

22 October 2018

By Fax (3468 2076) and By Post

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

Attention: Mr. Malcolm Sage

Dear Sir,

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

**Contract No. HY/2014/05 – HZMB HKBCF – Remaining Ancillary Buildings and
Facilities
Quarterly EM&A Report No.8 for December 2017 to February 2018**

Reference is made to the Environmental Team's submission of Quarterly Environmental Monitoring & Audit Report No.7 for December 2017 to February 2018 (Rev. 1) certified by the ET Leader (ET's ref.: "5140819/18.30/OC051/KC/RL" dated 22 October 2018) and provided to us via e-mail on 22 October 2018.

We are pleased to inform you that we have no adverse comment on the captioned report. We write to verify the captioned submission in accordance with Section 16.4.1 of the Updated EM&A Manual (2011).

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



Raymond Dai
Independent Environmental Checker

c.c.	HyD	Mr. Tony Pang	(By Fax: 3188 6614)
	HyD	Mr. Ken Woo	(By Fax: 3188 6614)
	Atkins	Mr. Keith Chau	(By Fax: 2890 6343)
	LCWJV	Mr. Iain Hubert	(By Fax: 3621 0180)

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

Your ref.
Our ref. 5140819/18.30/OC051/KC/RL
Date: 22 October 2018

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

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Attn: Mr. Stephen Tsang

Dear Mr. Tsang,

**Contract No. HY/2014/05
Hong Kong – Zhuhai – Macao Bridge
Hong Kong Boundary Crossing Facilities –
Remaining Ancillary Buildings and Facilities
Certification of Quarterly EM&A Report No. 8**

Atkins China Limited certifies, in the capacity of Environmental Team Leader, that the Quarterly EM&A Report No. 8 (Revision 1) conforms the requirements provided in Section 16.4 of the Updated Environmental Monitoring and Audit Manual for HKBCF (Version 1.0).

**Yours faithfully,
for and on behalf of
Atkins China Limited**



**Keith Chau
Environmental Team Leader**

cc.

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

Contract No. HY/2014/05

**Hong Kong-Zhuhai-Macao Bridge
Hong Kong Boundary Crossing Facilities –
Remaining Ancillary Buildings and Facilities**

**Quarterly EM&A Report No. 8
(Covering the Period from 1 December 2017 to 28 February 2018)**

1 August 2018

Revision 1

Main Contractor



**Leighton - Chun Wo
Joint Venture**

Environmental Team

ATKINS

Member of the SNC-Lavalin Group

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Executive Summary

This Quarterly Environmental Monitoring and Audit (EM&A) Report is prepared for Contract HY/2014/05 Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities (HKBCF) – Remaining Ancillary Buildings and Facilities (includes the construction works of Contract No. HY/2013/06 Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Automatic Vehicle Clearance Support System and Contract No. HY/2014/04 Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Gantry Type X-ray Vehicle Inspection System within Contract No. HY/2014/05 works area) (hereafter referred to as “the Contract”) for the Highways Department of Hong Kong Special Administrative Region (HKSAR). Contract No. HY/2014/05 was awarded to Leighton – Chun Wo Joint Venture (construction works of Contract No. HY/2013/06 was awarded to ATAL Technologies Limited and Contract No. HY/2014/04 was awarded to Rapiscan Systems Pte Ltd within Contract No. HY/2014/05 works area) (hereafter referred to as “the Contractor”) and Atkins China Limited was appointed as the Environmental Team (ET) by the Contractor.

Contract No. HY/2014/05 (includes the construction works of Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area) is part of HZMB HKBCF Project which is a “Designated Project” under Schedule 2 of the Environmental Impact Assessment Ordinance (EIAO) (Cap 499) and Environmental Impact Assessment (EIA) Report (Register No. AEIAR-145/2009) was prepared for the Project. The current Environmental Permit (EP) No. EP-353/2009/K for HKBCF was issued on 11 April 2016. These documents are available through the EIA Ordinance Register. The construction works of the Contract No. HY/2014/05 commenced on 29 February 2016 while the construction works of the Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area commenced on 3 January 2017 and 13 February 2017 respectively.

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

This is the eighth Quarterly EM&A Report for the Contract No. HY/2014/05 which summarizes findings of the EM&A works during the reporting period from 1 December 2017 to 28 February 2018 (includes the construction works of Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area).

Environmental Monitoring and Audit Progress

The EM&A programme was undertaken in accordance with the Updated EM&A Manual for HKBCF (Version 1.0). It should be noted that the air quality and noise monitoring works for the Contract are covered by Contract No. HY/2013/01 Hong Kong-Zhuhai-Macao Bridge HKBCF – Reclamation Works and Contract No. HY/2011/03 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between Scenic Hill and HKBCF. The ET of the Contract or another ET of the HZMB project is required to conduct impact air quality monitoring at AMS6 and AMS7/AMS7B and noise monitoring at NMS2 and NMS3B as part of EM&A programme if these monitoring stations are no longer covered under Contract Nos. HY/2013/01 and HY/2011/03. However, this is subject to ENPO’s final decision on which ET should carry out the monitoring work at these stations.

The dates of environmental site inspection for the Contract No. HY/2014/05 (includes the construction works of Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area) during the reporting period are listed below:

Environmental Site Inspection Date		
December 2017	January 2018	February 2018
4, 13, 18 and 27	3, 11, 15, 22 and 29	7, 12, 22 and 26

Breaches of Action and Limit Levels

Summary of Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level at station AMS6 shall be referred to the monthly EM&A Reports (for December 2017, January and February 2018) prepared by Contract No. HY/2011/03. No Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at AMS7/ AMS7B by the Environmental Team of Contract No. HY/2013/01 during the reporting period.

There were two AL exceedances of 24-hour TSP at ASM3B were recorded on 23 December 2017 and 17 January 2017, one AL exceedance of 24-hr TSP at ASM2 was recorded on 17 January. Exceedances were recorded by the Environmental Team of Contract No. HY/2013/01 during the reporting period, after investigation, the exceedances were not related to the Contract. Details of the exceedance shall be referred to the monthly EM&A report prepared by Contract No. HY/2013/01. The IRs were provided in **Appendix J**.

There was no Action and Limit Level exceedance for noise recorded at NMS2 and NMS3B by the Environmental Team of Contract No. HY/2013/01 during the reporting period.

Implementation of Environmental Measures

Site inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures for the Project. Potential environmental impacts due to the construction activities were monitored and reviewed.

Complaint Log

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

Notifications of Summons and Successful Prosecutions

There was no notification of summon or prosecution received during this reporting period.

Reporting Change

Re-location of AQM station (AMS7) for HZMB HKBCF Project was justified by the ET Leader for Contract No. HY/2013/01 on 22 January 2018; verified by the IEC on 24 January 2018; and submitted to EPD on 30 January 2018, and the AQM has been carrying out at the alternative AQM station with EPD's consent since 6 February 2018.

1 Introduction

1.1 Basic Project Information

- 1.1.1 This Quarterly Environmental Monitoring and Audit (EM&A) Report is prepared for Contract HY/2014/05 Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities (HKBCF) – Remaining Ancillary Buildings and Facilities (includes the construction works of Contract No. HY/2013/06 Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Automatic Vehicle Clearance Support System and Contract No. HY/2014/04 Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Gantry Type X-ray Vehicle Inspection System within Contract No. HY/2014/05 works area) (hereafter referred to as “the Contract”) for the Highways Department of Hong Kong Special Administrative Region (HKSAR). Contract No. HY/2014/05 was awarded to Leighton – Chun Wo Joint Venture (construction works of Contract No. HY/2013/06 was awarded to ATAL Technologies Limited and Contract No. HY/2014/04 was awarded to Rapiscan Systems Pte Ltd within Contract No. HY/2014/05 works area) (hereafter referred to as “the Contractor”) and Atkins China Limited was appointed as the Environmental Team (ET) by the Contractor.
- 1.1.2 Contract No. HY/2014/05 (includes the construction works of Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area) is part of HZMB HKBCF Project which is a “Designated Project” under Schedule 2 of the Environmental Impact Assessment Ordinance (EIAO) (Cap 499) and Environmental Impact Assessment (EIA) Report (Register No. AEIAR-145/2009) was prepared for the Project. The current Environmental Permit (EP) No. EP-353/2009/K for HKBCF was issued on 11 April 2016. These documents are available through the EIA Ordinance Register. The construction works of the Contract No. HY/2014/05 commenced on 29 February 2016 while the construction works of the Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area commenced on 3 January 2017 and 13 February 2017 respectively. The works areas of the Contract are shown in **Appendix A**.
- 1.1.3 This is the Eighth Quarterly EM&A Report for the Contract No. HY/2014/05 which summarizes the audit findings of the EM&A programme during the reporting period from 1 December 2017 to 28 February 2018 (includes the construction works of Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area).

1.2 Project Organisation

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

Table 1.1 Contact Information of Key Personnel

Party	Position	Name	Telephone	Fax
<u>For Contract No. HY/2014/05</u>				
Engineer or Engineer's Representative (AECOM Asia Co. Ltd.)	Chief Registered Architect	Malcolm Sage	3958 7330	3468 2076
Environmental Project Office / Independent Environmental Checker (Ramboll Environ Hong Kong Limited)	Environmental Project Office Leader	Y. H. Hui	3465 2888	3465 2899
	Independent Environmental Checker	Raymond Dai	3465 2888	3465 2899

Contractor (Leighton – Chun Wo Joint Venture)	Site Agent	Albert Chan	3973 0514	3621 0180
	Environmental Officer	Alfred She	39730484	3621 0180
Environmental Team (Atkins China Limited)	Environmental Team Leader	Keith Chau	2972 1721	2890 6343
24 hours complaint hotline	---	---	3958 7300	---
For Contract No. HY/2013/06 within Contract No. HY/2014/05 works area				
Engineer or Engineer's Representative (AECOM Asia Co. Ltd.)	Chief Registered Architect	Malcolm Sage	3958 7330	3468 2076
Environmental Project Office / Independent Environmental Checker (Ramboll Environ Hong Kong Limited)	Environmental Project Office Leader	Y. H. Hui	3465 2888	3465 2899
	Independent Environmental Checker	Raymond Dai	3465 2888	3465 2899
Contractor (ATAL Technologies Limited)	Site Agent	Mr. Eric Yim	2565 3355	3162 5217
	Environmental Officer	Mr. W. Li	2565 3137	3162 5217
Environmental Team (Atkins China Limited)	Environmental Team Leader	Keith Chau	2972 1721	2890 6343
24 hours complaint hotline	---	---	6509 0375	---
For Contract No. HY/2014/04 within Contract No. HY/2014/05 works area				
Engineer or Engineer's Representative (AECOM Asia Co. Ltd.)	Chief Registered Architect	Malcolm Sage	3958 7330	3468 2076
Environmental Project Office / Independent Environmental Checker (Ramboll Environ Hong Kong Limited)	Environmental Project Office Leader	Y. H. Hui	3465 2888	3465 2899
	Independent Environmental Checker	Raymond Dai	3465 2888	3465 2899
Contractor (Rapiscan Systems Pte Ltd)	Site Agent	Ringo Yau	9833 1402	2707 0816
	Environmental Officer	Clarie Tsang	6371 1362	---
Environmental Team (Atkins China Limited)	Environmental Team Leader	Keith Chau	2972 1721	2890 6343
24 hours complaint hotline	---	---	9833 1420	---

1.3 Construction Programme

1.3.1 A copy of the Contractor's construction programme is provided in **Appendix C**.

1.4 Construction Works Undertaken During the Reporting Period

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

For Contract No. HY/2014/05

- ABWF & MEP works (Internal) of Buildings 022, 023, 025, 032, 044, 045, 050A1, 050A2, 050H1, 050H2, 053 and 058
- Foot Path, Utilities and Drainage installation of Buildings 021, 022, 023, 025, 032, 045, 053, 050A1, 050A2, 050H1, 050H2 and 058
- ABWF & MEP works (External) of Buildings 021, 022, 023, 025, 032, 044, 045, 050H1, 050H2, 050A1, 050A2, 053, 058 and 059
- ABWF & MEP works (roof) of Buildings 021, 022, 023, 025, 032, 044, 045, 050H1, 050H2, 050A1, 050A2, 053, 058 and 059
- Construction of Planter Box and Ramp of Building 023
- ABWF & MEP works (roof) of Building 050A1
- Landscape works: 023, 025, 032, 044 and 045

For Contract No. HY/2013/06 within Contract No. HY/2014/05 works area

- As confirmed by Contractor, construction works for Contract No. HY/2013/06 were not conducted within Contract No. HY/2014/05 works area in December 2017
- Conduit Installation and Cabling at Buildings 025 and 032 during January and February 2018

For Contract No. HY/2014/04 within Contract No. HY/2014/05 works area

- Installation of software at Buildings 053 and 054
- Radiation Testing at Buildings 058 and 059

2 EM&A Requirement

2.1 Summary of EM&A Requirements

- 2.1.1 The EM&A programme was undertaken in accordance with the Updated EM&A Manual for HKBCF (Version 1). It should be noted that the air quality and noise monitoring works for the Contract are covered by Contract No. HY/2013/01 HZMB HKBCF – Passenger Clearance Building and Contract No. HY/2011/03 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between Scenic Hill and HKBCF. The ET of the Contract or another ET of the HZMB project is required to conduct impact air quality monitoring at AMS6 and AMS7/ AMS7B and noise monitoring at NMS2 and NMS3B as part of EM&A programme if these monitoring stations are no longer covered under Contract Nos. HY/2013/01 and HY/2011/03. However, this is subject to ENPO's final decision on which ET should carry out the monitoring work at these stations.
- 2.1.2 A summary of air and noise monitoring locations is presented in **Table 2.1**. The locations of air quality and noise monitoring stations are shown as in **Figure 2.1** and **Figure 2.2**, respectively.

Table 2.1 Summary of Impact EM&A Requirements

Environmental Monitoring	ID	Location Description
Air Quality	AMS6 ⁽¹⁾	Dragonair/CNAC (Group) Building
	AMS7/AMS7B ^{(1),(4)}	Hong Kong SkyCity Marriott Hotel / 3RS site office
Noise	NMS2 ⁽²⁾	Seaview Crescent
	NMS3B ^{(2),(3)}	Site Boundary of Site Office Area at Works Area WA2

Remarks:

- (1) The ET of this Contract should conduct impact air quality monitoring at the AMS listed in the table as part of EM&A programme according to the latest notification from ENPO when the monitoring station(s) is/are no longer covered by another ET of the HZMB project.
- (2) The ET of this Contract should conduct impact noise monitoring at the NMS listed in the table as part of EM&A programme according to the latest notification from ENPO when the monitoring station(s) is/are no longer covered by another ET of the HZMB project.
- (3) The Action and Limit Levels for schools will be applied for this alternative monitoring location.
- (4) A proposal for re-location of AQM station (AMS7) for HZMB HKBCF Project was justified by the ET Leader for Contract No. HY/2013/01 on 22 January 2018; verified by the IEC on 24 January 2018; and submitted to EPD on 30 January 2018, and the AQM has been carrying out at the alternative AQM station with EPD's consent since 6 February 2018.

2.2 Monitoring Requirements

- 2.2.1 The monitoring requirements, monitoring equipment, monitoring parameters, frequency and duration, monitoring methodology, monitoring schedule, meteorological information are detailed in the monthly EM&A Reports prepared for Contract Nos. HY/2013/01 and HY/2011/03.

2.3 Action and Limit Levels

- 2.3.1 The Action and Limit Level for 1-hr TSP and 24-hr TSP are provided in **Table 2.2** and **Table 2.3**, respectively.

Table 2.2 Action and Limit Levels for 1-hour TSP

Monitoring Station	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AMS6 – Dragonair/CNAC (Group) Building (HKIA)	360	500

Table 2.3 Action and Limit Levels for 24-hour TSP

Monitoring Station	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AMS6 – Dragonair/CNAC (Group) Building (HKIA)	173	260
AMS7 – Hong Kong SkyCity Marriott Hotel/ AMS7B ⁽¹⁾	183	

Remark:

- (1) A proposal for re-location of AQM station (AMS7) for HZMB HKBCF Project was justified by the ET Leader for Contract No. HY/2013/01 on 22 January 2018; verified by the IEC on 24 January 2018; and submitted to EPD on 30 January 2018, and the AQM has been carrying out at the alternative AQM station with EPD's consent since 6 February 2018.

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

2.3.3 The Action and Limit Levels for construction noise are defined in **Table 2.4**.

Table 2.4 Action and Limit Level for Construction Noise

Parameter	Action Level	Limit Level
07:00 – 19:00 hours on normal weekdays	When one documented complaint is received	75 dB(A)*

Notes:

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

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

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

2.4 Event Action Plans

2.4.1 The Event Actions Plans for air quality and noise are provided in **Appendix D**.

2.5 Mitigation Measures

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

3 Environmental Monitoring and Audit

3.1 Air Quality Monitoring Results

- 3.1.1 The monitoring results for AMS6 and AMS7/ AMS7B are reported in the monthly EM&A Reports (for December 2017, January and February 2018) prepared for Contract Nos. HY/2013/01 and HY/2011/03, respectively.
- 3.1.2 Summary of Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level at AMS6 shall be referred to the monthly EM&A Reports (for December 2017, January and February 2018) prepared by Contract No. HY/2013/01. No Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at AMS7/ AMS7B by the Environmental Team of Contract No. HY/2013/01 during the reporting period.
- 3.1.3 There were two AL exceedances of 24-hr TSP at ASM3B were recorded on 23 December 2017 and 17 January 2018, one AL exceedance of 24-hr TSP at AMS2 was recorded on 17 January 2018. Exceedances were recorded by the Environmental Team of Contract No. HY/2013/01 during the reporting period. After investigation, the exceedances were not related to the Contract. Details of the exceedances shall be referred to the monthly EM&A report prepared by Contract No. HY/2013/01. The IR was provided in **Appendix J**.

3.2 Noise Monitoring Results

- 3.2.1 The monitoring results for NMS2 and NMS3B are reported in the monthly EM&A Reports (for December 2017, January and February 2018) prepared for Contract No. HY/2013/01.
- 3.2.2 No noise exceedances were recorded at stations NMS2 and NMS3B by the ET of Contract No. HY/2013/01 during the reporting period.

3.3 Implementation of Environmental Measures

- 3.3.1 In response to the site audit findings, the Contractors carried out corrective actions. Details of site audit findings and the corrective actions during the reporting period are presented in **Appendix F**.
- 3.3.2 A summary of the Implementation Schedule of Environmental Mitigation Measures (EMIS) is presented in **Appendix E**. Most of the necessary mitigation measures were implemented properly.
- 3.3.3 The Contractor waters 8 times per day on all exposed soil within the Contract site and associated works areas when construction activities are being undertaken.

3.4 Advice on the Solid and Liquid Waste Management Status

- 3.4.1 The Contractor of Contract No. HY/2014/05 registered as a chemical waste producer for the Contract. Sufficient numbers of receptacles were available for general refuse collection and sorting.
- 3.4.2 The summary of waste flow table is detailed in **Appendix G**.
- 3.4.3 The Contractor of Contract No. HY/2014/05 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 Packaging, Labelling and Storage of Chemical Wastes*.

3.5 Environmental Licenses and Permits

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

- 3.5.2 The Contractors of Contract No. HY/2013/06 and Contract No. HY/2014/04 were advised to register as a chemical waste producer when chemical waste will be expected to generate for the foreseeable future from the operations (For Registration as Waste Producer Pursuant to Waste Disposal (Chemical Waste) (General) Regulation).

4 Summary of Exceedance, Complaint, Notification of Summons and Successful Prosecution

4.1 Summary of Exceedance of the Environmental Quality Performance Limit

- 4.1.1 Summary of Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level at AMS6 shall be referred to the monthly EM&A Reports (for December 2017, January and February 2018) prepared by Contract No. HY/2011/03.
- 4.1.2 There was no Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at AMS7/ AMS7B by the Environmental Team of Contract No. HY/2013/01 during the reporting period.
- 4.1.3 There was no Action and Limit Level exceedance for noise recorded at NMS2 and NMS3B by the Environmental Team of Contract No. HY/2013/01 during the reporting period.
- 4.1.4 There were two AL exceedances of 24-hour TSP at ASM3B were recorded on 23 December 2017 and 17 January 2018, one AL exceedance of 24-hr TSP at AMS2 was recorded on 17 January 2018. Exceedances were recorded by the Environmental Team of Contract No. HY/2013/01 during the reporting period. After investigation, the exceedances were not related to the Contract. Details of the exceedance shall be referred to the monthly EM&A report prepared by Contract No. HY/2013/01. No Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at AMS7/ AMS7B by the Environmental Team of Contract No. HY/2013/01 during the reporting period. The IR was provided in Appendix J.

4.2 Summary of Complaints, Notification of Summons and Successful Prosecution

- 4.2.1 There was no complaint received in relation to the environmental impact during the reporting period.
- 4.2.2 No notification of summons and prosecution was received during the reporting period.
- 4.2.3 Statistics on notifications of summons and successful prosecutions are summarized in **Appendix I**.

5 Comments, Recommendations and Conclusion

5.1 Comments

- 5.1.1 According to the environmental site inspections undertaken during the reporting period, the following recommendations were provided:
- The Contractor was reminded to provide proper drip tray and chemical label for the chemical container.
 - The Contractor was to cover the bags of cement.
 - The Contractor was reminded to provide water spraying for dusty operation.
 - The Contractor was reminded to enhance the water spraying for haul road near Building 044 and Building 045.
 - The Contractor was reminded to minimize the dust emission from the access road near the building by watering.
 - The Contractor was reminded to keep the site tidiness.

- The Contractor was reminded to remove general refuses as soon as possible and keep the site clean and tidy.
- The Contractor was reminded to display the corresponding NRMM label on the machines and provide a new NRMM label showing the correct colour.
- The Contractor was reminded to affix an appropriate NRMM for the lifting platform.
- The Contractor was reminded to affix an appropriate NRMM label for the lifting platform at Building 032.
- The Contractor was reminded to keep the site tidiness at Building 045.
- The Contractor was reminded to cover the bags of dusty materials at the rooftop of Building 045.

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

5.2 Recommendations

- 5.2.1 With implementation of the recommended environmental mitigation measures, the contract's environmental impacts were considered environmentally acceptable. The weekly environmental site inspections ensured that all the environmental mitigation measures recommended were effectively implemented.
- 5.2.2 The recommended environmental mitigation measures, as included in the EM&A programme, effectively minimize the potential environmental impacts from the contract. Also, the EM&A programme effectively monitored the environmental impacts from the construction activities and ensure the proper implementation of mitigation measures. No particular recommendation was advised for the improvement of the programme.

5.3 Conclusions

- 5.3.1 The construction works of the Contract No. HY/2014/05 commenced on 29 February 2016, while the construction works of the Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area commenced on 3 January 2017 and 13 February 2017 respectively. This is the Eighth Quarterly EM&A Report which summarizes findings of the EM&A works during the reporting period from 1 December 2017 to 28 February 2018 (includes the construction works of Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area).
- 5.3.2 Summary of Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level at AMS6 shall be referred to the monthly EM&A Reports (December 2017, January and February 2018) prepared by Contract No. HY/2011/03.
- 5.3.3 There was no Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at AMS7/ AMS7B by the Environmental Team of Contract No. HY/2013/01 during the reporting period.
- 5.3.4 There were two AL exceedances of 24-hour TSP at ASM3B was recorded on 23 December 2017 and 23 January 2018, one AL exceedance of 24-hr TSP at AMS2 was recorded on 17 January 2018. Exceedances were recorded by the Environmental Team of Contract No. HY/2013/01 during the reporting period, after investigation, the exceedance was not related to the Contract. Details of the exceedance shall be referred to the monthly EM&A report prepared by Contract No. HY/2013/01. No Limit Level exceedance of 1-hr TSP level and 24-hr TSP level

recorded at AMS7/ AMS7B by the Environmental Team of Contract No. HY/2013/01 during the reporting period. The IR was provided in Appendix J.

- 5.3.5 There was no Action and Limit Level exceedance for noise recorded at NMS2 and NMS3B by the Environmental Team of Contract No. HY/2013/01 during the reporting period.
- 5.3.6 Environmental site inspections were carried out on 4, 13, 18, and 27 December 2017, 3, 11, 15, 22 and 29 January 2018 and 7, 12, 22 and 26 February 2018 for the Contract No. HY/2014/05 (includes the construction works of Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area). Recommendations on remedial actions were given to the Contractors for the deficiencies identified during the site inspections.
- 5.3.7 There was no complaint received in relation to the environmental impact during the reporting period.
- 5.3.8 No notification of summons and successful prosecution was received during the reporting period.



FIGURES

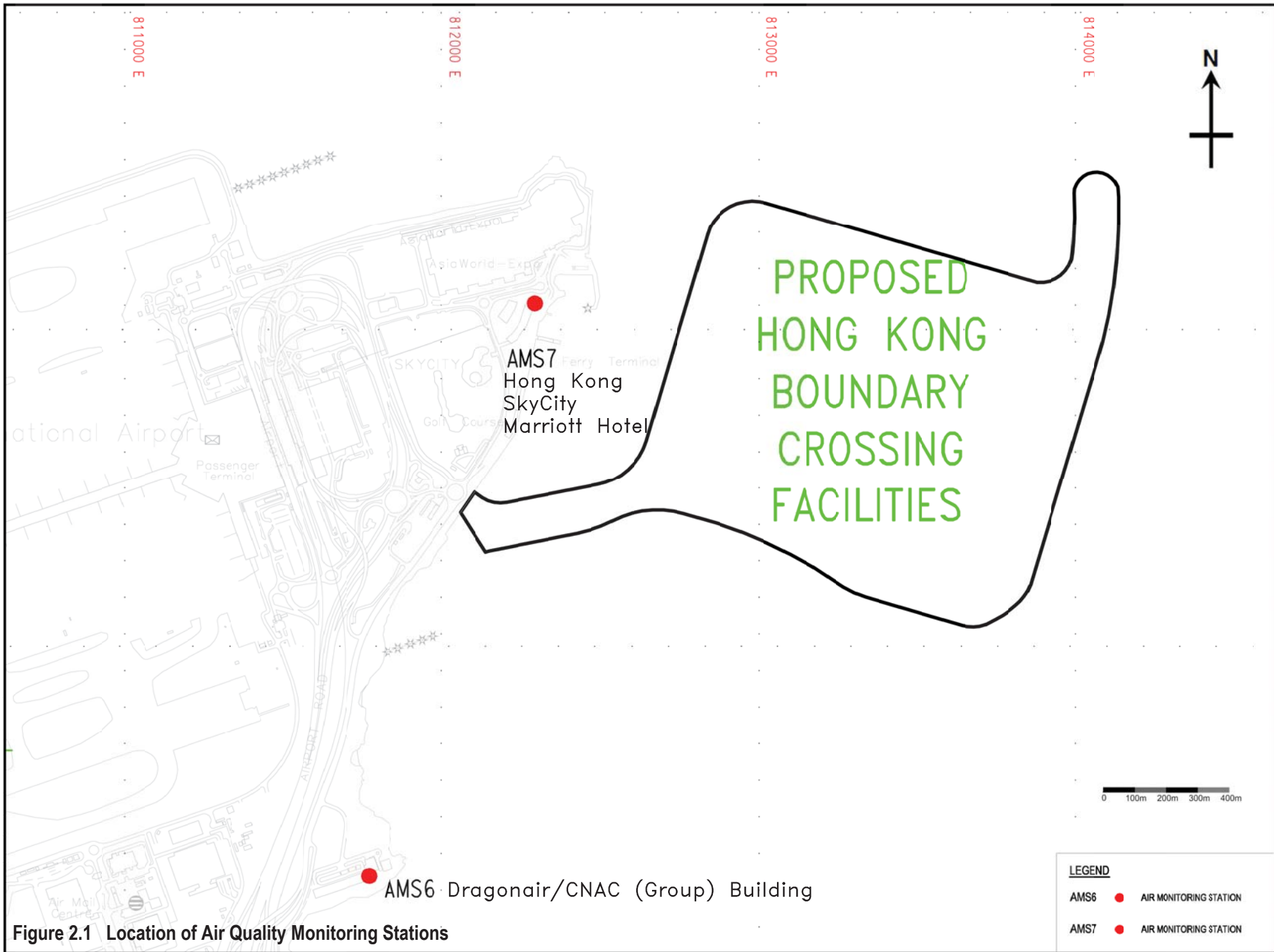
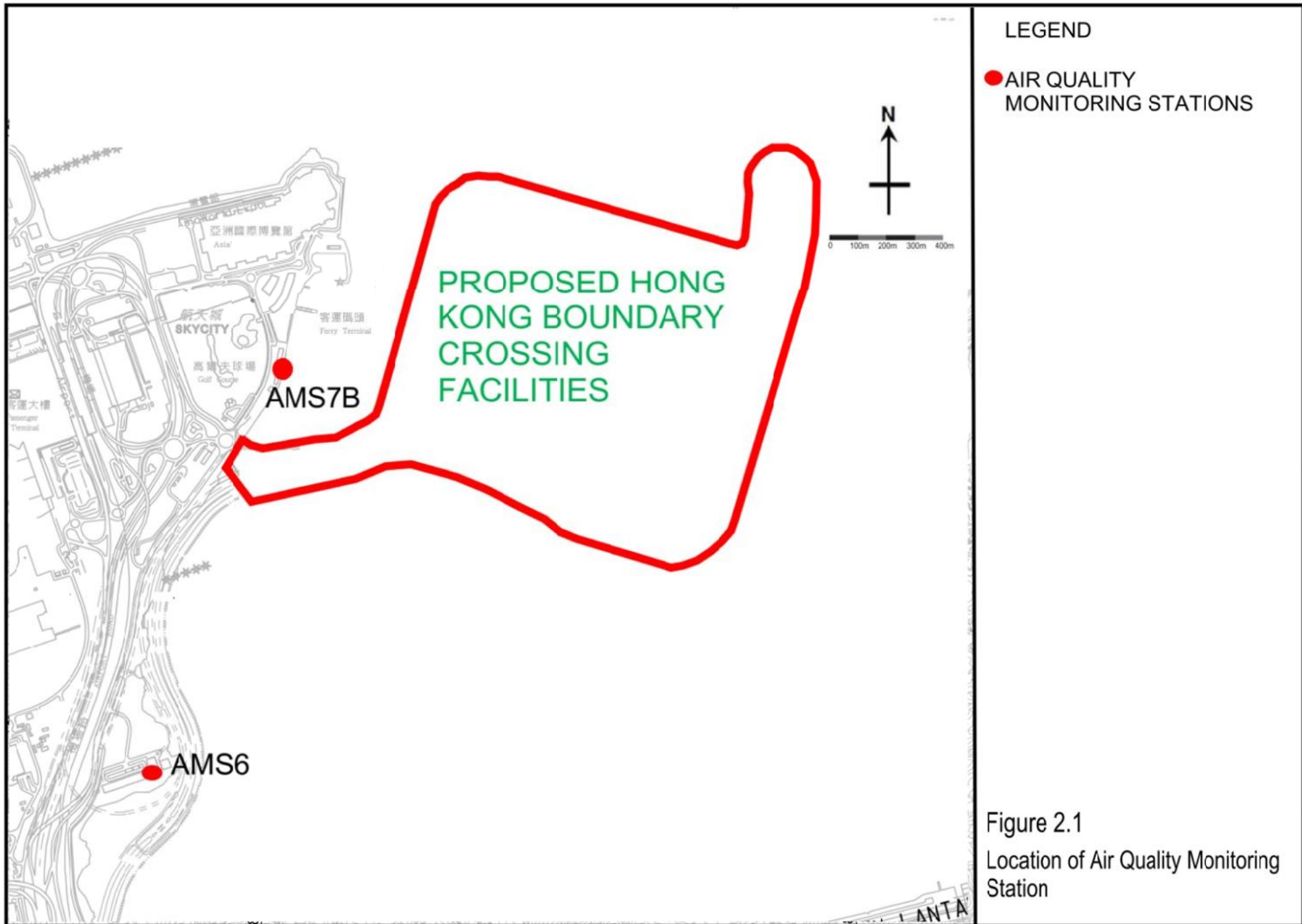


Figure 2.1 Location of Air Quality Monitoring Stations

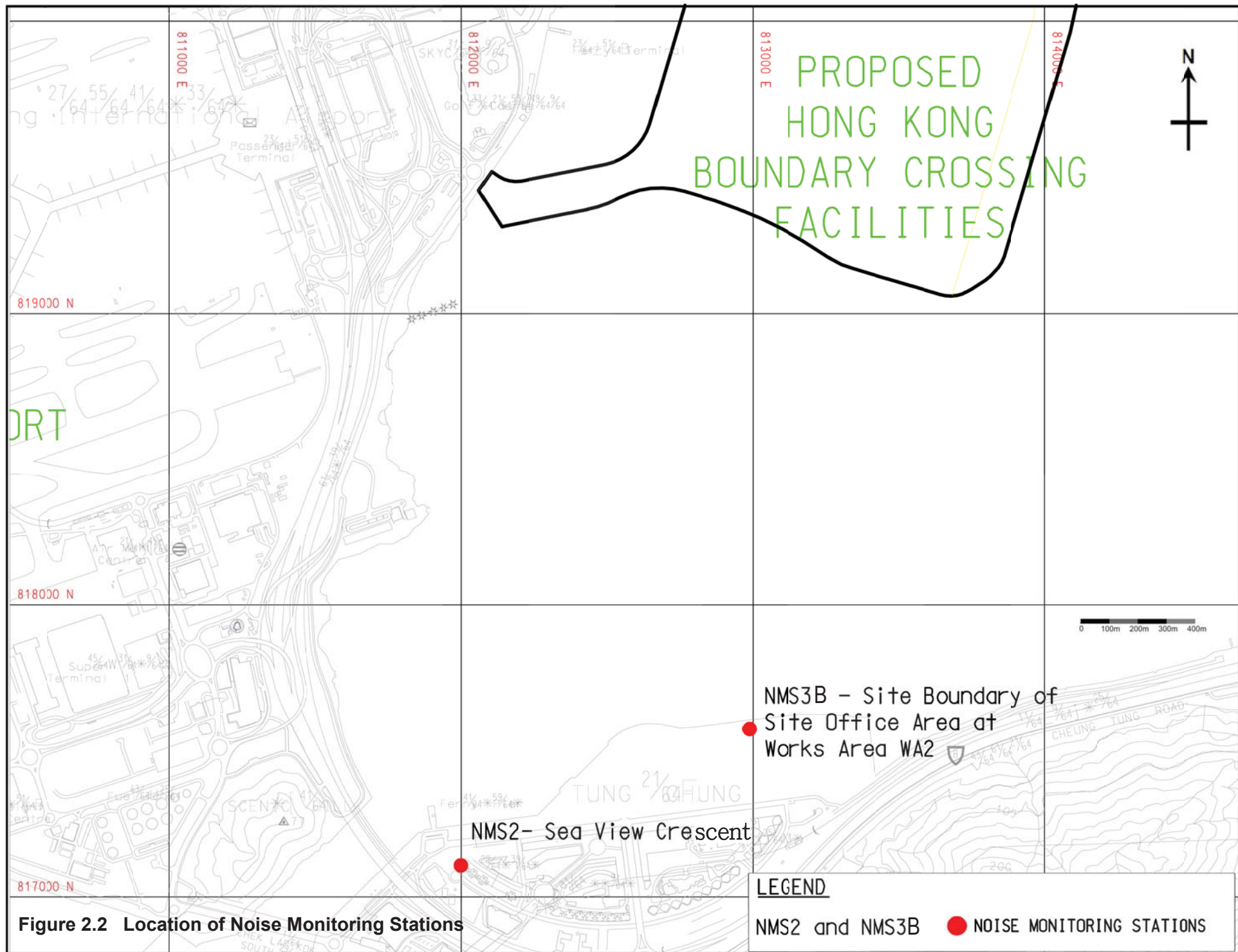
LEGEND	
AMS6	● AIR MONITORING STATION
AMS7	● AIR MONITORING STATION



LEGEND

● AIR QUALITY MONITORING STATIONS

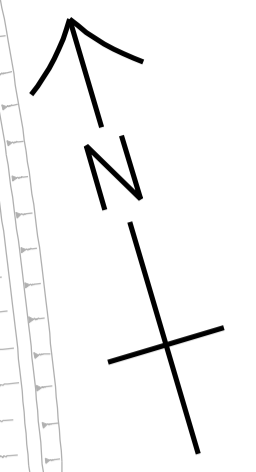
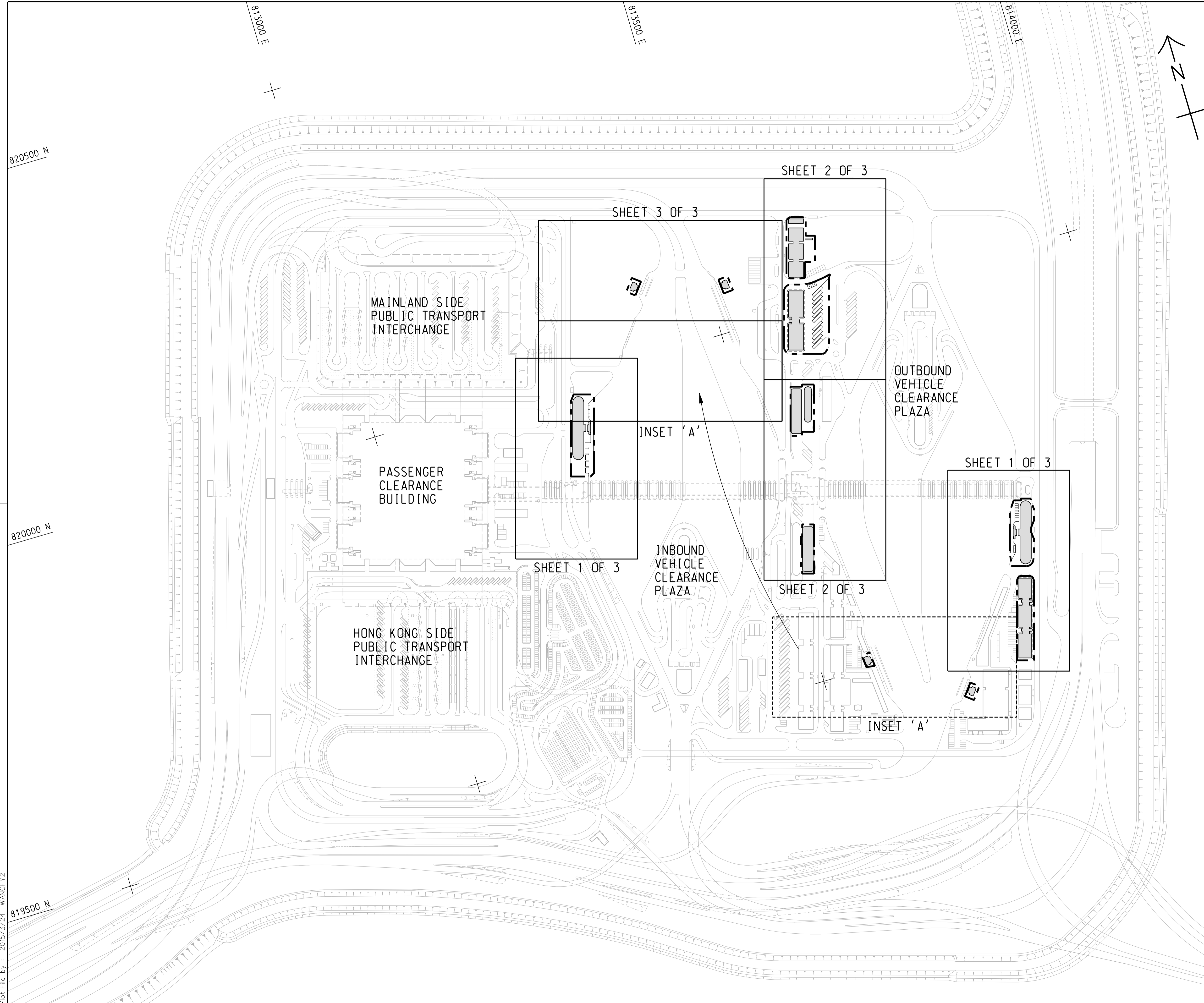
Figure 2.1
Location of Air Quality Monitoring Station





APPENDIX A

Location of Works Areas



820500 N

820000 N

819500 N

813000 E

813500 E

814000 E

Plot File by : 2015/3/24 WANGFY2

p:\projects\60191048\drawing\contract\c8\1000\C8_000_C00_1010.dgn

- TENDER DRAWING		BWCW SCI	MAR.15
REV. 修改	DESCRIPTION 內容摘要	D.C. 圖樣號	DATE 日期

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

HONG KONG-ZHUHAI-MACAO BRIDGE
 HONG KONG BOUNDARY CROSSING FACILITIES
 - REMAINING ANCILLARY BUILDINGS AND FACILITIES

KEY PLAN

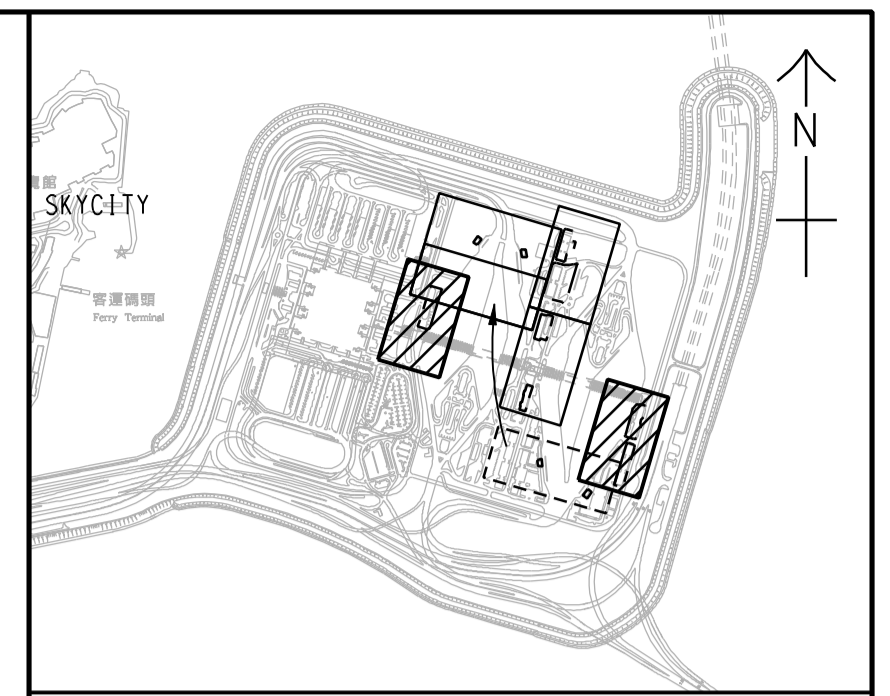
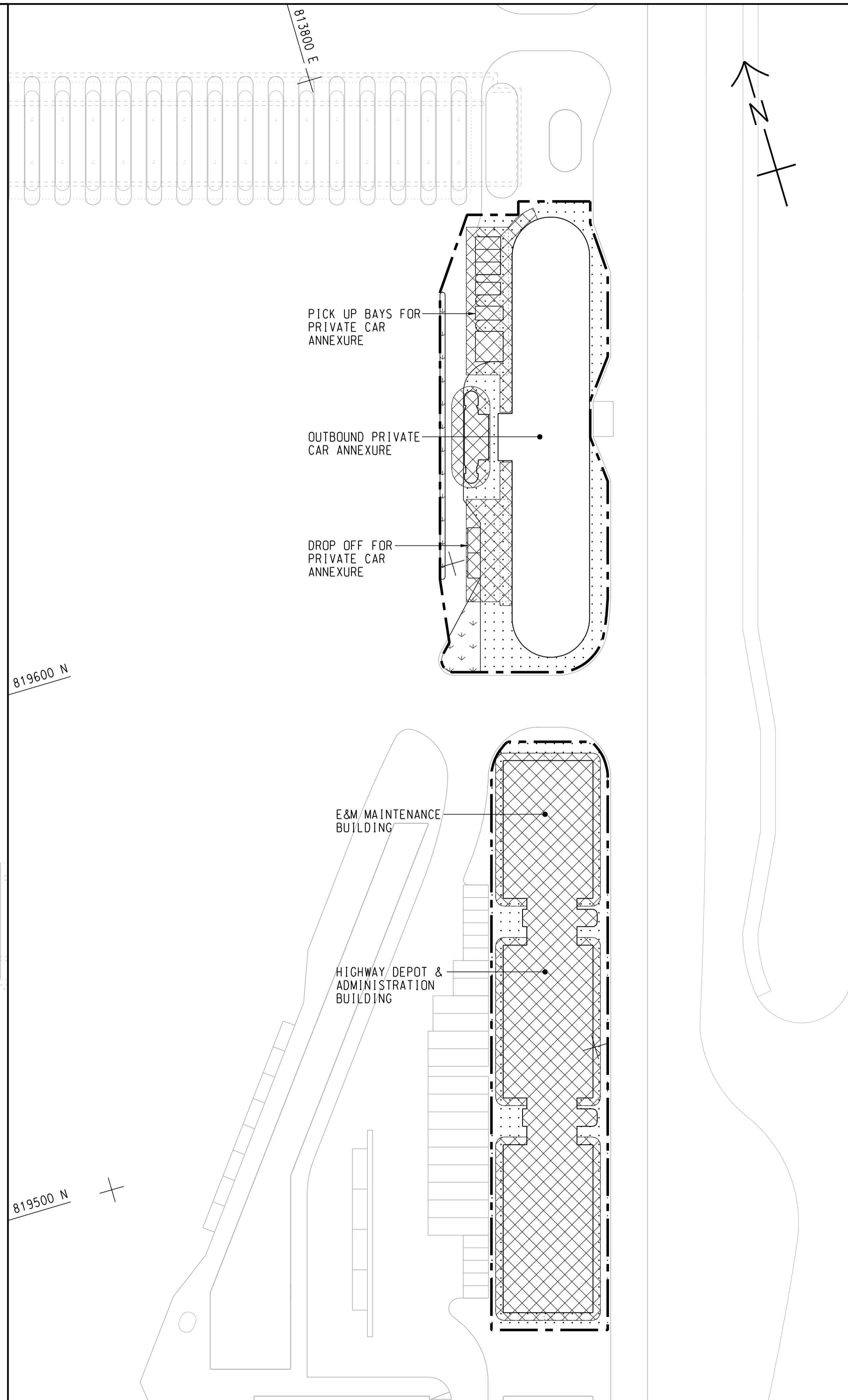
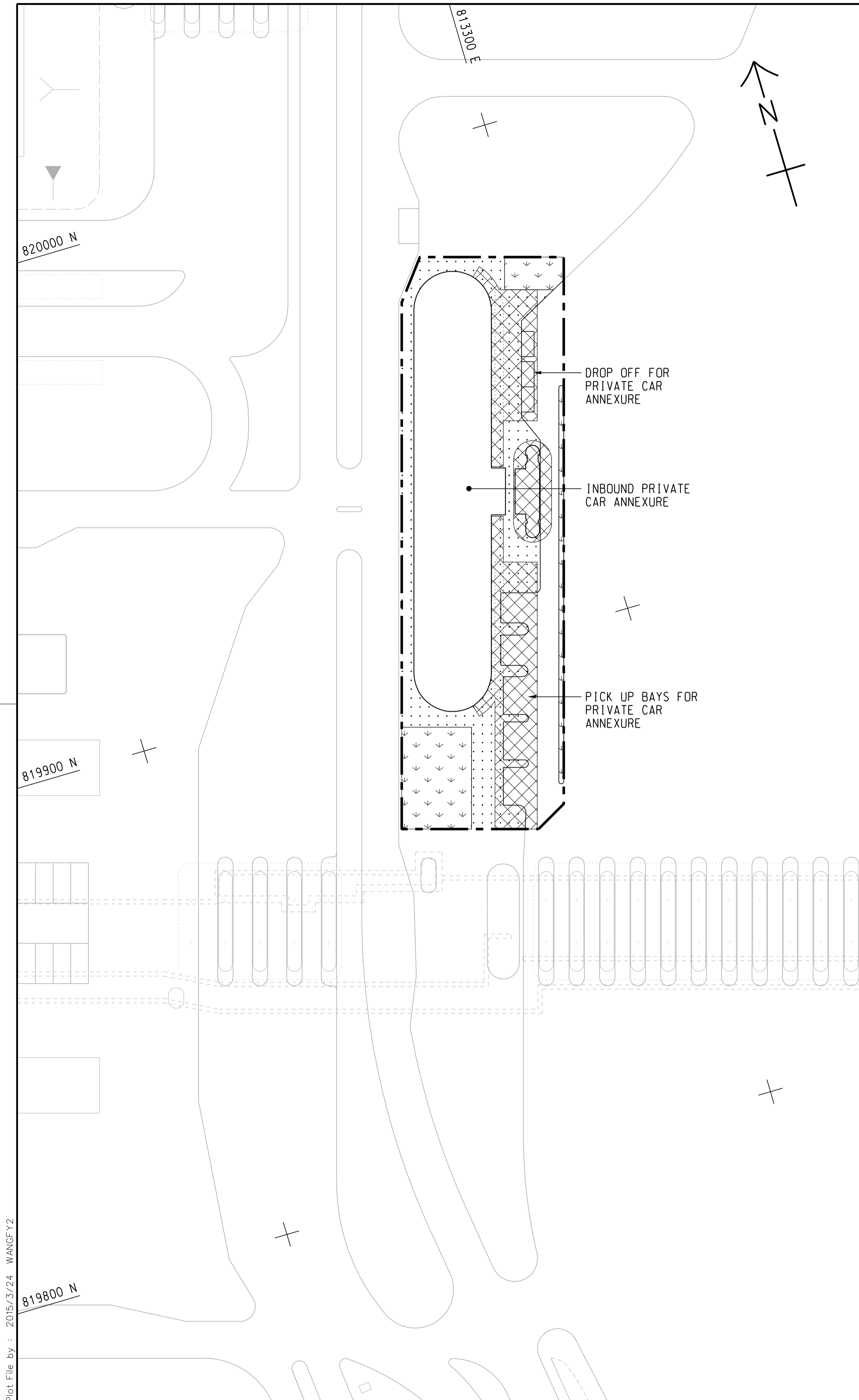
AECOM Aedas
 Rogers Stirk Harbour + Partners
 BURO HAPPOLD ATKINS ADI

DRG.NO. 60191048/C8/000/C00/1010
 圖紙編號

DESIGNED BY 設計	BWCW	CONTRACT NO. 合約編號	HY/2014/05	P. Dir. APPROVED 批准人	TKH
DRAWN BY 繪圖	WSY	STATUS 階段			

SCALE 比例 A1 1 : 2500

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KEY PLAN
SCALE 1 : 20000

NOTE:
1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING NOS. 60191048/C8/000/C00/1012 AND 1013.

LEGEND:

	SITE BOUNDARY
	FOOTPATH (DETAILS REFER TO LANDSCAPE DETAIL DRAWINGS)
	CANOPY
	PLANTING AREA

REV. / 修改	DESCRIPTION / 內容摘要	DATE / 日期
-	TENDER DRAWING	BWCW SCI MAR.15



HONG KONG-ZHUHAI-MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- REMAINING ANCILLARY BUILDINGS AND FACILITIES

GENERAL LAYOUT PLAN

SHEET 1 OF 3

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

Aedas +

DRG.NO. / 圖紙編號 60191048/C8/000/C00/1011

DESIGNED BY / 設計	CONTRACT NO. / 合約編號	P. Dir. / APPROVED / 批准人
BWCW	HY/2014/05	TKH

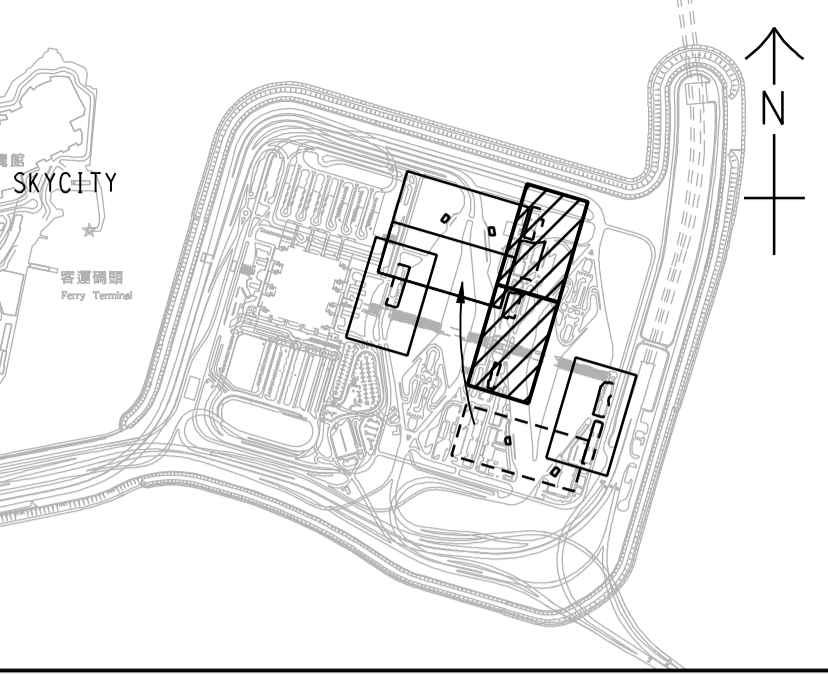
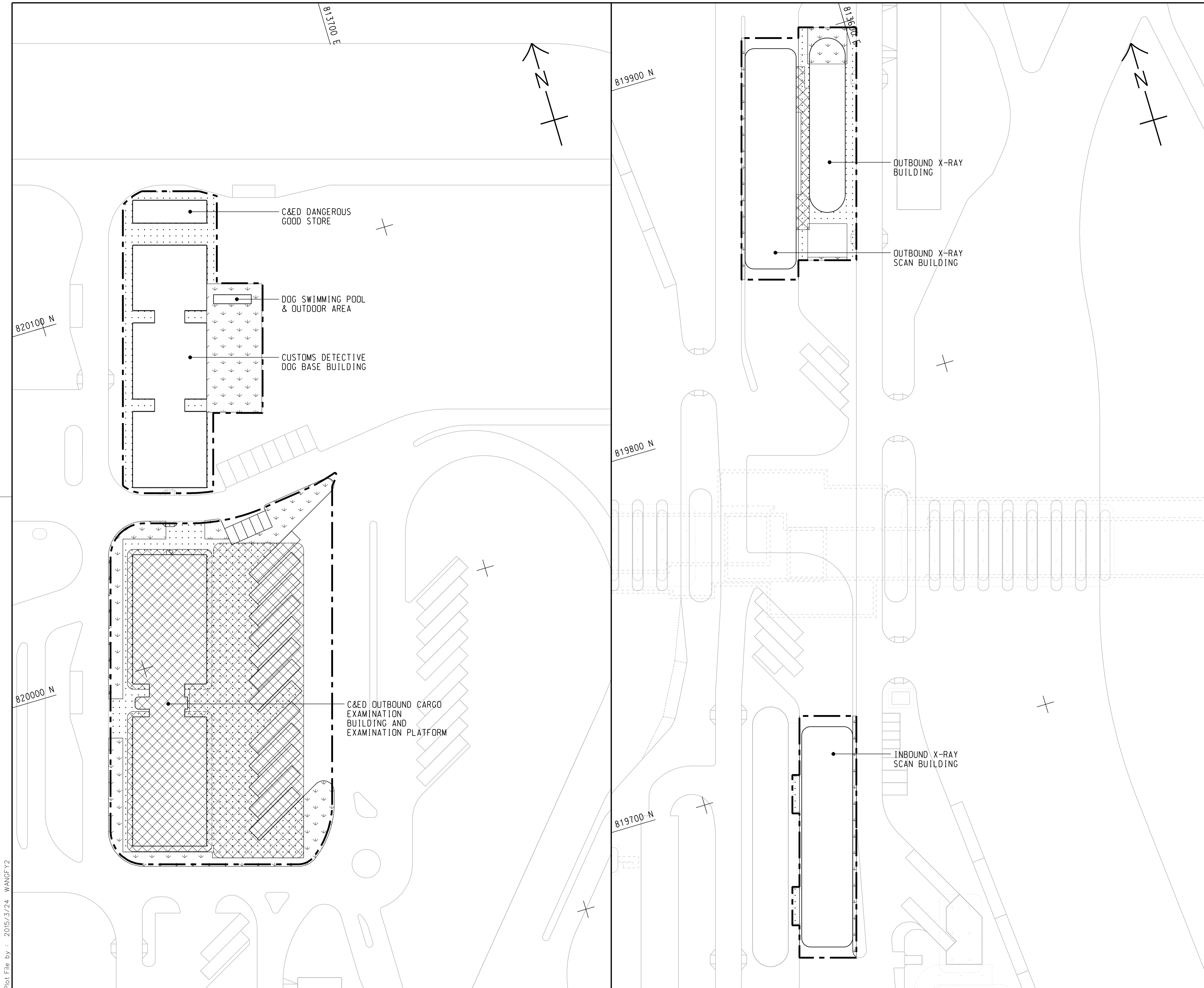
DRAWN BY / 繪圖	STATUS / 階段
WSY	初步

SCALE / 比例 A1 1 : 500

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KEY PLAN
SCALE 1 : 20000

NOTES:

- FOR NOTES AND LEGEND REFER TO DRAWING NO. 60191048/C8/000/C00/1011.
- THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING NOS. 60191048/C8/000/C00/1011 AND 1013.

REV. 修改	DESCRIPTION 內容摘要	B.C. 校核	P.C. 繪圖	DATE 日期
-	TENDER DRAWING	BWCW	SCI	MAR. 15



HONG KONG-ZHUHAI-MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- REMAINING ANCILLARY BUILDINGS AND FACILITIES

GENERAL LAYOUT PLAN

SHEET 2 OF 3



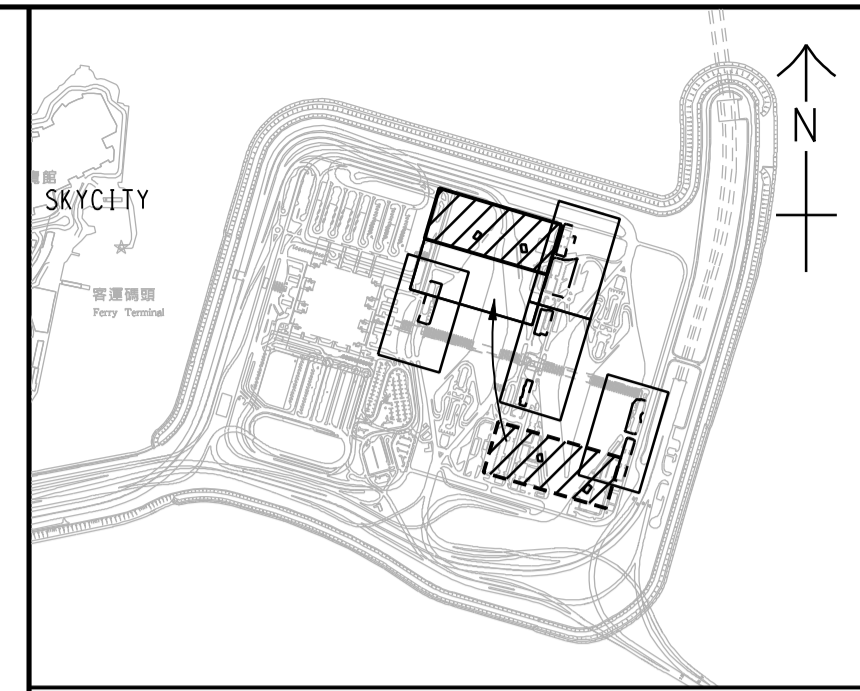
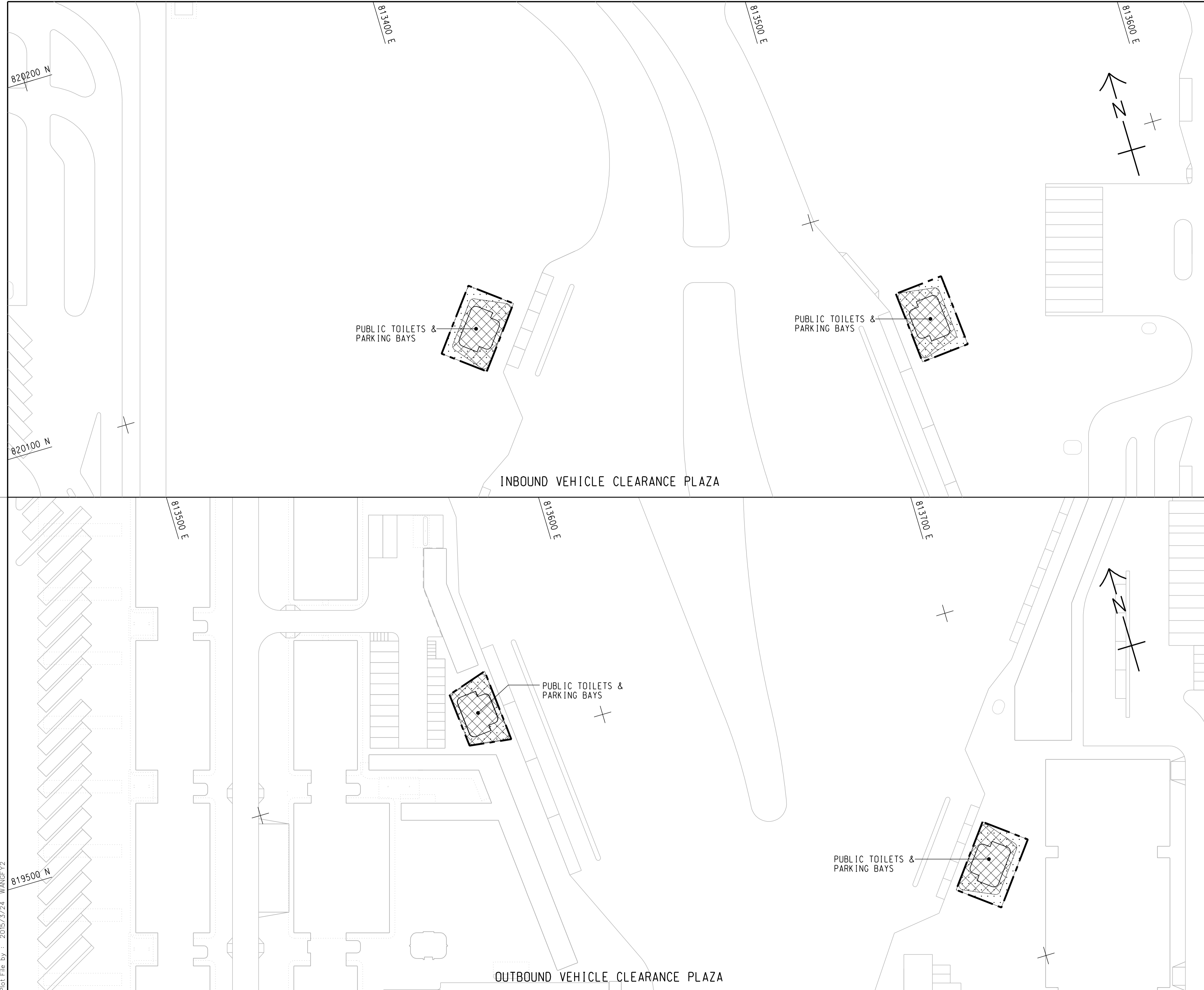
DRG. NO. 60191048/C8/000/C00/1012
圖紙編號

DESIGNED BY 設計	CONTRACT NO. 合約編號	P. Dir. APPROVED 批准人
BWCW	HY/2014/05	TKH

DRAWN BY 繪圖	STATUS 階段
WSY	初步

SCALE 比例 A1 1 : 500
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KEY PLAN
SCALE 1 : 20000

- NOTES:
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 2. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING NOS. 60191048/C8/000/C00/1011 AND 1012.

REV. 修改	DESCRIPTION 內容摘要	DATE 日期
-	TENDER DRAWING	MAR. 15



HONG KONG-ZHUHAI-MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- REMAINING ANCILLARY BUILDINGS AND FACILITIES

GENERAL LAYOUT PLAN
SHEET 3 OF 3

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

Aedas +

DRG.NO. 60191048/C8/000/C00/1013
圖紙編號

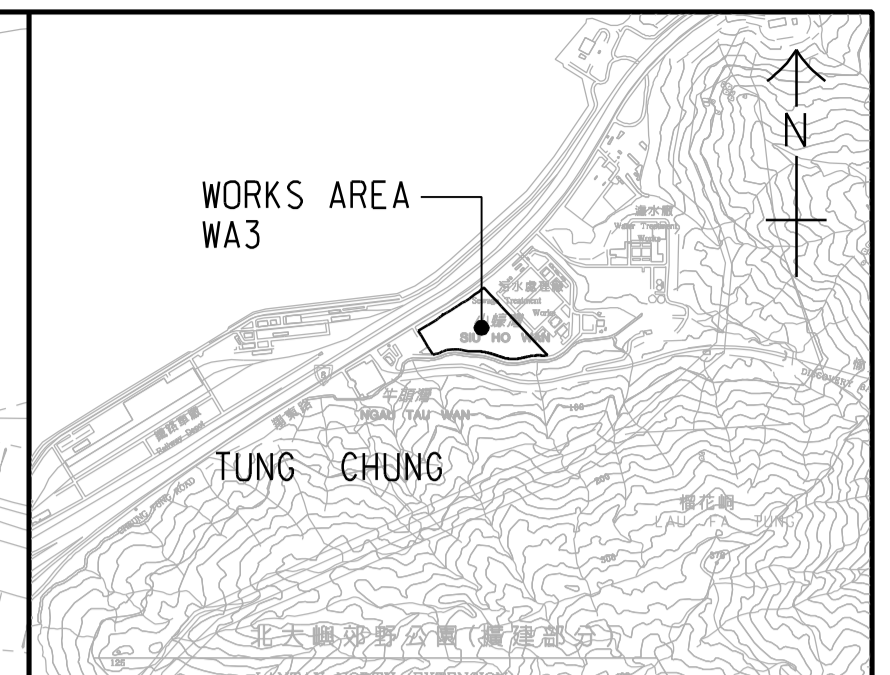
DESIGNED BY 設計	CONTRACT NO. 合約編號	P. Dir. APPROVED 批准人
BWCW	HY/2014/05	TKH
DRAWN BY 繪圖	STATUS 階段	
WSY		
SCALE 比例		
A1 1 : 500		

DIMENSIONS ARE IN 尺寸單位 METRES 版權所 有

Plot File by : 2015/3/24 WANGFY2

SETTING OUT POINT

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



LOCATION PLAN
SCALE 1 : 25000

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

LEGEND:

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

REV.	DESCRIPTION	DATE
-	TENDER DRAWING	MAR. 15

HONG KONG-ZHUHAI-MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- REMAINING ANCILLARY BUILDINGS AND FACILITIES

WORKS AREA WA3

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

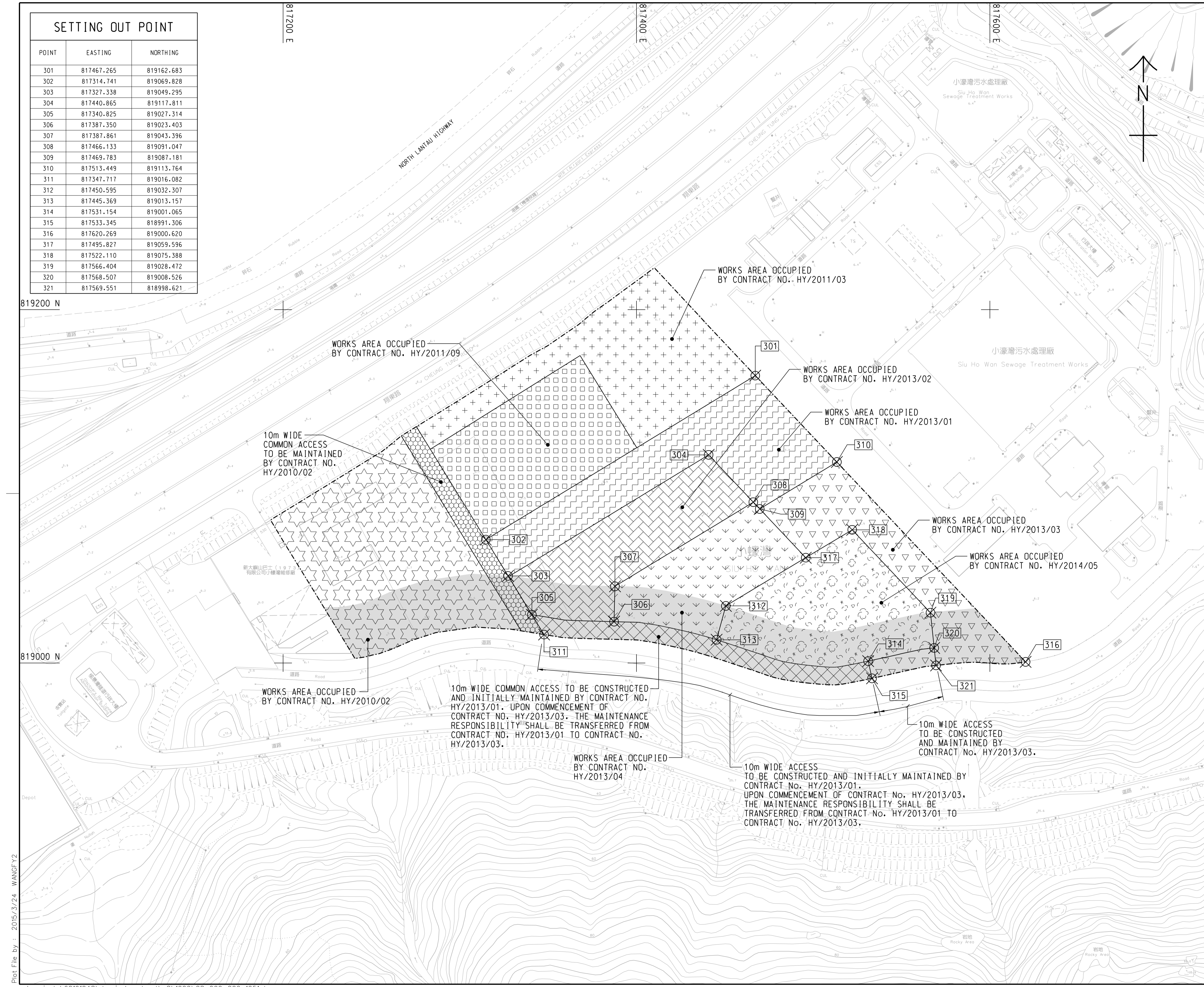
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圖紙編號

DESIGNED BY 設計	CONTRACT NO. 合約編號	P. Dir. APPROVED 批准人
BWCW	HY/2014/05	TKH

DRAWN BY 繪圖	STATUS 階段
WSY	初步

DIMENSIONS ARE IN METRES
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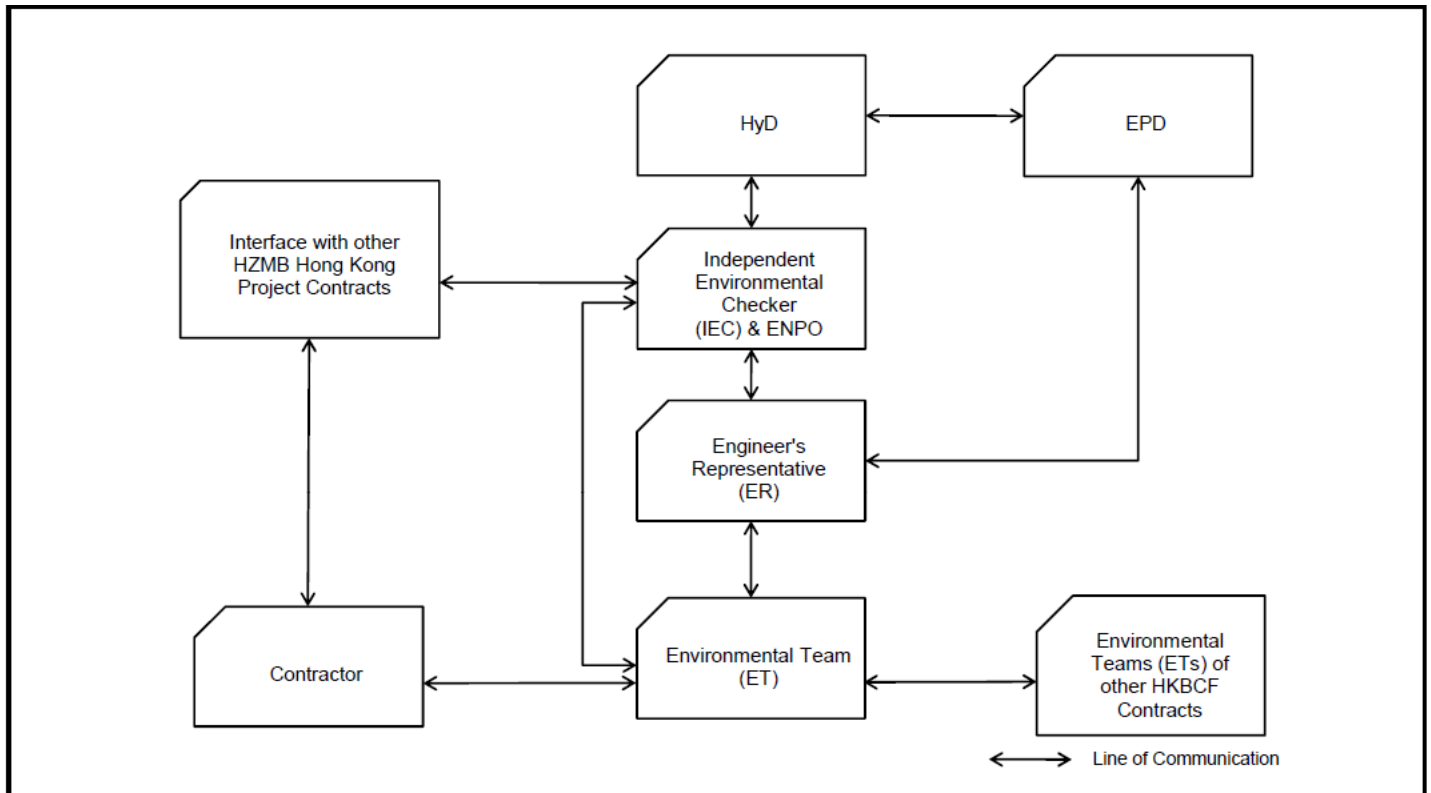
Plot File by : 2015/3/24 WANGFY2



APPENDIX B

Project Organization for Environmental Works

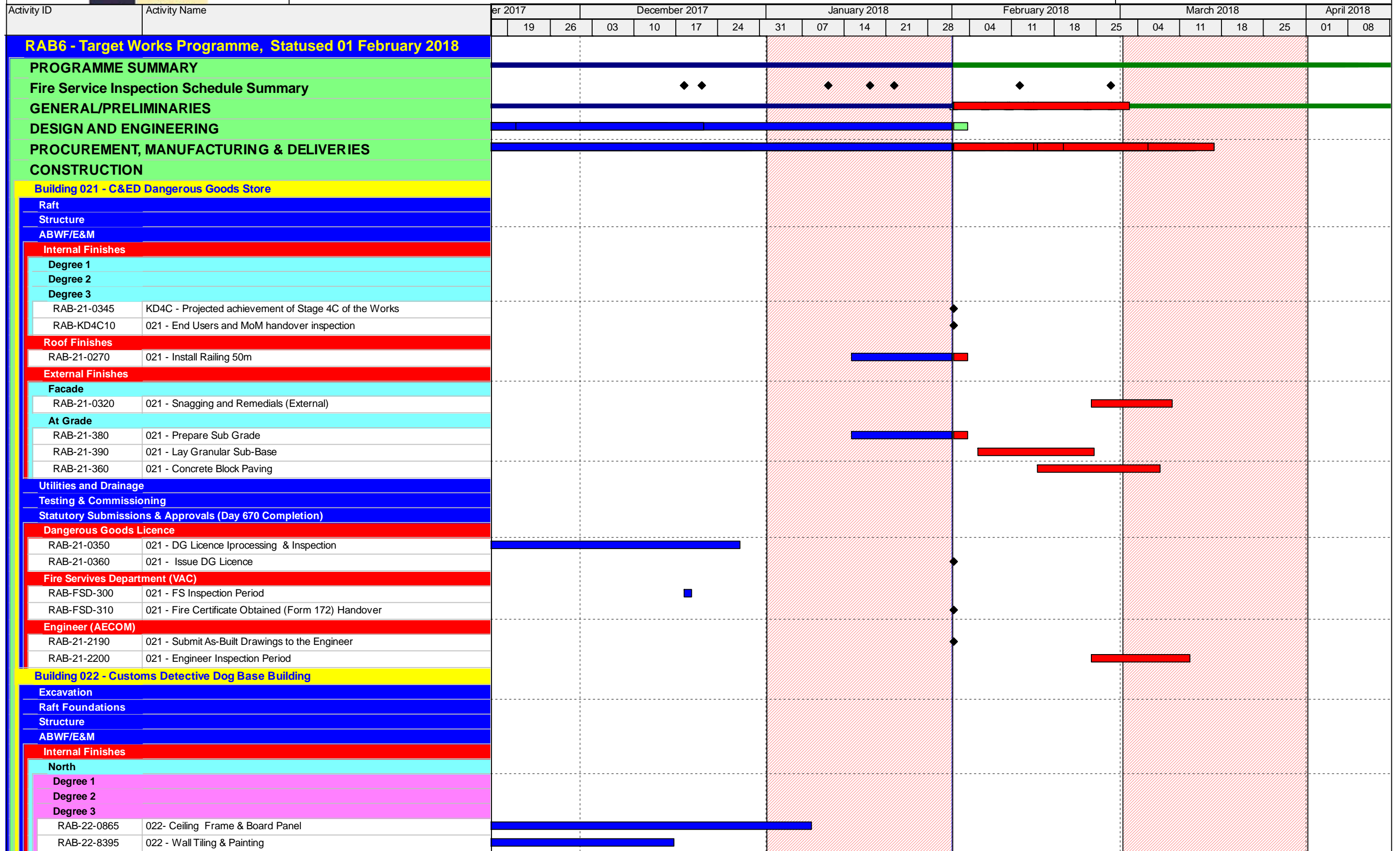
Project Organisation for Environmental Works





APPENDIX C

Construction Programme



■ Remaining Level of Effort
 ■ Actual Work
 ■ Critical Remaining ...
■ Actual Level of Effort
 ■ Remaining Work
 △ Finish Constraint

3-Month Rolling Programme, 01 Feb. 2018 Stated

Date	Revision	Checked	Approved
01-Feb-18	3-Month Rolling Programme, 01 Feb-18 Stated		



Activity ID	Activity Name	November 2017		December 2017				January 2018				February 2018				March 2018				April 2018		
		19	26	03	10	17	24	31	07	14	21	28	04	11	18	25	04	11	18	25	01	08
RAB-22-8275	022 - MEP Final Fix																					
RAB-22-8365	022 - Floor Finish Other Than Early Handovr Rooms																					
RAB-22-8265	022 - Door Panel & Ironmongery																					
RAB-22-8295	022 - Snagging and Remedials (Bldg. Internal)																					
RAB-22-0870	022 - MEP Balance of Works																					
RAB-22-0980	022 - End Users and MOM Handover Inspection																					
RAB-22-0950	022 - ABWF and MEP works to Degree 3 (KD5C)																					
External Finishes																						
Facade																						
RAB-22-0470	022 - External Painting, Tiling & Cladding																					
RAB-22-0710	Snag Listing - Bldg. External & External Works																					
At Grade																						
RAB-22-2100	022 - Prepare Sub Grade																					
RAB-22-2170	022 - Landscaping for Outdoor Excise Lawn																					
RAB-22-2120	022 - Lay Granular Sub-Base																					
Roof Finishes - North																						
RAB-22-0530	022 - Install Railing																					
Specialist Installations																						
Window Wall																						
RAB-22-7050	022 - Glazing to Window Wall																					
Dog Swimming Pool																						
RAB-22-0600	022 - Tiling to Dog Swimming Pool																					
RAB-22-0640	022 - Plumbing and filtration systems																					
RAB-22-0630	022 - Metalworks and Railings																					
RAB-22-0490	022 - Backfill to ground level at Dog Swimming Pool																					
RAB-22-0700	022 - Snagging and Remedials - Dog Pool																					
Utilities and Drainage																						
Testing & Commissioning																						
RAB-TC22-1000	022 - T&C (HVAC, FS, P&D, OTHERS)																					
Statutory Submissions & Approvals (Day 670 Completion)																						
BEE0																						
Water Supplies Department (WSD)																						
Commencement																						
RAB-WSD-254	022 - WSD's Processing/Inspection/Meter Connection																					
RAB-WSD-804	022 - Submit WWO 46 Pt. IV																					
RAB-WSD-264	022 - Permanent Water ON/WSD Issue WWO 46 Part V Cert & Water Cor																					
Fire Services Department (VAC)																						
Fire Services Water (FS)																						
RAB-FSD-330	022 - FS Inspection Period, FS																					
RAB-FSD-590	022 - Issuance of FS 172, FS Certificate of Compliance, FS																					
Engineer (AECOM)																						
RAB-22-2220	022 - Submit Building 022 As Built Drawings to Engineer																					
Building 023 - C&ED Outbound Cargo Examination Building and Examination Platform																						
Excavation																						
Raft Foundations - Inspection Platform																						
Raft Foundations - Main Building																						
Structure																						
ABWF/E&M																						
Internal Finishes																						
Ground Floor																						
Degree 1																						

■ Remaining Level of Effort
 ■ Actual Work
 ■ Critical Remaining ...
■ Actual Level of Effort
 ■ Remaining Work
 ◻ Finish Constraint

3-Month Rolling Programme, 01 Feb. 2018 Stated

Date	Revision	Checked	Approved
01-Feb-18	3-Month Rolling Programme, 01 Feb-18 Stated		

Activity ID	Activity Name	November 2017		December 2017				January 2018				February 2018				March 2018				April 2018		
		19	26	03	10	17	24	31	07	14	21	28	04	11	18	25	04	11	18	25	01	08
Degree 2		RAB-23-5610	023 - Frame for Wall Panel & Cladding + Louver, G/F																			
Degree 3		RAB-23-5930	023 - Wall Finish - Paint & Tile, G/F																			
		RAB-23-6220	023 - Floor Finish Other Than Carpet, G/F																			
		RAB-23-5760	023 - Ceiling Frame, G/F																			
		RAB-23-6380	023 - MEP Final Fix, G/F																			
		RAB-23-5660	023 - Door Frame/Panel & Ironmongery, G/F																			
		RAB-23-6410	023 - Ceiling Plaster Board, G/F																			
		RAB-23-6180	023 - Floor Carpet Finish, G/F																			
		RAB-23-6190	023 - Access to End Users, KD3C' - C3, C6 & C7																			
First Floor																						
Degree 1																						
Degree 2		RAB-23-8085	023 - Frame for Wall Panel & Cladding + Louver, 1/F																			
Degree 3		RAB-23-8175	023 - Wall Finish - Paint & Tile, 1/F																			
		RAB-23-8105	023 - Ceiling Frame, 1/F																			
		RAB-23-8205	023 - Floor Finish Other Than Carpet, 1/F																			
		RAB-23-8145	023 - Glazing, 1/F																			
		RAB-23-8155	023 - Door Panel/Ironmongery & Glass Baluster, 1/F																			
		RAB-23-8185	023 - Ceiling Plaster Board, 1/F																			
		RAB-23-8195	023 - Floor Carpet Finish, 1/F																			
		RAB-23-8265	023 - MEP Balance of Works																			
		RAB-23-2290	023 - Snag Listing & Remedial Works - Building Internal																			
		RAB-23-5970	023 - ABWF and MEP works to Degree 3 (KD3E)																			
		RAB-23-8225	023 - Handover Rooms Ready to End Users***, KD3C Target to Achieve																			
		RAB-23-6040	023 - End Users and MOM Handover Inspection																			
		RAB-23-8255	023 - ABWF and MEP works to Degree 3 - Remaining Area- 1/F																			
Roof Level Dog House																						
		RAB-23-6280	023 - ABWF and MEP works to Degree 2 R/F																			
		RAB-23-6340	023 - ABWF and MEP works to Degree 3 R/F																			
External Finishes																						
Facade		RAB-23-5650	023 - External Painting																			
At Grade																						
Platform Deck		RAB-23-7030	023 - Lay & Compact Granular Sub-Base																			
		RAB-23-7040	023 - Construct Platform Concrete Slab																			
Road Works		RAB-23-7100	023 - Topping Up to Platform to Road Formation Level																			
		RAB-23-7110	023 - Lay & Compact Granular Sub-Base																			
		RAB-23-7120	023 - Construct Rigid Road Pavement																			
		RAB-23-7130	023 - Construction of Flexible Pavement																			
Foot Path		RAB-23-5740	023 - Prepare Sub Grade																			
		RAB-23-5910	023 - Lay Granular Sub-Base																			
		RAB-23-6050	023 - Sand Bedding + Concrete Block Pavement																			
Curtain Wall																						
East		RAB-23-6810	023 - Install Primary Steelwork for Curtain Wall (Bracket Support) - E																			

■ Remaining Level of Effort
 ■ Actual Work
 ■ Critical Remaining ...
■ Actual Level of Effort
 ■ Remaining Work
 ◻ Finish Constraint

3-Month Rolling Programme, 01 Feb. 2018 Stated

Date	Revision	Checked	Approved
01-Feb-18	3-Month Rolling Programme, 01 Feb-18 Stated		



Activity ID	Activity Name	November 2017		December 2017				January 2018				February 2018				March 2018				April 2018		
		19	26	03	10	17	24	31	07	14	21	28	04	11	18	25	04	11	18	25	01	08
RAB-23-6820	023 - Install Secondary Steelwork for Curtain Wall (Mullion, etc) - E																					
RAB-23-6830	023 - Glazing to Window Wall - E																					
West																						
RAB-23-6840	023 - Install Primary Steelwork for Window Wall (Bracket Support) - W																					
RAB-23-6850	023 - Install Secondary Steelwork for Window Wall (Mullion, etc) - W																					
RAB-23-6860	023 - Glazing to Window Wall - W																					
Roof Finishes																						
RAB-23-5920	023 - Install Railing																					
Green Roof																						
Specialist Installations																						
PV Installation																						
RAB-23-6350	023 - Install Supporting Frame and PV panel																					
RAB-23-6360	023 - Cable containment and grid cable wiring																					
RAB-23-6390	023 - Sub-array junction box installation & Connection																					
RAB-23-6400	023 - DC cable wiring from PV panel to EL room																					
Steel Canopy																						
RAB-23-6290	023 - Install Metal Cladding Panels																					
RAB-23-6310	023 - Install Misc Metalworks																					
Utilities and Drainage																						
RAB-23-7975	023 - Construct Permanent Drainage, Manholes & Draw Pits																					
RAB-23-7985	023 - Utilities and Common Telecom Ducting																					
Testing & Commissioning																						
RAB-TC23-1000	023 - T&C (HVAC, FS, P&D, OTHERS)																					
RAB-TC23-1015	023 - PV Self-test with Engineer																					
RAB-TC23-1020	023 - PV On-Grid inspection with CLP																					
Statutory Submissions & Approvals (Day 610 Completion)																						
BEE0																						
EMSD - Building 023 Lift Inspection																						
RAB-FSD-190	023 - EMSD Lift Inspection																					
RAB-FSD-106	023 - EMSD Lift Certificate Issued - Building 023																					
Water Supplies Department (WSD)																						
Commencement																						
RAB-WSD-774	023 - Submit WWO 46 Pt. IV for Building 023																					
RAB-WSD-107	023 - WSD Inspection/Meter Connection																					
RAB-WSD-109	023 - Permanent Water ON/WSD Issue WWO 46 Part V - Water Certificate																					
Fire Services Department (VAC)																						
RAB-FSD-110	023 - FS Inspection Period For Building 023																					
RAB-FSD-290	023 - Issuance of FS 172, FS Certificate of Compliance																					
Engineer (AECOM)																						
RAB-23-2250	023 - Submit Building 023 As Built Drawings to Engineer																					
Building 025 - Inbound Private Car Annexure																						
Excavation																						
Raft Foundations																						
Structure																						
ABWF/E&M INTERNAL FINISHES																						
INTERNAL FINISHING WORKS																						
Degree 1																						
Degree 2																						
Degree 3																						
RAB-25-7620	025 - Ceiling Panel																					
RAB-25-7580	025 - Floor Painting																					

■ Remaining Level of Effort
 ■ Actual Work
 ■ Critical Remaining ...
■ Actual Level of Effort
 ■ Remaining Work
 △ Finish Constraint

3-Month Rolling Programme, 01 Feb. 2018 Stated

Date	Revision	Checked	Approved
01-Feb-18	3-Month Rolling Programme, 01 Feb-18 Stated		



Activity ID	Activity Name	November 2017		December 2017				January 2018				February 2018				March 2018				April 2018		
		19	26	03	10	17	24	31	07	14	21	28	04	11	18	25	04	11	18	25	01	08
RAB-25-7590	025 - Floor Carpet																					
RAB-25-7550	025 - MEP Balance of Works																					
RAB-25-7370	025 - Snagging and Remedials																					
RAB-25-7375	KD6C - Projected achievement of Stage 6C of the Works																					
RAB-25-7630	025 - Early Handover Rooms Ready to End Users**, Target to Achieve KDI																					
RAB-KD6C10	025 - End Users and MoM handover inspection																					
External Finishes																						
Facade																						
RAB-25-0580	025 - Make good external surfaces																					
At Grade																						
Road Works																						
RAB-25-7100	025 - Topping Up to Platform to Road Formation Level																					
RAB-25-7110	025 - Lay & Compact Granular Sub-Base																					
Foot Path																						
RAB-25-5740	025 - Prepare Sub Grade																					
RAB-25-5910	025 - Lay Granular Sub-Base																					
RAB-25-6050	025 - Sand Bedding + Concrete Block Paving																					
Roof Finishes																						
RAB-25-0550	025 - Install Railing (222m)																					
Green Roof																						
RAB-25-0710	025 - Complete Green Roof Works																					
Specialist Installations																						
RAB-25-620	025 - Construct Health Department Screening Station x 1																					
RAB-25-610	025 - Construct Immigration Counters x 3																					
Glazed Canopy																						
RAB-25-0520	025 - Install Glazed Panels																					
IMMD Kiosk																						
RAB-25-0380	025 - Internal ABWF and MEP of IMMD Kiosk																					
RAB-25-0350	025 - External Finishes to IMMD Kiosk																					
RAB-25-0430	025 - Erect Kiosk Canopy @ +10.17mPD																					
Utilities and Drainage																						
RAB-25-7250	025 - Construct Permanent Drainage, Manholes & Draw Pits																					
RAB-25-7270	025 - Install Flushing Water Mains																					
RAB-25-7280	025 - Install Fresh Water Mains																					
RAB-25-7290	025 - Install FS Water Main																					
Testing & Commissioning																						
RAB-TC25-1000	025 - T&C (HVAC, FS, P&D, OTHERS)																					
Statutory Submissions & Approvals (Day 670 Completion)																						
BEE0																						
Water Supplies Department (WSD)																						
Commencement																						
Completion																						
RAB-WSD-744	025 - Submit WWO 46 Pt. IV																					
RAB-WSD-374	025 - WSD Inspection/Meter Connection																					
RAB-WSD-384	025 - WSD Issue Water Certificate WWO 46 Part V																					
Fire Services Department (VAC)																						
Fire Service Water (FS)																						
RAB-FSD-360	025 - FS Inspection Period, FS																					
RAB-FSD-894	025 - Issuance of Fform 172, FS Certificate of Compliance																					
Engineer (AECOM)																						
RAB-25-7220	025 - Submit Building 025 As Built Drawings to Engineer																					

■ Remaining Level of Effort
 ■ Actual Work
 ■ Critical Remaining ...
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		19	26	03	10	17	24	31	07	14	21	28	04	11	18	25	04	11	18	25	01
Building 032 - Outbound Private Car Annexure																					
Excavation																					
Raft Foundations																					
Structure																					
ABWF/E&M																					
Internal Finishes																					
Degree 1																					
Degree 2																					
RAB-32-0660	032 - Power On																				
Degree 3																					
RAB-32-0830	032 - Wall Painting																				
RAB-32-0745	032 - Raised Floor																				
RAB-32-0870	032 - Ceiling Panel																				
RAB-32-0860	032 - Floor Painting & Remaining Floor Tiling																				
RAB-32-0590	032 - MEP Final Fix																				
RAB-32-0800	032 - Door Panel & Ironmongery																				
RAB-32-0790	032 - Glazing																				
RAB-32-0680	32 - Snagging and Remedials																				
RAB-32-0850	032 - Early Handover Rooms Ready to End Users***																				
RAB-KD7C10	KD7C - Projected achievement of Stage 7C of the Works																				
RAB-32-0670	032 - End Users and MoM handover inspection																				
RAB-32-0740	032 - MEP Balance of Work																				
Roof Finishes																					
RAB-32-0540	032 - Install Cat Ladders and Roof Hatch																				
RAB-32-0550	032 - Install Railing																				
Green Roof																					
External Finishes																					
Facade																					
RAB-32-0580	032 - Make good external surfaces																				
At Grade																					
Road Works																					
RAB-32-7100	032 - Topping Up to Platform to Road Formation Level																				
RAB-32-7110	032 - Lay & Compact Granular Sub-Base																				
RAB-32-7120	032 - Construct Flexible Road Pavement																				
Foot Path																					
RAB-32-6460	032 - Prepare Sub Grade																				
RAB-32-5910	032 - Lay Granular Sub-Base																				
RAB-32-6440	032 - Sand Bedding + Concrete Block Paving																				
Specialist Installations																					
RAB-32-630	032 - Construct Immigration Counters x 3																				
RAB-32-640	032 - Construct Health Department Screening Station X 1																				
IMMD Kiosk																					
RAB-32-0380	032 - Internal ABWF and MEP of IMMD Kiosk																				
RAB-32-0350	032 - External Finishes to IMMD Kiosk																				
RAB-32-0430	032 - Erect Kiosk Canopy @ +10.17mPD																				
Glazed Canopy																					
RAB-32-0520	032 - Install Glazed Panels																				
Utilities and Drainage																					
RAB-32-7310	032 - Install Flushing Water Mains																				
RAB-32-7320	032 - Install Fresh Water Mains																				
RAB-32-7330	032 - Install FS Water Main																				

■ Remaining Level of Effort
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		19	26	03	10	17	24	31	07	14	21	28	04	11	18	25	04	11	18	25	01
Testing & Commissioning																					
RAB-TC32-1000	032 - T&C (HVAC, FS, P&D, OTHERS)																				
Statutory Submissions & Approvals (Day 670 Completion)																					
BEE0																					
Water Supplies Department (WSD)																					
Commencement																					
Completion																					
RAB-WSD-714	032 - Submit WWO 46 Pt. IV																				
RAB-WSD-344	032 - WSD Inspection/Meter Connection																				
RAB-WSD-354	032 - WSD Issue WWO 46 Part V - Completion Cert of Plumbing & Water (
Fire Services Department (HVAC)																					
Fire Water Service (FS)																					
RAB-FSD-390	032 - FS Inspection Period, FS																				
RAB-FSD-400	032 - Issuance of Form 172, FS Cert. of Compliance.																				
Engineer (AECOM)																					
RAB-32-7250	032 - Submit Building 032 As Built Drawings to Engineer																				
Building 044 - E&M Maintenance Building																					
Excavation																					
Raft																					
Structure																					
ABWF/E&M																					
Ground Floor																					
Degree 1																					
Degree 2																					
RAB-44-9175	044 - MEP 2nd Fix - G/F																				
RAB-44-0760	044 - Door & Window Frame + Louver - G/F																				
Degree 3																					
RAB-44-9285	044 - Wall Finish, Paint & Tile - G/F																				
RAB-44-9255	044 - Ceiling Paint - G/F																				
RAB-44-9185	044 - MEP Final Fix - G/F																				
RAB-44-9235	044 - Ceiling Panel Frame - G/F																				
RAB-44-9275	044 - Glazing - G/F																				
RAB-44-9345	044 - Ceiling Panel - G/F																				
RAB-44-9245	044 - Ceiling Plaster Board Frame																				
RAB-44-9295	044 - Door Panel & Ironmongery - G/F																				
RAB-44-9395	044 - Ceiling Plaster Board																				
RAB-44-9355	044 - Floor Paint Finish - G/F																				
First Floor																					
Degree 1																					
Degree 2																					
RAB-44-9365	044 - MEP 2nd Fix - 1/F																				
RAB-44-9455	044 - Door & Window Frame + Louver - 1/F																				
Degree 3																					
RAB-44-9555	044 - Wall Finish, Paint & Tile - 1/F																				
RAB-44-9465	044 - Ceiling Paint Finish - 1/F																				
RAB-44-9375	044 - MEP Final Fix - 1/F																				
RAB-44-9385	044 - Ceiling Panel Frame - 1/F																				
RAB-44-9485	044 - Glazing - 1/F																				
RAB-44-9695	044 - Ceiling Plaster Board Frame																				
RAB-44-9505	044 - Door Panel & Ironmongery - 1/F																				
RAB-44-9495	044 - Ceiling Panel - 1/F																				
RAB-44-9705	044 - Ceiling Plaster Board - 1/F																				

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		19	26	03	10	17	24	31	07	14	21	28	04	11	18	25	04	11	18	25	01	08
RAB-44-9475	044 - Floor Paint Finish - 1/F																					
Second Floor																						
Degree 1																						
Degree 2																						
RAB-44-9575	044 - MEP 2nd Fix - 2/F																					
RAB-44-9665	044 - Door & Window Frame + Louver - 2/F																					
RAB-44-0610	KD8B - Projected achievement of Stage 8B of the Works - 2/F																					
RAB-44-9605	044 - Power On - 2/F																					
Degree 3																						
RAB-44-9595	044 - Wall Finish, Paint & Tile - 2/F																					
RAB-44-9585	044 - MEP Final Fix - 2/F																					
RAB-44-9675	044 - Glazing - 2/F																					
RAB-44-9685	044 - Floor Tile Finish & Floor Finish to Early handover Rooms - 2/F																					
RAB-44-9645	044 - Ceiling Panel Frame - 2/F																					
RAB-44-9655	044 - Floor Finish Other Than Early Handover at 1/F																					
RAB-44-9725	044 - Ceiling Plaster Board Frame - 2/F																					
RAB-44-9745	044 - Ceiling Panel - 2/F																					
RAB-44-9715	044 - Door Panel & Ironmongery - 2/F																					
RAB-44-9735	044 - Ceiling Plaster Board																					
RAB-44-9625	044 - Snagging and Remedials																					
RAB-44-9795	044 - MEP Balance of Works																					
RAB-44-9615	044 - End Users and MoM handover inspection																					
RAB-KD8C20	KD8C - Projected achievement of Stage 8C of the Works, 044																					
Roof Finishes																						
RAB-44-0550	044 - Install Cat Ladder and Roof Hatch																					
RAB-44-0540	044 - Install Railing																					
Green Roof																						
RAB-44-0400	044 - Install Green Roof Irrigation Systems																					
RAB-44-0500	044 - Complete Green Roofing Works																					
External Finishes																						
Facade																						
RAB-44-0430	044 - Install External Louvers /Windows/Doors																					
RAB-44-0590	044 - Make good external surfaces																					
At Grade																						
RAB-44-6520	044 - Prepare Sub Grade																					
RAB-44-6510	044 - Laying Geo Textile																					
Specialist Installations																						
Curtain Wall																						
East																						
RAB-44-6880	044 - Install Primary Steelwork for Window Wall - East																					
RAB-44-6890	044 - Install Secondary Steelwork for Window Wall - East																					
RAB-44-6900	044 - Glazing to Window Wall - East																					
West																						
RAB-44-6920	044 - Install Primary Steelwork for Window Wall - West																					
RAB-44-6930	044 - Install Secondary Steelwork for Window Wall - West																					
RAB-44-6940	044 - Glazing to Window Wall - West																					
Utilities and Drainage																						
Testing & Commissioning																						
RAB-TC44-1000	044 - T&C (HVAC, FS, P&D, OTHERS)																					
Statutory Submissions & Approvals																						
BEO																						

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		19	26	03	10	17	24	31	07	14	21	28	04	11	18	25	04	11	18	25	01
EMSD - Building 044 Lift Inspection																					
RAB-FSD-220	044 - EMSD Lift Inspection																				
RAB-FSD-114	044 - EMSD Lift Certificate Issued - Building 044																				
Water Supplies Department (WSD)																					
Commencement																					
Completion																					
RAB-WSD-684	044 - Submit WWO 46 Pt. IV																				
RAB-WSD-314	044 WSD Inspection/Meter Connection																				
Fire Services Department (HVAC)																					
RAB-FSD-1040	044 - Submit Form 501 to FSD, HVAC																				
Fire Water Services (FS)																					
RAB-FSD-128	044 - Submit Form 501, FS																				
RAB-FSD-126	044 - Submit Form 314 to FSD, FS																				
RAB-FSD-118	044 FS Inspection Period, FS																				
RAB-FSD-148	044 - Issuance of Form 172																				
Engineer (AECOM)																					
RAB-44-7280	044 - Submit Building 044 As Built Drawings to Engineer																				
Building 045 - Highways Depot & Administration Building																					
Raft Foundation																					
Structure G/F to R/F																					
ABWF/E&M																					
Ground Floor, South - G/F																					
Degree 1, G/F																					
Degree 2, G/F																					
RAB-45-9895	045 - Door & Window Frame + Louver - G/F																				
RAB-45-9905	045 - Access for C3 to Install Equipment																				
Degree 3, G/F																					
RAB-45-9935	045 - Wall Finish, Paint & Tile - G/F																				
RAB-45-9915	045 - Floor Finish (Paint & Tile) - G/F																				
RAB-45-10035	045 - Ceiling Plaster Board Frame & Ceiling Panel Frame - G/F																				
RAB-45-9815	045 - MEP Final Fix - G/F																				
RAB-45-9925	045 - Glazing - G/F																				
RAB-45-9945	045 - Door Panel & Ironmongery - G/F																				
RAB-45-10055	045 - Ceiling Plaster Board & Ceiling Panel - G/F																				
First Floor, 1/F																					
Degree 1, 1/F																					
Degree 2, 1/F																					
RAB-45-10015	045 - MEP 2nd Fix - 1/F																				
RAB-45-10105	045 - Door & Window Frame + Louver - 1/F																				
Degree 3, 1/F																					
RAB-45-10145	045 - Wall Finish, Paint & Tile - 1/F																				
RAB-45-10125	045 - Floor Finish (Paint & Tile) - 1/F																				
RAB-45-10205	045 - Ceiling Plaster Board Frame Ceiling Panel Frame- 1/F																				
RAB-45-10025	045 - MEP Final Fix - 1/F																				
RAB-45-10155	045 - Door Panel & Ironmongery - 1/F																				
RAB-45-10285	045 - Glazing - 1/F																				
RAB-45-10245	045 - Ceiling Plaster Board & Ceiling Panel - 1/F																				
RAB-45-10275	045 - Handover to End users***																				
Second Floor, 2/F																					
Degree 1, 2/F																					
Degree 2, 2/F																					
RAB-45-10225	045 - MEP 2nd Fix - 2/F																				

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		19	26	03	10	17	24	31	07	14	21	28	04	11	18	25	04	11	18	25	01
RAB-45-10315	045 - Door & Window Frame + Louver - 2/F	[Blue bar from Nov 19 to Jan 14]																			
RAB-45-10255	045 - Power On - 2/F	[Diamond on Dec 17]																			
RAB-45-10295	045 - Access for C3 Equip. Installation, 2/F***	[Diamond on Jan 21]																			
RAB-45-0950	KD8B - Projected achievement of Stage 8B of the Works - 2/F, 045	[Diamond on Jan 21]																			
Degree 3, 2/F																					
RAB-45-10355	045 - Wall Finish, Paint & Tile - 2/F	[Red bar from Jan 28 to Feb 11]																			
RAB-45-10235	045 - MEP Final Fix - 2/F	[Blue bar from Nov 26 to Jan 21]																			
RAB-45-10345	045 - Glazing - 2/F	[Blue bar from Jan 14 to Jan 28]																			
RAB-45-10335	045 - Floor Finish (Paint & Tile) - 2/F	[Blue bar from Jan 14 to Jan 28]																			
RAB-45-10365	045 - Door Panel & Ironmongery - 2/F	[Blue bar from Jan 14 to Jan 28]																			
RAB-45-10375	045 - Ceiling Plaster Board Frame & Ceiling Panel Frame - 2/F	[Blue bar from Jan 14 to Jan 28]																			
RAB-45-10385	045 - Ceiling Plaster Board & Ceiling Panel - 2/F	[Blue bar from Jan 14 to Jan 28]																			
RAB-45-0980	045 - Snagging and Remedials - 2/F	[Red bar from Feb 11 to Feb 25]																			
RAB-45-10305	045 - MEP Balance of Works	[Red bar from Feb 11 to Feb 25]																			
RAB-45-10265	045 - End Users and MoM handover inspection	[Diamond on Feb 25]																			
RAB-45-0970	KD8C - Projected achievement of Stage 8C of the Works - 2/F, 045	[Diamond on Feb 25]																			
External Finishes																					
Bldg. External Finishes																					
Facade																					
RAB-45-0620	045 - Install External Louvers /Windows/Doors	[Green bar from Feb 11 to Feb 18]																			
RAB-45-0760	045 - Make good external surfaces	[Red bar from Feb 11 to Feb 25]																			
At Grade																					
RAB-45-6580	045 - Prepare Sub Grade	[Red bar from Feb 11 to Feb 18]																			
RAB-45-6570	045 - Laying Geo Textile	[Red bar from Feb 18 to Feb 25]																			
RAB-45-6590	045 - Lay Granular Sub-Base	[Red bar from Feb 18 to Feb 25]																			
Roof Finishes -																					
RAB-45-0910	045 - Install Roof Tiles	[Blue bar from Nov 19 to Dec 10]																			
RAB-45-0930	045 - Install Cat Ladder and Roof Hatch	[Blue bar from Nov 19 to Dec 10]																			
RAB-45-0920	045 - Install Railing	[Blue bar from Nov 19 to Dec 10]																			
Green Roof - Noth Side, 2/F Level																					
RAB-45-0680	045 - Install green Roof Irrigation Systems	[Blue bar from Dec 10 to Feb 11]																			
RAB-45-0740	045 - Complete Green Roofing Works	[Red bar from Feb 11 to Feb 25]																			
Specialist Installations																					
Window Wall																					
East																					
RAB-45-6960	045 - Install Primary Steelwork for Window Wall	[Blue bar from Nov 19 to Dec 10]																			
RAB-45-6970	045 - Install Secondary Steelwork for Window Wall	[Blue bar from Dec 10 to Jan 14]																			
RAB-45-6980	045 - Glazing to Window Wall	[Blue bar from Dec 10 to Jan 14]																			
West																					
RAB-45-6990	045 - Install Primary Steelwork for Window Wall	[Blue bar from Nov 19 to Dec 10]																			
RAB-45-7000	045 - Install Secondary Steelwork for Window Wall	[Blue bar from Dec 10 to Jan 14]																			
RAB-45-7010	045 - Glazing to Window Wall	[Blue bar from Dec 10 to Jan 14]																			
Utilities and Drainage																					
RAB-45-7945	045 - Utilities and Common Telecom Ducting	[Blue bar from Nov 19 to Dec 10]																			
RAB-45-7955	045 - Install Flushing Water Mains	[Red bar from Feb 11 to Feb 25]																			
RAB-45-7965	045 - Install Fresh Water Mains	[Red bar from Feb 11 to Feb 25]																			
RAB-45-7975	045 - Install FS Water Main	[Red bar from Feb 11 to Feb 25]																			
Testing & Commissioning																					
RAB-TC45-1020	045 - T&C (HVAC, FS, P&D, OTHERS)	[Blue bar from Dec 10 to Feb 11]																			
Statutory Submissions & Approvals (Day 670 Completion)																					
BEE0																					

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		19	26	03	10	17	24	31	07	14	21	28	04	11	18	25	04	11	18	25	01
EMSD - Building 045 Lift Inspection																					
RAB-FSD-250	045 - EMSD Lift Inspection																				
RAB-FSD-130	045 - EMSD Lift Certificate Issued - Building 045																				
Fuel Tank - DG License																					
RAB-FSD-680	045 - FSD Issue License																				
Generator Set - EPD Permit																					
Water Supplies Department (WSD)																					
Commencement																					
Completion																					
RAB-WSD-654	045 - Submit WWO 46 Pt. IV																				
RAB-WSD-284	045 - WSD's Processing/Inspection/Meter Connection																				
RAB-WSD-294	045 - WSD Issue WWO 046 Part V, Plumbing Inst'n Cert & Connect Water																				
HVAC																					
RAB-FSD-1000	045 - Submit Form 501																				
FSD																					
RAB-FSD-630	045 - Submit Form 501 - FS																				
RAB-FSD-830	045 - Submit Form 314 - FS																				
RAB-FSD-450	045 - FS Inspection Period - FS																				
RAB-FSD-460	045 - Issuance of Form 172, FS Cert. of Compliance - FS																				
Engineer (AECOM)																					
RAB-45-7310	045 - Submit Building 045 As Built Drawings to Engineer																				
Building 050 - Public Toilets Type 2																					
Public Toilet (Portion H1)																					
Excavation																					
Raft																					
Structure																					
ABWF/E&M																					
Internal Finishes																					
Degree 1																					
RAB-50-1170	050 H1 - MEP 1st Fix																				
RAB-KD9A40	050 H1 - Access for C3 Cabling Works																				
RAB-KD9A10	KD9A - Projected achievement of Stage 9A of the Works																				
Degree 2																					
RAB-50-1270	050 H1 - MEP 2nd Fix																				
RAB-50-1360	050 H1 - Louver / Door Frame																				
RAB-50-1380	050 H1 - Access for C3 Equip. Installation																				
RAB-KD9B10	KD9B - Projected achievement of Stage 9B of the Works																				
RAB-50-1300	050 H1 - Power On																				
Degree 3																					
RAB-50-1370	050 H1 - Floor Finish																				
RAB-50-1390	050 H1 - Door panel & Ironmongery																				
RAB-50-1350	050 H1 - Wall Finish																				
RAB-50-1310	050 H1 - Ceiling Frame & Ceiling Board																				
RAB-50-1280	050 H1 - MEP Final Fix																				
RAB-50-1290	050 H1 - Snagging and Remedials																				
RAB-KD9C10	KD9C - Projected achievement of Stage 9C of the Works																				
RAB-50-7460	050 H1 - End Users and MoM handover inspection																				
Specialist installation																					
RAB-50-1240	050 H1 - Installation of Sanitaryware and Fixtures																				
Roof Finishes																					
RAB-50-1210	050 H1 - Install Cat Ladder and Roof Access Hatch																				

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RAB-50-1100	050 H1 - Install Skylights (8No)																					
RAB-50-4320	050 H1 - Install Aluminium Cladding																					
RAB-50-1200	050 H1 - Install Railing - 49m																					
RAB-50-4470	050 H1 - Installation of Aluminium Canopy																					
External Finishes																						
RAB-50-1120	050 H1 - Install External Louvers /Windows/Doors																					
Utilities and Drainage																						
RAB-50-8035	050 H1 - Install Flushing Water Mains																					
RAB-50-8045	050 H1 - Install Fresh Water Mains																					
Testing & Commissioning																						
RAB-TC50-1000	050 H1 - T&C (HVAC, FS, P&D, OTHERS)																					
Statutory Submissions & Approvals (Day 670 Completion)																						
Water Supplies Department (WSD)																						
Commencement																						
Completion																						
RAB-WSD-454	050 H1 - Submit WWO 46 Pt. IV																					
RAB-WSD-464	050 H1 - WSD Inspection/Meter Connection for Building 050																					
Fire Services Department (VAC)																						
RAB-FSD-1080	050 H1 - Submit Form 314																					
RAB-FSD-1090	050 H1 - Submit Form 501																					
RAB-FSD-1130	050 H1 - FS Inspection																					
Engineer (AECOM)																						
RAB-50-7340	050 H1 - Submit Building 050 H1 As Built Drawings to Engineer																					
Public Toilet (Portion H2)																						
Excavation																						
Raft																						
Structure																						
ABWF/E&M																						
Internal Finishes																						
Degree 1																						
RAB-50-2170	050 H2 - MEP 1st Fix																					
RAB-50-2390	050 H2 - Access for C3 Cabling Works																					
RAB-KD10A10	050 H2 - Projected achievement of Stage 10A of the Works																					
Degree 2																						
RAB-50-2270	050 H2 - MEP 2nd Fix																					
RAB-50-2360	050 H2 - Louver / Door Frame																					
RAB-KD10B40	050 H2 - Access for C3 Equip. Installation																					
RAB-KD10B10	050 H2 - Projected achievement of Stage 10B of the Works																					
RAB-50-2300	050 H2 - Power On																					
Degree 3																						
RAB-50-2370	050 H2 - Floor Finish																					
RAB-50-2380	050 H2 - Door panel & Ironmongery																					
RAB-50-2350	050 H2 - Wall Finish																					
RAB-50-2340	050 H2 - Ceiling Frame & Ceiling Board																					
RAB-50-2280	050 H2 - MEP Final Fix																					
Specialist installation																						
RAB-50-2240	050 H2 - Installation of Sanitaryware and Fixtures																					
Roof Finishes																						
RAB-50-2210	050 H2 - Install Cat Ladder and Roof Access Hatch																					
RAB-50-2100	050 H2 - Install Skylights (8No)																					
RAB-50-2200	050 H2 - Install Railing - 49m																					

■ Remaining Level of Effort
 ■ Actual Work
 ■ Critical Remaining ...
■ Actual Level of Effort
 ■ Remaining Work
 ◻ Finish Constraint

3-Month Rolling Programme, 01 Feb. 2018 Stated

Date	Revision	Checked	Approved
01-Feb-18	3-Month Rolling Programme, 01 Feb-18 Stated		



Activity ID	Activity Name	November 2017		December 2017				January 2018				February 2018				March 2018				April 2018		
		19	26	03	10	17	24	31	07	14	21	28	04	11	18	25	04	11	18	25	01	08
RAB-50-4360	050 H2 - Install Aluminium Cladding																					
RAB-50-2230	050 H2 - Installation of Aluminium Canopy																					
External Finishes																						
RAB-50-2120	050 H2 - Install External Louvers /Windows/Doors																					
RAB-50-2260	050 H2 - Make good external surfaces																					
Utilities and Drainage																						
RAB-50-7915	050 H2 - Install Flushing Water Mains																					
RAB-50-7925	050 H2 - Install Fresh Water Mains																					
Testing & Commissioning																						
Statutory Submissions & Approvals (Day 670 Completion)																						
Water Supplies Department (WSD)																						
Commencement																						
Completion																						
RAB-WSD-594	050 H2 - Submit WWO 46 Pt. IV																					
RAB-WSD-434	050 H2 - WSD Inspection/Meter Connection for Building 050																					
Fire Services Department (VAC)																						
RAB-FSD-1110	050 H2 - Submit Form 314																					
RAB-FSD-1120	050 H2 - Submit Form 501																					
RAB-FSD-1160	050 H2 - FS Inspection																					
Engineer (AECOM)																						
RAB-50-7370	050 H2 - Submit Building 050 H1 As Built Drawings to Engineer																					
Public Toilet (Portion A1)																						
Excavation																						
Raft																						
Structure																						
ABWF/E&M																						
Internal Finishes																						
Degree 1																						
RAB-50-3310	050 A1 - Plastering/Rendering & Undercoat																					
RAB-50-3170	050 A1 - MEP 1st Fix																					
RAB-50-3320	050 A1 - Screeding																					
RAB-50-3330	050 A1 - Access for C3 for Cabling Works																					
RAB-KD11A10	KD11A - Projected achievement of Stage 11A of the Works																					
Degree 2																						
RAB-50-3270	050 A1 - MEP 2nd Fix																					
RAB-50-3360	050 A1 - Louver / Door Frame																					
RAB-50-3390	050 A1 - Access for C3 for Equip. Installation																					
RAB-50-3300	050 A1 - Power On																					
RAB-KD11B10	KD11B - Projected achievement of Stage 11B of the Works																					
Degree 3																						
RAB-50-3350	050 A1 - Wall Finish																					
RAB-50-3370	050 A1 - Floor Finish																					
RAB-50-3380	050 A1 - Door panel & Ironmongery																					
RAB-50-3340	050 A1 - Ceiling Frame																					
RAB-50-3280	050 A1 - MEP Final Fix																					
RAB-50-3290	050 A1 - Snagging and Remedials																					
Specialist installation																						
RAB-50-3240	050 A1 - Installation of Sanitaryware and Fixtures																					
Roof Finishes																						
RAB-50-3210	050 A1 - Install Cat Ladder and Roof Access Hatch																					
RAB-50-3100	050 A1 - Install Skylights (8No)																					

■ Remaining Level of Effort
 ■ Actual Work
 ■ Critical Remaining ...
■ Actual Level of Effort
 ■ Remaining Work
 ◊ Finish Constraint

3-Month Rolling Programme, 01 Feb. 2018 Stated

Date	Revision	Checked	Approved
01-Feb-18	3-Month Rolling Programme, 01 Feb-18 Stated		



Activity ID	Activity Name	November 2017		December 2017			January 2018				February 2018			March 2018				April 2018				
		19	26	03	10	17	24	31	07	14	21	28	04	11	18	25	04	11	18	25	01	08
RAB-50-3200	050 A1 - Install Railing - 49m																					
RAB-50-4370	050 A1 - Install Aluminium Cladding																					
RAB-50-3230	050 A1 - Installation of Aluminium Canopy																					
External Finishes																						
RAB-50-3120	050 A1 - Install External Louvers /Windows/Doors																					
RAB-50-3190	050 A1 - External Tiling																					
RAB-50-3260	050 A1 - Make good external surfaces																					
Utilities and Drainage																						
RAB-50-7955	050 A1 - Install Flushing Water Mains																					
RAB-50-7965	050 A1 - Install Fresh Water Mains																					
Testing & Commissioning																						
Statutory Submissions & Approvals (Day 670 Completion)																						
Water Supplies Department (WSD)																						
Commencement																						
Completion																						
RAB-WSD-394	050 A1 - Submit WWO 46 Pt. IV																					
RAB-WSD-404	050 A1 - WSD Inspection/Meter Connection																					
Fire Services Department (VAC)																						
RAB-FSD-1050	050 A1 - Submit Form 314																					
RAB-FSD-1060	050 A1 - Submit Form 501																					
Engineer (Aecom)																						
Public Toilet (Portion A2)																						
Excavation																						
Raft																						
Structure																						
ABWF/E&M																						
Internal Finishes																						
Degree 1																						
RAB-50-4170	050 A2 - MEP 1st Fix																					
RAB-50-4410	050 A2 - Access for C3 Cabling Works																					
RAB-KD12A10	KD12A - Projected achievement of Stage 12A of the Works																					
Degree 2																						
RAB-50-4270	050 A2 - MEP 2nd Fix																					
RAB-50-4440	050 A2 - Louver / Door Frame																					
RAB-50-4480	050 A2 - Access for C3 Equip. Installation																					
RAB-KD12B10	KD12B - Projected achievement of Stage 12B of the Works																					
RAB-50-4300	050 A2 - Power On																					
Degree 3																						
RAB-50-4430	050 A2 - Wall Finish																					
RAB-50-4450	050 A2 - Floor Finish																					
RAB-50-4460	050 A2 - Door panel & Ironmongery																					
RAB-50-4390	050 A2 - Ceiling Frame																					
RAB-50-4280	050 A2 - MEP Final Fix																					
Specialist installation																						
RAB-50-4240	050 A2 - Installation of Sanitaryware and Fixtures																					
Roof Finishes																						
RAB-50-4180	050 A2 - Install Roof Tiles - 140m²																					
RAB-50-4210	050 A2 - Install Cat Ladder and Roof Access Hatch																					
RAB-50-4100	050 A2 - Install Skylights (8No)																					
RAB-50-4200	050 A2 - Install Railing - 49m																					
RAB-50-4380	050 A2 - Install Aluminium Cladding																					

■ Remaining Level of Effort
 ■ Actual Work
 ■ Critical Remaining ...
■ Actual Level of Effort
 ■ Remaining Work
 ◻ Finish Constraint

3-Month Rolling Programme, 01 Feb. 2018 Stated

Date	Revision	Checked	Approved
01-Feb-18	3-Month Rolling Programme, 01 Feb-18 Stated		



Activity ID	Activity Name	November 2017		December 2017				January 2018				February 2018				March 2018			April 2018			
		19	26	03	10	17	24	31	07	14	21	28	04	11	18	25	04	11	18	25	01	08
RAB-50-4230	050 A2 - Installation of Aluminium Canopy																					
External Finishes																						
RAB-50-4190	050 A2 - External Tiling																					
RAB-50-4120	050 A2 - Install External Louvers /Windows/Doors																					
Utilities and Drainage																						
RAB-50-7995	050 A2 - Install Flushing Water Mains																					
RAB-50-8005	050 A2 - Install Fresh Water Mains																					
Testing & Commissioning																						
Statutory Submissions & Approvals (Day 670 Completion)																						
Water Supplies Department (WSD)																						
Commencement																						
Completion																						
RAB-WSD-124	050 A2 - Submit WWO 46 Pt. IV																					
RAB-WSD-134	050 A2 - WSD Inspection/Meter Connection for Building 050																					
Fire Services Department (VAC)																						
RAB-FSD-260	050 A2 - Submit Form 314																					
RAB-FSD-270	050 A2 - Submit Form 501																					
Engineer (AECOM)																						
Building 053 - Outbound X-Ray Building																						
Excavation																						
Raft																						
Structure																						
ABWF/E&M																						
Ground Floor																						
Degree 1 - G/F																						
Degree 2 - G/F																						
Degree 3 - G/F																						
RAB-53-8205	053 - Floor Painting & Tiling, G/F																					
First Floor																						
Degree 1 - 1/F																						
Degree 2 - 1/F																						
Degree 3 - 1/F																						
RAB-53-8215	053 - Floor Painting & Tiling, 1/F																					
RAB-53-8195	053 - MEP Balance of Works																					
RAB-53-8125	053 - Snagging and Remedials, 1/F																					
RAB-53-8095	053 - Projected Achievement of Stage 1C, 1/F																					
External Finishes																						
External Facade																						
RAB-53-0500	053 - External Painting																					
RAB-53-0640	053 - Make good external surfaces																					
At Grade																						
RAB-53-7615	053 - Prepare Sub Grade																					
RAB-53-7885	053 - Laying Geo Textile																					
RAB-53-7625	053 - Lay Granular Sub-Base																					
Roof Finishes																						
RAB-53-0530	053 - Install Railing - 105m																					
Spacialist Installations																						
Glazed Canopy																						
RAB-53-0620	053 - Construct high level Canopy at +9.95mPD																					
Utilities and Drainage																						
Testing & Commissioning																						
RAB-TC53-1050	053 - T&C, Lift																					
Statutory Submissions & Approvals (Day 470 Completion)																						

■ Remaining Level of Effort
 ■ Actual Work
 ■ Critical Remaining ...
■ Actual Level of Effort
 ■ Remaining Work
 ◻ Finish Constraint

3-Month Rolling Programme, 01 Feb. 2018 Stated

Date	Revision	Checked	Approved
01-Feb-18	3-Month Rolling Programme, 01 Feb-18 Stated		



Activity ID	Activity Name	November 2017		December 2017				January 2018				February 2018				March 2018				April 2018	
		19	26	03	10	17	24	31	07	14	21	28	04	11	18	25	04	11	18	25	01
BEEO																					
EMSD - Building 053 Lift Inspection																					
RAB-FSD-160	053 - EMSD Lift Inspection					■															
RAB-FSD-090	053 - EMSD Lift Certificate Issued (Fire Lift)										◆										
Water Supplies Department (WSD)																					
Commencement																					
Completion																					
RAB-WSD-100	053 - Submit WWO 46 Pt. IV					◆															
RAB-WSD-102	053 - WSD's Processing/Inspection/Meter Connection																				
RAB-WSD-104	053 - WSD Issue WWO 046 Part V, Plumbing Compl. Cert & Water Conner																				
VAC																					
FSD																					
RAB-FSD-430	053 - Issue Form 172, FS Compliance Cert.																				
Engineer (AECOM)																					
RAB-53-7460	053 - Submit Building 053 As Built Drawings to Engineer																				
RAB-53-7470	053 - Engineer Inspection Period																				
Building 058 - Outbound X-Ray Scan Tunnel																					
Excavation																					
Raft																					
Structure																					
ABWF/E&M																					
Internal Finishes																					
Degree 1																					
Degree 2																					
Degree 3																					
RAB-58-0700	058 - Floor Finish (Epoxy Paint)																				
RAB-58-0660	058 - Snagging and Remedials, Bldg. Internal																				
RAB-58-7520	058 - End Users and MoM handover inspection																				
Roof Finishes																					
RAB-58-0540	058 - Install Railing - 152m																				
External Finishes																					
Facade																					
RAB-58-0470	058 - External Painting																				
At Grade																					
RAB-58-6760	058 - Prepare Sub Grade																				
RAB-58-6750	058 - Laying Geo Textile																				
RAB-58-6770	058 - Lay Granular Sub-Base																				
RAB-58-6780	058 - Laying Course																				
Glazed Canopy																					
RAB-58-0600	058 - Construct high level canopy at +13.231mPD																				
Utilities and Drainage																					
Testing & Commissioning																					
Statutory Submissions & Approvals (Day 470 Completion)																					
VAC (FSD)																					
RAB-FSD-104	058 - Fire Certificate Obtained (Form 172) Handover For Building 058																				
Engineer (AECOM)																					
RAB-58-7490	058 - Submit Building 058 As Built Drawings to Engineer																				
Building 059 - Inbound X-Ray Scan Tunnel																					
Excavation																					
Raft Foundations																					
Structure																					
ABWF/E&M																					
Internal Finishes																					

■ Remaining Level of Effort
 ■ Actual Work
 ■ Critical Remaining ...
■ Actual Level of Effort
 ■ Remaining Work
 ◻ Finish Constraint

3-Month Rolling Programme, 01 Feb. 2018 Stated

Date	Revision	Checked	Approved
01-Feb-18	3-Month Rolling Programme, 01 Feb-18 Stated		



Activity ID	Activity Name	November 2017		December 2017				January 2018				February 2018				March 2018				April 2018		
		19	26	03	10	17	24	31	07	14	21	28	04	11	18	25	04	11	18	25	01	08
Degree 1																						
Degree 2																						
Degree 3																						
RAB-59-7550	059 - End Users and MoM handover inspection																					
Roof Finishes																						
External Finishes																						
Facade																						
RAB-59-0480	059 - External Painting																					
RAB-59-0650	059 - Make good external surfaces																					
At Grade																						
RAB-59-6700	059 - Prepare Sub Grade																					
RAB-59-6690	059 - Laying Geo Textile																					
RAB-59-6710	059 - Lay Granular Sub-Base																					
RAB-59-6720	059 - Laying Course																					
RAB-59-6680	059 - Concrete Block Paving																					
RAB-59-0670	059 - Snagging and Remedials																					
Glazed Canopy																						
RAB-59-0610	059 - Construct high level glazed canopy at +13.406mPD North																					
Utilities and Drainage																						
Testing & Commissioning																						
Statutory Submissions & Approvals (Day 470 Completion)																						
VAC																						
Fire Services Department (FSD)																						
Commencement																						
Completion																						
Bldg. 059 Ready for FS Inspection (C8 Requirement)																						
RAB-FSD-750	059 - Fire Certificate Obtained (Form 172) Handover For Building 059																					
Bldg. 059 for FS Inspection (Due to C3 Work Interface)																						
RAB-FSD-490	059 - Fire Certificate Obtained (Form 172) Handover For Building 059																					
Engineer (AECOM)																						
RAB-59-7520	059 - Submit Building 059 As Built Drawings to Engineer																					
Bldg. 059 Ready for Engineer Inspection (C8 Requirement)																						
RAB-59-7570	059 - Engineer Inspection Period																					
Bldg. 059 Ready for Engineer Inspection (Due to C3 Work Interface)																						
RAB-59-7530	059 - Engineer Inspection Period																					

■ Remaining Level of Effort
 ■ Actual Work
 ■ Critical Remaining ...
■ Actual Level of Effort
 ■ Remaining Work
 △ Finish Constraint

3-Month Rolling Programme, 01 Feb. 2018 Stated

Date	Revision	Checked	Approved
01-Feb-18	3-Month Rolling Programme, 01 Feb-18 Stated		

Activity ID	Activity Name	2015			2016				2017				2018				2019		
		Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Hong Kong-Zhuhai_Macao Bridge Hong Kong Boundary Crossing F		<p>22-Oct-17, Hong Kong-Zhuhai_Macao Bridge</p> <p>23-Jun-17, Site and Facility Inspection</p> <p>24-Aug-17, Access Dates</p>																	
Key Dates																			
Interface Activities																			
Site and Facility Inspection																			
JS1200	Pre Site and Facility Inspection by Contractor at Location 4 - Deg2																		
JS1210	Joint Site and Facility Inspection with Interface Contractor at Location 4 - Deg2																		
JS1620	Pre Site and Facility Inspection by Contractor at Location 14 - Deg2																		
JS1630	Joint Site and Facility Inspection with Interface Contractor at Location 14 - Deg2																		
JS1760	Pre Site and Facility Inspection by Contractor at Location 18 - Deg1																		
JS1770	Joint Site and Facility Inspection with Interface Contractor at Location 18 - Deg1																		
JS1780	Pre Site and Facility Inspection by Contractor at Location 18 - Deg2																		
JS1790	Joint Site and Facility Inspection with Interface Contractor at Location 18 - Deg2																		
Access Dates																			
AD1000	Location 1(PCB (001) Basement)-Deg1 (270d)																		
AD1010	Location 1(PCB (001) Basement)-Deg2 (380d)																		
AD1020	Location 1(PCB (001) ELV Room (Grid Line E3))-Deg1 (270d)																		
AD1030	Location 1(PCB (001) ELV Room (Grid Line E3))-Deg2 (380d)																		
AD1040	Location 2(PCB (001) First Floor Main Server Room)-Deg1 (330d)																		
AD1050	Location 2(PCB (001) First Floor Main Server Room)-Deg2 (380d)																		
AD1060	Location 2(PCB (001) First Floor Main Server Room) - For Server Installation - Deg2 (380d)																		
AD1070	Location 2(PCB (001) Ground Floor ELV Room (Grid Line E3)) - Deg1 (330d)																		
AD1080	Location 2(PCB (001) Ground Floor DOH Port Health Control Room (Grid Line BD5)) - Deg1 (330d)																		
AD1090	Location 2(PCB (001) Ground Floor DOH Port Health Control Room (Grid Line BD5)) - Deg2 (380d)																		
AD1130	Location 3(Inbd Cargo Exam Bldg (037) Platform Control Room)-Deg2 (500d)																		
AD1150	Location 3(Inbd Cargo Exam Bldg (037) Inspector Offices 128,129,130,131,128,129,14)																		
AD1170	Location 3a(Inbd Cargo Exam Bldg (037) ROCARS Room)-Deg2 (480d)																		
AD1190	Location 3a(Inbd Cargo Exam Bldg (037) Main Server Room)-Deg2 (480d)																		
AD1200	Location 3a(Inbd Cargo Exam Bldg (037) Main Server Room) - For Server installation - Deg2 (480d)																		
AD1220	Location 4(Outbd Cargo Exam Bldg (023))-Deg2 (680d)																		
AD1240	Location 4a(Outbd Cargo Exam Bldg (023))-Deg2 (630d)																		
AD1270	Location 6(Common Utility Enclosure & Staff Subway)-Deg1 (400d)																		
AD1290	Location 7(Common Utility Enclosure & Staff Subway)-Deg1 (270d)																		
AD1300	Location 8(Inbd Private Car Annex (025))-Deg1 (430d)																		
AD1310	Location 8(Inbd Private Car Annex (025))-Deg2 (580d)																		
AD1320	Location 8(Inbd Private Car Annex (025) Canopy)-Deg1 (430d)																		
AD1330	Location 8(Inbd Private Car Annex (025) Canopy)-Deg2 (580d)																		
AD1340	Location 9(Outbd Private Car Annex (032))-Deg1 (520d)																		
AD1350	Location 9(Outbd Private Car Annex (032))-Deg2 (660d)																		
AD1360	Location 9(Outbd Private Car Annex (032) Canopy)-Deg1 (520d)																		
AD1370	Location 9(Outbd Private Car Annex (032) Canopy)-Deg2 (660d)																		
AD1501	Location 12(Inbd Private Car Kiosks(027))-Deg1 (400d) Phase 2																		
AD1510	Location 12(Inbd Private Car Kiosks(027))-Deg2 (480d) Phase 1																		
AD1511	Location 12(Inbd Private Car Kiosks(027))-Deg2 (480d) Phase 2																		
AD1521	Location 12(Inbd Private Car Kiosks(027) Canopy)-Deg1 (400d) Phase 2																		

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

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

summary

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

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

Activity ID	Activity Name	2015												2016				2017				2018				2019		
		Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q1	Q2	Q3						
AD1530	Location 12(Inbd Private Car Kiosks(027) Canopy)-Deg2 (480d) Phase 1																											
AD1531	Location 12(Inbd Private Car Kiosks(027) Canopy)-Deg2 (480d) Phase 2																											
AD1540	Location 12(Inbd GV Kiosks (028))-Deg1 (400d) Phase 1																											
AD1541	Location 12(Inbd GV Kiosks (028))-Deg1 (400d) Phase 2																											
AD1550	Location 12(Inbd GV Kiosks (028))-Deg2 (480d) Phase 1																											
AD1551	Location 12(Inbd GV Kiosks (028))-Deg2 (480d) Phase 2																											
AD1560	Location 12(Inbd GV Kiosks (028) Canopy)-Deg1 (400d) Phase 1																											
AD1561	Location 12(Inbd GV Kiosks (028) Canopy)-Deg1 (400d) Phase 2																											
AD1570	Location 12(Inbd GV Kiosks (028) Canopy)-Deg2 (480d) Phase 1																											
AD1571	Location 12(Inbd GV Kiosks (028) Canopy)-Deg2 (480d) Phase 2																											
AD1580	Location 12(Outbd GV Kiosks (029))-Deg1 (400d) Phase 1																											
AD1581	Location 12(Outbd GV Kiosks (029))-Deg1 (400d) Phase 2																											
AD1590	Location 12(Outbd GV Kiosks (029))-Deg2 (480d) Phase 1																											
AD1591	Location 12(Outbd GV Kiosks (029))-Deg2 (480d) Phase 2																											
AD1600	Location 12(Outbd GV Kiosks (029) Canopy)-Deg1 (400d) Phase 1																											
AD1601	Location 12(Outbd GV Kiosks (029) Canopy)-Deg1 (400d) Phase 2																											
AD1610	Location 12(Outbd GV Kiosks (029) Canopy)-Deg2 (480d) Phase 1																											
AD1611	Location 12(Outbd GV Kiosks (029) Canopy)-Deg2 (480d) Phase 2																											
AD1620	Location 13(Outbd Private Car Kiosks (030))-Deg1 (480d) Phase 1																											
AD1630	Location 13(Outbd Private Car Kiosks (030))-Deg2 (550d) Phase 1																											
AD1640	Location 13(Outbd Private Car Kiosks (030) Canopy)-Deg1 (480d) Phase 1																											
AD1650	Location 13(Outbd Private Car Kiosks (030) Canopy)-Deg2 (550d) Phase 1																											
AD1660	Location 14(Future-Outbd/Inbd Private Car Kiosks)-Deg1 (610d)																											
AD1670	Location 14(Future-Outbd/Inbd Private Car Kiosks)-Deg2 (680d)																											
AD1700	Location 16(Outbd Traffic Control Kiosk (101))-Deg1 (400d)																											
AD1710	Location 16(Outbd Traffic Control Kiosk (101))-Deg2 (480d)																											
AD1740	Location 18(Outbd Private Car Exam Bldg(024))-Deg1 (-)																											
AD1750	Location 18(Outbd Private Car Exam Bldg(024))-Deg2 (670d)																											
AD1780	(by C03) Underground Ducting (UUD1.1) between CUE and Inbd Cargo Exam Bldg (0																											
AD1790	(by C03) (UUD1.2) between Inbd Cargo Exam Bldg South (037[S]) and DOH Cargo C																											
AD1800	(by C03) (UUD2) between Inbd Cargo Exam Bldg North (037[N]) and Inbd Vehicle Cle																											
AD1810	(by C03) (UUD9.1) btw Inbd Cargo Exam Bldg S.(037[S]) & Inbd PC Exam Bldg(033) &																											
AD1820	(by C03) (UUD9.3) between Inbd Private Car Exam Bldg (033) and Inbd Vehicle Clear																											
AD1830	(by C03) (UUD9.2) between Inbd Private Car Exam Bldg (033) and Inbd Vehicle Clear																											
AD1840	(by C03) Underground Ducting (UUD3.1) between CUE to Outbd Cargo Exam Bldg (0																											
AD1850	(by C03) (UUD3.2) btw Outbd Car Exam Bldg (023) and Outbd PC Exam Bldg (024) a																											
AD1860	(byC03) (UUD4.1) between Outbd Private Car Exam Bldg (024) and Outbd Vehicle Cle																											
AD1870	(byC03) (UUD5) between Outbd Car Exam Bldg South (023[S]) and Outbd Vehicle Cle																											
AD1880	(by C03) Underground Ducting (UUD8) between CUE and Outbd PCA (032)																											
AD1910	(by C03) Inbound Vehicle Clearance Plaza																											
AD1920	(by C03) Outbound Vehicle Clearance Plaza																											
<p>Interfaces Provisions</p> <p>Mobilization Provisions</p> <p>WA4 Site Erection & Servicing</p>																												

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		Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Detailed Design Specification Construction Design and Management Supply/Manufacture Mock-up items Supply/Manufacture prototypes Software Design, Coding and Testing Coding Software System Inetgration Prototype & Software Simulation Tests Procurement - Phase 1 / Section I Supply/Manufacture products for FAT Factory Acceptance Test (FAT) Supply/Manufacture Equipment Delivery and Bench Acceptance Test for Phase 1/ Section I Installation - Phase 1 / Section I																			
Location 1(PCB (001) Basement) EM1920 L1(001)B/F - Cable Laying and termination at Location 1 and Location 2 Location 1(PCB (001) ELV Room (Grid Line E3)) EM1940 L1(001)ELV Rm - Cable Laying and termination at Location 1 and Location 2 Location 2(PCB (001) Ground Floor ELV Room (Grid Line E3)) EM1960 L2(001)ELV Rm - Cable Laying and termination at Location 1 and Location 2 Location 2(PCB (001) Ground Floor DOH Port Health Control Room (Grid Line BD5)) EM1080 L2(001)Heath Ctrl Rm - Cable Laying and termination at Location 1 and Location 2 EM1100 L2(001)Heath Ctrl Rm - Cable Splicing and Testing and Labeling EM1120 L2(001)Health Ctrl Rm - Intercom and PA system Installation EM1140 L2(001)Heath Ctrl Rm - Intercom and PA system tuning Location 2(PCB (001) First Floor Main Server Room) EM1000 L2(001)Main Server Rm - Cable Laying and termination at Location 1 and Location 2 EM1020 L2(001)Main Server Rm - Cable Splicing and Testing and Labeling EM1040 L2(001)Main Server Rm - AVCSS Network and Server Installation EM1060 L2(001)Main Server Rm - AVCSS Network and Server Tuning Location 3(Inbd Cargo Exam Bldg (037) MDF Room) Location 3(Inbd Cargo Exam Bldg (037) ELV Room) Location 3(Inbd Cargo Exam Bldg (037) Inspector Offices 128,129,130,131,128,129,141) EM2020 L3(037)Inspec Offices - Cable Laying and termination in Location 3 and Location 3a EM2040 L3(037)Inspec Offices - Cable Splicing and Testing and Labeling EM2060 L3(037)Inspec Offices - AVCSS SURCON WS and 55" LCD Installation EM2080 L3(037)Inspec Offices - VTS WS Installation EM2100 L3(037)Inspec Offices - SURCON and WS Tuning Location 3(Inbd Cargo Exam Bldg (037) Platform Control Room) EM1160 L3(037)PLF Ctrl Rm - Cable Laying and termination in Location 3 and Location 3a EM1180 L3(037)PLF Ctrl Rm - Cable Splicing and Testing and Labeling EM1200 L3(037)PLF Ctrl Rm - AVCSS SYSCON WS and 55" TV Wall Installation EM1220 L3(037)PLF Ctrl Rm - AVCSS SYSCON WS Tuning		01-Sep-17; Installation - Phase 1 / Section I 22-Jun-17; Location:1(PCB (001);Basement) L1(001)B/F - Cable Laying and termination at Location 22-Jun-17; Location:1(PCB (001);ELV Room (Grid Line L1(001)ELV Rm - Cable Laying and termination at Loca 22-Jun-17; Location:2(PCB (001);Ground Floor ELV R L2(001)ELV Rm - Cable Laying and termination at Loca 18-Aug-17; Location:2(PCB (001);Ground Floor DO L2(001)Heath Ctrl Rm - Cable Laying and termination L2(001)Heath Ctrl Rm - Cable Splicing and Testing and L2(001)Health Ctrl Rm - Intercom and PA system In L2(001)Health Ctrl Rm - Intercom and PA system tu 21-Aug-17; Location:2(PCB (001); First Floor Main L2(001)Main Server Rm - Cable Laying and terminatio L2(001)Main Server Rm - Cable Splicing and Testing L2(001)Main Server Rm - AVCSS Network and Ser L2(001)Main Server Rm - AVCSS Network and Se 07-Aug-17; Location 3(Inbd Cargo Exam Bldg (037) L3(037)Inspec Offices - Cable Laying and termination in L3(037)Inspec Offices - Cable Splicing and Testing and L3(037)Inspec Offices - AVCSS SURCON WS and 5 L3(037)Inspec Offices - VTS WS Installation L3(037)Inspec Offices - SURCON and WS Tuning 07-Aug-17; Location 3(Inbd Cargo Exam Bldg (037) L3(037)PLF Ctrl Rm - Cable Laying and termination in L3(037)PLF Ctrl Rm - Cable Splicing and Testing and L3(037)PLF Ctrl Rm - AVCSS SYSCON WS and 55 L3(037)PLF Ctrl Rm - AVCSS SYSCON WS Tuning																	

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Location 3a(Inbd Cargo Exam Bldg (037) ROCARS Room)		07-Aug-17, Location 3a(Inbd Cargo Exam Bldg (037) ROCARS Rm - Cable Laying and termination in Location 3 and Location 3a 07-Aug-17, Location 3a(Inbd Cargo Exam Bldg (037) ROCARS Rm - Cable Splicing and Testing and Labeling 07-Aug-17, Location 3a(Inbd Cargo Exam Bldg (037) ROCARS Rm - AVCSS SYSCON and SURCON and Intercom Installation 07-Aug-17, Location 3a(Inbd Cargo Exam Bldg (037) ROCARS Rm - VTS WS Installation 07-Aug-17, Location 3a(Inbd Cargo Exam Bldg (037) ROCARS Rm - VID WS Installation 07-Aug-17, Location 3a(Inbd Cargo Exam Bldg (037) ROCARS Rm - SURCON and SYSCON and WS Tuning																	
EM1240	L3a(037) ROCARS Rm - Cable Laying and termination in Location 3 and Location 3a	L3a(037) ROCARS Rm - Cable Laying and termination																	
EM1260	L3a(037) ROCARS Rm - Cable Splicing and Testing and Labeling	L3a(037) ROCARS Rm - Cable Splicing and Testing and Labeling																	
EM1280	L3a(037) ROCARS Rm - AVCSS SYSCON and SURCON and Intercom Installation	L3a(037) ROCARS Rm - AVCSS SYSCON and SURCON and Intercom Installation																	
EM1300	L3a(037) ROCARS Rm - VTS WS Installation	L3a(037) ROCARS Rm - VTS WS Installation																	
EM1320	L3a(037) ROCARS Rm - VID WS Installation	L3a(037) ROCARS Rm - VID WS Installation																	
EM1340	L3a(037) ROCARS Rm - SURCON and SYSCON and WS Tuning	L3a(037) ROCARS Rm - SURCON and SYSCON and WS Tuning																	
Location 3a(Inbd Cargo Exam Bldg (037) Main Server Room)		07-Aug-17, Location 3a(Inbd Cargo Exam Bldg (037) Main Server Rm - Cable Laying and termination in Location 3 and Location 3a 07-Aug-17, Location 3a(Inbd Cargo Exam Bldg (037) Main Server Rm - Cable Splicing and Testing and Labeling 07-Aug-17, Location 3a(Inbd Cargo Exam Bldg (037) Main Server Rm - AVCSS Server Installation 07-Aug-17, Location 3a(Inbd Cargo Exam Bldg (037) Main Server Rm - VTS Server Installation 07-Aug-17, Location 3a(Inbd Cargo Exam Bldg (037) Main Server Rm - Servers Tuning																	
EM2120	L3a(037) Main Server Rm - Cable Laying and termination in Location 3 and Location 3a	L3a(037) Main Server Rm - Cable Laying and termination																	
EM2140	L3a(037) Main Server Rm - Cable Splicing and Testing and Labeling	L3a(037) Main Server Rm - Cable Splicing and Testing and Labeling																	
EM2160	L3a(037) Main Server Rm - AVCSS Server Installation	L3a(037) Main Server Rm - AVCSS Server Installation																	
EM2180	L3a(037) Main Server Rm - VTS Server Installation	L3a(037) Main Server Rm - VTS Server Installation																	
EM2200	L3a(037) Main Server Rm - Servers Tuning	L3a(037) Main Server Rm - Servers Tuning																	
Location 4(Outbd Cargo Exam Bldg (023) MDF Room)		04-Aug-17, Location 4a(Outbd Cargo Exam Bldg (023) ROCARS Rm - Cable Splicing and Testing and Labeling 04-Aug-17, Location 4a(Outbd Cargo Exam Bldg (023) ROCARS Rm - AVCSS SYSCON and SURCON and Intercom Installation 04-Aug-17, Location 4a(Outbd Cargo Exam Bldg (023) ROCARS Rm - VTS WS Installation 04-Aug-17, Location 4a(Outbd Cargo Exam Bldg (023) ROCARS Rm - SYSCON and SURCON and WS Tuning																	
EM2240	L4a(023) ROCARS Rm - Cable Splicing and Testing and Labeling	L4a(023) ROCARS Rm - Cable Splicing and Testing and Labeling																	
EM2260	L4a(023) ROCARS Rm - AVCSS SYSCON and SURCON and Intercom Installation	L4a(023) ROCARS Rm - AVCSS SYSCON and SURCON and Intercom Installation																	
EM2280	L4a(023) ROCARS Rm - VTS WS Installation	L4a(023) ROCARS Rm - VTS WS Installation																	
EM2300	L4a(023) ROCARS Rm - SYSCON and SURCON and WS Tuning	L4a(023) ROCARS Rm - SYSCON and SURCON and WS Tuning																	
Location 5(Common Utility Enclosure & Staff Subway)		01-Sep-17, Location 5(Common Utility Enclosure & Staff Subway) - Cable Laying between Location 5 and Location 6 01-Sep-17, Location 5(Common Utility Enclosure & Staff Subway) - Cable Laying between Location 5 and Location 7 01-Sep-17, Location 5(Common Utility Enclosure & Staff Subway) - Cable Splicing and Testing and Labeling																	
EM2341	L5(CUE) - Cable Laying between Location 5 and Location 6	L5(CUE) - Cable Laying between Location 5 and Location 6																	
EM2361	L5(CUE) - Cable Laying between Location 5 and Location 7	L5(CUE) - Cable Laying between Location 5 and Location 7																	
EM2380	L5(CUE) - Cable Splicing and Testing and Labeling	L5(CUE) - Cable Splicing and Testing and Labeling																	
Location 6(Common Utility Enclosure & Staff Subway)		26-Aug-17, Location 6(Common Utility Enclosure & Staff Subway) - Cable Laying between Location 5 and Location 6 26-Aug-17, Location 6(Common Utility Enclosure & Staff Subway) - Cable Splicing and Testing and Labeling																	
EM2400	L6(CUE) - Cable Laying between Location 5 and Location 6	L6(CUE) - Cable Laying between Location 5 and Location 6																	
EM2420	L6(CUE) - Cable Splicing and Testing and Labeling	L6(CUE) - Cable Splicing and Testing and Labeling																	
Location 7(Common Utility Enclosure & Staff Subway)		01-Sep-17, Location 7(Common Utility Enclosure & Staff Subway) - Cable Laying between Location 5 and Location 6 01-Sep-17, Location 7(Common Utility Enclosure & Staff Subway) - Cable Splicing and Testing and Labeling																	
EM2440	L7(CUE) - Cable Laying between Location 5 and Location 6	L7(CUE) - Cable Laying between Location 5 and Location 6																	
EM2460	L7(CUE) - Cable Splicing and Testing and Labeling	L7(CUE) - Cable Splicing and Testing and Labeling																	
Location 12(Inbd Private Car Kiosks,GV Kiosks (027,028,029))		30-Aug-17, Location 12(Inbd Private Car Kiosks,GV Kiosks (027,028,029)) - 9 nos (Phase 1) 24-Aug-17, Inbd Private Car Kiosks(027) - 9 nos (Phase 1) 30-Aug-17, Inbd Goods Vehicle Kiosks(028) - 5 nos (Phase 1)																	
Inbd Private Car Kiosks(027) - 9 nos (Phase 1)		L12(027)(9nos P1) - Cable Splicing and Testing and Labeling L12(027)(9nos P1) - AVCSS/MOM Kiosk Equipment Installation (9 nos) L12(027)(9nos P1) - XDB installation (18 nos) L12(027)(9nos P1) - ODB installation (5 nos) L12(027)(9nos P1) - ODB installation (2 nos) L12(027)(9nos P1) - ODB installation (2 nos) L12(027)(9nos P1) - Loop installation (45 nos)																	
EM1500	L12(027)(9nos P1) - Cable Splicing and Testing and Labeling	L12(027)(9nos P1) - Cable Splicing and Testing and Labeling																	
EM1520	L12(027)(9nos P1) - AVCSS/MOM Kiosk Equipment Installation (9 nos)	L12(027)(9nos P1) - AVCSS/MOM Kiosk Equipment Installation (9 nos)																	
EM1541	L12(027)(9nos P1) - XDB installation (18 nos)	L12(027)(9nos P1) - XDB installation (18 nos)																	
EM1542	L12(027)(9nos P1) - ODB installation (5 nos)	L12(027)(9nos P1) - ODB installation (5 nos)																	
EM1543	L12(027)(9nos P1) - ODB installation (2 nos)	L12(027)(9nos P1) - ODB installation (2 nos)																	
EM1544	L12(027)(9nos P1) - ODB installation (2 nos)	L12(027)(9nos P1) - ODB installation (2 nos)																	
EM1560	L12(027)(9nos P1) - Loop installation (45 nos)	L12(027)(9nos P1) - Loop installation (45 nos)																	
Inbd Goods Vehicle Kiosks(028) - 5 nos (Phase 1)		L12(028)(5nos P1) - Cable Laying and termination L12(028)(5nos P1) - Cable Splicing and Testing and Labeling L12(028)(5nos P1) - AVCSS/MOM Kiosk Equipment Installation (5 nos) L12(028)(5nos P1) - XDB installation (10 nos) L12(028)(5nos P1) - ODB installation (3 nos) L12(028)(5nos P1) - ODB installation (2 nos)																	
EM1620	L12(028)(5nos P1) - Cable Laying and termination	L12(028)(5nos P1) - Cable Laying and termination																	
EM1640	L12(028)(5nos P1) - Cable Splicing and Testing and Labeling	L12(028)(5nos P1) - Cable Splicing and Testing and Labeling																	
EM1660	L12(028)(5nos P1) - AVCSS/MOM Kiosk Equipment Installation (5 nos)	L12(028)(5nos P1) - AVCSS/MOM Kiosk Equipment Installation (5 nos)																	
EM1681	L12(028)(5nos P1) - XDB installation (10 nos)	L12(028)(5nos P1) - XDB installation (10 nos)																	
EM1682	L12(028)(5nos P1) - ODB installation (3 nos)	L12(028)(5nos P1) - ODB installation (3 nos)																	
EM1683	L12(028)(5nos P1) - ODB installation (2 nos)	L12(028)(5nos P1) - ODB installation (2 nos)																	

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- Actual Level of Effort
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		Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	
EM1700	L12(028)(5nos P1) - AIOP Installation (5 nos)																			
EM1720	L12(028)(5nos P1) - Loop installation (25 nos)																			
Outbd Goods Vehicle Kiosks(029) - 5 nos (Phase 1)																				
EM1740	L12(029)(5nos P1) - Cable Containment in Kiosks																			
EM1760	L12(029)(5nos P1) - Cable Laying and termination																			
EM1780	L12(029)(5nos P1) - Cable Splicing and Testing and Labeling																			
EM1800	L12(029)(5nos P1) - AVCSS/MOM Kiosk Equipment Installation (5 nos)																			
EM1821	L12(029)(5nos P1) - XDB installation (5 nos)																			
EM1822	L12(029)(5nos P1) - ODB installation (4 nos)																			
EM1823	L12(029)(5nos P1) - ODB installation (1 nos)																			
EM1840	L12(029)(5nos P1) - AIOP Installation (5 nos)																			
Location 13(Outbd Private Car Kiosks (030)) - 9 nos (Phase 1)																				
EM2520	L13(030)(9nos P1) - Cable Containment in Kiosks																			
EM2540	L13(030)(9nos P1) - Cable Laying and termination																			
EM2560	L13(030)(9nos P1) - Cable Splicing and Testing and Labeling																			
EM2580	L13(030)(9nos P1) - AVCSS/MOM Kiosk Equipment Installation (9 nos)																			
EM2601	L13(030)(9nos P1) - XDB installation (9 nos)																			
EM2602	L13(030)(9nos P1) - ODB installation (7 nos)																			
Location 14(Future-Outbd/Inbd Private Car Kiosks) - 6+6 nos																				
EM1440	L14 - Cable Laying and termination at ELV Room in CUE																			
Location 15(Inbd Traffic Control Kiosk (100))																				
Location 16(Outbd Traffic Control Kiosk (101))																				
EM2760	L16(101) - Cable Laying and termination																			
EM2780	L16(101) - Cable Splicing and Testing and Labeling																			
EM2800	L16(101) - AVCSS SYSCON and SURCON Installation																			
EM2820	L16(101) - VTS WS and 55" LCD Installation																			
Location 17(Inbd Private Car Exam Bldg(033) Operational Office)																				
Location 18 (Outbd Private Car Exam Bldg(024) Operational Office)																				
EM2940	L18(024) - Cable Laying and termination																			
EM2960	L18(024) - Cable Splicing and Testing and Labeling																			
EM2980	L18(024) - AVCSS SURCON and 55" LCD Installation																			
EM3000	L18(024) - SURCON Tuning																			
Location 19 (DOH Cargo Clearance Bldg(043))																				
EM1360	L19(043) - Cable Laying and termination																			
EM1380	L19(043) - Cable Splicing and Testing and Labeling																			
EM1400	L19(043) - PA and Intercom Installation																			
EM1420	L19(043) - PA and Intercom Tuning																			
Inbd Vehicle Clearance Plaza - 8 nos VID, 7 nos VTS, 4 nos TLS																				
EM3020	Inbound VID cabling from pillar box to VID field equipment																			
EM3040	Inbound VTS cabling from pillar box to VTS field equipment																			
EM3060	Inbound TLS cabling from pillar box to TLS field equipment																			
EM3080	Inbound VID field equipment installation (8 VID)																			
EM3100	Inbound VTS field equipment installation (4 RFID + 3 Cameras)																			
EM3120	Inbound TLS field equipment installation (4 TLS)																			
EM3140	Inbound VID and VTS and TLS field equipment tuning																			

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Outbd Vehicle Clearance Plaza - 8 nos VID, 6 nos VTS, 4 nos TLS		<ul style="list-style-type: none"> EM3160 Outbound VID cabling from pillar box to VID field equipment EM3180 Outbound VTS cabling from pillar box to VTS field equipment EM3200 Outbound TLS cabling from pillar box to TLS field equipment EM3220 Outbound VID field equipment installation (8 VID) EM3240 Outbound VTS field equipment installation (3 RFID + 3 Cameras) EM3260 Outbound TLS field equipment installation (4 TLS) EM3280 Outbound VID and VTS and TLS field equipment tuning 																	
Underground Ducting (UUD1.1) between CUE and Inbd Cargo Exam Bldg (037)		<ul style="list-style-type: none"> UD1000 (UUD1.1 [CUE-037]) - Cable laying and termination 																	
(UUD1.2) between Inbd Cargo Exam Bldg South (037[S]) and DOH Cargo Clearance Bldg (037[S])		<ul style="list-style-type: none"> UD1060 (UUD1.2 [037[S]-043]) - Cable laying and termination 																	
Underground Ducting (UUD6) between CUE and Shuttle Bus Kiosk (006) and Inbd Private Car Exam Bldg (033)		<ul style="list-style-type: none"> UD1040 (UUD9.1 [037[S]-033-100]) - Cable laying and termination 																	
(UUD9.1) btw IB Cargo Exam Bldg South(037[S]) & IB PC Exam Bldg(033) & IB Traffic Control Bldg (033)		<ul style="list-style-type: none"> UD1010 (UUD2 [037[N]-IB VCP]) - Cable laying and termination 																	
(UUD2) between Inbd Cargo Exam Bldg North (037[N]) to Inbd VCP		<ul style="list-style-type: none"> UD1070 (UUD9.3 [033-IB VCP[W]]) - Cable laying and termination 																	
(UUD9.3) between Inbd Private Car Exam Bldg (033) and Inbd Vehicle Clearance Plaza		<ul style="list-style-type: none"> UD1020 (UUD9.2 [033-IB VCP[E]]) - Cable laying and termination 																	
(UUD9.2) between Inbd Private Car Exam Bldg (033) and Inbd Vehicle Clearance Plaza		<ul style="list-style-type: none"> UD1030 (UUD8 [CUE-032]) - Cable laying and termination 																	
Underground Ducting (UUD7) between PCB(001) and Inbd Coach Kiosks(010)		<ul style="list-style-type: none"> UD1030 (UUD3.1 [CUE-023]) - Cable laying and termination 																	
Underground Ducting (UUD3.1) between CUE and Outbd Cargo Exam Bldg (023)		<ul style="list-style-type: none"> UD1050 (UUD3.2 [023-024-101]) - Cable laying and termination 																	
(UUD3.2) btw OB Car Exam Bldg(023) & OB PC Exam Bldg(024) & OB Traffic Control Bldg (023)		<ul style="list-style-type: none"> UD1100 (UUD8 [CUE-032]) - Cable laying and termination 																	
Underground Ducting (UUD8) between CUE and Outbd PCA (032)		<ul style="list-style-type: none"> UD1080 (UUD4.1 [024-OB VCP]) - Cable laying and termination 																	
(UUD4.1) between Outbd PC Exam Bldg (024) and Outbd Vehicle Clearance Plaza		<ul style="list-style-type: none"> UD1090 (UUD5 [023[S]-OB VCP]) - Cable laying and termination 																	
(UUD5) between Outbd Car Exam Bldg (023[S]) and Outbd Vehicle Clearance Plaza		<ul style="list-style-type: none"> UD1090 (UUD5 [023[S]-OB VCP]) - Cable laying and termination 																	
Initial On-Site Test and Commissioning / Pre-SAT (Phase 1 / Section I)																			
Site Acceptance Test (Phase 1 / Section I)																			
Security Risk Assessment and Audit																			
Operability Period Test (Phase 1 / Section I)																			
Completion (Phase 1 /Section I)																			
Training and Document (Phase 1 /Section I)																			
Operation (Phase 1 /Section I)																			
Engineering Support for Phase 1 / Section I																			
Procurement - Phase 2 / Section II																			
Delivery and Bench Acceptance Test for Phase 2/Section II																			
Installation - Phase 2 / Section II		<ul style="list-style-type: none"> 30-Aug-17: Installation -Phase 2/ Section II 																	


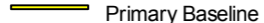

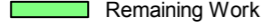
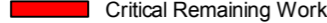


Programme No.: HZMB-DWP Data Date: 14-Aug-15	<ul style="list-style-type: none"> Actual Level of Effort Primary Baseline Actual Work Remaining Work Critical Remaining Work Baseline Milestone Milestone 	Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities - Automatic Vehicle Clearance Support System (AVCSS)	Date	Revision	Checked	Approved
			14-Nov-16	Rev.: 0	WC	LC
			10-Mar-17	Rev.: 1.0a	WC	LC
			5-May-17	Rev.: 1.0b	WC	LC

Activity ID	Activity Name	2015			2016				2017				2018				2019		
		Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Location 8(Inbd Private Car Annex (025)) (Phase 2)		▼ 30-Aug-17; Location 8(Inbd Private Car Annex (025)) (Phase 2)																	
EM3370	L8(025) - Cable Containment in Kiosks	■ L8(025) - Cable Containment in Kiosks																	
EM3380	L8(025) - Cable Laying and termination	■ L8(025) - Cable Laying and termination																	
EM3400	L8(025) - Cable Splicing and Testing and Labeling	■ L8(025) - Cable Splicing and Testing and Labeling																	
Location 9(Outbd Private Car Annex (032)) (Phase 2)		▼ 30-Aug-17; Location 9(Outbd Private Car Annex (032)) (Phase 2)																	
EM3500	L9(032) - Cable Containment in Kiosks	■ L9(032) - Cable Containment in Kiosks																	
EM3520	L9(032) - Cable Laying and termination	■ L9(032) - Cable Laying and termination																	
Initial On-Site Test and Commissioning / Pre-SAT (Phase 2 / Section II)																			
Site Acceptance Test (Phase 2 / Section II)																			
Operability Period Test (Phase 2 / Section II)																			
Completion (Phase 2 / Section II)																			
Engineering Support for Phase 2 / Section II																			
Procurement for Phase2 / Section III																			
Delivery and Bench Acceptance Test for Phase2 / Section III																			
Installation - Phase 2 / Section III		▼ 09-Oct-17; Installation - Phase 2 / Section III																	
Location 10,11,12,13 (Vehicle Clearance Kiosks)		▼ 09-Oct-17; Location 10,11,12,13 (Vehicle Clearance Kiosks)																	
Location 12 Inbd Private Car Kiosks (027) - 12 nos (Phase 2)		▼ 09-Oct-17; Location 12 Inbd Private Car Kiosks																	
EM4440	L12(027)(12nos P2) - Cable Laying and termination	■ L12(027)(12nos P2) - Cable Laying and termination																	
EM4460	L12(027)(12nos P2) - Cable Splicing and Testing and Labeling	■ L12(027)(12nos P2) - Cable Splicing and Testing and Labeling																	
EM4480	L12(027)(12nos P2) - AVCSS/DOH/MOM Kiosk Equipment Installation (12 nos)	■ L12(027)(12nos P2) - AVCSS/DOH/MOM Kiosk Equipment Installation (12 nos)																	
Location 13 Outbd Private Car Kiosks (030) - 12 nos (Phase 2)		▼ 01-Sep-17; Location 13 Outbd Private Car Kiosks																	
EM4560	L13(030)(12nos P2) - Cable Containment in Kiosks	■ L13(030)(12nos P2) - Cable Containment in Kiosks																	
Location 12 Outbd Goods Vehicle Kiosks (029) - 3 nos (Phase 2)		▼ 31-Aug-17; Location 12 Outbd Goods Vehicle Kiosks																	
EM4880	L12(029)(3nos P2) - Cable Laying and termination	■ L12(029)(3nos P2) - Cable Laying and termination																	
EM4900	L12(029)(3nos P2) - Cable Splicing and Testing and Labeling	■ L12(029)(3nos P2) - Cable Splicing and Testing and Labeling																	
EM4920	L12(029)(3nos P2) - AVCSS/DOH/MOM Kiosk Equipment Installation (3 nos)	■ L12(029)(3nos P2) - AVCSS/DOH/MOM Kiosk Equipment Installation (3 nos)																	
EM4940	L12(029)(3nos P2) - ODB & XDB Installation (3 nos)	■ L12(029)(3nos P2) - ODB & XDB Installation (3 nos)																	
EM4960	L12(029)(3nos P2) - AIOP Installation (3 nos)	■ L12(029)(3nos P2) - AIOP Installation (3 nos)																	
EM4980	L12(029)(3nos P2) - Loop Installation (15 nos)	■ L12(029)(3nos P2) - Loop Installation (15 nos)																	
Location 11 Outbd Coach Kiosks (009) - 4 nos (Phase 2)																			
Location 12 Inbd Goods Vehicle Kiosks (028) - 3 nos (Phase 2)		▼ 24-Aug-17; Location 12 Inbd Goods Vehicle Kiosks																	
EM4720	L12(028)(3nos P2) - Cable Laying and termination	■ L12(028)(3nos P2) - Cable Laying and termination																	
EM4740	L12(028)(3nos P2) - Cable Splicing and Testing and Labeling	■ L12(028)(3nos P2) - Cable Splicing and Testing and Labeling																	
EM4760	L12(028)(3nos P2) - AVCSS/DOH/MOM Kiosk Equipment Installation (3 nos)	■ L12(028)(3nos P2) - AVCSS/DOH/MOM Kiosk Equipment Installation (3 nos)																	
EM4780	L12(028)(3nos P2) - ODB & XDB Installation (3 nos)	■ L12(028)(3nos P2) - ODB & XDB Installation (3 nos)																	
EM4800	L12(028)(3nos P2) - AIOP Installation (3 nos)	■ L12(028)(3nos P2) - AIOP Installation (3 nos)																	
EM4820	L12(028)(3nos P2) - Loop Installation (15 nos)	■ L12(028)(3nos P2) - Loop Installation (15 nos)																	
EM4840	L12(028)(3nos P2) - Kiosk Equipment Configuration (3 nos)	■ L12(028)(3nos P2) - Kiosk Equipment Configuration (3 nos)																	
EM5120	L12(028)(3nos P2) - Inbd Goods Vehicle Kiosks Installation Complete	◆ L12(028)(3nos P2) - Inbd Goods Vehicle Kiosks Installation Complete																	
Location 10 Shuttle Bus Kiosks (006) - 4 nos (Phase 2)		▼ 30-Aug-17; Location 10 Shuttle Bus Kiosks (006) -																	
EM4000	L10(006)(4nos P2) - Cable Containment in Kiosks	■ L10(006)(4nos P2) - Cable Containment in Kiosks																	
Location 11 Inbd Coach Kiosks (010) - 2 nos (Phase 2)-1																			
Location 11 Inbd Coach Kiosks (010) - 2 nos (Phase 2)-2																			
Initial On-Site Test and Commissioning / Pre-SAT (Phase 2 / Section III)																			

Programme No.: HZMB-DWP Data Date: 14-Aug-15		Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities - Automatic Vehicle Clearance Support System (AVCSS)	Date	Revision	Checked	Approved
			14-Nov-16	Rev.: 0	WC	LC
			10-Mar-17	Rev.: 1.0a	WC	LC
			5-May-17	Rev.: 1.0b	WC	LC

Activity ID	Activity Name	2015			2016				2017				2018				2019			
		Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	
	Site Acceptance Test (Phase 2 / Section III)																			
	Operability Period Test (Phase 2 / Section III)																			
	Completion (Phase 2 / Section III)																			
	Operation (Phase 2 / Section III)																			
	Defect Liability Period (DLP)																			
	Document Submission (Phase 2 / Section III)																			

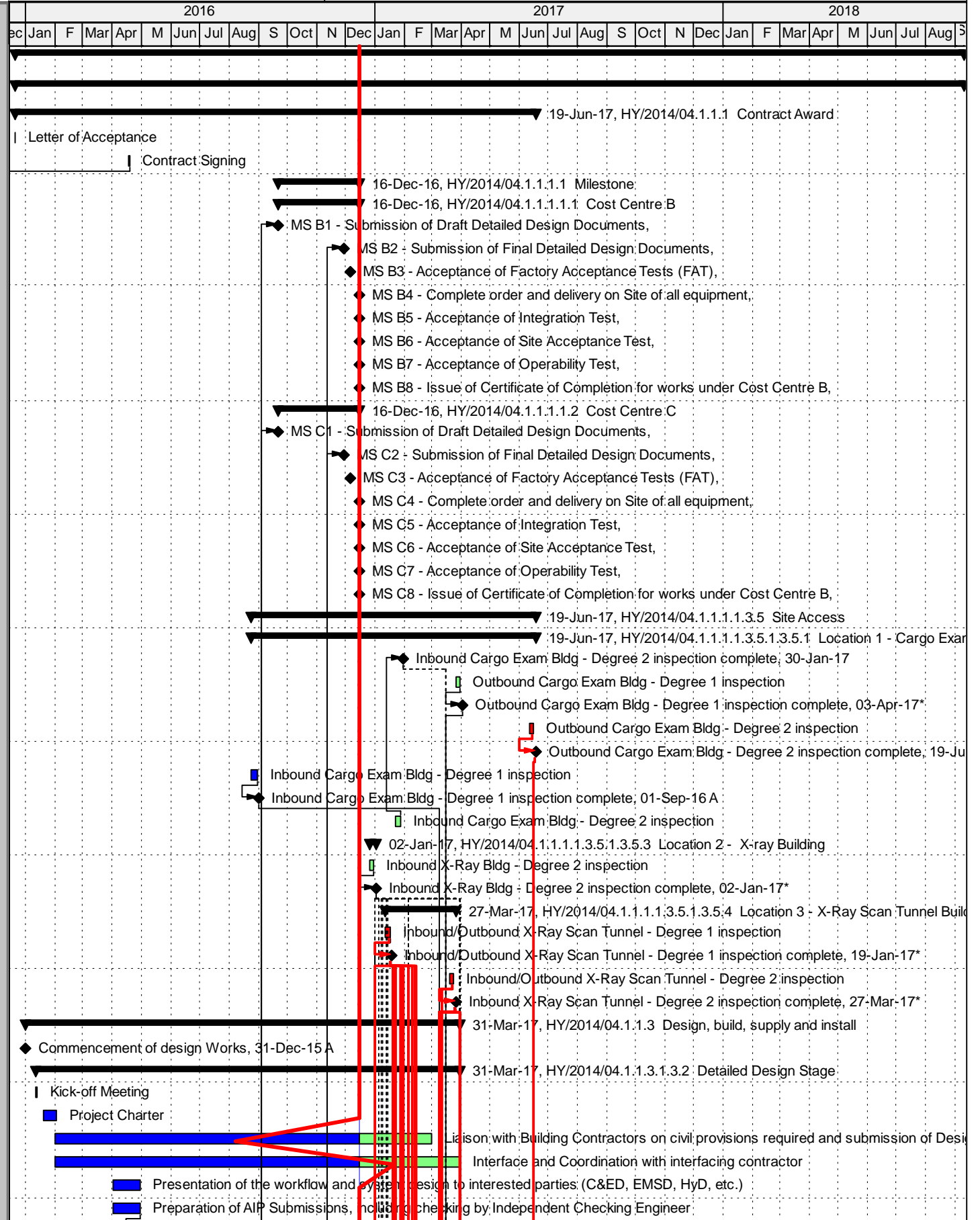
Programme No.: HZMB-DWP
Data Date: 14-Aug-15

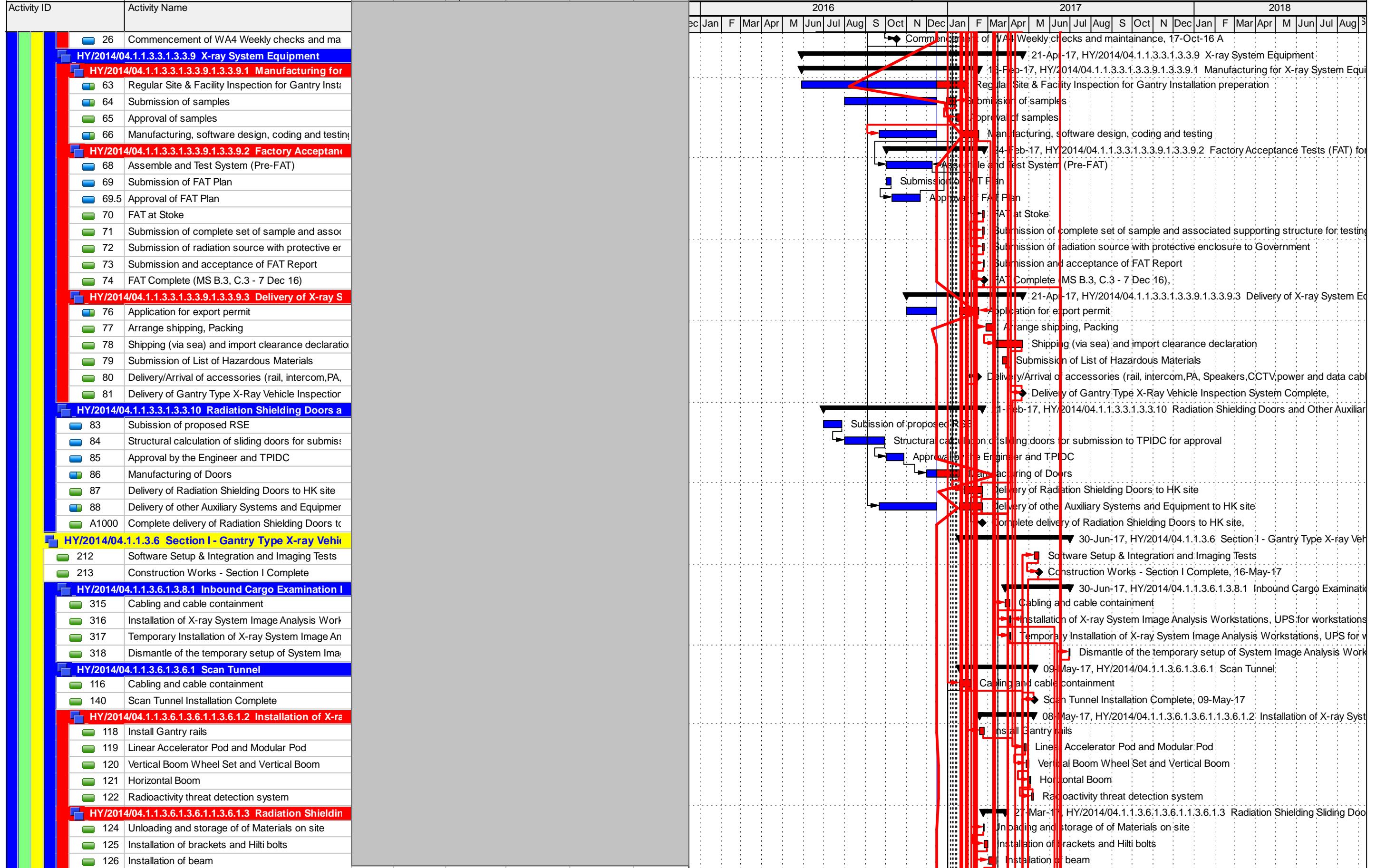
-  Actual Level of Effort
-  Primary Baseline
-  Actual Work
-  Remaining Work
-  Critical Remaining Work
-  Baseline Milestone
-  Milestone

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

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

Activity ID	Activity Name
HY/2014/04 Hong Kong-Zhuhai-Macao Bridge	
HY/2014/04.1 Contract No. HY/2014/04 Hong Kong-Zhuhai-Macao Bridge	
HY/2014/04.1.1.1 Contract Award	
3	Letter of Acceptance
4	Contract Signing
HY/2014/04.1.1.1.1 Milestone	
HY/2014/04.1.1.1.1.1 Cost Centre B	
A1C	MS B1 - Submission of Draft Detailed Design Documents
A1C	MS B2 - Submission of Final Detailed Design Documents
A1C	MS B3 - Acceptance of Factory Acceptance Tests (FAT)
A1C	MS B4 - Complete order and delivery on Site of all equipment
A1C	MS B5 - Acceptance of Integration Test
A1C	MS B6 - Acceptance of Site Acceptance Test
A1C	MS B7 - Acceptance of Operability Test
A1C	MS B8 - Issue of Certificate of Completion for works under Cost Centre B
HY/2014/04.1.1.1.1.2 Cost Centre C	
A1C	MS C1 - Submission of Draft Detailed Design Documents
A11	MS C2 - Submission of Final Detailed Design Documents
A11	MS C3 - Acceptance of Factory Acceptance Tests (FAT)
A11	MS C4 - Complete order and delivery on Site of all equipment
A11	MS C5 - Acceptance of Integration Test
A11	MS C6 - Acceptance of Site Acceptance Test
A11	MS C7 - Acceptance of Operability Test
A11	MS C8 - Issue of Certificate of Completion for works under Cost Centre C
HY/2014/04.1.1.1.3.5 Site Access	
HY/2014/04.1.1.1.3.5.1.3.5.1 Location 1 - Cargo Exam Bldg - Degree 2 inspection	
100	Inbound Cargo Exam Bldg - Degree 2 inspection
102	Outbound Cargo Exam Bldg - Degree 1 inspection
103	Outbound Cargo Exam Bldg - Degree 1 inspection
104	Outbound Cargo Exam Bldg - Degree 2 inspection
105	Outbound Cargo Exam Bldg - Degree 2 inspection
97	Inbound Cargo Exam Bldg - Degree 1 inspection
98	Inbound Cargo Exam Bldg - Degree 1 inspection
99	Inbound Cargo Exam Bldg - Degree 2 inspection
HY/2014/04.1.1.1.3.5.1.3.5.3 Location 2 - X-ray Building	
107	Inbound X-Ray Bldg - Degree 2 inspection
108	Inbound X-Ray Bldg - Degree 2 inspection complete
HY/2014/04.1.1.1.3.5.1.3.5.4 Location 3 - X-Ray Scan Tunnel Building	
110	Inbound/Outbound X-Ray Scan Tunnel - Degree 1 inspection
111	Inbound/Outbound X-Ray Scan Tunnel - Degree 1 inspection
112	Inbound/Outbound X-Ray Scan Tunnel - Degree 2 inspection
113	Inbound X-Ray Scan Tunnel - Degree 2 inspection
HY/2014/04.1.1.3 Design, build, supply and install	
28	Commencement of design Works
HY/2014/04.1.1.3.1.3.2 Detailed Design Stage	
30	Kick-off Meeting
31	Project Charter
32	Liaison with Building Contractors on civil provisions required and submission of Design
33	Interface and Coordination with interfacing contractor
35	Presentation of the workflow and system design to interested parties (C&ED, EMSD, HyD, etc.)
36	Preparation of AIP Submissions, including check by Independent Checking Engineer

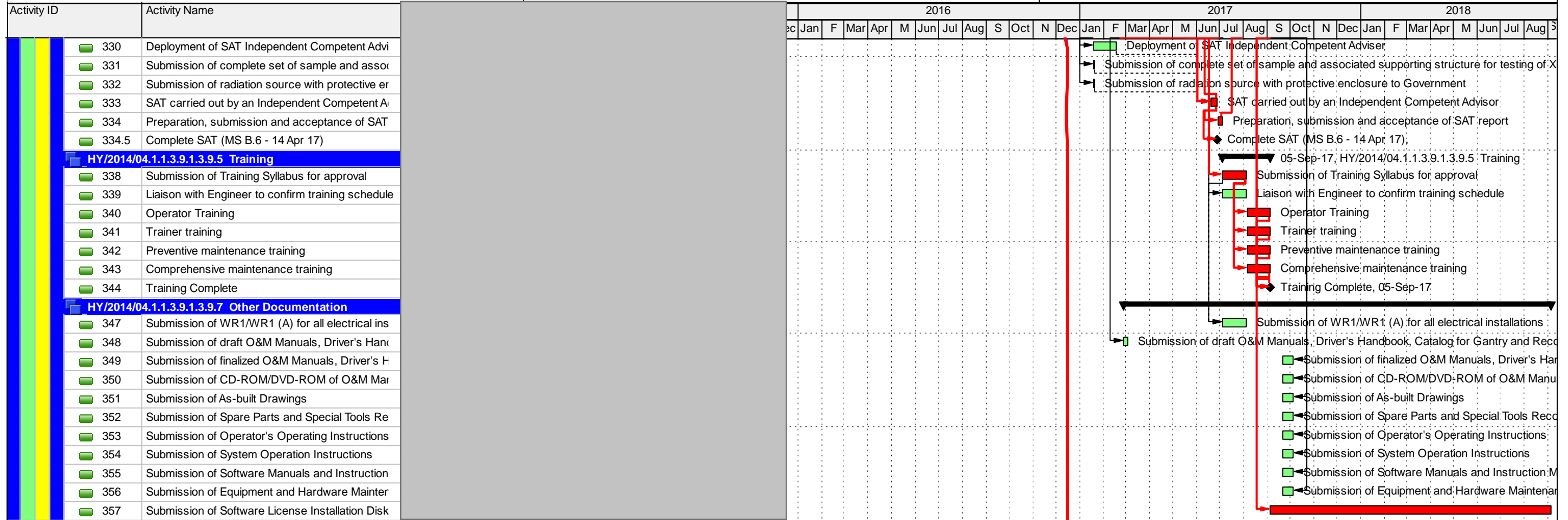




█ Actual Level of Effort █ Remaining Work ◆◆ Milestone
█ Actual Work █ Critical Remaining Work ▼ summary

Activity ID	Activity Name	2016												2017												2018											
		Dec	Jan	F	Mar	Apr	M	Jun	Jul	Aug	S	Oct	N	Dec	Jan	F	Mar	Apr	M	Jun	Jul	Aug	S	Oct	N	Dec	Jan	F	Mar	Apr	M	Jun	Jul	Aug	S		
230	PTZ CCTV camera (outdoor type)																																				
231	Humidity Sensor																																				
232	CCTV Control System																																				
233	Drop arm barrier, stop/go light and connection to																																				
234	Perimeter Alarm System and connection to the x-																																				
235	Infra-red over-height detection portal and connec																																				
236	Control, monitoring and alarms of infra-red over-l																																				
237	Personal X-ray Dosimeter																																				
238	UPS for workstations, equipment and system																																				
HY/2014/04.1.1.3.7.1.3.7.2 X-ray Building																																					
310	X-ray Building Installation Complete																																				
HY/2014/04.1.1.3.7.1.3.7.2.1.3.7.2.1 Cabling and cable																																					
242	Cabling and cable containment - Entry Kiosk																																				
243	Cabling and cable containment - Control Room																																				
244	Cabling and cable containment - Exit Kiosk																																				
245	Cabling and cable containment - Image Interpret																																				
246	Cabling and cable containment - X-ray Examinati																																				
247	Cabling and cable containment - Driver's Waiting																																				
248	Cabling and cable containment - Training Room																																				
249	Cabling and cable containment complete																																				
HY/2014/04.1.1.3.7.1.3.7.2.1.3.7.2.2 Equipment Install																																					
HY/2014/04.1.1.3.7.1.3.7.2.1.3.7.2.2.1.3.7.2.2.1 Entry																																					
	X-ray System Image Analysis Workstation																																				
	CCTV System																																				
	Intercom System																																				
	Public Address System																																				
	Perimeter Alarm System																																				
	Radiation Monitoring and Alarm System																																				
	Over Height Detection System alarm																																				
	Drop Arm Barrier controller																																				
	Radiation shielding sliding door controller																																				
	UPS for workstations, equipment and system																																				
	Speaker																																				
HY/2014/04.1.1.3.7.1.3.7.2.1.3.7.2.2.1.3.7.2.2.2 Cont																																					
	Video Wall (4nos. 55" LED)																																				
	UPS for workstations, equipment and system																																				
	CCTV System																																				
	Public Address System																																				
	Intercom System																																				
	Radiation Monitoring and Alarm System																																				
	Perimeter Alarm system																																				
	Wall-mounted Display Unit of Humidity Sensor																																				
	Over Height Detection System alarm																																				
	Drop Arm Barrier controller																																				
	Radiation shielding sliding door controller																																				
	X-ray System Control Workstation																																				
	Scanner																																				
	Printer																																				
HY/2014/04.1.1.3.7.1.3.7.2.1.3.7.2.2.1.3.7.2.2.3 Exit Kiosk																																					
	Intercom System																																				
	Radiation Monitoring and Alarm System																																				

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



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



APPENDIX D

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

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

Event / Action Plan for Construction Noise Monitoring

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



APPENDIX E

Implementation Schedule for Environmental Mitigation Measures (EMIS)

**Contract No. HY/2014/05 – Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Remaining Ancillary Buildings and Facilities
Implementation Schedule for Environmental Mitigation Measures**

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Air Quality								
S5.5.6.1	A1	1) The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Good construction site practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.	Contractor	All construction sites	Construction stage	To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1- hr and 24hr TSP levels are 500 $\mu\text{g}\text{m}^{-3}$ and 260 $\mu\text{g}\text{m}^{-3}$, respectively)	√
S5.5.6.2	A2	2) Proper watering of exposed spoil should be undertaken throughout the construction phase: <ul style="list-style-type: none"> • Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads; • A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or trafficcones. • The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores; 	Good construction site practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.	Contractor	All construction sites	Construction stage	To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1- hr and 24hr TSP levels are 500 $\mu\text{g}\text{m}^{-3}$ and 260 $\mu\text{g}\text{m}^{-3}$, respectively)	√

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S5.5.6.2	A2	<ul style="list-style-type: none"> • 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; • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport should be totally enclosed by impervious sheeting; • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides; 	Good construction site practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.	Contractor	All construction sites	Construction stage	To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1- hr and 24hr TSP levels are 500 $\mu\text{g}\text{m}^{-3}$ and 260 $\mu\text{g}\text{m}^{-3}$, respectively)	√

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S5.5.6.2	A2	<ul style="list-style-type: none"> Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed; Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies. 	Good construction site practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.	Contractor	All construction sites	Construction stage	To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1- hr and 24hr TSP levels are 500 $\mu\text{g}\text{m}^{-3}$ and 260 $\mu\text{g}\text{m}^{-3}$, respectively)	√
S5.5.6.4	A3	The Contractor should undertake proper watering on all exposed spoil (with at least 8 times per day) throughout the construction phase.	Control construction dust	Contractor	All construction sites	Construction stage	To control the dust impact	√
S5.5.6.5	A4	Engineer to incorporate the controlled measures into the Particular Specification (PS) for the civil work. The PS should also draw the contractor's attention to the relevant latest Practice Notes issued by EPD.	Control construction dust	Engineer	All construction sites	Design Stage	Air Pollution Control (Construction Dust) Regulation	√
S5.5.6.5	A5	Implement regular dust monitoring under EM&A programme during the construction stage.	Monitor the 24 hr and 1hr TSP levels at the representative dust monitoring stations to ensure compliance with relevant criteria throughout the construction period.	Contractor	Selected representative dust monitoring station	Construction stage	<ul style="list-style-type: none"> Air Pollution Control (Construction Dust) Regulation To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1- hr and 24hr TSP levels are 500 $\mu\text{g}\text{m}^{-3}$ and 260 $\mu\text{g}\text{m}^{-3}$, respectively) 	√ (The dust monitoring at AMS6 under EM&A Programme for the Contract is covered by Contract No. HY/2011/03 while the dust monitoring at AMS7/AMS7B under EM&A Programme for the Contract is covered by Contract No. HY/2013/01.)

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S5.5.7.1	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"> • Loading, unloading, handling, transfer or storage of any dusty materials should be carried out in totally enclosed system; • All dust-laden air or waste gas generated by the process operations should be properly extracted and vented to fabric filtering system to meet the emission limits for TSP; • Vents for all silos and cement/pulverised fuel ash (PFA) weighing scale should be fitted with fabric filtering system; • The materials which may generate airborne dusty emissions should be wetted by water spray system; • All receiving hoppers should be enclosed on three sides up to 3m above unloading point; • All conveyor transfer points should be totally enclosed; • All access and route roads within the premises should be paved and wetted; and • Vehicle cleaning facilities should be provided and used by all concrete trucks before leaving the premises to wash off any dust on the wheels and/or body. 	Monitor the 24 hr and 1hr TSP levels at the representative dust monitoring stations to ensure compliance with relevant criteria throughout the construction period.	Contractor	Selected representative dust monitoring station	Construction stage	<ul style="list-style-type: none"> • Air Pollution Control (Construction Dust) Regulation • To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1- hr and 24hr TSP levels are $500 \mu\text{g}\text{m}^{-3}$ and $260 \mu\text{g}\text{m}^{-3}$, respectively) 	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"> • All road surface within the barging facilities will be paved; • Dust enclosures will be provided for the loading ramp; • Vehicles will be required to pass through designated wheels wash facilities; and • Continuous water spray at the loading points. 	Control construction dust	Contractor	All construction sites	Construction stage	Air Pollution Control (Construction Dust) Regulation	N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Construction Noise (Air borne)								
S6.4.10	N1	<p>1) Use of good site practices to limit noise emissions by considering the following:</p> <ul style="list-style-type: none"> only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; mobile plant should be sited as far away from NSRs as possible and practicable; material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities. 	Control construction airborne noise by means of good site practices	Contractor	All construction sites	Construction stage	Noise Control Ordinance	√
S6.4.11	N2	2) Install temporary hoarding located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period.	Reduce the construction noise levels at low-level zone of NSRs through partial screening.	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> Noise Control Ordinance Annex 5, TM-EIA 	N/A
S6.4.12	N3	3) Install movable noise barriers (typically density @14kg/m ²), acoustic mat or full enclosure close to noisy plants including air compressor, generators, saw.	Screen the noisy plant items to be used at all construction sites	Contractor	For plant items listed in Appendix 6D of the EIA report at all construction sites	Construction stage	<ul style="list-style-type: none"> Noise Control Ordinance Annex 5, TM-EIA 75dB(A) for residential premises The movable barrier should achieve at least 5dB(A) and the full enclosure should be 	N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S6.4.13	N4	4) Select "Quiet plants" which comply with the BS 5228 Part 1 or TM standards.	Reduce the noise levels of plant items	Contractor	For plant items listed in Appendix 6D of the EIA report at all construction sites	Construction stage	<ul style="list-style-type: none"> Noise Control Ordinance & its TM Annex 5, TM-EIA 	√
S6.4.14	N5	5) Sequencing operation of construction plants where practicable.	Operate sequentially within the same work site to reduce the construction airborne noise	Contractor	All construction sites where practicable	Construction stage	<ul style="list-style-type: none"> Noise Control Ordinance Annex 5, TM-EIA 	√
/	N6	6) Implement a noise monitoring under EM&A programme.	Monitor the construction noise levels at the selected representative locations	Contractor	Selected representative noise monitoring station	Construction stage	<ul style="list-style-type: none"> Noise Control Ordinance Annex 5, TM-EIA 75dB(A) for residential premises 	√ (The noise monitoring at NMS2 and NMS3B under EM&A programme for the Contract are covered by Contract No. HY/2013/01.)
Sediment								
S7.3	S1	1) The requirements as recommended in ETWB TC 34/2002 Management of Dredged/Excavated Sediment shall be included in the Particular Specification as appropriate.	Develop sediment disposal arrangement	Engineer	All construction sites	Design stage	<ul style="list-style-type: none"> Waste Disposal Ordinance ETW B TC 34/2002 	N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Waste Management (Construction Waste)								
S8.3.8	WM1	<p><u>Construction and Demolition Material</u></p> <p>The following mitigation measures should be implemented in handling the waste:</p> <ul style="list-style-type: none"> • Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement; • Carry out on-site sorting; • Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; • Adopt 'Selective Demolition' technique to demolish the existing structures and facilities with a view to recovering broken concrete effectively for recycling purpose, where possible; • Implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified; and • Implement an enhanced Waste Management Plan similar to ETW BTC (Works) No. 19/2005 – "Environmental Management on Construction Sites" to encourage on-site sorting of C&D materials and to minimize their generation during the course of construction. • In addition, disposal of the C&D materials onto any sensitive locations such as agricultural lands, etc. should be avoided. The Contractor shall propose the final disposal sites to the Project Proponent and get its approval before implementation. 	Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> • Land (Miscellaneous Provisions) Ordinance • Waste Disposal Ordinance • ETW BTC 19/2005 	√

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S8.3.9-S8.3.11	WM2	<p><u>C&D Waste</u></p> <ul style="list-style-type: none"> Standard formwork or pre-fabrication should be used as far as practicable in order to minimise the arising of C&D materials. The use of more durable formwork or plastic facing for the construction works should be considered. Use of wooden hoardings should not be used, as in other projects. Metal hoarding should be used to enhance the possibility of recycling. The purchasing of construction materials will be carefully planned in order to avoid over ordering and wastage. The Contractor should recycle as much of the C&D materials as possible on-site. Public fill and C&D waste should be segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. Where practicable, concrete and masonry can be crushed and used as fill. Steel reinforcement bar can be used by scrap steel mills. Different areas of the sites should be considered for such segregation and storage. 	Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> Land (Miscellaneous Provisions) Ordinance Waste Disposal Ordinance ETWB TC 19/2005 	√
S8.2.12-S8.3.15	WM3	<p><u>Chemical Waste</u></p> <ul style="list-style-type: none"> Chemical waste that is produced, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, should be handled in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Containers used for the storage of chemical wastes should be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; have a capacity of less than 450 liters unless the specification has been approved by the EPD; and display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the regulation. The storage area for chemical wastes should be clearly labelled and used solely for the storage of chemical waste; enclosed on at least 3 sides; have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20 % of the total volume of waste stored in that area, whichever is the greatest; have adequate ventilation; covered to prevent rainfall entering; and arranged so that incompatible materials are adequately separated. 	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> Waste Disposal (Chemical Waste) General) Regulation Code of Practice on the Packaging, Labelling and Storage of Chemical Waste 	√

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
		<ul style="list-style-type: none"> Disposal of chemical waste should be via a licensed waste collector; be to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Centre which also offers a chemical waste collection service and can supply the necessary storage containers; or be to a reuser of the waste, under approval from the EPD. 						√
S8.3.16	WM4	<p><u>Sewage</u></p> <ul style="list-style-type: none"> Adequate numbers of portable toilets should be provided for the workers. The portable toilets should be maintained in a state, which will not deter the workers from utilizing these portable toilets. Night soil should be collected by licensed collectors regularly. 	Proper handling of sewage from worker to avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> Waste Disposal Ordinance 	√
S8.3.17	WM5	<p><u>General Refuse</u></p> <ul style="list-style-type: none"> General refuse generated on-site should be stored in enclosed bins or compaction units separately from construction and chemical wastes. A reputable waste collector should be employed by the Contractor to remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to minimize odour, pest and litter impacts. Burning of refuse on construction sites is prohibited by law. Aluminium cans are often recovered from the waste stream by individual collectors if they are segregated and made easily accessible. Separate labelled bins for their deposit should be provided if feasible. Office wastes can be reduced through the recycling of paper if volumes are large enough to warrant collection. Participation in a local collection scheme should be considered by the Contractor. In addition, waste separation facilities for paper, aluminum cans, plastic bottles etc., should be provided. Training should be provided to workers about the concepts of site cleanliness and appropriate waste management procedure, including reduction, reuse and recycling of wastes. 	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> Waste Disposal Ordinance 	√

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Water Quality (Construction Phase)								
S.9.11.1.7	W2	<p><u>Land Works</u> General construction activities on land should also be governed by standard good working practice. Specific measures to be written into the works contracts should include:</p> <ul style="list-style-type: none"> • wastewater from temporary site facilities should be controlled to prevent direct discharge to surface or marine waters; • sewage effluent and discharges from on-site kitchen facilities shall be directed to Government sewer in accordance with the requirements of the W PCO or collected for disposal offsite. The use of soakaways shall be avoided; • storm drainage shall be directed to storm drains via adequately designed sand/silt removal facilities such as sand traps, silt traps and sediment basins. Channels, earth bunds or sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks; • silt removal facilities, channels and manholes shall be maintained and any deposited silt and grit shall be removed regularly, including specifically at the onset of and after each rainstorm; • temporary access roads should be surfaced with crushed stone or gravel; • rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities; • measures should be taken to prevent the washout of construction materials, soil, silt or debris into any drainage system; • open stockpiles of construction materials (e.g. aggregates and sand) on site should be covered with tarpaulin or similar fabric during rainstorms; • manholes (including any newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers; • discharges of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system; 	To control construction water quality	Contractor	Land-based works areas	Construction stage	TM-EIAO	√

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S9.11.1.7	W2	<ul style="list-style-type: none"> • all vehicles and plant should be cleaned before they leave the construction site to ensure that no earth, mud or debris is deposited by them on roads. A wheel washing bay should be provided at every site exit; • wheel wash overflow shall be directed to silt removal facilities before being discharged to the storm drain; • the section of construction road between the wheel washing bay and the public road should be surfaced with crushed stone or coarse gravel; • wastewater generated from concreting, plastering, internal decoration, cleaning work and other similar activities, shall be screened to remove large objects; • vehicle and plant servicing areas, vehicle wash bays and lubrication facilities shall be located under roofed areas. The drainage in these covered areas shall be connected to foul sewers via a petrol interceptor in accordance with the requirements of the WPCO or collected for off site disposal; • the contractors shall prepare an oil / chemical cleanup plan and ensure that leakages or spillages are contained and cleaned up immediately; • waste oil should be collected and stored for recycling or disposal, in accordance with the Waste Disposal Ordinance; • all fuel tanks and chemical storage areas should be provided with locks and be sited on sealed areas. The storage areas should be surrounded by bunds with a capacity equal to 110% of the storage capacity of the largest tank; and • surface run-off from bunded areas should pass through oil/grease traps prior to discharge to the stormwater system. 	To control construction water quality	Contractor	Land-based works areas	Construction stage	TM-EIAO	√

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Ecology (Construction Phase)								
S10.7	E4	<ul style="list-style-type: none"> Watering to reduce dust generation; prevention of siltation of freshwater habitats; Site runoff should be desilted, to reduce the potential for suspended sediments, organics and other contaminants to enter streams and standing freshwater 	Prevent Sedimentation from Land-based works areas	Contractor	Land-based works areas	During construction	TM-Water	√
S10.7	E5	<ul style="list-style-type: none"> Good site practices, including strictly following the permitted works hours, using quieter machines where practicable, and avoiding excessive lightings during night time 	Prevent disturbance to terrestrial fauna and habitats	Contractor	Land-based works areas	During construction		√
S10.7	E8	<ul style="list-style-type: none"> Control vessel speed Skipper training Predefined and regular routes for working vessels; avoid Brother Islands. 	Minimise marine traffic disturbance on dolphins	Contractor	Marine Traffic	During construction		N/A
Fisheries								
S11.7	F4	<ul style="list-style-type: none"> Maritime Oil Spill Response Plan (MOSRP); Contingency plan. 	Minimise impacts on marine water quality impacts	Marine Department	HKBCF	During operation		N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Landscape & Visual (Detailed Design Phase)								
S14.3.3.1	LV1	<p>General design measures include:</p> <ul style="list-style-type: none"> • Roadside planting and planting along the edge of the HKBCF Island is proposed; • Transplanting of mature trees in good health and amenity value where appropriate and reinstatement of areas disturbed during construction by compensatory hydro-seeding and planting; • Protection measures for the trees to be retained during construction activities; • Optimizing the sizes and spacing of the bridge columns; Fine-tuning the location of the bridge columns to avoid visually-sensitive locations; • Maximizing new tree, shrub and other vegetation planting to compensate tree felled and vegetation removed; • Providing planting area around peripheral of HKBCF for tree planting screening effect; • Providing salt-tolerant native trees along the planter strip at affected seawall and newly reclaimed coastline; • For HKBCF, providing aesthetic architectural design on the related buildings (e.g. similar materials for PCB building facade to Airport buildings, roof planting and subtle materials for other facilities buildings and so on), and the related infrastructure (e.g. parapet planting and transparent cover for elevated footbridges) to provide harmonious atmosphere of the HKBCF; and • Fine-tuning the sizes of the structural members to minimize the bulkiness of buildings and adjustment of building arrangement to minimise disturbance to surrounding vegetation in the HKBCF. 	Minimise visual & landscape impact	Detailed designer	HKBCF	Design Stage		N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
<i>Landscape & Visual (Construction Phase)</i>								
S14.3.3.3	LV2	<p>Mitigate both Landscape and Visual Impacts</p> <p>G1. Grass-hydroseed bare soil surface and stock pile areas.</p> <p>G2. Add planting strip and automatic irrigation system if appropriate at some portions of bridge footbridge to screen bridge and traffic. (This mitigation measure is not applicable to the Contract.)</p> <p>G3. Not applicable as this is for HKLR.</p> <p>G4. For HKBCF, providing aesthetic architectural design on the related buildings (e.g. similar materials for PCB building facade to Airport buildings, roof planting and subtle materials for other facilities buildings and so on), and the related infrastructure (e.g. parapet planting and transparent cover for elevated footbridges) to provide harmonious atmosphere of the HKBCF.</p> <p>G5. Vegetation reinstatement and upgrading to disturbed areas.</p> <p>G6. Maximizing new tree shrub and other vegetation planting to compensate tree felled and vegetation removed.</p> <p>G7. Providing planting area around peripheral of HKBCF for tree planting screening effect. (This mitigation measure is not applicable to the Contract.)</p> <p>G8. Plant salt-tolerant native and shrubs etc along the planter strip at affected seawall. (This mitigation measure is not applicable to the Contract.)</p> <p>G9. Reserve of loose natural granite rocks for re-use. Provide new coastline to adopt "natural-look" by means of using armour rocks in the form of natural rock materials and planting strip area accommodating screen buffer to enhance "natural-look" of the new coastline. (This mitigation measure is not applicable to the Contract.)</p>	Minimise visual & landscape impact	Contractor	Buildings 023, 025, 032,044 and 045	Construction stage		√ Construction phase
S14.3.3.3	LV3	<p>Mitigate Visual Impacts</p> <p>V1. Minimize time for construction activities during construction period.</p> <p>V2. Provide screen hoarding at the portion of the project site / works areas / storage areas near VSRs who have close low-level views to the Project during HKBCF construction.</p>						√ for V1. N/A for V2.

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
EM&A								
S15.2.2	EM1	An Independent Environmental Checker needs to be employed as per the EM&A Manual.	Control EM&A Performance	Project Proponent	All construction sites		<ul style="list-style-type: none"> EIAO Guidance Note No.4/2002 TM-EIAO 	√
S15.5 - S15.6	EM2	<ol style="list-style-type: none"> 1) An Environmental Team needs to be employed as per the EM&A Manual. 2) Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures. 3) An environmental impact monitoring needs to be implementing by the Environmental Team to ensure all the requirements given in the EM&A Manual are fully complied with. 	Perform environmental monitoring & auditing	Contractor	All construction sites		<ul style="list-style-type: none"> EIAO Guidance Note No.4/2002 TM-EIAO 	√

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



APPENDIX F

Site Audit Findings and Corrective Actions

Appendix F – Site Audit Findings and Corrective Actions

1.1.1 Site Inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures for the Project. During the reporting period, thirteen site inspections were carried out on 4, 13, 18, and 27 December 2017, 3, 11, 15, 22 and 29 January 2018 and 7, 12, 22 and 26 February 2018.

1.1.2 Particular observations during the site inspections are described in the table below.

Date of Audit	Observations	Actions Taken by Contractor / Recommendation	Date of Observations Closed
For Contract No. HY/2014/05			
27 November 2017	<ol style="list-style-type: none"> 1. A stock of more than 20 bags of cement was not covered properly at Building 045. 2. No drip tray was provided for chemical containers outside Building 023. 	<ol style="list-style-type: none"> 1. The stock of dusty materials at Building Building 045 was removed. 2. The chemical containers at Building 023 were removed. 	4 December 2017
4 December 2017	<ol style="list-style-type: none"> 1. No drip tray and chemical label were provided for a chemical container at Building 023. 	<ol style="list-style-type: none"> 1. Chemical container was removed at Building 023. 	13 December 2017
13 December 2017	<ol style="list-style-type: none"> 1. NRMM label missing for the excavator was observed and the colour of a NRMM label for a crane was faded near Building 044. 	<ol style="list-style-type: none"> 1. NRMM label was provided for the excavator and the crane was removed from the site near Building 044. 	18 December 2017
18 December 2017	<ol style="list-style-type: none"> 1. No particular environmental issue was recorded during the site inspection. 	Nil	N/A



27 December 2017	1. Concrete breaking was observed without water spraying at Building 022.	1. Water spraying was provided for concrete breaking at Building 022.	3 January 2018
3 January 2018	1. The chemical container was found without label and drip tray at Building 032.	1. The chemical container was removed at Building 032.	11 January 2018
11 January 2018	1. The haul road was observed dry near Building 044 and Building 045. 2. Cement bags without proper cover were found at Building 044.	1. The cement bags outside Building 025 and Building 053 were covered and removed. 2. The chemical containers outside Building 023 and Building 025 were removed.	15 January 2018
15 January 2018	1. The general refuse was accumulated near waste skip near Building 044 and Building 045.	1. The general refuse was removed near waste skip near Building 044 and Building 045.	22 January 2018
22 January 2018	1. The general refuse was observed inside Building 045.	1. The general refuse was removed at Building 045.	29 January 2018
	2. The colour of the NRMM label for the lifting platform was observed faded at Building 032.	2. The Contractor was reminded to affix an appropriate NRMM label for the lifting platform at Building 032.	22 February 2018
29 January 2018	1. The colour of the NRMM label for the lifting platform was observed faded at Building 032.	1. The Contractor was reminded to affix an appropriate NRMM label for the lifting platform at Building 032.	22 February 2018



	<ul style="list-style-type: none"> 2. General refuse was observed near staircase at Building 045. 3. Over 20 bags of dusty materials were not covered at rooftop of Building 045. 	<ul style="list-style-type: none"> 2. The Contractor was reminded to keep the site tidiness at Building 045. 3. The Contractor was reminded to cover the bags of dusty materials at the rooftop of Building 045. 	7 February 2018
7 February 2018	<ul style="list-style-type: none"> 1. The colour of the NRMM label for the lifting platform was observed faded at Building 032. 	<ul style="list-style-type: none"> 1. The lifting platform was removed from the site. 	22 February 2018
	<p>Reminder:</p> <ul style="list-style-type: none"> 1. The Contractor was reminded to minimize the dust emission from the access road near the Building by watering. 	<ul style="list-style-type: none"> 1. One water truck was in operation on the access road near the building. 	12 February 2018
12 February 2018	<ul style="list-style-type: none"> 1. The colour of the NRMM label for the lifting platform was observed faded near Building 032 and Building 045. 	<ul style="list-style-type: none"> 1. The lifting platform was removed from the site. 	22 February 2018
22 February 2018	<ul style="list-style-type: none"> 1. The chemical container was found without drip tray near Building 044. 	<ul style="list-style-type: none"> 1. The chemical container was removed near Building. 	26 February 2018
26 February 2018	<ul style="list-style-type: none"> 1. The general refuse was found at G/F of Building 022. 	<ul style="list-style-type: none"> 1. The Contractor was reminded to remove general refuses as soon as possible and keep the site clean and tidy. 	Follow-up action undertaken by the Contractor will be inspected during the site inspection to be undertaken in March 2018.

Date of Audit	Observations	Actions Taken by Contractor / Recommendation	Date of Observations Closed
For Contract No. HY/2013/06 within Contract No. HY/2014/05 works area			
4 December 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
13 December 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
18 December 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
27 December 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
3 January 2018	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
11 January 2018	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
15 January 2018	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
22 January 2018	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
29 January 2018	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
7 February 2018	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
12 February 2018	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
22 February 2018	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
26 February 2018	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.

Date of Audit	Observations	Actions Taken by Contractor / Recommendation	Date of Observations Closed
For Contract No. HY/2014/04 within Contract No. HY/2014/05 works area			
4 December 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
13 December 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
18 December 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
27 December 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
3 January 2018	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
11 January 2018	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
15 January 2018	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
22 January 2018	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
29 January 2018	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
7 February 2018	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
12 February 2018	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
22 February 2018	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
26 February 2018	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.



APPENDIX G

Waste Flow Table

Monthly Summary Waste Flow Table for 2017



Leighton - Chun Wo Joint Venture

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	a.Total Quantity Generated (see Note 8)	b. Hard Rock and Large Broken Concrete (see Note 9)	c. Reused in the Contract	d. Reused in Other Projects	e. Disposed as Public Fill (see Note 10)	f. Imported Fill	g. Metals (see Note 5)	h. Paper / Cardboard Packaging (see Note 5)	i. Plastics (see Note 3) (see Note 5)	j. Chemical Waste	k. Others, e.g. general refuse
	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m ³)
January	1.390	0.010	1.380	0.000	0.010	0.000	0.000	0.000	0.000	0.000	0.197
February	1.070	0.003	1.067	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.143
March	0.266	0.202	0.064	0.000	0.202	0.000	5.840	0.000	0.000	0.000	0.269
April	0.249	0.013	0.236	0.000	0.013	0.000	0.000	0.000	0.000	0.000	0.220
May	0.132	0.132	0.000	0.000	0.132	0.000	0.000	0.000	0.000	0.000	0.421
June	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.392
Sub-total	3.107	0.360	2.747	0.000	0.360	0.000	5.840	0.000	0.000	0.000	1.642
July	0.076	0.007	0.069	0.000	0.007	0.000	0.000	0.000	0.000	0.000	0.403
August	0.010	0.010	0.000	0.000	0.010	0.000	0.000	0.000	0.000	0.000	0.405
September	0.071	0.071	0.000	0.000	0.071	0.000	0.000	0.000	0.000	0.000	0.465
October	0.166	0.141	0.025	0.000	0.141	0.416	0.000	0.000	0.000	0.000	0.448
November	0.425	0.165	0.260	0.000	0.165	0.000	0.000	0.000	0.000	0.000	0.427
December	0.543	0.543	0.000	0.000	0.543	0.000	0.000	0.000	0.000	0.000	0.319
Total	4.398	1.297	3.101	0.000	1.297	0.416	5.840	0.000	0.000	0.000	4.109

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

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

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

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

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



ATAL Technologies Ltd.

Contract No. **HY/2013/06** HKBCF Automatic Vehicle Clearance Support System

Location: Artificial Island of HKBCF (C8 Area)

Ver: 1st
Date: Jan 2017

Monthly Summary Waste Flow Table for 2017

Month	Inert C&D Waste disposal / 墮性廢物 (in tonnes) (see Note 1)						Non-inert C&D Waste disposal 非墮性廢物 (in tonnes)		Waste to be recycled and returned / 可再循環利用或回收的廢物								Total Quantity Generated 總生產量		
	Reused in the Work Package (e.g. backfilling) 再用於工程 (如回填)		Reused in other Projects 再用於其他工程		Inert Waste (e.g. soil, broken concrete, rubble, fill material etc.) 墮性廢物 (如泥, 石, 磚, 瓦, 填土等)		Others (e.g. general refuse, broken formwork etc.) 其他 (如垃圾, 廢板枋等)		Metals 金屬		Plastic 塑膠		Paper/cardboard packaging 廢紙/包裝紙類		Chemical Waste 化學廢物				
	(b)		(c)		(d)		(e)		(in tonnes)		(in tonnes)		(in tonnes)		(in litre)		(a)= (b+c+d+e)		
	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	
January	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.002	0.000	0.000	0.000	0.000
February	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.002	0.000	0.000	0.000	0.000
March	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.002	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.002
April	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.002	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.002
May	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.005	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.005
June	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.002	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.002
July	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.002	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.002
August	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.002	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.002
September	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
October	0.000	0.000	0.000	0.000	0.000	0.000	0.020	0.020	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.020	0.020
November	0.000	0.000	0.000	0.000	0.000	0.000	0.020	0.020	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.020	0.020
December	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	0.000	0.000	0.000	0.000	0.000	0.000	0.055	0.055	0.025	0.025	0.000	0.000	0.004	0.004	0.000	0.000	0.055	0.055	

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

Monthly Summary Waste Flow Table for 2018



Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	a.Total Quantity Generated (see Note 8)	b. Hard Rock and Large Broken Concrete (see Note 9)	c. Reused in the Contract	d. Reused in Other Projects	e. Disposed as Public Fill (see Note 10)	f. Imported Fill	g. Metals (see Note 5)	h. Paper / Cardboard Packaging (see Note 5)	i. Plastics (see Note 3) (see Note 5)	j. Chemical Waste	k. Others, e.g. general refuse
	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m ³)
January	0.053	0.053	0.000	0.000	0.053	0.000	0.000	0.000	0.000	0.000	0.515
February	0.010	0.010	0.000	0.000	0.010	0.000	0.000	0.000	0.000	0.000	0.232
March											
April											
May											
June											
Sub-total	0.063	0.063	0.000	0.000	0.063	0.000	0.000	0.000	0.000	0.000	0.747
July											
August											
September											
October											
November											
December											
Total	0.063	0.063	0.000	0.000	0.063	0.000	0.000	0.000	0.000	0.000	0.747

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

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

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

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



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

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



ATAL Technologies Ltd.

Contract No. **HY/2013/06** HKBCF Automatic Vehicle Clearance Support System

Location: Artificial Island of HKBCF (C8 Area)

Ver: 1st
Date: Jan 2017

Monthly Summary Waste Flow Table for 2018

Month	Inert C&D Waste disposal / 墮性廢物 (in tonnes) (see Note 1)						Non-inert C&D Waste disposal 非墮性廢物 (in tonnes)		Waste to be recycled and returned / 可再循環利用或回收的廢物								Total Quantity Generated 總生產量	
	Reused in the Work Package (e.g. backfilling) 再用於工程 (如回填)		Reused in other Projects 再用於其他工程		Inert Waste (e.g. soil, broken concrete, rubble, fill material etc.) 墮性廢物 (如泥, 石矢頭, 石, 填料等)		Others (e.g. general refuse, broken formwork etc) 其他 (如垃圾, 廢板枋等)		Metals 金屬		Plastic 塑膠		Paper/cardboard packaging 廢紙/包裝紙類		Chemical Waste 化學廢物			
	(b)		(c)		(d)		(e)		(in tonnes)		(in tonnes)		(in tonnes)		(in litre)		(a)= (b+c+d+e)	
	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量
January	0.000	0.000	0.000	0.000	0.000	0.000	0.020	0.020	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.020	0.020
February	0.000	0.000	0.000	0.000	0.000	0.000	0.015	0.015	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.015	0.015
March																		
April																		
May																		
June																		
July																		
August																		
September																		
October																		
November																		
December																		
Total	0.000	0.000	0.000	0.000	0.000	0.000	0.035	0.035	0.010	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.035	0.035

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



APPENDIX H

Environmental Licenses and Permits

Environmental License/ Permits /Notification Register

LCAL H2642

Contract No. HY/2014/05 – Hong Kong Zhuhai and Macao Bridge Hong Kong Boundary Crossing Facilities – Remaining Ancillary Buildings and Facilities

Item No.	Permit/License or Registration Application			Permit/License/ Notification/ Registration Description	Permit/License/ Registration Number	Issue/Start Date	Expiry Date	Issuing Office	Remark
	Work Area	Date	Reference						
1	All Areas	30 Jun 2015	N/A	Environmental Permit to construct the Remaining Ancillary Buildings and Facilities and associated works of the Hong Kong Zhuhai and Macao Bridge Boundary Crossing Facilities	EP-353/2009/I	17 Jul 15	N/A	EPD	Superseded by EP-353/2009/J
2	All Areas	18 Feb 2016	N/A	Environmental Permit to construct the Remaining Ancillary Buildings and Facilities and associated works of the Hong Kong Zhuhai and Macao Bridge Boundary Crossing Facilities	EP-353/2009/J	25 Feb 2016	N/A	EPD	Superseded by EP-353/2009/K
3	All Areas	24 Mar 2016	N/A	Environmental Permit to construct the Remaining Ancillary Buildings and Facilities and associated works of the Hong Kong Zhuhai and Macao Bridge Boundary Crossing Facilities	EP-353/2009/K	11 Apr 2016	N/A	EPD	-
4	All Areas	30 Dec 15	N/A	Billing Account for disposal of construction waste	7024342	16 Feb 16	N/A	EPD	-

Environmental License/ Permits /Notification Register

LCAL H2642

Contract No. HY/2014/05 – Hong Kong Zhuhai and Macao Bridge Hong Kong Boundary Crossing Facilities – Remaining Ancillary Buildings and Facilities

Item No.	Permit/License or Registration Application			Permit/License/ Notification/ Registration Description	Permit/License/ Registration Number	Issue/Start Date	Expiry Date	Issuing Office	Remark
	Work Area	Date	Reference						
5	All Areas	30 Dec 15	RABF-LTR- EPD-000001	Notification that notifiable works are anticipated to commence (Form NA).	Acknowledge Receipt Ref. No. 397571	06 Jan 16	N/A	EPD	-
6	All Areas	04 Jan 16	RABF-LTR- EPD-000002	Registration as Chemical Waste Producer for disposal of spent batteries, used lubrication oil and surplus paint at RABF area	WPN 5213-951-L2846-02	19 Feb 16	N/A	EPD	-
7	All Areas	25 Jan 16	RABF-LTR- EPD-000003	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS0106-16	11 Feb 16	10 Aug 16	EPD	Superseded by GW-RS0476-16
8	All Areas	08 May 16	RABF-LTR- EPD-000012	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS0476-16	19 May 16	18 Nov 16	EPD	Superseded by GW-RS0666-16

Environmental License/ Permits /Notification Register

LCAL H2642

Contract No. HY/2014/05 – Hong Kong Zhuhai and Macao Bridge Hong Kong Boundary Crossing Facilities – Remaining Ancillary Buildings and Facilities

Item No.	Permit/License or Registration Application			Permit/License/ Notification/ Registration Description	Permit/License/ Registration Number	Issue/Start Date	Expiry Date	Issuing Office	Remark
	Work Area	Date	Reference						
9	All Areas	16 Jun 16	RABF-LTR- EPD-000015	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS0666-16	04 Jul 16	03 Jan 17	EPD	Superseded by GW-RS0907-16
10	All Areas	18 Aug 16	RABF-LTR- EPD-000018	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS0907-16	01 Sep 16	28 Feb 17	EPD	Superseded by GW-RS1195-16
11	All Areas	16 Nov 16	RABF-LTR-EPD-000020	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS1195-16	30 Nov 16	29 May 17	EPD	Superseded by GW-RS1315-16
12	All Areas	08 Dec 16	RABF-LTR-EPD-000023	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS1315-16	22 Dec 16	21 Jun 17	EPD	Superseded by GW-RS0131-17

Environmental License/ Permits /Notification Register

LCAL H2642

Contract No. HY/2014/05 – Hong Kong Zhuhai and Macao Bridge Hong Kong Boundary Crossing Facilities – Remaining Ancillary Buildings and Facilities

Item No.	Permit/License or Registration Application			Permit/License/ Notification/ Registration Description	Permit/License/ Registration Number	Issue/Start Date	Expiry Date	Issuing Office	Remark
	Work Area	Date	Reference						
13	WA3	13 Jan 17	RABF-LTR-EPD-000026	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00. (Non-designated area)	GW-RS0070-17	27 Jan 17	26 Jul 17	EPD	Superseded by GW-RS0626-17
14	All areas	03 Feb 17	RABF-LTR-EPD-000028	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS0131-17	17 Feb 17	16 Aug 17	EPD	Superseded by GW-RS0306-17
15	All areas	20 Mar 17	RABF-LTR-EPD-000035	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS0306-17	05 Apr 17	02 Oct 17	EPD	Superseded by GW-RS0435-17
16	All areas	05 May 17	RABF-LTR-EPD-000036	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS0435-17	20 May 17	16 Nov 17	EPD	Superseded by GW-RS0710-17

Environmental License/ Permits /Notification Register

LCAL H2642

Contract No. HY/2014/05 – Hong Kong Zhuhai and Macao Bridge Hong Kong Boundary Crossing Facilities – Remaining Ancillary Buildings and Facilities

Item No.	Permit/License or Registration Application			Permit/License/ Notification/ Registration Description	Permit/License/ Registration Number	Issue/Start Date	Expiry Date	Issuing Office	Remark
	Work Area	Date	Reference						
17	WA3	28 Jun 17	RABF-LTR-EPD-000041	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00. (Non-designated area)	GW-RS0626-17	27 Jul 17	26 Jan 18	EPD	Expired
18	All areas	03 Aug 17	RABF-LTR-EPD-000042	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS0710-17	21 Aug 17	16 Feb 18	EPD	Expired
19	WA3	11 Jan 18	RABF-LTR-EPD-000046	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00. (Non-designated area)	GW-RS0050-18	27 Jan 18	26 Jul 18	EPD	-
20	All areas	31 Jan 18	RABF-LTR-EPD-000048	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS0112-18	17 Feb 18	16 Aug 18	EPD	-

Environmental License/ Permits /Notification Register

LCAL H2642

Contract No. HY/2013/06 – Hong Kong Zhuhai and Macao Bridge - HKBCF – Automatic Vehicle Clearance Support System

Date: 28 Feb 2018									Remark
Item No.	Permit/License or Registration Application			Permit/License/ Notification/ Registration Description	Permit/License/ Registration Number	Issue/Start Date	Expiry Date	Issuing Office	
	Work Area	Date	Reference						
1	HZMB-HK Boundary Crossing Facilities	31 July 2015	WFG14980	Disposal of Construction Waste Billing Account	7023015	20 August 2015	--	EPD	
2	HZMB-HK Boundary Crossing Facilities	14 Nov 2017	EP831/N09/R S1037-17	Construction Noise Permit	GW-RS1037-17	1 Dec 2017	30 May 2018	EPD	

Environmental License/ Permits /Notification Register

Contract No. HY/2014/04 – Hong Kong Zhuhai and Macao Bridge Hong Kong Boundary Crossing Facilities – Gantry Type X-ray Vehicle Inspection System

Date: February 2018									Remark
Item No.	Permit/License or Registration Application			Permit/License/ Notification/ Registration Description	Permit/License/ Registration Number	Issue/Start Date	Expiry Date	Issuing Office	
	Work Area	Date	Reference						
1	All Areas	23 Aug 2016	N/A	<u>Billing Account</u> for disposal of construction waste	7025930	20 Sep 2016	N/A	EPD	
2	Building 058,059	27 Jul 2017	N/A	Construction Noise Permit(CNP)	GW-RS0640-17	6 Aug 2017	4 Feb 2018	EPD	



APPENDIX I

Statistics on Environmental Complaints, Notification of Summons and Successful Prosecutions

Statistics on Environmental Complaints, Notifications of Summons and Successful Prosecutions

For Contract No. HY/2014/05

Reporting Period	Cumulative Statistics		
	Complaints	Notifications of summons	Successful prosecutions
This reporting period	0	0	0
From commencement date of contract to end of reporting period	6	0	0

For Contract No. HY/2013/06 within Contract No. HY/2014/05 work area

Reporting Period	Cumulative Statistics		
	Complaints	Notifications of summons	Successful prosecutions
This reporting period	0	0	0
From commencement date of contract to end of reporting period	0	0	0

For Contract No. HY/2014/04 within Contract No. HY/2014/05 work area

Reporting Period	Cumulative Statistics		
	Complaints	Notifications of summons	Successful prosecutions
This reporting period	0	0	0
From commencement date of contract to end of reporting period	0	0	0



Complaint Register

For Contract No. HY/2014/05

Complaint No.	Complaint Received Date	Category	Complaint Details	Follow up Action /Recommendation	Status
001	22 September 2016	Water Quality	According to ENPO's email to the Environmental Team, Engineer's Representative and Contractor on 22 September 2016, it is noted that EPD received a complaint lodged by a member of the public regarding whitish effluent discharge from two flat top barges into the sea every day from 18:00 to 04:00 hours next to Cell No.54 and 55 of Hong Kong - Zhuhai - Macao Bridge Hong Kong Boundary Crossing Facilities Construction Site.	After investigation, contractor confirmed that they do not have any marine works. In addition, they do not have any flat top barge working for Contract No. HY/2014/05. No mitigation measures are required as the complaint is not related to Contract No. HY/2014/05.	Closed.
002	14 December 2016	Noise	According to ENPO's email to ET, Engineer's Representative and Contractor on 14 December 2016, it was noted that EPD had received a complaint regarding a noise complaint from a member of public. The complainant said that he/she was disturbed by hammering noise generated from construction sites in mid-night over the past month. He/She suspected that the noise was generated from HZMB Project. Based on further email from ENPO on 20 December 2016, it is noted that the complainant lives in Seaview Crescent (海堤灣畔). He sometimes hears noise created by impacting metals or metal/ground, particularly in December 2016.	According as the information provided by the Contractor, no construction works being done after 11p.m. in November 2016 and December 2016. Therefore, the noise nuisance is considered not related to Contract No. HY/2014/05 after investigation. No follow-up action is required	Closed.



003	28 March 2017	Noise and Water Quality	<p>According to ENPO's email to ET, Engineer's Representative and Contractor on 28 March 2017, it was noted that EPD had received a complaint regarding a noise and water quality complaint from a resident of Century Link. The complaint content as extracted below:</p> <p>"作(昨)晚大約十時起，屋外間歇有非常響亮聲音，經觀察應該是從港珠澳大橋近人工島的工程發出，噪音一直至深夜。另今早發現住處對出海面受到一大遍污染（見相片）。以上都應該是大橋工程所造成的污染"</p>	<p>According to the information provided by the Contractor, there was no construction work (includes Contract No. HY/2013/06 HZMB HKBCF - Automatic Vehicle Clearance Support System and Contract No. HY/2014/04 HZMB HKBCF – Gantry Type X-ray Vehicle Inspection System within Contract No. HY/2014/05 works area) being done after 10pm on 26 March 2017.</p> <p>No marine works and marine transportation were carried out under this Contract.</p> <p>Based on the investigation results, it is found that the noise and water quality complaint is not related to Contract No. HY/2014/05 (includes Contract No. HY/2013/06 HZMB HKBCF - Automatic Vehicle Clearance Support System and Contract No. HY/2014/04 HZMB HKBCF – Gantry Type X-ray Vehicle Inspection System within Contract No. HY/2014/05 works area). No follow up action is required.</p>	Closed.
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004	31 2017	May	Air Quality	<p>According to ENPO's email to ET, Engineer's Representative and Contractor on 1 June 2017, it was noted that EPD had received a complaint regarding dust emission from the haul road near Buildings 044 and 045 . The complaint content as extracted below: "投訴港珠澳大橋人工島地盤近 044 及 045 大廈旁的車路，有大量車出入，工人沒有灑水，引致塵埃，造成嚴重滋擾"</p>	<p>Based on the Contractor information, the construction work at Buildings 044 and 045 are reinforced concrete structure works, internal finishing and pipe installation works. Only a small number of vehicles access for Buildings 044 and 045 on each day (less than 20 vehicles per day, exclude the water truck for watering spraying). The Contractor have provided the guideline to remind the site vehicles should travel within speed limit of 8 km/hr. As confirmed by the Contractor, the road access management adjacent to Buildings 044 and 045 is not under this contract. However, the Contractor have arranged the water truck for water spraying near the Buildings 044 and 045 to avoid the potential dust impact from the haul road. Based on the investigation results, it is found that the nuisance of dust emission from the transportation near Buildings 044 and 045 is not related to Contract No. HY/2014/05 (includes Contract No. HY/2013/06 HZMB HKBCF - Automatic Vehicle Clearance Support System and Contract No. HY/2014/04 HZMB HKBCF – Gantry Type X-ray Vehicle Inspection System within Contract No. HY/2014/05 works area). No follow up action is required.</p>	Closed.
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005	27 October 2017	Water Quality	<p>According to ENPO's email to ET, Engineer's Representative and Contractor on 27 October 2017, it was noted that EPD had received a complaint regarding a water quality at C3 area. The complaint content as extracted below: "珠澳大橋人工島地盤投訴黃泥水落海，情況持續了一個星期，詳細發生地點是人工島的 C3 位置，他要求跟進及回覆。"</p>	<p>According to the observation of weekly site inspections (3, 11, 16, 23 and 30 October 2017 and 6 November 2017) and confirmed by the Contractor, the wastewater generated from construction site is treated and reused in the site area. No site runoff within the Contract site was observed. Based on the investigation results, it is found that the complaint is not related to Contract No. HY/2014/05. No follow up action is required.</p>	Closed
006	23 November 2017	Air Quality	<p>According to ENPO's email to ET, Engineer's Representative and Contractor on 23 November 2017, it was noted that EPD had received a complaint regarding dust emission from HZMB construction site. The complaint content as extracted below: "港珠澳大橋 人工島地盤，由於不是每處都灑水，引致大量塵埃，近收費亭最嚴重"</p>	<p>Based on the Contractor information, the construction work on 23 November 2017 were: Architectural Builders Works and Finishes(ABWF) & Mechanical, Electrical, and Plumbing (MEP) works (Internal) of Buildings 022, 023, 025, 032, 044, 045, 050A1, 050A2, 050H1, 050H2; and Utilities and Drainage installation of Buildings 021, 022, 023, 025, 044 and 045. No dusty activities are included in the above works. According to site inspection which conducted on 6, 15 and 20 November 2017, no dusty activities and dry condition in haul road were observed. Based on the investigation results, it is found that the nuisance of dust emission from haul road is not related to Contract No. HY/2014/05 (includes Contract No. HY/2013/06 HZMB HKBCF - Automatic Vehicle Clearance Support System and Contract No. HY/2014/04 HZMB HKBCF – Gantry Type X-ray Vehicle Inspection System within Contract No. HY/2014/05 works area). No follow up action is required.</p>	Closed



APPENDIX J

Investigation Report

Contract No. HY/2014/05 - Hong Kong- Zhuhai- Macao Bridge Hong Kong Boundary Crossing Facilities – Remaining Ancillary Buildings and Facilities Notifications of Environmental Quality Limits Exceedances Notification No.: 20171223_Air_24hr				
Date of Investigation Report: 10 January 2018				
Date of Environmental Quality Limit Exceedance: 23 December 2017 and the results were issued on 5 January 2018				
Monitoring Location: AMS3B – Site Boundary of Site Office Area at Work Area WA2 (The air quality monitoring station for the Contract is covered by Contract No. HY/2013/01 HZMB HKBCF – Passenger Clearance Building)				
Monitoring Date: 23 December 2017 Start Time: 08:00				
Action & Limit Level (AL & LL) / Measured Level:				
PARAMETER	STATION	AL (µg/m ³)	LL (µg/m ³)	MEASURED LEVEL, µg/m ³
24-hr TSP	AMS3B – Site Boundary of Site Office Area at Works Area WA2	167	260	<i>182</i>
Notes: <i>Bold Italic</i> means AL exceedance <u><i>Bold Italic with underline</i></u> means LL exceedance				

Possible reason for Action / Limit Level Non-compliance:

On 23 December 2017, one AL exceedance of 24-hr TSP at AMS3B was recorded.

Based on the information from the Contractor, the construction works undertaken on 23 and 24 December 2017 are shown as below:

- ABWF & MEP works (Internal) of Buildings 022, 023, 032, 044, 045, 050H1, 050H2, 050A1, 050A2, 053
- ABWF works (external) of Buildings 022, 023, 025, 032, 044, 045, 050H1, 050H2, 050A1, 050A2
- ABWF works (roof) of Buildings 021, 022, 023, 032, 044, 050H1, 050H2, 050A1, 050A2, 053
- Utilities and Drainage installation of Buildings 050H1, 050A1, 050A2

The Contractor confirmed that the mitigation measures according to Water Spraying Plan in December 2017 (Appendix A) are implemented to avoid dust emission. Photos of haul road condition and dust suppression are included in Appendix A. The Contractor has provided the guideline to remind the site vehicles travel within speed limit of 8km/hr. According to site inspection which conducted on 4, 13, 18 and 27 December 2017, no dusty activities and dry condition in haul road were observed.

The Air Quality Health Index (AQHI) of Tung Chung station with the wind data from the on-site wind station are shown in Appendix B. The hourly AQHI of Tung Chung station ranged 3 to 8 (Low to Very High) on 23 and 24 December 2017 during monitoring period. According to the wind data at on-site wind station, no prevailing wind direction was found in the monitoring period. The RABF site of HKBCF is far away from AMS3B (more than 1km). No potential dust source was observed near the monitoring station at AMS3B during the monitoring period.

Therefore, it is concluded that the exceedances were not related to the Contract.

Actions taken/ to be taken:

The Water Spraying Plan including the information of watering schedule, routing of trucks of for watering and the location of water filling, was prepared and submitted to RE and ENPO. The Contractor was also reminded to implement all necessary mitigation as specified in EIA (Section 5.5.6.3), EM&A Manual (EM&A Log Ref: A3), EMP, Method Statements, General and Particular Specifications of this Project to minimize the potential dust impact during construction activities.

Prepared by: Ruby Law Title: Environmental Team Representative

Signature:  Date: 10 January 2018

Checked by: Keith Chau Title: Environmental Team Leader

Signature:  Date: 10 January 2018

Copied to : Contractor, Engineer Representative and IEC/ENPO

Appendix A



Contract No. HY/2014/05
Hong Kong – Zhuhai – Macao – Bridge
Boundary Crossing Facility – Remaining Ancillary Buildings and Facilities

Watering Plan for December 2017

Water Truck License Plate Number: PJ9039, SE4312

Capacity of a Water Truck: 15000L

Volume of water/ distance needed to water spraying: = 7.3 L/m

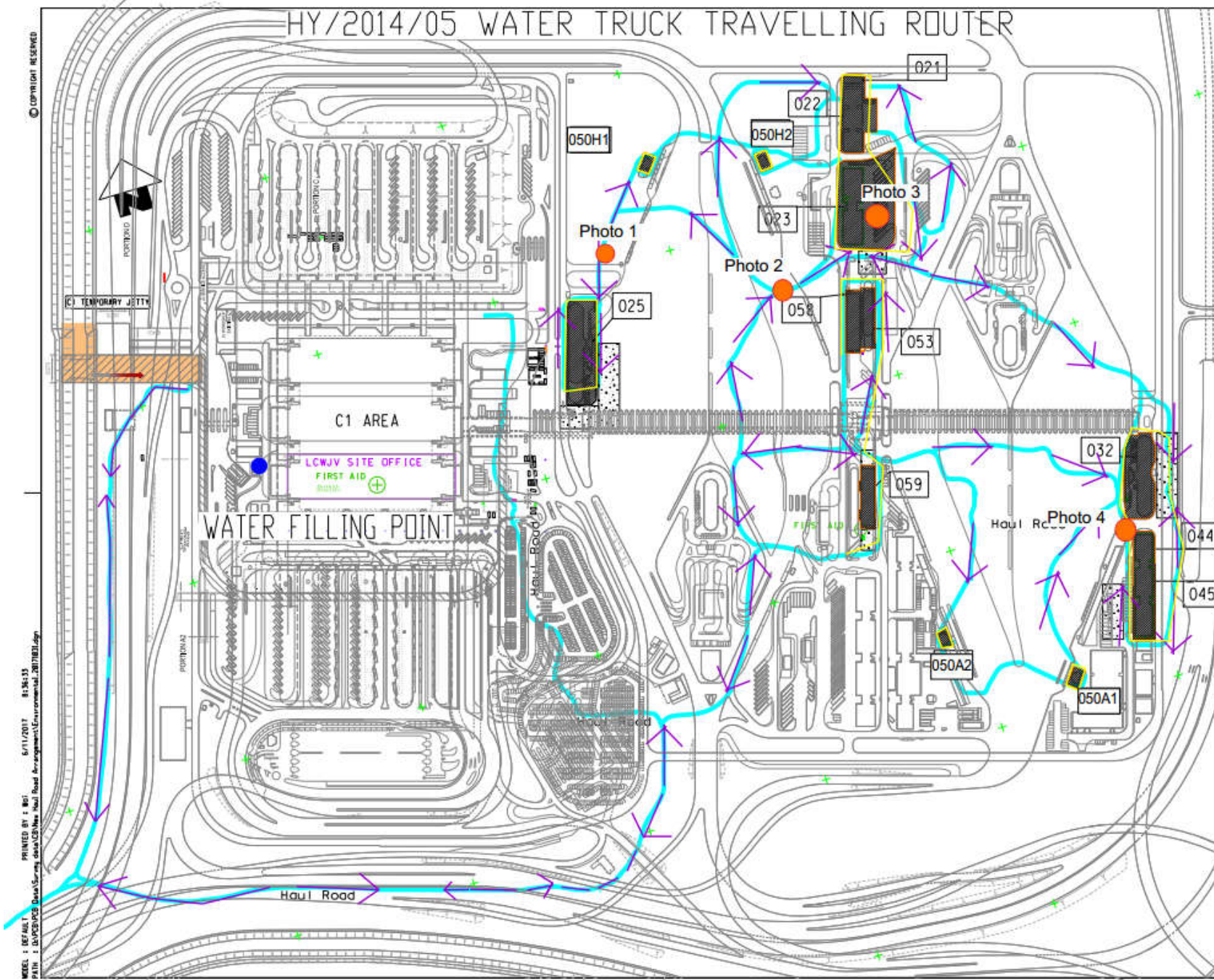
Water Truck could spray 15000L in one 59 minutes trip.

Planned Schedule of Watering Spraying by Water Truck

Cycle	Truck No.	Time of water spraying
1	PJ9039	08:00 – 09:15
2	SE4312	09:15 – 10:30
3	PJ9039	10:30 – 11:45
4	SE4312	13:00 – 14:15
5	PJ9039	14:15 – 15:30
6	SE4312	15:30 – 16:45
7	PJ9039	16:45 – 18:00
8	SE4312	18:00 – 19:00

HY/2014/05 WATER TRUCK TRAVELLING ROUTER

- LEGEND**
- WATER FILLING POINT
 - WORKING SPACE
 - TRAVEL ROUTE
 - ROAD WITH WATER SPRAYING BY HY/2014/05
 - HAUL ROAD OF HKBCF



Rev	Date	Desc	Drawn By	Check By
CONTRACT NO. HY/2014/05 HONG KONG - ZHUNJI - MACAO BRIDGE HONG KONG BOUNDARY CROSSING FACILITIES - REMAINING ANCILLARY BUILDINGS AND FACILITIES				
Design By		Approved By		
Check By		Drawn By		
Scale		Date		
Drawn No.				

© COPYRIGHT RESERVED
 PRINTED BY : BGL
 DATE : 6/11/2017 10:56:13
 FILE : D:\WORK\PCS\Draws\Drawings\env\env\Haul Road Arrangement\Environmental_20170317.dwg

Water spraying record during TSP 24-hr monitoring on 23 and 24 December 2017

Photo 1



Photo 2



Photo 3



Photo 4



Appendix B

Date	Hour	AQHI at Tung Chung Station	Average Wind Speed (m/s) #	Average Wind Direction #
23/12/2017	08:00	3	0	ENE
23/12/2017	09:00	3	0	NNE
23/12/2017	10:00	4	0	ENE
23/12/2017	11:00	4	0	ENE
23/12/2017	12:00	4	0	NNE
23/12/2017	13:00	4	0	N
23/12/2017	14:00	4	0	NE
23/12/2017	15:00	5	0	NE
23/12/2017	16:00	6	0	NNE
23/12/2017	17:00	6	0	N
23/12/2017	18:00	6	0	---
23/12/2017	19:00	6	0	NE
23/12/2017	20:00	6	0	WNW
23/12/2017	21:00	5	0	N
23/12/2017	22:00	5	0	N
23/12/2017	23:00	5	0	NNW
24/12/2017	00:00	5	0	ENE
24/12/2017	01:00	6	0	ESE
24/12/2017	02:00	5	0	---
24/12/2017	03:00	6	0	---
24/12/2017	04:00	7	0	W
24/12/2017	05:00	8	0	SSE
24/12/2017	06:00	8	0	NNW
24/12/2017	07:00	7	0	---
24/12/2017	08:00	7	0	---

^ The data collection for calculation of AQHI was affected due to station or equipment maintenance, the data of a most similar station was adopted.

#- The related wind data is obtained from the on-site wind station.

N.A. - Not available.

Contract No. HY/2014/05 - Hong Kong- Zhuhai- Macao Bridge Hong Kong Boundary Crossing Facilities – Remaining Ancillary Buildings and Facilities Notifications of Environmental Quality Limits Exceedances Notification No.: 20180117_Air_24hr_v1				
Date of Investigation Report: 20 February 2018				
Date of Environmental Quality Limit Exceedance: 17 January 2018 and the results were issued on 29 January 2018				
Monitoring Location: AMS2 – Tung Chung Pier and : AMS3B – Site Boundary of Site Office Area at Works Area WA2 (The air quality monitoring stations for the Contract is covered by Contract No. HY/2013/01 HZMB HKBCF – Passenger Clearance Building)				
Monitoring Date: 17 January 2018 Start Time: 08:00				
Action & Limit Level (AL & LL) / Measured Level:				
<u>PARAMETER</u>	<u>STATION</u>	<u>AL (µg/m³)</u>	<u>LL (µg/m³)</u>	<u>MEASURED LEVEL, µg/m³</u>
24-hr TSP	AMS2 – Tung Chung Pier	176	260	<i>184</i>
24-hr TSP	AMS3B – Site Boundary of Site Office Area at Works Area WA2	167	260	<i>183</i>
Notes: <i>Bold Italic</i> means AL exceedance <i><u>Bold Italic with underline</u></i> means LL exceedance				

Possible reason for Action / Limit Level Non-compliance:

On 17 January 2018, one AL exceedance of 24-hr TSP at AMS2 and one AL exceedance of 24-hr TSP at AMS3B were recorded.

Based on the information from the Contractor, the construction works undertaken on 17 and 18 January 2018 are shown as below:

- Architectural Builder's Work and Finishes (ABWF) & Mechanical, Electrical and Plumbing (MEP) works (Internal) of Buildings 022, 023, 025, 032, 044, 045, 050H1, 050H2, 050A1, 050A2, 053, 058
- ABWF works (external) of Buildings 021, 022, 023, 032, 044, 045, 050H1, 050H2, 050A1, 050A2
- ABWF works (roof) of Buildings 032, 044, 050H1, 050H2, 050A1, 050A2
- Foot Path, Utilities and Drainage installation of Buildings 021, 022, 023, 032, 045, 053, 058

The Contractor confirmed that the mitigation measures according to Water Spraying Plan in January 2018 (Appendix A) are implemented to avoid dust emission. Photos of haul road condition and dust suppression are included in Appendix A. The Contractor has provided the guideline to remind the site vehicles travel within speed limit of 8km/hr.

The Air Quality Health Index (AQHI) of Tung Chung station with the wind data from the on-site wind station are shown in Appendix B. The hourly AQHI of Tung Chung station ranged 3 to 10+ (Low to Serious) on 17 and 18 January 2018 during monitoring period. According to the wind data at on-site wind station, no prevailing wind direction was found in the monitoring period. The RABF site of HKBCF is far away from AMS2 and AMS3B (more than 1km). No potential dust source was observed near the monitoring station at AMS2 and AMS3B during the monitoring period.

Therefore, it is concluded that the exceedances were not related to the Contract.

Actions taken/ to be taken:

The Water Spraying Plan including the information of watering schedule, routing of trucks of for watering and the location of water filling, was prepared and submitted to RE and ENPO. The Contractor was also reminded to implement all necessary mitigation as specified in EIA (Section 5.5.6.3), EM&A Manual (EM&A Log Ref: A3), EMP, Method Statements, General and Particular Specifications of this Project to minimize the potential dust impact during construction activities.

Prepared by: Ruby Law Title: Environmental Team Representative

Signature:  Date: 20 February 2018

Checked by: Keith Chau Title: Environmental Team Leader

Signature:  Date: 20 February 2018

Copied to : Contractor, Engineer Representative and IEC/ENPO



Contract No. HY/2014/05
Hong Kong – Zhuhai – Macao – Bridge
Boundary Crossing Facility – Remaining Ancillary Buildings and Facilities

Watering Plan for January 2018

Water Truck License Plate Number: PJ9039, SE4312

Capacity of a Water Truck: 15000L

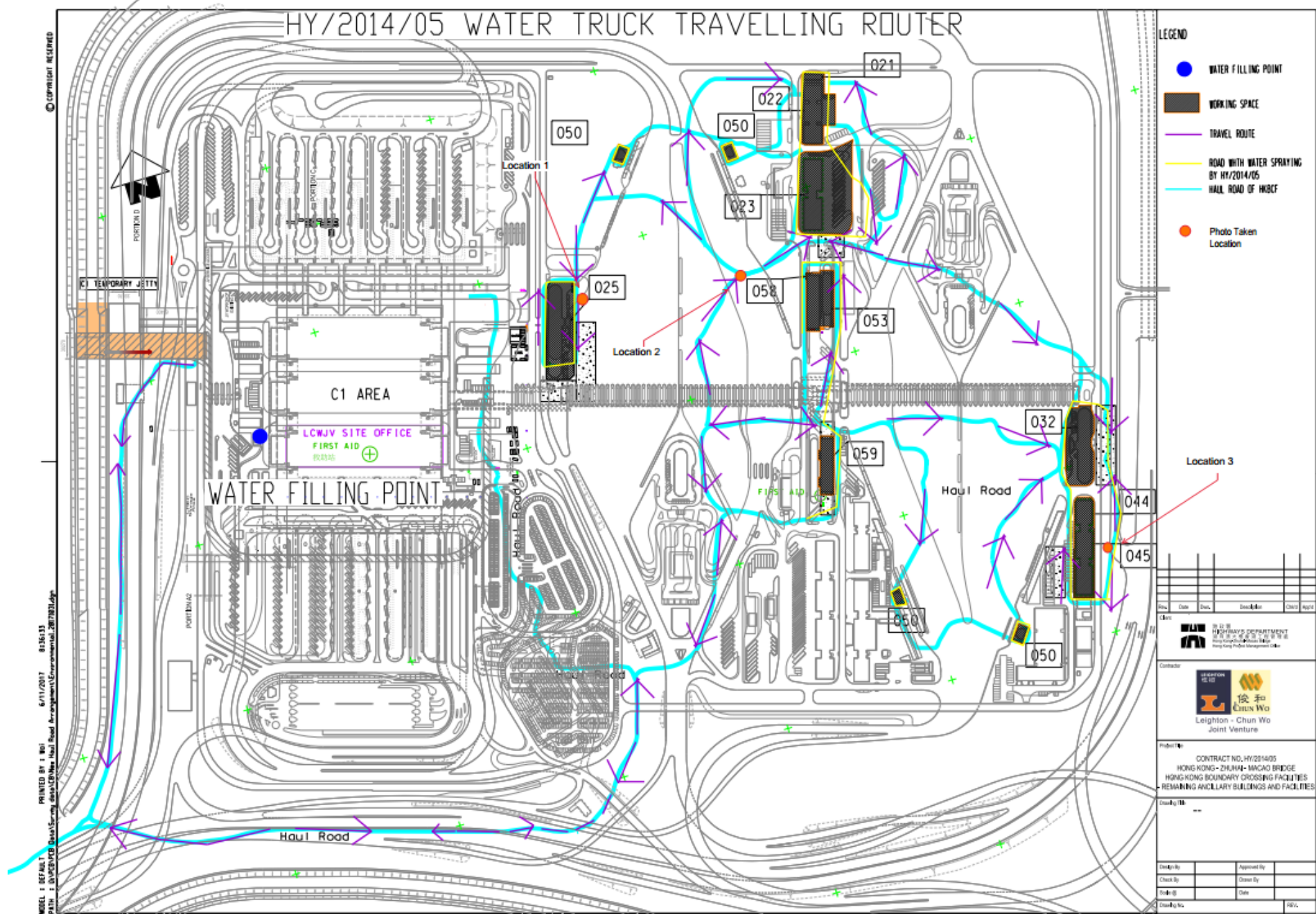
Volume of water/ distance needed to water spraying: = 7.3 L/m

Water Truck could spray 15000L in one 59 minutes trip.

Planned Schedule of Watering Spraying by Water Truck

Cycle	Truck No.	Time of water spraying
1	PJ9039	08:00 – 09:15
2	SE4312	09:15 – 10:30
3	PJ9039	10:30 – 11:45
4	SE4312	13:00 – 14:15
5	PJ9039	14:15 – 15:30
6	SE4312	15:30 – 16:45
7	PJ9039	16:45 – 18:00
8	SE4312	18:00 – 19:00



HY/2014/05 WATER TRUCK TRAVELLING ROUTER



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MODEL: 1 - REF: A11
 PATH: I:\D\2014\05\HY/2014/05\Haul Road Arrangement\Environmental_20170314.dwg
 6/11/2017 09:16:33
 PRINTED BY: IBOI

Water spraying record during TSP 24-hr monitoring on 17 and 18 January 2018

Location 1	Location 2
 A close-up photograph of the rear of a yellow truck. The truck is parked on a dirt surface. A stream of water is being sprayed from the rear of the truck, creating a misty spray. In the background, there is a concrete building with a large doorway and some construction materials.	 A wide-angle photograph of a construction site. In the foreground, there is a large, flat, dirt-covered area. In the background, a yellow crane is visible, along with a white truck with a yellow container. The sky is clear and blue.
Location 3	
 A photograph of a yellow truck driving on a dirt road at a construction site. The truck is moving towards the camera, and there is a large puddle of water on the road in front of it. In the background, there is a large building under construction and other construction equipment.	

Appendix B

Date	Hour	AQHI at Tung Chung Station	Average Wind Speed (m/s) #	Average Wind Direction #
17/01/2018	08:00	6	0	SW
17/01/2018	09:00	6	0	SW
17/01/2018	10:00	6	0	SSW
17/01/2018	11:00	8	0	SSW
17/01/2018	12:00	10	0	W
17/01/2018	13:00	10+	0	---
17/01/2018	14:00	10+	0	W
17/01/2018	15:00	10+	0	W
17/01/2018	16:00	10+	0	W
17/01/2018	17:00	10+	0	W
17/01/2018	18:00	10+	0	E
17/01/2018	19:00	10+	0	---
17/01/2018	20:00	9	0	SSE
17/01/2018	21:00	6	0	SSE
17/01/2018	22:00	5	0	E
17/01/2018	23:00	5	0	SE
18/01/2018	00:00	5	0	SSE
18/01/2018	01:00	4	0	E
18/01/2018	02:00	4	0	SE
18/01/2018	03:00	4	0	SSE
18/01/2018	04:00	4	0	SE
18/01/2018	05:00	4	0	SSE
18/01/2018	06:00	3	0	SSW
18/01/2018	07:00	3	0	---
18/01/2018	08:00	3	0	---

Remark:

#- The related wind data is obtained from the on-site wind station.