

12 June 2017

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
Monthly Environmental Monitoring & Audit Report for May 2017**

Reference is made to the Environmental Team's submission of Monthly Environmental Monitoring & Audit Report for May 2017 (Rev. 1) certified by the ET Leader (ET's ref.: "5140819/18.30/OC035/KC/EW" dated 9 June 2017) and provided to us via e-mail on 9 June 2017.

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

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

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



Raymond Dai
Independent Environmental Checker

c.c.	HyD	Mr. Vico Cheung	(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, ENPO Site

Your ref.
Our ref. 5140819/18.30/OC035/KC/EW

Date: 9 June 2017

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

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

Attn: Mr. Stephen Tsang

Dear Mr. Tsang,

**Contract No. HY/2014/05
Hong Kong – Zhuhai – Macao Bridge
Hong Kong Boundary Crossing Facilities –
Remaining Ancillary Buildings and Facilities
Certification of Monthly EM&A Report No. 15**

Atkins China Limited certifies, in the capacity of Environmental Team Leader, that the Monthly EM&A Report No. 15 for May 2017 (Revision 1) conforms the requirements provided in Condition 5.4 of the Environmental Permit No. EP-353/2009/K.

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



**Keith Chau
Environmental Team Leader**

cc.

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



路政署
HIGHWAYS DEPARTMENT

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

Contract No. HY/2014/05

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

**Monthly EM&A Report No. 15
(Covering the Period from 1 May 2017 to 31 May 2017)**

9 June 2017

Revision 1

Main Contractor



Leighton - Chun Wo
Joint Venture

Environmental Team

ATKINS

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Executive Summary

This Monthly Environmental Monitoring and Audit (EM&A) Report is prepared for Contract No. HY/2014/05 Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities (HZMB 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 fifteen monthly EM&A Report for the Contract No. HY/2014/05 which summarizes findings of the EM&A works during the reporting period from 1 to 31 May 2017 (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 monthly EM&A programme was undertaken in accordance with the Updated EM&A Manual for HKBCF (Version 1.0). It should be noted that the air quality and noise monitoring works for the Contract are covered by Contract No. HY/2010/02 Hong Kong-Zhuhai-Macao Bridge HKBCF – Reclamation Works and Contract No. HY/2011/03 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between Scenic Hill and HKBCF. The ET of the Contract or another ET of the HZMB project is required to conduct impact air quality monitoring at AMS6 and AMS7 and noise monitoring at NMS2 and NMS3B as part of EM&A programme if these monitoring stations are no longer covered under Contract Nos. HY/2010/02 and HY/2011/03. However, this is subject to ENPO’s final decision on which ET should carry out the monitoring work at these stations.

The dates of site inspection 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: 4, 10, 17, 25 and 31 May 2017

Breaches of Action and Limit Levels

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

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

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

Complaint Log

There was one complaint received in relation to the environmental impact during the reporting period. The complaint investigation is being undertaken and will be reported in the next reporting period.

Notifications of Summons and Successful Prosecutions

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

Reporting Change

There was no reporting change during the reporting period.

Future Key Issues

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

For Contract No. HY/2014/05

- Construction of RC Structure of Buildings 023, 050A1, 050H1, 050H2 and 050A2
- ABWF works (Internal Finishes) of Buildings 021, 022, 023, 025, 032, 044, 045, 050A1, 050A2, 053, 058 and 059
- ABWF works (External Finishes) of Buildings 021, 022, 023, 025, 045, 050A1, 050H2, 058 and 059
- ABWF works (Roof Finishes) of Buildings 022, 023, 025, 032, 044, 045, 050H2, 053, 058 and 059
- MEP installation of Buildings 021, 022, 023, 025, 032, 044, 045, 053, 058 and 059
- Utilities and Drainage installation of Building 025, 032, 050A1, 050A2, 050H2, 053, 058 and 059

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

- Conceal Conduit Installation at Buildings 023, 025 and 032

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

- Cabling Works at Buildings 053 and 054
- Installation of Doors at Building 058 and 059

1 Introduction

1.1 Basic Project Information

1.1.1 This Monthly Environmental Monitoring and Audit (EM&A) Report is prepared for Contract No. HY/2014/05 Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities (HZMB 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 which is a “Designated Project” under Schedule 2 of the Environmental Impact Assessment Ordinance (EIAO) (Cap 499). An Environmental Impact Assessment (EIA) Report (Register No. AEIAR-145/2009) was prepared for the Project. The current Environmental Permit (EP) No. EP-353/2009/K for HKBCF was issued on 11 April 2016. These documents are available through the EIA Ordinance Register. 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 The proposed works under this Contract comprise the following:

For Contract No. HY/2014/05

(i) Construction of the following ancillary buildings and facilities including architectural and builder works, structural steel canopy, reinforced concrete frames, foundations, curtain wall facade, building services and electrical and mechanical works:

- Public Toilets at Vehicle Clearance Plaza (VCP);
- Customs and Excise Department (C&ED) Dangerous Good Store (Building 021);
- Customs Detective Dog Base Building (Building 022);
- C&ED Outbound Cargo Examination Building and Examination Platform (Building 023);
- Inbound Private Car Annexure (Building 025);
- Outbound Private Car Annexure (Building 032);
- E&M maintenance Building (Building 044);
- Highways Depot & Administration Building (Building 045);
- Outbound X-ray Building (Building 053);
- Outbound X-ray Scan Tunnel (Building 058); and
- Inbound X-ray Scan Tunnel (Building 059).

(ii) Construction of civil provisions, cable containment and power supply for the following systems:

- Automatic Vehicle Clearance Support System (AVCSS) installed by Contract No. HY/2013/06; and

- Gantry Type X-ray Vehicle Inspection System installed by Contract No. HY/2014/04.
- (iii) Supply and installation of Mobile X-ray Vehicle Inspection System and other standalone equipment;
- (iv) Construction of minor civil engineering works at the periphery of buildings;
- (v) Construction of minor Landscape hardworks and softworks; and
- (vi) Other works which are shown on Drawings or specified in the Specification or which may be ordered in accordance with the Contract.

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

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

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

- (i) The Gantry Type X-ray Vehicle Inspection System (GXRVIS) aims to provide an integrated, innovative, efficient and effective vehicle inspection system at the inbound and outbound boundary control points of Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities (HKBCF) for supporting the operations of Customs & Excise Department (C&ED);
- (ii) Design, supply, deliver to HKBCF, installation, test and commissioning and maintenance of two sets of Gantry Type X-ray Vehicle Inspection System and all related components necessary for the complete operation of the system; and
- (iii) Design, supply, install, test, commission and maintain of the Radioactive Threat Detection Systems integrated into the Gantry Type X-ray Vehicle Inspection Systems.

1.1.4 This is the fifteen Monthly EM&A Report for the Contract No. HY/2014/05 which summarizes the findings of the EM&A programme during the reporting period from 1 to 31 May 2017. (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	Environmental Project Office Leader	Y. H. Hui	3465 2888	3465 2899

(Ramboll Environ Hong Kong Limited)	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	Stephen Tsang	3973 1806	3621 0180
Environmental Team (Atkins China Limited)	Environmental Team Leader	Keith Chau	2972 1721	2890 6343
24 hours complaint hotline	---	---	3958 7300	---
<u>For Contract No. HY/2013/06 within Contract No. HY/2014/05 works area</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 (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	---
<u>For Contract No. HY/2014/04 within Contract No. HY/2014/05 works area</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 (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

- Raft foundation for Buildings 050A1
- Construction of RC Structure of Buildings 023, 044, 045, 050H1, 050H2 and 050A2A
- ABWF works (Internal Finishes) of Buildings 021, 022, 023, 025, 032, 044, 045, 050A2, 053, 058 and 059
- ABWF works (External Finishes) of Buildings 021, 022, 023, 025, 045, 050A2, 053, 058 and 059
- ABWF works (Roof Finishes) of Buildings 022, 023, 025, 032, 044, 053, 058 and 059
- MEP installation of Building 021, 022, 023, 025, 032, 044, 045, 053, 058 and 059
- Utilities and Drainage installation of Building 025

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

- Conceal Conduit Installation Buildings 025 and 032

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

- Cabling Works at Buildings 053 and 054
- Installation of Extension Pieces and Door frames at Building 058
- Installation of Doors at Building 059

2 Air Quality Monitoring

2.1 Monitoring Locations

- 2.1.1 The air quality monitoring works for the Contract are covered by Contract No. HY/2010/02 Hong Kong-Zhuhai-Macao Bridge HKBCF – Reclamation Works and Contract No. HY/2011/03 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between Scenic Hill and HKBCF.
- 2.1.2 The ET of the Contract or another ET of the HZMB project is required to conduct air quality monitoring at AMS6 and AMS7 as part of EM&A programme if these air quality monitoring stations are no longer covered under Contract Nos. HY/2010/02 and HY/2011/03. **Figure 2.1** shows the locations of the air monitoring stations.

Table 2-1 Construction Dust Monitoring Locations

ID	Location Description
AMS 6 ⁽¹⁾	Dragonair/CNAC (Group) Building
AMS 7 ⁽¹⁾	Hong Kong SkyCity Marriott Hotel

Remark:

(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.

2.2 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/2010/02 and HY/2011/03.
- 2.2.2 The Action and Limit Levels 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, $\mu\text{g}/\text{m}^3$
AMS 6 – Dragonair / CNAC (Group) Building (HKIA)	360	500
AMS 7 - Hong Kong SkyCity Marriott Hotel	370	

Table 2-3 Action and Limit Levels for 24-hour TSP

Monitoring Station	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AMS 6 – Dragonair / CNAC (Group) Building (HKIA)	173	260
AMS 7 - Hong Kong SkyCity Marriott Hotel	183	

- 2.2.3 The event and action plan is provided in **Appendix D**.
- 2.2.4 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.

2.3 Monitoring Results

- 2.3.1 The monitoring results for AMS6 and AMS7 are reported in the monthly EM&A Reports prepared for Contract Nos. HY/2011/03 and HY/2010/02, respectively.
- 2.3.2 Summary of Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level at AMS6 shall be referred to the monthly EM&A report prepared by Contract No. HY/2011/03.
- 2.3.3 There was no Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at AMS7 recorded by the ET of Contract No. HY/2010/02 during the reporting period.

3 Noise Monitoring

3.1 Monitoring Locations

3.1.1 The noise monitoring works for the Contract are covered by Contract No. HY/2010/02 Hong Kong-Zhuhai-Macao Bridge HKBCF – Reclamation Works. The ET of the Contract or another ET of the HZMB project is required to conduct impact noise monitoring at NMS2 and NMS3B as part of EM&A programme if these noise monitoring stations are no longer covered under Contract No. HY/2010/02. **Figure 3.1** shows the locations of noise monitoring stations.

Table 3-1 Construction Noise Monitoring Locations

ID	Location Description
NMS2 ⁽¹⁾	Seaview Crescent
NMS3B ⁽¹⁾⁽²⁾	Site Boundary of Site Office Area at Works Area WA2

Remarks:

- (1) The ET of this Contract should conduct impact noise monitoring at the NMS listed in the table as part of EM&A programme according to the latest notification from ENPO when the monitoring station(s) is/are no longer covered by another ET of the HZMB project.
- (2) The Action and Limit Levels for schools will be applied for this alternative monitoring location.

3.2 Monitoring Requirements

3.2.1 The monitoring requirements, monitoring equipment, monitoring parameters, frequency and duration, monitoring methodology and monitoring schedule are detailed in the monthly EM&A Reports prepared for Contract Nos. HY/2010/02.

3.2.2 The Action and Limit Levels for construction noise are defined in **Table 3-2**.

Table 3-2 Action and Limit Level for Construction Noise

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.

* Limit level is 70 dB(A) for schools and 65 dB(A) during school examination period.

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

3.2.4 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.

3.3 Monitoring Results

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

4 Environmental Site Inspection and Audit

4.1 Site Inspection

- 4.1.1 Site Inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures for the Contract No. HY/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, site inspections were carried out on 4, 10, 17, 25 and 31 May 2017.
- 4.1.2 Particular observations for Contract No. HY/2014/05 and Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area during the site inspections and corrective actions undertaken by the Contractor are described in **Tables 4-1, 4-2 and 4-3**.

Table 4-1 Summary of Environmental Site Inspections for Contract No. HY/2014/05

Date of Audit	Observations	Actions Taken by Contractor / Recommendation	Date of Observations Closed
26 April 2017	1. Rubbish was scattered on the ground at Building 032 work area.	1. The rubbish on the ground was cleared at the Building 032 works area.	25 May 2017
4 May 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
10 May 2017	1. Oil product was stored in a plastic bottle and found without proper drip tray at Building 058.	1. Oil container was removed at Building 058.	17 May 2017
17 May 2017	1. The dust emission was observation during the handling process of cement at Building 025. 2. The used cement bags were found at Building 025. 3. Oily water was found in the drip tray at Building 022.	1. A tarpaulin was provided and it will be used during the handling process of cement at Building 025. 2. The used cement bags were removed at Building 025. 3. The oily water was cleared in the drip tray at Building 022.	25 May 2017
25 May 2017	1. Chemical containers were found without drip tray at Building 044.	1. The chemical containers were removed at Building 044.	31 May 2017
31 May 2017	1. General refuses were observed on the ground at Building 023 work area.	1. The Contractor was reminded to clear the rubbish on the ground at the Building 023 works and keep the site tidiness.	Follow-up action undertaken by the Contractor will be inspected during the site inspection to be undertaken in June 2017.

Table 4-2 Summary of Environmental Site Inspections for Contract No. HY/2013/06 within Contract No. HY/2014/05 works area

Date of Audit	Observations	Actions Taken by Contractor / Recommendation	Date of Observations Closed
4 May 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
10 May 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
17 May 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
25 May 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
31 May 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.

Table 4-3 Summary of Environmental Site Inspections for Contract No. HY/2014/04 within Contract No. HY/2014/05 works area

Date of Audit	Observations	Actions Taken by Contractor / Recommendation	Date of Observations Closed
4 May 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
10 May 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
17 May 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
25 May 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
31 May 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.

4.1.1 The Contractor has rectified most of observations as identified during environmental site inspections within this reporting month.

4.2 Advice on the Solid and Liquid Waste Management Status

4.2.1 The Contractor of Contract No. HY/2014/05 registered as a chemical waste producer. Sufficient numbers of receptacles were available for general refuse collection and sorting.

- 4.2.2 The Contractor of Contract No. HY/2014/05 was reminded that chemical waste should be properly treated and stored temporarily in designated chemical waste storage areas on site in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.
- 4.2.3 The monthly summary of waste flow table for 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) are detailed in **Appendix E**.

4.3 Environmental Licenses and Permits

- 4.3.1 The valid environmental licenses and permits for Contract No. HY/2014/05 during the reporting period (includes the construction works of Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area) are summarized in **Appendix F**.
- 4.3.2 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).

4.4 Implementation Status of Environmental Mitigation Measures

- 4.4.1 In response to the site audit findings, the Contractors carried out corrective actions.
- 4.4.2 The Contractor conducts watering on all exposed soil within the Contract site and associated works areas 8 times per day when construction activities are being undertaken.
- 4.4.3 A summary of the Implementation Schedule of Environmental Mitigation Measures (EMIS) is presented in **Appendix G**. Most of the necessary mitigation measures were implemented properly.

4.5 Summary of Exceedance of the Environmental Quality Performance Limit

- 4.5.1 Summary of Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level at AMS6 shall be referred to the monthly EM&A report prepared by Contract No. HY/2011/03.
- 4.5.2 There was no Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at AMS7 by the Environmental Team of Contract No. HY/2010/02 during the reporting period.
- 4.5.3 There was no Action and Limit Level exceedance for noise recorded at NMS2 and NMS3B by the Environmental Team of Contract No. HY/2010/02 during the reporting period.

4.6 Summary of Complaints, Notification of Summons and Successful Prosecution

- 4.6.1 There was one complaint received in relation to the environmental impact during the reporting period. A summary of environmental complaints is presented in **Table 4-4**. The details of cumulative statistics of Environmental Complaints are provided in **Appendix H**.

Table 4-4 A Summary of Environmental Complaints for the Reporting Month

Environmental Complaint No.	Date of Complaint Received	Description of Environmental Complaints
004	31 May 2017	Air Quality

- 4.6.2 According to ENPO's email to the Environmental Team, Engineer's Representative and Contractor on 1 June 2017, it is noted that EPD had received a complaint regrading a dust emission from the transportation near building 044 and 045.

- 4.6.3 The complaint investigation is being undertaken and will be reported in the next reporting period.
- 4.6.4 Statistics on environmental complaints, notifications of summons and successful prosecutions are summarized in **Appendix H**.

5 Future Key Issues

5.1 Construction Programme for the Coming Months

- 5.1.1 As informed by the Contractor, the major construction activities for June 2017 are summarized in **Table 5-1**.

Table 5-1 Construction Activities for June 2017

Site Area	Description of Activities
<u>For Contract No. HY/2014/05</u>	
Buildings 023, 050A1, 050H1, 050H2 and 050A2	Construction of RC Structure
Buildings 021, 022, 023, 025, 032, 044, 045, 050A1, 050A2, 053, 058 and 059	ABWF works (Internal Finishes)
Buildings 021, 022, 023, 025, 045, 050A1, 050H2, 058 and 059	ABWF works (External Finishes)
Buildings 022, 023, 025, 032, 044, 045, 050H2, 053, 058 and 059	ABWF works (Roof Finishes)
Buildings 021, 022, 023, 025, 032, 044, 045, 053, 058 and 059	MEP installation
Building 025, 032, 050A1, 050A2, 050H2, 053, 058 and 059	Utilities and Drainage installation
<u>For Contract No. HY/2013/06 within Contract No. HY/2014/05 works area</u>	
Buildings 023, 025 and 032	Conceal Conduit Installation
<u>For Contract No. HY/2014/04 within Contract No. HY/2014/05 works area</u>	
Buildings 053 and 054	Cabling Works
Buildings 058 and 059	Installation of Doors

5.2 Environmental Site Inspection Schedule for the Coming Month

- 5.2.1 The tentative schedule for weekly site inspections for June 2017 is provided in **Appendix I**.

6 Conclusions

6.1 Conclusions

- 6.1.1 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. The fifteen Monthly EM&A Report for Contract No. HY/2014/05 summarizes findings of the EM&A works during the reporting period from 1 to 31 May 2017 (includes the construction works of Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area).
- 6.1.2 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 report prepared by Contract No. HY/2011/03.
- 6.1.3 There was no Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at AMS7 by the Environmental Team of Contract No. HY/2010/02 during the reporting period.
- 6.1.4 There was no Action and Limit Level exceedance for noise recorded at NMS2 and NMS3B by the Environmental Team of Contract No. HY/2010/02 during the reporting period.
- 6.1.5 Environmental site inspections were carried out on 4, 10, 17, 25 and 31 May 2017 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.
- 6.1.6 There was one complaint received in relation to the environmental impact during the reporting period. The complaint investigation is undertaken and will be reported in the next reporting period.
- 6.1.7 No notification of summons and successful prosecution was received during the reporting period.

FIGURES

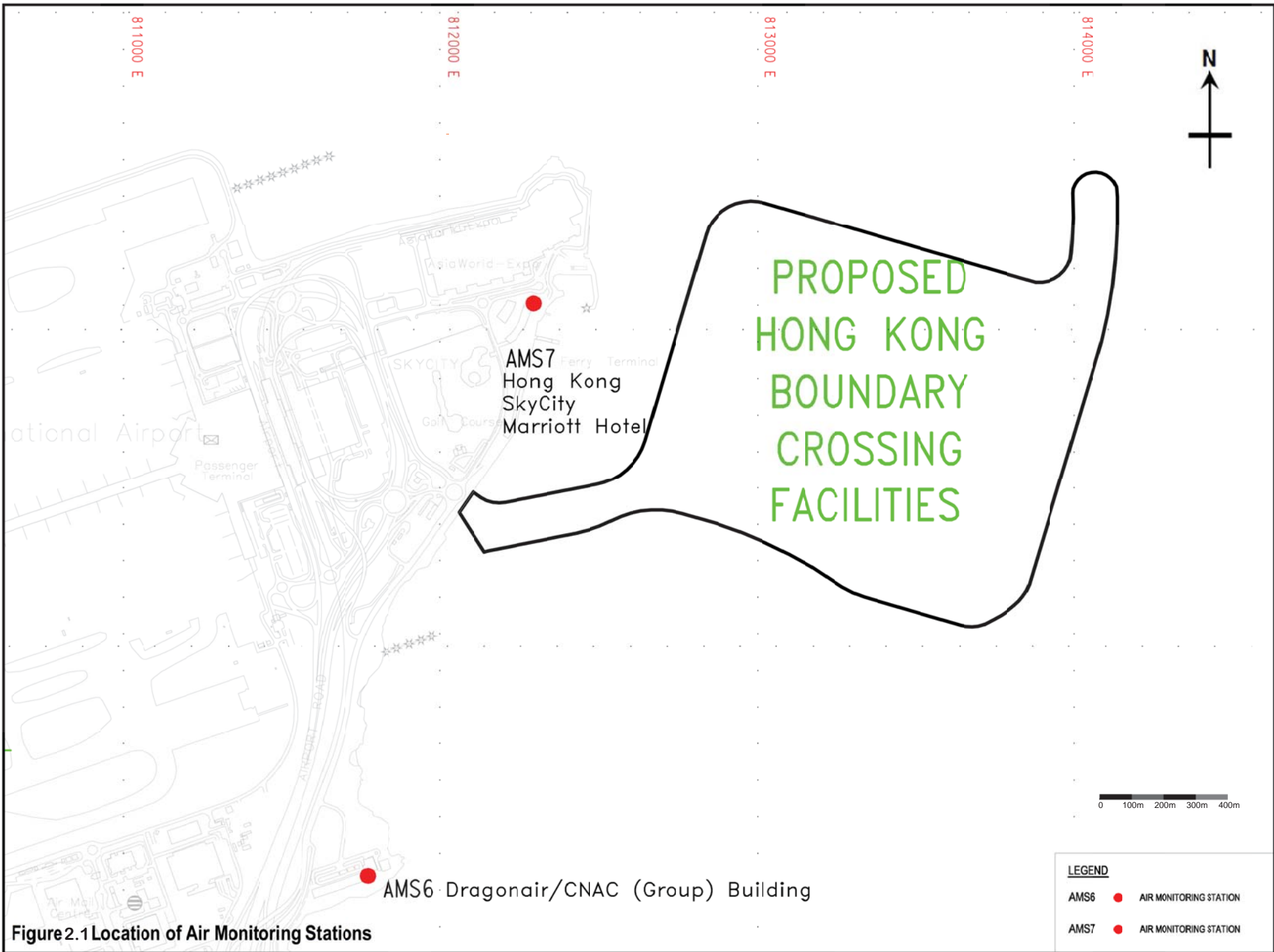


Figure 2.1 Location of Air Monitoring Stations

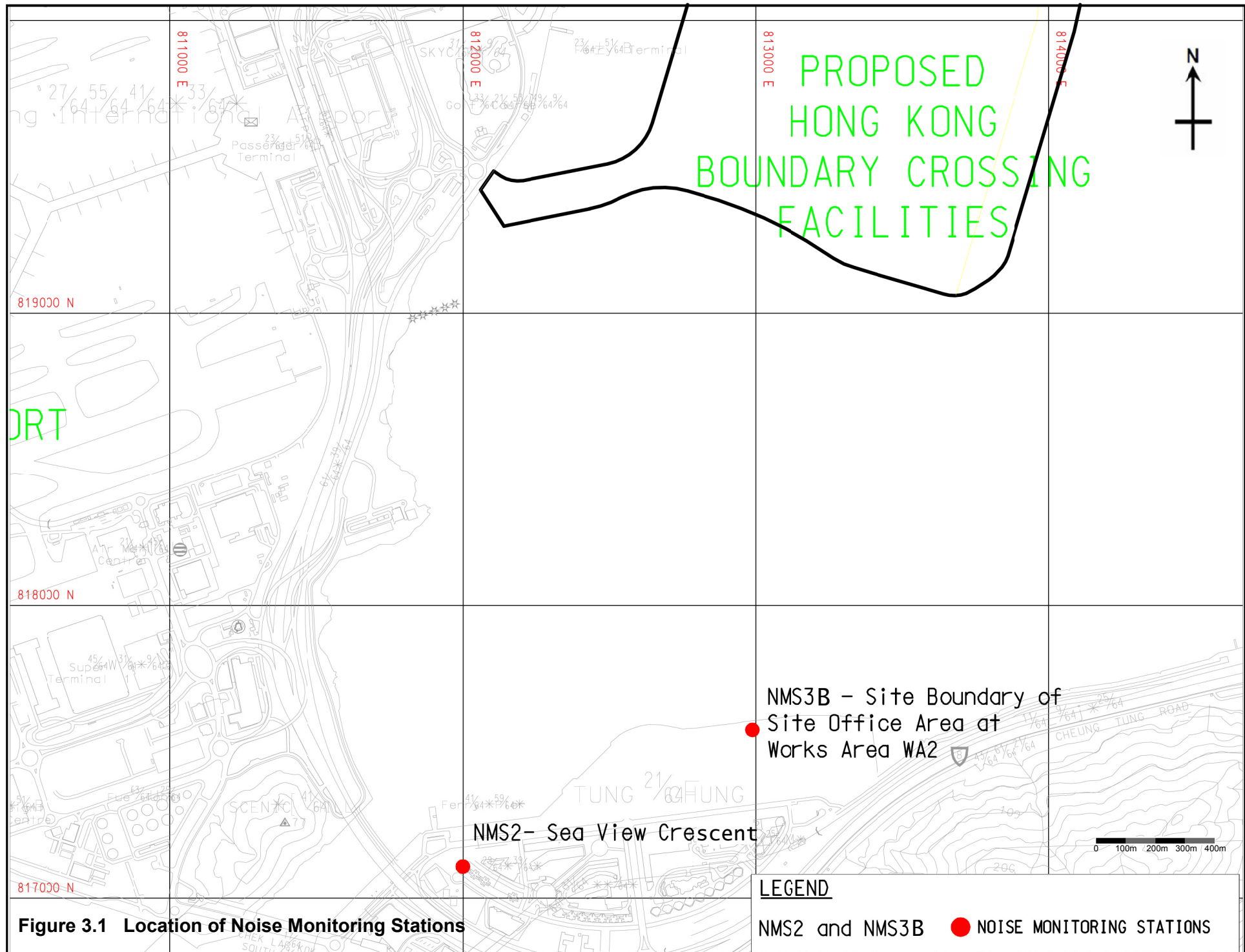


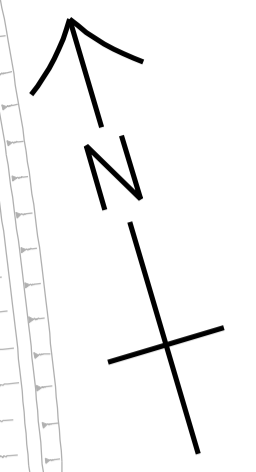
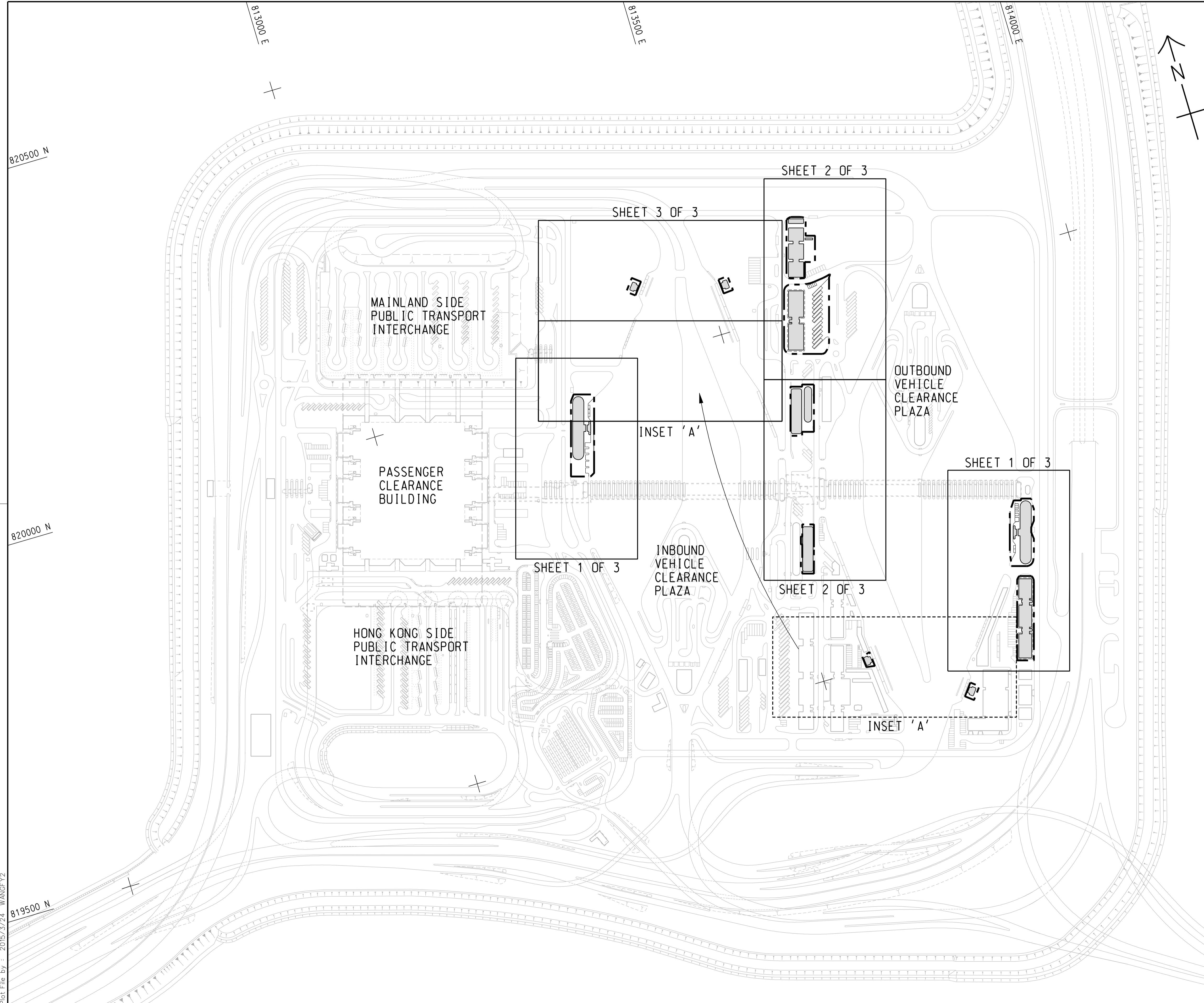
Figure 3.1 Location of Noise Monitoring Stations

LEGEND

NMS2 and NMS3B ● NOISE MONITORING STATIONS

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

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

HIGHWAYS DEPARTMENT
 路政署

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

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

KEY PLAN

AECOM
 Rogers Stirk Harbour + Partners
 BURO HAPPOLD ATKINS ADI

Aedas

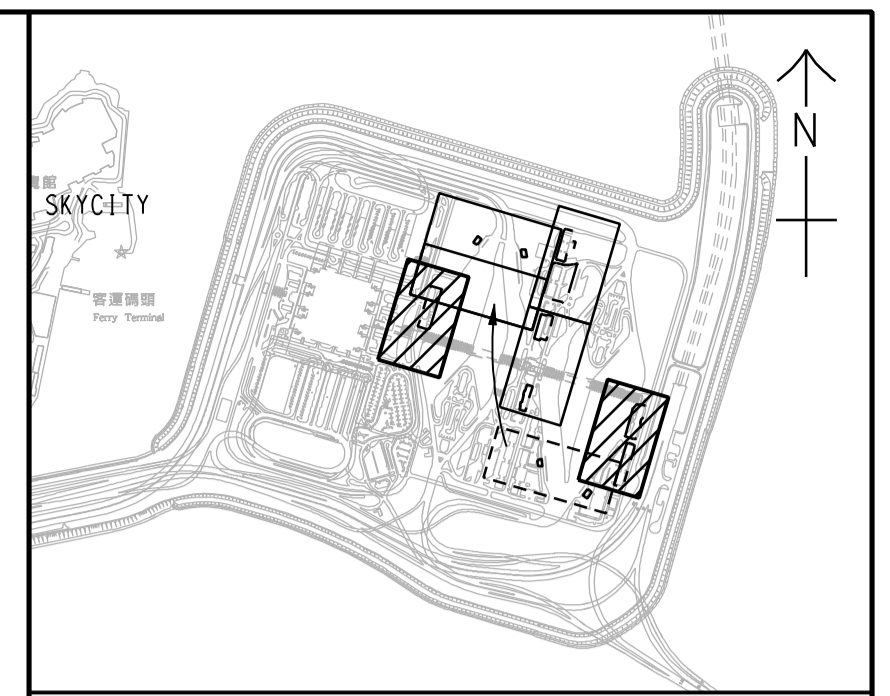
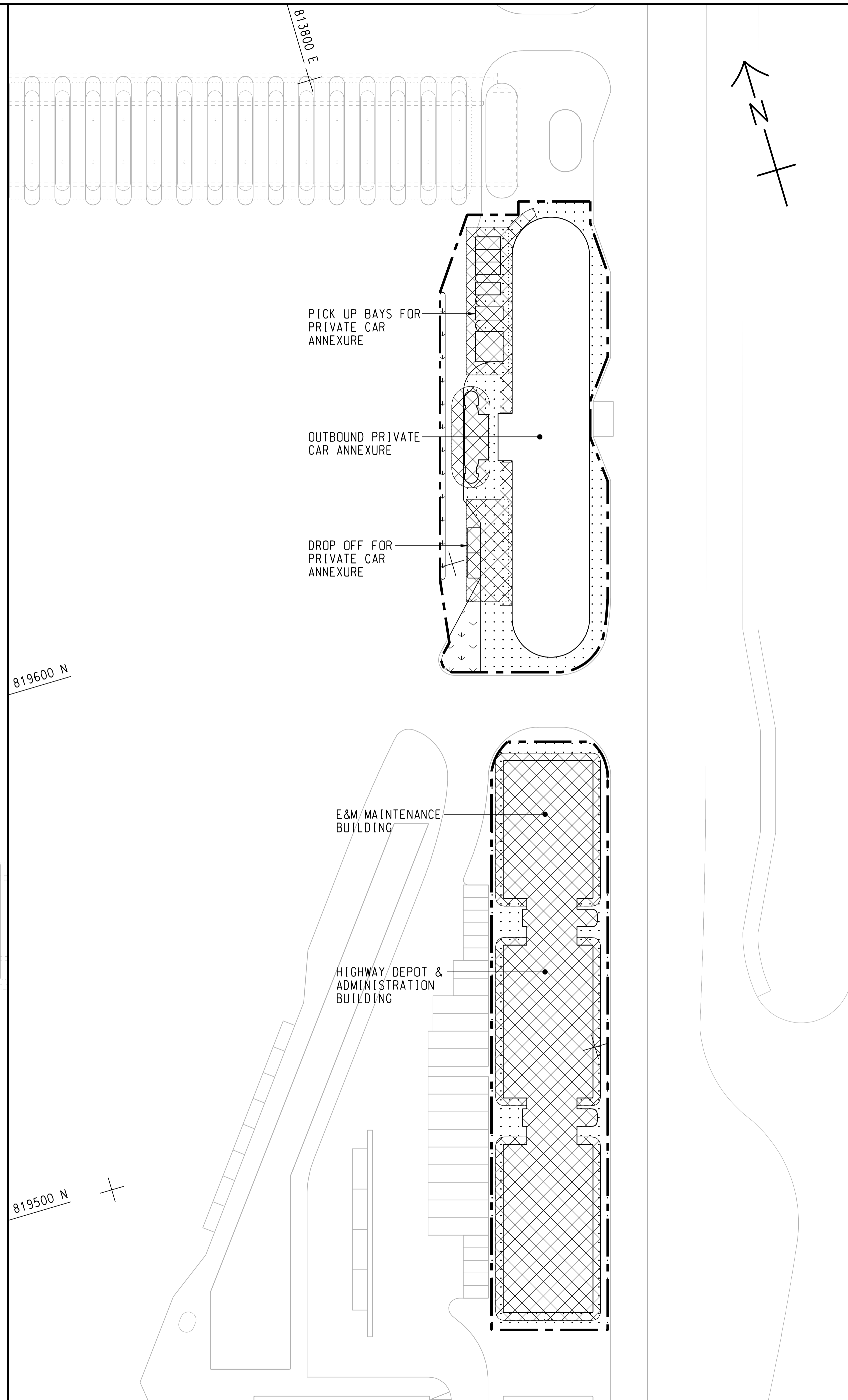
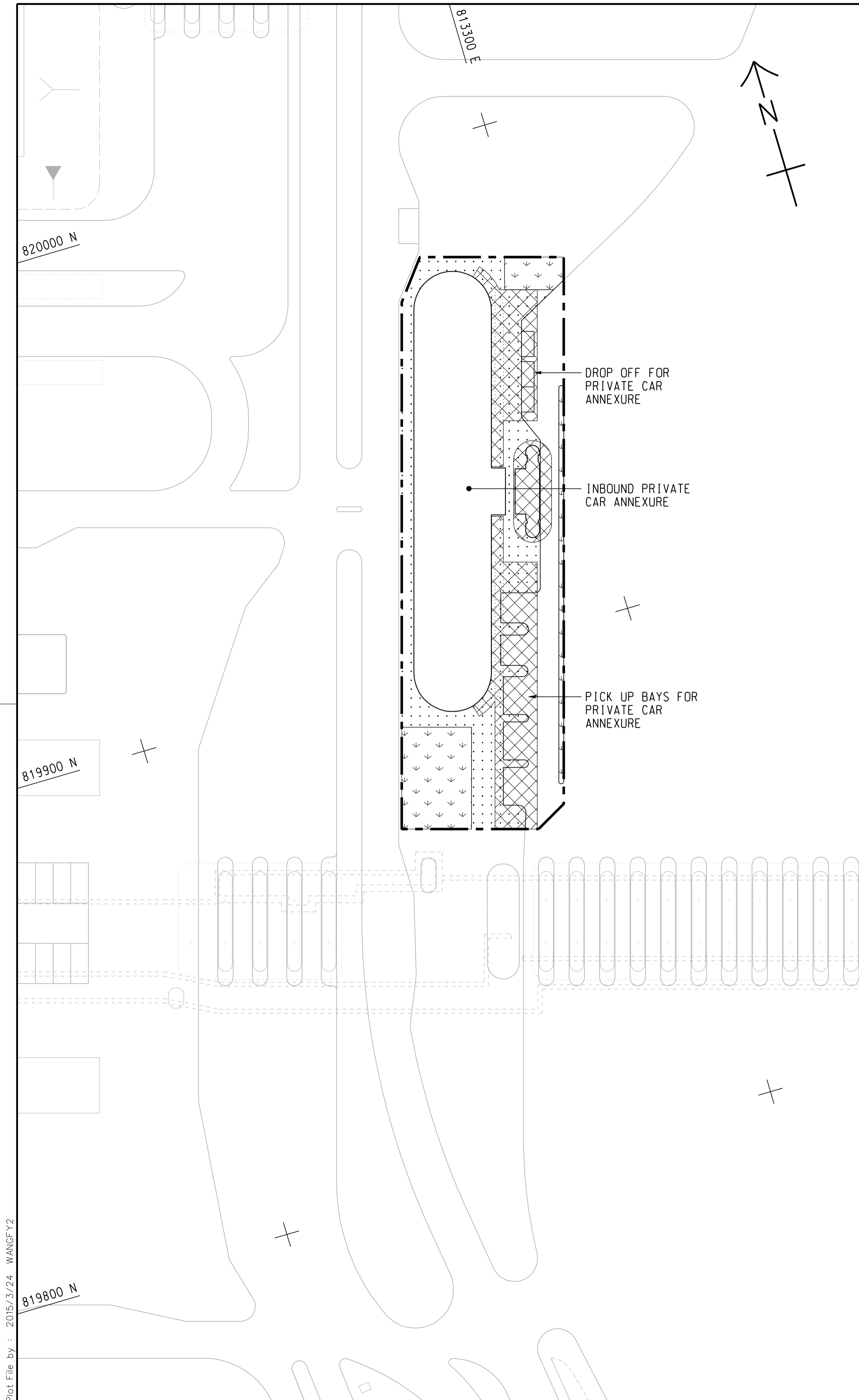
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 圖紙編號

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SCALE 比例 A1 1 : 2500

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LEGEND:

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

REV. 修改	DESCRIPTION 內容摘要	DATE 日期
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HONG KONG-ZHUHAI-MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- REMAINING ANCILLARY BUILDINGS AND FACILITIES

GENERAL LAYOUT PLAN

SHEET 1 OF 3

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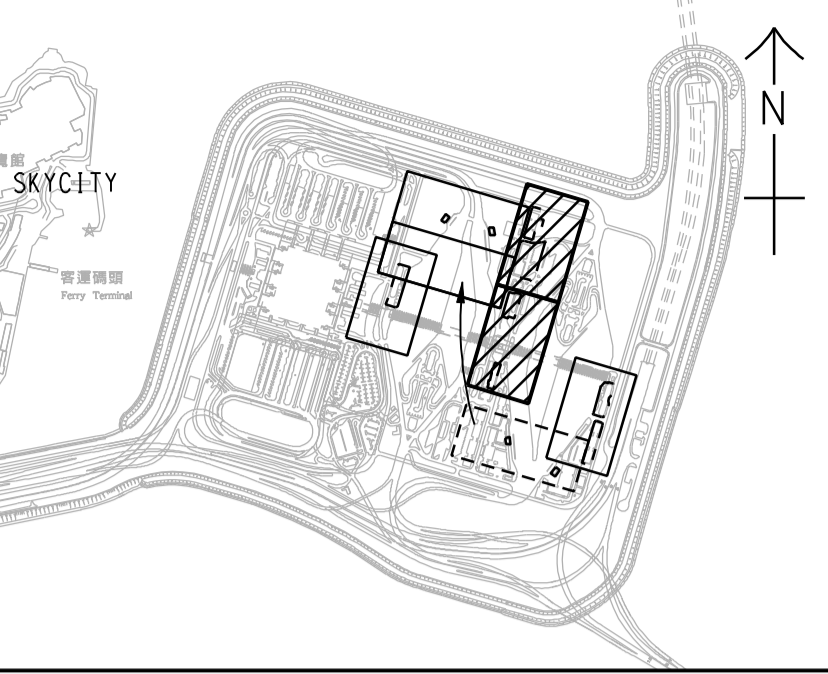
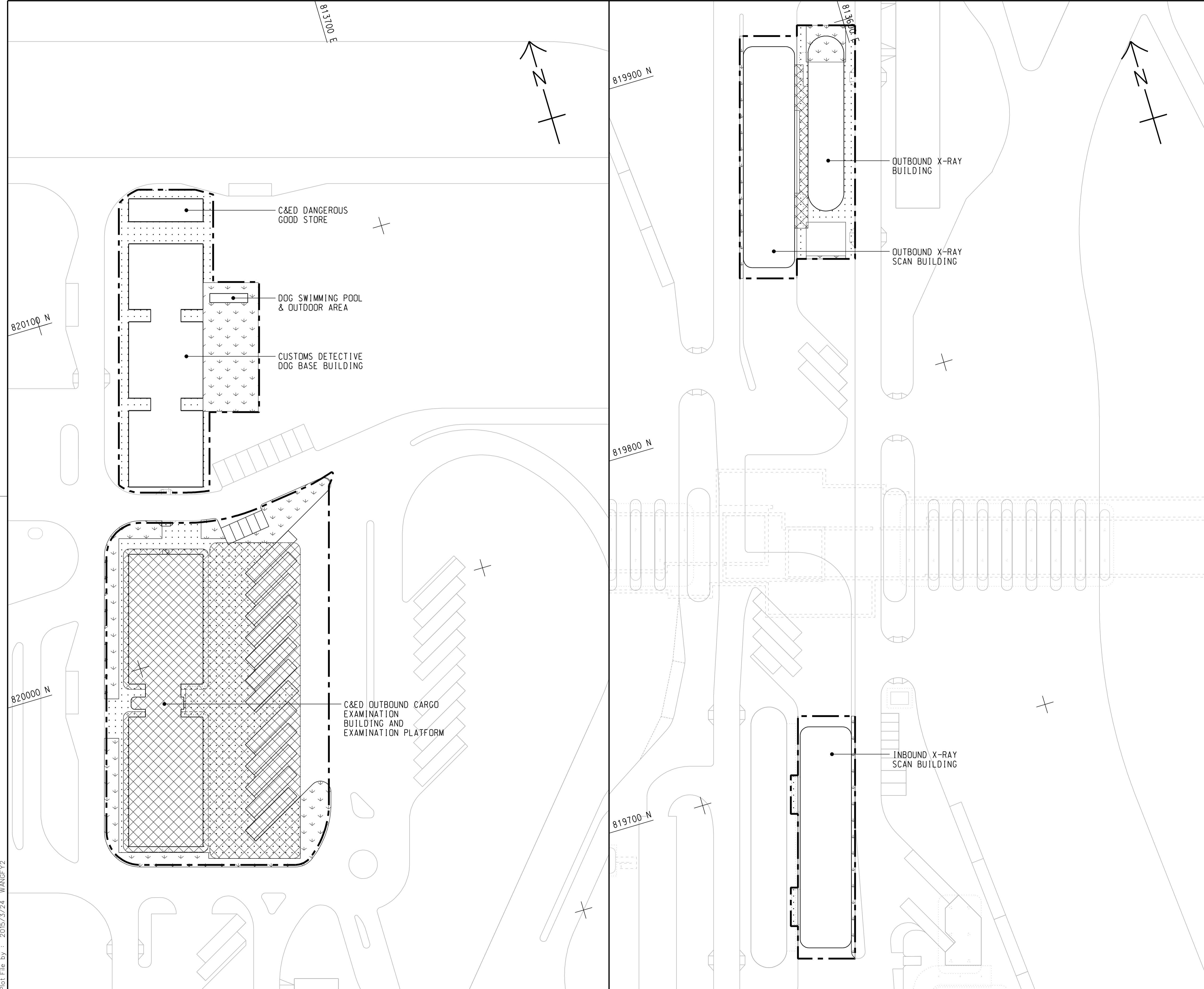
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HONG KONG-ZHUHAI-MACAO BRIDGE
 HONG KONG BOUNDARY CROSSING FACILITIES
 - REMAINING ANCILLARY BUILDINGS AND FACILITIES

GENERAL LAYOUT PLAN

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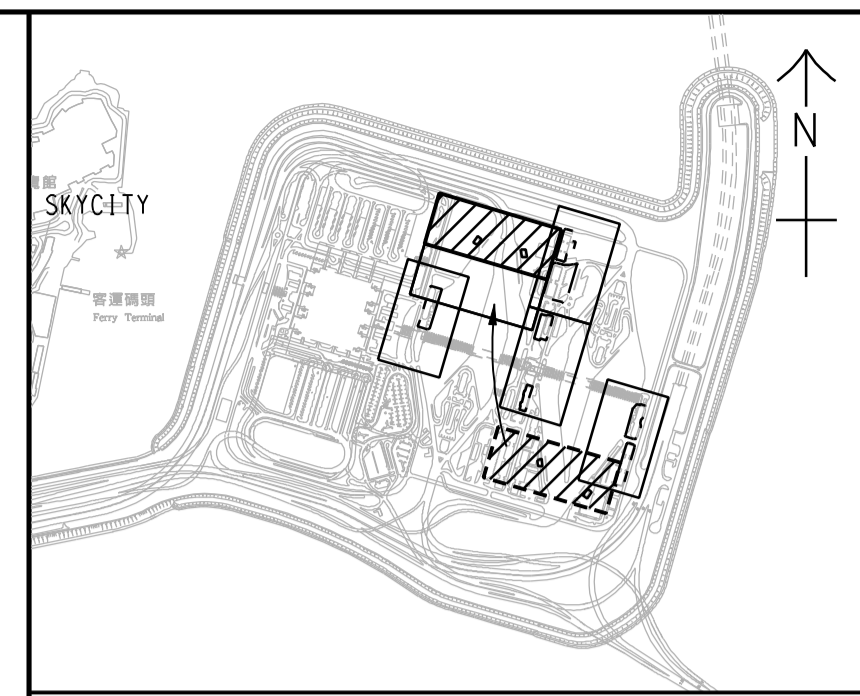
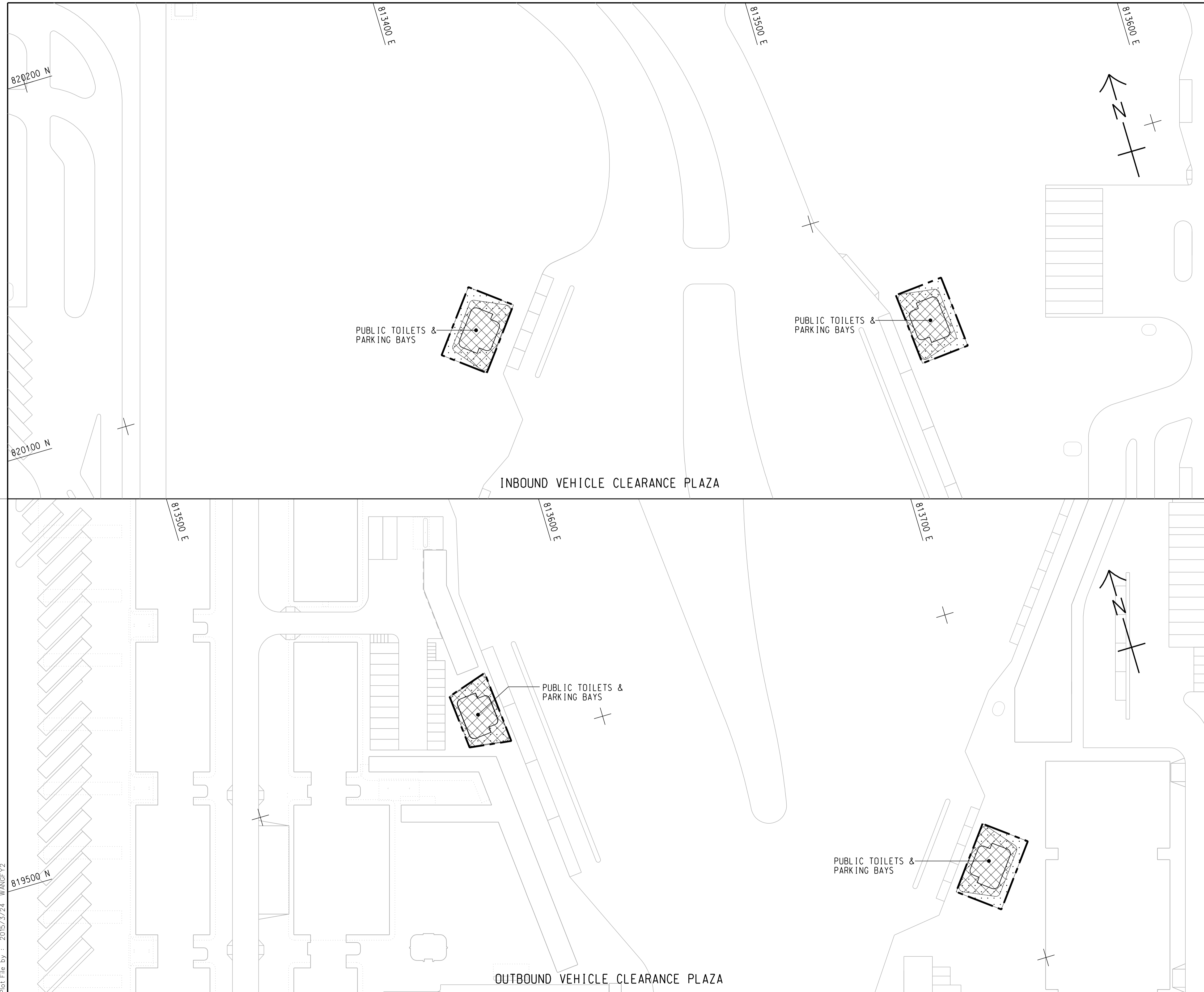
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BWCW	HY/2014/05	TKH

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WSY	初步

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

GENERAL LAYOUT PLAN

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WSY	初步

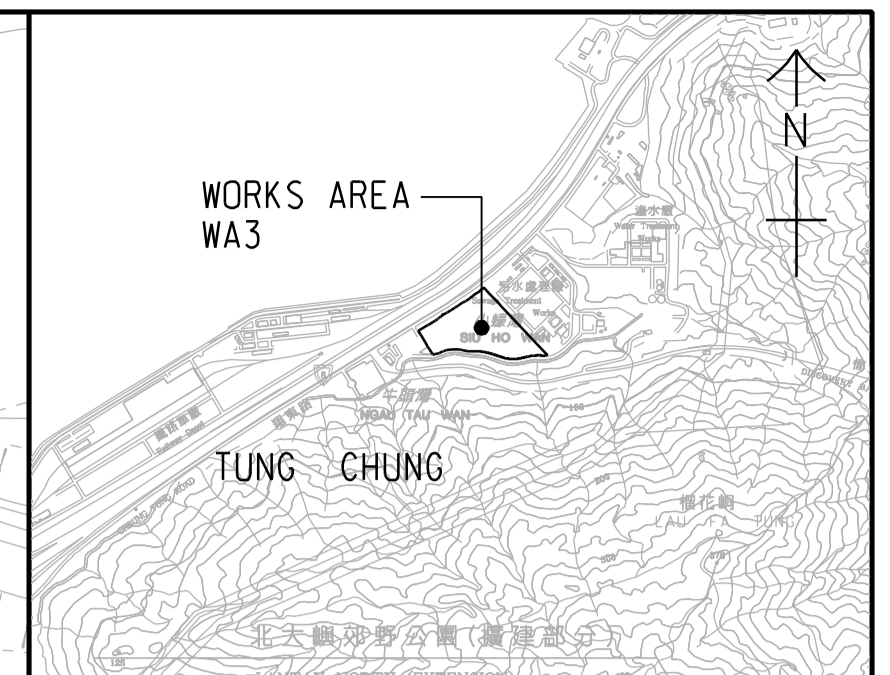
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SETTING OUT POINT

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



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

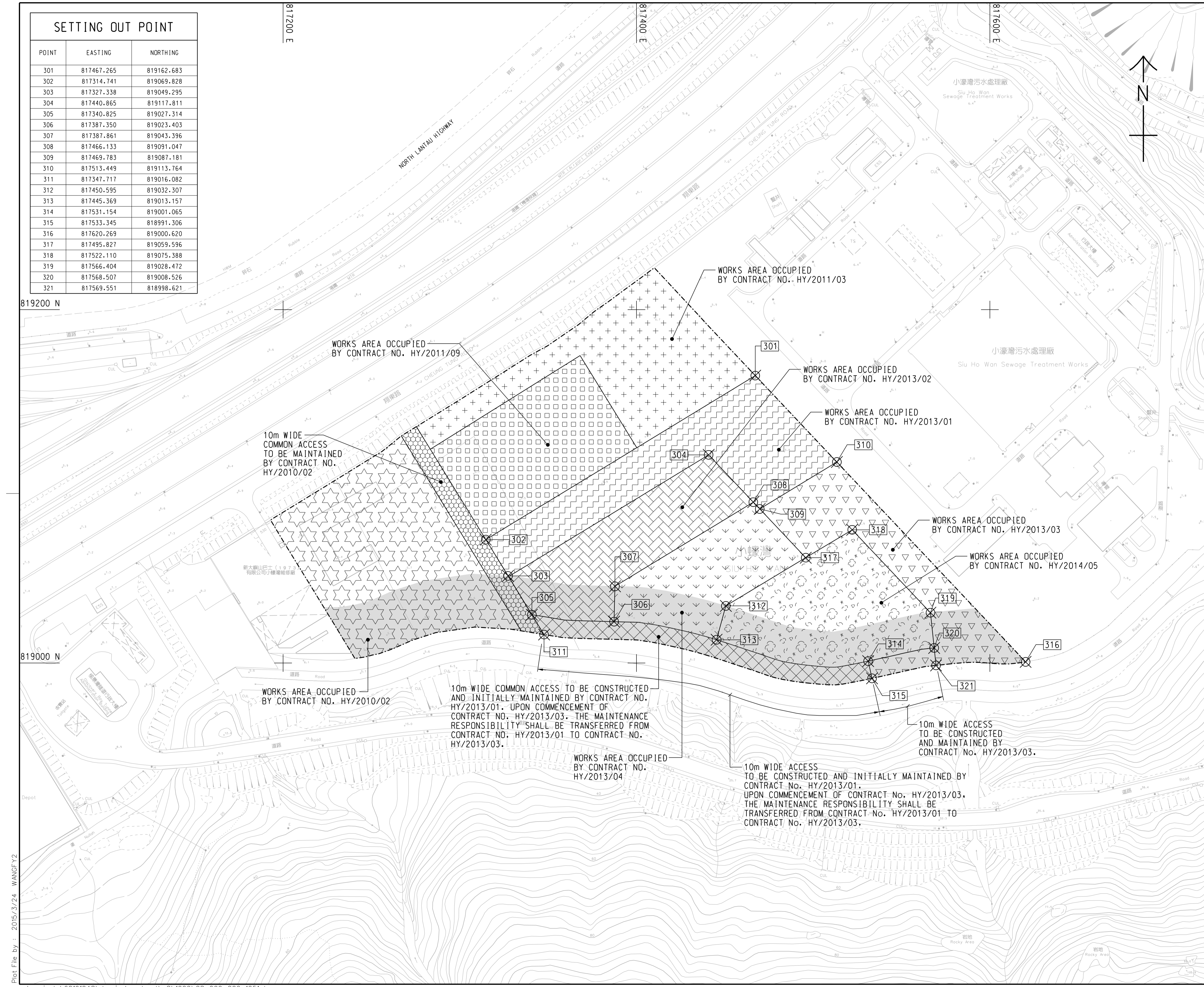
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SCALE A1 1 : 1000	DIMENSIONS ARE IN METRES
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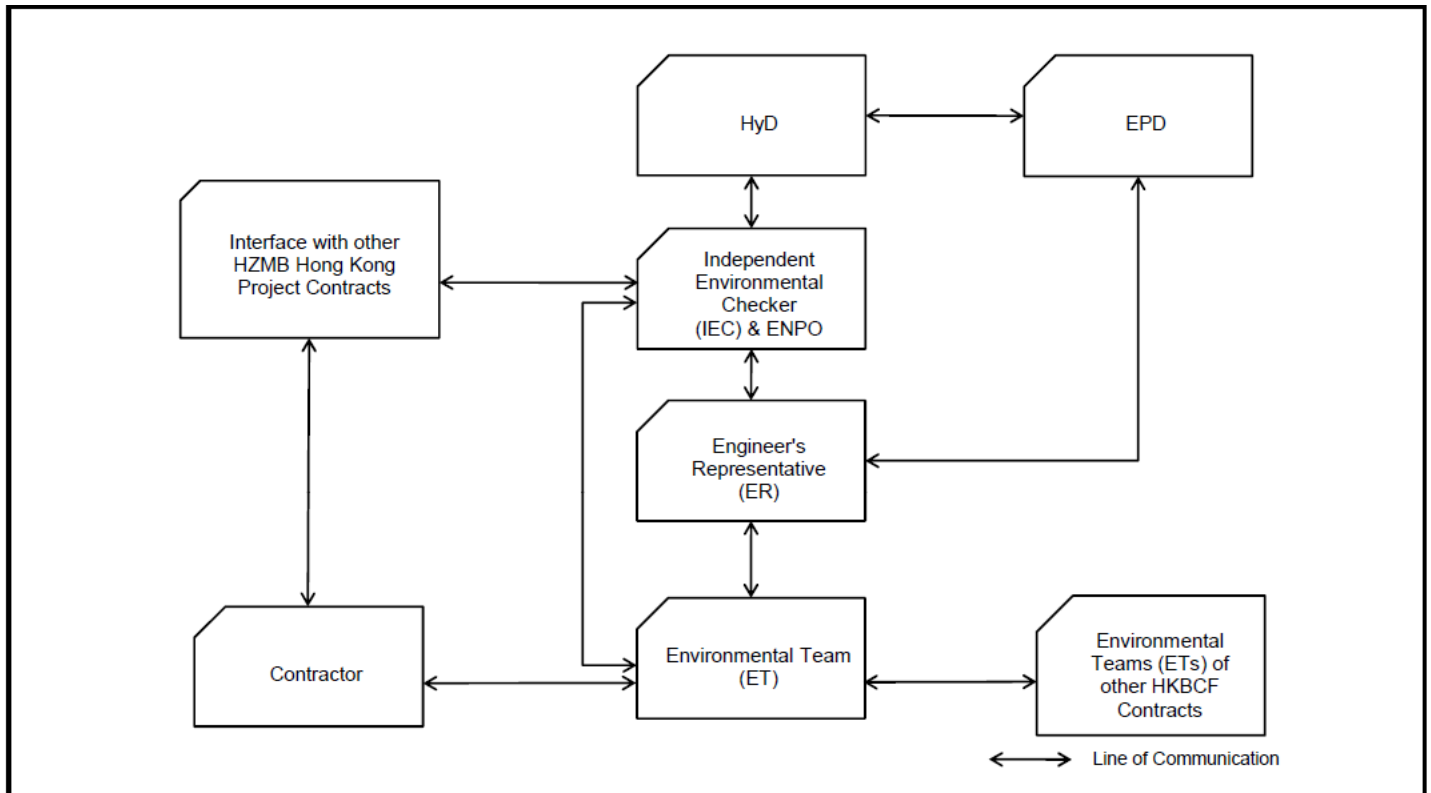


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APPENDIX B

Project Organization for Environmental Works

Project Organisation for Environmental Works



APPENDIX C

Construction Programme



Activity ID	Activity Name	April 2017				May 2017				June 2017				July 2017				August 2017				September 2017	
		02	09	16	23	30	07	14	21	28	04	11	18	25	02	09	16	23	30	06	13	20	27

RAB5 - Target Baseline Programme - 01 Jun-17 Stated

PROGRAMME SUMMARY

Building 021 - Dangerous Goods Store

RAB-21-SUM2	021 - ABWF and MEP
RAB-21-SUM3	021 - Submissions and Approvals

Building 022 - Customs Detective Dog Base Building

RAB-22-SUM2	022 - ABWF and MEP
RAB-22-SUM3	022 - Submissions and Approvals
RAB-22-SUM13	022 - Window Wall

Building 023 - C&ED Outbond Cargo Examination Building

RAB-23-SUM4	023 - ABWF and MEP
RAB-23-SUM3	023 - Install Lift
RAB-23-SUM5	023 - Construct Metal Canopy
RAB-23-SUM2	023 - Window Wall
RAB-23-SUM6	023 - Submissions and Approvals

Building 025 - Inbound Private Car Annexure

RAB-25-SUM2	025 - Glazed Kiosk
RAB-25-SUM4	025 - ABWF and MEP

Building 032 - Outbound Private Car Annexure

RAB-32-SUM2	032 - Glazed Kiosk
RAB-32-SUM4	032 - ABWF and MEP

Building 044 - E&M Maintenance Building

RAB-44-SUM1	044 - Raft Foundation and Structure
RAB-44-SUM4	044 - ABWF and MEP
RAB-44-SUM2	044 - Install Lift
RAB-44-SUM3	044 - Install Window Wall

Building 045 - Highways Depot and Administration Building

RAB-45-SUM1	045 - Raft Foundation and Structure
RAB-45-SUM3	045 - ABWF and MEP
RAB-45-SUM2	045 - Install Lift

Building 050 (H1) - Public Toilets Type 2

RAB-50-SUM1	050 - Raft Foundation and Structure
RAB-50-SUM5	050 - ABWF and MEP

Building 050 (H2) - Public Toilets Type 2

RAB-50-SUM2	050 - Raft Foundation and Structure
RAB-50-SUM6	050 - ABWF and MEP

Building 050 (A1) - Public Toilets Type 2

RAB-50-SUM3	050 - Raft Foundation and Structure
RAB-50-SUM7	050 - ABWF and MEP

Building 050 (A2) - Public Toilets Type 2

RAB-50-SUM4	050 - Raft Foundation and Structure
RAB-50-SUM8	050 - ABWF and MEP

Building 053 - Outbound X-Ray Building

RAB-53-SUM3	053 - ABWF and MEP
RAB-53-SUM2	053 - Install Lift
RAB-53-SUM4	053 - Submissions and Approvals

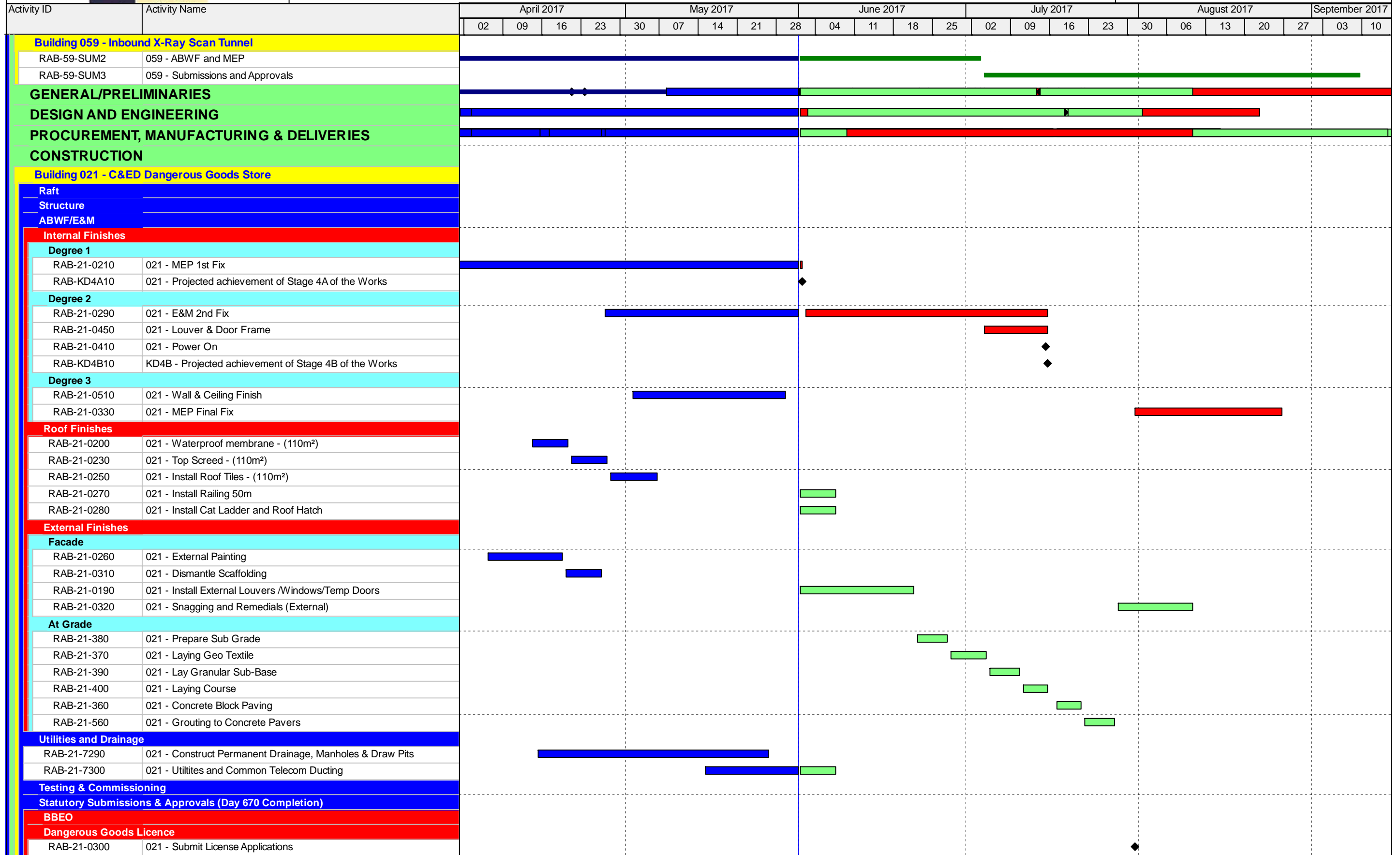
Building 058 - Outbound X-Ray Scan Tunnel

RAB-58-SUM3	058 - ABWF and MEP
RAB-58-SUM2	058 - Submissions and Approvals

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

3-Month Rolling Programme Update, 01 June 2017

RAB5			
Date	Revision	Checked	Approved
01-Jun-17	3-Month Rolling Programme, 01 Jun-17 Update	SGJ	



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

3-Month Rolling Programme Update, 01 June 2017

RAB5			
Date	Revision	Checked	Approved
01-Jun-17	3-Month Rolling Programme, 01 Jun-17 Update	SGJ	

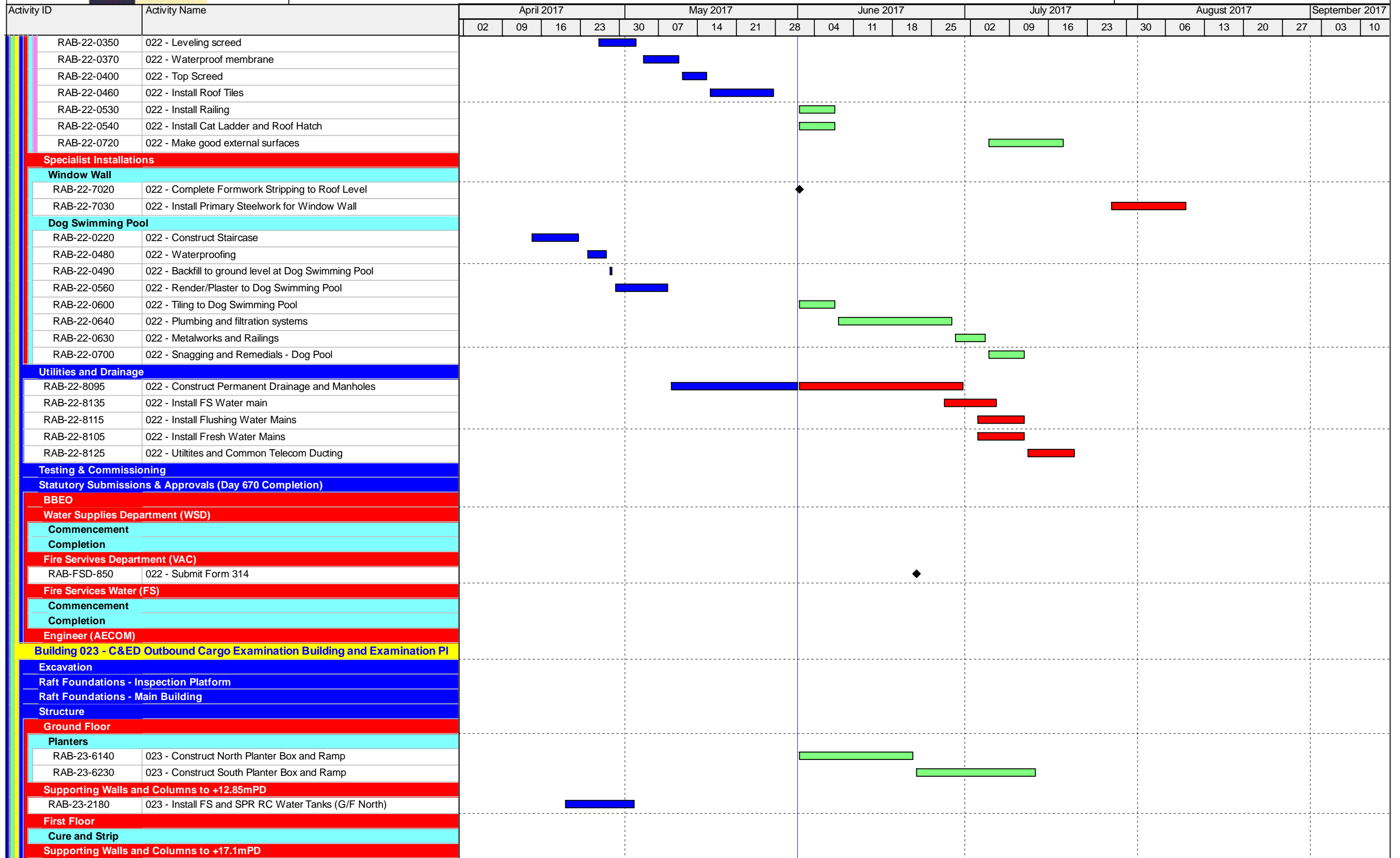


Activity ID	Activity Name	April 2017				May 2017				June 2017				July 2017				August 2017				September 2017	
		02	09	16	23	30	07	14	21	28	04	11	18	25	02	09	16	23	30	06	13	20	27
Fire Services Department (VAC)																							
Engineer (AECOM)																							
Building 022 - Customs Detective Dog Base Building																							
Excavation																							
Raft Foundations																							
Structure																							
Walls & Columns																							
Roof Slab																							
North Structure																							
Cure and Strip																							
Middle Structure																							
Cure and Strip																							
South Structure																							
Cure and Strip																							
ABWF/E&M																							
Internal Finishes																							
North																							
Degree 1																							
RAB-22-8205	022 - Blockwork Walls & Partition	[Gantt bar: April 02 to June 04]																					
RAB-22-8215	022 - Plastering/Rendering	[Gantt bar: April 09 to June 11]																					
RAB-22-8225	022 - MEP 1st Fix	[Gantt bar: April 16 to June 18]																					
RAB-22-8695	022 - Install Conduit for C3 & C8***	[Gantt bar: April 23 to April 23]																					
RAB-22-8665	022 - Screeding	[Gantt bar: May 07 to June 04]																					
RAB-22-8285	022 - Undercoat	[Gantt bar: May 14 to June 11]																					
RAB-22-0680	022 - Access for C3 Cable containment	[Finish Constraint: May 21]																					
RAB-22-0670	022 - Access to C3 Cabling Works***	[Finish Constraint: June 18]																					
RAB-22-0660	022 - ABWF and MEP works to Degree 1 (KD5A),	[Finish Constraint: June 25]																					
Degree 2																							
RAB-22-0855	022 - Frame for Wall Panel & Cladding	[Gantt bar: June 11 to June 18]																					
RAB-22-0885	022 - Door Frame & Louvers	[Gantt bar: June 18 to July 02]																					
RAB-22-0895	022 - MEP 2nd Fix	[Gantt bar: June 25 to August 06]																					
Degree 3																							
RAB-22-8535	022 - Floor Tiling + Floor Finishes (for Early Handover Rooms)	[Gantt bar: June 11 to July 02]																					
RAB-22-8395	022 - Wall Tiling	[Gantt bar: June 18 to July 23]																					
RAB-22-0865	022 - Ceiling Frame	[Gantt bar: June 25 to August 13]																					
RAB-22-8255	022 - Ceiling Finish Compl.	[Gantt bar: July 02 to August 20]																					
RAB-22-8245	022 - Glazing	[Gantt bar: July 23 to August 06]																					
RAB-22-8275	022 - MEP Final Fix	[Gantt bar: August 06 to August 20]																					
RAB-22-8265	022 - Door Panel & Ironmongery	[Gantt bar: August 13 to August 20]																					
External Finishes																							
Facade																							
RAB-22-0410	022 - External Render	[Gantt bar: April 02 to April 23]																					
RAB-22-0620	022 - Dismantle Scaffolding	[Gantt bar: May 14 to May 14]																					
RAB-22-0470	022 - External Painting, Tiling & Cladding	[Gantt bar: June 11 to July 23]																					
At Grade																							
RAB-22-2100	022 - Prepare Sub Grade	[Gantt bar: July 02 to July 23]																					
RAB-22-2110	022 - Laying Geo Textile	[Gantt bar: July 23 to August 06]																					
RAB-22-2170	022 - Landscaping for Outdoor Excise Lawn	[Gantt bar: August 06 to August 20]																					
RAB-22-2120	022 - Lay Granular Sub-Base	[Gantt bar: August 13 to August 27]																					
RAB-22-2130	022 - Laying Course	[Gantt bar: August 20 to September 03]																					
Roof Finishes - North																							
RAB-22-2180	022 - Set up and Mobilisation for Roof Finishes	[Gantt bar: April 16 to April 16]																					

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

3-Month Rolling Programme Update, 01 June 2017

RAB5			
Date	Revision	Checked	Approved
01-Jun-17	3-Month Rolling Programme, 01 Jun-17 Update	SGJ	



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

3-Month Rolling Programme Update, 01 June 2017

RAB5			
Date	Revision	Checked	Approved
01-Jun-17	3-Month Rolling Programme, 01 Jun-17 Update	SGJ	



Activity ID	Activity Name	April 2017				May 2017				June 2017				July 2017				August 2017				September 2017		
		02	09	16	23	30	07	14	21	28	04	11	18	25	02	09	16	23	30	06	13	20	27	03
Roof																								
Cure and Strip																								
Supporting Walls and Columns to +19.1mPD																								
Lift Doghouse																								
Cure and Strip																								
RAB-23-6060	023 - Cure and Strip False/Formwork +19.95mPD																							
ABWF/E&M																								
Internal Finishes																								
Ground Floor																								
Degree 1																								
RAB-23-5420	023 - Construct Blockwork Walls to G/F																							
RAB-23-5430	023 - Plastering & Undercoat, G/F																							
RAB-23-5470	023 - MEP 1st Fix, G/F																							
023 -23-5430	023 - Screeding, G/F																							
RAB-23-5530	023 - Access to C3, C6 & C7 Cabling**, G/F																							
RAB-23-5540	023 - ABWF and MEP works to Degree 1 for others (KD3A) G/F																							
Degree 2																								
RAB-23-5860	023 - MEP 2nd Fix, G/F																							
RAB-23-5610	023 - Frame for Wall Panel & Cladding + Louver, G/F																							
RAB-23-5670	023 - Access to C3, C6 & C7 For Equip. Installation**, G/F																							
Degree 3																								
RAB-23-6320	023 - Ceiling Paint Finish, G/F																							
RAB-23-5930	023 - Wall Finish - Paint & Tile, G/F																							
RAB-23-6380	023 - MEP Final Fix, G/F																							
RAB-23-6220	023 - Floor Finish Other Than Carpet, G/F																							
RAB-23-5760	023 - Ceiling Frame, G/F																							
RAB-23-6080	023 - Glazing, G/F																							
First Floor																								
Degree 1																								
RAB-23-8055	023 - Construct Blockwork Walls, G/F - 1/F North (932m³), 1/F																							
RAB-23-8065	023 - Plastering & Undercoat, 1/F																							
RAB-23-8075	023 - MEP 1st Fix, 1/F																							
RAB-23-8245	023 - C3, C6 & C7 Wall Conduit**, 1/F																							
RAB-23-8215	023 - Screeding, 1/F																							
RAB-23-8345	023 - C3, C6 & C7 Cabling**, 1/F																							
Degree 2																								
RAB-23-8125	023 - MEP 2nd Fix, 1/F																							
RAB-23-8085	023 - Frame for Wall Panel & Cladding + Louver, 1/F																							
RAB-23-5790	023 - ABWF and MEP works to Degree 2 for others (KD3B) 1/F																							
RAB-23-8235	023 - Power On																							
Degree 3																								
RAB-23-8175	023 - Wall Finish - Paint & Tile, 1/F																							
RAB-23-8135	023 - Ceiling Paint Finish, 1/F																							
RAB-23-8165	023 - MEP Final Fix, 1/F																							
RAB-23-8105	023 - Ceiling Frame, 1/F																							
RAB-23-8145	023 - Glazing, 1/F																							
RAB-23-8205	023 - Floor Finish Other Than Carpet, 1/F																							
RAB-23-8265	023 - ABWF and MEP works to Degree 3 (KD3C) 1/F																							
Roof Level Dog House																								
RAB-23-6150	023 - ABWF and MEP works to Degree 1 R/F																							
External Finishes																								

■ Remaining Level of Effort
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Activity ID	Activity Name	April 2017				May 2017				June 2017				July 2017				August 2017				September 2017			
		02	09	16	23	30	07	14	21	28	04	11	18	25	02	09	16	23	30	06	13	20	27	03	10
Facade																									
RAB-23-5560	023 - External Render	[Red bar from April 02 to June 04]																							
RAB-23-5590	023 - External Tiling	[Red bar from June 11 to July 02]																							
RAB-23-5650	023 - External Painting	[Red bar from June 18 to July 09]																							
RAB-23-5990	023 - Dismantle Scaffolding	[Red bar from July 16 to July 23]																							
At Grade																									
RAB-23-5740	023 - Prepare Sub Grade	[Red bar from July 23 to August 06]																							
Window Wall																									
East																									
RAB-23-6800	023 - Complete Formwork Stripping to Roof Level - E	[Milestone diamond at April 23]																							
RAB-23-6810	023 - Install Primary Steelwork for Window Wall - E	[Green bar from July 16 to July 23]																							
RAB-23-6820	023 - Install Secondary Steelwork for Window Wall - E	[Green bar from July 23 to August 06]																							
West																									
Roof Finishes																									
RAB-23-5500	023 - Leveling screed	[Blue bar from May 14 to May 21]																							
RAB-23-5550	023 - Waterproof membrane	[Red bar from June 04 to June 11]																							
RAB-23-5620	023 - Top Screed	[Red bar from June 18 to June 25]																							
RAB-23-5920	023 - Install Railing	[Red bar from July 02 to July 09]																							
Green Roof																									
RAB-23-5720	023 - Install green Roof Irrigation Systems	[Red bar from July 02 to July 23]																							
RAB-23-5900	023 - Complete Green Roofing Works	[Red bar from August 06 to September 10]																							
Specialist Installations																									
RAB-23-6270	023 - Install Lift (1 nos)	[Blue bar from May 14 to May 21]																							
RAB-23-7310	023 - Install Glazed Entrance Canopy	[Green bar from June 04 to July 02]																							
PV Installation																									
RAB-23-6350	023 - Install Supporting Frame and PV panel	[Green bar from July 02 to July 23]																							
RAB-23-6360	023 - Cable containment and grid cable wiring	[Green bar from July 23 to August 06]																							
Steel Canopy																									
RAB-23-6170	023 - Install Steel Support Columns	[Blue bar from May 21 to May 28]																							
RAB-23-6200	023 - Install Primary Steelwork	[Green bar from June 11 to June 18]																							
RAB-23-6240	023 - Install Secondary Steelwork	[Green bar from June 18 to July 02]																							
RAB-23-6290	023 - Install Metal Cladding Panels	[Green bar from July 02 to July 23]																							
RAB-23-6310	023 - Install Misc Metalworks	[Green bar from July 23 to August 06]																							
Utilities and Drainage																									
RAB-23-7975	023 - Construct Permanent Drainage, Manholes & Draw Pits	[Red bar from July 23 to September 10]																							
Testing & Commissioning																									
RAB-TC23-1010	023 - T&C (Lift)	[Green bar from July 02 to July 09]																							
RAB-TC23-1000	023 - T&C (HVAC, FS, P&D, OTHERS)	[Red bar from July 09 to July 23]																							
Statutory Submissions & Approvals (Day 610 Completion)																									
BBE0																									
EMSD - Building 023 Lift Inspection																									
RAB-FSD-170	023 - Submit EMSD Form 3 (Commencement of Lift Installation)	[Milestone diamond at June 04]																							
RAB-FSD-180	023 - Submit EMSD Form 5 (Completion of Lift Installation)	[Milestone diamond at July 09]																							
RAB-FSD-190	023 - EMSD Lift Inspection	[Green bar from July 23 to August 06]																							
Water Supplies Department (WSD)																									
Commencement																									
Completion																									
Fire Services Department (VAC)																									
RAB-FSD-890	023 - Submit Form 314	[Milestone diamond at May 21]																							
Fire Services Department (FSD)																									
Commencement																									
Completion																									

█ Remaining Level of Effort
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		02	09	16	23	30	07	14	21	28	04	11	18	25	02	09	16	23	30	06	13	20	27	03
RAB-FSD-138	023 - Submit Form 314																							
RAB-FSD-108	023 - Submit WWO 46 Pt. IV for Building 023																							
Engineer (AECOM)																								
Building 025 - Inbound Private Car Annexure																								
Excavation																								
Raft Foundations																								
Structure																								
Walls & Columns																								
Roof Slab																								
Cure and Strip																								
ABWF/E&M INTERNAL FINISHES																								
INTERNAL FINISHING WORKS																								
Degree 1																								
RAB-25-7380	025 - Blockwork/Partition Walls (1720m ²)																							
RAB-25-7490	025 - Floor Screed																							
RAB-25-7400	025 - MEP 1st Fix																							
RAB-25-7390	025 - Plastering & Under Coat																							
RAB-25-7540	025 - Access for C3 Cabling***																							
Degree 2																								
RAB-25-7430	025 - MEP 2nd Fix																							
RAB-25-7570	025 - Raised Floor Pedestal																							
RAB-25-7450	025 - Frame for Wall Panel & Cladding																							
RAB-25-7560	025 - Access C3, C6 & C7 Equip. Installation***																							
RAB-25-7350	025 - Power On Available																							
RAB-KD6B10	KD6B - Projected achievement of Stage 6B of the Works																							
Degree 3																								
RAB-25-7480	025 - Floor Tiling																							
RAB-25-7610	025 - Wall Tiling																							
RAB-25-7440	025 - Door Frame/Panel & Ironmongery																							
RAB-25-7460	025 - MEP Final Fix																							
RAB-25-7470	025 - Ceiling Painting & Ceiling Sub-Frame																							
RAB-25-7600	025 - Wall Paint Finish Coat																							
RAB-25-7580	025 - Floor Painting																							
External Finishes																								
Facade																								
RAB-25-0400	025 - External Render																							
RAB-25-0420	025 - External Tiling																							
RAB-25-0450	025 - External Painting																							
RAB-25-0360	025 - Install External Louvers /Windows/Doors																							
RAB-25-0570	025 - Dismantle Scaffolding																							
RAB-25-0580	025 - Make good external surfaces																							
At Grade																								
RAB-25-6400	025 - Prepare Sub Grade																							
RAB-25-6390	025 - Laying Geo Textile																							
RAB-25-6410	025 - Lay Granular Sub-Base																							
RAB-25-6420	025 - Laying Course																							
Roof Finishes																								
RAB-25-0390	025 - Leveling screed - (1285m ²)																							
RAB-25-0440	025 - Waterproof membrane - (1285m ²)																							
RAB-25-0470	025 - Top Screed - (1285m ²)																							
RAB-25-0530	025 - Install Roof Tiles - (1285m ²)																							

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RAB-25-0550	025 - Install Railing (222m)																							
RAB-25-0540	025 - Install Cat Ladders and Roof Hatch																							
Green Roof																								
RAB-25-0700	025 - Install Green Roof Irrigation Systems																							
Specialist Installations																								
RAB-25-610	025 - Construct Immigration Counters x 3																							
Glazed Canopy																								
IMMD Kiosk																								
RAB-25-0380	025 - Internal ABWF and MEP of IMMD Kiosk																							
RAB-25-0350	025 - External Finishes to IMMD Kiosk																							
Utilities and Drainage																								
RAB-25-7250	025 - Construct Permanent Drainage, Manholes & Draw Pits																							
RAB-25-7290	025 - Install FS Water Main																							
RAB-25-7270	025 - Install Flushing Water Mains																							
RAB-25-7280	025 - Install Fresh Water Mains																							
RAB-25-7260	025 - Utilities and Common Telecom Ducting																							
Testing & Commissioning																								
Statutory Submissions & Approvals (Day 670 Completion)																								
BEO																								
Water Supplies Department (WSD)																								
Commencement																								
Completion																								
Fire Services Department (VAC)																								
Fire Service Water (FS)																								
Commencement																								
Completion																								
Engineer (AECOM)																								
Building 032 - Outbound Private Car Annexure																								
Excavation																								
Raft Foundations																								
Structure																								
Walls & Columns																								
RAB-32-610	032 - Install SPR and FS RC Water Tanks (G/F South)																							
Roof Slab																								
Cure and Strip																								
RAB-32-0690	032 - Cure and Strip False/Formwork, Water Tank																							
ABWF/E&M																								
Internal Finishes																								
Degree 1																								
RAB-32-0460	032 - Construct Blockwork Walls (2170m ²)																							
RAB-32-0720	032 - Plastering & Undercoat																							
RAB-32-0700	032 - Floor Screed																							
RAB-32-0510	032 - MEP 1st Fix																							
RAB-32-0820	023 - Access for C3 Cabling***																							
Degree 2																								
RAB-32-0560	032 - MEP 2nd Fix																							
RAB-32-0760	032 - Door & Window Frame + Louver																							
RAB-32-0660	032 - Power On																							
RAB-32-0840	032 - Access for C3, C6 & C7 Equip. Installation***																							
RAB-KD7B10	KD7B - Projected achievement of Stage 7B of the Works																							
Degree 3																								
RAB-32-0770	032 - Floor Tiling & Floor Finishes to Early handover Rooms																							

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		02	09	16	23	30	07	14	21	28	04	11	18	25	02	09	16	23	30	06	13	20	27	03
RAB-32-0750	032 - Ceiling Frame																							
RAB-32-0790	032 - Glazing																							
RAB-32-0590	032 - MEP Final Fix																							
RAB-32-0745	032 - Raised Floor																							
RAB-32-0870	032 - Ceiling Panel																							
RAB-32-0800	032 - Door Panel & Ironmongery																							
RAB-32-0850	032 - Early Handover Rooms Ready to End Users***																							
Roof Finishes																								
RAB-32-0440	032 - Waterproof membrane																							
RAB-32-0470	032 - Roof Tiling																							
RAB-32-0550	032 - Install Railing																							
RAB-32-0540	032 - Install Cat Ladders and Roof Hatch																							
Green Roof																								
RAB-32-0620	032 - Install Green Roof Irrigation Systems																							
RAB-32-0650	032 - Complete Green Roof Works																							
External Finishes																								
Facade																								
RAB-32-0400	032 - External Render																							
RAB-32-0360	032 - Install External Louvers /Windows/Doors																							
RAB-32-0420	032 - External Tiling																							
RAB-32-0450	032 - External Painting																							
RAB-32-0570	032 - Dismantle Scaffolding																							
RAB-32-0580	032 - Make good external surfaces																							
At Grade																								
RAB-32-6460	032 - Prepare Sub Grade																							
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																							
Glazed Canopy																								
RAB-32-0480	032 - Install Steel Support Columns (14 No)																							
Utilities and Drainage																								
RAB-32-7290	032 - Construct Permanent Drainage and Manholes (Approx 150m)																							
RAB-32-7330	032 - Install FS Water Main																							
RAB-32-7310	032 - Install Flushing Water Mains																							
RAB-32-7320	032 - Install Fresh Water Mains																							
RAB-32-7300	032 - Utilities and Common Telecom Ducting																							
Testing & Commissioning																								
Statutory Submissions & Approvals (Day 670 Completion)																								
BBE0																								
Water Supplies Department (WSD)																								
Commencement																								
Completion																								
Fire Services Department (HVC)																								
Fire Water Service (FS)																								
Commencement																								
Completion																								
Engineer (AECOM)																								
Building 044 - E&M Maintenance Building																								
Excavation																								

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		02	09	16	23	30	07	14	21	28	04	11	18	25	02	09	16	23	30	06	13	20	27	03
Raft																								
Structure																								
Walls & Columns																								
Ground to First Floor																								
First Floor																								
Cure and Strip																								
RAB-44-0220	044 - Cure and Strip False/Formwork for +12.15mPD Slab, G/F - 1/F																							
First Floor to Second Floor																								
RAB-44-0210	044 - Construct External Walls to +16.85mPD																							
Second Floor																								
RAB-44-0250	044 - Construct Roof Level (2/F) RC Structures upto +16.85mPD																							
Cure and Strip																								
RAB-44-0280	044 - Cure and Strip False/Formwork for +16.85mPD Slab, 1/F - 2/F																							
Second Floor to Roof																								
RAB-44-0270	044 - Construct External Walls to +20.65mPD (South)																							
RAB-44-610	044 - Install SPR (37m³) and FS (36m³) RC Water Tanks																							
Roof Level																								
RAB-44-0330	044 - Construct Roof Floor upto +20.65mPD (242m²) (72m³)																							
Cure and Strip																								
RAB-44-0370	044 - Cure and Strip False/Formwork for +20.65mPD Slab, 2/F - R/F																							
ABWF/E&M																								
Ground Floor																								
Degree 1																								
RAB-44-1110	044 - Construct Blockwork Walls - G/F																							
RAB-44-1180	044 - Plastering & Undercoat - G/F																							
RAB-44-1185	044 - MEP 1st Fix - G/F																							
RAB-44-1190	044 - C3 & C8 Conduit Installation*** - G/F																							
RAB-44-1170	044 - Screed - G/F																							
RAB-44-1200	044 - C3 Cabling*** - G/F																							
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-44-9295	044 - Door Panel & Ironmongery - G/F																							
First Floor																								
Degree 1																								
RAB-44-9315	044 - Construct Blockwork Walls - 1/F																							
RAB-44-9405	044 - C3, C6 & C8 Conduit Installation*** - 1/F																							
RAB-44-9305	044 - MEP 1st Fix - 1/F																							
RAB-44-9335	044 - Plastering & Undercoat - 1/F																							
RAB-44-9325	044 - Screed - 1/F																							
RAB-44-9415	044 - Access for C3 Cabling*** - 1/F																							
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-44-9505	044 - Door Panel & Ironmongery - 1/F																							
Second Floor																								
Degree 1																								
RAB-44-9525	044 - Construct Blockwork Walls - 2/F																							

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RAB-44-9755	044 - C3, C6 & C8 Conduit Installation*** - 2/F																							
RAB-44-9515	044 - MEP 1st Fix - 2/F																							
RAB-44-9545	044 - Plastering & Undercoat - 2/F																							
RAB-44-9765	044 - Access for C3 Cabling*** - 2/F																							
RAB-44-9535	044 - Screed - 2/F																							
RAB-KD8A20	044 - Projected achievement of Stage 8A of the Works - 2/F																							
Degree 2																								
RAB-44-9575	044 - MEP 2nd Fix - 2/F																							
RAB-44-9665	044 - Door & Window Frame + Louver - 2/F																							
RAB-44-9605	044 - Power On - 2/F																							
RAB-44-0610	KD8B - Projected achievement of Stage 8B of the Works - 2/F																							
Degree 3																								
Roof Finishes																								
RAB-44-0420	044 - Leveling screed - (242m²)																							
RAB-44-0450	044 - Waterproof membrane - (242m²)																							
RAB-44-1150	044 - Insulation Board - (242m²)																							
RAB-44-0480	044 - Top Screed - (242m²)																							
RAB-44-0520	044 - Install Roof Tiles - (242m²)																							
RAB-44-0540	044 - Install Railing																							
RAB-44-0550	044 - Install Cat Ladder and Roof Hatch																							
Green Roof																								
RAB-44-0320	044 - Erect External Scaffolding																							
RAB-44-0350	044 - Leveling screed - (242m²)																							
RAB-44-0360	044 - Waterproof membrane - (242m²)																							
RAB-44-0390	044 - Top Screed - (242m²)																							
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-44-0470	044 - External Render																							
RAB-44-0530	044 - External Painting																							
RAB-44-0490	044 - External Tiling																							
RAB-44-0570	044 - Dismantle Scaffolding																							
At Grade																								
Specialist Installations																								
RAB-44-0600	044 - Install Lift (1 nos)																							
RAB-44-1100	044 - Installation of Roller Shutter Header Box																							
RAB-44-2250	044 - Small Glass Canopy North Elevation																							
RAB-44-1090	044 - Installation of Roller Shutter Steel Curtain																							
Curtain Wall																								
East																								
RAB-44-6870	044 - Complete Formwork Stripping to Roof Level																							
RAB-44-6880	044 - Install Primary Steelwork for Window Wall - East																							
RAB-44-6890	044 - Install Secondary Steelwork for Window Wall - East																							
West																								
Utilities and Drainage																								
RAB-44-7895	044 - Construct Permanent Drainage and Manholes (Approx 100m)																							
Testing & Commissioning																								
Statutory Submissions & Approvals																								
BBE0																								

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		02	09	16	23	30	07	14	21	28	04	11	18	25	02	09	16	23	30	06	13	20	27	03
EMSD - Building 044 Lift Inspection																								
RAB-FSD-200	044 - Submit EMSD Form 3 (Commencement of Lift Installation)																							
Water Supplies Department (WSD)																								
Commencement																								
Completion																								
Fire Services Department (HVAC)																								
Fire Water Services (FS)																								
Commencement																								
Completion																								
Engineer (AECOM)																								
Building 045 - Highways Depot & Administration Building																								
Raft Foundation																								
Diesel Fuel Chamber																								
Structure G/F to R/F																								
G/F to 1/F Walls & Columns																								
1/F Slab																								
Cure and Strip																								
1/F to 2/F Walls & Columns																								
2/F Slab																								
RAB-45-0470	045 - Construct 2/F Suspended Slab +16.55mPD Bay 6 (South) (28€)																							
RAB-45-0520	045 - Construct 2/F Suspended Slab +16.55mPD Bay 5 (South) (28€)																							
Cure and Strip																								
RAB-45-0430	045 - Cure and Strip False/Formwork +16.7mPD Bay 3 (Middle), 1/F																							
RAB-45-0550	045 - Cure and Strip False/Formwork +16.7mPD Bay 4 (Middle), 1/F																							
RAB-45-0370	045 - Cure and Strip False/Formwork +16.55mPD Bay 6 (South), 1/f																							
RAB-45-0510	045 - Cure and Strip False/Formwork +16.55mPD Bay 5 (South), 1/f																							
2/f to R/F Walls & Columns																								
RAB-45-0610	045 - Construct External Walls to +20.65mPD Bay 3, 2/F-R/F																							
RAB-45-1110	045 - Construct SPR (37m³) and FS (36m³) RC Water Tanks (2/F St																							
RAB-45-1220	045 - Construct External Walls to +20.65mPD Bay 4, 2/F-R/F																							
Roof Level Slab																								
RAB-45-0700	045 - Construct Roof Floor upto +20.65mPD Bay 3 (285m²) (approx																							
RAB-45-1230	045 - Construct Roof Floor upto +20.65mPD Bay 4 (285m²) (approx																							
Cure and Strip																								
RAB-45-0750	045 - Cure and Strip False/Formwork +20.65mPD Bay 3, 2/F-R/F																							
RAB-45-1240	045 - Cure and Strip False/Formwork +20.65mPD Bay 4, 2/F-R/F																							
ABWF/E&M																								
Ground Floor, South - G/F																								
Degree 1, G/F																								
RAB-45-0410	045 - Concrete Surface Defect Rectification																							
RAB-45-0400	045 - C3, C6 & C8 Conduit Installation, G/F***																							
RAB-45-0390	045 - Construct Blockwork Walls - G/F																							
RAB-45-9725	045 - MEP 1st Fix - G/F																							
RAB-45-0440	045 - Access for C3 Cabling Works, G/F***																							
RAB-45-9775	045 - Plastering & Undercoat - G/F																							
RAB-45-9765	045 - Screed - G/F																							
Degree 2, G/F																								
RAB-45-9805	045 - MEP 2nd Fix - G/F																							
RAB-45-9895	045 - Door & Window Frame + Louver - G/F																							
Degree 3, G/F																								
RAB-45-9915	045 - Floor Finish (Paint & Tile) - G/F																							
RAB-45-9935	045 - Wall Finish, Paint & Tile - G/F																							

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

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		02	09	16	23	30	07	14	21	28	04	11	18	25	02	09	16	23	30	06	13	20	27	03	10
RAB-45-9925	045 - Glazing - G/F																								
RAB-45-10005	045 - Ceiling Paint - G/F																								
RAB-45-9815	045 - MEP Final Fix - G/F																								
First Floor, 1/F																									
Degree 1, 1/F																									
RAB-45-9965	045 - Construct Blockwork Walls - 1/F																								
RAB-45-9975	045 - Screed - 1/F																								
RAB-45-9995	045 - C3, C6 & C8 Conduit Installation, 1/F***																								
RAB-45-9985	045 - Plastering & Undercoat - 1/F																								
RAB-45-10045	045 - Access for C3 Cabling Works, 1/F***																								
RAB-45-9955	045 - MEP 1st Fix - 1/F																								
Degree 2, 1/F																									
RAB-45-10105	045 - Door & Window Frame + Louver - 1/F																								
RAB-45-10015	045 - MEP 2nd Fix - 1/F																								
Degree 3, 1/F																									
RAB-45-10125	045 - Floor Finish (Paint & Tile) - 1/F																								
RAB-45-10145	045 - Wall Finish, Paint & Tile - 1/F																								
RAB-45-10285	045 - Glazing - 1/F																								
RAB-45-10175	045 - Ceiling Paint - 1/F																								
Second Floor, 2/F																									
Degree 1, 2/F																									
RAB-45-0810	045 - Construct Blockwork Walls - 2/F																								
RAB-45-10185	045 - Screed - 2/F																								
RAB-45-10195	045 - Plastering & Undercoat - 2/F																								
RAB-45-10165	045 - MEP 1st Fix - 2/F																								
RAB-45-0830	045 - Access to C3, C6 & C8 Conduit Installation, 2/F***																								
RAB-45-0840	045 - Access for C3 Cabling Works, 2/F***																								
RAB-45-0900	045 - Projected achievement of Stage 8A of the Works - 2/F																								
Degree 2, 2/F																									
RAB-45-10315	045 - Door & Window Frame + Louver - 2/F																								
RAB-45-10225	045 - MEP 2nd Fix - 2/F																								
Degree 3, 2/F																									
External Finishes																									
Bldg. External Finishes																									
Facade																									
RAB-45-0760	045 - Make good external surfaces																								
RAB-45-0630	045 - External Render																								
RAB-45-0620	045 - Install External Louvers /Windows/Doors																								
RAB-45-0690	045 - External Painting																								
RAB-45-0720	045 - Dismantle Scaffolding																								
At Grade																									
RAB-45-6580	045 - Prepare Sub Grade																								
RAB-45-6570	045 - Laying Geo Textile																								
RAB-45-6590	045 - Lay Granular Sub-Base																								
RAB-45-6600	045 - Laying Course																								
RAB-45-6560	045 - Concrete Block Paving																								
RAB-45-6610	045 - Grouting Works to Concrete Pavers																								
Roof Finishes -																									
RAB-45-0820	045 - Leveling screed																								
RAB-45-0860	045 - Waterproof membrane																								
RAB-45-0880	045 - Top Screed																								

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RAB-45-0910	045 - Install Roof Tiles																								
Green Roof - Noth Side, 2/F Level																									
RAB-45-0600	045 - Leveling screed																								
RAB-45-0650	045 - Waterproof membrane																								
RAB-45-1210	045 - Insulation Board																								
RAB-45-0670	045 - Top Screed																								
RAB-45-0680	045 - Install green Roof Irrigation Systems																								
RAB-45-0740	045 - Complete Green Roofing Works																								
Specialist Installations																									
RAB-45-1125	045 - Install Genset and swtich board G/F																								
RAB-45-0590	045 - Install Lift (1 nos)																								
Window Wall																									
East																									
RAB-45-6950	045 - Complete Formwork Stripping to Roof Level																								
West																									
Utilities and Drainage																									
RAB-45-7935	045 - Construct Permanent Drainage and Manholes (Approx 180m)																								
Testing & Commissioning																									
Statutory Submissions & Approvals (Day 670 Completion)																									
BBE0																									
EMSD - Building 045 Lift Inspection																									
RAB-FSD-230	045 - Submit EMSD Form 3 (Commencement of Lift Installation)																								
Fuel Tank - DG License																									
RAB-FSD-660	045 - FSD Inspection & Approval																								
RAB-FSD-680	045 - FSD Issue License																								
Generator Set - EPD Permit																									
RAB-EPD-0100	45 - DG Storage Drwg. Ready for Submission																								
RAB-EPD-0110	45 - Submmit to EPD																								
RAB-EPD-0120	45 - EPD Issue Permit																								
RAB-EPD-0130	45 - Submission Form 501to EPD																								
Generator Set - DG Licence																									
RAB-FSD-690	045- Genset Ready for DG Inspection																								
RAB-FSD-700	045 - Notify FSD for DG Inspection																								
Water Supplies Department (WSD)																									
Commencement																									
Completion																									
RAB-WSD-654	045 - Submit WWO 46 Pt. IV																								
HVAC																									
FSD																									
Commencement																									
Completion																									
Engineer (AECOM)																									
Building 050 - Public Toilets Type 2																									
Public Toilet (Portion H1)																									
Excavation																									
Raft																									
RAB-50-1330	050 H1 - Ground Slab																								
Structure																									
RAB-50-1060	050 H1 - Construct RC Walls & Columns (External and Internal)																								
RAB-50-1070	050 H1 - Construct Roof Floor at +11.525mPD																								
RAB-50-4310	050 H1 - Construct RC Support Columns for Aluminium Solar Shade																								
RAB-50-1080	050 H1 - Cure and Strip False/Formwork																								

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ABWF/E&M																								
Internal Finishes																								
Degree 1																								
RAB-50-1110	050 H1 - Construct Blockwork Walls (126m ²)																							
RAB-50-1320	050 H1 - Screeding																							
RAB-50-1340	050 H1 - Plastering & Undercoat																							
RAB-50-1170	050 H1 - MEP 1st Fix																							
Degree 2																								
Degree 3																								
Specialist installation																								
Roof Finishes																								
RAB-50-1100	050 H1 - Install Skylights (8No)																							
RAB-50-1130	050 H1 - Leveling screed - 140m ²																							
External Finishes																								
RAB-50-1090	050 H1 - Erect External Scaffolding																							
RAB-50-1120	050 H1 - Install External Louvers /Windows/Doors																							
RAB-50-1150	050 H1 - External Render																							
Utilities and Drainage																								
RAB-50-8015	050 H1 - Construct Permanent Drainage and Manholes (Approx 20m)																							
RAB-50-8035	050 H1 - Install Flushing Water Mains																							
RAB-50-8045	050 H1 - Install Fresh Water Mains																							
RAB-50-8025	050 H1 - Utilities and Common Telecom Ducting																							
Testing & Commissioning																								
Statutory Submissions & Approvals (Day 670 Completion)																								
BBEO																								
Water Supplies Department (WSD)																								
Commencement																								
Completion																								
Fire Services Department (VAC)																								
Engineer (AECOM)																								
Public Toilet (Portion H2)																								
Excavation																								
Raft																								
RAB-50-2320	050 H2 - Ground Slab																							
Structure																								
RAB-50-2060	050 H2 - Construct RC Walls (External and Internal)																							
RAB-50-4330	050 H2 - Construct Roof Floor at +11.525mPD																							
RAB-50-2070	050 H2 - Construct RC Support Columns for Aluminium Solar Shade																							
RAB-50-2080	050 H2 - Cure and Strip False/Formwork																							
ABWF/E&M																								
Internal Finishes																								
Degree 1																								
RAB-50-2110	050 H2 - Construct Blockwork Walls (126m ²)																							
RAB-50-2310	050 H2 - Screeding																							
Degree 2																								
Degree 3																								
Specialist installation																								
Roof Finishes																								
RAB-50-2100	050 H2 - Install Skylights (8No)																							
RAB-50-2130	050 H2 - Leveling screed - 140m ²																							
External Finishes																								
RAB-50-2090	050 H2 - Erect External Scaffolding																							

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RAB-50-2120	050 H2 - Install External Louvers /Windows/Doors																							
Utilities and Drainage																								
RAB-50-7895	050 H2 - Construct Permanent Drainage and Manholes (Approx 20m)																							
RAB-50-7915	050 H2 - Install Flushing Water Mains																							
RAB-50-7925	050 H2 - Install Fresh Water Mains																							
RAB-50-7905	050 H2 - Utilities and Common Telecom Ducting																							
Testing & Commissioning																								
Statutory Submissions & Approvals (Day 670 Completion)																								
BBEO																								
Water Supplies Department (WSD)																								
Commencement																								
Completion																								
Fire Services Department (VAC)																								
Engineer (AECOM)																								
Public Toilet (Portion A1)																								
RAB-50-3000	050 A1 - Possession of Portion A1 - If Exercised																							
Excavation																								
RAB-50-3020	050 A1 - Open cut excavation down to formation level (370m³)																							
RAB-50-3030	050 A1 - Underground Utilities and Drainage																							
Raft																								
RAB-50-3040	050 A1 - Construct Raft Foundation + Dwarf Wall																							
RAB-50-3050	050 A1 - Ground Slab																							
Structure																								
RAB-50-3060	050 A1 - Construct RC Walls (External and Internal)																							
RAB-50-3070	050 A1 - Construct Roof Floor at +11.525mPD (140m²) (21m³)																							
RAB-50-4340	050 A1 - Construct RC Support Columns for Aluminium Solar Shade																							
RAB-50-3080	050 A1 - Cure and Strip False/Formwork																							
ABWF/E&M																								
Internal Finishes																								
Degree 1																								
RAB-50-3110	050 A1 - Construct Blockwork Walls (126m²)																							
RAB-50-3320	050 A1 - Screeding																							
Degree 2																								
Degree 3																								
Specialist installation																								
Roof Finishes																								
RAB-50-3100	050 A1 - Install Skylights (8No)																							
External Finishes																								
RAB-50-3090	050 A1 - Erect External Scaffolding																							
RAB-50-3120	050 A1 - Install External Louvers /Windows/Doors																							
Utilities and Drainage																								
RAB-50-7935	050 A1 - Construct Permanent Drainage and Manholes																							
Testing & Commissioning																								
Statutory Submissions & Approvals (Day 670 Completion)																								
BBEO																								
Water Supplies Department (WSD)																								
Commencement																								
Completion																								
Fire Services Department (VAC)																								
Engineer (Aecom)																								
Public Toilet (Portion A2)																								
Excavation																								
Raft																								

█ Remaining Level of Effort
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RAB-50-4050	050 A2 - Ground Slab																							
Structure																								
RAB-50-4060	050 A2 - Construct RC Walls (External and Internal)																							
RAB-50-4070	050 A2 - Construct Roof Floor at +11.525mPD (140m²) (21m³)																							
RAB-50-4350	050 A2 - Construct RC Support Columns for Aluminium Solar Shade																							
RAB-50-4080	050 A2 - Cure and Strip False/Formwork																							
ABWF/E&M																								
Internal Finishes																								
Degree 1																								
RAB-50-4110	050 A2 - Construct Blockwork Walls (126m²)																							
RAB-50-4400	050 A2 - Screeding																							
Degree 2																								
Degree 3																								
Specialist installation																								
Roof Finishes																								
RAB-50-4100	050 A2 - Install Skylights (8No)																							
External Finishes																								
RAB-50-4090	050 A2 - Erect External Scaffolding																							
RAB-50-4120	050 A2 - Install External Louvers /Windows/Doors																							
Utilities and Drainage																								
RAB-50-7975	050 A2 - Construct Permanent Drainage and Manholes (Approx 20m)																							
RAB-50-7995	050 A2 - Install Flushing Water Mains																							
RAB-50-8005	050 A2 - Install Fresh Water Mains																							
RAB-50-7985	050 A2 - Utilites and Common Telecom Ducting																							
Testing & Commissioning																								
Statutory Submissions & Approvals (Day 670 Completion)																								
BBEO																								
Water Supplies Department (WSD)																								
Commencement																								
Completion																								
Fire Servives Department (VAC)																								
Engineer (AECOM)																								
Building 053 - Outbound X-Ray Building																								
Excavation																								
Raft																								
Structure																								
External Walls																								
To First Floor Level																								
Internal Structures																								
First Floor																								
Slabs																								
RAB-53-1130	053 - Install SPR and FS Glass Reinforced Polyester Water Tanks(S																							
Cure and Strip																								
1/F - Roof Level																								
Staircases																								
Roof Floor																								
Slabs																								
Cure and Strip																								
ABWF/E&M																								
Ground Floor																								
Degree 1 - G/F																								
RAB-53-0400	053 - MEP 1st Fix, G/F																							
Degree 2 - G/F																								

█ Remaining Level of Effort
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RAB-53-7935	053 - MEP 2nd Fix, G/F	[Actual Work]												[Critical Remaining]													
RAB-53-7895	053 - Frame for Wall Panel & Cladding, G/F	[Actual Work]												[Critical Remaining]													
Degree 3 - G/F																											
RAB-53-0660	053 - Wall Tiling & Wall Painting Final Coat (2), G/F	[Actual Work]												[Critical Remaining]													
RAB-53-0730	053 - MEP Final Fix, G/F	[Actual Work]												[Critical Remaining]													
RAB-53-8135	053 - Ceiling Plaster Board Sub-Frame, G/F	[Actual Work]												[Critical Remaining]													
RAB-53-0690	053 - Raised Floor System, G/F	[Actual Work]												[Critical Remaining]				[Remaining Work]									
RAB-53-0710	053 - Door Panel & Ironmongery, G/F	[Actual Work]												[Critical Remaining]				[Remaining Work]									
RAB-53-0700	053 - Glazing, G/F	[Actual Work]												[Critical Remaining]				[Remaining Work]									
First Floor																											
Degree 1 - 1/F																											
RAB-53-7955	053 - MEP 1st Fix, 1/F	[Actual Work]																									
Degree 2 - 1/F																											
RAB-53-8035	053 - MEP 2nd Fix, 1/F	[Actual Work]												[Critical Remaining]				[Remaining Work]									
RAB-53-8005	053 - Access to C3 equipment Installatrion***	[Finish Constraint]																									
RAB-53-8045	053 - Projected Achievement of Stage 1B	[Finish Constraint]																									
RAB-53-8015	053 - Frame for Wall Panel & Cladding, 1/F	[Actual Work]												[Critical Remaining]				[Remaining Work]									
RAB-53-8065	053 - Power On, 1/F	[Actual Work]												[Critical Remaining]				[Remaining Work]									
Degree 3 - 1/F																											
RAB-53-8055	053 - Ceiling Paint, Final Coat, 1/F	[Actual Work]																									
RAB-53-8155	053 - Wall Tiling & Wall Painting Final Coat (2), 1/F	[Actual Work]												[Critical Remaining]				[Remaining Work]									
RAB-53-8105	053 - MEP Final Fix, 1/F	[Actual Work]												[Critical Remaining]				[Remaining Work]									
RAB-53-8185	053 - Early handover to Enbd Users***	[Finish Constraint]																									
RAB-53-7985	053 - Ceiling Plaster Board Sub-Frame, 1/F	[Actual Work]												[Critical Remaining]				[Remaining Work]									
RAB-53-8085	053 - Door Panel & Ironmongery, 1/F	[Actual Work]												[Critical Remaining]				[Remaining Work]									
RAB-53-8075	053 - Glazing, 1/F	[Actual Work]												[Critical Remaining]				[Remaining Work]									
RAB-53-8125	053 - Snagging and Remedials, 1/F	[Actual Work]												[Critical Remaining]				[Remaining Work]									
External Finishes																											
External Facade																											
RAB-53-0500	053 - External Painting	[Actual Work]																									
RAB-53-0440	053 - Install External Louvers /Windows/Doors	[Actual Work]												[Remaining Work]													
RAB-53-0570	053 - Dismantle Scaffolding	[Actual Work]												[Remaining Work]				[Remaining Work]									
RAB-53-0640	053 - Make good external surfaces	[Actual Work]												[Remaining Work]				[Remaining Work]									
At Grade																											
RAB-53-7615	053 - Prepare Sub Grade	[Actual Work]												[Critical Remaining]				[Remaining Work]									
Roof Finishes																											
RAB-53-0460	053 - Waterproof Membrane - (490m²)	[Actual Work]												[Remaining Work]													
RAB-53-670	053 - Insulation Board - (490m²)	[Actual Work]												[Remaining Work]													
RAB-53-0490	053 - Top Screed - (490m²)	[Actual Work]												[Remaining Work]													
RAB-53-0520	053 - Install Roof Tiles - (490m²)	[Actual Work]												[Remaining Work]													
RAB-53-0530	053 - Install Railing - 105m	[Actual Work]												[Remaining Work]													
RAB-53-0540	053 - Install Cat Ladder and Roof Hatch	[Actual Work]												[Remaining Work]													
Spacialist Installations																											
RAB-53-0600	053 - Install Lift (1 nos)	[Actual Work]												[Remaining Work]													
Glazed Canopy																											
RAB-53-0620	053 - Construct high level Canopy at +9.95mPD	[Actual Work]												[Remaining Work]				[Remaining Work]									
Utilities and Drainage																											
RAB-53-7595	053 - Construct Permanent Drainage and Manholes (Approx 135m)	[Actual Work]												[Critical Remaining]				[Remaining Work]									
RAB-53-7655	053 - Install FS Water Main	[Actual Work]												[Critical Remaining]				[Remaining Work]									
RAB-53-7610	053 - Install Flushing Water Mains	[Actual Work]												[Critical Remaining]				[Remaining Work]									
RAB-53-7620	053 - Install Fresh Water Mains	[Actual Work]												[Critical Remaining]				[Remaining Work]									

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

3-Month Rolling Programme Update, 01 June 2017

RAB5			
Date	Revision	Checked	Approved
01-Jun-17	3-Month Rolling Programme, 01 Jun-17 Update	SGJ	



Activity ID	Activity Name	April 2017				May 2017				June 2017				July 2017				August 2017				September 2017		
		02	09	16	23	30	07	14	21	28	04	11	18	25	02	09	16	23	30	06	13	20	27	03
RAB-53-7605	053 - Utilities and Common Telecom Ducting																							
Testing & Commissioning																								
RAB-TC53-1040	053 - T&C (HVAC, FS, P&D, OTHERS)																							
RAB-TC53-1050	053 - T&C, Lift																							
Statutory Submissions & Approvals (Day 470 Completion)																								
BBE0																								
EMSD - Building 053 Lift Inspection																								
RAB-FSD-150	053 - Submit EMSD Form 5 (Completion of Lift Installation)																							
RAB-FSD-160	053 - EMSD Lift Inspection																							
Water Supplies Department (WSD)																								
Commencement																								
Completion																								
VAC																								
RAB-FSD-1140	053 - Submit Form 314																							
FSD																								
Commencement																								
Completion																								
Engineer (AECOM)																								
Building 058 - Outbound X-Ray Scan Tunnel																								
Excavation																								
Raft																								
Structure																								
Walls																								
South																								
North																								
Roof Slabs																								
Cure and Strip																								
ABWF/E&M																								
Internal Finishes																								
Degree 1																								
Degree 2																								
RAB-58-0690	058 - Wall Finish (BOH)																							
RAB-58-0630	058 - MEP 2nd Fix																							
RAB-58-0680	058 - Install Louver & Door Frame (Door Frame by other)																							
RAB-58-0640	058 - Power On																							
RAB-KD1B10	KD1B - Projected achievement of Stage 1B of the Works Building 05																							
Degree 3																								
RAB-58-0650	058 - MEP Final Fix																							
RAB-58-0700	058 - Floor Finish (Epoxy Paint)																							
RAB-58-0660	058 - Snagging and Remedials, Bldg. Internal																							
RAB-58-0710	058 - Door Panel (By other)																							
RAB-KD1C10	KD1C - Projected achievement of Stage 1C of the Works Building 05																							
RAB-58-7520	058 - End Users and MoM handover inspection																							
Roof Finishes																								
RAB-58-0450	058 - Waterproof membrane - 885m²																							
RAB-58-660	058 - insulation Board - 885m²																							
RAB-58-0480	058 - Top Screed - 885m²																							
RAB-58-0510	058 - Install Roof Tiles - 885m²																							
RAB-58-0540	058 - Install Railing - 152m																							
RAB-58-0530	058 - Install Cat Ladder and Roof Hatch																							
External Finishes																								
Facade																								

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

3-Month Rolling Programme Update, 01 June 2017

RAB5			
Date	Revision	Checked	Approved
01-Jun-17	3-Month Rolling Programme, 01 Jun-17 Update	SGJ	



Activity ID	Activity Name	April 2017				May 2017				June 2017				July 2017				August 2017				September 2017		
		02	09	16	23	30	07	14	21	28	04	11	18	25	02	09	16	23	30	06	13	20	27	03
RAB-58-0420	058 - External Render (630m²) (From Bldg 059)	[Blue bar from 02 to 09]																						
RAB-58-0440	058 - External Tiling (630m²)	[Blue bar from 23 to 28]																						
RAB-58-0400	058 - Install External Louvers /Windows/Doors	[Blue bar from 14 to 21]																						
RAB-58-0470	058 - External Painting	[Green bar from 28 to 04]																						
At Grade																								
Glazed Canopy																								
Utilities and Drainage																								
RAB-58-7550	058 - Construct Permanent Drainage and Manholes (Approx 100m)	[Blue bar from 02 to 28]																						
RAB-58-7590	058 - Install FS Water main	[Green bar from 18 to 25]																						
RAB-58-7570	058 - Install Flushing Water Mains	[Green bar from 09 to 16]																						
RAB-58-7580	058 - Install Fresh Water Mains	[Green bar from 02 to 09]																						
RAB-58-7560	058 - Utilites and Common Telecom Ducting	[Green bar from 16 to 23]																						
Testing & Commissioning																								
RAB-TC58-1060	058 - T&C (HVAC, FS, P&D, OTHERS)	[Red bar from 02 to 20]																						
Statutory Submissions & Approvals (Day 470 Completion)																								
BBE0																								
VAC (FSD)																								
Commencement																								
RAB-FSD-0280	058 - Submit Form 314	[Diamond at 28]																						
Completion																								
RAB-FSD-370	058 - Submit Form 046 Part IV	[Diamond at 28]																						
Engineer (AECOM)																								
Building 059 - Inbound X-Ray Scan Tunnel																								
Excavation																								
Raft Foundations																								
Structure																								
Walls																								
West																								
East																								
Roof Slabs																								
Cure and Strip																								
ABWF/E&M																								
Internal Finishes																								
Degree 1																								
Degree 2																								
RAB-59-0630	059 - MEP 2nd Fix	[Blue bar from 02 to 28]																						
RAB-59-0680	059 - Install Louver & Door Frame (Door Frame by other)	[Blue bar from 14 to 21]																						
RAB-KD2B10	KD2B - Projected achievement of Stage 2B of the Works	[Diamond at 11]																						
RAB-59-0640	059 - Power On	[Diamond at 11]																						
Degree 3																								
RAB-59-0660	059 - MEP Final Fix	[Blue bar from 23 to 28]																						
RAB-59-0700	059 - Floor Finish (Epoxy Paint)	[Red bar from 11 to 18]																						
RAB-59-7560	059 - Snagging and Remedials	[Red bar from 18 to 25]																						
RAB-KD2C10	KD2C - Projected achievement of Stage 2C of the Works	[Diamond at 23]																						
RAB-59-7550	059 - End Users and MoM handover inspection	[Diamond at 23]																						
Roof Finishes																								
RAB-59-0490	059 - Waterproof Membrane - 885m²	[Red bar from 04 to 11]																						
RAB-59-670	059 - Insulation Board - 885m²	[Red bar from 11 to 18]																						
RAB-59-0510	059 - Top Screed - 885m²	[Red bar from 18 to 25]																						
RAB-59-0540	059 - Install Roof Tiles - 885m²	[Red bar from 25 to 02]																						
RAB-59-0560	059 - Install Railing - 152m	[Red bar from 02 to 09]																						
RAB-59-0550	059 - Install Cat Ladder and Roof Hatch	[Red bar from 09 to 16]																						

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

3-Month Rolling Programme Update, 01 June 2017

RAB5			
Date	Revision	Checked	Approved
01-Jun-17	3-Month Rolling Programme, 01 Jun-17 Update	SGJ	



Activity ID	Activity Name	April 2017				May 2017				June 2017				July 2017				August 2017				September 2017			
		02	09	16	23	30	07	14	21	28	04	11	18	25	02	09	16	23	30	06	13	20	27	03	10
External Finishes																									
Facade																									
RAB-59-0430	059 - External Render (630m²)	[Actual Work]												[Critical Remaining]											
RAB-59-0480	059 - External Painting													[Critical Remaining]											
RAB-59-0450	059 - External Tiling (630m²)													[Critical Remaining]											
RAB-59-0590	059 - Dismantle Scaffolding													[Critical Remaining]											
At Grade																									
Glazed Canopy																									
RAB-59-0610	059 - Construct high level glazed canopy at +13.406mPD North													[Critical Remaining]											
Utilities and Drainage																									
RAB-59-7330	059 - Construct Permanent Drainage and Manholes (Approx 100m)	[Actual Work]												[Critical Remaining]											
RAB-59-7370	059 - Install FS Water Main													[Critical Remaining]											
RAB-59-7350	059 - Install Flushing Water Mains													[Critical Remaining]											
RAB-59-7360	059 - Install Fresh Water Mains													[Critical Remaining]											
RAB-59-7340	059 - Utilities and Common Telecom Ducting													[Critical Remaining]											
Testing & Commissioning																									
RAB-TC59-1000	059 - T&C (HVAC, FS, P&D, OTHERS)													[Critical Remaining]											
Statutory Submissions & Approvals (Day 470 Completion)																									
BBEO																									
RAB-BEE-480	059 - IRegistered Energy Assessor Inspection & Certification													[Critical Remaining]											
RAB-BEE-490	059 - ISubmit REA Certification to EDMS													[Critical Remaining]											
RAB-BEE-500	059 - IEDMS Issue of Cert of Compliance Registration (COCR)													[Critical Remaining]											
VAC																									
RAB-FSD-550	059 - Submit Form 314													[Critical Remaining]											
RAB-FSD-560	059 - Submit Form 501													[Critical Remaining]											
Fire Services Department (FSD)																									
Commencement																									
Completion																									
RAB-FSD-530	059 - Submit Form WWO 46 Part IV													[Critical Remaining]											
RAB-FSD-470	059 - Submit Form 501 to FSD for FS Inspection For Building 059													[Critical Remaining]											
RAB-FSD-480	059 - FSD Inspection Period For Building 059													[Critical Remaining]											
RAB-FSD-540	059 - Submit Form WWO 46 Part V													[Critical Remaining]											
Engineer (AECOM)																									
RAB-59-7520	059 - Submit Building 059 As Built Drawings to Engineer													[Critical Remaining]											

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

3-Month Rolling Programme Update, 01 June 2017

RAB5			
Date	Revision	Checked	Approved
01-Jun-17	3-Month Rolling Programme, 01 Jun-17 Update	SGJ	

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
				<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <ul style="list-style-type: none"> 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) ai 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 </div> <div style="width: 50%; border-left: 1px dashed gray; padding-left: 10px;"> <ul style="list-style-type: none"> Location 12(Inbd Private Car Kiosks(027) Canopy)-Deg2 (480d) Phase 1 Location 12(Inbd Private Car Kiosks(027) Canopy)-Deg2 (480d) Phase 2 Location 12(Inbd GV Kiosks (028))-Deg1 (400d) Phase 1 Location 12(Inbd GV Kiosks (028))-Deg1 (400d) Phase 2 Location 12(Inbd GV Kiosks (028))-Deg2 (480d) Phase 1 Location 12(Inbd GV Kiosks (028))-Deg2 (480d) Phase 2 Location 12(Inbd GV Kiosks (028) Canopy)-Deg1 (400d) Phase 1 Location 12(Inbd GV Kiosks (028) Canopy)-Deg1 (400d) Phase 2 Location 12(Inbd GV Kiosks (028) Canopy)-Deg2 (480d) Phase 1 Location 12(Inbd GV Kiosks (028) Canopy)-Deg2 (480d) Phase 2 Location 12(Outbd GV Kiosks (029))-Deg1 (400d) Phase 1 Location 12(Outbd GV Kiosks (029))-Deg1 (400d) Phase 2 Location 12(Outbd GV Kiosks (029))-Deg2 (480d) Phase 1 Location 12(Outbd GV Kiosks (029))-Deg2 (480d) Phase 2 Location 12(Outbd GV Kiosks (029) Canopy)-Deg1 (400d) Phase 1 Location 12(Outbd GV Kiosks (029) Canopy)-Deg1 (400d) Phase 2 Location 12(Outbd GV Kiosks (029) Canopy)-Deg2 (480d) Phase 1 Location 12(Outbd GV Kiosks (029) Canopy)-Deg2 (480d) Phase 2 Location 13(Outbd Private Car Kiosks (030))-Deg1 (480d) Phase 1 Location 13(Outbd Private Car Kiosks (030))-Deg2 (550d) Phase 1 Location 13(Outbd Private Car Kiosks (030) Canopy)-Deg1 (480d) Phase 1 Location 13(Outbd Private Car Kiosks (030) Canopy)-Deg2 (550d) Phase 1 Location 14(Future-Outbd/Inbd Private Car Kiosks)-Deg1 (610d) Location 14(Future-Outbd/Inbd Private Car Kiosks)-Deg2 (680d) Location 16(Outbd Traffic Control Kiosk (101))-Deg1 (400d) Location 16(Outbd Traffic Control Kiosk (101))-Deg2 (480d) Location 18(Outbd Private Car Exam Bldg(024))-Deg1 (-) Location 18(Outbd Private Car Exam Bldg(024))-Deg2 (670d) (by C03) Underground Ducting (UUD1.1) between CUE and Inbd Cargo Exam Bldg (0 (by C03) (UUD1.2) between Inbd Cargo Exam Bldg South (037[S]) and DOH Cargo C (by C03) (UUD2) between Inbd Cargo Exam Bldg North (037[N]) and Inbd Vehicle Cle (by C03) (UUD9.1) btw Inbd Cargo Exam Bldg S.(037[S]) & Inbd PC Exam Bldg(033) & (by C03) (UUD9.3) between Inbd Private Car Exam Bldg (033) and Inbd Vehicle Clear (by C03) (UUD9.2) between Inbd Private Car Exam Bldg (033) and Inbd Vehicle Clear (by C03) Underground Ducting (UUD3.1) between CUE to Outbd Cargo Exam Bldg (0 (by C03) (UUD3.2) btw Outbd Car Exam Bldg (023) and Outbd PC Exam Bldg (024) ai (byC03) (UUD4.1) between Outbd Private Car Exam Bldg (024) and Outbd Vehicle Cle (byC03) (UUD5) between Outbd Car Exam Bldg South (023[S]) and Outbd Vehicle Cle (by C03) Underground Ducting (UUD8) between CUE and Outbd PCA (032) (by C03) Inbound Vehicle Clearance Plaza, 01-Jun-17* (by C03) Outbound Vehicle Clearance Plaza, 01-Jun-17* </div> </div> <div style="margin-top: 10px;"> <ul style="list-style-type: none"> Interfaces Provisions Mobilization Provisions WA4 Site Erection & Servicing </div>															

Programme No.: HZMB-DWP Data Date: 14-Aug-15	<ul style="list-style-type: none"> Actual Level of Effort summary 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)	<table border="1" style="width: 100%; font-size: x-small;"> <thead> <tr> <th>Date</th> <th>Revision</th> <th>Checked</th> <th>Approved</th> </tr> </thead> <tbody> <tr> <td>14-Nov-16</td> <td>Rev.: 0</td> <td>WC</td> <td>LC</td> </tr> <tr> <td>10-Mar-17</td> <td>Rev.: 1.0a</td> <td>WC</td> <td>LC</td> </tr> <tr> <td>5-May-17</td> <td>Rev.: 1.0b</td> <td>WC</td> <td>LC</td> </tr> </tbody> </table>	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
Date	Revision	Checked	Approved																
14-Nov-16	Rev.: 0	WC	LC																
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Activity ID	Activity Name	2015			2016				2017				2018				2019		
		Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	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)																			
LLooccaattiioonn 33((Inbd Cargo Exam Bldg (037) Inspector Offices 128,129,130,131,12																			
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 i
 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

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
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			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
				<div style="display: flex; justify-content: space-between;"> <div style="width: 60%;"> <p>Location 3a(Inbd Cargo Exam Bldg (037) ROCARS Room)</p> <ul style="list-style-type: none"> EM1240 L3a(037) ROCARS Rm - Cable Laying and termination in Location 3 and Location 3a EM1260 L3a(037) ROCARS Rm - Cable Splicing and Testing and Labeling EM1280 L3a(037) ROCARS Rm - AVCSS SYSCON and SURCON and Intercom Installation EM1300 L3a(037) ROCARS Rm - VTS WS Installation EM1320 L3a(037) ROCARS Rm - VID WS Installation EM1340 L3a(037) ROCARS Rm - SURCON and SYSCON and WS Tuning <p>Location 3a(Inbd Cargo Exam Bldg (037) Main Server Room)</p> <ul style="list-style-type: none"> EM2120 L3a(037)Main Server Rm - Cable Laying and termination in Location 3 and Location 3a EM2140 L3a(037)Main Server Rm - Cable Splicing and Testing and Labeling EM2160 L3a(037)Main Server Rm - AVCSS Server Installation EM2180 L3a(037)Main Server Rm - VTS Server Installation EM2200 L3a(037)Main Server Rm - Servers Tuning <p>Location 4(Outbd Cargo Exam Bldg (023) MDF Room)</p> <p>Location 4a(Outbd Cargo Exam Bldg (023) ROCARS Room)</p> <ul style="list-style-type: none"> EM2240 L4a(023)ROCARS Rm - Cable Splicing and Testing and Labeling EM2260 L4a(023)ROCARS Rm - AVCSS SYSCON and SURCON and Intercom Installation EM2280 L4a(023)ROCARS Rm - VTS WS Installation EM2300 L4a(023)ROCARS Rm - SYSCON and SURCON and WS Tuning <p>Location 5(Common Utility Enclosure & Staff Subway)</p> <ul style="list-style-type: none"> EM2341 L5(CUE) - Cable Laying between Location 5 and Location 6 EM2361 L5(CUE) - Cable Laying between Location 5 and Location 7 EM2380 L5(CUE) - Cable Splicing and Testing and Labeling <p>Location 6(Common Utility Enclosure & Staff Subway)</p> <ul style="list-style-type: none"> EM2400 L6(CUE) - Cable Laying between Location 5 and Location 6 EM2420 L6(CUE) - Cable Splicing and Testing and Labeling <p>Location 7(Common Utility Enclosure & Staff Subway)</p> <ul style="list-style-type: none"> EM2440 L7(CUE) - Cable Laying between Location 5 and Location 7 EM2460 L7(CUE) - Cable Splicing and Testing and Labeling <p>Location 12(Inbd Private Car Kiosks,GV Kiosks (027,028,029))</p> <p>Inbd Private Car Kiosks(027) - 9 nos (Phase 1)</p> <ul style="list-style-type: none"> EM1500 L12(027)(9nos P1) - Cable Splicing and Testing and Labeling EM1520 L12(027)(9nos P1) - AVCSS/MOM Kiosk Equipment Installation (9 nos) EM1541 L12(027)(9nos P1) - XDB installation (18 nos) EM1542 L12(027)(9nos P1) - ODB installation (5 nos) EM1543 L12(027)(9nos P1) - ODB installation (2 nos) EM1544 L12(027)(9nos P1) - ODB installation (2 nos) EM1560 L12(027)(9nos P1) - Loop installation (45 nos) <p>Inbd Goods Vehicle Kiosks(028) - 5 nos (Phase 1)</p> <ul style="list-style-type: none"> EM1620 L12(028)(5nos P1) - Cable Laying and termination EM1640 L12(028)(5nos P1) - Cable Splicing and Testing and Labeling EM1660 L12(028)(5nos P1) - AVCSS/MOM Kiosk Equipment Installation (5 nos) EM1681 L12(028)(5nos P1) - XDB installation (10 nos) EM1682 L12(028)(5nos P1) - ODB installation (3 nos) EM1683 L12(028)(5nos P1) - ODB installation (2 nos) </div> <div style="width: 35%;"> <p>07-Aug-17, Location 3a(Inbd Cargo Exam Bldg (037) ROCARS Rm - Cable Laying and termination</p> <p>07-Aug-17, Location 3a(Inbd Cargo Exam Bldg (037) ROCARS Rm - Cable Splicing and Testing and Labeling</p> <p>07-Aug-17, Location 3a(Inbd Cargo Exam Bldg (037) ROCARS Rm - AVCSS SYSCON and SURCON and Intercom Installation</p> <p>07-Aug-17, Location 3a(Inbd Cargo Exam Bldg (037) ROCARS Rm - VTS WS Installation</p> <p>07-Aug-17, Location 3a(Inbd Cargo Exam Bldg (037) ROCARS Rm - VID WS Installation</p> <p>07-Aug-17, Location 3a(Inbd Cargo Exam Bldg (037) ROCARS Rm - SURCON and SYSCON and WS Tuning</p> <p>07-Aug-17, Location 3a(Inbd Cargo Exam Bldg (037) Main Server Rm - Cable Laying and termination</p> <p>07-Aug-17, Location 3a(Inbd Cargo Exam Bldg (037) Main Server Rm - Cable Splicing and Testing and Labeling</p> <p>07-Aug-17, Location 3a(Inbd Cargo Exam Bldg (037) Main Server Rm - AVCSS Server Installation</p> <p>07-Aug-17, Location 3a(Inbd Cargo Exam Bldg (037) Main Server Rm - VTS Server Installation</p> <p>07-Aug-17, Location 3a(Inbd Cargo Exam Bldg (037) Main Server Rm - Servers Tuning</p> <p>04-Aug-17, Location 4a(Outbd Cargo Exam Bldg (023) ROCARS Rm - Cable Splicing and Testing and Labeling</p> <p>04-Aug-17, Location 4a(Outbd Cargo Exam Bldg (023) ROCARS Rm - AVCSS SYSCON and SURCON and Intercom Installation</p> <p>04-Aug-17, Location 4a(Outbd Cargo Exam Bldg (023) ROCARS Rm - VTS WS Installation</p> <p>04-Aug-17, Location 4a(Outbd Cargo Exam Bldg (023) ROCARS Rm - SYSCON and SURCON and WS Tuning</p> <p>01-Sep-17, Location 5(Common Utility Enclosure & Staff Subway) - Cable Laying between Location 5 and Location 6</p> <p>01-Sep-17, Location 5(Common Utility Enclosure & Staff Subway) - Cable Laying between Location 5 and Location 7</p> <p>01-Sep-17, Location 5(Common Utility Enclosure & Staff Subway) - Cable Splicing and Testing and Labeling</p> <p>26-Aug-17, Location 6(Common Utility Enclosure & Staff Subway) - Cable Laying between Location 5 and Location 6</p> <p>01-Sep-17, Location 6(Common Utility Enclosure & Staff Subway) - Cable Splicing and Testing and Labeling</p> <p>01-Sep-17, Location 7(Common Utility Enclosure & Staff Subway) - Cable Laying between Location 5 and Location 7</p> <p>01-Sep-17, Location 7(Common Utility Enclosure & Staff Subway) - Cable Splicing and Testing and Labeling</p> <p>30-Aug-17, Location 12(Inbd Private Car Kiosks,GV Kiosks (027,028,029)) - Cable Splicing and Testing and Labeling</p> <p>24-Aug-17, Inbd Private Car Kiosks(027) - 9 nos (Phase 1) - Cable Splicing and Testing and Labeling</p> <p>30-Aug-17, Inbd Goods Vehicle Kiosks(028) - 5 nos (Phase 1) - Cable Laying and termination</p> <p>30-Aug-17, Inbd Goods Vehicle Kiosks(028) - 5 nos (Phase 1) - Cable Splicing and Testing and Labeling</p> <p>30-Aug-17, Inbd Goods Vehicle Kiosks(028) - 5 nos (Phase 1) - AVCSS/MOM Kiosk Equipment Installation</p> <p>30-Aug-17, Inbd Goods Vehicle Kiosks(028) - 5 nos (Phase 1) - XDB installation</p> <p>30-Aug-17, Inbd Goods Vehicle Kiosks(028) - 5 nos (Phase 1) - ODB installation</p> <p>30-Aug-17, Inbd Goods Vehicle Kiosks(028) - 5 nos (Phase 1) - ODB installation</p> <p>30-Aug-17, Inbd Goods Vehicle Kiosks(028) - 5 nos (Phase 1) - ODB installation</p> <p>30-Aug-17, Inbd Goods Vehicle Kiosks(028) - 5 nos (Phase 1) - Loop installation</p> </div> </div>															

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

- Actual Level of Effort
- Primary Baseline
- Actual Work
- Remaining Work
- Critical Remaining Work
- summary
- 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
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 (023)		<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 (023)		<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 (UUD3.1 [CUE-023]) - Cable laying and termination 																	
Underground Ducting (UUD7) between PCB(001) and Inbd Coach Kiosks(010)		<ul style="list-style-type: none"> UD1050 (UUD3.2 [023-024-101]) - Cable laying and termination 																	
Underground Ducting (UUD3.1) between CUE and Outbd Cargo Exam Bldg (023)		<ul style="list-style-type: none"> UD1100 (UUD8 [CUE-032]) - 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"> UD1080 (UUD4.1 [024-OB VCP]) - Cable laying and termination 																	
Underground Ducting (UUD8) between CUE and Outbd PCA (032)		<ul style="list-style-type: none"> UD1090 (UUD5 [023[S]-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"> UD1080 (UUD4.1 [024-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




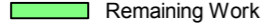



Activity ID	Activity Name	2015			2016				2017				2018				2019			
		Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	
Location 8(Inbd Private Car Annex (025)) (Phase 2)		▼ 30-Aug-17; Location 8(Inbd Private Car Annex (025)) (Phase 2)																		
EM3370	L8(025) - Cable Containment in Kiosks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

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

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

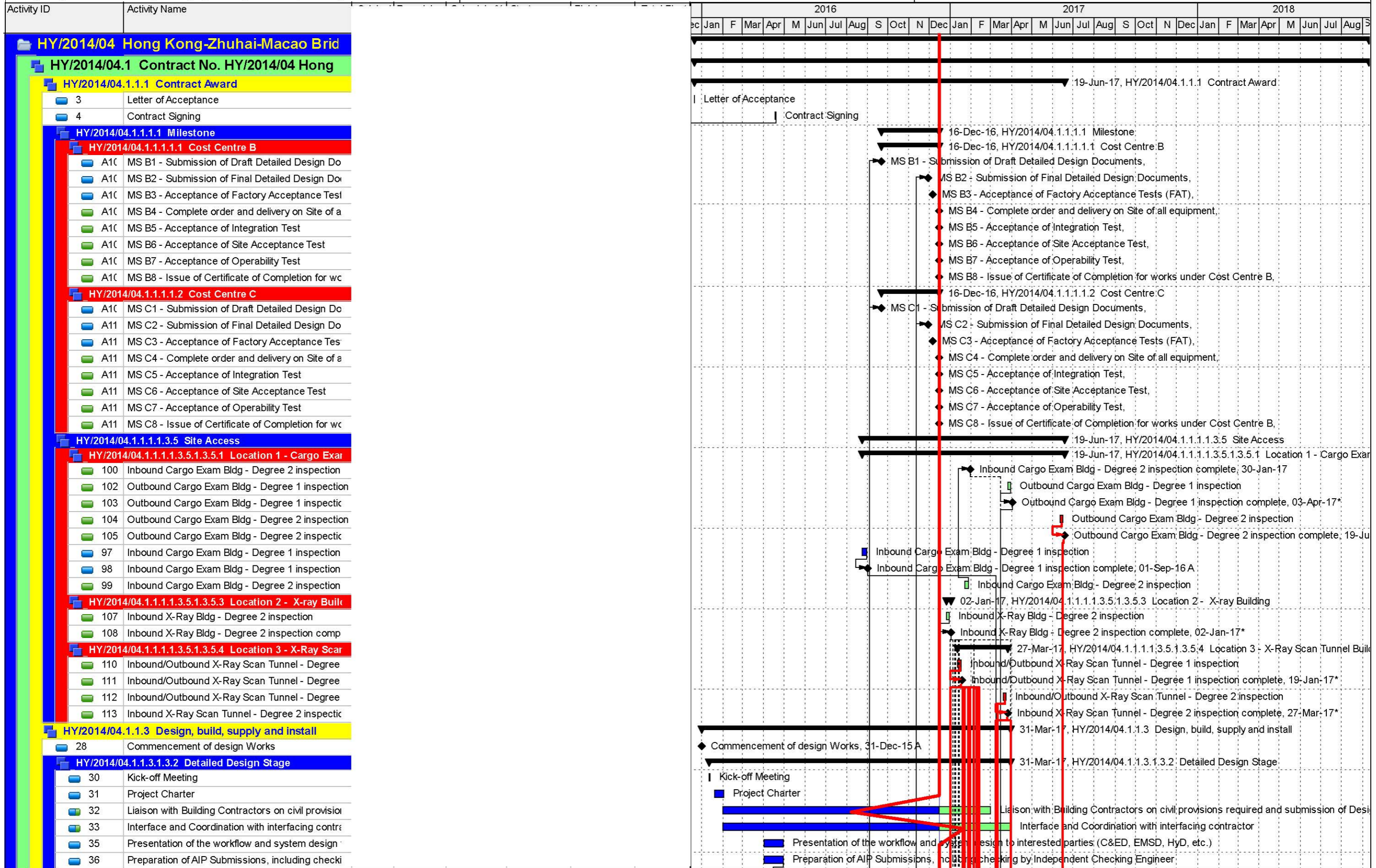
2015			2016				2017				2018				2019		
Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3

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

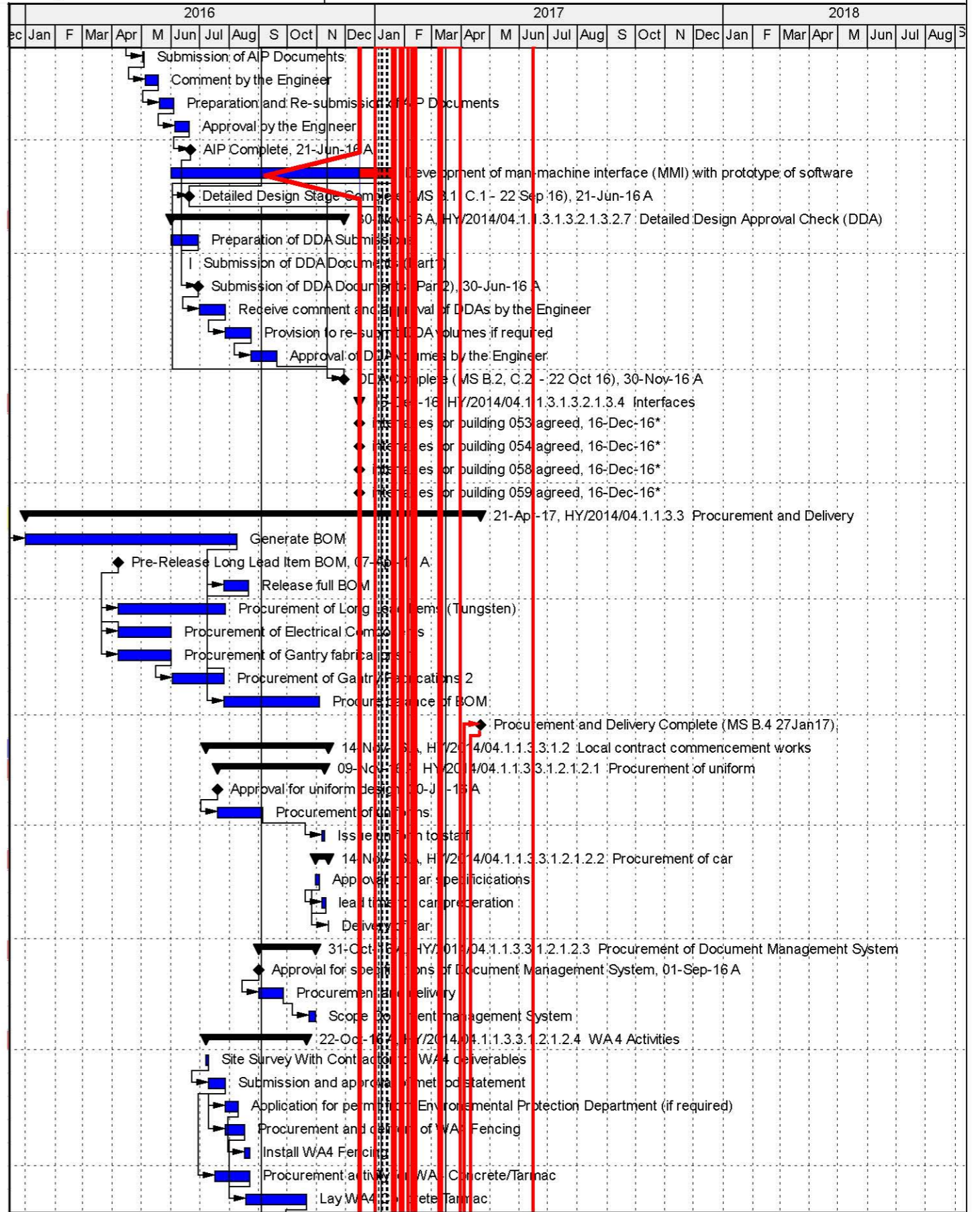
-  Actual Level of Effort
-  Primary Baseline
-  Actual Work
-  Remaining Work
-  Critical Remaining Work
-  Baseline Milestone
-  Milestone

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



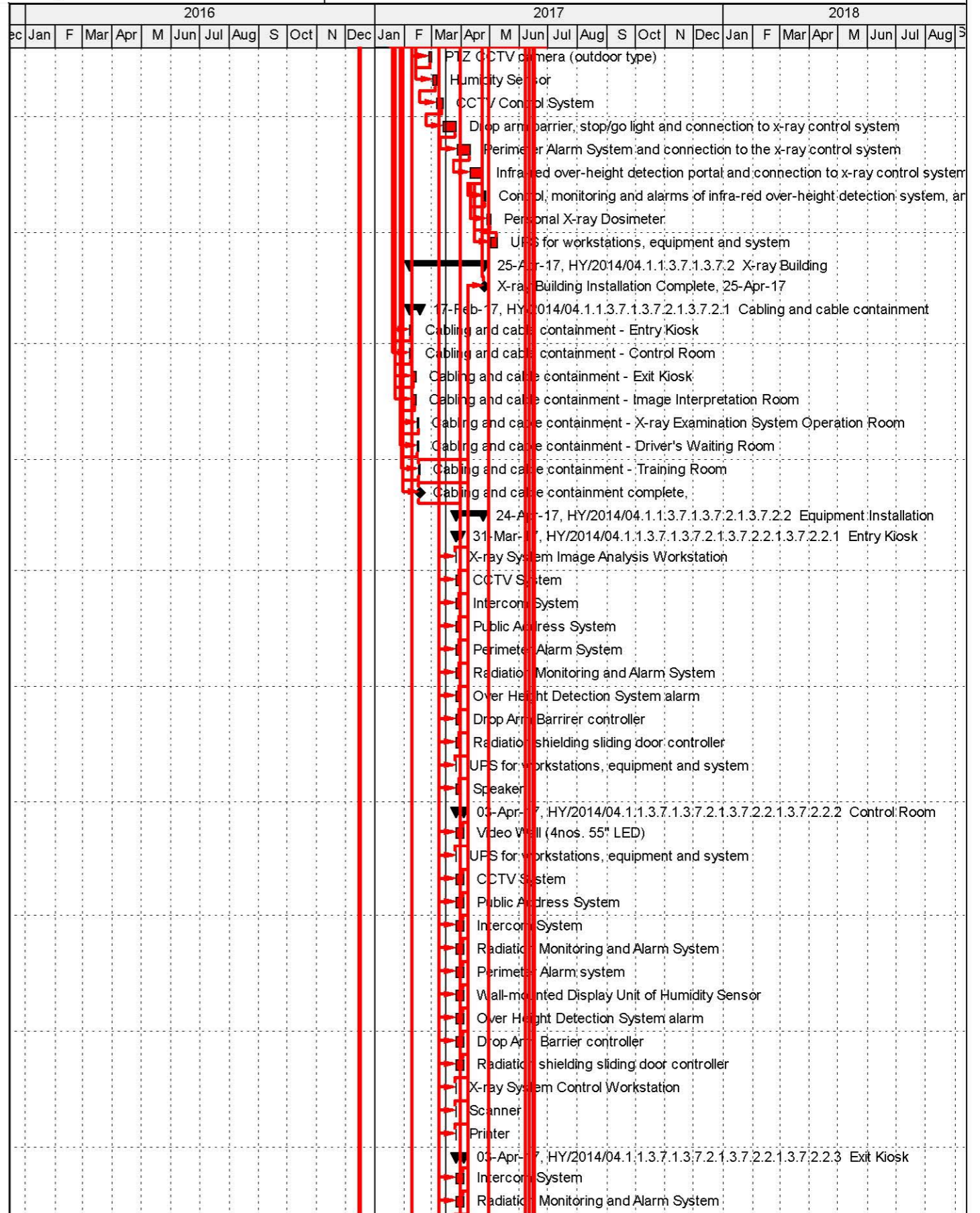
Activity ID	Activity Name
37	Submission of AIP Documents
38	Comment by the Engineer
39	Preparation and Re-submission of AIP Documents
40	Approval by the Engineer
41	AIP Complete
42	Development of man-machine interface (MMI) with prototype of software
51	Detailed Design Stage Complete (MS B.1, C.1 - 22-Sep-16)
HY/2014/04.1.1.3.3.2.1.3.2.7 Detailed Design Approval Check (DDA)	
44	Preparation of DDA Submissions
45	Submission of DDA Documents (Part1)
46	Submission of DDA Documents (Part2)
47	Receive comment and approval of DDAs by the Engineer
48	Provision to re-submit DDA volumes if required
49	Approval of DDA volumes by the Engineer
50	DDA Complete (MS B.2, C.2 - 22 Oct 16)
HY/2014/04.1.1.3.3.2.1.3.4 Interfaces	
91	interfaces for building 053 agreed
92	interfaces for building 054 agreed
93	interfaces for building 058 agreed
94	interfaces for building 059 agreed
HY/2014/04.1.1.3.3 Procurement and Delivery	
53	Generate BOM
54	Pre-Release Long Lead Item BOM
55	Release full BOM
56	Procurement of Long Lead Items (Tungsten)
57	Procurement of Electrical Components
58	Procurement of Gantry fabrications 1
59	Procurement of Gantry Fabrications 2
60	Procure balance of BOM
89	Procurement and Delivery Complete (MS B.4 27Jan17)
HY/2014/04.1.1.3.3.1.2 Local contract commencement works	
HY/2014/04.1.1.3.3.1.2.1.1 Procurement of uniform	
7	Approval for uniform design
8	Procurement of uniforms
9	Issue uniform to staff
HY/2014/04.1.1.3.3.1.2.1.2 Procurement of car	
11	Approval for car specifications
12	lead time for car preparation
13	Delivery of car
HY/2014/04.1.1.3.3.1.2.1.2.3 Procurement of Document Management System	
15	Approval for specifications of Document Management System
16	Procurement and delivery
17	Scope Document management System
HY/2014/04.1.1.3.3.1.2.1.2.4 WA 4 Activities	
19	Site Survey With Contractor for WA4 deliverables
20	Submission and approval of method statement
21	Application for permit from Environmental Protection Department (if required)
22	Procurement and delivery of WA4 Fencing
23	Install WA4 Fencing
24	Procurement activity for WA4 Concrete/Tarmac
25	Lay WA4 Concrete/Tarmac



Activity ID	Activity Name	2016												2017												2018											
		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			
	Printer																																				
	HY/2014/04.1.1.3.6.1.3.6.2.1.3.6.2.2.1.3.6.2.2.3 Exit Kiosk																																				
	Intercom System																																				
	Radiation Monitoring and Alarm System																																				
	X-ray System Image Analysis Workstation																																				
	Radiation shielding sliding door controller																																				
	CCTV System																																				
	Public Address System																																				
	UPS for workstations, equipment and system																																				
	HY/2014/04.1.1.3.6.1.3.6.2.1.3.6.2.2.1.3.6.2.2.4 Image Interpretation Kiosk																																				
	Intercom System																																				
	Radiation Monitoring and Alarm System																																				
	X-ray System Image Analysis Workstation																																				
	Printer																																				
	UPS for workstations, equipment and system																																				
	HY/2014/04.1.1.3.6.1.3.6.2.1.3.6.2.2.1.3.6.2.2.5 X-ray Examination Kiosk																																				
	Server																																				
	Server rack																																				
	UPS for workstations, equipment and system																																				
	HY/2014/04.1.1.3.6.1.3.6.2.1.3.6.2.2.1.3.6.2.2.6 Driver's Waiting Area																																				
	CCTV System																																				
	Intercom System																																				
	Radiation Monitoring and Alarm System																																				
	Speaker																																				
	UPS for workstations, equipment and system																																				
	HY/2014/04.1.1.3.6.1.3.6.2.1.3.6.2.2.1.3.6.2.2.7 Training room																																				
	Projector screen (Screen size 106")																																				
	Ceiling mounted projector																																				
	X-ray System Training Workstation																																				
	Radiation Monitoring and Alarm System																																				
	UPS for workstations, equipment and system																																				
	Training aids																																				
	Printer																																				
	HY/2014/04.1.1.3.7 Section II - Gantry Type X-ray Vehicle Inspection System																																				
311	Software Setup & Integration and Imaging Tests																																				
312	Construction Works - Section II Complete																																				
	HY/2014/04.1.1.3.7.1.3.7.1 Scan Tunnel																																				
216	Cabling and cable containment																																				
239	Scan Tunnel Installation Complete																																				
	HY/2014/04.1.1.3.7.1.3.7.1.1.3.7.1.2 Installation of X-ray System																																				
218	Gantry rails																																				
219	Linear Accelerator Pod and Modular Pod																																				
220	Vertical Boom Wheel Set and Vertical Boom																																				
221	Horizontal Boom																																				
222	Radioactivity threat detection system																																				
	HY/2014/04.1.1.3.7.1.3.7.1.1.3.7.1.3 Radiation Shielding Sliding Door																																				
224	Installation of brackets and Hilti bolts																																				
225	Installation of beam																																				
226	Installation of door box																																				
227	Testing & commissioning																																				
	HY/2014/04.1.1.3.7.1.3.7.1.1.3.7.1.4 Installation of Auxiliary Systems																																				
229	PTZ CCTV camera (indoor type)																																				

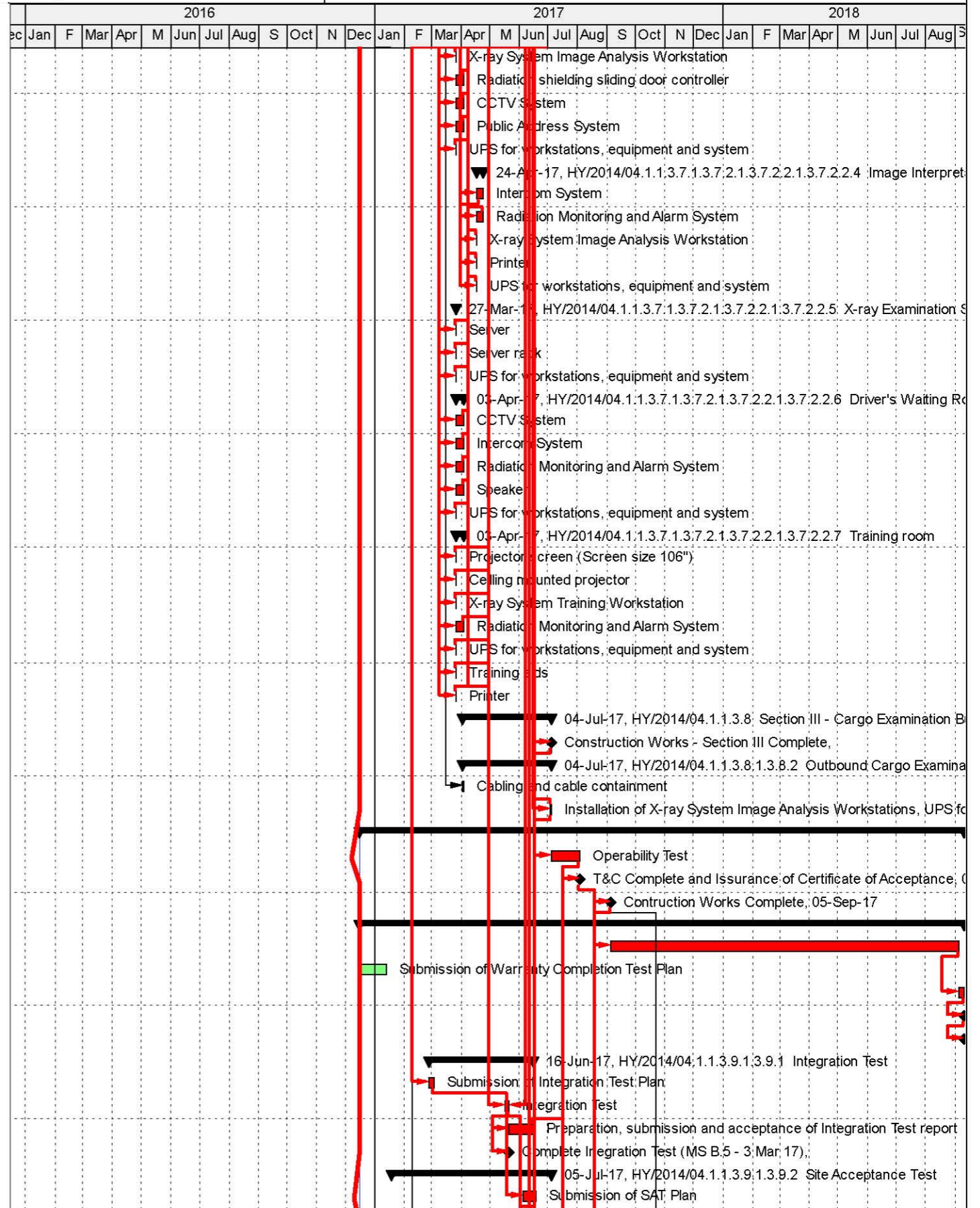
█ Actual Level of Effort
 █ Remaining Work
 █ Critical Remaining Work
 ◆ Milestone
 ▼ summary

Activity ID	Activity Name
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	
242	X-ray System Image Analysis Workstation
243	CCTV System
244	Intercom System
245	Public Address System
246	Perimeter Alarm System
247	Radiation Monitoring and Alarm System
248	Over Height Detection System alarm
249	Drop Arm Barrier controller
250	Radiation shielding sliding door controller
251	UPS for workstations, equipment and system
252	Speaker
HY/2014/04.1.1.3.7.1.3.7.2.1.3.7.2.2.1.3.7.2.2.2 Conti	
253	Video Wall (4nos. 55" LED)
254	UPS for workstations, equipment and system
255	CCTV System
256	Public Address System
257	Intercom System
258	Radiation Monitoring and Alarm System
259	Perimeter Alarm system
260	Wall-mounted Display Unit of Humidity Sensor
261	Over Height Detection System alarm
262	Drop Arm Barrier controller
263	Radiation shielding sliding door controller
264	X-ray System Control Workstation
265	Scanner
266	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	
267	Intercom System
268	Radiation Monitoring and Alarm System



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

Activity ID	Activity Name
322	Construction Works - Section III Complete
320	Cabling and cable containment
321	Installation of X-ray System Image Analysis Workstations, UPS for workstations, equipment and system
335	Operability Test
336	T&C Complete and Issurance of Certificate of Acceptance, 05-Sep-17
345	Construction Works Complete
359	Defect Liability Period
360	Submission of Warranty Completion Test Plan
361	Warranty Completion Test
362	DLP Complete and issuance of Defect Liability Certificate
363	Commencement of Maintenance Services
325	Submission of Integration Test Plan
326	Integration Test
327	Preparation, submission and acceptance of Integration Test report
327.5	Complete Inegration Test (MS B.5 - 3 Mar 17)
329	Submission of SAT Plan



█ 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

Waste Flow Table

Monthly Summary Waste Flow Table for 2017



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											
Sub-total	3.107	0.360	2.747	0.000	0.360	0.000	5.840	0.000	0.000	0.000	1.250
July											
August											
September											
October											
November											
December											
Total	3.107	0.360	2.747	0.000	0.360	0.000	5.840	0.000	0.000	0.000	1.250

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 HKIAP (C1 & C8 Area)

Ver: 1st
Date: May 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, 石矢頭, 石, 填料等)		Others (e.g. general refuse, broken formwork etc) 其他 (如垃圾, 廢板枋等)		Metals 金屬		Plastic 塑膠		Paper/cardboard packaging 廢紙/包裝紙類		Chemical Waste 化學廢物					
	(b)		(c)		(d)		(e)		(in tonnes)		(in tonnes)		(in tonnes)		(in litre)				(a)=(b+c+d+e)	
	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量			Est. Qty. 估計數量	Act. Qty. 實際數量
January	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	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																				
July																				
August																				
September																				
October																				
November																				
December																				
Total	0.000	0.000	0.000	0.000	0.000	0.000	0.009	0.009	0.009	0.009	0.000	0.000	0.004	0.004	0.000	0.000	0.009	0.009		

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 gm⁻³.

APPENDIX F

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 for Hong Kong-Zhuhai-Macao Bridge Hong Kong 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 for Hong Kong-Zhuhai-Macao Bridge Hong Kong 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 for Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities	EP-353/2009/K	11 Apr 2016	N/A	EPD	-
4	All Areas	30 Dec 2015	N/A	Billing Account for disposal of construction waste	7024342	16 Feb 2016	N/A	EPD	-
5	All Areas	30 Dec 2015	RABF-LTR- EPD-000001	Notification that notifiable works are anticipated to commence (Form NA).	Acknowledge Receipt Ref. No. 397571	06 Jan 2016	N/A	EPD	-
6	All Areas	04 Jan 2016	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 2016	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						
7	All Areas	25 Jan 2016	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 2016	10 Aug 2016	EPD	Superseded by GW-RS0476-16
8	All Areas	08 May 2016	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 2016	18 Nov 2016	EPD	Superseded by GW-RS0666-16
9	All Areas	16 Jun 2016	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 2016	03 Jan 2017	EPD	Superseded by GW-RS0907-16
10	All Areas	18 Aug 2016	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 2016	28 Feb 2017	EPD	Superseded by GW-RS1195-16

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						
11	All Areas	16 Nov 2016	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 2016	29 May 2017	EPD	Superseded by GW-RS1315-16
12	All Areas	08 Dec 2016	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 2016	21 Jun 2017	EPD	Superseded by GW-RS0131-17
13	WA3	13 Jan 2017	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 2017	26 Jul 2017	EPD	-
14	All areas	03 Feb 2017	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 2017	16 Aug 2017	EPD	Superseded by GW-RS0306-17

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						
15	All areas	20 Mar 2017	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 2017	02 Oct 2017	EPD	Superseded by GW-RS0435-17
16	All areas	05 May 2017	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 2017	16 Nov 2017	EPD	-

Environmental License/ Permits /Notification Register

Contract No. HY/2013/06 – Hong Kong Zhuhai and Macao Bridge Hong Kong Boundary Crossing Facilities – Automatic Vehicle Clearance Support System

Item No.	Permit/License or Registration Application			Permit/License/ Notification/ Registration Description	Permit/License/ Registration Number	Issue/Start Date	Expiry Date	Issuing Office	Remark
	Work Area	Date	Reference						
1	All Areas	24 Mar 2016	N/A	Environmental Permit for Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities	EP-353/2009/K	11 Apr 2016	N/A	EPD	-
2	Building 023, 025 and 032	31 Jul 2015	WFG14980	Billing Account for disposal of construction waste	7023015	20 Aug 2015	N/A	EPD	-
3.	N/A	N/A	N/A	Registration as Chemical Waste Producer for disposal chemical waste	N/A	N/A	N/A	N/A	#
4.	All Areas	18 May 2017	CNP-GW416290	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 00:00 and 00:00 to 07:00. (Non-designated area)	GW-RS0452-17	1 Jun 2017	30 Nov 2017	EPD	-

The Contractor of Contract No. HY/2013/06 was advised to register as a chemical waste producer when chemical waste is expected to generate for the foreseeable future from the operations.

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: May 2017									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	24 Mar 2016	N/A	Environmental Permit for Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities	EP-353/2009/K	11 Apr 2016	N/A	EPD	-
2	All Areas	23 Aug 2016	N/A	Billing Account for disposal of construction waste	7025930	20 Sep 2016	N/A	EPD	(a)
3.	N.A.	N.A.	N.A.	Registration as Chemical Waste Producer for disposal chemical waste	N.A.	N.A.	N.A.	N.A.	(b)

Remarks:

(a) As informed by the Contractor of Contract No. HY/2014/04 on 5 May 2017, the billing account for disposal of construction waste should be 7025930.

(b) The Contractor of Contract No. HY/2014/04 was advised to register as a chemical waste producer when chemical waste is expected to generate for the foreseeable future from the operations.

APPENDIX G

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 traffic cones. • The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores; 	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 works under EM&A programme for the Contract are covered by Contract No. HY/2010/02 and Contract No. HY/2011/03.)

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 µgm⁻³ and 260 µgm⁻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 works under EM&A programme for the Contract are covered by Contract No. HY/2010/02.)
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	<u>Sewage</u> <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	<u>General Refuse</u> <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 WPCO or collected for disposal offsite. The use of soakaways shall be avoided; • storm drainage shall be directed to storm drains via adequately designed sand/silt removal facilities such as sand traps, silt traps and sediment basins. Channels, earth bunds or sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks; • silt removal facilities, channels and manholes shall be maintained and any deposited silt and grit shall be removed regularly, including specifically at the onset of and after each rainstorm; • temporary access roads should be surfaced with crushed stone or gravel; • rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities; • measures should be taken to prevent the washout of construction materials, soil, silt or debris into any drainage system; • open stockpiles of construction materials (e.g. aggregates and sand) on site should be covered with tarpaulin or similar fabric during rainstorms; • manholes (including any newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers; • discharges of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system; 	To control construction water quality	Contractor	Land-based works areas	Construction stage	TM-EIAO	√

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S9.11.1.7	W2	<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.</p> <p>G3. Not applicable as this is for HKLR.</p> <p>G4. For HKBCF, providing aesthetic architectural design on the related buildings (e.g. similar materials for PCB building facade to Airport buildings, roof planting and subtle materials for other facilities buildings and so on), and the related infrastructure (e.g. parapet planting and transparent cover for elevated footbridges) to provide harmonious atmosphere of the HKBCF</p> <p>G5. Vegetation reinstatement and upgrading to disturbed areas</p> <p>G6. Maximizing new tree shrub and other vegetation planting to compensate tree felled and vegetation removed</p> <p>G7. Providing planting area around peripheral of HKBCF for tree planting screening effect;</p> <p>G8. Plant salt-tolerant native and shrubs etc along the planter strip at affected seawall.</p> <p>G9. Reserve of loose natural granite rocks for re-use. Provide new coastline to adopt "natural-look" by means of using armour rocks in the form of natural rock materials and planting strip area accommodating screen buffer to enhance "natural-look" of the new coastline.</p>	Minimise visual & landscape impact	Contractor	HKBCF	Construction stage		N/A
S14.3.3.3	LV3	<p><u>Mitigate Visual Impacts</u></p> <p>V1.Minimize time for construction activities during construction period.</p> <p>V2.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	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 H

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	1	0	0
From commencement date of contract to end of reporting month	4	0	0

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

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

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

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

APPENDIX I

Environmental Site Inspection Schedule

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

Environmental Site Inspection Schedule for June 2017

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

Contract No. HY/2013/06 (within Contract No. HY/2014/05 works area) Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Automatic Vehicle Clearance Support System

Environmental Site Inspection Schedule for June 2017

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

Contract No. HY/2014/04 (within Contract No. HY/2014/05 works area) Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Gantry Type X-ray Vehicle Inspection System

Environmental Site Inspection Schedule for June 2017

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

