SNC·LAVALIN
ATKINS
Member of the SNC-Lavalin Group

13F Wharf T&T Centre
Harbour City
'sim Sha Tsui
ın Hong Kong
+852 2972 1000
+852 2890 6343
info.hk@atkinsglobal.com

atkinsglobal.com
snclavalin.com

Your ref.
Our ref. 5126871/19.10/OC150/KC/RL

Date: 20 November 2018

By Post and e-mail (Stephen.Tsang@lcwjv.com)

Leighton – Chun Wo Joint Venture
39/F Sun Hung Kai Centre
30 Harbour Road
Hong Kong

Attn: Mr. Stephen Tsang

Dear Mr. Tsang,

Contract No. HY/2013/01
Hong Kong – Zhuhai – Macao Bridge
Hong Kong Boundary Crossing Facilities – Passenger Clearance Building
Certification of Monthly EM&A Report No. 49

Atkins China Limited certifies, in the capacity of Environmental Team Leader, that Monthly EM&A Report No. 49 (Revision 2) conforms the requirements provided in Condition 5.4 of the Environmental Permit No. EP-353/2009/K.

Yours faithfully,
for and on behalf of
Atkins China Limited

Keith Chau
Environmental Team Leader

cc.
1. AECOM – Mr. Malcolm Sage (By Fax.: 3468 2076)
2. IEC / ENPO – Mr. Raymond Dai & Mr. Y.H. Hui (By Fax.: 3465 2899)

Ref.: HYDHZMBEEM00_0_7007L.18

20 November 2018

By Fax (3468 2076) and By Post

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

Attention: Mr. Malcolm Sage

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/2013/01 – HZMB HKBCF – Passenger Clearance Building
Monthly Environmental Monitoring & Audit Report for October 2018

We refer to Environmental Team (ET)'s submission of the Monthly Environmental Monitoring and Audit Report No. 49 for October 2018 (Rev. 2) certified by the ET Leader (ET's ref.: "5126871/19.10/OC150/KC/RL" dated 20 November 2018) and their Response-to-Comment provided to us via e-mail on 20 November 2018.

We write to verify the captioned submission with respect to Condition 5.4 of the Environmental Permit No. EP-353/2009/K, whereas our verification with respect to Condition 5.1 of the Environmental Permit No. EP-353/2009/K will ONLY be valid upon the following qualifications are satisfied:

1. EPD's written approval on the submitted proposal for termination of EM&A programme submitted (Your ref.: "HKBCF/(PCB)/(HY/2013/01)/M45/100(00140)/B115647" dated 26 October 2018) to justify no further scheduling of site inspection of the upcoming month can be accepted.
2. Written confirmation from Engineer Representative on the commencement of monitoring for landscape and visual (L&V) mitigation measures in the upcoming month, i.e., November 2018, to enable ET to report on upcoming schedule of their implementation of monitoring for L&V mitigation measures during the 12-month establishment period in order to ensure the L&V mitigation measures be implemented on-site as per the L&V Plan confirmed no further comments by EPD on 23 October 2018.

With respect to qualification item 1, please be reminded that the EM&A programme for construction phase under Contract No. HY/2013/01 shall not be terminated until the proposal for termination of EM&A programme for construction phase is approved by EPD. Should there be any need to obtain EPD's approval promptly, relevant parties are strongly advised to closely liaise with EPD to obtain their written approval without further delay.

The ET Leader is also reminded that it is the ET's responsibility to ensure the report be timely submitted to the Director of Environmental Protection, and the reported materials be true, valid and correct as per Conditions 5.4 and 5.5 of EP-353/2009/K respectively.

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

Q:\Projects\HYDHZMBEEM00\02_Proj_Mgt\02_Corr\HYDHZMBEEM00_0_7007L.18.doc

Ramboll Hong Kong Limited 英環香港有限公司
21/F, BEA Harbour View Centre, 56 Gloucester Road, Wanchai, Hong Kong Tel: 852.3465 2888 Fax: 852.3465 2899
www.Ramboll.com

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

Raymond Dai
Independent Environmental Checker

c.c.	HyD	Mr. Tony Pang	(By Fax: 3188 6614)
	HyD	Ms. Lowell Chiu	(By Fax: 3188 6614)
	EPD	Mr. Alfred Lo	(By Fax: 2960 1760)
	Atkins	Mr. Keith Chau	(By Fax: 2890 6343)
	LCWJV	Mr. Owen Leung	(By Fax: 3621 0180)

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

Ramboll Hong Kong Limited 英環香港有限公司
21/F, BEA Harbour View Centre, 56 Gloucester Road, Wanchai, Hong Kong Tel: 852.3465 2888 Fax: 852.3465 2899
www.Ramboll.com

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

Contract No. HY/2013/01

Hong Kong-Zhuhai-Macao Bridge
Hong Kong Boundary Crossing Facilities – Passenger Clearance Building

Monthly EM&A Report No. 49
(Covering the Period from 1 October 2018 to 31 October 2018)

20 November 2018

Revision 2

Main Contractor

LEIGHTON 禮頓
俊和 CHUN WO
Leighton - Chun Wo Joint Venture

Environmental Team

ATKINS
Member of the SNC-Lavalin Group

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Executive Summary

This Monthly Environmental Monitoring and Audit (EM&A) Report is prepared for Contract No. HY/2013/01 Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities (HZMB HKBCF) – Passenger Clearance Building (hereafter referred to as "the Contract") (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/2013/01 works area) for the Highways Department of Hong Kong Special Administrative Region (HKSAR). The Contract was awarded to Leighton – Chun Wo Joint Venture (construction works of Contract No. HY/2013/06 was awarded to ATAL Technologies Limited within Contract No. HY/2013/01 works area) (hereafter referred to as "the Contractor") and Atkins China Limited was appointed as the Environmental Team (ET) by the Contractor.

The Contract is part of HZMB HKBCF Project which is a "Designated Project", under Schedule 2 of the Environmental Impact Assessment Ordinance (EIAO) (Cap 499) and Environmental Impact Assessment (EIA) Report (Register No. AEIAR-145/2009) was prepared for the Project. The current Environmental Permit (EP) No. EP-353/2009/K for HKBCF was issued on 11 April 2016. These documents are available through the EIA Ordinance Register. Site preparation works of the Contract started on 26 September 2014 and the construction works of the Contract commenced on 6 October 2014. The construction works of the Contract No. HY/2013/06 within Contract No. HY/2013/01 works area commenced on 20 February 2018.

Atkins China Limited 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 to the Contract.

This is the forty-ninth monthly EM&A Report for the Contract which summarizes findings of the EM&A works during the reporting period from 1 to 31 October 2018. (includes the construction works of Contract No. HY/2013/06 within Contract No. HY/2013/01 works area)

Environmental Monitoring and Audit Progress

The monthly EM&A programme was undertaken in accordance with the Updated EM&A Manual for HKBCF (Version 1.0). The air quality, noise, water quality and dolphin monitoring works under Contract No. HY/2010/02 Hong Kong-Zhuhai-Macao Bridge HKBCF – Reclamation Works were suspended from 1 September 2017. The ET of Contract No. HY/2013/01 is required and continues the same implementation of environmental monitoring commencing on 1 September 2017. It should be noted that the air quality monitoring station (AMS6) is covered by Contract No. HY/2011/03 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between Scenic Hill and HKBCF. Noise monitoring station (NMS3C) responsibility under the EM&A programme for the HZMB HKBCF Project has been changed from Contract No. HY/2013/01 to Contract No. HY/2013/04 since 20 August 2018. Noise monitoring station (NMS2), air quality monitoring station (AMS7B), water quality monitoring and Chinese white dolphin monitoring responsibility under the EM&A programme for the HZMB HKBCF Project has been changed from Contract No. HY/2013/01 to Contract No. HY/2013/04 since 1 October 2018.

Environmental Site Inspection: 5, 10, 18, 24 and 31 October 2018

Breaches of Action and Limit Levels

A summary of environmental exceedances for the reporting period are listed below:

Environmental Monitoring	Parameters	Action Level (AL)	Limit Level (LL)
Air Quality	1-hour TSP	-	-
	24-hour TSP	-	-
Noise	$L_{eq\ (30\ min)}$	-	-
Water Quality	Suspended solids level (SS)	1	-
	Turbidity level	1	-
	Dissolved oxygen level (DO)	-	-
Dolphin Monitoring	Quarterly Analysis	-	-

Complaint Log

There was no complaint received in relation to the environmental impact during the reporting period.

Notifications of Summons and Successful Prosecutions

There was no notifications of summons or prosecutions received during the reporting period.

Reporting Change

The entire environmental monitoring responsibility under the EM&A programme for the HZMB HKBCF Project has been changed from Contract No. HY/2013/01 to Contract No. HY/2013/04 since 1 October 2018.

The works area in Hong Kong-Zhuhai-Macao Bridge was handed over to the owner since 24 October 2018.

Future Key Issues

No construction works will be conducted by Contract No. HY/2013/01 in the upcoming month.

1 Introduction

1.1 Basic Project Information

1.1.1 This Monthly Environmental Monitoring and Audit (EM&A) Report is prepared for Contract No. HY/2013/01 Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Passenger Clearance Building (hereafter referred to as "the Contract") (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/2013/01 works area) for the Highways Department of Hong Kong Special Administrative Region. The Contract was awarded to Leighton – Chun Wo Joint Venture (construction works of Contract No. HY/2013/06 was awarded to ATAL Technologies Limited within Contract No. HY/2013/01 works area) (hereafter referred to as "the Contractor") and Atkins China Limited was appointed as the Environmental Team (ET) by the Contractor.

1.1.2 The Contract is part of Hong Kong – Zhuhai – Macao Bridge Hong Kong Boundary Crossing Facilities (HKBCF) which is a "Designated Project", under Schedule 2 of the Environmental Impact Assessment Ordinance (EIAO) (Cap 499). An Environmental Impact Assessment (EIA) Report (Register No. AEIAR-145/2009) was prepared for the Project. The current Environmental Permit (EP) No. EP-353/2009/K for HKBCF was issued on 11 April 2016. These documents are available through the EIA Ordinance Register. Site preparation work of the Contract started on 26 September 2014 and the construction works of the Contract commenced on 6 October 2014. The construction works of the Contract No. HY/2013/06 within Contract No. HY/2013/01 works area commenced on 20 February 2018.The works areas of the Contract are shown in **Appendix A**.

1.1.3 The proposed works under this Contract comprise the following:

<u>For Contract No. HY/2013/01</u>

- Construction of Passenger Clearance Building (PCB) including architectural and builders works, structural steel roof and reinforced concrete frames, basement, piled foundations, aluminium roof, curtain wall facades, building services and electrical and mechanical works;
- Installation of district cooling system including seawater cooling intake pumping station, seawater intake and discharge water pipelines work; Installation of Chilled water cooling pipelines system, heat exchanger and chilled pumping system;
- Construction of transport and associated facilities connecting to the PCB entailing the Emergency Vehicular Access, an at-grade mainland side drop-off area, an Hong Kong side elevated drop-off deck and 8 numbers of footbridge links;
- Construction of a public toilet, 6 numbers of C&ED observation booths, a generator set building and a refuse storage & material recovery chamber;
- Construction of a section of 70m common utilities enclosure and staff subway and civil provisions for associated electrical and mechanical works;
- Construction of drainage, sewerage, fresh water & flushing water supply and utilities & service works;
- Construction of civil provisions, including draw pits & ducting for Traffic Control and Surveillance System (TCSS) and Extra Low Voltage System (ELV);
- Construction of box culvert A;
- Construction of 2 numbers of vehicular bridge abutments at mainland side pickup area earthmound;
- Construction of geotechnical works including top up the existing earth mound from +11.5mPD to the finished level as stated in the Contract, reinforced earth slope and fill slopes and special backdrop manhole at mainland side pickup area earthmound;
- Landscape hardworks and softworks; and
- Other works which are shown on the Drawings or specified in the Specification or which

may be ordered in accordance with the Contract.

For Contract No. HY/2013/06 within Contract No. HY/2013/01

- The Automatic Vehicle Clearance Support System amid to increasing traffic flow for Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities;
- Responsible for designs and develops a set of tailor-made computer monitoring and control systems to for daily security operation; and
- The Clearance Workstations at 72 vehicle clearance kiosks, Customs and Excise's inbound and outbound traffic control centers as well as a Vehicle Tracking System.

1.1.4 This is the forty-ninth monthly EM&A Report for the Contract No. HY/2013/01 which summarizes the audit findings of the EM&A programme during the reporting period from 1 to 31 October 2018 (included the construction works of Contract No. HY/2013/06 within Contract No. HY/2013/01 works area).

1.2 Project Organisation

1.2.1 The project organization structure and lines of communication with respect to the on-site environmental management structure is shown in **Appendix B**. The key personnel contact names and numbers are summarized in **Table 1.1**.

Table 1.1 Contact Information of Key Personnel

Party	Position	Name	Telephone	Fax
For Contract No. HY/2013/01				
Engineer or Engineer's Representative (AECOM Asia Co. Ltd.)	Chief Resident Engineer	Malcolm Sage	3958 7330	3468 2076
Environmental Project Office / Independent Environmental Checker (Ramboll Hong Kong Limited)	Environmental Project Office Leader	Y. H. Hui	3465 2888	3465 2899
	Independent Environmental Checker	Raymond Dai	3465 2888	3465 2899
Contractor (Leighton – Chun Wo Joint Venture)	Project Manager	Owen Leung	9232 5750	3621 0180
	Environmental Officer	Stephen Tsang	9686 0787	3621 0180
Environmental Team (Atkins China Limited)	Environmental Team Leader	Keith Chau	2972 1721	2890 6343
24 hours complaint hotline	---	---	3958 7300	---
For Contract No. HY/2013/06 within Contract No. HY/2013/01 works area				
Engineer or Engineer's Representative (AECOM Asia Co. Ltd.)	Chief Registered Architect	Malcolm Sage	3958 7330	3468 2076
Environmental Project Office / Independent Environmental Checker (Ramboll Hong Kong Limited)	Environmental Project Office Leader	Y. H. Hui	3465 2888	3465 2899
	Independent Environmental Checker	Raymond Dai	3465 2888	3465 2899
	Site Agent	Mr. Eric Yim	2565 3355	3162 5217

Contractor (ATAL Technologies Limited)	Environmental Officer	Mr. W. Li	2565 3137	3162 5217
Environmental Team (Atkins China Limited)	Environmental Team Leader	Keith Chau	2972 1721	2890 6343
24 hours complaint hotline	---	---	6509 0375	---

1.3 Construction Programme

1.3.1 A copy of the Contractor's construction programme is 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/2013/01

Land Based work and Marine Based work

- According to information from the Contractor, the construction works of Contract No. HY/2013/01 have been completed. The related completion certificate (Ref.: BWLM: TTHK: mlmp:60313494/C1/M15/905/M1422-2018009635T) dated 9 August 2018 was issued by Engineer's Representative.
- Maintenance works.

For Contract No. HY/2013/06 within Contract No. HY/2013/01 works area

- According to information from Contractor, no construction works were be conducted by Contract No. HY/2013/06 except System Testing and Commissioning at ELV & Sever Room, and Zone E PCB.

2 Air Quality Monitoring

2.1 Monitoring Requirements

2.1.1 The monitoring requirements are detailed in the monthly EM&A Reports prepared by Contract Nos. HY/2011/03 and HY/2013/04.

2.1.2 The Action and Limit Level for the 1-hour and 24-hour TSP are provided in **Table 2.1** and **2.2** respectively.

Table 2.1 Action and Limit Levels for 1-hour TSP

Monitoring Station	Action Level, µg/m³	Limit Level, µg/m³
AMS6 - Dragonair / CNAC (Group) Building (HKIA)	360	500
AMS7B – 3RS Site Office	370	

Table 2.2 Action and Limit Levels for 24-hour TSP

Monitoring Station	Action Level, µg/m³	Limit Level, µg/m³
AMS6 – Dragonair / CNAC (Group) Building (HKIA)	173	260
AMS7B – 3RS Site Office	183	

2.1.3 If exceedance(s) at these station(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 monthly EM&A Report.

2.2 Monitoring Equipment

2.2.1 The monitoring equipment are detailed in the monthly EM&A Reports prepared by Contract Nos. HY/2011/03 and HY/2013/04.

2.3 Monitoring Locations

2.3.1 The air quality monitoring works for the Contract are covered by Contract No. HY/2013/04 Hong Kong-Zhuhai-Macao Bridge HKBCF - Infrastructure Works Stage II (Southern Portion) and Contract No. HY/2011/03 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between Scenic Hill and HKBCF.

2.3.2 The permission to carry out impact air quality monitoring work at AMS7 (Hong Kong SkyCity Marriott Hotel) was not granted after 31 January 2015. The air quality monitoring location (AMS7) was relocated to a nearby air sensitive receiver, Chu Kong Air-Sea Union Transportation Co. Ltd, from 5 February 2015. The alternative location was approved by EPD on 5 February 2015. However, AMS7A was relocated back to its original location (AMS7-Hong Kong SkyCity Marriott Hotel) on 30 December 2015. The relocation of air quality monitoring location, AMS7A, back to AMS7 was approved by EPD on 21 December 2015. As the permission to carry out air quality monitoring at Hong Kong SkyCity Marriott Hotel was not granted after the end of January 2018, as such, a proposal for the monitoring location relocated to 3RS Site Office(AMS7B) was justified by the ET Leader for Contract No. HY/2013/01 on 22 January 2018; verified by the IEC on 24 January 2018; and submitted to EPD on 30 January 2018, and the AQM has been carrying out at AMS7B with EPD's consent since 6 February 2018.The baseline and action/limit level for air quality as derived from the baseline monitoring data recorded at Hong Kong SkyCity Marriott Hotel (AMS7) was adopted for the air quality monitoring location.

2.3.3 The ET of the Contract or another ET of the HZMB project is required to conduct air quality monitoring at AMS6 and AMS7B as part of EM&A programme if these air quality monitoring stations are no longer covered under Contract Nos. HY/2011/03 and HY/2013/04.

2.3.4 **Table 2.3** describes the details of the monitoring stations and **Figure 2.1** shows the locations of the air quality monitoring stations.

Table 2.3 Construction Dust Monitoring Locations

ID	Location Description
AMS6	Dragonair/CNAC (Group) Building
AMS7B(1)	3RS Site Office

Remarks:

(1) The original monitoring location was at Hong Kong SkyCity Marriott Hotel (AMS7). As the permission to carry out air quality monitoring at Hong Kong SkyCity Marriott Hotel was not granted after 31 January 2015, the monitoring location was relocated to Chu Kong Air-Sea Union Transportation Co. Ltd. (AMS7A) from 5 February 2015 to 30 December 2015. The alternative monitoring location at Chu Kong Air-Sea Union Transportation Co. Ltd. was approved by EPD on 5 February 2015. However, AMS7A was relocated back to its original location (AMS7-Hong Kong SkyCity Marriott Hotel) on 30 December 2015. The relocation of air quality monitoring location, AMS7A, back to AMS7 was approved by EPD on 21 December 2015. As the permission to carry out air quality monitoring at Hong Kong SkyCity Marriott Hotel was not granted after the end of January 2018, as such, a proposal for the monitoring location relocated to 3RS Site Office(AMS7B) was justified by the ET Leader for Contract No. HY/2013/01 on 22 January 2018; verified by the IEC on 24 January 2018; and submitted to EPD on 30 January 2018, and the AQM has been carrying out at AMS7B with EPD's consent since 6 February 2018.

2.4 Monitoring Parameters, Frequency and Duration

2.4.1 The monitoring parameters, frequency and duration are detailed in the monthly EM&A Reports prepared by Contract Nos. HY/2011/03 and HY/2013/04.

2.5 Monitoring Methodology

2.5.1 The monitoring methodology are detailed in the monthly EM&A Reports prepared by Contract Nos. HY/2011/03 and HY/2013/04.

2.6 Monitoring Schedule for the Reporting Month

2.6.1 The schedule for air quality monitoring in October 2018 are referred to the monthly EM&A report prepared by Contracts Nos. HY/2011/03 and HY/2013/04 – Hong Kong-Zhuhai-Macao Bridge HKBCF - Infrastructure Works Stage II (Southern Portion) respectively.

2.7 Monitoring Results

2.7.1 The monitoring results for AMS6 and AMS7B are reported in the monthly EM&A Reports prepared for Contract Nos. HY/2011/03 and HY/2013/04, respectively.

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

2.7.3 There was no Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at AMS7B recorded by the ET of Contract No. HY/2013/04 during the reporting period.

2.7.4 The event and action plan is provided in **Appendix H.**

3 Noise Monitoring

3.1 Monitoring Requirements

3.1.1 The monitoring requirements are detailed in the monthly EM&A Reports prepared by Contract No. HY/2013/04.

3.1.2 The Action and Limit Level for the noise monitoring is provided in **Table 3.1**.

Table 3.1 Action and Limit Levels for Noise during Construction Period

Monitoring Station	Time Period	Action Level	Limit Level
NMS2	0700-1900 hours on normal weekdays	When one documented complaint is received.	75 dB(A)
NMS3C(i)			70/65 dB(A)*

Remark:
* Limit Level for schools will be applied for NMS3C. Daytime noise Limit Level of 70 dB(A) applies to education institutions, while 65 dB(A) applies during the school examination period.
(i) Noise monitoring at NMS3C has been undertaking by the ET for Contract No. HY/2013/04 since 20 August 2018.

3.1.3 If exceedance(s) at these station(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 monthly EM&A Report.

3.2 Monitoring Equipment

3.2.1 The monitoring equipment are detailed in the monthly EM&A Reports prepared by Contract No. HY/2013/04.

3.3 Monitoring Locations

3.3.1 Monitoring location NMS2 was set up at the proposed locations in accordance with Contract Specific EM&A Manual. However, for monitoring location NMS3 (Ho Yu College), as proposed in the Contract Specific EM&A Manual, approval for carrying out impact monitoring could not be obtained from the principal of school. Permission on setting up and carry out impact monitoring works at nearby sensitive receivers, like Caribbean Coast and Coastal Skyline, was also sought. However, approvals for carrying out impact monitoring works within their premises were not obtained. Impact noise monitoring was conducted at site boundary of the site office area in Work Area WA2 (NMS3B) respectively. The noise monitoring station at NMS3B has been relocated and renamed as NMS3C and is covered by Contract No. HY/2013/04. Same baseline noise level (as derived from the baseline monitoring data recorded at Ho Yu College) and Limit Level were adopted for this alternative noise monitoring location.

3.3.2 The noise monitoring works for the Contract are covered by Contract No. HY/2013/04 Hong Kong-Zhuhai-Macao Bridge HKBCF - Infrastructure Works Stage II (Southern Portion). The ET of the Contract or another ET of the HZMB project is required to conduct impact noise monitoring at NMS2 and NMS3B as part of EM&A programme if these noise monitoring stations are no longer covered under Contract No. HY/2013/04.

3.3.3 **Figure 2.1** shows the locations of noise monitoring stations. **Table 3.2** describes the details of monitoring stations.

Table 3.2 Construction Noise Monitoring Locations

ID	Location Description
NMS2(1)	Seaview Crescent
NMS3C(1) (2) (3)	Ying Tung Estate Refuse Collection Point

Remarks:

(1) 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.

(2) Limit Level for schools will be applied for NMS3C. Day time noise Limit Level of 70 dB(A) applies to education institutions, while 65 dB(A) applies during the school examination period.

(3) Noise Monitoring at NMS3C has been undertaking by the ET for Contract No. HY/2013/04 since 20 August 2018.

3.4 Monitoring Parameters, Frequency and Duration

3.4.1 The monitoring parameters, frequency and duration are detailed in the monthly EM&A Reports prepared by Contract No. HY/2013/04.

3.5 Monitoring Methodology

3.5.1 The monitoring methodology are detailed in the monthly EM&A Reports prepared by Contract No. HY/2013/04.

3.6 Monitoring Schedule for the Reporting Month

3.6.1 The schedule for construction noise monitoring in October 2018 are referred to the monthly EM&A report prepared by Contract No. HY/2013/04 – Hong Kong-Zhuhai-Macao Bridge HKBCF - Infrastructure Works Stage II (Southern Portion).

3.7 Monitoring Results

3.7.1 The monitoring results for NMS2 and NMS3B are reported in the monthly EM&A Reports prepared for Contract No. HY/2013/04. No noise exceedances were recorded at stations NMS2 and NMS3B by the ET of Contract No. HY/2013/04 during the reporting period.

4 Water Quality Monitoring

4.1 Monitoring Requirements

4.1.1 The monitoring requirements are detailed in the monthly EM&A Reports prepared by Contract No. HY/2013/04.

4.1.2 If exceedance(s) at these survey 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 monthly EM&A Report.

4.1.3 **Table 4.1** shows the established Action and Limit Levels for the environmental monitoring works.

Table 4.1 Action and Limit Levels for Water Quality

Parameters	Action Level	Limit Level
DO in mg L^{-1} (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^{-1} (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:
1. "depth-averaged" is calculated by taking the arithmetic means of reading of all three depths.
2. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
3. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
4. 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.
5. The 1%-ile of baseline data for dissolved oxygen (surface and middle) and dissolved oxygen (bottom) are 4.2 mg/L and 3.6 mg/L respectively.

4.2 Monitoring Equipment

4.2.1 The monitoring equipment are detailed in the monthly EM&A Reports prepared by Contract No. HY/2013/04.

4.3 Monitoring Parameters, Frequency and Duration

4.3.1 The monitoring parameters, frequency and duration are detailed in the monthly EM&A Reports prepared by Contract No. HY/2013/04.

4.4 Monitoring Location

4.4.1 In accordance with the Contract Specific EM&A Manual, a total of twenty-one stations (nine Impact Stations, seven Sensitive Receiver Stations and five Control/Far Field Stations) were designated for impact water quality monitoring. The nine Impact Stations (IS) were chosen on the basis of their proximity to the reclamation and thus the greatest potential for water quality impacts, the seven Sensitive Receiver Stations (SR) were chosen as they are close to the key sensitive receives and the five Control/ Far Field Stations (CS) were chosen to facilitate comparison of the water quality of the IS stations with less influence by the Project/ ambient water quality conditions

4.4.2 The water quality monitoring stations at CS(Mf)3 (Coordinate: 809989E, 821117N), IS10 (Coordinate: 812577E, 820670N) and SR5 (811489E, 820455N) have been occupied by the marine work of a designated project - Expansion of Hong Kong International Airport into a Three-Runway System (3RS Project). The alternative water quality monitoring station at CS(Mf)3(N) (Coordinate: 808814E, 822355N), IS10(N) (Coordinate: 812942E, 820881N) and SR5(N) (812569E, 8201475N) were justified and verified by the ET Leader for Contract No. HY/2010/02 and the IEC respectively on 24 March 2017 and it was approved by EPD on 12 May 2017.

4.4.3 The water quality monitoring stations at SR3, SR10A and SR10B(N) were not available for water sampling due to safety reason, thus, monitoring stations were changed to SR3(N) (Coordinate: 810689E, 816591N); SR10A(N) (Coordinate: 823644E, 823484N) and SR10B(N2) (Coordinate:823689E, 823159N) were justified by the ET Leader on 8 November 2017 and the IEC verified on 13 November 2017; and submitted to EPD on 29 November 2017 and it was approved by EPD on 22 December 2017.

4.4.4 The ET of the Contract or another ET of the HZMB project is required to conduct water quality monitoring at these stations as part of EM&A programme if these monitoring stations are no longer covered under Contract No. HY/2013/04.

4.4.5 **Table 4.2** and **Figure 4.1** shows the locations of water quality monitoring stations.

Table 4.2 Impact 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(N)^	Sensitive receivers (San Tau SSSI)	810689	816591
SR4(N)	Sensitive receivers (Tai Ho)	814705	817859

Station	Description	East	North
SR5(N)*	Sensitive receiver (Artificial Reef in NE Airport)	812569	821475
SR6	Sensitive receivers (Sha Chau and Lung Kwu Chau Marine Park)	805837	821818
SR7	Sensitive receivers (Tai Mo Do)	814293	821431
SR10A(N)^	Sensitive receivers (Ma Wan FCZ) 1	823644	823484
SR10B(N2)^	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	Control Station	818103	823064

Remarks:
*Alternative water quality monitoring stations at CS(Mf)3(N), SR5(N) and IS10(N) were justified and verified by the ET Leader for Contract No. HY/2010/02 and the IEC respectively on 24 March 2017 and it was approved by EPD on 12 May 2017.

^ Alternative water quality monitoring stations at SR3, SR10A and SR10B(N) were justified by the ET Leader on 8 November 2017 and verified by IEC on 13 November 2017; and submitted to EPD on 29 November 2017 and it was approved by EPD on 22 December 2017.

4.5 Monitoring Methodology

4.5.1 The monitoring methodology are detailed in the monthly EM&A Reports prepared by Contract No. HY/2013/04.

4.6 Monitoring Schedule for the Reporting Month

4.6.1 The schedule for water quality monitoring in October 2018 are referred to the monthly EM&A report prepared by Contract No. HY/2013/04 – Hong Kong-Zhuhai-Macao Bridge HKBCF - Infrastructure Works Stage II (Southern Portion).

4.7 Monitoring Result

4.7.1 The monitoring results for the monitoring stations are reported in the monthly EM&A Reports prepared for Contract No. HY/2013/04.

4.7.2 No Action Level and Limit Level exceedance of dissolved oxygen were recorded at mid-ebb tide and mid-flood tide by the ET of Contract No. HY/2013/04 during the report period.

4.7.3 One Action Level exceedance of turbidity was recorded at mid-ebb tide on 24 October 2018 by the ET of Contract No. HY/2013/04 during the report period. No Action Level exceedances of turbidity were recorded at mid-flood tide and no Limit Level exceedances of turbidity by the ET of Contract No. HY/2013/04 during the report period.

4.7.4 One Action Level exceedance of suspended solid was recorded at mid-flood tide on 10 October 2018 by the ET of Contract No. HY/2013/04 during the report period. No Action Level

exceedances of suspended solid were recorded at mid-ebb tide and no Limit Level exceedances of suspended solid during the reporting month by the ET of Contract No. HY/2013/04 during the report period.

4.7.5 The event and action plan is provided in **Appendix H.**

5 Dolphins Monitoring

5.1 Monitoring Requirement

5.1.1 The monitoring requirements are detailed in the monthly EM&A Reports prepared by Contract No. HY/2013/04.

5.1.2 The Action and Limit Level for dolphin monitoring are provided in **Table 5.1** and **5.2** respectively.

Table 5.1 Action and Limit Levels for Chinese White Dolphin Monitoring - Approach to Define Action Level (AL) and Limit Level (LL)

	North Lantau Social Cluster	
	Northeast Lantau (NEL)	**Northwest Lantau (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)]	

Remarks:

1. STG means no. of on-effort dolphin sightings per 100 km of survey effort
2. ANI means no. of dolphins from all on-effort sightings per 100 km of survey effort
3. For North Lantau Social Cluster, AL will be trigger if either NEL or NWL fall below the criteria; LL will be triggered if both NEL and NWL fall below the criteria.

Table 5.2 Derived Value of Action Level (AL) and Limit Level (LL) for Chinese White Dolphin 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)]	

5.1.3 The event and action plan is provided in **Appendix H.**

5.2 Monitoring Methodology and Location

5.2.1 The dolphin monitoring works for the Contract are covered by Contract No. HY/2013/04 Hong Kong-Zhuhai-Macao Bridge HKBCF - Infrastructure Works Stage II (Southern Portion). The ET of the Contract or another ET of the HZMB project is required to conduct dolphin monitoring at the twenty-four transects as part of EM&A programme if these transects are no longer covered under Contract No. HY/2013/04. The dolphin 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 change of transect lines 2, 3, 4, 5, 6 and 7 and new vessel-based transect line 24 for dolphin monitoring have been proposed due to the marine work of a designated project - Expansion of Hong Kong International Airport into a Three-Runway System (3RS Project). It was justified and verified by the ET Leader for Contract No. HY/2010/02 and the IEC respectively on 24 March 2017 and it was approved by EPD on 12 May 2017 . **Figure 5.1** shows the for the layout map transect lines.

5.2.2 The co-ordinates for the transect lines and a layout map showing the transect lines have been provided by AFCD and are shown in **Table 5.3.**

Table 5.3 Impact Dolphin Monitoring Transect Line Co-ordinates

Transect Line No.	HK Grid System	
	Easting	Northing
1(#)	804671	815456
	804671	831404
2(#)	805476	820800
	805476	826654
3	806464	821150
	806464	822911
4	807518	821500
	807518	829230
5	808504	821850
	808504	828602
6	809490	822150
	809490	825352
7(#)	810499	822000
	810499	824613
8(#)	811508	821123
	811508	824254
9(#)	812516	821303
	812516	824254
10*	813525	820827
	813525	824657
11#	814556	818853
	814556	820992
12	815542	818807
	815542	824882
13	816506	819480
	816506	824859
14	817537	820220
	817537	824613
15	818568	820735
	818568	824433
16	819532	821420
	819532	824209
17	820451	822125
	820451	823671
18	821504	822371
	821504	823761
19	822513	823268
	822513	824321
20	823477	823402
	823477	824613
21	805476	827081
	805476	830562
22	806464	824033
	806464	829598
23	814559	821739
	814559	824768
24	805476	815900
	805476	819100

Remarks:

(a) * Due to the presence of deployed silt curtain systems at the site boundaries of the Contract, some of

the transect lines could not be fully surveyed during the regular survey. Transect 10 is reduced from 6.4km to approximately 3.6km in length due to the HKBCF construction site. Therefore, the total transect length for both NEL and NWL combined is reduced to approximately 108km.

(b) # Coordinates for transect lines 1, 8, 9 and 11 have been updated in respect to the Proposal for Alteration of Transect Line for Dolphin Monitoring approved by EPD on 19 August 2015.

(c) Due to marine work of the Expansion of Hong Kong International Airport into a Three-Runway System (3RS Project), original transect lines of dolphin monitoring 2, 3, 4, 5, 6 and 7 are enclosed by works boundary of 3RS Project. Alternative dolphin monitoring transect lines 2, 3, 4, 5, 6, 7 and 24 are adopted starting from 17 May 2017 to replace the original transect lines.

(d) The change of transect lines 2, 3, 4, 5, 6 and 7 and new vessel-based transect line 24 for dolphin monitoring have been proposed due to the marine work of a designated project - Expansion of Hong Kong International Airport into a Three-Runway System (3RS Project). It was justified and verified by the ET Leader for Contract No. HY/2010/02 and the IEC respectively on 24 March 2017 and it was approved by EPD on 12 May 2017.

5.3 Monitoring Schedule for the Reporting Month

5.3.1 The schedule for dolphin monitoring in October 2018 are referred to the monthly EM&A report prepared by Contract No. HY/2013/04 – Hong Kong-Zhuhai-Macao Bridge HKBCF - Infrastructure Works Stage II (Southern Portion).

5.4 Monitoring Result

5.4.1 Impact dolphin monitoring results at all transects in October 2018 are reported in the EM&A Reports prepared for Contract No. HY/2013/04.

6 Environmental Site Inspection and Audit

6.1 Site Inspection

6.1.1 Site Inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures for the Contract No. HY/2013/01 (includes the construction works of Contract No. HY/2013/06 within Contract No. HY/2013/01 works area). During the reporting period, site inspections were carried out on 5, 10, 18, 24 and 31 October 2018.

6.1.2 Particular observations for Contract No. HY/2013/01 and Contract No. HY/2013/06 within Contract No. HY/2013/01 works area during the site inspections and corrective actions undertaken by the Contractor are described in **Table 6.1 and Table 6.2**.

Table 6.1 Summary of Environmental Site Inspections for Contract No. HY/2013/01

Date of Audit	Observations	Actions Taken by Contractor / Recommendation	Date of Observations Closed
26 September 2018	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
5 October 2018	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
10 October 2018	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
18 October 2018	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
24 October 2018	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
31 October 2018	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.

Table 6.2 Summary of Environmental Site Inspections for Contract No. HY/2013/06 within Contract No. HY/2013/01 works area

Date of Audit	Observations	Actions Taken by Contractor / Recommendation	Date of Observations Closed
26 September 2018	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
5 October 2018	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
10 October 2018	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.

Date of Audit	Observations	Actions Taken by Contractor / Recommendation	Date of Observations Closed
18 October 2018	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
24 October 2018	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
31 October 2018	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.

6.1.3 Particular observations (Landscape works) for Contract No. HY/2013/01 during the site inspections and corrective actions undertaken by the Contractor are described in **Table 6.3**. The landscape work for Contract No. HY/2013/01 was commenced on 1 March 2018. The implementation of mitigation measures for landscape and visual resources recommended in the EIA Report were monitored 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 6.3 Summary of Environmental Site Inspections (Landscape works) for Contract No. HY/2013/01 works area

Date of Audit	Observations	Actions Taken by Contractor / Recommendation	Date of Observations Closed
5 October 2018	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
18 October 2018	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
31 October 2018	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.

6.2 Advice on the Solid and Liquid Waste Management Status

6.2.1 The Contractor registered as a chemical waste producer for the Contract. Sufficient numbers of receptacles were available for general refuse collection and sorting.

6.2.2 No marine sediment was generated in the reporting month. As informed by the Contractor in May 2016, the transfer of treated marine sediment to Contract no. HY/2010/02 has been discontinued since July 2015.

6.2.3 The monthly summary of waste flow table is detailed in **Appendix I**.

6.2.4 The Contractor was reminded that chemical waste should be properly treated and stored temporarily in designated chemical waste storage areas on site in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.

6.3 Environmental Licenses and Permits

6.3.1 The valid environmental licenses and permits for Contract No. HY/2013/01 during the reporting period are summarized in **Appendix J**.

6.3.2 As confirmed the contractor (Contract No. HY/2013/01), all chemical waste from Contract No. HY/2013/06 should be disposed through Contractor of Contract No. HY/2013/01 within Contract No. HY/2013/01 site area. Contract No. HY/2013/06 with valid Disposal of Construction Waste Billing Account during the reporting period are summarized in **Appendix J**.

6.4 Implementation Status of Environmental Mitigation Measures

6.4.1 In response to the site audit findings, the Contractors carried out corrective actions.

6.4.2 All exposed site area has been paved expect planting area, thus, watering of exposed spoil was not required during reporting month.

6.4.3 The marine traffic records and geographical plots of all the vessels tracks will be submitted by the Contractor to ER, ETL and IEC/ENPO within 3 weeks after the reporting month. As informed by Contractor, there was no marine transportation since 30 January 2018.

6.4.4 Regarding the implementation of dolphin monitoring and protection measures (i.e. implementation of Dolphin Watching Plan, Dolphin Exclusion Zone and Silt Curtain integrity check), regular checking were conducted by the dolphin watcher(s) / dolphin observer(s) within the works area to ensure no dolphin was trapped by the enclosed silt curtain systems. No dolphin spotted within the enclosed silt curtain systems was reported and recorded during the reporting period. Silt curtain systems were also inspected timely in accordance to the submitted plan. All inspection records were kept properly.

6.4.5 Training was provided for barge operators in accordance with the Regular Marine Travel Routes Plan and relevant records were kept properly.

6.4.6 A summary of the Implementation Schedule of Environmental Mitigation Measures (EMIS) is presented in **Appendix K**. Most of the necessary mitigation measures were implemented properly.

6.5 Summary of Exceedance of the Environmental Quality Performance Limit

6.5.1 For air quality monitoring, summary of Action and Limit Level exceedance of 1-hour TSP level and 24-hour TSP level at AMS6 are referred to the monthly EM&A report prepared by Contract No. HY/2011/03. No Action and Limit level exceedance of 1-hr TSP level and 24-hr TSP level recorded AMS7B by the Environmental Team of Contract No. HY/2013/04 during the reporting period.

6.5.2 For construction noise, no Action and Limit Level exceedance for noise recorded NMS2 and NMS3C by the ET of Contract No. HY/2013/04 during the report period.

6.5.3 For water quality monitoring, no Action Level and Limit Level exceedance of dissolved oxygen were recorded at mid-ebb tide and mid-flood tide by the ET of Contract No. HY/2013/04 during the report period.

6.5.4 One Action Level exceedance of turbidity was recorded at mid-ebb tide on 24 October 2018 by the ET of Contract No. HY/2013/04 during the report period. No Action Level exceedances of turbidity were recorded at mid-flood tide and no Limit Level exceedances of turbidity by the ET of Contract No. HY/2013/04 during the report period.

6.5.5 One Action Level exceedance of suspended solid was recorded at mid-flood tide on 10 October 2018 by the ET of Contract No. HY/2013/04 during the report period. No Action Level exceedances of suspended solid were recorded at mid-ebb tide and no Limit Level exceedances of suspended solid during the reporting month by the ET of Contract No. HY/2013/04 during the report period.

6.5.6 As confirmed by the Contractor, no marine transportation and marine-based work was conducted during the reporting month. Therefore, it is concluded that the exceedances were not related the Contract.

6.5.7 Impact dolphin monitoring results in October 2018 at all transects are reported in the EM&A Reports prepared for Contract No. HY/2013/04

6.6 Summary of Complaints, Notification of Summons and Successful Prosecution

6.6.1 There was no complaint received in relation to the environmental impact during the reporting period. The details of cumulative statistics of Environmental Complaints are provide in **Appendix L**.

6.6.2 No notification of summons and prosecution was received during the reporting period.

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

7 Future Key Issues

7.1 Construction Programme for the Coming Months

7.1.1 As informed by the Contractor, the construction has been completed.

7.2 Environmental Site Inspection and Monitoring Schedule for the Coming Month

7.2.1 No weekly site inspection will be scheduled for the coming month.

7.2.2 The tentative schedule for environmental monitoring of November 2018 are detailed in the monthly EM&A Report prepared by Contract No. HY/2013/04.

8 Conclusions

8.1 Conclusions

8.1.1 The site preparation work of the Contract started on 26 September 2014 and the construction works of the Contract commenced on 6 October 2014. The construction works of the Contract No. HY/2013/06 within Contractor No. HY/2013/01 works area commenced on 20 February 2018. The forty-ninth Monthly EM&A Report summarizes findings of the EM&A works during the reporting period from 1 to 31 October 2018 (included the construction works of Contract No. HY/2013/06 within Contract No. HY/2013/01 works area). The works area in Hong Kong-Zhuhai-Macao Bridge was handed over to the owner since 24 October 2018.

8.1.2 For air quality monitoring, summary of Action and Limit Level exceedance of 1-hour TSP level and 24-hour TSP level at AMS6 are referred to the monthly EM&A report prepared by Contract No. HY/2011/03. No Action and Limit level exceedance of 1-hr TSP level and 24-hr TSP level recorded AMS7B by the Environmental Team of Contract No. HY/2013/04 during the reporting period.

8.1.3 For construction noise, no Action and Limit Level exceedance for noise recorded NMS2 and NMS3C by the ET of Contract No. HY/2013/04 during the report period.

8.1.4 For water quality monitoring, no Action Level and Limit Level exceedance of dissolved oxygen were recorded at mid-ebb tide and mid-flood tide by the ET of Contract No. HY/2013/04 during the report period. One Action Level exceedance of turbidity was recorded at mid-ebb tide on 24 October 2018 by the ET of Contract No. HY/2013/04 during the report period. No Action Level exceedances of turbidity were recorded at mid-flood tide and no Limit Level exceedances of turbidity by the ET of Contract No. HY/2013/04 during the report period. One Action Level exceedance of suspended solid was recorded at mid-flood tide on 10 October 2018 by the ET of Contract No. HY/2013/04 during the report period. No Action Level exceedances of suspended solid were recorded at mid-ebb tide and no Limit Level exceedances of suspended solid during the reporting month by the ET of Contract No. HY/2013/04 during the report period.

8.1.5 Impact dolphin monitoring results at all transects in October 2018 are reported in the EM&A Reports prepared for Contract No. HY/2013/04.

8.1.6 Environmental site inspections were carried out on 5, 10, 18, 24 and 31 October 2018 for the Contract No. HY/2013/01 (includes the construction works of Contract No. HY/2013/06 within Contract No. HY/2013/01 works area). Recommendations on remedial actions were given to the Contractor for the deficiencies identified during the site inspections.

8.1.7 There was no complaint received in relation to the environmental impact during the reporting period.

8.1.8 No notification of summons and successful prosecution was received during the reporting period.

FIGURES

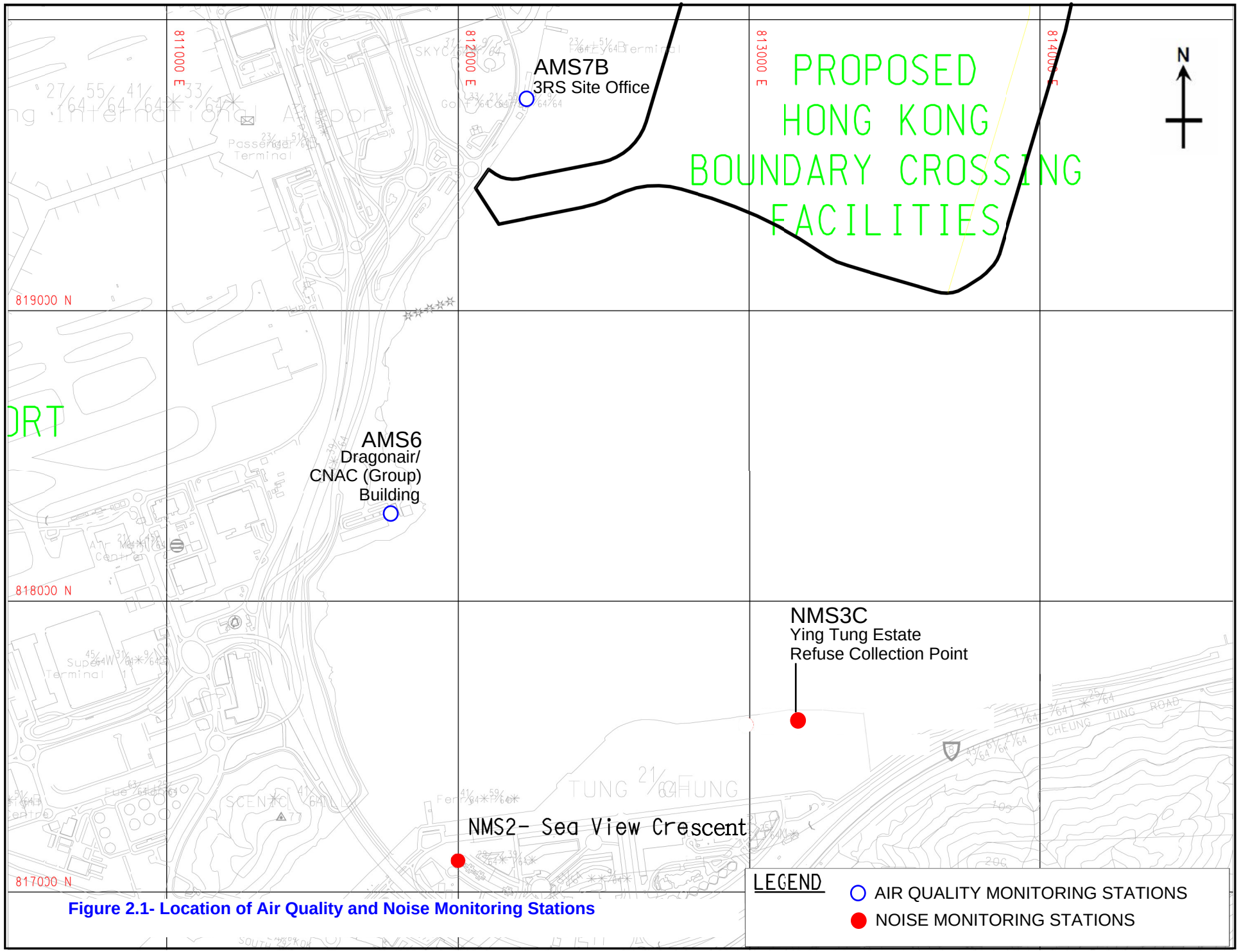
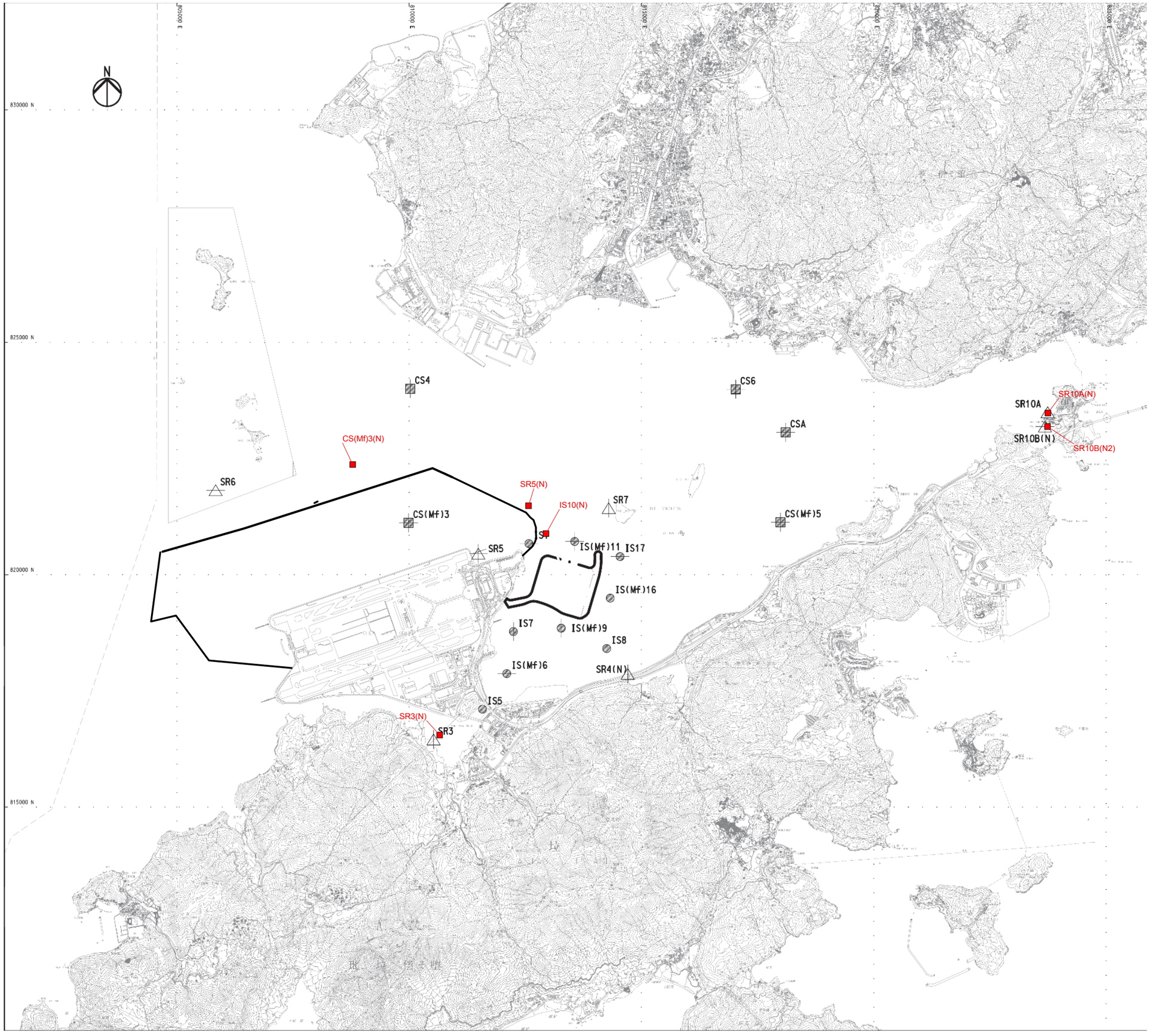


Figure 2.1- Location of Air Quality and Noise Monitoring Stations



Station	East	North
IS5	811579	817106
IS(Mf)6	812101	817873
IS7	812244	818777
IS8	814251	818412
IS(Mf)9	813273	818850
IS10(N)	812942	820881
IS(Mf)11	813562	820716
IS(Mf)16	814328	819497
IS17	814539	820391
SR3(N)	810689	816591
SR4(N)	814705	817859
SR5(N)	812569	821475
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SR10A(N)	823644	823484
SR10B(N2)	823689	823159
CS(Mf)3(N)	808814	822355
CS(Mf)5	817990	821129
CS4	810025	824004
CS6	817028	823992
CSA	818103	823064

FIGURE 4.1– LOCATION OF WATER QUALITY MONITORING STATIONS

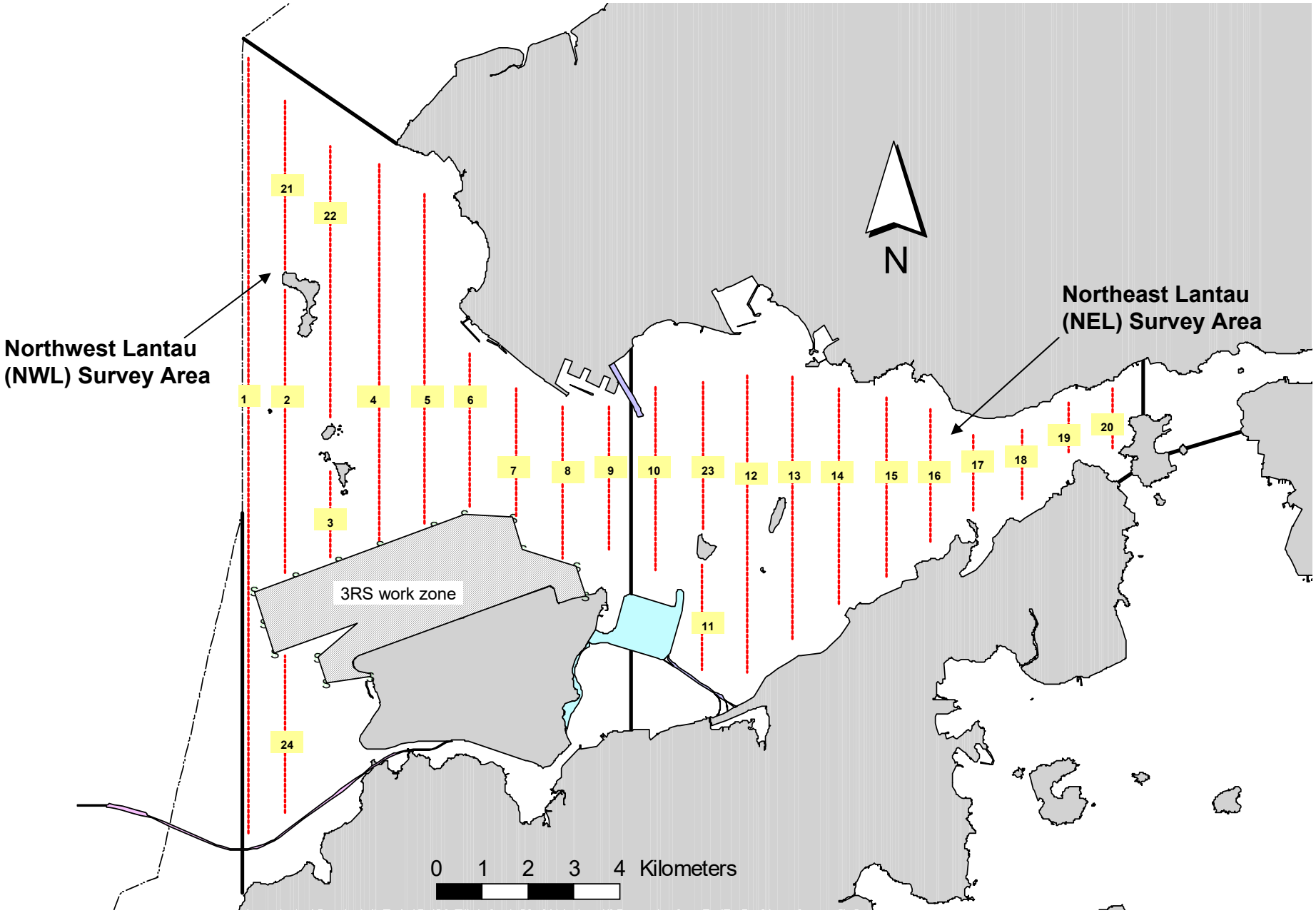
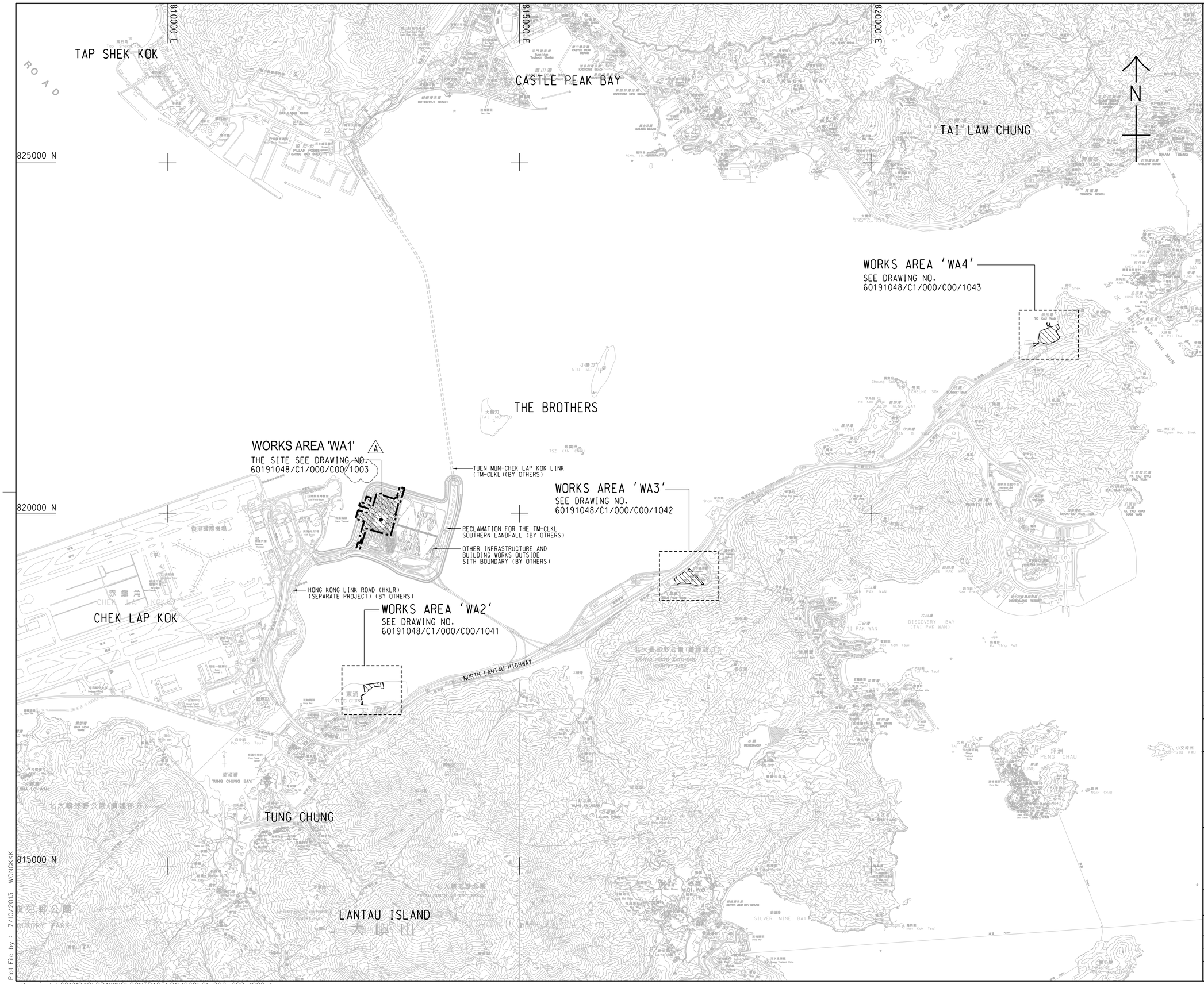


Figure 5.1 Transect Line Layout in Northwest and Northeast Lantau Survey Areas

APPENDIX A

Location of Works Areas



NOTES:

1. COORDINATES ARE RELATED TO HONG KONG METRIC GRID (1980).
2. DIMENSIONS ARE IN MILLIMETER AND CHAINAGE ARE IN METRES UNLESS OTHERWISE SHOWN.
3. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NOS. 60191048/C1/000/C00/1041 TO 1043.

LEGEND: A A

SITE BOUNDARY

WORKS AREA

REV. 修訂	DESCRIPTION 內容摘要	D.E. P.E. CHECKED 查核	DATE 日期
B	WORKING DRAWING	BWCW SCI	JUN.14
A	TENDER ADDENDUM NO. 1	BWCW SCI	OCT.13
-	TENDER DRAWING	BWCW SCI	SEP.13

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

HONG KONG-ZHUHAI-MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- PASSENGER CLEARANCE BUILDING

SITE LOCATION PLAN

AECOM
Rogers Stirk Harbour + Partners
BURO HAPPOLD ATKINS ADI
Aedas

DRG.NO. 圖紙編號 60191048/C1/000/C00/1000B

DESIGNED BY 設計	BWCW	CONTRACT NO. 合約編號	HY/2013/01
DRAWN BY 繪圖	WSY	P. Dir. APPROVED 負責人	TKH
SCALE 比例	A1 1 : 25000	STATUS 階段	WORKING DRAWING
DIMENSIONS ARE IN 尺寸單位	METRES	© COPYRIGHT RESERVED 版權所有	

Plot File by : 7/10/2013 WONGKKK

p:\projects\60191048\DRAWING\CONTRACT\C1\1000\C1_000_C00_1000.dgn

812500 E

813000 E

813500 E

820500 N

820000 N

819500 N

SKYCITY

GATE 2 TO BE CONSTRUCTED
WHEN HY/2013/02 CONTRACTOR
TAKE OVER PORTION 1

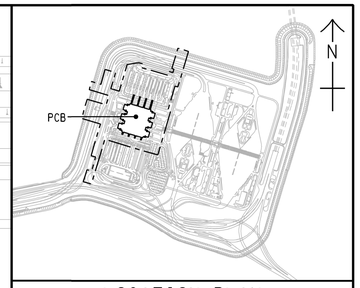
HAUL ROAD TO BE CONSTRUCTED
DIVERTED, MANAGED AND MAINTAINED
BY HY/2013/01 CONTRACT

C3

GATE TO BE CONSTRUCTED
BY CLP

MARINE LOADING AND UNLOADING
POINTS, EXACT LOCATION AND
EXTENT TO BE LIAISED AND
CONFIRMED WITH HY/2013/02
CONTRACTOR

GATE 1 TO BE CONSTRUCTED
AT THE COMMENCEMENT OF THE CONTRACT



LOCATION PLAN
SCALE 1 : 20000

NOTES:

1. COORDINATES ARE BASED ON HONG KONG METRIC GRID (1980) UNLESS OTHERWISE NOTED.
2. LEVELS ARE IN METRES RELATIVE TO HONG KONG PRINCIPAL DATUM (mPD) UNLESS OTHERWISE NOTED.
3. DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
4. SETTING OUT, DIMENSIONS, LEVELS, COORDINATES ARE TO BE CALCULATED BY THE CONTRACTOR. NO INFORMATION SHOULD BE SCALED PHYSICALLY OR ELECTRONICALLY FROM THE DRAWINGS OR FILES.
5. SITE ACCESS SHALL BE HARD PAVED WITH PROPER DRAINAGE PROVIDED. IT SHALL BE KEPT UNOBSTRUCTED AND UNDISRUPTED AT ALL TIMES.

LEGEND:

SITE BOUNDARY

7.3m CLEAR WIDTH
CONSTRUCTION HAUL ROAD

INDICATIVE 20m WIDE
VEHICULAR ACCESS
BY RECLAMATION
CONTRACT HY/2010/02

REV. 修訂	DESCRIPTION 內容摘要	D.E.	P.E. CHECKED 查核	DATE 日期
-	TENDER DRAWING	BWCW	SCI	SEP.13

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

HONG KONG-ZHUHAI-MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- PASSENGER CLEARANCE BUILDING

WORKS AREA WA1

AECOM
Rogers Stirk Harbour + Partners
BURO HAPPOLD ATKINS ADI
Aedas

DRG.NO. 圖紙編號 60191048/C1/000/C00/1044

DESIGNED BY 設計	CONTRACT NO. 合約編號	P. Dir. APPROVED 負責人
BWCW	HY/2013/01	EMSC
DRAWN BY 繪圖 WSY	STATUS 階段	
SCALE 比例 A1 1 : 2500		
DIMENSIONS ARE IN 尺寸單位 METRES		

Plot File by : 2013/9/10 WANGSY

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812600 E

812800 E

813000 E

817600 N

817400 N

N

WORKS AREA OCCUPIED BY
CONTRACT NO. HY/2010/02

COMMON ACCESS TO BE PROVIDED
AND MAINTAINED BY
CONTRACT NO. HY/2010/02

YING HEI ROAD

迎禧路

單車徑 Cycling Track

巴士 Bus

的士 Taxi

小巴 Minibus

HWM

Nullah

Podium (Car Park under)

Club House

Basketball Court

Playground

Ho Yu College (Sponsored by Sik Sik Yuen)

Ho Yu College and Primary School (Sponsored by Sik Sik Yuen)

Ho Yu Primary School (Sponsored by Sik Sik Yuen)

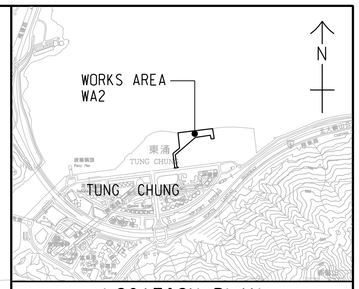
CARIBBEAN COAST

Monterey Cove Tower

Road

POINT	EASTING	NORTHING
201	813071.417	817531.755
202	813046.124	817528.520
203	813041.528	817559.119
204	812918.331	817540.618
205	812754.843	817398.454
206	812767.133	817302.381
207	812780.486	817294.062
208	812745.200	817289.613
209	812752.963	817300.569
210	812748.782	817300.034
211	812734.825	817409.146
212	812788.988	817454.350
213	812777.075	817578.404
214	813058.837	817612.753
215	812925.889	817596.485
216	812931.852	817542.648
217	812930.654	817552.515
218	812909.983	817549.657
219	812802.930	817457.358
220	812798.921	817461.656
221	812788.702	817458.876

SETTING OUT POINT



LOCATION PLAN
SCALE 1 : 25000

NOTES:

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

LEGEND:

- WORKS AREA BOUNDARY
- PORTION 2.1
- PORTION 2.2
- PORTION 2.3

REV. 修訂	DESCRIPTION 內容摘要	BY CHECKED 複核	DATE 日期
B	WORKING DRAWING	BWCW SCI	JUN.14
A	TENDER ADDENDUM NO. 1	BWCW SCI	OCT.13
-	TENDER DRAWING	BWCW SCI	SEP.13

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

HONG KONG-ZHUHAI-MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- PASSENGER CLEARANCE BUILDING

WORKS AREA WA2

AECOM
Rogers Stirk Harbour + Partners
BURO HAPPOLD ATKINS ADI
Aedas

DRG.NO. 圖紙編號 60191048/C1/000/C00/1041B

DESIGNED BY 設計	BWCW	CONTRACT NO. 合約編號	HY/2013/01
P. Dir. APPROVED 負責人	TKH		
DRAWN BY 繪圖	WSY	STATUS 階段	WORKING DRAWING
SCALE 比例	A1 1 : 1000		
DIMENSIONS ARE IN 尺寸單位	METRES		

Plot File by : 7/10/2013 WONGKKK

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SETTING OUT POINT

POINT	EASTING	NORTHING
301	817467.265	819162.683
302	817314.741	819069.828
303	817327.338	819049.295
304	817440.865	819117.811
305	817340.825	819027.314
306	817387.350	819023.403
307	817387.861	819043.396
308	817466.133	819091.047
309	817469.783	819087.181
310	817513.449	819113.764
311	817347.717	819016.082
312	817526.774	819020.578
313	817531.659	819021.641
314	817531.154	819001.065
315	817533.345	818991.306
316	817620.269	819000.620

817200 E

817400 E

817600 E

819200 N

819000 N

NORTH LANTAU HIGHWAY

CHEUNG TUNG ROAD

小濠灣污水處理廠
Siu Ho Wan Sewage Treatment Works

WORKS AREA OCCUPIED BY CONTRACT NO. HY/2011/03

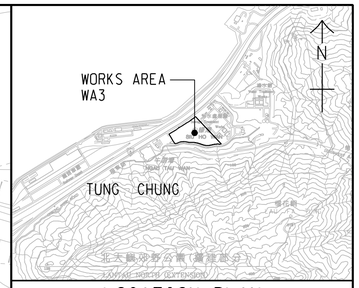
WORKS AREA OCCUPIED BY CONTRACT NO. HY/2011/09

10m WIDE COMMON ACCESS TO BE MAINTAINED BY CONTRACT NO. HY/2010/02

301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316

WORKS AREA OCCUPIED BY CONTRACT NO. HY/2010/02

10m WIDE COMMON ACCESS TO BE CONSTRUCTED AND INITIALLY MAINTAINED BY CONTRACT NO. HY/2013/01. UPON COMMENCEMENT OF CONTRACT NO. HY/2013/03, THE MAINTENANCE RESPONSIBILITY SHALL BE TRANSFERRED FROM CONTRACT NO. HY/2013/01 TO CONTRACT NO. HY/2013/03.



LOCATION PLAN
SCALE 1 : 25000

NOTES:

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

LEGEND:

- WORKS AREA BOUNDARY
- PORTION 3.1
- PORTION 3.2
- PORTION 3.3
- PORTION 3.4
- PORTION 3.5
- PORTION 3.6
- PORTION 3.7
- PORTION 3.8
- PORTION 3.9

REV. 修訂	DESCRIPTION 內容摘要	DRAWN 繪圖	CHECKED 查核	DATE 日期
A	WORKING DRAWING	BWCW	SCT	JUN.14
-	TENDER DRAWING	BWCW	SCT	SEP.13

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

HONG KONG-ZHUHAI-MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- PASSENGER CLEARANCE BUILDING

WORKS AREA WA3

AECOM
Rogers Stirk Harbour + Partners
BURO HAPPOLD ATKINS ADI
Aedas

DRG.NO. 圖紙編號 60191048/C1/000/C00/1042A

DESIGNED BY 設計 BWCW	CONTRACT NO. 合約編號 HY/2013/01	P. Dir. APPROVED 負責人 TKH
DRAWN BY 繪圖 WSY	STATUS 階段 **WORKING DRAWING**	
SCALE 比例 A1 1 : 1000		
DIMENSIONS ARE IN 尺寸單位 METRES	© COPYRIGHT RESERVED 版權所有	

Plot File by : 2013/9/10 WANGSY

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SETTING OUT POINT

POINT	EASTING	NORTHING
401	822488.151	822632.315
402	822640.593	822689.415
403	822515.608	822559.848
404	822610.940	822599.642
405	822629.428	822607.359
406	822526.988	822529.813
407	822618.348	822567.950
408	822542.232	822489.581
409	822584.983	822507.426
410	822606.866	822516.561
411	822560.278	822441.956
412	822602.949	822460.010
413	822621.914	822467.959
414	822624.130	822470.998
415	822651.725	822508.856

822600 N

822400 E

822600 E

822400 N

TO KAU WAN

401 402 403 404 405 406 407 408 409 410 411 412 413 414 415

WORKS AREA OCCUPIED BY CONTRACT NO. HY/2011/03

WORKS AREA OCCUPIED BY CONTRACT NO. HY/2011/09

WORKS AREA OCCUPIED BY CONTRACT NO. HY/2013/05

9m WIDE COMMON ACCESS TO BE CONSTRUCTED AND MAINTAINED BY CONTRACT NO. HY/2013/01

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

NORTH LANTAU HIGHWAY

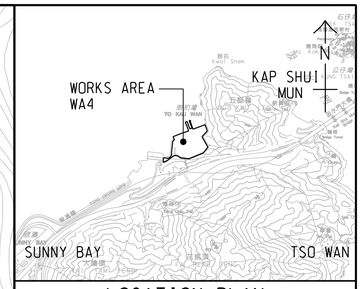
大青洲 TAI TSING CHAU

船廠 Shipyard

海堤 Seawall

碎石 Rubble

隧道 Tunnel



LOCATION PLAN
SCALE 1 : 25000

NOTES:

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

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

REV. 修訂	DESCRIPTION 內容摘要	D.C.	P.C. CHECKED 審核	DATE 日期
-	TENDER DRAWING	BWCW	SCI	SEP.13

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

HONG KONG-ZHUHAI-MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- PASSENGER CLEARANCE BUILDING

WORKS AREA WA4

AECOM
Rogers Stirk Harbour + Partners
BURO HAPPOLD ATKINS ADI
Aedas

DRG.NO. 圖紙編號 60191048/C1/000/C00/1043

DESIGNED BY 設計	BWCW	CONTRACT NO. 合約編號	HY/2013/01	P. Dir. APPROVED 批准人	EMSC
DRAWN BY 繪圖	WSY	STATUS 階段			
SCALE 比例	A1 1 : 1000				
DIMENSIONS ARE IN 尺寸單位	METRES				

Plot File by : 2013/9/10 WANGSY

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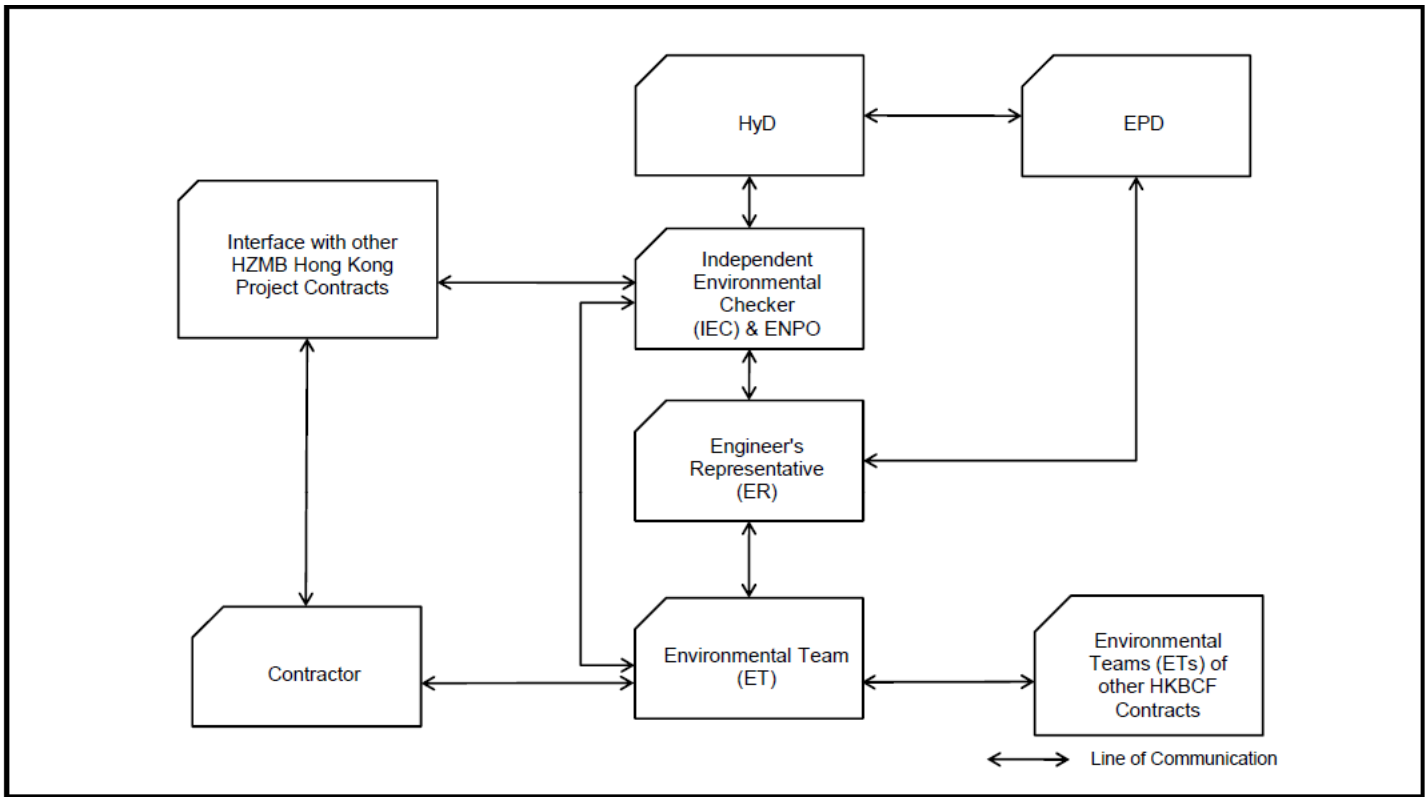
APPENDIX B

Project Organization for Environmental Works

Project Organisation for Environmental Works



APPENDIX C

Construction Programme

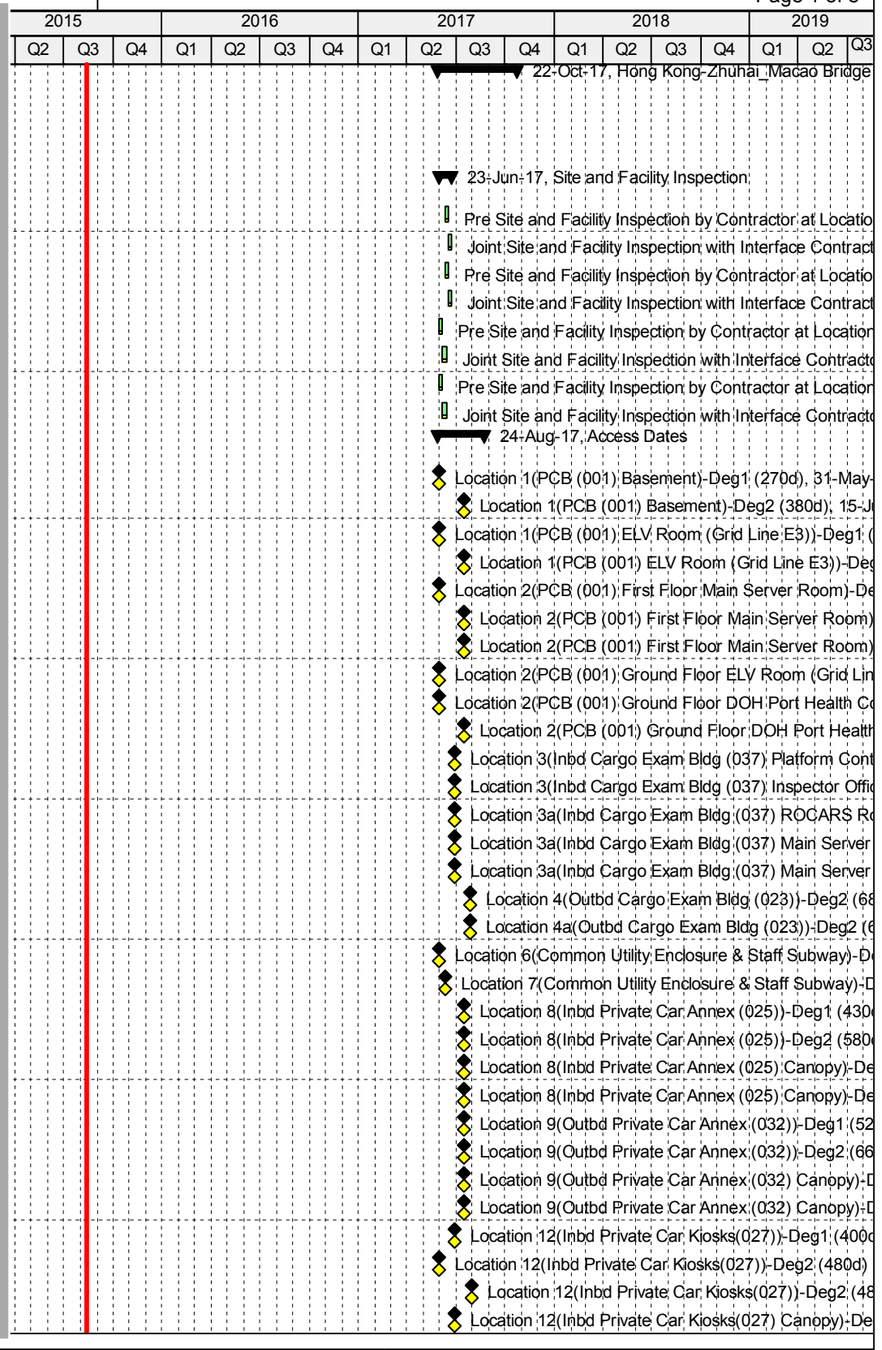
CONSTRUCTION SCHEDULE

Leighton - Chun Wo Joint Venture

TASK DESCRIPTION	2018		
	Oct	Nov	Dec
Remaining Work			
Maintenance Work upon request			

Updated in November 2018

Activity ID	Activity Name
	Hong Kong-Zhuhai_Macao Bridge Hong Kong Boundary Crossing F
	Key Dates
	Interface Activities
	Site and Facility Inspection
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
	Access Dates
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 (3
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 BD5)) -
AD1090	Location 2(PCB (001) Ground Floor DOH Port Health Control Room (Grid Line BD5)) -
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 -
AD1220	Location 4(Outbd Cargo Exam Bldg (023))-Deg2 (680d)
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 (400d) 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-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
10-Mar-17	Rev.: 1.0a	WC	LC
5-May-17	Rev.: 1.0b	WC	LC

Activity ID	Activity Name
AD1530	Location 12(Inbd Private Car Kiosks(027) Canopy)-Deg2 (480d) Phase 1
AD1531	Location 12(Inbd Private Car Kiosks(027) Canopy)-Deg2 (480d) Phase 2
AD1540	Location 12(Inbd GV Kiosks (028))-Deg1 (400d) Phase 1
AD1541	Location 12(Inbd GV Kiosks (028))-Deg1 (400d) Phase 2
AD1550	Location 12(Inbd GV Kiosks (028))-Deg2 (480d) Phase 1
AD1551	Location 12(Inbd GV Kiosks (028))-Deg2 (480d) Phase 2
AD1560	Location 12(Inbd GV Kiosks (028) Canopy)-Deg1 (400d) Phase 1
AD1561	Location 12(Inbd GV Kiosks (028) Canopy)-Deg1 (400d) Phase 2
AD1570	Location 12(Inbd GV Kiosks (028) Canopy)-Deg2 (480d) Phase 1
AD1571	Location 12(Inbd GV Kiosks (028) Canopy)-Deg2 (480d) Phase 2
AD1580	Location 12(Outbd GV Kiosks (029))-Deg1 (400d) Phase 1
AD1581	Location 12(Outbd GV Kiosks (029))-Deg1 (400d) Phase 2
AD1590	Location 12(Outbd GV Kiosks (029))-Deg2 (480d) Phase 1
AD1591	Location 12(Outbd GV Kiosks (029))-Deg2 (480d) Phase 2
AD1600	Location 12(Outbd GV Kiosks (029) Canopy)-Deg1 (400d) Phase 1
AD1601	Location 12(Outbd GV Kiosks (029) Canopy)-Deg1 (400d) Phase 2
AD1610	Location 12(Outbd GV Kiosks (029) Canopy)-Deg2 (480d) Phase 1
AD1611	Location 12(Outbd GV Kiosks (029) Canopy)-Deg2 (480d) Phase 2
AD1620	Location 13(Outbd Private Car Kiosks (030))-Deg1 (480d) Phase 1
AD1630	Location 13(Outbd Private Car Kiosks (030))-Deg2 (550d) Phase 1
AD1640	Location 13(Outbd Private Car Kiosks (030) Canopy)-Deg1 (480d) Phase 1
AD1650	Location 13(Outbd Private Car Kiosks (030) Canopy)-Deg2 (550d) Phase 1
AD1660	Location 14(Future-Outbd/Inbd Private Car Kiosks)-Deg1 (610d)
AD1670	Location 14(Future-Outbd/Inbd Private Car Kiosks)-Deg2 (680d)
AD1700	Location 16(Outbd Traffic Control Kiosk (101))-Deg1 (400d)
AD1710	Location 16(Outbd Traffic Control Kiosk (101))-Deg2 (480d)
AD1740	Location 18(Outbd Private Car Exam Bldg(024))-Deg1 (-)
AD1750	Location 18(Outbd Private Car Exam Bldg(024))-Deg2 (670d)
AD1780	(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) btw 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) Underground Ducting (UUD3.1) between CUE to Outbd Cargo Exam Bldg (0
AD1850	(by C03) (UUD3.2) btw Outbd Car Exam Bldg (023) and Outbd PC Exam Bldg (024) an
AD1860	(byC03) (UUD4.1) between Outbd Private Car Exam Bldg (024) and Outbd Vehicle Cle
AD1870	(byC03) (UUD5) between Outbd Car Exam Bldg South (023[S]) and Outbd Vehicle Cle
AD1880	(by C03) Underground Ducting (UUD8) between CUE and Outbd PCA (032)
AD1910	(by C03) Inbound Vehicle Clearance Plaza
AD1920	(by C03) Outbound Vehicle Clearance Plaza
	Interfaces Provisions
	Mobilization Provisons
	WA4 Site Erection & Servicing

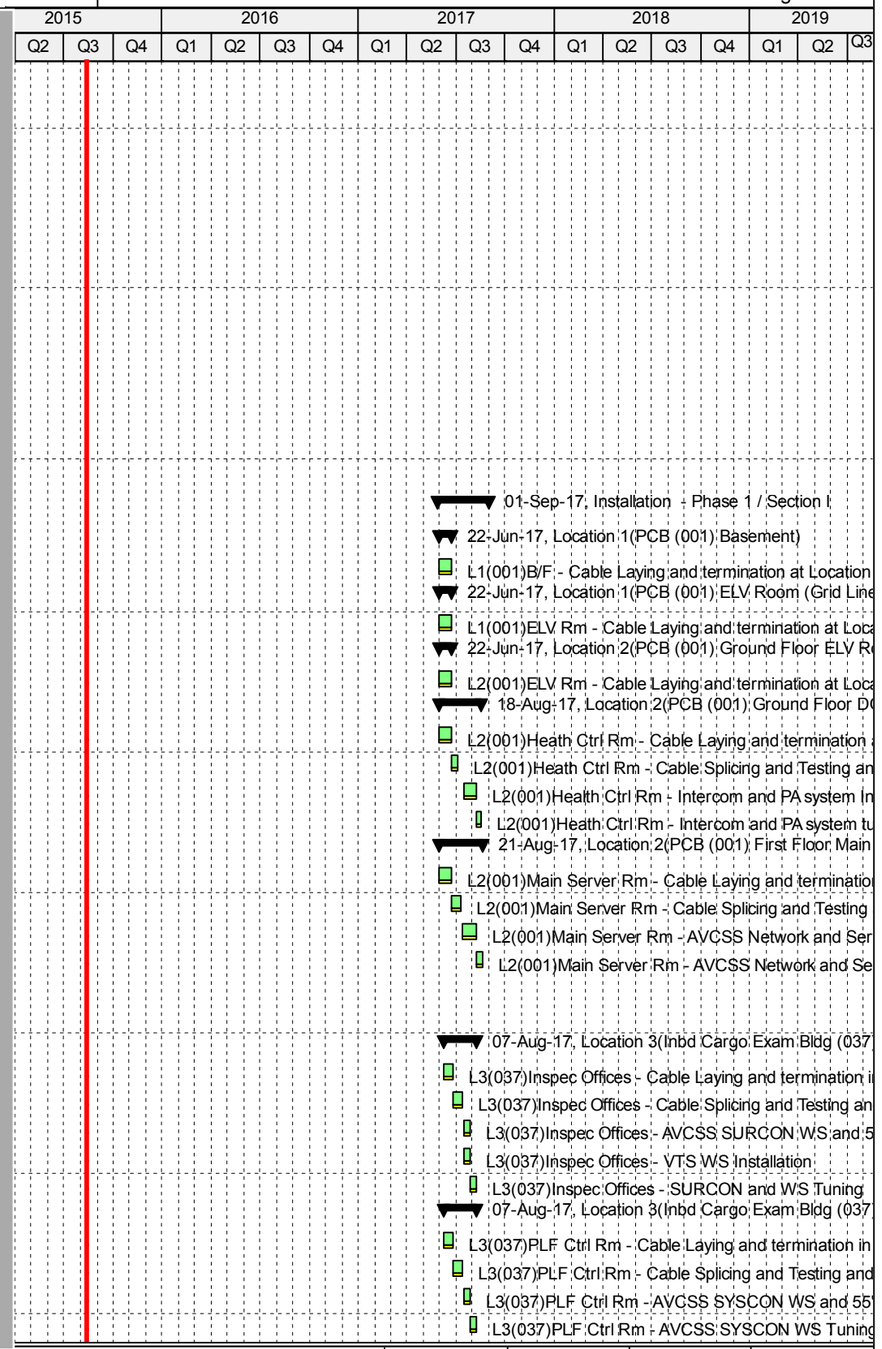
Programme No.: HZMB-DWP
Data Date: 14-Aug-15

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
10-Mar-17	Rev.: 1.0a	WC	LC
5-May-17	Rev.: 1.0b	WC	LC

Activity ID	Activity Name
	Detailed Design Specification
	Contruction Design and Management
	Supply/Manufacture Mock-up items
	Supply/Manufacture prototypes
	Software Design, Coding and Testing
	Coding
	Software System Inetgration
	Prototype & Software Simulation Tests
	Procurement - Phase 1 / Section I
	Supply/Manufacture products for FAT
	Factory Acceptance Test (FAT)
	Supply/Manufacture Equipment
	Delivery and Bench Acceptance Test for Phase 1/ Section I
	Installation - Phase 1 / Section I
	Location 1(PCB (001) Basement)
EM1920	L1(001)B/F - Cable Laying and termination at Location 1 and Location 2
	Location 1(PCB (001) ELV Room (Grid Line E3))
EM1940	L1(001)ELV Rm - Cable Laying and termination at Location 1 and Location 2
	Location 2(PCB (001) Ground Floor ELV Room (Grid Line E3))
EM1960	L2(001)ELV Rm - Cable Laying and termination at Location 1 and Location 2
	Location 2(PCB (001) Ground Floor DOH Port Health Control Room (Grid Line BD5))
EM1080	L2(001)Heath Ctrl Rm - Cable Laying and termination at Location 1 and Location 2
EM1100	L2(001)Heath Ctrl Rm - Cable Splicing and Testing and Labeling
EM1120	L2(001)Health Ctrl Rm - Intercom and PA system Installation
EM1140	L2(001)Heath Ctrl Rm - Intercom and PA system tuning
	Location 2(PCB (001) First Floor Main Server Room)
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
	Location 3(Inbd Cargo Exam Bldg (037) MDF Room)
	Location 3(Inbd Cargo Exam Bldg (037) ELV Room)
	Location 3(Inbd Cargo Exam Bldg (037) Inspector Offices 128,129,130,131,128,129,14
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
	Location 3(Inbd Cargo Exam Bldg (037) Platform Control Room)
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



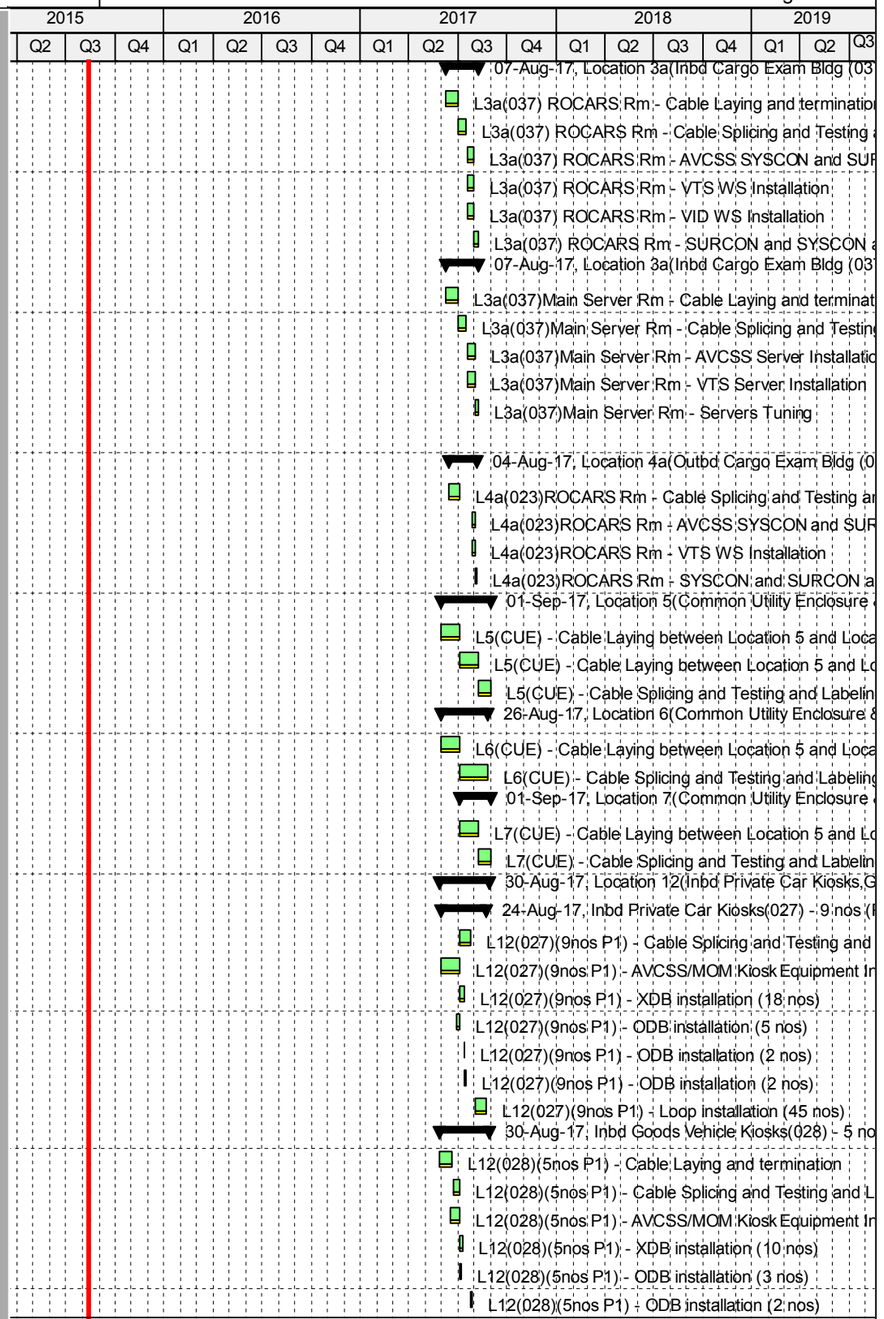
Programme No.: HZMB-DWP
Data Date: 14-Aug-15

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
10-Mar-17	Rev.: 1.0a	WC	LC
5-May-17	Rev.: 1.0b	WC	LC

Activity ID	Activity Name
Location 3a(Inbd Cargo Exam Bldg (037) ROCARS Room)	
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 SYSCON and WS Tuning
Location 3a(Inbd Cargo Exam Bldg (037) Main Server Room)	
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
Location 4(Outbd Cargo Exam Bldg (023) MDF Room)	
Location 4a(Outbd Cargo Exam Bldg (023) ROCARS Room)	
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 SURCON and WS Tuning
Location 5(Common Utility Enclosure & Staff Subway)	
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
Location 6(Common Utility Enclosure & Staff Subway)	
EM2400	L6(CUE) - Cable Laying between Location 5 and Location 6
EM2420	L6(CUE) - Cable Splicing and Testing and Labeling
Location 7(Common Utility Enclosure & Staff Subway)	
EM2440	L7(CUE) - Cable Laying between Location 5 and Location 7
EM2460	L7(CUE) - Cable Splicing and Testing and Labeling
Location 12(Inbd Private Car Kiosks,GV Kiosks (027,028,029))	
Inbd Private Car Kiosks(027) - 9 nos (Phase 1)	
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)
Inbd Goods Vehicle Kiosks(028) - 5 nos (Phase 1)	
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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- 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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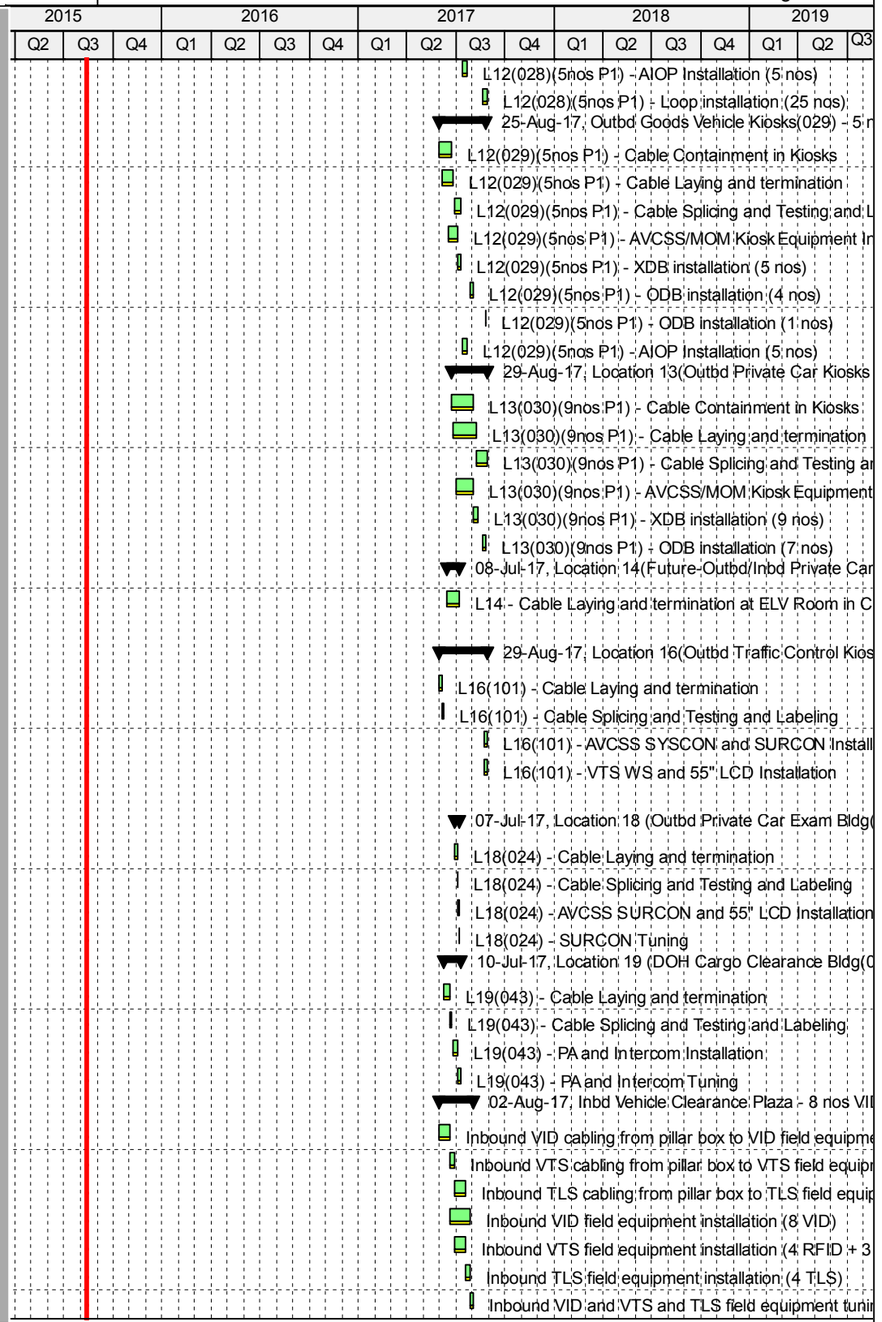
Activity ID	Activity Name
EM1700	L12(028)(5nos P1) - AIOP Installation (5 nos)
EM1720	L12(028)(5nos P1) - Loop installation (25 nos)
Outbd Goods Vehicle Kiosks(029) - 5 nos (Phase 1)	
EM1740	L12(029)(5nos P1) - Cable Containment in Kiosks
EM1760	L12(029)(5nos P1) - Cable Laying and termination
EM1780	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) - AIOP Installation (5 nos)
Location 13(Outbd Private Car Kiosks (030)) - 9 nos (Phase 1)	
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)
Location 14(Future-Outbd/Inbd Private Car Kiosks) - 6+6 nos	
EM1440	L14 - Cable Laying and termination at ELV Room in CUE
Location 15(Inbd Traffic Control Kiosk (100))	
Location 16(Outbd Traffic Control Kiosk (101))	
EM2760	L16(101) - Cable Laying and termination
EM2780	L16(101) - Cable Splicing and Testing and Labeling
EM2800	L16(101) - AVCSS SYSCON and SURCON Installation
EM2820	L16(101) - VTS WS and 55" LCD Installation
Location 17(Inbd Private Car Exam Bldg(033) Operational Office)	
Location 18 (Outbd Private Car Exam Bldg(024) Operational Office)	
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
Location 19 (DOH Cargo Clearance Bldg(043))	
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
Inbd Vehicle Clearance Plaza - 8 nos VID, 7 nos VTS, 4 nos TLS	
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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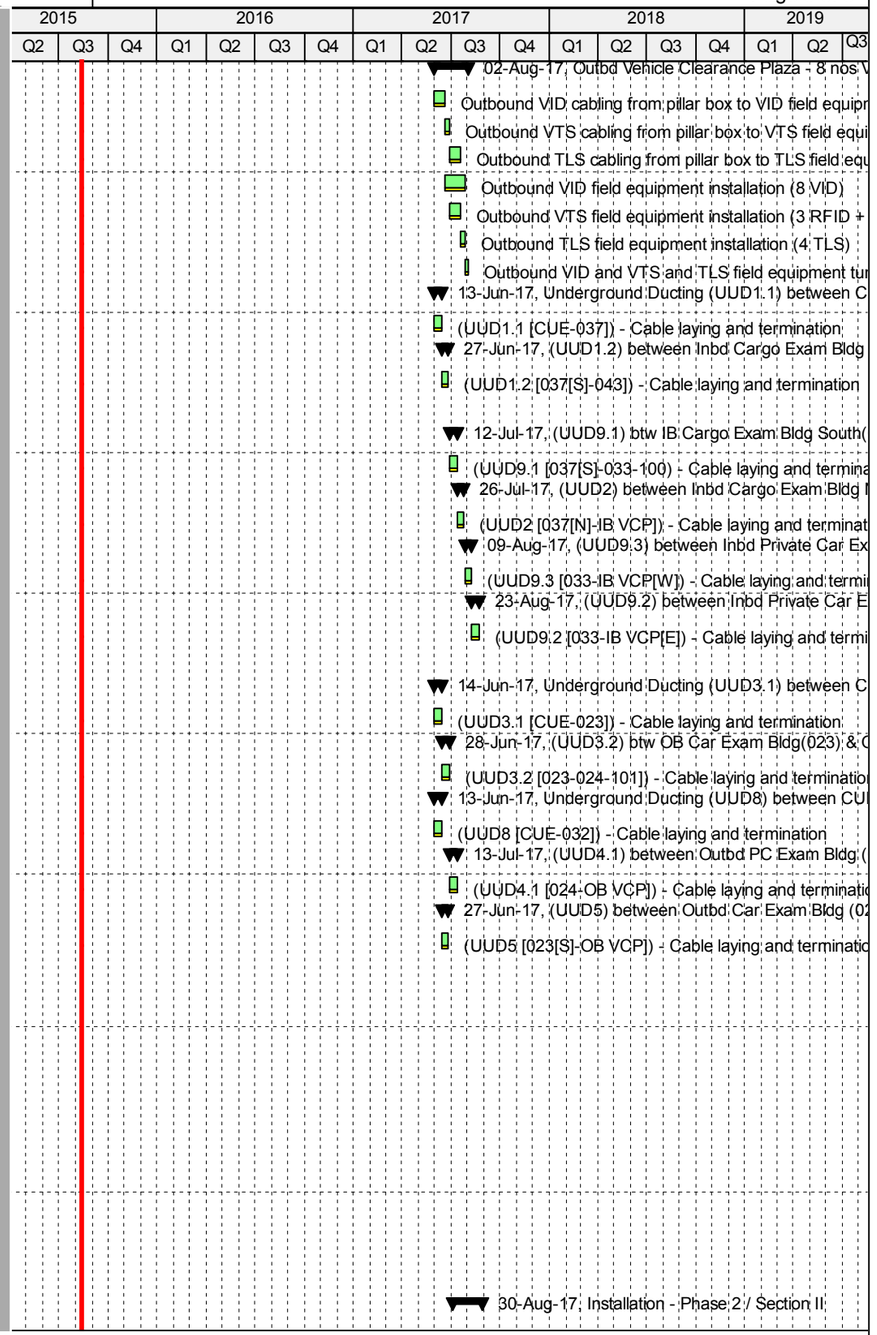
Activity ID	Activity Name
	Outbd Vehicle Clearance Plaza - 8 nos VID, 6 nos VTS, 4 nos TLS
EM3160	Outbound VID cabling from pillar box to VID field equipment
EM3180	Outbound VTS cabling from pillar box to VTS field equipment
EM3200	Outbound TLS cabling from pillar box to TLS field equipment
EM3220	Outbound 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
	Underground Ducting (UUD1.1) between CUE and Inbd Cargo Exam Bldg (037)
UD1000	(UUD1.1 [CUE-037]) - Cable laying and termination
	(UUD1.2) between Inbd Cargo Exam Bldg South (037[S]) and DOH Cargo Clearance Bl
UD1060	(UUD1.2 [037[S]-043]) - Cable laying and termination
	Underground Ducting (UUD6) between CUE and Shuttle Bus Kiosk (006) and Inbd Priv
	(UUD9.1) btw IB Cargo Exam Bldg South(037[S]) & IB PC Exam Bldg(033) & IB Traffic
UD1040	(UUD9.1 [037[S]-033-100) - Cable laying and termination
	(UUD2) between Inbd Cargo Exam Bldg North (037[N]) to Inbd VCP
UD1010	(UUD2 [037[N]-IB VCP]) - Cable laying and termination
	(UUD9.3) between Inbd Private Car Exam Bldg (033) and Inbd Vehicle Clearance Plaza
UD1070	(UUD9.3 [033-IB VCP[W]) - Cable laying and termination
	(UUD9.2) between Inbd Private Car Exam Bldg (033) and Inbd Vehicle Clearance Plaza
UD1020	(UUD9.2 [033-IB VCP[E]) - Cable laying and termination
	Underground Ducting (UUD7) between PCB(001) and Inbd Coach Kiosks(010)
	Underground Ducting (UUD3.1) between CUE and Outbd Cargo Exam Bldg (023)
UD1030	(UUD3.1 [CUE-023]) - Cable laying and termination
	(UUD3.2) btw OB Car Exam Bldg(023) & OB PC Exam Bldg(024) & OB Traffic Control I
UD1050	(UUD3.2 [023-024-101]) - Cable laying and termination
	Underground Ducting (UUD8) between CUE and Outbd PCA (032)
UD1100	(UUD8 [CUE-032]) - Cable laying and termination
	(UUD4.1) between Outbd PC Exam Bldg (024) and Outbd Vehicle Clearance Plaza
UD1080	(UUD4.1 [024-OB VCP]) - Cable laying and termination
	(UUD5) between Outbd Car Exam Bldg (023[S]) and Outbd Vehicle Clearance Plaza
UD1090	(UUD5 [023[S]-OB VCP]) - Cable laying and termination
	Initial On-Site Test and Commissioning / Pre-SAT (Phase 1 / Section I)
	Site Acceptance Test (Phase 1 / Section I)
	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
	Installation - Phase 2 / Section II



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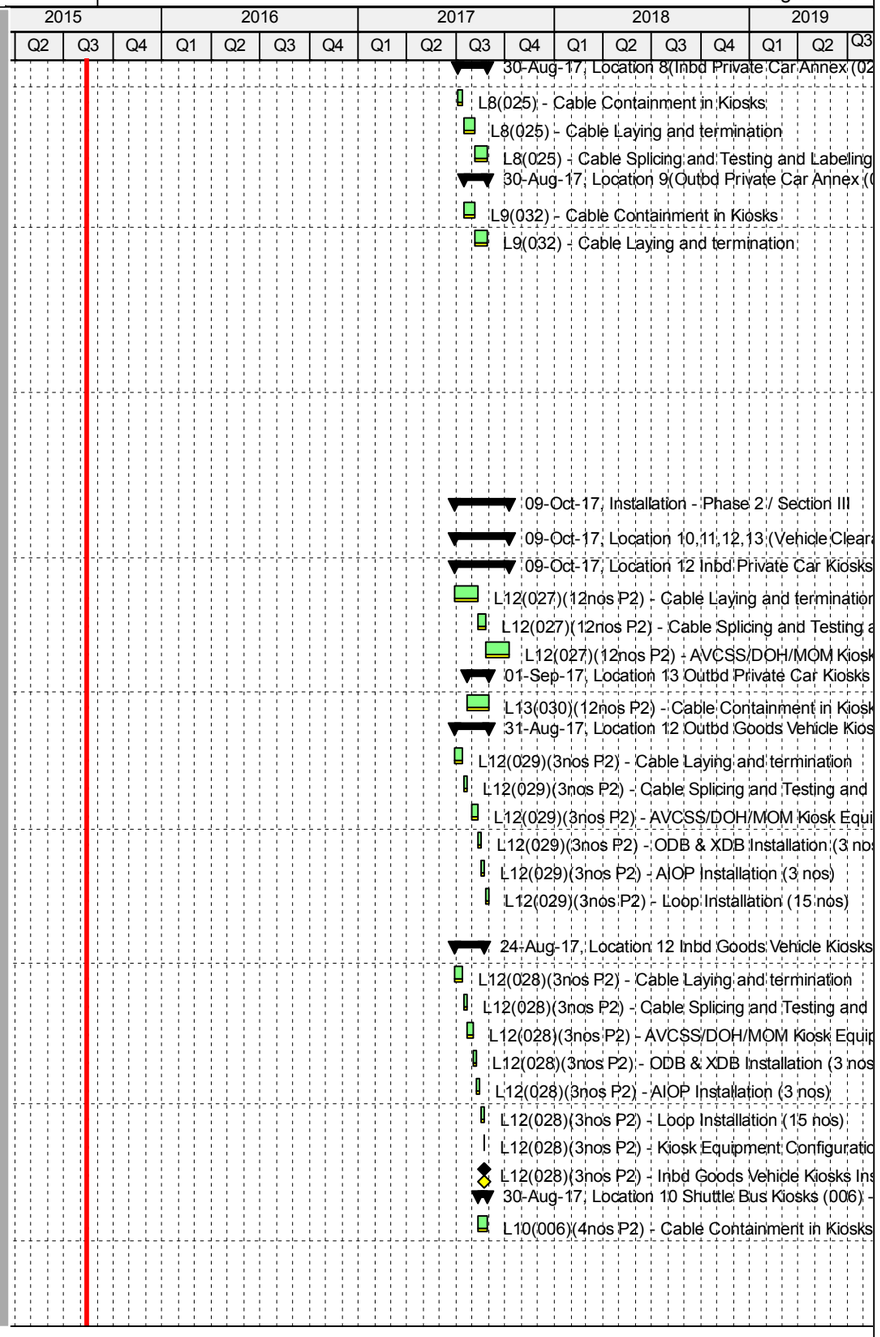
Activity ID	Activity Name
	Location 8(Inbd Private Car Annex (025)) (Phase 2)
EM3370	L8(025) - Cable Containment in Kiosks
EM3380	L8(025) - Cable Laying and termination
EM3400	L8(025) - Cable Splicing and Testing and Labeling
	Location 9(Outbd Private Car Annex (032)) (Phase 2)
EM3500	L9(032) - Cable Containment in Kiosks
EM3520	L9(032) - Cable Laying and termination
	Initial On-Site Test and Commissioning / Pre-SAT (Phase 2 / Section II)
	Site Acceptance Test (Phase 2 / Section II)
	Operability Period Test (Phase 2 / Section II)
	Completion (Phase 2 / Section II)
	Engineering Support for Phase 2 / Section II
	Procurement for Phase2 / Section III
	Delivery and Bench Acceptance Test for Phase2 / Section III
	Installation - Phase 2 / Section III
	Location 10,11,12,13 (Vehicle Clearance Kiosks)
	Location 12 Inbd Private Car Kiosks (027) - 12 nos (Phase 2)
EM4440	L12(027)(12nos P2) - Cable Laying and termination
EM4460	L12(027)(12nos P2) - Cable Splicing and Testing and Labeling
EM4480	L12(027)(12nos P2) - AVCSS/DOH/MOM Kiosk Equipment Installation (12 nos)
	Location 13 Outbd Private Car Kiosks (030) - 12 nos (Phase 2)
EM4560	L13(030)(12nos P2) - Cable Containment in Kiosks
	Location 12 Outbd Goods Vehicle Kiosks (029) - 3 nos (Phase 2)
EM4880	L12(029)(3nos P2) - Cable Laying and termination
EM4900	L12(029)(3nos P2) - Cable Splicing and Testing and Labeling
EM4920	L12(029)(3nos P2) - AVCSS/DOH/MOM Kiosk Equipment Installation (3 nos)
EM4940	L12(029)(3nos P2) - ODB & XDB Installation (3 nos)
EM4960	L12(029)(3nos P2) - AIOP Installation (3 nos)
EM4980	L12(029)(3nos P2) - Loop Installation (15 nos)
	Location 11 Outbd Coach Kiosks (009) - 4 nos (Phase 2)
	Location 12 Inbd Goods Vehicle Kiosks (028) - 3 nos (Phase 2)
EM4720	L12(028)(3nos P2) - Cable Laying and termination
EM4740	L12(028)(3nos P2) - Cable Splicing and Testing and Labeling
EM4760	L12(028)(3nos P2) - AVCSS/DOH/MOM Kiosk Equipment Installation (3 nos)
EM4780	L12(028)(3nos P2) - ODB & XDB Installation (3 nos)
EM4800	L12(028)(3nos P2) - AIOP Installation (3 nos)
EM4820	L12(028)(3nos P2) - Loop Installation (15 nos)
EM4840	L12(028)(3nos P2) - Kiosk Equipment Configuration (3 nos)
EM5120	L12(028)(3nos P2) - Inbd Goods Vehicle Kiosks Installation Complete
	Location 10 Shuttle Bus Kiosks (006) - 4 nos (Phase 2)
EM4000	L10(006)(4nos P2) - Cable Containment in Kiosks
	Location 11 Inbd Coach Kiosks (010) - 2 nos (Phase 2)-1
	Location 11 Inbd Coach Kiosks (010) - 2 nos (Phase 2)-2
	Initial On-Site Test and Commissioning / Pre-SAT (Phase 2 / Section III)



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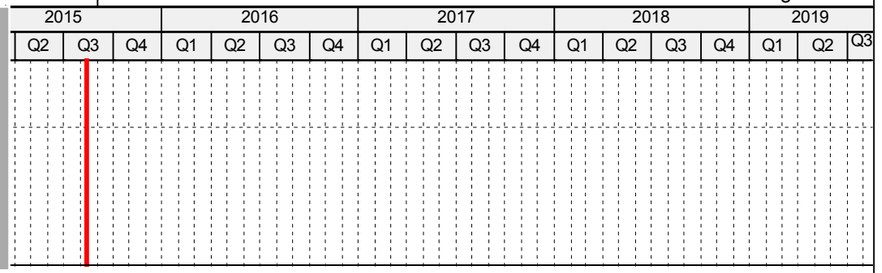
Activity ID	Activity Name
	Site Acceptance Test (Phase 2 / Section III)
	Operability Period Test (Phase 2 / Section III)
	Completion (Phase 2 / Section III)
	Operation (Phase 2 / Section III)
	Defect Liability Period (DLP)
	Document Submission (Phase 2 / Section III)



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APPENDIX D

(Not Used)

APPENDIX E

(Not Used)

APPENDIX F

(Not Used)

APPENDIX G

(Not Used)

APPENDIX H

Event and Action Plan

Event/Action Plan for Air Quality Monitoring

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
ACTION LEVEL				
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.
2. Exceedance for two or more consecutive samples	1. Identify source; 2. Inform IEC and ER; 3. Advise the ER on the effectiveness of the proposed remedial measures; 4. Repeat measurement s to confirm findings; 5. Increase monitoring frequency to daily; 6. Discuss with IEC and Contractor on remedial actions required; 7. If exceedance continues, arrange meeting with IEC and ER; 8. If exceedance stops, cease additional monitoring.	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. Submit proposals for remedial to ER within 3 working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate.

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
LIMIT LEVEL				
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.
2. Exceedance for two or more consecutive samples	1. Notify IEC, ER, Contractor and EPD; 2. Identify source; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency to daily; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring.	1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Ensure remedial measures properly implemented; 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.	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. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Event / Action Plan for Construction Noise Monitoring

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action Level	1. Notify IEC and Contractor; 2. Identify source, investigate the causes of exceedance and propose remedial measures; 3. Report the results of investigation to the IEC, ER and Contractor; 4. Discuss with the Contractor and formulate remedial measures; 5 Increase monitoring frequency to check mitigation effectiveness.	1. Review the analysed results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise problem; 4. Ensure remedial measures are properly implemented.	1. Submit noise mitigation proposals to IEC; 2. Implement noise mitigation proposals.
Limit Level	1. Inform IEC, ER, EPD and Contractor; 2. Identify source; 3. Repeat measurements to confirm findings; 4. Increase monitoring frequency; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Inform IEC, ER and EPD the causes and actions taken for the exceedances; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring.	1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractors remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise problem; 4. Ensure remedial measures properly implemented; 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.	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. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Event / Action Plan for Water Quality Monitoring

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action level being exceeded by one sampling day	1. Repeat in situ measurement to confirm findings; 2. Identify source(s) of impact; 3. Inform IEC, contractor and ER; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC, ER and Contractor; 6. Ensure mitigation measures are implemented; 7. Repeat measurement on next day of exceedance to confirm findings.	1. Check monitoring data submitted by ET and Contractor's working methods; 2. Discuss with ET and Contractor on possible remedial actions; 3. Review the proposed mitigation measures submitted by Contractor and advise the ER accordingly; 4. Assess the effectiveness of the implemented mitigation measures.	1. Confirm receipt of notification of non-compliance in writing; 2. Discuss with IEC on the proposed mitigation measures; 3. Make agreement on mitigation measures to be implemented; 4. Ensure mitigation measures are properly implemented.	1. Inform the ER and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment and consider changes of working methods; 4. Discuss with ET and IEC on possible remedial actions and propose mitigation measures to IEC and ER; 5. Implement the agreed mitigation measures. 6. Amend working methods if appropriate.
Action level being exceeded by two or more consecutive sampling days	1. Repeat in situ measurement to confirm findings; 2. Identify source(s) of impact; 3. Inform IEC, Contractor and ER; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC, ER and Contractor; 6. Ensure mitigation measures are implemented; 7. Increase the monitoring frequency to daily until no exceedance of Action level; 8. Repeat measurement on next day of exceedance to confirm findings.	1. Check monitoring data submitted by ET and Contractor's working method; 2. Discuss with ET and Contractor on possible remedial actions; 3. Review the proposed mitigation measures submitted by Contractor and advise the ER accordingly; 4. Assess the effectiveness of the implemented mitigation measures.	1. Confirm receipt of notification of non-compliance in writing; 2. Discuss with IEC on the proposed mitigation measures; 3. Make agreement on mitigation measures to be implemented; 4. Ensure mitigation measures are properly implemented; 5. Assess the effectiveness of the implemented mitigation measures.	1. Inform the Engineer and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment and consider changes of working methods; 4. Discuss with ET and IEC on possible remedial actions and propose mitigation measures to IEC and ER within 3 working days of notification; 5. Implement the agreed mitigation measures; 6. Amend working methods if appropriate.

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Limit level being exceeded by one sampling day	1. Repeat *in-situ* measurement to confirm findings; 2. Identify source(s) of impact; 3. Inform IEC, Contractor, ER and EPD; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC, ER and Contractor; 6. Ensure mitigation measures are implemented; 7. Increase the monitoring frequency to daily until no exceedance of Limit level.	1. Check monitoring data submitted by ET and Contractor's working method; 2. Discuss with ET and Contractor on possible remedial actions; 3. Review the proposed mitigation measures submitted by Contractor and advise the ER accordingly; 4. Assess the effectiveness of the implemented mitigation measures.	1. Confirm receipt of notification of failure in writing; 2. Discuss with IEC, ET and Contractor on the proposed mitigation measures; 3. Request Contractor to critically review the working methods; 4. Ensure mitigation measures are properly implemented; 5. Assess the effectiveness of the implemented mitigation measures.	1. Inform the ER and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment and consider changes of working methods; 4. Submit proposal of mitigation measures to ER within 3 working days of notification and discuss with ET, IEC and ER; 5. Implement the agreed mitigation measures; 6. Amend working methods if appropriate.
Limit level being exceeded by two or more consecutive sampling days	1. Repeat *in-situ* measurement to confirm findings; 2. Identify source(s) of impact; 3. Inform IEC, contractor, ER and EPD; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC, ER and Contractor; 6. Ensure mitigation measures are implemented; 7. Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days.	1. Check monitoring data submitted by ET and Contractor's working method; 2. Discuss with ET and Contractor on possible remedial actions; 3. Review the Contractor's mitigation measures whenever necessary to assure their effectiveness and advise the ER accordingly.	1. Confirm receipt of notification of failure in writing; 2. Discuss with IEC, ET and Contractor on the proposed mitigation measures; 3. Request Contractor to critically review the working methods; 4. Make agreement on the mitigation measures to be implemented; 5. Ensure mitigation measures are properly implemented; 6. Assess the effectiveness of the implemented mitigation measures; 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.	1. Inform the ER and confirm notification of the non-compliance in writing; 2. Take immediate action to avoid further exceedance; 3. Rectify unacceptable practice; 4. Check all plant and equipment and consider changes of working methods; 5. Submit proposal of mitigation measures to ER within 3 working days of notification and discuss with ET, IEC and ER; 6. Implement the agreed mitigation measures; 7. Resubmit proposals of mitigation measures if problem still not under control; 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.

Event / Action Plan for Dolphin Monitoring

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action Level	1. Repeat statistical data analysis to confirm findings; 2. Review all available and relevant data, including raw data and statistical analysis results of other parameters covered in the EM&A, to ascertain if differences are as a result of natural variation or previously observed seasonal differences; 3. Identify source(s) of impact; 4. Inform the IEC, ER/SOR and Contractor; 5. Check monitoring data. 6. Review to ensure all the dolphin protective measures are fully and properly implemented and advise on additional measures if necessary.	1. Check monitoring data submitted by ET and Contractor; 2. Discuss monitoring results and finding with the ET and the Contractor.	1. Discuss monitoring with the IEC and any other measures proposed by the ET; 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.	1. Inform the ER/SOR and confirm notification of the non-compliance in writing; 2. Discuss with the ET and the IEC and propose measures to the IEC and the ER/SOR; 3. Implement the agreed measures.

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Limit Level	1. Repeat statistical data analysis to confirm findings; 2. Review all available and relevant data, including raw data and statistical analysis results of other parameters covered in the EM&A, to ascertain if differences are as a result of natural variation or previously observed seasonal differences; 3. Identify source(s) of impact; 4. Inform the IEC, ER/SOR and Contractor of findings; 5. Check monitoring data; 6. Repeat review to ensure all the dolphin protective measures are fully and properly implemented and advise on additional measures if necessary. 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.	1. Check monitoring data submitted by ET and Contractor; 2. Discuss monitoring results and findings with the ET and the Contractor; 3. Attend the meeting to discuss with ET, ER/SOR and Contractor the necessity of additional dolphin monitoring and any other potential mitigation measures. 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. 5. Supervise / Audit the implementation of additional monitoring and/or any other mitigation measures and advise ER/SOR the results and findings accordingly.	1. Attend the meeting to discuss with ET, IEC and Contractor the necessity of additional dolphin monitoring and any other potential mitigation measures. 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. 3. Supervise the implementation of additional monitoring and/or any other mitigation measures.	1. Inform the ER/SOR and confirm notification of the non-compliance in writing; 2. Attend the meeting to discuss with ET, IEC and ER/SOR the necessity of additional dolphin monitoring and any other potential mitigation measures. 3. Jointly submit with ET to IEC a proposal of additional dolphin monitoring and/or any other mitigation measures when necessary. 4. Implement the agreed additional dolphin monitoring and/or any other mitigation measures.

APPENDIX I

Waste Flow Table

Name of Department: Highways Department

Contract No.: HY/2013/01

Leighton - Chun Wo Joint Venture

Monthly Summary Waste Flow Table for 2018

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	a.Total Quantity Generated (see Note 8)	b. Hard Rock and Large Broken Concrete (see Note 9)	c. Reused in the Contract	d. Reused in Other Projects	e. Disposed as Public Fill (see Note 10)	f. Imported Fill	g. Metals (see Note 5)	h. Paper / Cardboard Packaging (see Note 5)	i. Plastics (see Note 3) (see Note 5)	j. Chemical Waste	k. Others, e.g. general refuse
	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m^3)
January	1.836	1.836	0.000	0.000	1.836	0.000	437.360	1.922	0.000	0.000	0.912
February	0.648	0.648	0.000	0.000	0.648	0.000	0.000	0.000	0.000	0.000	1.124
March	2.590	2.590	0.000	0.000	2.590	0.000	0.000	1.785	0.000	0.000	1.661
April	0.355	0.355	0.000	0.000	0.355	0.000	0.000	1.630	0.000	0.000	1.067
May	0.066	0.000	0.000	0.000	0.066	0.000	0.000	1.493	0.000	0.000	0.510
June	0.071	0.000	0.000	0.000	0.071	0.000	0.000	0.000	0.000	0.000	0.218
Sub-total	5.566	5.429	0.000	0.000	5.566	0.000	437.360	6.830	0.000	0.000	5.492
July	0.010	0.000	0.000	0.000	0.010	0.000	0.000	0.000	0.000	0.000	0.114
August	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.201	0.000	0.000	0.189
September	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.700	0.000	0.000	0.066
October	0.038	0.000	0.000	0.000	0.038	0.000	0.000	0.000	0.000	0.000	0.255
November											
December											
Total	5.614	5.429	0.000	0.000	5.614	0.000	437.360	9.731	0.000	0.000	6.116

Total C&D waste generated = a+b+f+g+h+i+j+k

Total C&D waste generated (excluded excavated material) = g+h+i+j+k

Total C&D waste recycled = c+d+g+h+i

% of recycled C&D waste = (Total C&D waste generated - Total C&D waste recycled) / Total C&D waste generated

Forecast of Total Quantities of C&D Materials to be Generated from the Contract*										
a.Total Quantity Generated (see Note 8)	**b. Hard Rock and Large Broken Concrete** (see Note 9)	**c. Reused in the Contract**	**d. Reused in Other Projects**	**e. Disposed as Public Fill** (see Note 10)	**f. Imported Fill**	**g. Metals** (see Note 5)	**h. Paper / Cardboard Packaging** (see Note 5)	**i. Plastics** (see Note 3) (see Note 5)	**j. Chemical Waste**	**k. Others, e.g. general refuse**
(in '000m^3)	**(in '000m^3)**	**(in '000m^3)**	**(in '000m^3)**	**(in '000m^3)**	**(in '000m^3)**	**(in '000kg)**	**(in '000kg)**	**(in '000kg)**	**(in '000kg)**	**(in '000m^3)**

Notes:
(1) The performance target are given in PS Clause 6(14)
(2) The waste flow table shall also include C&D materials that are not specified in the Contract to be imported for use at the Site
(3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material
(4) The Contractor shall also submit the latest forecast of the amount of C&D materials expected to be generated from the Works, together with a break down of the nature where the total amount of C&D materials expected to be generated from the Works is equal to or exceeding 50,000m3.
(5) All recyclable materials, including metals, paper / cardboard packaging, plastics, etc. will be collected by registered collector for recycling.
(6) Conversion factors for reporting purpose:
in-situ: rock = 2.5 tonnes/m^3; soil = 2.0 tonnes/m^3
excavated: rock = 2.0 tonnes/m^3; soil = 1.8 tonnes/m^3; broken concrete and bitumen = 2.4 tonnes/m^3
C&D Waste = 0.9 tonnes/m^3; bentonite slurry = 2.8 tonnes/m^3
Diesel density: 0.8kg/l
(7) Numbers are rounded off to the nearest three decimal places
(8) The "Total Quantity Generated" equals to the sum of "Reuse in the Contract", "Reuse in Other Projects" and "Disposed as Public Fill"
(9) The "Hard Rock and Large Broken Concrete" were disposed as public fill
(10) The amount in "Disposed as Public Fill" included the "Hard Rock and Large Broken Concrete" disposed as public fill

Ver: 1st
Date: Jan 2017

ATAL Technologies Ltd
安樂科技工程有限公司

ATAL Technologies Ltd.
Contract No. **HY/2013/06** HKBCF Automatic Vehicle Clearance Support System
Location: Artifical Island of HKBCF **(C1 Area)**

Monthly Summary Waste Flow Table for 2018

Month	Inert C&D Waste disposal / 瀉性廢物 (in tonnes) (see Note 1)						Non-inert C&D Waste disposal 非瀉性廢物 (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.) 瀉性廢物 (如泥, 石矢頭, 石, 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			
	(b)		(c)		(d)		(e)		(in tonnes)		(in tonnes)		(in tonnes)		(in litre)		(a)= (b+c+d+e)	
	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	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
February	0.000	0.000	0.000	0.000	0.000	0.000	0.010	0.010	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.010	0.010
March	0.000	0.000	0.000	0.000	0.000	0.000	0.010	0.010	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.010	0.010
April	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
May	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
June	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.005
July	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
August	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
September	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
October	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
November																		
December																		
Total	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.045**	**0.045**	**0.007**	**0.007**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.045**	**0.045**

Notes: (1) The quantitles of C&D Materials, in tonne, was calculated by multiply the estimated volume, in m3, with the density of the soil, which is 1.5 gcm^{-3}.

APPENDIX J

Environmental Licenses and Permits

Environmental License/ Permits /Notification Register

LCAL H2620

Contract No. HY/2013/01 – Hong Kong Zhuhai and Macao Bridge Hong Kong Boundary Crossing Facilities - Passenger Clearance Building

Date: October 2018

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.	All Areas	29 Jul 13	N/A	Environmental Permit to construct the Passenger Clearance Building and associated works of the Hong Kong Zhuhai and Macao Bridge Boundary Crossing Facilities	EP-353/2009/G	06 Aug 13	N/A	EPD	Superseded by EP-353/2009/H
2.	All Areas	16 Jan 15	N/A	Environmental Permit to construct the Passenger Clearance Building and associated works of the Hong Kong Zhuhai and Macao Bridge Boundary Crossing Facilities	EP-353/2009/H	19 Jan 15	N/A	EPD	Superseded by EP-353/2009/I
3.	All Areas	30 Jun 15	N/A	Environmental Permit to construct the Passenger Clearance Building and associated works of the Hong Kong Zhuhai and Macao Bridge Boundary Crossing Facilities	EP-353/2009/I	17 Jul 15	N/A	EPD	Superseded by EP-353/2009/J
4.	All Areas	18 Feb 2016	N/A	Environmental Permit to construct the Passenger Clearance Building and associated works of the Hong Kong Zhuhai and Macao Bridge Boundary Crossing Facilities	EP-353/2009/J	25 Feb 2016	N/A	EPD	Superseded by EP-353/2009/K

Environmental License/ Permits /Notification Register

LCAL H2620

Contract No. HY/2013/01 – Hong Kong Zhuhai and Macao Bridge Hong Kong Boundary Crossing Facilities - Passenger Clearance Building

Date: October 2018

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						
5.	All Areas	24 Mar 2016	N/A	Environmental Permit to construct the Passenger Clearance Building and associated works of the Hong Kong Zhuhai and Macao Bridge Boundary Crossing Facilities	EP-353/2009/K	11 Apr 2016	N/A	EPD	
6.	All Areas	29 Apr 14	H2620-LTR-EPD-AU-000006	**Billing Account** for disposal of construction waste	Billing Account No.: 7019944	16 May 14	N/A	EPD	
7.	PCB	30 Apr 14	H2620-LTR- EPD-000002	**Notification** that notifiable works are anticipated to commence (Form NA).	Acknowledge Receipt Ref. No. 373961	05 May 14	N/A	EPD	
8.	WA2	30 Apr 14	H2620-LTR- EPD-000003	**Notification** that notifiable works are anticipated to commence (Form NA).	Acknowledge Receipt Ref. No. 373956	05 May 14	N/A	EPD	
9.	WA3	30 Apr 14	H2620-LTR-EPD-AU-000001	**Notification** that notifiable works are anticipated to commence (Form NA).	Acknowledge Receipt Ref. No. 373962	05 May 14	N/A	EPD	

Contract No. HY/2013/01 – Hong Kong Zhuhai and Macao Bridge Hong Kong Boundary Crossing Facilities - Passenger Clearance Building

Date: October 2018

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						
10.	PCB	30 May 14	H2620-LTR-EPD-AU-000020	**Registration** as Chemical Waste Producer for disposal of spent batteries, used lubrication oil and surplus paint at PCB area	WPN: 5213-951-L2846-01	08 Jul 14	N/A	EPD	
11.	PCB	23 Jun 14	In H2620-LTR-EPD-000017	**CNP** for the use of powered mechanical equipment for the purpose of carry out pre-drill and bore piling works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS0683-14	03 Jul 14	29 Dec 14	EPD	Superseded by GW-RS0908-14
12.	WA2	02 Jul 14	H2620-LTR-LCJ-AU-000280	**CNP** for the use of powered mechanical equipment for the purpose of carry out ER Office construction works from 19:00 to 23:00. (Non-designated area)	GW-RS0715-14	17 Jul 14	15 Jan 15	EPD	Superseded by GW-RS1034-14
13.	WA3	02 Jul 14	H2620-LTR-LCJ-AU-000324	**CNP** for the use of powered mechanical equipment for the purpose of carry out construction of JV site office from 19:00 to 23:00. (Non-designated)	GW-RS0716-14	17 Jul 14	15 Jan 15	EPD	Expired

Contract No. HY/2013/01 – Hong Kong Zhuhai and Macao Bridge Hong Kong Boundary Crossing Facilities - Passenger Clearance Building

Date: October 2018

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						
14.	PCB	23 Jun 14	H2620-LTR- EPD-000527	**CNP** for the use of powered mechanical equipment for the purpose of carry out pre-drill and bore piling works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS0908-14	03 Sep 14	22 Dec 14	EPD	Superseded by GW-RS1044-14
15.	PCB	29 Sep 14	H2620-LTR-EPD-AU-000034	**CNP** for the use of powered mechanical equipment for the purpose of carry out pre-drill and bore piling works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS1044-14	29 Sep 14	24 Dec 14	EPD	Superseded by GW-RS1300-14
16.	WA2	12 Sep 14	H2620-LTR-EPD-AU-000032	**CNP** for the use of powered mechanical equipment for the purpose of carry out ER Office construction works from 19:00 to 23:00. (Non-designated area)	GW-RS1034-14	29 Sep 14	28 Mar 15	EPD	Expired
17.	WA4	17 Oct 14	H2620-LTR-EPD-AU-000036	**CNP** for the use of powered mechanical equipment from 19:00 to 23:00. (Non-designated area)	GW-RW0814-14	20 Oct 14	19 Apr 15	EPD	Expired and replaced by GW-RW0171-15

Contract No. HY/2013/01 – Hong Kong Zhuhai and Macao Bridge Hong Kong Boundary Crossing Facilities - Passenger Clearance Building

Date: October 2018

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						
18.	PCB	03 Nov 14	H2620-LTR-EPD-AU-000040	**CNP** for the use of powered mechanical equipment for the purpose of carry out pre-drill and bore piling works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS1300-14	17 Nov 14	16 Feb 15	EPD	Superseded by GW-RS0087-15
19.	PCB	12 Jan 15	H2620-LTR-EPD-AU-000046	**CNP** for the use of powered mechanical equipment for the purpose of carry out pre-drill and bore piling works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS0087-15	26 Jan 15	25 Apr 15	EPD	Superseded by GW-RS0308-15
20.	PCB	12 Mar 15	H2620-LTR-EPD-AU-000051	**CNP** for the use of powered mechanical equipment for the purpose of carry out pre-drill and bore piling works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS0308-15	26 Mar 15	25 Jun 15	EPD	Superseded by GW-RS0476-15
21.	PCB	31 Jul 14	H2620-LTR-EPD-AU-000038	**Water Discharge License** for construction works on PCB island	WT00020335-2014	13 Nov 14	30 Nov 19	EPD	

Contract No. HY/2013/01 – Hong Kong Zhuhai and Macao Bridge Hong Kong Boundary Crossing Facilities - Passenger Clearance Building

Date: October 2018

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						
22.	WA4	27 Mar 15	H2620-LTR-EPD-AU-000054	**CNP** for the use of powered mechanical equipment from 19:00 to 23:00. (Non-designated area)	GW-RW0171-15	20 Apr 15	19 Oct 15	EPD	Superseded by GW-RW0351-15
23.	PCB	15 Apr 15	H2620-LTR-EPD-AU-000057	**CNP** for the use of powered mechanical equipment for the purpose of carry out pre-drill and bore piling works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS0476-15	01 May 15	31 Jul 15	EPD	Superseded by GW-RS0685-15
24.	PCB	09 Jun 15	H2620-LTR-EPD-AU-000063	**CNP** for the use of powered mechanical equipment for the purpose of carry out pre-drill and bore piling works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS0685-15	01 Jul 15	30 Sep 15	EPD	Superseded by GW-RS0877-15
25.	WA4	29 Jun 15	H2620-LTR-EPD-AU-000066	**CNP** for the use of powered mechanical equipment from 19:00 to 23:00. (Non-designated area)	GW-RW0351-15	17 Jul 15	12 Jan 16	EPD	Expired. Replaced by GW-RW0003-16

Date: October 2018									
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**						
26.	PCB	27 Jul 15	H2620-LTR-EPD-AU-000069	**CNP** for the use of powered mechanical equipment for the purpose of carry out pre-drill and bore piling works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS0877-15	10 Aug 15	09 Nov 15	EPD	Superseded by GW-RS1016-15
27.	PCB	02 Sep 15	H2620-LTR-EPD-AU-000072	**CNP** for the use of powered mechanical equipment for the purpose of carry out pre-drill and bore piling works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS1016-15	18 Sep 15	17 Dec 15	EPD	Superseded by GW-RS1195-15
28.	PCB	22 Oct 15	H2620-LTR-EPD-AU-000075	**CNP** for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS1195-15	9 Nov 15	8 Feb 16	EPD	Superseded by GW-RS1444-15
29.	PCB	17 Dec 15	H2620-LTR-EPD-AU-000076	**CNP** for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS1444-15	31 Dec15	30 Mar 16	EPD	Superseded by GW-RW0191-16

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								Date: October 2018	
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	Work Area	Date	Reference						
30.	WA4	24 Dec 15	H2620-LTR-EPD-AU-000080	**CNP** for the use of powered mechanical equipment from 19:00 to 23:00. (Non-designated area)	GW-RW0003-16	13 Jan 16	06 Jul 16	EPD	Superseded by GW-RW0394-16
31.	PCB	17 Feb 16	H2620-LTR-EPD-AU-000083	**CNP** for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS0191-16	3 Mar 16	2 Jun 16	EPD	Superseded by GW-RW0543-16
32.	PCB	18 May 16	H2620-LTR-EPD-AU-000086	**CNP** for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS0543-16	2 Jun 16	1 Sep 16	EPD	Superseded by GW-RS0879-16
33.	WA4	20 Jun 16	H2620-LTR-EPD-AU-000089	**CNP** for the use of powered mechanical equipment from 19:00 to 23:00. (Non-designated area)	GW-RW0394-16	07 Jul 16	06 Jan 17	EPD	Superseded by GW-RW0742-16

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	Work Area	Date	Reference						
34.	PCB	09 Aug 16	H2620-LTR-EPD-AU-000092	**CNP** for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS0879-16	23 Aug 16	22 Dec 16	EPD	Superseded by GW-RS1193-16
35.	PCB	16 Nov 16	H2620-LTR-EPD-AU-000094	**CNP** for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS1193-16	30 Nov 16	29 May 17	EPD	Superseded by GW-RS0005-17
36.	WA4	17 Dec 16	H2620-LTR-EPD-AU-000100	**CNP** for the use of powered mechanical equipment from 19:00 to 23:00. (Non-designated area)	GW-RW0742-16	07 Jan 17	06 Jul 17	EPD	Superseded by GW-RW0341-17
37.	PCB	19 Dec 16	H2620-LTR-EPD-AU-000103	**CNP** for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS0005-17	6 Jan 17	5 Jul 17	EPD	Superseded by GW-RS0461-17

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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						
38.	WA3	30 Dec 16	H2620-LTR-EPD-AU-000102	**CNP** for the use of powered mechanical equipment for the purpose of carry out construction of JV site office from 19:00 to 23:00. (Non-designated)	GW-RS0015-17	12 Jan 17	11 Jul 17	EPD	Superseded by GW-RS0587-17
39.	PCB	12 May 17	H2620-LTR-EPD-AU-000106	**CNP** for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS0461-17	25 May 17	24 Nov 17	EPD	Superseded by GW-RS0998-17
40.	WA3	22 Jun 17	H2620-LTR-EPD-AU-000113	**CNP** for the use of powered mechanical equipment for the purpose of carry out construction of JV site office from 19:00 to 23:00. (Non-designated)	GW-RS0587-17	12 Jul 17	11 Jan 18	EPD	Expired and replaced by GW-RS1201-17
41.	WA4	19 Jun 17	H2620-LTR-EPD-AU-000112	**CNP** for the use of powered mechanical equipment from 19:00 to 23:00. (Non-designated area)	GW-RW0341-17	10 Jul 17	6 Jan 18	EPD	Expired and replaced by GW-RW0005-18

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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						
42.	PCB	20 Oct 17	H2620-LTR-EPD-AU-000117	**CNP** for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS0998-17	15 Nov 17	12 May 18	EPD	Expired and replaced by GW-RS0389-18
43.	WA3	20 Dec 17	H2620-LTR-EPD-AU-000119	**CNP** for the use of powered mechanical equipment for the purpose of carry out construction of JV site office from 19:00 to 23:00. (Non-designated)	GW-RS1201-17	12 Jan 18	11 Jul 18	EPD	Expired and replaced by GW-RS0589-18
44.	WA4	20 Dec 17	H2620-LTR-EPD-AU-000118	**CNP** for the use of powered mechanical equipment from 19:00 to 23:00. (Non-designated area)	GW-RW0005-18	07 Jan 18	06 Jul 18	EPD	Expired and replaced by GW-RW0271-18
45.	PCB	27 Apr 18	H2620-LTR-EPD-AU-000125	**CNP** for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS0389-18	13 May 18	12 Nov 18	EPD	-

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								Date: October 2018	
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						
46.	WA4	22 Jun 18	H2620-LTR-EPD-AU-000129	**CNP** for the use of powered mechanical equipment from 19:00 to 23:00. (Non-designated area)	GW-RW0271-18	10 Jul 18	06 Jan 19	EPD	-
47.	WA3	22 Jun 18	H2620-LTR-EPD-AU-000128	**CNP** for the use of powered mechanical equipment for the purpose of carry out construction of JV site office from 19:00 to 23:00. (Non-designated)	GW-RS0589-18	12 Jul 18	11 Jan 19	EPD	-

APPENDIX K

Implementation Schedule for Environmental Mitigation Measures (EMIS)

Contract No. HY/2013/01 – Hong Kong Zhuhai and Macao Bridge Hong Kong Boundary Crossing Facilities – Passenger Clearance Building

Implementation Schedule for Environmental Mitigation Measures

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Air Quality								
S5.5.6.1	A1	1) The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Good construction site practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.	Contractor	All construction sites	Construction stage	To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1- hr and 24hr TSP levels are 500 μgm^{-3} and 260 μgm^{-3}, respectively)	√
S5.5.6.2	A2	2) Proper watering of exposed spoil should be undertaken throughout the construction phase: • Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads; • A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones. • The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores; • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet;	Good construction site practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.	Contractor	All construction sites	Construction stage	To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1- hr and 24hr TSP levels are 500 μgm^{-3} and 260 μgm^{-3}, respectively)	√ √ √ √ √ √ √ √

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S5.5.6.2	A2	• Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport should be totally enclosed by impervious sheeting; • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides; • Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed; • Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and • Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies.	Good construction site practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.	Contractor	All construction sites	Construction stage	To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1- hr and 24hr TSP levels are 500 μgm^{-3} and 260 μgm^{-3}, respectively)	√ √ √ √ √
S5.5.6.4	A3	The Contractor should undertake proper watering on all exposed spoil (with at least 8 times per day) throughout the construction phase.	Control construction dust	Contractor	All construction sites	Construction stage	To control the dust impact	N/A All site area of C1 have been paved, the watering was not required in reporting month
S5.5.6.5	A4	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.	Control construction dust	En	construction sites	Design Stage	Air Pollution Control (Construction Dust) Regulation	√

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S5.5.6.5	A5	Implement regular dust monitoring under EM&A programme during the construction stage.	Monitor the 24 hr and 1hr TSP levels at the representative dust monitoring stations to ensure compliance with relevant criteria throughout the construction period.	Contractor	Selected representative dust monitoring station	Construction stage	• Air Pollution Control (Construction Dust) Regulation •To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1- hr and 24hr TSP levels are 500 μgm^{-3} and 260 μgm^{-3}, respectively)	√ (The dust monitoring works (Station AMS6) under EM&A programme for the Contract is covered by Contract No. HY/2011/03. Monitoring stations AMS7B for the Contract are covered by Contract No.HY/2013/04)
S5.5.7.1	A6	The following mitigation measures should be adopted to prevent fugitive dust emissions for concrete batching plant: • Loading, unloading, handling, transfer or storage of any dusty materials should be carried out in totally enclosed system; • All dust-laden air or waste gas generated by the process operations should be properly extracted and vented to fabric filtering system to meet the emission limits for TSP; • Vents for all silos and cement/pulverised fuel ash (PFA) weighing scale should be fitted with fabric filtering system; • The materials which may generate airborne dusty emissions should be wetted by water spray system; • All receiving hoppers should be enclosed on three sides up to 3m above unloading point; • All conveyor transfer points should be totally enclosed; • All access and route roads within the premises should be paved and wetted; and • Vehicle cleaning facilities should be provided and used by all concrete trucks before leaving the premises to wash off any dust on the wheels and/or body.	Monitor the 24 hr and 1hr TSP levels at the representative dust monitoring stations to ensure compliance with relevant criteria throughout the construction period.	Contractor	Selected representative dust monitoring station	Construction stage	• Air Pollution Control (Construction Dust) Regulation •To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1- hr and 24hr TSP levels are 500 μgm^{-3} and 260 μgm^{-3}, respectively)	N/A
S5.5.2.7	A7	The following mitigation measures should be adopted to prevent fugitive dust emissions at barging point: • All road surface within the barging facilities will be paved; • Dust enclosures will be provided for the loading ramp; • Vehicles will be required to pass through designated wheels wash facilities; and • Continuous water spray at the loading points.	Control construction dust	Contractor	All construction sites	Construction stage	Air Pollution Control (Construction Dust) Regulation	N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Construction Noise (Air borne)								
S6.4.10	N1	1) Use of good site practices to limit noise emissions by considering the following: • only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; • 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; • plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; • silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; • mobile plant should be sited as far away from NSRs as possible and practicable; • material stockpiles, mobile container site officer and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.	Control construction airborne noise by means of good site practices	Contractor	All construction sites	Construction stage	Noise Control Ordinance	√ √ √ √ √ √
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.	Reduce the construction noise levels at low-level zone of NSRs through partial screening.	Contractor	All construction sites	Construction stage	• Noise Control Ordinance • Annex 5, TM-EIA	N/A
S6.4.12	N3	3) Install movable noise barriers (typically density @14kg/m^2), acoustic mat or full enclosure close to noisy plants including air compressor, generators, saw.	Screen the noisy plant items to be used at all construction sites	Contractor	For plant items listed in Appendix 6D of the EIA report at all construction sites	Construction stage	• Noise Control Ordinance • Annex 5, TM-EIA • 75dB(A) for residential premises • The movable barrier should achieve at least 5dB(A) and the full enclosure should be designed to achieve 10dB(A)	N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S6.4.13	N4	4) Select "Quiet plants" which comply with the BS 5228 Part 1 or TM standards.	Reduce the noise levels of plant items	Contractor	For plant items listed in Appendix 6D of the EIA report at all construction sites	Construction stage	• Noise Control Ordinance & its TM • Annex 5, TM-EIA	√
S6.4.14	N5	5) Sequencing operation of construction plants where practicable.	Operate sequentially within the same work site to reduce the construction airborne noise	Contractor	All construction sites where practicable	Construction stage	• Noise Control Ordinance • Annex 5, TM-EIA	√
S6.4.14	N6	6) Implement a noise monitoring under EM&A programme.	Monitor the construction noise levels at the selected representative locations	Contractor	Selected representative noise monitoring station	Construction stage	• Noise Control Ordinance • Annex 5, TM-EIA • 75dB(A) for residential premises	√ (Noise monitoring station NMS2 and NMS3C are covered by Contract No. HY/2013/04.)
Sediment								
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.	Develop sediment disposal arrangement	Engineer	All construction sites	Design stage	• Waste Disposal Ordinance • ETW B TC 34/2002	N/A
Waste Management (Construction Waste)								
S8.3.8	WM1	*Construction and Demolition Material* The following mitigation measures should be implemented in handling the waste: • Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement; • Carry out on-site sorting; • Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; • Adopt 'Selective Demolition' technique to demolish the existing structures and facilities with a view to recovering broken concrete effectively for recycling purpose, where possible; • Implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified; and	Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	• Land (Miscellaneous Provisions) Ordinance • Waste Disposal Ordinance • ETW BTC 19/2005	√ √ √ √ √

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S8.3.8	WM1	• Implement an enhanced Waste Management Plan similar to ETW BTC (Works) No. 19/2005 – "Environmental Management on Construction Sites" to encourage on-site sorting of C&D materials and to minimize their generation during the course of construction. • In addition, disposal of the C&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.	Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	•	√ √
S8.3.9-S8.3.11	WM2	*C&D Waste* • Standard formwork or pre-fabrication should be used as far as practicable in order to minimise the arising of C&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. • The Contractor should recycle as much of the C&D materials as possible on-site. Public fill and C&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.	Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	• Land (Miscellaneous Provisions) Ordinance • Waste Disposal Ordinance • ETWB TC 19/2005	√ √
S8.2.12-S8.3.15	WM3	*Chemical Waste* • 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. • 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. • The storage area for chemical wastes should be clearly labelled 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.	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction stage	• Waste Disposal (Chemical Waste) General) Regulation • Code of Practice on the Packaging, Labelling and Storage of Chemical Waste	√ √ √

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S8.2.12-S8.3.15	WM3	• 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 a chemical waste collection service and can supply the necessary storage containers; or be to a reuser of the waste, under approval from the EPD.	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction stage		√
S8.3.16	WM4	*Sewage* • Adequate numbers of portable toilets should be provided for the workers. The portable toilets should be maintained in a state, which will not deter the workers from utilizing these portable toilets. Night soil should be collected by licensed collectors regularly.	Proper handling of sewage from worker to avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance	√
S8.3.17	WM5	*General Refuse* • General refuse generated on-site should be stored in enclosed bins or compaction units separately from construction and chemical wastes. • 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. • 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. • 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. In addition, waste separation facilities for paper, aluminum cans, plastic bottles etc., should be provided. • Training should be provided to workers about the concepts of site cleanliness and appropriate waste management procedure, including reduction, reuse and recycling of wastes.	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	• Waste Disposal Ordinance	√ √ √ √ √

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Water Quality (Construction Phase)								
S.9.11.1.7	W1	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 backfilling, as well as protection measures. Details of the measures are provided below: • Reclamation filling for the Project shall not proceed until at least 200m of leading seawall at the reclamation area formed above +2.2mPD, unless otherwise agreement was obtained from EPD, except for the 300m gaps for marine access. All underwater filling works shall be carried out behind seawalls to avoid dispersion of suspended solids outside the Project limit;	To control construction water quality	Contractor	During filling	Construction stage	TM-EIAO	√
S.9.11.1.7	W1	• Except for the filling of the cellular structures, not more than 15% public fill shall be used for reclamation filling below +2.5mPD during construction of the seawall; • After the seawall is completed except for the 300m marine access as indicated in the EPs, not more than 30% public fill shall be used for reclamation filling below +2.5mPD, unless otherwise agreement from EPD was obtained; • Upon completion of 200m leading seawall, no more than a total of 60 filling barge trips per day shall be made with a cumulative maximum daily filling rate of 60,000 m3 for HKBCF and TMCLKL southern landfall reclamation during the filling operation; and • Upon completion of the whole section of seawall except for the 300m marine access as indicated in the EPs, no more than a total of 190 filling barge trips per day shall be made with a cumulative maximum daily filling rate of 190,000 m3 for the remaining filling operations for HKBCF and TMCLKL southern landfall reclamation. • Floating type perimeter silt curtains shall be around the HKBCF site before the commencement of marine works. Staggered layers of silt curtain shall be provided to prevent sediment loss at navigation accesses. The length of each staggered layers shall be at least 200m; • Single layer silt curtain to be applied around the North-east airport water intake; • The silt-curtains should be maintained in good condition to ensure the sediment plume generated from filling be confined effectively within the site boundary; • The filling works shall be scheduled to spread the works evenly over a working day; • Cellular structure shall be used for seawall construction; • A layer of geotextile shall be placed on top of the seabed before any filling activities take place inside the cellular structures to form the seawall;	To control construction water quality	Contractor	During filling	Construction stage	TM-EIAO	√ √ √ √ √ √ √ √ √ √ √

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S.9.11.1.7	W1	• The conveyor belts shall be fitted with windboards and conveyor release points shall be covered with curtain to prevent any spillage of filling materials onto the surrounding waters; and • An additional layer of silt curtain shall be installed near the active stone column installation points. A layer of geotextile with stone blanket on top shall be placed on the seabed prior to stone column installation works.	To control construction water quality	Contractor	During filling	Construction stage	TM-EIAO	√ √
S.9.11.1.7	W2	<u>Land Works</u> General construction activities on land should also be governed by standard good working practice. Specific measures to be written into the works contracts should include: • wastewater from temporary site facilities should be controlled to prevent direct discharge to surface or marine waters;	To control construction water quality	Contractor	Land-based works areas	Construction stage	TM-EIAO	√
S.9.11.1.7	W2	• 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; • 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; • 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; • temporary access roads should be surfaced with crushed stone or gravel; • rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities; • measures should be taken to prevent the washout of construction materials, soil, silt or debris into any drainage system; • open stockpiles of construction materials (e.g. aggregates and sand) on site should be covered with tarpaulin or similar fabric during rainstorms; • 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; • discharges of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system;	To control construction water quality	Contractor	Land-based works areas	Construction stage	TM-EIAO	√ √ √ √ √ √ √ √

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S9.11.1.7	W2	• 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; • wheel wash overflow shall be directed to silt removal facilities before being discharged to the storm drain; • the section of construction road between the wheel washing bay and the public road should be surfaced with crushed stone or coarse gravel; • wastewater generated from concreting, plastering, internal decoration, cleaning work and other similar activities, shall be screened to remove large objects; • 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; • the contractors shall prepare an oil / chemical cleanup plan and ensure that leakages or spillages are contained and cleaned up immediately; • waste oil should be collected and stored for recycling or disposal, in accordance with the Waste Disposal Ordinance; • 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 • surface run-off from bunded areas should pass through oil/grease traps prior to discharge to the stormwater system.	To control construction water quality	Contractor	Land-based works areas	Construction stage	TM-EIAO	√ √ √ √ √ √ √ √ √
S.9.14	W3	• Implement a water quality monitoring programme.	To control water quality	Contractor	Selected representative water quality monitoring station	Construction stage	• TM-EIAO • Water Pollution Control Ordinance	√ (Water quality monitoring are covered by Contract No. HY/2013/04.)

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Ecology (Construction Phase)								
S10.7	E1	• Install silt curtain during the construction • Limit works fronts • Construct seawall prior to reclamation filling where practicable • Good site practices • Strict enforcement of no marine dumping • Site runoff control • Spill response plan	Prevent Sedimentation from Land-based works areas	Contractor	Seawall, reclamation area	During construction	TM-Water	√ √ √ √ √ √ √
S10.7	E2	• 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.	Prevent Sedimentation from Land-based works areas	Contractor	Land-based works areas	During construction	TM-Water	√
S10.7	E3	• Good site practices, including strictly following the permitted works hours, using quieter machines where practicable, and avoiding excessive lightings during night time	Prevent disturbance to terrestrial fauna and habitats	Contractor	Land-based works areas	During construction	TM-Water	√
S10.7	E4	• Dolphin Exclusion Zone • Dolphin Watching plan	Minimise marine traffic disturbance on dolphins	Contractor	Marine Works	During construction	TM-Water	√ √
S10.7	E5	• Decouple compressors and other equipment on working vessels • Proposal on design and implementation of acoustic decoupling measures applied during reclamation works • Avoidance of percussive piling	Minimise marine traffic disturbance on dolphins	Contractor	Marine Works	During construction	TM-Water	√ √ √
S10.7	E6	• Control vessel speed • Skipper training • Predefined and regular routes for working vessels; avoid Brother Islands.	Minimise marine traffic disturbance on dolphins	Contractor	Marine Traffic	During construction	TM-Water	√ √ √
S10.7	E7	• Vessel based dolphin monitoring	Minimise marine traffic disturbance on dolphins	Contractor	Northeast and Northwest Lantau	During construction	TM-Water	√ (Dolphins monitoring are covered by Contract No. HY/2013/04.)
Fisheries								
S11.7	F1	• Reduce re-suspension of sediments • Limit works fronts • Good site practices • Strict enforcement of no marine dumping • Spill response plan	Minimise impacts on marine water quality impacts	Marine Department	Seawall, reclamation area	During operation		√ √ √ √ √
S11.7	F2	• Install silt-grease trap in the drainage system collecting surface runoff	Minimise impacts on marine water quality impacts	Marine Department	Reclamation area	During operation		√

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S11.7	F4	• Maritime Oil Spill Response Plan (MOSRP); • Contingency plan.	Minimise impacts on marine water quality impacts	Marine Department	HKBCF	During operation		N/A
Landscape & Visual (Detailed Design Phase)								
S14.3.3.1	LV1	General design measures include: • Roadside planting and planting along the edge of the HKBCF Island is proposed; • 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; • Protection measures for the trees to be retained during construction activities; • Optimizing the sizes and spacing of the bridge columns; Fine-tuning the location of the bridge columns to avoid visually-sensitive locations; • Maximizing new tree, shrub and other vegetation planting to compensate tree felled and vegetation removed; • Providing planting area around peripheral of HKBCF for tree planting screening effect; • Providing salt-tolerant native trees along the planter strip at affected seawall and newly reclaimed coastline;	Minimise visual & landscape impact	Detailed designer	HKBCF	Design Stage		N/A
S14.3.3.1	LV1	• 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; and • 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.	Minimise visual & landscape impact	Detailed designer	HKBCF	Design Stage		N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Landscape & Visual (Construction Phase)								
S14.3.3.3	LV2	Mitigate both Landscape and Visual Impacts • Grass-hydroseed bare soil surface and stock pile areas. • Add planting strip and automatic irrigation system if appropriate at some portions of bridge footbridge to screen bridge and traffic. • Not applicable as this is for HKLR. • 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. • Vegetation reinstatement and upgrading to disturbed areas • Maximizing new tree shrub and other vegetation planting to compensate tree felled and vegetation removed • Providing planting area around peripheral of HKBCF for tree planting screening effect; • Plant salt-tolerant native and shrubs etc along the planter strip at affected seawall. • 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 enchance “natural-look” of the new coastline.	Minimise visual & landscape impact	Contractor	HKBCF	Construction stage		N/A N/A √ N/A √ N/A N/A N/A
S14.3.3.3	LV3	<u>Mitigate Visual Impacts</u> • V1.Minimize time for construction activities during construction period. • V2.Provide screen hoarding at the portion of the project site / works areas / storage areas near VSRs who have close low-level views to the Project during HKBCF construction.						√ √
EM&A								
S15.2.2	EM1	An Independent Environmental Checker needs to be employed as per the EM&A Manual.	Control EM&A Performance	Project Proponent	All construction sites		• EIAO Guidance Note No.4/2002 • TM-EIAO	√

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S15.5 - S15.6	EM2	• An Environmental Team needs to be employed as per the EM&A Manual. • Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures. • An environmental impact monitoring needs to be implementing by the Environmental Team to ensure all the requirements given in the EM&A Manual are fully complied with.	Perform environmental monitoring & auditing	Contractor	All construction sites		• EIAO Guidance Note No.4/2002 • TM-EIAO	√ √ √

Legends: √ = Implemented; X = Not implemented; N/A = Not applicable

APPENDIX L

Statistics on Environmental Complaints, Notification of Summons and Successful Prosecutions

Statistics on Environmental Complaints, Notifications of Summons and Successful Prosecutions

For Contract No. HY/2013/01

Reporting Period	Cumulative Statistics		
	Complaints	Notifications of Summons	Successful Prosecutions
This reporting period	0	0	0
From commencement date of contract to end of reporting month	11	0	0

For Contract No. HY/2013/06 within Contract No. HY/2013/01 works area

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

APPENDIX M

Environmental Site Inspection Schedule

Contract No. HY/2013/01- HKBCF Passenger Clearance Building
Environmental Monitoring Schedule for October 2018

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Date		1-Oct	2-Oct	3-Oct	4-Oct	5-Oct	6-Oct
						Site Inspection	
Date	7-Oct	8-Oct	9-Oct	10-Oct	11-Oct	12-Oct	13-Oct
				Site Inspection			
Date	14-Oct	15-Oct	16-Oct	17-Oct	18-Oct	19-Oct	20-Oct
					Site Inspection		
Date	21-Oct	22-Oct	23-Oct	24-Oct	25-Oct	26-Oct	27-Oct
				Site Inspection			
Date	28-Oct	29-Oct	30-Oct	31-Oct	1-Nov	2-Nov	3-Nov
				Site Inspection			