

10 May 2017

By Fax (3468 2076) and By Post

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

Attention: Mr. Patrick Lee

Dear Sir,

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

**Contract No. HY/2014/05 – HZMB HKBCF – Remaining Ancillary Buildings and
Facilities
Quarterly EM&A Report No.4 for December 2016 to February 2017**

Reference is made to the Environmental Team's submission of Quarterly Environmental Monitoring & Audit Report No.4 for December 2016 to February 2017 (Rev. 2) certified by the ET Leader (ET's ref.: "5140819/18.30/OC033/KC/EK" dated 5 May 2017) and provided to us via e-mail on 5 May 2017.

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

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

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



Raymond Dai
Independent Environmental Checker

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

Internal: DY, YH, ENPO Site

Your ref.
Our ref. 5140819/18.30/OC033/KC/EK

Date: 5 May 2017

Telephone (852) 2972 1000
Facsimile (852) 2890 6343

www.atkinsglobal.com

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

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

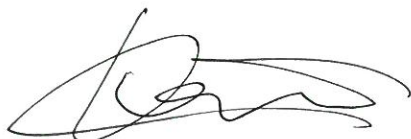
Attn: Mr. Stephen Tsang

Dear Mr. Tsang,

**Contract No. HY/2014/05
Hong Kong – Zhuhai – Macao Bridge
Hong Kong Boundary Crossing Facilities –
Remaining Ancillary Buildings and Facilities
Certification of Quarterly EM&A Report No. 4 (Revision 2)**

Atkins China Limited certifies, in the capacity of Environmental Team Leader, that the Quarterly EM&A Report No. 4 (Revision 2) conforms the requirements provided in Section 16.4 of the Updated Environmental Monitoring and Audit Manual for HKBCF (Version 1.0).

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



**Keith Chau
Environmental Team Leader**

cc.

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

Contract No. HY/2014/05

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

**Quarterly EM&A Report No. 4
(Covering the Period from 1 December 2016 to 28 February 2017)**

5 May 2017

Revision 2

Main Contractor



Leighton - Chun Wo
Joint Venture

Environmental Team

ATKINS

Contents

Executive Summary

1	Introduction	1
1.1	Basic Project Information	1
1.2	Project Organisation.....	1
1.3	Construction Programme	2
1.4	Construction Works Undertaken During the Reporting Period	3
2	EM&A Requirement.....	4
2.1	Summary of EM&A Requirements.....	4
2.2	Monitoring Requirements	4
2.3	Action and Limit Levels	4
2.4	Event Action Plans	5
2.5	Mitigation Measures	5
3	Environmental Monitoring and Audit	6
3.1	Air Quality Monitoring Results.....	6
3.2	Noise Monitoring Results	6
3.3	Implementation of Environmental Measures	6
3.4	Advice on the Solid and Liquid Waste Management Status.....	6
3.5	Environmental Licenses and Permits	6
4	Summary of Exceedance, Complaint, Notification of Summons and Successful Prosecution	7
4.1	Summary of Exceedance of the Environmental Quality Performance Limit	7
4.2	Summary of Complaints, Notification of Summons and Successful Prosecution	7
5	Comments, Recommendations and Conclusion.....	8
5.1	Comments	8
5.2	Recommendations	8
5.3	Conclusions.....	9

Figures

- Figure 2.1 Location of Air Quality Monitoring Stations
 Figure 2.2 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 Implementation Schedule for Environmental Mitigation Measures (EMIS)
 Appendix F Site Audit Findings and Corrective Actions
 Appendix G Waste Flow Table
 Appendix H Environmental Licenses and Permits
 Appendix I Statistics on Environmental Complaints, Notification of Summons and Successful Prosecutions

Executive Summary

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

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

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

This is the Fourth Quarterly EM&A Report for the Contract No. HY/2014/05 which summarizes findings of the EM&A works during the reporting period from 1 December 2016 to 28 February 2017 (includes the construction works of Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area).

Environmental Monitoring and Audit Progress

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

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

Environmental Site Inspection Date		
December 2016	January 2017	February 2017
7, 14, 21 and 28	4, 11, 18 and 25	1, 8, 15 and 22

Breaches of Action and Limit Levels

Summary of Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level at station AMS6 shall be referred to the monthly EM&A Reports (for December 2016, January and February 2017) prepared by Contract No. HY/2011/03.

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



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

Implementation of Environmental Measures

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

Complaint Log

There was one complaint received in relation to the environmental impact during the reporting period. An investigation was carried out. It was found that the complaint was not related to 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).

Notifications of Summons and Successful Prosecutions

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

Reporting Change

Construction works of Contract No. HY/2013/06 within the works area of Contract No. HY/2014/05 commenced on 3 January 2017.

Construction works of Contract No. HY/2014/04 within the works area of Contract No. HY/2014/05 commenced on 13 February 2017.

As the construction works of Contract No. HY/2013/06 and Contract No. HY/2014/04 are conducted within the works area of Contract No. HY/2014/05, both construction works and EM&A implementation are included in this EM&A report.

1 Introduction

1.1 Basic Project Information

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

1.2 Project Organisation

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

Table 1.1 Contact Information of Key Personnel

Party	Position	Name	Telephone	Fax
For Contract No. HY/2014/05				
Engineer or Engineer's Representative (AECOM Asia Co. Ltd.)	Chief Resident Engineer	Darrel Kingan	3958 7339	3468 2076
Environmental Project Office / Independent Environmental Checker (Ramboll Environ Hong Kong Limited)	Environmental Project Office Leader	Y. H. Hui	3465 2888	3465 2899
	Independent Environmental Checker	Raymond Dai	3465 2888	3465 2899

Contractor (Leighton – Chun Wo Joint Venture)	Site Agent	Albert Chan	3973 0514	3621 0180
	Environmental Officer	Wu Yun Kau	5505 8633	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 Resident Engineer	Darrel Kingan	3958 7339	3468 2076
Environmental Project Office / Independent Environmental Checker (Ramboll Environ Hong Kong Limited)	Environmental Project Office Leader	Y. H. Hui	3465 2888	3465 2899
	Independent Environmental Checker	Raymond Dai	3465 2888	3465 2899
Contractor (ATAL Technologies Limited)	Site Agent	Mr. Eric Yim	2565 3355	3162 5217
	Environmental Officer	Mr. W. Li	2565 3137	3162 5217
Environmental Team (Atkins China Limited)	Environmental Team Leader	Keith Chau	2972 1721	2890 6343
24 hours complaint hotline	---	---	6509 0375	---
For Contract No. HY/2014/04 within Contract No. HY/2014/05 works area				
Engineer or Engineer's Representative (AECOM Asia Co. Ltd.)	Chief Resident Engineer	Darrel Kingan	3958 7339	3468 2076
Environmental Project Office / Independent Environmental Checker (Ramboll Environ Hong Kong Limited)	Environmental Project Office Leader	Y. H. Hui	3465 2888	3465 2899
	Independent Environmental Checker	Raymond Dai	3465 2888	3465 2899
Contractor (Rapiscan Systems Pte Ltd)	Site Agent	Ringo Yau	9833 1402	2707 0816
	Environmental Officer	Clarie Tsang	6371 1362	---
Environmental Team (Atkins China Limited)	Environmental Team Leader	Keith Chau	2972 1721	2890 6343
24 hours complaint hotline	---	---	9833 1420	---

1.3 Construction Programme

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

1.4 Construction Works Undertaken During the Reporting Period

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

For Contract No. HY/2014/05

- Earth Works for Buildings 021, 022, 023, 044, 050A2, 050H1 and 050H2
- Raft foundation for Buildings 021, 022, 023, 032, 044, 045, 050A2, 050H1 and 050H2
- Construction of RC Structure of Buildings 021, 022, 023, 025, 032, 044, 045, 053, 058 and 059
- Installation of window wall of Buildings 022, 044 and 045
- Blockwork walls construction of Buildings 025 and 053
- ABWF works of Buildings 021, 023, 025, 032, 053, 058 and 059
- Dog Swimming Pool of Building 022
- Utilities and Drainage installation of Buildings 053 and 058

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

- Conceal Conduit Installation Buildings 025 and 032

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

- Delivering materials at Building 059

2 EM&A Requirement

2.1 Summary of EM&A Requirements

- 2.1.1 The EM&A programme was undertaken in accordance with the Updated EM&A Manual for HKBCF (Version 1). It should be noted that the air quality and noise monitoring works for the Contract are covered by Contract No. HY/2010/02 Hong Kong-Zhuhai-Macao Bridge HKBCF – Reclamation Works and Contract No. HY/2011/03 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between Scenic Hill and HKBCF. The ET of the Contract or another ET of the HZMB project is required to conduct impact air quality monitoring at AMS6 and AMS7 and noise monitoring at NMS2 and NMS3B as part of EM&A programme if these monitoring stations are no longer covered under Contract Nos. HY/2010/02 and HY/2011/03. However, this is subject to ENPO's final decision on which ET should carry out the monitoring work at these stations.
- 2.1.2 A summary of air and noise monitoring locations are presented in **Table 2.1**. The location of air quality and noise monitoring stations are shown as in **Figure 2.1** and **Figure 2.2**, respectively.

Table 2.1 Summary of Impact EM&A Requirements

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

Remarks:

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

2.2 Monitoring Requirements

- 2.2.1 The monitoring requirements, monitoring equipment, monitoring parameters, frequency and duration, monitoring methodology, monitoring schedule, meteorological information are detailed in the monthly EM&A Reports prepared for Contract Nos. HY/2010/02 and HY/2011/03.

2.3 Action and Limit Levels

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

Table 2.2 Action and Limit Levels for 1-hour TSP

Monitoring Station	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AMS6 – Dragonair/CNAC (Group) Building (HKIA)	360	500
AMS7 – Hong Kong SkyCity Marriott Hotel	370	

Table 2.3 Action and Limit Levels for 24-hour TSP

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

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

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

Table 2.4 Action and Limit Level for Construction Noise

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

Notes:

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

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

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

2.4 Event Action Plans

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

2.5 Mitigation Measures

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

3 Environmental Monitoring and Audit

3.1 Air Quality Monitoring Results

- 3.1.1 The monitoring results for AMS6 and AMS7 are reported in the monthly EM&A Reports (for December 2016, January and February 2017) prepared for Contract Nos. HY/2011/03 and HY/2010/02, respectively.
- 3.1.2 Summary of Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level at AMS6 shall be referred to the monthly EM&A Reports (for December 2016, January and February 2017) prepared by Contract No. HY/2011/03.
- 3.1.3 There was no Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at AMS7 recorded by the ET of Contract No. HY/2010/02 during the reporting period.

3.2 Noise Monitoring Results

- 3.2.1 The monitoring results for NMS2 and NMS3B are reported in the monthly EM&A Reports (for December 2016, January and February 2017) prepared for Contract No. HY/2010/02.
- 3.2.2 No noise exceedances were recorded at stations NMS2 and NMS3B by the ET of Contract No. HY/2010/02 during the reporting period.

3.3 Implementation of Environmental Measures

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

3.4 Advice on the Solid and Liquid Waste Management Status

- 3.4.1 The Contractor of Contract No. HY/2014/05 registered as a chemical waste producer for the Contract. Sufficient numbers of receptacles were available for general refuse collection and sorting.
- 3.4.2 The summary of waste flow table is detailed in **Appendix G**.
- 3.4.3 The Contractor of Contract No. HY/2014/05 was reminded that chemical waste containers should be properly treated and stored temporarily in designated chemical waste storage area on site in accordance with the *Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes*.

3.5 Environmental Licenses and Permits

- 3.5.1 The valid environmental licenses and permits during the reporting period are summarized in **Appendix H**.
- 3.5.2 The Contractors of Contract No. HY/2013/06 and Contract No. HY/2014/04 were advised to register as a chemical waste producer when chemical waste will be expected to generate for the foreseeable future from the operations (For Registration as Waste Producer Pursuant to Waste Disposal (Chemical Waste) (General) Regulation).

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

4.1 Summary of Exceedance of the Environmental Quality Performance Limit

- 4.1.1 Summary of Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level at AMS6 shall be referred to the monthly EM&A Reports (for December 2016, January and February 2017) prepared by Contract No. HY/2011/03.
- 4.1.2 There was no Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at AMS7 by the Environmental Team of Contract No. HY/2010/02 during the reporting period.
- 4.1.3 There was no Action and Limit Level exceedance for noise recorded at NMS2 and NMS3B by the Environmental Team of Contract No. HY/2010/02 during the reporting period.

4.2 Summary of Complaints, Notification of Summons and Successful Prosecution

- 4.2.1 There was one complaint received in relation to the environmental impact during the reporting period. According to ENPO's email to ET, Engineer's Representative and Contractor on 14 December 2016, it was noted that EPD had received a complaint regarding a noise complaint from a member of public. The complainant said that he/she was disturbed by hammering noise generated from construction sites in mid-night over the past month. He/She suspected that the noise was generated from HZMB Project. Based on further email from ENPO on 20 December 2016, it is noted that the complainant lives in Seaview Crescent (海堤灣畔). He sometimes hears noise created by impacting metals or metal/ground, particularly in December 2016.
- 4.2.2 According as the information provided by the Contractor, no construction works being done after 11p.m. in November 2016 and December 2016. Therefore, the noise nuisance is considered not related to Contract No. HY/2014/05 after investigation. No follow-up action is required.
- 4.2.3 No notification of summons and prosecution was received during the reporting period.
- 4.2.4 Statistics on notifications of summons and successful prosecutions are summarized in **Appendix I**.

5 Comments, Recommendations and Conclusion

5.1 Comments

- 5.1.1 According to the environmental site inspections undertaken during the reporting period, the following recommendations were provided:
- The Contractor was reminded to provide a drip tray for the chemical container.
- 5.1.2 A summary of the Implementation Schedule of Environmental Mitigation Measures (EMIS) is presented in **Appendix E**. Most of the necessary mitigation measures were implemented properly.

5.2 Recommendations

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

5.3 Conclusions

- 5.3.1 The construction works of the Contract No. HY/2014/05 commenced on 29 February 2016, while the construction works of the Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area commenced on 3 January 2017 and 13 February 2017 respectively. This is the Fourth Quarterly EM&A Report summarizes findings of the EM&A works during the reporting period from 1 December 2016 to 28 February 2017 (includes the construction works of Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area).
- 5.3.2 Summary of Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level at AMS6 shall be referred to the monthly EM&A Reports (for December 2016, January and February 2017) prepared by Contract No. HY/2011/03.
- 5.3.3 There was no Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at AMS7 by the Environmental Team of Contract No. HY/2010/02 during the reporting period.
- 5.3.4 There was no Action and Limit Level exceedance for noise recorded at NMS2 and NMS3B by the Environmental Team of Contract No. HY/2010/02 during the reporting period.
- 5.3.5 Environmental site inspections were carried out on 7, 14, 21 and 28 December 2016, 4, 11, 18 and 25 January 2017 and 1, 8, 15 and 22 February 2017 for the Contract No. HY/2014/05 (includes the construction works of Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area). Recommendations on remedial actions were given to the Contractors for the deficiencies identified during the site inspections.
- 5.3.6 There was one complaint received in relation to the environmental impact during the reporting period. An investigation was carried out. It was found that the complaint was not related to Contract No. HY/2014/05.
- 5.3.7 No notification of summons and successful prosecution was received during the reporting period.



FIGURES

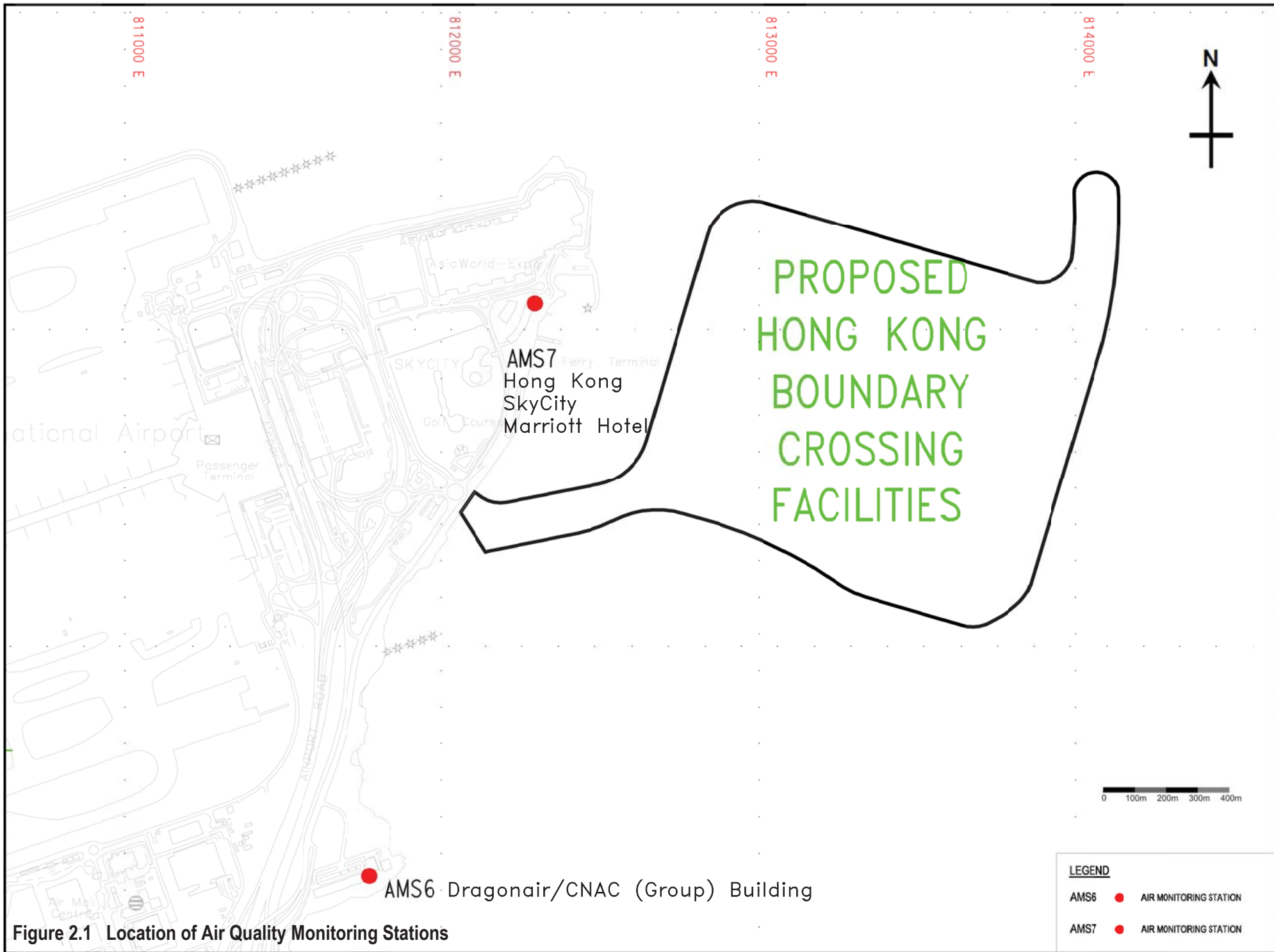


Figure 2.1 Location of Air Quality Monitoring Stations

LEGEND	
AMS6	● AIR MONITORING STATION
AMS7	● AIR MONITORING STATION

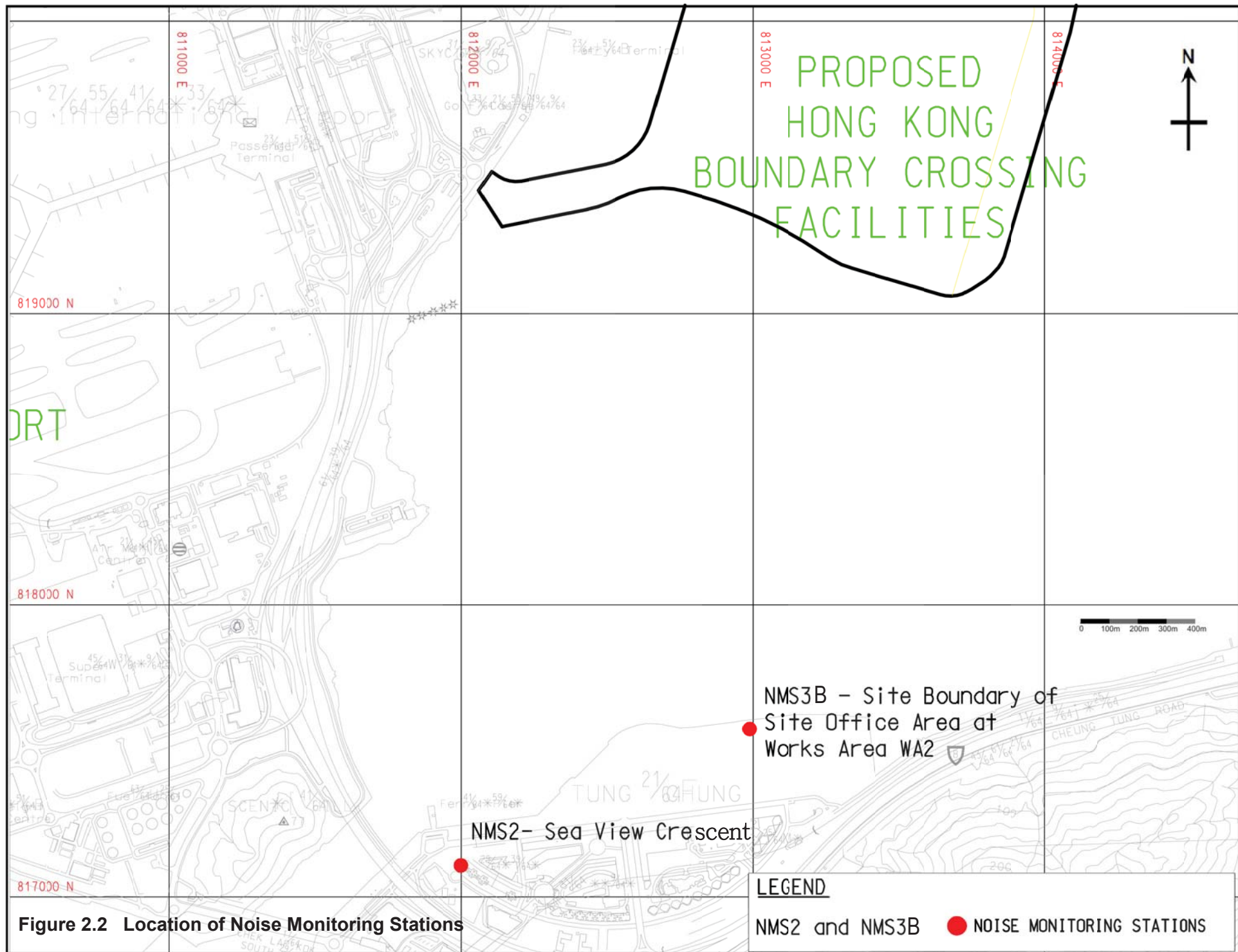


Figure 2.2 Location of Noise Monitoring Stations

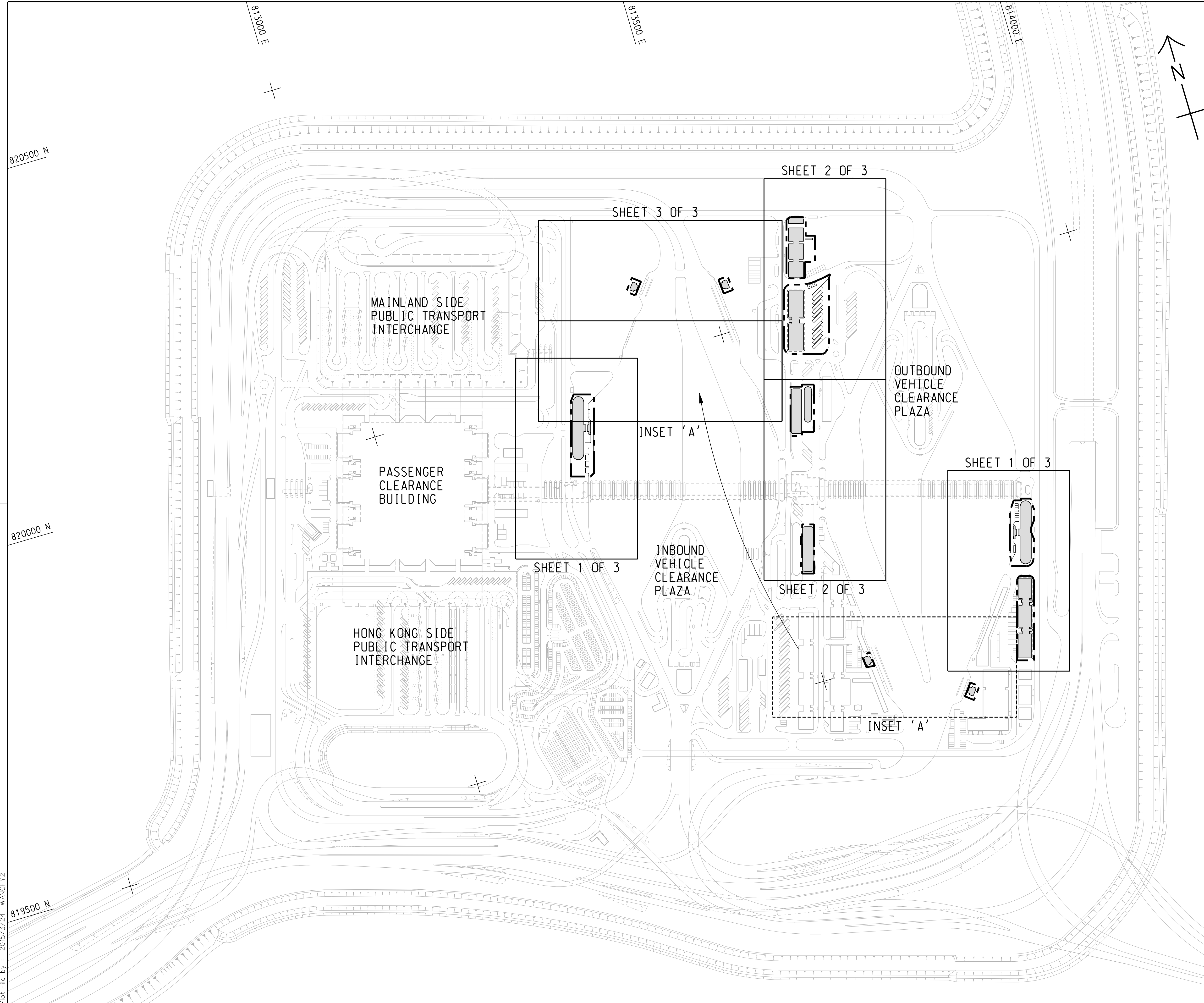
LEGEND

NMS2 and NMS3B ● NOISE MONITORING STATIONS



APPENDIX A

Location of Works Areas



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

HIGHWAYS DEPARTMENT
 路政署

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

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

KEY PLAN

AECOM Aedas
 Rogers Stirk Harbour + Partners
 BURO HAPPOLD ATKINS ADI

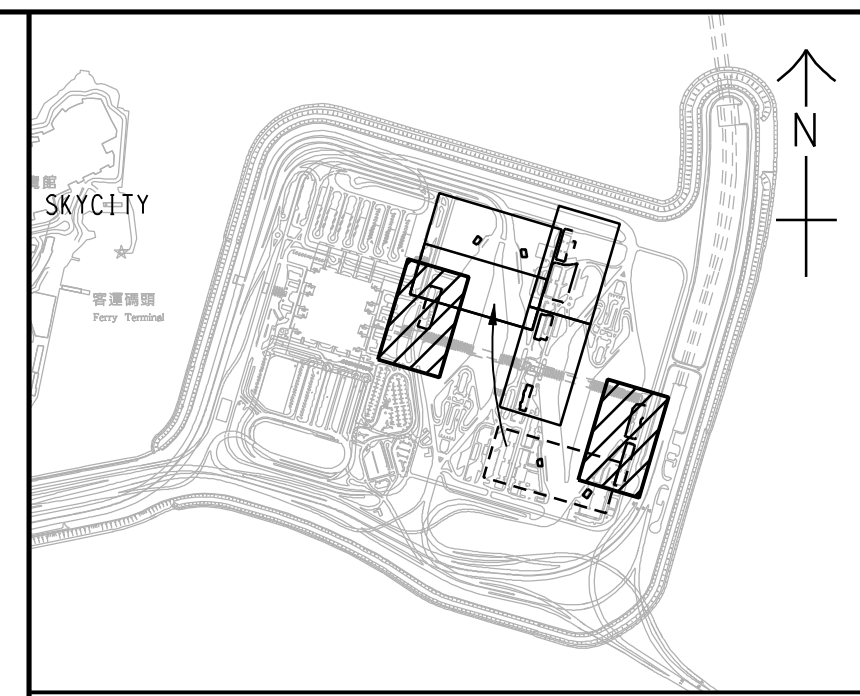
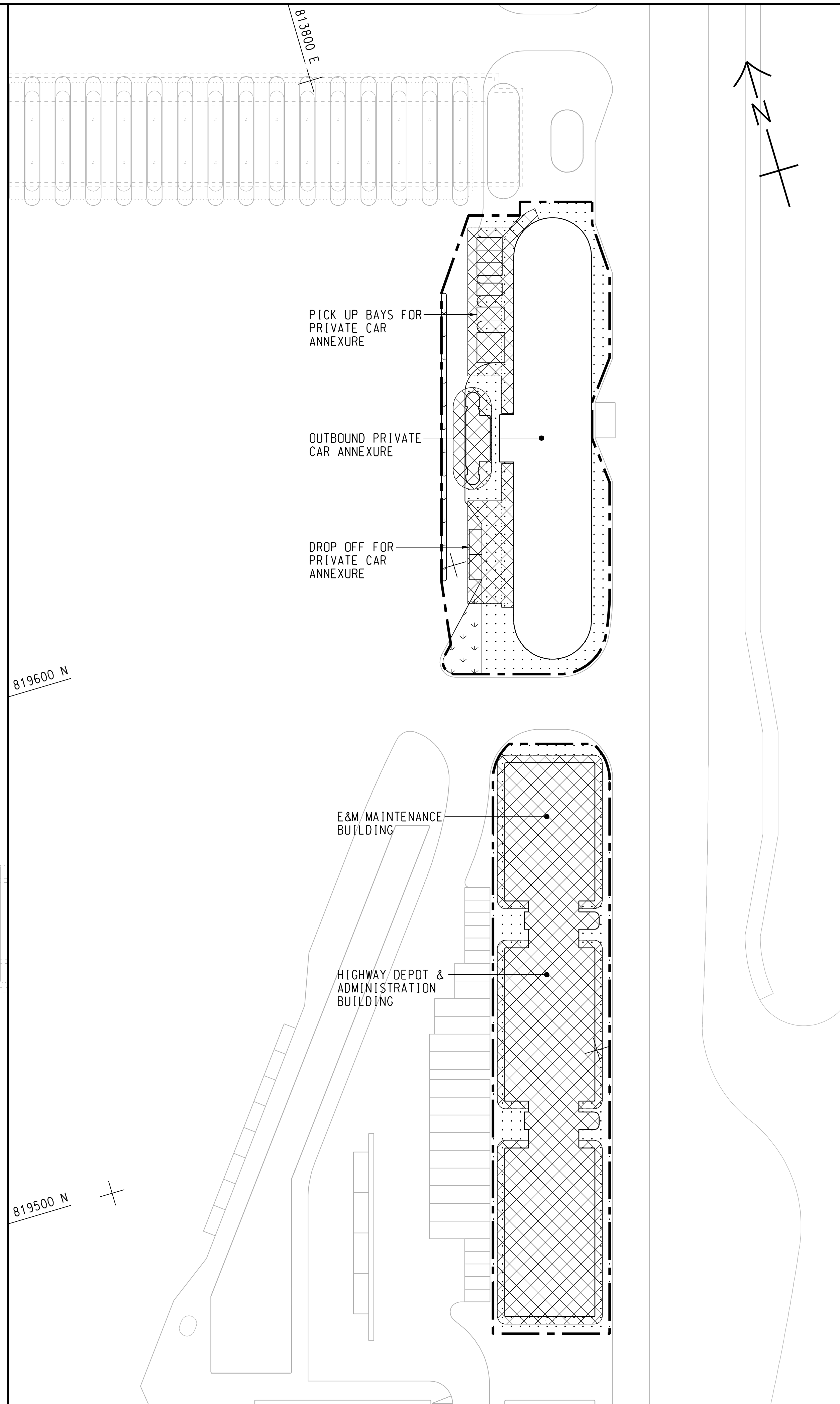
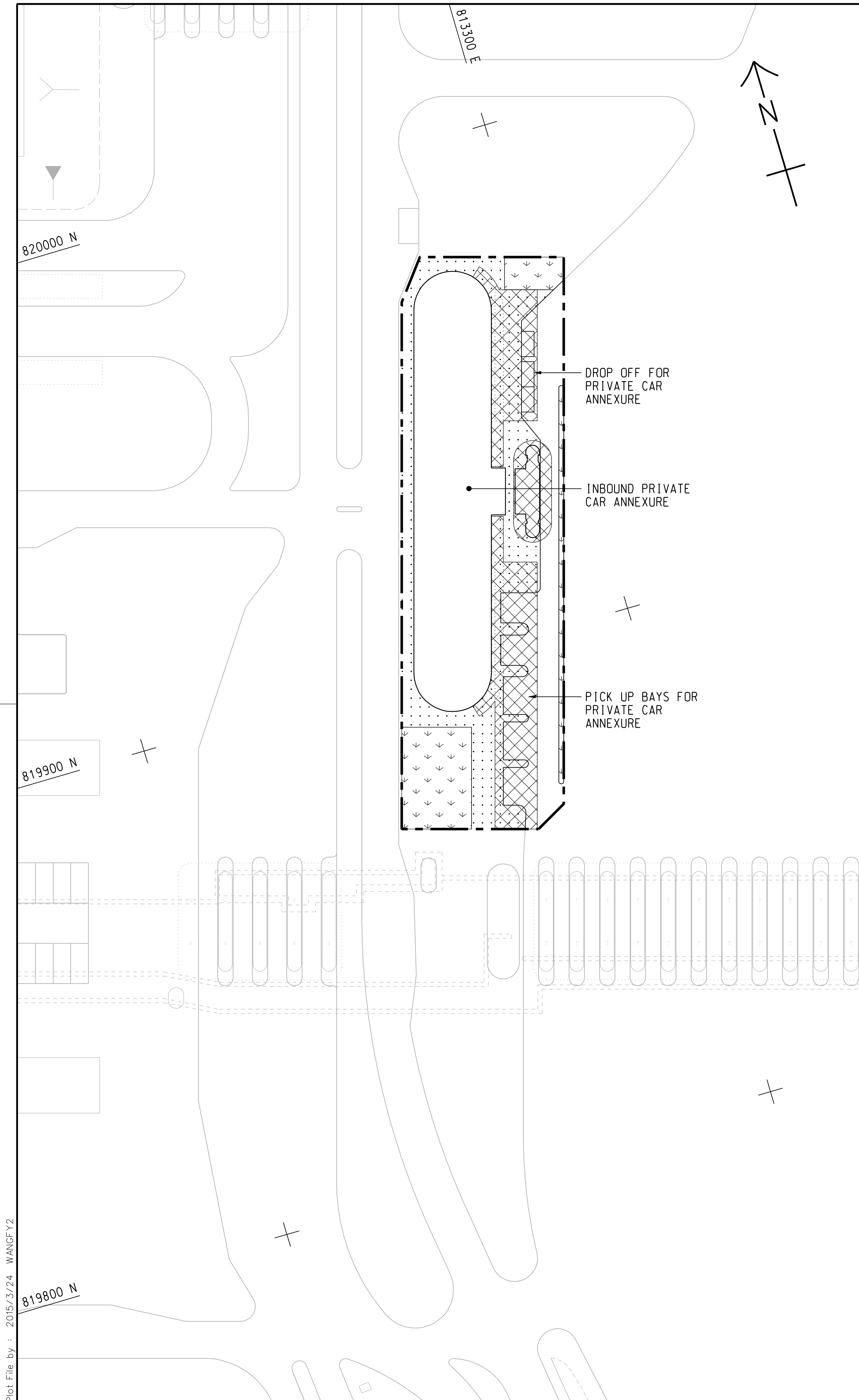
DRG.NO. 60191048/C8/000/C00/1010
 圖紙編號

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

SCALE 比例 A1 1 : 2500
 DIMENSIONS ARE IN 尺寸單位 METRES

© COPYRIGHT RESERVED
 版權所有

Plot File by : 2015/3/24 WANGFY2



KEY PLAN
SCALE 1 : 20000

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

LEGEND:

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

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



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

GENERAL LAYOUT PLAN

SHEET 1 OF 3

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

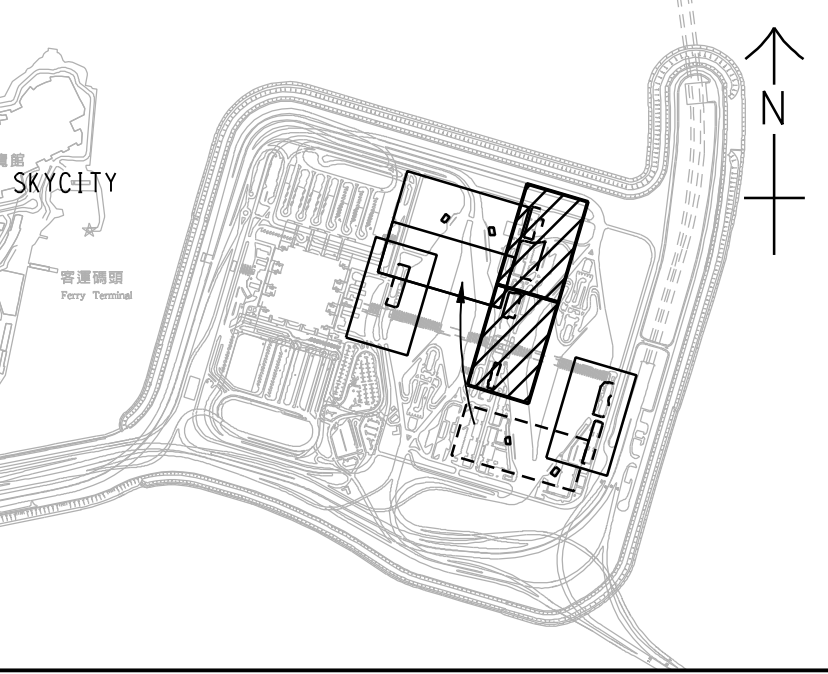
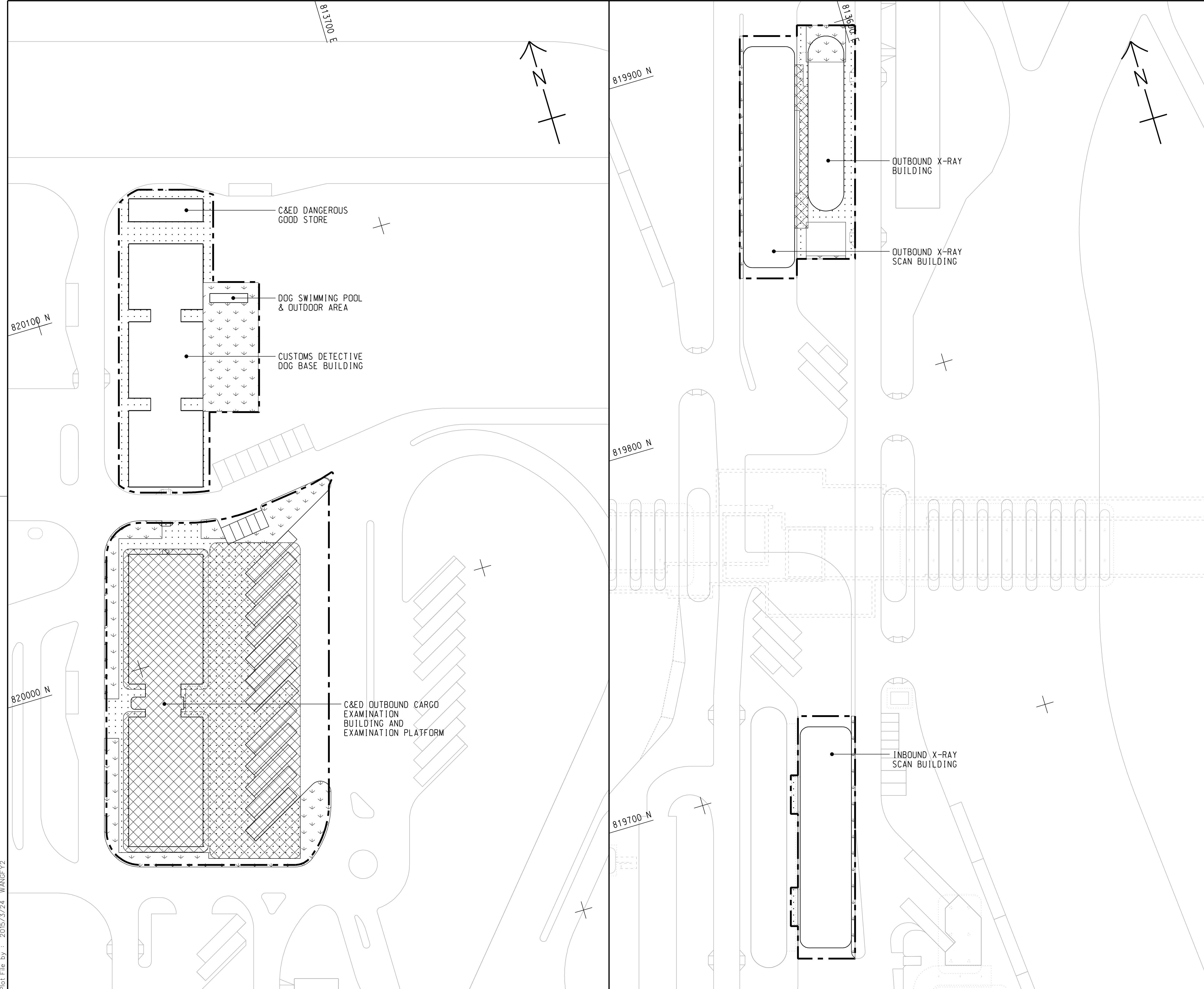
DRG.NO. / 圖紙編號: 60191048/C8/000/C00/1011

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

DRAWN BY / 繪圖	STATUS / 階段
WSY	初步

SCALE / 比例: A1 1 : 500
DIMENSIONS ARE IN / 尺寸單位: METRES
© COPYRIGHT RESERVED / 版權所 有

Plot File by : 2015/3/24 WANGFY2



KEY PLAN
SCALE 1 : 20000

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

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

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

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

GENERAL LAYOUT PLAN

SHEET 2 OF 3

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

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

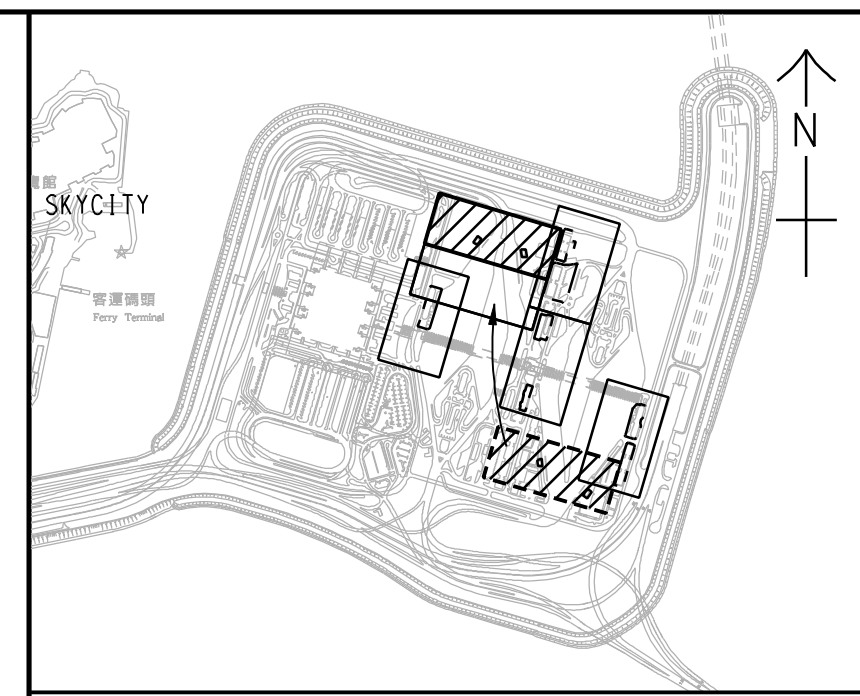
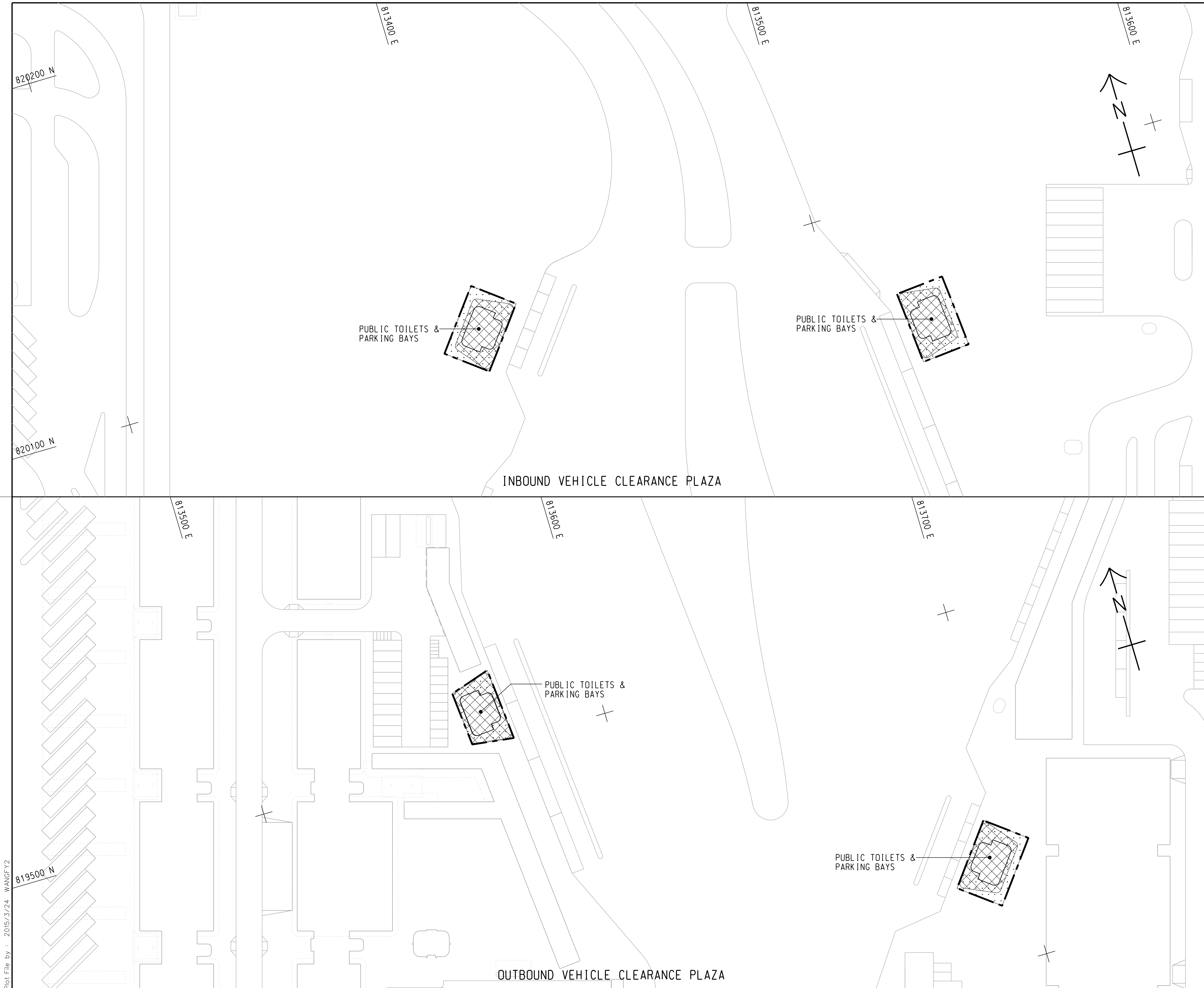
DESIGNED BY 設計	CONTRACT NO. 合約編號	P. Dir. APPROVED 批准人
BWCW	HY/2014/05	TKH

DRAWN BY 繪圖	STATUS 階段
WSY	初步

SCALE 比例 A1 1 : 500

DIMENSIONS ARE IN 尺寸單位 METRES
 © COPYRIGHT RESERVED 版權所有

Plot File by : 2015/3/24 WANGFY2



KEY PLAN
SCALE 1 : 20000

- NOTES:
1. FOR NOTES AND LEGEND REFER TO DRAWING NO. 60191048/C8/000/C00/1011.
 2. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING NOS. 60191048/C8/000/C00/1011 AND 1012.

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

SHEET 3 OF 3

Rogers Stirk Harbour + Partners
 BURO HAPPOLD ATKINS ADI

DRG. NO. 60191048/C8/000/C00/1013
圖紙編號

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

DRAWN BY 繪圖	STATUS 階段
WSY	初步

SCALE 1 : 500
DIMENSIONS ARE IN METRES

© COPYRIGHT RESERVED
版權所有

Plot File by : 2015/3/24 WANGFY2

SETTING OUT POINT

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

81200 E

81400 E

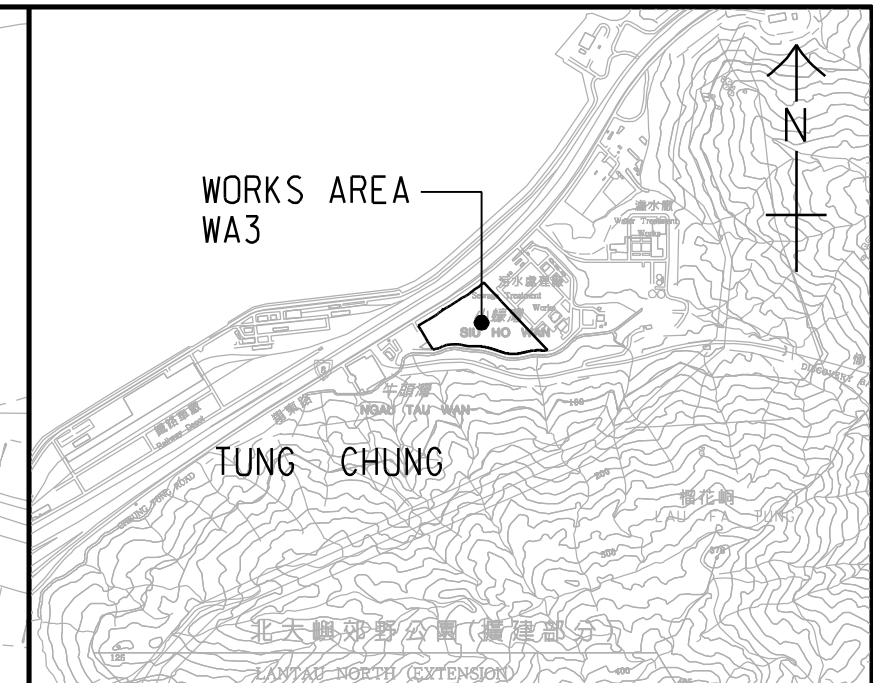
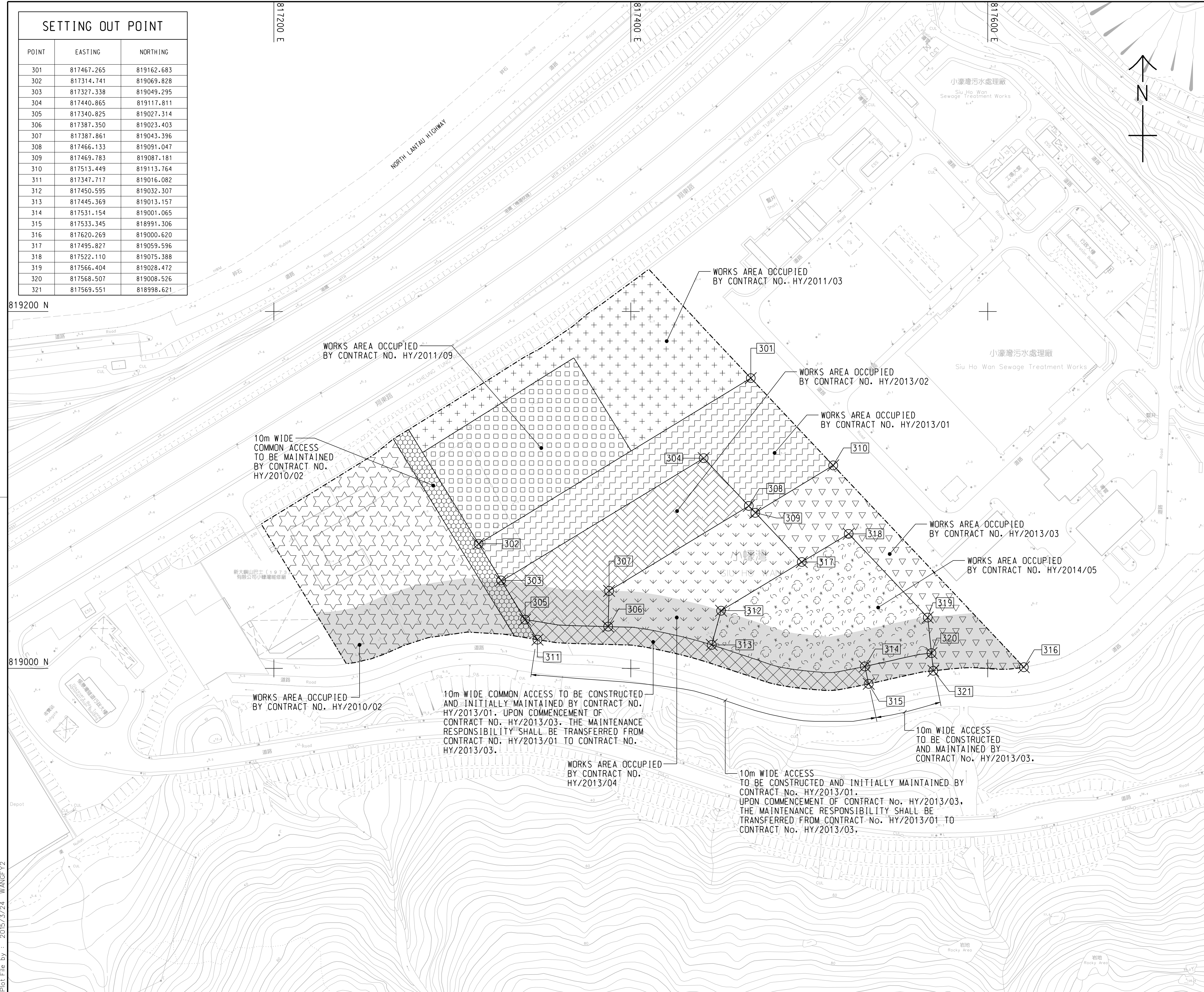
81600 E

819200 N

819000 N

Plot File by : 2015/3/24 WANGFY2

p:\projects\60191048\drawing\contract\c8\1000\c8_000_c00_1051.dgn



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 內容摘要	DATE 日期

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

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

WORKS AREA WA3

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

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

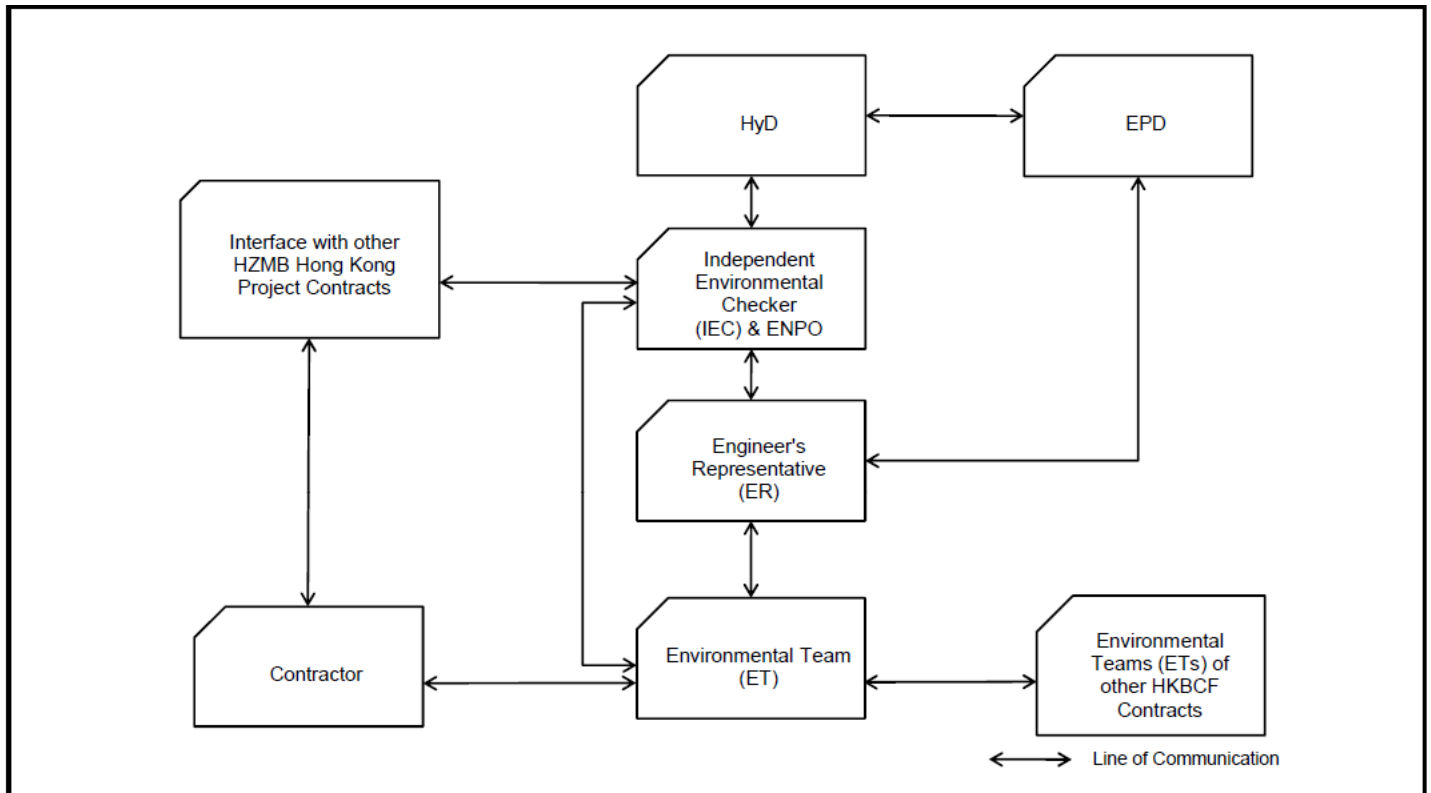
DESIGNED BY 設計	BWC	CONTRACT NO. 合約編號	HY/2014/05	P. Dir. APPROVED 批准人	TKH
DRAWN BY 繪圖	WSY	STATUS 階段			
SCALE 比例	A1 1 : 1000				
DIMENSIONS ARE IN 尺寸單位	METRES	© COPYRIGHT RESERVED 版權所 有			



APPENDIX B

Project Organization for Environmental Works

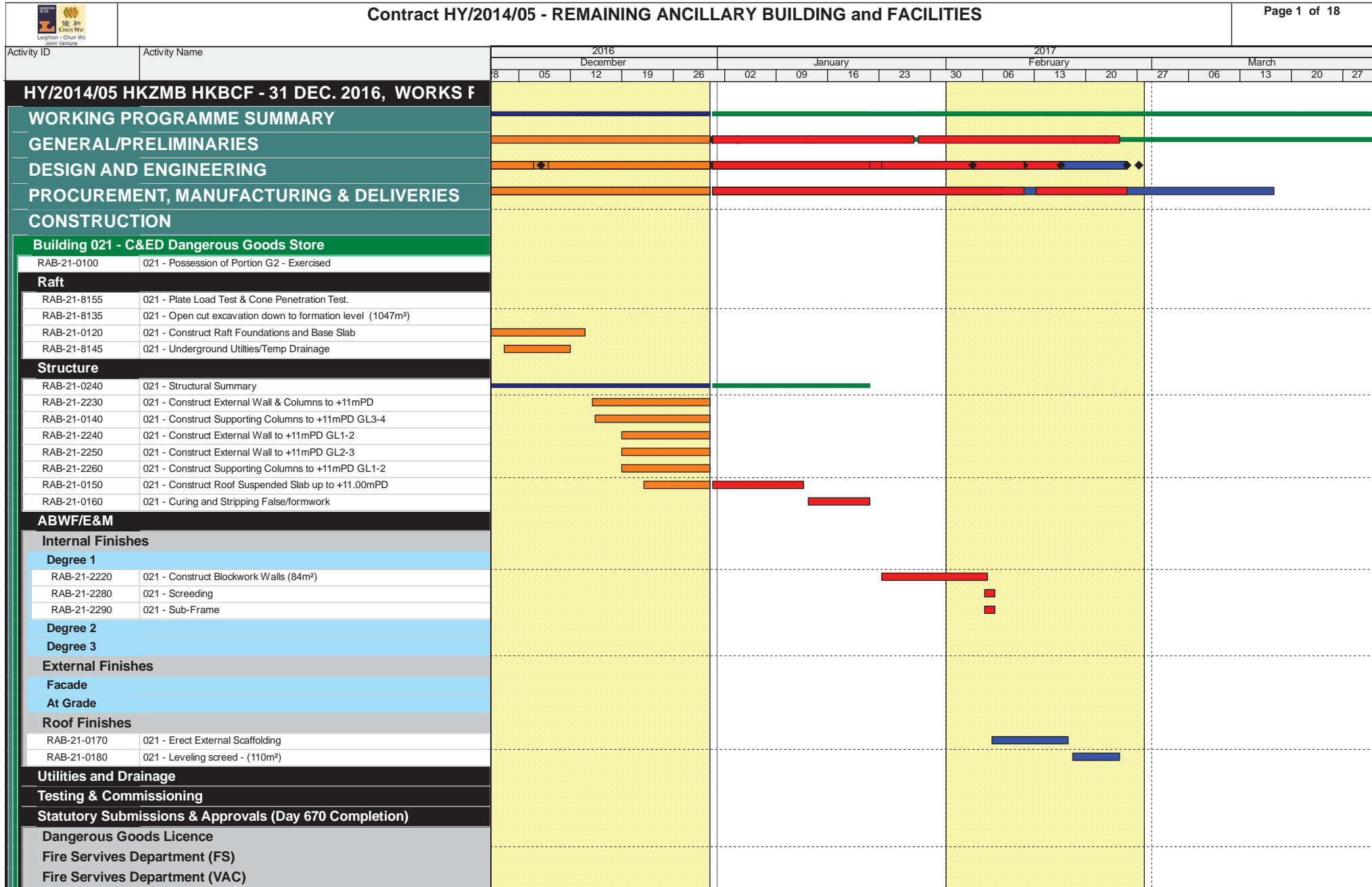
Project Organisation for Environmental Works





APPENDIX C

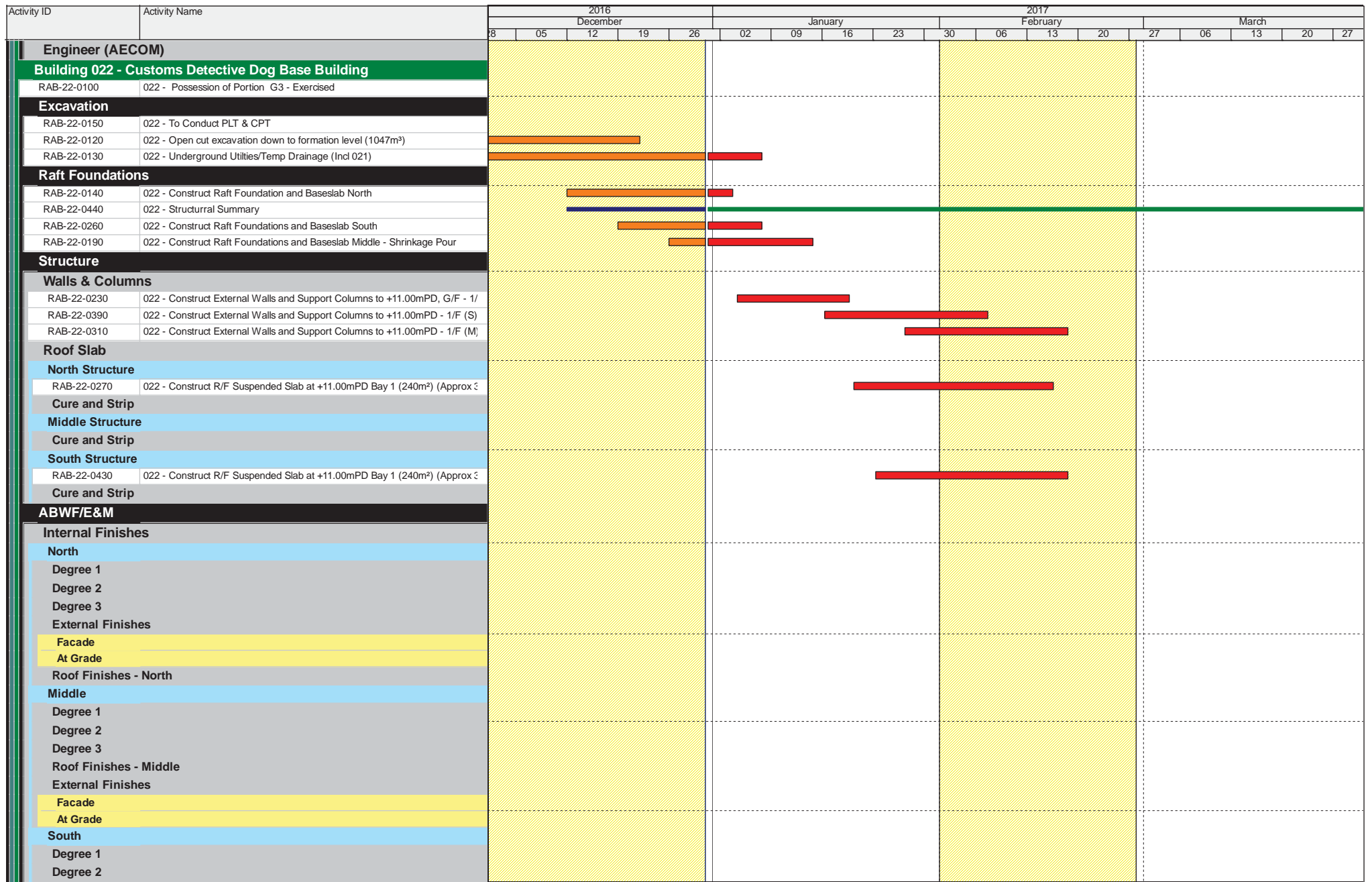
Construction Programme



■ Remaining Level of Effort
 ■ Actual Work
 ■
 ■ Actual Level of Effort
 ■ Remaining Work
 ◆ ◆

C8 - 3 MONTH ROLLING PROGRAMME, 01 DEC-16 UPDATE

Page 1 of 18	Date	Revision	Checked	Appro...
	01-Dec-16	Working Programme with RAB3 Baseline	SGJ	



■ Remaining Level of Effort
 ■ Actual Work
 ■
 ■ Actual Level of Effort
 ■ Remaining Work
 ◆ ◆

C8 - 3 MONTH ROLLING PROGRAMME, 01 DEC-16 UPDATE

Activity ID	Activity Name	2016					2017					2017							
		December					January					February					March		
		8	05	12	19	26	02	09	16	23	30	06	13	20	27	06	13	20	27
Degree 3																			
External Finishes																			
Facade																			
At Grade																			
Roof Finishes South																			
Specialist Installations																			
Window Wall																			
RAB-22-7090	022 - Install Window Wall Cast In Items (North)																		
RAB-22-7130	022 - Install Window Wall Cast In Items (South)																		
East																			
West																			
Dog Swimming Pool																			
RAB-22-0160	022 - Setting out of Dog Swimming Pool																		
RAB-22-0170	022 - Excavate for Dog Swimming Pool																		
RAB-22-0200	022 - RC Structure																		
RAB-22-0220	022 - Construct Staircase																		
RAB-22-0480	022 - Waterproofing																		
RAB-22-0490	022 - Backfill to ground level at Dog Swimming Pool																		
Utilities and Drainage																			
North																			
Middle																			
South																			
Testing & Commissioning																			
Statutory Submissions & Approvals (Day 670 Completion)																			
Water Supplies Department (WSD)																			
Commencement																			
RAB-WSD-794	022 - Submit WWO 46 Pt. I & II																		
RAB-WSD-814	022 - WSD Issue WWO 46 Pt. III																		
Completion																			
Fire Services Water (FS)																			
Commencement																			
RAB-WSD-824	022 - Submit WWO 46 Pt. I & II																		
RAB-WSD-844	022 - WSD Issue WWO 46 Pt. III																		
Completion																			
Fire Services Department (VAC)																			
Engineer (AECOM)																			
Building 023 - C&ED Outbound Cargo Examination Building and Exar																			
Excavation																			
RAB-23-5018	023 - Blinding																		
RAB-23-5030	023 - Underground Utilities/Temp Drainage																		
Raft Foundations - Inspection Platform																			
RAB-23-5050	023 - Construct Raft Foundations for Platform Bay 1																		
RAB-23-5150	023 - Construct Raft Foundations for Platform Bay 3																		
RAB-23-5190	023 - Construct Raft Foundations for Platform Bay 4																		
Raft Foundations - Main Building																			
RAB-23-5040	023 - Construct Raft Foundations - Main Building Bay 2 (GL8.5-10)																		
RAB-23-5060	023 - Summary Bldg. Structure - main Building																		

- Remaining Level of Effort
- Actual Level of Effort
- Actual Work
- Remaining Work
- ◆
- ◆

C8 - 3 MONTH ROLLING PROGRAMME, 01 DEC-16 UPDATE

Date	Revision	Checked	Appro...
01-Dec-16	Working Programme with RAB3 Baseline	SGJ	

Activity ID	Activity Name	2016					2017					2017							
		December					January					February					March		
		8	05	12	19	26	02	09	16	23	30	06	13	20	27	06	13	20	27
RAB-23-5100	023 - Construct Lift Pit for L-01 (GL5-6)																		
RAB-23-5240	023 - Construct Raft Foundations for Main Building Bay 5 (GL4-8.5)																		
RAB-23-5140	023 - Construct Raft Foundations for Main Building Bay 6 (GL1-4)																		
Structure																			
Ground Floor																			
Planters																			
Supporting Walls and Columns to +12.85mPD																			
RAB-23-5110	023 - Construct External Walls to +12.85mPD Bay 2 (GL8.5-10)																		
RAB-23-5300	023 - Construct External Walls to +12.85mPD Bay 5 (GL4-8.5)																		
RAB-23-5390	023 - Construct External Walls to +12.85mPD Bay 6 (GL1-4)																		
RAB-23-2180	023 - Install FS and SPR RC Water Tanks (G/F North)																		
First Floor																			
RAB-23-5200	023 - Construct 1/F Suspended Slab +12.85mPD Bay 2 (GL8.5-10)																		
RAB-23-5320	023 - Construct 1/F Suspended Slab +12.85mPD Bay 5 (GL4-8.5)																		
RAB-23-5350	023 - Construct 1/F Suspended Slab +12.85mPD Bay 6 (GL1-4)																		
Cure and Strip																			
RAB-23-5230	023 - Cure and Strip False/Formwork +12.85mPD Bay 2 (GL8.5-10), G/F - 1																		
RAB-23-5400	023 - Cure and Strip False/Formwork +12.85mPD Bay 5 (GL4-8.5), G/F - 1/F																		
RAB-23-5510	023 - Cure and Strip False/Formwork +12.85mPD Bay 6 (GL1-4), G/F - 1/F																		
Supporting Walls and Columns to +17.1mPD																			
RAB-23-5280	023 - Construct External Walls to +17.1mPD Bay 2 (GL8.5-10)																		
RAB-23-5440	023 - Construct External Walls to +17.1mPD Bay 5 (GL4-8.5)																		
RAB-23-5580	023 - Construct External Walls to +17.1mPD Bay 6 (GL1-4)																		
Roof																			
RAB-23-5330	023 - Construct R/F Suspended Slab +17.1mPD Bay 2 (GL8.5-10)																		
Cure and Strip																			
Supporting Walls and Columns to +19.1mPD																			
Lift Doghouse																			
Cure and Strip																			
ABWF/E&M																			
North																			
Internal Finishes - North																			
Ground Floor - North																			
Degree 1 - North																			
Degree 2 - North																			
Degree 3 - North																			
First Floor - North																			
Degree 1 - North																			
Degree 2 - North																			
Degree 3 - North																			
Early Handover Rooms With Interface for KD3D & KD3E)																			
Ground Floor, Rm. 25, 26, 58 & 59 (FM200 & NER)																			
Degree 1																			
Degree 2																			
Degree 3																			
First Floor, Rm. 34 & 35 (FM200 & NER)																			
Degree 1																			
Degree 2																			

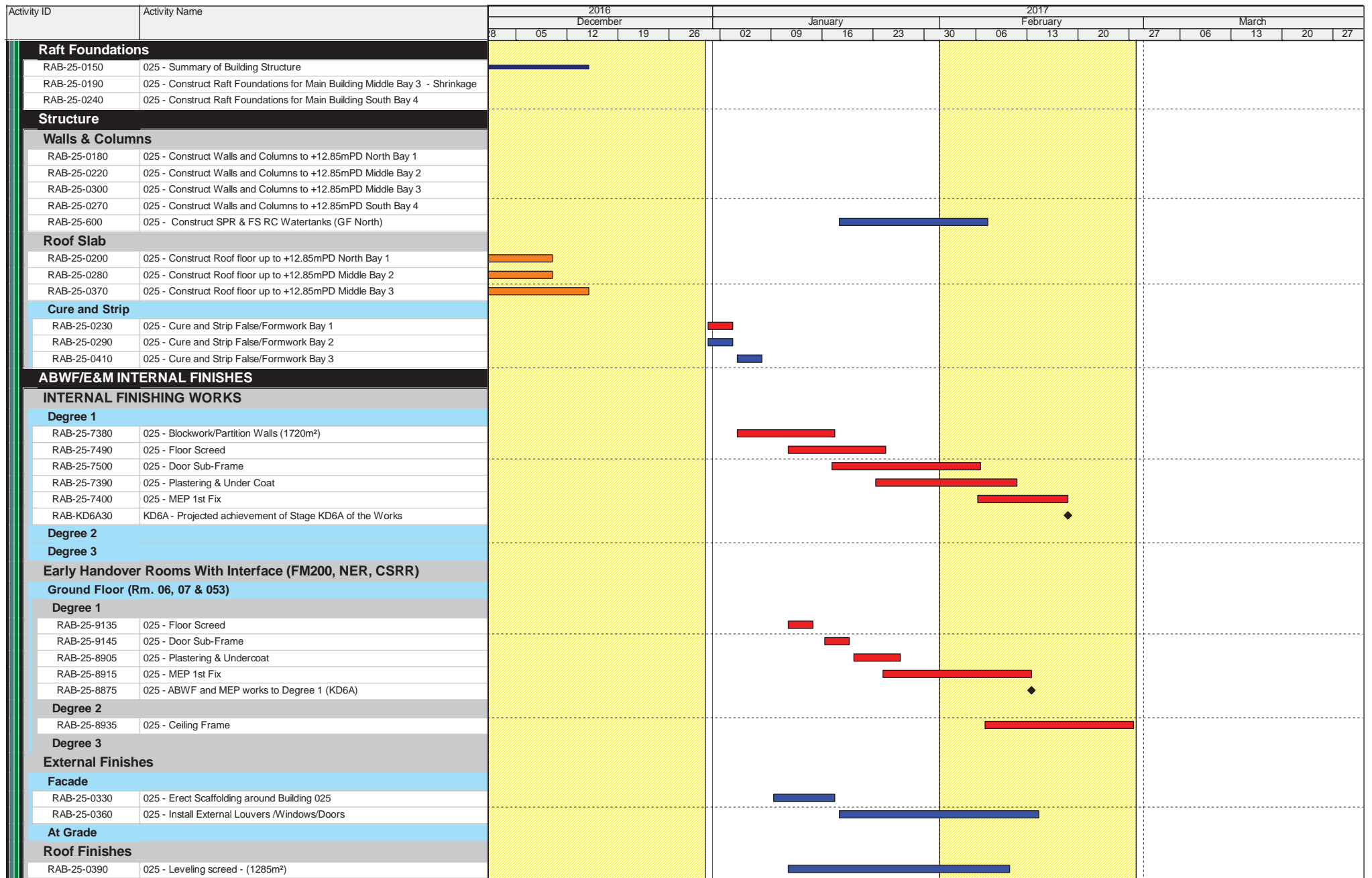
- Remaining Level of Effort
- Actual Level of Effort
- Actual Work
- Remaining Work
- ◆ ◆

C8 - 3 MONTH ROLLING PROGRAMME, 01 DEC-16 UPDATE

Activity ID	Activity Name	2016					2017					2017								
		December					January					February					March			
		8	05	12	19	26	02	09	16	23	30	06	13	20	27	06	13	20	27	
	Degree 3																			
	External Finishes - North																			
	Facade																			
	At Grade																			
	Roof Finishes																			
	Green Roof																			
	South																			
	Internal Finishes - South																			
	Ground Floor - South																			
	Degree 1 - South																			
	Degree 2 - South																			
	Degree 3 - South																			
	First Floor - South																			
	Degree 1 - South																			
	Degree 2 - South																			
	Degree 3 - South																			
	External Finishes - South																			
	Facade																			
	At Grade																			
	Window Wall																			
RAB-23-7100	023 - Install Window Wall Cast In Items in Base Slab - S																			
RAB-23-7140	023 - Install Window Wall Cast In Items in 1/F Slab - S																			
	East																			
	West																			
	Roof Finishes																			
	Roof Level Dog House																			
	Building 023																			
	Specialist Installations																			
	Metal Canopy																			
	Utilities and Drainage																			
	Testing & Commissioning																			
	Statutory Submissions & Approvals (Day 610 Completion)																			
	EMSD - Building 023 Lift Inspection																			
	Water Supplies Department (WSD)																			
	Commencement																			
RAB-WSD-764	023 - Submit WWO 46 Pt. I & II for Building 023																			
RAB-WSD-854	023 - Submit WWO 46 Pt. III																			
	Completion																			
	Fire Services Department (FSD)																			
	Commencement																			
RAB-WSD-864	023 - Submit WWO 46 Pt. I & II for Building 023																			
RAB-WSD-874	023 - Submit WWO 46 Pt. III																			
	Completion																			
	Fire Services Department (VAC)																			
	Engineer (AECOM)																			
	Building 025 - Inbound Private Car Annexure																			
	Excavation																			

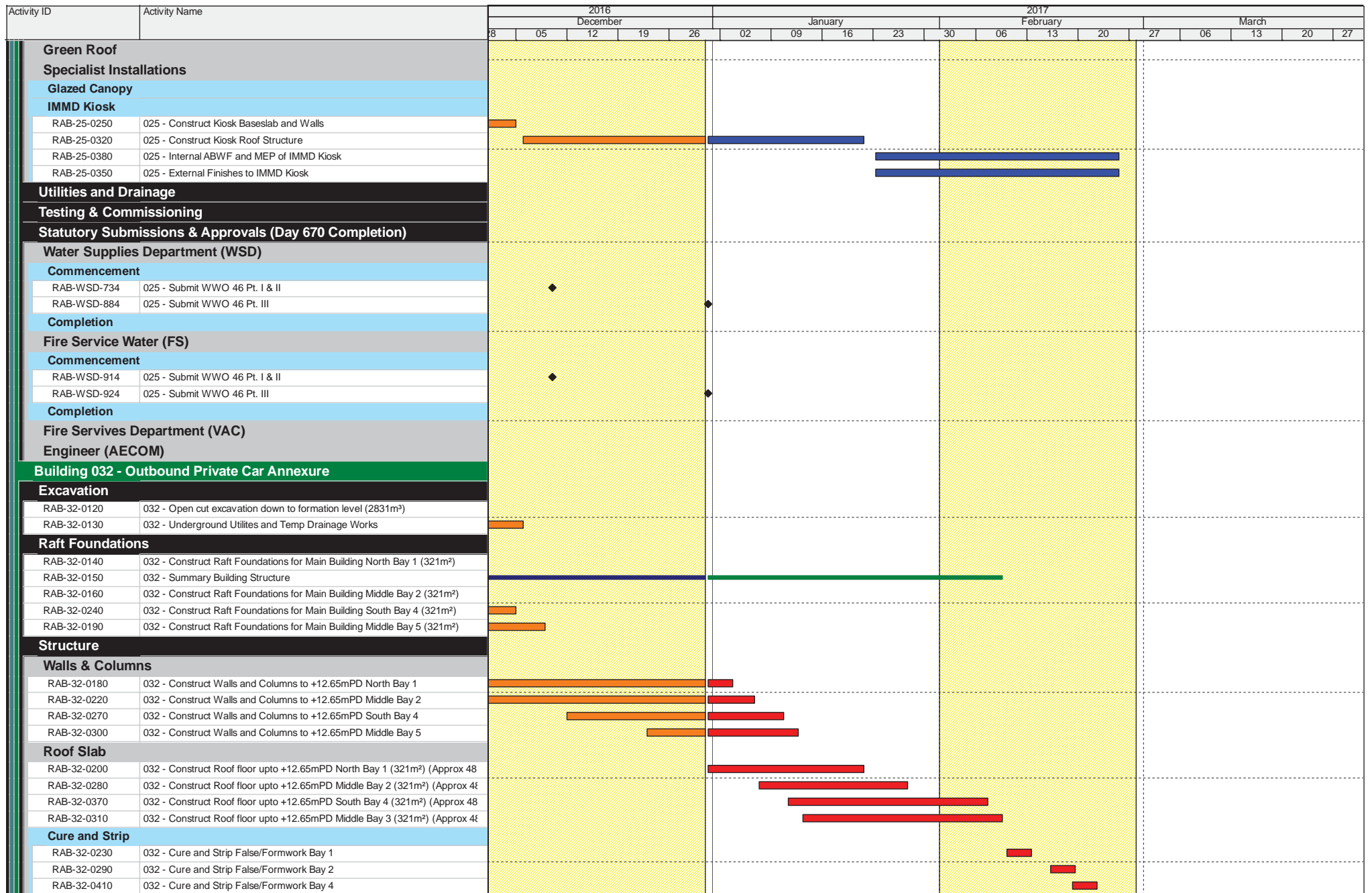
- Remaining Level of Effort
- Actual Level of Effort
- Actual Work
- Remaining Work
- ◆
- ◆

C8 - 3 MONTH ROLLING PROGRAMME, 01 DEC-16 UPDATE



C8 - 3 MONTH ROLLING PROGRAMME, 01 DEC-16 UPDATE

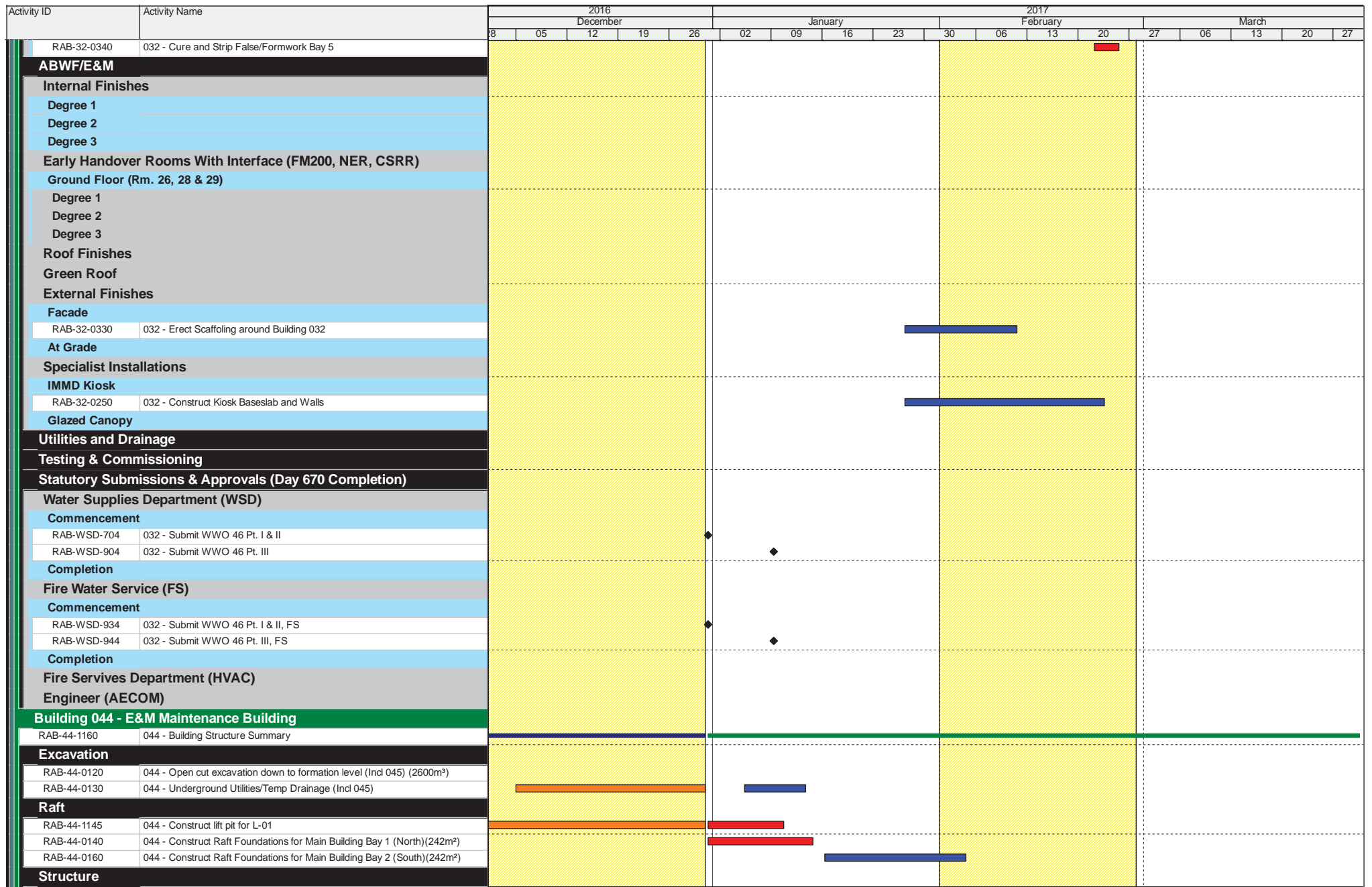
Date	Revision	Checked	Appro...
01-Dec-16	Working Programme with RAB3 Baseline	SGJ	



█ Remaining Level of Effort
 █ Actual Work
 █
 █ Actual Level of Effort
 █ Remaining Work
 ◆ ◆

C8 - 3 MONTH ROLLING PROGRAMME, 01 DEC-16 UPDATE

Date	Revision	Checked	Appro...
01-Dec-16	Working Programme with RAB3 Baseline	SGJ	



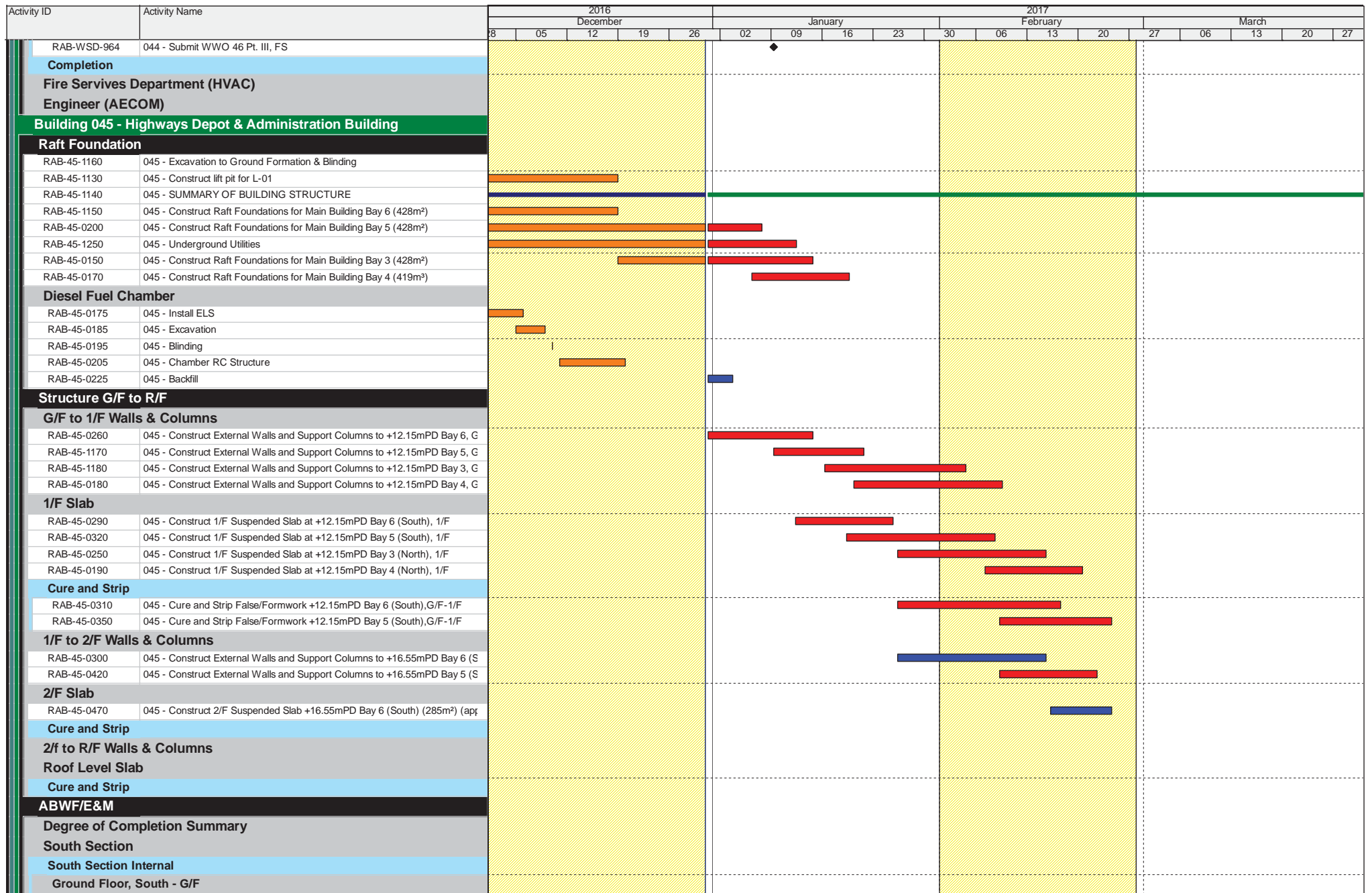
C8 - 3 MONTH ROLLING PROGRAMME, 01 DEC-16 UPDATE

Activity ID	Activity Name	2016					2017					2017																											
		December					January					February					March																						
		8	05	12	19	26	02	09	16	23	30	06	13	20	27	06	13	20	27																				
Walls & Columns																																							
Ground to First Floor																																							
RAB-44-0170	044 - Construct External Walls to +12.15mPD																				[Red bar from Jan 16 to Jan 23]																		
First Floor																																							
RAB-44-0190	044 - Construct 1/F Suspended Slab +12.15mPD																				[Red bar from Jan 23 to Feb 06]																		
Cure and Strip																																							
First Floor to Second Floor																																							
Second Floor																																							
Cure and Strip																																							
Second Floor to Roof																																							
Roof Level																																							
Cure and Strip																																							
ABWF/E&M																																							
Ground Floor																																							
Degree 1																																							
Degree 2																																							
Degree 3																																							
First Floor																																							
Degree 1																																							
Degree 2																																							
Degree 3																																							
Second Floor																																							
Degree 1																																							
Degree 2																																							
Degree 3																																							
Roof Finishes																																							
Green Roof																																							
External Finishes																																							
Facade																																							
At Grade																																							
Specialist Installations																																							
East																																							
West																																							
Utilities and Drainage																																							
Testing & Commissioning																																							
Statutory Submissions & Approvals																																							
EMSD - Building 044 Lift Inspection																																							
Water Supplies Department (WSD)																																							
Commencement																																							
RAB-WSD-674	044 - Submit WWO 46 Pt. I & II	◆																																					
RAB-WSD-304	044 - Submit WWO 46 Pt. III	◆																																					
Completion																																							
Fire Water Services (FS)																																							
Commencement																																							
RAB-WSD-954	044 - Submit WWO 46 Pt. I & II, FS	◆																																					

■ Remaining Level of Effort ■ Actual Work ■
■ Actual Level of Effort ■ Remaining Work ◆ ◆

C8 - 3 MONTH ROLLING PROGRAMME, 01 DEC-16 UPDATE

Date	Revision	Checked	Appro...
01-Dec-16	Working Programme with RAB3 Baseline	SGJ	



C8 - 3 MONTH ROLLING PROGRAMME, 01 DEC-16 UPDATE

Activity ID	Activity Name	2016					2017					2017									
		December					January					February					March				
		8	05	12	19	26	02	09	16	23	30	06	13	20	27	06	13	20	27		
	Degree 1, South - G/F																				
	Degree 2, South - G/F																				
	Degree 3, South - G/F																				
	First Floor, South - 1/F																				
	Degree 1, South - 1/F																				
	Degree 2, South - 1/F																				
	Degree 3, South - 1/F																				
	Second Floor, South - 2/F																				
	Degree 1, South - 2/F																				
	Degree 2, South - 2/F																				
	Degree 3, South - 2/F																				
	External Finishes South																				
	Roof Finishes - South																				
	Facade - South																				
	At Grade - South																				
	North Section																				
	North Section Internal																				
	Ground Floor, North - G/F																				
	Degree 1, North - G/F																				
	Degree 2, North - G/F																				
	Degree 3, North - G/F																				
	First Floor, North - 1/F																				
	Degree 1, North - 1/F																				
	Degree 2, North - 1/F																				
	Degree 3, North - 1/F																				
	North External Finishes																				
	North Green Roof																				
	North Facade																				
	North At Grade																				
	Specialist Installations																				
RAB-45-1120	045 - Install Fuel Tanks G/F North																				
	Window Wall																				
RAB-23-7120	045 - Install Window Wall Cast in Items G/F																				
RAB-23-7190	045 - Install Window Wall Cast in Items F/F																				
	East																				
	West																				
	Utilities and Drainage																				
	Testing & Commissioning																				
	Statutory Submissions & Approvals (Day 670 Completion)																				
	EMSD - Building 045 Lift Inspection																				
	Fuel Tank - DG License																				
RAB-FSD-640	045 - DG Storage Dwg ready for Submission																				
RAB-FSD-650	045 - Submission to FSD																				
RAB-FSD-660	045 - FSD Inspection & Approval																				
RAB-FSD-680	045 - FSD Issue License																				
	Generator Set - EPD Permit																				
	Generator Set - DG Licence																				
	Water Supplies Department (WSD)																				

■ Remaining Level of Effort
■ Actual Work
■
■ Actual Level of Effort
■ Remaining Work
◆
◆

C8 - 3 MONTH ROLLING PROGRAMME, 01 DEC-16 UPDATE

Activity ID	Activity Name	2016					2017					2017									
		December					January					February					March				
		8	05	12	19	26	02	09	16	23	30	06	13	20	27	06	13	20	27		
Commencement																					
RAB-WSD-644	045 - Submit WWO 46 Pt. I & II																				
RAB-WSD-634	045 - Submit WWO 46 Pt. III																				
Completion																					
Fire Services Department (FSD)																					
Commencement																					
RAB-FSD-620	045 - Submit WWO 46 Pt. I & II																				
RAB-WSD-974	045 - Submit WWO 46 Pt. III																				
Completion																					
Fire Services Department (HVAC)																					
Engineer (AECOM)																					
Building 050 - Public Toilets Type 2																					
RAB-50-1000	050 H1 - Forecast Possession of Portion H1 - If Exercised																				
Public Toilet (Portion H1)																					
Excavation																					
RAB-50-1020	050 H1 - Open cut excavation down to formation level (370m³)																				
RAB-50-1030	050 H1 - Underground Utilities and Drainage																				
Raft																					
RAB-50-1040	050 H1 - Construct Raft Foundation (140m²) (91m³)																				
Structure																					
RAB-50-4310	050 H1 - Construct RC Support Columns for Aluminium Solar Shade																				
ABWF/E&M																					
Internal Finishes																					
Degree 1																					
Degree 2																					
Degree 3																					
Specialist installation																					
Roof Finishes																					
External Finishes																					
Utilities and Drainage																					
Testing & Commissioning																					
Statutory Submissions & Approvals (Day 670 Completion)																					
Water Supplies Department (WSD)																					
Commencement																					
RAB-WSD-614	050 H1 - Submit WWO 46 Pt. I & II for Building 050																				
RAB-WSD-624	050 H1 - Submit WWO 46 Pt. III																				
Completion																					
Fire Services Department (VAC)																					
Engineer (AECOM)																					
Public Toilet (Portion H2)																					
RAB-50-2000	050 H2 - Possession of Portion H2 - If Exercised																				
Excavation																					
RAB-50-2020	050 H2 - Open cut excavation down to formation level (370m³)																				
RAB-50-2030	050 H2 - Underground Utilities and Drainage																				
Raft																					
Structure																					

- Remaining Level of Effort
- Actual Level of Effort
- Actual Work
- Remaining Work
- ◆
- ◆

C8 - 3 MONTH ROLLING PROGRAMME, 01 DEC-16 UPDATE

Date	Revision	Checked	Appro...
01-Dec-16	Working Programme with RAB3 Baseline	SGJ	

Activity ID	Activity Name	2016					2017					2017																										
		December					January					February					March																					
		8	05	12	19	26	02	09	16	23	30	06	13	20	27	06	13	20	27																			
ABWF/E&M																																						
Internal Finishes																																						
Degree 1																																						
Degree 2																																						
Degree 3																																						
Specialist installation																																						
Roof Finishes																																						
External Finishes																																						
Utilities and Drainage																																						
Testing & Commissioning																																						
Statutory Submissions & Approvals (Day 670 Completion)																																						
Water Supplies Department (WSD)																																						
Commencement																																						
RAB-WSD-574	050 H2 - Submit WWO 46 Pt. I & II																																					
RAB-WSD-584	050 H2 - Submit WWO 46 Pt. III																																					
Completion																																						
Fire Services Department (VAC)																																						
Engineer (AECOM)																																						
Public Toilet (Portion A1)																																						
Excavation																																						
Raft																																						
Structure																																						
ABWF/E&M																																						
Internal Finishes																																						
Degree 1																																						
Degree 2																																						
Degree 3																																						
Specialist installation																																						
Roof Finishes																																						
External Finishes																																						
Utilities and Drainage																																						
Testing & Commissioning																																						
Statutory Submissions & Approvals (Day 670 Completion)																																						
Water Supplies Department (WSD)																																						
Commencement																																						
Completion																																						
Fire Services Department (VAC)																																						
Engineer (Aecom)																																						
Public Toilet (Portion A2)																																						
Excavation																																						
RAB-50-4020	050 A2 - Open cut excavation down to formation level (370m³)																																					
RAB-50-4030	050 A2 - Underground Utilities and Drainage																																					
Raft																																						
RAB-50-4040	050 A2 - Construct Raft Foundation (140m²) (91m³)																																					
Structure																																						

- Remaining Level of Effort
- Actual Level of Effort
- Actual Work
- Remaining Work
- ◆
- ◆

C8 - 3 MONTH ROLLING PROGRAMME, 01 DEC-16 UPDATE

Activity ID	Activity Name	2016					2017					2017							
		December					January					February					March		
		8	05	12	19	26	02	09	16	23	30	06	13	20	27	06	13	20	27
RAB-50-4350	050 A2 - Construct RC Support Columns for Aluminium Solar Shade																		
ABWF/E&M																			
Internal Finishes																			
Degree 1																			
Degree 2																			
Degree 3																			
Specialist installation																			
Roof Finishes																			
External Finishes																			
Utilities and Drainage																			
Testing & Commissioning																			
Statutory Submissions & Approvals (Day 670 Completion)																			
Water Supplies Department (WSD)																			
Commencement																			
Completion																			
VAC (FSD)																			
Engineer (AECOM)																			
Building 053 - Outbound X-Ray Building																			
Excavation																			
RAB-53-0170	053 - SUMMARY OF BUILDING STRUCTURE																		
Raft Structure																			
External Walls																			
To First Floor Level																			
RAB-53-0190	053 - Construct External Walls and Columns to +13.0mPD North - G/F - 1/F																		
RAB-53-0250	053 - Construct External Walls and Columns to +13.0mPD South - G/F - 1/F																		
Internal Structures																			
RAB-53-7550	053 - Construct Internal Liftshaft L-01 +13.0mPD North - G/F - 1/F																		
RAB-53-7490	053 - Construct Internal Staircase S-01 +13.0mPD South - G/F - 1/F																		
RAB-53-7500	053 - Construct Internal Staircase S-02 +13.0mPD North - G/F - 1/F																		
First Floor																			
Slabs																			
RAB-53-0240	053 - Construct 1/F Suspended Slab +13.0mPD North - 1/F																		
RAB-53-0310	053 - Construct 1/F Suspended Slab +13.0mPD South - 1/F																		
Cure and Strip																			
RAB-53-0260	053 - Cure and Strip False/Formwork at +13.0mPD North - G/F-1/F																		
RAB-53-0340	053 - Cure and Strip False/Formwork at +13.0mPD South - G/F-1/F																		
1/F - Roof Level																			
RAB-53-0280	053 - Construct External Walls and Columns to +17.4mPD North, 1/F - R/F																		
RAB-53-0360	053 - Construct External Walls and Columns to +17.4mPD South, 1/F - R/F																		
Staircases																			
RAB-53-7560	053 - Construct Internal Liftshaft L-01 +17.4mPD North, 1/F - R/F																		
RAB-53-7520	053 - Construct Internal Staircase S-02 +17.4mPD North, 1/F - R/F																		
RAB-53-7510	053 - Construct Internal Staircase S-01 +17.4mPD South, 1/F - R/F																		
Roof Floor																			
Slabs																			
RAB-53-0320	053 - Construct R/F Suspended Slab at +17.4mPD North, R/F																		

- Remaining Level of Effort
- Actual Level of Effort
- Actual Work
- Remaining Work
- ◆ ◆

C8 - 3 MONTH ROLLING PROGRAMME, 01 DEC-16 UPDATE

Activity ID	Activity Name	2016					2017					2017									
		December					January					February					March				
		8	05	12	19	26	02	09	16	23	30	06	13	20	27	06	13	20	27		
RAB-53-0430	053 - Construct R/F Suspended Slab at +17.4mPD South, R/F	Actual Work																			
Cure and Strip																					
RAB-53-0350	053 - Cure and Strip False/Formwork at +17.4mPD North, 1/F - R/F	Remaining Work																			
RAB-53-0480	053 - Cure and Strip False/Formwork at +17.1mPD South, 1/F - R/F	Actual Work																			
ABWF/E&M																					
Ground Floor																					
Degree 1 - G/F																					
RAB-53-0390	053 - Blockwork / Partition Walls	Actual Work																			
RAB-53-0630	53 - Screeding	Remaining Work																			
RAB-53-0590	053 - Plastering & Undercoat	Actual Work																			
RAB-53-0400	053 - MEP 1st Fix - North G/F	Actual Work																			
RAB-53-0510	053 - Projected Achievement of Stage 1A	Actual Work																			
Degree 2 - G/F																					
RAB-53-7895	053 - Framework for Wall Panel & Cladding	Actual Work																			
Degree 3 - G/F																					
First Floor																					
Degree 1 - 1/F																					
RAB-53-7945	053 - Blockwork / Partition Walls	Actual Work																			
RAB-53-8025	53 - Screeding	Actual Work																			
RAB-53-7965	053 - Plastering & Undercoat	Actual Work																			
RAB-53-7955	053 - MEP 1st Fix - North G/F	Actual Work																			
RAB-53-7975	053 - Projected Achievement of Stage 1A	Actual Work																			
Degree 2 - 1/F																					
Degree 3 - 1/F																					
External Finishes																					
External Facade																					
RAB-53-0410	053 - Erect External Scaffolding	Actual Work																			
RAB-53-0440	053 - Install External Louvers /Windows/Doors	Actual Work																			
RAB-53-0450	053 - External Render (465m²) (From Bldg 053)	Actual Work																			
At Grade																					
Roof Finishes																					
RAB-53-0420	053 - Leveling Screed - (490m²)	Actual Work																			
RAB-53-0460	053 - Waterproof Membrane - (490m²)	Actual Work																			
RAB-53-670	053 - Insulation Board - (490m²)	Actual Work																			
RAB-53-0490	053 - Top Screed - (490m²)	Actual Work																			
Spacialist Installations																					
Glazed Canopy																					
Utilities and Drainage																					
RAB-53-7620	053 - Install Fresh Water Mains	Actual Work																			
Testing & Commissioning																					
RAB-TC53-1040	053 - T&C (HVAC, FS, P&D, OTHERS)	Actual Work																			
Statutory Submissions & Approvals (Day 470 Completion)																					
EMSD - Building 053 Lift Inspection																					
RAB-FSD-140	053 - Submit EMSD Form 3 (Commencement of Lift Installation)	Actual Work																			
Water Supplies Department (WSD)																					
Commencement																					
RAB-WSD-494	053 - Submit WWO 46 Pt. I & II	Actual Work																			
RAB-WSD-504	053 - Submit WWO 46 Pt. III	Actual Work																			

- Remaining Level of Effort
- Actual Level of Effort
- Actual Work
- Remaining Work
- ◆
- ◆

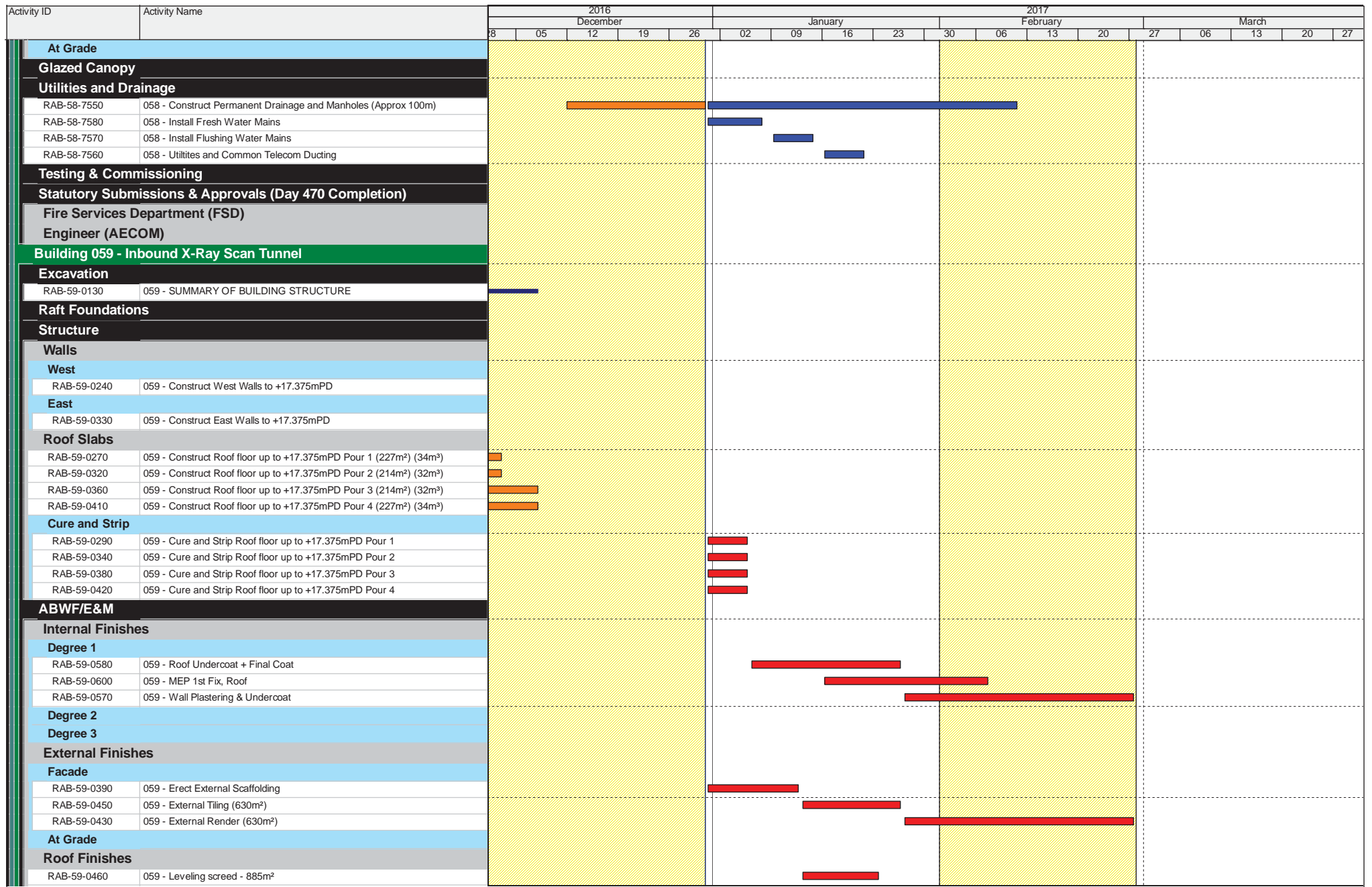
C8 - 3 MONTH ROLLING PROGRAMME, 01 DEC-16 UPDATE

Date	Revision	Checked	Appro...
01-Dec-16	Working Programme with RAB3 Baseline	SGJ	

Activity ID	Activity Name	2016					2017					2017								
		December					January					February					March			
		8	05	12	19	26	02	09	16	23	30	06	13	20	27	06	13	20	27	
Completion																				
Fire Water Services (FSD)																				
Commencement																				
RAB-FSD-770	053 - Submit WWO 46 Pt. I & II																			
RAB-FSD-840	053 - Submit WWO 46 Pt. III																			
Completion																				
Fire Services Department (VAC)																				
Engineer (AECOM)																				
Building 058 - Outbound X-Ray Scan Tunnel																				
Excavation																				
Raft																				
RAB-58-0160	058 - Construct Raft Foundation - West																			
RAB-58-0180	058 - SUMMARY OF BUILDING STRUCTURE																			
RAB-58-0170	058 - Construct Raft Foundation - East																			
Structure																				
Walls																				
South																				
RAB-58-0210	058 - Construct West Walls to +9.5mPD																			
RAB-58-0230	058 - Construct West Walls to +12.6mPD																			
RAB-58-0240	058 - Construct West Walls to +17.375mPD																			
North																				
RAB-58-0300	058 - Construct East Walls to +9.5mPD																			
RAB-58-0310	058 - Construct East Walls to +12.6mPD																			
RAB-58-0330	058 - Construct East Walls to +17.375mPD																			
Roof Slabs																				
RAB-58-0270	058 - Construct Roof floor to +17.375mPD Pour 1 - South																			
RAB-58-0430	058 - Construct Roof floor to +17.375mPD Pour 4 - North																			
Cure and Strip																				
RAB-58-0340	058 - Cure and Strip Roof floor to +17.375mPD - West																			
RAB-58-0460	058 - Cure and Strip Roof floor to +17.375mPD - East																			
ABWF/E&M																				
Internal Finishes																				
Degree 1																				
RAB-58-0550	058 - Roof Undercoat + Final Coat																			
RAB-58-0520	058 - MEP 1st Fix, Roof																			
Degree 2																				
RAB-58-0680	058 - Install Louver & Door Frame (Door Frame by other)																			
Degree 3																				
Roof Finishes																				
RAB-58-0410	058 - Leveling screed - 885m²																			
RAB-58-0450	058 - Waterproof membrane - 885m²																			
RAB-58-660	058 - insulation Board - 885m²																			
External Finishes																				
Facade																				
RAB-58-0390	058 - Erect External Scaffolding																			
RAB-58-0400	058 - Install External Louvers /Windows/Doors																			
RAB-58-0420	058 - External Render (630m²) (From Bldg 059)																			
RAB-58-0440	058 - External Tiling (630m²)																			

- Remaining Level of Effort
- Actual Level of Effort
- Actual Work
- Remaining Work
- ◆ ◆

C8 - 3 MONTH ROLLING PROGRAMME, 01 DEC-16 UPDATE



■ Remaining Level of Effort
■ Actual Work
■
■ Actual Level of Effort
■ Remaining Work
◆
◆

C8 - 3 MONTH ROLLING PROGRAMME, 01 DEC-16 UPDATE

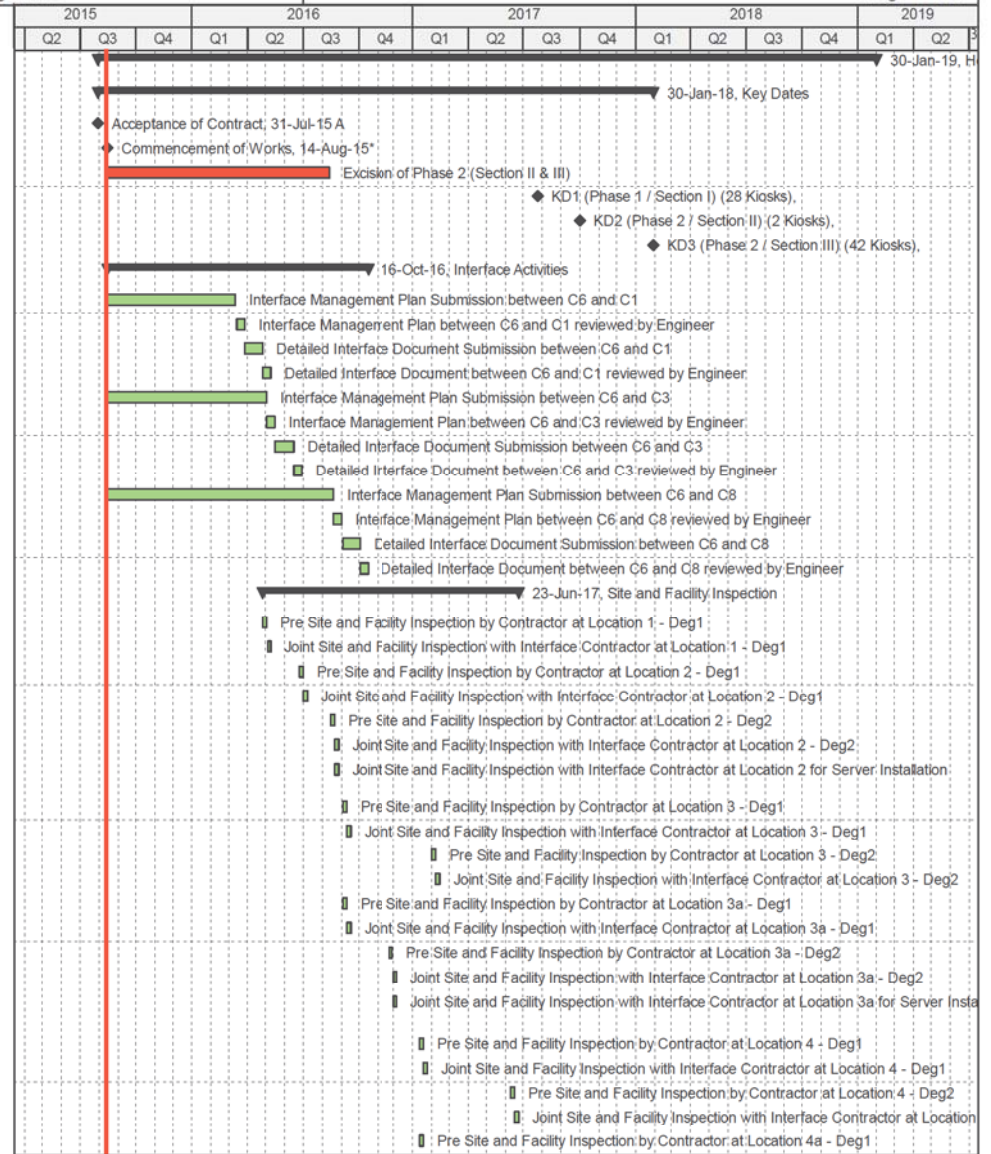
Activity ID	Activity Name	2016					2017					2017							
		December					January					February					March		
		8	05	12	19	26	02	09	16	23	30	06	13	20	27	06	13	20	27
RAB-59-0490	059 - Waterproof Membrane - 885m²																		
RAB-59-670	059 - Insulation Board - 885m²																		
Glazed Canopy																			
Utilities and Drainage																			
Testing & Commissioning																			
Statutory Submissions & Approvals (Day 470 Completion)																			
Fire Services Department (FSD)																			
Engineer (AECOM)																			

- Remaining Level of Effort
- Actual Level of Effort
- Actual Work
- Remaining Work
- ◆ ◆

C8 - 3 MONTH ROLLING PROGRAMME, 01 DEC-16 UPDATE

Date	Revision	Checked	Appro...
01-Dec-16	Working Programme with RAB3 Baseline	SGJ	

Activity ID	Activity Name
Hong Kong-Zhuhai_Macao Bridge Hong Kong Boundary Crossir	
Key Dates	
A1000	Acceptance of Contract
A1010	Commencement of Works
A1020	Excision of Phase 2 (Section II & III)
A1120	KD1 (Phase 1 / Section I) (28 Kiosks)
A1470	KD2 (Phase 2 / Section II) (2 Kiosks)
A1480	KD3 (Phase 2 / Section III) (42 Kiosks)
Interface Activities	
A6860	Interface Management Plan Submission between C6 and C1
A6865	Interface Management Plan between C6 and C1 reviewed by Engineer
A6870	Detailed Interface Document Submission between C6 and C1
A6875	Detailed Interface Document between C6 and C1 reviewed by Engineer
A6880	Interface Management Plan Submission between C6 and C3
A6885	Interface Management Plan between C6 and C3 reviewed by Engineer
A6890	Detailed Interface Document Submission between C6 and C3
A6895	Detailed Interface Document between C6 and C3 reviewed by Engineer
A6900	Interface Management Plan Submission between C6 and C8
A6905	Interface Management Plan between C6 and C8 reviewed by Engineer
A6910	Detailed Interface Document Submission between C6 and C8
A6915	Detailed Interface Document between C6 and C8 reviewed by Engineer
Site and Facility Inspection	
A4730	Pre Site and Facility Inspection by Contractor at Location 1 - Deg1
A4740	Joint Site and Facility Inspection with Interface Contractor at Location 1 - Deg1
A4760	Pre Site and Facility Inspection by Contractor at Location 2 - Deg1
A4770	Joint Site and Facility Inspection with Interface Contractor at Location 2 - Deg1
A4772	Pre Site and Facility Inspection by Contractor at Location 2 - Deg2
A4774	Joint Site and Facility Inspection with Interface Contractor at Location 2 - Deg2
A4775	Joint Site and Facility Inspection with Interface Contractor at Location 2 for Server Installation
A4780	Pre Site and Facility Inspection by Contractor at Location 3 - Deg1
A4790	Joint Site and Facility Inspection with Interface Contractor at Location 3 - Deg1
A4800	Pre Site and Facility Inspection by Contractor at Location 3 - Deg2
A4810	Joint Site and Facility Inspection with Interface Contractor at Location 3 - Deg2
A4820	Pre Site and Facility Inspection by Contractor at Location 3a - Deg1
A4830	Joint Site and Facility Inspection with Interface Contractor at Location 3a - Deg1
A4840	Pre Site and Facility Inspection by Contractor at Location 3a - Deg2
A4850	Joint Site and Facility Inspection with Interface Contractor at Location 3a - Deg2
A4851	Joint Site and Facility Inspection with Interface Contractor at Location 3a for Server Installation
A4860	Pre Site and Facility Inspection by Contractor at Location 4 - Deg1
A4870	Joint Site and Facility Inspection with Interface Contractor at Location 4 - Deg1
A4880	Pre Site and Facility Inspection by Contractor at Location 4 - Deg2
A4890	Joint Site and Facility Inspection with Interface Contractor at Location 4 - Deg2
A4891	Pre Site and Facility Inspection by Contractor at Location 4a - Deg1



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

- █ Actual Level of Effort
- █ Actual Work
- █ Remaining Work
- █ Critical Remaining Work
- ◆ Milestone
- ▬ summary

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



Date	Revision	Checked	Approved
14-Nov-16	Rev: 0	WC	LC

Activity ID	Activity Name	2015		2016				2017				2018				2019	
		Q2	Q3	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
A5360	Pre Site and Facility Inspection by Contractor at Location 16 - Deg2																
A5370	Joint Site and Facility Inspection with Interface Contractor at Location 16 - Deg2																
A5375	Pre Site and Facility Inspection by Contractor at Location 17 - Deg1																
A5378	Joint Site and Facility Inspection with Interface Contractor at Location 17 - Deg1																
A5380	Pre Site and Facility Inspection by Contractor at Location 17 - Deg2																
A5390	Joint Site and Facility Inspection with Interface Contractor at Location 17 - Deg2																
A5395	Pre Site and Facility Inspection by Contractor at Location 18 - Deg1																
A5396	Joint Site and Facility Inspection with Interface Contractor at Location 18 - Deg1																
A5400	Pre Site and Facility Inspection by Contractor at Location 18 - Deg2																
A5410	Joint Site and Facility Inspection with Interface Contractor at Location 18 - Deg2																
A5420	Pre Site and Facility Inspection by Contractor at Location 19 - Deg1																
A5430	Joint Site and Facility Inspection with Interface Contractor at Location 19 - Deg1																
A5440	Pre Site and Facility Inspection by Contractor at Location 19 - Deg2																
A5450	Joint Site and Facility Inspection with Interface Contractor at Location 19 - Deg2																
A5470	Pre Site and Facility Inspection by Contractor at Inbound Vehicle Clearance Plaza																
A5480	Joint Site and Facility Inspection with Interface Contractor at Inbound Vehicle Clearance Plaza																
A5490	Pre Site and Facility Inspection by Contractor at Outbound Vehicle Clearance Plaza																
A5550	Joint Site and Facility Inspection with Interface Contractor at Outbound Vehicle Clearance Plaza																
Access Dates		<p>24-Jun-17, Access Dates</p> <ul style="list-style-type: none"> ◆ Location:1(PCB (001) Basement)-Deg1 (270d), 10-May-16* ◆ Location:1(PCB (001) ELV Room (Grid Line E3))-Deg1 (270d), 10-May-16* ◆ Location:2(PCB (001) First Floor Main Server Room)-Deg1 (330d), 09-Jul-16* ◆ Location:2(PCB (001) First Floor Main Server Room)-Deg2 (380d), 28-Aug-16* ◆ Location:2(PCB (001) First Floor Main Server Room) - For Server Installation, 28-Aug-16* ◆ Location:2(PCB (001) Ground Floor ELV Room (Grid Line E3)) - Deg1 (330d), 09-Jul-16* ◆ Location:2(PCB (001) Ground Floor DOH Port Health Control Room (Grid Line BD5)) - Deg1 (330d), 09-Jul-16* ◆ Location:2(PCB (001) Ground Floor DOH Port Health Control Room (Grid Line BD5)) - Deg2 (380d), 28-Aug-16* ◆ Location:3(Inbd Cargo Exam Bldg (037) MDF Room)-Deg1 (400d), 17-Sep-16* ◆ Location:3(Inbd Cargo Exam Bldg (037) ELV Room)-Deg1 (400d), 17-Sep-16* ◆ Location:3(Inbd Cargo Exam Bldg (037) Platform Control Room)-Deg1 (400d), 17-Sep-16* ◆ Location:3(Inbd Cargo Exam Bldg (037) Platform Control Room)-Deg2 (500d), 25-Jan-17* ◆ Location:3(Inbd Cargo Exam Bldg (037) Inspector Offices 128,129,130,131,128,129,140,141)-Deg1 (400d), 17-Sep-16* ◆ Location:3(Inbd Cargo Exam Bldg (037) Inspector Offices 128,129,130,131,128,129,140,141)-Deg2 (500d), 25-Jan-17* ◆ Location:3a(Inbd Cargo Exam Bldg ROCARS Room)-Deg1 (-), 17-Sep-16* ◆ Location:3a(Inbd Cargo Exam Bldg ROCARS Room)-Deg2 (480d), 06-Dec-16* ◆ Location:3a(Inbd Cargo Exam Bldg Main Server Room)-Deg1 (-), 17-Sep-16* ◆ Location:3a(Inbd Cargo Exam Bldg Main Server Room)-Deg2 (480d), 06-Dec-16* ◆ Location:3a(Inbd Cargo Exam Bldg Main Server Room) - For Server installation, 06-Dec-16* ◆ Location:4(Outbd Cargo Exam Bldg (023))-Deg1 (530d), 25-Jan-17* ◆ Location:4(Outbd Cargo Exam Bldg (023))-Deg2 (680d), 24-Jun-17* ◆ Location:4a(Outbd Cargo Exam Bldg (023))-Deg1 (-), 25-Jan-17* 															

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

- █ Actual Level of Effort
- █ Actual Work
- █ Remaining Work
- █ Critical Remaining Work
- ◆ Milestone
- ▾ summary

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



Date	Revision	Checked	Approved
14-Nov-16	Rev: 0	WC	LC

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	Q4	Q1	Q2					
A1162	Location 4a(Outbd Cargo Exam Bldg (023))-Deg2 (630d)																										
A1170	Location 5(Common Utility Enclosure & Staff Subway)-Deg1 (320d)																										
A1180	Location 5(Common Utility Enclosure & Staff Subway)-Deg2 (-)																										
A1190	Location 6(Common Utility Enclosure & Staff Subway)-Deg1 (400d)																										
A1200	Location 6(Common Utility Enclosure & Staff Subway)-Deg2 (-)																										
A1210	Location 7(Common Utility Enclosure & Staff Subway)-Deg1 (270d)																										
A1230	Location 8(Inbd Private Car Annex (025))-Deg1 (430d)																										
A1240	Location 8(Inbd Private Car Annex (025))-Deg2 (580d)																										
A1241	Location 8(Inbd Private Car Annex (025) Canopy)-Deg1 (430d)																										
A1242	Location 8(Inbd Private Car Annex (025) Canopy)-Deg2 (580d)																										
A1250	Location 9(Outbd Private Car Annex (032))-Deg1 (520d)																										
A1260	Location 9(Outbd Private Car Annex (032))-Deg2 (660d)																										
A1261	Location 9(Outbd Private Car Annex (032) Canopy)-Deg1 (520d)																										
A1262	Location 9(Outbd Private Car Annex (032) Canopy)-Deg2 (660d)																										
A1270	Location 10(Shuttle Bus Kiosks (006))-Deg1 (480d)																										
A1280	Location 10(Shuttle Bus Kiosks (006))-Deg2 (550d)																										
A1281	Location 10(Shuttle Bus Kiosks (006) Canopy)-Deg1 (480d)																										
A1282	Location 10(Shuttle Bus Kiosks (006) Canopy)-Deg2 (550d)																										
A1290	Location 11(Outbd Coach Kiosks (009))-Deg1 (400d)																										
A1300	Location 11(Outbd Coach Kiosks (009))-Deg2 (480d)																										
A1301	Location 11(Outbd Coach Kiosks (009) Canopy)-Deg1 (400d)																										
A1302	Location 11(Outbd Coach Kiosks (009) Canopy)-Deg2 (480d)																										
A1303	Location 11(Inbd Coach Kiosks (010))-Deg1 (400d)																										
A1304	Location 11(Inbd Coach Kiosks (010))-Deg2 (480d)																										
A1305	Location 11(Inbd Coach Kiosks (010) Canopy)-Deg1 (400d)																										
A1306	Location 11(Inbd Coach Kiosks (010) Canopy)-Deg2 (480d)																										
A1310	Location 12(Inbd Private Car Kiosks(027))-Deg1 (400d)																										
A1311	Location 12(Inbd Private Car Kiosks(027))-Deg2 (480d)																										
A1312	Location 12(Inbd Private Car Kiosks(027) Canopy)-Deg1 (400d)																										
A1313	Location 12(Inbd Private Car Kiosks(027) Canopy)-Deg2 (480d)																										
A1314	Location 12(Inbd GV Kiosks (028))-Deg1 (400d)																										
A1315	Location 12(Inbd GV Kiosks (028))-Deg2 (480d)																										
A1316	Location 12(Inbd GV Kiosks (028) Canopy)-Deg1 (400d)																										
A1317	Location 12(Inbd GV Kiosks (028) Canopy)-Deg2 (480d)																										
A1318	Location 12(Outbd GV Kiosks (029))-Deg1 (400d)																										
A1319	Location 12(Outbd GV Kiosks (029))-Deg2 (480d)																										
A1320	Location 12(Outbd GV Kiosks (029) Canopy)-Deg1 (400d)																										
A1321	Location 12(Outbd GV Kiosks (029) Canopy)-Deg2 (480d)																										
A1330	Location 13(Outbd Private Car Kiosks (030))-Deg1 (480d)																										
A1340	Location 13(Outbd Private Car Kiosks (030))-Deg2 (550d)																										
A1341	Location 13(Outbd Private Car Kiosks (030) Canopy)-Deg1 (480d)																										
A1342	Location 13(Outbd Private Car Kiosks (030) Canopy)-Deg2 (550d)																										
A1350	Location 14(Future-Outbd/Inbd Private Car Kiosks)-Deg1 (610d)																										
A1370	Location 15(Inbd Traffic Control Kiosk (100))-Deg1 (400d)																										
A1380	Location 15(Inbd Traffic Control Kiosk (100))-Deg2 (480d)																										

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

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

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



Date	Revision	Checked	Approved
14-Nov-16	Rev: 0	WC	LC

Activity ID	Activity Name	2015		2016				2017				2018				2019	
		Q2	Q3	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
A1390	Location 16(Outbd Traffic Control Kiosk (101))-Deg1 (400d)																
A1400	Location 16(Outbd Traffic Control Kiosk (101))-Deg2 (480d)																
A1410	Location 17(Inbd Private Car Exam Bldg(033))-Deg1 (-)																
A1420	Location 17(Inbd Private Car Exam Bldg(033))-Deg2 (550d)																
A1430	Location 18(Outbd Private Car Exam Bldg(024))-Deg1 (-)																
A1440	Location 18(Outbd Private Car Exam Bldg(024))-Deg2 (670d)																
A1450	Location 19(DOH Cargo Clearance Bldg(043))-Deg1 (-)																
A1460	Location 19(DOH Cargo Clearance Bldg(043))-Deg2 (550d)																
A1461	Underground Ducting between Inbd Cargo Exam Bldg (037) and DOH Cargo Clearance Bldg (043) and CUE																
A1462	Underground Ducting between Inbd Cargo Exam Bldg (037) and Inbd Vehicle Clearance Plaza																
A1463	Underground Ducting between CUE and Outbd Car Exam Bldg (023)																
A1464	Underground Ducting Between Outbd Cargo Exam Bldg (023) and Outbd Vehicle Clearance Plaza																
A1465	Underground Ducting between CUE and Outbd Vehicle Clearance Plaza																
A1466	Underground Ducting between CUE and Inbd P. Car Annex (025) and Shuttle Bus Kiosks (006)																
A1467	Underground Ducting between PCB(001) and Inbd Coach Kiosks(010)																
A1468	Underground Ducting between CUE and Outbd PCA (032)																
A1478	Inbound Vehicle Clearance Plaza (Assume same as Location 3)																
A1488	Outbound Vehicle Clearance Plaza (Assume same as Location 4 degree 1 + 51 day)																
Interfaces Provisions																	
A7000	Inbound VID foundation and mounting structure (assume same as Access date of Inbound Vehicle Clearance Plaza)																
A7010	Inbound VTS foundation and mounting poles (assume same as Access date of Inbound Vehicle Clearance Plaza)																
A7020	Inbound TLS foundation and mounting poles (assume same as Access date of Inbound Vehicle Clearance Plaza)																
A7030	Outbound VID foundation and mounting structure (assume same as Access date of Outbound Vehicle Clearance Plaza)																
A7040	Outbound VTS foundation and mounting poles (assume same as Access date of Outbound Vehicle Clearance Plaza)																
A7050	Outbound TLS foundation and mounting poles (assume same as Access date of Outbound Vehicle Clearance Plaza)																
WA4 Site Erection & Servicing																	
A1740	Possession of Site																
A1750	Method Statement & Drawing																
A1760	Place Order to prepare materials																
A1770	Review, revise and approve method statement																
A1780	Equipment mobilization and construction material delivered to the site																
A1790	Set up the alignment and level of the u-channel																
A1800	Trial pit excavation																
A1801	Excavation for chain-link fence footing																
A4540	Underground Utility detection																
A4550	Delivery of asphalt and fencing materials																
A4560	Trimming and leveling soil surface for paving asphalt material																
A4570	Remove the vegetation and lose material on the soil surface by backhoe																
A4580	Set out the alignment and level of the u-channel																

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

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

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



Date	Revision	Checked	Approved
14-Nov-16	Rev: 0	WC	LC

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
A4590	Installation of fencing post along the site boundary																	
A4600	Excavation for underground drainage pipe																	
A4610	Evenly spread the asphalt scrap material by backhoe																	
A4620	Cast concrete for the u-channel and underground drainage pipe																	
A4630	Remove the u-channel framework																	
A4640	Installation of chain-link fencing along the site boundary																	
A4650	Installation of access doors																	
A4660	Excavation for drainage ditch																	
A4670	Cast concrete for the drainage ditch																	
A4680	Compact the asphalt scrap material																	
A4690	Land surveying																	
A4700	Inspection of chain-link fencing and access doors																	
A4710	Testing of drains																	
A4720	Completion of the works																	
Detailed Design Specification																		
A1808	Preliminary System Proposal Submission																	
A1809	Engineer's agreement with preliminary system proposal																	
A1810	Draft Detailed Design Specification (DDS) Submission																	
A1814	Draft Hardware Function Design Specification for Computer system and Network system (HFD)																	
A1815	Draft Software Function Design Specification for Computer system and Network system (SFD)																	
A1820	Engineer's Review and Approval for Draft Detailed Design Specification (DDS)																	
A1823	Engineer's Review and Approval for Draft Hardware FDS for Computer system and Network system (HFD)																	
A1824	Engineer's Review and Approval for Draft Software FDS for Computer system and Network system (SFD)																	
A1829	Interface Requirements for CED (LBS, CED IT Server, Metro-Ethernet) and IMMD (AVCS)																	
A1830	Final DDS Submission (AVCSS,VTS,VIDS)(Phase 1/Section I)																	
A1831	Development of System Security Plan																	
A1840	Engineer's Review and Approval for Final DDS Submission including System Security Plan (AVCSS)(Phase 1/Section I)																	
A1850	Final DDS Submission (AVCSS)(Phase 2/Section II&III)																	
A1860	Engineer's Review and Approval for DDS Submission (AVCSS)(Phase 2/Section II&III)																	
Construction Design and Management																		
A6920	Construction Health and Safety Plan Submission																	
A6930	Construction Health and Safety Plan reviewed by Engineer																	
Supply/Manufacture Mock-up items																		
A4749	Preparation of Kiosk equipment Mock-up																	
A4750	Installation of Kiosk equipment Mock-up																	
Supply/Manufacture prototypes																		
A2900	Manufacture LED Display Prototype (VID, ODB and XDB)																	
A2910	Manufacture All-In-One Panel Prototype (AIOP)																	
Software Design, Coding and Testing																		

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

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

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



Date	Revision	Checked	Approved
14-Nov-16	Rev: 0	WC	LC

Activity ID	Activity Name	2015		2016			2017				2018				2019	
		Q2	Q3	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
Coding		05-Jan-17, Coding														
A5460	CCS, SURCON, SYSCON, CDBS Development Stage 1	[Red bar]														
A5500	VTS Development Stage 1	[Red bar]														
A5510	VIDS Development Stage 1	[Green bar]														
A5540	CCS, SURCON, SYSCON, CDBS Development Stage 2	[Red bar]														
A5580	VTS Development Stage 2	[Red bar]														
A5590	VIDS Development Stage 2	[Red bar]														
Software System Inetgration		22-May-17, Software System Inetgration														
A5520	Test Plan Documentation Submission	[Red bar]														
A5530	Engineer's Review and Approval for Test Plan Documentation Submission	[Red bar]														
A5600	Software System Integration Test	[Red bar]														
A5630	CCS/SYSCON/SURCON/CDBS/VTS/VIDS Software Enhancement	[Red bar]														
A5640	Software User Acceptance Test (UAT)	[Red bar]														
Prototype & Software Simulation Tests		09-Sep-16, Prototype & Software Simulation Tests														
A1910	Prototype Test Document	[Green bar]														
A2130	Engineer's Approval for Testing Document	[Green bar]														
A2920	CCWS with CDBS, SURCON and SYSCON (Software Simulation/ Software Integration Test)	[Red bar]														
A2930	Vehicle Tracking System (VTS) (Software Simulation/ Software Integration Test)	[Red bar]														
A2950	LED Displays (VID, ODB and XDB)	[Red bar]														
A2960	All-In-One Panel (AIOP)	[Red bar]														
A3020	Prototype Testing Report Submission	[Red bar]														
A4350	Engineer's Approval for Prototype Testing Report	[Red bar]														
Procurement - Phase 1 / Section I		27-Dec-16, Procurement - Phase 1 / Section I														
A3070	Procurement of Equipment for Phase 1/Section I	[Red bar]														
A3080	Procurement of Cable and Accessories for Phase 1 /Section I	[Red bar]														
A3990	Procurement of All Servers and Workstations	[Red bar]														
Supply/Manufacture products for FAT		10-Nov-16, Supply/Manufacture products for FAT														
A2980	Supply/Manufacture LED Display (ODB, VID and XDB) for FAT	[Red bar]														
A2990	Supply/Manufacture All-In-One Panel (AIOP) for FAT	[Red bar]														
A3000	Supply/Manufacture off-the-shelf equipment for FAT	[Red bar]														
Factory Acceptance Test (FAT)		12-Dec-16, Factory Acceptance Test (FAT)														
A2120	FAT Procedure Document	[Red bar]														
A2121	Engineer's Approval for FAT Procedure Document	[Red bar]														
A3050	FAT for Licence Plate Recognition System (LPRS)	[Red bar]														
A3060	FAT for PA/Intercom	[Red bar]														
A3090	FAT for ODB	[Red bar]														
A3100	FAT for XDB	[Red bar]														
A3110	FAT for VID	[Red bar]														
A3120	FAT for Video Management System (VMS)	[Red bar]														
A3130	FAT for Vehicle Tracking System (VTS)	[Red bar]														
A3140	FAT for Communication Network (CMN)	[Red bar]														
A3150	FAT for All-In-One Panel (AIOP)	[Red bar]														
A3160	FAT for AVCSS System Test	[Red bar]														
A4360	FAT Report Submission	[Red bar]														

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

- █ Actual Level of Effort
- █ Actual Work
- █ Remaining Work
- █ Critical Remaining Work
- ◆ Milestone
- ◀ summary

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



Date	Revision	Checked	Approved
14-Nov-16	Rev: 0	WC	LC

Activity ID	Activity Name	2015		2016				2017				2018				2019	
		Q2	Q3	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
A4370	Engineer's Approval for FAT Report Submission																
Supply/Manufacture Equipment		<ul style="list-style-type: none"> Engineer's Approval for FAT Report Submission 10-Feb-17, Supply/Manufacture Equipment Supply/Manufacture LED (ODB, VID and XDB) Display for installation Supply/Manufacture AIOP for installation 															
Delivery and Bench Acceptance Test for Phase 1/ Section I		<ul style="list-style-type: none"> 21-Feb-17, Delivery and Bench Acceptance Test for Phase 1/ Section I Material On-Site for Phase 1/Section I Material Bench Acceptance Test for Phase 1/Section I Cable On-Site for Phase 1/Section I AIOP On-Site for Phase 1/Section I AIOP Bench Acceptance Test for Phase 1/Section I LED (ODB, VID and XDB) On-Site for Phase 1/Section I LED (ODB, VID and XDB) Bench Acceptance Test for Phase 1/Section I 															
Installation - Phase 1 / Section I		<ul style="list-style-type: none"> 29-Jun-17, Installation - Phase 1 / Section I 14-Nov-16, Location 1(PCB,001) Basement Cable Laying and termination at Location 1 and Location 2 14-Nov-16, Location 1(PCB,001) ELV Room (Grid Line E3) Cable Laying and termination at Location 1 and Location 2 14-Nov-16, Location 2(PCB,001) Ground Floor ELV Room (Grid Line E3) Cable Laying and termination at Location 1 and Location 2 30-Mar-17, Location 2(PCB,001) Ground Floor DOH Port Health Control Room (Grid Line BD) Cable Laying and termination at Location 1 and Location 2 Cable Testing Intercom and PA system Installation Intercom and PA system tuning 03-Apr-17, Location 2(PCB,001) First Floor Main Server Room Cable Laying and termination at Location 1 and Location 2 Cable Testing AVCSS Network and Server Installation AVCSS Network and Server Tuning 22-May-17, Location 3(Inbd Cargo Exam Bldg (037) Inspector Offices 128,129,130,131,128,12) Cable Laying and termination in Location 3 and Location 3a AVCSS SURCON WS and 55" LCD Installation VTS WS Installation SURCON, WS Tuning 09-Jan-17, Location 3(Inbd Cargo Exam Bldg,037) ELV Room Cable Laying and termination between Location 3 and CUE 22-May-17, Location 3(Inbd Cargo Exam Bldg (037) Platform Control Room) Cable Laying and termination in Location 3 and Location 3a AVCSS SYSCON WS and 55" TV Wall Installation AVCSS SYSCON WS Tuning 09-Jan-17, Location 3(Inbd Cargo Exam Bldg,037) MDF Room Cable Laying and termination between Location 3 and CUE 22-May-17, Location 3a(Inbd Cargo Exam Bldg,037) ROCARS Room Cable Laying and termination in Location 3 and Location 3a AVCSS SYSCON,SURCON and Intercom Installation 															
Location 1(PCB,001) Basement																	
A3081	Cable Laying and termination at Location 1 and Location 2																
Location 1(PCB,001) ELV Room (Grid Line E3)																	
A3101	Cable Laying and termination at Location 1 and Location 2																
Location 2(PCB,001) Ground Floor ELV Room (Grid Line E3)																	
A3121	Cable Laying and termination at Location 1 and Location 2																
Location 2(PCB,001) Ground Floor DOH Port Health Control Room (Grid Line BD)																	
A2041	Cable Laying and termination at Location 1 and Location 2																
A2042	Cable Testing																
A2043	Intercom and PA system Installation																
A2044	Intercom and PA system tuning																
Location 2(PCB,001) First Floor Main Server Room																	
A2001	Cable Laying and termination at Location 1 and Location 2																
A2002	Cable Testing																
A2003	AVCSS Network and Server Installation																
A2004	AVCSS Network and Server Tuning																
Location 3(Inbd Cargo Exam Bldg (037) Inspector Offices 128,129,130,131,128,12)																	
A3241	Cable Laying and termination in Location 3 and Location 3a																
A3242	AVCSS SURCON WS and 55" LCD Installation																
A3243	VTS WS Installation																
A3245	SURCON, WS Tuning																
Location 3(Inbd Cargo Exam Bldg (037) ELV Room)																	
A3210	Cable Laying and termination between Location 3 and CUE																
Location 3(Inbd Cargo Exam Bldg (037) Platform Control Room)																	
A2071	Cable Laying and termination in Location 3 and Location 3a																
A2072	AVCSS SYSCON WS and 55" TV Wall Installation																
A2074	AVCSS SYSCON WS Tuning																
Location 3(Inbd Cargo Exam Bldg (037) MDF Room)																	
A3190	Cable Laying and termination between Location 3 and CUE																
Location 3a(Inbd Cargo Exam Bldg (037) ROCARS Room)																	
A2091	Cable Laying and termination in Location 3 and Location 3a																
A2092	AVCSS SYSCON,SURCON and Intercom Installation																

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

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

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



Date	Revision	Checked	Approved
14-Nov-16	Rev: 0	WC	LC

Activity ID	Activity Name	2015		2016				2017				2018				2019	
		Q2	Q3	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
A2093	VTS WS Installation																
A2094	VID WS Installation																
A2096	SURCON, SYSCON, WS Tuning																
Location 3a(Inbd Cargo Exam Bldg Main Server Room)																	
A3330	Cable Laying and termination in Location 3 and Location 3a																
A3340	AVCSS Server Installation																
A3350	VTS Server Installation																
A3360	Servers Tuning																
Location 4(Outbd Cargo Exam Bldg (023) MDF Room)																	
A3410	Cable Laying and termination between CUE and Location 4																
Location 4 and 4a(Outbd Cargo Exam Bldg (023) ROCARS Room)																	
A3370	Cable Laying and termination in Location 4 and 4a																
A3380	AVCSS SYSCON, SURCON and Intercom Installation																
A3390	VTS WS Installation																
A3400	SYSCON, SURCON, WS Tuning																
Location 5(Common Utility Enclosure & Staff Subway)																	
A3430	Cable Laying between Location 5 and Location 7																
A3440	Cable Laying between Location 5 and Location 6																
A3480	ODB Switch Installation at EL Room 2-7																
Location 6(Common Utility Enclosure & Staff Subway)																	
A3450	Cable Laying between Location 5 and Location 6																
A3490	ODB Switch Installation at EL Room 8-9,11-12																
Location 7(Common Utility Enclosure & Staff Subway)																	
A3470	Cable Laying between Location 5 and Location 7																
Location 12(Inbd Private Car Kiosks,GV Kiosks (027,028,029))																	
Inbd Private Car Kiosks(027) - 9 nos (Phase 1)																	
A2452	Cable Containment in Kiosks																
A2453	Cable Laying and termination																
A2454	Cable Splicing, Testing and Labeling																
A2460	AVCSS/DOH/MOM Kiosk Equipment Installation (9 nos)																
A2470	ODB & XDB installation (9 nos)																
A4380	Inbd Private Car Kiosk Installation Complete																
Inbd Goods Vehicle Kiosks(028) - 5 nos (Phase 1)																	
A2532	Cable Containment in Kiosks																
A2533	Cable Laying and termination																
A2534	Cable Splicing, Testing and Labeling																
A2540	AVCSS/DOH/MOM Kiosk Equipment Installation (5 nos)																
A2550	AIOP Installation (5 nos)																
A2560	ODB & XDB installation (5 nos)																
A4390	Inbd Goods Vehicle Kiosks Installation Complete																
Outbd Goods Vehicle Kiosks(029) - 5 nos (Phase 1)																	
A2572	Cable Containment in Kiosks																
A2573	Cable Laying and termination																
A2574	Cable Splicing, Testing and Labeling																
A2580	AVCSS/DOH/MOM Kiosk Equipment Installation (5 nos)																

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

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

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



Date	Revision	Checked	Approved
14-Nov-16	Rev: 0	WC	LC

Activity ID	Activity Name	2015		2016				2017				2018				2019	
		Q2	Q3	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
A2590	AIOP Installation (5 nos)																
A2600	ODB & XDB installation (5 nos)																
A4400	Outbd Goods Vehicle Kiosks Installation Complete																
Location 13(Outbd Private Car Kiosks (030)) - 9 nos (Phase 1)																	
A3582	Cable Containment in Kiosks																
A3583	Cable Laying and termination																
A3584	Cable Splicing, Testing and Labeling																
A3590	AVCSS/DOH/MOM Kiosk Equipment Installation (9 nos)																
A3600	ODB & XDB installation (9 nos)																
A4410	Outbd Private Car Kiosks Installation Complete																
Location 14(Future-Outbd/Inbd Private Car Kiosks) - 6+6 nos																	
A2441	Cable Laying and termination at ELV Room in CUE																
Location 15(Inbd Traffic Control Kiosk (100))																	
A3651	Cable Laying and termination																
A3652	AVCSS SYSCON, SURCON Installation																
A3660	VTS WS and 55" LCD Installation																
A3670	SYSCON, SURCON, WS Tuning																
Location 16(Outbd Traffic Control Kiosk (101))																	
A3701	Cable Laying and termination																
A3702	AVCSS SYSCON, SURCON Installation																
A3710	VTS WS and 55" LCD Installation																
Location 17(Inbd Private Car Exam Bldg(033) Operational Office)																	
A3750	Cable Laying and termination																
A3760	AVCSS SURCON and 55" LCD Installation																
A3770	SURCON Tuning																
Location 18 (Outbd Private Car Exam Bldg(024) Operational Office)																	
A3780	Cable Laying and termination																
A3790	AVCSS SURCON and 55" LCD Installation																
Location 19 (DOH Cargo Clearance Bldg(043))																	
A2111	Cable Laying and termination between Location 19 and CUE																
A2112	Cable Laying in Location 19																
A2113	PA and Intercom Installation																
A2123	PA and Intercom Tuning																
Inbd Vehicle Clearance Plaza - 8 nos VID, 7 nos VTS, 4 nos TLS																	
A4050	Inbound VID cabling from pillar box to VID field equipment																
A4052	Inbound VTS cabling from pillar box to VTS field equipment																
A4054	Inbound TLS cabling from pillar box to TLS field equipment																
A4060	Inbound VID field equipment installation (8 VID)																
A4062	Inbound VTS field equipment installation (4 RFID + 3 Cameras)																
A4064	Inbound TLS field equipment installation (4 TLS)																
A4066	Inbound VID, VTS and TLS field equipment tuning																
Outbd Vehicle Clearance Plaza - 8 nos VID, 6 nos VTS, 4 nos TLS																	
A4110	Outbound VID cabling from pillar box to VID field equipment																
A4120	Outbound VTS cabling from pillar box to VTS field equipment																
A4130	Outbound TLS cabling from pillar box to TLS field equipment																

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

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

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



Date	Revision	Checked	Approved
14-Nov-16	Rev: 0	WC	LC

Activity ID	Activity Name	2015		2016				2017				2018				2019	
		Q2	Q3	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
A4140	Outbound VID field equipment installation (8 VID)																
A4150	Outbound VTS field equipment installation (3 RFID + 3 Cameras)																
A4170	Outbound TLS field equipment installation (4 TLS)																
A4180	Outbound VID, VTS and TLS field equipment tuning																
Underground Ducting between Inbd Cargo Exam Bldg (037) and CUE																	
A3810	Cable Laying and termination (note: Access Date by C03)																
Underground Ducting between Inbd Cargo Exam Bldg (037) and Inbd Vehicle Clea																	
A3830	Cable Laying and termination (note: Access Date by C03)																
Underground Ducting between CUE and Outbd Car Exam Bldg (023)																	
A3850	Cable Laying and termination (note: Access Date by C03)																
Underground Ducting Between Outbd Cargo Exam Bldg (023) and Outbd Vehicle C																	
A3870	Cable Laying and termination (note: Access Date by C03)																
Underground Ducting between CUE and Outbd Vehicle Clearance Plaza																	
A3890	Cable Laying and termination (note: Access Date by C03)																
On-Site Test and Commissioning (Phase 1 / Section I)																	
A2150	Testing & Commissioning Documents Submission (8 weeks before Testings carried out)																
A2151	Enginocr Approval for T&C Document																
A2152	Joint Site Inspection for Permanent Power/Tele-communication for Initial on-site testing																
A2153	Initial on-site Testing & Commissioning																
Site Acceptance Test (Phase 1 / Section I)																	
A6601	Interface Readiness CED(LBS, CED IT, Metro-Ethernet) and IMMD (AVS)																
A6602	SAT for AVCSS																
A6603	SAT for Location 18 (AVCSS SURCON and 55" LCD)																
A6630	SAT Test Document Submission																
A6640	Software Manual Documentations Submission																
Security Risk Assessment and Audit																	
A6800	SRAA (Assessment)																
A6810	Fix per SRAA Assessment																
A6820	SRAA Audit																
Operability Period Test (Phase 1 / Section I)																	
A5610	Joint Site Inspection for utilities, telecom connection and metro ethernet for OPT																
A5620	Operability Period Test (OPT) Phase 1																
A5650	Operability Period Test (OPT) Phase 2																
Completion (Phase 1 /Section I)																	
A2230	AVCSS - Certificate of Completion (Phase 1/Section I)																
A2231	Certificate of Completion Approval by Engineer																
Training and Document (Phase 1 /Section I)																	
A2180	Training Materials & Documentation Submission																
A2190	Operation and Maintenance Training																
Operation (Phase 1 /Section I)																	
A2240	Site Operation (Phase 1/Section I)																
Engineering Support for Phase 1 / Section I																	

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

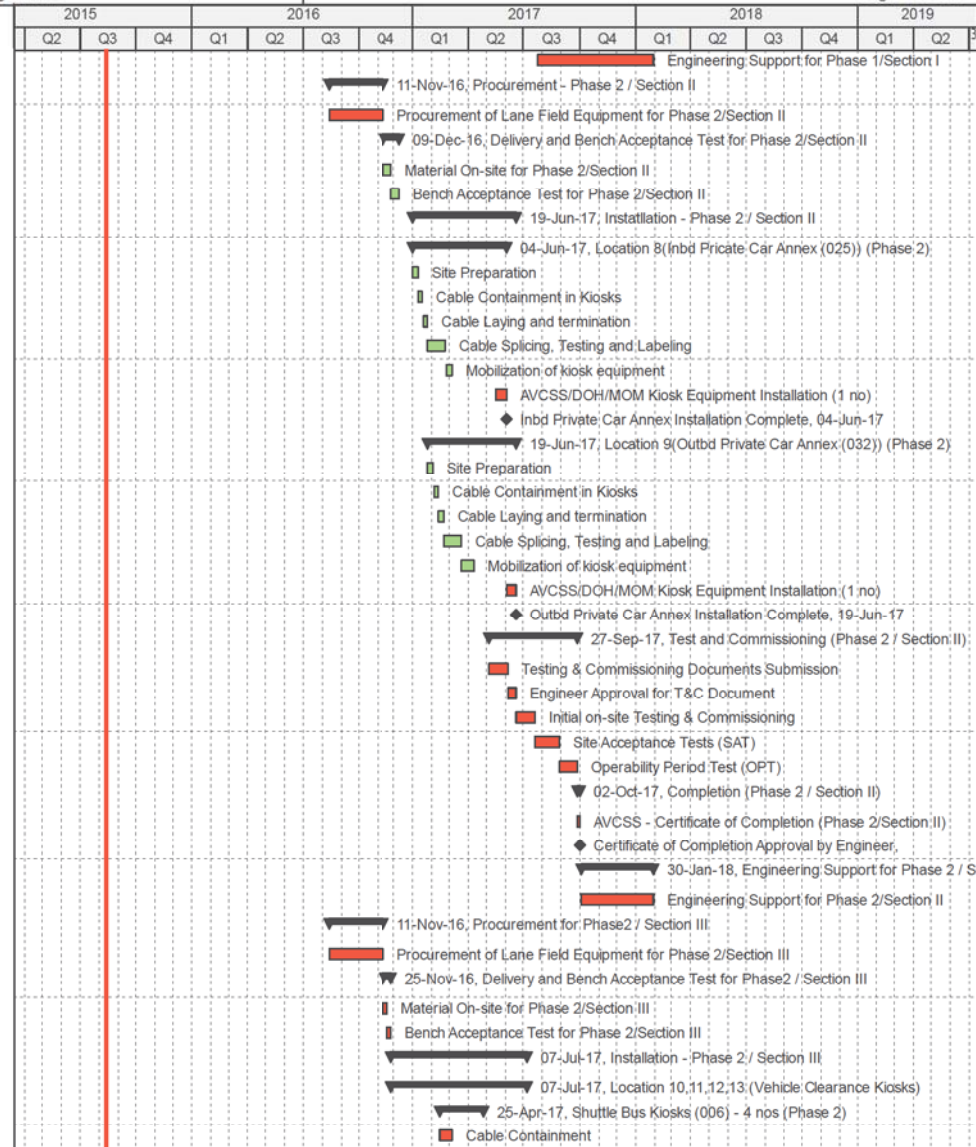
- Actual Level of Effort
- Actual Work
- Remaining Work
- Critical Remaining Work
- Milestone
- summary

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



Date	Revision	Checked	Approved
14-Nov-16	Rev: 0	WC	LC

Activity ID	Activity Name
A4420	Engineering Support for Phase 1/Section I
Procurement - Phase 2 / Section II	
A3980	Procurement of Lane Field Equipment for Phase 2/Section II
Delivery and Bench Acceptance Test for Phase 2/Section II	
A6760	Material On-site for Phase 2/Section II
A6770	Bench Acceptance Test for Phase 2/Section II
Installation - Phase 2 / Section II	
Location 8 (Inbd Private Car Annex (025)) (Phase 2)	
A4090	Site Preparation
A4091	Cable Containment in Kiosks
A4093	Cable Laying and termination
A4094	Cable Splicing, Testing and Labeling
A4096	Mobilization of kiosk equipment
A4100	AVCSS/DOH/MOM Kiosk Equipment Installation (1 no)
A4430	Inbd Private Car Annex Installation Complete
Location 9 (Outbd Private Car Annex (032)) (Phase 2)	
A4151	Site Preparation
A4152	Cable Containment in Kiosks
A4153	Cable Laying and termination
A4154	Cable Splicing, Testing and Labeling
A4156	Mobilization of kiosk equipment
A4160	AVCSS/DOH/MOM Kiosk Equipment Installation (1 no)
A4440	Outbd Private Car Annex Installation Complete
Test and Commissioning (Phase 2 / Section II)	
A2290	Testing & Commissioning Documents Submission
A2291	Engineer Approval for T&C Document
A2292	Initial on-site Testing & Commissioning
A2300	Site Acceptance Tests (SAT)
A2310	Operability Period Test (OPT)
Completion (Phase 2 / Section II)	
A2320	AVCSS - Certificate of Completion (Phase 2/Section II)
A4320	Certificate of Completion Approval by Engineer
Engineering Support for Phase 2 / Section II	
A4450	Engineering Support for Phase 2/Section II
Procurement for Phase2 / Section III	
A4000	Procurement of Lane Field Equipment for Phase 2/Section III
Delivery and Bench Acceptance Test for Phase2 / Section III	
A6780	Material On-site for Phase 2/Section III
A6790	Bench Acceptance Test for Phase 2/Section III
Installation - Phase 2 / Section III	
Location 10,11,12,13 (Vehicle Clearance Kiosks)	
Shuttle Bus Kiosks (006) - 4 nos (Phase 2)	
A2622	Cable Containment



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

- █ Actual Level of Effort
- █ Actual Work
- █ Remaining Work
- █ Critical Remaining Work
- ◆ Milestone
- ▾ summary

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



Date	Revision	Checked	Approved
14-Nov-16	Rev: 0	WC	LC

Activity ID	Activity Name	2015		2016				2017				2018				2019	
		Q2	Q3	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
A2623	Cable Laying and termination																
A2630	AVCSS/DOH/MOM Kiosk Equipment Installation (4 nos)																
A4460	Shuttle Bus Kiosks Installation Complete																
Outbd Coach Kiosks (009) - 4 nos (Phase 2)																	
A2662	Cable Containment																
A2663	Cable Laying and termination																
A2670	AVCSS/DOH/MOM Kiosk Equipment Installation (4 nos)																
A4470	Outbd Coach Kiosks Installation Complete																
Inbd Private Car Kiosks (027) - 12 nos (Phase 2)																	
A2742	Cable Containment																
A2743	Cable Laying and termination																
A2744	Cable Splicing, Testing and Labeling																
A2750	AVCSS/DOH/MOM Kiosk Equipment Installation (12 nos)																
A2760	Kiosk Equipment Configuration (12 nos)																
A4490	Inbd Private Car Kiosks Installation Complete																
Outbd Private Car Kiosks (030) - 12 nos (Phase 2)																	
A2782	Cable Containment																
A2783	Cable Laying and termination																
A2784	Cable Splicing, Testing and Labeling																
A2790	AVCSS/DOH/MOM Kiosk Equipment Installation (12 nos)																
A4500	Outbd Private Car Kiosks Installation Complete																
Inbd Goods Vehicle Kiosks (028) - 3 nos (Phase 2)																	
A2822	Cable Containment																
A2823	Cable Laying and termination																
A2825	Kiosk Equipment Configuration (3 nos)																
A2830	AVCSS/DOH/MOM Kiosk Equipment Installation (3 nos)																
A4510	Inbd Goods Vehicle Kiosks Installation Complete																
Outbd Goods Vehicle Kiosks (029) - 3 nos (Phase 2)																	
A2862	Cable Containment																
A2863	Cable Laying and termination																
A2865	Cable Splicing, Testing and Labeling																
A2870	AVCSS/DOH/MOM Kiosk Equipment Installation (3 nos)																
A4520	Outbd Goods Vehicle Kiosks Installation Complete																
Inbd Coach Kiosks (010) - 4 nos (Phase 2)																	
A2702	Cable Containment																
A2703	Cable Laying and termination																
A2705	Kiosk Equipment Configuration (4 nos)																
A2710	AVCSS/DOH/MOM Kiosk Equipment Installation (2 nos)																
A2720	AVCSS/DOH/MOM Kiosk Equipment Installation (2 nos)																
A4480	Inbd Coach Kiosks Installation Complete																
Underground Ducting between CUE and Shuttle Bus Kiosk (006)																	
A3970	Cable Laying and termination (note: Access Date by C03)																
Underground Ducting between PCB(001) and Inbd Coach Kiosks(010)																	
A3930	Cable Laying and termination (note: Access Date by C03)																
Test and Commissioning (Phase 2 / Section III)																	

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

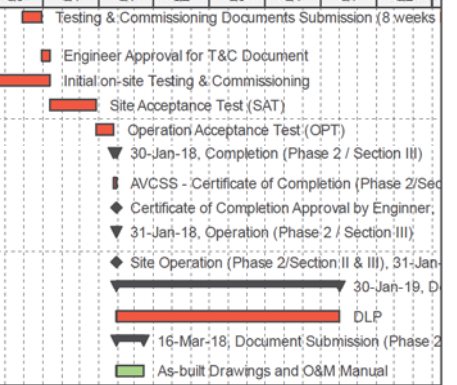
- Actual Level of Effort
- Actual Work
- Remaining Work
- Critical Remaining Work
- ◆ Milestone
- ◀ summary

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



Date	Revision	Checked	Approved
14-Nov-16	Rev: 0	WC	LC

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
A2370	Testing & Commissioning Documents Submission (8 weeks before Testings carried out)																	
A2371	Engineer Approval for T&C Document																	
A2373	Initial on-site Testing & Commissioning																	
A2380	Site Acceptance Test (SAT)																	
A2390	Operation Acceptance Test (OPT)																	
Completion (Phase 2 / Section III)																		
A2400	AVCSS - Certificate of Completion (Phase 2/Section III)																	
A4330	Certificate of Completion Approval by Engineer																	
Operation (Phase 2 / Section III)																		
A2420	Site Operation (Phase 2/Section II & III)																	
Defect Liability Period (DLP)																		
A2430	DLP																	
Document Submission (Phase 2 / Section III)																		
A4340	As-built Drawings and O&M Manual																	



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

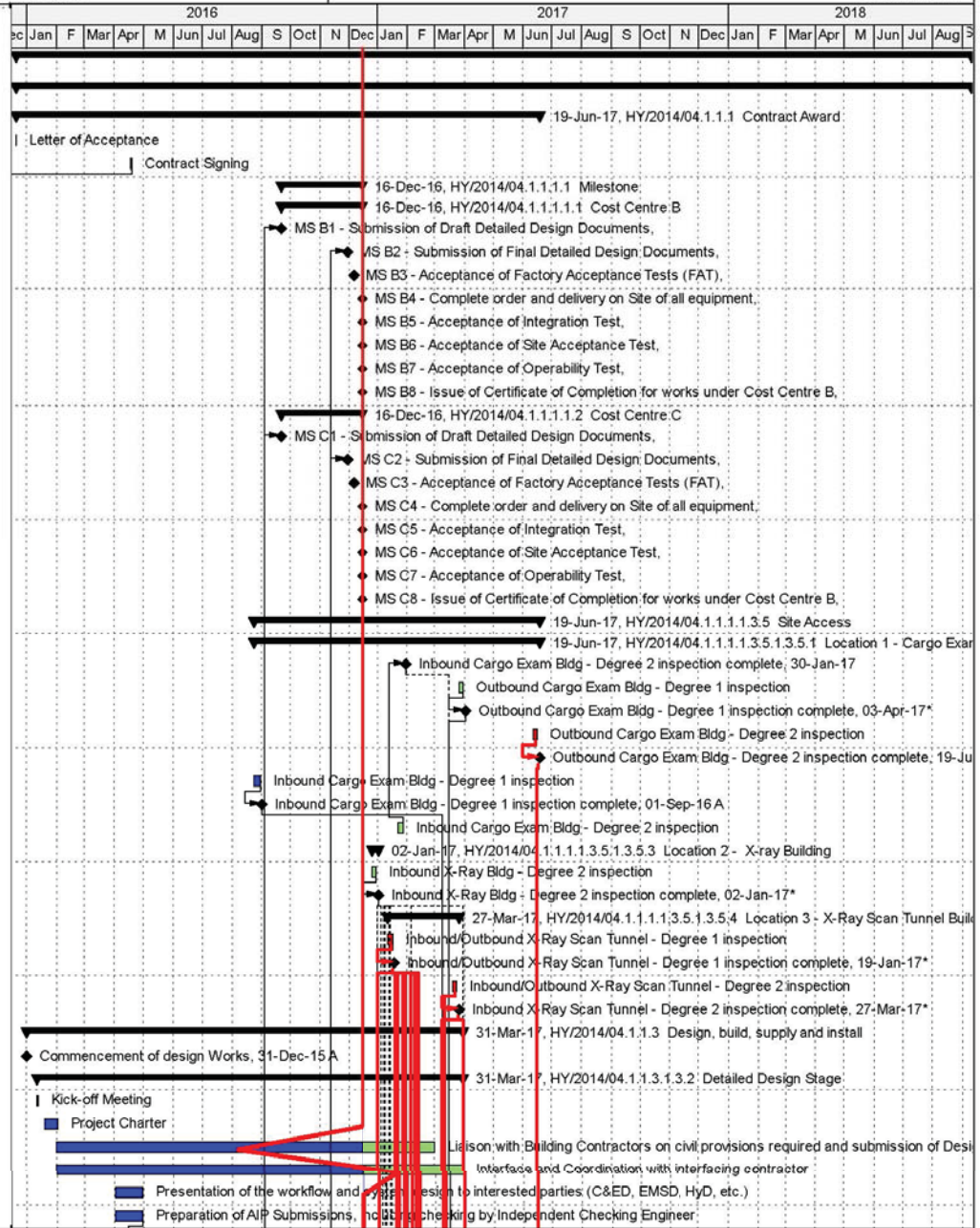
- Actual Level of Effort
- Actual Work
- Remaining Work
- Critical Remaining Work
- Milestone
- summary

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



Date	Revision	Checked	Approved
14-Nov-16	Rev: 0	WC	LC

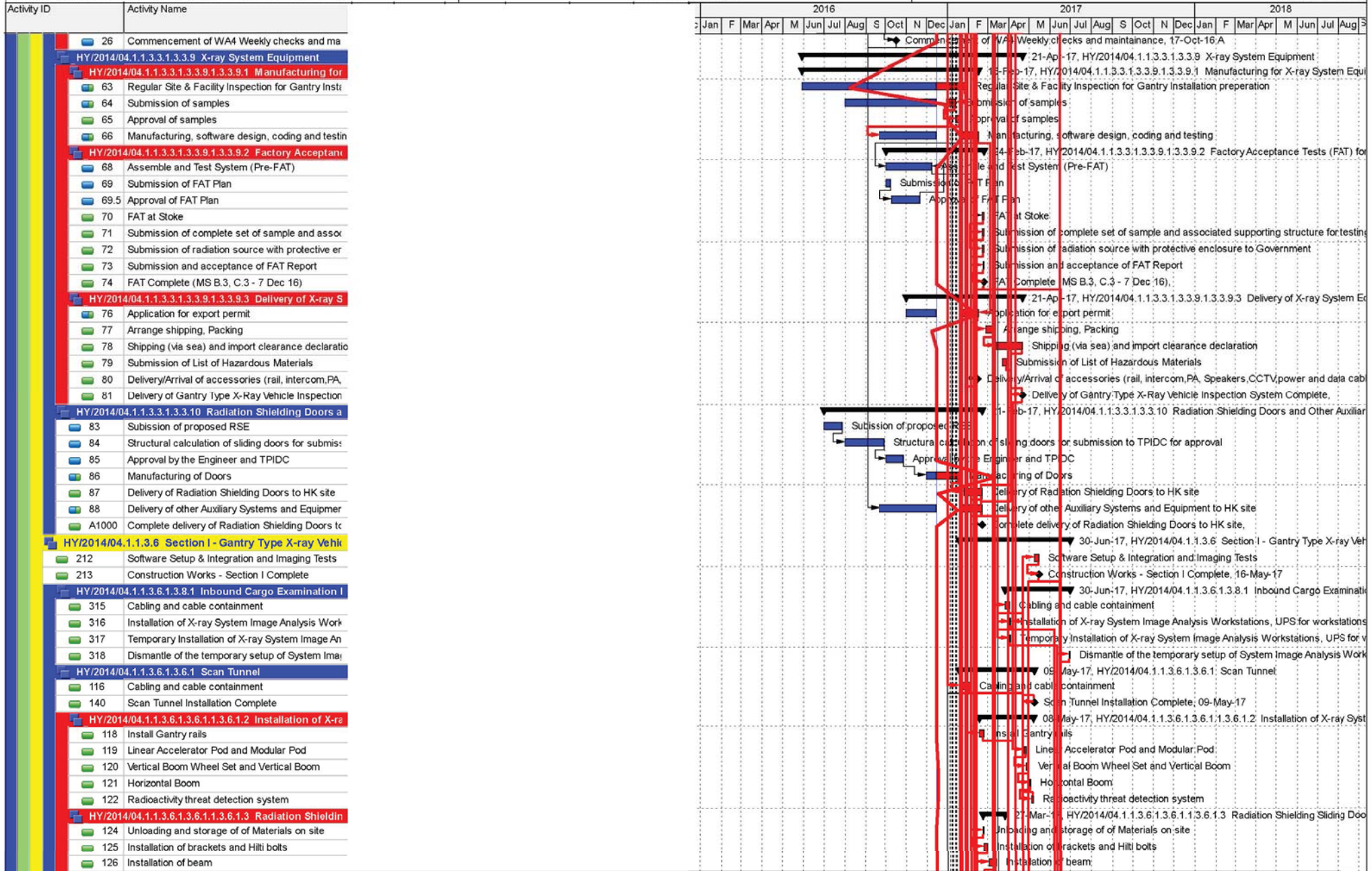
Activity ID	Activity Name
HY/2014/04 Hong Kong-Zhuhai-Macao Brid	
HY/2014/04.1 Contract No. HY/2014/04 Hong	
HY/2014/04.1.1.1 Contract Award	
3	Letter of Acceptance
4	Contract Signing
HY/2014/04.1.1.1.1 Milestone	
HY/2014/04.1.1.1.1.1 Cost Centre B	
A1C	MS B1 - Submission of Draft Detailed Design Do
A1C	MS B2 - Submission of Final Detailed Design Do
A1C	MS B3 - Acceptance of Factory Acceptance Test
A1C	MS B4 - Complete order and delivery on Site of a
A1C	MS B5 - Acceptance of Integration Test
A1C	MS B6 - Acceptance of Site Acceptance Test
A1C	MS B7 - Acceptance of Operability Test
A1C	MS B8 - Issue of Certificate of Completion for wc
HY/2014/04.1.1.1.1.2 Cost Centre C	
A1C	MS C1 - Submission of Draft Detailed Design Do
A11	MS C2 - Submission of Final Detailed Design Do
A11	MS C3 - Acceptance of Factory Acceptance Tes
A11	MS C4 - Complete order and delivery on Site of a
A11	MS C5 - Acceptance of Integration Test
A11	MS C6 - Acceptance of Site Acceptance Test
A11	MS C7 - Acceptance of Operability Test
A11	MS C8 - Issue of Certificate of Completion for wc
HY/2014/04.1.1.1.3.5 Site Access	
HY/2014/04.1.1.1.3.5.1 Location 1 - Cargo Exam	
100	Inbound Cargo Exam Bldg - Degree 2 inspection
102	Outbound Cargo Exam Bldg - Degree 1 inspection
103	Outbound Cargo Exam Bldg - Degree 1 inspectio
104	Outbound Cargo Exam Bldg - Degree 2 inspection
105	Outbound Cargo Exam Bldg - Degree 2 inspectio
97	Inbound Cargo Exam Bldg - Degree 1 inspection
98	Inbound Cargo Exam Bldg - Degree 1 inspection
99	Inbound Cargo Exam Bldg - Degree 2 inspection
HY/2014/04.1.1.1.3.5.1.3.5.3 Location 2 - X-ray Buildi	
107	Inbound X-Ray Bldg - Degree 2 inspection
108	Inbound X-Ray Bldg - Degree 2 inspection comp
HY/2014/04.1.1.1.3.5.1.3.5.4 Location 3 - X-Ray Scar	
110	Inbound/Outbound X-Ray Scan Tunnel - Degree
111	Inbound/Outbound X-Ray Scan Tunnel - Degree
112	Inbound/Outbound X-Ray Scan Tunnel - Degree
113	Inbound X-Ray Scan Tunnel - Degree 2 inspectio
HY/2014/04.1.1.3 Design, build, supply and install	
28	Commencement of design Works
HY/2014/04.1.1.3.1.3.2 Detailed Design Stage	
30	Kick-off Meeting
31	Project Charter
32	Liaison with Building Contractors on civil provisio
33	Interface and Coordination with interfacing contr
35	Presentation of the workflow and system design
36	Preparation of AIP Submissions, including checki



Activity ID	Activity Name
37	Submission of AIP Documents
38	Comment by the Engineer
39	Preparation and Re-submission of AIP Documents
40	Approval by the Engineer
41	AIP Complete
42	Development of man-machine interface (MMI) with prototype of software
51	Detailed Design Stage Complete (MS B.1, C.1 - 22 Sep-16)
HY/2014/04.1.1.3.1.3.2.1.3.2.7 Detailed Design Approval Check (DDA)	
44	Preparation of DDA Submissions
45	Submission of DDA Documents (Part1)
46	Submission of DDA Documents (Part2)
47	Receive comment and approval of DDAs by the Engineer
48	Provision to re-submit DDA volumes if required
49	Approval of DDA volumes by the Engineer
50	DDA Complete (MS B.2, C.2 - 22 Oct 16)
HY/2014/04.1.1.3.1.3.2.1.3.4 Interfaces	
91	interfaces for building 053 agreed
92	interfaces for building 054 agreed
93	interfaces for building 058 agreed
94	interfaces for building 059 agreed
HY/2014/04.1.1.3.3 Procurement and Delivery	
53	Generate BOM
54	Pre-Release Long Lead Item BOM
55	Release full BOM
56	Procurement of Long Lead Items (Tungsten)
57	Procurement of Electrical Components
58	Procurement of Gantry fabrications 1
59	Procurement of Gantry Fabrications 2
60	Procure balance of BOM
89	Procurement and Delivery Complete (MS B.4 27 Jan 17)
HY/2014/04.1.1.3.3.1.2 Local contract commencement works	
HY/2014/04.1.1.3.3.1.2.1 Procurement of uniform	
7	Approval for uniform design
8	Procurement of uniforms
9	Issue uniform to staff
HY/2014/04.1.1.3.3.1.2.2 Procurement of car	
11	Approval for car specifications
12	lead time for car preparation
13	Delivery of car
HY/2014/04.1.1.3.3.1.2.2.3 Procurement of Document Management System	
15	Approval for specifications of Document Management System
16	Procurement and delivery
17	Scope Document management System
HY/2014/04.1.1.3.3.1.2.1.2.4 WA 4 Activities	
19	Site Survey With Contractor for WA4 deliverables
20	Submission and approval of method statement
21	Application for permit from Environmental Protection Department (if required)
22	Procurement and delivery of WA4 Fencing
23	Install WA4 Fencing
24	Procurement activity for WA4 Concrete/Tarmac
25	Lay WA4 Concrete/Tarmac

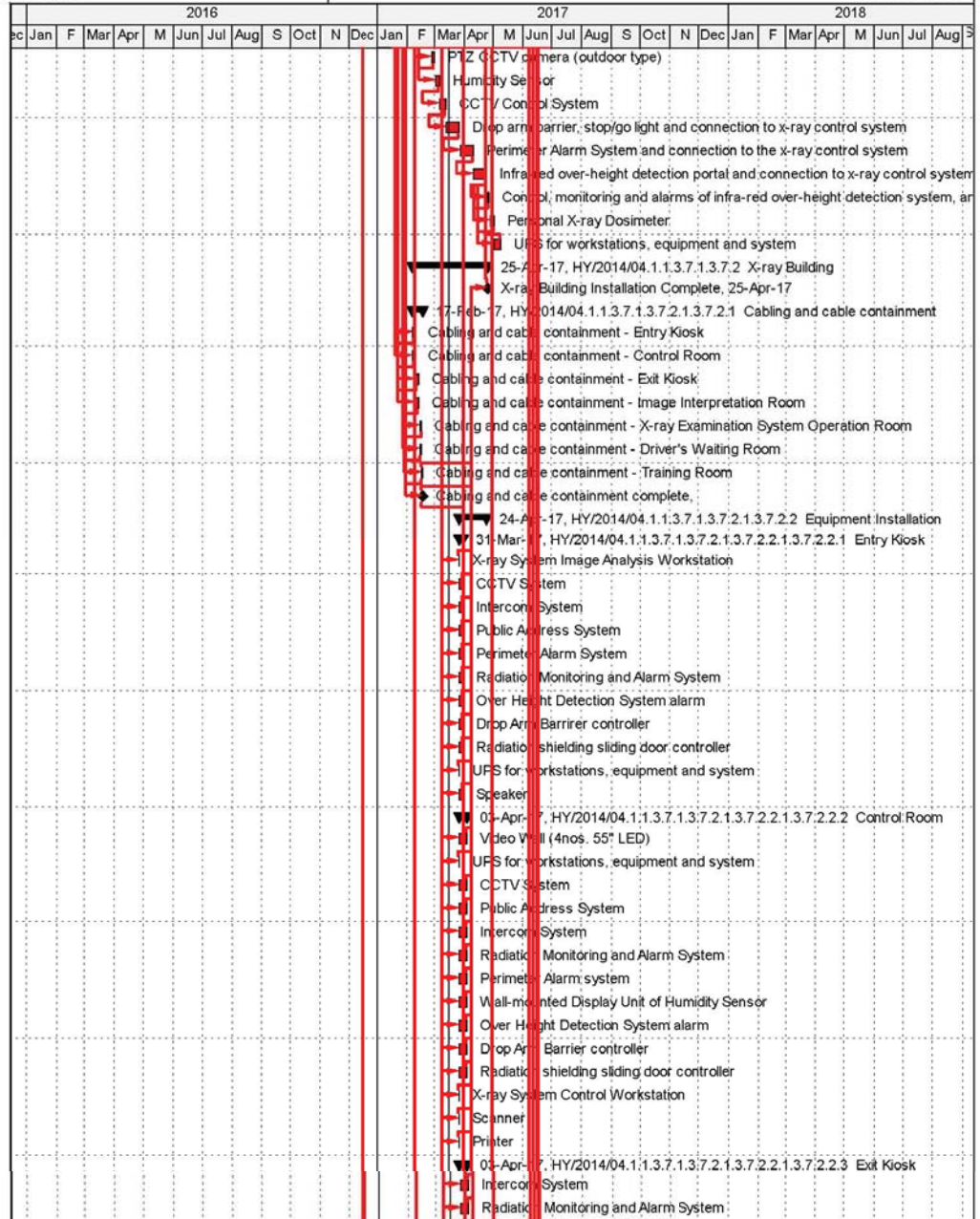


■ Actual Level of Effort ■ Remaining Work ◆◆ Milestone
■ Actual Work ■ Critical Remaining Work ▼ summary

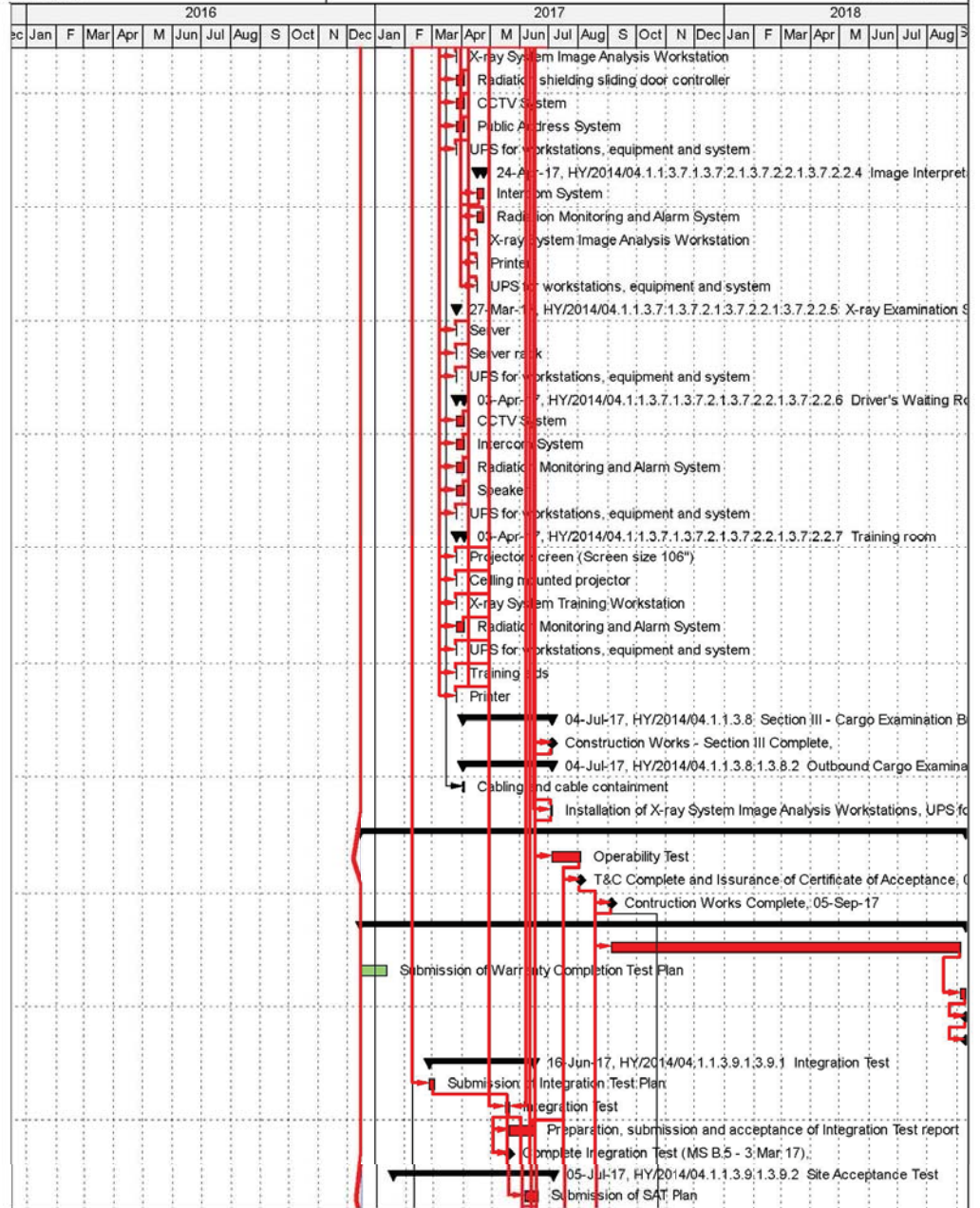


■ Actual Level of Effort ■ Remaining Work ◆ Milestone
■ Actual Work ■ Critical Remaining Work ▼ summary

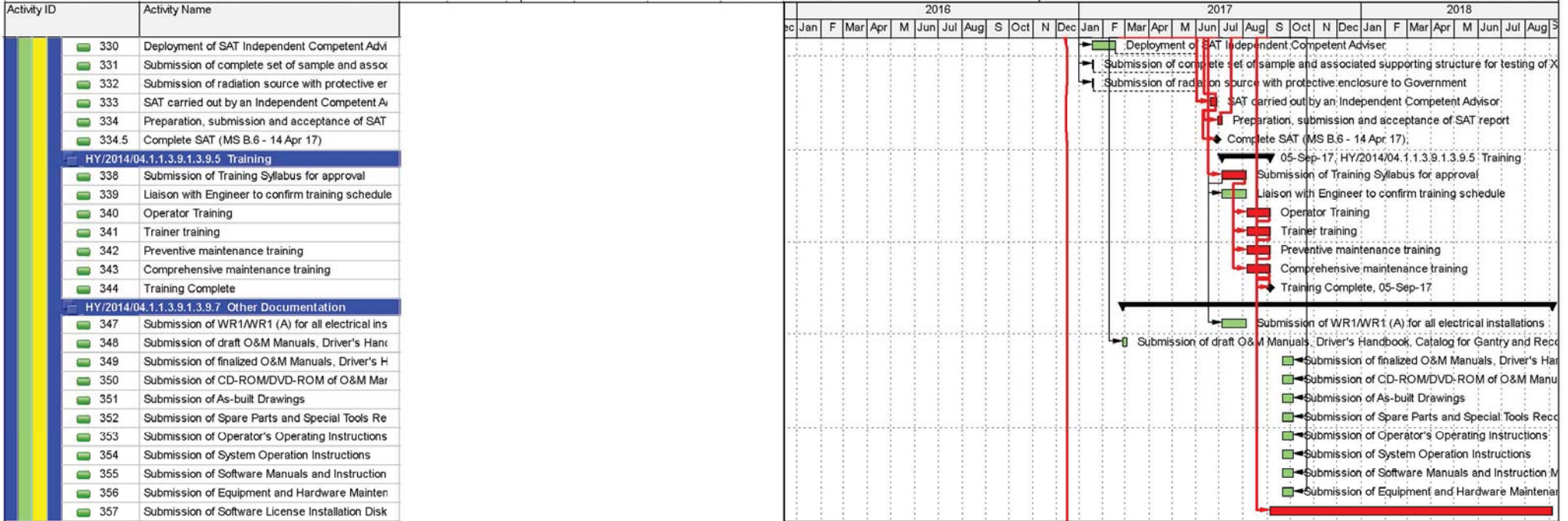
Activity ID	Activity Name
230	PTZ CCTV camera (outdoor type)
231	Humidity Sensor
232	CCTV Control System
233	Drop arm barrier, stop/go light and connection to
234	Perimeter Alarm System and connection to the x-
235	Infra-red over-height detection portal and connec
236	Control, monitoring and alarms of infra-red over-l
237	Personal X-ray Dosimeter
238	UPS for workstations, equipment and system
HY/2014/04.1.1.3.7.1.3.7.2 X-ray Building	
310	X-ray Building Installation Complete
HY/2014/04.1.1.3.7.1.3.7.2.1.3.7.2.1 Cabling and cable	
242	Cabling and cable containment - Entry Kiosk
243	Cabling and cable containment - Control Room
244	Cabling and cable containment - Exit Kiosk
245	Cabling and cable containment - Image Interpret
246	Cabling and cable containment - X-ray Examinati
247	Cabling and cable containment - Driver's Waiting
248	Cabling and cable containment - Training Room
249	Cabling and cable containment complete
HY/2014/04.1.1.3.7.1.3.7.2.1.3.7.2.2 Equipment Installati	
HY/2014/04.1.1.3.7.1.3.7.2.1.3.7.2.2.1 Entry	
	: X-ray System Image Analysis Workstation
	: CCTV System
	: Intercom System
	: Public Address System
	: Perimeter Alarm System
	: Radiation Monitoring and Alarm System
	: Over Height Detection System alarm
	: Drop Arm Barrier controller
	: Radiation shielding sliding door controller
	: UPS for workstations, equipment and system
	: Speaker
HY/2014/04.1.1.3.7.1.3.7.2.1.3.7.2.2.2 Conti	
	: Video Wall (4nos. 55" LED)
	: UPS for workstations, equipment and system
	: CCTV System
	: Public Address System
	: Intercom System
	: Radiation Monitoring and Alarm System
	: Perimeter Alarm system
	: Wall-mounted Display Unit of Humidity Sensor
	: Over Height Detection System alarm
	: Drop Arm Barrier controller
	: Radiation shielding sliding door controller
	: X-ray System Control Workstation
	: Scanner
	: Printer
HY/2014/04.1.1.3.7.1.3.7.2.1.3.7.2.2.3 Exit Kiosk	
	: Intercom System
	: Radiation Monitoring and Alarm System



Activity ID	Activity Name
	X-ray System Image Analysis Workstation
	Radiation shielding sliding door controller
	CCTV System
	Public Address System
	UPS for workstations, equipment and system
HY/2014/04.1.1.3.7.1.3.7.2.1.3.7.2.2.1.3.7.2.2.4	Image Interpretation Workstation
	Intercom System
	Radiation Monitoring and Alarm System
	X-ray System Image Analysis Workstation
	Printer
	UPS for workstations, equipment and system
HY/2014/04.1.1.3.7.1.3.7.2.1.3.7.2.2.1.3.7.2.2.5	X-ray Examination Station
	Server
	Server rack
	UPS for workstations, equipment and system
HY/2014/04.1.1.3.7.1.3.7.2.1.3.7.2.2.1.3.7.2.2.6	Driver's Waiting Room
	CCTV System
	Intercom System
	Radiation Monitoring and Alarm System
	Speaker
	UPS for workstations, equipment and system
HY/2014/04.1.1.3.7.1.3.7.2.1.3.7.2.2.1.3.7.2.2.7	Training room
	Projector screen (Screen size 106")
	Ceiling mounted projector
	X-ray System Training Workstation
	Radiation Monitoring and Alarm System
	UPS for workstations, equipment and system
	Training aids
	Printer
HY/2014/04.1.1.3.8	Section III - Cargo Examination Building
322	Construction Works - Section III Complete
HY/2014/04.1.1.3.8.1.3.8.2	Outbound Cargo Examination Room
320	Cabling and cable containment
321	Installation of X-ray System Image Analysis Workstations, UPS for workstations, equipment and system
HY/2014/04.1.1.3.9	On-Site Testing & Commissioning
335	Operability Test
336	T&C Complete and Issurance of Certificate of Acceptance, Commissioning
345	Construction Works Complete
HY/2014/04.1.1.3.9.1.3.10	Defect Liability Period for Construction Works
359	Defect Liability Period
360	Submission of Warranty Completion Test Plan
361	Warranty Completion Test
362	DLP Complete and issuance of Defect Liability Certificate
363	Commencement of Maintenance Services
HY/2014/04.1.1.3.9.1.3.9.1	Integration Test
325	Submission of Integration Test Plan
326	Integration Test
327	Preparation, submission and acceptance of Integration Test report
327.5	Complete Integration Test (MS B.5 - 3 Mar 17)
HY/2014/04.1.1.3.9.1.3.9.2	Site Acceptance Test
329	Submission of SAT Plan



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



Actual Level of Effort (Blue bar), Remaining Work (Green bar), Actual Work (Yellow bar), Critical Remaining Work (Red bar), Milestone (Diamond), Summary (Triangle)



APPENDIX D

Event and Action Plan

Event/Action Plan for Air Quality

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

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

Event / Action Plan for Construction Noise Monitoring

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



APPENDIX E

Implementation Schedule for Environmental Mitigation Measures (EMIS)

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

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

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

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S5.5.6.2	A2	<ul style="list-style-type: none"> Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed; Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies. 	Good construction site practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.	Contractor	All construction sites	Construction stage	To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1- hr and 24hr TSP levels are 500 $\mu\text{g}\text{m}^{-3}$ and 260 $\mu\text{g}\text{m}^{-3}$, respectively)	√
S5.5.6.4	A3	The Contractor should undertake proper watering on all exposed spoil (with at least 8 times per day) throughout the construction phase.	Control construction dust	Contractor	All construction sites	Construction stage	To control the dust impact	√
S5.5.6.5	A4	Engineer to incorporate the controlled measures into the Particular Specification (PS) for the civil work. The PS should also draw the contractor's attention to the relevant latest Practice Notes issued by EPD.	Control construction dust	Engineer	All construction sites	Design Stage	Air Pollution Control (Construction Dust) Regulation	√
S5.5.6.5	A5	Implement regular dust monitoring under EM&A programme during the construction stage.	Monitor the 24 hr and 1hr TSP levels at the representative dust monitoring stations to ensure compliance with relevant criteria throughout the construction period.	Contractor	Selected representative dust monitoring station	Construction stage	<ul style="list-style-type: none"> Air Pollution Control (Construction Dust) Regulation To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1- hr and 24hr TSP levels are 500 $\mu\text{g}\text{m}^{-3}$ and 260 $\mu\text{g}\text{m}^{-3}$, respectively) 	√ (The dust monitoring works under EM&A programme for the Contract are covered by Contract No. HY/2010/02 and Contract No. HY/2011/03.)

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S5.5.7.1	A6	<p>The following mitigation measures should be adopted to prevent fugitive dust emissions for concrete batching plant:</p> <ul style="list-style-type: none"> • Loading, unloading, handling, transfer or storage of any dusty materials should be carried out in totally enclosed system; • All dust-laden air or waste gas generated by the process operations should be properly extracted and vented to fabric filtering system to meet the emission limits for TSP; • Vents for all silos and cement/pulverised fuel ash (PFA) weighing scale should be fitted with fabric filtering system; • The materials which may generate airborne dusty emissions should be wetted by water spray system; • All receiving hoppers should be enclosed on three sides up to 3m above unloading point; • All conveyor transfer points should be totally enclosed; • All access and route roads within the premises should be paved and wetted; and • Vehicle cleaning facilities should be provided and used by all concrete trucks before leaving the premises to wash off any dust on the wheels and/or body. 	Monitor the 24 hr and 1hr TSP levels at the representative dust monitoring stations to ensure compliance with relevant criteria throughout the construction period.	Contractor	Selected representative dust monitoring station	Construction stage	<ul style="list-style-type: none"> • Air Pollution Control (Construction Dust) Regulation • To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1- hr and 24hr TSP levels are $500 \mu\text{g}\text{m}^{-3}$ 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 works under EM&A programme for the Contract are covered by Contract No. HY/2010/02.)
Sediment								
S7.3	S1	1) The requirements as recommended in ETWB TC 34/2002 Management of Dredged/Excavated Sediment shall be included in the Particular Specification as appropriate.	Develop sediment disposal arrangement	Engineer	All construction sites	Design stage	<ul style="list-style-type: none"> Waste Disposal Ordinance ETW B TC 34/2002 	N/A

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

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

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

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

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

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

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

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

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

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



APPENDIX F

Site Audit Findings and Corrective Actions



Appendix F – Site Audit Findings and Corrective Actions

1.1.1 Site Inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures for the Project. During the reporting period, twelve site inspections were carried out on 7, 14, 21 and 28 December 2016, 4, 11, 18 and 25 January 2017 and 1, 8, 15 and 22 February 2017.

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

Date of Audit	Observations	Actions Taken by Contractor / Recommendation	Date of Observations Closed
For Contract No. HY/2014/05			
30 November 2016	1. Chemical containers were placed without drip tray next to water tank at Building 025.	1. The chemical containers next to water tank at Building 025 were removed.	07 December 2016
07 December 2016	1.No drip tray was provided for the fuel/ oil drum near the waste skip at Building 059. 2.Stagnant water with mud and algae was observed inside the drip tray for a fuel/ oil drum near the resting area at Building 059.	1.Chemical drums were removed next to the waste skip. 2.Stagnant water in the drip tray for a diesel drum was removed.	14 December 2016
14 December 2016	1.Chemical container was found without drip tray at Building 032.	1.The chemical container was removed at Building 032.	21 December 2016
21 December 2016	1.Rubbish was accumulated in a skip and some rubbish was scattered on the ground at Building 053. 2.Oil product was stored in plastic bottles and the bottles were placed without drip tray at Building 053.	1.The rubbish was cleared at Building 053. 2.The plastic bottles were removed at Building 053.	28 December 2016



Date of Audit	Observations	Actions Taken by Contractor / Recommendation	Date of Observations Closed
For Contract No. HY/2014/05			
28 December 2016	1.Chemical containers were placed on the ground without drip tray at Building 023.	1.Chemical containers were removed at Building 023.	4 January 2017
4 January 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
11 January 2017	1.Chemical drums were found without drip tray at Building 032. 2.Chemical drums were found without proper chemical labels near a generator at Building 032.	1.The drip tray was provided for chemical container at Building 032. 2.The proper label was provided for the chemical container at Building 032.	18 January 2017
18 January 2017	1.The construction waste were accumulated near Building 044. 2.Chemical label is damaged on the chemical container at Building 032. 3.The chemical container was found without drip tray at Building 023.	1.Construction waste was removed and site cleanliness has been maintained. 2.Chemical label has been provided to the drum. 3.The chemical container was removed at Building 023.	25 January 2017
25 January 2017	1.A crawler crane was found without NRMM label at Building 032. 2.Two chemical containers were found without drip tray at Building 044.	1.A NRMM label was displayed on the crawler crane at Building 032. 2.The chemical containers were removed at Building 044.	1 February 2017



Date of Audit	Observations	Actions Taken by Contractor / Recommendation	Date of Observations Closed
For Contract No. HY/2014/05			
1 February 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
8 February 2017	1.A chemical container was observed without drip tray at Building 023.	1.The chemical container at Building 023 was removed.	15 February 2017
15 February 2017	1.The chemical containers were found without drip tray at Building 023.	1.The chemical containers were removed at Building 023.	22 February 2017
22 February 2017	1.A chemical container was found without drip tray at Building 044.	1.The Contractor was reminded to provide a drip tray for the chemical container at Building 044.	Follow-up action undertaken by the Contractor will be inspected during the site inspection to be undertaken in March 2017.



Date of Audit	Observations	Actions Taken by Contractor / Recommendation	Date of Observations Closed
For Contract No. HY/2013/06 within Contract No. HY/2014/05 works area			
4 January 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
11 January 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
18 January 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
25 January 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
1 February 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
8 February 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
15 February 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
22 February 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.

Date of Audit	Observations	Actions Taken by Contractor / Recommendation	Date of Observations Closed
For Contract No. HY/2014/04 within Contract No. HY/2014/05 works area			
15 February 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
22 February 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.



APPENDIX G

Waste Flow Table

Monthly Summary Waste Flow Table for 2016



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	c. Reused in the Contract	d. Reused in Other Projects (see Note 9)	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											
February	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
March	0.036	0.000	0.000	0.036	0.000	0.270	0.000	0.000	0.000	0.000	0.000
April	0.000	0.000	0.000	0.000	0.000	0.027	0.000	0.000	0.000	0.000	0.000
May	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004
June	0.049	0.049	0.049	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002
Sub-total	0.085	0.049	0.049	0.036	0.000	0.297	0.000	0.000	0.000	0.000	0.006
July	0.355	0.000	0.355	0.000	0.000	1.238	0.000	0.000	0.000	0.000	0.007
August	0.070	0.000	0.070	0.000	0.000	0.000	9.980	0.000	0.000	0.000	0.016
September	0.551	0.000	0.551	0.000	0.000	0.000	9.960	0.000	0.000	0.000	0.034
October	2.709	0.000	2.709	0.000	0.000	0.000	12.810	0.000	0.000	0.000	0.027
November	1.891	0.000	1.891	0.000	0.000	0.128	23.010	0.000	0.000	0.000	0.084
December	1.125	0.000	1.125	0.000	0.000	0.000	14.970	0.000	0.000	0.000	0.144
Total	6.786	0.049	6.750	0.036	0.000	1.663	70.730	0.000	0.000	0.000	0.318

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

Name of Department: Highways Department

Contract No.: HY/2014/05



- 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) Inert C&D Materials (as sand only) were transferred to Contract No. HY/2013/01 in March 2016.
 - (10) The amount in "Disposed as Public Fill" included the "Hard Rock and Large Broken Concrete" disposed as public fill

Monthly Summary Waste Flow Table for 2017



Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	a. Total Quantity Generated (see Note 8)	b. Hard Rock and Large Broken Concrete (see Note 9)	c. Reused in the Contract	d. Reused in Other Projects	e. Disposed as Public Fill (see Note 10)	f. Imported Fill	g. Metals (see Note 5)	h. Paper / Cardboard Packaging (see Note 5)	i. Plastics (see Note 3) (see Note 5)	j. Chemical Waste	k. Others, e.g. general refuse
	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m ³)
January	1.390	0.010	1.380	0.000	0.010	0.000	0.000	0.000	0.000	0.000	0.197
February	1.070	0.003	1.067	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.143
March											
April											
May											
June											
Sub-total	2.460	0.013	2.447	0.000	0.013	0.000	0.000	0.000	0.000	0.000	0.340
July											
August											
September											
October											
November											
December											
Total	2.460	0.013	2.447	0.000	0.013	0.000	0.000	0.000	0.000	0.000	0.340

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

- 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

Ver: 1st
Date: Feb 2017

Monthly Summary Waste Flow Table for 2017

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

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

Contract No. HY/2014/04

Contract Title: Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities

Gantry Type X-ray Vehicle Inspection System



Highways Department Monthly Summary of Waste Flow Table in 2017

Month	Actual Quantities of Inert C&D Materials Generated / Imported						Actual Quantities of Other C&D Materials / Wastes Generated				
	Total Quantity Generated (in '000m ³)	Hard Rocks and Large Broken Concrete (in '000m ³)	Reused in the Contract (in '000m ³)	Reused in other Projects (in '000m ³)	Disposed as Public Fill (in '000m ³)	Imported Fill (in '000m ³)	Metals (in '000kg)	Paper/Card-board packaging (in '000kg)	Plastic (in '000kg)	Chemical Waste (in '000kg)	Others. e.g. general refuse, plastic (in '000m ³)
Jan-17*	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Feb-17*	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mar-17											
Apr-17											
May-17											
Jun-17											
Half-year total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Jul-17											
Aug-17											
Sep-17											
Oct-17											
Nov-17											
Dec-17											
Yearly Total											

- Notes:
- (1) *Contract No. HY/2014/04 commenced on 13 February 2017.
 - (2) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging materials.
 - (3) Broken concrete for recycling into aggregates.



APPENDIX H

Environmental Licenses and Permits

Environmental License/ Permits /Notification Register

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

									Date: February 2017
Item No.	Permit/License or Registration Application			Permit/License/ Notification/ Registration Description	Permit/License/ Registration Number	Issue/Start Date	Expiry Date	Issuing Office	Remark
	Work Area	Date	Reference						
1	All Areas	30 Jun 2015	N/A	Environmental Permit for Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities	EP-353/2009/I	17 Jul 2015	N/A	EPD	Superseded by EP-353/2009/J
2	All Areas	18 Feb 2016	N/A	Environmental Permit for Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities	EP-353/2009/J	25 Feb 2016	N/A	EPD	Superseded by EP-353/2009/K
3	All Areas	24 Mar 2016	N/A	Environmental Permit for Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities	EP-353/2009/K	11 Apr 2016	N/A	EPD	-
4	All Areas	30 Dec 2015	N/A	Billing Account for disposal of construction waste	7024342	16 Feb 2016	N/A	EPD	-
5	All Areas	30 Dec 2015	RABF-LTR- EPD-000001	Notification that notifiable works are anticipated to commence (Form NA).	Acknowledge Receipt Ref. No. 397571	6 Jan 2016	N/A	EPD	-
6	All Areas	04 Jan 2016	RABF-LTR- EPD-000002	Registration as Chemical Waste Producer for disposal of spent batteries, used lubrication oil and surplus paint at RABF area	WPN 5213-951-L2846-02	19 Feb 2016	N/A	EPD	-

Environmental License/ Permits /Notification Register

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

								Date: February 2017		
Item No.	Permit/License or Registration Application			Permit/License/ Notification/ Registration Description	Permit/License/ Registration Number	Issue/Start Date	Expiry Date	Issuing Office	Remark	
	Work Area	Date	Reference							
7	All Areas	25 Jan 2016	RABF-LTR- EPD-000003	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS0106-16	11 Feb 2016	10 Aug 2016	EPD	Superseded by GW-RS0476-16	
8	All Areas	08 May 2016	RABF-LTR- EPD-000012	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS0476-16	19 May 2016	18 Nov 2016	EPD	Superseded by GW-RS0666-16	
9	All Areas	16 Jun 2016	RABF-LTR- EPD-000015	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS0666-16	04 Jul 2016	03 Jan 2017	EPD	Superseded by GW-RS0907-16	
10	All Areas	18 Aug 2016	RABF-LTR- EPD-000018	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS0907-16	01 Sep 2016	28 Feb 2017	EPD	Superseded by GW-RS1195-16	

Environmental License/ Permits /Notification Register

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

Item No.	Permit/License or Registration Application			Permit/License/ Notification/ Registration Description	Permit/License/ Registration Number	Issue/Start Date	Expiry Date	Issuing Office	Remark
	Work Area	Date	Reference						
11	All Areas	16 Nov 2016	RABF-LTR-EPD-000020	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS1195-16	30 Nov 2016	29 May 2017	EPD	Superseded by GW-RS1315-16
12	All Areas	08 Dec 2016	RABF-LTR-EPD-000023	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS1315-16	22 Dec 2016	21 Jun 2017	EPD	Superseded by GW-RS0131-17
13	WA3	13 Jan 2017	RABF-LTR-EPD-000026	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00. (Non-designated area)	GW-RS0070-17	27 Jan 2017	26 Jul 2017	EPD	-
14	All areas	03 Feb 2017	RABF-LTR-EPD-000028	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS0131-17	17 Feb 2017	16 Aug 2017	EPD	-

Environmental License/ Permits /Notification Register

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

Item No.	Permit/License or Registration Application			Permit/License/ Notification/ Registration Description	Permit/License/ Registration Number	Issue/Start Date	Expiry Date	Issuing Office	Remark
	Work Area	Date	Reference						
1	All Areas	24 Mar 16	N/A	Environmental Permit for Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities	EP-353/2009/K	11 Apr 16	N/A	EPD	-
2	Building 023, 025 and 032	31 Jul 15	WFG14980	Billing Account for disposal of construction waste	7023015	20 Aug 15	N/A	EPD	-
3.	N.A.	N.A.	N.A.	Registration as Chemical Waste Producer for disposal chemical waste	N.A.	N.A.	N.A.	N.A.	#

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

Environmental License/ Permits /Notification Register

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

Date: February 2017									
Item No.	Permit/License or Registration Application			Permit/License/ Notification/ Registration Description	Permit/License/ Registration Number	Issue/Start Date	Expiry Date	Issuing Office	Remark
	Work Area	Date	Reference						
1	All Areas	24 Mar 2016	N/A	Environmental Permit for Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities	EP-353/2009/K	11 Apr 2016	N/A	EPD	-
2	All Areas	23 Aug 2016	N/A	Billing Account for disposal of construction waste	7025930	20 Sep 2016	N/A	EPD	(a)
3.	N.A.	N.A.	N.A.	Registration as Chemical Waste Producer for disposal chemical waste	N.A.	N.A.	N.A.	N.A.	(b)

Remarks:
 (a) As informed by the Contractor of Contract No. HY/2014/04 on 5 May 2017, the billing account for disposal of construction waste should be 7025930.
 (b) The Contractor of Contract No. HY/2014/04 was advised to register as a chemical waste producer when chemical waste is expected to generate for the foreseeable future from the operations.



APPENDIX I

Statistics on Environmental Complaints, Notification of Summons and Successful Prosecutions



Statistics on Environmental Complaints, Notifications of Summons and Successful Prosecutions

For Contract No. HY/2014/05

Reporting Period	Cumulative Statistics		
	Complaints	Notifications of summons	Successful prosecutions
This reporting period	1	0	0
From commencement date of contract to end of reporting period	2	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 period	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 period	0	0	0



Complaint Register

For Contract No. HY/2014/05

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