

15 July 2022

By Fax (3748 8900) and By Post

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

Attention: Mr. Jason Yu

Dear Sir,

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

**Contract No. HY/2019/01  
HZMB HKBCF – Phase 2 and Other Works  
Monthly EM&A Report for June 2022**

Reference is made to the Environmental Team's submission of Monthly EM&A Report for June 2022 certified by the ET Leader (ET's ref.: "MCL/ED/0261/2022/C" dated 15 July 2022) and provided to us via e-mail on 15 July 2022.

We are pleased to inform you that we have no further comments on the captioned submission. We write to verify the captioned submission in accordance with Condition 5.4 of the Environmental Permit No. EP-353/2009/K (the EP).

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

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



Adi Lee  
Independent Environmental Checker  
HZMB HKBCF

c.c.	HyD	Attn.: Mr. Eric Wong	(By Fax: 3188 6614)
	HyD	Attn.: Mr. Y F Lau	(By Fax: 3188 6614)
	Fugro	Attn.: Mr. Calvin Leung	(By Fax: 2450 6138)
	CHEC	Attn.: Mr. Johnason Ko	(By Fax: 2887 3104)

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FUGRO TECHNICAL SERVICES LIMITED  
Fugro Development Centre  
5 Lok Yi Street, Tai Lam  
Tuen Mun, NT  
Hong Kong

Date 15 July 2022  
Our Ref. MCL/ED/0261/2022/C

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

BY EMAIL

Attn.: Mr. Adi Lee, Independent Environmental Checker

Dear Sir,

**EP Condition 5.4 – Monthly EM&A Report for  
Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Phase 2 and  
Other Works (Contract No. HY/2019/01)**

Pursuant to Condition 5.4 of the Environmental Permit (EP-353/2009K) for the captioned project, we hereby submit the certified Monthly EM&A Report for June 2022 for your verification.

Thank you for your attention, should there be any comments or queries, please contact our Mr. Cyrus Lai at 3565-4442 or the undersigned at 3565-4441.

Yours faithfully,  
for and on behalf of  
FUGRO TECHNICAL SERVICES LIMITED

Calvin Leung  
Environmental Team Leader

c.c.	AECOM	Attn: Mr. Jason Yu, Mr. Gordon Kok
	Ramboll	Attn: Mr. Y. H. Hui, Mr. K. C. Chan
	CHEC	Attn: Mr. Marko Chan, Mr. Matthew Wu



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## Monthly EM&A Report (June 2022)

0002/20/ED/0495 01 |

**Contact No. HY/2019/01 Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Phase 2 and Other Works**

# Document Control


## Document Information

Project Title	Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Phase 2 and Other Works (Contract No. HY/2019/01)
Document Title	Monthly EM&A Report (June 2022)
Fugro Project No.	0002/20
Fugro Document No.	0002/20/ED/0495
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## Client Information

Client	China Harbour Engineering Co., Ltd. - Contract No. HY/2019/01
Client Address	China Harbour Building, 370-4 King's Road, North Point Hong Kong
Client Contact	Matthew Wu

## Environmental Team

Initials	Name	Role	Signature
MP	Calvin M.P. Leung	Environmental Team Leader	
CY	Cyrus C.Y. Lai	Senior Environmental Consultant	
KH	Toby K.H. Wan	Environmental Consultant	



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## EXECUTIVE SUMMARY

This Monthly Environmental Monitoring and Audit (EM&A) Report is prepared for Contract No. HY/2019/01 "Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Phase 2 and Other Works" (hereafter referred to as "the Contract") for the Highways Department of Hong Kong Special Administrative Region (HKSAR). Contract No. HY/2019/01 was awarded to China Harbour Engineering Co. Limited and Fugro Technical Services Limited (FTS) was appointed as the Environmental Team (ET) by the Contractor.

Contract No. HY/2019/01 is part of the "Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities" (HZMB HKBCF) Project which is a "Designated Project" under Schedule 2 of the Environmental Impact Assessment (EIA) Ordinance (Cap. 499) and for which an EIA Report (Register No. AEIAR-145/2009) was prepared and approved. The current Environmental Permit (EP) for HKBCF, namely No. EP-353/2009/K, was issued on 11 April 2016. These documents are available through the EIA Ordinance Register. Commencement of the Contract took place on 4 December 2019 and the construction site preparation works commenced in early February 2020.

Fugro Technical Services Limited (FTS) 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 is providing environmental team services for the Contract.

This is the 29th Monthly EM&A Report for the Contract which summaries findings of the EM&A programme during the reporting period from 1 June 2022 to 30 June 2022.

### **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). It should be noted that the air quality, noise and the post-construction dolphin monitoring works for the Contract are covered by Contract No. HY/2019/01 "Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Phase 2 and Other Works". The ET of the Contract or another ET of the HZMB project is required to conduct impact air quality monitoring at AMS6 as part of EM&A programme if the impact air quality monitoring work is no longer covered by Contract No. HY/2011/03 respectively. However, this is subject to ENPO's final decision on which ET should carry out the monitoring work at these stations.

### **Breaches of Action and Limit Levels**

According to the EPD's reply email, EPD has no comment on the Proposal for Termination of Air quality and Noise Monitoring, the air quality and noise monitoring for Contract No: HY/2019/01 have been terminated on 25 March 2022, no Action / Limit Level exceedance for air quality and noise monitoring was recorded during the period.

### **Complaint Log**

No complaints were received in the reporting period.

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

No notifications of summons and prosecutions were received in the reporting period.

**Reporting Change**

No reporting change in the reporting period.

**Future Key Issues**

No main construction works will be carried out in the next reporting period.

# Contents

<b>EXECUTIVE SUMMARY</b>	<b>1</b>
<b>1. INTRODUCTION</b>	<b>5</b>
1.1 Background	5
1.2 Project Description	5
1.3 Project Organization	6
1.4 Construction Programme and Activities	6
1.5 Works undertaken during the month	6
1.6 Status of Environmental Licences, Notification and Permits	7
<b>2. AIR QUALITY</b>	<b>8</b>
2.1 Monitoring Requirement	8
2.2 Monitoring Locations	8
<b>3. NOISE</b>	<b>9</b>
3.1 Monitoring Requirement	9
3.2 Monitoring Parameters and Frequency	9
3.3 Monitoring Locations	9
<b>4. ECOLOGY MONITORING</b>	<b>10</b>
4.1 Monitoring Requirements	10
4.2 Monitoring Locations and Methodology	10
<b>5. SITE INSPECTION AND AUDIT</b>	<b>11</b>
5.1 Site Inspection	11
5.2 Landscape and Visual Site Audit (Establishment Period)	11
5.3 Advice on the Solid and Liquid Waste Management Status	11
<b>6. ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE</b>	<b>12</b>
6.1 Environmental Exceedance	12
6.2 Complaints, Notification of Summons and Prosecution	12
<b>7. IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURE</b>	<b>13</b>
7.1 Implementation Status	13
<b>8. FUTURE KEY ISSUES</b>	<b>14</b>
8.1 Construction Programme for the Next Month	14
8.2 Key Issues for the Coming Month	14
8.3 Monitoring Schedules for the Next Month	14
<b>9. CONCLUSION AND RECOMMENDATION</b>	<b>15</b>
9.1 Conclusions	15
9.2 Comment and Recommendations	15

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## Tables

[Table 1.1 Contact Information of Key Personnel](#)

[Table 1.2 Environmental Licenses, Notification and Permits Summary](#)

[Table 2.1 Air Quality Monitoring Location](#)

[Table 3.1 Monitoring Parameters and Frequencies of Noise Monitoring](#)

[Table 3.2 Construction Noise Monitoring Location](#)

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## Figures

Figure 1 The Site Layout Plan of the Contract

Figure 2 The Location of the Air Quality Monitoring Station

Figure 3 The Location of the Noise Monitoring Station

Figure 4 Post-Construction Dolphin Monitoring Line Transect Layout Map

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## Appendices

Appendix A Construction Programme

Appendix B Project Organization Chart

Appendix C Event and Action Plan

Appendix D Waste Flow Table

Appendix E Implementation Status of Environment Mitigation Measures (Construction Phase)

Appendix F Cumulative statistics on Environmental Complaints, Notifications of Summons and Successful Prosecutions

Appendix G Summary of Site Audit in the Reporting Month

Appendix H Outstanding Issues and Deficiencies

Appendix I Environmental Monitoring Schedule

Appendix J Bi-Monthly Landscape and Visual Audit Checklist

# 1. INTRODUCTION

## 1.1 Background

- 1.1.1 Fugro Technical Services Limited was commissioned by China Harbour Engineering Co. Limited (also referred to as “the Contractor”) to undertake the Environmental Team (ET) services (including environmental monitoring and audit (EM&A)) for Contract No. HY/2019/01 “Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Phase 2 and Other Works”.
- 1.1.2 Contract No. HY/2019/01 is part of the “Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities” (HZMB HKBCF) Project which is a “Designated Project” under Schedule 2 of the Environmental Impact Assessment (EIA) Ordinance (Cap. 499) and for which an EIA Report (Register No. AEIAR-145/2009) was prepared and approved. The current Environmental Permit (EP) for HKBCF, namely No. EP-353/2009/K, was issued on 11 April 2016. These documents are available through the EIA Ordinance Register. The general layout of the Project area is shown in **Figure 1**. Commencement of the Contract took place on 4 December 2019 and the construction site preparation works commenced in early February 2020.
- 1.1.3 This is the 29th Monthly EM&A report to document the findings of site inspection activities and EM&A programme carried out by the Contractor of Contract No. HY/2019/01 from 1 June 2022 to 30 June 2022 (reporting period) and is submitted to fulfil Condition 5.4 of the EP.

## 1.2 Project Description

- 1.2.1 The works to be executed under Contract No. HY/2019/01 include the following major items:
- Landscaping and establishment works;
  - Irrigation system and associated drainage pumping system and facilities;
  - Erection and installation in the Passenger Clearance Building;
  - Public transport interchange (PTI) public toilet, satellite refuse collection point (RCP) and observation guard booths;
  - PTI cross boundary shuttle (CBS) / cross boundary coach (CBC) lanes and covered walkway;
  - Vehicle clearance plazas (VCP) vehicle kiosks and associate automatic vehicle clearance supporting system (AVCSS).

### 1.3 Project Organization

1.3.1 The Project Organization 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
Engineer or Engineer's Representative (AECOM Asia Co. Ltd.)	Senior Resident Engineer	Mr. Jason Yu	3748 8903
	Resident Engineer	Mr. Gordon Kok	3748 8967
Environmental Project Office / Independent Environmental Checker (Ramboll Hong Kong Limited)	Environmental Project Office Leader	Mr. Y. H. Hui	3465 2888
	Independent Environmental Checker (IEC)	Mr. Adi Lee	9700 6767
	Environmental Site Supervisor	Mr. K. C. Chan	3465 2882
Contractor (China Harbour Engineering Co. Ltd)	Environmental Manager	Mr. Marko Chan	9427 2879
	Environmental Officer	Mr. Matthew Wu	6076 2675
Environmental Team (Fugro Technical Services Limited)	Environmental Team Leader (ETL)	Mr. Calvin Leung	3565 4441

### 1.4 Construction Programme and Activities

1.4.1 The site layout plan of the Contract is shown in **Figure 1**.

1.4.2 The construction programme of this Contract is shown in **Appendix A**.

1.4.3 The Proposal for Termination of EM&A Programme in Construction Phase (0002\_20\_ED\_0467\_04) was verified by IEC on 13 June 2022 and submitted to EPD for approval.

### 1.5 Works undertaken during the month

1.5.1 No main construction works was carried out in the reporting period.

## 1.6 Status of Environmental Licences, Notification and Permits

1.6.1 A summary of the relevant permits, licenses and/or notifications on environmental protection for this Contract is presented in **Table 1.2**.

Table 1.2 Environmental Licenses, Notification and Permits Summary

Permit/ Notification/ License	Reference No	Valid From	Valid Till
Environmental Permit	EP-353/2009/K	11-Apr-16	Not Applicable
Notification pursuant to Air Pollution (Construction Dust) Regulation	451380	28-Nov-19	Not Applicable
Billing Account for Disposal of C&D waste	A/C No. 7036097	18-Dec-19	Not Applicable
Chemical Waste Producer Registration	5296-951-C1186-32	6-Feb-20	Not Applicable
Construction Noise Permit	GW-RS0955-21	13-Dec-21	11-Jun-22
Water Discharge License	WT00035721-2020	8-Jun-21	30-Apr 25

## 2. AIR QUALITY

### 2.1 Monitoring Requirement

- 2.1.1 In accordance with the Contract Specific EM&A Manual, 1-hour and 24-hour Total Suspended Particulates (TSP) levels should be measured at the designated air quality monitoring stations to indicate the impacts of construction dust on air quality. Impact 1-hour TSP monitoring was conducted for at least three times every 6 days, while impact 24-hour TSP monitoring was carried out for at least once every 6 days.
- 2.1.2 According to the EPD's reply email, EPD has no comment on the Proposal for Termination of Air quality and Noise Monitoring, the air quality monitoring for Contract No: HY/2019/01 have been terminated on 25 March 2022. The last monitoring was completed on 24 March 2022.

### 2.2 Monitoring Locations

- 2.2.1 In accordance with the Contract Specific EM&A Manual, four air quality monitoring locations, namely AMS2, AMS3C, AMS6 and AMS7B were set up at the proposed locations. AMS2, AMS3C and AMS7B are covered by Contract No. HY/2019/01 "Hong Kong-Zhuhai- Macao Bridge Hong Kong Boundary Crossing Facilities – Phase 2 and Other Works"
- 2.2.2 AMS6 is covered by Contract No. HY/2011/03 "Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road (HZMB HKLR) – Section between Scenic Hill and HKBCF". The ET of the Contract or another ET of the HZMB project is required to conduct impact air quality monitoring at AMS6 as part of EM&A programme if this air quality monitoring station is no longer covered by Contract No. HY/2011/03.
- 2.2.3 Due to the existing air quality monitoring location AMS7B would be hand over back to Airport Authority for their construction works. A new alternative air quality monitoring location is still under processing. Air quality monitoring location AMS7B was temporary suspended, effective from 10 December 2020.
- 2.2.4 According to the email date 11 August 2021, EPD have no comment on the Proposal for Relocation of Monitoring Location AMS 7B, the monitoring location AMS 7B are proposed to be relocated by alternative monitoring location AMS 7C for air quality monitoring. The monitoring location AMS 7C has resumed air quality monitoring on 5 October 2021.
- 2.2.5 The most updated locations of air quality monitoring are summarized in **Table 2.1** and they are shown in **Figure 2**.

Table 2.1 Air Quality Monitoring Location

Monitoring Station	Location
AMS2	Tung Chung Development Pier
AMS3C	Ying Tung Estate Market Rooftop
AMS6	Dragonair / CNAC (Group) Building (HKIA)
AMS7C	East Sea Rescue Berth – Airport Fire Contingent Third Runway Site Office

Remarks: The ET of this Contract should conduct impact air quality monitoring at station AMS6 listed in the table as part of EM&A programme according to latest notification from ENPO when the monitoring station is no longer covered by another ET of the HZMB project.



## 3. NOISE

### 3.1 Monitoring Requirement

3.1.1 In accordance with the Contract Specific EM&A Manuals,  $L_{eq}$  (30min) monitoring is conducted for at least once a week during the construction phase between 0700 and 1900 on normal weekdays at the designated monitoring locations.

3.1.2 According to the EPD's reply email, EPD has no comment on the Proposal for Termination of Air quality and Noise Monitoring, the noise monitoring for Contract No: HY/2019/01 have been terminated on 25 March 2022. The last monitoring was completed on 24 March 2022.

### 3.2 Monitoring Parameters and Frequency

3.2.1 The parameters and frequencies of impact noise monitoring is summarized in **Table 3.1**.

Table 3.1 Monitoring Parameters and Frequencies of Noise Monitoring

Parameter	Frequency
$L_{eq}$ (30min) $L_{10}$ and $L_{90}$ will be recorded for reference	At each station at 0700-1900 hours on normal weekdays at a frequency of once a week

### 3.3 Monitoring Locations

3.3.1 In accordance with the Contract Specific EM&A Manual, two noise monitoring locations, namely NMS2 and NMS3C are covered under Contract No. HY/2019/01 "Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Phase 2 and Other Works.

3.3.2 Due to rejection from Ho Yu College (NMS3) for setting up a noise monitoring station at their school, an alternative location at site boundary of the site office area at Works Area WA2 (NMS3B) is proposed. Impact noise monitoring has been relocated from NMS3B to Ying Tung Estate Market Rooftop (NMS3C) on 20 August 2018 under Contract No. HY/2013/04. The same baseline and Action and Limit levels for noise, as derived from the baseline monitoring data recorded at Ho Yu College, are adopted for this alternative noise monitoring location.

3.3.3 The most updated locations are summarized in **Table 3.2** and the locations of the noise monitoring stations shown in **Figure 3**.

Table 3.2 Construction Noise Monitoring Location

Monitoring Station	Location
NMS2	Seaview Crescent
NMS3C	Ying Tung Estate Refuse Collection Point

Remark: The Limit Levels for schools will be applied for this alternative monitoring location at NMS3C.

## 4. ECOLOGY MONITORING

### 4.1 Monitoring Requirements

- 4.1.1 All marine-based construction activities for the HKBCF project were completed in January 2019. No marine-based construction activities will be undertaken under this Contract. However, the ET of this Contract or another ET of the HZMB is required to conduct post-construction dolphin monitoring in accordance with Section 10.7 of the updated EM&A Manual.
- 4.1.2 The CV of the proposed dolphin specialist for this Contract has been submitted to IEC for review prior to submission to AFCD for approval.
- 4.1.3 According to the Proposal on Post-construction Dolphin Monitoring (PCDM) prepared by Contract No. HY/2013/04 which has been verified by ENPO and approved by EPD on 8 March 2019 (EPD ref. () in Ax(5) to E771/E1/100) , the completion date of the PCDM is in February 2021. Therefore, the reporting of Chinese White Dolphins monitoring works under this contract was completed on 1 March 2021.

### 4.2 Monitoring Locations and Methodology

- 4.2.1 In accordance with the requirements of the updated EM&A manual, the dolphin monitoring programme have adopted the standard line-transect method (Buckland et al. 2001) to survey the pre-set and fixed transect lines defined by AFCD in the Northeast Lantau (NEL) and Northwest Lantau (NWL) survey areas. The layout map of the transect lines provided by AFCD is presented in **Figure 4**.

## 5. SITE INSPECTION AND AUDIT

### 5.1 Site Inspection

- 5.1.1 Site audits were carried out by ET on weekly basis to monitor the implementation of proper environmental management practices and mitigation measures in the Project site.
- 5.1.2 In the reporting month, five site inspections were carried out on 1, 9, 15, 20 and 29 June 2022.
- 5.1.3 No outstanding issues were reported during the reporting month. Details of observations recorded during the site inspections are summarized in **Appendix G**.

### 5.2 Landscape and Visual Site Audit (Establishment Period)

- 5.2.1 As informed by AECOM, the commencement date of the 12-month establishment period for the landscape monitoring under this contract is 5 January 2022. Bi-monthly landscape and visual site audits will be conducted from 5 January 2022 to 4 January 2023.
- 5.2.2 A bi-monthly landscape and visual site audit was carried out on 20 June 2022 by a Registered Landscape Architect. The bi-monthly landscape and visual site audit checklist was counter-signed by IEC and presented in **Appendix J**.

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

- 5.3.1 The Contractor registered as a chemical waste producer for the Contract. Sufficient numbers of receptacles were available for general refuse collection and sorting.
- 5.3.2 The monthly summary of waste flow table is detailed in **Appendix D**.
- 5.3.3 If off-site disposal is required, the excavated marine mud from the land-based works shall be disposed of at the designated disposal sites within Hong Kong as allocated by the Marine Fill Committee or other locations as agreed by the Director. The Contractor shall ensure no spilling and overflowing of materials during loading / unloading / transportation is allowed.
- 5.3.4 The Contractor was reminded that chemical waste containers should be properly treated and stored temporarily in designated chemical waste storage area on site in accordance with the Code of Practice on the Packing, Labelling and Storage of Chemical Waste.

## 6. ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

### 6.1 Environmental Exceedance

6.1.1 According to the EPD's reply email, EPD has no comment on the Proposal for Termination of Air quality and Noise Monitoring, the air quality and noise monitoring for Contract No: HY/2019/01 have been terminated on 25 March 2022, no Action / Limit Level exceedance for air quality and noise monitoring was recorded during the period.

### 6.2 Complaints, Notification of Summons and Prosecution

6.2.1 No environmental complaint, notification of summons and successful prosecution were received in the reporting month.

6.2.2 Cumulative complaint log, summaries of complaints, notification of summons and successful prosecutions are presented in **Appendix F**.

## 7. IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURE

### 7.1 Implementation Status

The Contractor had implemented environmental mitigation measures and requirements as stated in the EIA Reports, the EP and EM&A Manuals. The implementation status of the environmental mitigation measures during the reporting period is summarized in **Appendix E**.

## 8. FUTURE KEY ISSUES

### 8.1 Construction Programme for the Next Month

- No main construction works will be carried out in the next reporting period.

### 8.2 Key Issues for the Coming Month

8.2.1 Potential environmental impacts arising from the above construction activities are mainly associated with construction dust, construction noise, waste management and landscape and visual impact issues.

### 8.3 Monitoring Schedules for the Next Month

8.3.1 The tentative schedule for environmental monitoring in the coming month is provided in **Appendix I**.

## 9. CONCLUSION AND RECOMMENDATION

### 9.1 Conclusions

- 9.1.1 According to the EPD's reply email, EPD has no comment on the Proposal for Termination of Air quality and Noise Monitoring, the air quality and noise monitoring for Contract No: HY/2019/01 have been terminated on 25 March 2022, no Action / Limit Level exceedance for air quality and noise monitoring was recorded during the period.
- 9.1.2 Five environmental site inspections were carried out in the reporting month. Recommendations on chemical and waste management mitigation measures was given to the Contractor for remediating the deficiencies identified during the site inspections.
- 9.1.3 Referring to the Contractor's information, no environmental complaint, notification of summons and successful prosecution was received in the reporting month.

### 9.2 Comment and Recommendations

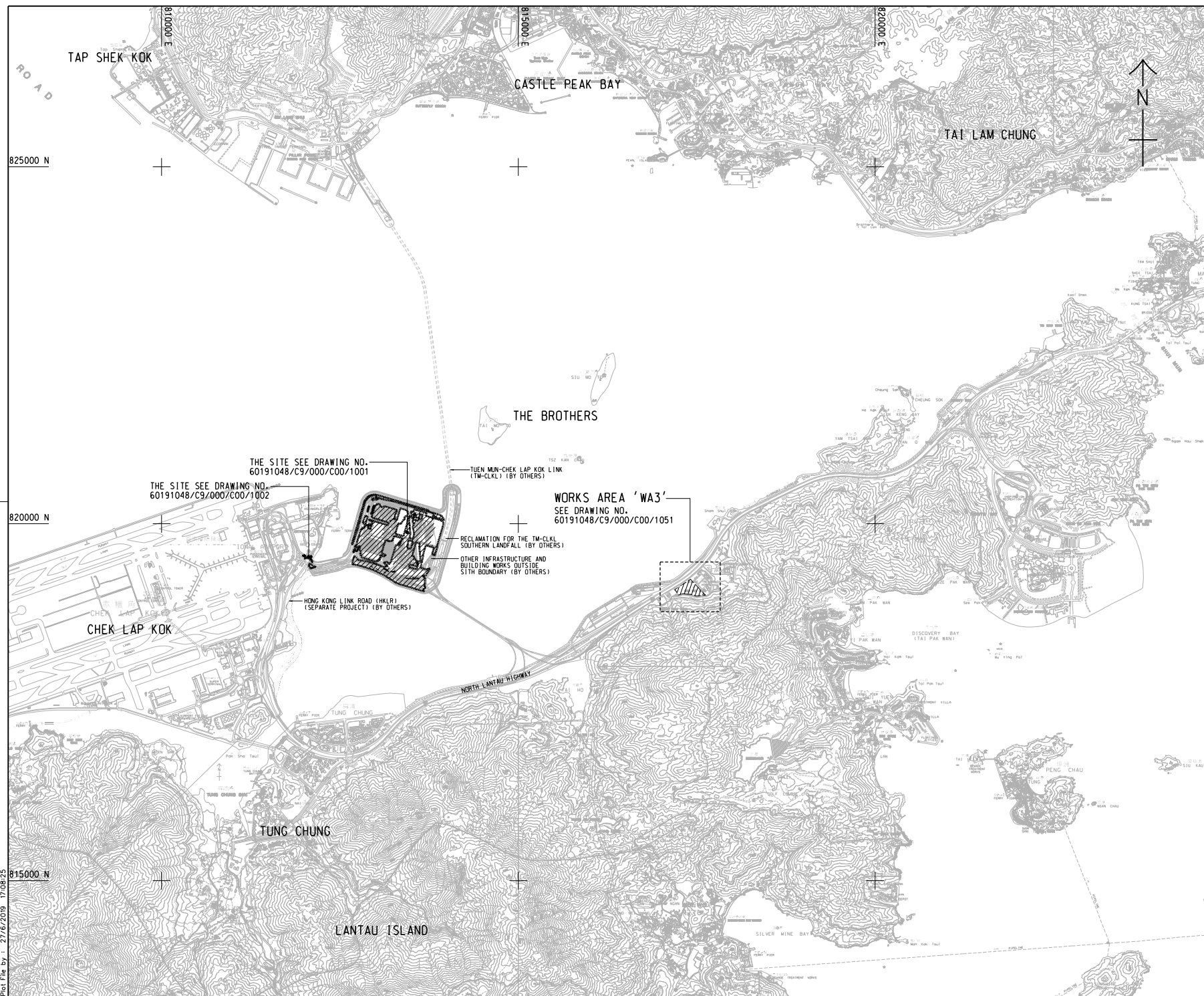
- 9.2.1 The recommended environmental mitigation measures, as proposed in the EIA reports and EM&A Manuals shall be effectively implemented to minimize the potential environmental impacts from the Project. The EM&A programme would effectively monitor the environmental impacts generated from the construction activities and ensure the proper implementation of mitigation measures.
- 9.2.2 According to the environmental site inspections performed in the reporting month, the following recommendations were provided:
- Air Quality Impact
- No specific observation was identified in the reporting month.
- Construction Noise Impact
- No specific observation was identified in the reporting month.
- Water Quality Impact
- No specific observation was identified in the reporting month.
- Chemical and Waste Management
- No specific observation was identified in the reporting month.
- Permit/ Licenses
- No specific observation was identified in the reporting month.

# Figure 1

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The Site Layout Plan of the Contract





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



THE SITE SEE DRAWING NO. 60191048/C9/000/C00/1001

THE SITE SEE DRAWING NO. 60191048/C9/000/C00/1002

WORKS AREA 'WA3'  
SEE DRAWING NO. 60191048/C9/000/C00/1051

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

RECLAMATION FOR THE TM-CKLK SOUTHERN LANDFALL (BY OTHERS)

OTHER INFRASTRUCTURE AND BUILDING WORKS OUTSIDE SITE BOUNDARY (BY OTHERS)

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

REV. NO.	DESCRIPTION	BY	DATE
-	TENDER DRAWING	TTHK	06 JUL 19

**香港高速公路局**  
**HIGHWAYS DEPARTMENT**  
 主要工程管理處 (傳真與辦)  
 Major Works Project Management Office (Special Duties)

**香港-珠海-澳門大橋**  
**HONG KONG-ZHUHAI-MACAO BRIDGE**  
 HONG KONG BOUNDARY CROSSING FACILITIES - PHASE 2 AND OTHER WORKS

**SITE LOCATION PLAN**

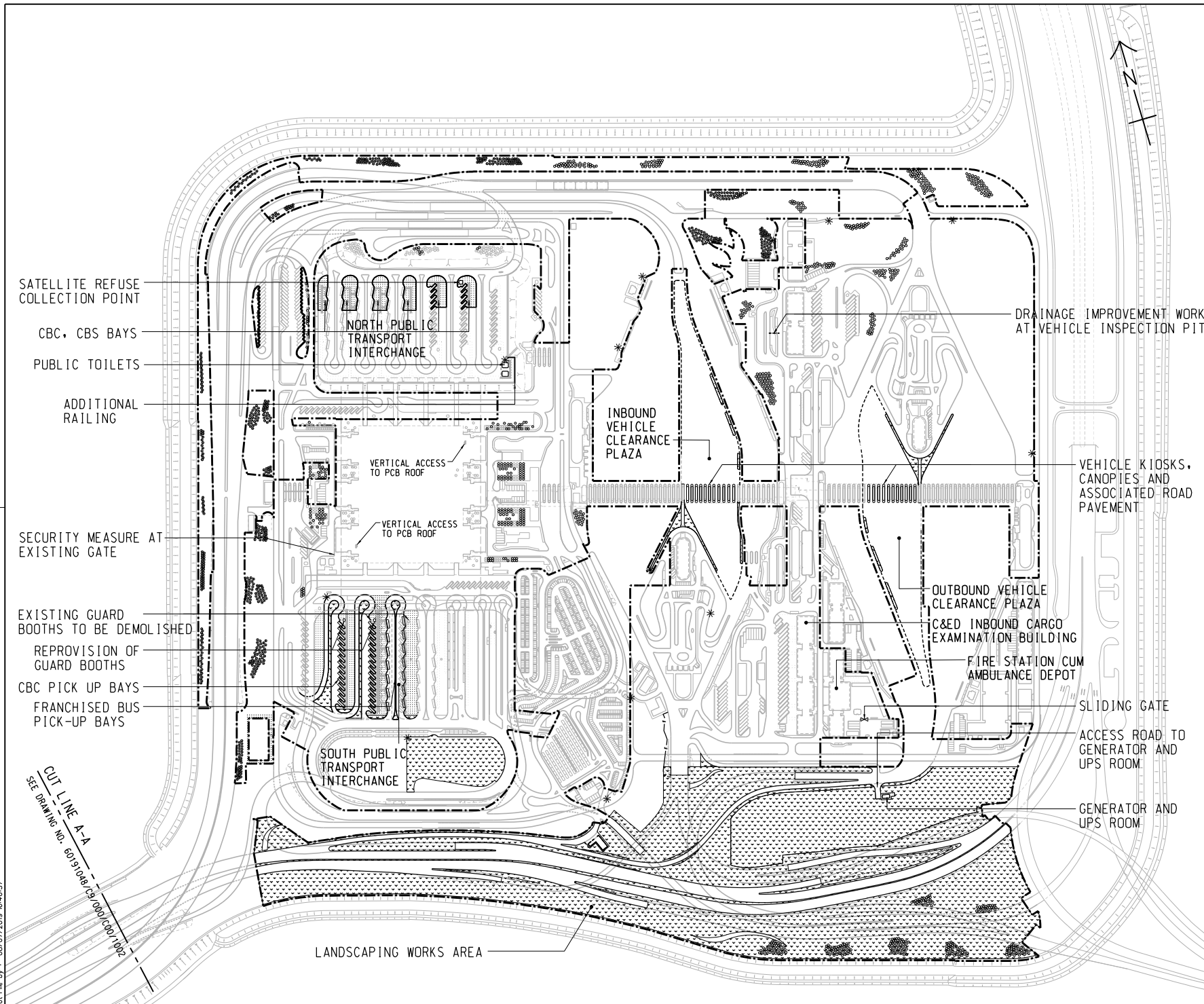
**AECOM** +  
 Rogers Stirk Harbour + Partners  
**Aedas**  
 BURO HAPPOLD ATKINS ADI +

DRG. NO. 60191048/C9/000/C00/1000  
 圖紙編號

DESIGNED BY TTHK	CONTRACT NO. HY/2019/01	APPROVED BY SC1
DRAWN BY JC	STATUS REV	

SCALE 1:25000  
 縮尺 1:25000  
 DIMENSION UNIT IN METRES  
 尺寸單位 公尺  
 © COPYRIGHT RESERVED  
 版權所有

Plot File by : 27/6/2019 17:08:25



**REMARKS:**

- IN SPT1:
  - DEMOLISH 2 NOS. EXISTING GUARD BOOTHS AND RE-PROVISION TO REVISED LOCATIONS AS SHOWN
  - CONSTRUCT COVERED WALKWAYS FOR THE NEW FB AND CBC PICK UP BAYS
  - MODIFY EXISTING DUCTING AND POLES FOR ELV SYSTEM, ROAD LIGHTING AND PILLAR BOXES, AND THE ASSOCIATED CABLING WORKS
  - RELOCATE AND REINSTATE 3 NOS. OF EXISTING BUS OPERATOR OFFICES AND FOOD TRUCK
  - REPLACEMENT OF DRAWPIT COVERS
- IN NPT1:
  - CONSTRUCT COVERED WALKWAYS FOR THE NEW CBC, CBS PICK UP BAYS AND PUBLIC TOILETS
  - PROVIDE AUTOMATIC IRRIGATION SYSTEM AT SLOPES
  - MODIFY EXISTING COVERED WALKWAY AND PROVISION OF LIGHTING
  - REPLACEMENT OF DRAWPIT COVERS
- LANDSCAPING WORKS AREA:
  - CONSTRUCT IRRIGATION SYSTEM WITH 13 NOS. OF NEW WATER POINT AND THE AUTOMATIC IRRIGATION SYSTEM AND PROVIDE MAINTENANCE WORKS
  - LANDSCAPE SOFTWARE, ESTABLISHMENT AND MAINTENANCE WORKS
  - CONSTRUCT RIVER WASHED STONE SWATHE AND MAINTENANCE WORKS
  - PROTECT EXISTING PLANTING AND HARD STRUCTURES
- PASSENGER CLEARANCE BUILDING
  - VERTICAL ACCESS
  - IMPROVEMENT WORKS FOR WATER FEATURE
  - MINOR REMAINING WORKS
  - PROVISION OF NEW CENTRAL AVSS EQUIPMENT WITH SUFFICIENT CAPACITY, PROCESSING POWER AND STORAGE TO ACCOMMODATE BOTH THE EXISTING AND NEW AVSS
- VEHICLE KIOSKS AT INBOUND & OUTBOUND VCP
  - PROVISION OF AVSS AT NEW KIOSKS TO SERVE 24 NOS. VEHICULAR LANES
  - REPLACEMENT OF BARRIER GATE WITH SKIRTING AT 72 NOS. EXISTING KIOSK
- C&E INBOUND CARGO EXAMINATION BUILDING
  - PROVISION OF NEW CENTRAL AVSS EQUIPMENT WITH SUFFICIENT CAPACITY, PROCESSING POWER AND STORAGE TO ACCOMMODATE BOTH THE EXISTING AND NEW AVSS

**ABBREVIATION:**

SPT1 - SOUTH PUBLIC TRANSPORT INTERCHANGE  
 NPT1 - NORTH PUBLIC TRANSPORT INTERCHANGE  
 VCP - VEHICLE CLEARANCE PLAZA  
 PCB - PASSENGER CLEARANCE BUILDING  
 FB - FRANCHISED BUS  
 CBC - CROSS BOUNDARY COACH  
 CBS - CROSS BOUNDARY SHUTTLE  
 ELV - EXTRA LOW VOLTAGE  
 AVSS - AUTOMATIC VEHICLE CLEARANCE SUPPORT SYSTEM

**NOTE:**

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING NOS. 60191048/C9/000/C00/1002

**LEGEND:**

- SITE BOUNDARY
- AMENITY AREA
- FOOTPATH
- COVERED WALKWAY
- SECURITY FENCE
- TREE PLANTING
- IRRIGATION POINT

NO.	DESCRIPTION	DATE
-	TENDER DRAWING	TTHK 06/2019

**GENERAL ARRANGEMENT**

SHEET 1 OF 2

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

**Aedas**

DRGNO 60191048/C9/000/C00/1001  
 圖紙編號

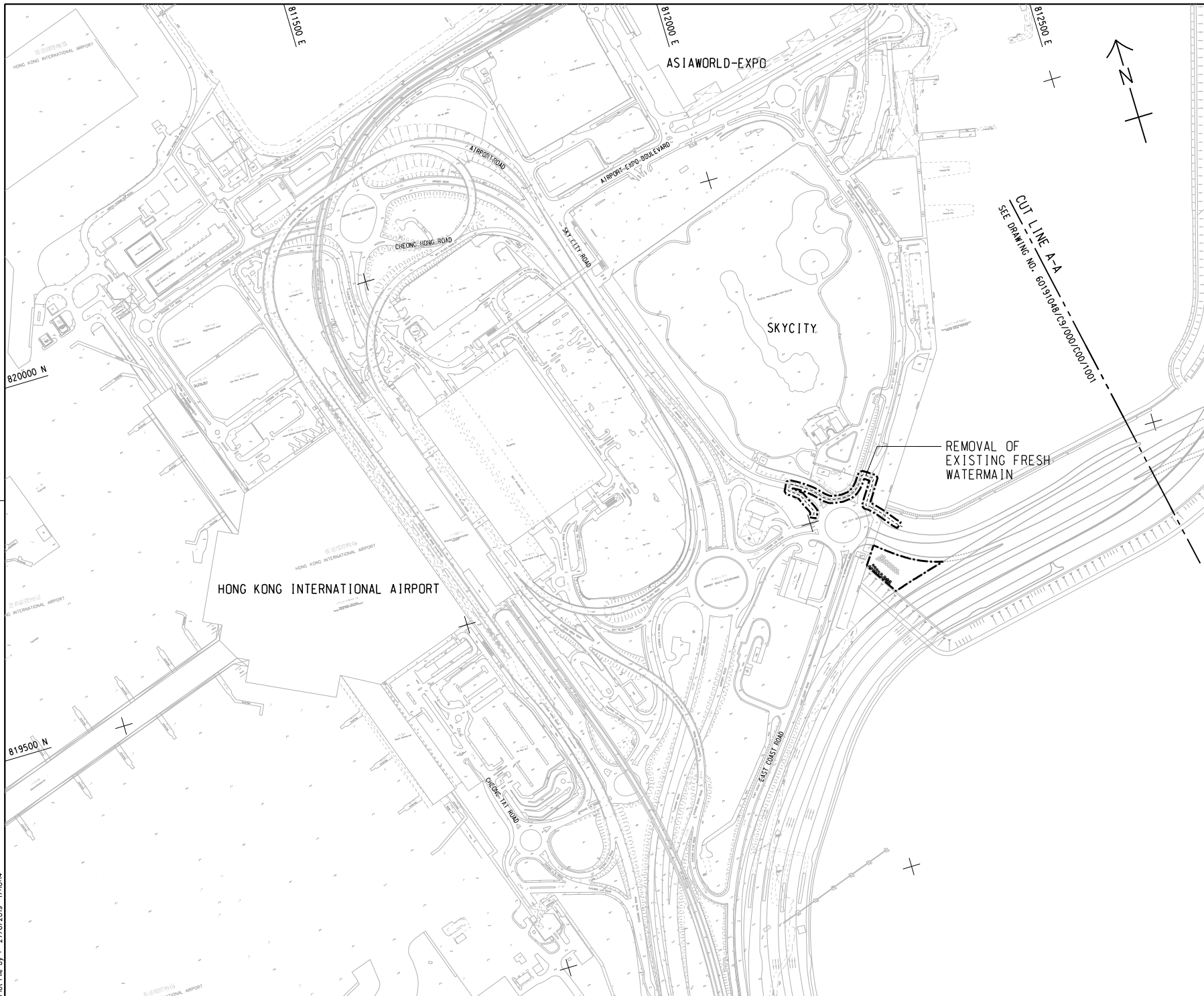
DESIGNED BY TTHK CONTRACT NO. HY/2019/01 P. Dir. APPROVED  
 CHECKED BY JC STATUS  
 SCALE AT 1 : 2500  
 DIMENSIONS ARE IN METRES

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Plot File by : 09/07/2019 B-4657

CUT LINE A-A  
 SEE DRAWING NO. 60191048/C9/000/C00/1002

LANDSCAPING WORKS AREA



**NOTE:**  
 1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING NOS. 60191048/C9/000/C00/1001.

CUT LINE A-A  
 SEE DRAWING NO. 60191048/C9/000/C00/1001

REV. NO.	DESCRIPTION	DATE
1	TENDER DRAWING	JUL 19

香港公路局  
 HIGHWAYS DEPARTMENT  
 主要工程管理處 (傳真專組)  
 Major Works Project Management Office (Special Duties)

HONG KONG-ZHUHAI-MACAO BRIDGE  
 HONG KONG BOUNDARY CROSSING FACILITIES  
 - PHASE 2 AND OTHER WORKS

GENERAL ARRANGEMENT  
 SHEET 2 OF 2

AECOM  
 Rogers Strik Harbour + Partners  
 BURO HAPPOLD ATKINS ADI

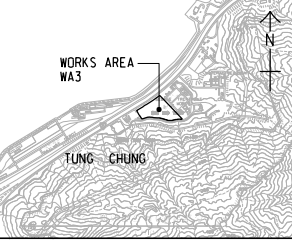
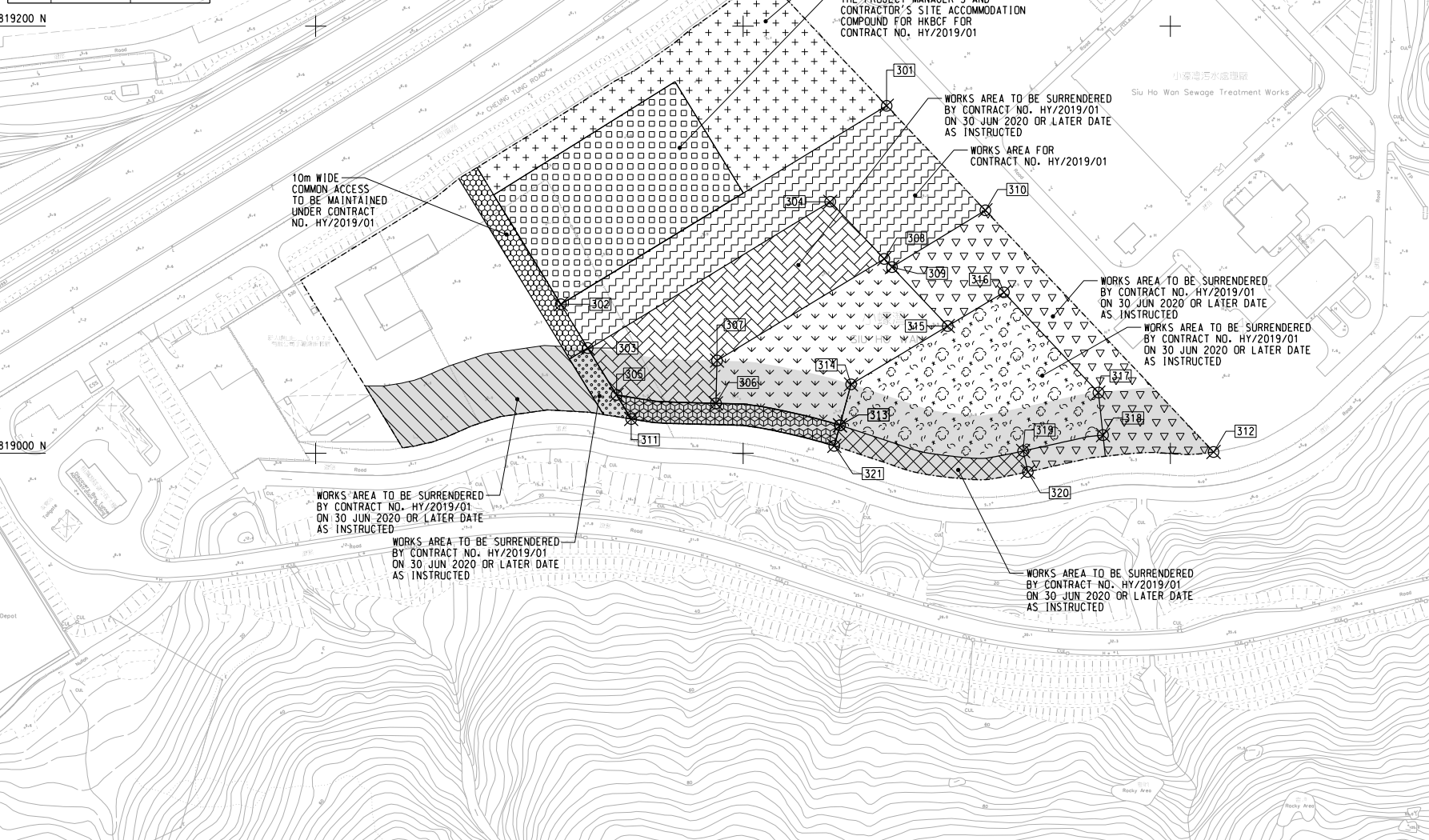
DRG. NO. 60191048/C9/000/C00/1002  
 圖紙編號

DESIGNED BY 設計	THK	CONTRACT NO. 合約編號	HY/2019/01	APPROVED BY 審核	SCI
DRAWN BY 繪圖	JC	STATUS 狀態			
SCALE 比例	A1 1 : 2500				

DIMENSIONS ARE IN METRES  
 尺寸單位為公尺  
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Plot File by : 27/6/2019 17:03:4

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	817620.269	819000.620
313	817445.362	819013.131
314	817450.595	819032.307
315	817495.828	819059.595
316	817522.110	819075.388
317	817566.404	819028.472
318	817568.506	819008.526
319	817531.155	819001.066
320	817533.346	818991.306
321	817442.727	819003.476



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
	PORTION 3.10
	PORTION 3.11
	PORTION 3.12
	NON-BUILDING AREA 8200m <sup>2</sup> (WHOLE)

TENDER DRAWING	TTHK/000	JUL 19
REV. NO.	DESCRIPTION	DATE

HIGHWAYS DEPARTMENT  
 主要工程管理處 (傳真與郵)  
 Major Works Project Management Office (Special Duties)

HONG KONG-ZHUHAI-MACAO BRIDGE  
 HONG KONG BOUNDARY CROSSING FACILITIES  
 - PHASE 2 AND OTHER WORKS

WORKS AREA WA3

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

DRGNO. 60191048/C9/000/C00/1051  
 圖紙編號

DESIGNED BY TTHK	CONTRACT NO. HY/2019/01	P. Dir. APPROVED SCL 1
DRAWN BY JC	STATUS REV	

SCALE  
A1 1 : 1000  
 DIMENSIONS ARE IN  
METRES  
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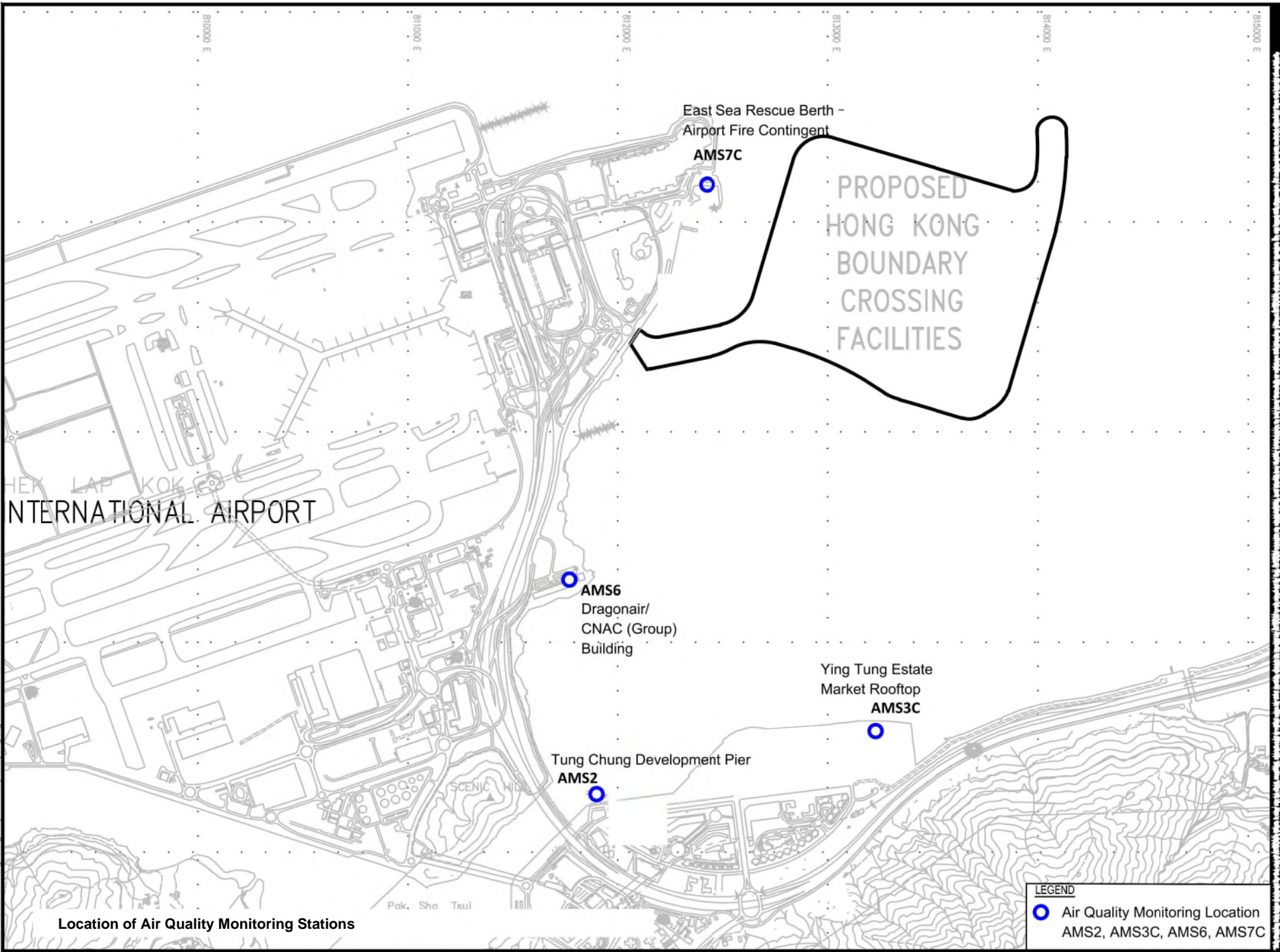
Plot File by : 22/6/2019 9:34:39

## Figure 2

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The Location of the Air Quality Monitoring Station





Location of Air Quality Monitoring Stations

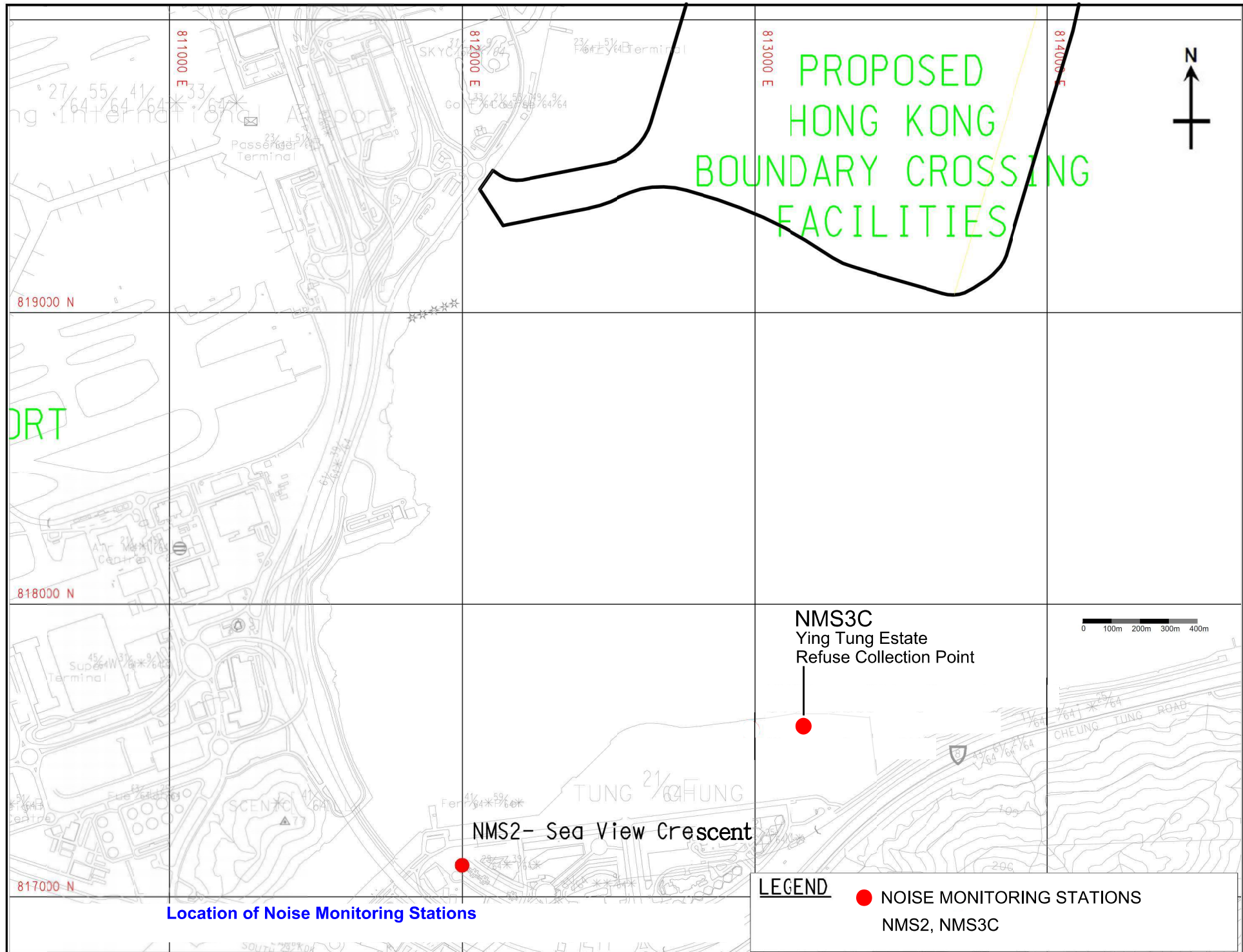
**LEGEND**

- Air Quality Monitoring Location  
AMS2, AMS3C, AMS6, AMS7C

## Figure 3

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The Location of the Noise Monitoring Station

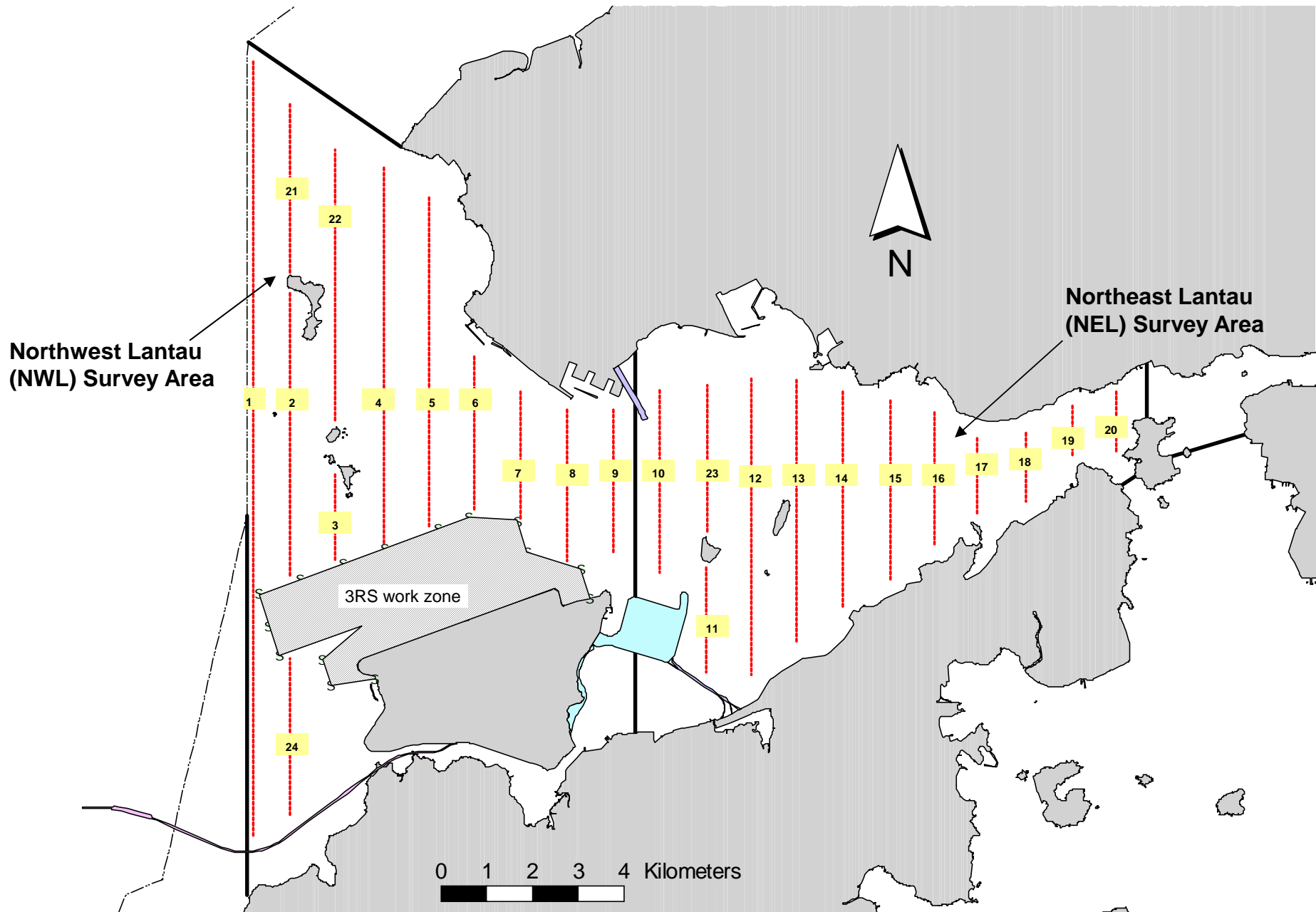




## Figure 4

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Post-Construction Dolphin Monitoring Line Transect  
Layout Map



Transect Line Layout in Northwest and Northeast Lantau Survey Areas

# Appendix A

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Construction Programme

Activity ID	Activity Name	Remaining Duration	Start	Finish	2022					
					Jan	Feb	Mar	Apr	May	
<b>Revised Works Programme for HKZMB Phase 2 and Other Works (HY/2019/01)</b>										
<b>CONTRACT DATES</b>										
<b>Starting Date</b>										
A0090	Completion Date (730 +19 days)	0		03-Feb-22*						
<b>Sectional Completion</b>										
A0310	Section 5: Remaining Works (730 +19 days) P.8 - P.12	0		03-Feb-22*						
<b>SUBMISSIONS</b>										
A0460	Acceptance of TTA	0	01-Jan-20 A	03-Feb-22						
<b>CONTRACTOR'S DESIGN</b>										
A7960	Design for Pump House	0	04-Dec-19 A	03-Feb-22						
A7980	Acceptance of the Design for Pump House	0	16-Aug-20 A	31-Jan-22 A						
<b>BUILDING INFORMATION MODELING</b>										
A7580	Completion of BIM 3D Model	28	17-Feb-20 A	02-Mar-22						
A7580A	As-built GIS Data Submission	28	03-Feb-22	02-Mar-22						
A7590	As-built BIM Model	41	08-Jan-21 A	15-Mar-22						
<b>REFINEMENT WORKS AT HKP (4A)</b>										
<b>Installation of Sliding Gate at Building No. 041 (4A.J)</b>										
A6650A	Removal of the existing manual swing gate	0	04-Oct-21 A	03-Feb-22						
A6710	Installation of Security Fence and Sliding Gate (Fire Station cum Ambulance Depot 041)	8	06-Dec-21 A	12-Feb-22						
A6720	T&C	3	14-Feb-22	16-Feb-22						
<b>Painting for Volleyball Court</b>										
A8850	Pavement rectification	15	03-Jan-22 A	21-Feb-22						
A8860	Painting for Volleyball Ground, Part 2	6	22-Feb-22*	28-Feb-22						
<b>SECTION 3: NPTI - PUBLIC TOILET, COVERED WALKWAY &amp; PAVEMENT (6)</b>										
<b>Additional and Modification to Existing Covered Walkway, Area 1 - 6 (6.E)</b>										
A6980	Installation of aluminum honey comb panels to the existing covered walkways	0	29-Dec-20 A	08-Jan-22 A						
A6990	T&C	0	07-Jul-21 A	08-Jan-22 A						
<b>Additional &amp; Modification of Covered Walkway adjacent to Building 003, Area 7 (6.C)</b>										
A4470G	Canopy Lighting Installation	0	15-Apr-21 A	03-Jan-22 A						
A7010	T&C	0	16-Aug-21 A	04-Feb-22						
<b>Public Toilet Type 1, Building 003 (6.B)</b>										
A3390	TPIDC Authority Inspection & Approval	0	30-Aug-21 A	15-Jan-22 A						
A6100	ASD Approval, WWO Part V submission & Approval	0	30-Aug-21 A	15-Jan-22 A						
<b>Additional Railing adjacent to Building 003 (6.D)</b>										
A3410	Installation of Railing	0	03-Jul-21 A	04-Feb-22						
<b>SECTION 5: REMAINING WORKS</b>										
<b>External Works at Plaza</b>										
A1520	Additional Drainage Works and Modification of existing UUs	0	03-Jun-20 A	04-Feb-22						
A1540B	Pavement Works (Roadbase and Base Course) at Outbound North	12	10-May-21 A	17-Feb-22						
A1540C	Pavement Works (Roadbase and Base Course) at Inbound South	11	08-Jun-21 A	16-Feb-22						
A8770	Pavement Works (Wearing Course) at Outbound	22	08-Nov-21 A	01-Mar-22						
A8780	Pavement Works (Wearing Course) at Inbound	24	08-Nov-21 A	03-Mar-22						
A8790	Road Marking & Signs	48	03-Jan-22 A	31-Mar-22						
<b>Design, Design Acceptance &amp; Procurement for Kiosks</b>										
A7110	Procurement of Steelwork/Glazing/ABWF/E&M Material	0	07-Apr-20 A	03-Feb-22						
<b>Inbound: 11 No. of Private Car Kiosks between 027/028</b>										
<b>Builder Works (5.A)</b>										
A1080C	ABWF Works at 4th Group Kiosks (3 nos.)	0	27-Jul-21 A	12-Jan-22 A						
A1080D	ABWF Works at Kiosks at Inbound VCP (miscellaneous external railing, cladding etc.)	33	17-Aug-21 A	14-Mar-22						
A1180A	MJ, Fall Arrest System, Maintenance Access	0	01-Sep-21 A	31-Jan-22 A						
A4480	Removal of all hoarding after OPT	12	14-Mar-22*	26-Mar-22						
A8800	Removal of TTA	4	28-Mar-22	31-Mar-22						
<b>E&amp;M Works</b>										
A1120-42	8.1.2.2. (by Civil/metal/E&M) D1-ABWF (raised floor, furniture, E&M, road surface at kiosk completed)	0	04-Feb-22							
A1120-44	8.1.2.2- 1st Installation of Equipment (027/028)	32	18-Oct-21 A	12-Mar-22						
A1120-44C	8.1.2.2- 4th Installation of Equipment (027/028)	32	25-Nov-21 A	12-Mar-22						
A1120-46.2	8.1.2.2-Termination & Installation Test of all ODB (027/028)	37	04-Feb-22	18-Mar-22						
A1120-46.4	8.1.2.2-Integrate all ODBs into Existing ODB network(027/028) (IB & OB together 24 kiosks)	28	19-Mar-22	25-Apr-22						
A1120-54	8.1.2A-Relocation of Inbound VID and VTS Equipment	32	04-Oct-21 A	12-Mar-22						

■ Actual Work    ◆ ◆ Milestone  
■ Remaining Work  
■ Critical

**THREE MONTH ROLLING PROGRAMME FOR PHASE 2 AND OTHER WORKS**  
**HKZMB - HONG KONG BOUNDARY CROSSING FACILITIES**  
 Page 1 of 3

Date	Revision	Checked	Approved
12-Mar-22	3mth Rolling Programme, 3 Feb. 22 - 2 May 22	ZJ	

HKZMB HK Boundary Crossing Facilities - Phase 2 and Other Works

16-Mar-22

Activity ID	Activity Name	Remaining Duration	Start	Finish	2022				
					Jan	Feb	Mar	Apr	May
A1120-60	8.1.3 - System Configuration of AVCSS	69	15-Jan-22 A	29-Apr-22	█	█	█	█	█
A1120-70	8.1.4-Complete Training, SAT (exclude ODB) (12 AVCSS Kiosks at 027/028)	53	30-Apr-22	05-Jul-22					█
A1120-80	8.1.5-Preparation of O&M Manual and Spare Parts	60	30-Apr-22	13-Jul-22					█
A1130-10	8.1.7-D1-TTA for OPT (027/028)	13	04-Feb-22	18-Feb-22		█			
A1130-20	8.1.7-OPT (027/028)	16	21-Feb-22	08-Mar-22		█			
A1130-30	8.1.7A - Migration/Integration with existing AVCSS (Existing 72 Kiosks + 24 Phase 2 Kiosks)	37	14-Mar-22	29-Apr-22			█		
A1130-40	8.1.6-T&C maintenance Services	225	30-Apr-22	01-Feb-23					█
A1190	E&M Works at Roof	0	24-Jul-21 A	31-Jan-22 A	█				
A8370	Update and modification of District Cooling System (DCS) (incl. water balancing for new kiosks and	60	01-Nov-21 A	19-Apr-22	█	█	█	█	
<b>Outbound: 11 No. of Private Car Kiosks between 029/030</b>									
<b>Builder's Works (5.A)</b>									
A1270D	ABWF Works at Kiosks at Outbound VCP (miscellaneous external railing, cladding etc.)	26	25-May-21 A	05-Mar-22	█	█			
A1380A	MJ, Fall Arrest System, Maintenance Access	0	25-Aug-21 A	31-Jan-22 A	█				
A4670	Removal of all hoarding after OPT	12	14-Mar-22*	26-Mar-22			█		
A8810	Removal of TTA	4	28-Mar-22	31-Mar-22			█		
<b>E&amp;M Works</b>									
A1310-44	8.1.2.2-1st Installation of Equipment (029/030)	32	18-Oct-21 A	12-Mar-22	█	█	█		
A1310-44C	8.1.2.2-4th Installation of Equipment (029/030)	32	05-Nov-21 A	12-Mar-22	█	█	█		
A1310-46.2	8.1.2.2-Termination & Installation Test of all ODB (029/030)	12	03-Jan-22 A	17-Feb-22	█	█			
A1310-46.4	8.1.2.2-Integrate all ODBs into Existing ODB network(027/028) (IB & OB together 24 kiosks)	28	18-Feb-22	22-Mar-22			█		
A1310-54	8.1.2A-Relocation of Outbound VID and VTS Equipment	0	04-Oct-21 A	15-Jan-22 A	█				
A1310-60	8.1.3 - System Configuration of AVCSS	69	04-Feb-22	29-Apr-22		█	█	█	█
A1310-70	8.1.4-Complete Training, SAT (exclude ODB) (12 AVCSS Kiosks at 029/030)	53	30-Apr-22	05-Jul-22					█
A1310-80	8.1.5-Preparation of O&M Manual and Spare Parts	60	30-Apr-22	13-Jul-22					█
A1320-10	8.1.7-D1-TTA for OPT (029/030)	13	04-Feb-22	18-Feb-22		█			
A1320-20	8.1.7-OPT (029/030)	14	07-Feb-22	20-Feb-22		█			
A1320-30	8.1.7A - Migration/Integration with existing AVCSS (Existing 72 Kiosks+24 Phase 2 Kiosks)	41	14-Mar-22	05-May-22			█		
A1390	E&M Works at Roof	8	03-Aug-21 A	12-Feb-22	█				
A8380	Update and modification of District Cooling System (DCS) (incl. water balancing for new kiosks and	60	01-Nov-21 A	19-Apr-22	█	█	█	█	
<b>SPTI Stage 3B</b>									
A8640	Installation of Covered Walkway Canopy	0	16-Aug-21 A	04-Feb-22	█				
A8660	Rigid Pavement Type A	0	17-Aug-21 A	17-Jan-22 A	█				
A8670	Kerb & Planter Barrier	0	18-Aug-21 A	17-Jan-22 A	█				
A8690	Flexible Pavement Type C (incl. SOL353)	0	18-Sep-21 A	17-Jan-22 A	█				
A8710	Footpath Paving Block	0	21-Sep-21 A	17-Jan-22 A	█				
A8720	Canopy Lighting and E&M Works	8	03-Nov-21 A	12-Feb-22	█				
<b>Pump House for Landscape (2)</b>									
A2900	Submission of Materials	0	04-Dec-19 A	03-Feb-22	█				
A2910	Acceptance of the Design for Pump House	0	16-Aug-20 A	07-Feb-22 A	█				
A2990	Final Connection and T&C	12	01-Nov-21 A	17-Feb-22	█	█			
A6440	WSD Inspection & Approval, Final Connection	16	04-Feb-22	19-Feb-22		█			
<b>Substation Paving Unit</b>									
A8820	Substation: Modification of existing MH/drawpit covers, construct U-channel and catch pit and conn	21	13-Nov-21 A	28-Feb-22	█	█			
A8830	Substation: Site formation for Pavement Works	0	20-Dec-21 A	08-Jan-22 A	█				
A8840	Substation: Pavement Works (KP1 & K1 ) (Paving Unit)	21	28-Dec-21 A	28-Feb-22	█	█			
<b>Landscape Works (2)</b>									
A4180B	Hydroseeding for Landscaping Area (C33 & Southern Portion)	0	14-Apr-21 A	04-Jan-22 A	█				
<b>Irrigation System (Southern Portion)</b>									
<b>Irrigation System at Southern Portion</b>									
A7910	Irrigaton Pipe Laying (incl. install sprinklers and QCV)	10	02-Jan-21 A	15-Feb-22	█	█			
A7930	T&C	14	16-Feb-22	03-Mar-22		█			
<b>Irrigation System (Water Point)</b>									
A7160	T&C	24	04-Oct-21 A	03-Mar-22	█	█			
<b>Group 1: WP 12, 13, 14 &amp; 18</b>									
A6563	Construction of Additional Waterpoints (WP 14) for Irrigation	0	03-Aug-21 A	20-Jan-22 A	█				
A6567	Construction of Additional Waterpoints (WP 18) for Irrigation	0	03-Aug-21 A	20-Jan-22 A	█				
<b>Group 2: WP 19 - 22</b>									
A6568	Construction of Additional Waterpoints (WP 19) for Irrigation	0	03-Sep-21 A	20-Jan-22 A	█				
A6569	Construction of Additional Waterpoints (WP 20) for Irrigation	0	03-Aug-21 A	20-Jan-22 A	█				
A6571	Construction of Additional Waterpoints (WP 21) for Irrigation	0	03-Aug-21 A	20-Jan-22 A	█				
A6572	Construction of Additional Waterpoints (WP 22) for Irrigation	0	03-Aug-21 A	20-Jan-22 A	█				

█ Actual Work    ◆ Milestone  
█ Remaining Work  
█ Critical

**THREE MONTH ROLLING PROGRAMME FOR PHASE 2 AND OTHER WORKS**  
**HKZMB - HONG KONG BOUNDARY CROSSING FACILITIES**

Date	Revision	Checked	Approved
12-Mar-22	3mth Rolling Programme, 3 Feb. 22 - 2 May 22	ZJ	

Activity ID	Activity Name	Remaining Duration	Start	Finish	2022				
					Jan	Feb	Mar	Apr	May
<b>Group 4: WP 8, &amp; WP 23</b>									
A6573	Construction of Additional Waterpoints (WP 23) for Irrigation	0	03-Aug-21 A	20-Jan-22 A					
<b>Completion of Section 5</b>									
A7490	Section 5: Remaining Works (730 + 12 days)	0		31-Mar-22*	◆ Section 5: Remaining Works (730 + 12 days)				
<b>SECTION 6: ESTABLISHMENT WORKS</b>									
A3550	Establishment Works	336	05-Jan-22 A	04-Jan-23					

Actual Work    ◆ Milestone  
 Remaining Work  
 Critical

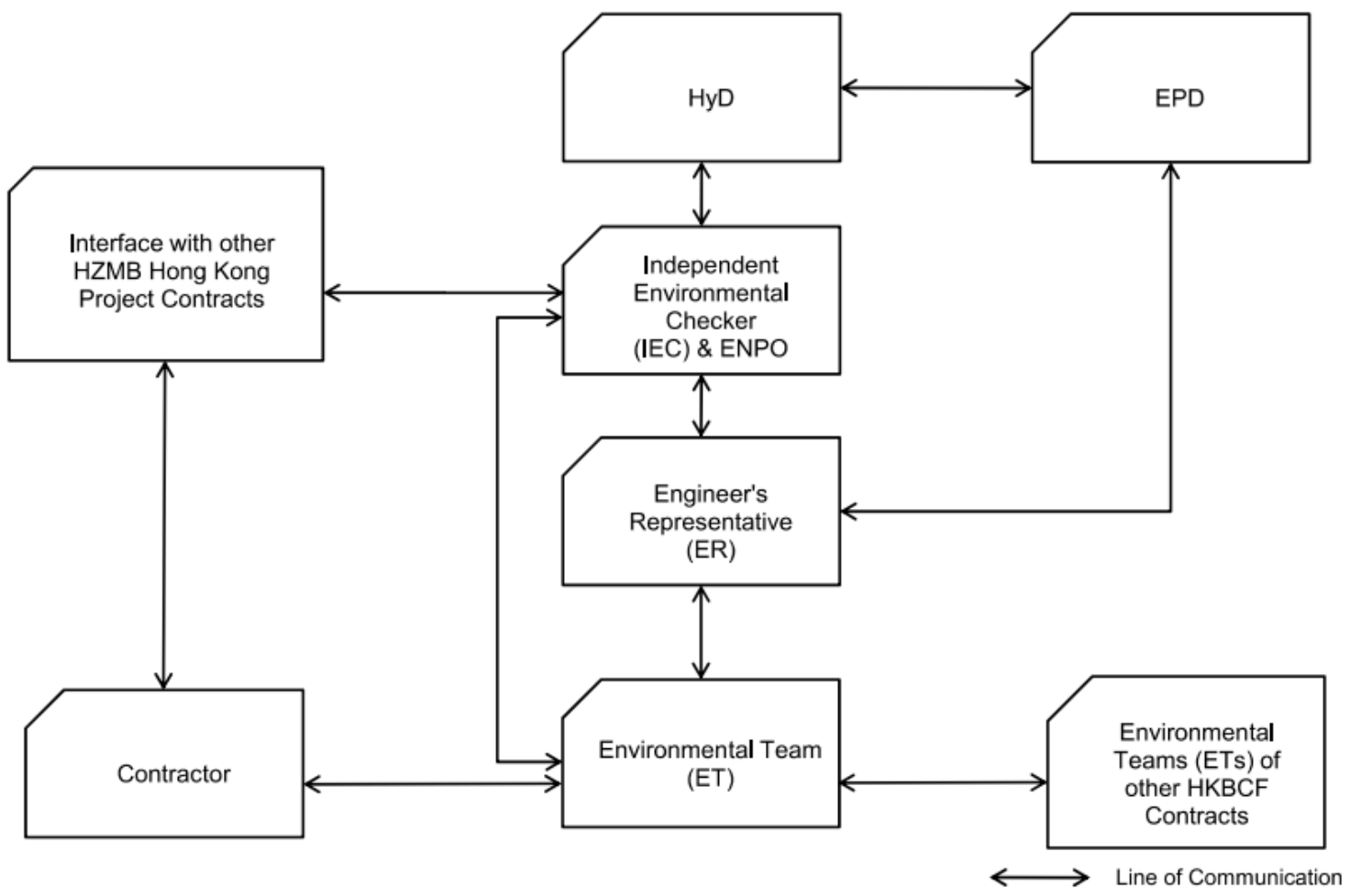
**THREE MONTH ROLLING PROGRAMME FOR PHASE 2 AND OTHER WORKS  
HKZMB - HONG KONG BOUNDARY CROSSING FACILITIES**

Date	Revision	Checked	Approved
12-Mar-22	3mth Rolling Programme, 3 Feb. 22 - 2 May 22	ZJ	

# Appendix B

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Project Organization Chart





# Appendix C

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Event and Action Plan

## Event / Action Plan for Air Quality

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

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

## Event / Action Plan for Construction Noise

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

## Event / Action Plan for Dolphin Monitoring

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

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

# Appendix D

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Waste Flow Table

<b>Waste Flow Table for Year 2020</b>										
Monthly Ending	Actual Quantities of Inert C&D Materials Generated Monthly					Actual Quantities of Non-inert C&D Wastes Generated Monthly				
	Total Quantity Generated (Inert C&D)	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 2)	Chemical Waste	Others, e.g. general refuse
	(in '000 Kg)	(in '000 Kg)	(in '000 Kg)	(in '000 Kg)	(in '000 Kg)	(in '000 Kg)	(in '000 Kg)	(in '000 Kg)	(in '000 Kg)	(in '000 Kg)
2020 Jan	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
2020 Feb	720.34	Nil	720.34	Nil	Nil	Nil	0.335	Nil	Nil	2.23
2020 Mar	11344.57	Nil	10218.92	Nil	1125.65	Nil	0.669	Nil	Nil	8.05
2020 Apr	19649.37	Nil	18670.3	Nil	979.07	Nil	Nil	Nil	Nil	21.64
2020 May	26767.55	Nil	26692.04	Nil	75.51	Nil	2.42	Nil	Nil	196.64
2020 Jun	4628.13	Nil	4198.52	Nil	429.61	Nil	Nil	Nil	Nil	117.19
2020 Jul	4895.66	Nil	3398.41	Nil	1497.25	Nil	Nil	Nil	Nil	30.33
2020 Aug	4971.00	Nil	4774.49	Nil	196.51	Nil	0.418	Nil	Nil	36.91
2020 Sep	1175.26	Nil	736.1	Nil	439.16	Nil	Nil	Nil	Nil	36.16
2020 Oct	3433.83	Nil	Nil	2262.7	1171.13	Nil	Nil	Nil	Nil	32.25
2020 Nov	26481.72	Nil	Nil	24393.64	2088.08	Nil	Nil	Nil	Nil	40.09
2020 Dec	14361.90	Nil	Nil	13468.00	893.90	Nil	Nil	Nil	Nil	39.56
<b>Total</b>	<b>118429.33</b>	<b>0</b>	<b>69409.12</b>	<b>40124.34</b>	<b>8895.87</b>	<b>0</b>	<b>3.842</b>	<b>0</b>	<b>0</b>	<b>561.05</b>

Note:

- 1) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
- 2) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging materials.
- 3) Total Quantity Generated (Inert) = Hard Rock and Large Broken Concrete + Reused in the Contract + Disposed as Public Fill – Imported Fill



Waste Flow Table for Year 2021										
Monthly Ending	Actual Quantities of Inert C&D Materials Generated Monthly					Actual Quantities of Non-inert C&D Wastes Generated Monthly				
	Total Quantity Generated (Inert C&D)	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 2)	Chemical Waste	Others, e.g. general refuse
	(in '000 Kg)	(in '000 Kg)	(in '000 Kg)	(in '000 Kg)	(in '000 Kg)	(in '000 Kg)	(in '000 Kg)	(in '000 Kg)	(in '000 Kg)	(in '000 Kg)
2021 Jan	787.6	0	0	0	787.6	0	0	0	0	18.19
2021 Feb	254.95	0	0	0	254.95	0	0	0	0	154.94
2021 Mar	1899.61	0	0	1720.5	179.11	0	0	0	0	371.73
2021 Apr	4056.27	0	0	0	4056.27	2.13	8.17	0	0	144.08
2021 May	2738.81	0	0	0	2738.81	0.495	0	0	0	31.63
2021 Jun	1009.53	0	0	0	1009.53	0	0	0	0	90.91
2021 Jul	1384.29	0	0	0	1384.29	0	0	0	0	51.69
2021 Aug	340.46	0	0	0	340.46	5.85	0	0	0	42.99
2021 Sep	732.9	0	0	0	732.9	0	0	0	0	70.11
2021 Oct	1023.81	0	0	0	1023.81	0	0	0	0	74.68
2021 Nov	1155.56	0	0	0	1155.56	3.195	0	0	0	121.99
2021 Dec	271.67	0	0	0.00	271.67	0	0	0	0	70.97
<b>Total</b>	<b>15655.46</b>	<b>0</b>	<b>0</b>	<b>1720.5</b>	<b>13934.96</b>	<b>11.665</b>	<b>8.17</b>	<b>0</b>	<b>0</b>	<b>1243.91</b>

Note:

- 1) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
- 2) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging materials.
- 3) Total Quantity Generated (Inert) = Hard Rock and Large Broken Concrete + Reused in the Contract + Disposed as Public Fill – Imported Fill

<b>Waste Flow Table for Year 2022</b>										
Monthly Ending	Actual Quantities of Inert C&D Materials Generated Monthly					Actual Quantities of Non-inert C&D Wastes Generated Monthly				
	Total Quantity Generated (Inert C&D)	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 2)	Chemical Waste	Others, e.g. general refuse
	(in '000 Kg)	(in '000 Kg)	(in '000 Kg)	(in '000 Kg)	(in '000 Kg)	(in '000 Kg)	(in '000 Kg)	(in '000 Kg)	(in '000 Kg)	(in '000 Kg)
2022 Jan	167.72	0	0	0	167.72	0	0	0	0	58.92
2022 Feb	50.85	0	0	0	50.85	0	0	0	0	20.48
2022 Mar	10.10	0	0	0	10.10	0	0	0	0	16.46
2022 Apr	154.27	0	0	0	154.27	0	0	0	0	20.09
2022 May	186.03	0	0	0	186.03	0	0	0	0	6.33
2022 Jun	7.86	0	0	0	7.86	0	0	0	0	8.08
2022 Jul										
2022 Aug										
2022 Sep										
2022 Oct										
2022 Nov										
2022 Dec										
<b>Total</b>	<b>576.83</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>576.83</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>130.36</b>

Note:

- 1) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
- 2) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging materials.
- 3) Total Quantity Generated (Inert) = Hard Rock and Large Broken Concrete + Reused in the Contract + Disposed as Public Fill – Imported Fill

# Appendix E

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Implementation Status of Environment Mitigation  
Measures (Construction Phase)

## Implementation Status of Environment Mitigation Measures (Construction Phase) - Contract No. HY/2019/01

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
<b>Air Quality</b>				
S5.5.6.1	A1	1) The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	All construction sites	Implemented
S5.5.6.2	A2	2) Proper watering of exposed spoil should be undertaken throughout the construction phase: <ul style="list-style-type: none"> <li>•Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading;</li> <li>•Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads;</li> <li>•A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones.</li> <li>•The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle;</li> <li>•Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores;</li> </ul>	All construction sites	N/A
S5.5.6.2	A2	<ul style="list-style-type: none"> <li>•When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period;</li> <li>•The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials,</li> <li>•Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously;</li> <li>•Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet;</li> <li>•Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding;</li> <li>•Any skip hoist for material transport should be totally enclosed by impervious sheeting;</li> <li>•Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top.</li> </ul>	All construction sites	N/A

## Implementation Status of Environment Mitigation Measures (Construction Phase) - Contract No. HY/2019/01

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
S5.5.6.2	A2	<ul style="list-style-type: none"> <li>• Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed;</li> <li>• Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and</li> <li>• Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies</li> </ul>	All construction sites	N/A
S5.5.6.3	A3	3) The Contractor should undertake proper watering on all exposed spoil (with at least 8 times per day) throughout the construction phase.	All construction sites	N/A
S5.5.6.4	A4	4) Project Manager to incorporate the controlled measures into the Particular Specification (PS) for the civil work. The PS should also draw the contractor's attention to the relevant latest Practice Notes issued by EPD.	All construction sites	N/A
S5.5.6.4	A5	5) Implement regular dust monitoring under EM&A programme during the construction stage.	Selected representative dust monitoring station	N/A
S5.5.7.1	A6	<p>The following mitigation measures should be adopted to prevent fugitive dust emissions for concrete batching plant;</p> <ul style="list-style-type: none"> <li>• Loading, unloading, handling, transfer or storage of any dusty materials should be carried out in totally enclosed system;</li> <li>• All dust-laden air or waste gas generated by the process operations should be properly extracted and vented to fabric filtering system to meet the emission limits for TSP;</li> <li>• Vents for all silos and cement/pulverised fuel ash (PFA) weighing scale should be fitted with fabric filtering system;</li> <li>• The materials which may generate airborne dusty emissions should be wetted by water spray system;</li> <li>• All receiving hoppers should be enclosed on three sides up to 3m above unloading point;</li> <li>• All conveyor transfer points should be totally enclosed;</li> <li>• All access and route roads within the premises should be paved and wetted; and</li> <li>• Vehicle cleaning facilities should be provided and used by all concrete trucks before leaving the premises to wash off any dust on the wheels and/or body.</li> </ul>	Selected representative dust monitoring station	N/A
S5.5.2.7	A7	<p>The following mitigation measures should be adopted to prevent fugitive dust emissions at barging point:</p> <ul style="list-style-type: none"> <li>• All road surface within the barging facilities will be paved;</li> <li>• Dust enclosures will be provided for the loading ramp;</li> <li>• Vehicles will be required to pass through designated wheels wash facilities; and</li> <li>• Continuous water spray at the loading points.</li> </ul>	All construction sites	N/A
<b>Construction Noise (Air borne)</b>				
S6.4.10	N1	<p>1) Use of good site practices to limit noise emissions by considering the following:</p> <ul style="list-style-type: none"> <li>• only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme;</li> <li>• machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum;</li> <li>• plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs;</li> <li>• silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works;</li> </ul>	All construction sites	Implemented

## Implementation Status of Environment Mitigation Measures (Construction Phase) - Contract No. HY/2019/01

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
		<ul style="list-style-type: none"> <li>•mobile plant should be sited as far away from NSRs as possible and practicable;</li> <li>•material stockpiles, mobile container site officer and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.</li> </ul>		
S6.4.11	N2	2) Install temporary hoarding located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period.	All construction sites	Implemented
S6.4.12	N3	3) Install movable noise barriers (typically density@14kg/m acoustic mat or full enclosure close to noisy plants including compressor, generators, saw.	For plant items listed in Appendix 6D of the EIA report at all construction sites	N/A
S6.4.13	N4	4) Select "Quiet plants" which comply with the BS 5228 Part 1 or TM standards.	For plant items listed in Appendix 6D of the EIA report at all construction sites	Implemented
S6.4.14	N5	5) Sequencing operation of construction plants where practicable	All construction sites where practicable	N/A
S5.1	N6	6) Implement a noise monitoring under EM&A programme.	Selected representative noise monitoring station	N/A
<b>Waste Management (Construction Noise)</b>				
S8.3.8	WM1	<p>Construction and Demolition Material</p> <p>The following mitigation measures should be implemented in handling the waste:</p> <ul style="list-style-type: none"> <li>•Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement;</li> <li>•Carry out on-site sorting;</li> <li>•Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate;</li> <li>•Implement a trip-ticket system for each works contract to ensure that the disposal of C&amp;D materials are properly documented and verified; and</li> <li>•Implement an enhanced Waste Management Plan similar to E7WBTC (Works) No. 19/2005 - "Environmental Management on Construction Sites" to encourage on-site sorting of C&amp;D materials and to minimize their generation during the course of construction.</li> <li>•In addition, disposal of the C&amp;D materials onto any sensitive locations such as agricultural lands, etc. should be avoided. The Contractor shall propose the final disposal sites to the Project Proponent and get its approval before implementation.</li> </ul>	All construction sites	N/A
S8.3.9- S8.3.11	WM2	<p>C&amp;D Waste</p> <ul style="list-style-type: none"> <li>•Standard formwork or pre-fabrication should be used as far as practicable in order to minimise the arising of C&amp;D materials. The use of more durable formwork or plastic facing for the construction works should be considered. Use of wooden hoardings should not be used, as in other projects. Metal hoarding should be used to enhance the possibility of recycling. The purchasing of construction materials will be carefully planned in order to avoid over ordering and wastage.</li> <li>•The Contractor should recycle as much of the C&amp;D materials as possible on-site. Public fill and C&amp;D waste should be segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. Where practicable, concrete and masonry can be crushed and used as fill. Steel reinforcement bar can be used by scrap steel mills. Different areas of the sites should be considered for such segregation and storage.</li> </ul>	All construction sites	Implemented

## Implementation Status of Environment Mitigation Measures (Construction Phase) - Contract No. HY/2019/01

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
S8.2.12- S8.3.15	WM3	<p><b>Chemical Waste</b></p> <ul style="list-style-type: none"> <li>•Chemical waste that is produced, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, should be handled in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.</li> <li>•Containers used for the storage of chemical wastes should be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; have a capacity of less than 450 liters unless the specification has been approved by the EPD; and display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the regulation.</li> <li>•The storage area for chemical wastes should be clearly 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.</li> <li>•Disposal of chemical waste should be via a licensed waste collector; be to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Centre which also offers chemical waste collection service and can supply the necessary storage containers; or be to a reuser of the waste, under approval from the EPD.</li> </ul>	All construction sites	Implemented
S8.3.16	WM4	<p><b>Sewage</b></p> <ul style="list-style-type: none"> <li>•Adequate numbers of portable toilets should be provided for the workers. The portable toilets should be maintained in a state which will not deter the workers from utilizing these portable toilets. Night soil should be collected by licensed collectors regularly.</li> </ul>	All construction sites	Implemented
S8.3.17- S8.3.19	WM5	<p><b>General Refuse</b></p> <ul style="list-style-type: none"> <li>•General refuse generated on-site should be stored in enclosed bins or compaction units separately from construction and chemical wastes.</li> <li>•A reputable waste collector should be employed by the Contractor to remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to minimize odour, pest and litter impacts. Burning of refuse on construction sites is prohibited by law.</li> <li>•Aluminium cans are often recovered from the waste stream by individual collectors if they are segregated and made easily accessible. Separate labelled bins for their deposit should be provided if feasible.</li> <li>•Office wastes can be reduced through the recycling of paper if volumes are large enough to warrant collection. Participation in a local collection scheme should be considered by the Contractor.</li> <li>•Training should be provided to workers about the concepts of site cleanliness and appropriate waste management procedure, including reduction, reuse and recycling of wastes.</li> </ul>	All construction sites	Implemented

# Implementation Status of Environment Mitigation Measures (Construction Phase) - Contract No. HY/2019/01

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
Water Quality (Construction Phase)				
S9.11.1.7	W2	<p>Land Works</p> <p>General construction activities on land should also be governed by standard good working practice. Specific measures to be written into the works contracts should include:</p> <ul style="list-style-type: none"> <li>•wastewater from temporary site facilities should be controlled to prevent direct discharge to surface or marine waters;</li> <li>•sewage effluent and discharges from on-site kitchen facilities shall be directed to Government sewer in accordance with the requirements of the WPCO or collected for disposal offsite. The use of soakaways shall be avoided;</li> <li>•storm drainage shall be directed to storm drains via adequately designed sand/silt removal facilities such as sand traps, silt traps and sediment basins. Channels, earth bunds or sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks;</li> <li>•silt removal facilities, channels and manholes shall be maintained and any deposited silt and grit shall be removed regularly, including specifically at the onset of and after each rainstorm;</li> <li>•temporary access roads should be surfaced with crushed stone or gravel;</li> <li>•rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities;</li> <li>•measures should be taken to prevent the washout of construction materials, soil, silt or debris into any drainage system;</li> <li>•open stockpiles of construction materials (e.g. aggregates and sand) on site should be covered with tarpaulin or similar fabric during rainstorms;</li> <li>•manholes (including any newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers;</li> <li>•discharges of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system;</li> <li>•all vehicles and plant should be cleaned before they leave the construction site to ensure that no earth, mud or debris is deposited by them on roads. A wheel washing bay should be provided at every site exit;</li> <li>•wheel wash overflow shall be directed to silt removal facilities before being discharged to the storm drain;</li> <li>•the section of construction road between the wheel washing bay and the public road should be surfaced with crushed stone or coarse gravel;</li> <li>•wastewater generated from concreting, plastering, Internal decoration, cleaning work and other similar activities, shall be screened to remove large objects;</li> <li>•vehicle and plant servicing areas, vehicle wash bays and lubrication facilities shall be located under roofed areas. The drainage in these covered areas shall be connected to foul sewers via a petrol interceptor in accordance with the requirements of the WPCO or collected for off site disposal;</li> <li>•the contractors shall prepare an oil / chemical cleanup plan and ensure that leakages or spillages are contained and cleaned up immediately;</li> <li>•waste oil should be collected and stored for recycling or disposal, in accordance with the Waste Disposal Ordinance;</li> <li>•all fuel tanks and chemical storage areas should be provided with locks and be sited on sealed areas. The storage areas should be surrounded by bunds with a capacity equal to 110% of the storage capacity of the largest tank; and</li> <li>•surface run-off from bunded areas should pass through oil/grease traps prior to discharge to the stormwater system.</li> </ul>	All land-based construction sites	N/A



## Implementation Status of Environment Mitigation Measures (Construction Phase) - Contract No. HY/2019/01

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
<b>Ecology (Construction Phase)</b>				
S10.7	E4	•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	Seawall, reclamation area	N/A
	E9	•Dolphin vessel monitoring	North Lantau and West Lantau	N/A Completed on 1 March 2021
<b>Landscape &amp; Visual (Construction Phase)</b>				
S14.3.3.3	LV2	Mitigate both Landscape and Visual Impacts G1. Grass-hydroseed bare soil surface and stock pile areas; G2. Add planting strip and automatic irrigation system if appropriate at some portions of bridge or footbridge to screen bridge and traffic. G3. Providing aesthetic architectural design on 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 harmonic atmosphere of the HKBCF. G4. Vegetation reinstatement and upgrading to disturbed areas; G5. Maximizing new tree, shrub and other vegetation planting to compensate tree felled and vegetation removed; G6. Providing planting area around peripheral of HKBCF for tree planting screening effect; G7. Providing salt-tolerant native trees along the planter strip at affected seawall and newly reclaimed coastline; and G8. Reserve of loose natural granite rocks for re-use. Provide new coastline to adopt "natural-look" by means of using armour rocks in the form of natural rock materials and planting strip area accommodating screen buffer to enhance "natural-look" of the new coastline.	All construction site areas	N/A  12-month establishment period commenced on 5 January 2022.
S14.3.3.3	LV3	Mitigate Visual Impacts V1. Minimize time for construction activities during construction period.	All construction site areas	N/A
S15.2.2	EM1	An Independent Environmental Checker needs to be employed as per the EM&A Manual.	All construction sites	Implemented
S15.5 –	EM2	1) An Environmental Team needs to be employed as per the EM&A Manual.	All construction sites	Implemented

Implementation Status of Environment Mitigation Measures (Construction Phase) - Contract No. HY/2019/01

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
S15.6		2) Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures. 3) An environmental impact monitoring needs to be implementing by the Environmental Team to ensure all the requirements given in the EM&A Manual are fully complied with.		

# Appendix F

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Cumulative statistics on Environmental Complaints,  
Notifications of Summons and Successful Prosecutions

### Environmental Complaints Log

Reference No.	Date of Complaint Received	Received From	Received By	Nature of Complaint	Date of Investigation	Outcome	Date of Reply

### Cumulative Statistics on Complaints

Environmental Parameters	Cumulative No. Brought Forward	No. of Complaints This Month	Cumulative Project-to-Date
Air	0	0	0
Noise	0	0	0
Water	0	0	0
Waste	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>

### Cumulative Statistics on Notification of Summons and Successful Prosecutions

Environmental Parameters	Cumulative No. Brought Forward	No. of Notification of Summons and Prosecutions This Month	Cumulative Project-to-Date
Air	0	0	0
Noise	0	0	0
Water	0	0	0
Waste	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>

# Appendix G

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Summary of Site Audit in the Reporting Month

**Summary of Site Audit in the Reporting Month**

Parameters	Date	Observations and Recommendations	Follow-up
Air Quality		NA	
Noise		NA	
Water Quality		NA	
Chemical and Waste Management		NA	
Land Contamination		NA	
Permit / Licenses		NA	
Others		NA	

# Appendix H

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Outstanding Issues and Deficiencies

**Summary of Outstanding Issues and Deficiencies in the Reporting Month**

Parameters	Outstanding Issues	Deficiencies
Air Quality	NA	Any items of deficiencies can be referred to <b>Appendix M</b> .
Noise	NA	
Water Quality	NA	
Chemical and Waste Management	NA	
Land Contamination	NA	
Landscape and Visual Impact	NA	
Permit / Licenses	NA	
Others	NA	



# Appendix I

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Environmental Monitoring Schedule

**Project: Contract No. HY/2019/01 - Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Phase 2 and Other Works**

**Impact Monitoring Schedule (June 2022)**

Sun	Mon	Tue	Wed	Thur	Fri	Sat
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20 <b>Bi-monthly landscape and visual site audit</b>	21	22	23	24	25
26	27	28	29	30		

**Remarks**

- As informed by AECOM, the commencement date of the 12-month establishment period for the landscape monitoring under this contract is 5 January 2022. Bi-monthly landscape and visual site audits will be conducted from 5 Jan 2022 to 4 Jan 2023.

**Project: Contract No. HY/2019/01 - Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Phase 2 and Other Works**

**Impact Monitoring Schedule (July 2022)**

Sun	Mon	Tue	Wed	Thur	Fri	Sat
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

**Remarks**

- As informed by AECOM, the commencement date of the 12-month establishment period for the landscape monitoring under this contract is 5 January 2022. Bi-monthly landscape and visual site audits will be conducted from 5 Jan 2022 to 4 Jan 2023.

# Appendix J

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Bi-Monthly Landscape and Visual Audit Checklist

**Contract No. HY/2019/01**  
**Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities –**  
**Phase 2 and Other Works**  
**Establishment Inspection Checklist**

**Remarks / Recommendations for Contractor**  
**Observation and/or Recommended Measures:**

**Portion A-1**

- TG46: 2 dead *Grevillea banksii* (GB) removed, pending replacement; and 4 dead *Bauhinia variegata* (BV) replaced.
- TG47: 20 dead *Grevillea robusta* (GR) replaced; 1 previous missing GR replaced with wrong species, further replacement required.
- TG48: 18 *Grevillea banksii* (GB) are found on site. To be replaced by 18 *Plumeria rubra* (PR).
- TG49: 1 dead *Grevillea robusta* (GR) replaced.

**Portion A-2**

- Area C33 construction completed and handed over for disease control facilities. Other areas have no particular findings.

**Portion A-3**

- No Particular findings.

**Portion B**

- No particular findings.

**Portion C**

- TG20: 2 *Heteropanax fragrans* (HF) are found missing.
- TG22: 2 *Grevillea banksia* (GB) are found missing. 2 *Cassia siamea* (CS) are planted.

**Portion D**

- TG02: 1 *Heteropanax fragrans* (HF) is found missing.
- TG03: 3 *Bauhinia variegata* (BV) and 9 *Heteropanax fragrans* (HF) are found missing.
- TG05: 3 *Brassia actinophylla* (BA) and 4 *Bauhinia variegata* (BV) are found missing.
- TG06: 1 *Brassia actinophylla* (BA) and 1 *Cassia siamea* (CS) are found missing.
- TG07: 1 *Brassia actinophylla* (BA) and 2 *Cassia siamea* (CS) are found missing.
- TG12: 16 *Heteropanax fragrans* (HF) are found missing.
- TG13: 1 *Bauhinia variegata* (BV) is found missing.
- TG15: 10 *Heteropanax fragrans* (HF) are found missing.
- TG16: 4 *Bauhinia variegata* (BV) are found missing.

**Portion E**

- TG42: 4 *Bauhinia variegata* (BV) are found missing.

**Portion F**

- No particular findings.

**Portion G**

- No particular findings.

**Portion H**

- No particular findings.

**Signatures:**

	Name	Signature	Date
ET's Representative	Alexis Wong		20/6/2022
Contractor's Representative	Matthew Wu		20/6/2022
PM's/Supervisor's Representative	CHAN Pak Kin (CRSFO)		20 JUN 2022
IEC's Representative	Theo Chan		14 July 2022

Contract No. HY/2019/01

**Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities –**

**Phase 2 and Other Works**

**Establishment Inspection Checklist**

Date of Site Audit:	2022-06-20	Time of Site Audit:	9:45-11:30
Site Auditor:	Aloysius Wong	Humidity:	73%
Weather Condition:	Overcast	Temperature:	30.1°C

Item	Description	N.A. or N.O.	Yes	No	Remarks
<b>1 Portion A-1</b>					
1.1	Is watering provided to all plants to ensure satisfactory growth and health (manual and automatic irrigation)?		✓		
1.2	After exceptional weather conditions, are proper action implemented to replace dead plants, repair damaged plants, bed in all plants that have blown over, firm up all other plants and immediately thereafter, remove dead plants and plant debris from the site?	N.O.			
1.3	Are litter and debris removed?		✓		
1.4	Are planting areas matched with the approved landscape plan?		✓		
1.5	Is planting pattern matched with the approved landscape plan?		✓		
1.6	Are planting locations and spacing matched with the approved landscape plan?		✓		
1.7	Are the planting species on site matched with the approved landscape plan?		✓		See Observations for TG48 & G47
1.8	Are the plants in satisfied condition?		✓		See Observations for TG46, TG47 & TG49
1.9	Are tree stakes, guys and ties provided properly for safety and avoid chaffing of bark?		✓		
1.10	Are trees or limb overhanging branches pruned?	N.O.			
<b>2 Portion A-2</b>					
2.1	Is watering provided to all plants to ensure satisfactory growth and health (manual and automatic irrigation)?		✓		
2.2	After exceptional weather conditions, are proper action implemented to replace dead plants, repair damaged plants, bed in all plants that have blown over, firm up all other plants and immediately thereafter, remove dead plants and plant debris from the site?	N.O.			
2.3	Are litter and debris removed?		✓		
2.4	Are planting areas matched with the approved landscape plan?		✓		
2.5	Is planting pattern matched with the approved landscape plan?		✓		

Item	Description	N.A. or N.O.	Yes	No	Remarks
2.6	Are planting locations and spacing matched with the approved landscape plan?		✓		
2.7	Are the planting species on site matched with the approved landscape plan?		✓		
2.8	Are the plants in satisfied condition?		✓		
<b>3 Portion A-3</b>					
3.1	Is watering provided to all plants to ensure satisfactory growth and health (manual and automatic irrigation)?		✓		
3.2	After exceptional weather conditions, are proper action implemented to replace dead plants, repair damaged plants, bed in all plants that have blown over, firm up all other plants and immediately thereafter, remove dead plants and plant debris from the site?	N.O.			
3.3	Are litter and debris removed?		✓		
3.4	Are planting areas matched with the approved landscape plan?		✓		
3.5	Is planting pattern matched with the approved landscape plan?		✓		
3.6	Are planting locations and spacing matched with the approved landscape plan?		✓		
3.7	Are the planting species on site matched with the approved landscape plan?		✓		
3.8	Are the plants in satisfied condition?		✓		
<b>4 Portion B</b>					
4.1	Is watering provided to all plants to ensure satisfactory growth and health (manual and automatic irrigation)?		✓		
4.2	After exceptional weather conditions, are proper action implemented to replace dead plants, repair damaged plants, bed in all plants that have blown over, firm up all other plants and immediately thereafter, remove dead plants and plant debris from the site?	N.O.			
4.3	Are litter and debris removed?		✓		
4.4	Are planting areas matched with the approved landscape plan?		✓		
4.5	Is planting pattern matched with the approved landscape plan?		✓		
4.6	Are planting locations and spacing matched with the approved landscape plan?		✓		
4.7	Are the planting species on site matched with the approved landscape plan?		✓		

Item	Description	N.A. or N.O.	Yes	No	Remarks
4.8	Are the plants in satisfied condition?		✓		
4.9	Are tree stakes, guys and ties provided properly for safety and avoid chaffing of bark?		✓		
4.10	Are trees or limb overhanging branches pruned?	N.O.			
<b>5 Portion C</b>					
5.1	Is watering provided to all plants to ensure satisfactory growth and health (manual and automatic irrigation)?		✓		
5.2	After exceptional weather conditions, are proper action implemented to replace dead plants, repair damaged plants, bed in all plants that have blown over, firm up all other plants and immediately thereafter, remove dead plants and plant debris from the site?	N.O.			
5.3	Are litter and debris removed?		✓		
5.4	Are planting areas matched with the approved landscape plan?		✓		
5.5	Is planting pattern matched with the approved landscape plan?		✓		
5.6	Are planting locations and spacing matched with the approved landscape plan?		✓		
5.7	Are the planting species on site matched with the approved landscape plan?		✓		
5.8	Are the plants in satisfied condition?		✓		See Observations for TG20 & TG22
5.9	Are tree stakes, guys and ties provided properly for safety and avoid chaffing of bark?		✓		
5.10	Are trees or limb overhanging branches pruned?	N.O.			
<b>6 Portion D</b>					
6.1	Is watering provided to all plants to ensure satisfactory growth and health (manual and automatic irrigation)?		✓		
6.2	After exceptional weather conditions, are proper action implemented to replace dead plants, repair damaged plants, bed in all plants that have blown over, firm up all other plants and immediately thereafter, remove dead plants and plant debris from the site?	N.O.			
6.3	Are litter and debris removed?		✓		
6.4	Are planting areas matched with the approved landscape plan?		✓		
6.5	Is planting pattern matched with the approved landscape plan?		✓		



Item	Description	N.A. or N.O.	Yes	No	Remarks
6.6	Are planting locations and spacing matched with the approved landscape plan?		✓		
6.7	Are the planting species on site matched with the approved landscape plan?		✓		
6.8	Are the plants in satisfied condition?		✓		See Observations for TG02, TG03, TG05, TG06, TG07, TG12, TG13, TG15 & TG16.
6.9	Are tree stakes, guys and ties provided properly for safety and avoid chaffing of bark?		✓		
6.10	Are trees or limb overhanging branches pruned?	N.O.			
<b>7 Portion E</b>					
7.1	Is watering provided to all plants to ensure satisfactory growth and health (manual and automatic irrigation)?		✓		
7.2	After exceptional weather conditions, are proper action implemented to replace dead plants, repair damaged plants, bed in all plants that have blown over, firm up all other plants and immediately thereafter, remove dead plants and plant debris from the site?	N.O.			
7.3	Are litter and debris removed?		✓		
7.4	Are planting areas matched with the approved landscape plan?		✓		
7.5	Is planting pattern matched with the approved landscape plan?		✓		
7.6	Are planting locations and spacing matched with the approved landscape plan?		✓		
7.7	Are the planting species on site matched with the approved landscape plan?		✓		
7.8	Are the plants in satisfied condition?		✓		See Observations for TG42
7.9	Are tree stakes, guys and ties provided properly for safety and avoid chaffing of bark?		✓		
7.10	Are trees or limb overhanging branches pruned?	N.O.			
<b>8 Portion F</b>					
8.1	Is watering provided to all plants to ensure satisfactory growth and health (manual and automatic irrigation)?		✓		
8.2	After exceptional weather conditions, are proper action implemented to replace dead plants, repair damaged plants, bed in all plants that have blown over, firm up all other plants and immediately thereafter, remove dead plants and plant debris from the site?	N.O.			

Item	Description	N.A. or N.O.	Yes	No	Remarks
8.3	Are litter and debris removed?		✓		
8.4	Are planting areas matched with the approved landscape plan?		✓		
8.5	Is planting pattern matched with the approved landscape plan?		✓		
8.6	Are planting locations and spacing matched with the approved landscape plan?		✓		
8.7	Are the planting species on site matched with the approved landscape plan?		✓		
8.8	Are the plants in satisfied condition?		✓		
8.9	Are tree stakes, guys and ties provided properly for safety and avoid chaffing of bark?		✓		
8.10	Are trees or limb overhanging branches pruned?	N.O.			
<b>9 Portion G</b>					
9.1	Is watering provided to all plants to ensure satisfactory growth and health (manual and automatic irrigation)?		✓		
9.2	After exceptional weather conditions, are proper action implemented to replace dead plants, repair damaged plants, bed in all plants that have blown over, firm up all other plants and immediately thereafter, remove dead plants and plant debris from the site?	N.O.			
9.3	Are litter and debris removed?		✓		
9.4	Are planting areas matched with the approved landscape plan?		✓		
9.5	Is planting pattern matched with the approved landscape plan?		✓		
9.6	Are planting locations and spacing matched with the approved landscape plan?		✓		
9.7	Are the planting species on site matched with the approved landscape plan?		✓		
9.8	Are the plants in satisfied condition?		✓		
9.9	Are tree stakes, guys and ties provided properly for safety and avoid chaffing of bark?		✓		
9.10	Are trees or limb overhanging branches pruned?	N.O.			
<b>10 Portion H</b>					
10.1	Is watering provided to all plants to ensure satisfactory growth and health (manual and automatic irrigation)?		✓		

Contract No. HY/2019/01

Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities –




Phase 2 and Other Works

Establishment Inspection Checklist







Item	Description	N.A. or N.O.	Yes	No	Remarks
10.2	After exceptional weather conditions, are proper action implemented to replace dead plants, repair damaged plants, bed in all plants that have blown over, firm up all other plants and immediately thereafter, remove dead plants and plant debris from the site?	N.O.			
10.3	Are litter and debris removed?		✓		
10.4	Are planting areas matched with the approved landscape plan?		✓		
10.5	Is planting pattern matched with the approved landscape plan?		✓		
10.6	Are planting locations and spacing matched with the approved landscape plan?		✓		
10.7	Are the planting species on site matched with the approved landscape plan?		✓		
10.8	Are the plants in satisfied condition?		✓		
10.9	Are tree stakes, guys and ties provided properly for safety and avoid chaffing of bark?		✓		
10.10	Are trees or limb overhanging branches pruned?	N.O.			

Contract No. HY/2019/01  
 Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities –  
 Phase 2 and Other Works  
 Establishment Inspection Checklist

**OBSERVATIONS**

Location	Photo Record	
<p><b>Portion A-1</b></p>		
	<p>TG46: 2 dead <i>Grevillea banksii</i> (GB) removed, pending replacement.</p>	<p>TG47: 1 previous missing GR replaced with wrong species, further replacement required.</p>
		
<p>TG48: 18 <i>Grevillea banksii</i> (GB) are found on site. To be replaced by 18 <i>Plumeria rubra</i> (PR).</p>		





Contract No. HY/2019/01  
 Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities –  
 Phase 2 and Other Works  
 Establishment Inspection Checklist

OBSERVATIONS			
Location		Photo Record	
Portion C			
	TG20: 2 <i>Heteropanax fragrans</i> (HF) are found missing.		TG22: 2 <i>Grevillea banksia</i> (GB) are found missing.
Portion D			
	TG02: 1 <i>Heteropanax fragrans</i> (HF) is found missing.		TG03: 3 <i>Bauhinia variegata</i> (BV) and 9 <i>Heteropanax fragrans</i> (HF) are found missing.






Contract No. HY/2019/01  
 Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities –  
 Phase 2 and Other Works  
 Establishment Inspection Checklist

**OBSERVATIONS**


Location	Photo Record	
Portion D		
	<p>TG05: 3 <i>Brassaia actinophylla</i> (BA) and 4 <i>Bauhinia variegata</i> (BV) are found missing.</p>	<p>TG06: 1 <i>Brassaia actinophylla</i> (BA) and 1 <i>Cassia siamea</i> (CS) are found missing.</p>
		
<p>TG07: 1 <i>Brassaia actinophylla</i> (BA) and 2 <i>Cassia siamea</i> (CS) are found missing.</p>	<p>TG12: 16 <i>Heteropanax fragrans</i> (HF) are found missing.</p>	

Contract No. HY/2019/01  
 Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities –  
 Phase 2 and Other Works  
 Establishment Inspection Checklist

**OBSERVATIONS**



Location	Photo Record	
<p><b>Portion D</b></p>		
	<p>TG13: 1 <i>Bauhinia variegata</i> (BV) is found missing.</p>	<p>TG15: 10 <i>Heteropanax fragrans</i> (HF) are found missing.</p>
		
	<p>TG16: 4 <i>Bauhinia variegata</i> (BV) are found missing.</p>	

Contract No. HY/2019/01  
 Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities –  
 Phase 2 and Other Works  
 Establishment Inspection Checklist

OBSERVATIONS		
Location	Photo Record	
Portion E		
	<p>TG42: 4 <i>Bauhinia variegata</i> (BV) are found missing.</p>	



**Contract No. HY/2019/01**  
**Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities –**  
**Phase 2 and Other Works**  
**Establishment Inspection Checklist**

<b>GENERAL CONDITIONS</b>	
<b>Location</b>	<b>Photo Record</b>
<b>Portion A-1</b>	 <p style="text-align: center;">Groundcover planting in Portion A-1</p>
<b>Portion A-2</b>	 <p style="text-align: center;">Grass Planting in Portion A-2</p>
<b>Portion A-3</b>	 <p style="text-align: center;">Grass Planting in Portion A-3</p>




**Contract No. HY/2019/01**  
**Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities –**  
**Phase 2 and Other Works**  
**Establishment Inspection Checklist**

**GENERAL CONDITIONS**

Location	Photo Record
<b>Portion B</b>	 <p data-bbox="794 770 1091 801">Grass planting at Portion B</p>
<b>Portion C</b>	 <p data-bbox="794 1375 1091 1406">Tree planting in Portion C</p>
<b>Portion D</b>	 <p data-bbox="794 1980 1091 2011">Tree planting in Portion D</p>



**Contract No. HY/2019/01**  
**Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities –**  
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<b>GENERAL CONDITIONS</b>	
<b>Location</b>	<b>Photo Record</b>
<b>Portion E</b>	 <p>Tree planting in Portion E</p>
<b>Portion F</b>	 <p>Grass planting at Portion F</p>
<b>Portion G</b>	 <p>Tree planting in Portion G</p>



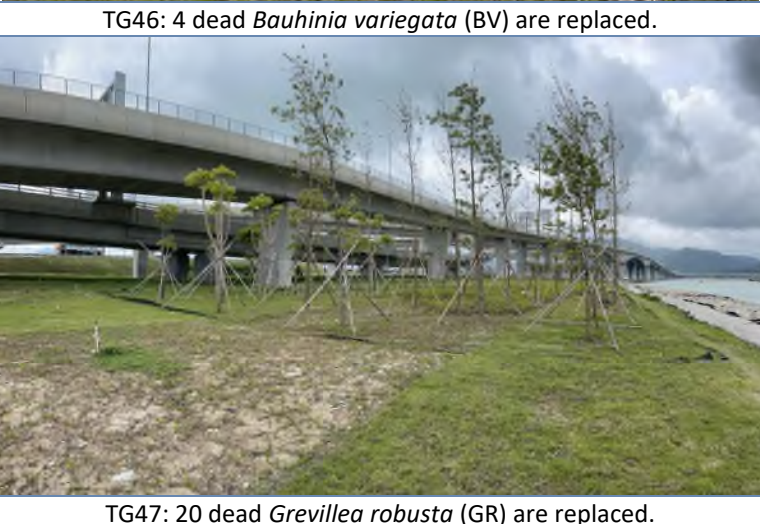
**Contract No. HY/2019/01  
Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities –  
Phase 2 and Other Works  
Establishment Inspection Checklist**

**GENERAL CONDITIONS**

Location	Photo Record
<b>Portion H</b>	 <p data-bbox="798 772 1085 806">Tree planting in Portion H.</p>

Contract No. HY/2019/01  
Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities –  
Phase 2 and Other Works  
Establishment Inspection Checklist



**FOLLOW-UP ACTION**

Location	Photo Record
<b>Portion A-1</b>	
	 <p data-bbox="667 1464 1225 1496">TG46: 4 dead <i>Bauhinia variegata</i> (BV) are replaced.</p>
	 <p data-bbox="667 1986 1225 2018">TG47: 20 dead <i>Grevillea robusta</i> (GR) are replaced.</p>



Contract No. HY/2019/01  
 Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities –  
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**FOLLOW-UP ACTION**

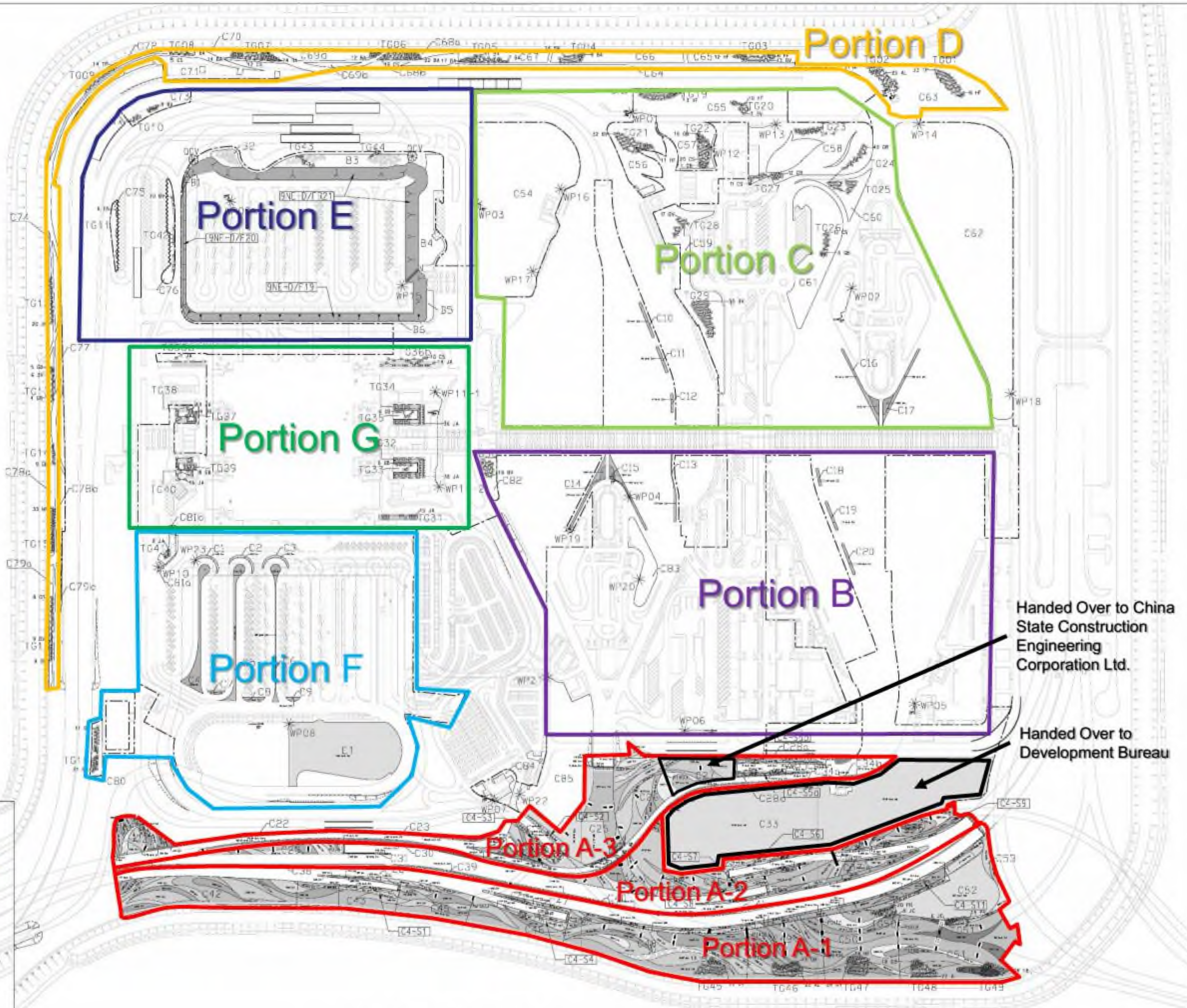
Location	Photo Record
	
	<p>TG49: 1 dead <i>Grevillea robusta</i> (GR) replaced.</p>
<p><b>Portion C</b></p>	
	<p>TG22: 2 <i>Cassia siamea</i> (CS) are planted. Total 20 <i>Cassia siamea</i> are observed.</p>



LEGEND:

- SITE BOUNDARY
- EXISTING TURF MAINTAINED BY CH
- EXISTING SIMAR SLOPE MAINTAINED BY CH
- STONE SANITIC

Hydroseeding	
Ficus microcarpa 'golden leaves'	(700H x 700S) w/ 600 spacing
Ilex chinensis	(800H x 400S) w/ 350 spacing
Rhododendron pulcherrim	(800H x 400S) w/ 300 spacing
Rhododendron smil	(800H x 400S) w/ 300 spacing
Spatholium commutatum	(800H x 300S) w/ 200 spacing
Shorea robusta	(500H x 400S) w/ 350 spacing
Larrea tridentata	(200H x 300S) w/ 300 spacing
Ulmus spicata	(100H x 100S) w/ 100 spacing
Cedrela japonica	(100H x 150S) w/ 100 spacing
Syzygium pectinatum	(200H x 300S) w/ 200 spacing
Albizia trilobata	(100H x 100S) w/ 150 spacing
Zaphrentes candida	(100H x 100S) w/ 100 spacing
Zaphrentes rosea	(150H x 200S) w/ 150 spacing
Zizia sp.	
AL Abies balsamifera	(4.5m H x 3m S) w/ 4m spacing
BV Bauhinia variegata	(4.5m H x 3m S) w/ 4m spacing
BA Brassia actinophylla	(3.4m H x 2.5m S) w/ 3m spacing
CS Cassia coccinea	(4.5m H x 3m S) w/ 4m spacing
GB Grevillea bursifolia	(3.4m H x 2.5m S) w/ 3m spacing
GR Grevillea robusta	(4.5m H x 3m S) w/ 4m spacing
HF Hesperis matronalis	(3.4m H x 2.5m S) w/ 3m spacing
JA Jacaranda mimosifolia	(4.5m H x 3m S) w/ 4m spacing
JC Jasper chinensis	(4.5m H x 3m S) w/ 4m spacing
PR Platanus orientalis	(3.5m H x 2.5m S) w/ 3m spacing
TP Theophrasta populifolia	(4.5m H x 3m S) w/ 4m spacing



PLANTER PLAN