Ref.: HYDHZMBEEM00_0_5979L.17

10 November 2017

By Fax (3468 2076) and By Post

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

Attention: Mr. Malcolm Sage

Dear Sir,

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

Environmental Project Office for the

HZMB Hong Kong Link Road, HZMB Hong Kong Boundary Crossing Facilities, and Tuen Mun-Chek Lap Kok Link – Investigation

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

Monthly Environmental Monitoring & Audit Report for October 2017

Reference is made to the Environmental Team's submission of Monthly Environmental Monitoring & Audit Report for October 2017 (Rev. 1) certified by the ET Leader (ET's ref.: "5140819/18.30/OC041/KC/RL" dated 10 November 2017) and provided to us via e-mail on 10 November 2017.

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

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

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

Ronge

Raymond Dai

Independent Environmental Checker

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

LCWJV Mr. Iain Hubert (By Fax: 3621 0180)

Internal: DY, YH, PSC, ENPO Site

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Ramboll Environ Hong Kong Limited 英環香港有限公司

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info.hk@atkinsglobal.com www.atkinsglobal.com

Your ref.

Our ref.

5140819/18.30/OC041/KC/RL

Date:

10 November 2017

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

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

Attn: Mr. Stephen Tsang

Dear Mr. Tsang,

Contract No. HY/2014/05 Hong Kong – Zhuhai – Macao Bridge Hong Kong Boundary Crossing Facilities – Remaining Ancillary Buildings and Facilities Certification of Monthly EM&A Report No. 20

Atkins China Limited certifies, in the capacity of Environmental Team Leader, that the Monthly EM&A Report No. 20 for October 2017 (Revision 1) conforms the requirements provided in Condition 5.4 of the Environmental Permit No. EP-353/2009/K.

Yours faithfully, for and on behalf of Atkins China Limited

Keith Chau

Environmental Team Leader

CC.

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

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



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. 20 (Covering the Period from 1 October 2017 to 31 October 2017)

9 November 2017

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 twentieth 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 October 2017 (includes the construction works of Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area).

Environmental Monitoring and Audit Progress

The monthly EM&A programme was undertaken in accordance with the Updated EM&A Manual for HKBCF (Version 1.0). It should be noted that 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 AMS7 and noise monitoring at NMS2 and NMS3B as part of EM&A programme if these monitoring stations are no longer covered under Contract Nos. HY/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: 3. 11. 16. 23 and 30 October 2017

Breaches of Action and Limit Levels

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

There was no Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at AMS7 by the Environmental Team of Contract No. HY/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 a complaint received by EPD on 27 October 2017 and sent to the ET on 27 October 2017 which regarding to water quality during the reporting period.

The complaint was found that muddy water discharge from construction site of HKBCF and last for a week. After investigation, it was not related to Contract No. HY/2014/05 (including Contract No. HY/2013/06 HZMB HKBCF - Automatic Vehicle Clearance Support System and Contract No. HY/2014/04 HZMB HKBCF - Gantry Type X-ray Vehicle Inspection System within Contract No. HY/2014/05 works area). No follow up action by Contract No. HY/2014/05 was required.

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 022, 023, 025, 032, 044, 045, 050H1, 050H2, 050A1, 050A2, 053, 058 & 059
- Utilities and Drainage installation of Building 021, 022, 023, 025, 044, 045, 053, 058 & 059
- PV Installation and curtain wall of Building 023
- Curtain wall of Building 044, 045
- Canopy of Building 025, 053, 059
- Construction of Planter Box and Ramp of Building 023

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

• Conceal Conduit Installation at Buildings 025 and 032

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

- Building 053 Installation of CCTV
- Building 054 Installation of CCTV
- Building 058 Cabling works
- Building 059 Cabling works



1 Introduction

1.1 Basic Project Information

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

For Contract No. HY/2014/05

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





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

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

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

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

- (i) The Gantry Type X-ray Vehicle Inspection System (GXRVIS) aims to provide an integrated, innovative, efficient and effective vehicle inspection system at the inbound and outbound boundary control points of Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities (HKBCF) for supporting the operations of Customs & Excise Department (C&ED);
- (ii) Design, supply, deliver to HKBCF, installation, test and commissioning and maintenance of two sets of Gantry Type X-ray Vehicle Inspection System and all related components necessary for the complete operation of the system; and
- (iii) Design, supply, install, test, commission and maintain of the Radioactive Threat Detection Systems integrated into the Gantry Type X-ray Vehicle Inspection Systems.
- 1.1.4 This is the twentieth 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 October 2017. (includes the construction works of Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area).

1.2 Project Organisation

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

Table 1-1 Contact Information of Key Personnel

Party	Position	Name	Telephone	Fax	
For Contract No. HY/2014/	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 Environ Hong Independent Raymond Dai 3465 2888 3465 2899 Kong Limited) Environmental Checker Albert Chan 3973 0514 3621 0180 Contractor Site Agent (Leighton - Chun Wo Environmental Stephen Tsang 3973 1806 3621 0180 Joint Venture) Officer Environmental Team Environmental Keith Chau 2972 1721 2890 6343 (Atkins China Limited) Team Leader 24 hours complaint 3958 7300 hotline For Contract No. HY/2013/06 within Contract No. HY/2014/05 works area Engineer or Engineer's Chief Registered Malcolm Sage 3958 7330 3468 2076 Representative Architect (AECOM Asia Co. Ltd.) Environmental Project Environmental Y. H. Hui 3465 2888 3465 2899 Office / Independent Project Office Environmental Checker Leader (Ramboll Environ Hong Kong Limited) Independent Raymond Dai 3465 2888 3465 2899 Environmental Checker Mr. Eric Yim 2565 3355 3162 5217 Contractor Site Agent (ATAL Technologies Environmental Mr. W. Li 2565 3137 3162 5217 Limited) Officer Environmental Team Environmental Keith Chau 2972 1721 2890 6343 (Atkins China Limited) Team Leader 24 hours complaint hotline 6509 0375 For Contract No. HY/2014/04 within Contract No. HY/2014/05 works area Engineer or Engineer's Chief Registered Malcolm Sage 3958 7330 3468 2076 Representative Architect (AECOM Asia Co. Ltd.) Environmental Y. H. Hui 3465 2888 3465 2899 Project Environmental Office / Independent Project Office Environmental Checker Leader (Ramboll Environ Hong Independent Raymond Dai 3465 2888 3465 2899 Kong Limited) Environmental Checker Contractor Site Agent Ringo Yau 9833 1402 2707 0816 (Rapiscan Systems Pte Environmental Clarie Tsang 6371 1362 Ltd) Officer Environmental Team Environmental Keith Chau 2972 1721 2890 6343 (Atkins China Limited) Team Leader





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, 023, 025, 032, 044, 045, 050H1, 050H2, 050A1, 050A2, 053, 058 & 059
 - Utilities and Drainage installation of Building 022, 023, 025, 032, 044, 045, 053, 058, 059, 050H1, 050A1 & 050A2
 - Installation of Lift of Building 023, 044 & 053
 - PV Installation and Steel Canopy of Building 023
 - Construction of Planter Box and Ramp of Building 023
 - Dog Swimming Pool of Building 022

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

• No works were undertaken at Building 023, 025 and 032

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

- Furniture Delivery 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 AMS7 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
AMS 6(1)	Dragonair/CNAC (Group) Building
AMS 7 ⁽¹⁾	Hong Kong SkyCity Marriott Hotel

Remark:

(1) The ET of this Contract should conduct impact air quality monitoring at the AMS listed in the table as part of EM&A programme according to the latest notification from ENPO when the monitoring station(s) is/are no longer covered by another ET of the HZMB project.

2.2 Monitoring Requirements

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

Monitoring Station	Action Level, µg/m³	Limit Level, µg/m³
AMS 6 – Dragonair / CNAC (Group) Building (HKIA)	360	500
AMS 7 - Hong Kong SkyCity Marriott Hotel	370	300

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

Monitoring Station	Action Level, µg/m³	Limit Level, µg/m³
AMS 6 – Dragonair / CNAC (Group) Building (HKIA)	173	360
AMS 7 - Hong Kong SkyCity Marriott Hotel	183	260

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





2.3 Monitoring Results

- 2.3.1 The monitoring results for AMS6 and AMS7 are reported in the monthly EM&A Reports prepared for Contract Nos. HY/2011/03 and HY/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.
- 2.3.3 There was no Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at AMS7 recorded by the ET of Contract No. HY/2013/01 during the reporting period.



3 Noise Monitoring

3.1 Monitoring Locations

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

Table 3-1 Construction Noise Monitoring Locations

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

Remarks:

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

3.2 Monitoring Requirements

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

Table 3-2 Action and Limit Level for Construction Noise

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

Notes:

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

- 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.



^{*} 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 3, 11, 16, 23 and 30 October 2017.
- 4.1.2 Particular observations for Contract No. HY/2014/05 and Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area during the site inspections and corrective actions undertaken by the Contractor are described in **Tables 4-1, 4-2 and 4-3**.

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

Date of Audit	Observations	Actions Taken by Contractor / Recommendation	Date of Observations Closed
25 September 2017	The opened cement bags were not covered at Building 022. The cement packages were scattered around the room at Building 022. No proper label and drip tray were provided for a chemical container outside Building 022.	The Contractor was reminded to cover the opened cement bags properly at Building 022. The Contractor was reminded to tidy up the site at Building 022. The Contractor was reminded to provide proper chemical labels and drip tray for the chemical containers at Building 022.	3 October 2017
3 October 2017	A stock of more than 20 bags of cement were not covered at Building 022. No proper label and drip tray were provided for chemical containers outside Building 044. Stagnant water was accumulated at the drip tray for an oil/ fuel drum outside Building 022.	The stock of more than 20 bags of cement at Building 022 were removed. The chemical container outside Building 044 was removed. The stagnant water accumulated at the drip tray outside Building 022 was cleared.	11 October 2017
11 October 2017	Cement bags were not covered properly outside Building 025 and Building 053. No drip tray was provided for chemical containers outside Building 023 and Building 025.	The cement bags outside Building 025 and Building 053 were covered and removed. The chemical containers outside Building 023 and Building 025 were removed.	16 October 2017
16 October 2017	General refuses were scattered outside Building 045. Stagnant water was accumulated at Building 044 and Building 045.	General refuses outside Building 045 were cleared. The stagnant water accumulated at Building 044 and Building 045 was cleared.	23 October 2017

Date of Audit	Observations	Actions Taken by Contractor / Recommendation	Date of Observations Closed
23 October 2017	Stocks of more than 20 bags of cement were not covered properly outside Building 044. No drip tray was provided for chemical containers outside Building 044.	The stocks of more than 20 bags of cement outside Building 044 were removed. The chemical containers outside Building 044 were removed.	30 October 2017
30 October 2017	A stock of more than 20 bags of cement was not covered properly at Building 045. No drip tray was provided for chemical containers outside Building 045.	The Contractor was reminded to cover the cement bags properly. The Contractor was reminded to provide drip tray for the chemical containers.	Follow-up action undertaken by the Contractor will be inspected during the site inspection to be undertaken in November 2017.

Contract No. HY/2014/05

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
3 October 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
11 October 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
16 October 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
23 October 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
30 October 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.

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

Date of Audit	Observations	Actions Taken by Contractor / Recommendation	Date of Observations Closed
3 October 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
11 October 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
16 October 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
23 October 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
30 October 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.

- 4.1.1 The Contractor has rectified most of the observations as identified during environmental site inspections during this reporting month. Follow-up actions for outstanding observations will be inspected in November 2017.
- 4.2 Advice on the Solid and Liquid Waste Management Status





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

4.3 Environmental Licenses and Permits

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

4.4 Implementation Status of Environmental Mitigation Measures

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

4.5 Summary of Exceedance of the Environmental Quality Performance Limit

- 4.5.1 Summary of Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level at AMS6 shall be referred to the monthly EM&A report prepared by Contract No. HY/2011/03.
- 4.5.2 There was no Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at AMS7 by the Environmental Team of Contract No. HY/2013/01 during the reporting period.
- 4.5.3 There was no Action and Limit Level exceedance for noise recorded at NMS2 and NMS3B by the Environmental Team of Contract No. HY/2013/01 during the reporting period.

4.6 Summary of Complaints, Notification of Summons and Successful Prosecution

- 4.6.1 There was a complaint received by EPD on 27 October 2017 and sent to the ET on 27 October 2017 which regarding to water quality during the reporting period.
 - The complaint was found that muddy water discharge from construction site of HKBCF and last for a week. After investigation, it was not related to Contract No. HY/2014/05 (including Contract No. HY/2013/06 HZMB HKBCF Automatic Vehicle Clearance Support System and Contract No. HY/2014/04 HZMB HKBCF Gantry Type X-ray Vehicle Inspection System within Contract No. HY/2014/05 works area). No follow up action by Contract No. HY/2014/05 was required. The details of cumulative statistics of Environmental Complaints are provided in **Appendix H**.
- 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 November 2017 are summarized in **Table 5-1**.

Table 5-1 Construction Activities for November 2017

Site Area	Description of Activities
For Contract No. HY/2014/05	
Buildings 022, 023, 025, 032, 044, 045, 050H1, 050H2, 050A1, 050A2, 053, 058 & 059	ABWF & MEP works (Internal)
Buildings 021, 022, 023, 025, 044, 045, 053, 058 & 059	Utilities and Drainage Installation
Building 044 and 045	Curtain wall
Building 023	PV Installation and curtain wall
Buildings 023, 053 and 059	Canopy
Building 023	Construction of Planter Box and Ramp
For Contract No. HY/2013/06 within Contract No. HY/2014/05 works area	
Buildings 025 and 032	Conceal Conduit Installation
For Contract No. HY/2014/04 within Contract No. HY/2014/05 works area	
Buildings 058 and 059	Installation of software
Buildings 053 and 054	Radiation testing

5.2 Environmental Site Inspection Schedule for the Coming Month

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



6 Conclusions

6.1 Conclusions

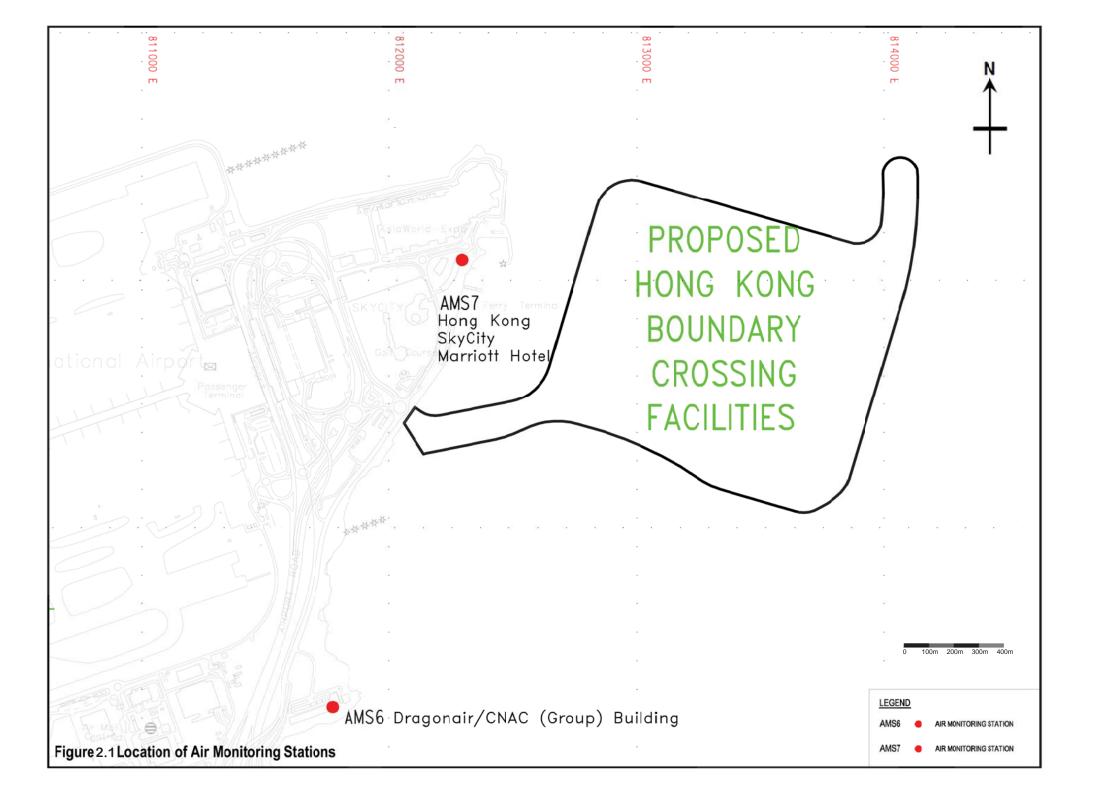
- 6.1.1 The construction works of the Contract No. HY/2014/05 commenced on 29 February 2016. while the construction works of the Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area commenced on 3 January 2017 and 13 February 2017 respectively. The twentieth Monthly EM&A Report for Contract No. HY/2014/05 summarizes findings of the EM&A works during the reporting period from 1 to 31 October 2017 (includes the construction works of Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area).
- 6.1.2 Summary of Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level at AMS6 shall be referred to the monthly EM&A Report prepared by Contract No. HY/2011/03.
- 6.1.3 There was no Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at AMS7 by the Environmental Team of Contract No. HY/2013/01 during the reporting period.
- 6.1.4 There was no Action and Limit Level exceedance for noise recorded at NMS2 and NMS3B by the Environmental Team of Contract No. HY/2013/01 during the reporting period.
- 6.1.5 Environmental site inspections were carried out on 3, 11, 16, 23 and 30 October 2017 for the Contract No. HY/2014/05 (includes the construction works of Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area). Recommendations on remedial actions were given to the Contractors for the deficiencies identified during the site inspection.
- 6.1.6 There was a complaint received by EPD on 27 October 2017 and sent to the ET on 27 October 2017 which regarding to water quality during the reporting period.
 - The complaint was found that muddy water discharge from construction site of HKBCF and last for a week. After investigation, it was not related to Contract No. HY/2014/05 (including Contract No. HY/2013/06 HZMB HKBCF Automatic Vehicle Clearance Support System and Contract No. HY/2014/04 HZMB HKBCF Gantry Type X-ray Vehicle Inspection System within Contract No. HY/2014/05 works area). No follow up action by Contract No. HY/2014/05 was required.
- 6.1.7 No notification of summons and successful prosecution was received during the reporting period.

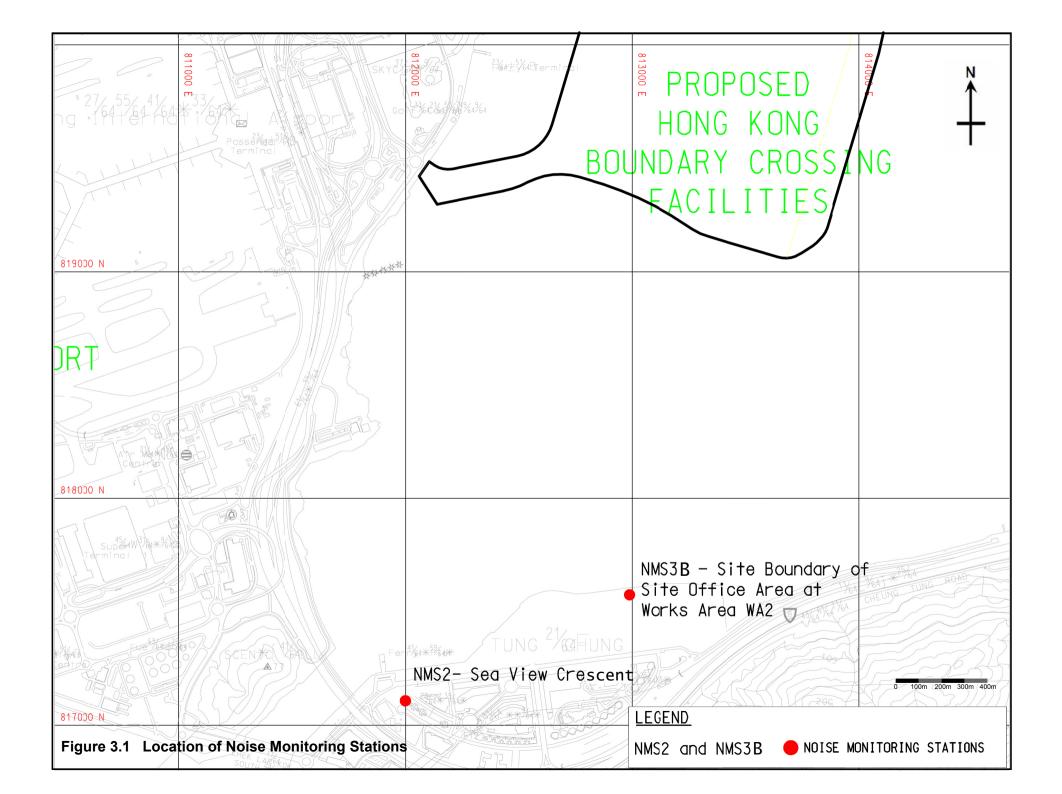




FIGURES





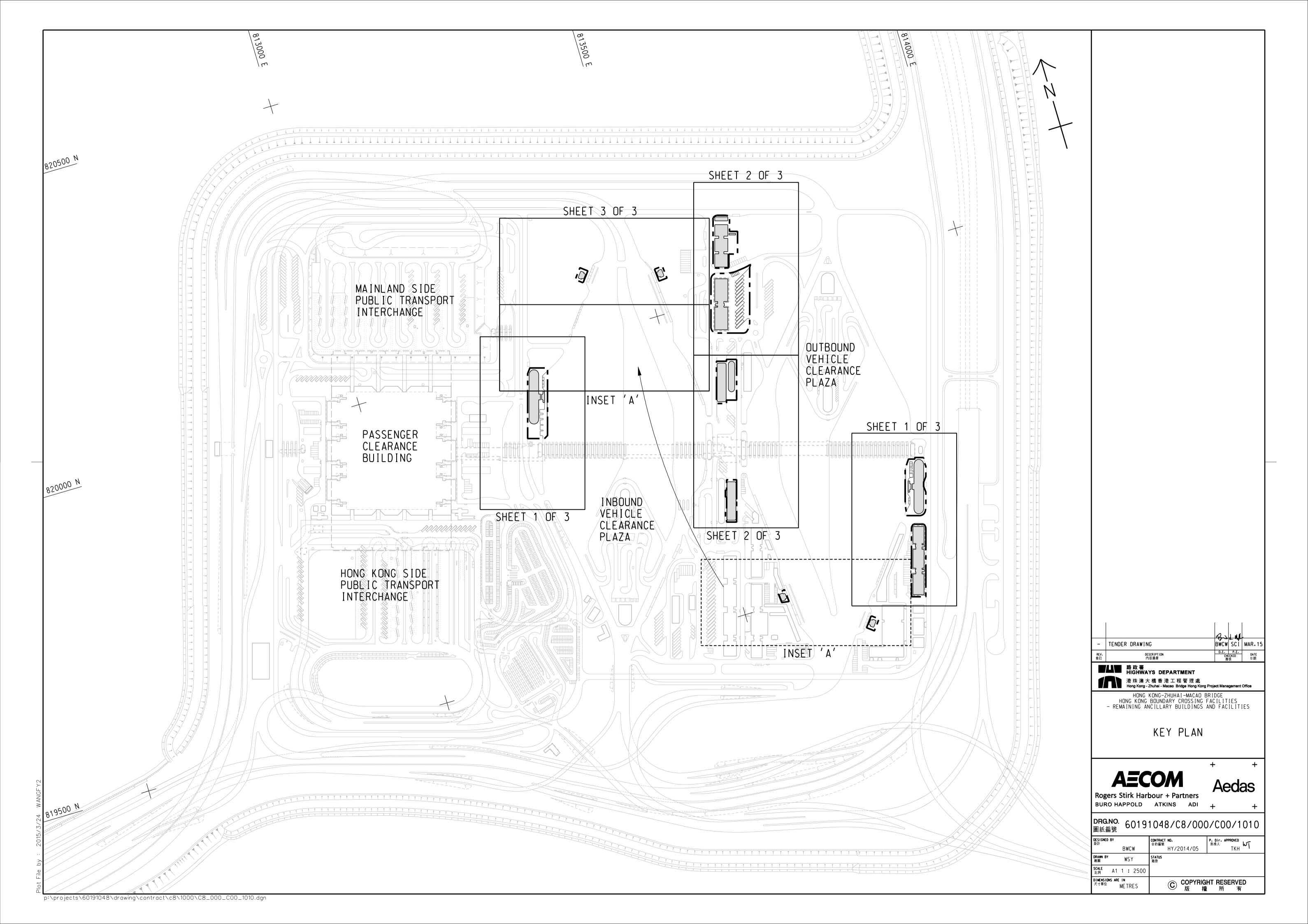


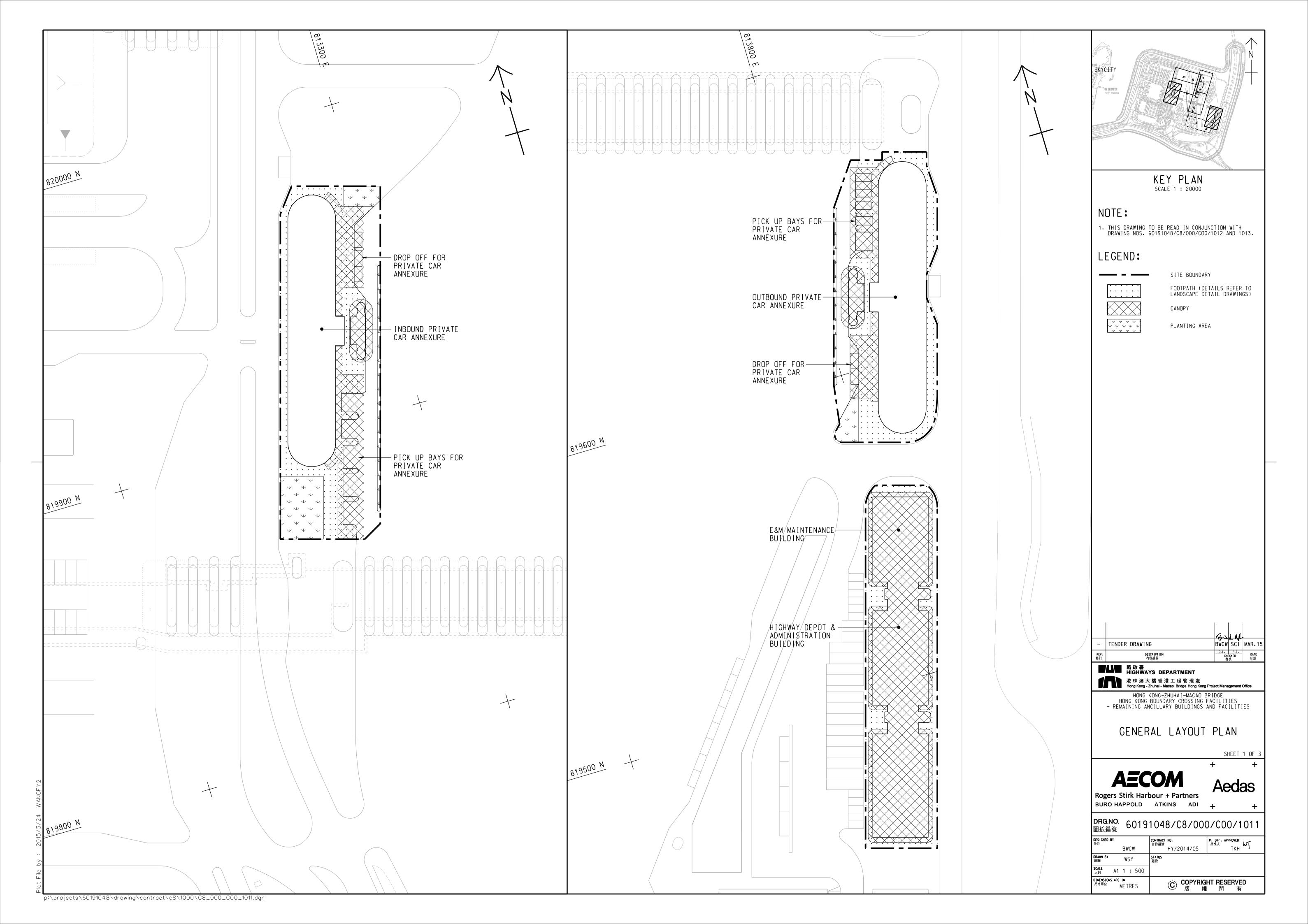


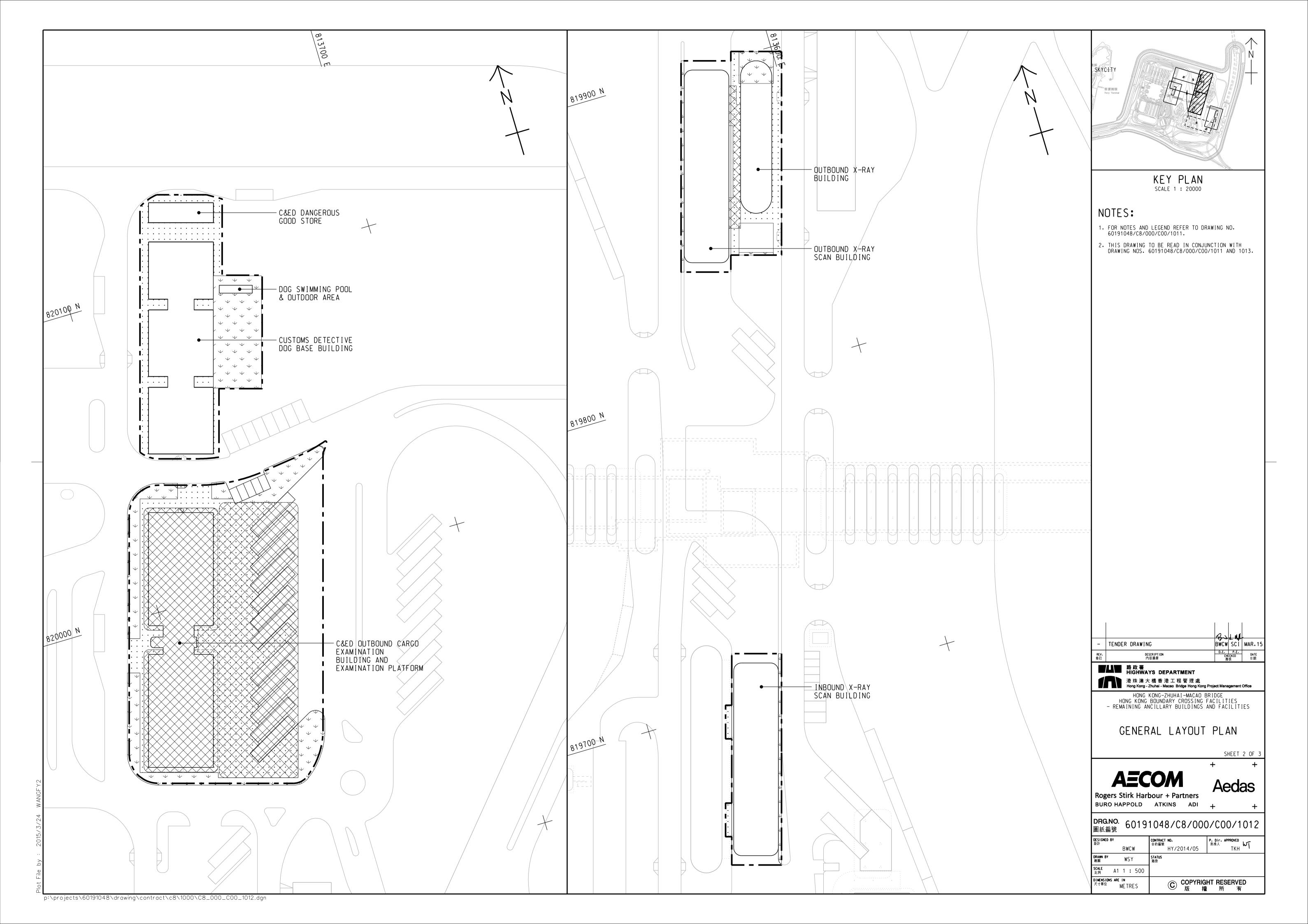
APPENDIX A

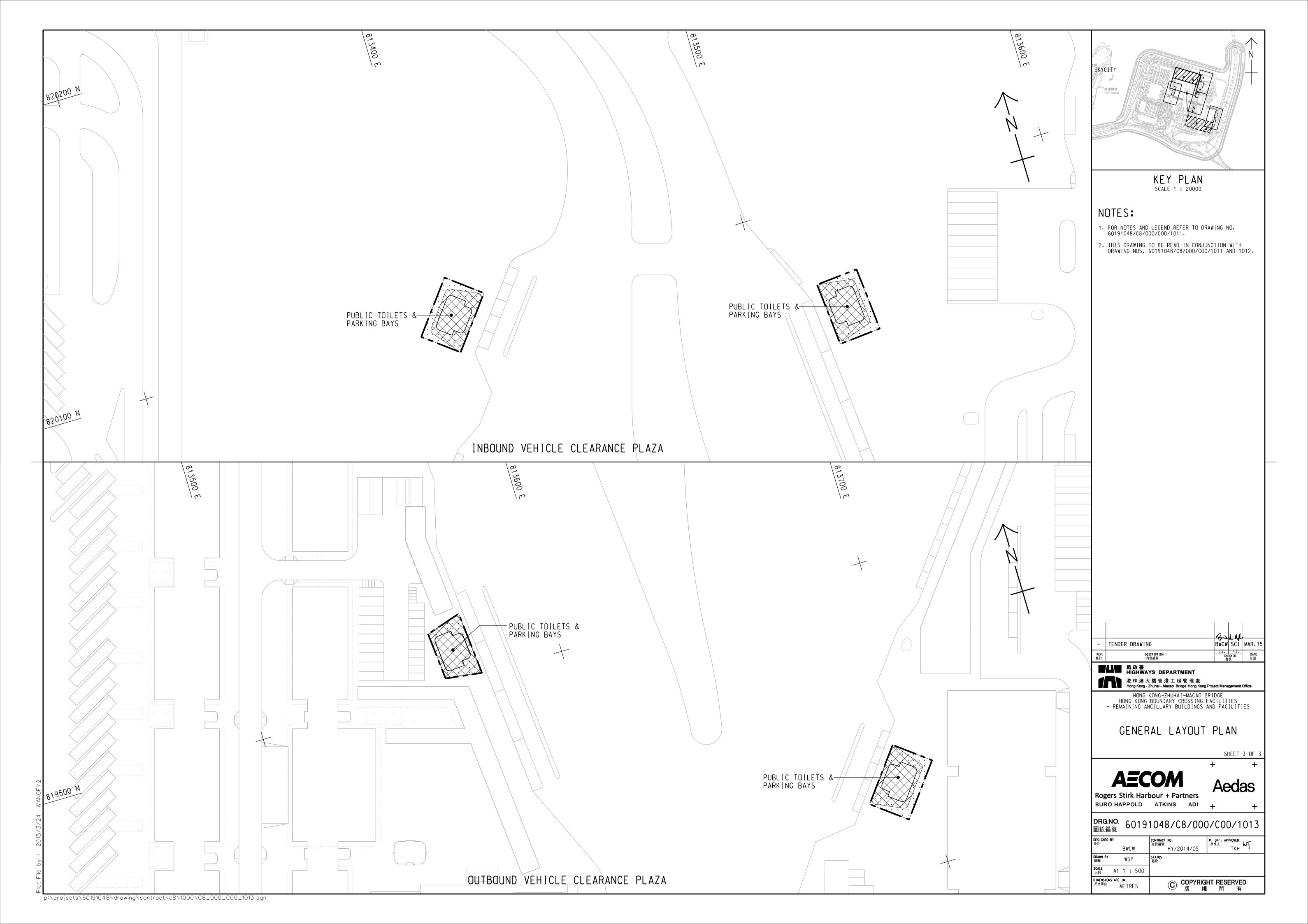
Location of Works Areas

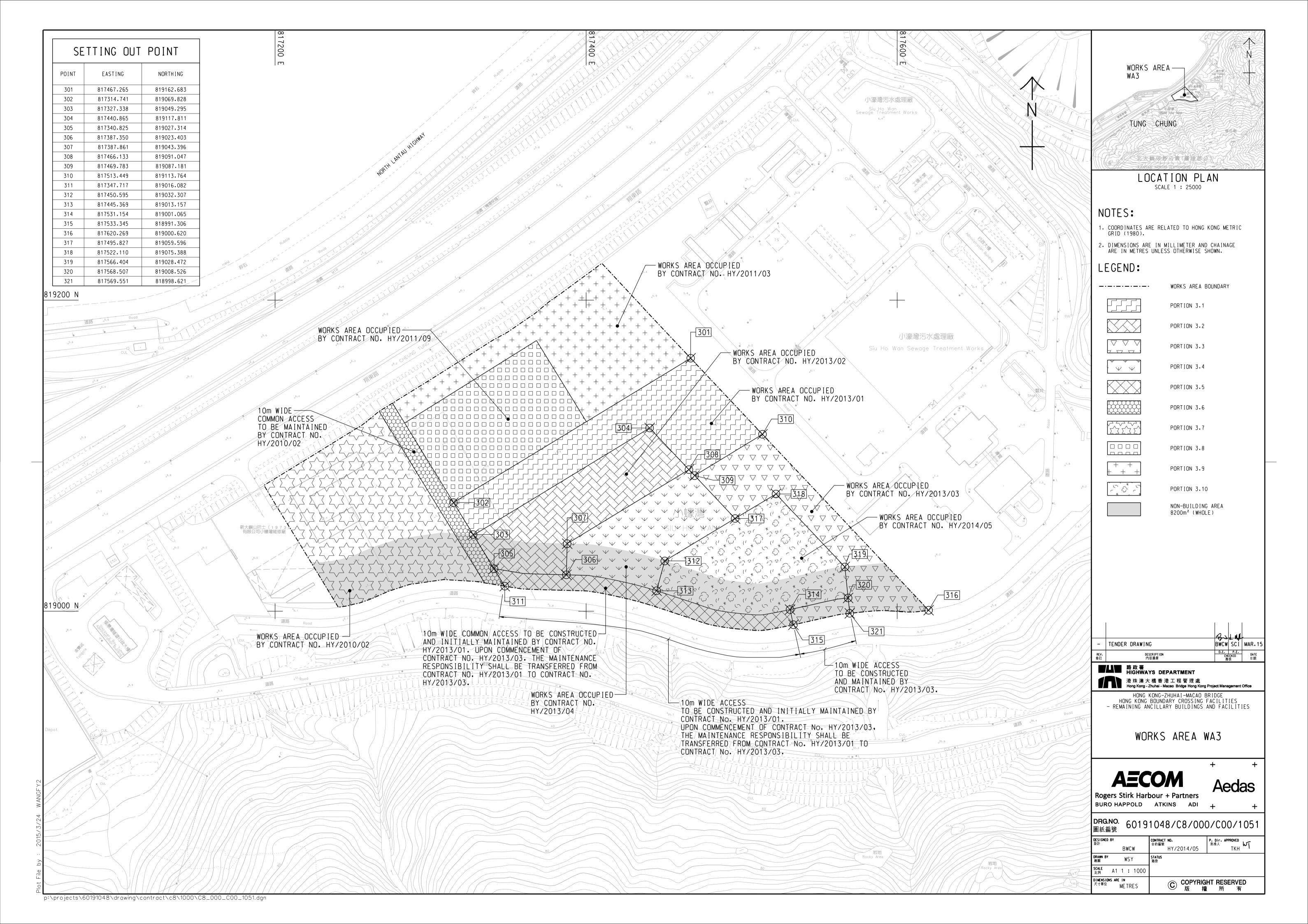












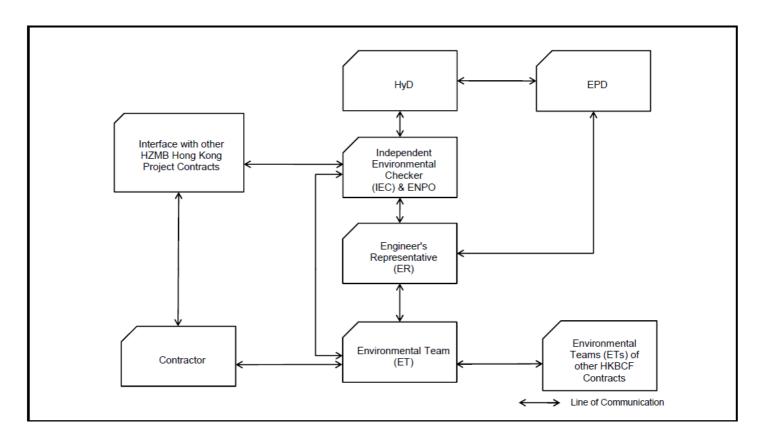


APPENDIX B

Project Organization for Environmental Works



Project Organisation for Environmental Works

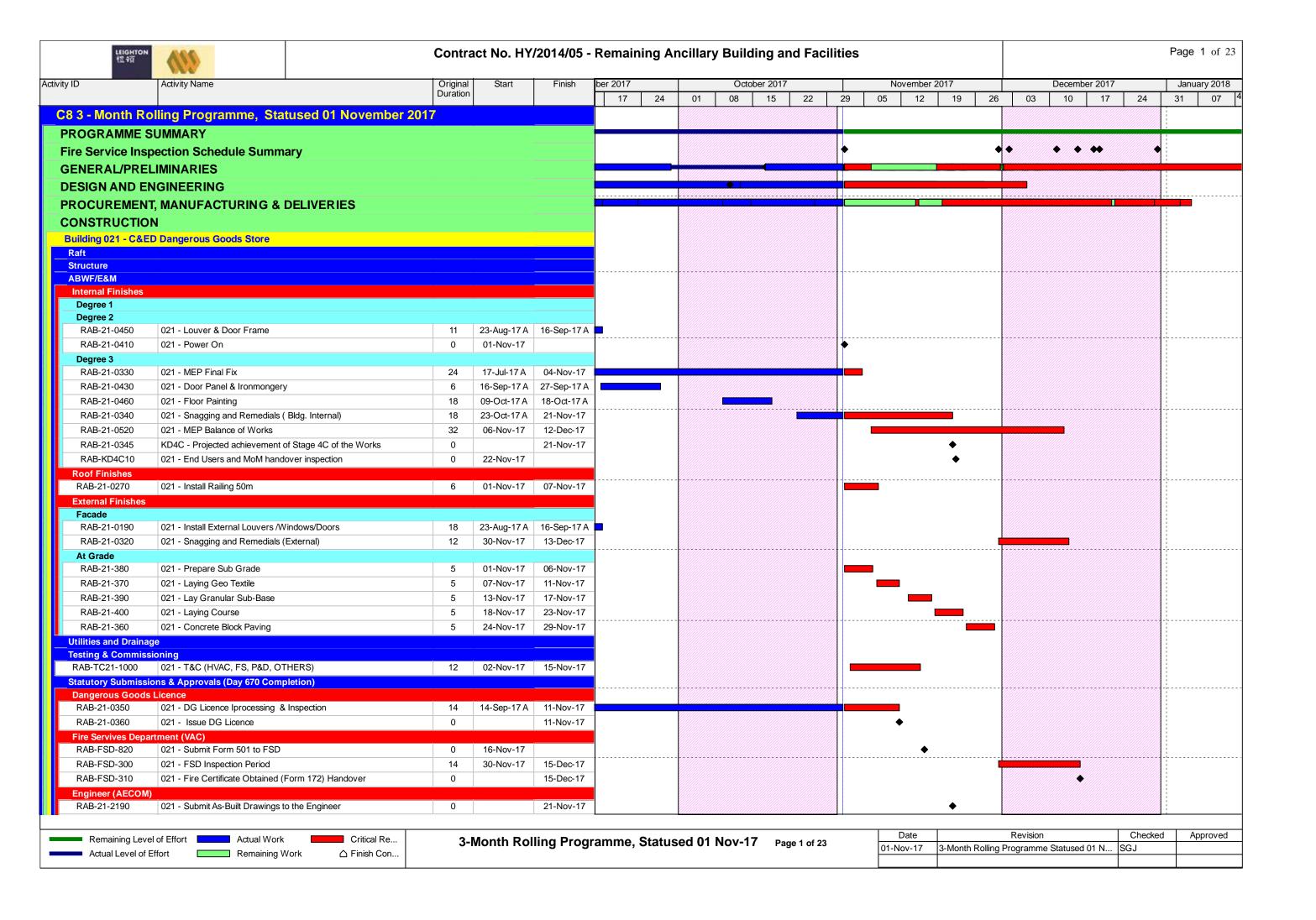


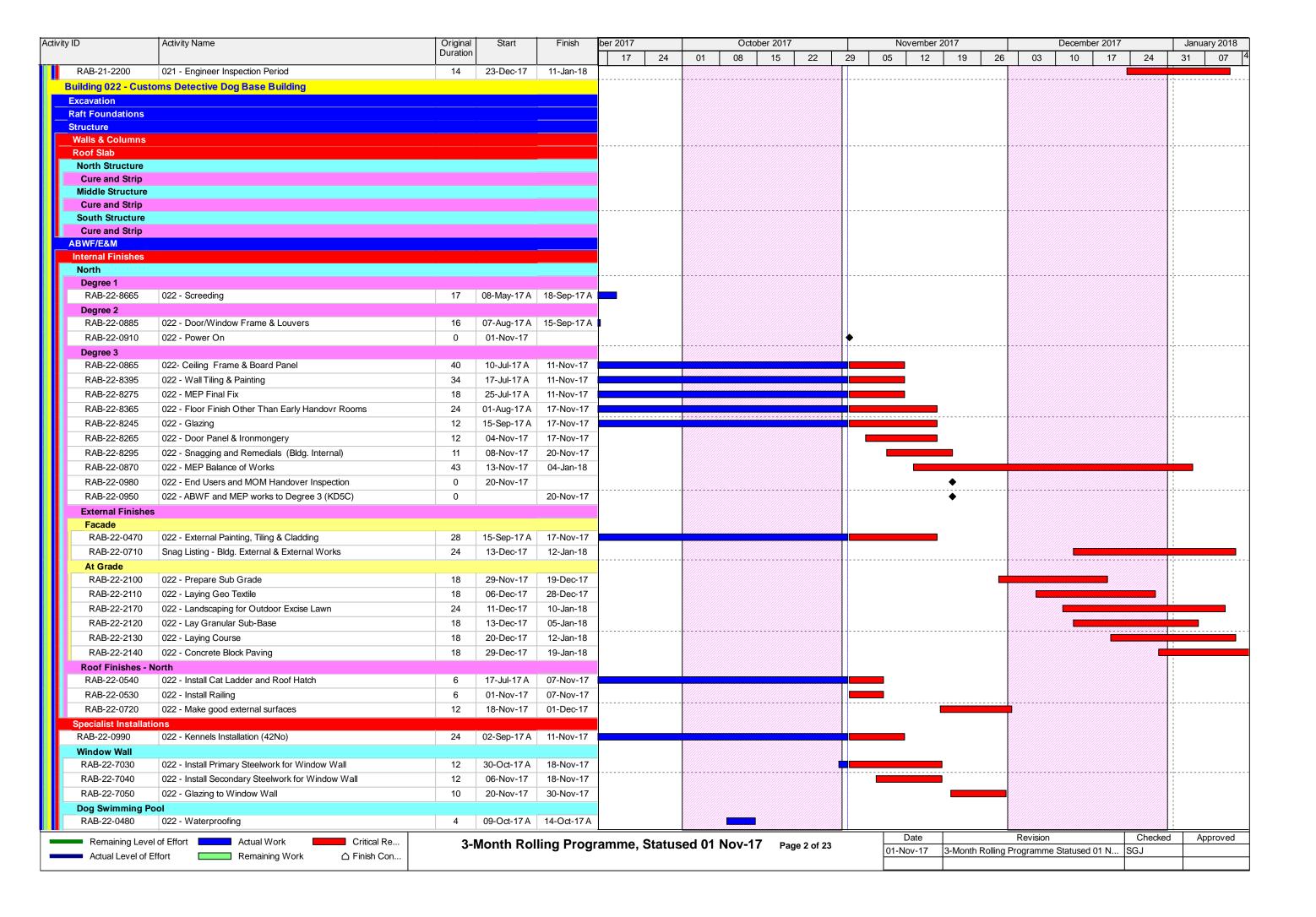


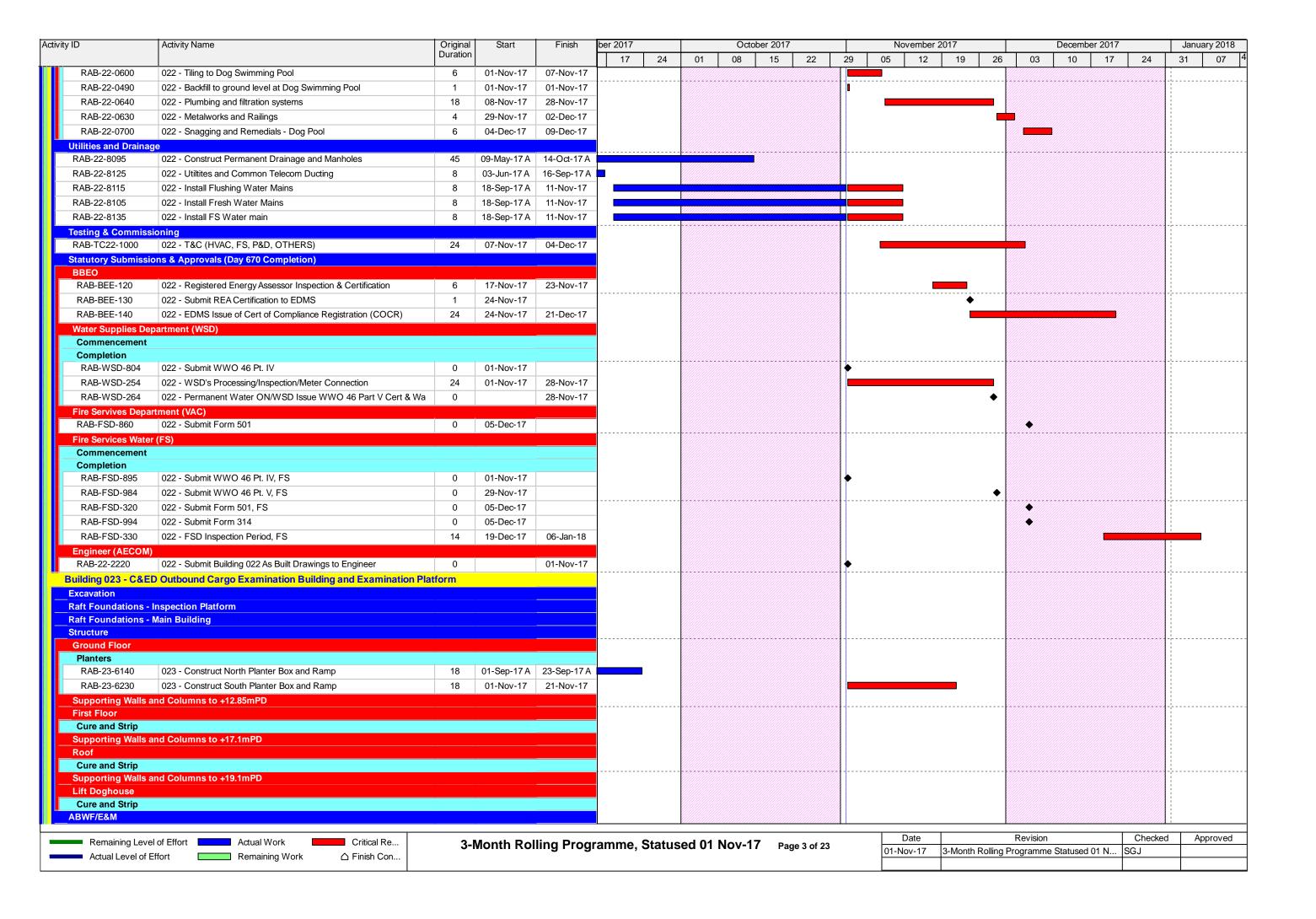
APPENDIX C

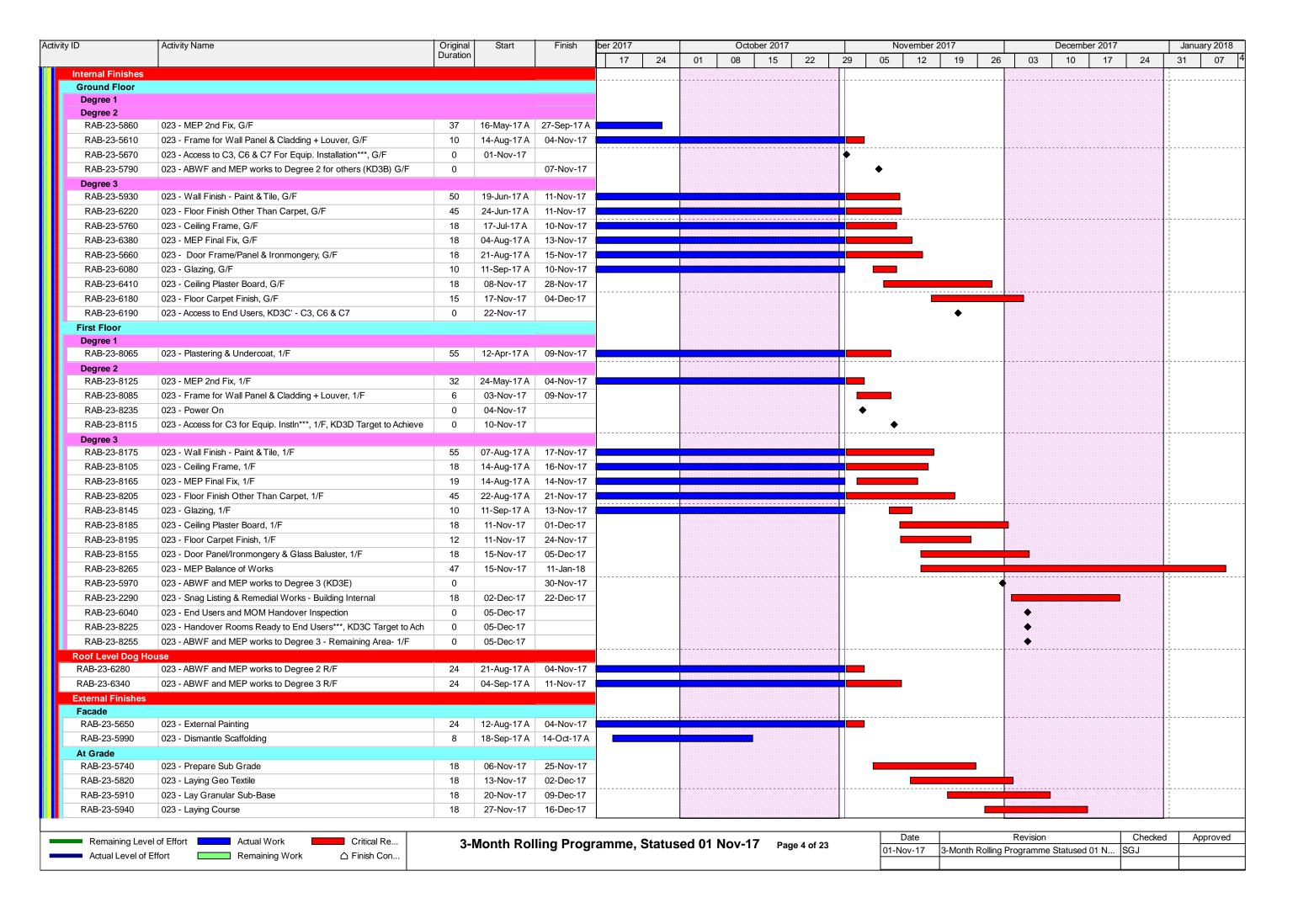
Construction Programme

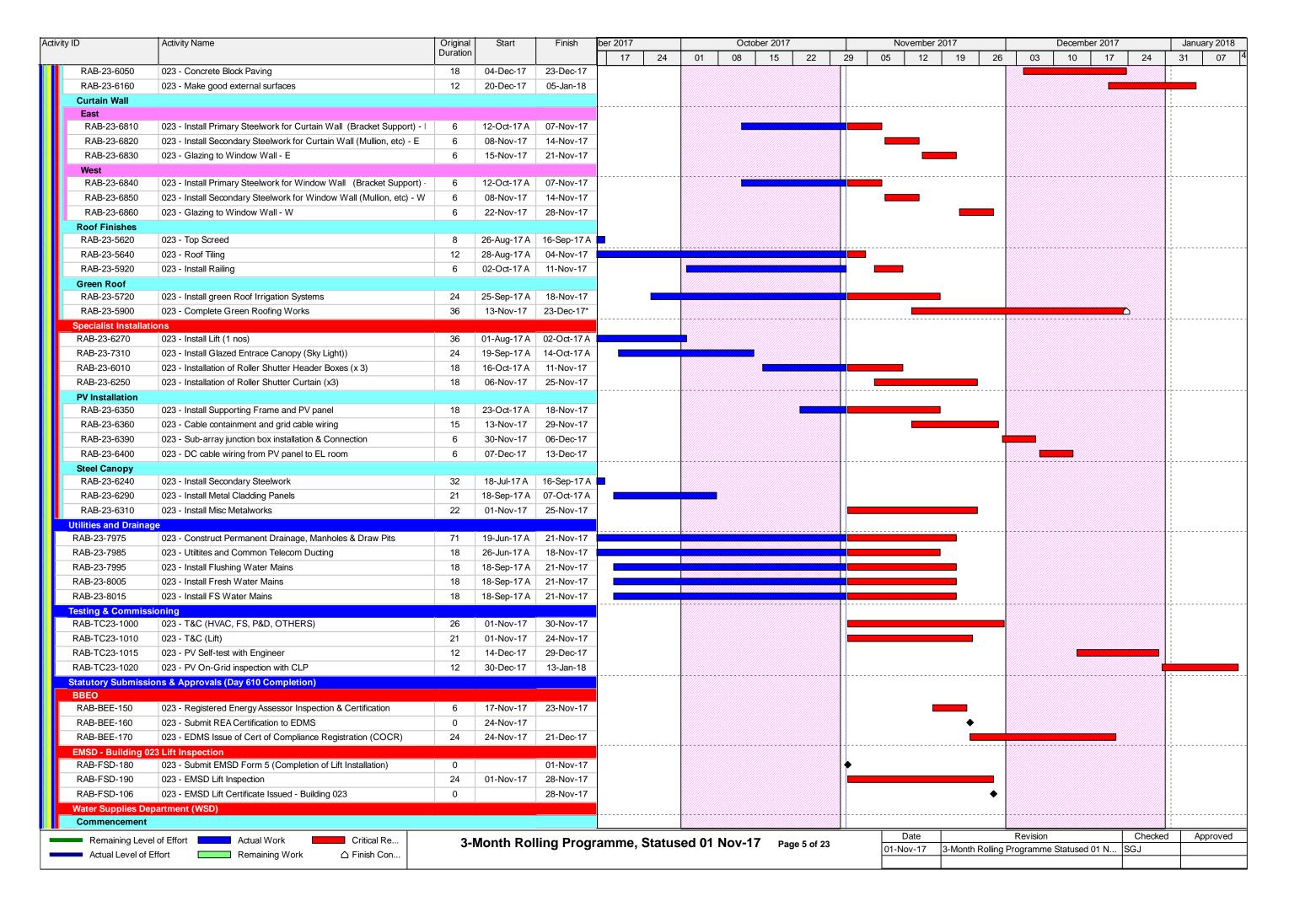


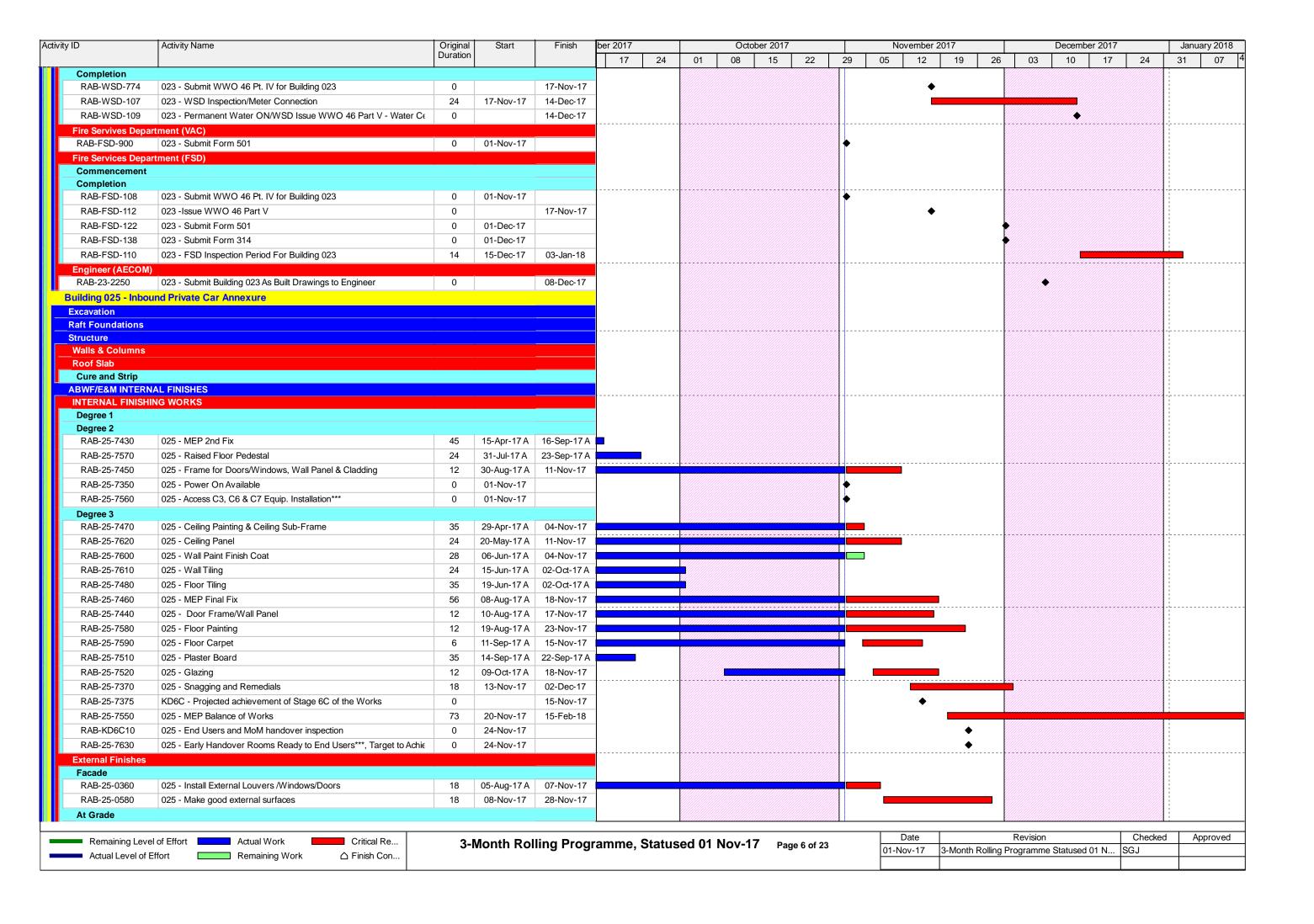


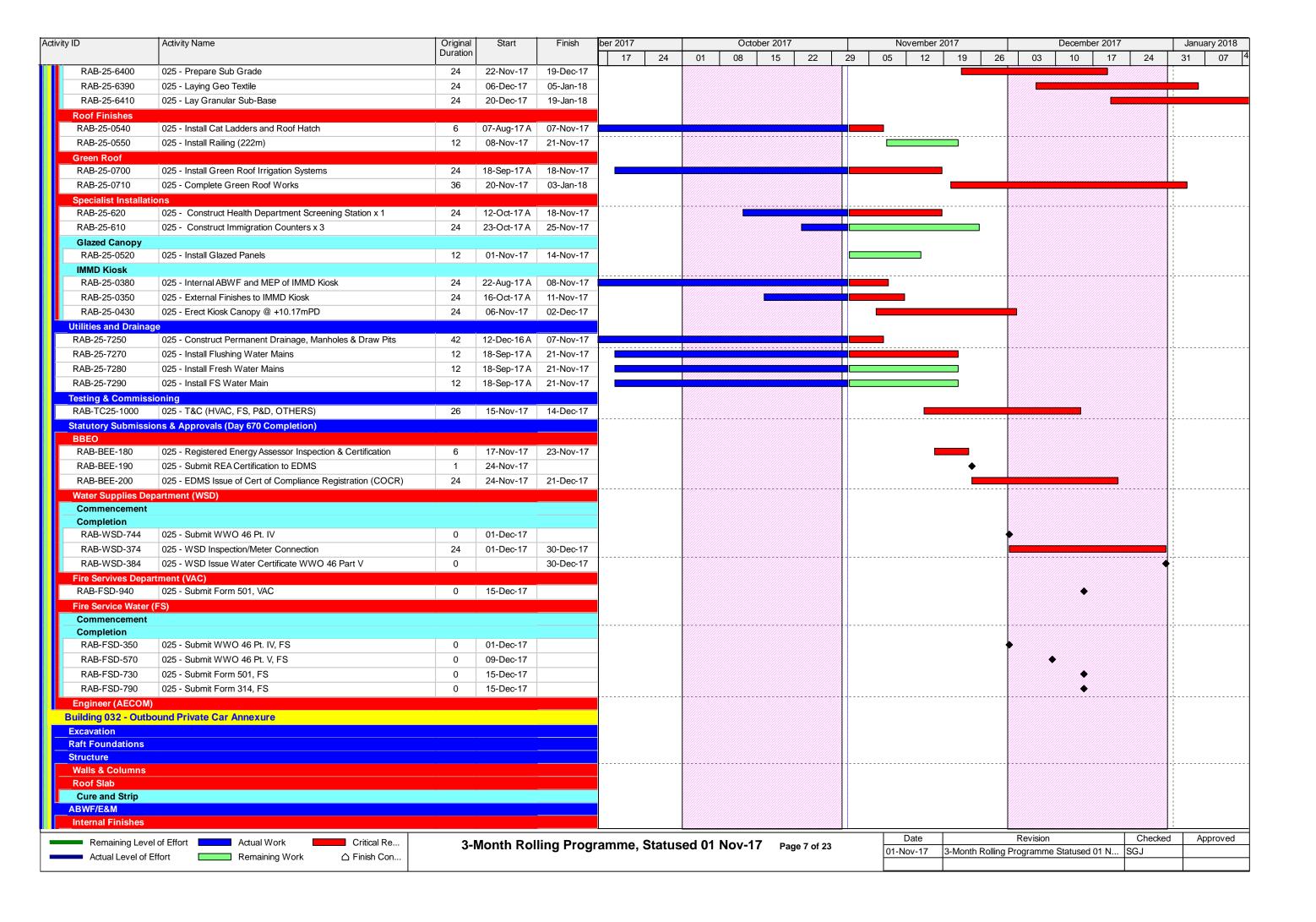


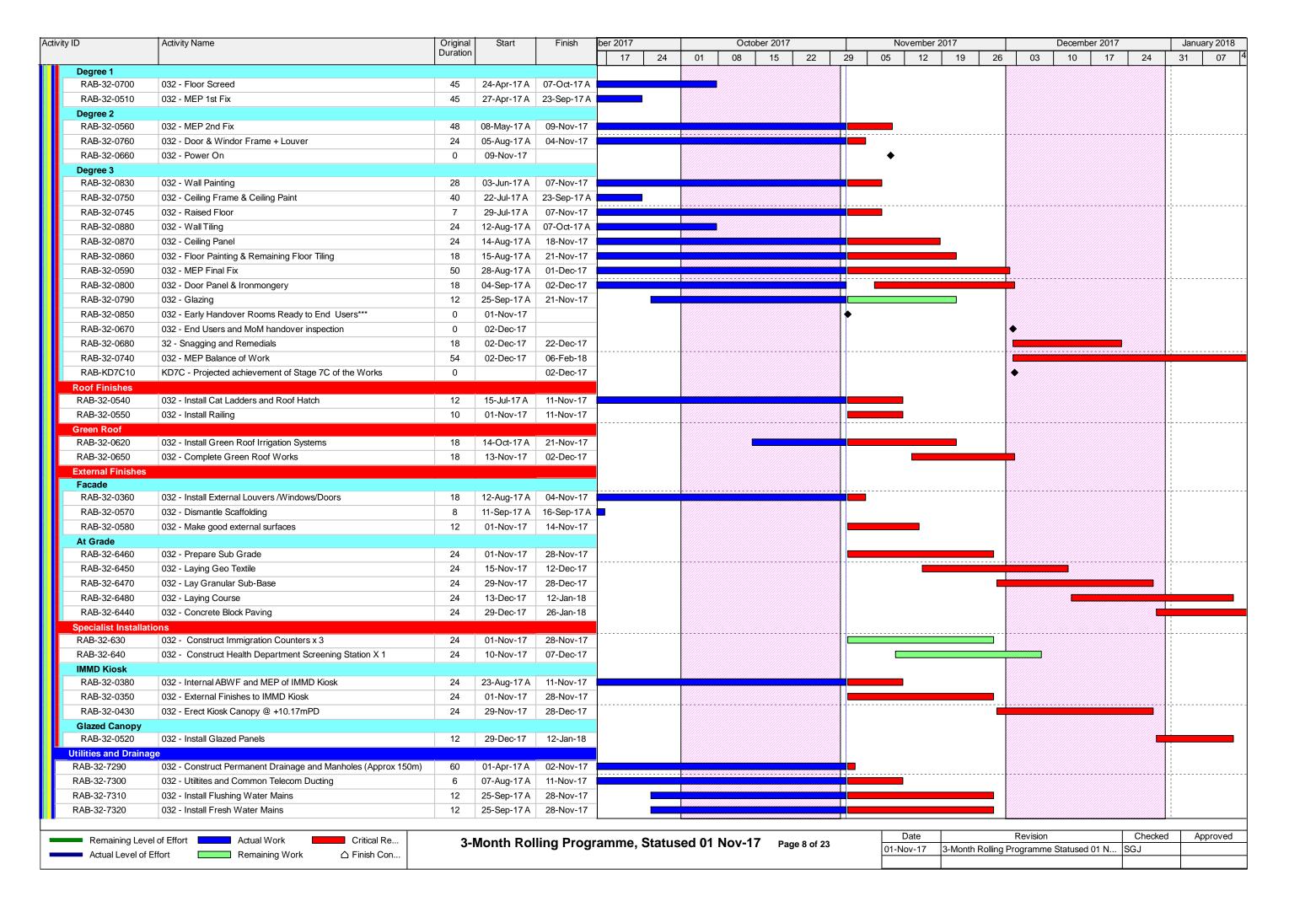


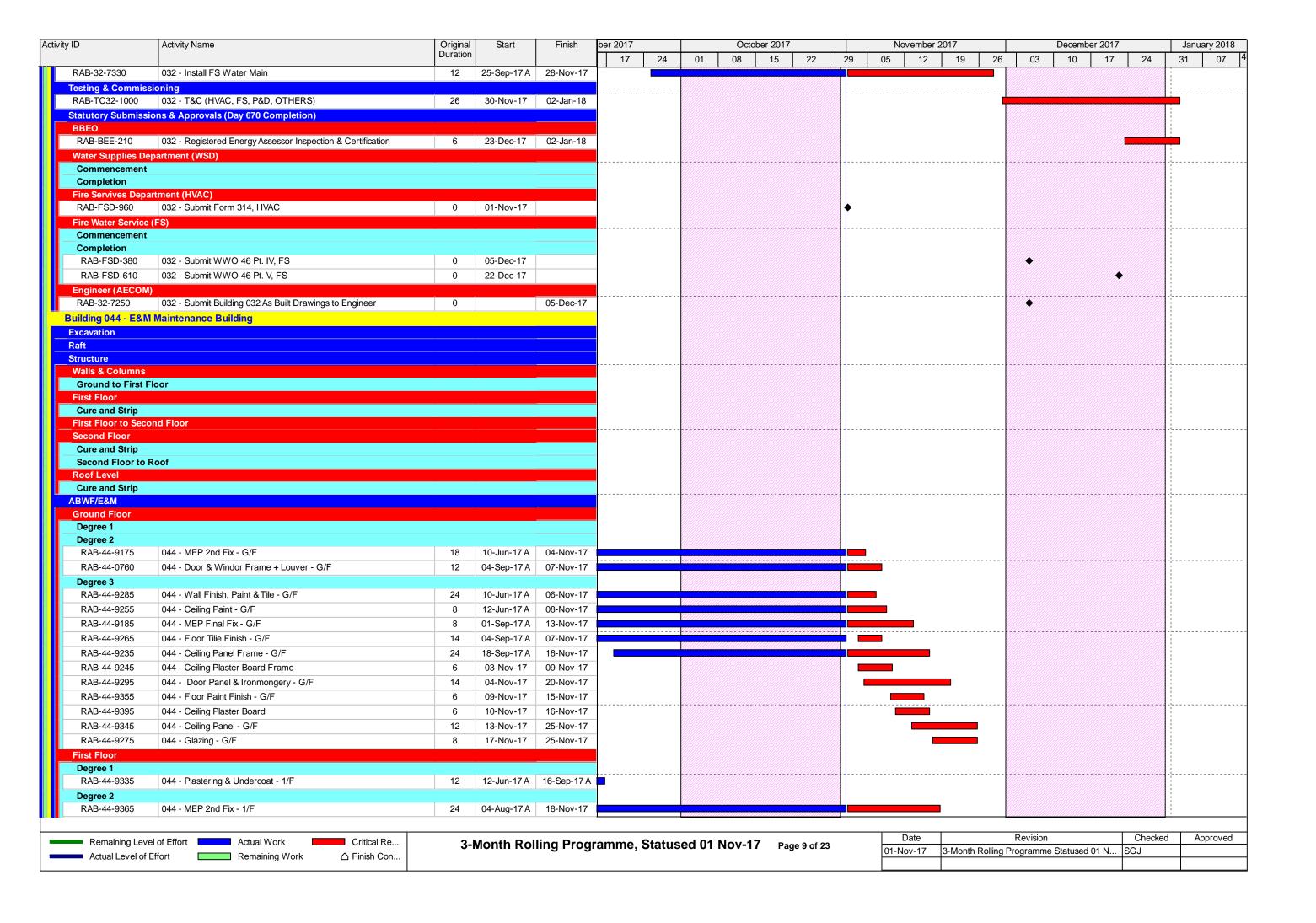


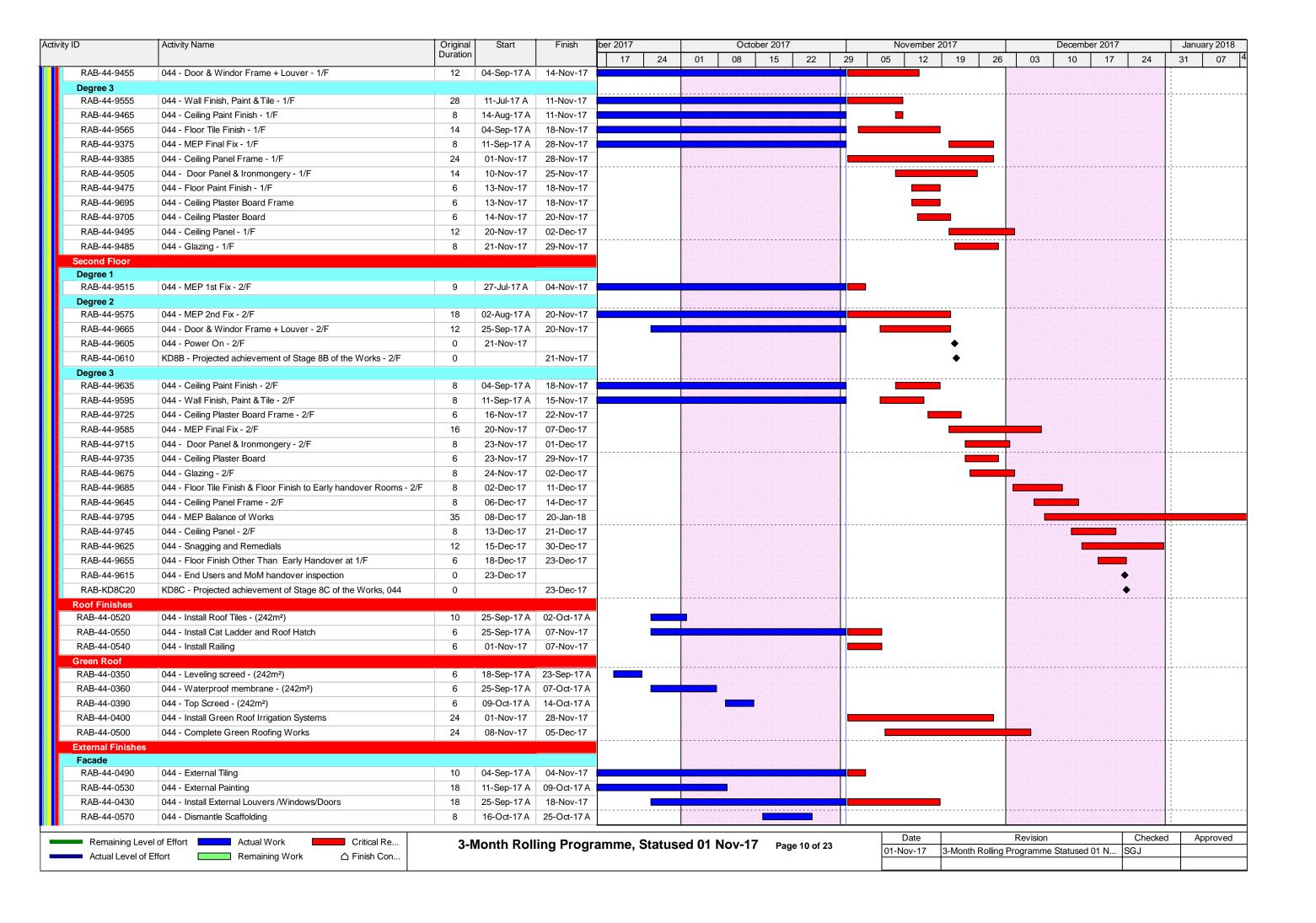


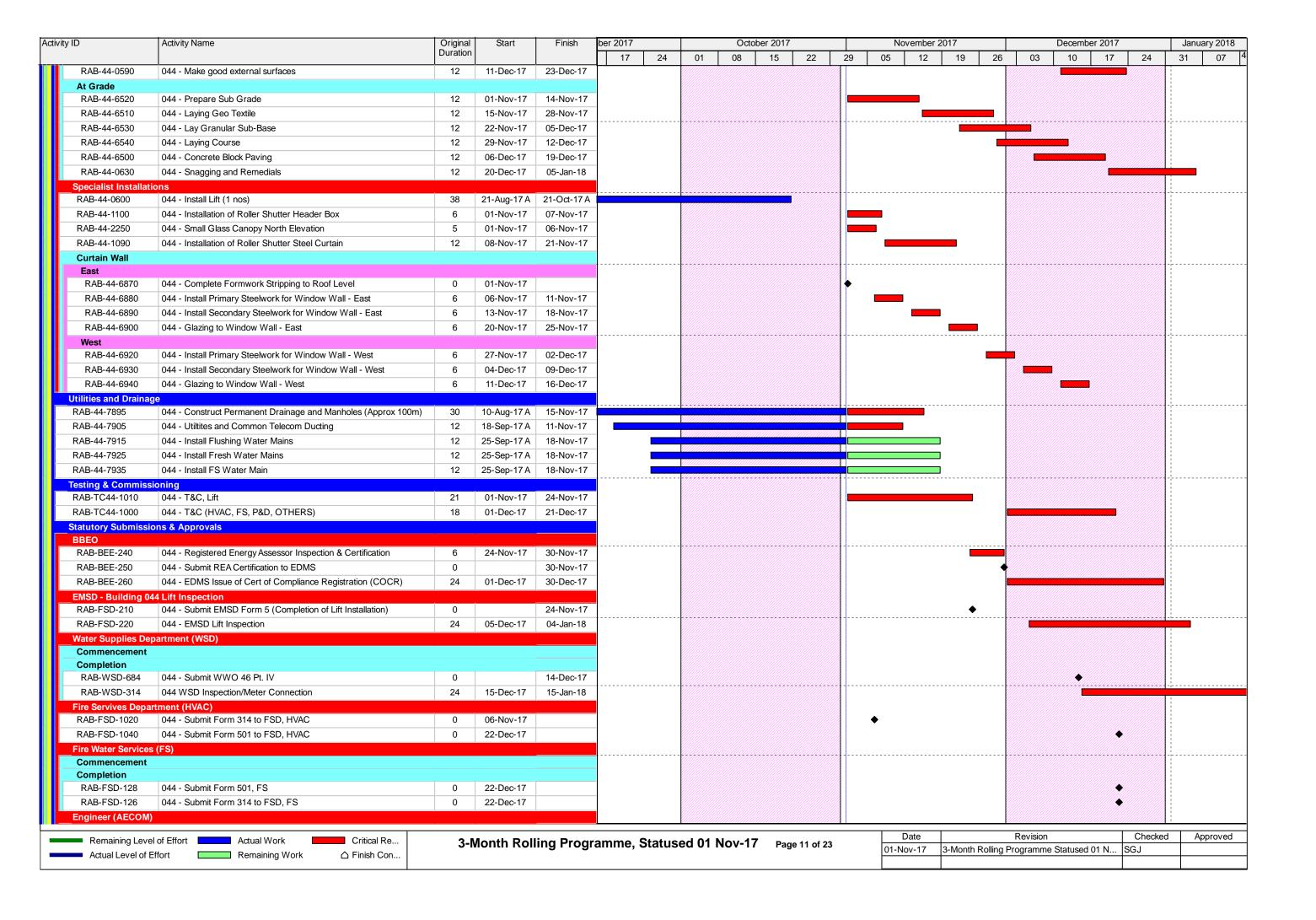


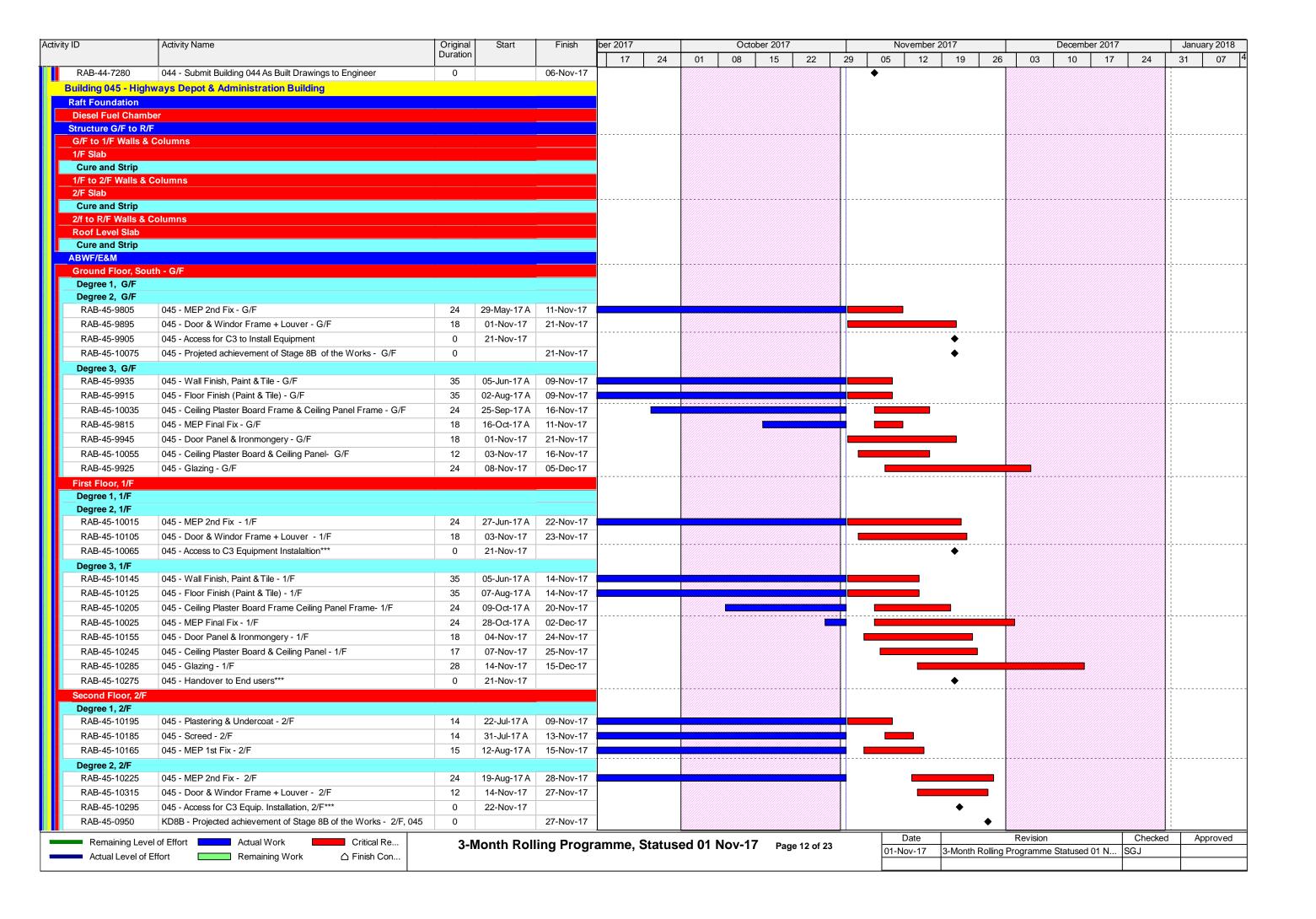


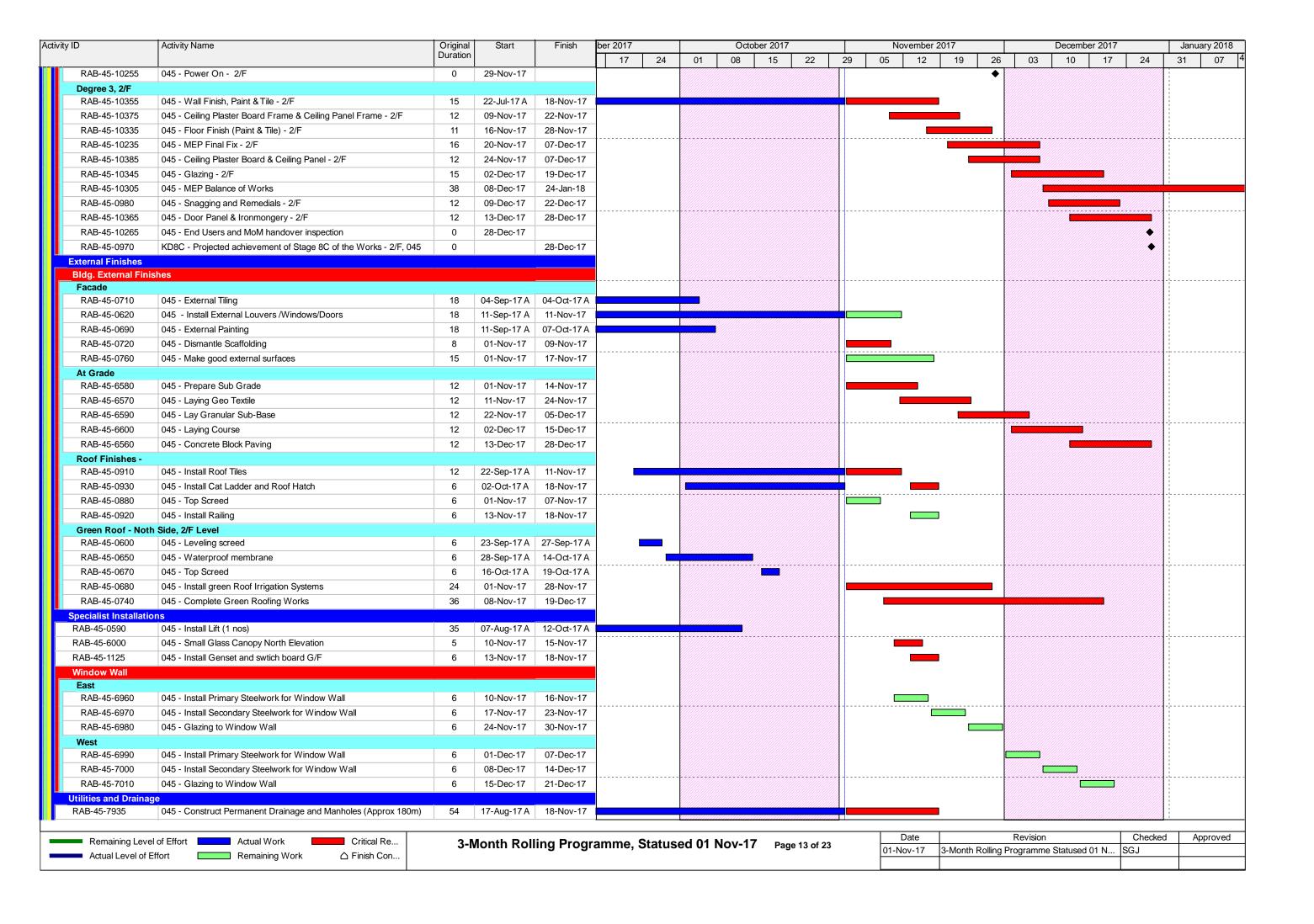


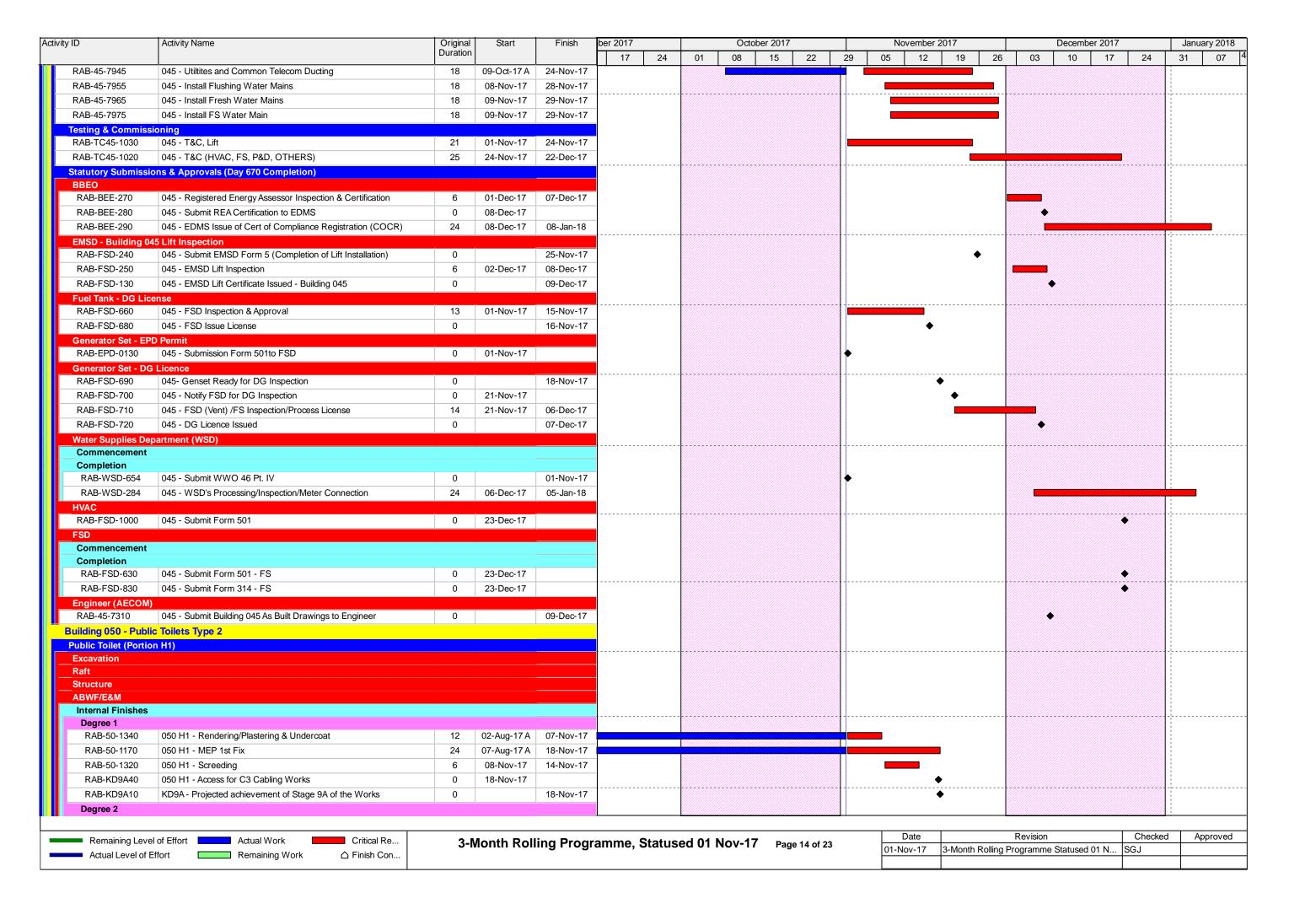


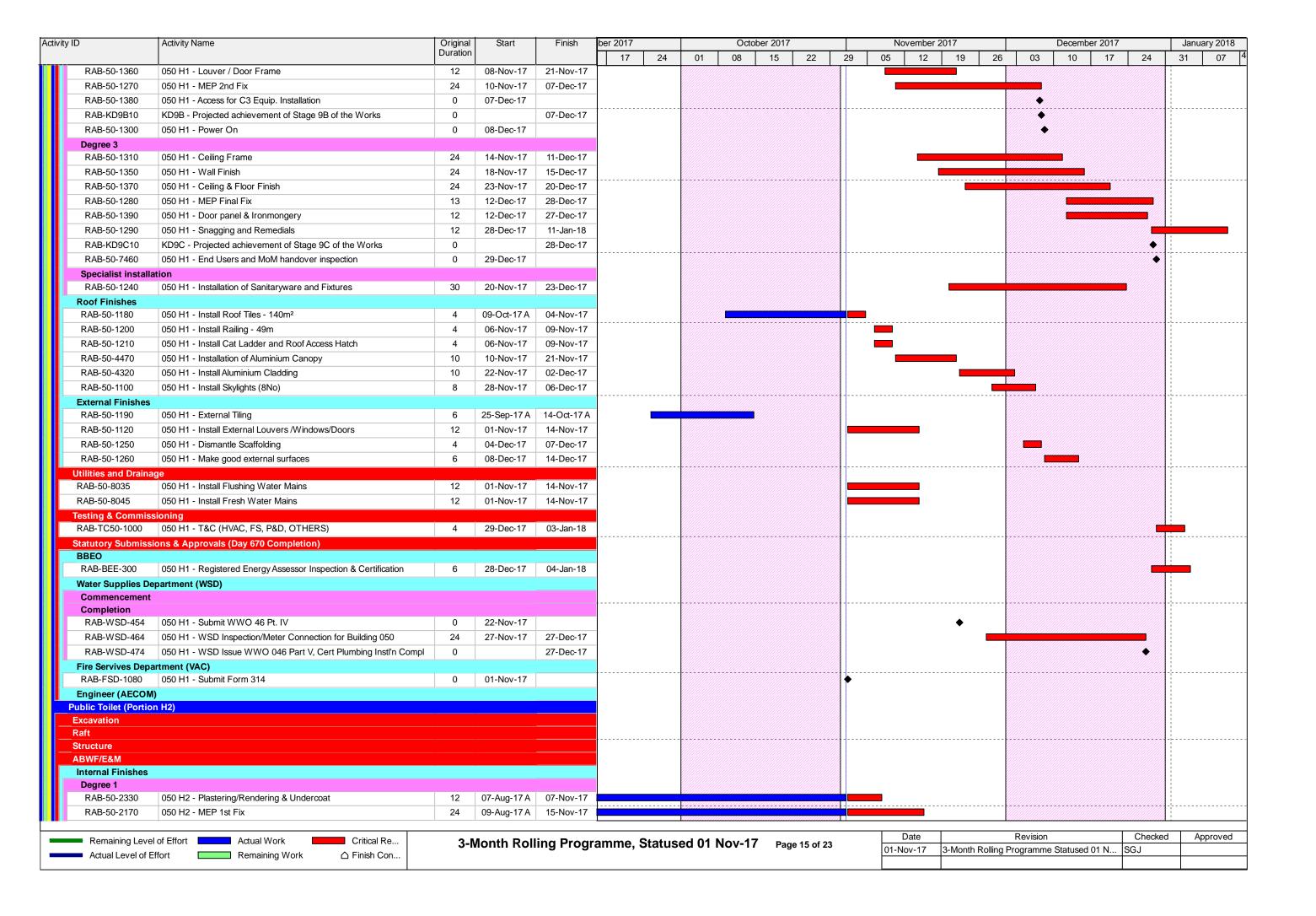


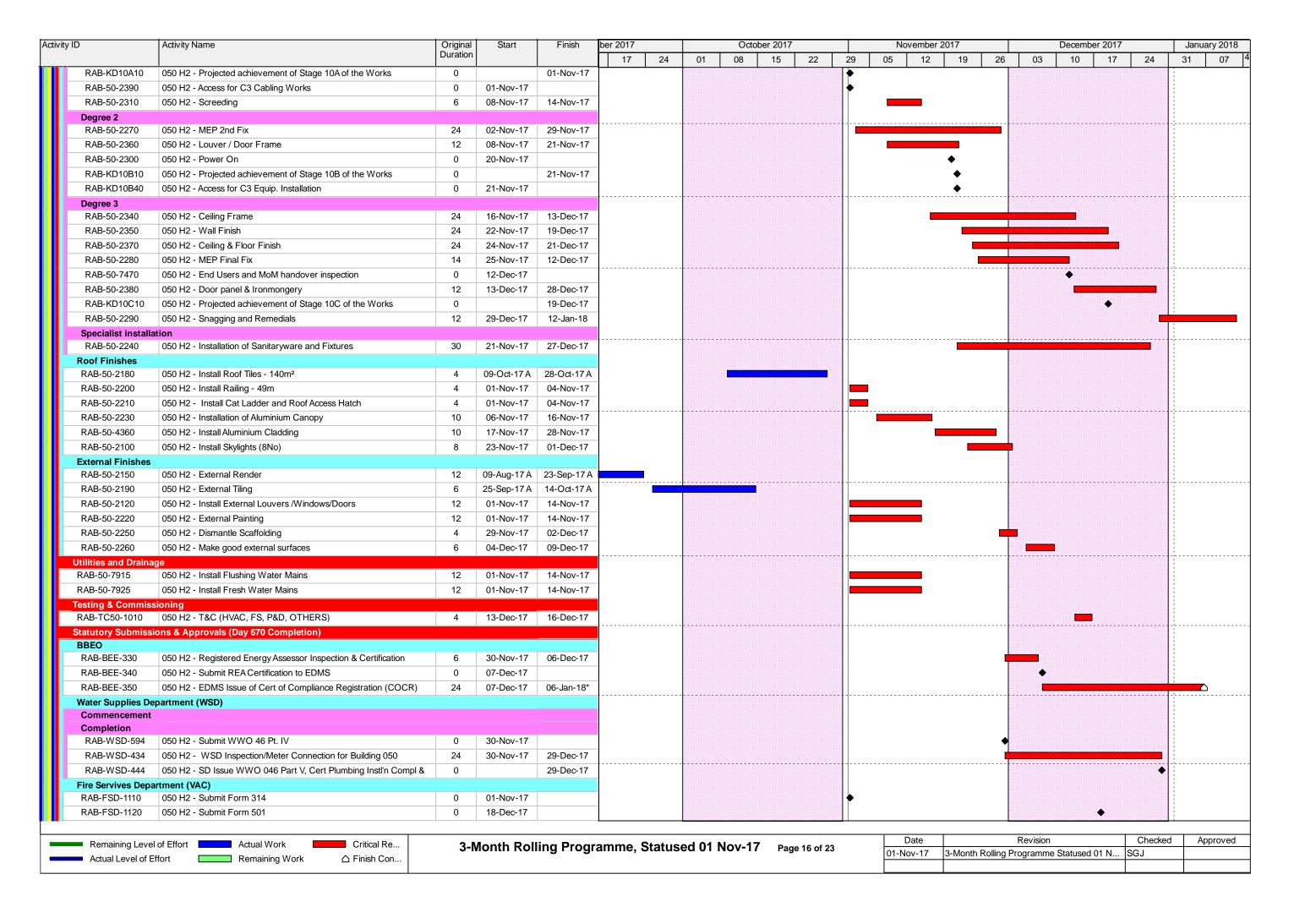


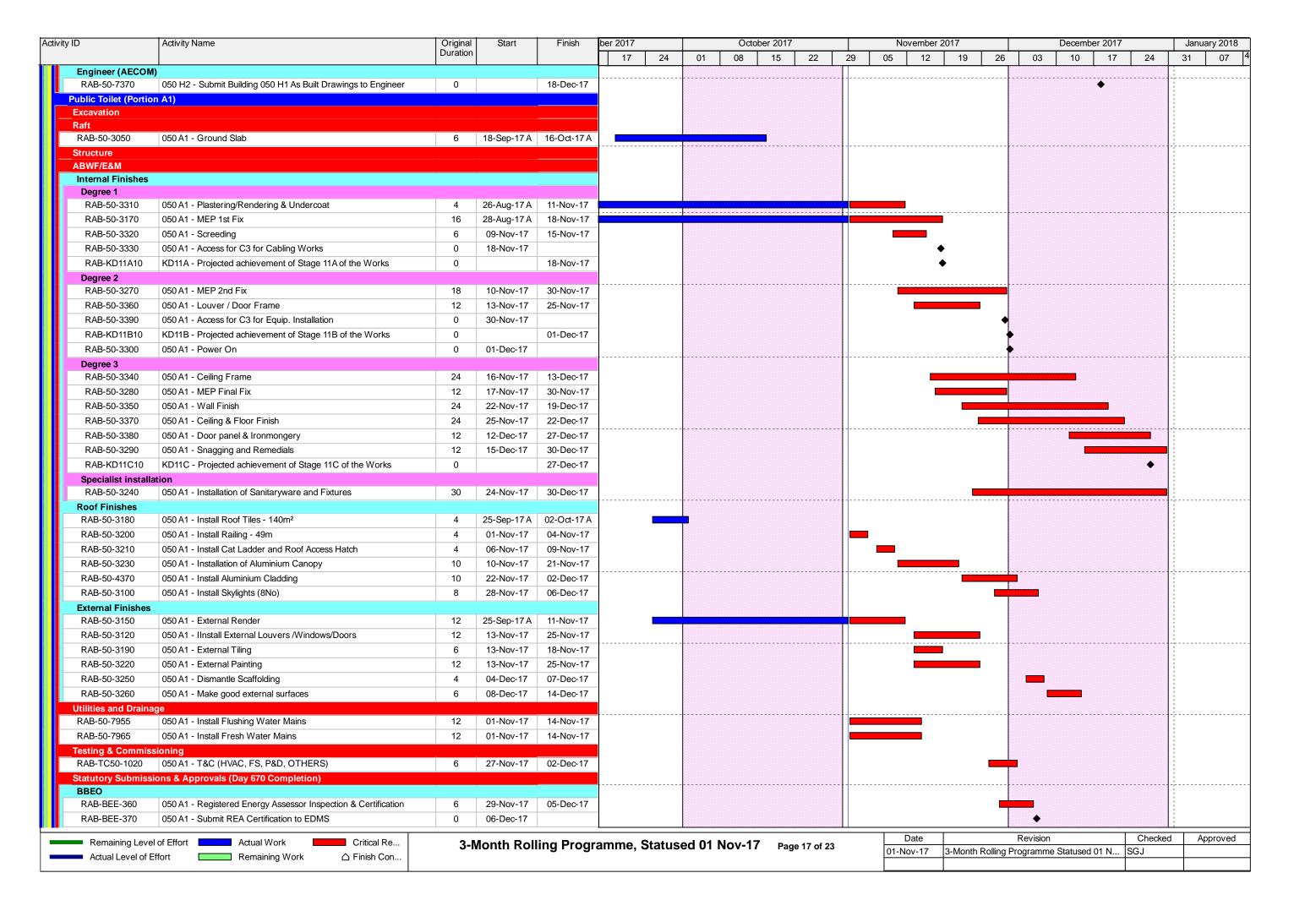


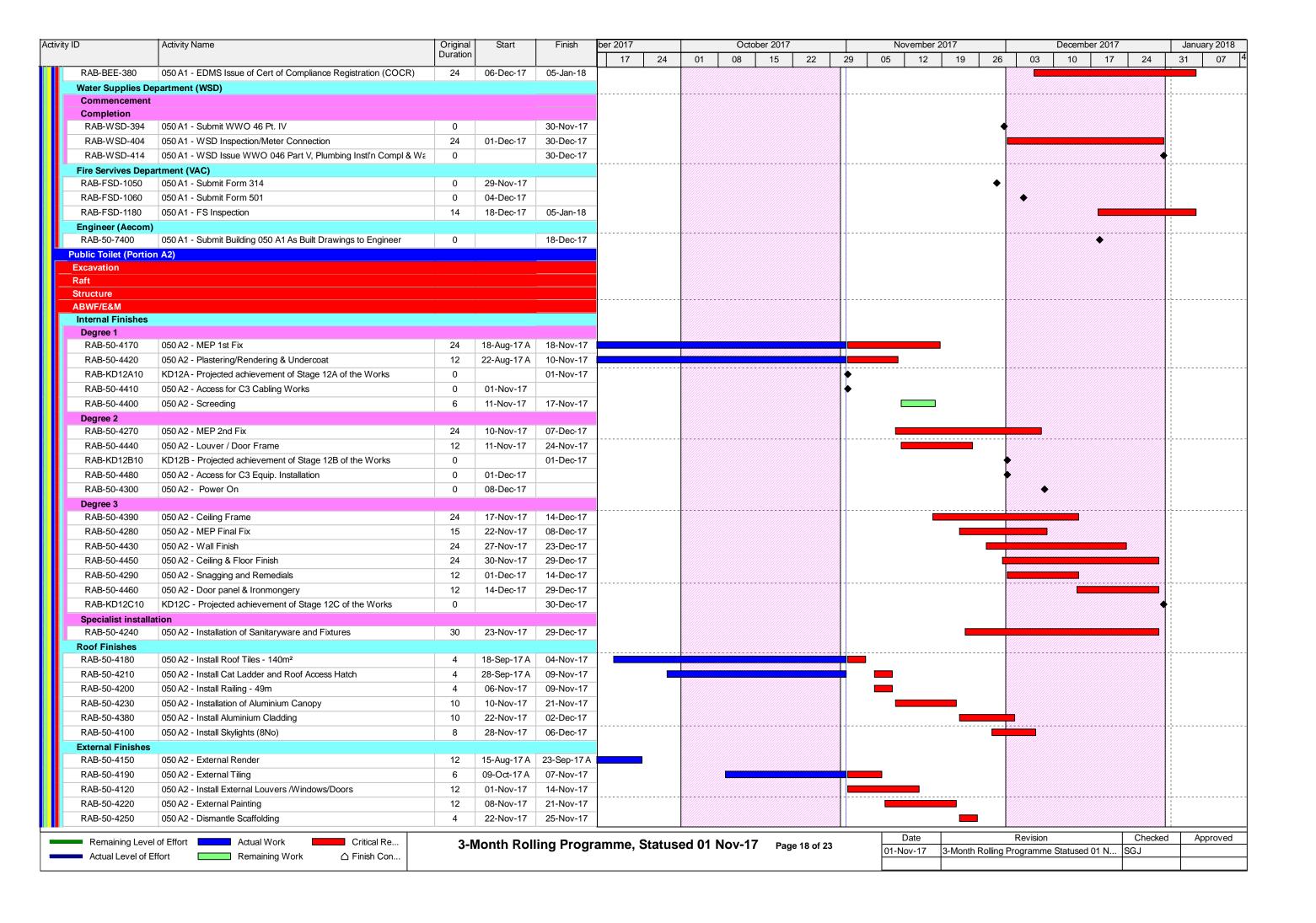


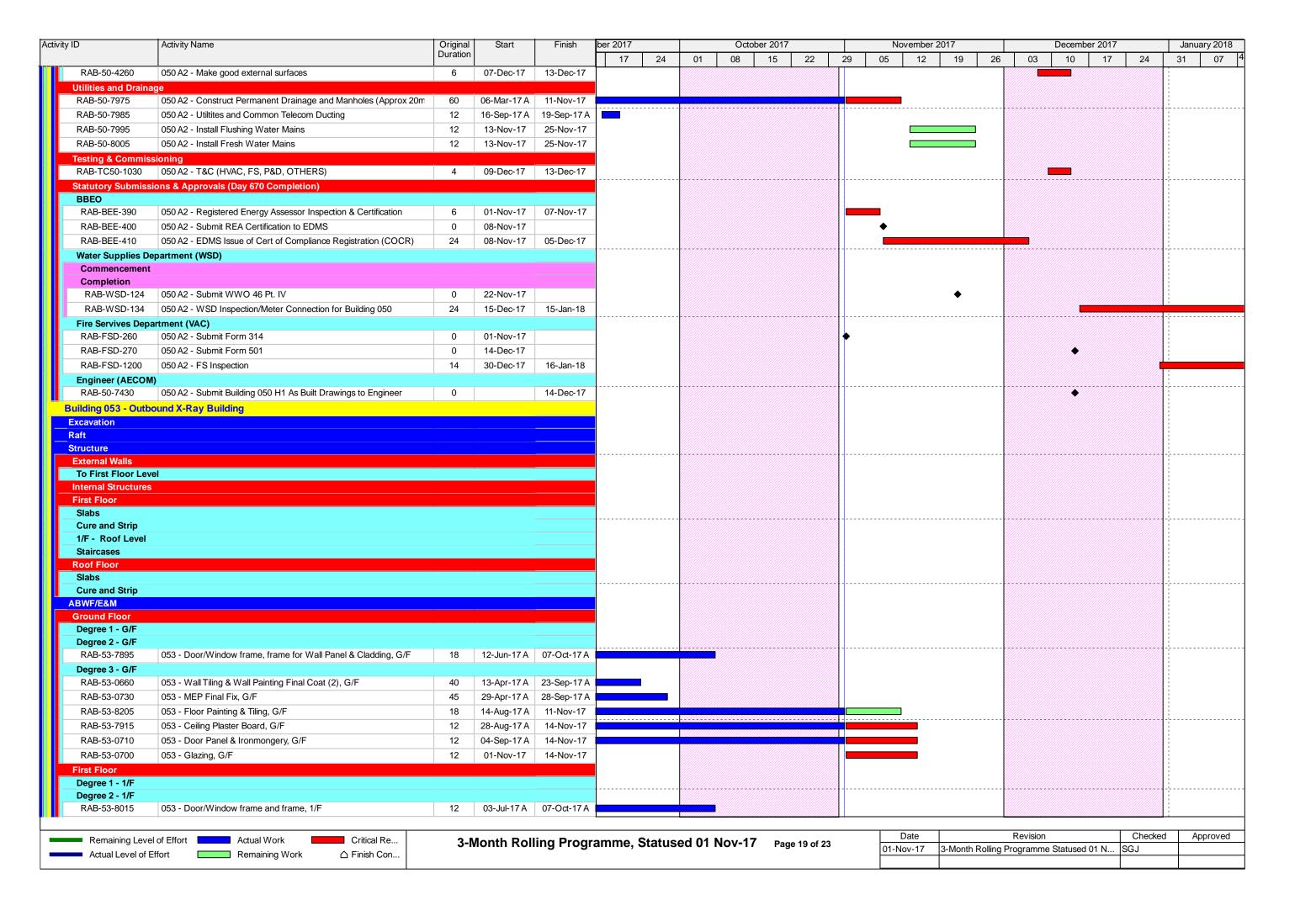


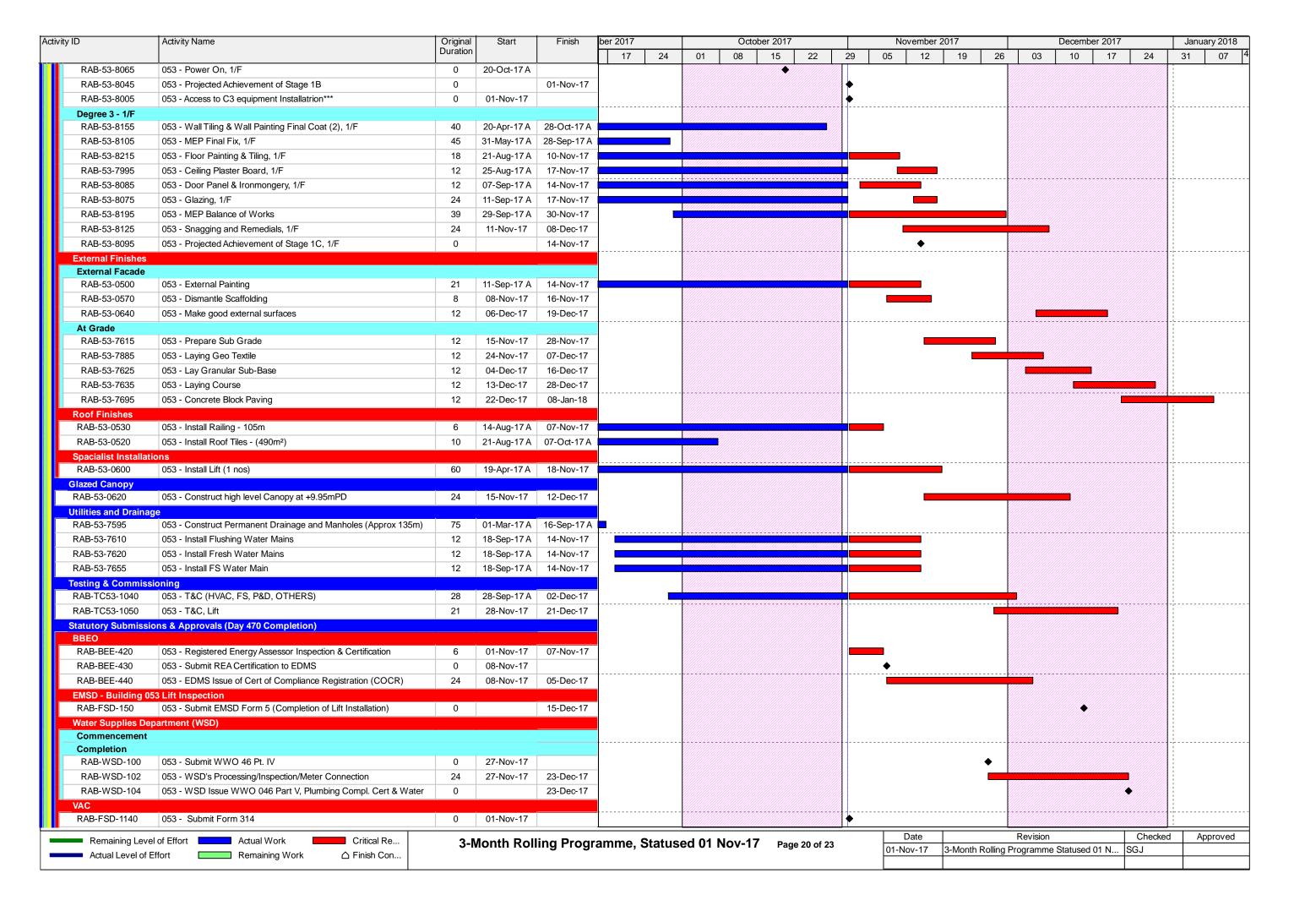


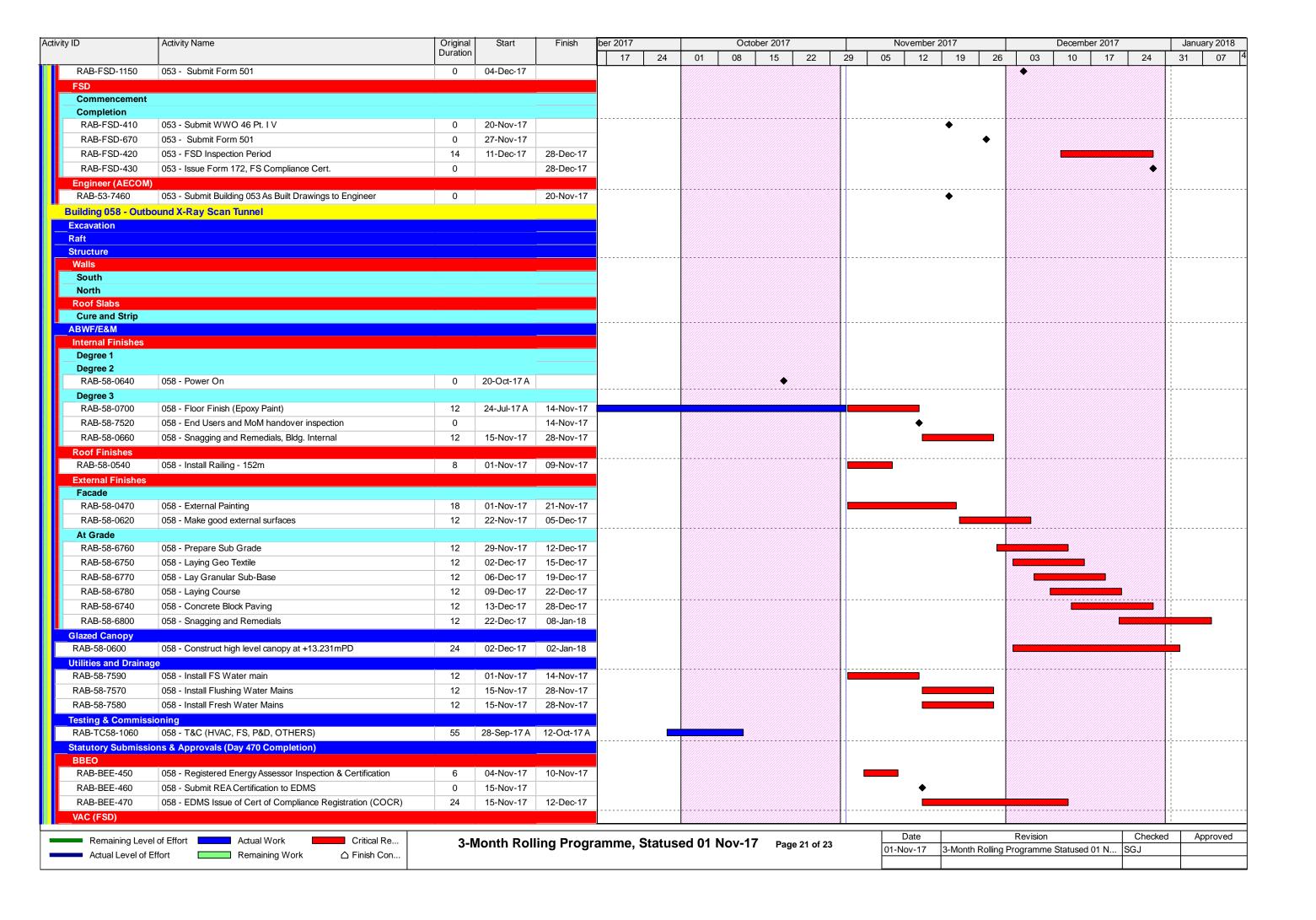


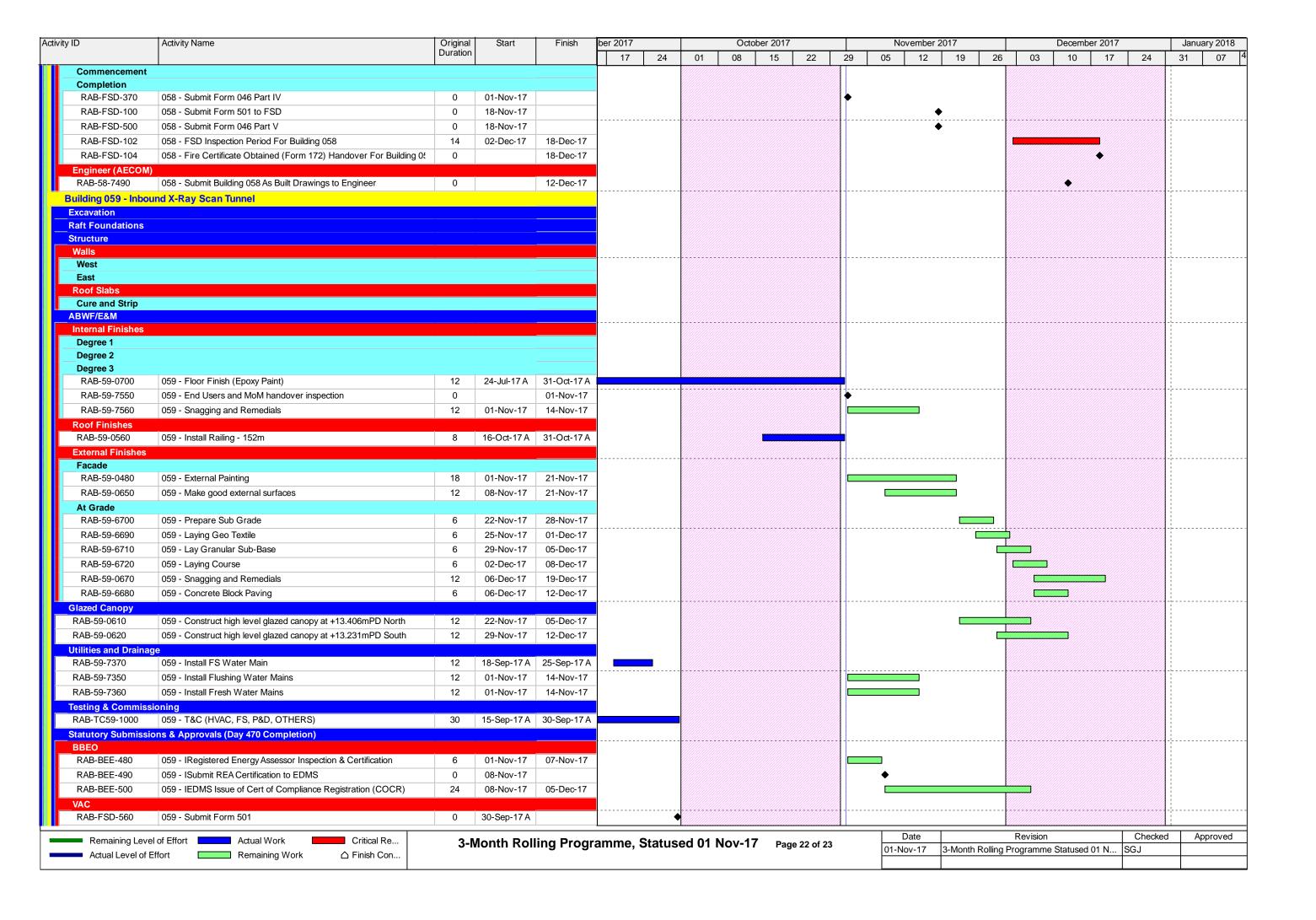




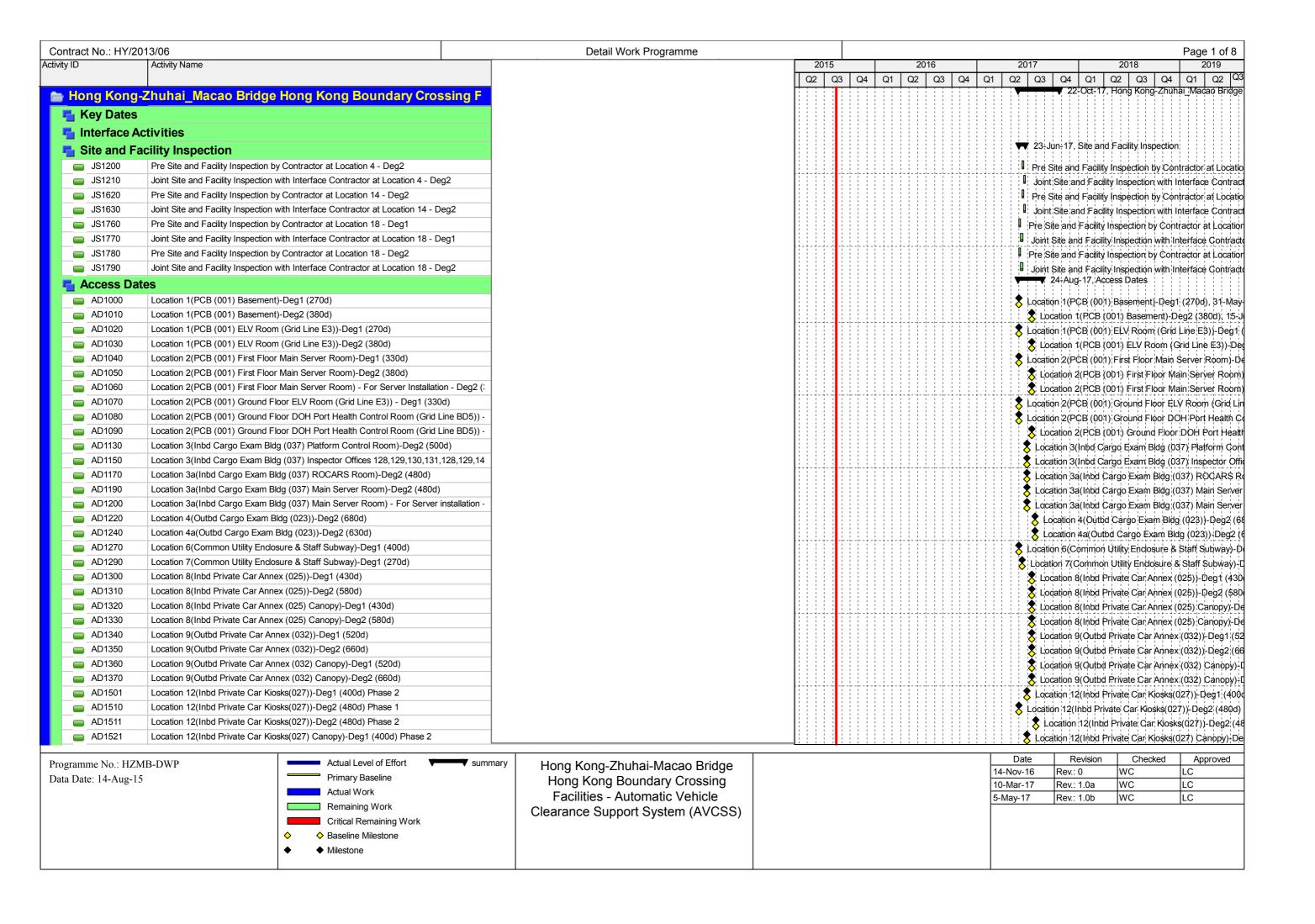




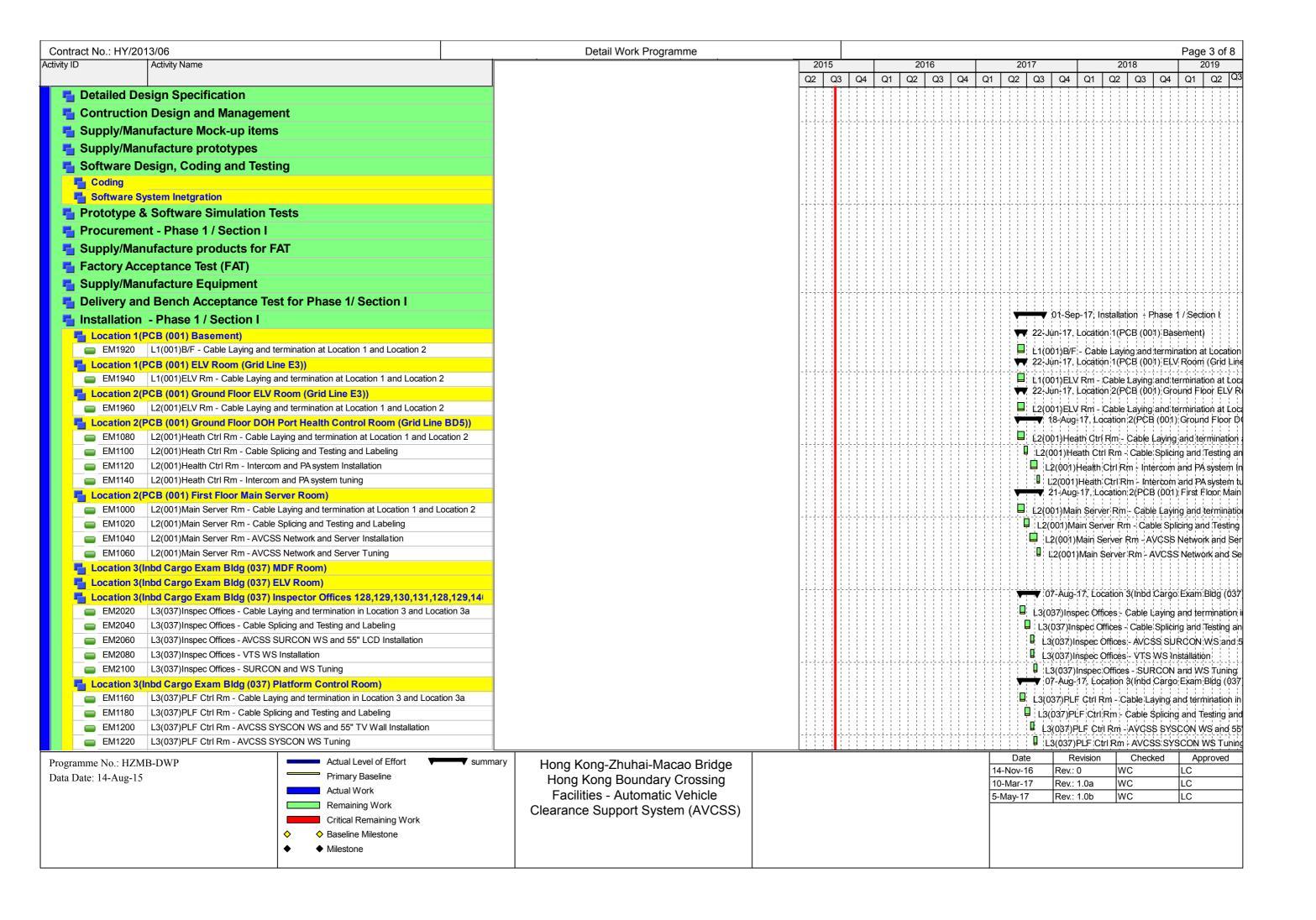


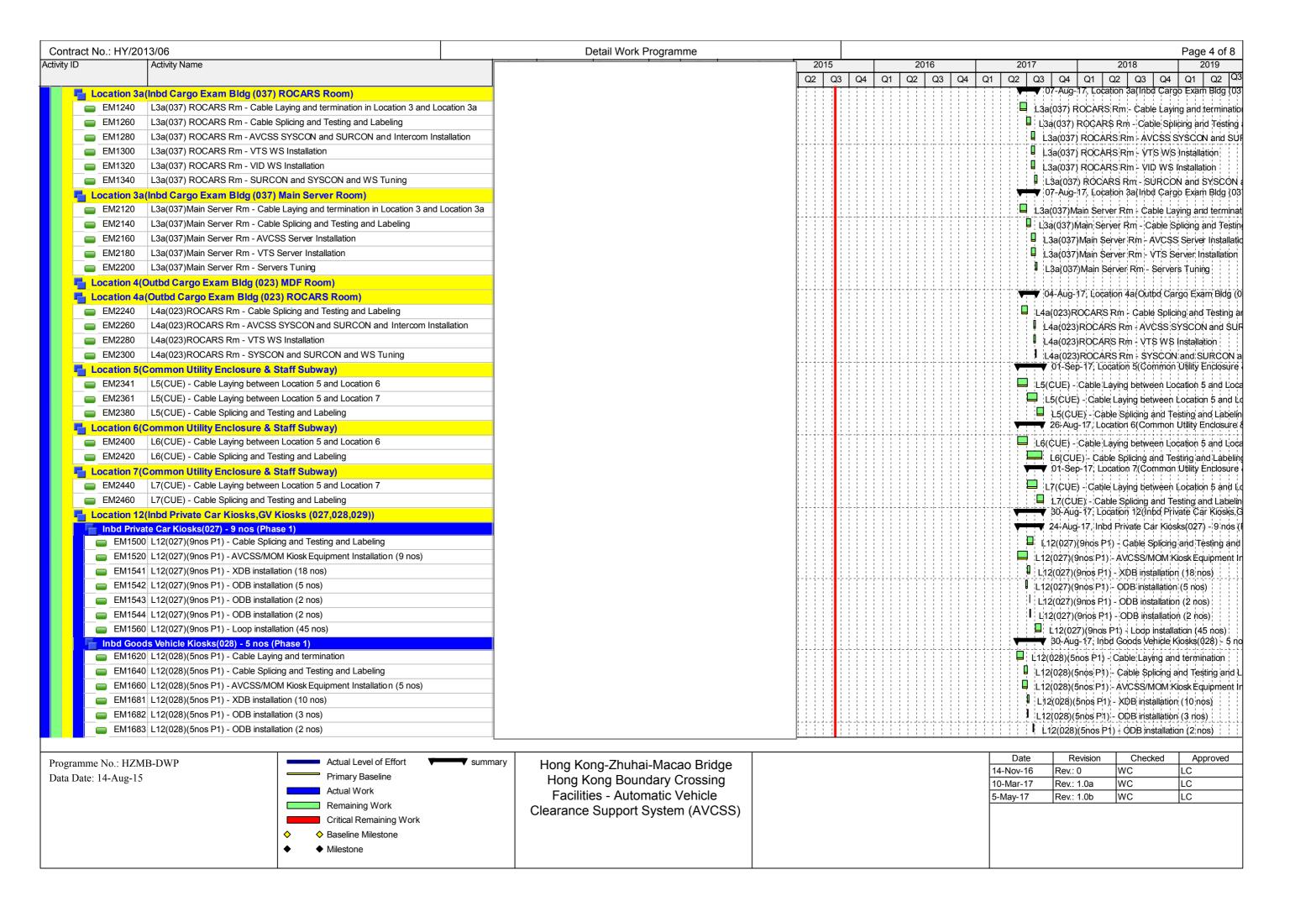


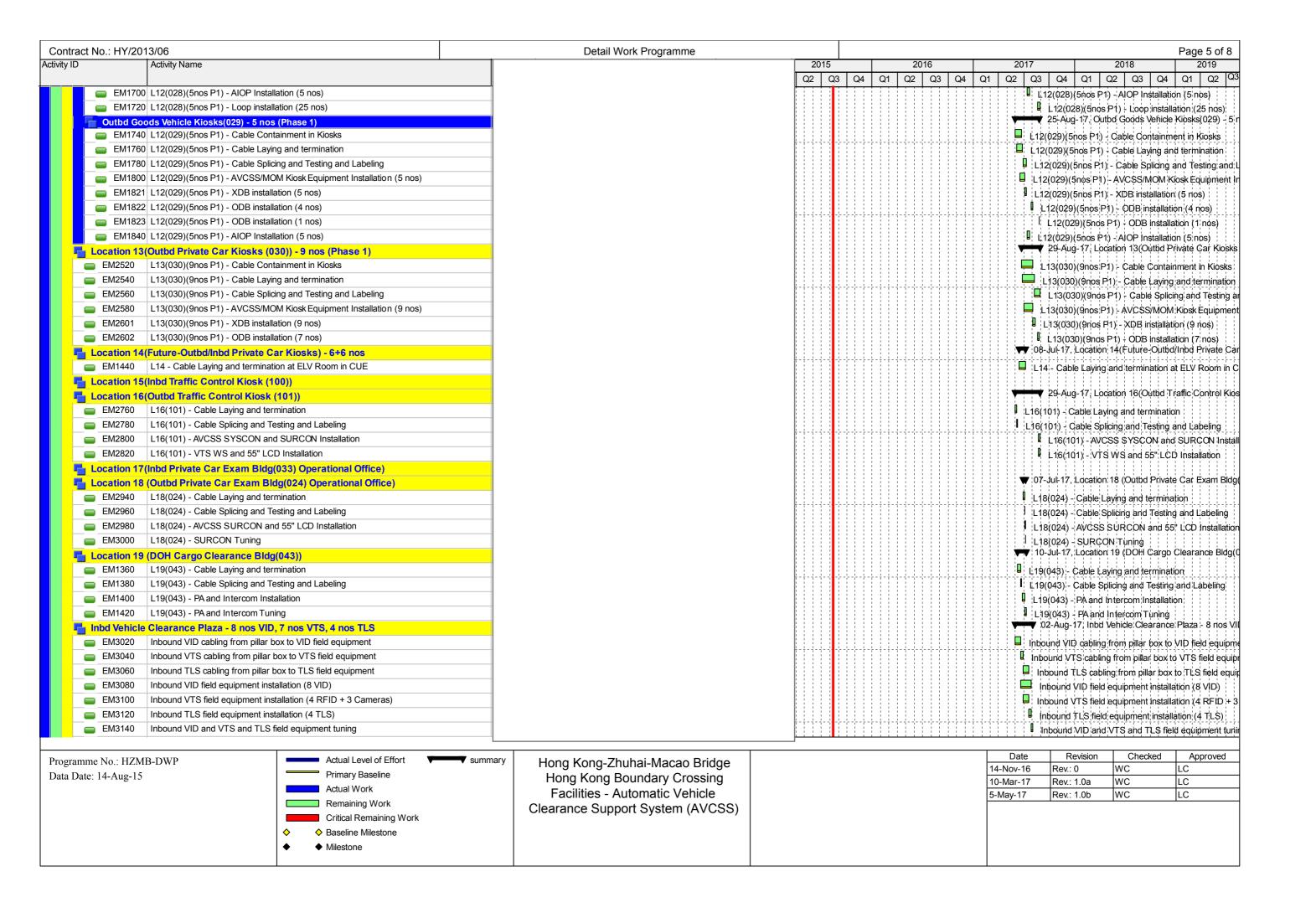
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Fire Services D	Department (FSD)												•	•							-
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RAB-FSD-76	059 - Submit Form 501 to FSD for FS Inspection For Building 059	0	20-Sep-17 A		•																
RAB-FSD-74	059 - FSD Inspection Period For Building 059	14	06-Oct-17 A	09-Oct-17 A																i	
RAB-FSD-75	059 - Fire Certificate Obtained (Form 172) Handover For Building 05	0		01-Nov-17							∅										
Bldg. 059 for	r FS Inspection (Due to C3 Work Interface)																			i	
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RAB-FSD-49	90 059 - Fire Certificate Obtained (Form 172) Handover For Building 05	0		01-Nov-17							♦										
Engineer (AEC	OM)																				
RAB-59-7520	059 - Submit Building 059 As Built Drawings to Engineer	0		01-Nov-17							♦										
Bldg. 059 Rea	dy for Engineer Inspection (C8 Requirement)																				
RAB-59-7570	059 - Engineer Inspection Period	14	08-Nov-17	23-Nov-17								_									
RAB-59-7580	059 - Engineer Issue Occupation Permit	0		23-Nov-17										•							
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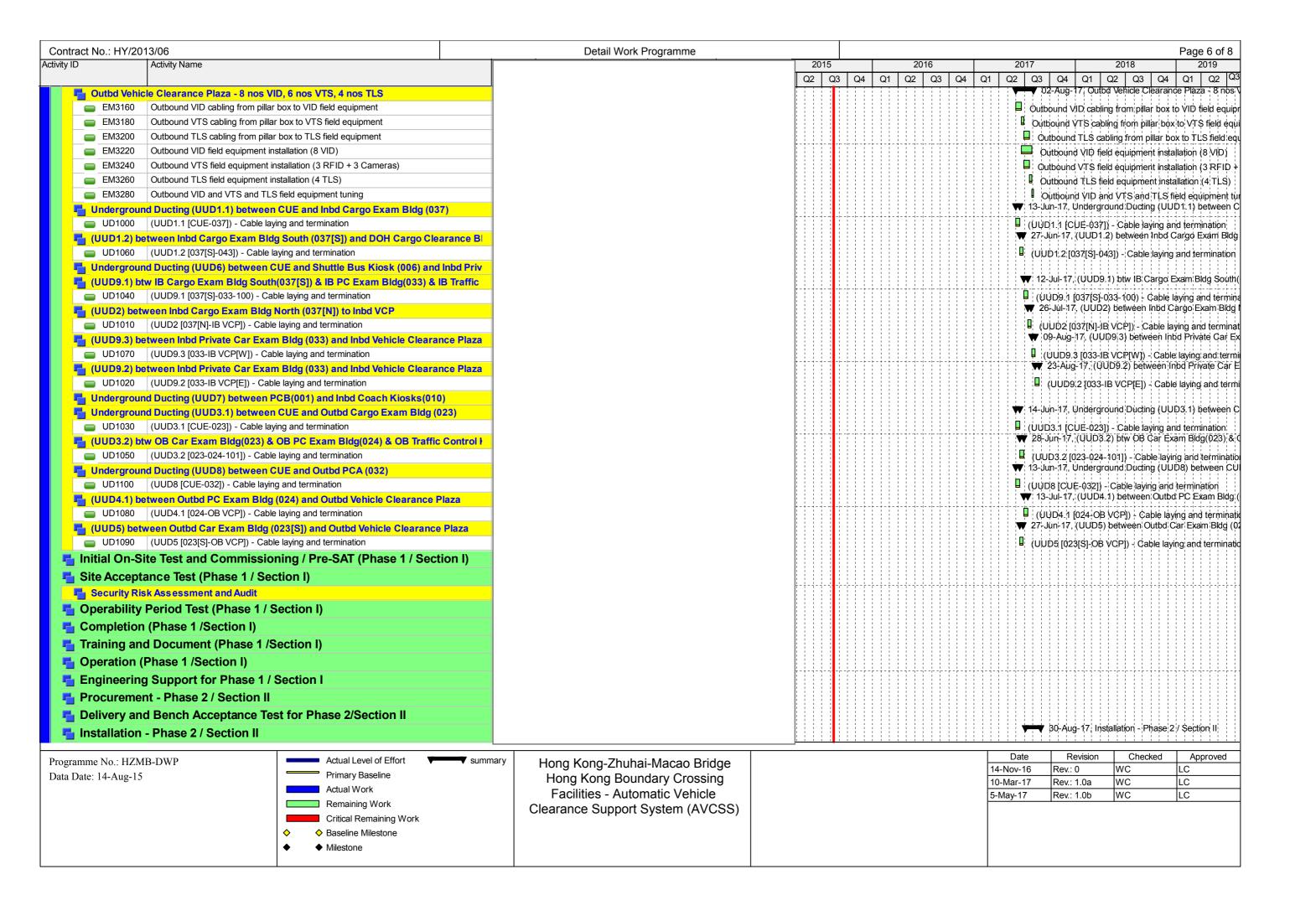


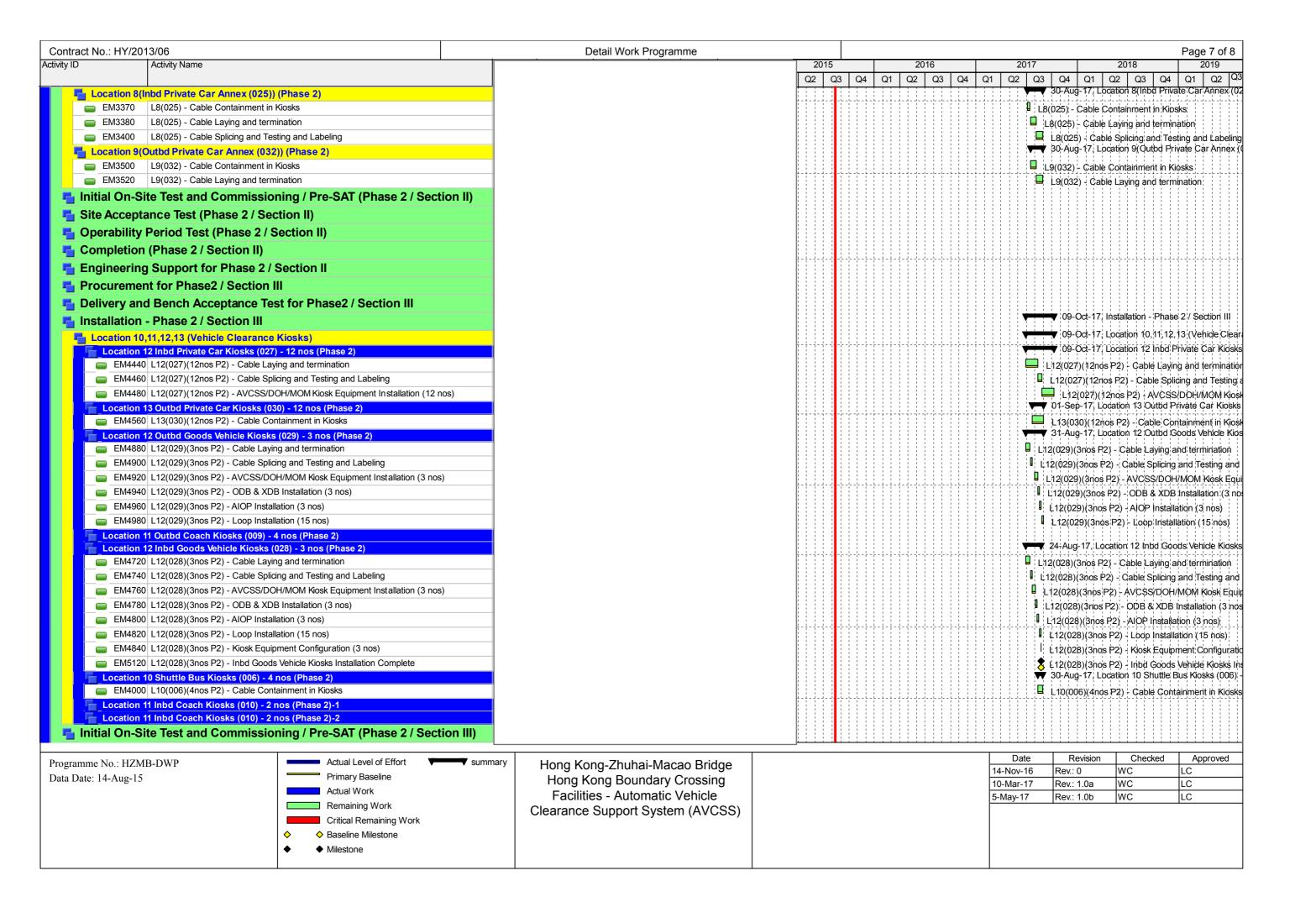


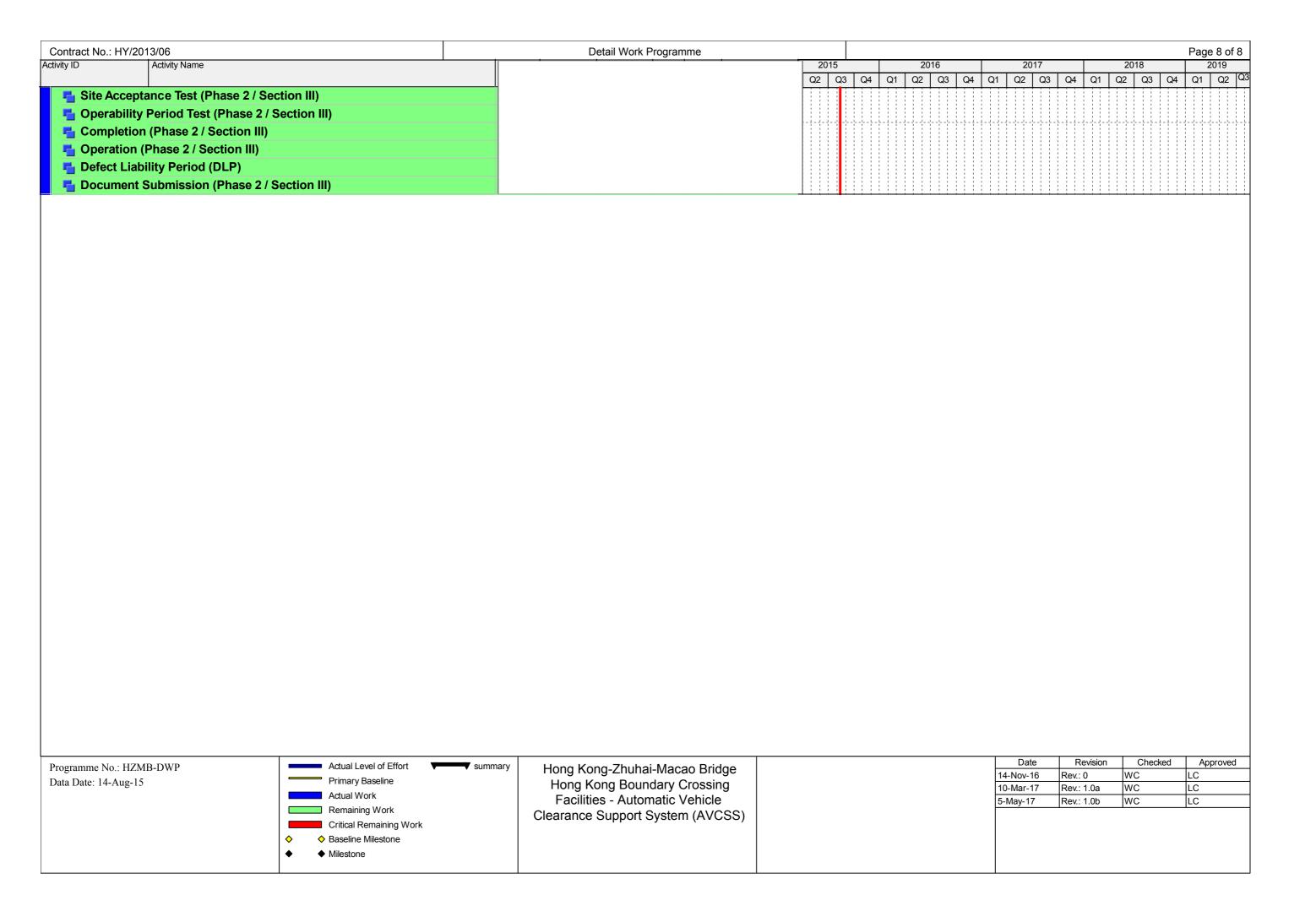


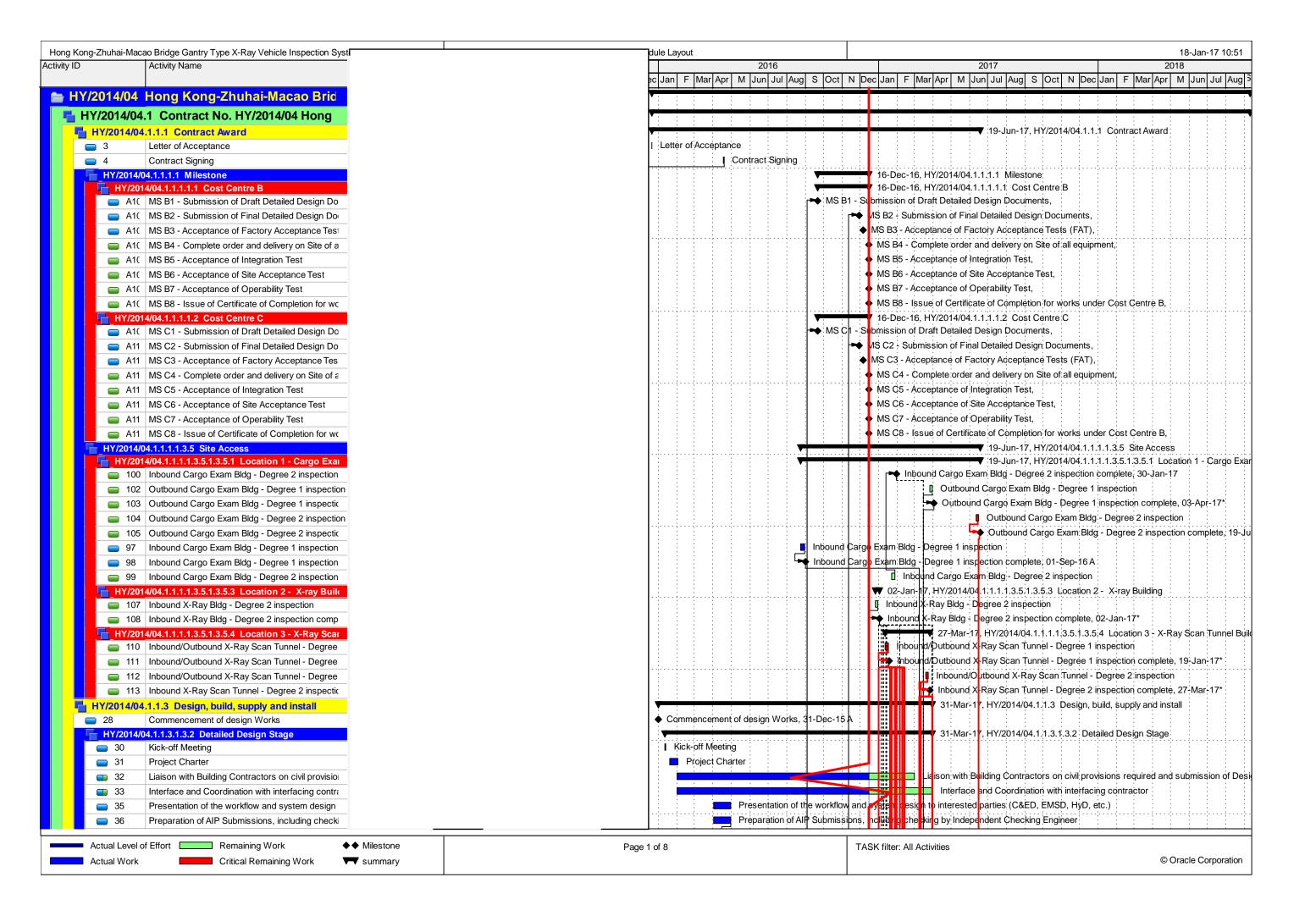


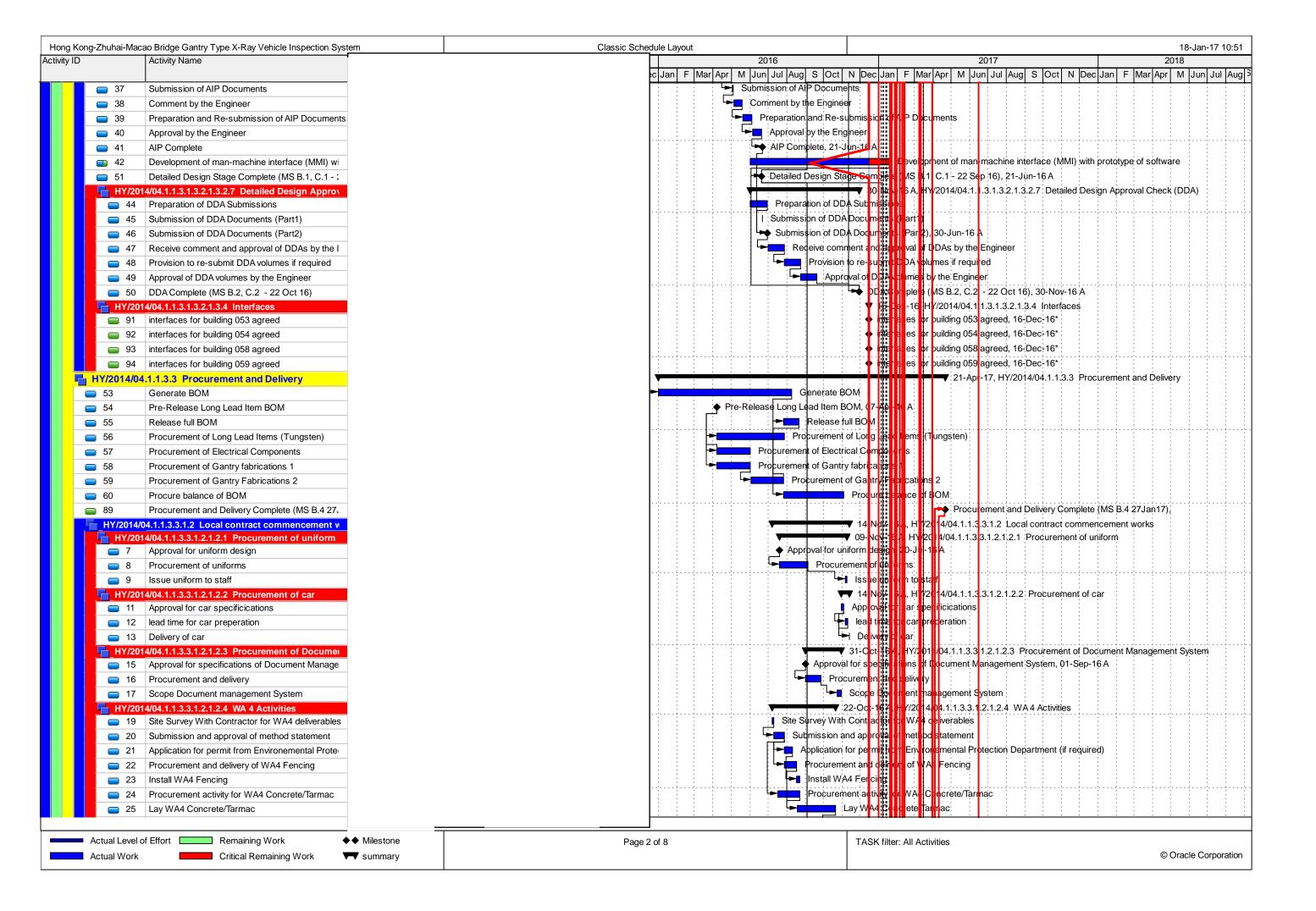


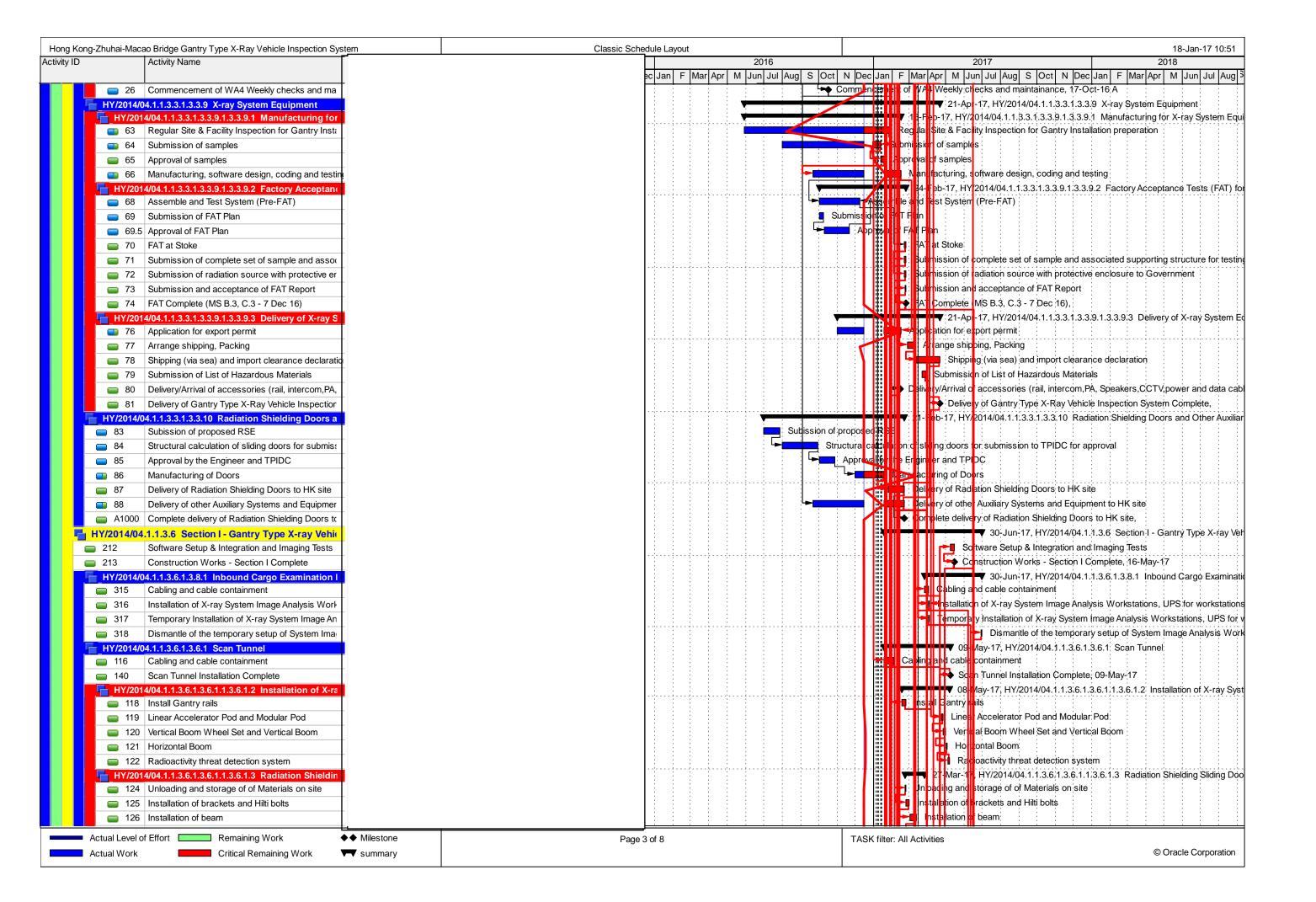




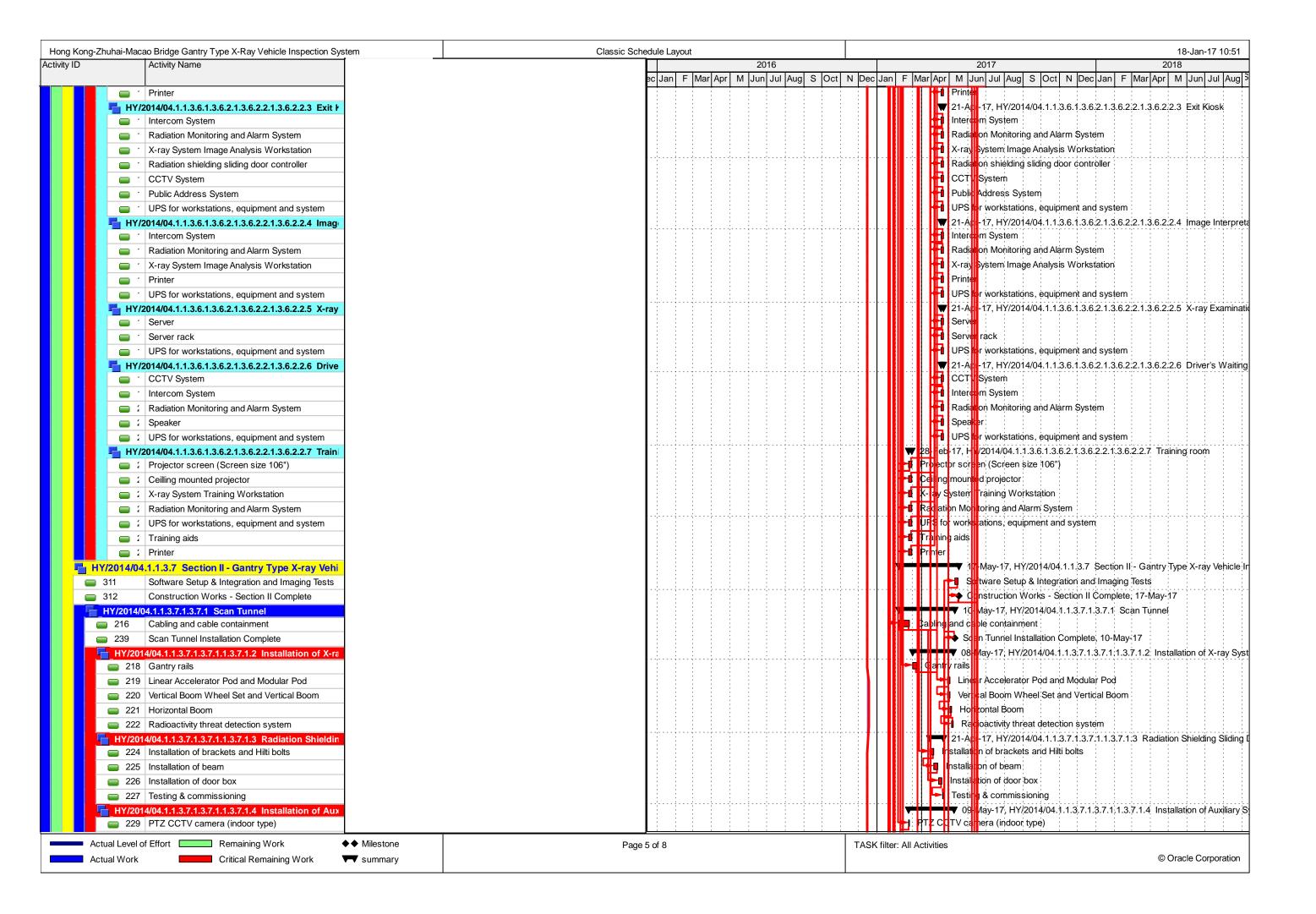


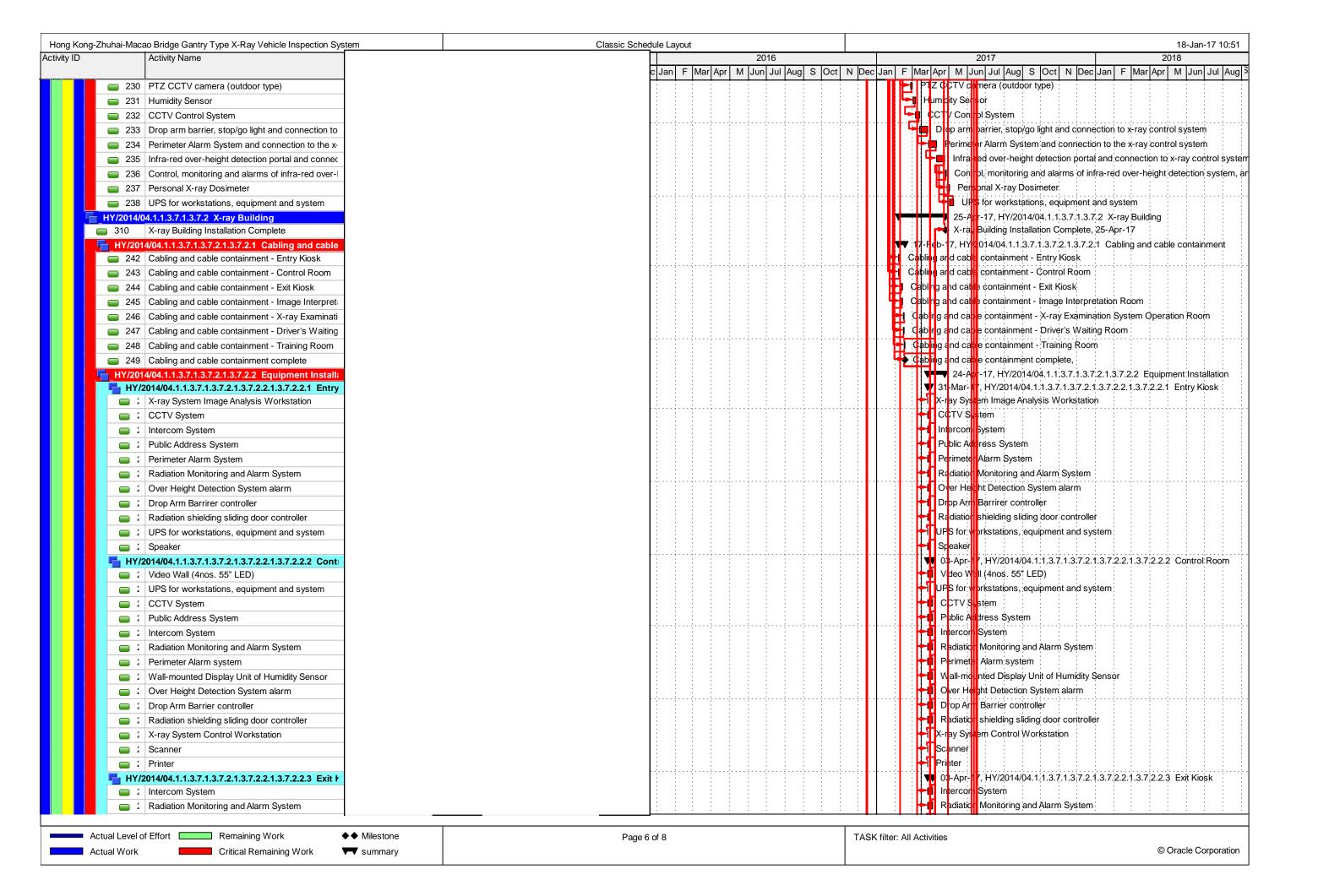


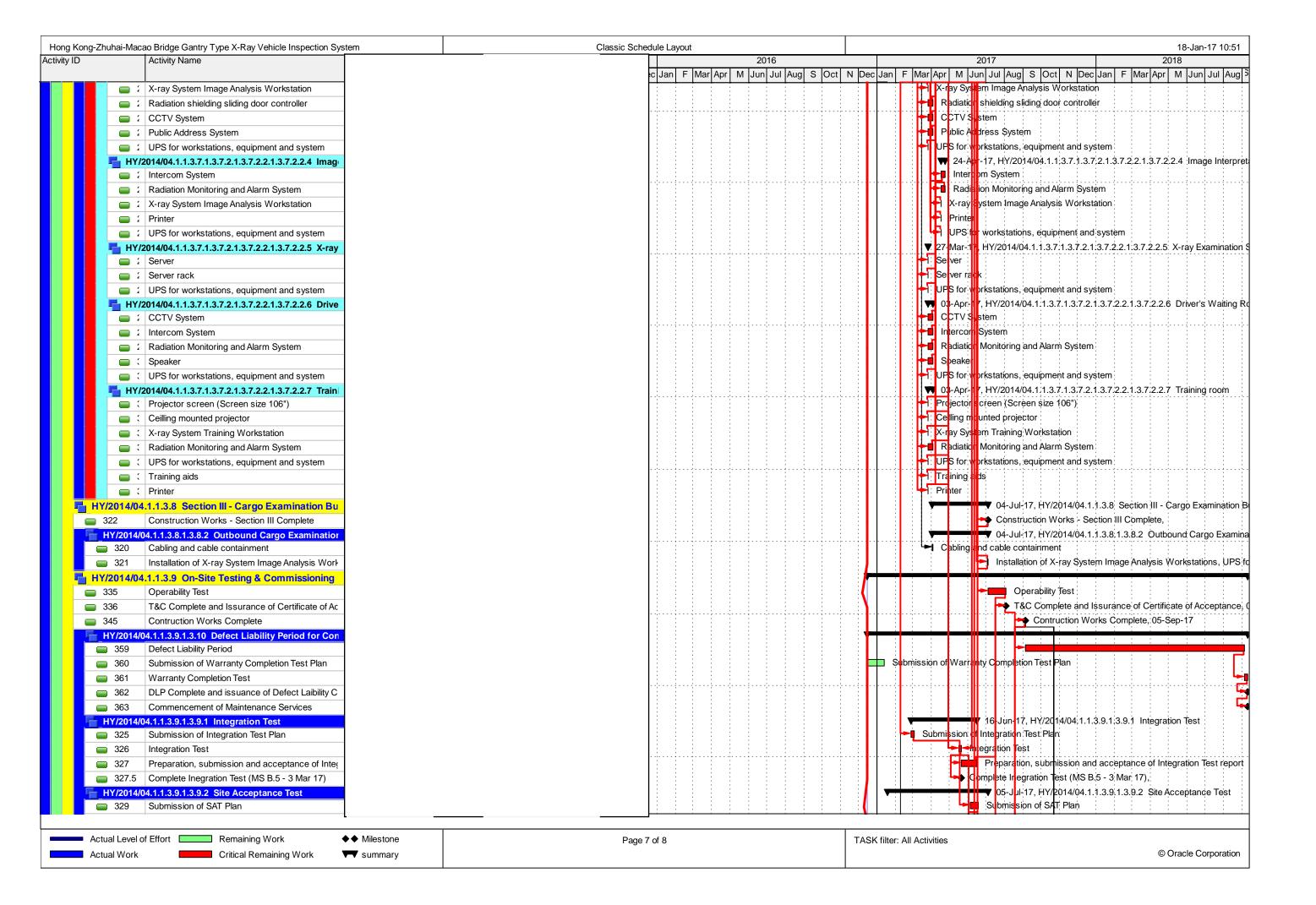


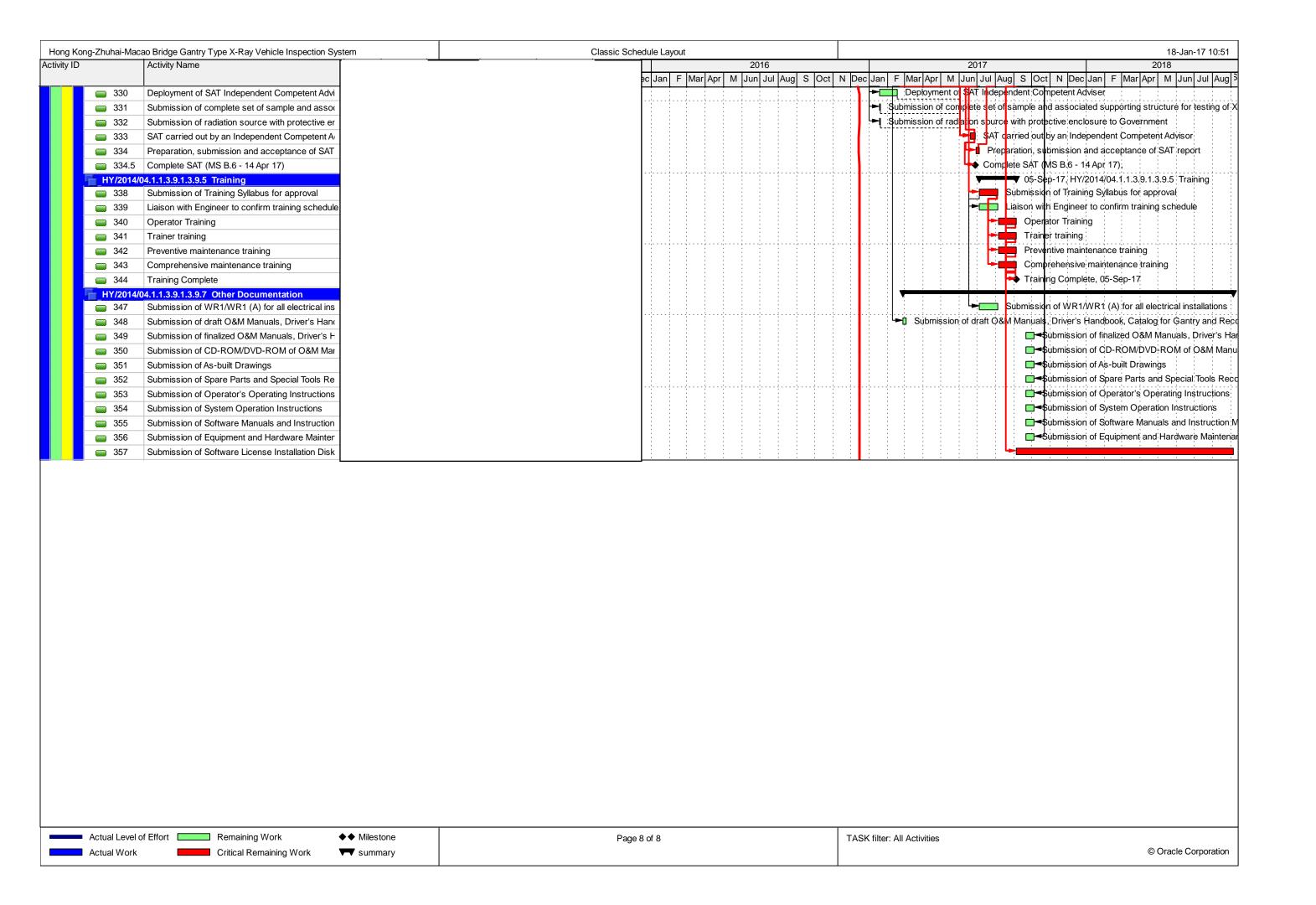


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	PTZ CCTV camera (outdoor type)				i i iii		amera (outdoor type)
	Humidity Sensor				100	Humidity Sen	
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= 134	Drop arm barrier, stop/go light and connection to						arrier, stop/go light and connection to x-ray control system
<u> </u>	Perimeter Alarm System and connection to the x-					Perimeter A	larm System and connection to the x-ray control system
= 136	Infra-red over-height detection portal and connec						ver-height detection portal and connection to x-ray control system
= 137	Control, monitoring and alarms of infra-red over-				100	Controllimo	onitoring and alarms of infra-red over-height detection system, and
= 138	Personal X-ray Dosimeter						(-ray Dosimeter
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- 1	X-ray System Image Analysis Workstation						stem Image Analysis Workstation
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	Intercom System					Intercom	
	Public Address System						dress System
	Perimeter Alarm System				<u>.</u>	Perimeter	r Alarm System
	Radiation Monitoring and Alarm System						Monitoring and Alarm System
	Over Height Detection System alarm						ght Detection System alarm
	Drop Arm Barrirer controller						n Barrirer controller
	Radiation shielding sliding door controller						shielding sliding door controller
	UPS for workstations, equipment and system					and the state of t	workstations, equipment and system
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	UPS for workstations, equipment and system						workstations, equipment and system
	CCTV System		 			CCTV Sy	
	Public Address System						dress System
	Intercom System					Intercom	
	Radiation Monitoring and Alarm System						Monitoring and Alarm System
	Perimeter Alarm system						r Alarm system
	Wall-mounted Display Unit of Humidity Sensor						ınted Display Unit of Humidity Sensor
	Over Height Detection System alarm						ght Detection System alarm
	Drop Arm Barrier controller						n Barrier controller
	Radiation shielding sliding door controller						shielding sliding door controller
	X-ray System Control Workstation					X-ray sys	stem Control Workstation
	Scanner Scanner					Scanner Scanner	
						 	
Actual Level	of Effort Remaining Work	► Milestone Page	4 of 8		TASK filter:	All Activities	
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Actual WOIK	Ontioa Remaining Work	· Garring					C Clasic Corporation











APPENDIX D

Event and Action Plan



Event/Action Plan for Air Quality

EVENT		ACTIO	ON	
	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	 Identify source; Inform IEC and ER; Advise the ER on the effectiveness of the proposed remedial measures; Repeat measurement s to confirm findings; Increase monitoring frequency to daily; Discuss with IEC and Contractor on remedial actions required; If exceedance continues, arrange meeting with IEC and ER; If exceedance stops, cease additional monitoring. 	 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 remedial measures; Supervise Implementation of remedial measures. 	 Confirm receipt of notification of failure in writing; Notify Contractor; Ensure remedial measures properly implemented. 	 Submit proposals for remedial to ER within 3 working days of notification; Implement the agreed proposals; Amend proposal if appropriate.

	EVENT		ACTIO	ON	
		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;	1. Submit noise mitigation proposals to IEC; 2. Implement noise mitigation proposals.		
Limit Level	 Inform IEC, ER, EPD and Contractor; Identify source; Repeat measurements to confirm findings; Increase monitoring frequency; Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; Inform IEC, ER and EPD the causes and actions taken for the exceedances; Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; If exceedance stops, cease additional monitoring. 	 Discuss amongst ER, ET, and Contractor on the potential remedial actions; Review Contractors remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; Supervise the implementation of remedial measures. 	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	 Take immediate action to avoid further exceedance; Submit proposals for remedial actions to IEC within 3 working days of notification; Implement the agreed proposals; Resubmit proposals if problem still not under control; Stop the relevant portion of works as determined by the ER until the exceedance is abated. 		



APPENDIX E

Waste Flow Table



Monthly Summary Waste Flow Table for 2017



Contract No.: HY/2014/05

	Actu	al Quantities	of Inert C&D	Materials G	enerated Mo	nthly	Actual (Quantities of	C&D Wastes	Generated I	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)	i. Plastics (see Note 3) (see Note 5)	j. Chemical Waste	k. Others, e.g. general refuse
	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m ³)
January	1.390	0.010	1.380	0.000	0.010	0.000	0.000	0.000	0.000	0.000	0.197
February	1.070	0.003	1.067	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.143
March	0.266	0.202	0.064	0.000	0.202	0.000	5.840	0.000	0.000	0.000	0.269
April	0.249	0.013	0.236	0.000	0.013	0.000	0.000	0.000	0.000	0.000	0.220
May	0.132	0.132	0.000	0.000	0.132	0.000	0.000	0.000	0.000	0.000	0.421
June	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.392
Sub-total	3.107	0.360	2.747	0.000	0.360	0.000	5.840	0.000	0.000	0.000	1.642
July	0.076	0.007	0.069	0.000	0.007	0.000	0.000	0.000	0.000	0.000	0.403
August	0.010	0.010	0.000	0.000	0.010	0.000	0.000	0.000	0.000	0.000	0.405
September	0.071	0.071	0.000	0.000	0.071	0.000	0.000	0.000	0.000	0.000	0.465
October	0.166	0.141	0.025	0.000	0.141	0.416	0.000	0.000	0.000	0.000	0.448
November											
December											
Total	3.430	0.589	2.841	0.000	0.589	0.416	5.840	0.000	0.000	0.000	3.363

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 ³)	(in '000m³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m ³)		

Notes: (1) The performance target are given in PS Clause 6(14)

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



ATAL Technologies Ltd.

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

Location: Artifical Island of HKBCF (C8 Area)

Monthly Summary Waste Flow Table for 2017

			&D Waste o					osal 生廢物		Waste t	o be recycle	d and returr	ned / 可再循	環利用或回収	女的廢物			
Month	Reused in Pack (e.g. ba 再用放 (如回	kage ckfilling) <公工程	Reused Proj 再用於其		墮性廢物 (如泥, 石矢頭, 石, 填料等)		Others (e.g. general refuse, broken formwork etc) 其他 (如垃圾, 廢板枋等)		Metals 金屬		Plastic 塑膠		Paper/cardboard packaging 廢紙/包裝紙類		Chemical Waste 化學廢物		Total Quantity Generated 總生產量	
	(k))	(0	c)	(0	d)	(6	e)	(in to	nnes)	(in to	nnes)	(in to	nnes)	(in l	litre)	(a)= (b-	+c+d+e)
	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量	Est. Qty. 估計數量	Act. Qty. 實際數量
January	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.002	0.000	0.000	0.000	0.000
February	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.002	0.000	0.000	0.000	0.000
March	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.002	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.002
April	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.002	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.002
May	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.005	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.005
June	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.002	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.002
July	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.002	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.002
August	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.002	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.002
September	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
October	0.000	0.000	0.000	0.000	0.000	0.000	0.020	0.020	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.020	0.020
November																		
December																		
Total	0.000	0.000	0.000	0.000	0.000	0.000	0.035	0.035	0.020	0.020	0.000	0.000	0.004	0.004	0.000	0.000	0.035	0.035

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-³.



Highways Department Monthly Summary of Waste Flow Table in 2017

	Actua		of Inert C&D	Materials G	enerated / In	nported	Actual Quan	tities of Othe	r C&D Mate	erials / Wast	es Generated
	Total	Rocks and	Reused in	Reused in	Disposed	Imported		Paper/Card-		Chemical	Others. e.g. general
Month	Quantity	Large	the	other	as Public	Fill	Metals	board	Plastic	Waste	refuse,
	Generated	Broken	Contract	Projects	Fill	1.111		packaging		vv asce	plastic
	(in '000m ³)	$(in '000m^3)$	(in '000m ³)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	*			
Jan-17	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Feb-17	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mar-17	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Apr-17	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.6100
May-17	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.8000
Jun-17	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	5.0700
Half-year											
total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	7.4800
Jul-17	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	14.3700
Aug-17	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sep-17	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.5100
Oct-17	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.9400
Nov-17											
Dec-17											
Yearly Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	24.3000



APPENDIX F

Environmental Licenses and Permits





Environmental License/ Permits /Notification Register

LCAL H2642

	_						Date: Octob	er 2017	
Item No.	Per Work	Applica		Permit/License/ Notification/ Registration Description	Permit/License/ Registration Number	Issue/Start Date	Expiry Date	Issuing Office	Remark
	Area	Date	Reference	Trogion anon 2000p.iion					
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: Octob	er 2017	
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	J	
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: Octobe	er 2017	
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		
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: Octob	er 2017	
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		
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: Octob	er 2017	
Item	Per	mit/License o Applica	r Registration ation	Permit/License/ Notification/	Permit/License/ Registration	Issue/Start	Expiry	Issuing Office	Remark
No.	Work Area	Date	Reference	Registration Description	Number	Date	Date		
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	-
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	-

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 Oct	ober 2017	
Ite m	Permit/License or Registration 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	4 May 2017	CNP- GW416290	Construction Noise Permit	GW-RS0452-17	1 June 2017	30 Nov 2017	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: Octob	per 2017	
Item	Permit/License or Registration Application			Permit/License/ Notification/	Permit/License/ Registration	Issue/Start	Expiry	Issuing Office	Remark
No.	Work Area	Date	Reference	Registration Number Description		Date	Date	issuing Office	
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 µgm³ and 260 µgm³, respectively)	V
S5.5.6.2	A2	 2) Proper watering of exposed spoil should be undertaken throughout the construction phase: Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads; A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones. The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores; 	Good construction site practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.	Contractor	All construction sites	Construction stage	To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1- hr and 24hr TSP levels are 500 µgm³, 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	 When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period; The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; Any skip hoist for material transport should be totally enclosed by impervious sheeting; Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides; 	Good construction site practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.	Contractor	All construction sites	Construction stage	To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1- hr and 24hr TSP levels are 500 µgm³ and 260 µgm³, 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	 Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed; Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies. 	Good construction site practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.	Contractor	All construction sites	Construction stage	To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1- hr and 24hr TSP levels are 500 µgm ⁻³ and 260 µgm ⁻³ , 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	Control (Construction Dust) Regulation •To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1- hr and	(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	 The following mitigation measures should be adopted to prevent fugitive dust emissions for concrete batching plant: Loading, unloading, handling, transfer or storage of any dusty materials should be carried out in totally enclosed system; All dust-laden air or waste gas generated by the process operations should be properly extracted and vented to fabric filtering system to meet the emission limits for TSP; Vents for all silos and cement/pulverised fuel ash (PFA) weighing scale should be fitted with fabric filtering system; The materials which may generate airborne dusty emissions should be wetted by water spraysystem; All receiving hoppers should be enclosed on three sides up to 3m above unloading point; All conveyor transfer points should be totally enclosed; All access and route roads within the premises should be paved and wetted; and Vehicle cleaning facilities should be provided and used by all concrete trucks before leaving the premises to wash off any dust on the wheels and/or body. 	Monitor the 24 hr and 1hr TSP levels at the representative dust monitoring stations to ensure compliance with relevant criteria throughout the construction period.	Contractor	Selected representative dust monitoring station	Construction stage	• Air Pollution Control (Construction Dust) Regulation •To control the dust impact to within the HKAQO and TM-EIA criteria (Ref. 1- hr and 24hr TSP levels are 500 µgm ⁻³ and 260 µgm ⁻³ , respectively)	N/A
S5.5.2.7	A7	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	ion 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	4) Select "Quiet plants" which comply with the BS 5228 Part 1 or TM standards.	Reduce the noise levels of plant items	Contractor	For plant items listed in Appendix 6D of the EIA report at all construction sites	stage	Noise Control Ordinance & its TM Annex 5, TM- EIA	٧
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	√
/	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 Mana	/aste Management (Construction Waste)									
\$8.3.8	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; Make provisions in the Contract documents to allow and promote	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	٧		
		 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
\$8.3.9- \$8.3.11	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	٧
		 The Contractor should recycle as much of the C&D materials as possible on-site. Public fill and C&D waste should be segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. Where practicable, concrete and masonry can be crushed and used as fill. Steel reinforcement bar can be used by scrap steel mills. Different areas of the sites should be considered for such segregation and storage. 						
S8.2.12- S8.3.15	WM3	 Chemical Waste Chemical waste that is produced, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, should be handled in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Containers used for the storage of chemical wastes should be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; have a capacity of less than 450 liters unless the specification has been approved by the EPD; and display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the regulation. The storage area for chemical wastes should be clearly labelled and used solely for the storage of chemical waste; enclosed on at least 3 sides; have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20 % of the total volume of waste stored in that area, whichever is the greatest; have adequate ventilation; covered to prevent rainfall entering; and arranged so that incompatible materials are adequately separated. 	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction stage	Waste Disposal (Chemical Waste) General) Regulation Code of Practice on the Packaging, Labelling and Storage of Chemical Waste	V

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. 						٧
S8.3.16	WM4	Sewage 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	٧
S8.3.17	WM5	 General Refuse General refuse generated on-site should be stored in enclosed bins or compaction units separately from construction and chemical wastes. A reputable waste collector should be employed by the Contractor to remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to minimize odour, pest and litter impacts. Burning of refuse on construction sites is prohibited bylaw. Aluminium cans are often recovered from the waste stream by individual collectors if they are segregated and made easily accessible. Separate labelled bins for their deposit should be provided if feasible. Office wastes can be reduced through the recycling of paper if volumes are large enough to warrant collection. Participation in a local collection scheme should be considered by the Contractor. In addition, waste separation facilities for paper, aluminum cans, plastic bottles etc., should be provided. Training should be provided to workers about the concepts of site cleanliness and appropriate waste management procedure, including reduction, reuse and recycling of wastes. 	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	Waste Disposal Ordinance	7

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	uction 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	V
		prevent direct discharge to surface or marine waters;						
		• sewage effluent and discharges from on-site kitchen facilities shall be directed to Government sewer in accordance with the requirements of the W PCO or collected for disposal offsite. The use of soakaways shall be avoided;						
		 storm drainage shall be directed to storm drains via adequately designed sand/silt removal facilities such as sand traps, silt traps and sediment basins. Channels, earth bunds or sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks; 						
		 silt removal facilities, channels and manholes shall be maintained and any deposited silt and grit shall be removed regularly, including specifically at the onset of and after each rainstorm; 						
		 temporary access roads should be surfaced with crushed stone or gravel; 						
		rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities;						
		 measures should be taken to prevent the washout of construction materials, soil, silt or debris into any drainage system; 						
		 open stockpiles of construction materials (e.g. aggregates and sand) on site should be covered with tarpaulin or similar fabric during rainstorms; 						
		 manholes (including any newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers; 						
		 discharges of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system; 						

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	Ref W2	 all vehicles and plant should be cleaned before they leave the construction site to ensure that no earth, mud or debris is deposited by them on roads. A wheel washing bay should be provided at every site exit; wheel wash overflow shall be directed to silt removal facilities before being discharged to the storm drain; the section of construction road between the wheel washing bay and the public road should be surfaced with crushed stone or coarse gravel; wastewater generated from concreting, plastering, internal decoration, cleaning work and other similar activities, shall be screened to remove large objects; vehicle and plant servicing areas, vehicle wash bays and lubrication facilities shall be located under roofed areas. The drainage in these covered areas shall be connected to foul sewers via a petrol interceptor in accordance with the requirements of the WPCO or collected for off site disposal; the contractors shall prepare an oil / chemical cleanup plan and ensure that leakages or spillages are contained and cleaned up immediately; waste oil should be collected and stored for recycling or disposal, in accordance with the Waste Disposal Ordinance; all fuel tanks and chemical storage areas should be provided with 	To control construction water quality	measures? Contractor	Land-based works areas	measures? Construction stage		
		locks and be sited on sealed areas. The storage areas should be surrounded by bunds with a capacity equal to 110% of the storage capacity of the largest tank; and • surface run-off from bunded areas should pass through oil/grease traps prior to discharge to the stormwater system.						

EIA Ref.	EM&A Log Ref	Reco	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	√
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		٧
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		<u> </u>			<u>I</u>				
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
Landscape	& Visual (Detailed Design Phase)		l				•
S14.3.3.1	LV1	 General design measures include: Roadside planting and planting along the edge of the HKBCF Island is proposed; Transplanting of mature trees in good health and amenity value where appropriate and reinstatement of areas disturbed during construction by compensatory hydro-seeding and planting; Protection measures for the trees to be retained during construction activities; Optimizing the sizes and spacing of the bridge columns; Finetuning the location of the bridge columns to avoid visually-sensitivelocations; Maximizing new tree, shrub and other vegetation planting to compensate tree felled and vegetation removed; Providing planting area around peripheral of HKBCF for tree planting screening effect; Providing salt-tolerant native trees along the planter strip at affected seawall and newly reclaimed coastline; For HKBCF, providing aesthetic architectural design on the related buildings (e.g. similar materials for PCB building facade to Airport buildings, roof planting and subtle materials for other facilities buildings and so on), and the related infrastructure (e.g. parapet planting and transparent cover for elevated footbridges) to provide harmonious atmosphere of the HKBCF; and Fine-tuning the sizes of the structural members to minimize the bulkiness of buildings and adjustment of building arrangement to minimise disturbance to surrounding vegetation in the HKBCF. 	Minimise visual & landscape impact	Detailed designer	HKBCF	Design Stage		N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
Landscape of	& 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 some portions of bridge footbridge to screen bridge and traffic. 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; G8. Plant salt-tolerant native and shrubs etc along the planter strip at affected seawall. 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. 	Minimise visual & landscape impact	Contractor	НКВСБ	Construction stage		N/A
S14.3.3.3	LV3	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	V

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						
reperming remod	Complaints	Notifications of Summons	Successful Prosecutions				
This reporting period	1	0	0				
From commencement date of contract to end of reporting month	5	0	0				

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

Reporting Period	Cumulative Statistics						
i i i i i i i i i i i i i i i i i i i	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				



Contract No. HY/2014/05
Hong Kong-Zhuhai-Macao Bridge
Hong Kong Boundary Crossing Facilities – Remaining Ancillary Buildings and Facilities
20th Monthly EM&A Report

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

Reporting Period	Cumulative Statistics					
riopoi i i i g	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 November 2017

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

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

Environmental Site Inspction Schedule for November 2017

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

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

Environmental Site Inspction Schedule for November 2017

Eliviron					Environmental Site Inspection Schedule for November 2017									
	Sunday	Monday	Tueday	Wednesday	Thursday	Friday	Saturday							
Time				1-Nov	2-Nov	3-Nov	4-Nov							
Time	5-Nov	6-Nov	7-Nov	8-Nov	9-Nov	10-Nov	11-Nov							
		Site Inspection												
Time	12-Nov	13-Nov	14-Nov	15-Nov	16-Nov	17-Nov	18-Nov							
				Site Inspection										
Time	19-Nov	20-Nov	21-Nov	22-Nov	23-Nov	24-Nov	25-Nov							
		Site Inspection												
Time	26-Nov	27-Nov	28-Nov	29-Nov	30-Nov									
		Site Inspection												