicing and Testing and Labeling															
EM1800	L12(029)(5nos P1) - AVCSS/MOM Kiosk Equipment Installation (5 nos)															
EM1821	L12(029)(5nos P1) - XDB installation (5 nos)															
EM1822	L12(029)(5nos P1) - ODB installation (4 nos)															
EM1823	L12(029)(5nos P1) - ODB installation (1 nos)															
EM1840	L12(029)(5nos P1) - A/OP installation (5 nos)															
EM2520	L13(030)(9nos P1) - Cable Containment in Kiosks															
EM2540	L13(030)(9nos P1) - Cable Laying and termination															
EM2560	L13(030)(9nos P1) - Cable Splicing and Testing and Labeling															
EM2580	L13(030)(9nos P1) - AVCSS/MOM Kiosk Equipment Installation (9 nos)															
EM2601	L13(030)(9nos P1) - XDB installation (9 nos)															
EM2602	L13(030)(9nos P1) - ODB installation (7 nos)															
EM1440	L14 - Cable Laying and termination at ELV Room in CUE															
EM2760	L16(101) - Cable Laying and termination															
EM2800	L16(101) - AVCSS SYSCON and SURCON Installation															
EM2820	L16(101) - VTS WS and 55" LCD Installation															
EM2940	L18(024) - Cable Laying and termination															
EM2960	L18(024) - Cable Splicing and Testing and Labeling															
EM2980	L18(024) - AVCSS SURCON and 55" LCD Installation															
EM3000	L18(024) - SURCON Tuning															
EM1360	L19(043) - Cable Laying and termination															
EM1380	L19(043) - Cable Splicing and Testing and Labeling															
EM1400	L19(043) - PA and Intercom Installation															
EM1420	L19(043) - PA and Intercom Tuning															
EM3020	Inbound VID cabling from pillar box to VID field equipment															
EM3040	Inbound VTS cabling from pillar box to VTS field equipment															
EM3060	Inbound TLS cabling from pillar box to TLS field equipment															
EM3080	Inbound VID field equipment installation (8 VID)															
EM3100	Inbound VTS field equipment installation (4 RFID + 3 Cameras)															
EM3120	Inbound TLS field equipment installation (4 TLS)															
EM3140	Inbound VID and VTS and TLS field equipment tuning															

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Hong Kong-Zhuhai-Macao Bridge  
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Activity ID	Activity Name	2015			2016			2017			2018			2019		
		Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
EM3160	Outbound VTS cabling from pillar box to VTS field equipment															
EM3180	Outbound VTS cabling from pillar box to VTS field equipment															
EM3200	Outbound TLS cabling from pillar box to TLS field equipment															
EM3220	Outbound VID field equipment installation (8 VID)															
EM3240	Outbound VTS field equipment installation (3 RFID + 3 Cameras)															
EM3260	Outbound TLS field equipment installation (4 TLS)															
EM3280	Outbound VID and VTS and TLS field equipment tuning															
UD1000	Underground Ducting (UUD1.1) between CUE and Inbd Cargo Exam Bldg (037)															
UD1001	(UUD1.1) [CUE-037] - Cable laying and termination															
UD1060	(UUD1.2) [037(S)-043] - Cable laying and termination															
UD1061	(UUD1.2) [037(S)-043] - Cable laying and termination															
UD1040	Underground Ducting (UUD6) between CUE and Shuttle Bus Kiosk (006) and Inbd Priv (UUD9.1) b/w IB Cargo Exam Bldg South(037(S)) & IB PC Exam Bldg(033) & IB Traffic															
UD1041	(UUD6) [037(S)-033-100] - Cable laying and termination															
UD1042	(UUD9.1) [037(S)-033-100] - Cable laying and termination															
UD1010	Underground Ducting (UUD2) between Inbd Private Car Exam Bldg (033) and Inbd Vehicle Clearance Plaza															
UD1011	(UUD2) [037(N)-IB VCP] - Cable laying and termination															
UD1070	Underground Ducting (UUD3.1) between CUE and Outbd Cargo Exam Bldg (023)															
UD1071	(UUD3.1) [CUE-023] - Cable laying and termination															
UD1020	Underground Ducting (UUD8.2) between Inbd Private Car Exam Bldg (033) and Inbd Vehicle Clearance Plaza															
UD1021	(UUD8.2) [033-IB VCP(E)] - Cable laying and termination															
UD1030	Underground Ducting (UUD3.1) between CUE and Outbd Cargo Exam Bldg (023)															
UD1031	(UUD3.1) [CUE-023] - Cable laying and termination															
UD1050	Underground Ducting (UUD3.2) between Inbd Private Car Exam Bldg (033) and Inbd Vehicle Clearance Plaza															
UD1051	(UUD3.2) [023-024-101] - Cable laying and termination															
UD1100	Underground Ducting (UUD8) between CUE and Outbd PCA (032)															
UD1101	(UUD8) [CUE-032] - Cable laying and termination															
UD1080	Underground Ducting (UUD4.1) between Outbd PC Exam Bldg (024) and Outbd Vehicle Clearance Plaza															
UD1081	(UUD4.1) [024-08 VCP] - Cable laying and termination															
UD1090	Underground Ducting (UUD5) between Outbd Car Exam Bldg (023(S)) and Outbd Vehicle Clearance Plaza															
UD1091	(UUD5) [023(S)-08 VCP] - Cable laying and termination															
<b>Initial On-Site Test and Commissioning / Pre-SAT (Phase 1 / Section I)</b>																
<b>Site Acceptance Test (Phase 1 / Section I)</b>																
Security Risk Assessment and Audit																
Operability Period Test (Phase 1 / Section I)																
Completion (Phase 1 / Section I)																
Training and Document (Phase 1 / Section I)																
Operation (Phase 1 / Section I)																
Engineering Support for Phase 1 / Section I																
Procurement - Phase 2 / Section II																
Delivery and Bench Acceptance Test for Phase 2 / Section II																
<b>Installation - Phase 2 / Section II</b>																

Programme No.: HZMB-DWP  
Data Date: 14-Aug-15

**Hong Kong-Zhuhai-Macao Bridge  
Hong Kong Boundary Crossing  
Facilities - Automatic Vehicle  
Clearance Support System (AVCSS)**

summary

Actual Level of Effort  
 Primary Baseline  
 Actual Work  
 Remaining Work  
 Critical Remaining Work  
 Baseline Milestone  
 Milestone

Date	Revision	Checked	Approved
14-Nov-16	Rev: 0	WC	LC
10-Mar-17	Rev: 1.0a	WC	LC
5-May-17	Rev: 1.0b	WC	LC

30-Aug-17, Installation - Phase 2 / Section II



Activity Name	2015				2016				2017				2018				2019			
	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
<ul style="list-style-type: none"> <li>Location 8(Inbd Private Car Annex (025)) (Phase 2)                             <ul style="list-style-type: none"> <li>EM0370 L8(025) - Cable Containment in Kiosks</li> <li>EM0380 L8(025) - Cable Laying and termination</li> <li>EM0400 L8(025) - Cable Splicing and Testing and Labeling</li> </ul> </li> <li>Location 9(Outbd Private Car Annex (032)) (Phase 2)                             <ul style="list-style-type: none"> <li>EM0350 L9(032) - Cable Containment in Kiosks</li> <li>EM0320 L9(032) - Cable Laying and termination</li> </ul> </li> </ul>																				
<ul style="list-style-type: none"> <li>Initial On-Site Test and Commissioning / Pre-SAT (Phase 2 / Section II)</li> <li>Site Acceptance Test (Phase 2 / Section II)</li> <li>Operability Period Test (Phase 2 / Section II)</li> <li>Completion (Phase 2 / Section II)</li> <li>Engineering Support for Phase 2 / Section II</li> <li>Procurement for Phase2 / Section III</li> <li>Delivery and Bench Acceptance Test for Phase2 / Section III</li> <li>Installation - Phase 2 / Section III</li> </ul>																				
<ul style="list-style-type: none"> <li>Location 10,11,12,13 (Vehicle Clearance Kiosks)                             <ul style="list-style-type: none"> <li>Location 12 Inbd Private Car Kiosks (027) - 12 nos (Phase 2)                                     <ul style="list-style-type: none"> <li>EM4440 L12(027)(12nos P2) - Cable Laying and termination</li> <li>EM4460 L12(027)(12nos P2) - Cable Splicing and Testing and Labeling</li> <li>EM4480 L12(027)(12nos P2) - AVCSS/DOH/MOM Kiosk Equipment Installation (12 nos)</li> </ul> </li> <li>Location 13 Outbd Private Car Kiosks (030) - 12 nos (Phase 2)                                     <ul style="list-style-type: none"> <li>EM4500 L13(030)(12nos P2) - Cable Containment in Kiosks</li> </ul> </li> </ul> </li> <li>Location 12 Outbd Goods Vehicle Kiosks (028) - 3 nos (Phase 2)                             <ul style="list-style-type: none"> <li>EM4580 L12(028)(3nos P2) - Cable Laying and termination</li> <li>EM4900 L12(028)(3nos P2) - Cable Splicing and Testing and Labeling</li> <li>EM4920 L12(028)(3nos P2) - AVCSS/DOH/MOM Kiosk Equipment Installation (3 nos)</li> <li>EM4940 L12(028)(3nos P2) - ODB &amp; XDB Installation (3 nos)</li> <li>EM4960 L12(028)(3nos P2) - AOP Installation (3 nos)</li> <li>EM4980 L12(028)(3nos P2) - Loop Installation (15 nos)</li> </ul> </li> <li>Location 11 Outbd Coach Kiosks (009) - 4 nos (Phase 2)                             <ul style="list-style-type: none"> <li>Location 12 Inbd Goods Vehicle Kiosks (028) - 3 nos (Phase 2)                                     <ul style="list-style-type: none"> <li>EM4720 L12(028)(3nos P2) - Cable Laying and termination</li> <li>EM4740 L12(028)(3nos P2) - Cable Splicing and Testing and Labeling</li> <li>EM4760 L12(028)(3nos P2) - AVCSS/DOH/MOM Kiosk Equipment Installation (3 nos)</li> <li>EM4780 L12(028)(3nos P2) - ODB &amp; XDB Installation (3 nos)</li> <li>EM4800 L12(028)(3nos P2) - AOP Installation (3 nos)</li> <li>EM4820 L12(028)(3nos P2) - Loop Installation (15 nos)</li> <li>EM4840 L12(028)(3nos P2) - Kiosk Equipment Configuration (3 nos)</li> <li>EM4860 L12(028)(3nos P2) - Inbd Goods Vehicle Kiosks Installation Complete</li> </ul> </li> </ul> </li> <li>Location 10 Shuttle Bus Kiosks (006) - 4 nos (Phase 2)                             <ul style="list-style-type: none"> <li>EM4000 L10(006)(4nos P2) - Cable Containment in Kiosks</li> </ul> </li> <li>Location 11 Inbd Coach Kiosks (010) - 2 nos (Phase 2)                             <ul style="list-style-type: none"> <li>Location 12 Inbd Coach Kiosks (010) - 2 nos (Phase 2)                                     <ul style="list-style-type: none"> <li>EM4000 L12(006)(4nos P2) - Cable Containment in Kiosks</li> </ul> </li> </ul> </li> </ul>																				

Programme No.: HZAMB-DWP  
Data Date: 14-Aug-15

Actual Level of Effort

- Actual Baseline
- Actual Work
- Remaining Work
- Critical Remaining Work
- Baseline Milestone
- Milestone

Hong Kong-Zhuhai-Macao Bridge  
Hong Kong Boundary Crossing  
Facilities - Automatic Vehicle  
Clearance Support System (AVCSS)

Date	Revision	Checked	Approved
14-Nov-16	Rev: 0	WC	LC
10-Mar-17	Rev: 1.0a	WC	LC
5-May-17	Rev: 1.0b	WC	LC

- Site Acceptance Test (Phase 2 / Section III)
- Operability Period Test (Phase 2 / Section III)
- Completion (Phase 2 / Section III)
- Operation (Phase 2 / Section III)
- Defect Liability Period (DLP)
- Document Submission (Phase 2 / Section III)

2015		2016				2017				2018				2019			
Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3

Programme No.: HZMB-DWP  
 Data Date: 14-Aug-15

- ▬ Actual Level of Effort
- ▬ Primary Baseline
- ▬ Actual Work
- ▬ Remaining Work
- ▬ Critical Remaining Work
- ◆ Baseline Milestone
- ◆ Milestone

summary

Hong Kong-Zhuhai-Macao Bridge  
 Hong Kong Boundary Crossing  
 Facilities - Automatic Vehicle  
 Clearance Support System (AVCSS)

Date	Revision	Checked	Approved
14-Nov-16	Rev: 0	WC	LC
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Report No.: 0165/15/ED/1132

### **Appendix D**

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

**Appendix D –**

**Event / Action Plan for Air Quality and Noise Monitoring and Water Quality Monitoring and Ecological 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 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. 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>

### Event / Action Plan for Water Quality

Event	ET Leader	IEC	ER	Contractor
Action level being exceeded by one sampling day	<ol style="list-style-type: none"> <li>1. Repeat in situ measurement on next day of exceedance to confirm findings</li> <li>2. Identify source(s) of impact</li> <li>3. Inform IEC, contractor and ER</li> <li>4. Check monitoring data, all plant, equipment and Contractor's working methods</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of noncompliance in writing</li> <li>2. Notify Contractor</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of noncompliance in writing</li> <li>2. Notify Contractor</li> </ol>	<ol style="list-style-type: none"> <li>1. Inform the ER and confirm notification of the noncompliance in writing</li> <li>2. Rectify unacceptable practice</li> <li>3. Amend working methods if appropriate</li> </ol>
Action level being exceeded by two or more consecutive sampling days	<ol style="list-style-type: none"> <li>1. Repeat in situ measurement to confirm findings</li> <li>2. Identify source(s) of impact</li> <li>3. Inform IEC, Contractor and ER</li> <li>4. Check monitoring data, all plant, equipment and Contractor's working methods</li> <li>5. Discuss mitigation measures with IEC, ER and Contractor</li> <li>6. Ensure mitigation measures are implemented</li> <li>7. Increase the monitoring frequency to daily until no exceedance of Action level</li> <li>8. Repeat measurement on next day of exceedance to confirm findings</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET and Contractor's working method</li> <li>2. Discuss with ET and Contractor on possible remedial actions</li> <li>3. Review the proposed mitigation measures submitted by Contractor and advise the ER accordingly</li> <li>4. Assess the effectiveness of the implemented mitigation measures</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of noncompliance in writing</li> <li>2. Discuss with IEC on the proposed mitigation measures</li> <li>3. Make agreement on mitigation measures to be implemented</li> <li>4. Ensure mitigation measures are properly implemented</li> <li>5. Assess the effectiveness of the implemented mitigation measures</li> </ol>	<ol style="list-style-type: none"> <li>1. Inform the Engineer and confirm notification of the noncompliance in writing</li> <li>2. Rectify unacceptable practice</li> <li>3. Check all plant and equipment and consider changes of working methods</li> <li>4. Discuss with ET and IEC on possible remedial actions and propose mitigation measures to IEC and ER within 3 working days of notification</li> <li>5. Implement the agreed mitigation measures</li> <li>6. Amend working methods if appropriate</li> </ol>

Event	ET Leader	IEC	ER	Contractor
Limit level being exceeded by one sampling day	<ol style="list-style-type: none"> <li>1. Repeat in-situ measurement to confirm findings</li> <li>2. Identify source(s) of impact</li> <li>3. Inform IEC, Contractor, ER and EPD</li> <li>4. Check monitoring data, all plant, equipment and Contractor's working methods</li> <li>5. Discuss mitigation measures with IEC, ER and Contractor</li> <li>6. Ensure mitigation measures are implemented</li> <li>7. Increase the monitoring frequency to daily until no exceedance of Limit level</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET and Contractor's working method</li> <li>2. Discuss with ET and Contractor on possible remedial actions</li> <li>3. Review the proposed mitigation measures submitted by Contractor and advise the ER accordingly</li> <li>4. Assess the effectiveness of the implemented mitigation measures</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing</li> <li>2. Discuss with IEC, ET and Contractor on the proposed mitigation measures</li> <li>3. Request Contractor to critically review the working methods</li> <li>4. Ensure mitigation measures are properly implemented</li> <li>5. Assess the effectiveness of the implemented mitigation measures</li> </ol>	<ol style="list-style-type: none"> <li>1. Inform the ER and confirm notification of the noncompliance in writing</li> <li>2. Rectify unacceptable practice</li> <li>3. Check all plant and equipment and consider changes of working methods</li> <li>4. Submit proposal of mitigation measures to ER within 3 working days of notification and discuss with ET, IEC and ER</li> <li>5. Implement the agreed mitigation measures</li> <li>6. Amend working methods if appropriate</li> </ol>
Limit level being exceeded by two or more consecutive sampling days	<ol style="list-style-type: none"> <li>1. Repeat in-situ measurement to confirm findings</li> <li>2. Identify source(s) of impact</li> <li>3. Inform IEC, contractor, ER and EPD</li> <li>4. Check monitoring data, all plant, equipment and Contractor's working methods</li> <li>5. Discuss mitigation measures with IEC, ER and Contractor</li> <li>6. Ensure mitigation measures are implemented</li> <li>7. Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET and Contractor's working method</li> <li>2. Discuss with ET and Contractor on possible remedial actions</li> <li>3. Review the Contractor's mitigation measures whenever necessary to assure their effectiveness and advise the ER accordingly</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing</li> <li>2. Discuss with IEC, ET and Contractor on the proposed mitigation measures</li> <li>3. Request Contractor to critically review the working methods</li> <li>4. Make agreement on the mitigation measures to be implemented</li> <li>5. Ensure mitigation measures are properly implemented</li> <li>6. Assess the effectiveness of the implemented mitigation measures</li> <li>7. Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the construction activities until no exceedance of Limit level</li> </ol>	<ol style="list-style-type: none"> <li>1. Inform the ER and confirm notification of the noncompliance in writing</li> <li>2. Take immediate action to avoid further exceedance</li> <li>3. Rectify unacceptable practice</li> <li>4. Check all plant and equipment and consider changes of working methods</li> <li>5. Submit proposal of mitigation measures to ER within 3 working days of notification and discuss with ET, IEC and ER</li> <li>6. Implement the agreed mitigation measures</li> <li>7. Resubmit proposals of mitigation measures if problem still not under control</li> <li>8. As directed by the engineer, to slow down or to stop all or part of the construction activities until no exceedance of Limit level</li> </ol>

## Event / Action Plan for Ecological Monitoring

Event	ET Leader	IEC	ER	Contractor
Action Level	<ol style="list-style-type: none"> <li>1. Repeat statistical data analysis to confirm findings;</li> <li>2. Review all available and relevant data, including raw data and statistical analysis results of other parameters covered in the EM&amp;A, to ascertain if differences are as a result of natural variation or previously observed seasonal differences;</li> <li>3. Identify source(s) of impact;</li> <li>4. Inform the IEC, ER/SOR and Contractor;</li> <li>5. Check monitoring data.</li> <li>6. Review to ensure all the dolphin protective measures are fully and properly implemented and advise on additional measures if necessary.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET and Contractor;</li> <li>2. Discuss monitoring results and finding with the ET and the Contractor.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss monitoring with the IEC and any other measures proposed by the ET;</li> <li>2. If ER/SOR is satisfied with the proposal of any other measures, ER/SOR to signify the agreement in writing on the measures to be implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Inform the ER/SOR and confirm notification of the non-compliance in writing;</li> <li>2. Discuss with the ET and the IEC and propose measures to the IEC and the ER/SOR;</li> <li>3. Implement the agreed measures.</li> </ol>

Event	ET Leader	IEC	ER	Contractor
Limit Level	<ol style="list-style-type: none"> <li>1. Repeat statistical data analysis to confirm findings;</li> <li>2. Review all available and relevant data, including raw data and statistical analysis results of other parameters covered in the EM&amp;A, to ascertain if differences are as a result of natural variation or previously observed seasonal differences;</li> <li>3. Identify source(s) of impact;</li> <li>4. Inform the IEC, ER/SOR and Contractor of findings;</li> <li>5. Check monitoring data;</li> <li>6. Repeat review to ensure all the dolphin protective measures are fully and properly implemented and advise on additional measures if necessary.</li> <li>7. If ET proves that the source of impact is caused by any of the construction activity by the works contract, ET to arrange a meeting to discuss with IEC, ER/SOR and Contractor the necessity of additional dolphin monitoring and/or any other potential mitigation measures (e.g., consider to modify the perimeter silt curtain or consider to control/temporarily stop relevant construction activity etc.) and submit to IEC a proposal of additional dolphin monitoring and/or mitigation measures where necessary.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET and Contractor;</li> <li>2. Discuss monitoring results and findings with the ET and the Contractor;</li> <li>3. Attend the meeting to discuss with ET, ER/SOR and Contractor the necessity of additional dolphin monitoring and any other potential mitigation measures.</li> <li>4. Review proposals for additional monitoring and any other mitigation measures submitted by ET and Contractor and advise ER/SOR of the results and findings accordingly.</li> <li>5. Supervise / Audit the implementation of additional monitoring and/or any other mitigation measures and advise ER/SOR the results and findings accordingly.</li> </ol>	<ol style="list-style-type: none"> <li>1. Attend the meeting to discuss with ET, IEC and Contractor the necessity of additional dolphin monitoring and any other potential mitigation measures.</li> <li>2. If ER/SOR is satisfied with the proposals for additional dolphin monitoring and/or any other mitigation measures submitted by ET and Contractor and verified by IEC, ER/SOR to signify the agreement in writing on such proposals and any other mitigation measures.</li> <li>3. Supervise the implementation of additional monitoring and/or any other mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Inform the ER/SOR and confirm notification of the non-compliance in writing;</li> <li>2. Attend the meeting to discuss with ET, IEC and ER/SOR the necessity of additional dolphin monitoring and any other potential mitigation measures.</li> <li>3. Jointly submit with ET to IEC a proposal of additional dolphin monitoring and/or any other mitigation measures when necessary.</li> <li>4. Implement the agreed additional dolphin monitoring and/or any other mitigation measures.</li> </ol>

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Report No.: 0165/15/ED/1132

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### **Appendix E**

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

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### Appendix E – 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 be 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</li> </ul>	All construction sites	N/A

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		<p>level alarm which is interlocked with the material filling line and no overfilling is allowed;</p> <ul style="list-style-type: none"> <li>• Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and</li> <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	V
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	V
S5.5.6.4	A5	5) Implement regular dust monitoring under EM&A programme during the construction stage.	Selected Representative dust monitoring station	V (Conducted by Contract No. HY/2013/01 and HY/2011/03)
S5.5.7.1	A6	<p>The following mitigation measures should be adopted to prevent fugitive dust emissions for concrete batching plant;</p> <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	<p>The following mitigation measures should be adopted to prevent fugitive dust emissions at barging point:</p> <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	V
<b>Construction Nose (Air borne)</b>				
S6.4.10	N1	<p>1) Use of good site practices to limit noise emissions by considering the following:</p> <ul style="list-style-type: none"> <li>• only well-maintained plant should be operated on-site and plant should be serviced regularly during</li> </ul>	All construction sites	V



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		<p>the construction programme;</p> <ul style="list-style-type: none"> <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> <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 (Conducted by Contract No. HY/2013/01)
<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><u>Construction and Demolition Material</u> 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</li> </ul>	All construction sites	V

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		<p>materials and to minimize their generation during the course of construction.</p> <ul style="list-style-type: none"> <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 disposal sites to the Project Proponent and get its approval before implementation</li> </ul>		
S8.3.9- S8.3.11	WM2	<p><b>C&amp;D Waste</b></p> <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	<p><b>Chemical Waste</b></p> <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	<p><b>Sewage</b></p> <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</li> </ul>	All construction sites	V

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		toilets. Night soil should be collected by licensed collectors regularly.		
S8.3.17	WM5	<p><b>General Refuse</b></p> <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 law.</li> <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>	All construction sites	V
<b>Water Quality ( Construction Phase)</b>				
S9.11.1.1- S9.11.1.2	W1	<ul style="list-style-type: none"> <li>Mitigation during the marine works to reduce impacts to within acceptable levels have been recommended and will comprise a series of measures that restrict the method and sequencing of dredging/backfilling, as well as protection measures. Details of the measures are provided below and summarised in the Environmental Mitigation Implementation Schedule in EM&amp;A Manual</li> <li>Construction of seawalls to be advanced by at least 100-200m before the main reclamation dredging and filling can commence. It should be noted that the protection by advanced seawall is a dynamic process depending on the progress of the construction activities and the stage when such protection could be realised is illustrated in Figure 9.2 and detailed in Appendix 9D6 of the EIA Report. The part of the works where such measures can be undertaken for the majority of the time includes the following locations: <ul style="list-style-type: none"> <li>TMCLKL northern reclamation;</li> <li>TMCLKL southern reclamation (after formation of the nips);</li> <li>Reclamation dredging and filling for Portion B of HKBCF;</li> <li>Reclamation filling for Portion C of HKBCF;-</li> <li>Reclamation filling for Portion D of HKBCF;</li> <li>Reclamation filling for FSD berth of HKBCF; and</li> <li>Reclamation dredging and filling for Portion 1 of HKLR;</li> </ul> </li> <li>Export for dredged spoils from NWWCZ avoiding exerting high demand on the disposal facilities in the NWWCZ and, hence, minimise potential cumulative impacts;</li> <li>For the marine viaducts of HKLR, the bored piling will be undertaken within a metal casing;</li> <li>A maximum of 30% public fill shall be used for all backfilling below -2.5mPD for the southern reclamation of TMCLKL, HKBCF and HKLR projects;</li> <li>where public fill is proposed for filling below - 2.5mPD, the fine content in the public fill will be</li> </ul>	Marine-based works area	N/A

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		<p>controlled to 25%;</p> <ul style="list-style-type: none"> <li>• silt curtains (cage type) will be applied round all grab dredgers during the HKBCF, HKLR and TMCLKL southern reclamation works;</li> <li>• single layer silt curtains will be applied around all works;</li> <li>• when constructing Portion D of the HKBCF, one side of the seawall crossing the channel should be constructed first and prior to the other works. This would reduce the maximum flow speed across the channel and enhance the effectiveness of other mitigation measures such as silt curtain system;</li> <li>• during the first two months of dredging work for HKBCF and HKLR, the silt-removal efficiency of the silt-curtains shall be verified by examining the results of water quality monitoring points. The water quality monitoring points to be selected for the above shall be those close to the locations of the initial period of dredging work. Details in this regard shall be determined by the ENPO to be established, taking account of the Contractor's proposed actual locations of his initial period of dredging work.</li> <li>• a sheet piled wall shall be constructed north of the HKBCF island ,in order to allow the use of silt curtains during Phase 2 works; and</li> <li>• silt curtain shall be fully maintained throughout the works.</li> </ul> <p>In addition, dredging operations should be undertaken in such a manner as to minimise resuspension of sediments. Standard good dredging practice measures should, therefore, be implemented including the following requirements which should be written into the dredging contract.</p> <ul style="list-style-type: none"> <li>• trailer suction hopper dredgers shall not allow mud to overflow;</li> <li>• use of Lean Material Overboard (LMOB) systems shall be prohibited;</li> <li>• mechanical grabs shall be designed and maintained to avoid spillage and should seal tightly while being lifted;</li> <li>• barges and hopper dredgers shall have tight fitting seals to their bottom openings to prevent leakage of material;</li> <li>• any pipe leakages shall be repaired quickly. Plant should not be operated with leaking pipes;</li> <li>• loading of barges and hoppers shall be controlled to prevent splashing of dredged material to the surrounding water. Barges or hoppers shall not be filled to a level which will cause overflow of materials or pollution of water during loading or transportation;</li> <li>• excess material shall be cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved;</li> <li>• adequate freeboard shall be maintained on barges to reduce the likelihood of decks being washed by wave action;</li> <li>• all vessels shall be sized such that adequate clearance is maintained between vessels and the sea bed at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash; and</li> <li>• the works shall not cause foam, oil, grease, litter or other objectionable matter to be present in the water within and adjacent to the works site.</li> </ul>		
S9.11.1.3	W2	<p><u>Land Works</u> General construction activities on land should also be governed by standard good working practice.</p>	Land-based works area	V

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		<p>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>		
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 washing bay and the public road should be surfaced with crushed stone or coarse gravel;</li> <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</li> </ul>	Land-based works area	V

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		<ul style="list-style-type: none"> <li>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>		
S9.14	W3	Implement a water quality monitoring programme	Selected representative WQM stations	V (Conducted by Contract No. HY/2013/01)
<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	E6	<ul style="list-style-type: none"> <li>Dolphin Exclusion Zone</li> <li>Dolphin watching plan</li> </ul>	Marine works	N/A
S10.7	E7	<ul style="list-style-type: none"> <li>Decouple compressors and other equipment on working vessels</li> <li>Proposal on design and implementation of acoustic decoupling measures applied during dredging and reclamation works</li> <li>Avoidance of percussive piling</li> </ul>	Marine works	N/A
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	N/A
S10.10	E9	Vessel based dolphin monitoring	Northeast and Northwest Lantau	V (Conducted by Contract No. HY/2013/01)
<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</li> </ul>	HKBCF	V

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		<p>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; and</p> <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	<p>Mitigate both Landscape and Visual Impacts</p> <p>G1. Grass-hydroseed bare soil surface and stock pile areas.</p> <p>G2. Add planting strip and automatic irrigation system if appropriate at some portions of bridge footbridge to screen bridge and traffic.</p> <p>G3. Not applicable as this is for HKLR.</p> <p>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</p> <p>G5. Vegetation reinstatement and upgrading to disturbed areas</p> <p>G6. Maximizing new tree shrub and other vegetation planting to compensate tree felled and vegetation removed</p> <p>G7. Providing planting area around peripheral of HKBCF for tree planting screening effect;</p> <p>G8. Plant salt-tolerant native and shrubs etc along the planter strip at affected seawall.</p> <p>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.</p>	Building 026, 031, 037, 039, 041, 043, 046 and all areas at ground level	V
S14.3.3.3	LV3	<p><u>Mitigate Visual Impacts</u></p> <p>V1. Minimize time for construction activities during construction period.</p> <p>V2. Not applicable for HKBCF.</p>	Building 026, 031, 037, 039, 041, 043, 046 and all areas at ground level	V
<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	<ol style="list-style-type: none"> <li>1) An Environmental Team needs to be employed as per the EM&amp;A Manual.</li> <li>2) Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures.</li> <li>3) An environmental impact monitoring needs to be implementing by the Environmental Team to ensure all the requirements given in the EM&amp;A Manual are fully complied with.</li> </ol>	All construction sites	V

Legend: V = implemented; x = not implemented; N/A = not applicable

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### **Appendix F**

#### **Site Audit Findings and Corrective Actions**



## MATERIALAB CONSULTANTS LIMITED

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### Appendix F – Site Audit Findings and Corrective Actions

Site inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures for the Project. During the reporting period, 13 site inspections were carried out on 07, 14, 20 and 28 June 2018, 05, 13, 20 and 26 July 2018, 02, 06, 17, 23 and 30 August 2018 (includes Contract No. HY/2013/06 within Contract No. HY/2013/03 works area).

Particular observations during the site inspections are described below.

#### For Contract No. HY/2013/03

##### 31 May 2018

1. The Contractor was reminded to clean the U channel in Building 029. The observation was closed on 07 June 2018.

##### 07 June 2018

1. The Contractor was reminded to provide bunding in Box Culvert B to prevent overflow due to the heavy rain. The observation was closed on 14 June 2018.

##### 14 June 2018

1. The Contractor was reminded to remove the chemical outside Building 047. The observation was closed on 20 June 2018.

##### 20 June 2018

1. The Contractor was reminded to increase watering for the paved road around Building 049. The observation was closed on 28 June 2018.
2. The Contractor was reminded to remove the construction waste accumulated outside Building 049. The observation was closed on 28 June 2018.
3. The Contractor was reminded to remove the stagnant water accumulated outside Building 049. The observation was closed on 28 June 2018.

##### 28 June 2018

1. The Contractor was reminded to clear the waste at Building 037. The observation was closed on 05 July 2018.

##### 05 July 2018

1. The Contractor was reminded to provide proper cover for the stockpile at Building 037. The observation was closed on 13 July 2018.

##### 13 July 2018

1. Nil findings.

##### 20 July 2018

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1. The Contractor was reminded to remove the waste accumulated outside Building 049. The observation was closed on 26 July 2018.
2. The Contractor was reminded to provide a new NRMM label for the generator outside Building 049. The observation was closed on 26 July 2018.

### 26 July 2018

1. The Contractor was reminded to remove the waste accumulated outside Building 049. The observation was closed on 02 August 2018

### 02 August 2018

1. The Contractor was reminded to remove the chemical stored near Box Culvert B. The observation was closed on 06 August 2018.

### 06 August 2018

1. Provide drip tray for the hydraulic machine in Portion H. The observation was closed on 17 August 2018.

### 17 August 2018

1. The Contractor was reminded to provide proper bunding for the gullies near Building 037 & 112. The observation was closed on 23 August 2018.

### 23 August 2018

1. The Contractor was reminded to remove the general waste accumulated outside Building 049. The observation was closed on 30 August 2018.

### 30 August 2018

1. Nil findings.

For Contract No. HY/2013/06 within Contract No. HY/2013/03 works area

### 07 June 2018

1. Nil findings.

### 14 June 2018

1. The Contractor was reminded to remove the general waste accumulated in their work area. The observation was closed on 20 June 2018.

### 20 June 2018

1. Nil findings.

### 28 June 2018

1. Nil findings.

### 05 July 2018

1. Nil findings.

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### 13 July 2018

1. Nil findings.

### 20 July 2018

1. Nil findings.

### 26 July 2018

1. Nil findings.

### 02 August 2018

1. Nil findings.

### 06 August 2018

1. Nil findings.

### 17 August 2018

1. Nil findings.

### 23 August 2018

1. Nil findings.

### 30 August 2018

1. Nil findings.

The Contractor has rectified most of the observations as identified during environmental site inspections during the reporting period. Follow-up actions for outstanding observations will be inspected during the next site inspections.

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### **Appendix G**

#### **Waste Flow Table**



**Monthly Summary of Waste Flow Table for 2018 (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 (in '000m <sup>3</sup> )	Broken Concrete (see Note 1) (in '000m <sup>3</sup> )	Reused in the Contract (in '000m <sup>3</sup> )	Reused in other Projects (in '000m <sup>3</sup> )	Disposed as Public Fill (in '000m <sup>3</sup> )	Metals (in '000 Kg)	Paper/ cardboard packaging (in '000 Kg)	Plastics (see Note 2) (in '000 Kg)	Chemical Waste (in '000 Kg)	Others, e.g. general refuse (in '000m <sup>3</sup> )		
Jan	9.366	0	0	0.684	8.682	0	0	0	0	1.584		
Feb	2.092	0	0	0	2.092	0	0	0	0	2.062		
Mar	2.471	0	0	0	2.471	0	0	0	0	3.125		
Apr	49.459	0	0	42.544	6.915	0	0	0	0	3.086		
May	15.066	0	0	13.123	1.943	0	0	0	0	2.165		
Jun	0.026	0	0	0	0.026	0	0	0	0	1.346		
Jul	0.088	0	0	0	0.088	0	0	0	0	0.590		
Aug	0.064	0	0	0	0.064	0	0	0	0	0.302		
Sept												
Oct												
Nov												
Dec												
<b>Total</b>	<b>78.638</b>	<b>0.000</b>	<b>0.000</b>	<b>56.351</b>	<b>22.287</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>14.260</b>		

Notes:

- (1) Broken concrete for recycling into aggregates.
- (2) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.

Contract: HY/2013/06 HKBCF- Automatic Vehicle Clearance Support System  
Location: Artificial Island of HKBCF (C3 Area)

### Monthly Summary Waste Flow Table for 2018

Month	Inert C&D Waste disposal / 墮性廢物 (in tonnes) (see Note 1)				Non-inert C&D Waste disposal 非墮性廢物 (in tonnes)				Waste to be recycled and returned / 可再循環利用或回收的廢物								Total Quantity Generated 總生產量	
	Reused in the Work Package (e.g. backfilling) 再用於工程 (如回填)		Reused in other Projects 再用於其他工程		Inert Waste (e.g. soil, broken concrete, rubble, fill material etc.) 墮性廢物 (如泥, 石, 瓦, 磚, 填料等)		Others (e.g. general refuse, broken formwork etc.) 其他 (如垃圾, 廢板枋等)		Metals 金屬		Plastic 塑膠		Paper/cardboard packaging 廢紙/包裝紙類		Chemical Waste 化學廢物		Est. Qty. 估計數量	Act. Qty. 實際數量
	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量		
January	0.000	0.000	0.000	0.000	0.000	0.000	0.100	0.100	0.030	0.030	0.000	0.000	0.000	0.000	0.000	0.000	0.100	0.100
February	0.000	0.000	0.000	0.000	0.000	0.000	0.050	0.050	0.010	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.050	0.050
March	0.000	0.000	0.000	0.000	0.000	0.000	0.050	0.050	0.010	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.050	0.050
April	0.000	0.000	0.000	0.000	0.000	0.000	0.050	0.050	0.010	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.050	0.050
May	0.000	0.000	0.000	0.000	0.000	0.000	0.030	0.030	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.030	0.030
June	0.000	0.000	0.000	0.000	0.000	0.000	0.010	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.010	0.010
July	0.000	0.000	0.000	0.000	0.000	0.000	0.100	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.100	0.100
August	0.000	0.000	0.000	0.000	0.000	0.000	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.020	0.020
September																		
October																		
November																		
December																		
<b>Total</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.410</b>	<b>0.410</b>	<b>0.060</b>	<b>0.060</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.410</b>	<b>0.410</b>

Notes: (1) The quantities of C&D Materials, in tonne, was calculated by multiply the estimated volume, in m<sup>3</sup>, with the density of the soil, which is 1.5 gcm<sup>-3</sup>.

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### **Appendix H**

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

## Environmental Permit / Licences Summary for Contract No. HY/2013/03

(update: 07/09/2018)

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/H	HKBCF	16-Jan-15	19-Jan-15	19-Jan-15	Nil	Superseded	
2	Notification Pursuant to Section 3(1) of The Air Pollution Control (Construction Dust) Regulation	Ref No. 387703	Main Site Area	15-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	15-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	15-Apr-15	06-May-15	06-May-15	Nil	Valid	
5	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0477-15	Works Area WA3	20-Apr-15	04-May-15	18-May-15	17-Nov-15	Expired	
6	Registration as Waste Producer Pursuant to Waste Disposal (Chemical Waste) (General) Regulation	5213-951-C1186-28	Main Site Area	28-Apr-15	01-Jun-15	01-Jun-15	Nil	Valid	
7	Registration as Waste Producer Pursuant to Waste Disposal (Chemical Waste) (General) Regulation	5213-974-C3597-03	Works Area WA4	28-Apr-15	01-Jun-15	01-Jun-15	Nil	Valid	
8	Water Discharge License Pursuant to Water Pollution Control Ordinance (Cap 358)	WT00022180-2015	Works Area WA3	29-Apr-15	04-Aug-15	03-Aug-15	31-Aug-20	Valid	
9	Water Discharge License Pursuant to Water Pollution Control Ordinance (Cap 358)	WT00022391-2015	Main Site Area	06-May-15	04-Sep-15	04-Sep-15	30-Sep-20	Superseded	
10	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0566-15	Box Culvert D	08-May-15	22-May-15	08-Jun-15	07-Nov-15	Expired	
11	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0674-15	CUE	05-Jun-15	19-Jun-15	19-Jun-15	18-Aug-15	Expired	
12	Environmental Permit Pursuant to Environmental Impact Assessment Ordinance	EP-353/2009/I	HKBCF	30-Jun-15	17-Jul-15	17-Jul-15	Nil	Superseded	
13	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	PP-RS0020-15	Drill Tower	06-Jul-15	20-Jul-15	01-Aug-15	30-Nov-15	Expired	
14	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0999-15	CUE	28-Aug-15	11-Sep-15	14-Sep-15	10-Dec-15	Superseded	
15	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS1065-15	Portion A1	15-Sept-15	29-Sep-15	30-Sep-15	31-Dec-15	Superseded	



16	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
17	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	Expired
18	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	Expired
19	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	Expired
20	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS1388-15	Main Site Area	27-Nov-15	16-Dec-15	21-Dec-15	18-Mar-16	Superseded
21	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	Superseded
22	Permit issued Under the Dumping at Sea Ordinance	EP/MD/16-161	South of Brothers (CMP2)	31-Dec-15	15-Jan-16	20-Jan-16	19-Feb-16	Expired
23	Permit issued Under the Dumping at Sea Ordinance	EP/MD/16-177	South of Brothers (CMP2)	26-Jan-16	11-Feb-16	20-Feb-16	19-Mar-16	Expired
24	Environmental Permit Pursuant to Environmental Impact Assessment Ordinance	EP-353/2009/J	HKBCF	18-Feb-16	25-Feb-16	25-Feb-16	Nil	Superseded
25	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	PP-RS0009-16	Portion G	02-Mar-16	16-Mar-16	21-Mar-16	20-Jul-16	Expired
26	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0244-16	Main Site Area	03-Mar-16	17-Mar-16	18-Mar-16	18-Jun-16	Expired
27	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0249-16	Main Site Area	03-Mar-16	17-Mar-16	19-Mar-16	18-Jun-16	Superseded
28	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0269-16	Floating Concrete Batching Plant	03-Mar-16	17-Mar-16	19-Mar-16	18-Jun-16	Superseded
29	Permit issued Under the Dumping at Sea Ordinance	EP/MD/16-202	East of Sha Chau (CMP Vd)	09-Mar-16	18-Mar-16	24-Mar-16	23-Apr-16	Expired
30	Environmental Permit Pursuant to Environmental Impact Assessment Ordinance	EP-353/2009/K	HKBCF	24-Mar-16	11-Apr-16	11-Apr-16	Nil	Valid
31	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0348-16	Main Site Area	29-Mar-16	12-Apr-16	15-Apr-16	14-Jul-16	Superseded
32	Permit issued Under the Dumping at Sea Ordinance	EP/MD/17-007	East of Sha Chau (CMP Vd)	08-Apr-16	19-Apr-16	24-Apr-16	23-May-16	Expired
33	Permit issued Under the Dumping at Sea Ordinance	EP/MD/17-029	East of Sha Chau (CMP Vd)	09-May-16	19-May-16	24-May-16	23-Jun-16	Expired

34	Permit issued Under the Dumping at Sea Ordinance	EP/MD/17-040	East of Sha Chau (CMP Vd)	31-May-16	13-Jun-16	14-Jun-16	13-Jul-16	Expired
35	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0607-16	Main Site Area	02-Jun-16	16-Jun-16	19-Jun-16	18-Sep-16	Superseded
36	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0629-16	Floating Concrete Batching Plant	02-Jun-16	16-Jun-16	19-Jun-16	18-Dec-16	Superseded
37	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0639-16	Main Site Area	02-Jun-16	16-Jun-16	15-Jul-16	14-Oct-16	Superseded
38	Permit issued Under the Dumping at Sea Ordinance	EP/MD/17-062	East of Sha Chau (CMP Vd)	30-Jun-16	12-Jul-16	14-Jul-16	13-Aug-16	Expired
39	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	PP-RS0020-16	Portion A, G & H	13-Jul-16	27-Jul-16	28-Jul-16	24-Jan-17	Superseded
40	Permit issued Under the Dumping at Sea Ordinance	EP/MD/17-075	East of Sha Chau (CMP Vd)	27-Jul-16	05-Aug-16	14-Aug-16	31-Aug-16	Expired
41	Permit issued Under the Dumping at Sea Ordinance	EP/MD/17-088	East of Sha Chau (CMP Vd)	16-Aug-16	26-Aug-16	01-Sep-16	30-Sep-16	Expired
42	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0933-16	Main Site Area	18-Aug-16	01-Sep-16	05-Sep-16	31-Dec-16	Expired
43	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0960-16	Main Site Area	06-Sep-16	15-Sep-16	19-Sep-16	18-Dec-16	Expired
44	Permit issued Under the Dumping at Sea Ordinance	EP/MD/17-105	East of Sha Chau (CMP Vd)	15-Sep-16	27-Sep-16	01-Oct-16	31-Oct-16	Expired
45	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	PP-RS0028-16	Portion A, G, H & N	15-Sep-16	29-Sep-16	03-Oct-16	02-Apr-17	Expired
46	Water Discharge License Pursuant to Water Pollution Control Ordinance (Cap 358)	WT00025384-2016	Main Site Area	09-Mar-16	10-Nov-16	10-Nov-16	30-Sep-20	Valid
47	Permit issued Under the Dumping at Sea Ordinance	EP/MD/17-132	East of Sha Chau (CMP Vd)	03-Nov-16	30-Nov-16	05-Dec-16	04-Jan-17	Expired
48	Permit issued Under the Dumping at Sea Ordinance	EP/MD/17-140	East of Sha Chau (CMP Va) or South of Brothers (CMP2)	14-Nov-16	30-Nov-16	30-Nov-16	29-Dec-16	Expired
49	Permit issued Under the Dumping at Sea Ordinance	EP/MD/17-146	East of Sha Chau (CMP Va) or South of Brothers (CMP2)	28-Nov-16	16-Dec-16	16-Dec-16	29-Dec-16	Expired
50	Construction Noise Permit	GW-RS1267-16	Main Site Area	02-Dec-16	16-Dec-16	19-Dec-16	18-Mar-17	Expired



69	Construction Noise Permit Pursuant to Section 8(6) of the Noise Control Ordinance	GW-RS0271-17	Main Site Area	15-Mar-18	29-Mar-18	13-Apr-18	12-Oct-18	Valid	
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**Environmental License/ Permits /Notification Register**

LCAL H2642

**Contract: HY/2013/06 – Hong Kong Zhuhai and Macao Bridge - HKBCF – Automatic Vehicle Clearance Support System**

Item No.	Permit/License or Registration Application		Permit/License/ Notification/ Registration Description	Permit/License/ Registration Number	Issue/Start Date	Expiry Date	Issuing Office	Remark	
	Work Area	Date							Reference
	1	HZMB-HK Boundary Crossing Facilities							31 July 2015
2									

Date: 31 August 2018

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### **Appendix I**

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

**MATERIALAB CONSULTANTS LIMITED**

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**MaterialLab**

Report No.: 0165/15/ED/1132

## Appendix I –

**Statistics on Environmental Complaints, Notifications of Summons and Successful Prosecutions**

For Contract No. HY/2013/03

Reporting Period	Cumulative Statistics		
	Complaints	Notifications of Summons	Successful Prosecutions
This reporting period	1	0	0
From commencement date of construction to end of reporting period	15	0	0

For Contract No. HY/2013/06 within Contract No. HY/2013/03 works area

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 period	0	0	0