

Ref.: HYDHZMBEEM00\_0\_6420L.18

17 April 2018

By Fax (3468 2076) and By Post

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

Attention: Mr. Malcolm Sage

Dear Sir,

Re: Agreement No. CE 48/2011 (EP)

**Environmental Project Office for the** 

HZMB Hong Kong Link Road, HZMB Hong Kong Boundary Crossing Facilities, and

Tuen Mun-Chek Lap Kok Link - Investigation

Contract No. HY/2014/05 - HZMB HKBCF - Remaining Ancillary Buildings and

**Facilities** 

**Monthly Environmental Monitoring & Audit Report for March 2018** 

Reference is made to the Environmental Team's submission of Monthly Environmental Monitoring & Audit Report for March 2018 (Rev. 1) certified by the ET Leader (ET's ref.: "5140819/18.30/OC049/KC/RL" dated 17 April 2018) and provided to us via e-mail on 16 April 2018.

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

The ET Leader is reminded that it is the ET's responsibility to ensure the report be timely submitted to the Director of Environmental Protection and the reported information be true, valid and correct as per Conditions 5.4 and 5.5 of EP-353/2009/K respectively.

With respect to the landscape works observed, please be reminded that the ET shall regularly check with the Landscape Resident Site Staff on the latest status of landscape construction and/or establishment and implement the bi-weekly landscape monitoring accordingly as required by the approved EM&A Manual.

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

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

Raymond Dai

Independent Environmental Checker

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Your ref.

Our ref. 5140819/18.30/OC049/KC/RL

**Date:** 17 April 2018

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

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

Attn: Mr. Alfred She

Dear Mr. She,

Contract No. HY/2014/05 Hong Kong – Zhuhai – Macao Bridge Hong Kong Boundary Crossing Facilities – Remaining Ancillary Buildings and Facilities Certification of Monthly EM&A Report No. 25

Atkins China Limited certifies, in the capacity of Environmental Team Leader, that the Monthly EM&A Report No. 25 for March 2018 (Revision 1) conforms the requirements provided in Condition 5.4 of the Environmental Permit No. EP-353/2009/K.

Yours faithfully, for and on behalf of Atkins China Limited

**Keith Chau** 

**Environmental Team Leader** 

CC.

1. AECOM – Mr. Malcolm Sage (By Fax.: 3468 2076)

2. IEC/ENPO – Mr. Raymond Dai & Mr. Y.H. Hui (By Fax.: 3465 2899)



## Contract No. HY/2014/05

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

# Monthly EM&A Report No. 25 (Covering the Period from 1 March 2018 to 31 March 2018)

16 April 2018

**Revision 1** 

## **Main Contractor**



## **Environmental Team**



Contract No. HY/2014/05



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#### **Executive Summary**

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

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

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

This is the twenty-fifth monthly EM&A Report for the Contract No. HY/2014/05 which summarizes findings of the EM&A works during the reporting period from 1 to 31 March 2018 (includes the construction works of Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area).

## **Environmental Monitoring and Audit Progress**

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

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

Environmental Site Inspection: 7, 14, 19 and 26 March 2018

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

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

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



## **Complaint Log**

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

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

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

## **Reporting Change**

There was no reporting change during the reporting period.



## **Future Key Issues**

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

## For Contract No. HY/2014/05

- Architectural Builder's Work and Finishes (ABWF) & Mechanical, Electrical and Plumbing works
   (MEP) Internal work of Buildings 044, 045, 050H2, 050A1, 050A2
- Architectural Builder's Work and Finishes (ABWF) External work of Buildings 044, 045, 050A1, 050A2
- ABWF works (roof) of Buildings 050H1, 050H2, 050A1, 050A2
- Foot Path of Buildings 023, 025, 044, 045

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

• Buildings 023, 025 and 032 - Cabling, Conduit & Equipment installation

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

Buildings 053, 054, 058 and 059 - Testing





#### Introduction

## 1.1 Basic Project Information

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

## For Contract No. HY/2014/05

- (i) Construction of the following ancillary buildings and facilities including architectural and builder works, structural steel canopy, reinforced concrete frames, foundations, curtain wall facade, building services and electrical and mechanical works:
  - Public Toilets at Vehicle Clearance Plaza (VCP);
  - Customs and Excise Department (C&ED) Dangerous Good Store (Building 021);
  - Customs Detective Dog Base Building (Building 022);
  - C&ED Outbound Cargo Examination Building and Examination Platform (Building 023);
  - Inbound Private Car Annexure (Building 025);
  - Outbound Private Car Annexure (Building 032);
  - E&M maintenance Building (Building 044);
  - Highways Depot & Administration Building (Building 045);
  - Outbound X-ray Building (Building 053);
  - Outbound X-ray Scan Tunnel (Building 058); and
  - Inbound X-ray Scan Tunnel (Building 059).
- (ii) Construction of civil provisions, cable containment and power supply for the following systems:
  - Automatic Vehicle Clearance Support System (AVCSS) installed by Contract No. HY/2013/06; and



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

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

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

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

- (i) The Gantry Type X-ray Vehicle Inspection System (GXRVIS) aims to provide an integrated, innovative, efficient and effective vehicle inspection system at the inbound and outbound boundary control points of Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities (HKBCF) for supporting the operations of Customs & Excise Department (C&ED);
- (ii) Design, supply, deliver to HKBCF, installation, test and commissioning and maintenance of two sets of Gantry Type X-ray Vehicle Inspection System and all related components necessary for the complete operation of the system; and
- (iii) Design, supply, install, test, commission and maintain of the Radioactive Threat Detection Systems integrated into the Gantry Type X-ray Vehicle Inspection Systems.
- 1.1.4 This is the twenty-fifth Monthly EM&A Report for the Contract No. HY/2014/05 which summarizes the findings of the EM&A programme during the reporting period from 1 to 31 March 2018. (includes the construction works of Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area).

## 1.2 Project Organisation

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

**Table 1-1 Contact Information of Key Personnel** 

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



Party	Position	Name	Telephone	Fax
(Ramboll Hong Kong Limited)	Independent Environmental Checker	Raymond Dai	3465 2888	3465 2899
Contractor	Site Agent	Albert Chan	3973 0514	3621 0180
(Leighton – Chun Wo Joint Venture)	Environmental Officer	Alfred She	39730484	3621 0180
Environmental Team (Atkins China Limited)	Environmental Team Leader	Keith Chau	2972 1721	2890 6343
24 hours complaint hotline			3958 7300	
For Contract No. HY/2013	3/06 within Contract N	No. HY/2014/05 wo	rks area	
Engineer or Engineer's Representative (AECOM Asia Co. Ltd.)	Chief Registered Architect	Malcolm Sage	3958 7330	3468 2076
Environmental Project Office / Independent Environmental Checker (Ramboll Hong Kong	Environmental Project Office Leader	Y. H. Hui	3465 2888	3465 2899
Limited)	Independent Environmental Checker	Raymond Dai	3465 2888	3465 2899
Contractor	Site Agent	Mr. Eric Yim	2565 3355	3162 5217
(ATAL Technologies Limited)	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 N	No. HY/2014/05 wo	rks area	
Engineer or Engineer's Representative (AECOM Asia Co. Ltd.)	Chief Registered Architect	Malcolm Sage	3958 7330	3468 2076
Environmental Project Office / Independent Environmental Checker	Environmental Project Office Leader	Y. H. Hui	3465 2888	3465 2899
(Ramboll Hong Kong Limited)	Independent Environmental Checker	Raymond Dai	3465 2888	3465 2899
Contractor	Site Agent	Ringo Yau	9833 1402	2707 0816
(Rapiscan Systems Pte Ltd)	Environmental Officer	Clarie Tsang	6371 1362	
Environmental Team (Atkins China Limited)	Environmental Team Leader	Keith Chau	2972 1721	2890 6343



Party	Position	Name	Telephone	Fax
24 hours complaint hotline			9833 1420	

## 1.3 Construction Programme

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

## 1.4 Construction Works Undertaken During the Reporting Period

- 1.4.1 A summary of the construction activities undertaken during this reporting period is shown below: For Contract No. HY/2014/05
  - ABWF & MEP works (Internal) of Buildings 021, 022, 032, 044, 045, 050H1, 050H2, 050A1, 050A2 and 058
  - Foot Path, Utilities and Drainage installation of Buildings 045, 050H2, 053 and 058
  - ABWF & MEP works (External) of Buildings 021, 022, 023, 025, 032, 045, 050H2, 050A1,
     053 and 058
  - ABWF & MEP works (roof) of Building 025 and 050A2
  - Roadworks of Building 025
  - Landscape work in Building 022

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

Cabling, Conduit & Equipment installation at Buildings 025 and 032

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

- Installation of field devices at Buildings 053 and 054
- Cabling works at Buildings 058 and 059



## 2 Air Quality Monitoring

## 2.1 Monitoring Locations

- 2.1.1 The air quality monitoring works for the Contract are covered by Contract No. HY/2011/03 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road Section between Scenic Hill and HKBCF and Contract No. HY/2013/01 HZMB HKBCF Passenger Clearance Building.
- 2.1.2 The ET of the Contract or another ET of the HZMB project is required to conduct air quality monitoring at AMS6 and AMS7B as part of EM&A programme if these air quality monitoring stations are no longer covered under Contract Nos. HY/2011/03 and HY/2013/01. Figure 2.1 shows the locations of the air monitoring stations.

Table 2-1 Construction Dust Monitoring Locations

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

#### Remark:

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

## 2.2 Monitoring Requirements

- 2.2.1 The monitoring requirements, monitoring equipment, monitoring parameters, frequency and duration, monitoring methodology, monitoring schedule, meteorological information are detailed in the monthly EM&A Reports prepared for Contract Nos. HY/2011/03 and HY/2013/01.
- 2.2.2 The Action and Limit Levels for 1-hr TSP and 24-hr TSP are provided in **Table 2-2** and **Table 2-3**, respectively.

Table 2-2 Action and Limit Levels for 1-hr TSP

Monitoring Station	Action Level, µg/m³	Limit Level, µg/m³
AMS6 – Dragonair / CNAC (Group) Building (HKIA)	360	500
AMS7B – 3RS site office	370	300

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

Monitoring Station	Action Level, µg/m³	Limit Level, µg/m³
AMS6 – Dragonair / CNAC (Group) Building (HKIA)	173	260
AMS7B – 3RS site office	183	200

- 2.2.3 The event and action plan is provided in **Appendix D**.
- 2.2.4 If exceedance(s) at these station(s) is/are recorded by the ET of the Contract or referred by the other ET under the HZMB project to the Contract, the ET of the Contract will carry out an investigation and findings will be reported in the monthly EM&A Report.





## 2.3 Monitoring Results

- 2.3.1 The monitoring results for AMS6 and AMS7B are reported in the monthly EM&A Reports prepared for Contract Nos. HY/2011/03 and HY/2013/01, respectively.
- 2.3.2 Summary of Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level at AMS6 shall be referred to the monthly EM&A Report prepared by Contract No. HY/2011/03. No Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at AMS7B by the Environmental Team of Contract No. HY/2013/01 during the reporting period.



#### 3 Noise Monitoring

## 3.1 Monitoring Locations

3.1.1 The noise monitoring works for the Contract are covered by Contract No. HY/2013/01 HZMB HKBCF – Passenger Clearance Building. The ET of the Contract or another ET of the HZMB project is required to conduct impact noise monitoring at NMS2 and NMS3B as part of EM&A programme if these noise monitoring stations are no longer covered under Contract No. HY/2013/01. Figure 3.1 shows the locations of noise monitoring stations.

**Table 3-1 Construction Noise Monitoring Locations** 

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

#### Remarks:

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

## 3.2 Monitoring Requirements

- 3.2.1 The monitoring requirements, monitoring equipment, monitoring parameters, frequency and duration, monitoring methodology and monitoring schedule are detailed in the monthly EM&A Reports prepared for Contract No. HY/2013/01.
- 3.2.2 The Action and Limit Levels for construction noise are defined in **Table 3-2**.

Table 3-2 Action and Limit Level for Construction Noise

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

### Notes:

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

- 3.2.3 The event and action plan is provided in **Appendix D**.
- 3.2.4 If exceedance(s) at these station(s) is/are recorded by the ET of the Contract or referred by the other ET under the HZMB project to the Contract, the ET of the Contract will carry out an investigation and findings will be reported in the monthly EM&A Report.

## 3.3 Monitoring Results

3.3.1 The monitoring results for NMS2 and NMS3B are reported in the monthly EM&A Reports prepared for Contract No. HY/2013/01. No noise exceedances were recorded at stations NMS2 and NMS3B by the ET of Contract No. HY/2013/01 during the reporting period.

<sup>\*</sup> Limit level is 70 dB(A) for schools and 65 dB(A) during school examination period.



## 4 Environmental Site Inspection and Audit

## 4.1 Site Inspection

- 4.1.1 Site Inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures for the Contract No. HY/2014/05 (includes the construction works of Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area). During the reporting period, site inspections were carried out on 7, 14, 19 and 26 March 2018.
- 4.1.2 Particular observations for Contract No. HY/2014/05 and Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area during the site inspections and corrective actions undertaken by the Contractor are described in **Tables 4-1, 4-2 and 4-3**.

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

Date of Audit	Observations	Actions Taken by Contractor / Recommendation	Date of Observations Closed
26 February 2018	The general refuse was found at G/F of Building 022.	The general refuses were removed at G/F of Building 022.	7 March 2018
7 March 2018	Environmental Permit and Construction Noise Permit were not displayed at Building 023.	Environmental Permit and Construction Noise Permit were displayed at Building 023.	14 March 2018
14 March 2018	No particular environmental issue was recorded during the site inspection.	N/A	N/A
19 March 2018	No particular environmental issue was recorded during the site inspection.	N/A	N/A
26 March 2018	No particular environmental issue was recorded during the site inspection.	N/A	N/A





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

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

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

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

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



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

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

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

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

- 4.2.1 The Contractor of Contract No. HY/2014/05 registered as a chemical waste producer. Sufficient numbers of receptacles were available for general refuse collection and sorting.
- 4.2.2 The Contractor of Contract No. HY/2014/05 was reminded that chemical waste should be properly treated and stored temporarily in designated chemical waste storage areas on site in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.
- 4.2.3 The monthly summary of waste flow table for Contract No. HY/2014/05 (includes the construction works of Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area) are detailed in **Appendix E**.

## 4.3 Environmental Licenses and Permits

- 4.3.1 The valid environmental licenses and permits for Contract No. HY/2014/05 during the reporting period (includes the construction works of Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area) are summarized in **Appendix F**.
- 4.3.2 The Contractors of Contract No. HY/2013/06 and Contract No. HY/2014/04 were advised to register as a chemical waste producer when chemical waste will be expected to generate for the foreseeable future from the operations (For Registration as Waste Producer Pursuant to Waste Disposal (Chemical Waste) (General) Regulation).

## 4.4 Implementation Status of Environmental Mitigation Measures

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

## 4.5 Summary of Exceedance of the Environmental Quality Performance Limit

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





- 4.5.2 There was no Action and Limit Level exceedance for noise recorded at NMS2 and NMS3B by the Environmental Team of Contract No. HY/2013/01 during the reporting period.
- 4.6 Summary of Complaints, Notification of Summons and Successful Prosecution
- 4.6.1 There was no complaint received in relation to the environmental impact during the reporting period.
- 4.6.2 Statistics on environmental complaints, notifications of summons and successful prosecutions are summarized in **Appendix H**.



## 5 Future Key Issues

## 5.1 Construction Programme for the Coming Months

5.1.1 As informed by the Contractor, the major construction activities for April 2018 are summarized in **Table 5-1**.

Table 5-1 Construction Activities for April 2018

Site Area	Description of Activities		
For Contract No. HY/2014/05			
Buildings 044, 045, 050H2, 050A1 and 050A2	ABWF & MEP works (Internal)		
Buildings 044, 045, 050A1 and 050A2	ABWF works (External)		
Building 050H1, 050H2, 050A1 and 050A2	ABWF works (roof)		
Buildings 023, 025, 044 and 045	Foot Path		
For Contract No. HY/2013/06 within Contract No. HY/2014/05 works area			
Buildings 023, 025 and 032	Cabling, Conduit & Equipment installation		
For Contract No. HY/2014/04 within Contract No. HY/2014/05 works area			
Buildings 053, 054, 058 and 059	Testing		

## 5.2 Environmental Site Inspection Schedule for the Coming Month

5.2.1 The tentative schedule for weekly site inspections for April 2018 is provided in **Appendix I**.



#### 6 Conclusions

## 6.1 Conclusions

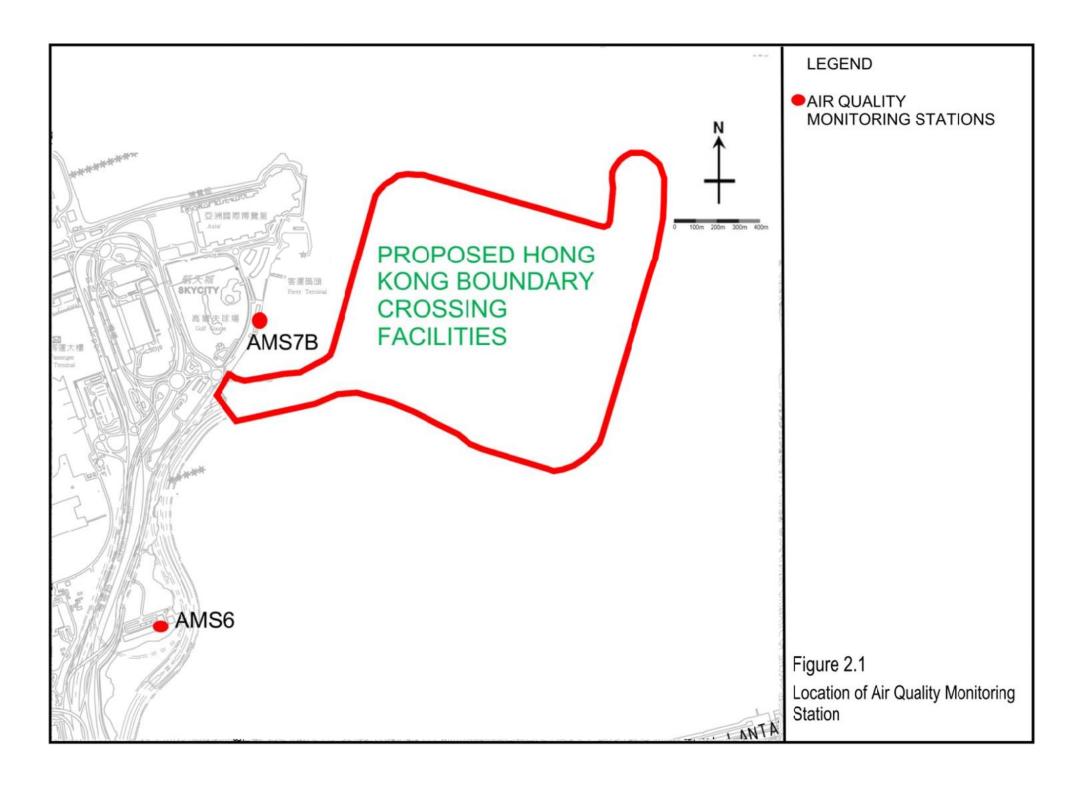
- 6.1.1 The construction works of the Contract No. HY/2014/05 commenced on 29 February 2016. while the construction works of the Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area commenced on 3 January 2017 and 13 February 2017 respectively. The twenty-fifth Monthly EM&A Report for Contract No. HY/2014/05 summarizes findings of the EM&A works during the reporting period from 1 to 31 March 2018 (includes the construction works of Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area).
- 6.1.2 Summary of Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level at AMS6 shall be referred to the monthly EM&A Report prepared by Contract No. HY/2011/03. No Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at AMS7B by the Environmental Team of Contract No. HY/2013/01 during the reporting period.
- 6.1.3 There was no Action and Limit Level exceedance for noise recorded at NMS2 and NMS3B by the Environmental Team of Contract No. HY/2013/01 during the reporting period.
- 6.1.4 Environmental site inspections were carried out on 7, 14, 19 and 26 March 2018 for the Contract No. HY/2014/05 (includes the construction works of Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area). Recommendations on remedial actions were given to the Contractors for the deficiencies identified during the site inspection.
- 6.1.5 There was no complaint received in relation to the environmental impact during the reporting period.
- 6.1.7 No notification of summons and successful prosecution was received during the reporting period.

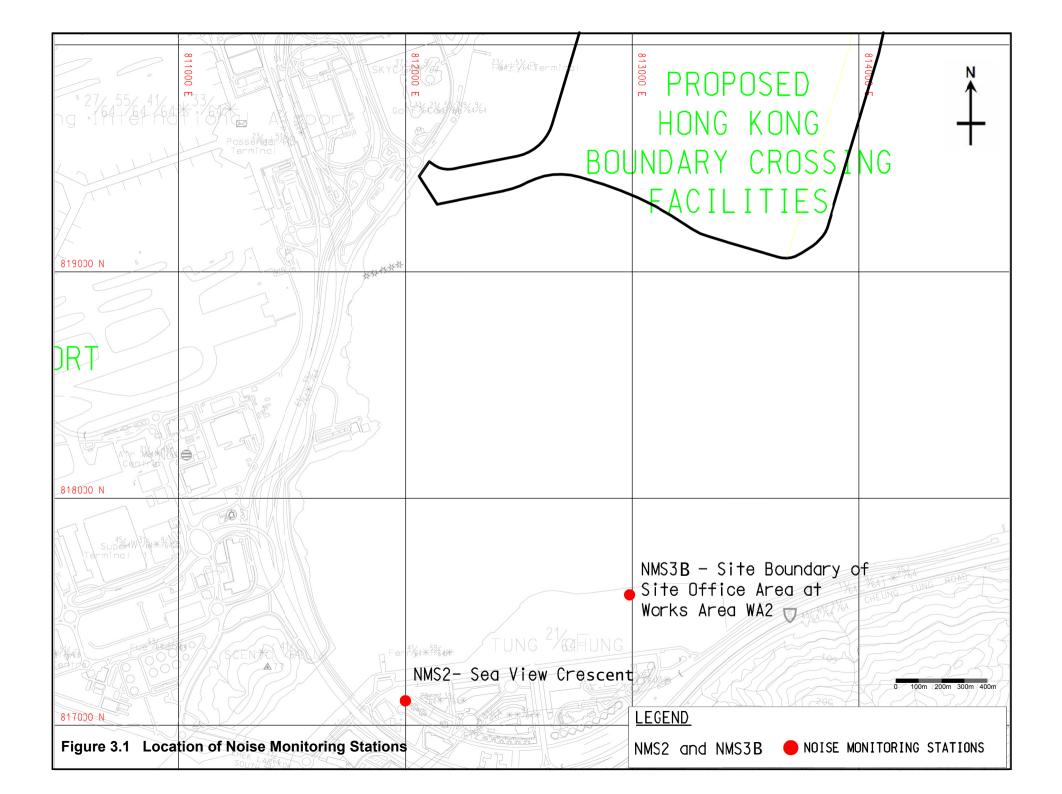




## **FIGURES**





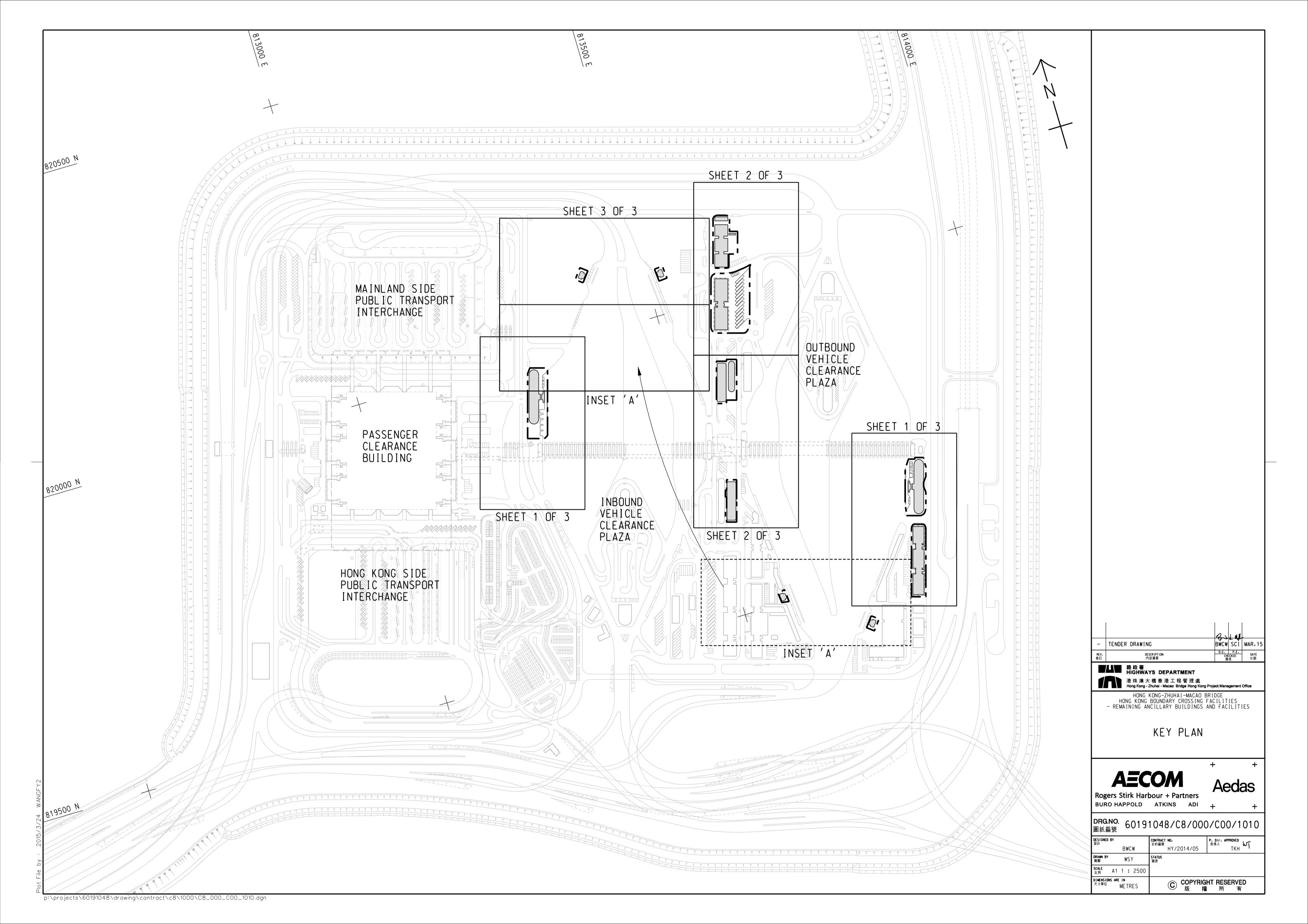


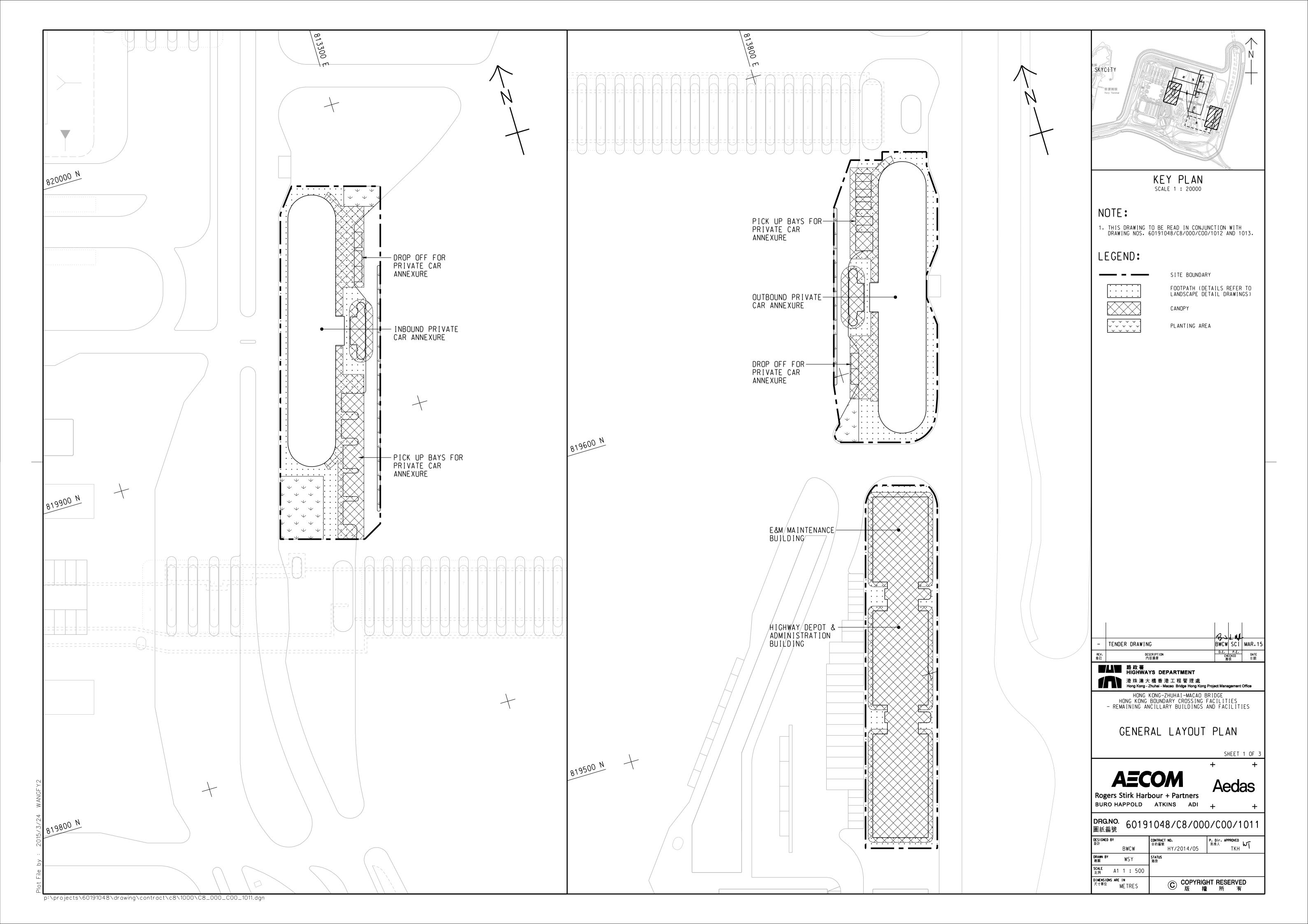


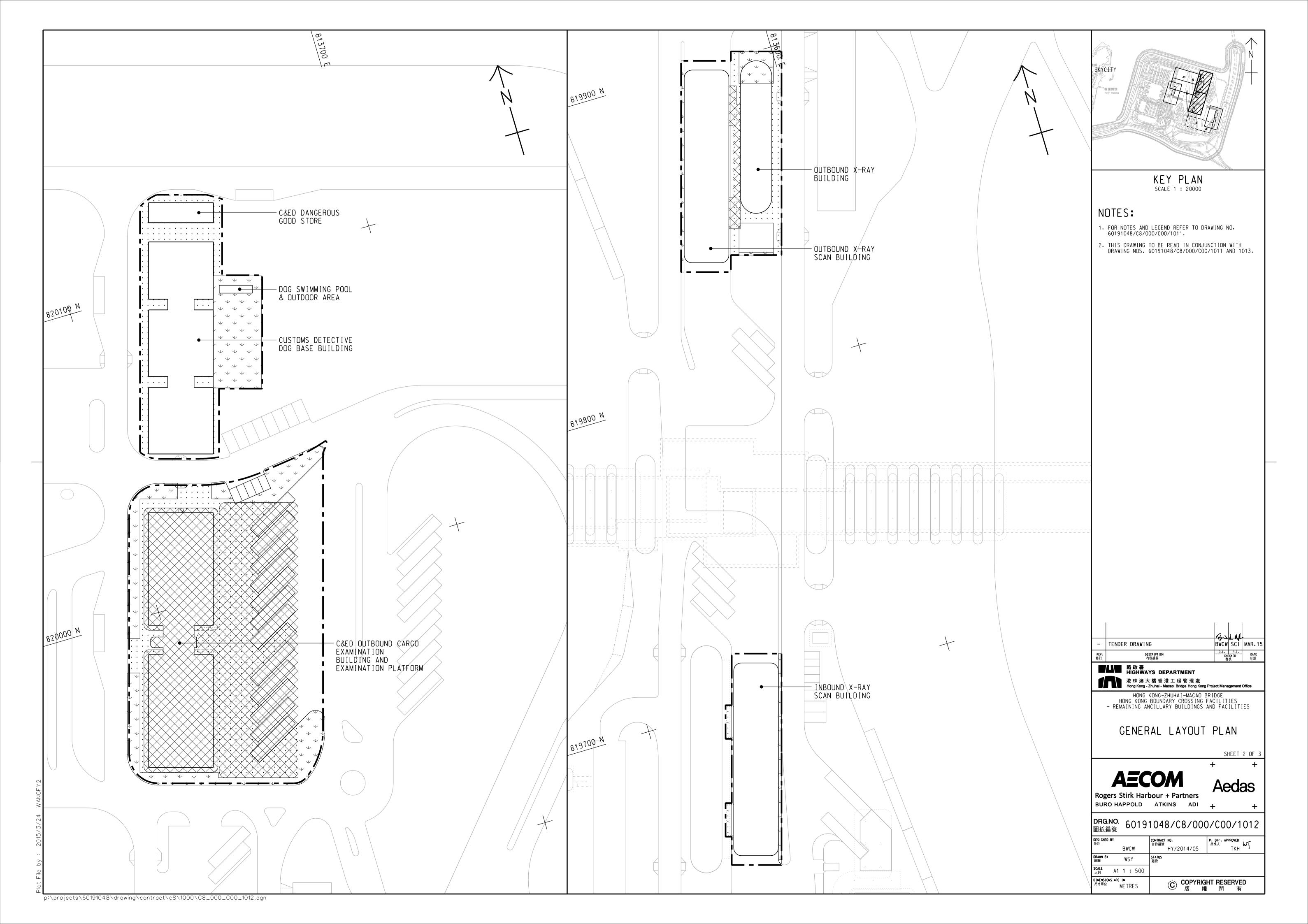
## **APPENDIX A**

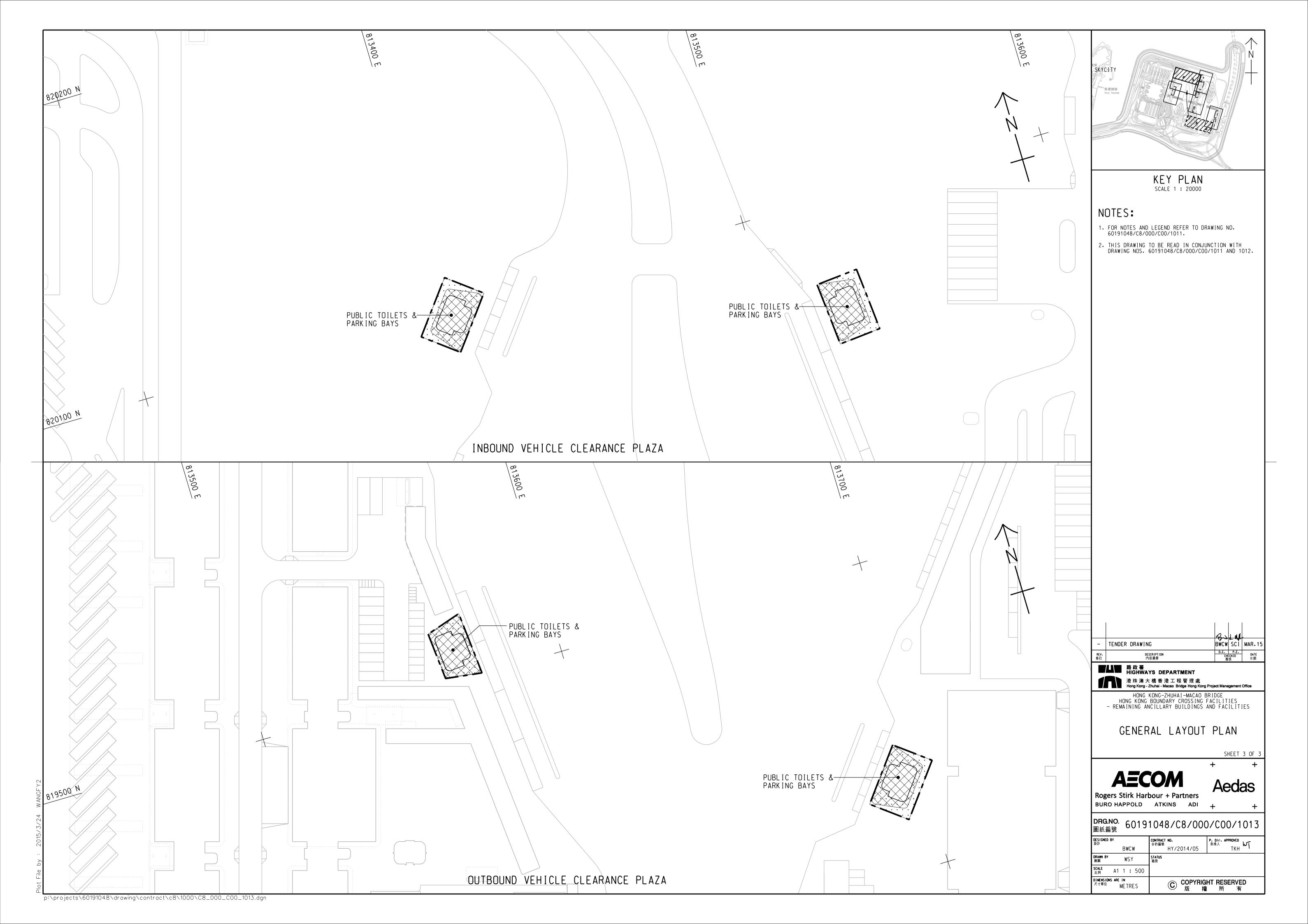
**Location of Works Areas** 

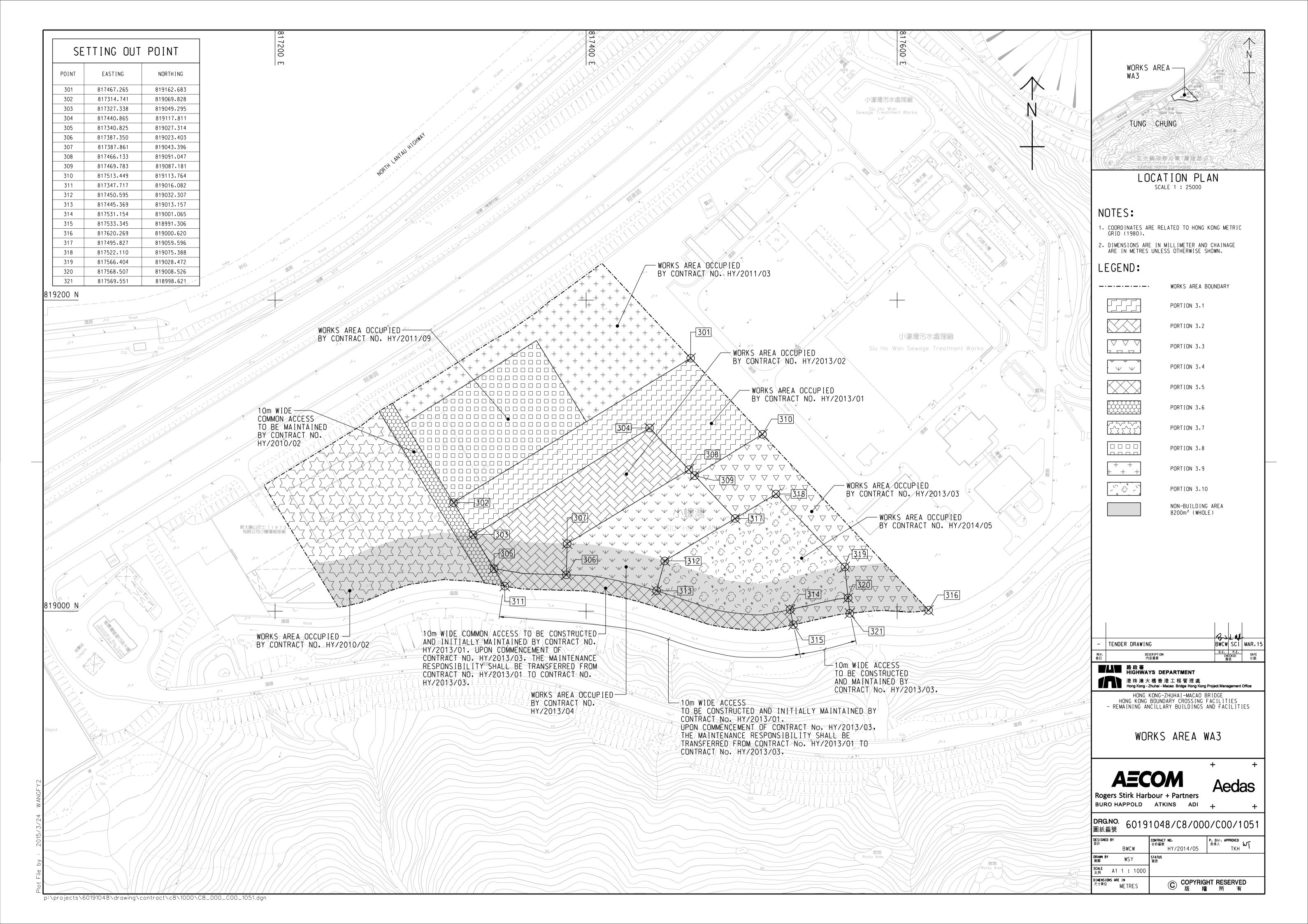












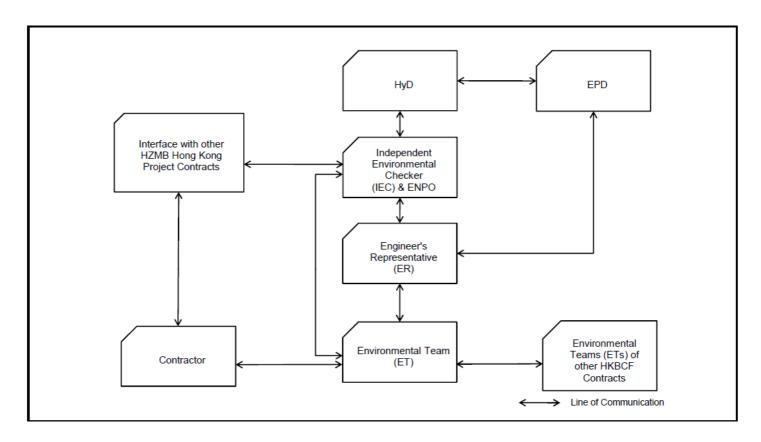


## **APPENDIX B**

Project Organization for Environmental Works



## **Project Organisation for Environmental Works**

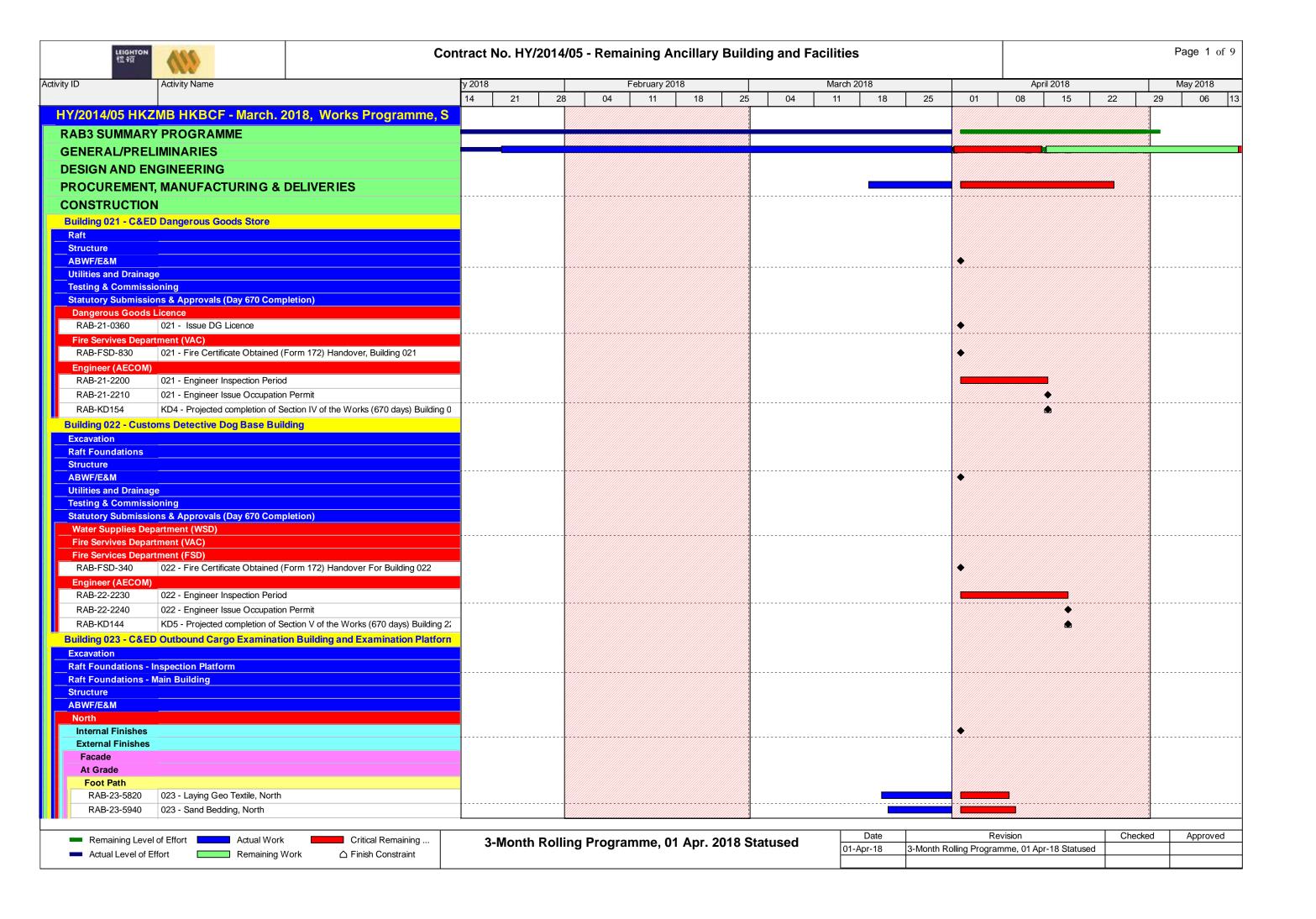


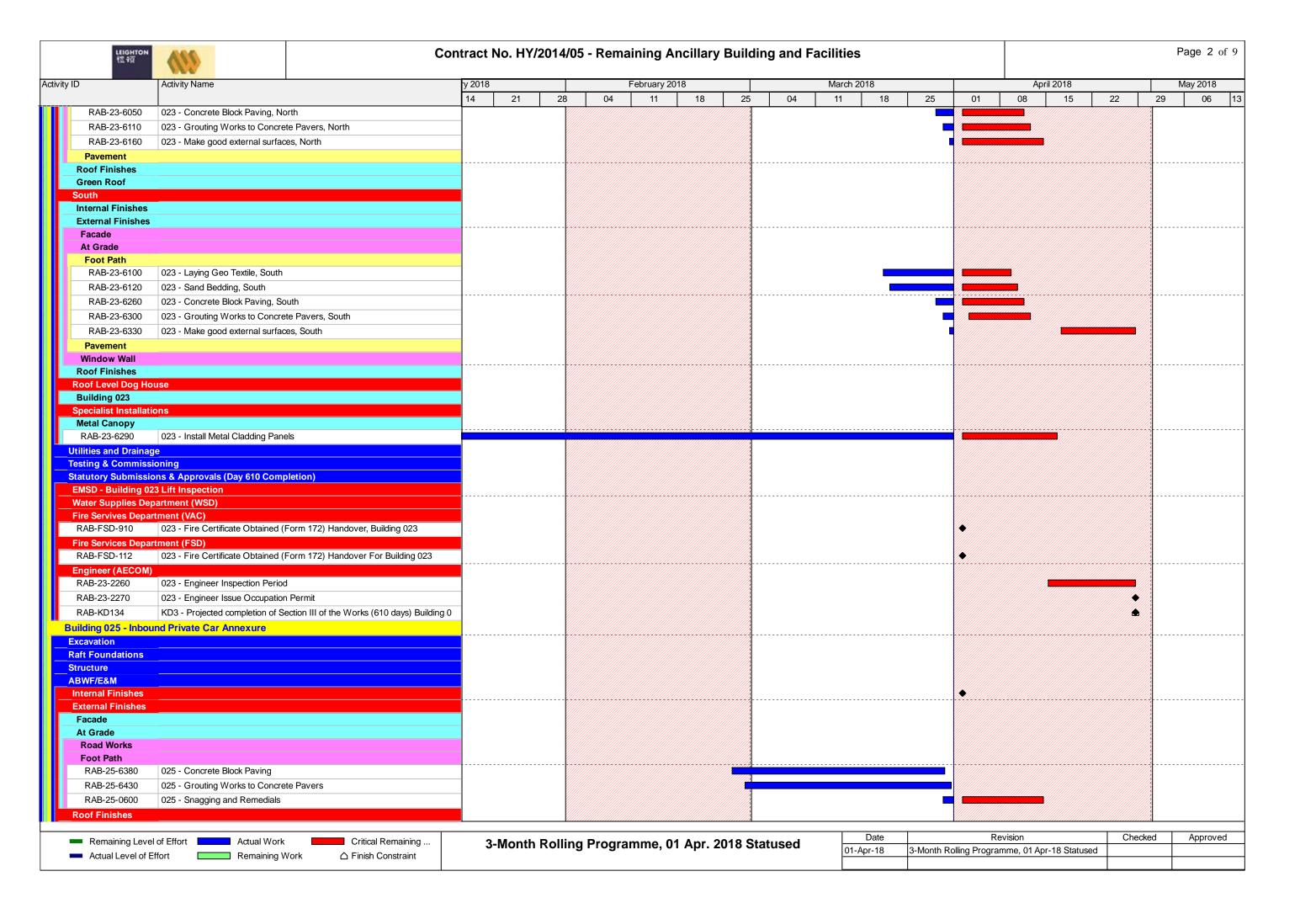


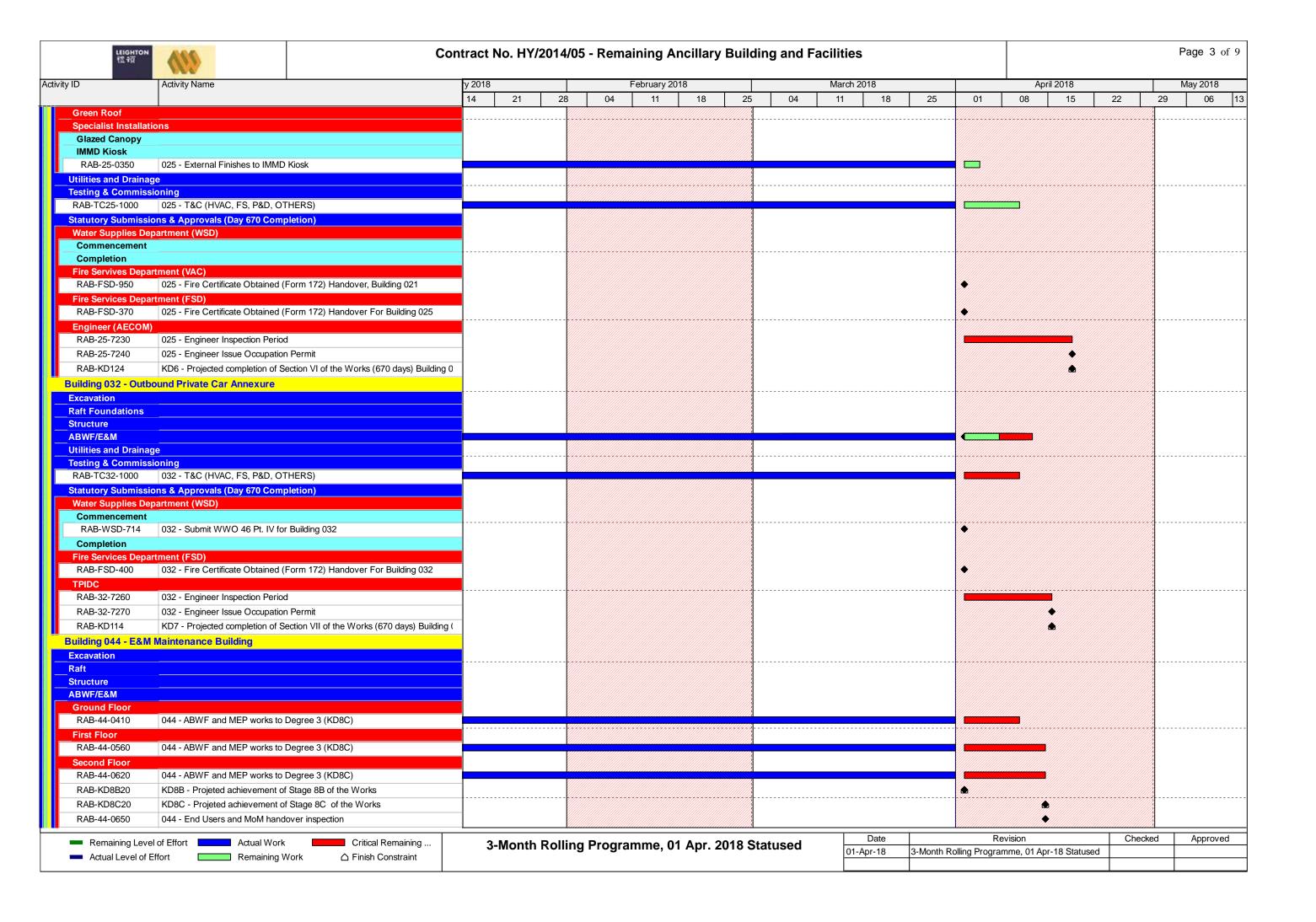
## **APPENDIX C**

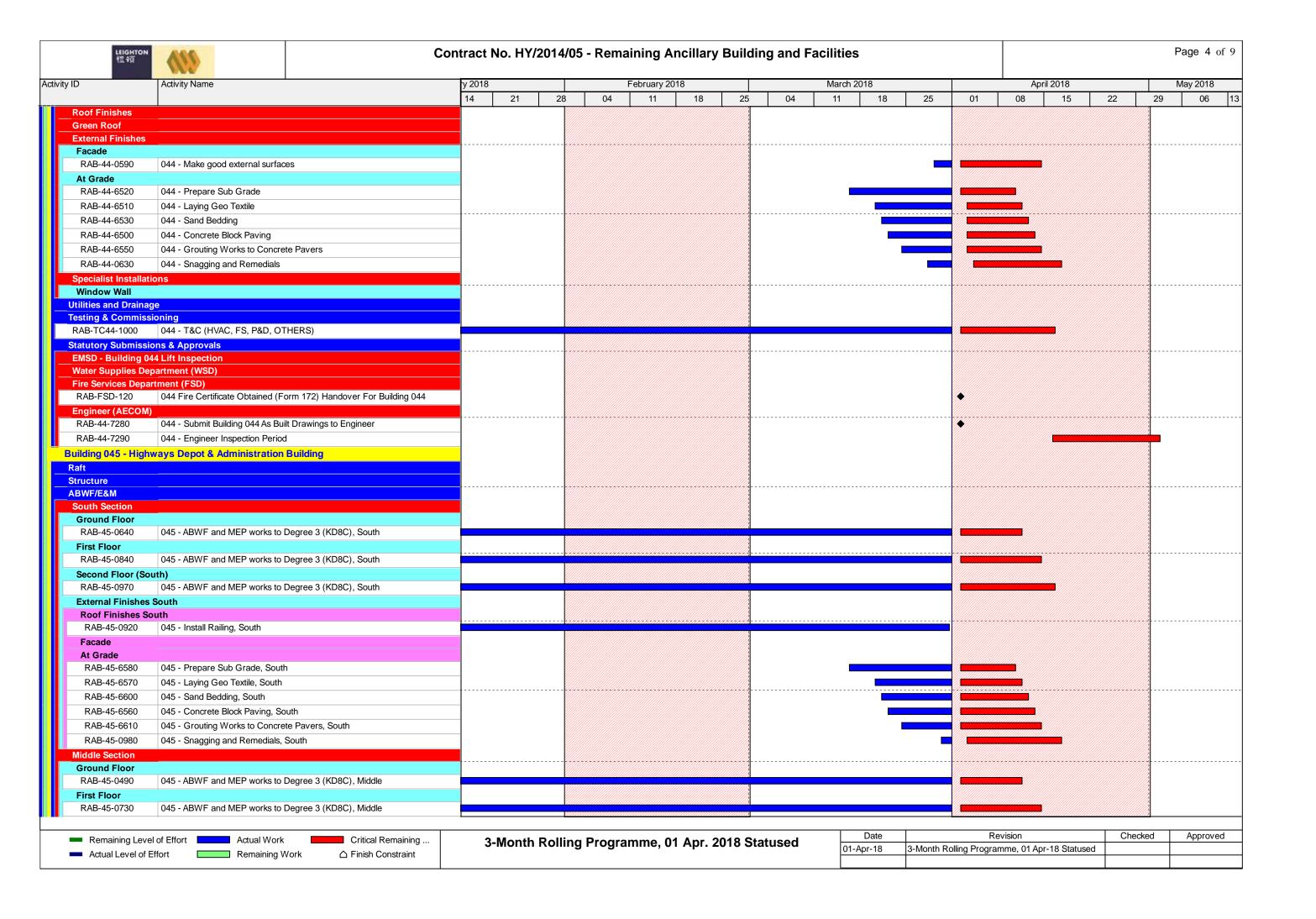
Construction Programme



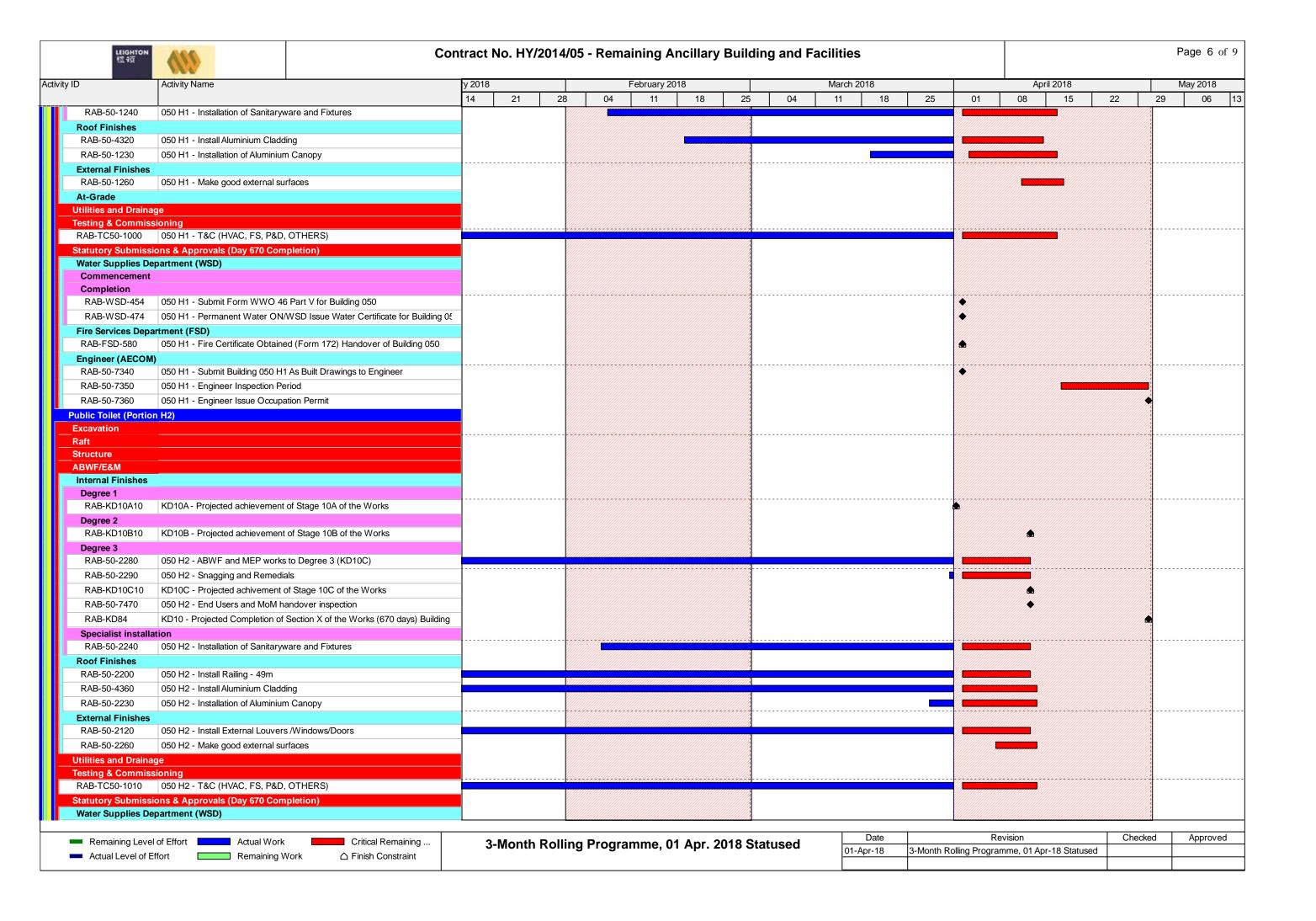


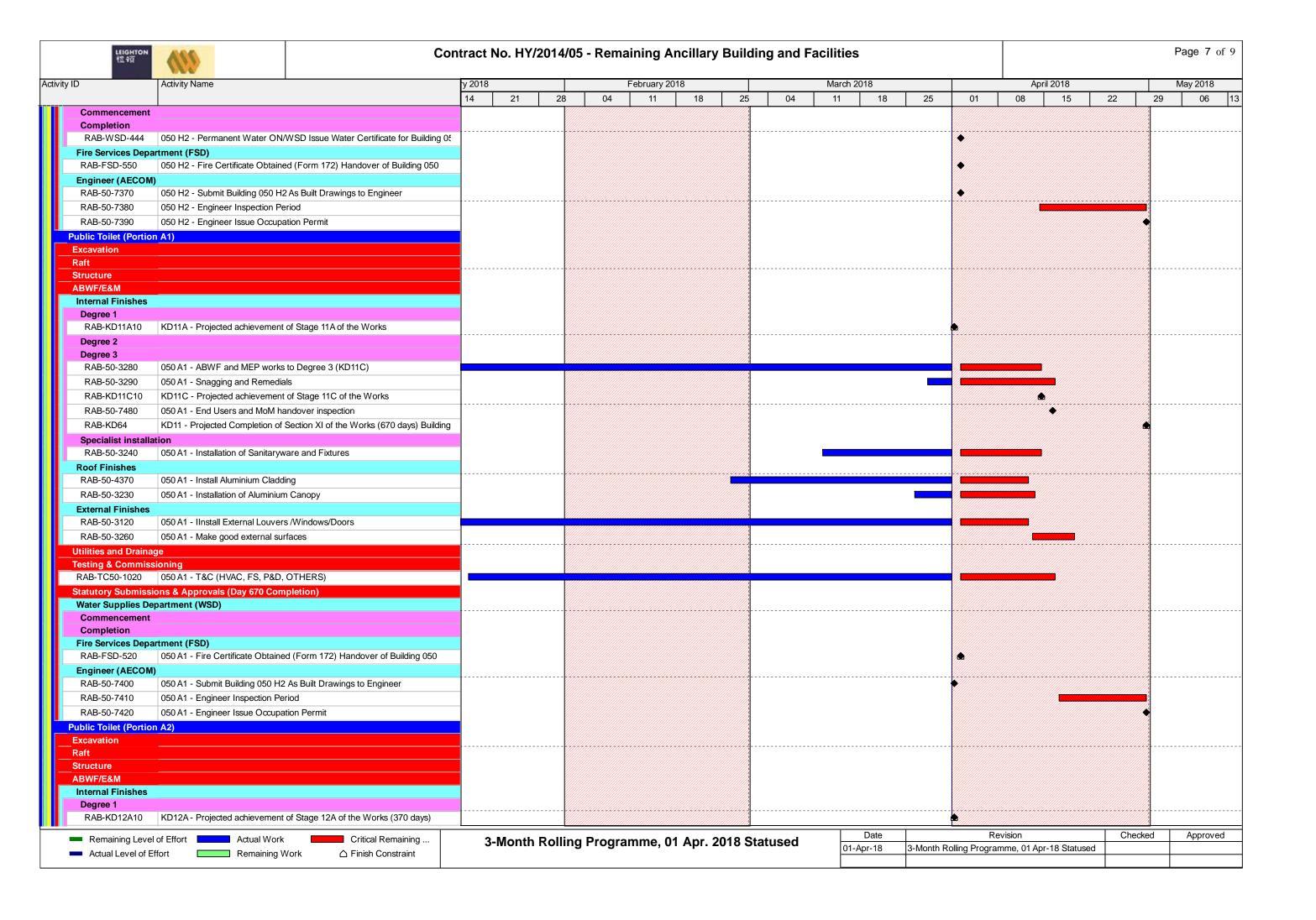


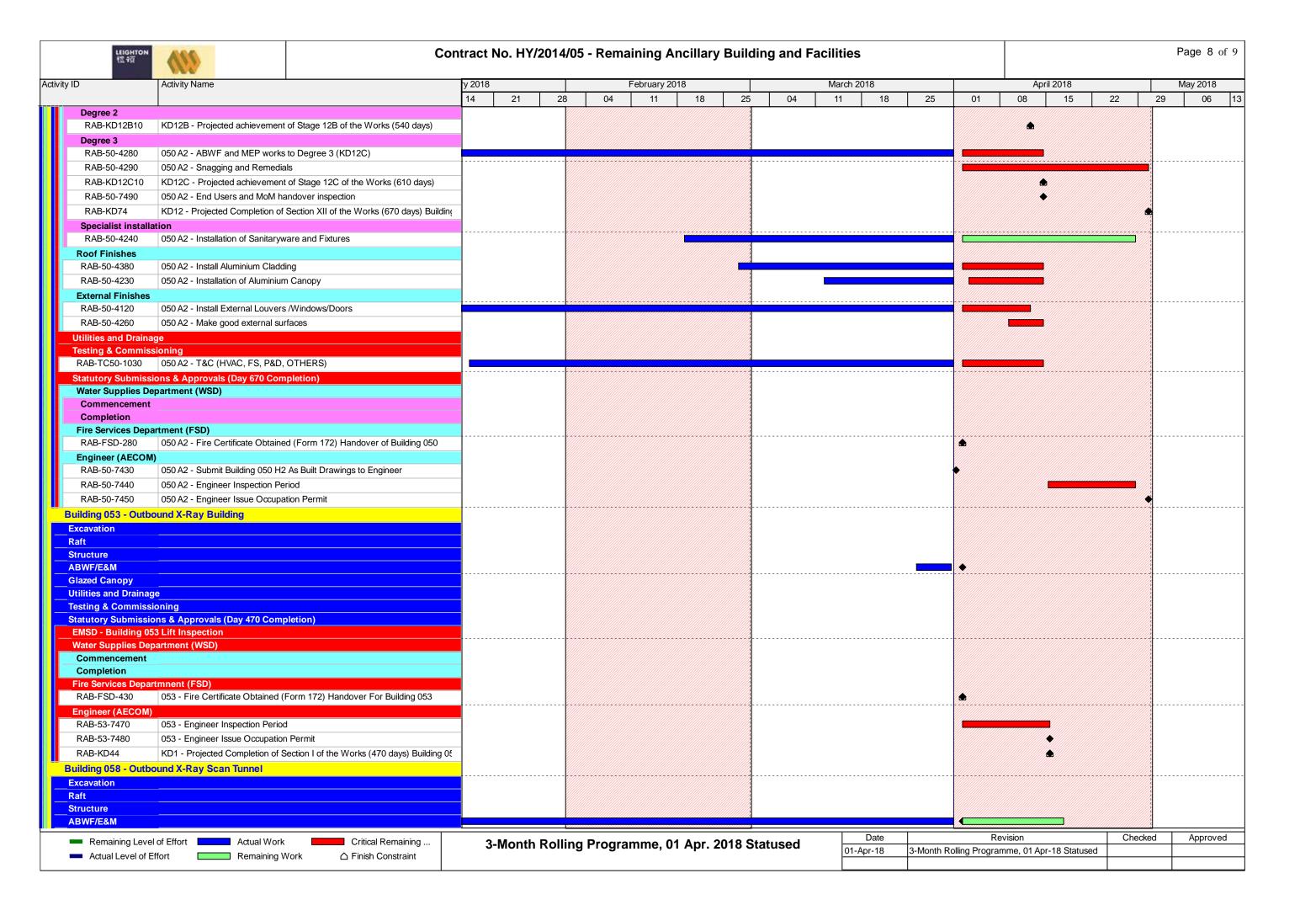


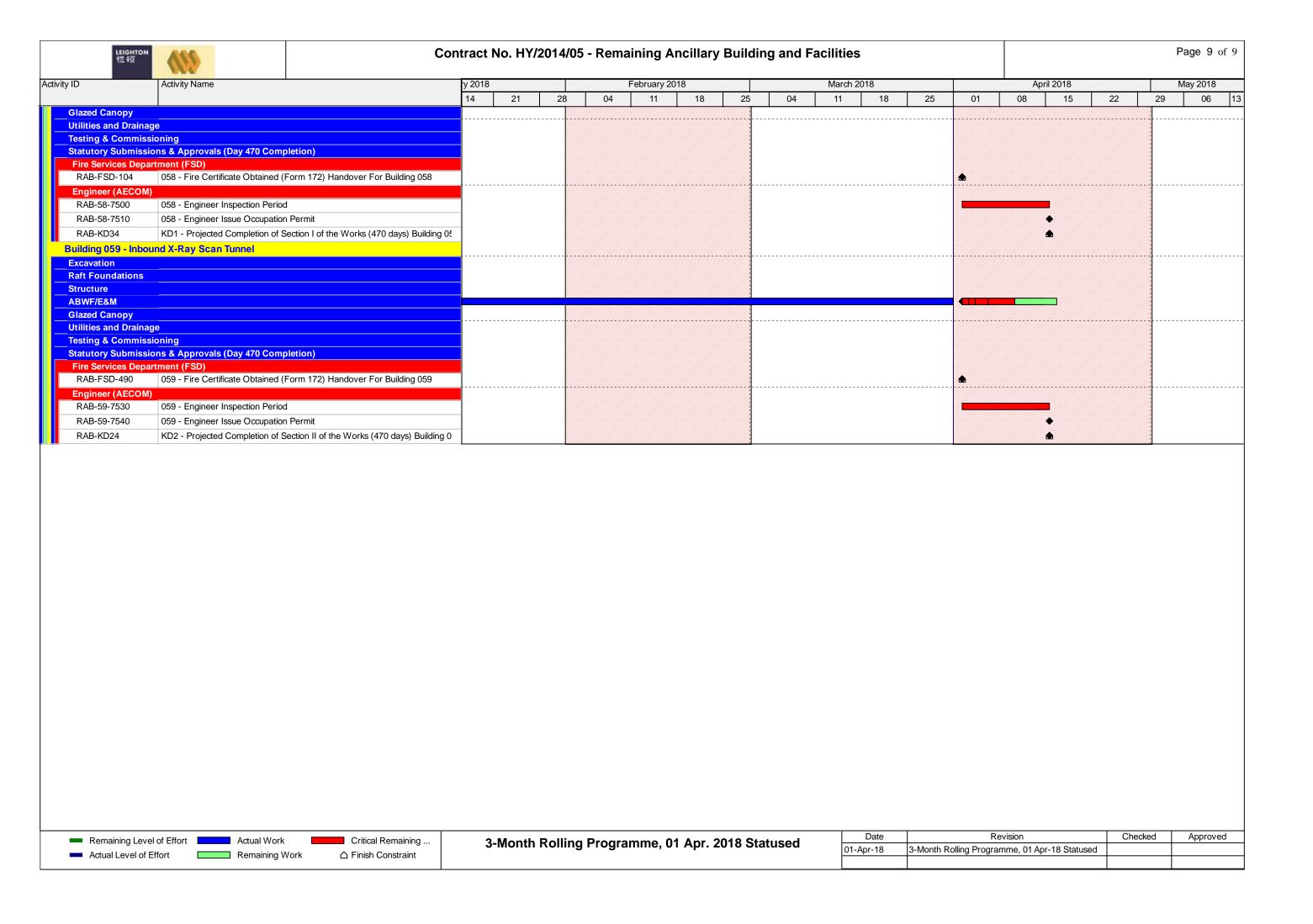


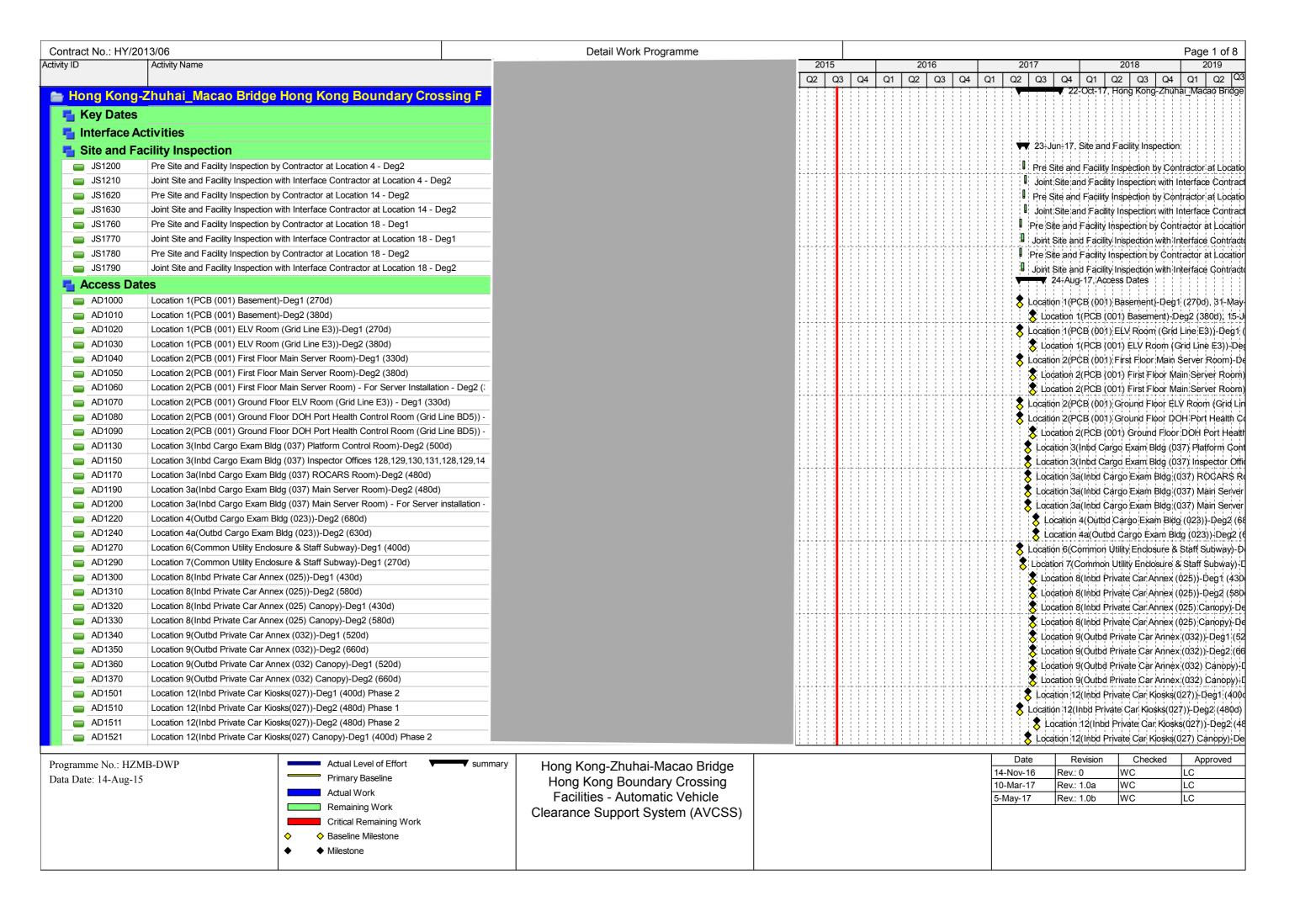
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RAB-45-0790	045 - End Users and MoM hando	-																	
RAB-KD8C10	KD8C - Projected achievement o	f Stage 8C of the Works (610 days), Middl																	
External Finishes N	Middle																		
Facade																	9		
RAB-45-0890	045 - External Painting, Middle					4,5,4,4,4,4,4,4,4,4,4,4,4,4,4,4,4,4,4,4	//////////////////////////////////////	4,	///////						.,,,,,,,,,,	,,,,,,,,,,,,,,,			
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RAB-45-6640	045 - Prepare Sub Grade, Middle	9									_								
RAB-45-6630	045 - Laying Geo Textile, Middle																		
RAB-45-6660	045 - Sand Bedding, Middle											_							
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RAB-KD9A10	KD9A - Projected achievement of	f Stage 9A of the Works																	
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RAB-50-1290	050 H1 - Snagging and Remedia																		
RAB-KD9C10	KD9C - Projected achievement o	-																	
RAB-50-7460	050 H1 - End Users and MoM ha	•																	
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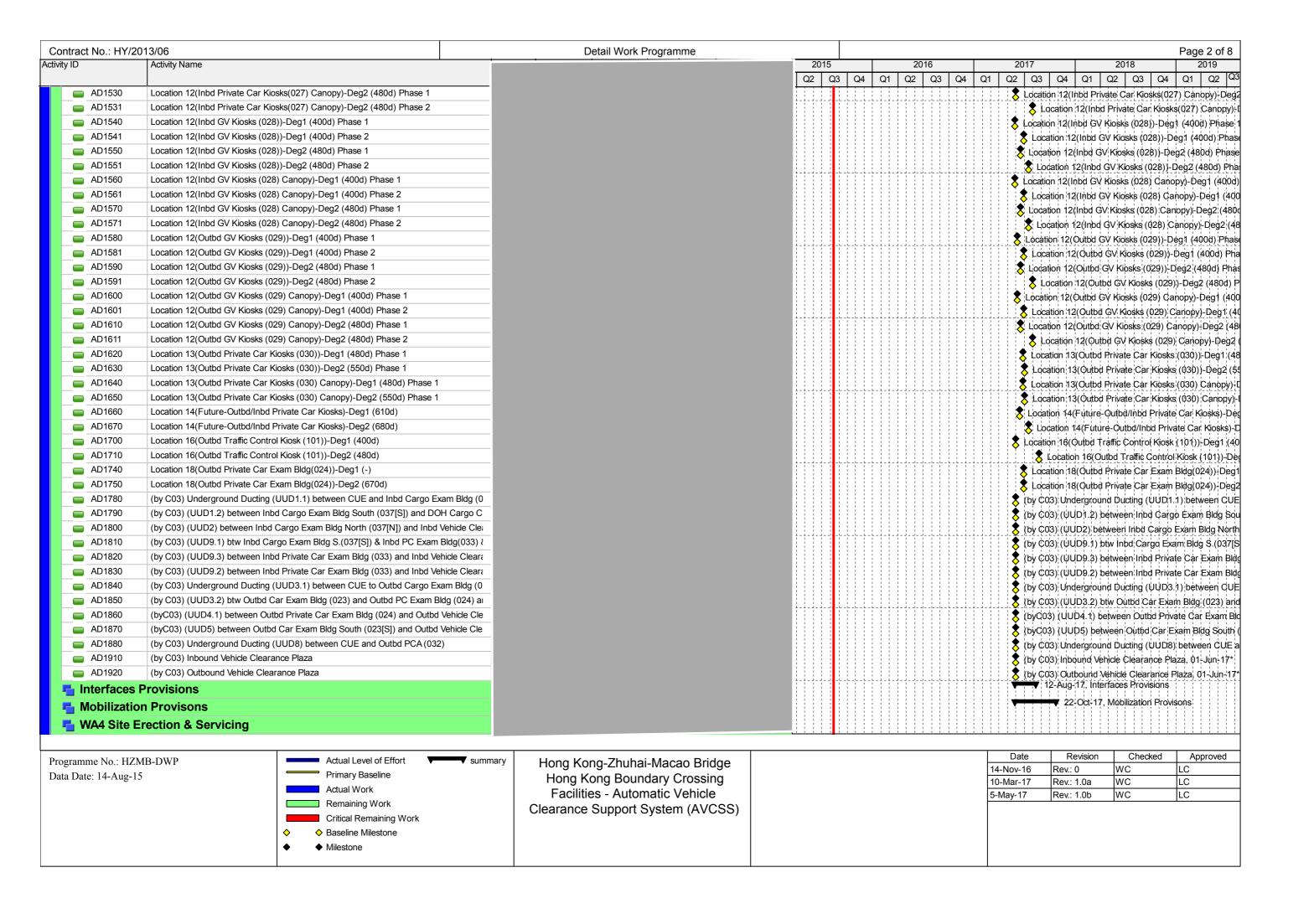


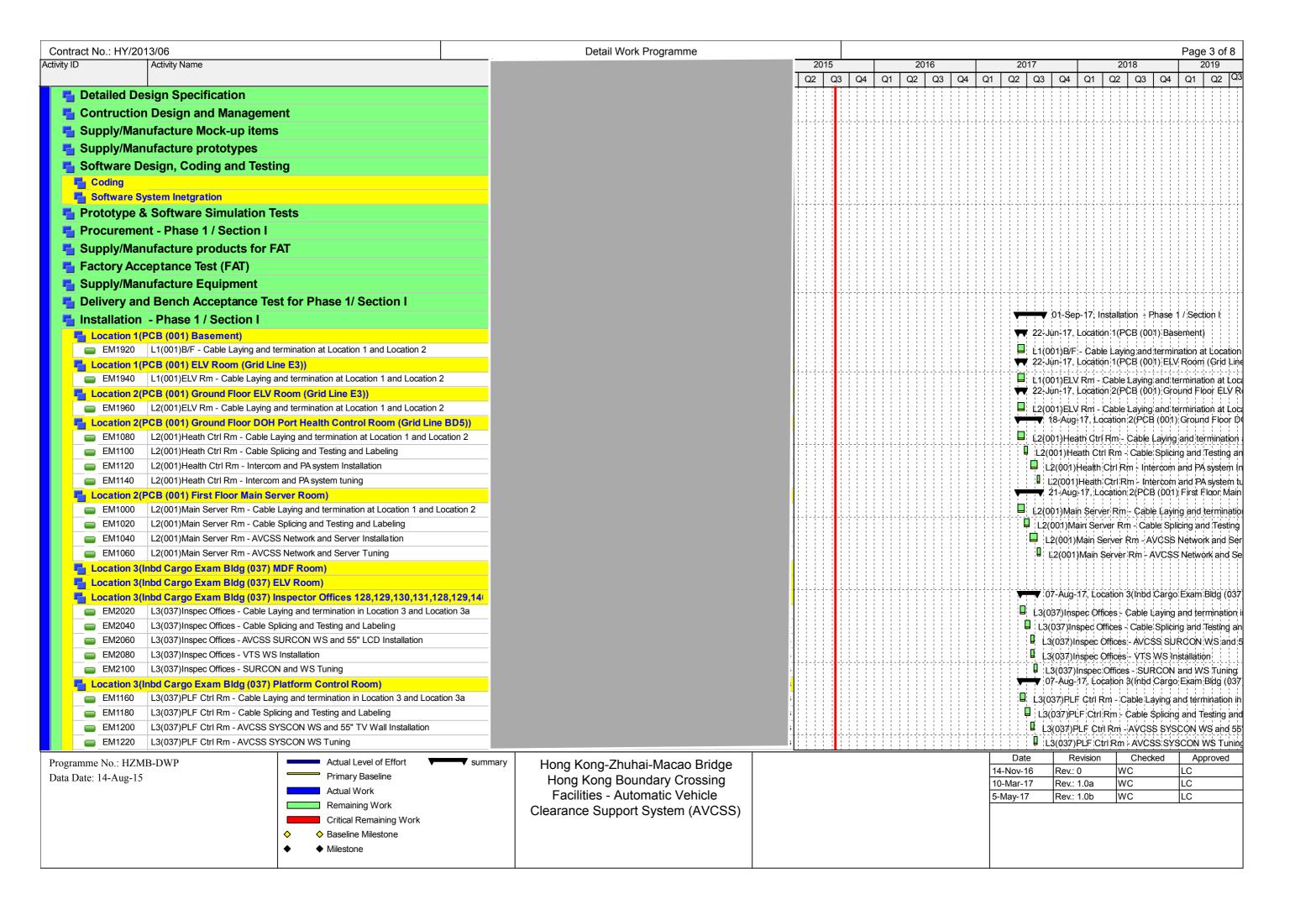


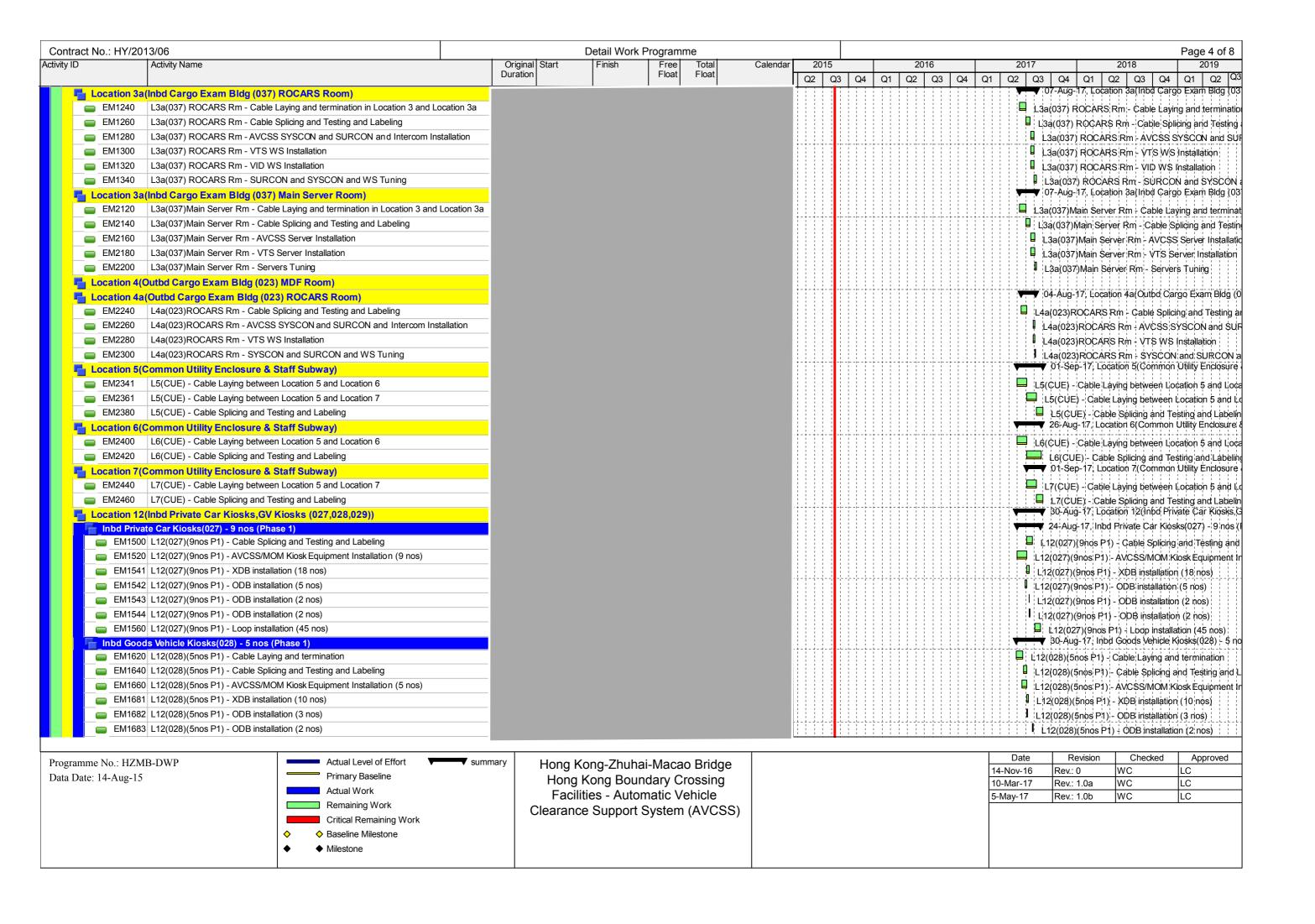


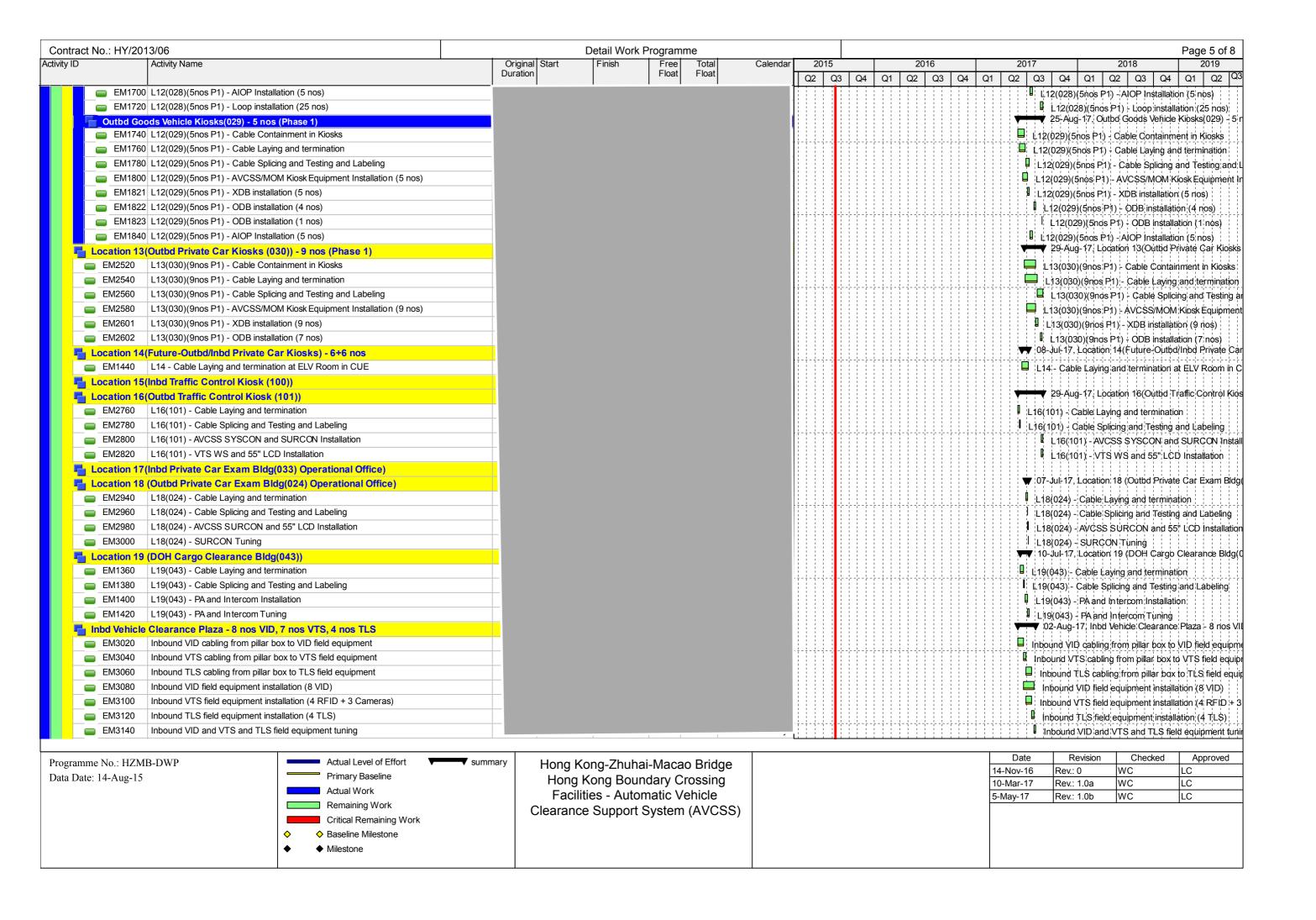


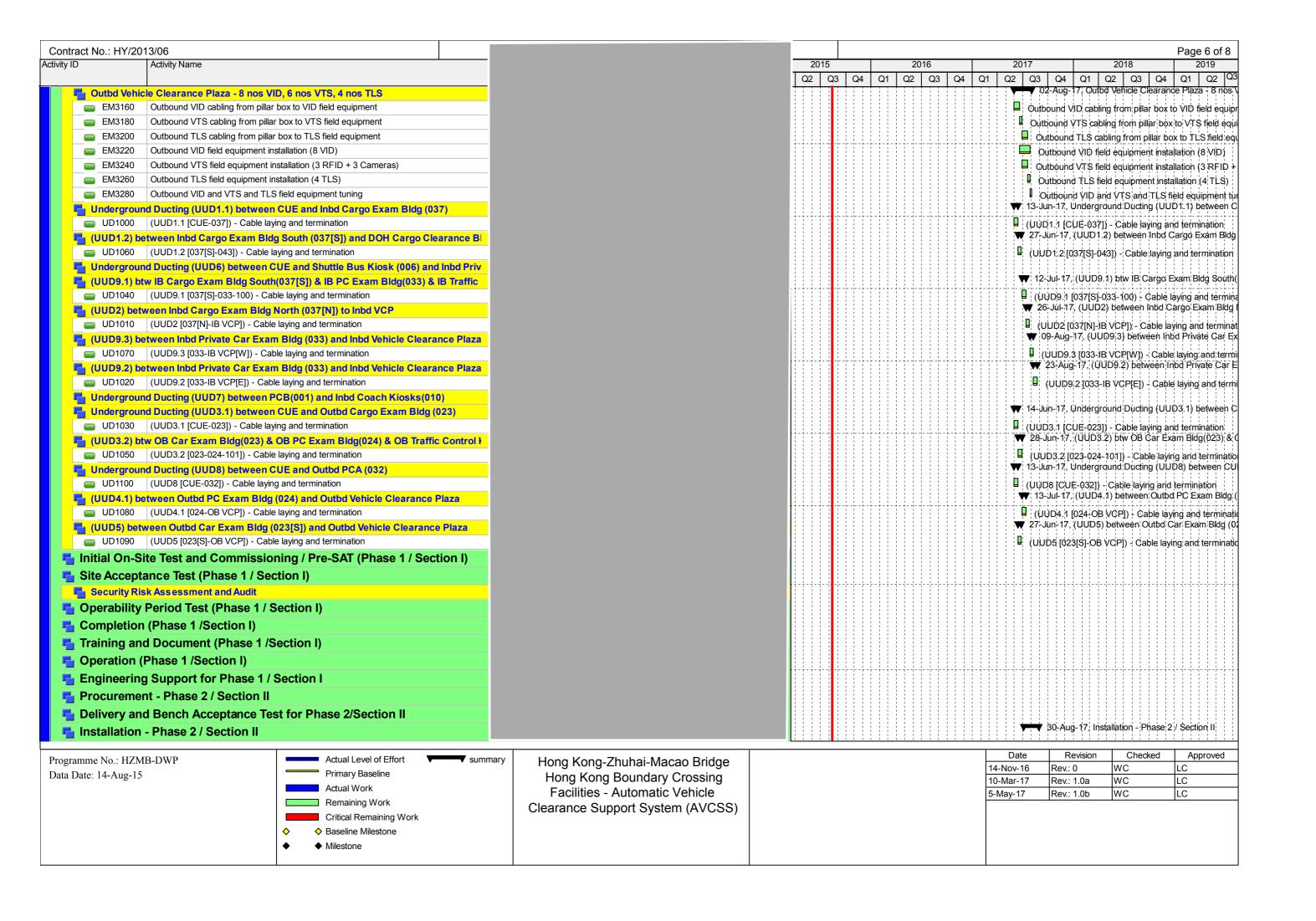


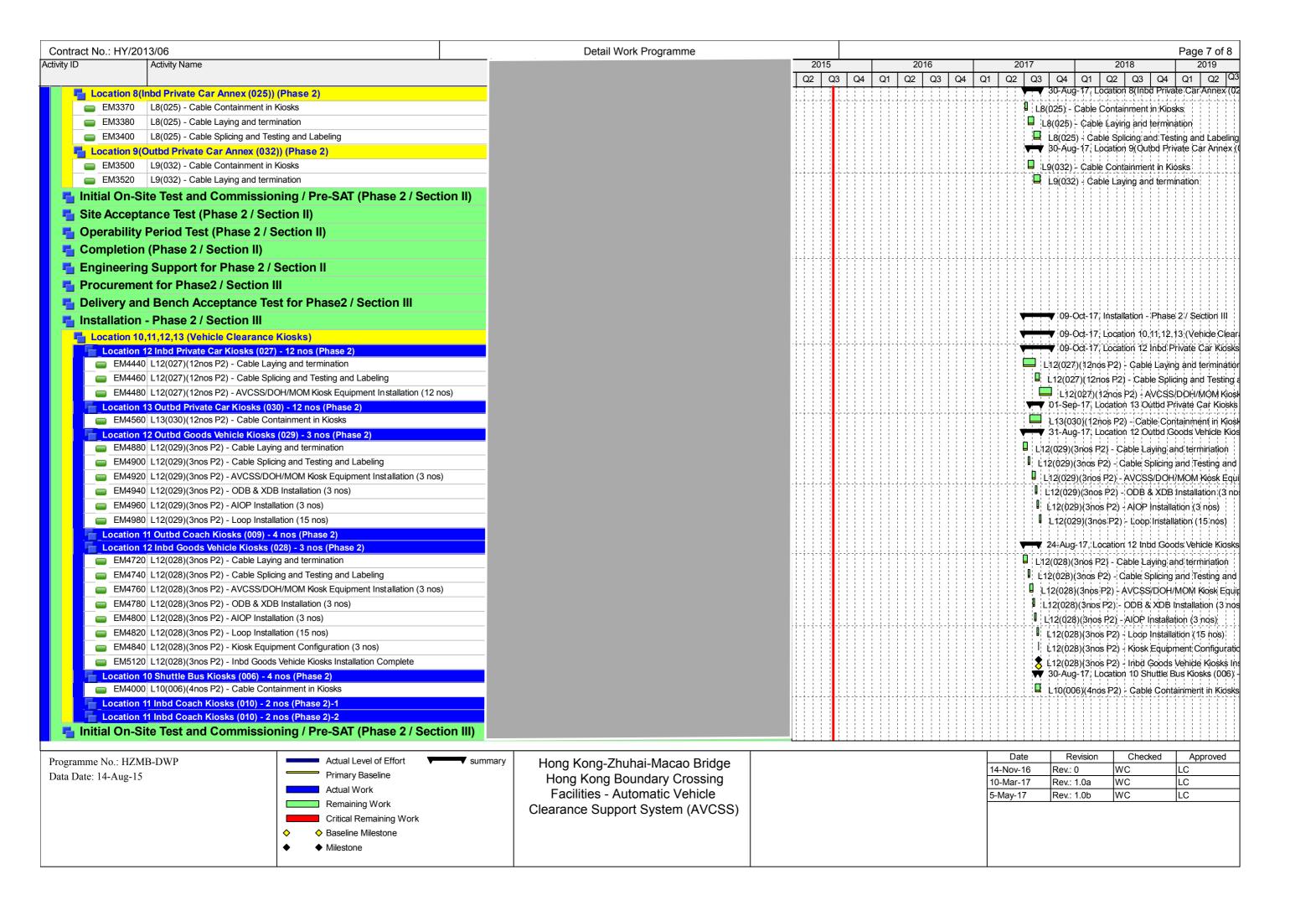


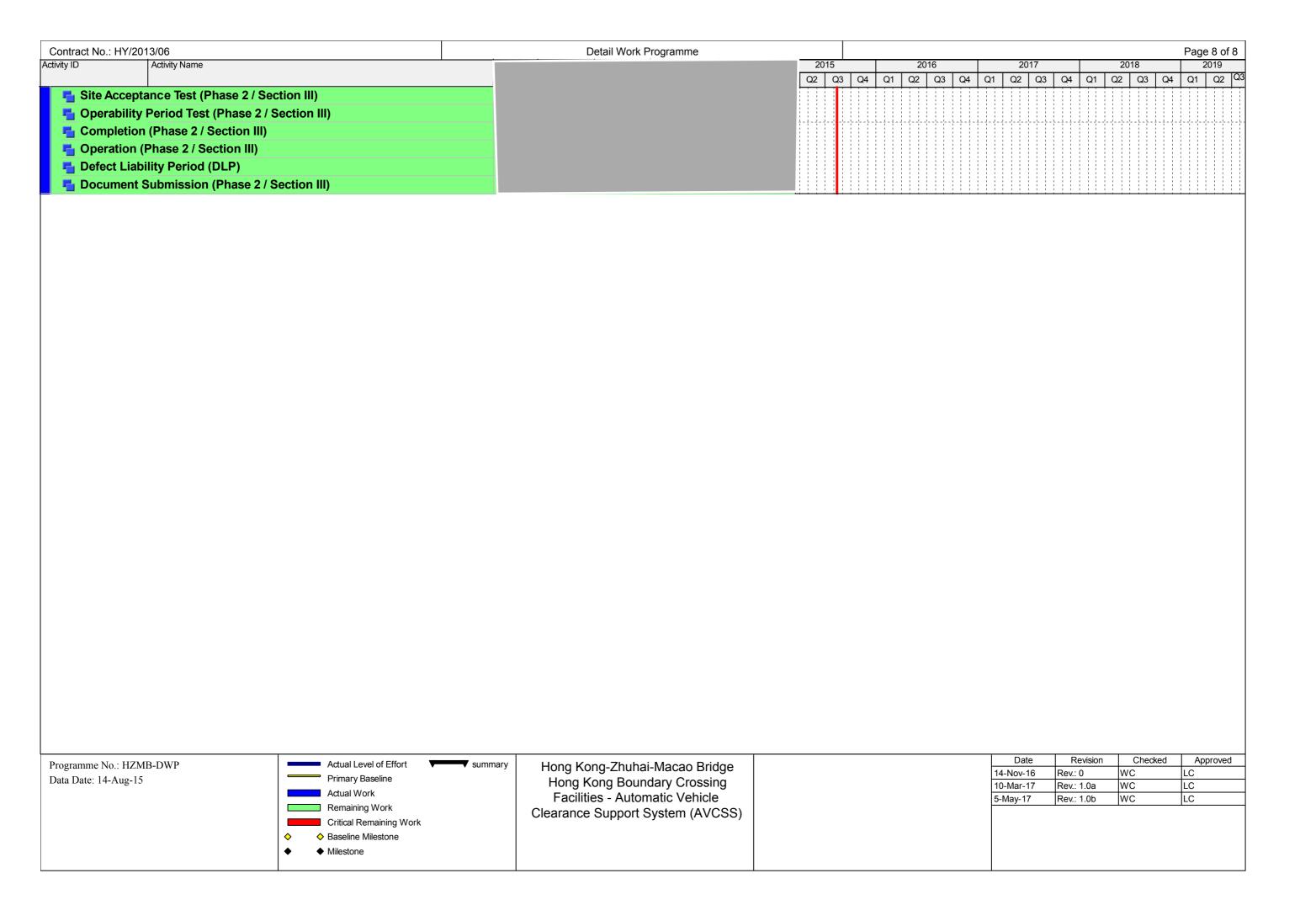


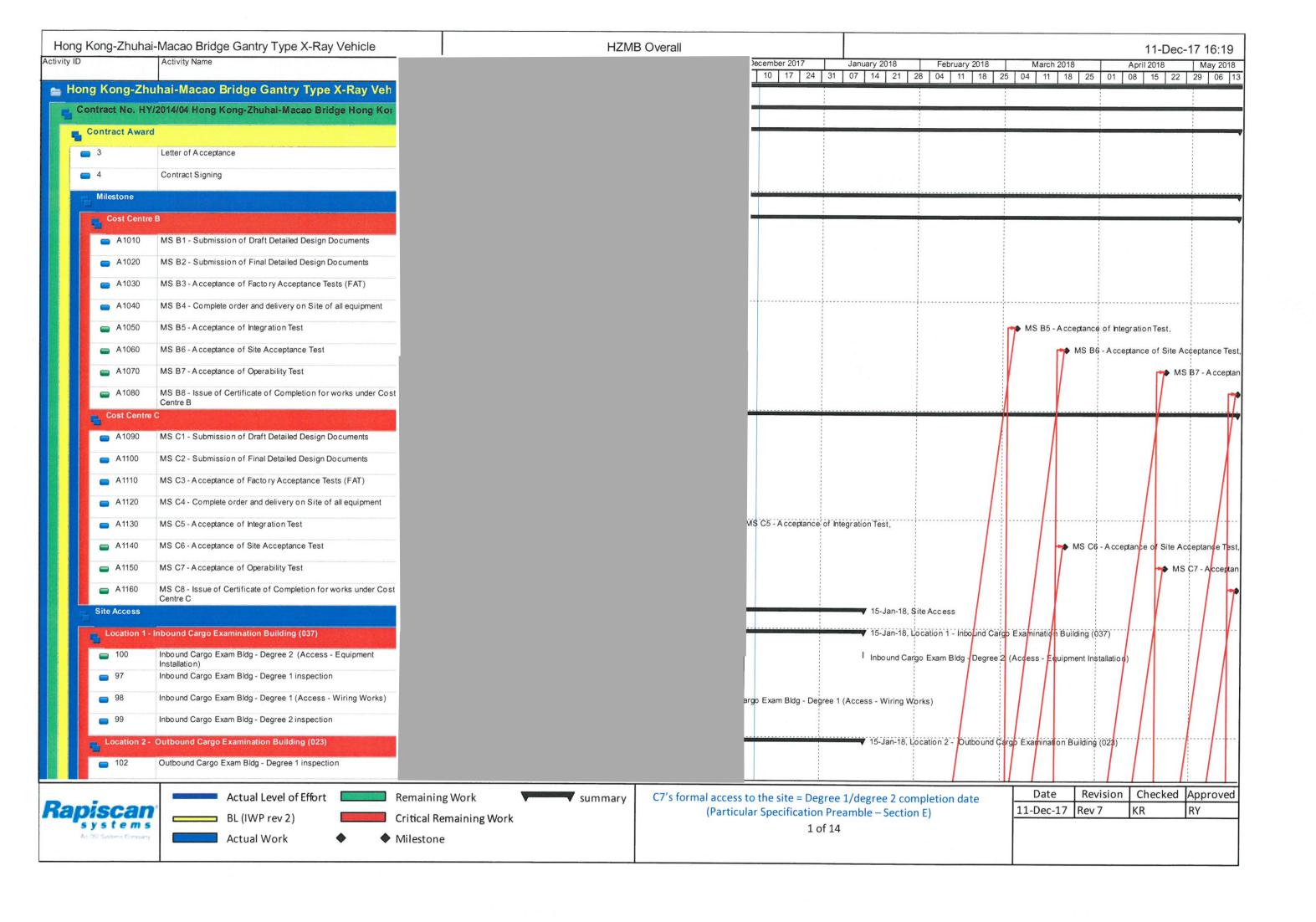


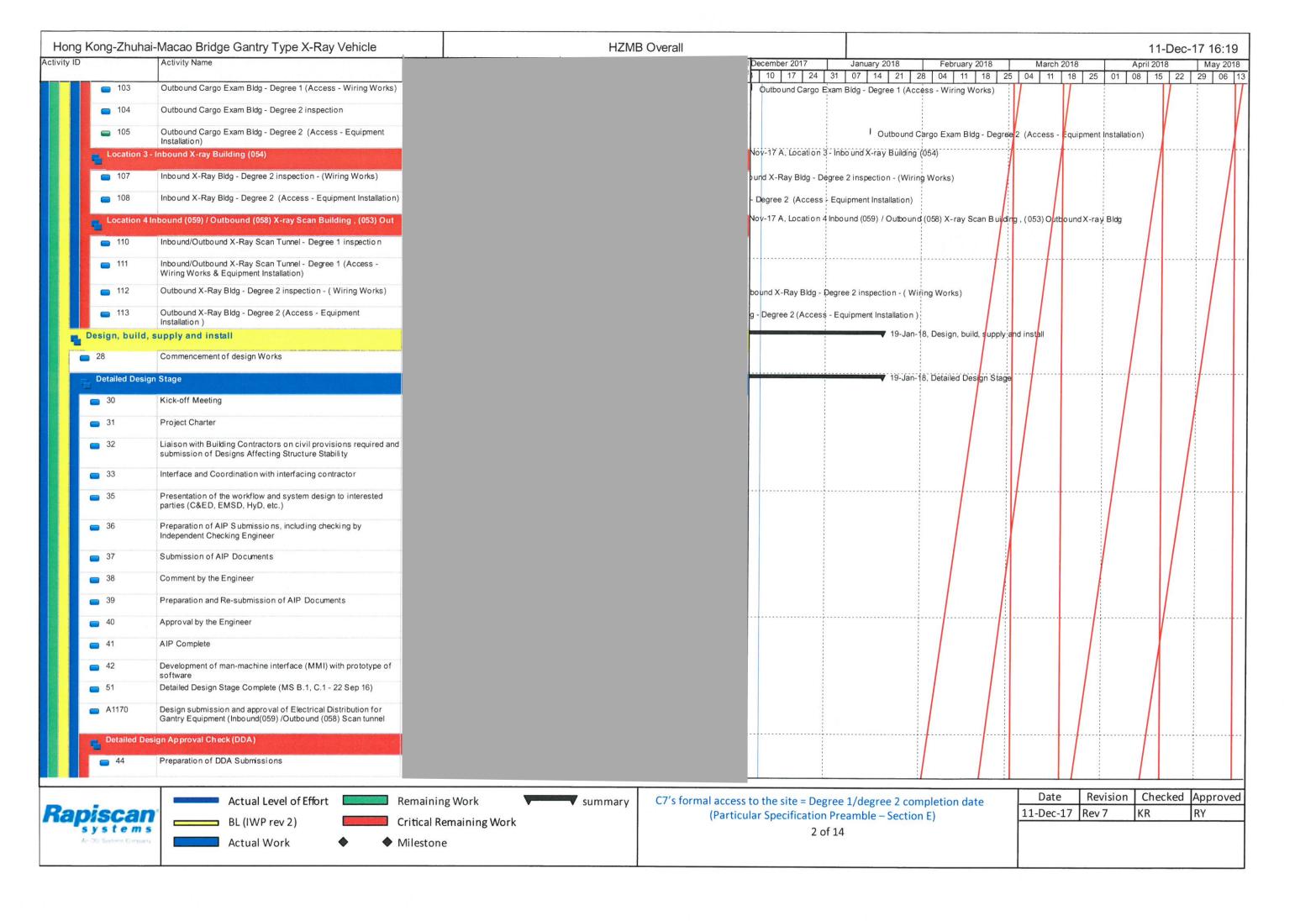


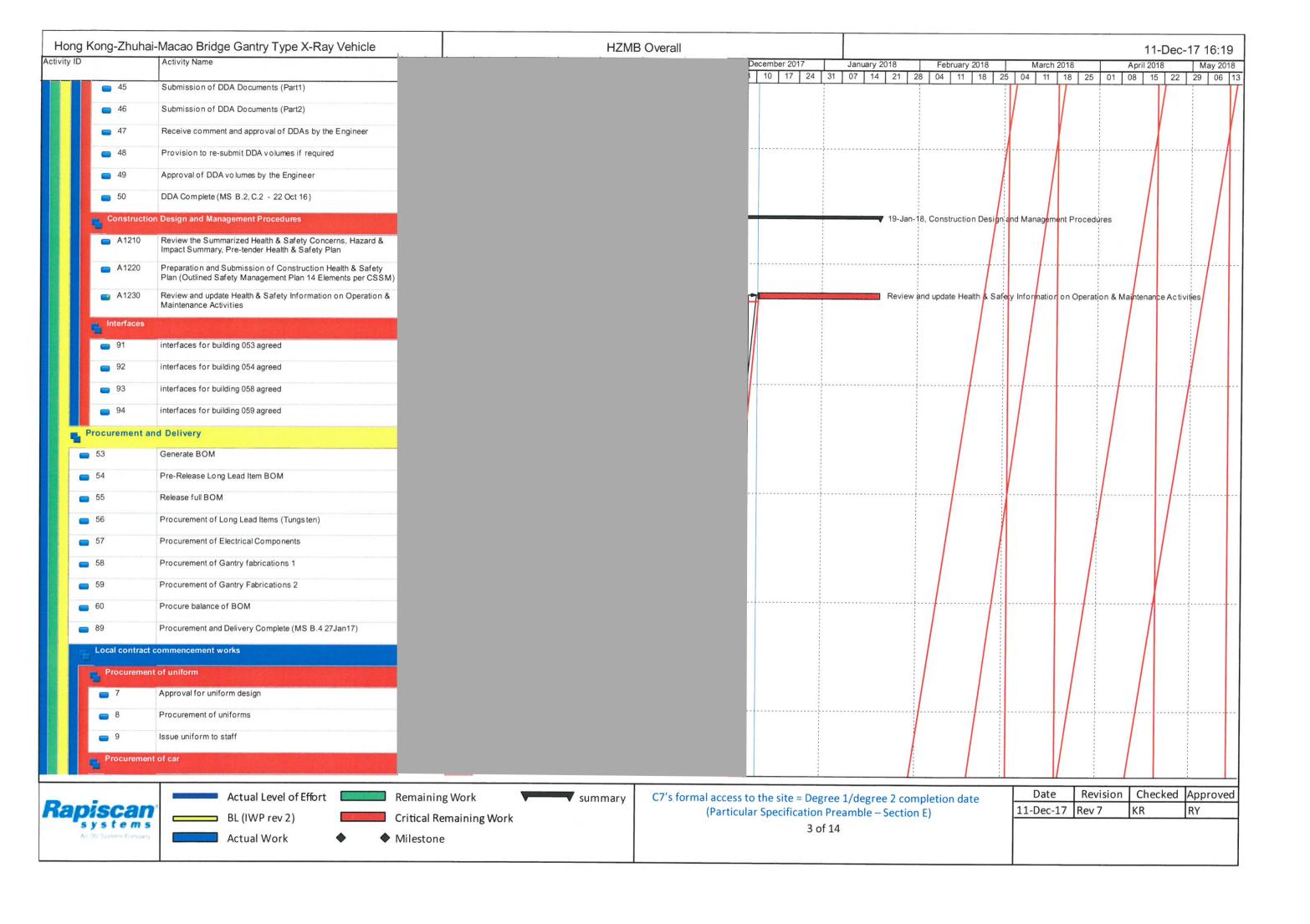


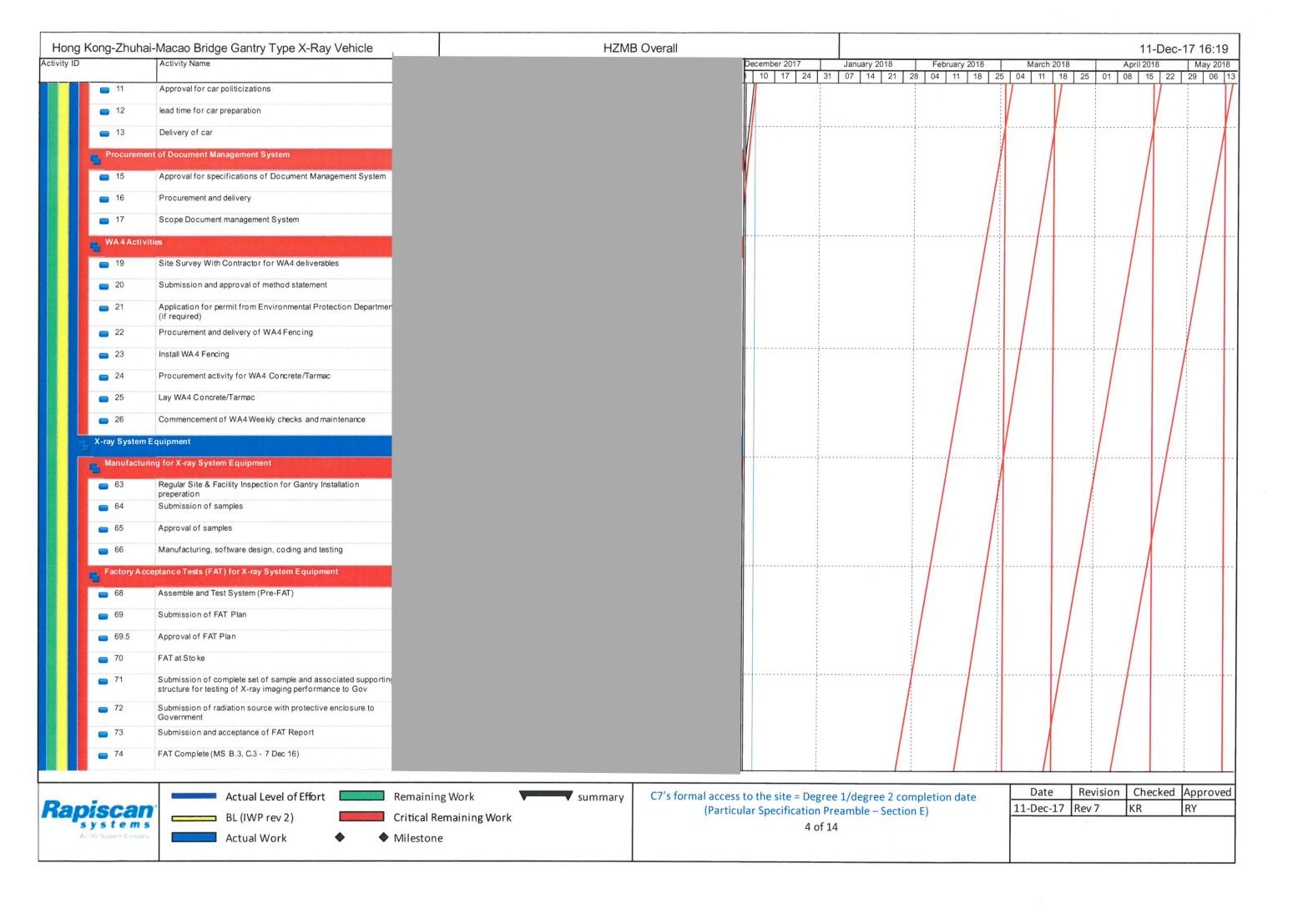


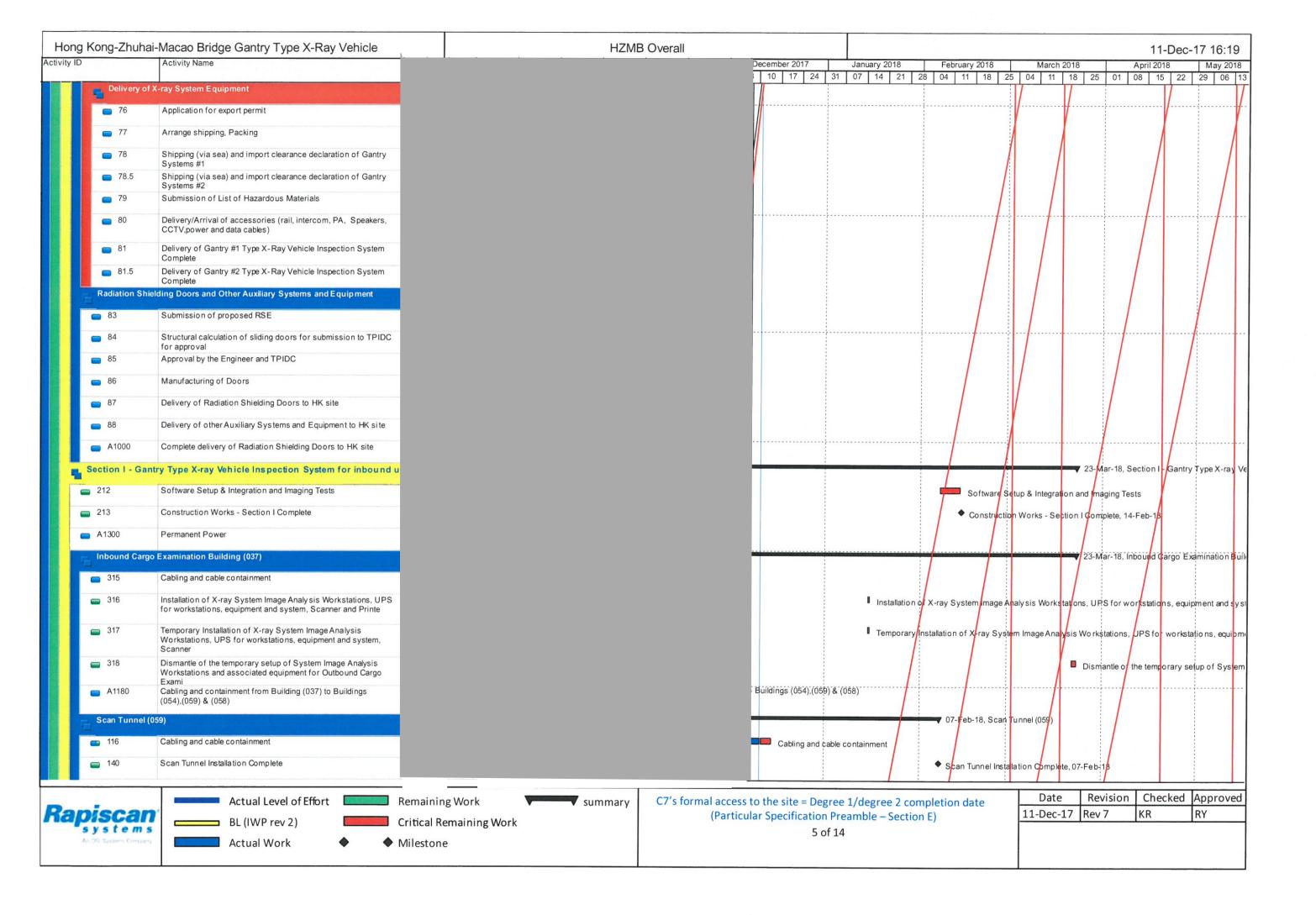


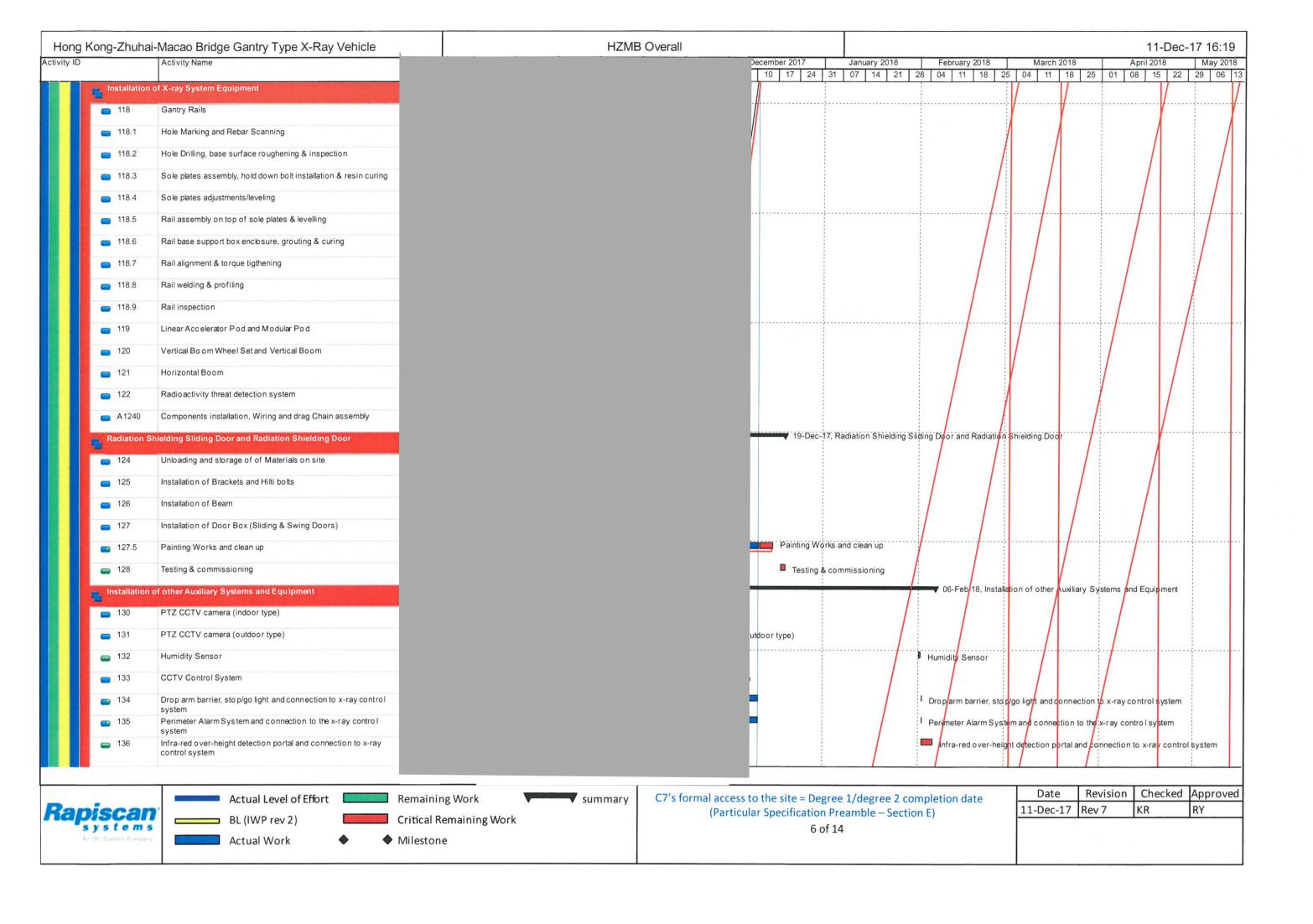


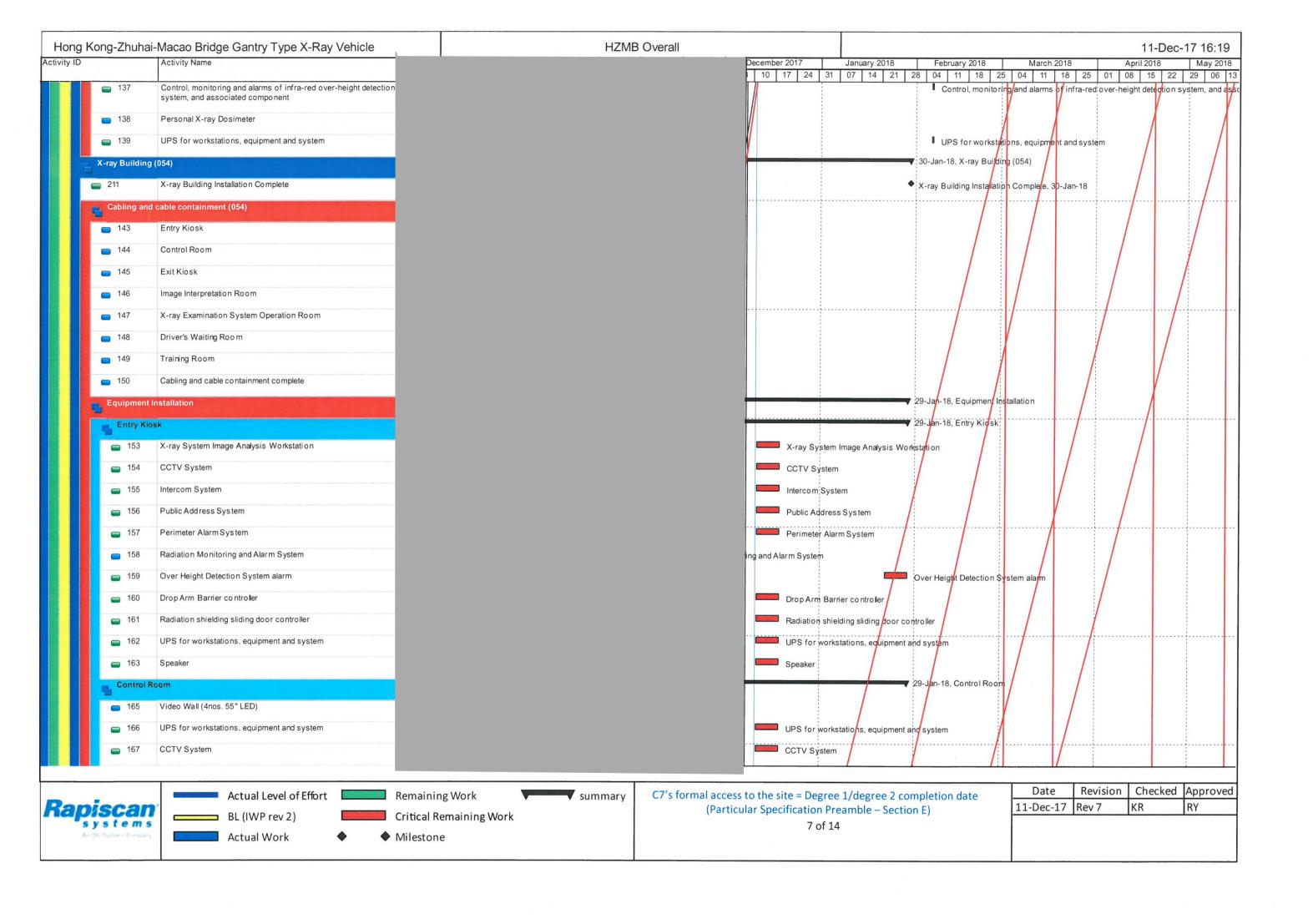


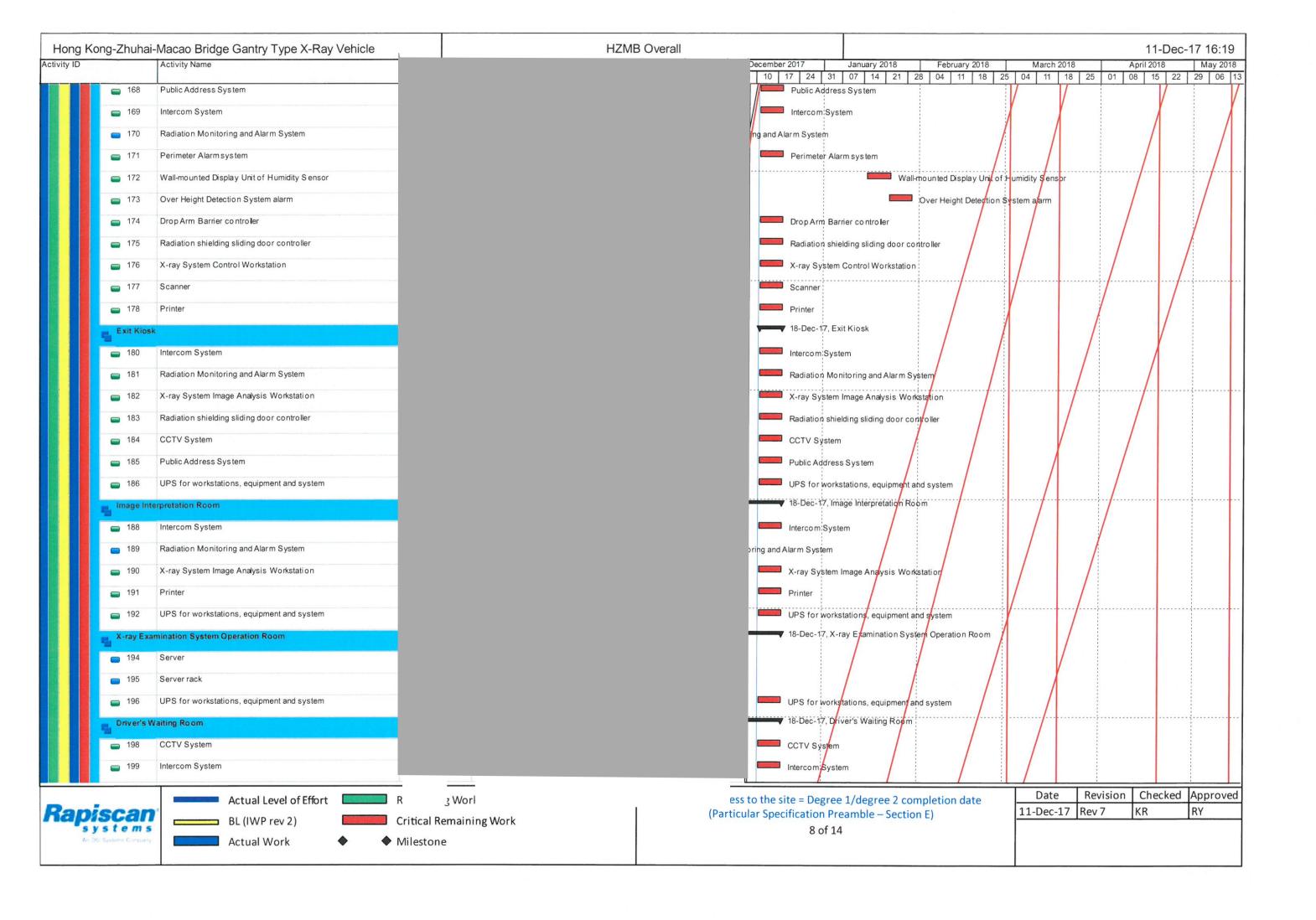


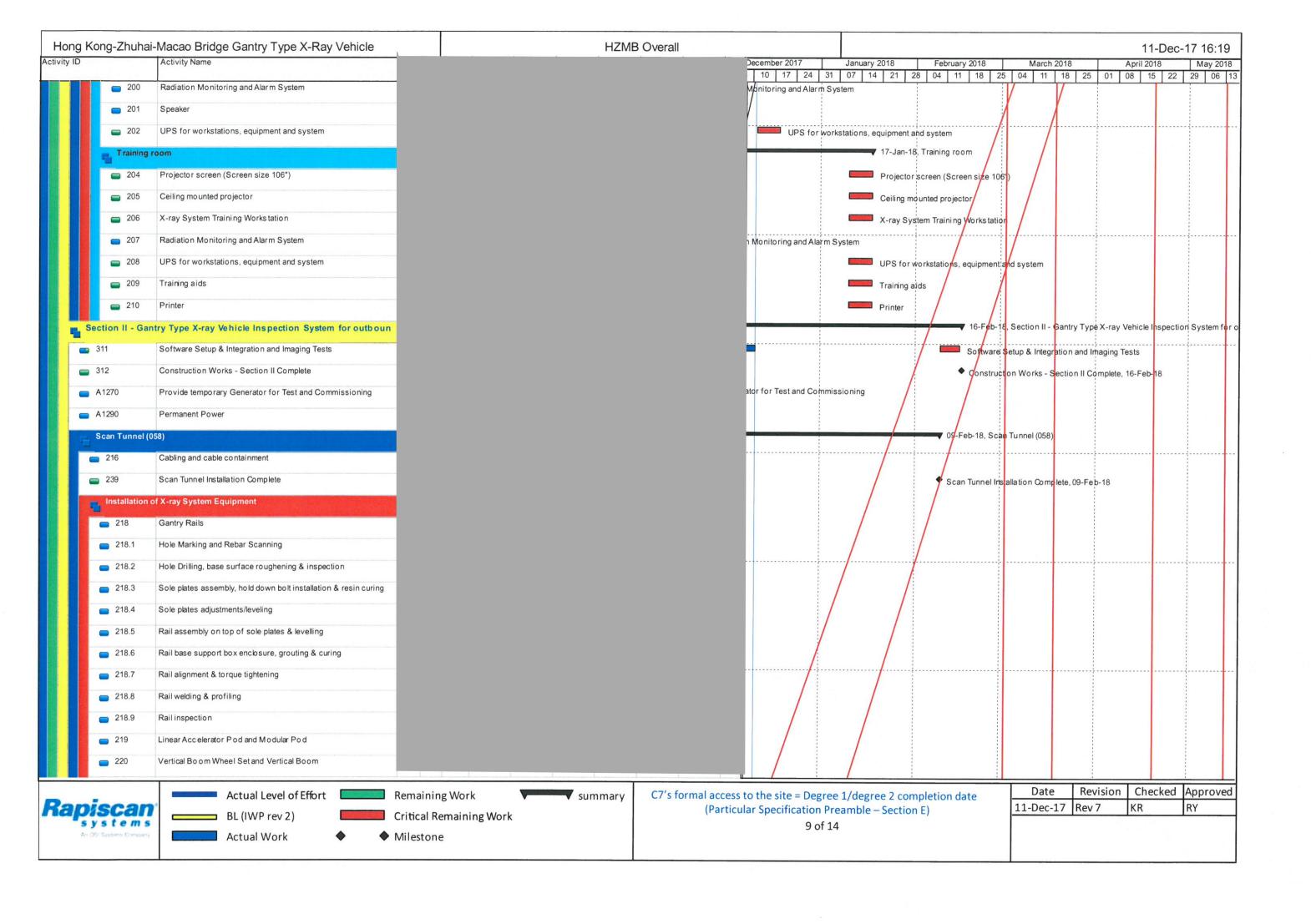


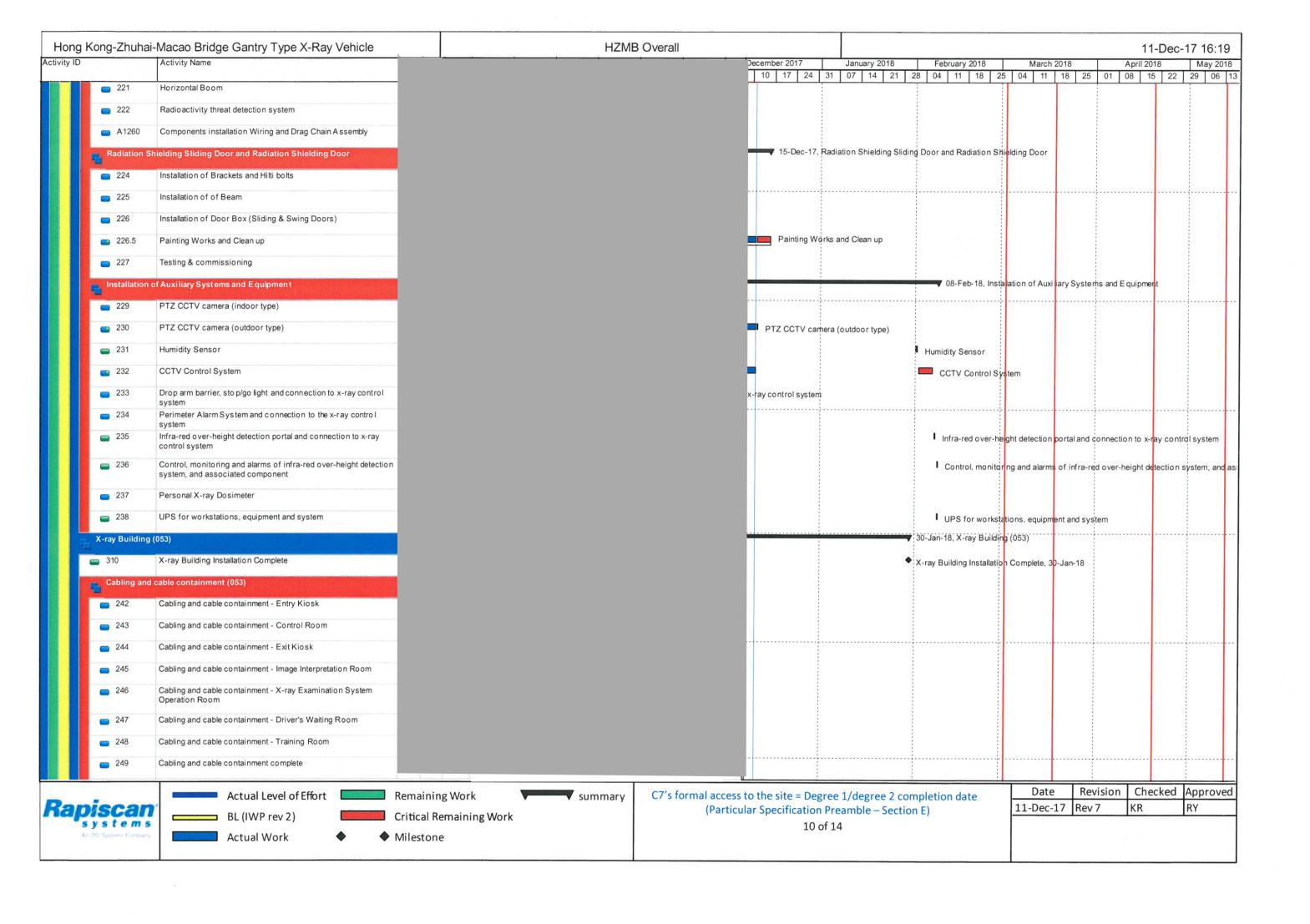


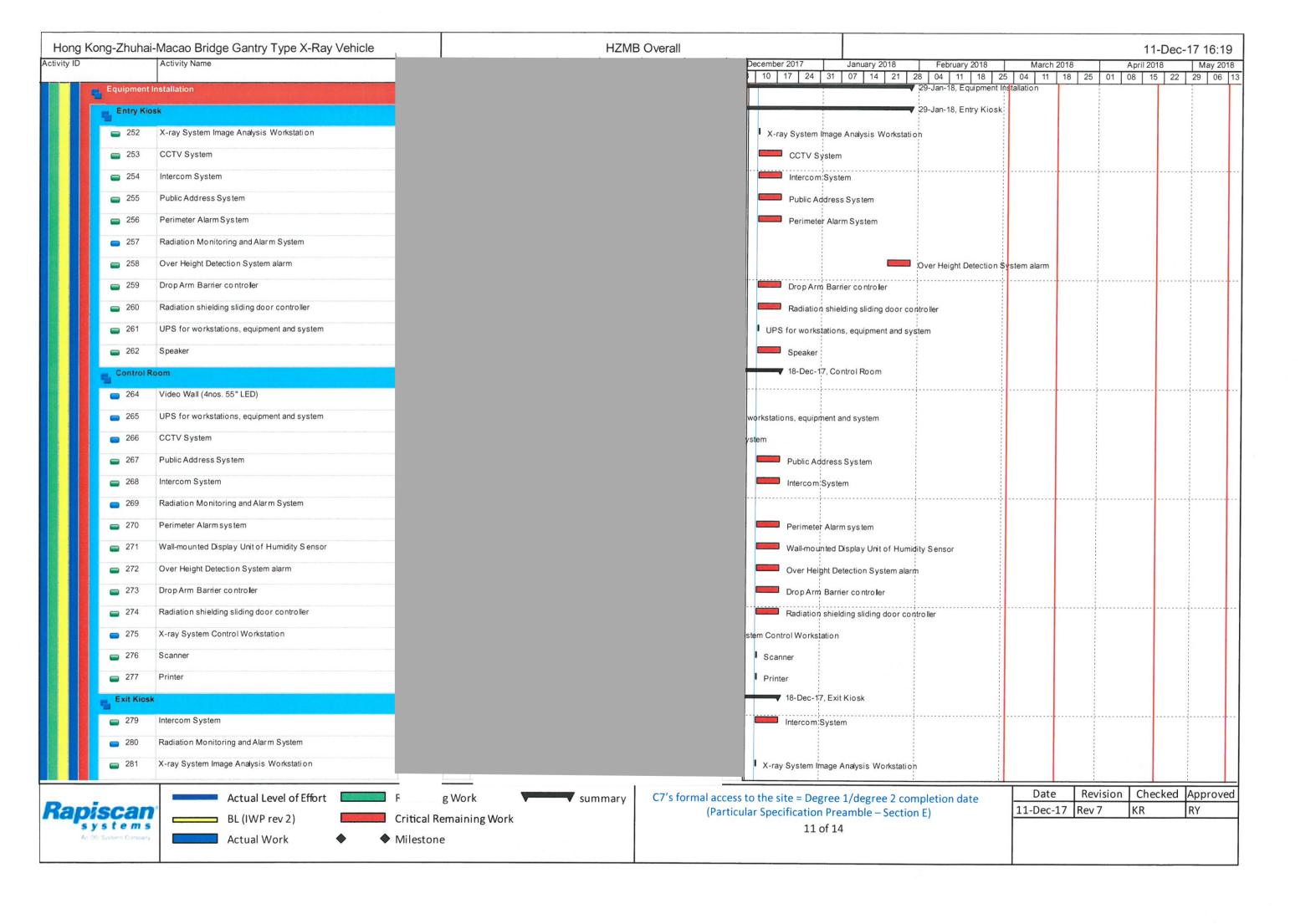


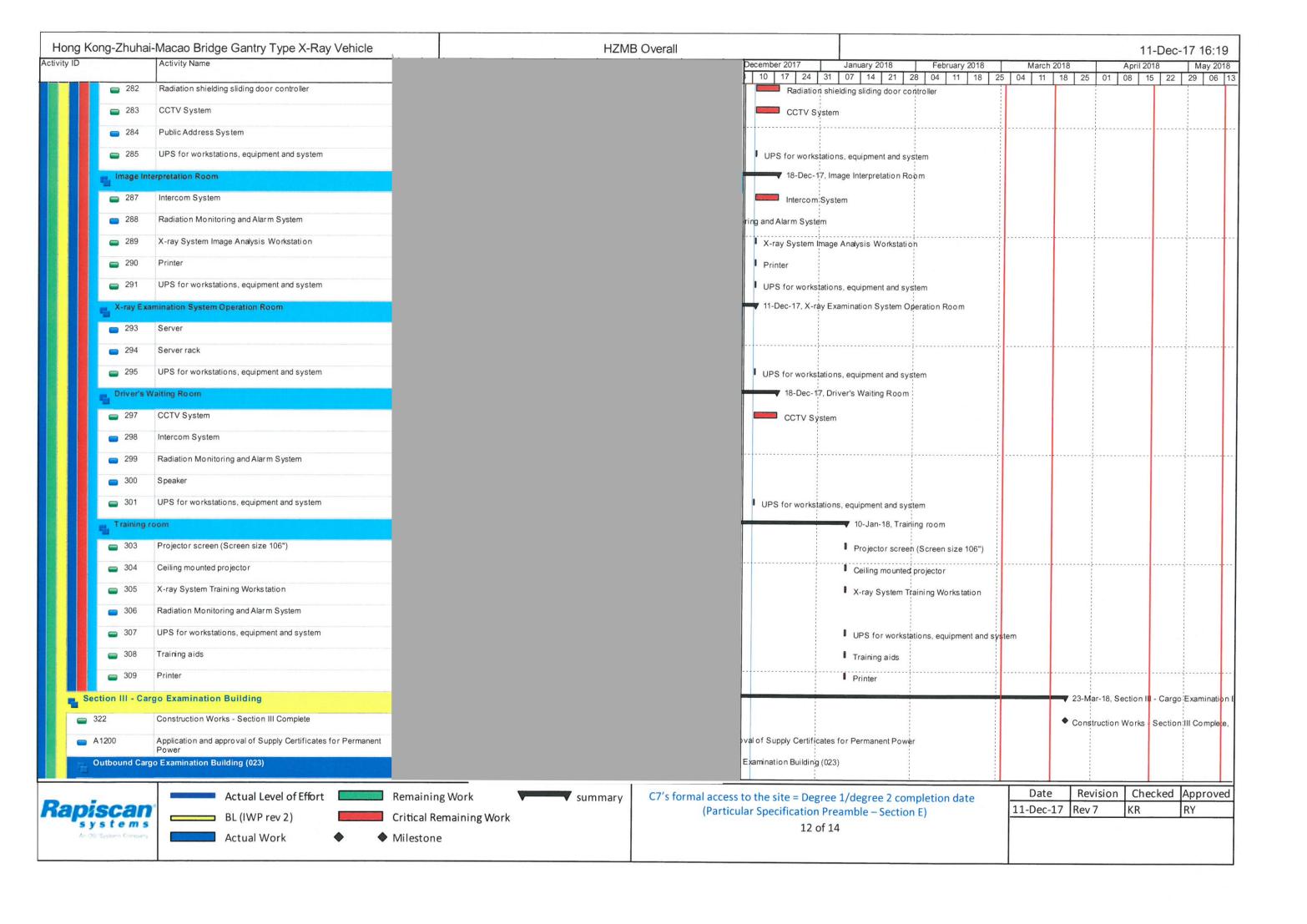


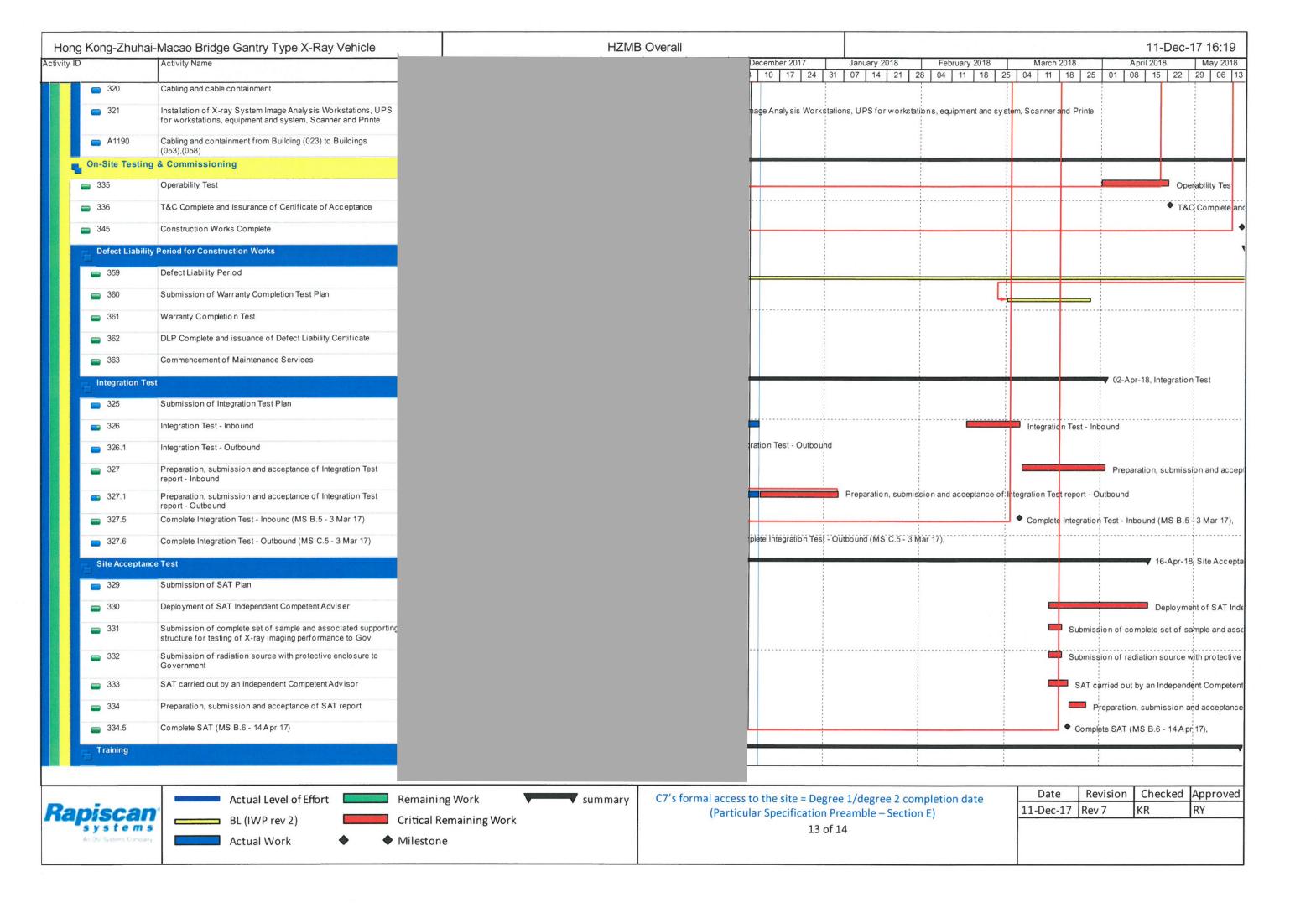








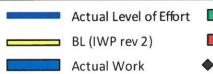


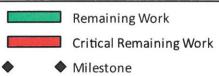


Macao Bridge Gantry Type X-Ray Vehicle  Activity Name			ļ			11-Dec	:-17 16:19
		December 2017	January 2018	February 2018	March 2018	April 2018	May 201
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Liaison with Engineer to confirm training schedule		confirm training s	hedule				
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Trainer training							
Preventive maintenance training			1 1 2 1 1		1		
Comprehensive maintenance training							<del></del>
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Submission of WR1/WR1 (A) for all electrical installations							Submission
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Submission of Operator's Operating Instructions				1			
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Submission of Equipment and Hardware Maintenance Instruction Manual							
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summary







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

14 of 14

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



## **APPENDIX D**

**Event and Action Plan** 



### **Event/Action Plan for Air Quality**

EVENT		ACTION								
	ET	IEC	ER	CONTRACTOR						
ACTION LEVEL										
Exceedance for one sample	Identify source, investigate the causes of exceedance and propose remedial measures;     Inform IEC and ER;     Repeat measurement to confirm finding;     Increase monitoring frequency to daily.	Check monitoring data submitted by ET;     Check Contractor's working method.	Notify Contractor.	Rectify any unacceptable practice;     Amend working methods if appropriate.						
Exceedance for two or more consecutive samples	<ol> <li>Identify source;</li> <li>Inform IEC and ER;</li> <li>Advise the ER on the effectiveness of the proposed remedial measures;</li> <li>Repeat measurement s to confirm findings;</li> <li>Increase monitoring frequency to daily;</li> <li>Discuss with IEC and Contractor on remedial actions required;</li> <li>If exceedance continues, arrange meeting with IEC and ER;</li> <li>If exceedance stops, cease additional monitoring.</li> </ol>	<ol> <li>Check monitoring data submitted by ET;</li> <li>Check Contractor's working method;</li> <li>Discuss with ET and Contractor on possible remedial measures;</li> <li>Advise the ER on the effectiveness of the proposed remedial measures;</li> <li>Supervise Implementation of remedial measures.</li> </ol>	<ol> <li>Confirm receipt of notification of failure in writing;</li> <li>Notify Contractor;</li> <li>Ensure remedial measures properly implemented.</li> </ol>	<ol> <li>Submit proposals for remedial to ER within 3 working days of notification;</li> <li>Implement the agreed proposals;</li> <li>Amend proposal if appropriate.</li> </ol>						

	EVENT		ACTION						
		ET	IEC	ER	CONTRACTOR				
L:	Exceedance for one sample	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	Check     monitoring data     submitted by ET;     Check     Contractor's     working     method;     Discuss with ET     and Contractor on     possible remedial     measures;     Advise the ER     on the effectiveness     of the proposed	Confirm receipt of notification of failure in writing;     Notify Contractor;     Ensure remedial measures properly implemented.	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	Contractor's remedial actions and keep IEC, EPD and ER informed of the results.  1. Notify IEC, ER,	remedial measures; 5. Supervise implementation of remedial measures.  1. Discuss amongst	Confirm receipt of	Take immediate				
	for two or more consecutive samples	Contractor and EPD;  Identify source;  Repeat measurement to confirm findings;  Increase monitoring frequency to daily;  Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented;  Arrange meeting with IEC and ER to discuss the remedial actions to be taken;  Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results;  If exceedance stops, cease additional monitoring.	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.	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.	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	exceedance and propose remedial measures; 3. Report the results of investigation to the		notification of failure in writing; 2. Notify Contractor;	Submit noise     mitigation     proposals to     IEC;      Implement     noise mitigation     proposals.			
Limit Level	<ol> <li>Inform IEC, ER, EPD and Contractor;</li> <li>Identify source;</li> <li>Repeat measurements to confirm findings;</li> <li>Increase monitoring frequency;</li> <li>Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented;</li> <li>Inform IEC, ER and EPD the causes and actions taken for the exceedances;</li> <li>Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results;</li> <li>If exceedance stops, cease additional monitoring.</li> </ol>	<ol> <li>Discuss amongst ER, ET, and Contractor on the potential remedial actions;</li> <li>Review Contractors remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly;</li> <li>Supervise the implementation of remedial measures.</li> </ol>	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	<ol> <li>Take immediate action to avoid further exceedance;</li> <li>Submit proposals for remedial actions to IEC within 3 working days of notification;</li> <li>Implement the agreed proposals;</li> <li>Resubmit proposals if problem still not under control;</li> <li>Stop the relevant portion of works as determined by the ER until the exceedance is abated.</li> </ol>			



# **APPENDIX E**

Waste Flow Table



## MLEIGHTON ((() 俊和 CHUN Wo

Contract No.: HY/2014/05

#### **Monthly Summary Waste Flow Table for 2018**

	Actua	al Quantities	of Inert C&D	Materials G	enerated Mo	nthly	Actual (	Quantities of	C&D Wastes	Generated	Monthly
Month	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)	(SEE NOTE 3)	j. Chemical Waste	k. Others, e.g. general refuse
	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m <sup>3</sup> )
January	0.053	0.053	0.000	0.000	0.053	0.000	0.000	0.000	0.000	0.000	0.515
February	0.010	0.010	0.000	0.000	0.010	0.000	0.000	0.000	0.000	0.000	0.232
March	0.017	0.017	0.000	0.000	0.017	0.000	0.000	0.000	0.000	0.000	0.358
April											
May											
June											
Sub-total	0.080	0.080	0.000	0.000	0.080	0.000	0.000	0.000	0.000	0.000	1.105
July											
August											
September											
October											
November											
December											
Total	0.080	0.080	0.000	0.000	0.080	0.000	0.000	0.000	0.000	0.000	1.105

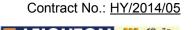
Total C&D waste generated = a+b+f+g+h+i+j+k

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

Monthly Summary Waste Flow Table for 2016 - Rev.00 - 22/01/2016 page 1



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

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:  $rock = 2.5 tonnes/m^3$ ; soil = 2.0 tonnes/m³ excavated:  $rock = 2.0 tonnes/m^3$ ; soil = 1.8 tonnes/m³; broken concrete and bitumen = 2.4 tonnes/m³
  - C&D Waste = 0.9 tonnes/m<sup>3</sup>; bentonite slurry = 2.8 tonnes/m<sup>3</sup>
- (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 Clearence Support System

Location: Artifical Island of HKBCF (C8 Area)

### **Monthly Summary Waste Flow Table for 2018**

				disposal / <u>墮</u> (see Note 1)			disp	生廢物		Waste to	o be recycle	d and returr	ned / 可再循	環利用或回	收的廢物			
Month	(e.g. ba	kage ickfilling) <工程	-	in other ects 丰他工程	(e.g. soil concrete, materi 墮性	· ·廢物 ·矢頭, 石,	broken for 其	eral refuse,		tals 屬		stic 即漻	pack	ardboard aging U裝紙類		al Waste 上廢物	Gene	Quantity erated 连產量
	(k	o)	(0	c)	(0	d)	(6	e)	(in to	nnes)	(in to	nnes)	(in to	nnes)	(in	litre)	(a)= (b+	+c+d+e)
	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量
January	0.000	0.000	0.000	0.000	0.000	0.000	0.020	0.020	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.020	0.020
February	0.000	0.000	0.000	0.000	0.000	0.000	0.015	0.015	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.015	0.015
March	0.000	0.000	0.000	0.000	0.000	0.000	0.015	0.015	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.015	0.015
April																		
May																		
June																		
July																		
August																		
September																		
October																		
November																		
December																		
Total	0.000	0.000	0.000	0.000	0.000	0.000	0.050	0.050	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.050	0.050

Notes: (1) The quantitles of C&D Materials, in tonne, was calculated by multiply the estimated volume, in m3, with the density of the soil, which is 1.5 gcm-<sup>3</sup>.



# Highways Department Monthly Summary of Waste Flow Table in 2018

	Actua	Quantities of	of Inert C&D	Materials G	enerated / In	ported	Actual Quan	tities of Othe	r C&D Mat	erials / Wast	es Generated
Month	Total Quantity Generated	Rocks and Large Broken	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/Card- board packaging	Plastic	Chemical Waste	Others. e.g. general refuse,
	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	plastic (in '000kg)
Jan 2018	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Feb 2018	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mar 2018	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Apr 2018											
May 2018											
Jun 2018											
Half-year											
total											
Jul 2018											
Aug 2018											
Sep 2018											
Oct 2018											
Nov 2018											
Dec 2018											
<b>Yearly Total</b>											



### **APPENDIX F**

**Environmental Licenses and Permits** 





#### **Environmental License/ Permits /Notification Register**

#### **LCAL H2642**

							Date: March	2018	
Item No.	Per	mit/License o Applica	r Registration ation	Permit/License/ Notification/	Permit/License/ Registration	Issue/Start Date	Expiry Date	Issuing Office	Remark
NO.	Work Area	Date	Reference	Registration Description	Number	Date	Date		
1	All Areas	30 Jun 2015	N/A	Environmental Permit to construct the Remaining Ancillary Buildings and Facilities and associated works of the Hong Kong Zhuhai and Macao Bridge Boundary Crossing Facilities	EP-353/2009/I	17 Jul 15	N/A	EPD	Superseded by EP-353/2009/J
2	All Areas	18 Feb 2016	N/A	Environmental Permit to construct the Remaining Ancillary Buildings and Facilities and associated works of the Hong Kong Zhuhai and Macao Bridge Boundary Crossing Facilities	EP-353/2009/J	25 Feb 2016	N/A	EPD	Superseded by EP-353/2009/K
3	All Areas	24 Mar 2016	N/A	Environmental Permit to construct the Remaining Ancillary Buildings and Facilities and associated works of the Hong Kong Zhuhai and Macao Bridge Boundary Crossing Facilities	EP-353/2009/K	11 Apr 2016	N/A	EPD	-
4	All Areas	30 Dec 15	N/A	Billing Account for disposal of construction waste	7024342	16 Feb 16	N/A	EPD	-



#### **Environmental License/ Permits /Notification Register**

#### **LCAL H2642**

							Date: March	2018	
Item	Per	mit/License c Applica	or Registration ation	Permit/License/ Notification/	Permit/License/ Registration	Issue/Start	Expiry	Issuing Office	Remark
No.	Work Area	Date	Reference	Registration Description	Number	Date	Date		
5	All Areas	30 Dec 15	RABF-LTR- EPD- 000001	Notification that notifiable works are anticipated to commence (Form NA).	Acknowledge Receipt Ref. No. 397571	06 Jan 16	N/A	EPD	-
6	All Areas	04 Jan 16	RABF-LTR- EPD- 000002	Registration as Chemical Waste Producer for disposal of spent batteries, used lubrication oil and surplus paint at RABF area	WPN 5213-951- L2846-02	19 Feb 16	N/A	EPD	-
7	All Areas	25 Jan 16	RABF-LTR- EPD- 000003	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Nondesignated area)	GW-RS0106-16	11 Feb 16	10 Aug 16	EPD	Superseded by GW-RS0476-16
8	All Areas	08 May 16	RABF-LTR- EPD- 000012	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Nondesignated area)	GW-RS0476-16	19 May 16	18 Nov 16	EPD	Superseded by GW-RS0666-16



#### **Environmental License/ Permits /Notification Register**

#### **LCAL H2642**

							Date: March	2018	
Item No.		mit/License o	or Registration ation	Permit/License/ Notification/	Permit/License/ Registration	Issue/Start Date	Expiry Date	Issuing Office	Remark
140.	Work Area	Date	Reference	Registration Description	Number	Date	Date		
9	All Areas	16 Jun 16	RABF-LTR- EPD- 000015	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Nondesignated area)	GW-RS0666-16	04 Jul 16	03 Jan 17	EPD	Superseded by GW-RS0907-16
10	All Areas	18 Aug 16	RABF-LTR- EPD- 000018	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Nondesignated area)	GW-RS0907-16	01 Sep 16	28 Feb 17	EPD	Superseded by GW-RS1195-16
11	All Areas	16 Nov 16	RABF-LTR-EPD- 000020	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Nondesignated area)	GW-RS1195-16	30 Nov 16	29 May 17	EPD	Superseded by GW-RS1315-16
12	All Areas	08 Dec 16	RABF-LTR-EPD- 000023	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Nondesignated area)	GW-RS1315-16	22 Dec 16	21 Jun 17	EPD	Superseded by GW-RS0131-17



#### **Environmental License/ Permits /Notification Register**

#### **LCAL H2642**

							Date: March	2018	
Item No.	Per	mit/License o	or Registration ation	Permit/License/ Notification/	Permit/License/ Registration	Issue/Start Date	Expiry Date	Issuing Office	Remark
NO.	Work Area	Date	Reference	Registration Description	Number	Date	Date	-	
13	WA3	13 Jan 17	RABF-LTR-EPD- 000026	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00. (Non-designated area)	GW-RS0070-17	27 Jan 17	26 Jul 17	EPD	Superseded by GW-RS0626-17
14	All areas	03 Feb 17	RABF-LTR-EPD- 000028	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Nondesignated area)	GW-RS0131-17	17 Feb 17	16 Aug 17	EPD	Superseded by GW-RS0306-17
15	All areas	20 Mar 17	RABF-LTR-EPD- 000035	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Nondesignated area)	GW-RS0306-17	05 Apr 17	02 Oct 17	EPD	Superseded by GW-RS0435-17
16	All areas	05 May 17	RABF-LTR-EPD- 000036	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Nondesignated area)	GW-RS0435-17	20 May 17	16 Nov 17	EPD	Superseded by GW-RS0710-17



#### **Environmental License/ Permits /Notification Register**

#### **LCAL H2642**

							Date: March	2018	
Item	Per	mit/License c Applica	or Registration ation	Permit/License/ Notification/	Permit/License/ Registration	Issue/Start	Expiry	Issuing Office	Remark
No.	Work Area	Date	Reference	Registration Description	Number	Date	Date	3	
17	WA3	28 Jun 17	RABF-LTR-EPD- 000041	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00. (Non-designated area)	GW-RS0626-17	27 Jul 17	26 Jan 18	EPD	Expired
18	All areas	03 Aug 17	RABF-LTR-EPD- 000042	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Nondesignated area)	GW-RS0710-17	21 Aug 17	16 Feb 18	EPD	Expired
19	WA3	11 Jan 18	RABF-LTR-EPD- 000046	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00. (Non-designated area)	GW-RS0050-18	27 Jan 18	26 Jul 18	EPD	-
20	All areas	31 Jan 18	RABF-LTR-EPD- 000048	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Nondesignated area)	GW-RS0112-18	17 Feb 18	16 Aug 18	EPD	-

#### ATAL Technologies Limited



#### **Environmental License/ Permits /Notification Register**

**LCAL H2642** 

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

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

#### Rapiscan Systems Pte Ltd (RS)



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

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### **APPENDIX G**

Implementation Schedule for Environmental Mitigation Measures (EMIS)



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

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Air Quality								
S5.5.6.1	A1	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 μgm <sup>-3</sup> , respectively)	V
\$5.5.6.2	A2	<ul> <li>2) Proper watering of exposed spoil should be undertaken throughout the construction phase:</li> <li>Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading;</li> <li>Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads;</li> <li>A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or trafficcones.</li> <li>The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle;</li> <li>Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores;</li> </ul>	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 μgm <sup>-3</sup> , 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> <li>When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period;</li> <li>The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials;</li> <li>Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously;</li> <li>Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet;</li> <li>Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding;</li> <li>Any skip hoist for material transport should be totally enclosed by impervious sheeting;</li> <li>Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides;</li> </ul>	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 µgm <sup>-3</sup> and 260 µgm <sup>-3</sup> , 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
\$5.5.6.2	A2	<ul> <li>Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed;</li> <li>Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and</li> <li>Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies.</li> </ul>	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 µgm³ and 260 µgm³, respectively)	V
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	٧
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	٧
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	• Air Pollution Control (Construction Dust) Regulation •To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1- hr and 24hr TSP levels are 500 µgm <sup>-3</sup> and 260 µgm <sup>-3</sup> , respectively)	(The dust monitoring at AMS6 under EM&A Programme for the Contract is covered by Contract No. HY/2011/03 while the dust monitoring at AMS7 under EM&A Programme for the Contract is covered by Contract No. HY/2013/01.)

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S5.5.7.1	A6	<ul> <li>The following mitigation measures should be adopted to prevent fugitive dust emissions for concrete batching plant:</li> <li>Loading, unloading, handling, transfer or storage of any dusty materials should be carried out in totally enclosed system;</li> <li>All dust-laden air or waste gas generated by the process operations should be properly extracted and vented to fabric filtering system to meet the emission limits for TSP;</li> <li>Vents for all silos and cement/pulverised fuel ash (PFA) weighing scale should be fitted with fabric filtering system;</li> <li>The materials which may generate airborne dusty emissions should be wetted by water spray system;</li> <li>All receiving hoppers should be enclosed on three sides up to 3m above unloading point;</li> <li>All conveyor transfer points should be totally enclosed;</li> <li>All access and route roads within the premises should be paved and wetted; and</li> <li>Vehicle cleaning facilities should be provided and used by all concrete trucks before leaving the premises to wash off any dust on the wheels and/or body.</li> </ul>	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	• Air Pollution Control (Construction Dust) Regulation •To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1- hr and 24hr TSP levels are 500 µgm <sup>-3</sup> and 260 µgm <sup>-3</sup> , respectively)	N/A
\$5.5.2.7	A7	The following mitigation measures should be adopted to prevent fugitive dust emissions at barging point:  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
Constructi	on Noise	(Air borne)						
S6.4.10	N1	1) Use of good site practices to limit noise emissions by considering the following:  • 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 aminimum;  • 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 officer 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	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	Noise Control Ordinance     Annex 5, TM- EIA	N/A
S6.4.12	N3	Install movable noise barriers (typically density @ 14kg/m²), 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	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	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	stage	Noise Control Ordinance & its TM     Annex 5, TM- EIA	<b>V</b>
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	Noise Control Ordinance     Annex 5, TM- EIA	<b>V</b>
/	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	Noise Control Ordinance     Annex 5, TM- EIA     75dB(A) for residential premises	(The noise monitoring at NMS2 and NMS3B under EM&A programme for the Contract are covered by Contract No. HY/2013/01.)
Sediment								
S7.3	S1	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	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 Man	agement (	Construction Waste)							
S8.3.8	WM1	Construction and Demolition Material The following mitigation measures should be implemented in handling the waste:  Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement;  Carry out on-site sorting;	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	Land (Miscellaneous Provisions)     Ordinance     Waste Disposal Ordinance     ETW BTC 19/2005	√ 	
		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.							

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	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 andwastage.	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	Land     (Miscellaneous     Provisions)     Ordinance     Waste Disposal     Ordinance     ETWB TC     19/2005	V
		<ul> <li>The Contractor should recycle as much of the C&amp;D materials as possible on-site. Public fill and C&amp;D waste should be segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. Where practicable, concrete and masonry can be crushed and used as fill. Steel reinforcement bar can be used by scrap steel mills. Different areas of the sites should be considered for such segregation and storage.</li> </ul>						
\$8.2.12- \$8.3.15	WM3	<ul> <li>Chemical Waste</li> <li>Chemical waste that is produced, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, should be handled in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.</li> <li>Containers used for the storage of chemical wastes should be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; have a capacity of less than 450 liters unless the specification has been approved by the EPD; and display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the regulation.</li> <li>The storage area for chemical wastes should be clearly labelled and used solely for the storage of chemical waste; enclosed on at least 3 sides; have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20 % of the total volume of waste stored in that area, whichever is the greatest; have adequate ventilation; covered to prevent rainfall entering; and arranged so that incompatible materials are adequately separated.</li> </ul>	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction stage	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
		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.						√
\$8.3.16	WM4	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	Waste Disposal Ordinance	V
S8.3.17	WM5	<ul> <li>General Refuse</li> <li>General refuse generated on-site should be stored in enclosed bins or compaction units separately from construction and chemical wastes.</li> <li>A reputable waste collector should be employed by the Contractor to remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to minimize odour, pest and litter impacts. Burning of refuse on construction sites is prohibited bylaw.</li> <li>Aluminium cans are often recovered from the waste stream by individual collectors if they are segregated and made easily accessible. Separate labelled bins for their deposit should be provided if feasible.</li> <li>Office wastes can be reduced through the recycling of paper if volumes are large enough to warrant collection. Participation in a local collection scheme should be considered by the Contractor. In addition, waste separation facilities for paper, aluminum cans, plastic bottles etc., should be provided.</li> <li>Training should be provided to workers about the concepts of site cleanliness and appropriate waste management procedure, including reduction, reuse and recycling of wastes.</li> </ul>	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	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 Qual	ity (Constr	ruction Phase)						
S.9.11.1.7	W2	Land Works 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:  • wastewater from temporary site facilities should be controlled to	To control construction water quality	Contractor	Land-based works areas	Construction stage	TM-EIAO	٧
		prevent direct discharge to surface or marine waters;						
		sewage effluent and discharges from on-site kitchen facilities shall be directed to Government sewer in accordance with the requirements of the W PCO or collected for disposal offsite. The use of soakaways shall be avoided;						
		storm drainage shall be directed to storm drains via adequately designed sand/silt removal facilities such as sand traps, silt traps and sediment basins. Channels, earth bunds or sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks;						
		• silt removal facilities, channels and manholes shall be maintained and any deposited silt and grit shall be removed regularly, including specifically at the onset of and after each rainstorm;						
		temporary access roads should be surfaced with crushed stone or gravel;						
		rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities;						
		measures should be taken to prevent the washout of construction materials, soil, silt or debris into any drainage system;						
		<ul> <li>open stockpiles of construction materials (e.g. aggregates and sand) on site should be covered with tarpaulin or similar fabric during rainstorms;</li> </ul>						
		<ul> <li>manholes (including any newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers;</li> </ul>						
		<ul> <li>discharges of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system;</li> </ul>						

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> <li>all vehicles and plant should be cleaned before they leave the construction site to ensure that no earth, mud or debris is deposited by them on roads. A wheel washing bay should be provided at every site exit;</li> <li>wheel wash overflow shall be directed to silt removal facilities before being discharged to the storm drain;</li> <li>the section of construction road between the wheel washing bay and the public road should be surfaced with crushed stone or coarse gravel;</li> <li>wastewater generated from concreting, plastering, internal decoration, cleaning work and other similar activities, shall be screened to remove large objects;</li> <li>vehicle and plant servicing areas, vehicle wash bays and lubrication facilities shall be located under roofed areas. The drainage in these covered areas shall be connected to foul sewers via a petrol interceptor in accordance with the requirements of the WPCO or collected for off site disposal;</li> <li>the contractors shall prepare an oil / chemical cleanup plan and ensure that leakages or spillages are contained and cleaned up immediately;</li> <li>waste oil should be collected and stored for recycling or disposal, in accordance with the Waste Disposal Ordinance;</li> <li>all fuel tanks and chemical storage areas should be provided with locks and be sited on sealed areas. The storage areas should be surrounded by bunds with a capacity equal to 110% of the storage capacity of the largest tank; and</li> <li>surface run-off from bunded areas should pass through oil/grease traps prior to discharge to the stormwater system.</li> </ul>	To control construction water quality	Contractor	Land-based works areas	Construction stage	TM-EIAO	

EIA Ref.	EM&A Log Ref		mmended 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 (C	onstructio	n Phas	se)						
S10.7	E4	•	Watering to reduce dust generation; prevention of siltation of freshwater habitats; Site runoff should be desilted, to reduce the potential for suspended sediments, organics and other contaminants to enter streams and standing freshwater	Prevent Sedimentation from Land-based works areas	Contractor	Land-based works areas	During construction	TM-Water	٧
S10.7	E5	•	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		<b>V</b>
S10.7	E8	•	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						1		<u> </u>	1
S11.7	F4	•	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
andscape	& Visual (	Detailed Design Phase)			<u> </u>			
S14.3.3.1	LV1	<ul> <li>General design measures include:</li> <li>Roadside planting and planting along the edge of the HKBCF Island is proposed;</li> <li>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;</li> <li>Protection measures for the trees to be retained during construction activities;</li> <li>Optimizing the sizes and spacing of the bridge columns; Finetuning the location of the bridge columns to avoid visually-sensitivelocations;</li> <li>Maximizing new tree, shrub and other vegetation planting to compensate tree felled and vegetation removed;</li> <li>Providing planting area around peripheral of HKBCF for tree planting screening effect;</li> <li>Providing salt-tolerant native trees along the planter strip at affected seawall and newly reclaimed coastline;</li> <li>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</li> <li>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.</li> </ul>	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
Landscape &	& Visual (C	Construction Phase)						
S14.3.3.3	LV2	Mitigate both Landscape and Visual Impacts  G1. Grass-hydroseed bare soil surface and stock pile areas.  G2. Add planting strip and automatic irrigation system if appropriate at	Minimise visual & landscape impact	Contractor	Building 022	Construction stage		√ Construction phase
		some portions of bridge footbridge to screen bridge and traffic. (This mitigation measure is not applicable to the Contract.)  G3. Not applicable as this is for HKLR.						
		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.						
		G5. Vegetation reinstatement and upgrading to disturbed areas.  G6. Maximizing new tree shrub and other vegetation planting to compensate tree felled and vegetation removed.						
		G7. Providing planting area around peripheral of HKBCF for tree planting screening effect. (This mitigation measure is not applicable to the Contract.)						
		G8. Plant salt-tolerant native and shrubs etc along the planter strip at affected seawall. (This mitigation measure is not applicable to the Contract.)  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 enchance "natural-look" of the new coastline. (This mitigation						
S14.3.3.3	LV3	measure is not applicable to the Contract.)  Mitigate Visual Impacts V1. Minimize time for construction activities during construction period. 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.						√ 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		EIAO Guidance     Note No.4/2002     TM-EIAO	V
S15.5 - S15.6	EM2	An Environmental Team needs to be employed as per the EM&A Manual.      Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures.      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.		Contractor	All construction sites		EIAO Guidance Note No.4/2002     TM-EIAO	٧

Legends:  $\sqrt{\ }$  = Implemented; X = Not implemented; N/A = Not applicable



### **APPENDIX H**

Statistics on Environmental Complaints, Notification of Summons and Successful Prosecutions





#### Statistics on Environmental Complaints, Notifications of Summons and Successful Prosecutions

#### For Contract No. HY/2014/05

Reporting Period	Cumulative Statistics					
reporting renea	Complaints	Notifications of Summons	Successful Prosecutions			
This reporting period	0	0	0			
From commencement date of contract to end of reporting month	6	0	0			

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

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





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

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





### **APPENDIX I**

**Environmental Site Inspection Schedule** 



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

Environmental Site Inspction Schedule for April 2018

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

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

Environmental Site Inspction Schedule for April 2018

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

Environmental Site Inspction Schedule for April 2018

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