

14 March 2018

By Fax (3468 2076) and By Post

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

Attention: Mr. Malcolm Sage

Dear Sir,

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

**Contract No. HY/2014/05 – HZMB HKBCF – Remaining Ancillary Buildings and
Facilities
Monthly Environmental Monitoring & Audit Report for February 2018**

Reference is made to the Environmental Team's submission of Monthly Environmental Monitoring & Audit Report for February 2018 (Rev. 1) certified by the ET Leader (ET's ref.: "5140819/18.30/OC048/KC/RL" dated 14 March 2018) and provided to us via e-mail on 14 March 2018.

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 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, PSC, ENPO Site

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Your ref.

Our ref. 5140819/18.30/OC048/KC/RL

Date: 14 March 2018

By Post and e-mail (Alfred.She@lcwjv.com)

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

Attn: Mr. Alfred She

Dear Mr. She,

**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. 24**

Atkins China Limited certifies, in the capacity of Environmental Team Leader, that the Monthly EM&A Report No. 24 for February 2018 (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)

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. 24
(Covering the Period from 1 February 2018 to 28 February 2018)**

9 March 2018

Revision 1

Main Contractor



**Leighton - Chun Wo
Joint Venture**

Environmental Team

ATKINS

Member of the SNC-Lavalin Group

Contents

Executive Summary

1	Introduction	1
1.1	Basic Project Information	1
1.2	Project Organisation	2
1.3	Construction Programme	4
1.4	Construction Works Undertaken During the Reporting Period	4
2	Air Quality Monitoring.....	5
2.1	Monitoring Locations	5
2.2	Monitoring Requirements	5
2.3	Monitoring Results.....	6
3	Noise Monitoring.....	7
3.1	Monitoring Locations	7
3.2	Monitoring Requirements	7
3.3	Monitoring Results.....	7
4	Environmental Site Inspection and Audit	8
4.1	Site Inspection.....	8
4.2	Advice on the Solid and Liquid Waste Management Status	10
4.3	Environmental Licenses and Permits	10
4.4	Implementation Status of Environmental Mitigation Measures	10
4.5	Summary of Exceedance of the Environmental Quality Performance Limit	10
4.6	Summary of Complaints, Notification of Summons and Successful Prosecution	11
5	Future Key Issues	12
5.1	Construction Programme for the Coming Months	12
5.2	Environmental Site Inspection Schedule for the Coming Month.....	12
6	Conclusions.....	13
6.1	Conclusions.....	13

Figures

- Figure 2.1 Location of Air Quality Monitoring Stations
- Figure 3.1 Location of Noise Monitoring Stations

Appendices

- Appendix A Location of Works Areas
- Appendix B Project Organization for Environmental Works
- Appendix C Construction Programme
- Appendix D Event and Action Plan
- Appendix E Waste Flow Table
- Appendix F Environmental Licenses and Permits
- Appendix G Implementation Schedule for Environmental Mitigation Measures (EMIS)
- Appendix H Statistics on Environmental Complaints, Notification of Summons and Successful Prosecutions
- Appendix I Environmental Site Inspection Schedule
- Appendix J Investigation Report

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 twenty-fourth 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 28 February 2018 (includes the construction works of Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area).

Environmental Monitoring and Audit Progress

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

The dates of 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: 7, 12, 22 and 26 February 2018

Breaches of Action and Limit Levels

Summary of Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level at AMS6 shall be referred to the monthly EM&A report prepared by Contract No. HY/2011/03. No Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at AMS7B by the Environmental Team of Contract No. HY/2013/01 during the reporting period.

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

Complaint Log

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

Notifications of Summons and Successful Prosecutions

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

Reporting Change

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

Future Key Issues

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

For Contract No. HY/2014/05

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

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

- Buildings 023, 025 and 032 - Conduit Installation & Cabling

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

- Building 053 - Installation of field devices
- Building 054 - Installation of field devices
- Building 058 – Cabling works
- Building 059 – Cabling works

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 twenty-fourth 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 28 February 2018. (includes the construction works of Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area).

1.2 Project Organisation

1.2.1 The project organization structure and lines of communication with respect to the on-site environmental management structure is shown in **Appendix B**. The key personnel contact names and numbers are summarized in **Table 1-1**.

Table 1-1 Contact Information of Key Personnel

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

Party	Position	Name	Telephone	Fax
(Ramboll 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	Alfred She	39730484	3621 0180
Environmental Team (Atkins China Limited)	Environmental Team Leader	Keith Chau	2972 1721	2890 6343
24 hours complaint hotline	---	---	3958 7300	---
For Contract No. HY/2013/06 within Contract No. HY/2014/05 works area				
Engineer or Engineer's Representative (AECOM Asia Co. Ltd.)	Chief Registered Architect	Malcolm Sage	3958 7330	3468 2076
Environmental Project Office / Independent Environmental Checker (Ramboll Hong Kong Limited)	Environmental Project Office Leader	Y. H. Hui	3465 2888	3465 2899
	Independent Environmental Checker	Raymond Dai	3465 2888	3465 2899
Contractor (ATAL Technologies Limited)	Site Agent	Mr. Eric Yim	2565 3355	3162 5217
	Environmental Officer	Mr. W. Li	2565 3137	3162 5217
Environmental Team (Atkins China Limited)	Environmental Team Leader	Keith Chau	2972 1721	2890 6343
24 hours complaint hotline	---	---	6509 0375	---
For Contract No. HY/2014/04 within Contract No. HY/2014/05 works area				
Engineer or Engineer's Representative (AECOM Asia Co. Ltd.)	Chief Registered Architect	Malcolm Sage	3958 7330	3468 2076
Environmental Project Office / Independent Environmental Checker (Ramboll 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

Party	Position	Name	Telephone	Fax
24 hours complaint hotline	---	---	9833 1420	---

1.3 Construction Programme

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

1.4 Construction Works Undertaken During the Reporting Period

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

For Contract No. HY/2014/05

- ABWF & MEP works (Internal) of Buildings 022, 023, 032, 044, 045, 050H1, 050H2, 050A1 and 050A2
- Foot Path, Utilities and Drainage installation of Buildings 023, 032, 045, 050H1, 050H2, 050A1, 050A2, 053 and 058
- ABWF & MEP works (External) of Buildings 021, 022, 023, 025, 032, 044, 045, 053 and 058
- ABWF & MEP works (roof) of Building 050A1
- Green Roof of Buildings

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

- Conduit Installation and Cabling at Buildings 025 and 032

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

- Installation of field devices at Buildings 053 and 054
- Radiation Testing at Buildings 058 and 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/2011/03 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between Scenic Hill and HKBCF and Contract No. HY/2013/01 HZMB HKBCF – Passenger Clearance Building.
- 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 AMS7B as part of EM&A programme if these air quality monitoring stations are no longer covered under Contract Nos. HY/2011/03 and HY/2013/01. **Figure 2.1** shows the locations of the air monitoring stations.

Table 2-1 Construction Dust Monitoring Locations

ID	Location Description
AMS6 ⁽¹⁾	Dragonair/CNAC (Group) Building
AMS7B ⁽²⁾	3RS site office

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

2.2 Monitoring Requirements

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

Monitoring Station	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AMS6 – Dragonair / CNAC (Group) Building (HKIA)	360	500
AMS7B – 3RS site office	370	

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

Monitoring Station	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AMS6 – Dragonair / CNAC (Group) Building (HKIA)	173	260
AMS7B – 3RS site office	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 AMS7B are reported in the monthly EM&A Reports prepared for Contract Nos. HY/2011/03 and HY/2013/01, 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. No Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at AMS7B by the Environmental Team of Contract No. HY/2013/01 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/2013/01 HZMB HKBCF – Passenger Clearance Building. The ET of the Contract or another ET of the HZMB project is required to conduct impact noise monitoring at NMS2 and NMS3B as part of EM&A programme if these noise monitoring stations are no longer covered under Contract No. HY/2013/01. **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 No. HY/2013/01.

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/2013/01. No noise exceedances were recorded at stations NMS2 and NMS3B by the ET of Contract No. HY/2013/01 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 7, 12, 22 and 28 February 2018.
- 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
29 January 2018	1. The colour of the NRMM label for the lifting platform was observed faded at Building 032.	1. The lifting platform was removed from the site.	22 February 2018
	2. General refuse was observed near staircase at Building 045. 3. Over 20 bags of dusty materials were not covered at rooftop of Building 045.	2. General refuse was removed near staircase at Building 045. 3. Over 20 bags of dusty materials were removed at rooftop of Building 045.	7 February 2018
7 February 2018	1. The colour of the NRMM label for the lifting platform was observed faded at Building 032.	1. The lifting platform was removed from the site.	22 February 2018
	Reminder: 1. The Contractor was reminded to minimize the dust emission from the access road near the Building by watering.	1. One water truck was in operation on the access road near the building.	12 February 2018
12 February 2018	1. The colour of the NRMM label for the lifting platform was observed faded near Building 032 and Building 045.	1. The lifting platform was removed from the site.	22 February 2018
22 February 2018	1. The chemical container was found without drip tray near Building 044.	1. The chemical container was removed near Building.	26 February 2018
26 February 2018	1. The general refuse was found at G/F of Building 022.	1. The Contractor was reminded to remove general refuses as soon as possible and keep the site clean and tidy.	Follow-up action undertaken by the Contractor will be inspected during the site inspection to be undertaken in March 2018.

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
7 February 2018	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
12 February 2018	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
22 February 2018	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
26 February 2018	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.

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
7 February 2018	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
12 February 2018	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
22 February 2018	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
26 February 2018	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.

4.1.3 Particular observations (Landscape works) for Contract No. HY/2014/05 during the site inspections and corrective actions undertaken by the Contractor are described in **Tables 4-4**. The landscape work of green roof for Contract No. HY/2014/05 was commenced on 11 December 2017. The implementation of mitigation measures for landscape and visual resources recommended in the EIA Report were monitored during the reporting period. Landscape and visual mitigation measures in accordance with the EP, EIA and EM&A Manual were implemented by the Contractor.

Table 4-4 Summary of Environmental Site Inspections (Landscape works) for Contract No. HY/2014/05 works area

Date of Audit	Observations	Actions Taken by Contractor / Recommendation	Date of Observations Closed
7 February 2018	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
22 February 2018	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.

- 4.1.4 The Contractor has rectified most of the observations as identified during environmental site inspections during this reporting month. Follow-up actions for outstanding observations will be inspected in March 2018.

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. No Action

and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at AMS7B by the Environmental Team of Contract No. HY/2013/01 during the reporting period.

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

4.6 Summary of Complaints, Notification of Summons and Successful Prosecution

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

- 4.6.2 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 March 2018 are summarized in **Table 5-1**.

Table 5-1 Construction Activities for March 2018

Site Area	Description of Activities
<u>For Contract No. HY/2014/05</u>	
Buildings 022, 032, 044, 045, 050H1, 050H2, 050A1 and 050A2	ABWF & MEP works (Internal)
Buildings 021, 022, 023, 025, 032, 044, 045, 053 and 058	ABWF works (External)
Building 050A2	ABWF works (roof)
Buildings 023, 032, 045, 050H1, 050H2, 050A1, 050A2, 053 and 058	Foot Path, Utilities and Drainage Installation
Building 025	Roadworks
Building 022	Landscape works: greening roof
<u>For Contract No. HY/2013/06 within Contract No. HY/2014/05 works area</u>	
Buildings 023, 025 and 032	Conduit Installation & Cabling
<u>For Contract No. HY/2014/04 within Contract No. HY/2014/05 works area</u>	
Buildings 053 and 054	Installation of field devices
Buildings 058 and 059	Cabling works

5.2 Environmental Site Inspection Schedule for the Coming Month

- 5.2.1 The tentative schedule for weekly site inspections for March 2018 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 twenty-fourth Monthly EM&A Report for Contract No. HY/2014/05 summarizes findings of the EM&A works during the reporting period from 1 to 28 February 2018 (includes the construction works of Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area).
- 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. No Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at AMS7B by the Environmental Team of Contract No. HY/2013/01 during the reporting period.
- 6.1.3 There was no Action and Limit Level exceedance for noise recorded at NMS2 and NMS3B by the Environmental Team of Contract No. HY/2013/01 during the reporting period.
- 6.1.4 Environmental site inspections were carried out on 7, 12, 22 and 26 February 2018 for the Contract No. HY/2014/05 (includes the construction works of Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area). Recommendations on remedial actions were given to the Contractors for the deficiencies identified during the site inspection.
- 6.1.5 There was no complaint received in relation to the environmental impact during the reporting period.
- 6.1.7 No notification of summons and successful prosecution was received during the reporting period.



FIGURES

LEGEND

● AIR QUALITY MONITORING STATIONS

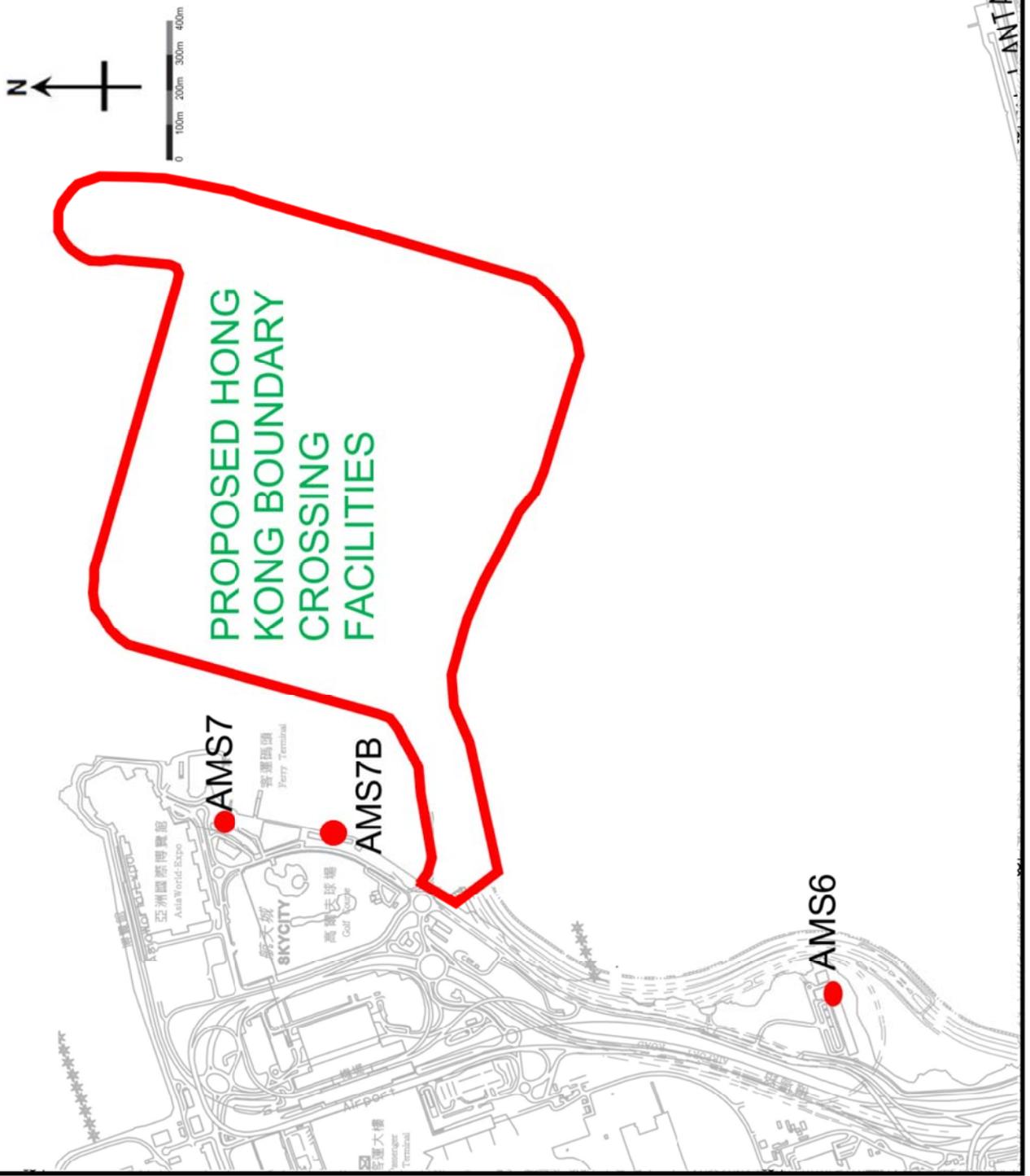


Figure 2.1
Location of Air Quality Monitoring Station

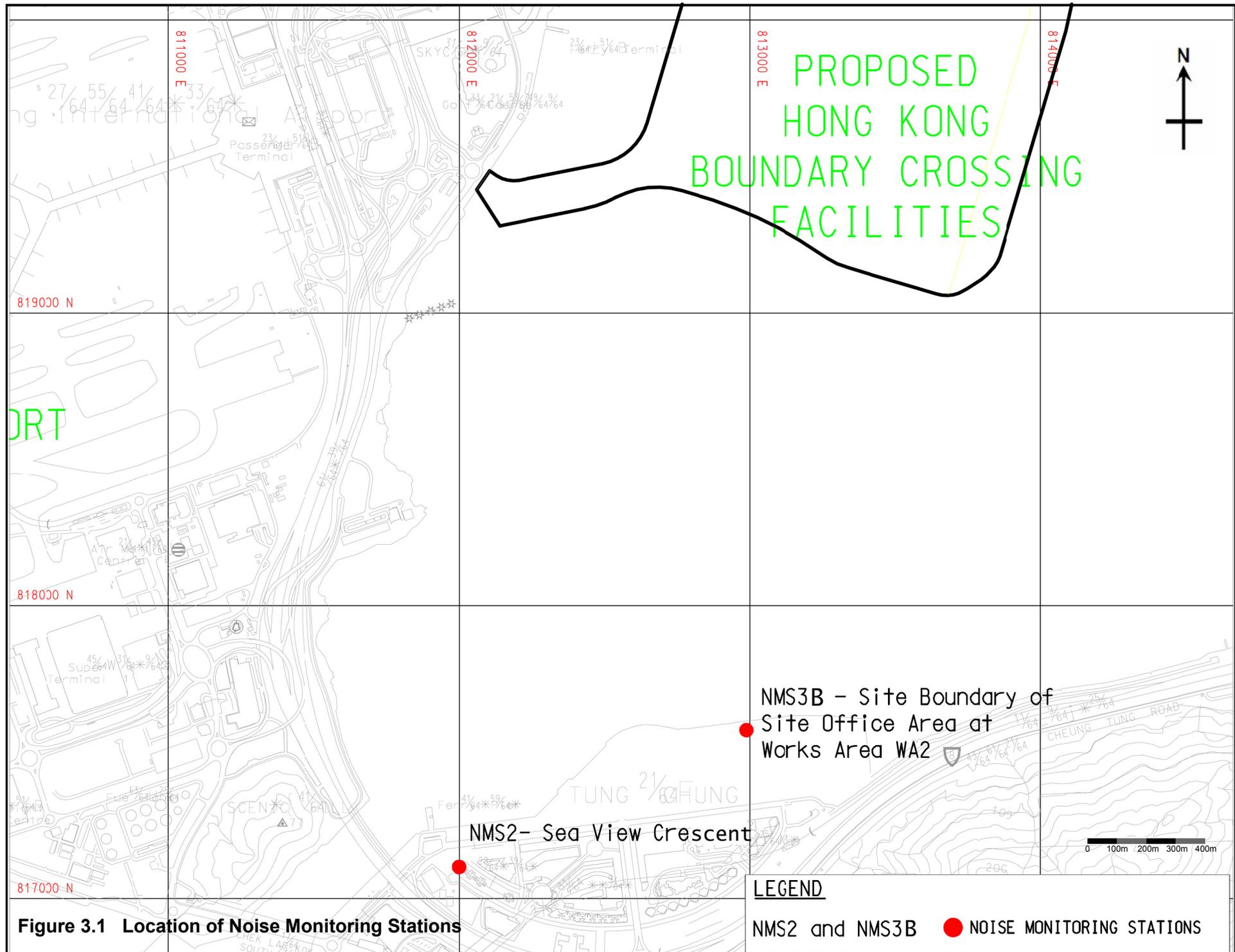


Figure 3.1 Location of Noise Monitoring Stations

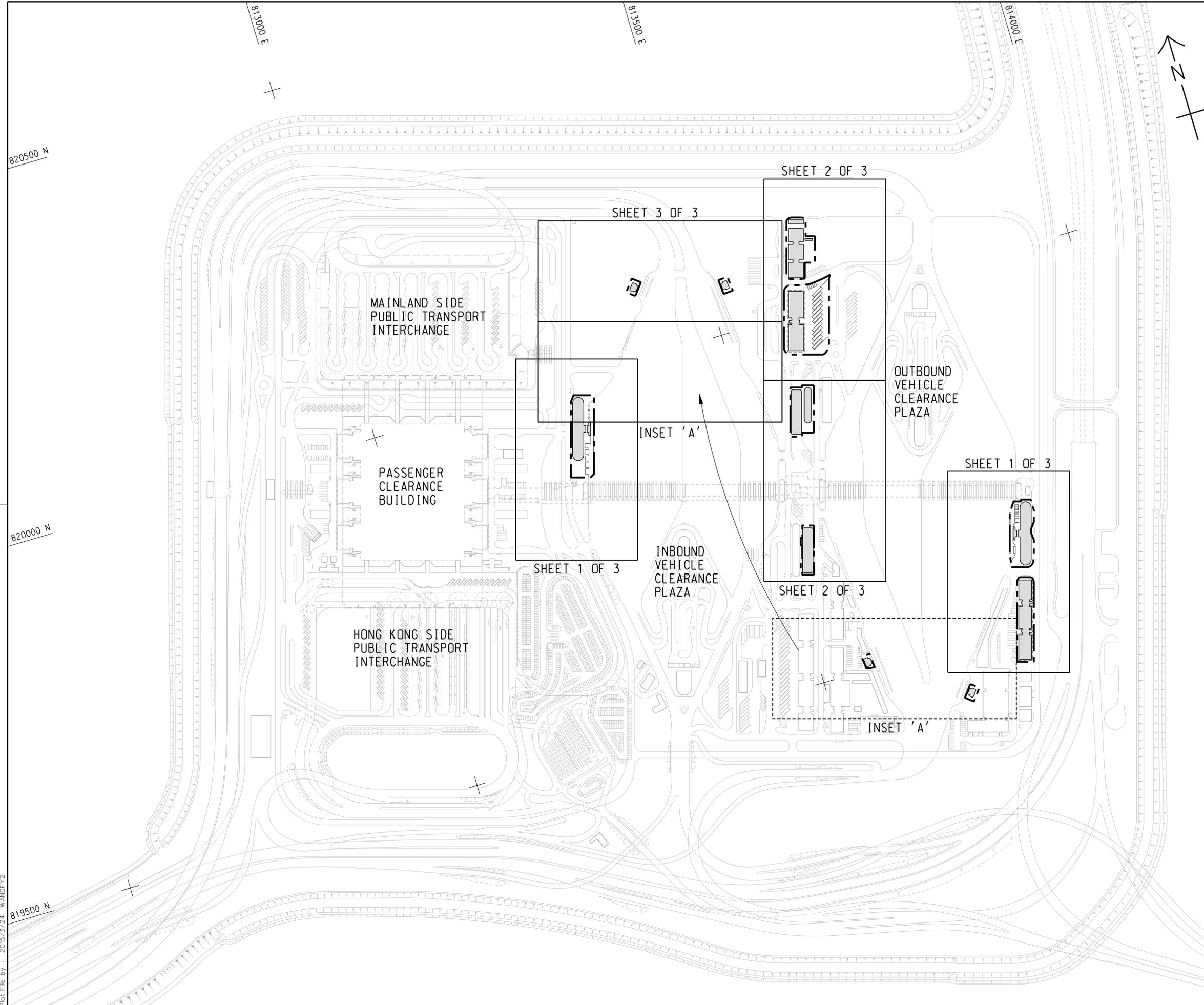
LEGEND

NMS2 and NMS3B ● NOISE MONITORING STATIONS



APPENDIX A

Location of Works Areas



- TENDER DRAWING		BWCW SCI	MAR. 15
REV. 修訂	DESCRIPTION 內容摘要	D.C. 校核	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

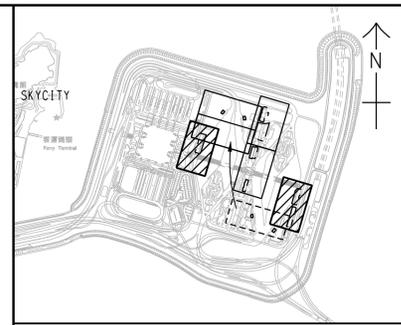
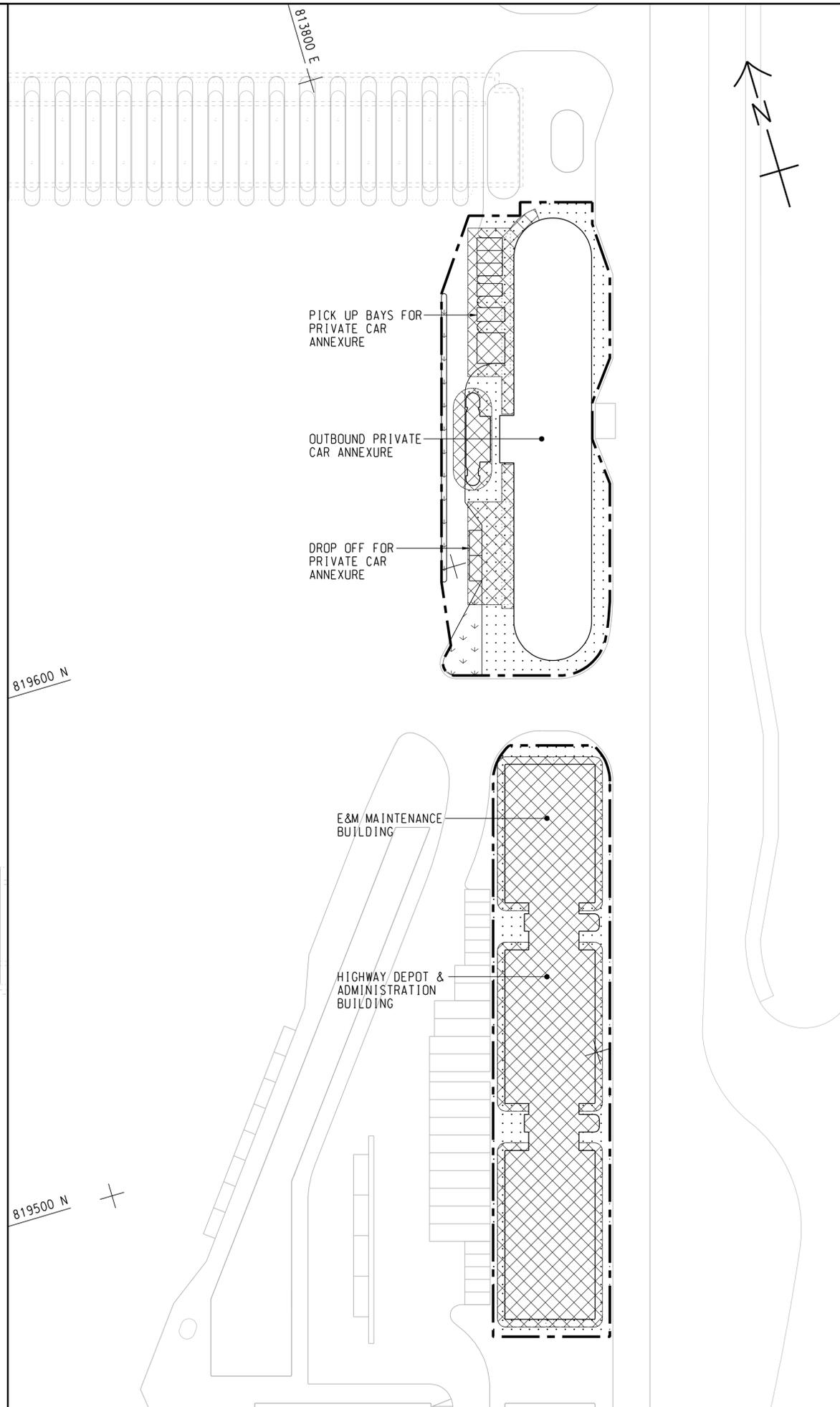
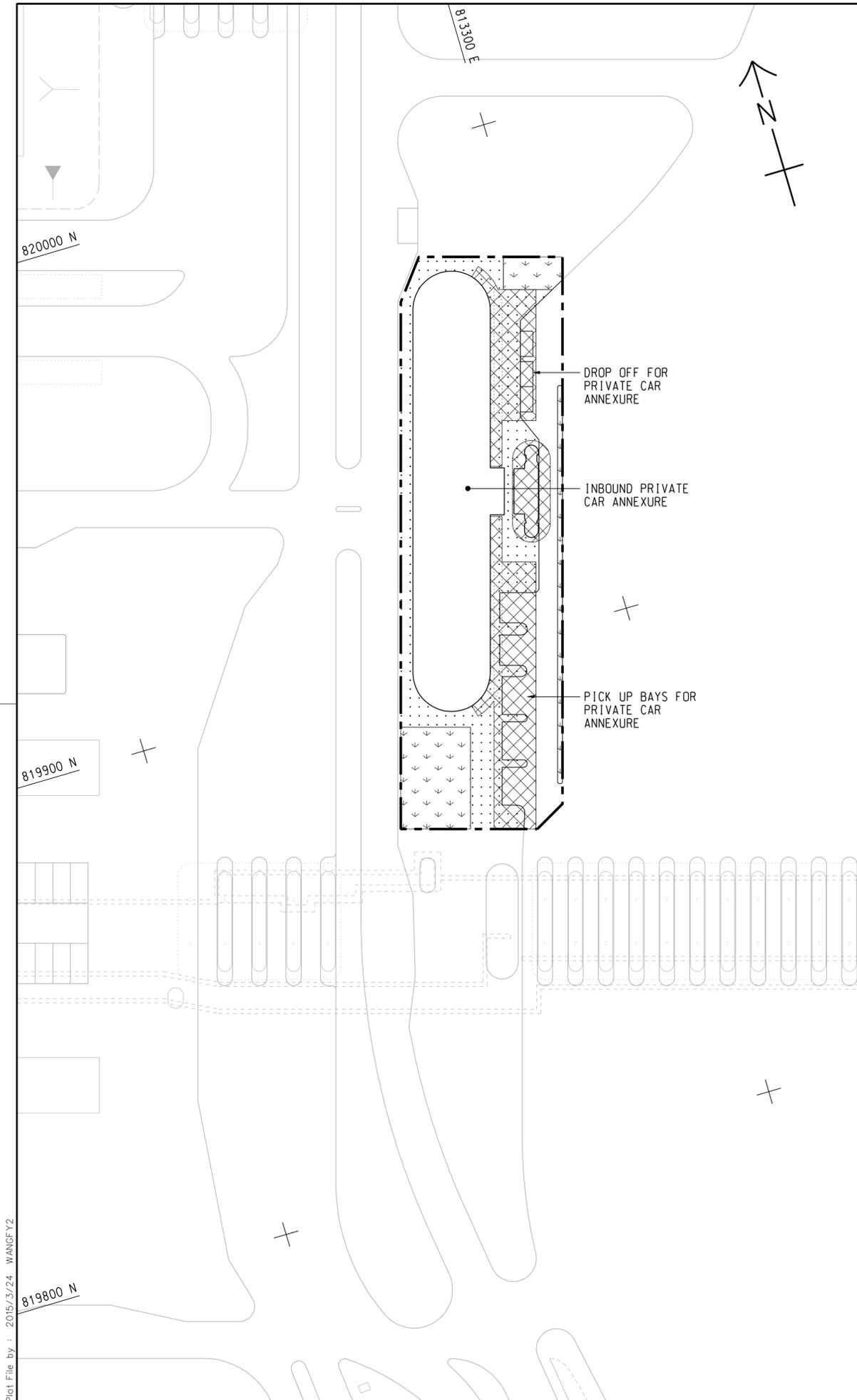
Rogers Stirk Harbour + Partners
 BURO HAPPOLD ATKINS ADI

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

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

SCALE 比例 A1 1 : 2500
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KEY PLAN
SCALE 1 : 20000

NOTE:
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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
-	TENDER DRAWING	MAR. 15

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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

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

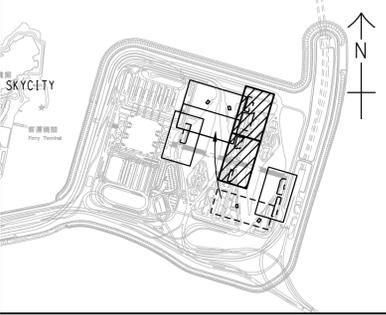
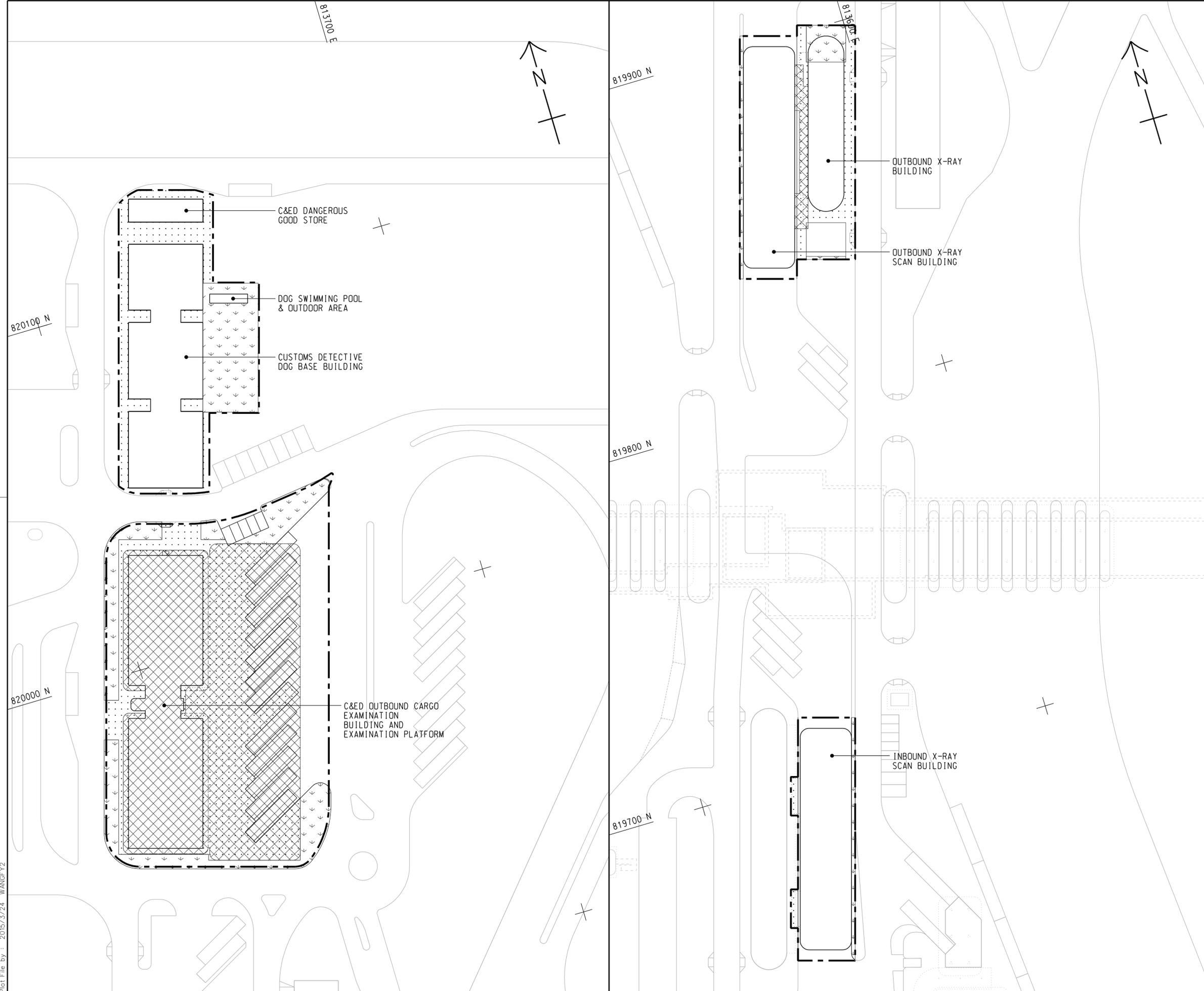
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圖紙編號

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GENERAL LAYOUT PLAN

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圖紙編號

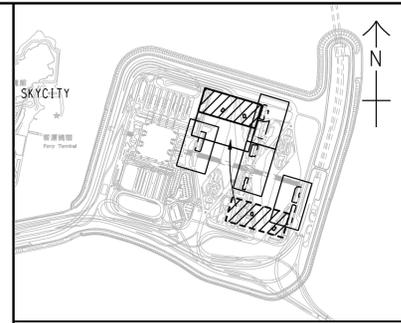
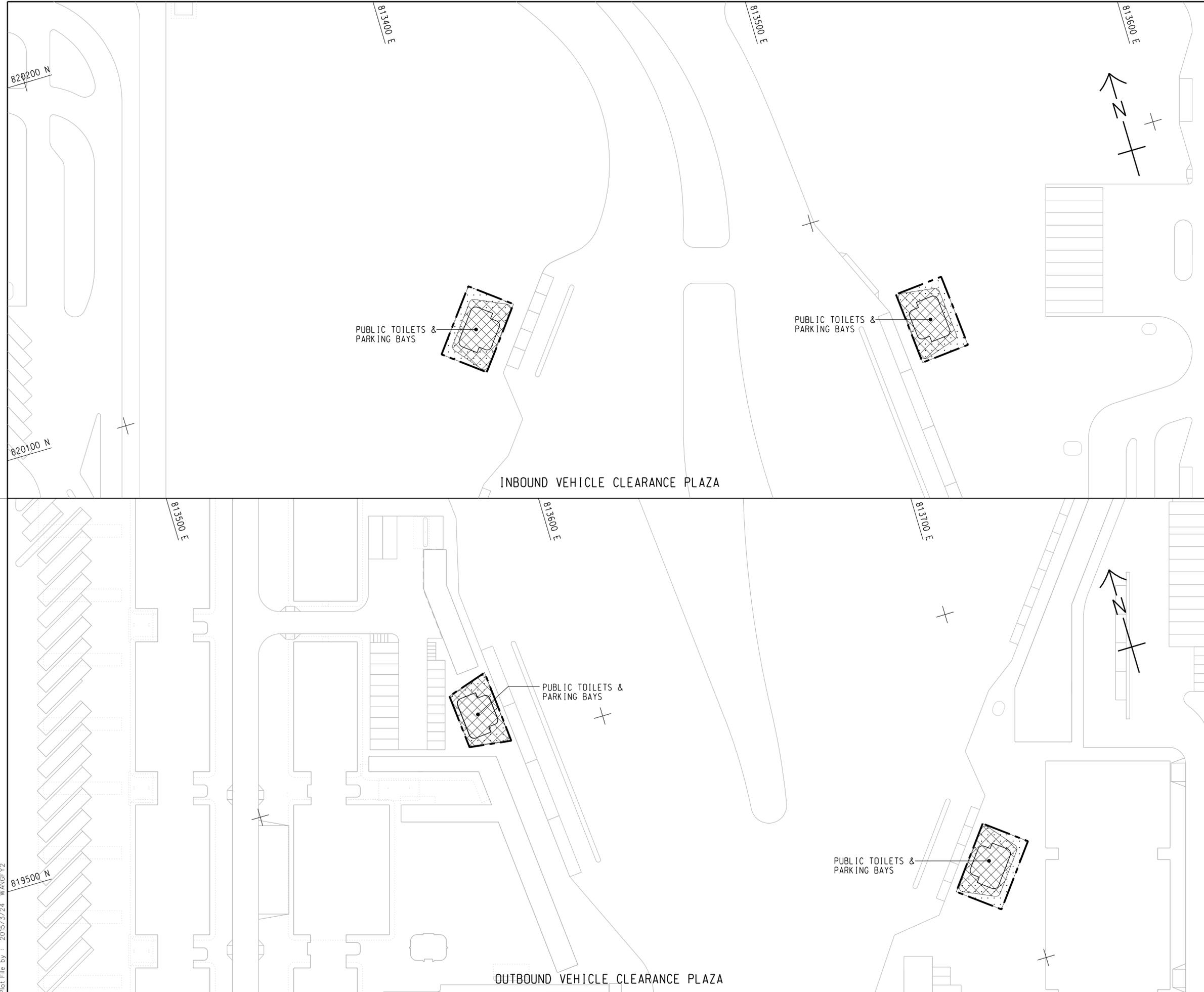
DESIGNED BY 設計	CONTRACT NO. 合約編號	P. Dir. APPROVED 批准人
BWCW	HY/2014/05	TKH

DRAWN BY 繪圖	STATUS 階段
WSY	初步

SCALE 比例 A1 1 : 500

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REV.	DESCRIPTION	DATE
01	TENDER DRAWING	MAR. 15



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

GENERAL LAYOUT PLAN
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SCALE 1 : 500
比例

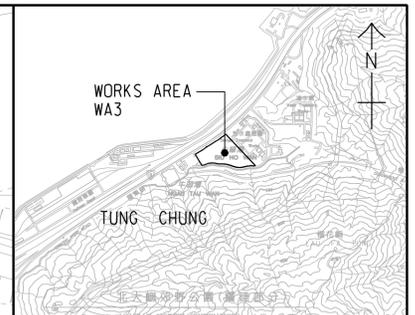
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SETTING OUT POINT

POINT	EASTING	NORTHING
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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



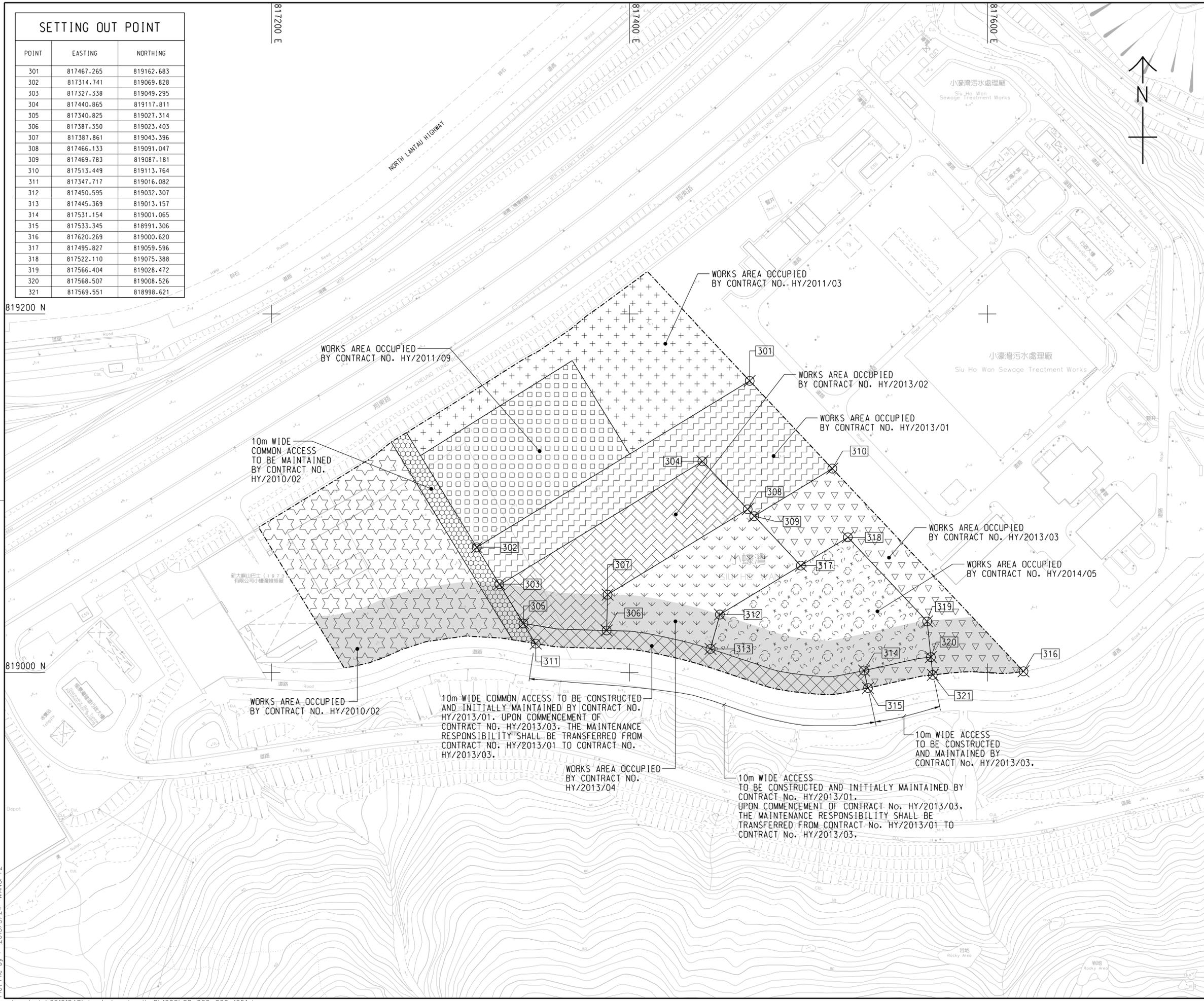
LOCATION PLAN
SCALE 1 : 25000

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)



TENDER DRAWING	BWC SCI	MAR. 15
REV. 修改	DESCRIPTION 內容變更	DATE 日期

路政署 HIGHWAYS DEPARTMENT
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 Hong Kong - Zhuhai - Macao Bridge Hong Kong Project Management Office

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

WORKS AREA WA3

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

DRG.NO. 60191048/C8/000/C00/1051
 圖紙編號

DESIGNED BY 設計	BWCW	CONTRACT NO. 合約編號	HY/2014/05	P. Dir. APPROVED 批准人	TKH
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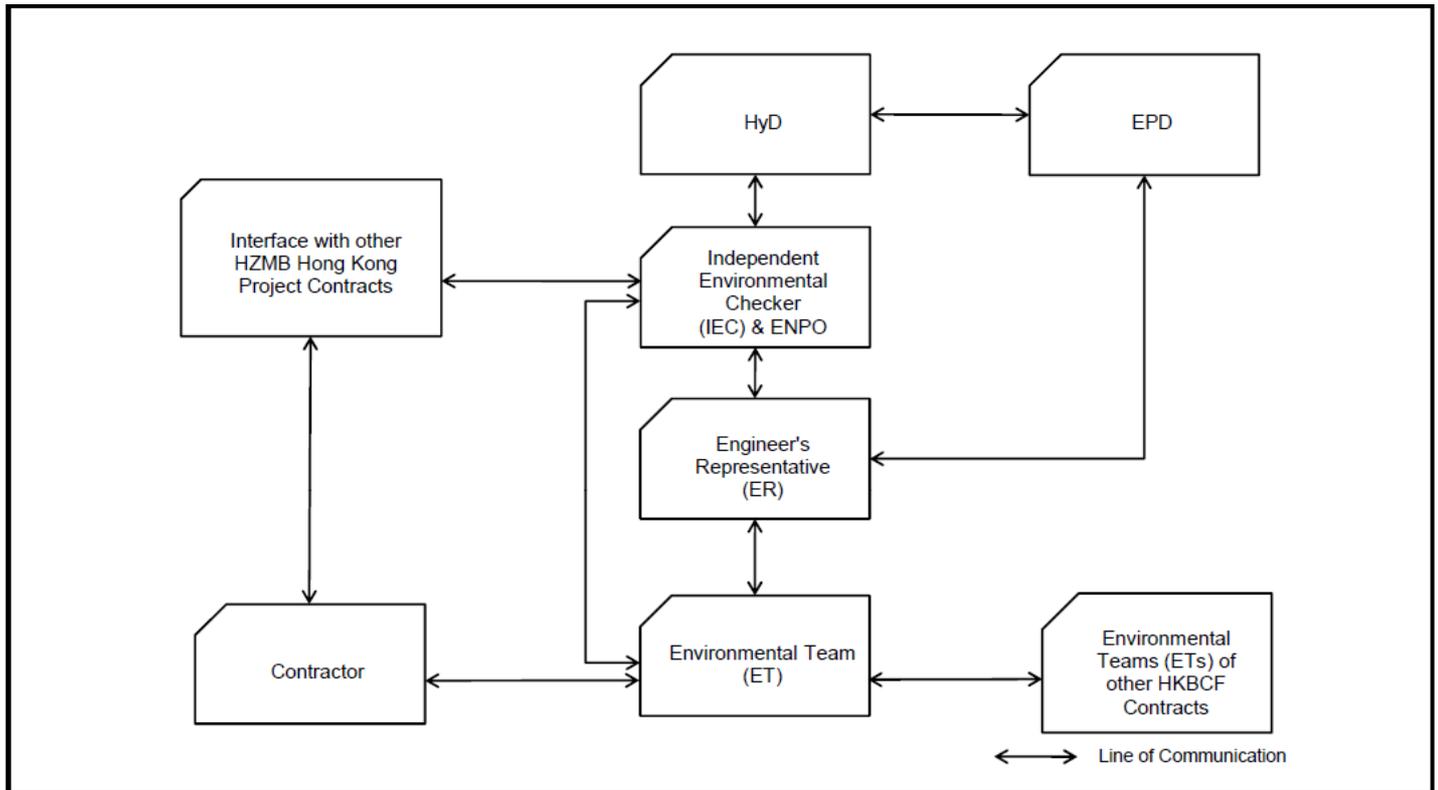
Plot File by : 2015/3/24 WANGFY2



APPENDIX B

Project Organization for Environmental Works

Project Organisation for Environmental Works





APPENDIX C

Construction Programme



Activity ID	Activity Name	December 2017			January 2018				February 2018				March 2018				April 2018				May 2018		
		17	24	31	07	14	21	28	04	11	18	25	04	11	18	25	01	08	15	22	29	06	13
HY/2014/05 HKZMB HKBCF - February 2018, Works Programme																							
RAB3 SUMMARY PROGRAMME																							
GENERAL/PRELIMINARIES																							
DESIGN AND ENGINEERING																							
PROCUREMENT, MANUFACTURING & DELIVERIES																							
CONSTRUCTION																							
Building 021 - C&ED Dangerous Goods Store																							
Raft																							
Structure																							
ABWF/E&M																							
Internal Finishes																							
Degree 1																							
Degree 2																							
Degree 3																							
RAB-21-0330	021 - ABWF and MEP works to Degree 3 (KD4C)																						
External Finishes																							
Facade																							
At Grade																							
RAB-21-380	021 - Prepare Sub Grade (Sub-grade of Bldg. 022 to comple)																						
RAB-21-390	021 - Lay Granular Sub-Base																						
RAB-21-370	021 - Laying Geo Textile + Sand Bedding																						
RAB-21-360	021 - Concrete Block Paving																						
RAB-21-560	021 - Grouting to Concrete Pavers (Conc. Paver of Bldg. 022 to compl)																						
Roof Finishes																							
RAB-21-0270	021 - Install Railing 50m																						
Utilities and Drainage																							
Testing & Commissioning																							
Statutory Submissions & Approvals (Day 670 Completion)																							
Dangerous Goods Licence																							
RAB-21-0350	021 - DG Licence Inspection & Processing																						
Fire Services Department (VAC)																							
RAB-FSD-820	021 - FSD Inspection Period, Building 021																						
Engineer (AECOM)																							
RAB-21-2190	021 - Submit As-Built Drawings to Engineer																						
Building 022 - Customs Detective Dog Base Building																							
Excavation																							
Raft Foundations																							
Structure																							
External Walls																							
Roof Slab																							
ABWF/E&M																							
Internal Finishes																							
North																							
Degree 1																							
Degree 2																							
Degree 3																							
RAB-22-0950	022 - ABWF and MEP works to Degree 3 (KD5C), North																						
External Finishes																							
Facade																							
RAB-22-0470	022 - External Painting, North																						
At Grade																							

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

3-Month Rolling Programme, 01 Mar. 2018 Stated

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



Activity ID	Activity Name	December 2017			January 2018				February 2018				March 2018				April 2018				May 2018		
		17	24	31	07	14	21	28	04	11	18	25	04	11	18	25	01	08	15	22	29	06	13
RAB-22-2100	022 - Prepare Sub Grade, North	[Actual Work]																					
RAB-22-2110	022 - Laying Geo Textile, North	[Actual Work]																					
RAB-22-2120	022 - Lay Sand Bedding, North	[Actual Work]																					
RAB-22-2140	022 - Concrete Block Paving, North	[Actual Work]																					
RAB-22-2150	022 - Concrete Paver Grouting Works, North	[Actual Work]																					
RAB-22-2170	022 - Landscaping for Outdoor Exercise Lawn, North	[Actual Work]																					
Roof Finishes																							
RAB-22-0530	022 - Install Railing, North	[Actual Work]																					
Middle																							
Degree 1																							
Degree 2																							
Degree 3																							
RAB-22-01010	022 - ABWF and MEP works to Degree 3 (KD5C)	[Actual Work]																					
External Finishes																							
Facade																							
RAB-22-0780	022 - External Painting, middle	[Actual Work]																					
Roof Finishes																							
RAB-22-0800	022 - Install Railing, middle	[Actual Work]																					
South																							
Degree 1																							
Degree 2																							
Degree 3																							
RAB-22-01020	022 - ABWF and MEP works to Degree 3 (KD5C)	[Actual Work]																					
External Finishes																							
Facade																							
RAB-22-0880	022 - External Painting, south	[Actual Work]																					
At Grade																							
RAB-22-2000	022 - Prepare Sub Grade, south	[Actual Work]																					
Roof Finishes																							
RAB-22-0900	022 - Install Railing, south	[Actual Work]																					
Specialist Installations																							
Window Wall																							
East																							
RAB-22-7050	022 - Glazing to Window Wall	[Actual Work]																					
West																							
RAB-23-7080	022 - Glazing to Window Wall	[Actual Work]																					
Dog Swimming Pool																							
RAB-22-0600	022 - Tiling to Dog Swimming Pool	[Actual Work]																					
RAB-22-0640	022 - Plumbing and filtration systems	[Actual Work]																					
RAB-22-0630	022 - Metalworks and Railings	[Actual Work]																					
Utilities and Drainage																							
Testing & Commissioning																							
RAB-TC22-1000	022 - T&C (HVAC, FS, P&D, OTHERS)	[Actual Work]																					
Statutory Submissions & Approvals (Day 670 Completion)																							
Water Supplies Department (WSD)																							
Commencement																							
RAB-WSD-804	022 - Submit WWO 46 Pt. IV for Building 022	[Actual Work]																					
Completion																							
RAB-WSD-254	022 - WSD's Processing/Inspection/Meter Connection for Building 022	[Actual Work]																					
Fire Services Department (VAC)																							
RAB-FSD-860	022 - FSD Inspection Period, Building 022	[Actual Work]																					
Fire Services Department (FSD)																							

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

3-Month Rolling Programme, 01 Mar. 2018 Stated

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



Activity ID	Activity Name	December 2017				January 2018				February 2018				March 2018				April 2018				May 2018	
		17	24	31	07	14	21	28	04	11	18	25	04	11	18	25	01	08	15	22	29	06	13
RAB-FSD-330	022 - FSD Inspection Period For Building 022	■																					
Engineer (AECOM)																							
RAB-22-2220	022 - Submit Building 022 As Built Drawings to Engineer	◆																					
Building 023 - C&ED Outbound Cargo Examination Building and Examination Platform																							
Excavation																							
Raft Foundations - Inspection Platform																							
Raft Foundations - Main Building																							
Structure																							
Ground Floor																							
Planters																							
RAB-23-6230	023 - Construct South Planter Box and Ramp	■																					
Supporting Walls and Columns to +12.85mPD																							
First Floor																							
Cure and Strip																							
Supporting Walls and Columns to +17.1mPD																							
Roof																							
Cure and Strip																							
Supporting Walls and Columns to +19.1mPD																							
Lift Doghouse																							
Cure and Strip																							
ABWF/E&M																							
North																							
Internal Finishes																							
Ground Floor																							
Building 023																							
RAB-23-5750	023 - ABWF and MEP works to Degree 3 for others (KD3C) G/F	■																					
Remaining Areas																							
First Floor																							
Building 023																							
RAB-23-5970	023 - ABWF and MEP works to Degree 3 for others (KD3C) F/F	■																					
Remaining Areas																							
External Finishes																							
Facade																							
RAB-23-5650	023 - External Painting, North	■																					
At Grade																							
RAB-23-5740	023 - Prepare Sub Grade, North	■																					
Roof Finishes																							
RAB-23-5920	023 - Install Railing (107m), North	■																					
Green Roof																							
South																							
Internal Finishes																							
Ground Floor																							
Building 023																							
RAB-23-6030	023 - ABWF and MEP works to Degree 3 for others (KD3C) G/F	■																					
Remaining Areas																							
First Floor																							
Building 023																							
RAB-23-6210	023 - ABWF and MEP works to Degree 3 for others (KD3C) F/F	■																					
Remaining Areas																							
External Finishes																							
Facade																							
RAB-23-5890	023 - External Painting, South	■																					
At Grade																							
RAB-23-6020	023 - Prepare Sub Grade, South	■																					

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

3-Month Rolling Programme, 01 Mar. 2018 Stated

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



Activity ID	Activity Name	December 2017			January 2018				February 2018				March 2018				April 2018				May 2018		
		17	24	31	07	14	21	28	04	11	18	25	04	11	18	25	01	08	15	22	29	06	13
Window Wall																							
East																							
RAB-23-6820	023 - Install Secondary Steelwork for Window Wall, South	[Gantt bar: Dec 17-24]																					
RAB-23-6810	023 - Install Primary Steelwork for Window Wall, South	[Gantt bar: Dec 24-31]																					
RAB-23-6830	023 - Glazing to Window Wall, South	[Gantt bar: Jan 07-14]																					
West																							
RAB-23-6840	023 - Install Primary Steelwork for Window Wall, South	[Gantt bar: Dec 17-24]																					
RAB-23-6850	023 - Install Secondary Steelwork for Window Wall, South	[Gantt bar: Dec 24-31]																					
RAB-23-6860	023 - Glazing to Window Wall, South	[Gantt bar: Jan 07-14]																					
Roof Finishes																							
RAB-23-6000	023 - Install Railing (107m), South	[Gantt bar: Dec 17-28]																					
Roof Level Dog House																							
Building 023																							
RAB-23-6340	023 - ABWF and MEP works to Degree 3 R/F	[Gantt bar: Dec 17-28]																					
Specialist Installations																							
RAB-23-6350	023 - Installation of PV System	[Gantt bar: Dec 17-28]																					
Metal Canopy																							
RAB-23-6290	023 - Install Metal Cladding Panels	[Gantt bar: Dec 17-28]																					
RAB-23-6310	023 - Install Misc Metalworks and Railings	[Gantt bar: Feb 04-11]																					
Utilities and Drainage																							
RAB-23-7975	023 - Construct Permanent Drainage and Manholes (Approx 180m)	[Gantt bar: Dec 17-24]																					
Testing & Commissioning																							
RAB-TC23-1000	023 - T&C (HVAC, FS, P&D, OTHERS)	[Gantt bar: Dec 17-24]																					
Statutory Submissions & Approvals (Day 610 Completion)																							
EMSD - Building 023 Lift Inspection																							
RAB-FSD-190	023 - EMSD Lift Inspection	[Gantt bar: Dec 24-31]																					
RAB-FSD-106	023 - EMSD Lift Certificate Issued (Fire Lift) - Building 023	[Gantt bar: Feb 04-11]																					
Water Supplies Department (WSD)																							
Commencement																							
RAB-WSD-774	023 - Submit WWO 46 Pt. IV for Building 023	[Gantt bar: Dec 17-24]																					
Completion																							
RAB-WSD-107	023 - WSD Inspection/Meter Connection	[Gantt bar: Jan 07-14]																					
Fire Services Department (VAC)																							
RAB-FSD-900	023 - FSD Inspection Period, Building 023	[Gantt bar: Dec 17-24]																					
Fire Services Department (FSD)																							
RAB-FSD-110	023 - FSD Inspection Period For Building 023	[Gantt bar: Dec 17-24]																					
Engineer (AECOM)																							
RAB-23-2250	023 - Submit Building 023 As Built Drawings to Engineer	[Gantt bar: Feb 04-11]																					
Building 025 - Inbound Private Car Annexure																							
Excavation																							
Raft Foundations																							
Structure																							
External Walls																							
Roof Slab																							
Cure and Strip																							
ABWF/E&M																							
Internal Finishes																							
Degree 1																							
Degree 2																							
Degree 3																							
RAB-25-0590	025 - ABWF and MEP works to Degree 3 (KD6C)	[Gantt bar: Dec 17-28]																					
External Finishes																							
Facade																							

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 ■ Actual Work
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3-Month Rolling Programme, 01 Mar. 2018 Stated

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



Activity ID	Activity Name	December 2017			January 2018				February 2018				March 2018				April 2018				May 2018		
		17	24	31	07	14	21	28	04	11	18	25	04	11	18	25	01	08	15	22	29	06	13
At Grade																							
RAB-25-6400	025 - Prepare Sub Grade																						
Roof Finishes																							
RAB-25-0540	025 - Install Cat Ladders and Roof Hatch																						
RAB-25-0550	025 - Install Railing (222m)																						
Green Roof																							
Specialist Installations																							
RAB-25-610	025 - Construct Immigration Counters x 3																						
RAB-25-620	025 - Construct Health Department Screening Station x 1																						
Glazed Canopy																							
RAB-25-0520	025 - Install Glazed Panels																						
IMMD Kiosk																							
RAB-25-0380	025 - Internal ABWF and MEP of IMMD Kiosk																						
RAB-25-0350	025 - External Finishes to IMMD Kiosk																						
RAB-25-0430	025 - Erect Kiosk Canopy @ +10.17mPD																						
Utilities and Drainage																							
RAB-25-7270	025 - Install Flushing Water Mains																						
RAB-25-7280	025 - Install Fresh Water Mains																						
Testing & Commissioning																							
RAB-TC25-1000	025 - T&C (HVAC, FS, P&D, OTHERS)																						
Statutory Submissions & Approvals (Day 670 Completion)																							
Water Supplies Department (WSD)																							
Commencement																							
RAB-WSD-744	025 - Submit WWO 46 Pt. IV for Building 025																						
Completion																							
RAB-WSD-374	025 - WSD Inspection/Meter Connection for Building 025																						
Fire Services Department (VAC)																							
RAB-FSD-940	025 - FSD Inspection Period, Building 021																						
Fire Services Department (FSD)																							
RAB-FSD-360	025 - FSD Inspection Period For Building 025																						
Engineer (AECOM)																							
RAB-25-7220	025 - Submit Building 025 As Built Drawings to Engineer																						
Building 032 - Outbound Private Car Annexure																							
Excavation																							
Raft Foundations																							
Structure																							
External Walls																							
Roof Slab																							
Cure and Strip																							
ABWF/E&M																							
Internal Finishes																							
Degree 1																							
Degree 2																							
RAB-32-0660	032 - Power On																						
Degree 3																							
RAB-32-0590	032 - ABWF and MEP works to Degree 3 (KD7C)																						
Roof Finishes																							
RAB-32-0540	032 - Install Cat Ladders and Roof Hatch																						
RAB-32-0550	032 - Install Railing (222m)																						
Green Roof																							
External Finishes																							
Facade																							
RAB-32-0360	032 - Install External Louvers /Windows/Doors																						

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

3-Month Rolling Programme, 01 Mar. 2018 Stated

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



Activity ID	Activity Name	December 2017			January 2018				February 2018				March 2018				April 2018				May 2018		
		17	24	31	07	14	21	28	04	11	18	25	04	11	18	25	01	08	15	22	29	06	13
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																						
RAB-32-0430	032 - Erect Kiosk Canopy @ +10.17mPD																						
Glazed Canopy																							
RAB-32-0520	032 - Install Glazed Panels																						
Utilities and Drainage																							
RAB-32-7310	032 - Install Flushing Water Mains																						
RAB-32-7320	032 - Install Fresh Water Mains																						
Testing & Commissioning																							
RAB-TC32-1000	032 - T&C (HVAC, FS, P&D, OTHERS)																						
Statutory Submissions & Approvals (Day 670 Completion)																							
Water Supplies Department (WSD)																							
Commencement																							
Completion																							
RAB-WSD-344	032 - WSD Inspection/Meter Connection for Building 032																						
Fire Services Department (FSD)																							
RAB-FSD-380	032 - Submit Form 501 to FSD for FS Inspection For Building 032																						
RAB-FSD-610	032 - Submit Form 314 to FSD for FSD info, Building 032																						
RAB-FSD-390	032 - FSD Inspection Period For Building 032																						
TPIDC																							
RAB-32-7250	032 - Submit Building 032 As Built Drawings to Engineer																						
Building 044 - E&M Maintenance Building																							
Excavation																							
Raft																							
Structure																							
ABWF/E&M																							
Ground Floor																							
RAB-44-0410	044 - ABWF and MEP works to Degree 3 (KD8C)																						
First Floor																							
RAB-44-0460	044 - ABWF and MEP works to Degree 2 (KD8B)																						
RAB-44-0560	044 - ABWF and MEP works to Degree 3 (KD8C)																						
Second Floor																							
RAB-44-0610	044 - ABWF and MEP works to Degree 2 (KD8B)																						
RAB-44-0620	044 - ABWF and MEP works to Degree 3 (KD8C)																						
RAB-44-0640	044 - Power On																						
Roof Finishes																							
RAB-44-0550	044 - Install Cat Ladder and Roof Hatch																						
RAB-44-0540	044 - Install Railing																						
Green Roof																							
RAB-44-0400	044 - Install green Roof Irrigation Systems																						
RAB-44-0500	044 - Complete Green Roofing Works																						
External Finishes																							
Facade																							
RAB-44-0430	044 - Install External Louvers /Windows/Doors																						
RAB-44-0530	044 - External Painting																						
At Grade																							

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3-Month Rolling Programme, 01 Mar. 2018 Stated

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



Activity ID	Activity Name	December 2017			January 2018				February 2018				March 2018				April 2018				May 2018		
		17	24	31	07	14	21	28	04	11	18	25	04	11	18	25	01	08	15	22	29	06	13
Specialist Installations																							
Window Wall																							
East																							
RAB-44-6880	044 - Install Primary Steelwork for Window Wall	[Gantt bar: Dec 17-31]																					
RAB-44-6890	044 - Install Secondary Steelwork for Window Wall	[Gantt bar: Dec 24-31]																					
RAB-44-6900	044 - Glazing to Window Wall	[Gantt bar: Dec 24-31]																					
West																							
RAB-44-6920	044 - Install Primary Steelwork for Window Wall	[Gantt bar: Dec 17-31]																					
RAB-44-6930	044 - Install Secondary Steelwork for Window Wall	[Gantt bar: Dec 24-31]																					
RAB-44-6940	044 - Glazing to Window Wall	[Gantt bar: Dec 24-31]																					
Utilities and Drainage																							
Testing & Commissioning																							
RAB-TC44-1000	044 - T&C (HVAC, FS, P&D, OTHERS)	[Gantt bar: Dec 17-25]																					
Statutory Submissions & Approvals																							
EMSD - Building 044 Lift Inspection																							
RAB-FSD-210	044 - Submit EMSD Form 5 (Completion of Lift Installation)	[Milestone: Dec 21]																					
RAB-FSD-220	044 - EMSD Lift Inspection	[Milestone: Dec 28]																					
RAB-FSD-114	044 - EMSD Lift Certificate Issued (Fire Lift) - Building 044	[Milestone: Feb 04]																					
Water Supplies Department (WSD)																							
Commencement																							
RAB-WSD-684	044 - Submit WWO 46 Pt. IV for Building 044	[Milestone: Dec 17]																					
Completion																							
RAB-WSD-314	044 WSD Inspection/Meter Connection for Building 044	[Gantt bar: Dec 17-25]																					
Fire Services Department (FSD)																							
RAB-FSD-116	044 Submit Form 501 to FSD for FS Inspection For Building 044	[Milestone: Dec 31]																					
RAB-FSD-118	044 FSD Inspection Period For Building 044	[Gantt bar: Dec 21-28]																					
Engineer (AECOM)																							
Building 045 - Highways Depot & Administration Building																							
Raft																							
Structure																							
ABWF/E&M																							
South Section																							
Ground Floor																							
RAB-45-0640	045 - ABWF and MEP works to Degree 3 (KD8C), South	[Gantt bar: Dec 17-25]																					
First Floor																							
RAB-45-0780	045 - ABWF and MEP works to Degree 2 (KD8B), South	[Gantt bar: Dec 17-25]																					
RAB-45-0840	045 - ABWF and MEP works to Degree 3 (KD8C), South	[Gantt bar: Dec 17-25]																					
Second Floor (South)																							
RAB-45-0950	045 - ABWF and MEP works to Degree 2 (KD8B), South	[Gantt bar: Dec 17-25]																					
RAB-45-0970	045 - ABWF and MEP works to Degree 3 (KD8C), South	[Gantt bar: Dec 17-25]																					
External Finishes South																							
Roof Finishes South																							
RAB-45-0910	045 - Install Roof Tiles - (540m ²), South	[Gantt bar: Dec 17-25]																					
RAB-45-0930	045 - Install Cat Ladder and Roof Hatch, South	[Gantt bar: Dec 17-25]																					
RAB-45-0920	045 - Install Railing, South	[Gantt bar: Dec 17-25]																					
Facade																							
RAB-45-0620	045 - Install External Louvers /Windows/Doors, South	[Gantt bar: Dec 17-25]																					
At Grade																							
Middle Section																							
Ground Floor																							
RAB-45-0490	045 - ABWF and MEP works to Degree 3 (KD8C), Middle	[Gantt bar: Dec 17-25]																					
First Floor																							

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3-Month Rolling Programme, 01 Mar. 2018 Stated

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



Activity ID	Activity Name	December 2017			January 2018				February 2018				March 2018				April 2018				May 2018		
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RAB-45-0580	045 - ABWF and MEP works to Degree 2 (KD8B), Middle	[Actual Work]												[Critical Remaining]									
RAB-45-0730	045 - ABWF and MEP works to Degree 3 (KD8C), Middle	[Actual Work]												[Critical Remaining]									
RAB-45-0770	045 - Power On, Middle	◆																					
External Finishes Middle																							
Facade																							
RAB-45-0830	045 - Install External Louvers /Windows/Doors, Middle	[Actual Work]																					
RAB-45-0890	045 - External Painting, Middle	[Actual Work]																					
At Grade																							
Green Roof Middle																							
RAB-45-0680	045 - Install green Roof Irrigation Systems, Middle																						
RAB-45-0740	045 - Complete Green Roofing Works, Middle	[Actual Work]																					
Specialist Installations																							
Window Wall																							
East																							
RAB-45-6960	045 - Install Primary Steelwork for Window Wall	[Actual Work]																					
RAB-45-6970	045 - Install Secondary Steelwork for Window Wall					[Actual Work]																	
RAB-45-6980	045 - Glazing to Window Wall					[Actual Work]																	
West																							
RAB-45-6990	045 - Install Primary Steelwork for Window Wall	[Actual Work]																					
RAB-45-7000	045 - Install Secondary Steelwork for Window Wall					[Actual Work]																	
RAB-45-7010	045 - Glazing to Window Wall					[Actual Work]																	
Utilities and Drainage																							
Testing & Commissioning																							
RAB-TC45-1020	045 - T&C (HVAC, FS, P&D, OTHERS)	[Actual Work]												[Critical Remaining]									
Statutory Submissions & Approvals (Day 670 Completion)																							
EMSD - Building 045 Lift Inspection																							
RAB-FSD-240	045 - Submit EMSD Form 5 (Completion of Lift Installation)					◆																	
RAB-FSD-250	045 - EMSD Lift Inspection																						
U/G Fuel Tank																							
Water Supplies Department (WSD)																							
Commencement																							
RAB-WSD-654	045 - Submit WWO 46 Pt. IV for Building 045	◆																					
Completion																							
RAB-WSD-284	045 - WSD's Processing/Inspection/Meter Connection for Building 045	[Actual Work]												[Remaining Work]									
Generator Set - Design																							
Fire Services Department (FSD)																							
RAB-FSD-440	045 - Submit Form 501 to FSD for FS Inspection For Building 045																						
RAB-FSD-620	045 - Submit Form 314 to FSD for FSD info, Building 045																						
RAB-FSD-450	045 - FSD Inspection Period For Building 045					[Actual Work]																	
Engineer (AECOM)																							
Building 050 - Public Toilets Type 2																							
Public Toilet (Portion H1)																							
Excavation																							
Raft																							
Structure																							
ABWF/E&M																							
Internal Finishes																							
Degree 1																							
RAB-50-1170	050 H1 - ABWF and MEP works to Degree 1 (KD9A)	[Actual Work]																					
Degree 2																							
RAB-50-1270	050 H1 - ABWF and MEP works to Degree 2 (KD9B)	[Actual Work]												[Critical Remaining]									
RAB-50-1300	050 H1 - Power On					◆																	

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3-Month Rolling Programme, 01 Mar. 2018 Stated

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



Activity ID	Activity Name	December 2017				January 2018				February 2018				March 2018				April 2018				May 2018	
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Degree 3																							
RAB-50-1280	050 H1 - ABWF and MEP works to Degree 3 (KD9C)																						
Specialist installation																							
RAB-50-1240	050 H1 - Installation of Sanitaryware and Fixtures																						
Roof Finishes																							
RAB-50-1210	050 H1 - Install Cat Ladder and Roof Access Hatch																						
RAB-50-1100	050 H1 - Install Skylights (8No)																						
RAB-50-1200	050 H1 - Install Railing - 49m																						
RAB-50-4320	050 H1 - Install Aluminium Cladding																						
External Finishes																							
RAB-50-1120	050 H1 - Install External Louvers /Windows/Doors																						
At-Grade																							
Utilities and Drainage																							
Testing & Commissioning																							
RAB-TC50-1000	050 H1 - T&C (HVAC, FS, P&D, OTHERS)																						
Statutory Submissions & Approvals (Day 670 Completion)																							
Water Supplies Department (WSD)																							
Commencement																							
RAB-WSD-624	050 H1 - Submit WWO 46 Pt. IV for Building 050																						
Completion																							
Fire Services Department (FSD)																							
RAB-FSD-560	050 H1 - Submit Form 501 to FSD for FS Inspection For Building 050																						
RAB-FSD-630	050 H1 - Submit Form 314 to FSD for FSD info, Building 050																						
RAB-FSD-570	050 H1 - FSD Inspection Period For Building 050																						
Engineer (AECOM)																							
Public Toilet (Portion H2)																							
Excavation																							
Raft																							
Structure																							
ABWF/E&M																							
Internal Finishes																							
Degree 1																							
RAB-50-2170	050 H2 - ABWF and MEP works to Degree 1 (KD10A)																						
Degree 2																							
RAB-50-2270	050 H2 - ABWF and MEP works to Degree 2 (KD10B)																						
RAB-50-2300	050 H2 - Power On																						
Degree 3																							
RAB-50-2280	050 H2 - ABWF and MEP works to Degree 3 (KD10C)																						
Specialist installation																							
RAB-50-2240	050 H2 - Installation of Sanitaryware and Fixtures																						
Roof Finishes																							
RAB-50-2210	050 H2 - Install Cat Ladder and Roof Access Hatch																						
RAB-50-2100	050 H2 - Install Skylights (8No)																						
RAB-50-2200	050 H2 - Install Railing - 49m																						
RAB-50-4360	050 H2 - Install Aluminium Cladding																						
External Finishes																							
RAB-50-2120	050 H2 - Install External Louvers /Windows/Doors																						
Utilities and Drainage																							
RAB-50-7915	050 H2 - Install Flushing Water Mains																						
RAB-50-7925	050 H2 - Install Fresh Water Mains																						
Testing & Commissioning																							
RAB-TC50-1010	050 H2 - T&C (HVAC, FS, P&D, OTHERS)																						

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3-Month Rolling Programme, 01 Mar. 2018 Stated

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



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Statutory Submissions & Approvals (Day 670 Completion)																							
Water Supplies Department (WSD)																							
Commencement																							
RAB-WSD-594	050 H2 - Submit WWO 46 Pt. IV for Building 050	◆																					
Completion																							
Fire Services Department (FSD)																							
RAB-FSD-530	050 H2 - Submit Form 501 to FSD for FS Inspection For Building 050					◆																	
RAB-FSD-740	050 H2 - Submit Form 314 to FSD for FSD info, Building 050					◆																	
RAB-FSD-540	050 H2 - FSD Inspection Period For Building 050																						
Engineer (AECOM)																							
Public Toilet (Portion A1)																							
Excavation																							
Raft																							
Structure																							
ABWF/E&M																							
Internal Finishes																							
Degree 1																							
RAB-50-3170	050 A1 - ABWF and MEP works to Degree 1 (KD11A)																						
Degree 2																							
RAB-50-3270	050 A1 - ABWF and MEP works to Degree 2 (KD11B)																						
RAB-50-3300	050 A1 - Power On				◆																		
Degree 3																							
RAB-50-3280	050 A1 - ABWF and MEP works to Degree 3 (KD11C)																						
Specialist installation																							
Roof Finishes																							
RAB-50-3100	050 A1 - Install Skylights (8No)																						
RAB-50-3210	050 A1 - Install Cat Ladder and Roof Access Hatch																						
RAB-50-3200	050 A1 - Install Railing - 49m																						
RAB-50-4370	050 A1 - Install Aluminium Cladding																						
External Finishes																							
RAB-50-3150	050 A1 - External Render (From Bldg 050 H2)																						
RAB-50-3120	050 A1 - Install External Louvers /Windows/Doors																						
RAB-50-3190	050 A1 - External Tiling																						
Utilities and Drainage																							
RAB-50-7955	050 A1 - Install Flushing Water Mains																						
RAB-50-7965	050 A1 - Install Fresh Water Mains																						
Testing & Commissioning																							
RAB-TC50-1020	050 A1 - T&C (HVAC, FS, P&D, OTHERS)																						
Statutory Submissions & Approvals (Day 670 Completion)																							
Water Supplies Department (WSD)																							
Commencement																							
RAB-WSD-564	050 A1 - Submit WWO 46 Pt. IV for Building 050	◆																					
Completion																							
Fire Services Department (FSD)																							
RAB-FSD-500	050 A1 - Submit Form 501 to FSD for FS Inspection For Building 050					◆																	
RAB-FSD-750	050 A1 - Submit Form 314 to FSD for FSD info, Building 050					◆																	
RAB-FSD-510	050 A1 - FSD Inspection Period For Building 050																						
Engineer (AECOM)																							
Public Toilet (Portion A2)																							
Excavation																							
Raft																							
Structure																							
ABWF/E&M																							

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

3-Month Rolling Programme, 01 Mar. 2018 Stated

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



Activity ID	Activity Name	December 2017		January 2018				February 2018				March 2018				April 2018				May 2018	
		17	24	31	07	14	21	28	04	11	18	25	04	11	18	25	01	08	15	22	29
Internal Finishes																					
Degree 1																					
RAB-50-4170	050 A2 - ABWF and MEP works to Degree 1 (KD12A)	[Actual Work Bar]																			
Degree 2																					
RAB-50-4270	050 A2 - ABWF and MEP works to Degree 2 (KD12B)	[Actual Work Bar]																			
RAB-50-4300	050 A2 - Power On	[Finish Constraint]																			
Degree 3																					
RAB-50-4280	050 A2 - ABWF and MEP works to Degree 3 (KD12C)	[Actual Work Bar]																			
Specialist installation																					
RAB-50-4240	050 A2 - Installation of Sanitaryware and Fixtures	[Actual Work Bar]																			
Roof Finishes																					
RAB-50-4180	050 A2 - Install Roof Tiles - 140m ²	[Actual Work Bar]																			
RAB-50-4210	050 A2 - Install Cat Ladder and Roof Access Hatch	[Actual Work Bar]																			
RAB-50-4100	050 A2 - Install Skylights (8No)	[Actual Work Bar]																			
RAB-50-4200	050 A2 - Install Railing - 49m	[Actual Work Bar]																			
RAB-50-4380	050 A2 - Install Aluminium Cladding	[Actual Work Bar]																			
External Finishes																					
RAB-50-4120	050 A2 - Install External Louvers /Windows/Doors	[Actual Work Bar]																			
RAB-50-4190	050 A2 - External Tiling	[Actual Work Bar]																			
Utilities and Drainage																					
RAB-50-7995	050 A2 - Install Flushing Water Mains	[Actual Work Bar]																			
RAB-50-8005	050 A2 - Install Fresh Water Mains	[Actual Work Bar]																			
Testing & Commissioning																					
RAB-TC50-1030	050 A2 - T&C (HVAC, FS, P&D, OTHERS)	[Actual Work Bar]																			
Statutory Submissions & Approvals (Day 670 Completion)																					
Water Supplies Department (WSD)																					
Commencement																					
RAB-WSD-534	050 A2 - Submit WWO 46 Pt. IV for Building 050	[Finish Constraint]																			
Completion																					
Fire Services Department (FSD)																					
RAB-FSD-260	050 A2 - Submit Form 501 to FSD for FS Inspection For Building 050	[Finish Constraint]																			
RAB-FSD-760	050 A2 - Submit Form 314 to FSD for FSD info, Building 050	[Finish Constraint]																			
RAB-FSD-270	050 A2 - FSD Inspection Period For Building 050	[Actual Work Bar]																			
Engineer (AECOM)																					
Building 053 - Outbound X-Ray Building																					
Excavation																					
Raft																					
Structure																					
External Walls																					
Internal Structures																					
First Floor																					
Roof Floor																					
ABWF/E&M																					
Ground Floor																					
Degree 1																					
Degree 2																					
Degree 3																					
RAB-53-0580	053 - ABWF and MEP works to Degree 3 (KD1C) G/F	[Actual Work Bar]																			
First Floor																					
Degree 1																					
Degree 2																					
Degree 3																					
RAB-53-0660	053 - ABWF and MEP works to Degree 3 (KD1C) F/F	[Actual Work Bar]																			

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

3-Month Rolling Programme, 01 Mar. 2018 Stated

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



Activity ID	Activity Name	December 2017			January 2018				February 2018				March 2018				April 2018				May 2018		
		17	24	31	07	14	21	28	04	11	18	25	04	11	18	25	01	08	15	22	29	06	13
External Finishes																							
External Facade																							
At Grade																							
RAB-53-7615	053 - Prepare Sub Grade																						
Roof Finishes																							
RAB-53-0530	053 - Install Railing - 105m																						
Spacialist Installations																							
Glazed Canopy																							
RAB-53-0620	053 - Construct high level Canopy at +9.95mPD																						
Utilities and Drainage																							
Testing & Commissioning																							
Statutory Submissions & Approvals (Day 470 Completion)																							
EMSD - Building 053 Lift Inspection																							
RAB-FSD-160	053 - EMSD Lift Inspection - Building 053																						
Water Supplies Department (WSD)																							
Commencement																							
RAB-WSD-504	053 - Submit WWO 46 Pt. IV for Building 053																						
Completion																							
RAB-WSD-102	053 - WSD's Processing/Inspection/Meter Connection for Building 053																						
Fire Services Department (FSD)																							
Engineer (AECOM)																							
RAB-53-7460	053 - Submit Building 053 As Built Drawings to Engineer																						
Building 058 - Outbound X-Ray Scan Tunnel																							
Excavation																							
Raft																							
Structure																							
ABWF/E&M																							
Internal Finishes																							
Roof Finishes																							
External Finishes																							
Facade																							
RAB-58-0470	058 - External Painting																						
At Grade																							
RAB-58-6760	058 - Prepare Sub Grade																						
Glazed Canopy																							
RAB-58-0600	058 - Construct high level canopy at +13.231mPD																						
Utilities and Drainage																							
Testing & Commissioning																							
Statutory Submissions & Approvals (Day 470 Completion)																							
Fire Services Department (FSD)																							
Engineer (AECOM)																							
RAB-58-7490	058 - Submit Building 058 As Built Drawings to Engineer																						
Building 059 - Inbound X-Ray Scan Tunnel																							
Excavation																							
Raft Foundations																							
Structure																							
Walls																							
Roof Slabs																							
Cure and Strip																							
ABWF/E&M																							
Internal Finishes																							
External Finishes																							
Facade																							
RAB-59-0480	059 - External Painting																						

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

3-Month Rolling Programme, 01 Mar. 2018 Stated

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



Activity ID	Activity Name	December 2017			January 2018				February 2018				March 2018				April 2018				May 2018			
		17	24	31	07	14	21	28	04	11	18	25	04	11	18	25	01	08	15	22	29	06	13	
At Grade																								
RAB-59-6700	059 - Prepare Sub Grade																							
Roof Finishes																								
Glazed Canopy																								
RAB-59-0610	059 - Construct high level glazed canopy at +13.406mPD North																							
RAB-59-0620	059 - Construct high level glazed canopy at +13.231mPD South																							
Utilities and Drainage																								
Testing & Commissioning																								
Statutory Submissions & Approvals (Day 470 Completion)																								
Fire Services Department (FSD) Engineer (AECOM)																								
RAB-59-7520	059 - Submit Building 059 As Built Drawings to Engineer																							

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

3-Month Rolling Programme, 01 Mar. 2018 Stated

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

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

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

█ Actual Level of Effort ▼ 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)

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

Activity ID	Activity Name	2015												2016				2017				2018				2019		
		Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q1	Q2	Q3						
	Detailed Design Specification																											
	Construction Design and Management																											
	Supply/Manufacture Mock-up items																											
	Supply/Manufacture prototypes																											
	Software Design, Coding and Testing																											
	Coding																											
	Software System Inetgration																											
	Prototype & Software Simulation Tests																											
	Procurement - Phase 1 / Section I																											
	Supply/Manufacture products for FAT																											
	Factory Acceptance Test (FAT)																											
	Supply/Manufacture Equipment																											
	Delivery and Bench Acceptance Test for Phase 1/ Section I																											
	Installation - Phase 1 / Section I																											
	Location 1(PCB (001) Basement)																											
EM1920	L1(001)B/F - Cable Laying and termination at Location 1 and Location 2																											
	Location 1(PCB (001) ELV Room (Grid Line E3))																											
EM1940	L1(001)ELV Rm - Cable Laying and termination at Location 1 and Location 2																											
	Location 2(PCB (001) Ground Floor ELV Room (Grid Line E3))																											
EM1960	L2(001)ELV Rm - Cable Laying and termination at Location 1 and Location 2																											
	Location 2(PCB (001) Ground Floor DOH Port Health Control Room (Grid Line BD5))																											
EM1080	L2(001)Heath Ctrl Rm - Cable Laying and termination at Location 1 and Location 2																											
EM1100	L2(001)Heath Ctrl Rm - Cable Splicing and Testing and Labeling																											
EM1120	L2(001)Health Ctrl Rm - Intercom and PA system Installation																											
EM1140	L2(001)Heath Ctrl Rm - Intercom and PA system tuning																											
	Location 2(PCB (001) First Floor Main Server Room)																											
EM1000	L2(001)Main Server Rm - Cable Laying and termination at Location 1 and Location 2																											
EM1020	L2(001)Main Server Rm - Cable Splicing and Testing and Labeling																											
EM1040	L2(001)Main Server Rm - AVCSS Network and Server Installation																											
EM1060	L2(001)Main Server Rm - AVCSS Network and Server Tuning																											
	Location 3(Inbd Cargo Exam Bldg (037) MDF Room)																											
	Location 3(Inbd Cargo Exam Bldg (037) ELV Room)																											
	Location 3(Inbd Cargo Exam Bldg (037) Inspector Offices 128,129,130,131,128,129,141)																											
EM2020	L3(037)Inspec Offices - Cable Laying and termination in Location 3 and Location 3a																											
EM2040	L3(037)Inspec Offices - Cable Splicing and Testing and Labeling																											
EM2060	L3(037)Inspec Offices - AVCSS SURCON WS and 55" LCD Installation																											
EM2080	L3(037)Inspec Offices - VTS WS Installation																											
EM2100	L3(037)Inspec Offices - SURCON and WS Tuning																											
	Location 3(Inbd Cargo Exam Bldg (037) Platform Control Room)																											
EM1160	L3(037)PLF Ctrl Rm - Cable Laying and termination in Location 3 and Location 3a																											
EM1180	L3(037)PLF Ctrl Rm - Cable Splicing and Testing and Labeling																											
EM1200	L3(037)PLF Ctrl Rm - AVCSS SYSCON WS and 55" TV Wall Installation																											
EM1220	L3(037)PLF Ctrl Rm - AVCSS SYSCON WS Tuning																											

01-Sep-17; Installation - Phase 1 / Section I
 22-Jun-17; Location:1(PCB (001);Basement)
 L1(001)B/F - Cable Laying and termination at Location
 22-Jun-17; Location:1(PCB (001);ELV Room (Grid Line
 L1(001)ELV Rm - Cable Laying and termination at Loca
 22-Jun-17; Location:2(PCB (001);Ground Floor ELV R
 L2(001)ELV Rm - Cable Laying and termination at Loca
 18-Aug-17; Location:2(PCB (001);Ground Floor DO
 L2(001)Heath Ctrl Rm - Cable Laying and termination
 L2(001)Heath Ctrl Rm - Cable Splicing and Testing and
 L2(001)Health Ctrl Rm - Intercom and PA system In
 L2(001)Health Ctrl Rm - Intercom and PA system tu
 21-Aug-17; Location:2(PCB (001); First Floor Main
 L2(001)Main Server Rm - Cable Laying and terminatio
 L2(001)Main Server Rm - Cable Splicing and Testing
 L2(001)Main Server Rm - AVCSS Network and Ser
 L2(001)Main Server Rm - AVCSS Network and Se
 07-Aug-17; Location:3(Inbd Cargo Exam Bldg (037)
 L3(037)Inspec Offices - Cable Laying and termination in
 L3(037)Inspec Offices - Cable Splicing and Testing and
 L3(037)Inspec Offices - AVCSS SURCON WS and 5
 L3(037)Inspec Offices - VTS WS Installation
 L3(037)Inspec Offices - SURCON and WS Tuning
 07-Aug-17; Location:3(Inbd Cargo Exam Bldg (037)
 L3(037)PLF Ctrl Rm - Cable Laying and termination in
 L3(037)PLF Ctrl Rm - Cable Splicing and Testing and
 L3(037)PLF Ctrl Rm - AVCSS SYSCON WS and 55
 L3(037)PLF Ctrl Rm - AVCSS SYSCON WS Tuning

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 	summary	Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities - Automatic Vehicle Clearance Support System (AVCSS)	<table border="1"> <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																	
10-Mar-17	Rev.: 1.0a	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
Outbd Vehicle Clearance Plaza - 8 nos VID, 6 nos VTS, 4 nos TLS		<ul style="list-style-type: none"> EM3160 Outbound VID cabling from pillar box to VID field equipment EM3180 Outbound VTS cabling from pillar box to VTS field equipment EM3200 Outbound TLS cabling from pillar box to TLS field equipment EM3220 Outbound VID field equipment installation (8 VID) EM3240 Outbound VTS field equipment installation (3 RFID + 3 Cameras) EM3260 Outbound TLS field equipment installation (4 TLS) EM3280 Outbound VID and VTS and TLS field equipment tuning 																	
Underground Ducting (UUD1.1) between CUE and Inbd Cargo Exam Bldg (037)		<ul style="list-style-type: none"> UD1000 (UUD1.1 [CUE-037]) - Cable laying and termination 																	
(UUD1.2) between Inbd Cargo Exam Bldg South (037[S]) and DOH Cargo Clearance Bldg (037[S])		<ul style="list-style-type: none"> UD1060 (UUD1.2 [037[S]-043]) - Cable laying and termination 																	
Underground Ducting (UUD6) between CUE and Shuttle Bus Kiosk (006) and Inbd Private Car Exam Bldg (033)		<ul style="list-style-type: none"> UD1040 (UUD9.1 [037[S]-033-100]) - Cable laying and termination 																	
(UUD9.1) btw IB Cargo Exam Bldg South(037[S]) & IB PC Exam Bldg(033) & IB Traffic Control Bldg (033)		<ul style="list-style-type: none"> UD1010 (UUD2 [037[N]-IB VCP]) - Cable laying and termination 																	
(UUD2) between Inbd Cargo Exam Bldg North (037[N]) to Inbd VCP		<ul style="list-style-type: none"> UD1070 (UUD9.3 [033-IB VCP[W]]) - Cable laying and termination 																	
(UUD9.3) between Inbd Private Car Exam Bldg (033) and Inbd Vehicle Clearance Plaza		<ul style="list-style-type: none"> UD1020 (UUD9.2 [033-IB VCP[E]]) - Cable laying and termination 																	
(UUD9.2) between Inbd Private Car Exam Bldg (033) and Inbd Vehicle Clearance Plaza		<ul style="list-style-type: none"> UD1030 (UUD8 [CUE-032]) - Cable laying and termination 																	
Underground Ducting (UUD7) between PCB(001) and Inbd Coach Kiosks(010)		<ul style="list-style-type: none"> UD1030 (UUD3.1 [CUE-023]) - Cable laying and termination 																	
Underground Ducting (UUD3.1) between CUE and Outbd Cargo Exam Bldg (023)		<ul style="list-style-type: none"> UD1050 (UUD3.2 [023-024-101]) - Cable laying and termination 																	
(UUD3.2) btw OB Car Exam Bldg(023) & OB PC Exam Bldg(024) & OB Traffic Control Bldg (023)		<ul style="list-style-type: none"> UD1100 (UUD8 [CUE-032]) - Cable laying and termination 																	
Underground Ducting (UUD8) between CUE and Outbd PCA (032)		<ul style="list-style-type: none"> UD1080 (UUD4.1 [024-OB VCP]) - Cable laying and termination 																	
(UUD4.1) between Outbd PC Exam Bldg (024) and Outbd Vehicle Clearance Plaza		<ul style="list-style-type: none"> UD1090 (UUD5 [023[S]-OB VCP]) - Cable laying and termination 																	
(UUD5) between Outbd Car Exam Bldg (023[S]) and Outbd Vehicle Clearance Plaza		<ul style="list-style-type: none"> UD1090 (UUD5 [023[S]-OB VCP]) - Cable laying and termination 																	
Initial On-Site Test and Commissioning / Pre-SAT (Phase 1 / Section I)																			
Site Acceptance Test (Phase 1 / Section I)																			
Security Risk Assessment and Audit																			
Operability Period Test (Phase 1 / Section I)																			
Completion (Phase 1 /Section I)																			
Training and Document (Phase 1 /Section I)																			
Operation (Phase 1 /Section I)																			
Engineering Support for Phase 1 / Section I																			
Procurement - Phase 2 / Section II																			
Delivery and Bench Acceptance Test for Phase 2/Section II																			
Installation - Phase 2 / Section II		<ul style="list-style-type: none"> 30-Aug-17: Installation -Phase 2/ Section II 																	

Programme No.: HZMB-DWP Data Date: 14-Aug-15		Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities - Automatic Vehicle Clearance Support System (AVCSS)	Date	Revision	Checked	Approved
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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	Q1	Q2	Q3						
Location 8(Inbd Private Car Annex (025)) (Phase 2)		▼ 30-Aug-17; Location 8(Inbd Private Car Annex (025))																										
EM3370	L8(025) - Cable Containment in Kiosks	L8(025) - Cable Containment in Kiosks																										
EM3380	L8(025) - Cable Laying and termination	L8(025) - Cable Laying and termination																										
EM3400	L8(025) - Cable Splicing and Testing and Labeling	L8(025) - Cable Splicing and Testing and Labeling																										
Location 9(Outbd Private Car Annex (032)) (Phase 2)		▼ 30-Aug-17; Location 9(Outbd Private Car Annex (032))																										
EM3500	L9(032) - Cable Containment in Kiosks	L9(032) - Cable Containment in Kiosks																										
EM3520	L9(032) - Cable Laying and termination	L9(032) - Cable Laying and termination																										
Initial On-Site Test and Commissioning / Pre-SAT (Phase 2 / Section II)																												
Site Acceptance Test (Phase 2 / Section II)																												
Operability Period Test (Phase 2 / Section II)																												
Completion (Phase 2 / Section II)																												
Engineering Support for Phase 2 / Section II																												
Procurement for Phase2 / Section III																												
Delivery and Bench Acceptance Test for Phase2 / Section III																												
Installation - Phase 2 / Section III		▼ 09-Oct-17; Installation - Phase 2/ Section III																										
Location 10,11,12,13 (Vehicle Clearance Kiosks)		▼ 09-Oct-17; Location 10,11,12,13 (Vehicle Clearance Kiosks)																										
Location 12 Inbd Private Car Kiosks (027) - 12 nos (Phase 2)		▼ 09-Oct-17; Location 12 Inbd Private Car Kiosks																										
EM4440	L12(027)(12nos P2) - Cable Laying and termination	L12(027)(12nos P2) - Cable Laying and termination																										
EM4460	L12(027)(12nos P2) - Cable Splicing and Testing and Labeling	L12(027)(12nos P2) - Cable Splicing and Testing and Labeling																										
EM4480	L12(027)(12nos P2) - AVCSS/DOH/MOM Kiosk Equipment Installation (12 nos)	L12(027)(12nos P2) - AVCSS/DOH/MOM Kiosk Equipment Installation (12 nos)																										
Location 13 Outbd Private Car Kiosks (030) - 12 nos (Phase 2)		▼ 01-Sep-17; Location 13 Outbd Private Car Kiosks																										
EM4560	L13(030)(12nos P2) - Cable Containment in Kiosks	L13(030)(12nos P2) - Cable Containment in Kiosks																										
Location 12 Outbd Goods Vehicle Kiosks (029) - 3 nos (Phase 2)		▼ 31-Aug-17; Location 12 Outbd Goods Vehicle Kiosks																										
EM4880	L12(029)(3nos P2) - Cable Laying and termination	L12(029)(3nos P2) - Cable Laying and termination																										
EM4900	L12(029)(3nos P2) - Cable Splicing and Testing and Labeling	L12(029)(3nos P2) - Cable Splicing and Testing and Labeling																										
EM4920	L12(029)(3nos P2) - AVCSS/DOH/MOM Kiosk Equipment Installation (3 nos)	L12(029)(3nos P2) - AVCSS/DOH/MOM Kiosk Equipment Installation (3 nos)																										
EM4940	L12(029)(3nos P2) - ODB & XDB Installation (3 nos)	L12(029)(3nos P2) - ODB & XDB Installation (3 nos)																										
EM4960	L12(029)(3nos P2) - AIOP Installation (3 nos)	L12(029)(3nos P2) - AIOP Installation (3 nos)																										
EM4980	L12(029)(3nos P2) - Loop Installation (15 nos)	L12(029)(3nos P2) - Loop Installation (15 nos)																										
Location 11 Outbd Coach Kiosks (009) - 4 nos (Phase 2)																												
Location 12 Inbd Goods Vehicle Kiosks (028) - 3 nos (Phase 2)		▼ 24-Aug-17; Location 12 Inbd Goods Vehicle Kiosks																										
EM4720	L12(028)(3nos P2) - Cable Laying and termination	L12(028)(3nos P2) - Cable Laying and termination																										
EM4740	L12(028)(3nos P2) - Cable Splicing and Testing and Labeling	L12(028)(3nos P2) - Cable Splicing and Testing and Labeling																										
EM4760	L12(028)(3nos P2) - AVCSS/DOH/MOM Kiosk Equipment Installation (3 nos)	L12(028)(3nos P2) - AVCSS/DOH/MOM Kiosk Equipment Installation (3 nos)																										
EM4780	L12(028)(3nos P2) - ODB & XDB Installation (3 nos)	L12(028)(3nos P2) - ODB & XDB Installation (3 nos)																										
EM4800	L12(028)(3nos P2) - AIOP Installation (3 nos)	L12(028)(3nos P2) - AIOP Installation (3 nos)																										
EM4820	L12(028)(3nos P2) - Loop Installation (15 nos)	L12(028)(3nos P2) - Loop Installation (15 nos)																										
EM4840	L12(028)(3nos P2) - Kiosk Equipment Configuration (3 nos)	L12(028)(3nos P2) - Kiosk Equipment Configuration (3 nos)																										
EM5120	L12(028)(3nos P2) - Inbd Goods Vehicle Kiosks Installation Complete	L12(028)(3nos P2) - Inbd Goods Vehicle Kiosks Installation Complete																										
Location 10 Shuttle Bus Kiosks (006) - 4 nos (Phase 2)		▼ 30-Aug-17; Location 10 Shuttle Bus Kiosks (006)																										
EM4000	L10(006)(4nos P2) - Cable Containment in Kiosks	L10(006)(4nos P2) - Cable Containment in Kiosks																										
Location 11 Inbd Coach Kiosks (010) - 2 nos (Phase 2)-1																												
Location 11 Inbd Coach Kiosks (010) - 2 nos (Phase 2)-2																												
Initial On-Site Test and Commissioning / Pre-SAT (Phase 2 / Section III)																												

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

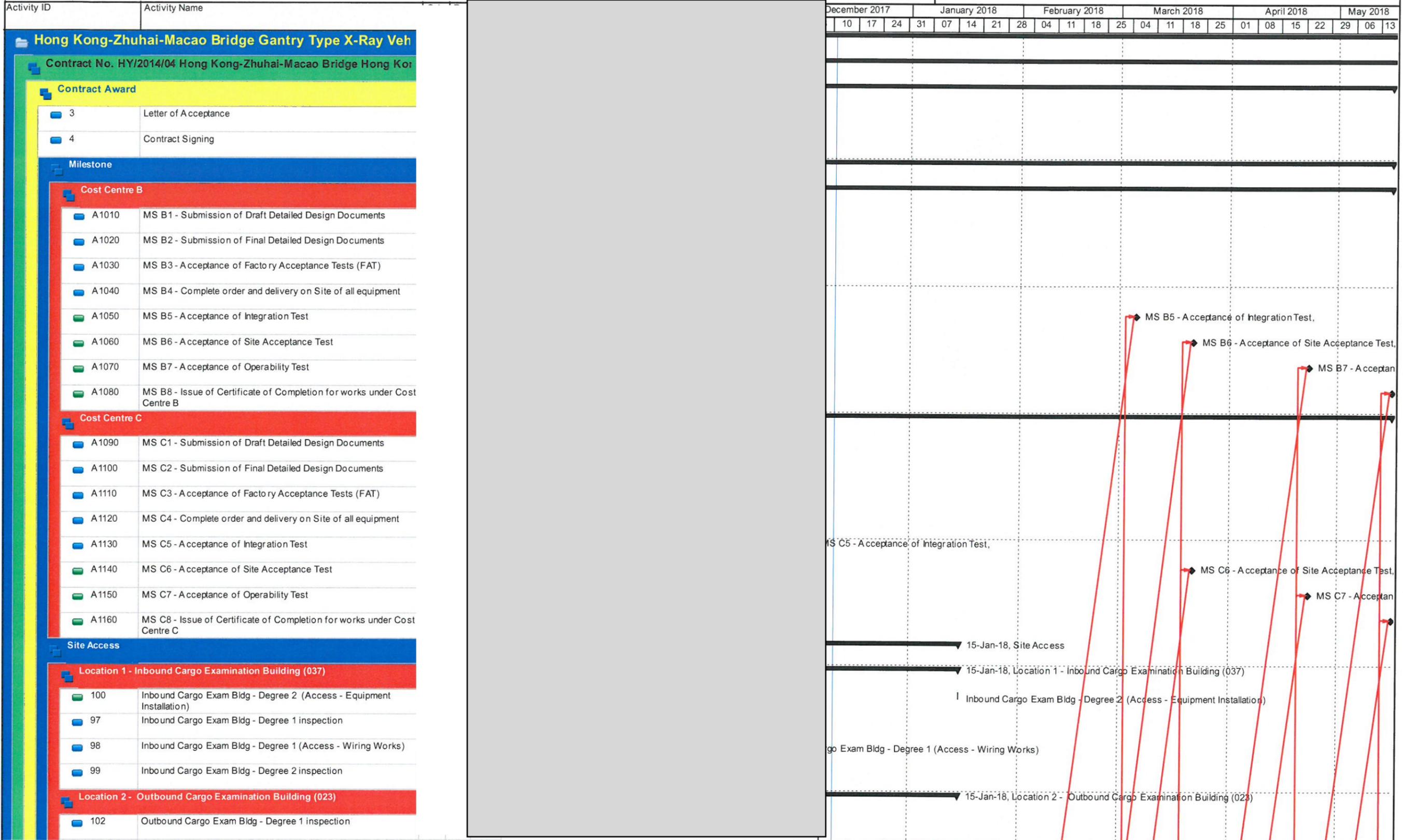
Activity ID	Activity Name	2015			2016				2017				2018				2019			
		Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	
	<ul style="list-style-type: none"> Site Acceptance Test (Phase 2 / Section III) Operability Period Test (Phase 2 / Section III) Completion (Phase 2 / Section III) Operation (Phase 2 / Section III) Defect Liability Period (DLP) Document Submission (Phase 2 / Section III) 																			

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

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

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

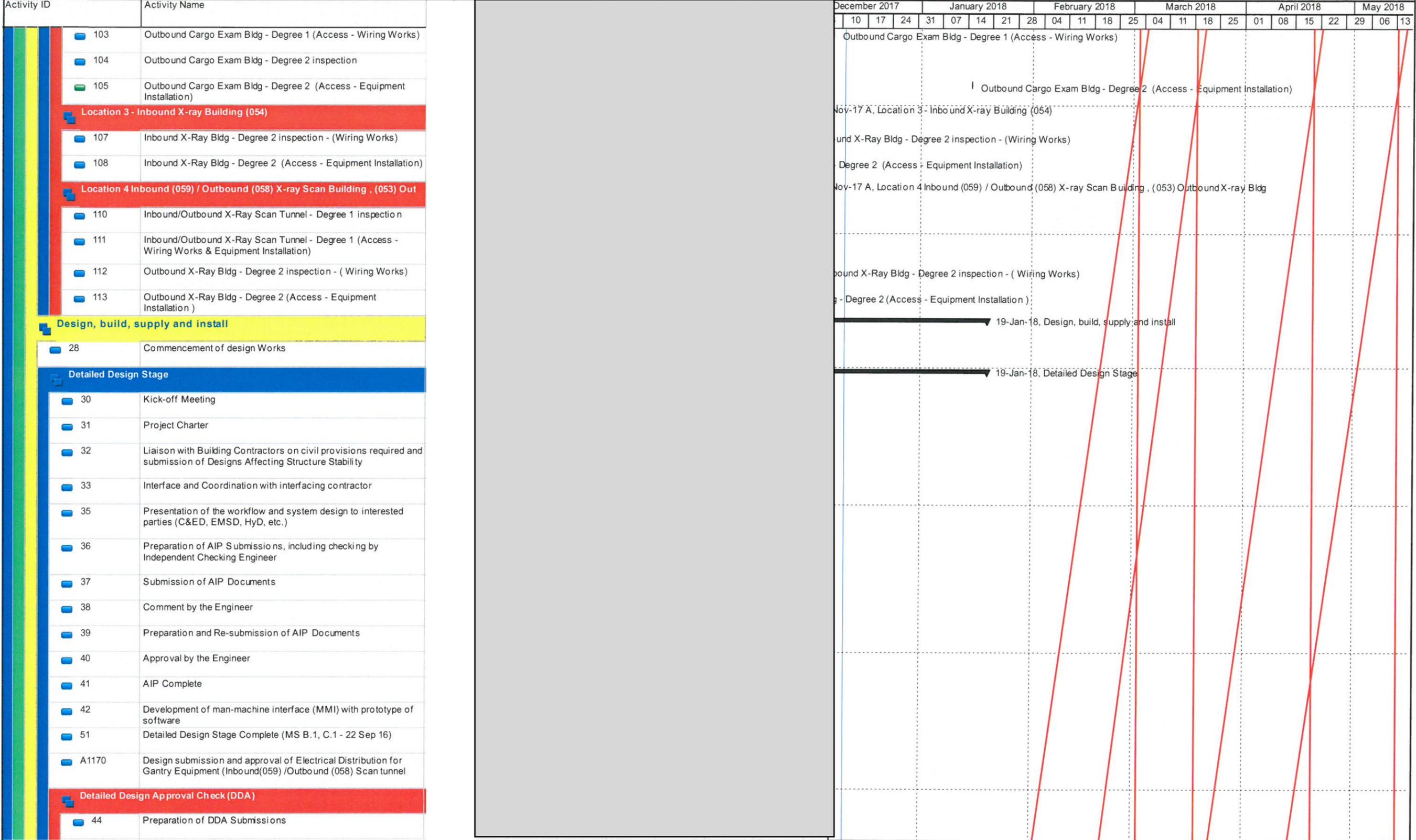
Date	Revision	Checked	Approved
14-Nov-16	Rev.: 0	WC	LC
10-Mar-17	Rev.: 1.0a	WC	LC
5-May-17	Rev.: 1.0b	WC	LC



█ Actual Level of Effort █ Remaining Work ▶ summary
█ BL (IWP rev 2) █ Critical Remaining Work
█ Actual Work ◆ Milestone

C7's formal access to the site = Degree 1/degree 2 completion date
(Particular Specification Preamble – Section E)

Date	Revision	Checked	Approved
11-Dec-17	Rev 7	KR	RY



█ Actual Level of Effort █ Remaining Work ▶ summary
█ BL (IWP rev 2) █ Critical Remaining Work
█ Actual Work ◆ Milestone

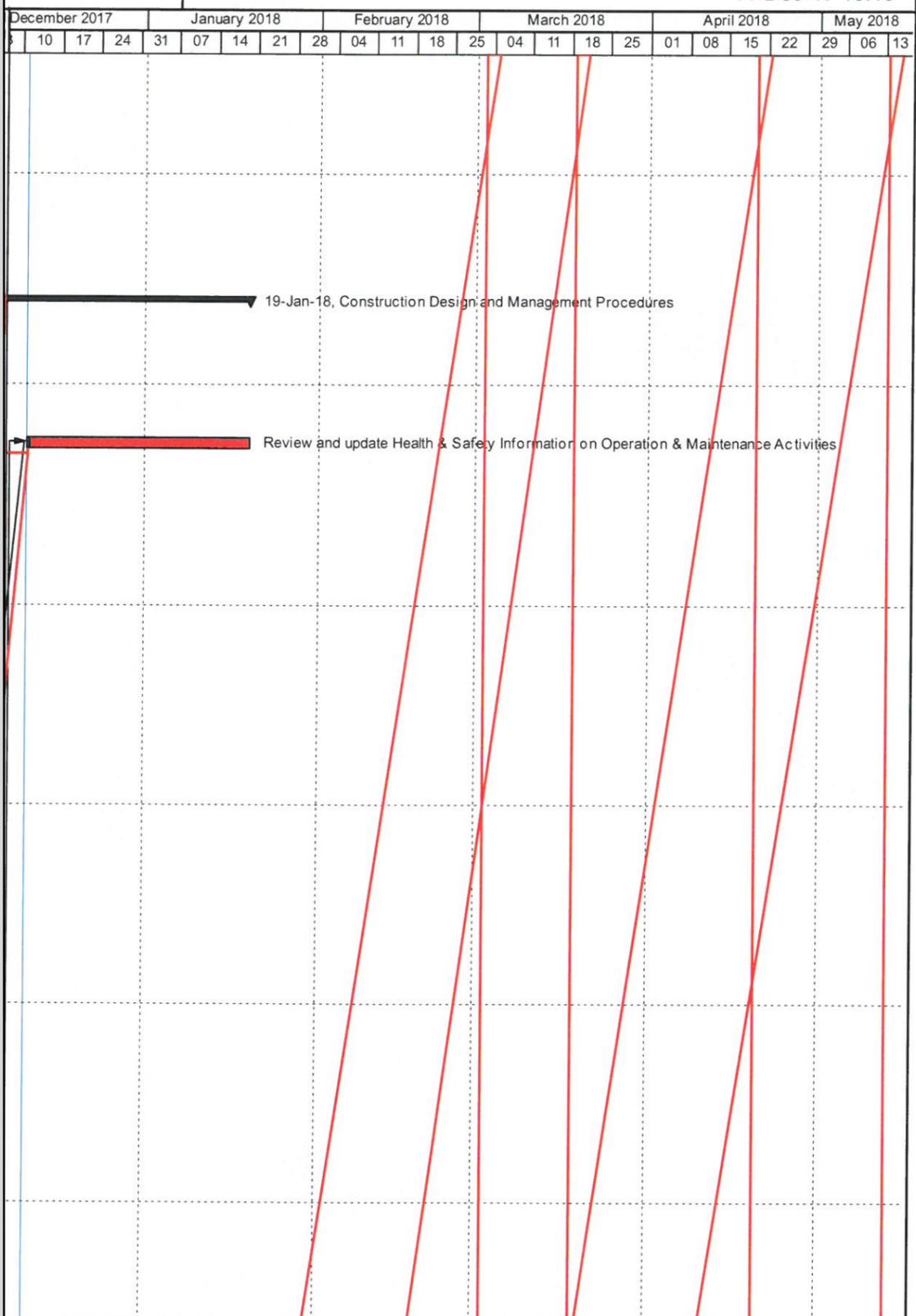
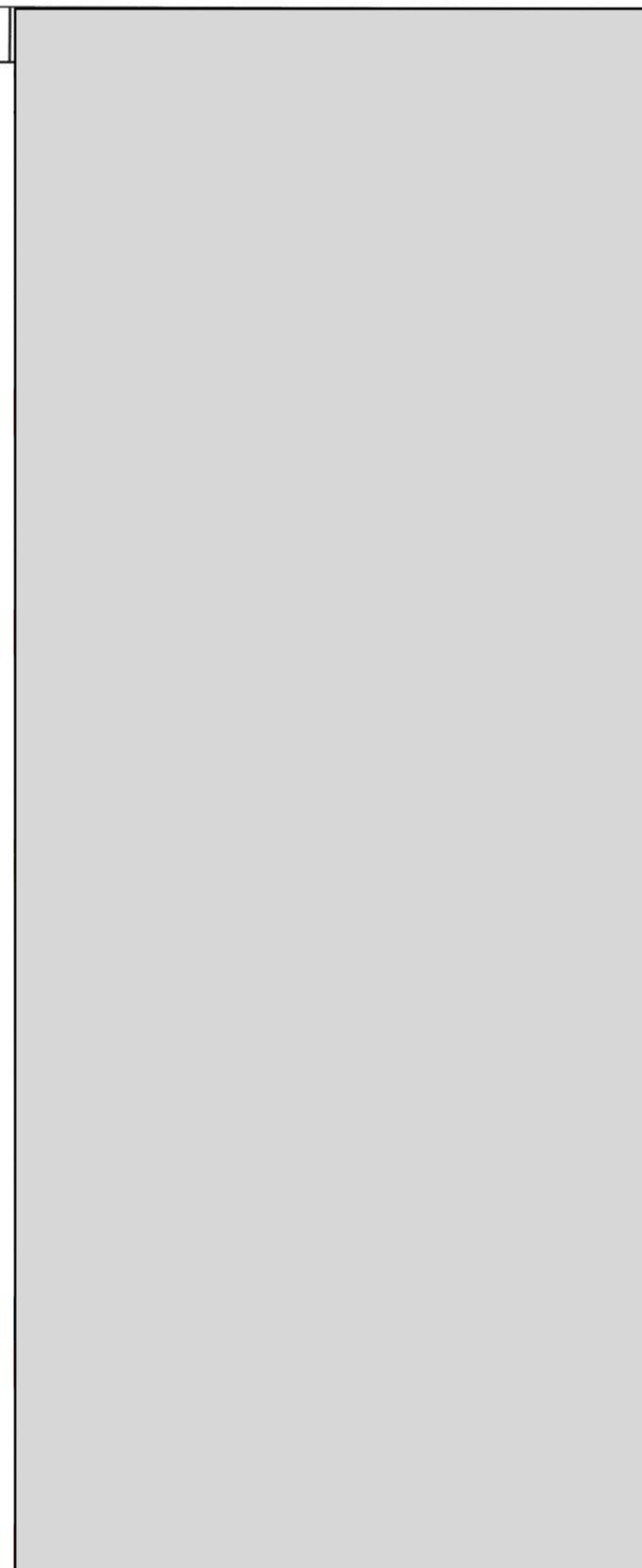
C7's formal access to the site = Degree 1/degree 2 completion date
 (Particular Specification Preamble – Section E)
 2 of 14

Date	Revision	Checked	Approved
11-Dec-17	Rev 7	KR	RY

Hong Kong-Zhuhai-Macao Bridge Gantry Type X-Ray Vehicle

11-Dec-17 16:19

Activity ID	Activity Name
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)
Construction Design and Management Procedures	
A1210	Review the Summarized Health & Safety Concerns, Hazard & Impact Summary, Pre-tender Health & Safety Plan
A1220	Preparation and Submission of Construction Health & Safety Plan (Outlined Safety Management Plan 14 Elements per CSSM)
A1230	Review and update Health & Safety Information on Operation & Maintenance Activities
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
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)
Local contract commencement works	
Procurement of uniform	
7	Approval for uniform design
8	Procurement of uniforms
9	Issue uniform to staff
Procurement of car	

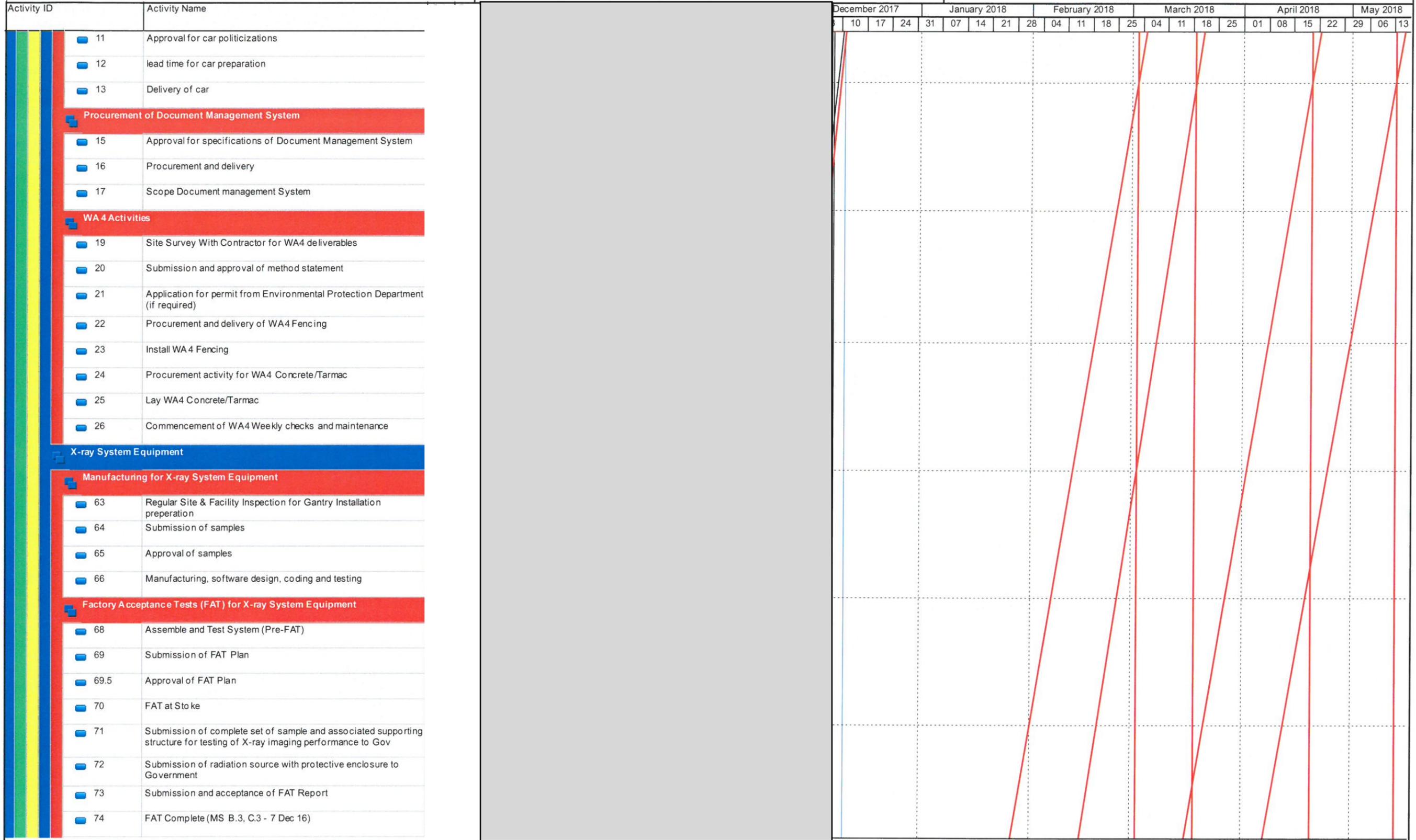


█ Actual Level of Effort █ Remaining Work ▶ summary
█ BL (IWP rev 2) █ Critical Remaining Work
█ Actual Work ◆ Milestone

C7's formal access to the site = Degree 1/degree 2 completion date
 (Particular Specification Preamble – Section E)

3 of 14

Date	Revision	Checked	Approved
11-Dec-17	Rev 7	KR	RY

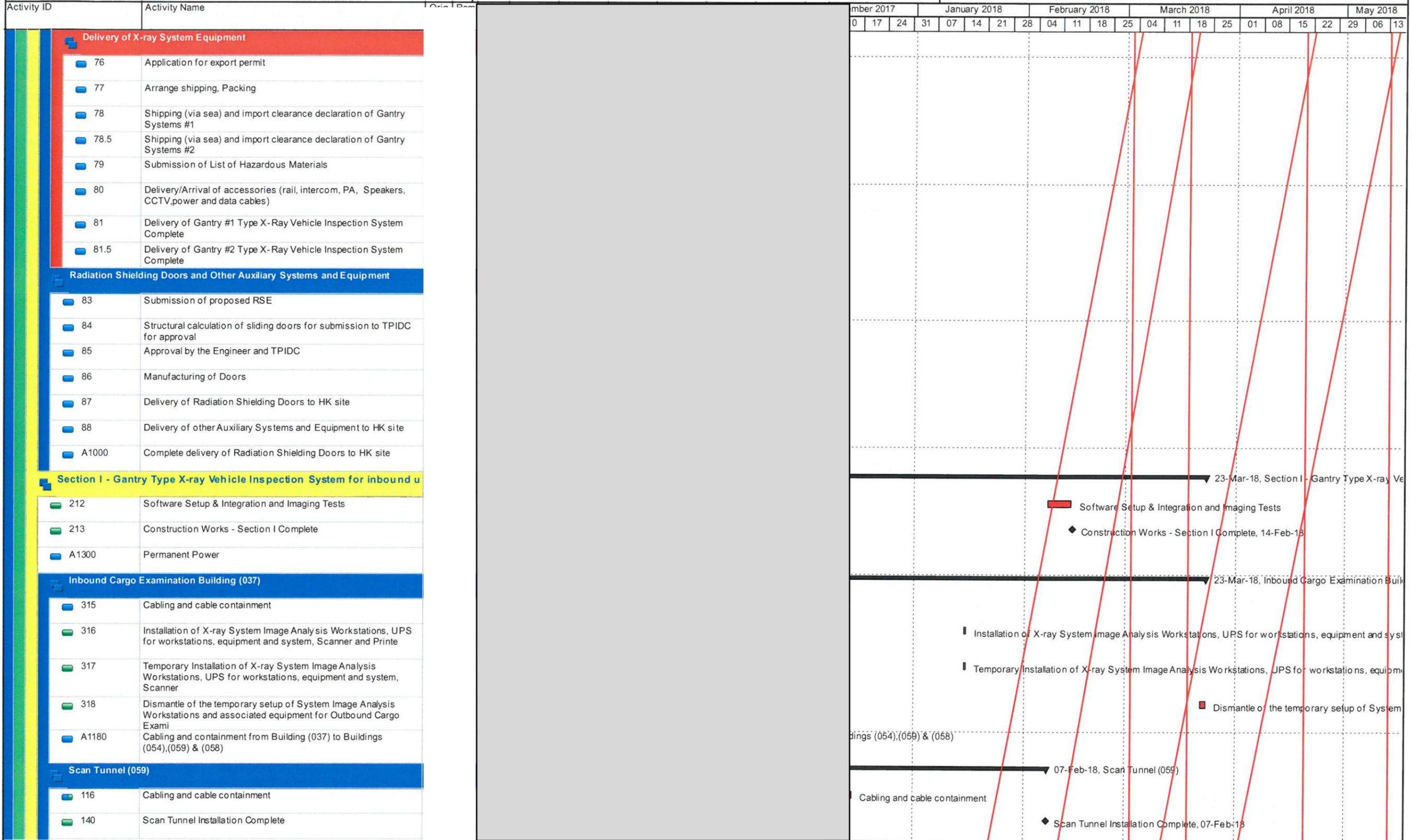


█ Actual Level of Effort █ Remaining Work ▼ summary
█ BL (IWP rev 2) █ Critical Remaining Work
█ Actual Work ◆ Milestone

C7's formal access to the site = Degree 1/degree 2 completion date (Particular Specification Preamble – Section E)

4 of 14

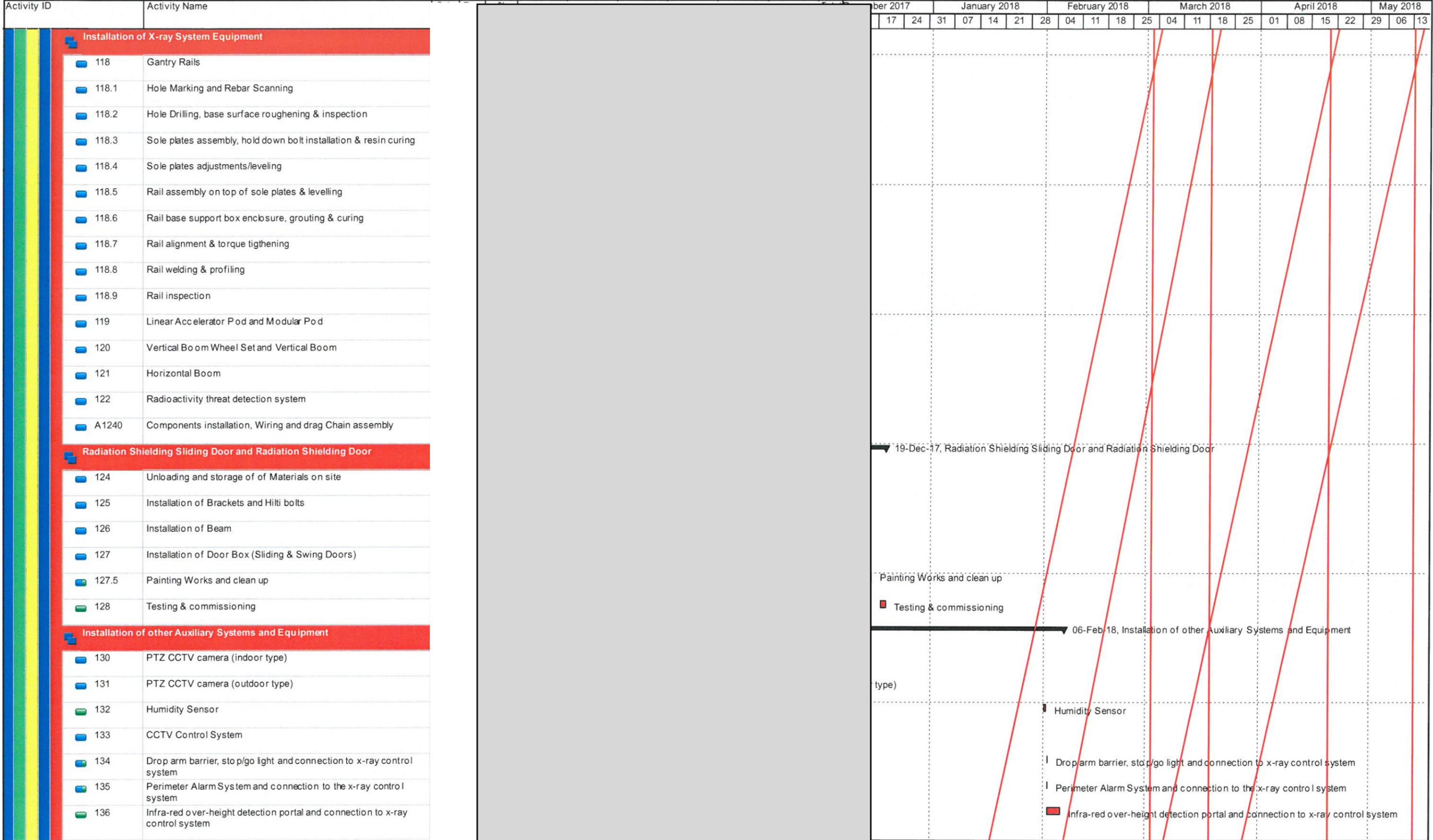
Date	Revision	Checked	Approved
11-Dec-17	Rev 7	KR	RY



█ Actual Level of Effort █ Remaining Work ▶ summary
█ BL (IWP rev 2) █ Critical Remaining Work
█ Actual Work ◆ Milestone

C7's formal access to the site = Degree 1/degree 2 completion date (Particular Specification Preamble – Section E)

Date	Revision	Checked	Approved
11-Dec-17	Rev 7	KR	RY



█ Actual Level of Effort █ Remaining Work ▶ summary
█ BL (IWP rev 2) █ Critical Remaining Work
█ Actual Work ◆ Milestone

C7's formal access to the site = Degree 1/degree 2 completion date
 (Particular Specification Preamble – Section E)

6 of 14

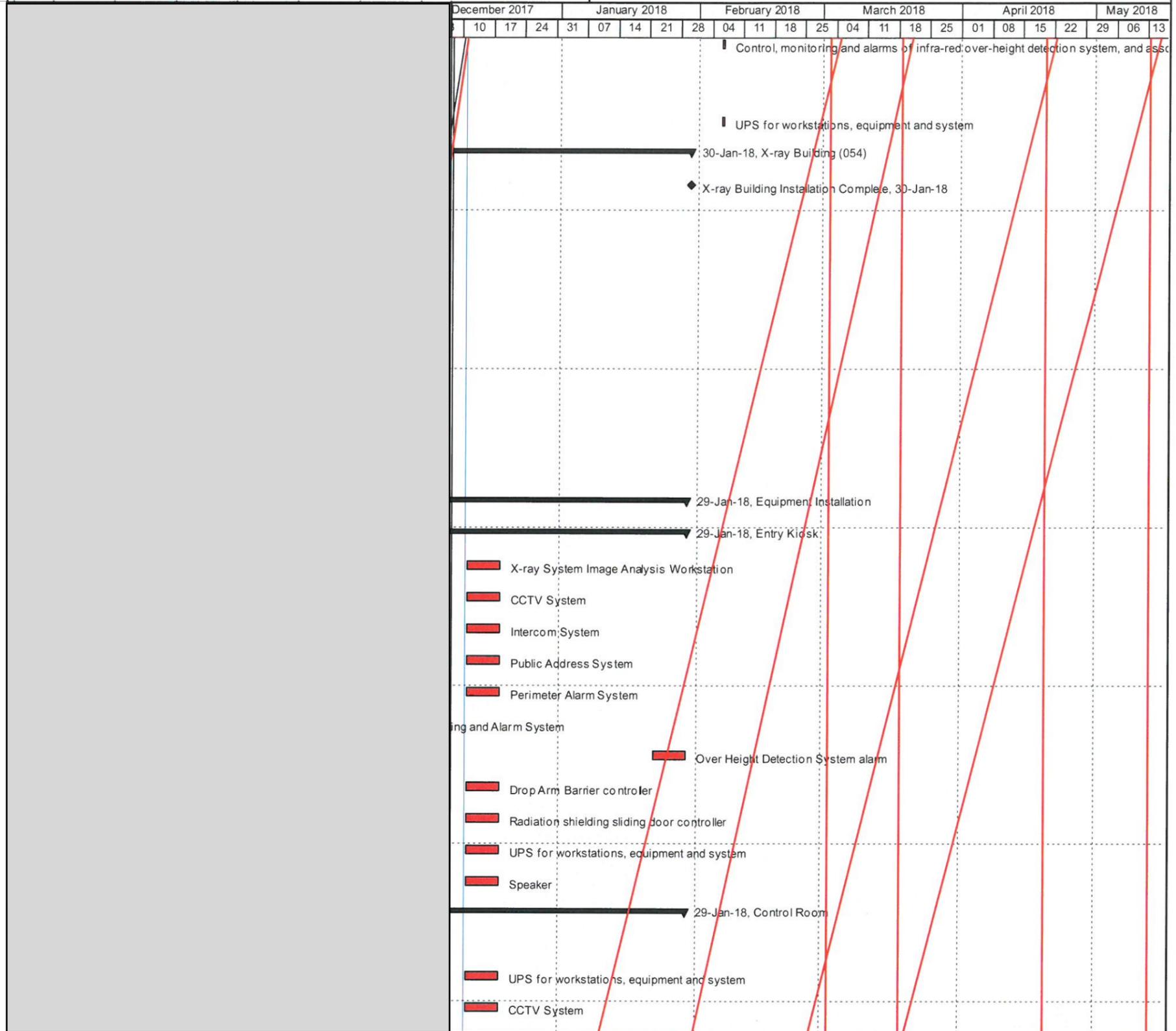
Date	Revision	Checked	Approved
11-Dec-17	Rev 7	KR	RY

Hong Kong-Zhuhai-Macao Bridge Gantry Type X-Ray Vehicle

HZMB Overall

11-Dec-17 16:19

Activity ID	Activity Name
137	Control, monitoring and alarms of infra-red over-height detection system, and associated component
138	Personal X-ray Dosimeter
139	UPS for workstations, equipment and system
X-ray Building (054)	
211	X-ray Building Installation Complete
Cabling and cable containment (054)	
143	Entry Kiosk
144	Control Room
145	Exit Kiosk
146	Image Interpretation Room
147	X-ray Examination System Operation Room
148	Driver's Waiting Room
149	Training Room
150	Cabling and cable containment complete
Equipment Installation	
Entry Kiosk	
153	X-ray System Image Analysis Workstation
154	CCTV System
155	Intercom System
156	Public Address System
157	Perimeter Alarm System
158	Radiation Monitoring and Alarm System
159	Over Height Detection System alarm
160	Drop Arm Barrier controller
161	Radiation shielding sliding door controller
162	UPS for workstations, equipment and system
163	Speaker
Control Room	
165	Video Wall (4nos. 55" LED)
166	UPS for workstations, equipment and system
167	CCTV System



█ Actual Level of Effort █ Remaining Work ▶ summary
█ BL (IWP rev 2) █ Critical Remaining Work
█ Actual Work ◆ Milestone

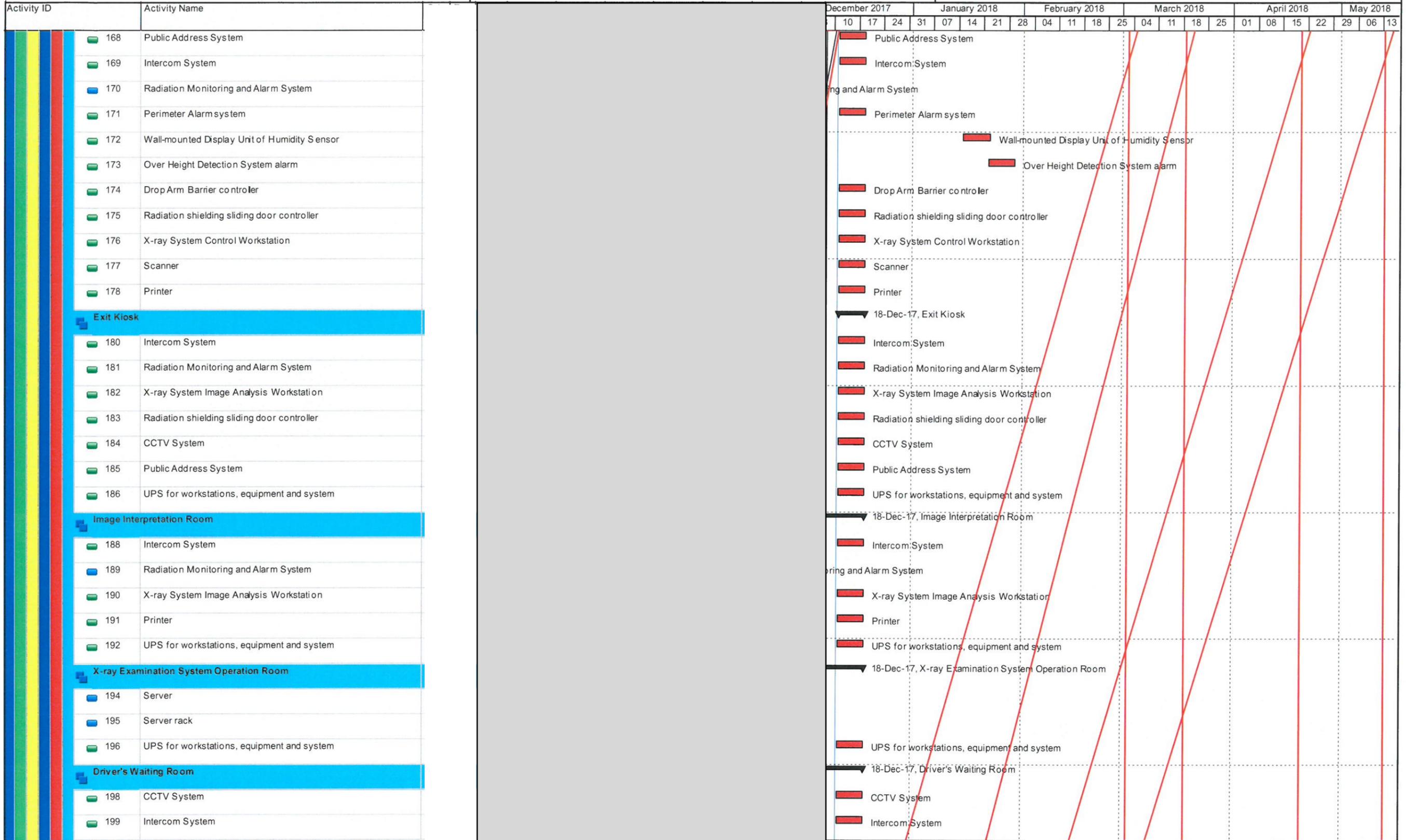
C7's formal access to the site = Degree 1/degree 2 completion date
 (Particular Specification Preamble – Section E)
 7 of 14

Date	Revision	Checked	Approved
11-Dec-17	Rev 7	KR	RY

Hong Kong-Zhuhai-Macao Bridge Gantry Type X-Ray Vehicle

HZMB Overall

11-Dec-17 16:19

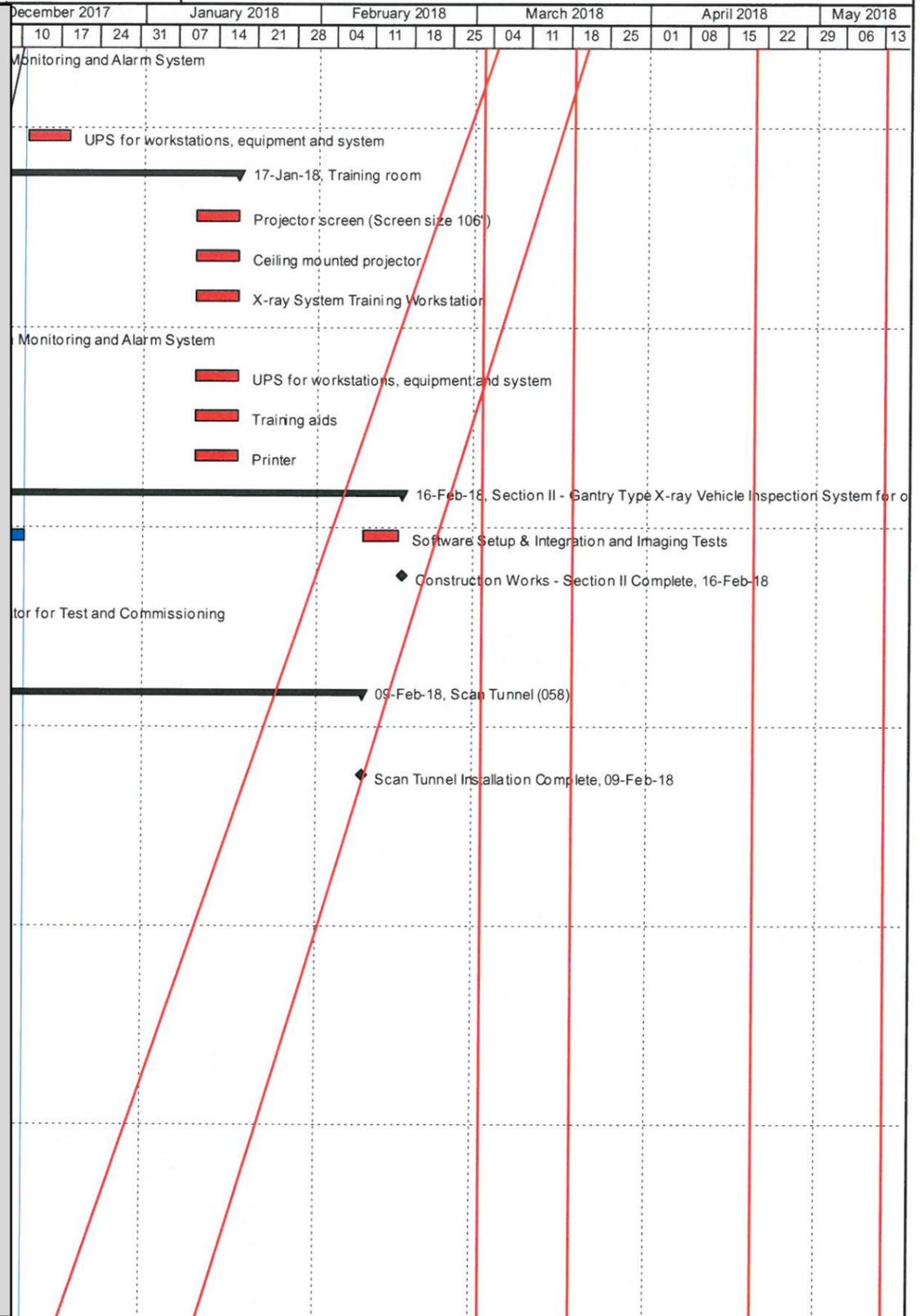
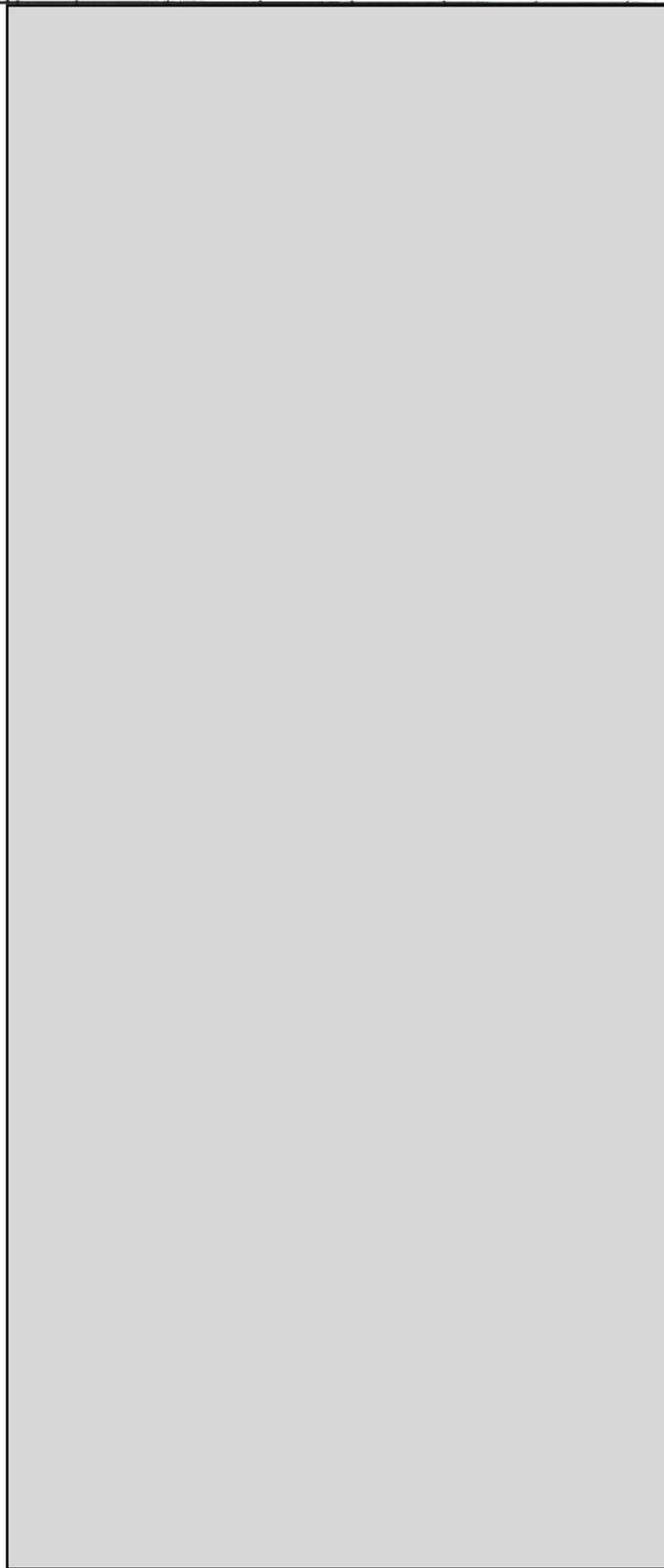


█ Actual Level of Effort █ R 3 Worl
█ BL (IWP rev 2) █ Critical Remaining Work
█ Actual Work ◆ Milestone

ess to the site = Degree 1/degree 2 completion date
(Particular Specification Preamble – Section E)

Date	Revision	Checked	Approved
11-Dec-17	Rev 7	KR	RY

Activity ID	Activity Name
200	Radiation Monitoring and Alarm System
201	Speaker
202	UPS for workstations, equipment and system
Training room	
204	Projector screen (Screen size 106")
205	Ceiling mounted projector
206	X-ray System Training Workstation
207	Radiation Monitoring and Alarm System
208	UPS for workstations, equipment and system
209	Training aids
210	Printer
Section II - Gantry Type X-ray Vehicle Inspection System for outboun	
311	Software Setup & Integration and Imaging Tests
312	Construction Works - Section II Complete
A1270	Provide temporary Generator for Test and Commissioning
A1290	Permanent Power
Scan Tunnel (058)	
216	Cabling and cable containment
239	Scan Tunnel Installation Complete
Installation of X-ray System Equipment	
218	Gantry Rails
218.1	Hole Marking and Rebar Scanning
218.2	Hole Drilling, base surface roughening & inspection
218.3	Sole plates assembly, hold down bolt installation & resin curing
218.4	Sole plates adjustments/levelling
218.5	Rail assembly on top of sole plates & levelling
218.6	Rail base support box enclosure, grouting & curing
218.7	Rail alignment & torque tightening
218.8	Rail welding & profiling
218.9	Rail inspection
219	Linear Accelerator Pod and Modular Pod
220	Vertical Boom Wheel Set and Vertical Boom



█ Actual Level of Effort █ Remaining Work ▶ summary
█ BL (IWP rev 2) █ Critical Remaining Work
█ Actual Work ◆ Milestone

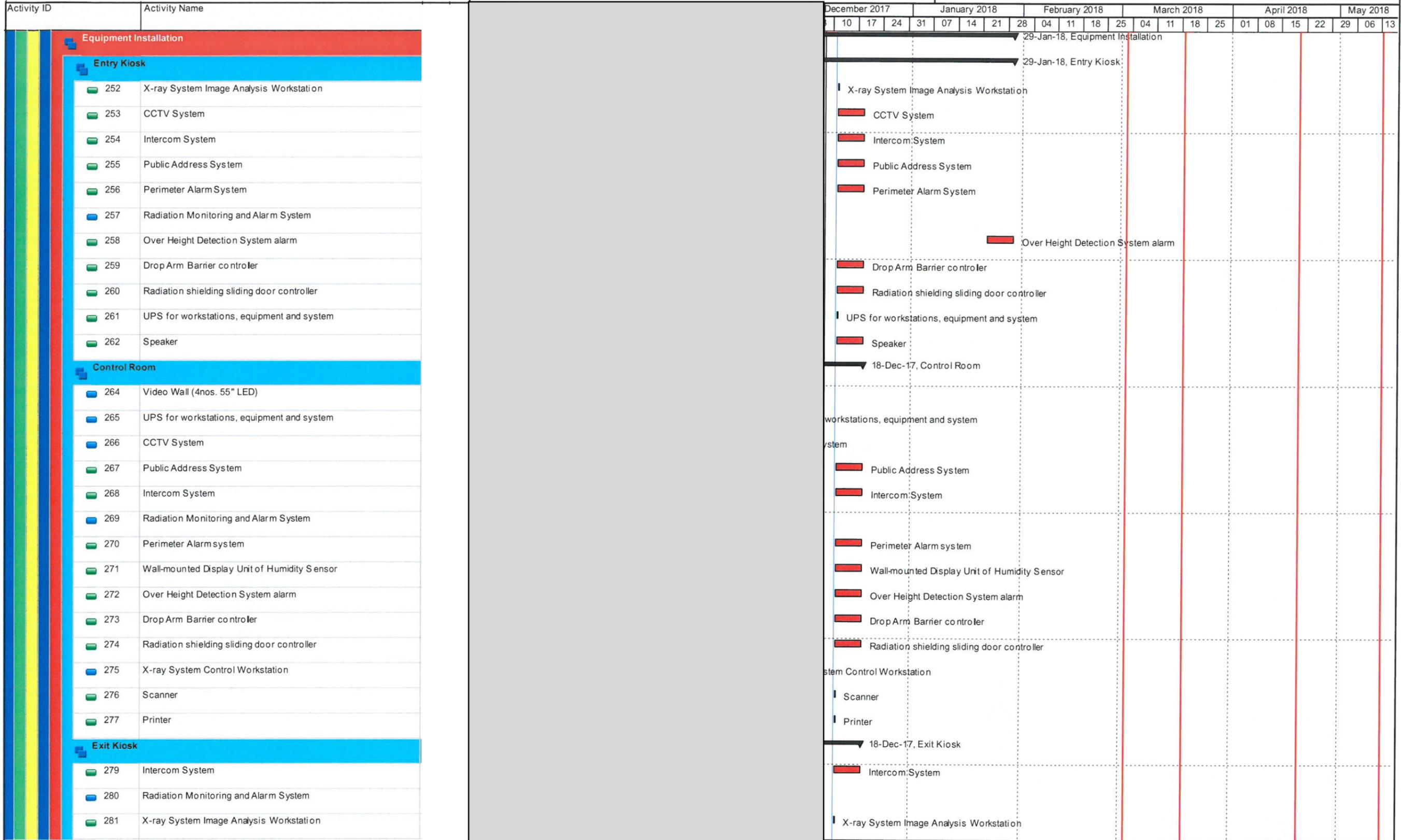
C7's formal access to the site = Degree 1/degree 2 completion date
 (Particular Specification Preamble – Section E)
 9 of 14

Date	Revision	Checked	Approved
11-Dec-17	Rev 7	KR	RY

Hong Kong-Zhuhai-Macao Bridge Gantry Type X-Ray Vehicle

HZMB Overall

11-Dec-17 16:19



█ Actual Level of Effort █ Remaining Work █ Critical Remaining Work
█ BL (IWP rev 2) ◆ Milestone
█ Actual Work ◆ Milestone

C7's formal access to the site = Degree 1/degree 2 completion date (Particular Specification Preamble – Section E)

Date	Revision	Checked	Approved
11-Dec-17	Rev 7	KR	RY

Hong Kong-Zhuhai-Macao Bridge Gantry Type X-Ray Vehicle

HZMB Overall

11-Dec-17 16:19

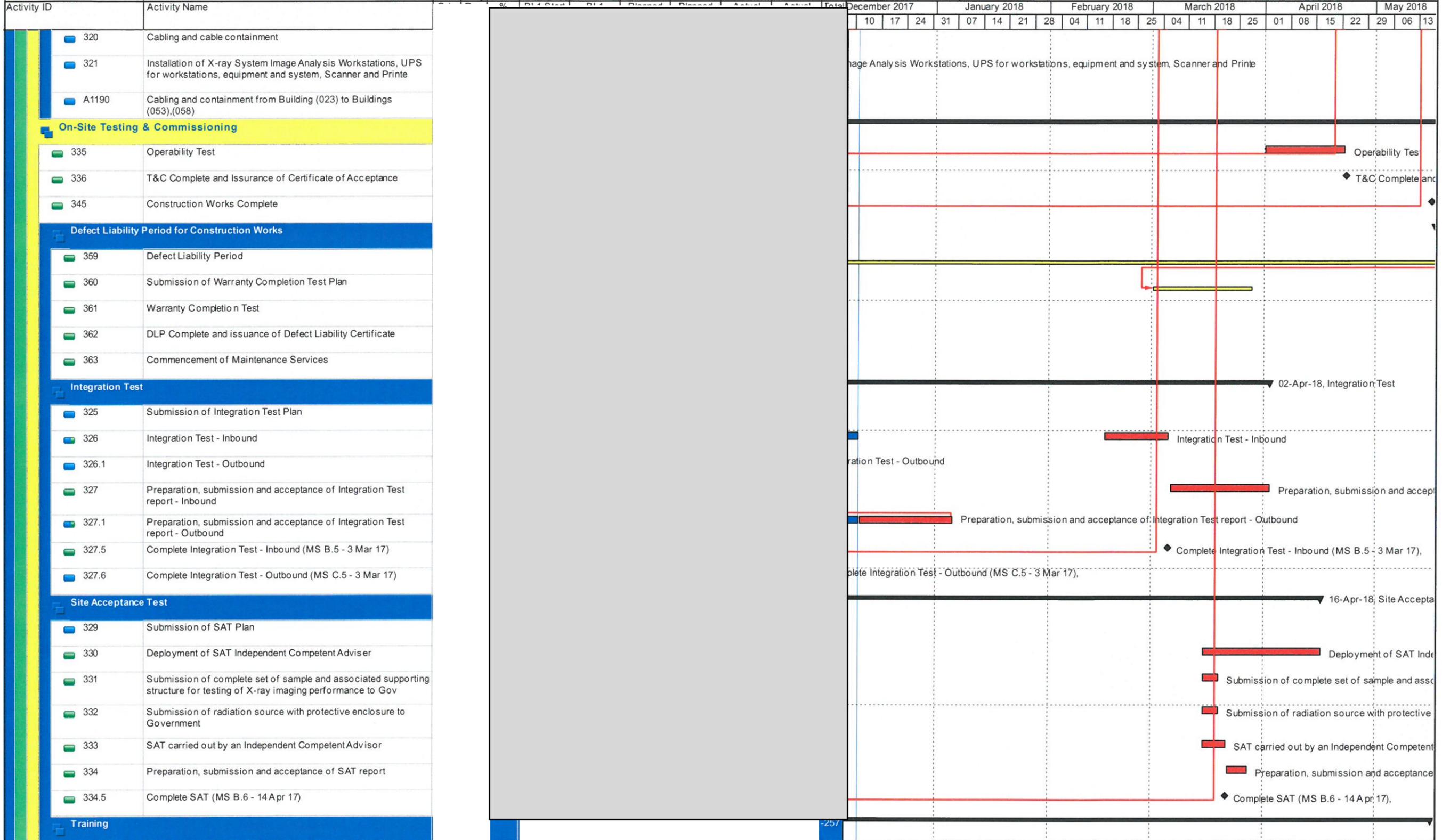
Activity ID	Activity Name	December 2017		January 2018				February 2018				March 2018				April 2018				May 2018					
		10	17	24	31	07	14	21	28	04	11	18	25	04	11	18	25	01	08	15	22	29	06	13	
282	Radiation shielding sliding door controller	[Gantt bar: Dec 10-17]																							
283	CCTV System	[Gantt bar: Dec 10-17]																							
284	Public Address System	[Gantt bar: Dec 10-17]																							
285	UPS for workstations, equipment and system	[Gantt bar: Dec 10-17]																							
Image Interpretation Room		[Summary arrow: 18-Dec-17, Image Interpretation Room]																							
287	Intercom System	[Gantt bar: Dec 10-17]																							
288	Radiation Monitoring and Alarm System	[Gantt bar: Dec 10-17]																							
289	X-ray System Image Analysis Workstation	[Gantt bar: Dec 10-17]																							
290	Printer	[Gantt bar: Dec 10-17]																							
291	UPS for workstations, equipment and system	[Gantt bar: Dec 10-17]																							
X-ray Examination System Operation Room		[Summary arrow: 11-Dec-17, X-ray Examination System Operation Room]																							
293	Server	[Gantt bar: Dec 10-17]																							
294	Server rack	[Gantt bar: Dec 10-17]																							
295	UPS for workstations, equipment and system	[Gantt bar: Dec 10-17]																							
Driver's Waiting Room		[Summary arrow: 18-Dec-17, Driver's Waiting Room]																							
297	CCTV System	[Gantt bar: Dec 10-17]																							
298	Intercom System	[Gantt bar: Dec 10-17]																							
299	Radiation Monitoring and Alarm System	[Gantt bar: Dec 10-17]																							
300	Speaker	[Gantt bar: Dec 10-17]																							
301	UPS for workstations, equipment and system	[Gantt bar: Dec 10-17]																							
Training room		[Summary arrow: 10-Jan-18, Training room]																							
303	Projector screen (Screen size 106")	[Gantt bar: Jan 07-14]																							
304	Ceiling mounted projector	[Gantt bar: Jan 07-14]																							
305	X-ray System Training Workstation	[Gantt bar: Jan 07-14]																							
306	Radiation Monitoring and Alarm System	[Gantt bar: Jan 07-14]																							
307	UPS for workstations, equipment and system	[Gantt bar: Jan 07-14]																							
308	Training aids	[Gantt bar: Jan 07-14]																							
309	Printer	[Gantt bar: Jan 07-14]																							
Section III - Cargo Examination Building		[Summary arrow: 23-Mar-18, Section III - Cargo Examination Building]																							
322	Construction Works - Section III Complete	[Milestone diamond: Mar 23]																							
A1200	Application and approval of Supply Certificates for Permanent Power	[Gantt bar: Dec 10-17]																							
Outbound Cargo Examination Building (023)		[Summary arrow: 23-Mar-18, Section III - Cargo Examination Building]																							



█ Actual Level of Effort █ Remaining Work ▶ summary
█ BL (IWP rev 2) █ Critical Remaining Work
█ Actual Work ◆ Milestone

C7's formal access to the site = Degree 1/degree 2 completion date (Particular Specification Preamble – Section E)

Date	Revision	Checked	Approved
11-Dec-17	Rev 7	KR	RY



- █ Actual Level of Effort
- █ Remaining Work
- █ BL (IWP rev 2)
- █ Critical Remaining Work
- █ Actual Work
- ◆ Milestone
- ▾ summary

C7's formal access to the site = Degree 1/degree 2 completion date (Particular Specification Preamble – Section E)

Date	Revision	Checked	Approved
11-Dec-17	Rev 7	KR	RY

Activity ID	Activity Name	December 2017			January 2018			February 2018			March 2018			April 2018			May 2018							
		10	17	24	31	07	14	21	28	04	11	18	25	04	11	18	25	01	08	15	22	29	06	13
338	Submission of Training Syllabus for approval																							
339	Liaison with Engineer to confirm training schedule																							
340	Operator Training																							
341	Trainer training																							
342	Preventive maintenance training																							
343	Comprehensive maintenance training																							
344	Training Complete																							
Other Documentation																								
347	Submission of WR1/WR1 (A) for all electrical installations																							
348	Submission of draft O&M Manuals, Driver's Handbook, Catalog for Gantry and Record Drawings																							
349	Submission of finalized O&M Manuals, Driver's Handbook, Catalog for Gantry and Record Drawings																							
350	Submission of CD-ROM/DVD-ROM of O&M Manuals																							
351	Submission of As-built Drawings																							
352	Submission of Spare Parts and Special Tools Record																							
353	Submission of Operator's Operating Instructions																							
354	Submission of System Operation Instructions																							
355	Submission of Software Manuals and Instruction Manual																							
356	Submission of Equipment and Hardware Maintenance Instruction Manual																							
357	Submission of Software License Installation Diskettes																							



- Actual Level of Effort
- BL (IWP rev 2)
- Actual Work
- Remaining Work
- Critical Remaining Work
- summary
- Milestone

C7's formal access to the site = Degree 1/degree 2 completion date
(Particular Specification Preamble – Section E)

Date	Revision	Checked	Approved
11-Dec-17	Rev 7	KR	RY



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 2018



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

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

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

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

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



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

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



ATAL Technologies Ltd.

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

Location: Artificial Island of HKBCF (C8 Area)

Ver: 1st
Date: Jan 2017

Monthly Summary Waste Flow Table for 2018

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

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



APPENDIX 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 to construct the Remaining Ancillary Buildings and Facilities and associated works of the Hong Kong Zhuhai and Macao Bridge Boundary Crossing Facilities	EP-353/2009/I	17 Jul 15	N/A	EPD	Superseded by EP-353/2009/J
2	All Areas	18 Feb 2016	N/A	Environmental Permit to construct the Remaining Ancillary Buildings and Facilities and associated works of the Hong Kong Zhuhai and Macao Bridge Boundary Crossing Facilities	EP-353/2009/J	25 Feb 2016	N/A	EPD	Superseded by EP-353/2009/K
3	All Areas	24 Mar 2016	N/A	Environmental Permit to construct the Remaining Ancillary Buildings and Facilities and associated works of the Hong Kong Zhuhai and Macao Bridge Boundary Crossing Facilities	EP-353/2009/K	11 Apr 2016	N/A	EPD	-
4	All Areas	30 Dec 15	N/A	Billing Account for disposal of construction waste	7024342	16 Feb 16	N/A	EPD	-

Environmental License/ Permits /Notification Register

LCAL H2642

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

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

Environmental License/ Permits /Notification Register

LCAL H2642

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

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

Environmental License/ Permits /Notification Register

LCAL H2642

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

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

Environmental License/ Permits /Notification Register

LCAL H2642

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

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

Environmental License/ Permits /Notification Register

LCAL H2642

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

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

Environmental License/ Permits /Notification Register

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

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

APPENDIX 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 trafficcones. • The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores; 	Good construction site practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.	Contractor	All construction sites	Construction stage	To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1- hr and 24hr TSP levels are 500 $\mu\text{g}\text{m}^{-3}$ and 260 $\mu\text{g}\text{m}^{-3}$, respectively)	√

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S5.5.6.2	A2	<ul style="list-style-type: none"> • When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period; • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport should be totally enclosed by impervious sheeting; • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides; 	Good construction site practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.	Contractor	All construction sites	Construction stage	To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1- hr and 24hr TSP levels are 500 $\mu\text{g}\text{m}^{-3}$ and 260 $\mu\text{g}\text{m}^{-3}$, respectively)	√

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

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S5.5.7.1	A6	<p>The following mitigation measures should be adopted to prevent fugitive dust emissions for concrete batching plant:</p> <ul style="list-style-type: none"> • Loading, unloading, handling, transfer or storage of any dusty materials should be carried out in totally enclosed system; • All dust-laden air or waste gas generated by the process operations should be properly extracted and vented to fabric filtering system to meet the emission limits for TSP; • Vents for all silos and cement/pulverised fuel ash (PFA) weighing scale should be fitted with fabric filtering system; • The materials which may generate airborne dusty emissions should be wetted by water sprays system; • All receiving hoppers should be enclosed on three sides up to 3m above unloading point; • All conveyor transfer points should be totally enclosed; • All access and route roads within the premises should be paved and wetted; and • Vehicle cleaning facilities should be provided and used by all concrete trucks before leaving the premises to wash off any dust on the wheels and/or body. 	Monitor the 24 hr and 1hr TSP levels at the representative dust monitoring stations to ensure compliance with relevant criteria throughout the construction period.	Contractor	Selected representative dust monitoring station	Construction stage	<ul style="list-style-type: none"> • Air Pollution Control (Construction Dust) Regulation • To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1- hr and 24hr TSP levels are 500 $\mu\text{g}\text{m}^{-3}$ and 260 $\mu\text{g}\text{m}^{-3}$, respectively) 	N/A
S5.5.2.7	A7	<p>The following mitigation measures should be adopted to prevent fugitive dust emissions at barging point:</p> <ul style="list-style-type: none"> • All road surface within the barging facilities will be paved; • Dust enclosures will be provided for the loading ramp; • Vehicles will be required to pass through designated wheels wash facilities; and • Continuous water spray at the loading points. 	Control construction dust	Contractor	All construction sites	Construction stage	Air Pollution Control (Construction Dust) Regulation	N/A

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

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

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

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

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
		<ul style="list-style-type: none"> Disposal of chemical waste should be via a licensed waste collector; be to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Centre which also offers a chemical waste collection service and can supply the necessary storage containers; or be to a reuser of the waste, under approval from the EPD. 						√
S8.3.16	WM4	<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 W PCO or collected for disposal offsite. The use of soakaways shall be avoided; • storm drainage shall be directed to storm drains via adequately designed sand/silt removal facilities such as sand traps, silt traps and sediment basins. Channels, earth bunds or sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks; • silt removal facilities, channels and manholes shall be maintained and any deposited silt and grit shall be removed regularly, including specifically at the onset of and after each rainstorm; • temporary access roads should be surfaced with crushed stone or gravel; • rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities; • measures should be taken to prevent the washout of construction materials, soil, silt or debris into any drainage system; • open stockpiles of construction materials (e.g. aggregates and sand) on site should be covered with tarpaulin or similar fabric during rainstorms; • manholes (including any newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers; • discharges of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system; 	To control construction water quality	Contractor	Land-based works areas	Construction stage	TM-EIAO	√

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

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

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

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
<i>Landscape & Visual (Construction Phase)</i>								
S14.3.3.3	LV2	<p>Mitigate both Landscape and Visual Impacts</p> <p>G1. Grass-hydroseed bare soil surface and stock pile areas.</p> <p>G2. Add planting strip and automatic irrigation system if appropriate at some portions of bridge footbridge to screen bridge and traffic. (This mitigation measure is not applicable to the Contract.)</p> <p>G3. Not applicable as this is for HKLR.</p> <p>G4. For HKBCF, providing aesthetic architectural design on the related buildings (e.g. similar materials for PCB building facade to Airport buildings, roof planting and subtle materials for other facilities buildings and so on), and the related infrastructure (e.g. parapet planting and transparent cover for elevated footbridges) to provide harmonious atmosphere of the HKBCF.</p> <p>G5. Vegetation reinstatement and upgrading to disturbed areas.</p> <p>G6. Maximizing new tree shrub and other vegetation planting to compensate tree felled and vegetation removed.</p> <p>G7. Providing planting area around peripheral of HKBCF for tree planting screening effect. (This mitigation measure is not applicable to the Contract.)</p> <p>G8. Plant salt-tolerant native and shrubs etc along the planter strip at affected seawall. (This mitigation measure is not applicable to the Contract.)</p> <p>G9. Reserve of loose natural granite rocks for re-use. Provide new coastline to adopt "natural-look" by means of using armour rocks in the form of natural rock materials and planting strip area accommodating screen buffer to enhance "natural-look" of the new coastline. (This mitigation measure is not applicable to the Contract.)</p>	Minimise visual & landscape impact	Contractor	Buildings 023, 025, 032,044 and 045	Construction stage		√ Construction phase
S14.3.3.3	LV3	<p><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	<ol style="list-style-type: none"> 1) An Environmental Team needs to be employed as per the EM&A Manual. 2) Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures. 3) An environmental impact monitoring needs to be implementing by the Environmental Team to ensure all the requirements given in the EM&A Manual are fully complied with. 	Perform environmental monitoring & auditing	Contractor	All construction sites		<ul style="list-style-type: none"> EIAO Guidance Note No.4/2002 TM-EIAO 	√

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



APPENDIX 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	0	0	0
From commencement date of contract to end of reporting month	6	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 March 2018

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Time				1-Mar	2-Mar	3-Mar	4-Mar
Time	5-Mar	6-Mar	7-Mar	8-Mar	9-Mar	10-Mar	11-Mar
			Site Inspection				
Time	12-Mar	13-Mar	14-Mar	15-Mar	16-Mar	17-Mar	18-Mar
			Site Inspection				
Time	19-Mar	20-Mar	21-Mar	22-Mar	23-Mar	24-Mar	25-Mar
	Site Inspection						
Time	26-Mar	27-Mar	28-Mar	29-Mar	30-Mar	31-Mar	
	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 March 2018

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Time				1-Mar	2-Mar	3-Mar	4-Mar
Time	5-Mar	6-Mar	7-Mar	8-Mar	9-Mar	10-Mar	11-Mar
			Site Inspection				
Time	12-Mar	13-Mar	14-Mar	15-Mar	16-Mar	17-Mar	18-Mar
			Site Inspection				
Time	19-Mar	20-Mar	21-Mar	22-Mar	23-Mar	24-Mar	25-Mar
	Site Inspection						
Time	26-Mar	27-Mar	28-Mar	29-Mar	30-Mar	31-Mar	
	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 March 2018

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