

11 May 2017

By Fax (3468 2076) and By Post

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

Attention: Mr. Patrick Lee

Dear Sir,

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

**Contract No. HY/2014/05 – HZMB HKBCF – Remaining Ancillary Buildings and
Facilities
Monthly Environmental Monitoring & Audit Report for April 2017**

Reference is made to the Environmental Team's submission of Monthly Environmental Monitoring & Audit Report for April 2017 (Rev. 1) certified by the ET Leader (ET's ref.: "5140819/18.30/OC034/KC/EW" dated 11 May 2017) and provided to us via e-mail on 11 May 2017.

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

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

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



Raymond Dai
Independent Environmental Checker

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

Internal: DY, YH, ENPO Site

Your ref.
Our ref. 5140819/18.30/OC034/KC/EW

Date: 11 May 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. 14**

Atkins China Limited certifies, in the capacity of Environmental Team Leader, that the Monthly EM&A Report No. 14 for April 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. Michael Tovey (By Fax.: 3468 2076)
2. IEC/ENPO – Mr. Raymond Dai & Mr. Y.H. Hui (By Fax.: 3465 2899)



路政署
HIGHWAYS DEPARTMENT

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

Contract No. HY/2014/05

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

**Monthly EM&A Report No. 14
(Covering the Period from 1 April 2017 to 30 April 2017)**

11 May 2017

Revision 1

Main Contractor



Leighton - Chun Wo
Joint Venture

Environmental Team

ATKINS

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Executive Summary

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

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

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

This is the fourteen 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 30 April 2017 (includes the construction works of Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area).

Environmental Monitoring and Audit Progress

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

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

Environmental Site Inspection: 5, 12, 19 and 26 April 2017

Breaches of Action and Limit Levels

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

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

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

Complaint Log

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

Notifications of Summons and Successful Prosecutions

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

Reporting Change

There was no reporting change during the reporting period.

Future Key Issues

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

For Contract No. HY/2014/05

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

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

- Conceal Conduit Installation at Buildings 023, 025 and 032

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

- Installation of rails, extension pieces and door frames at Buildings 058 and 059
- Cabling Works at Buildings 053 and 054

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 fourteen 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 30 April 2017. (includes the construction works of Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area).

1.2 Project Organisation

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

Table 1-1 Contact Information of Key Personnel

Party	Position	Name	Telephone	Fax
<u>For Contract No. HY/2014/05</u>				
Engineer or Engineer's Representative (AECOM Asia Co. Ltd.)	Chief Resident Engineer	Michael Tovey	3958 7339	3468 2076
Environmental Project Office / Independent Environmental Checker	Environmental Project Office Leader	Y. H. Hui	3465 2888	3465 2899

(Ramboll Environ Hong Kong Limited)	Independent Environmental Checker	Raymond Dai	3465 2888	3465 2899
Contractor (Leighton – Chun Wo Joint Venture)	Site Agent	Albert Chan	3973 0514	3621 0180
	Environmental Officer	Stephen Tsang	3973 1806	3621 0180
Environmental Team (Atkins China Limited)	Environmental Team Leader	Keith Chau	2972 1721	2890 6343
24 hours complaint hotline	---	---	3958 7300	---
<u>For Contract No. HY/2013/06 within Contract No. HY/2014/05 works area</u>				
Engineer or Engineer's Representative (AECOM Asia Co. Ltd.)	Chief Resident Engineer	Michael Tovey	3958 7339	3468 2076
Environmental Project Office / Independent Environmental Checker (Ramboll Environ Hong Kong Limited)	Environmental Project Office Leader	Y. H. Hui	3465 2888	3465 2899
	Independent Environmental Checker	Raymond Dai	3465 2888	3465 2899
Contractor (ATAL Technologies Limited)	Site Agent	Mr. Eric Yim	2565 3355	3162 5217
	Environmental Officer	Mr. W. Li	2565 3137	3162 5217
Environmental Team (Atkins China Limited)	Environmental Team Leader	Keith Chau	2972 1721	2890 6343
24 hours complaint hotline	---	---	6509 0375	---
<u>For Contract No. HY/2014/04 within Contract No. HY/2014/05 works area</u>				
Engineer or Engineer's Representative (AECOM Asia Co. Ltd.)	Chief Resident Engineer	Michael Tovey	3958 7339	3468 2076
Environmental Project Office / Independent Environmental Checker (Ramboll Environ Hong Kong Limited)	Environmental Project Office Leader	Y. H. Hui	3465 2888	3465 2899
	Independent Environmental Checker	Raymond Dai	3465 2888	3465 2899
Contractor (Rapiscan Systems Pte Ltd)	Site Agent	Ringo Yau	9833 1402	2707 0816
	Environmental Officer	Clarie Tsang	6371 1362	---
Environmental Team (Atkins China Limited)	Environmental Team Leader	Keith Chau	2972 1721	2890 6343
24 hours complaint hotline	---	---	9833 1420	---

1.3 Construction Programme

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

1.4 Construction Works Undertaken During the Reporting Period

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

For Contract No. HY/2014/05

- Earth Works for Buildings 050A1, 050A2 and 050H2
- Raft foundation for Buildings 032, 044, 045 and 050H1
- Construction of RC Structure of Buildings 022, 023, 032, 044, 045 and 050H1
- Installation of window wall of Building 045
- ABWF works (Internal Finishes) of Buildings 021, 025, 044, 045, 053, 058 and 059
- ABWF works (External Finishes) of Buildings 025, 032, 053, 058 and 059
- ABWF works (Roof Finishes) of Buildings 021, 023, 025, 032 and 053
- Dog Swimming Pool of Building 022
- Utilities and Drainage installation of Building 053

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

- Conceal Conduit Installation Buildings 025 and 032

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

- Installation of rails, extension pieces and door frames at Buildings 058 and 059
- Cabling Works at Buildings 053 and 054

2 Air Quality Monitoring

2.1 Monitoring Locations

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

Table 2-1 Construction Dust Monitoring Locations

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

Remark:

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

2.2 Monitoring Requirements

- 2.2.1 The monitoring requirements, monitoring equipment, monitoring parameters, frequency and duration, monitoring methodology, monitoring schedule, meteorological information are detailed in the monthly EM&A Reports prepared for Contract Nos. HY/2010/02 and HY/2011/03.
- 2.2.2 The Action and Limit Levels for 1-hr TSP and 24-hr TSP are provided in **Table 2-2** and **Table 2-3**, respectively.

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

Monitoring Station	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AMS 6 – Dragonair / CNAC (Group) Building (HKIA)	360	500
AMS 7 - Hong Kong SkyCity Marriott Hotel	370	

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

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

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

2.3 Monitoring Results

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

3 Noise Monitoring

3.1 Monitoring Locations

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

Table 3-1 Construction Noise Monitoring Locations

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

Remarks:

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

3.2 Monitoring Requirements

- 3.2.1 The monitoring requirements, monitoring equipment, monitoring parameters, frequency and duration, monitoring methodology and monitoring schedule are detailed in the monthly EM&A Reports prepared for Contract Nos. HY/2010/02.
- 3.2.2 The Action and Limit Levels for construction noise are defined in **Table 3-2**.

Table 3-2 Action and Limit Level for Construction Noise

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

Notes :

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

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

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

3.3 Monitoring Results

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

4 Environmental Site Inspection and Audit

4.1 Site Inspection

- 4.1.1 Site Inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures for the Contract No. HY/2014/05 (includes the construction works of Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area). During the reporting period, site inspections were carried out on 5, 12, 19 and 26 April 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
5 April 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
12 April 2017	1. Bags of base plaster were not covered by impervious sheeting or placed in an area sheltered on the top and 3 sides at Building 023 works area.	1. The bags of base plaster have been removed at Building 023 work area.	19 April 2017
19 April 2017	1. The stagnant water was found in the drip tray at the Building 032 works area. 2. Bags of base plaster were not covered by impervious sheeting near the Building 044 and Building 025 works area.	1. The stagnant water was cleared in the drip tray at Building 032 works area. 2a. The bags of base plaster were removed near the Building 044 works area. 2b. The bags of base plaster were covered properly by impervious sheeting at Building 025 works area.	26 April 2017
26 April 2017	1. Rubbish was scattered on the ground at Building 032 work area.	1. The Contractor was reminded to clear the rubbish regularly at the Building 032 works area.	Follow-up action undertaken by the Contractor will be inspected during the site inspection to be undertaken in May 2017.

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

Date of Audit	Observations	Actions Taken by Contractor / Recommendation	Date of Observations Closed
5 April 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
12 April 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
19 April 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
26 April 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
5 April 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
12 April 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
19 April 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.
26 April 2017	No particular environmental issue was recorded during the site inspection.	Nil.	Nil.

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

4.2 Advice on the Solid and Liquid Waste Management Status

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

4.2.2 The Contractor of Contract No. HY/2014/05 was reminded that chemical waste should be properly treated and stored temporarily in designated chemical waste storage areas on site in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.

- 4.2.3 The monthly summary of waste flow table for Contract No. HY/2014/05 (includes the construction works of Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area) are detailed in **Appendix E**.

4.3 Environmental Licenses and Permits

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

4.4 Implementation Status of Environmental Mitigation Measures

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

4.5 Summary of Exceedance of the Environmental Quality Performance Limit

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

4.6 Summary of Complaints, Notification of Summons and Successful Prosecution

- 4.6.1 There was no complaint received in relation to the environmental impact during the reporting period. 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 May 2017 are summarized in **Table 5-1**.

Table 5-1 Construction Activities for May 2017

Site Area	Description of Activities
<u>For Contract No. HY/2014/05</u>	
Building 050A1	Raft foundation
Buildings 023, 044, 045, 050H1, 050H2 and 050A2A	Construction of RC Structure
Buildings 021, 022, 023, 025, 032, 044, 045, 050A2, 053, 058 and 059	ABWF works (Internal Finishes)
Buildings 021, 022, 023, 025, 045, 050A2, 053, 058 and 059	ABWF works (External Finishes)
Buildings 022, 023, 025, 032, 044, 053, 058 and 059	ABWF works (Roof Finishes)
Buildings 021, 022, 023, 025, 032, 044, 045, 053, 058 and 059	MEP installation
Building 025	Utilities and Drainage installation
<u>For Contract No. HY/2013/06 within Contract No. HY/2014/05 works area</u>	
Buildings 023, 025 and 032	Conceal Conduit Installation
<u>For Contract No. HY/2014/04 within Contract No. HY/2014/05 works area</u>	
Buildings 058 and 059	Installation of rails, extension pieces and door frames
Buildings 053 and 054	Cabling Works

5.2 Environmental Site Inspection Schedule for the Coming Month

- 5.2.1 The tentative schedule for weekly site inspections for May 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 fourteen Monthly EM&A Report for Contract No. HY/2014/05 summarizes findings of the EM&A works during the reporting period from 1 to 30 April 2017 (includes the construction works of Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area).
- 6.1.2 Summary of Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level at AMS6 shall be referred to the monthly EM&A report prepared by Contract No. HY/2011/03.
- 6.1.3 There was no Action and Limit Level exceedance of 1-hr TSP level and 24-hr TSP level recorded at AMS7 by the Environmental Team of Contract No. HY/2010/02 during the reporting period.
- 6.1.4 There was no Action and Limit Level exceedance for noise recorded at NMS2 and NMS3B by the Environmental Team of Contract No. HY/2010/02 during the reporting period.
- 6.1.5 Environmental site inspections were carried out on 5, 12, 19 and 26 April 2017 for the Contract No. HY/2014/05 (includes the construction works of Contract No. HY/2013/06 and Contract No. HY/2014/04 within Contract No. HY/2014/05 works area). Recommendations on remedial actions were given to the Contractors for the deficiencies identified during the site inspections.
- 6.1.6 There was no complaint received in relation to the noise and water quality during the reporting period.
- 6.1.7 No notification of summons and successful prosecution was received during the reporting period.

FIGURES

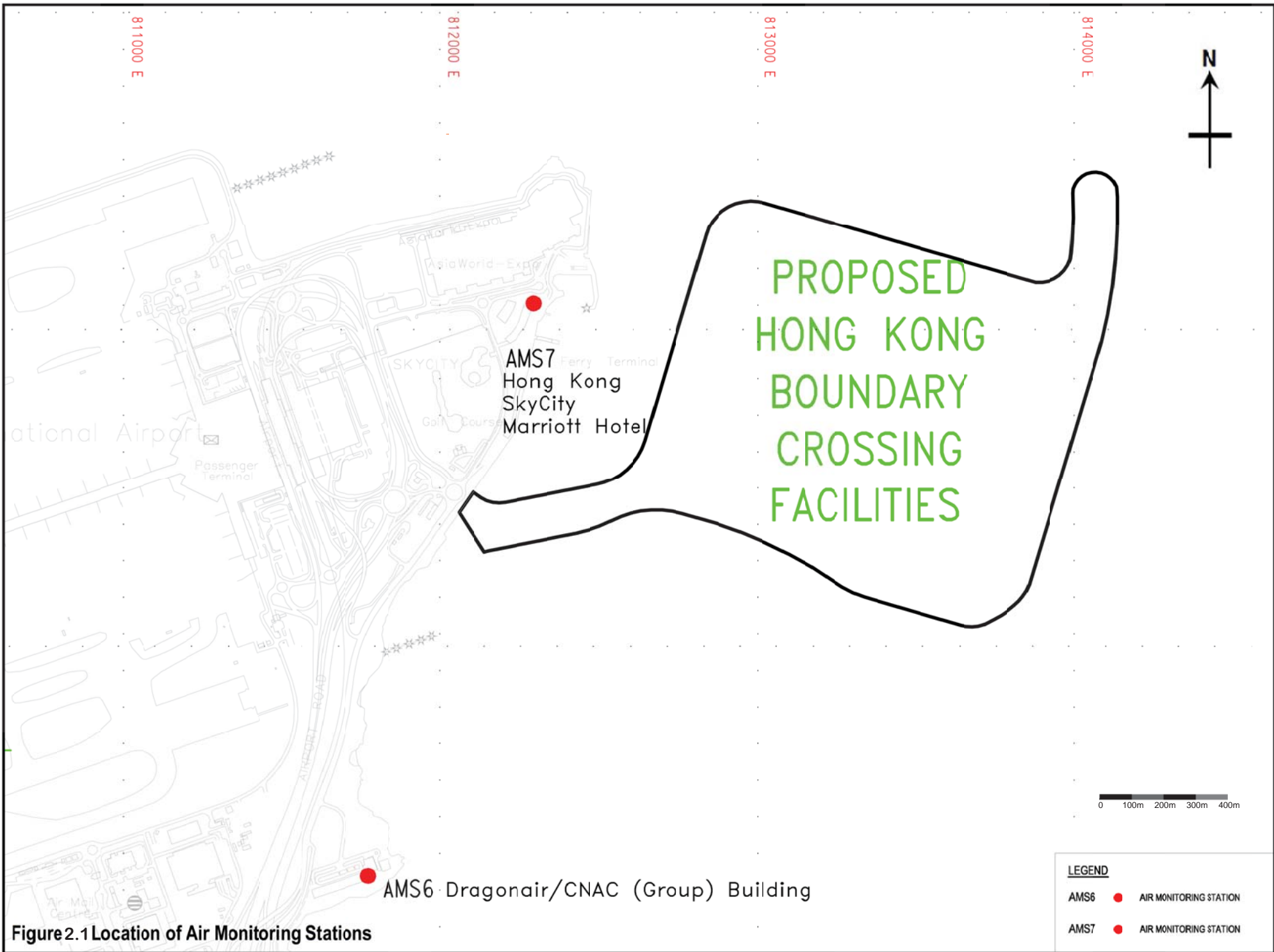


Figure 2.1 Location of Air Monitoring Stations

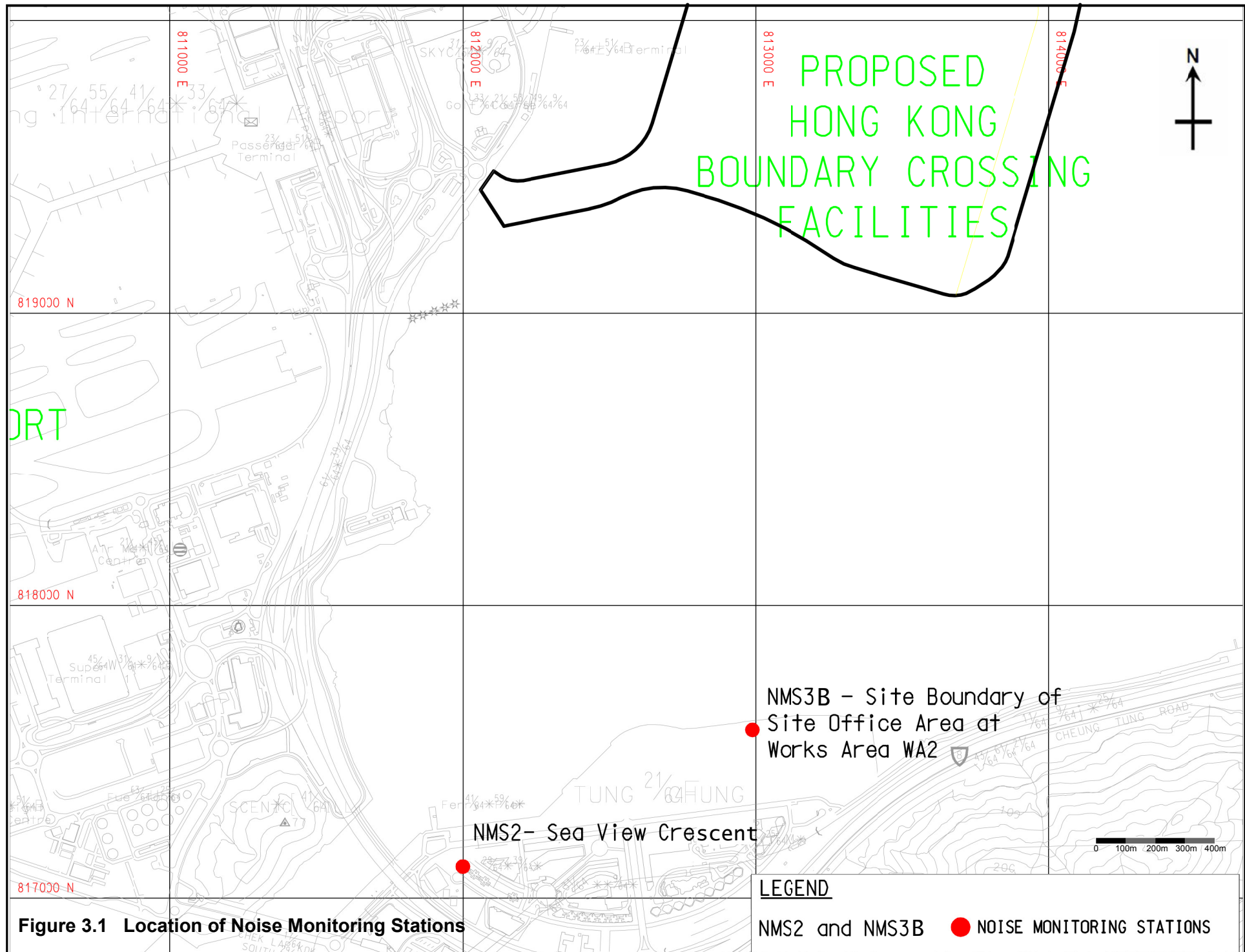


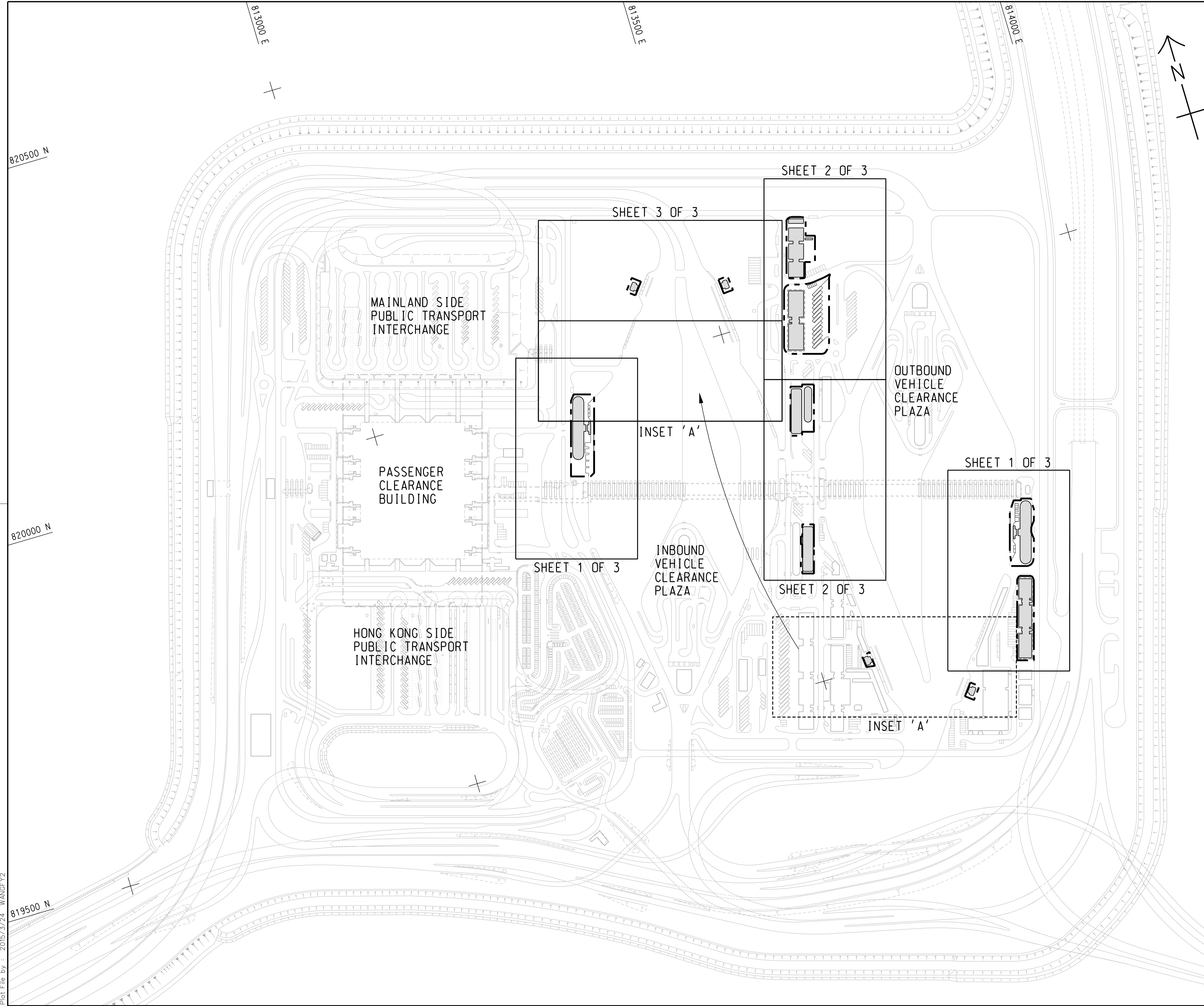
Figure 3.1 Location of Noise Monitoring Stations

LEGEND

NMS2 and NMS3B ● NOISE MONITORING STATIONS

APPENDIX A

Location of Works Areas



Plot File by : 2015/3/24 WANGFY2

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

路政署 HIGHWAYS DEPARTMENT
 港珠澳大橋香港工程管理局
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HONG KONG-ZHUHAI-MACAO BRIDGE
 HONG KONG BOUNDARY CROSSING FACILITIES
 - REMAINING ANCILLARY BUILDINGS AND FACILITIES

KEY PLAN

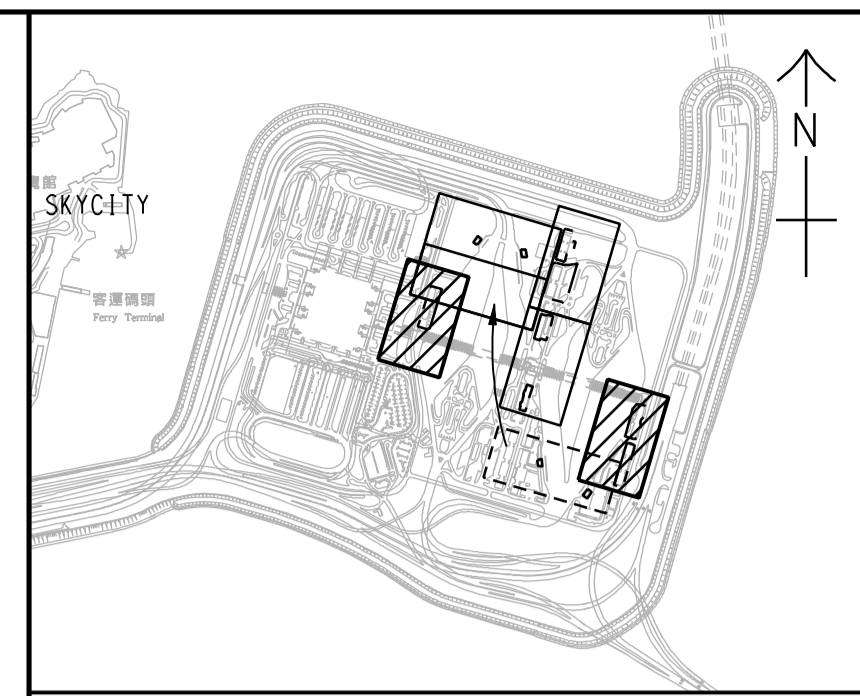
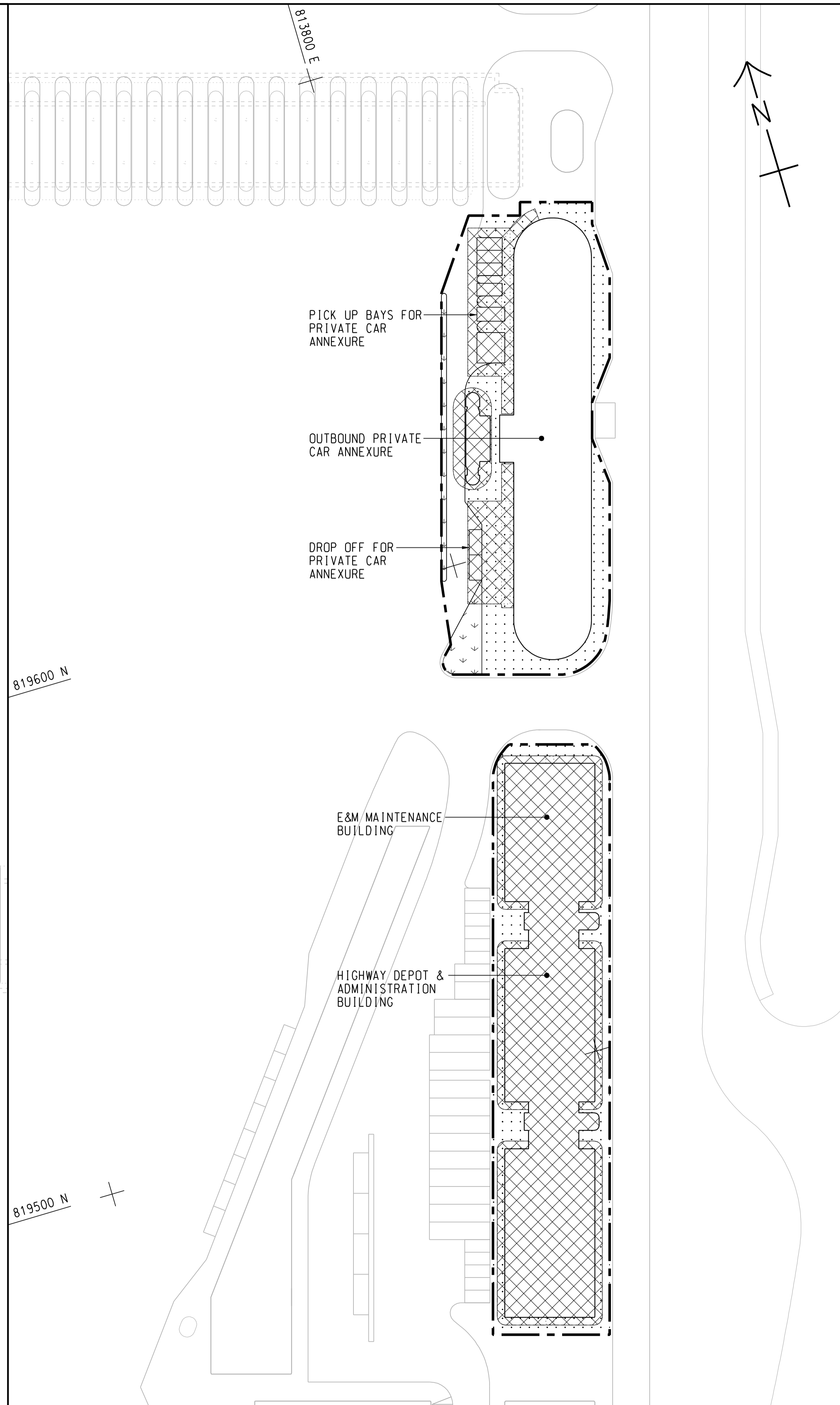
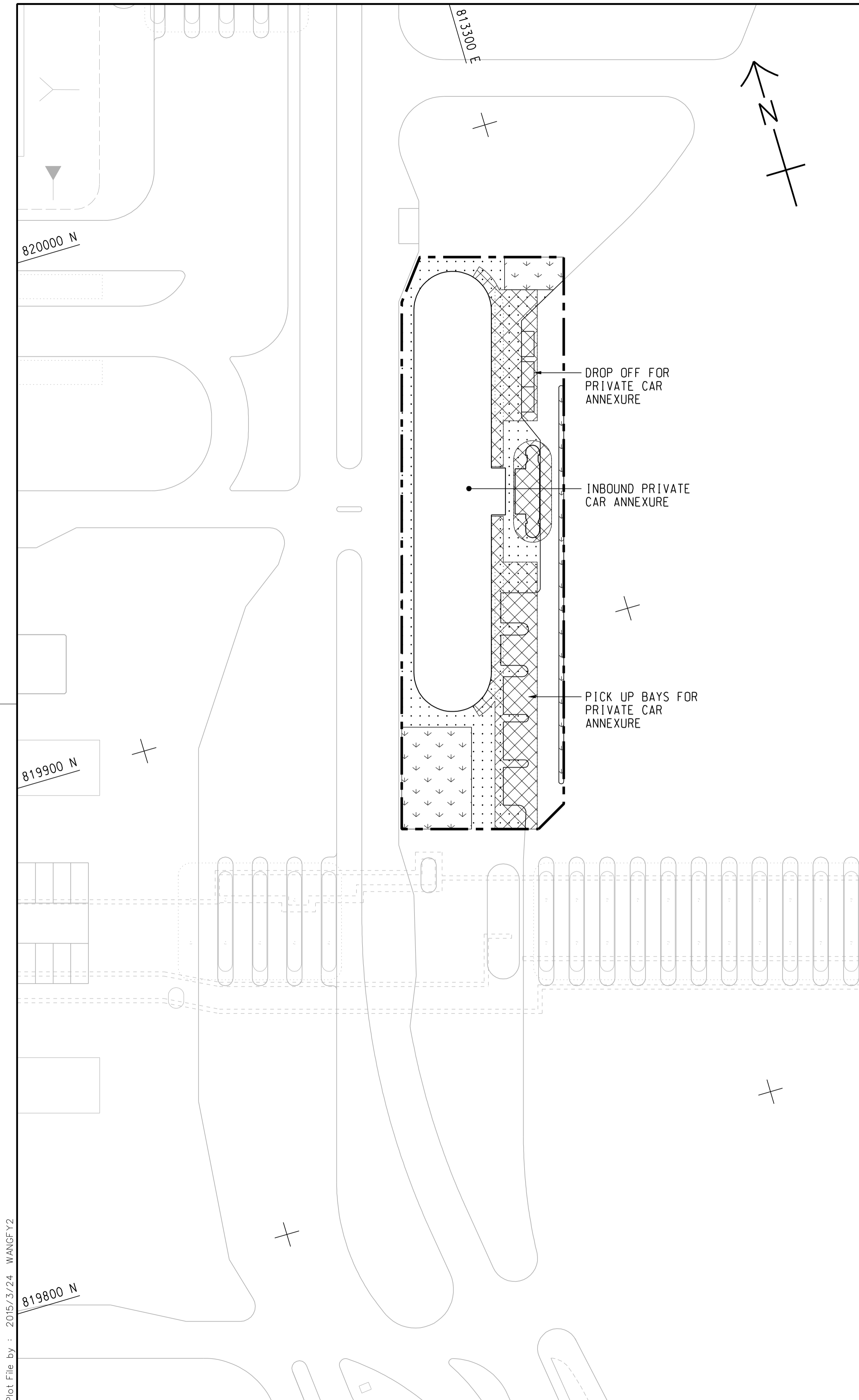
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Aedas
 Rogers Stirk Harbour + Partners
 BURO HAPPOLD ATKINS ADI + +

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

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

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KEY PLAN
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NOTE :

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

LEGEND :

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

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



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

GENERAL LAYOUT PLAN

SHEET 1 OF 3

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BWCW	HY/2014/05	TKH

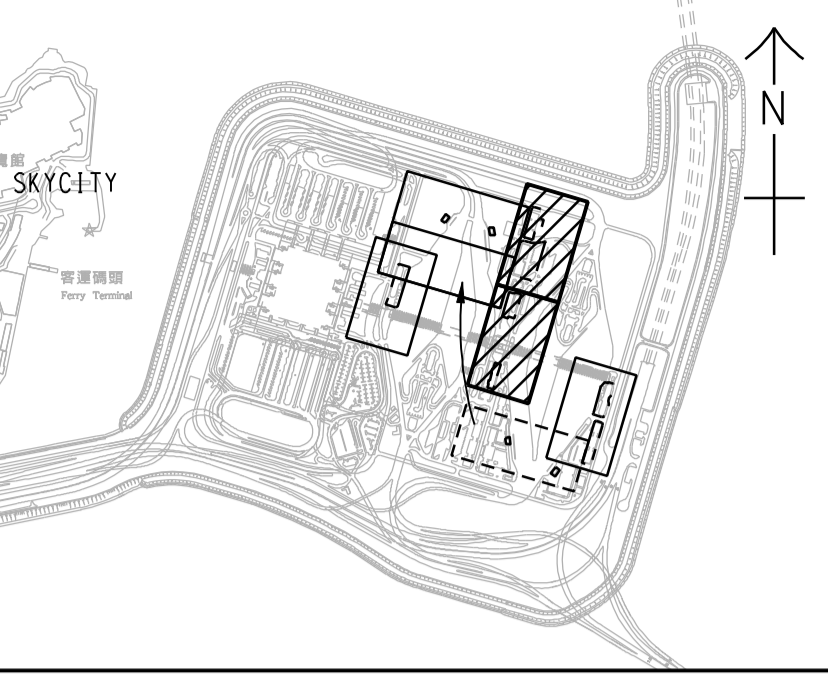
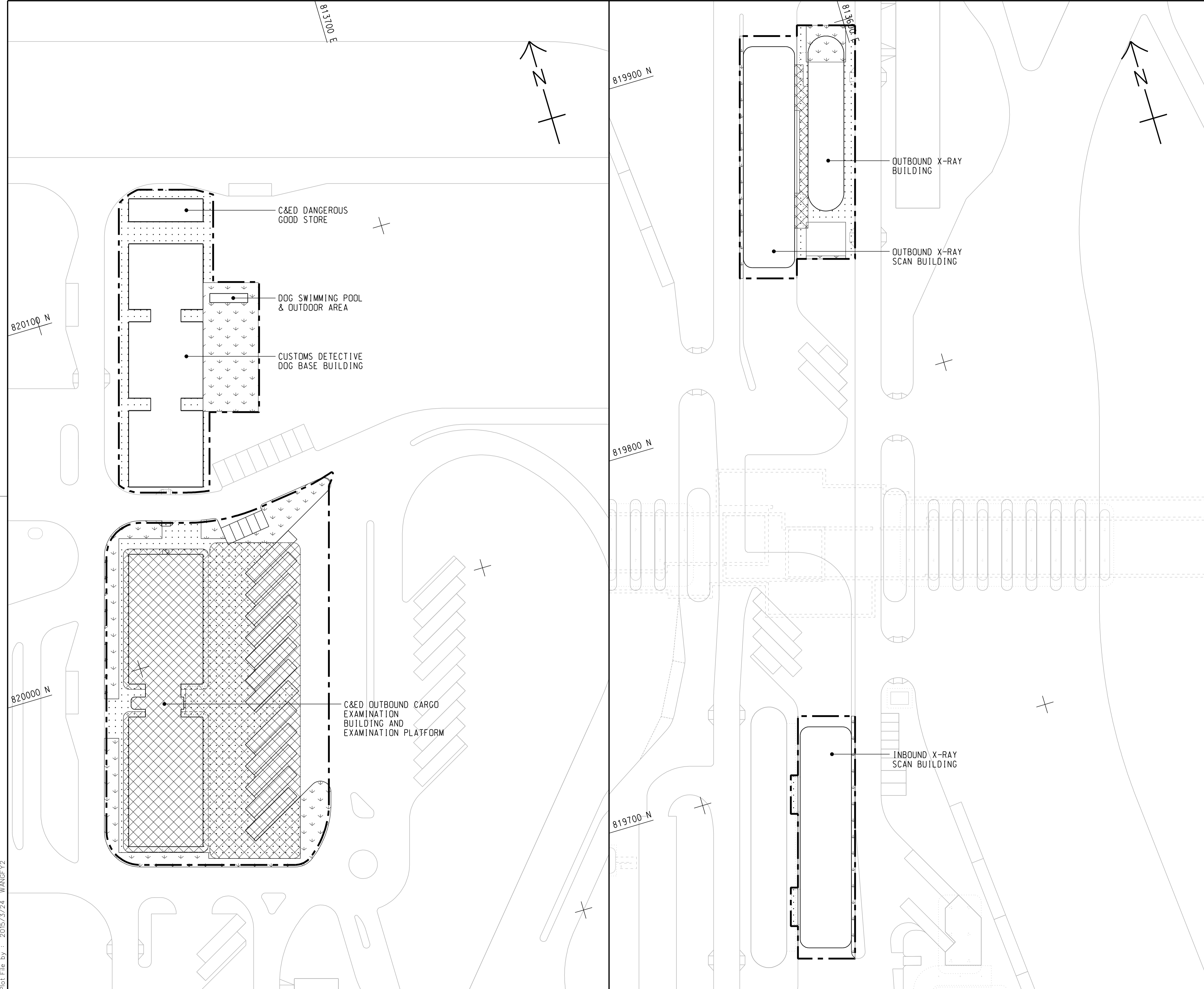
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HONG KONG-ZHUHAI-MACAO BRIDGE
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- REMAINING ANCILLARY BUILDINGS AND FACILITIES

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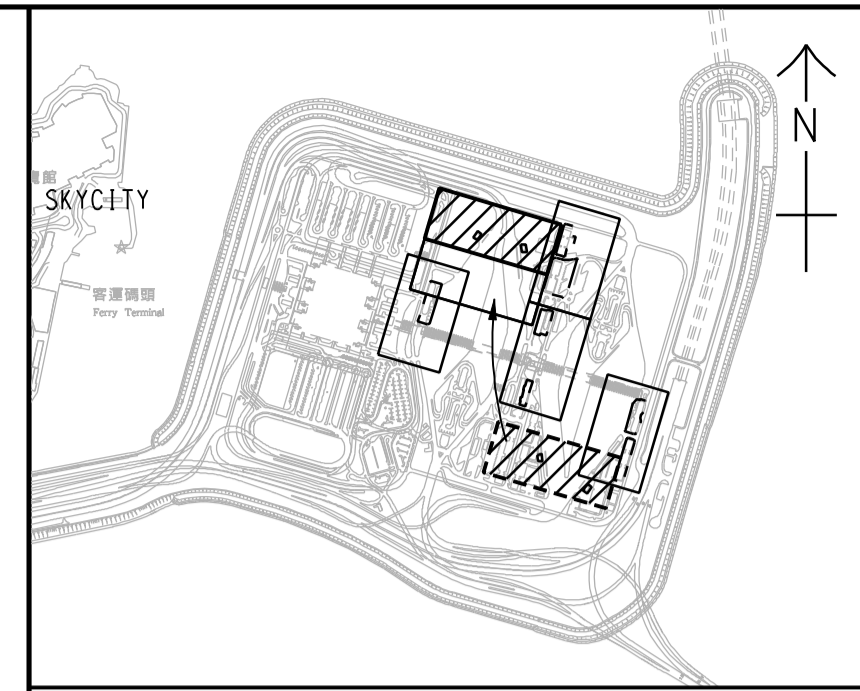
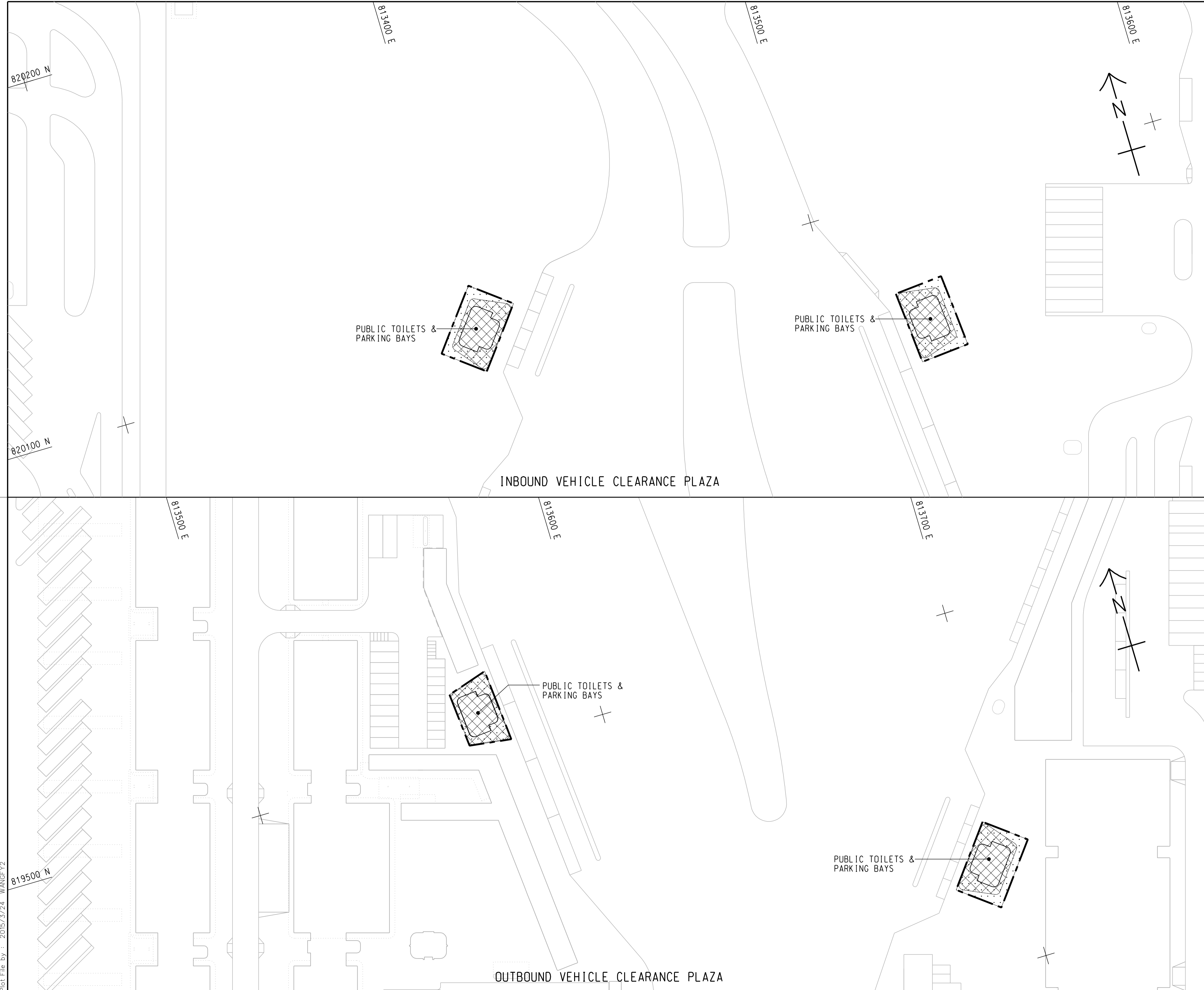
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WSY	初步

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SCALE 比例 1 : 500
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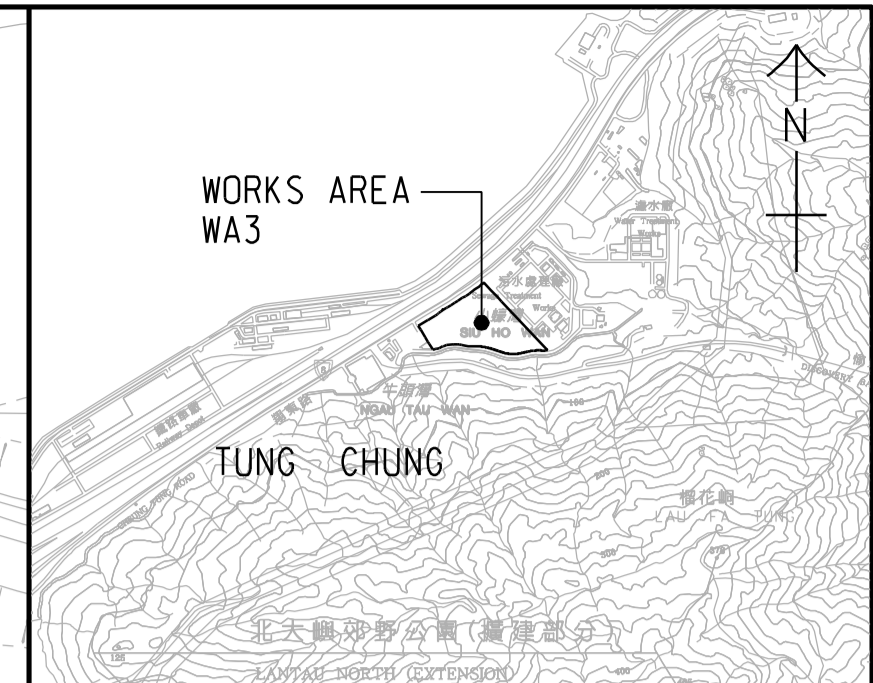
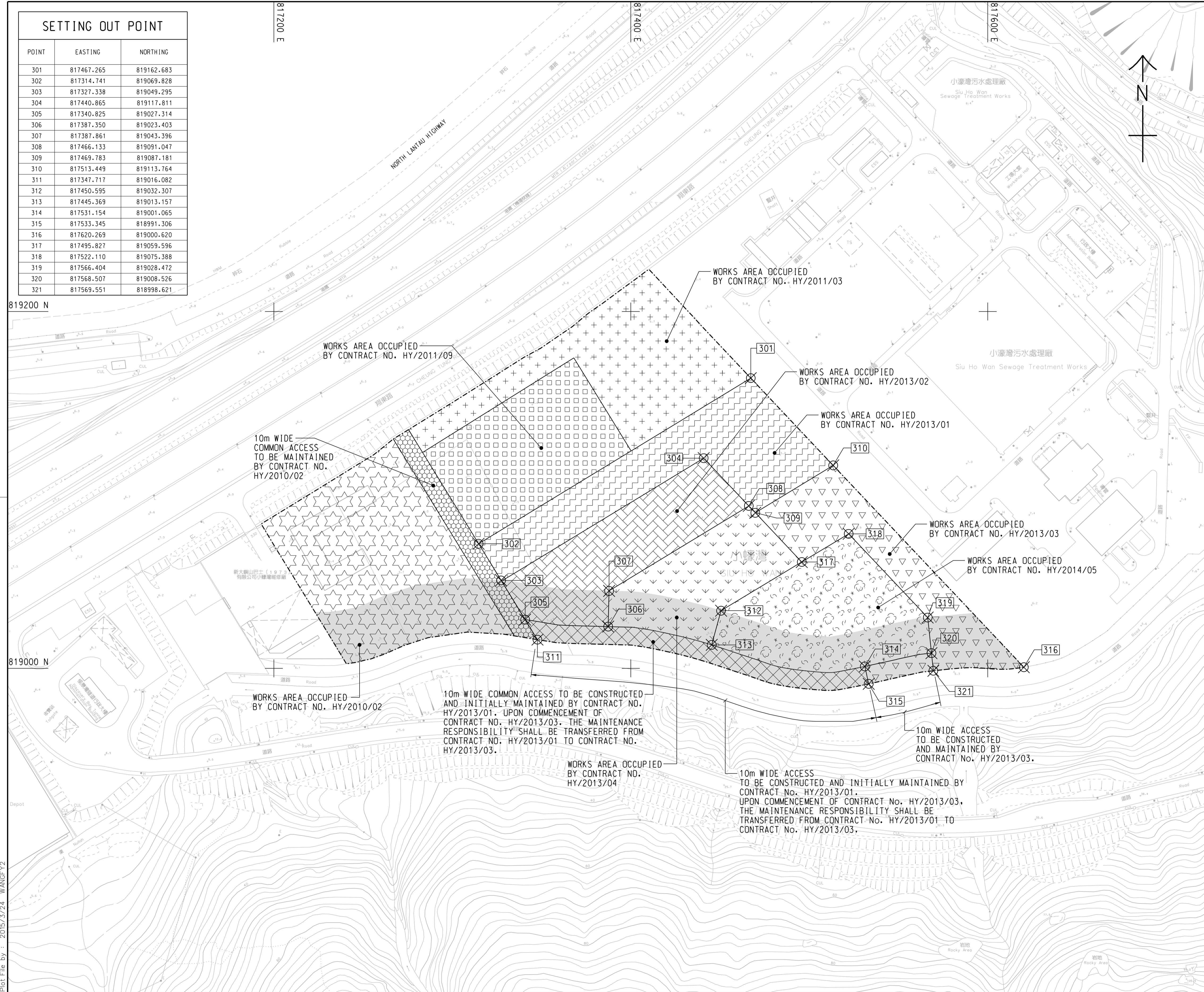
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- DIMENSIONS ARE IN MILLIMETER AND CHAINAGE ARE IN METRES UNLESS OTHERWISE SHOWN.

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	PORTION 3.8
	PORTION 3.9
	PORTION 3.10
	NON-BUILDING AREA 8200m ² (WHOLE)

REV.	DESCRIPTION	DATE
-	TENDER DRAWING	MAR. 15

HIGHWAYS DEPARTMENT
 路政署
 港珠澳大橋香港工程管理局
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HONG KONG-ZHUHAI-MACAO BRIDGE
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WORKS AREA WA3

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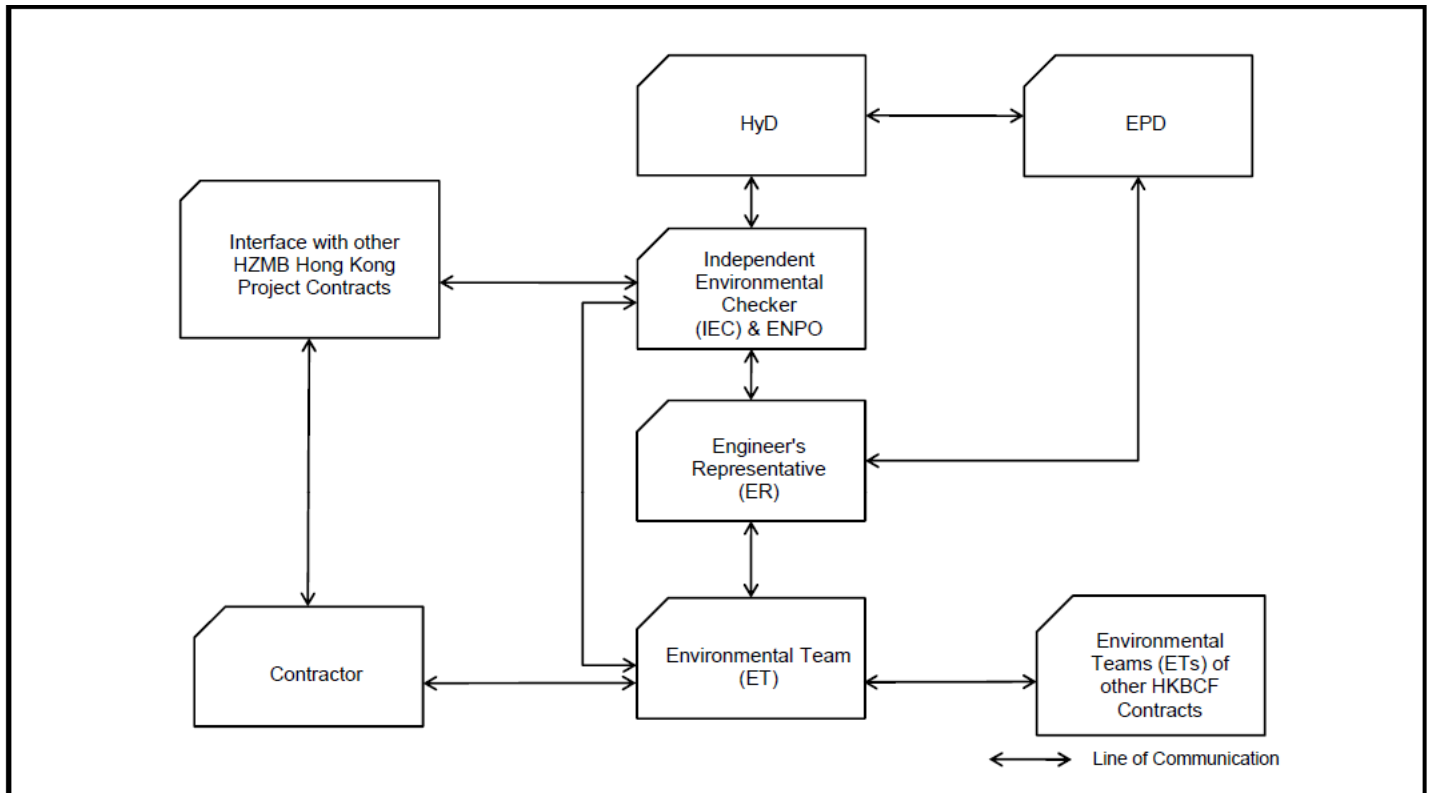
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APPENDIX B

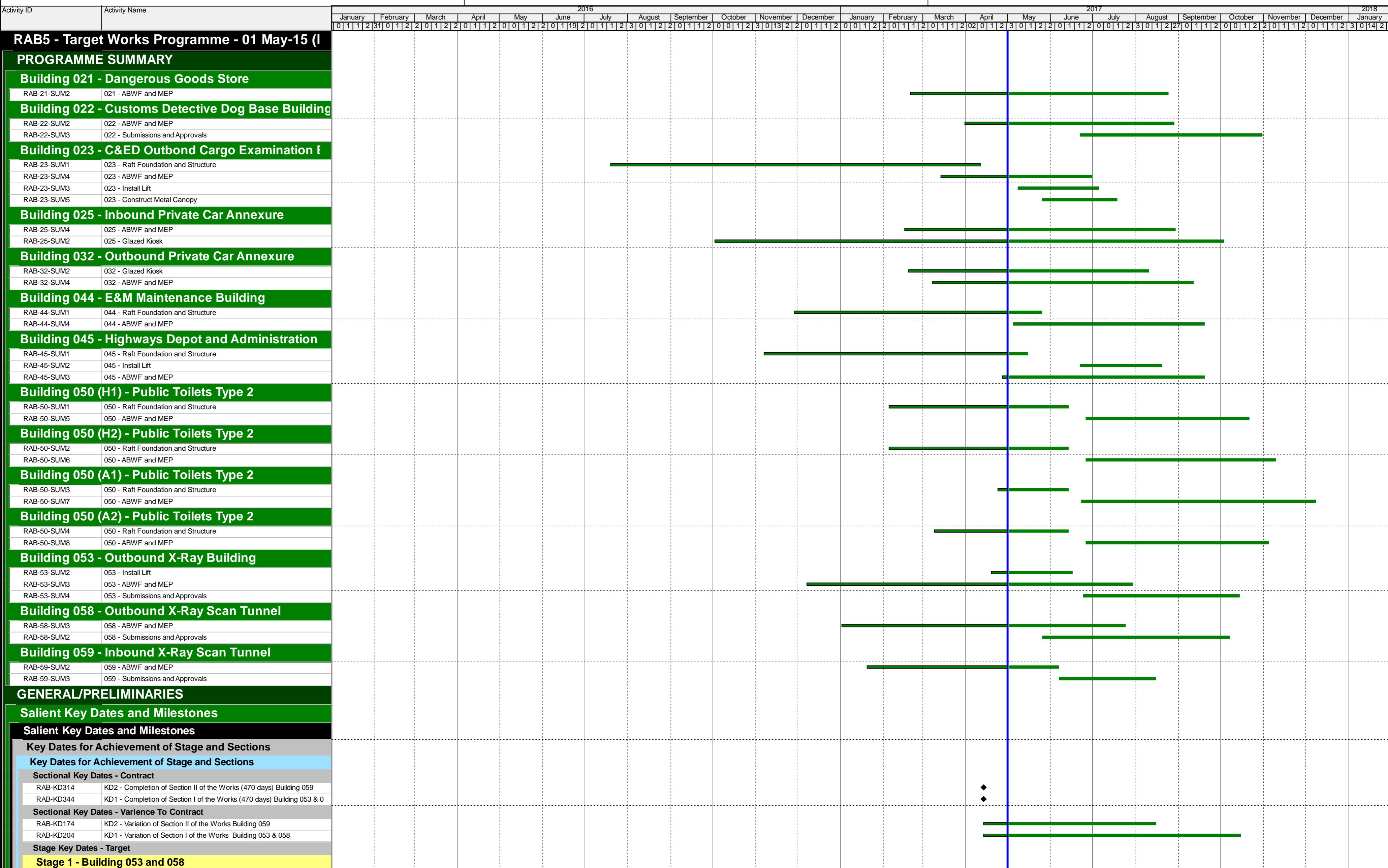
Project Organization for Environmental Works

Project Organisation for Environmental Works



APPENDIX C

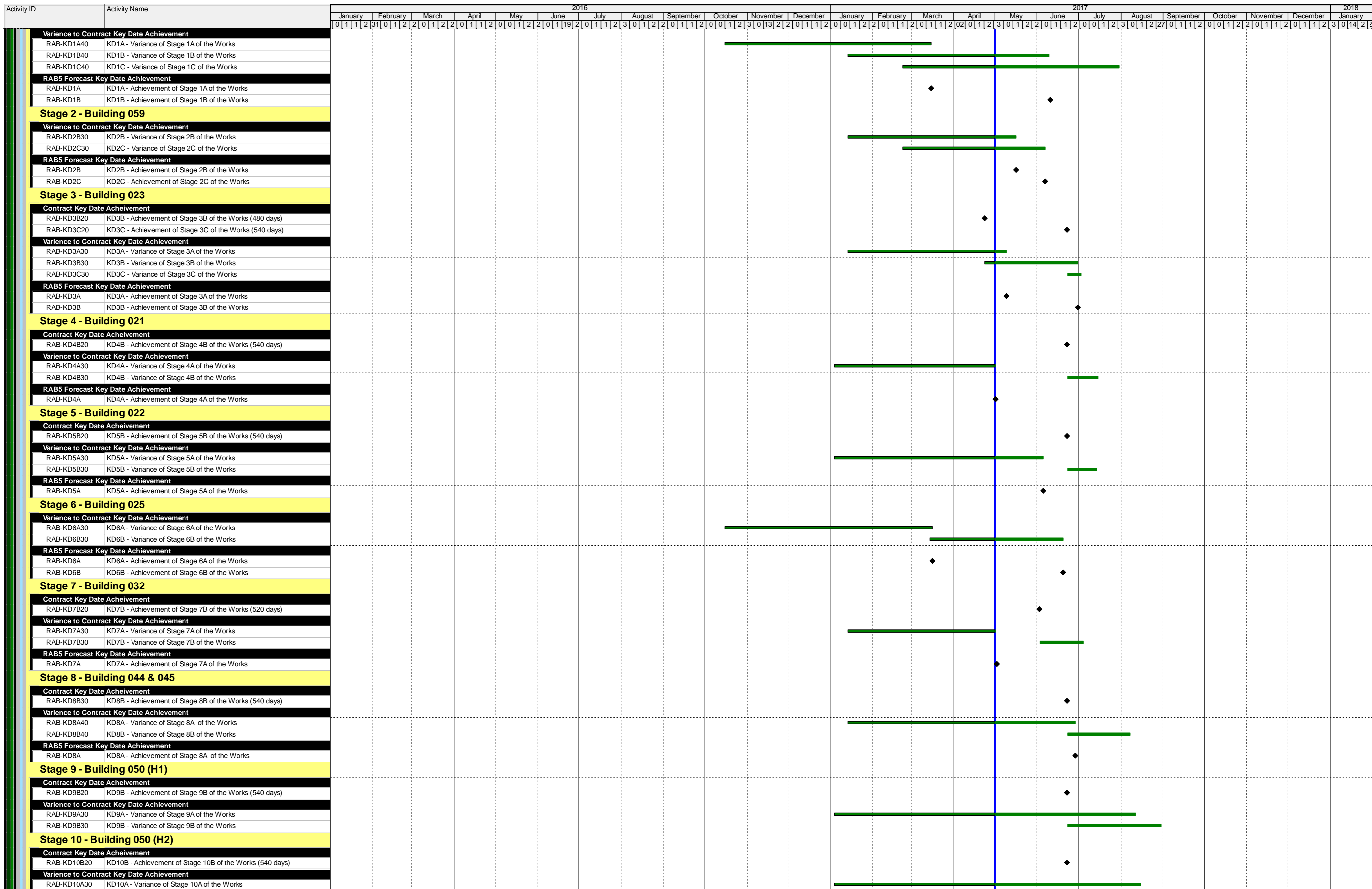
Construction Programme



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

3 - Month Rolling Programme - RAB5

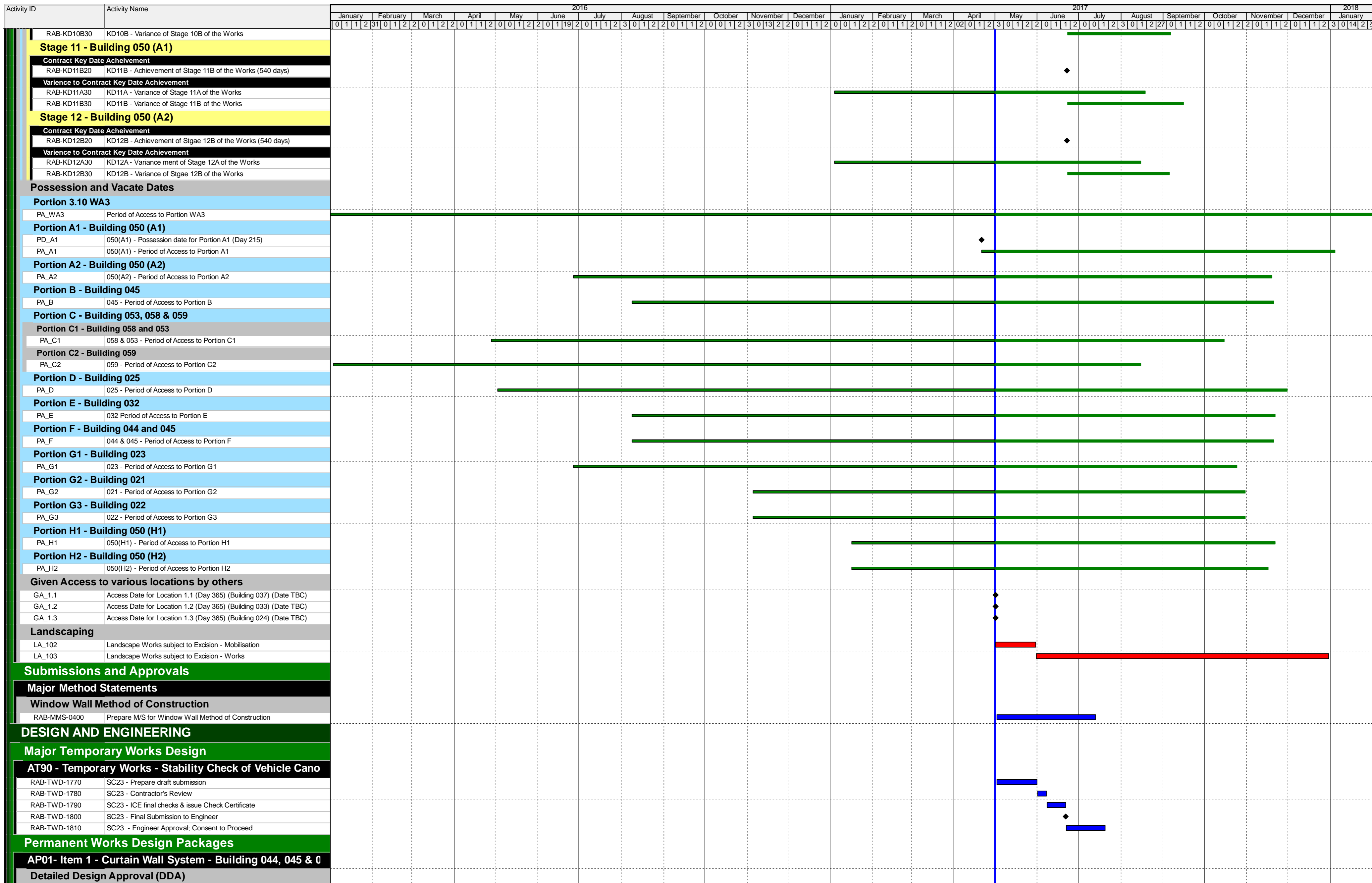
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01-May-17	Target Programme RAB5	SGJ	



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- Critical Remaining Work
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3 - Month Rolling Programme - RAB5

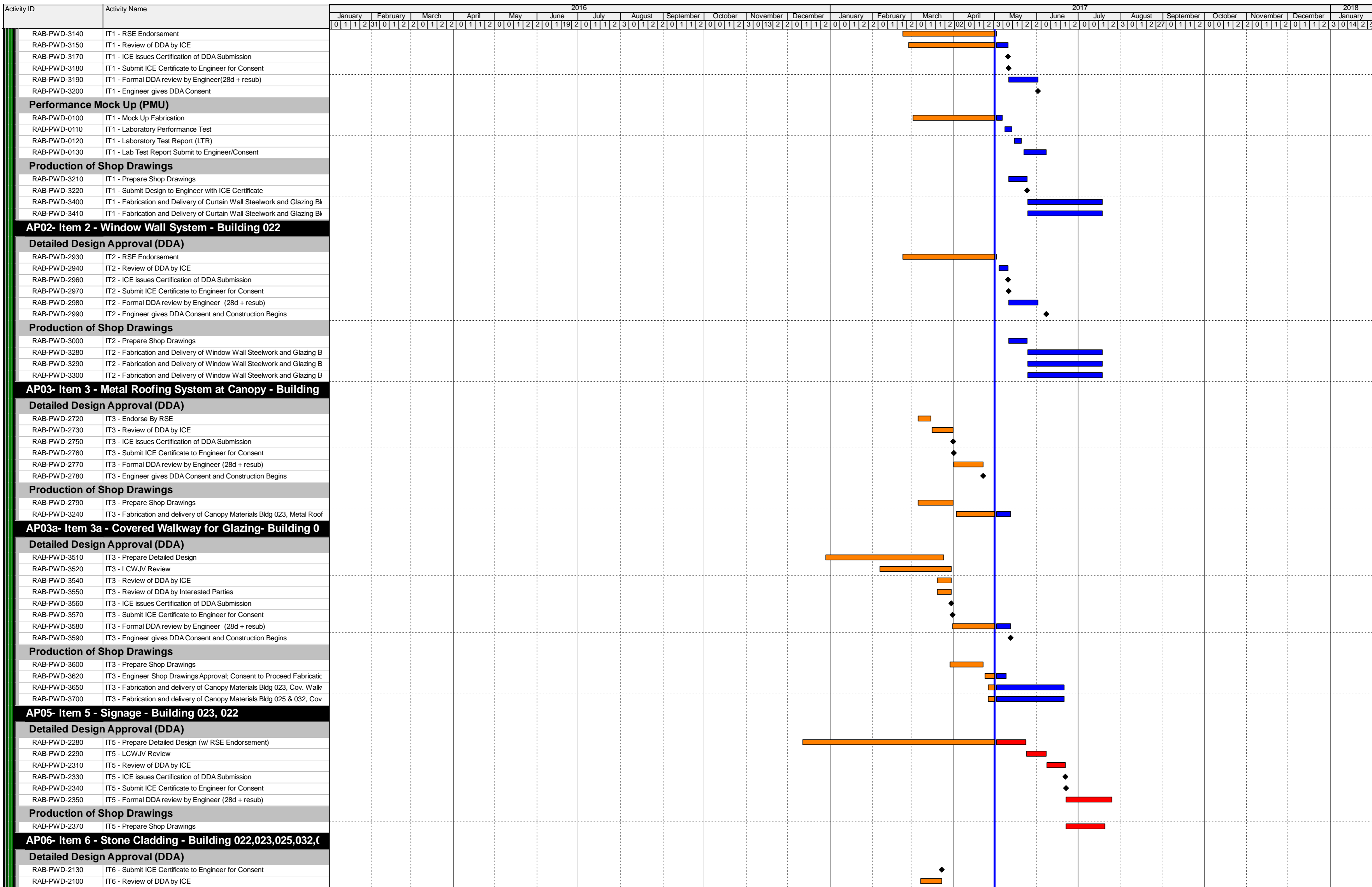
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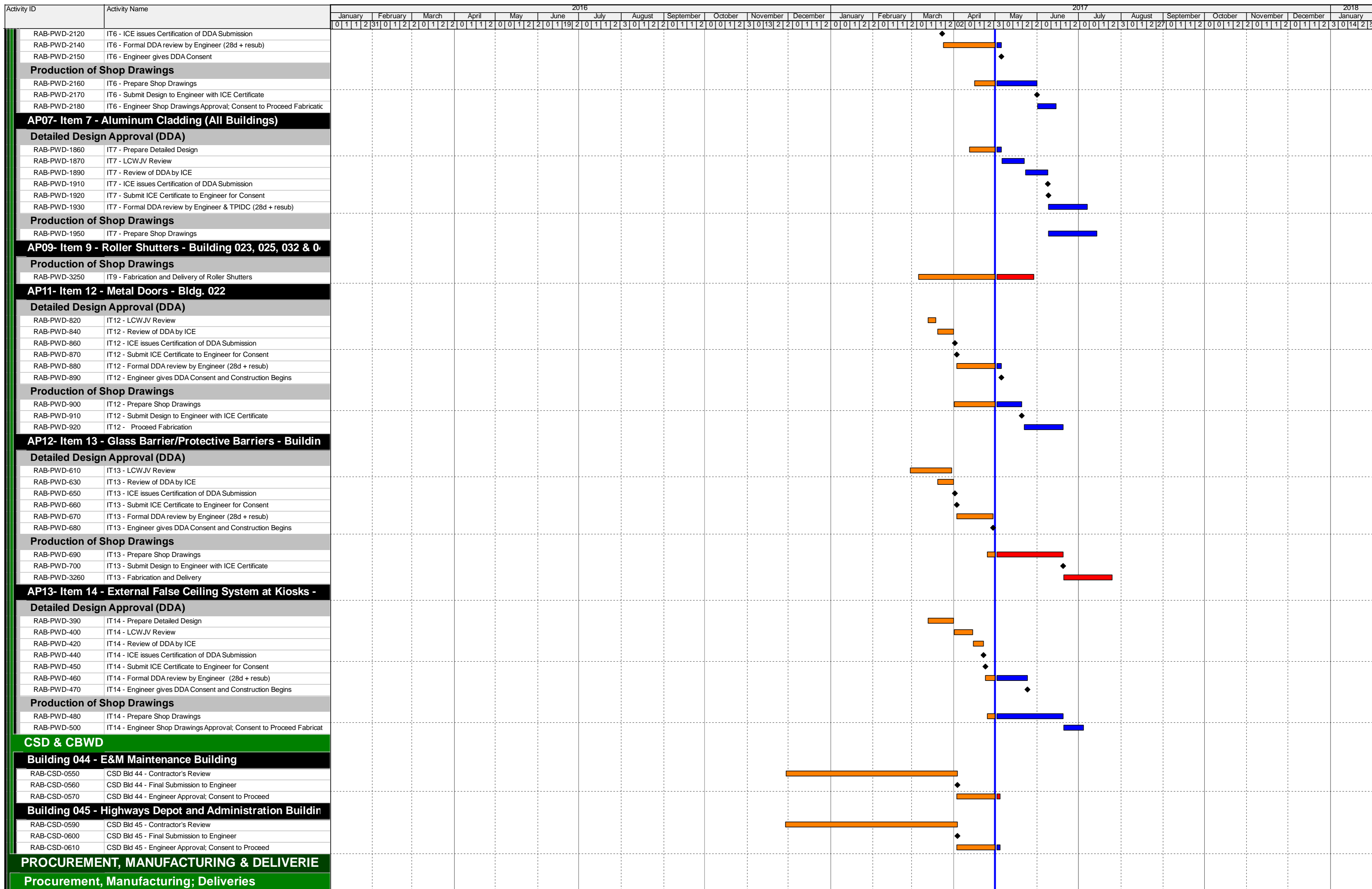
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01-May-17	Target Programme RAB5	SGJ	



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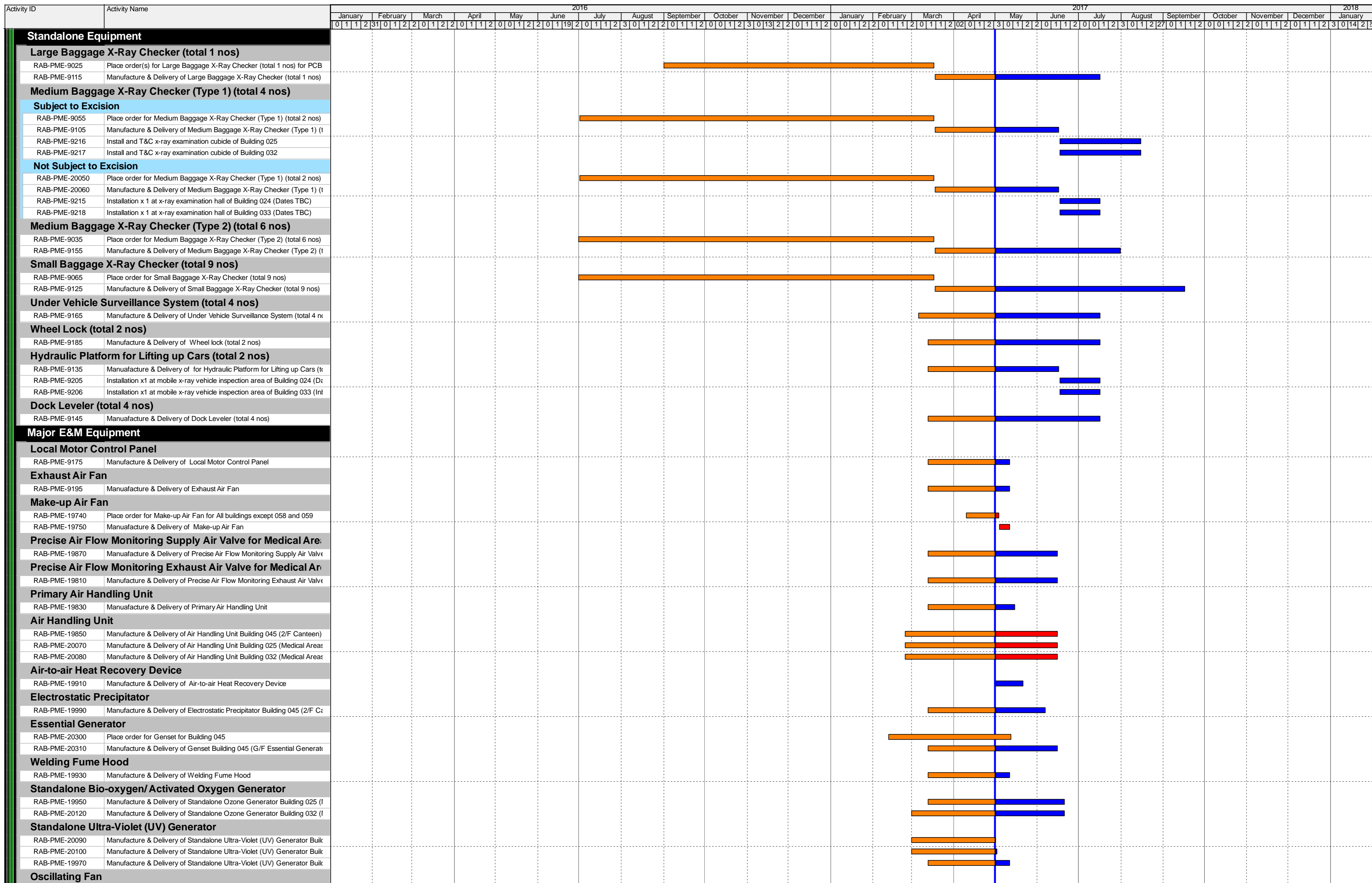
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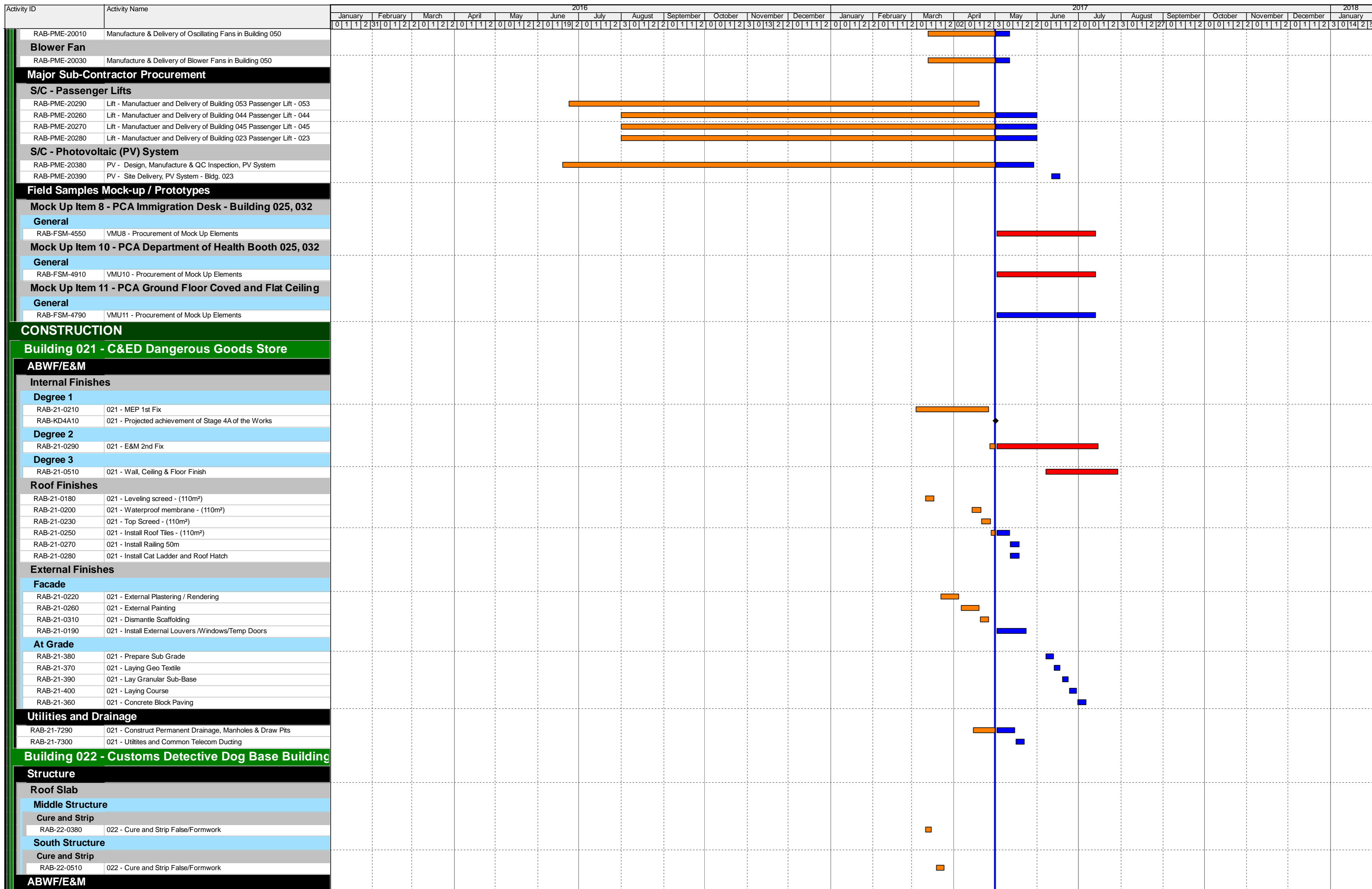
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█ Critical Remaining Work

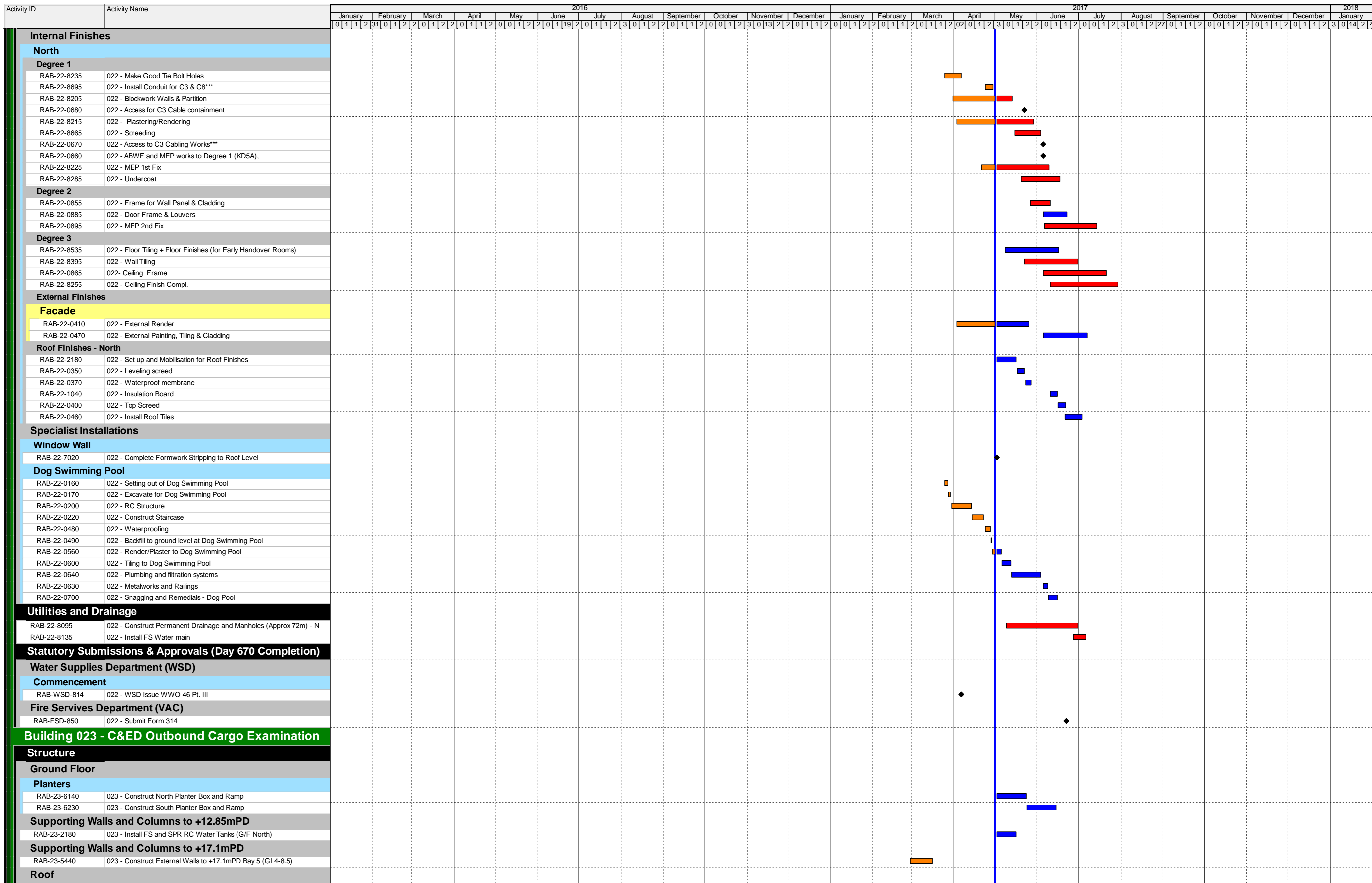
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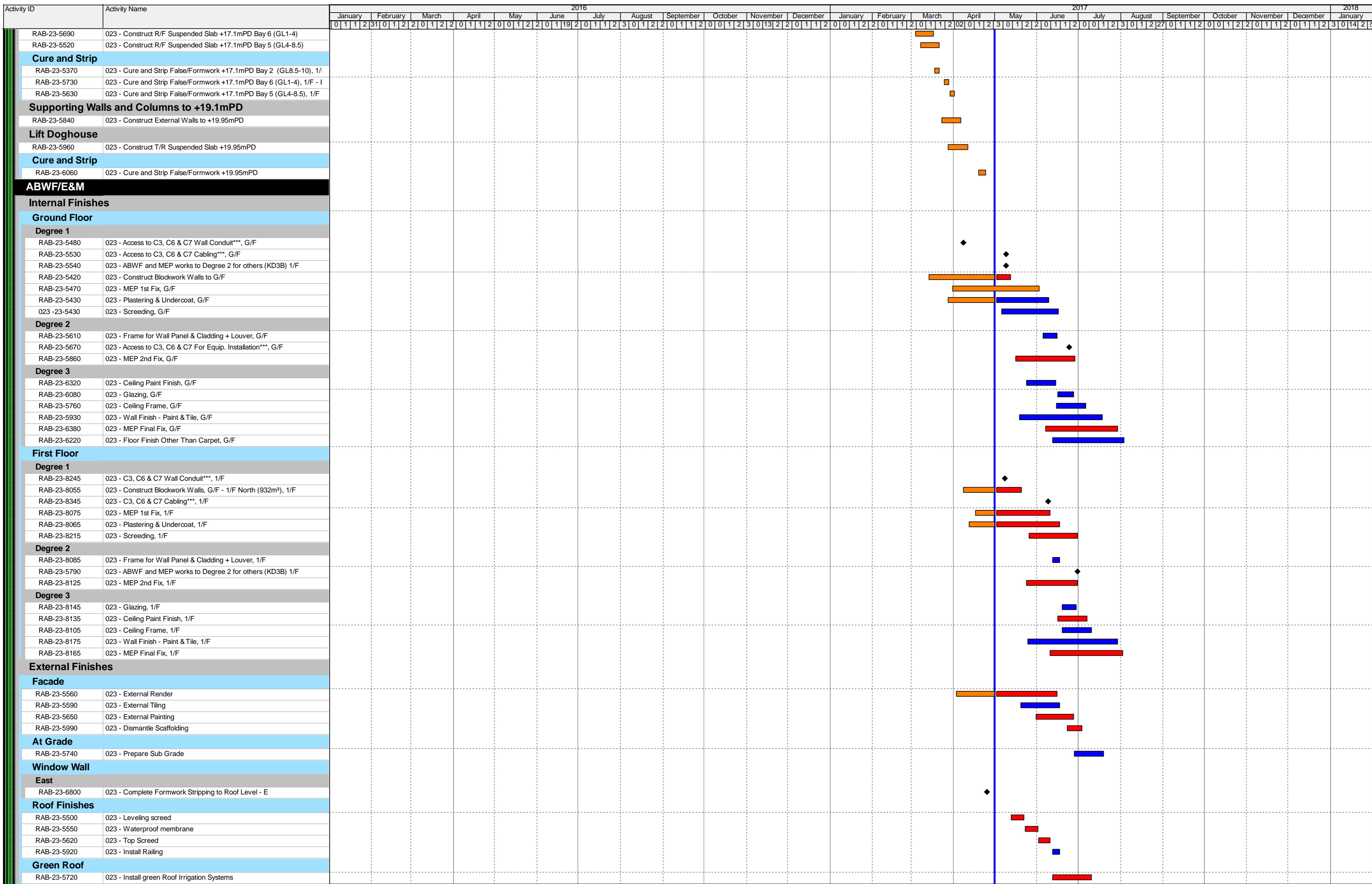
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- Critical Remaining Work
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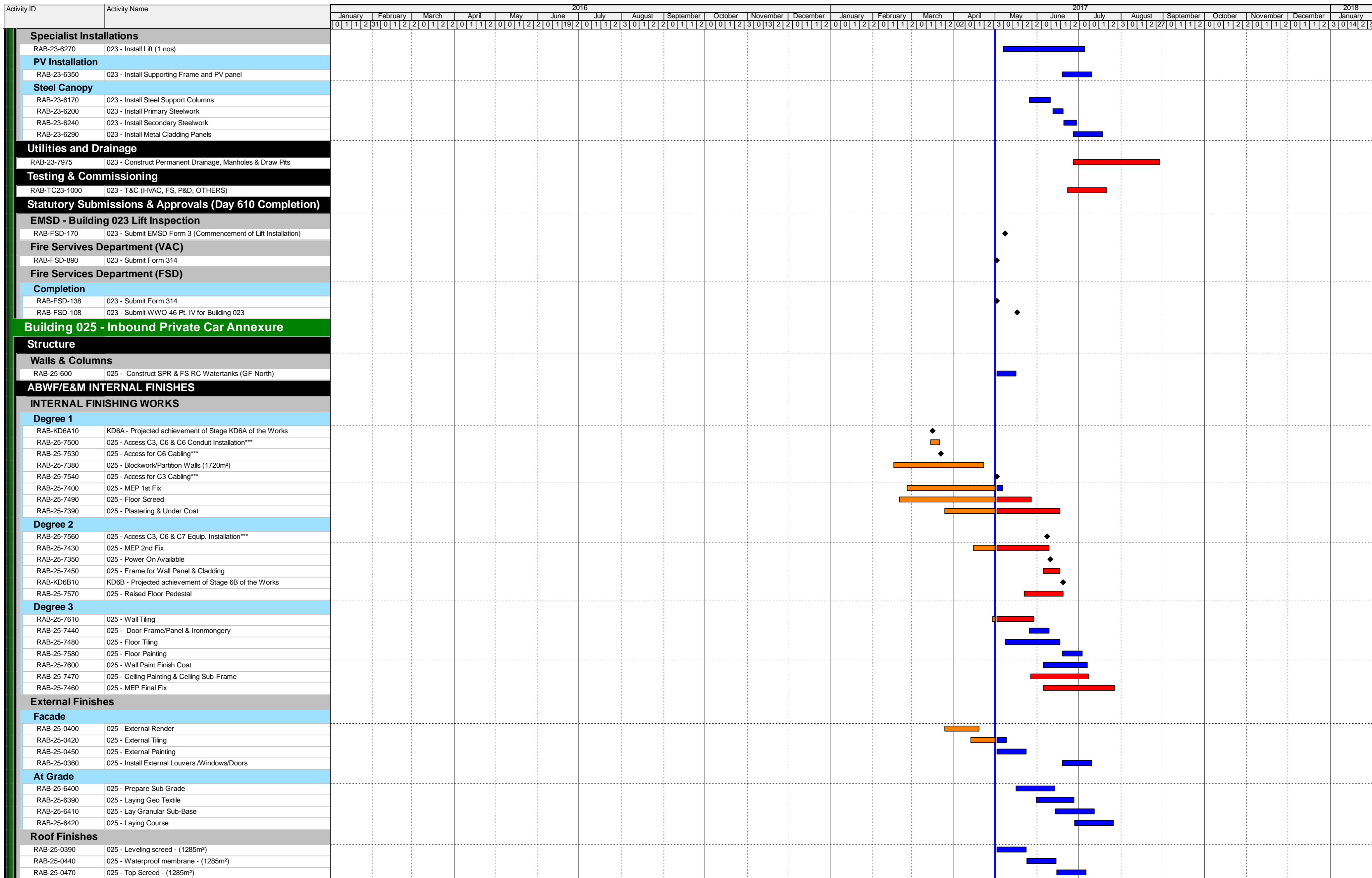


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	Actual Level of Effort		
	Actual Work		
	Remaining Work		
	Critical Remaining Work		

3 - Month Rolling Programme - RAB5

Page 9 of 18

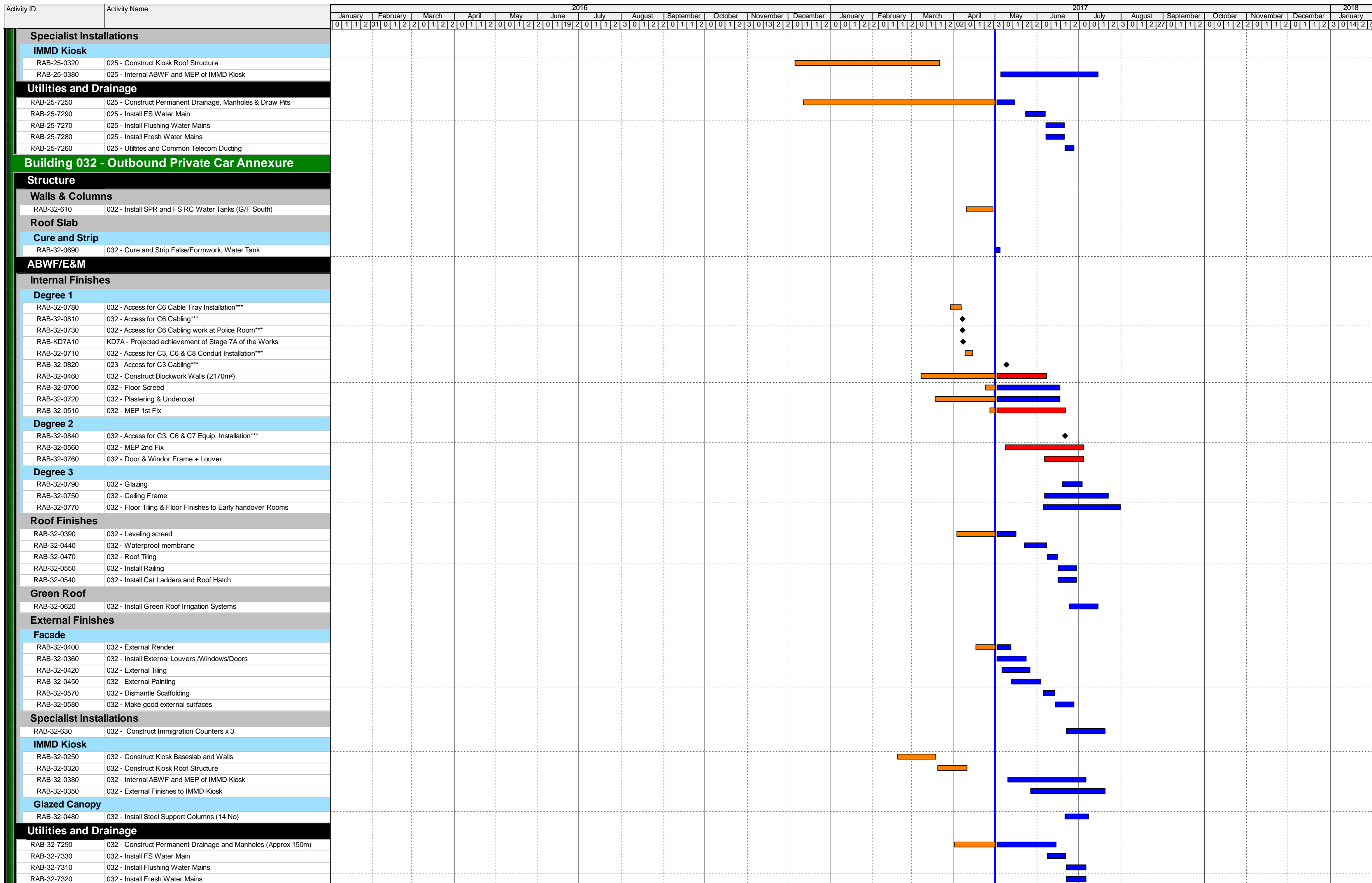
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01-May-17	Target Programme RAB5	SGJ	



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

3 - Month Rolling Programme - RAB5

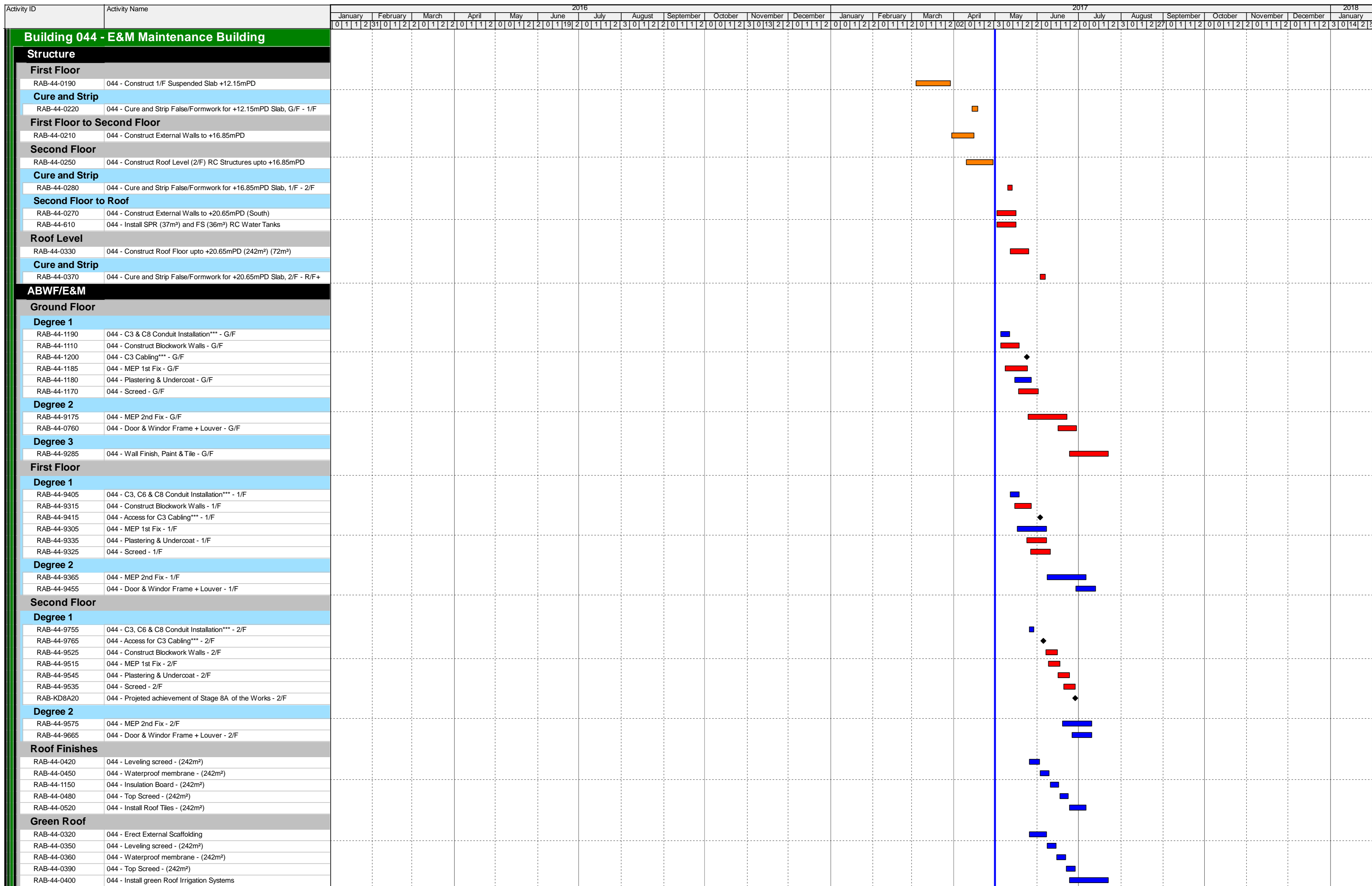
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01-May-17	Target Programme RAB5	SGJ	



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

3 - Month Rolling Programme - RAB5

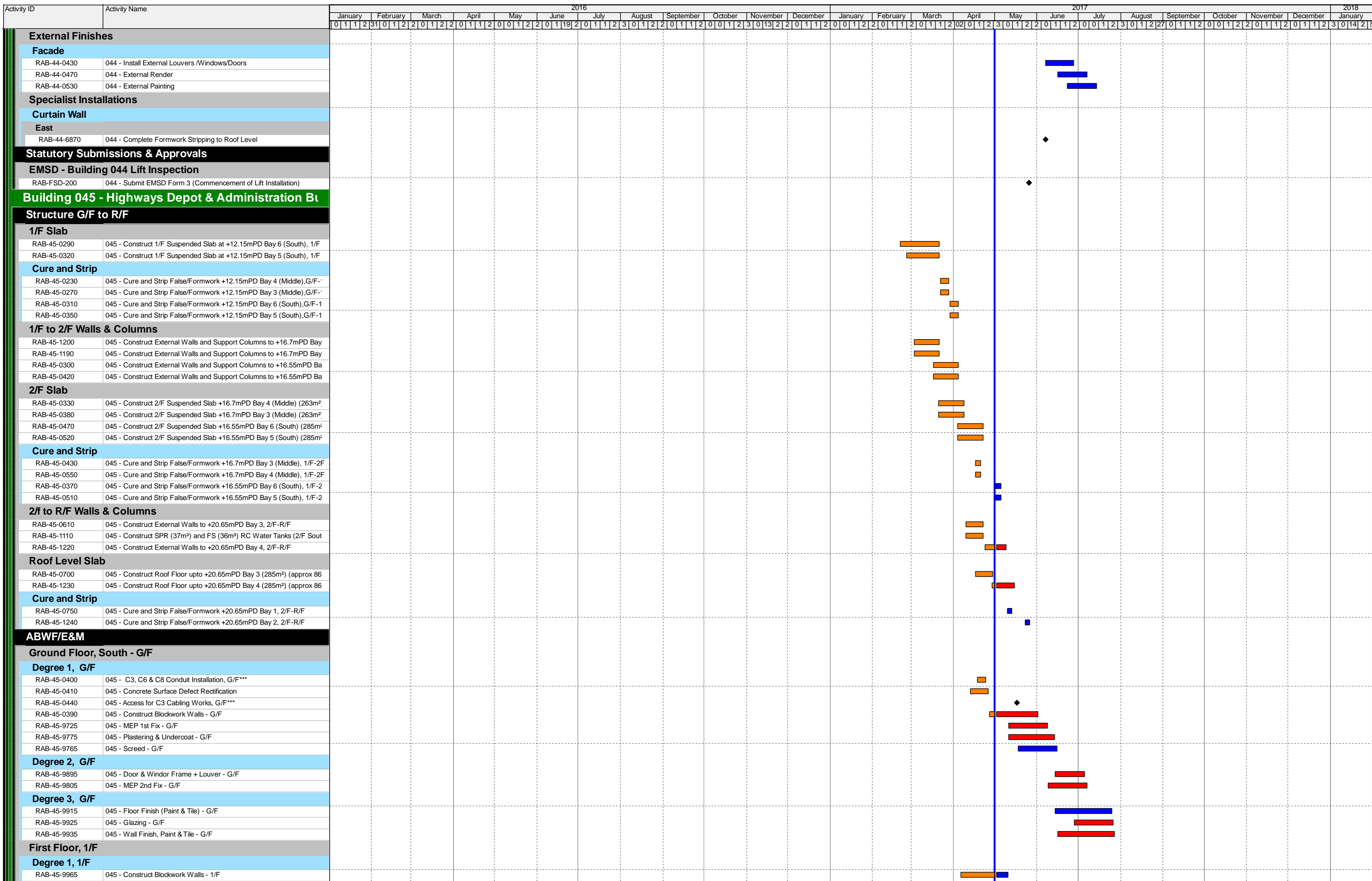
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3 - Month Rolling Programme - RAB5

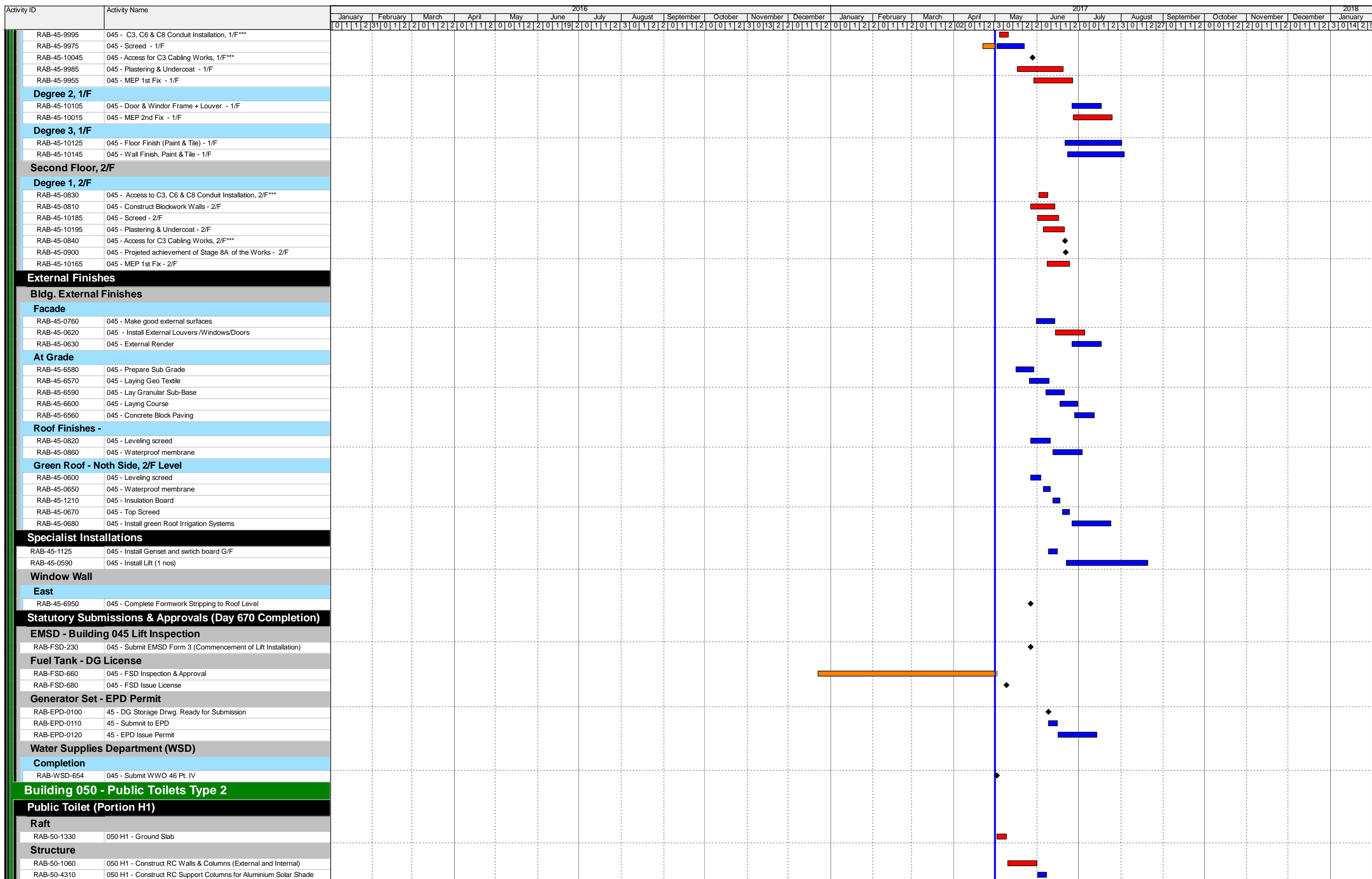
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- Remaining Level of Effort
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3 - Month Rolling Programme - RAB5

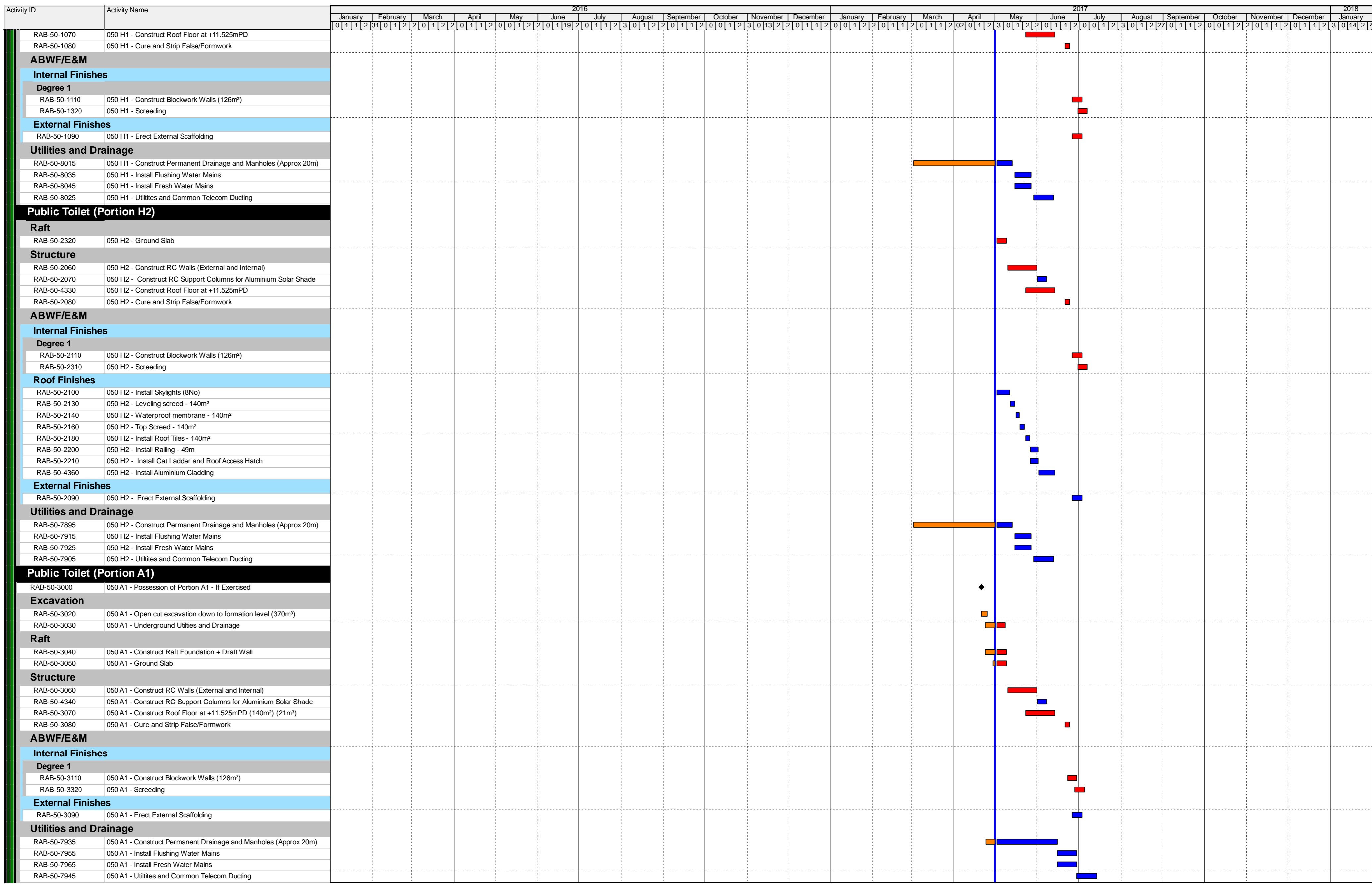
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- Remaining Level of Effort
- Actual Work
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- ◆ Milestone

3 - Month Rolling Programme - RAB5

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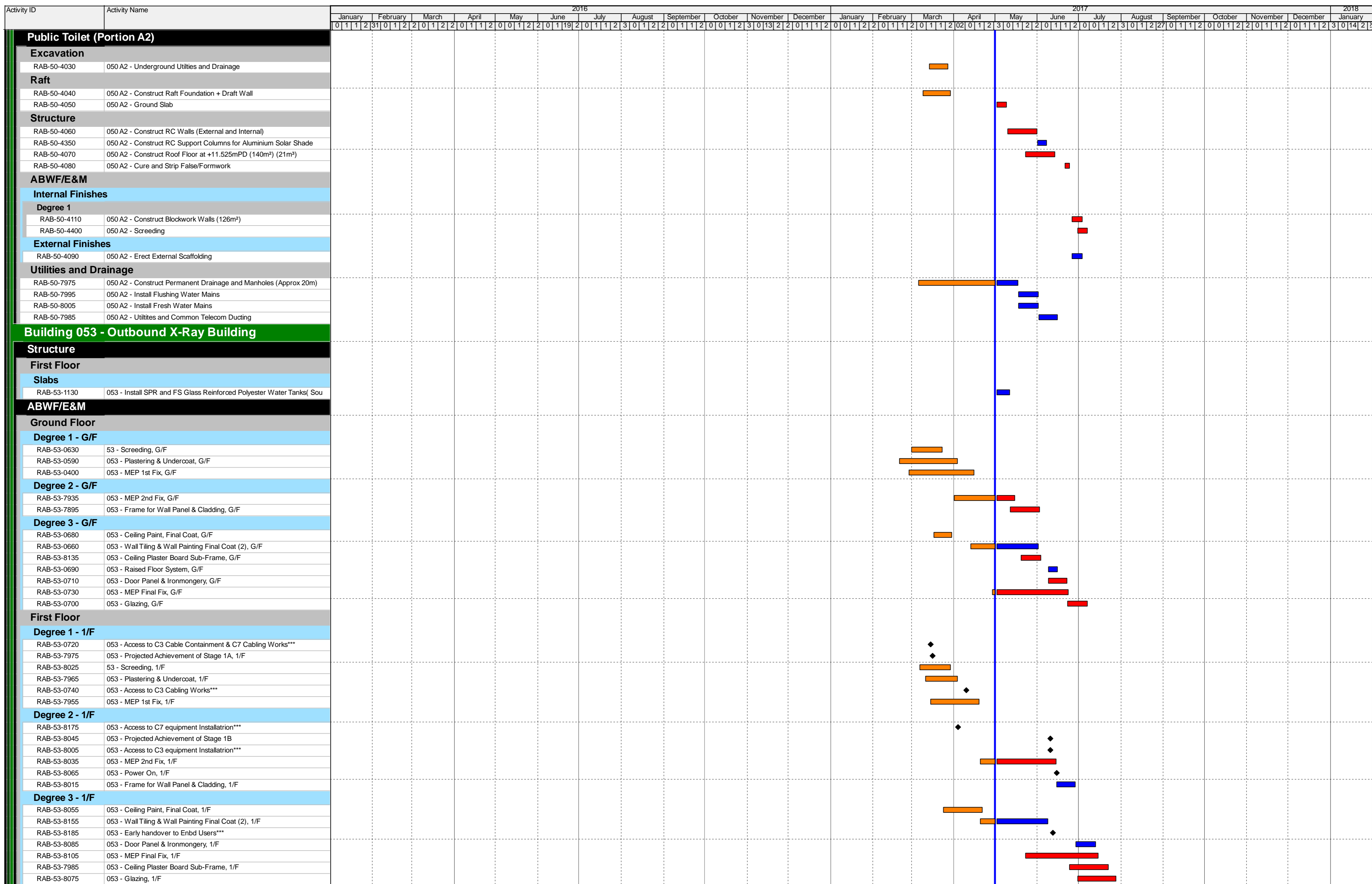


	Remaining Level of Effort		Milestone
	Actual Work		
	Remaining Work		
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3 - Month Rolling Programme - RAB5

Page 15 of 18

Date	Revision	Checked	Approved
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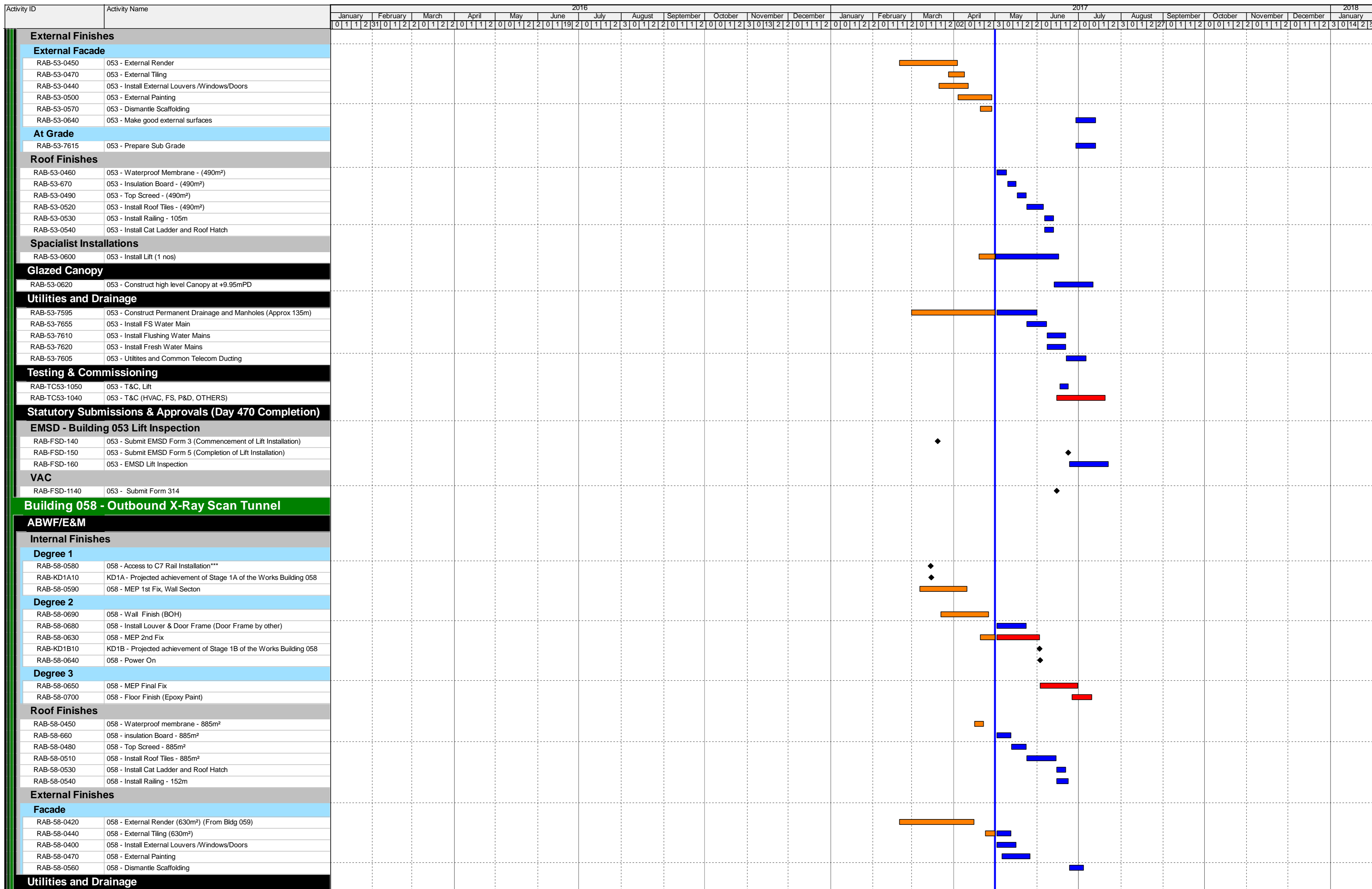


■ Remaining Level of Effort ◆ Milestone
■ Actual Level of Effort
■ Actual Work
■ Remaining Work
■ Critical Remaining Work

3 - Month Rolling Programme - RAB5

Page 16 of 18

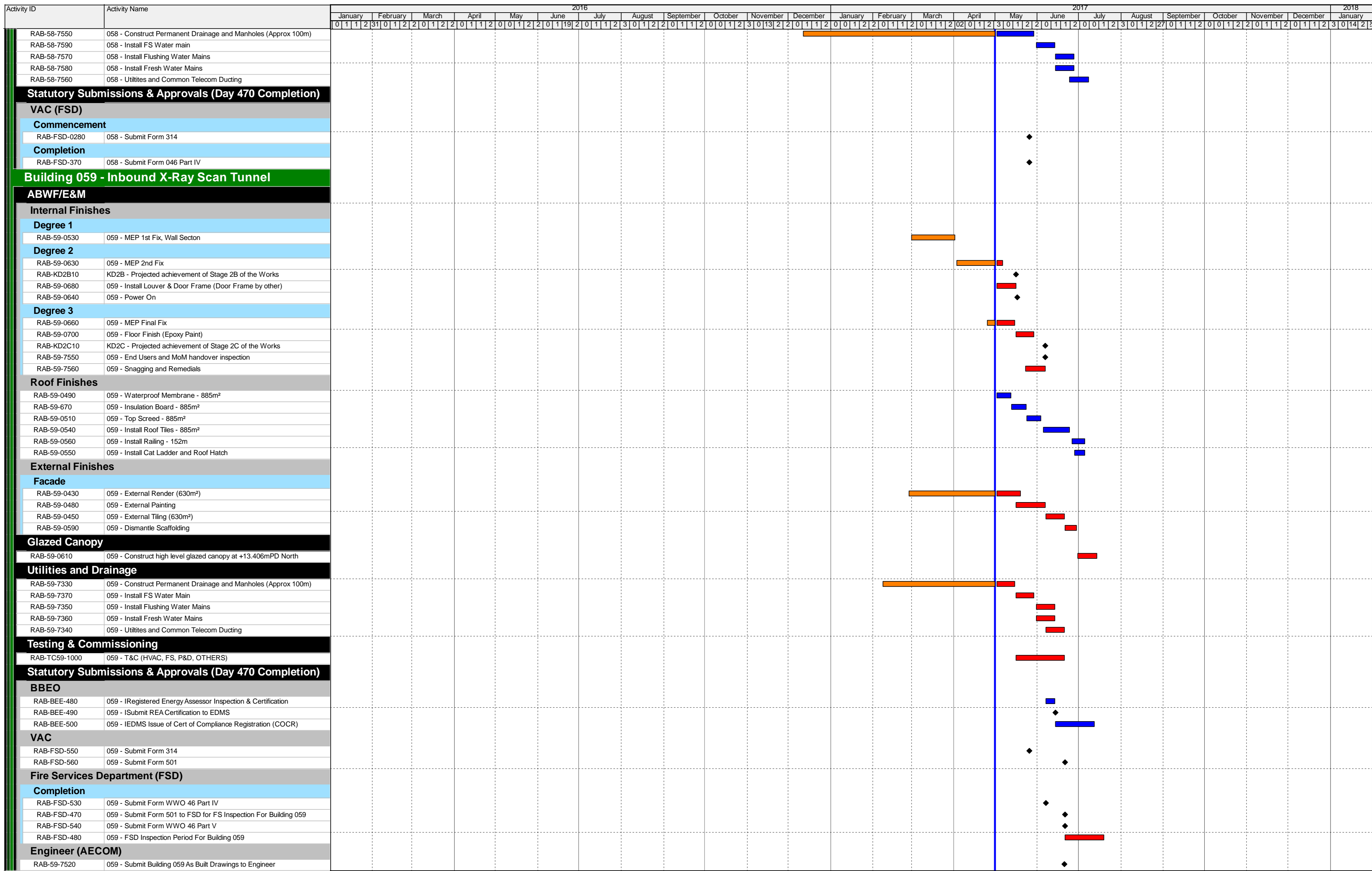
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3 - Month Rolling Programme - RAB5

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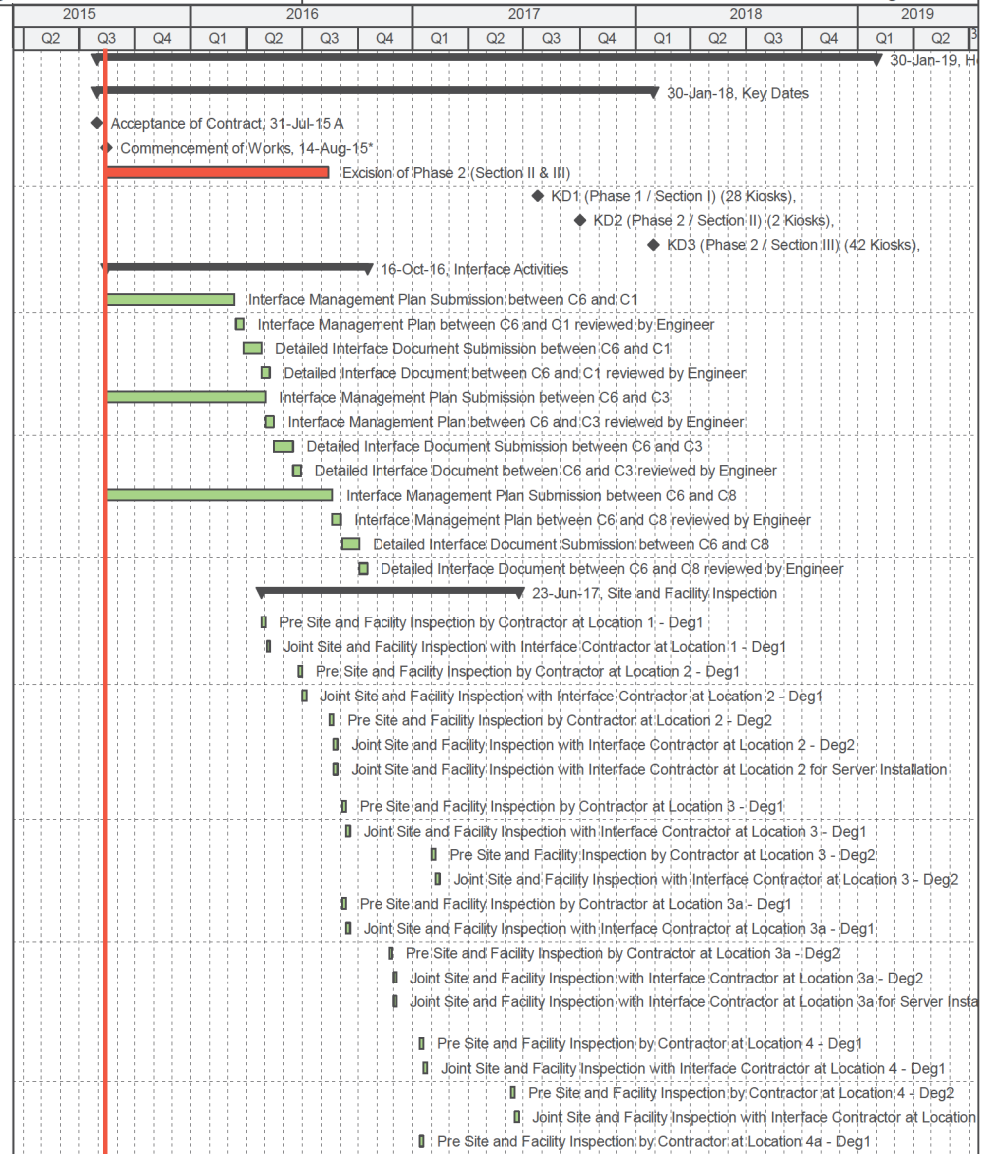


- Remaining Level of Effort
- Actual Level of Effort
- Actual Work
- Remaining Work
- Critical Remaining Work
- ◆ Milestone

3 - Month Rolling Programme - RAB5

Date	Revision	Checked	Approved
01-May-17	Target Programme RAB5	SGJ	

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



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Hong Kong-Zhuhai-Macao Bridge
Hong Kong Boundary Crossing
Facilities - Automatic Vehicle
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Activity ID	Activity Name	2015		2016				2017				2018				2019	
		Q2	Q3	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
A4892	Joint Site and Facility Inspection with Interface Contractor at Location 4a - Deg1																
A4900	Pre Site and Facility Inspection by Contractor at Location 4a - Deg2																
A4910	Joint Site and Facility Inspection with Interface Contractor at Location 4a - Deg2																
A4920	Pre Site and Facility Inspection by Contractor at Location 5 - Deg1																
A4930	Joint Site and Facility Inspection with Interface Contractor at Location 5 - Deg1																
A4940	Pre Site and Facility Inspection by Contractor at Location 5 - Deg2																
A4950	Joint Site and Facility Inspection with Interface Contractor at Location 5 - Deg2																
A4960	Pre Site and Facility Inspection by Contractor at Location 6 - Deg1																
A4970	Joint Site and Facility Inspection with Interface Contractor at Location 6 - Deg1																
A4980	Pre Site and Facility Inspection by Contractor at Location 6 - Deg2																
A4990	Joint Site and Facility Inspection with Interface Contractor at Location 6 - Deg2																
A5000	Pre Site and Facility Inspection by Contractor at Location 7 - Deg1																
A5010	Joint Site and Facility Inspection with Interface Contractor at Location 7 - Deg1																
A5020	Pre Site and Facility Inspection by Contractor at Location 8 - Deg1																
A5030	Joint Site and Facility Inspection with Interface Contractor at Location 8 - Deg1																
A5040	Pre Site and Facility Inspection by Contractor at Location 8 - Deg2																
A5050	Joint Site and Facility Inspection with Interface Contractor at Location 8 - Deg2																
A5060	Pre Site and Facility Inspection by Contractor at Location 9 - Deg1																
A5070	Joint Site and Facility Inspection with Interface Contractor at Location 9 - Deg1																
A5080	Pre Site and Facility Inspection by Contractor at Location 9 - Deg2																
A5090	Joint Site and Facility Inspection with Interface Contractor at Location 9 - Deg2																
A5100	Pre Site and Facility Inspection by Contractor at Location 10 - Deg1																
A5110	Joint Site and Facility Inspection with Interface Contractor at Location 10 - Deg1																
A5120	Pre Site and Facility Inspection by Contractor at Location 10 - Deg2																
A5130	Joint Site and Facility Inspection with Interface Contractor at Location 10 - Deg2																
A5140	Pre Site and Facility Inspection by Contractor at Location 11 - Deg1																
A5150	Joint Site and Facility Inspection with Interface Contractor at Location 11 - Deg1																
A5160	Pre Site and Facility Inspection by Contractor at Location 11 - Deg2																
A5170	Joint Site and Facility Inspection with Interface Contractor at Location 11 - Deg2																
A5180	Pre Site and Facility Inspection by Contractor at Location 12 - Deg1																
A5190	Joint Site and Facility Inspection with Interface Contractor at Location 12 - Deg1																
A5200	Pre Site and Facility Inspection by Contractor at Location 12 - Deg2																
A5210	Joint Site and Facility Inspection with Interface Contractor at Location 12 - Deg2																
A5220	Pre Site and Facility Inspection by Contractor at Location 13 - Deg1																
A5230	Joint Site and Facility Inspection with Interface Contractor at Location 13 - Deg1																
A5240	Pre Site and Facility Inspection by Contractor at Location 13 - Deg2																
A5250	Joint Site and Facility Inspection with Interface Contractor at Location 13 - Deg2																
A5260	Pre Site and Facility Inspection by Contractor at Location 14 - Deg1																
A5270	Joint Site and Facility Inspection with Interface Contractor at Location 14 - Deg1																
A5300	Pre Site and Facility Inspection by Contractor at Location 15 - Deg1																
A5310	Joint Site and Facility Inspection with Interface Contractor at Location 15 - Deg1																
A5320	Pre Site and Facility Inspection by Contractor at Location 15 - Deg2																
A5330	Joint Site and Facility Inspection with Interface Contractor at Location 15 - Deg2																
A5340	Pre Site and Facility Inspection by Contractor at Location 16 - Deg1																
A5350	Joint Site and Facility Inspection with Interface Contractor at Location 16 - Deg1																

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

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

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

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

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Coding		05-Jan-17, Coding CCS, SURCON, SYSCON, CDBS Development Stage 1 VTS Development Stage 1 VIDS Development Stage 1 CCS, SURCON, SYSCON, CDBS Development Stage 2 VTS Development Stage 2 VIDS Development Stage 2														
Software System Inetgration		22-May-17, Software System Inetgration Test Plan Documentation Submission Engineer's Review and Approval for Test Plan Documentation Submission Software System Integration Test CCS/SYSCON/SURCON/CDBS/VTS/VIDS Software Enhancement Software User Acceptance Test (UAT)														
Prototype & Software Simulation Tests		09-Sep-16, Prototype & Software Simulation Tests Prototype Test Document Engineer's Approval for Testing Document CCWS with CDBS, SURCON and SYSCON (Software Simulation/ Software Integration Test) Vehicle Tracking System (VTS) (Software Simulation/ Software Integration Test) LED Displays (VID, ODB and XDB) All-In-One Panel (AIOP) Prototype Testing Report Submission Engineer's Approval for Prototype Testing Report														
Procurement - Phase 1 / Section I		27-Dec-16, Procurement - Phase 1 / Section I Procurement of Equipment for Phase 1/Section I Procurement of Cable and Accessories for Phase 1 /Section I Procurement of All Servers and Workstations														
Supply/Manufacture products for FAT		10-Nov-16, Supply/Manufacture products for FAT Supply/Manufacture LED Display (ODB, VID and XDB) for FAT Supply/Manufacture All-In-One Panel (AIOP) for FAT Supply/Manufacture off-the-shelf equipment for FAT														
Factory Acceptance Test (FAT)		12-Dec-16, Factory Acceptance Test (FAT) FAT Procedure Document Engineer's Approval for FAT Procedure Document FAT for Licence Plate Recognition System (LPRS) FAT for PA/Intercom FAT for ODB FAT for XDB FAT for VID FAT for Video Management System (VMS) FAT for Vehicle Tracking System (VTS) FAT for Communication Network (CMN) FAT for All-In-One Panel (AIOP) FAT for AVCSS System Test FAT Report Submission														

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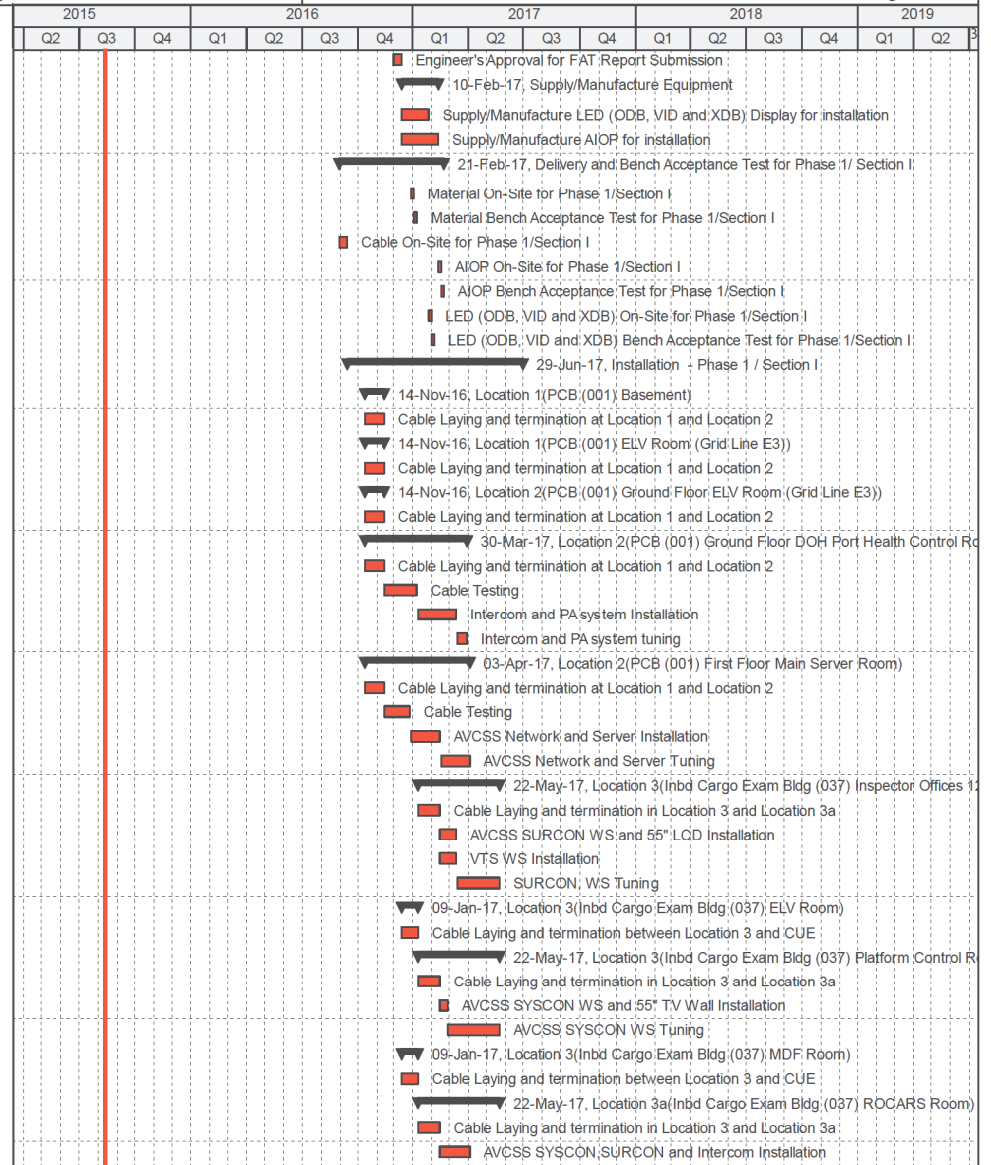
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Activity ID	Activity Name
A4370	Engineer's Approval for FAT Report Submission
Supply/Manufacture Equipment	
A6830	Supply/Manufacture LED (ODB, VID and XDB) Display for installation
A6840	Supply/Manufacture AIOP for installation
Delivery and Bench Acceptance Test for Phase 1/ Section I	
A6740	Material On-Site for Phase 1/Section I
A6750	Material Bench Acceptance Test for Phase 1/Section I
A6850	Cable On-Site for Phase 1/Section I
A6960	AIOP On-Site for Phase 1/Section I
A6970	AIOP Bench Acceptance Test for Phase 1/Section I
A6980	LED (ODB, VID and XDB) On-Site for Phase 1/Section I
A6990	LED (ODB, VID and XDB) Bench Acceptance Test for Phase 1/Section I
Installation - Phase 1 / Section I	
Location 1(PCB (001) Basement)	
A3081	Cable Laying and termination at Location 1 and Location 2
Location 1(PCB (001) ELV Room (Grid Line E3))	
A3101	Cable Laying and termination at Location 1 and Location 2
Location 2(PCB (001) Ground Floor ELV Room (Grid Line E3))	
A3121	Cable Laying and termination at Location 1 and Location 2
Location 2(PCB (001) Ground Floor DOH Port Health Control Room (Grid Line BD))	
A2041	Cable Laying and termination at Location 1 and Location 2
A2042	Cable Testing
A2043	Intercom and PA system Installation
A2044	Intercom and PA system tuning
Location 2(PCB (001) First Floor Main Server Room)	
A2001	Cable Laying and termination at Location 1 and Location 2
A2002	Cable Testing
A2003	AVCSS Network and Server Installation
A2004	AVCSS Network and Server Tuning
Location 3(Inbd Cargo Exam Bldg (037) Inspector Offices 128,129,130,131,128,12)	
A3241	Cable Laying and termination in Location 3 and Location 3a
A3242	AVCSS SURCON WS and 55" LCD Installation
A3243	VTS WS Installation
A3245	SURCON, WS Tuning
Location 3(Inbd Cargo Exam Bldg (037) ELV Room)	
A3210	Cable Laying and termination between Location 3 and CUE
Location 3(Inbd Cargo Exam Bldg (037) Platform Control Room)	
A2071	Cable Laying and termination in Location 3 and Location 3a
A2072	AVCSS SYSCON WS and 55" TV Wall Installation
A2074	AVCSS SYSCON WS Tuning
Location 3(Inbd Cargo Exam Bldg (037) MDF Room)	
A3190	Cable Laying and termination between Location 3 and CUE
Location 3a(Inbd Cargo Exam Bldg (037) ROCARS Room)	
A2091	Cable Laying and termination in Location 3 and Location 3a
A2092	AVCSS SYSCON, SURCON and Intercom Installation



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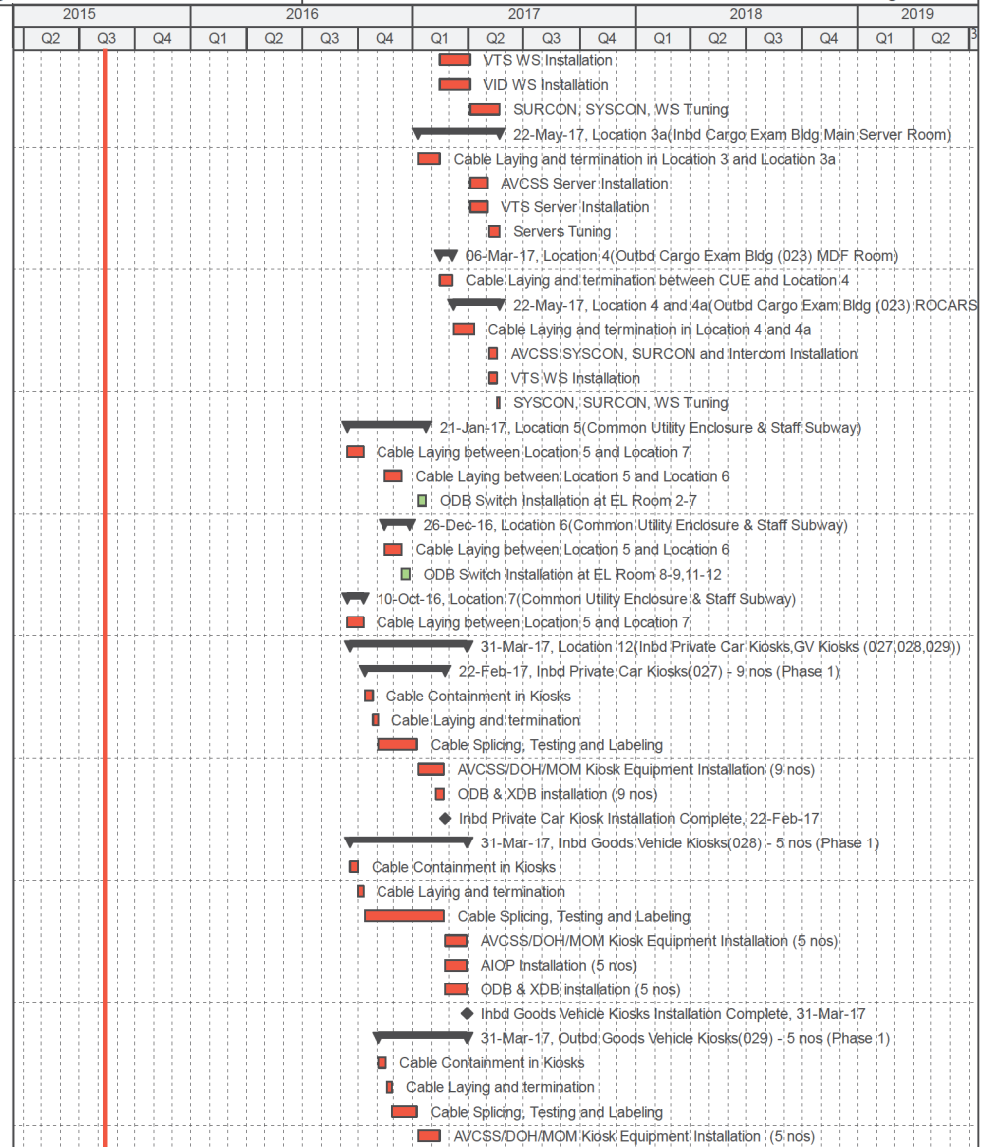
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A2093	VTS WS Installation
A2094	VID WS Installation
A2096	SURCON, SYSCON, WS Tuning
Location 3a(Inbd Cargo Exam Bldg Main Server Room)	
A3330	Cable Laying and termination in Location 3 and Location 3a
A3340	AVCSS Server Installation
A3350	VTS Server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



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

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

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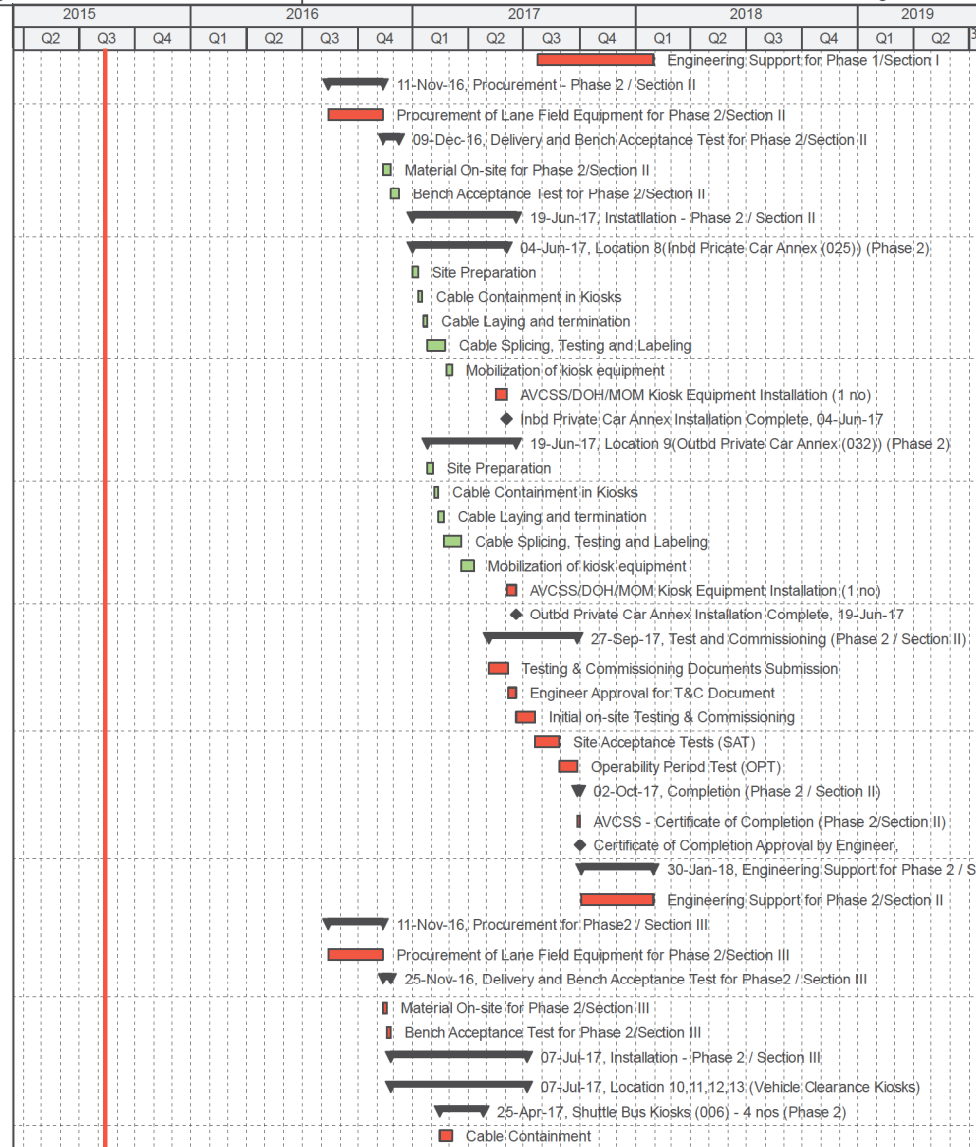
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Activity ID	Activity Name
A4420	Engineering Support for Phase 1/Section I
Procurement - Phase 2 / Section II	
A3980	Procurement of Lane Field Equipment for Phase 2/Section II
Delivery and Bench Acceptance Test for Phase 2/Section II	
A6760	Material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



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

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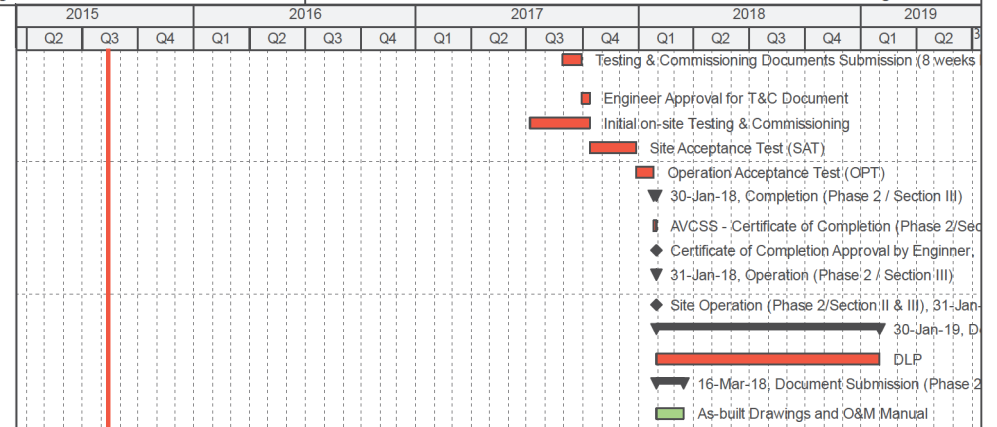
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A2370	Testing & Commissioning Documents Submission (8 weeks before Testings carried out)
A2371	Engineer Approval for T&C Document
A2373	Initial on-site Testing & Commissioning
A2380	Site Acceptance Test (SAT)
A2390	Operation Acceptance Test (OPT)
Completion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



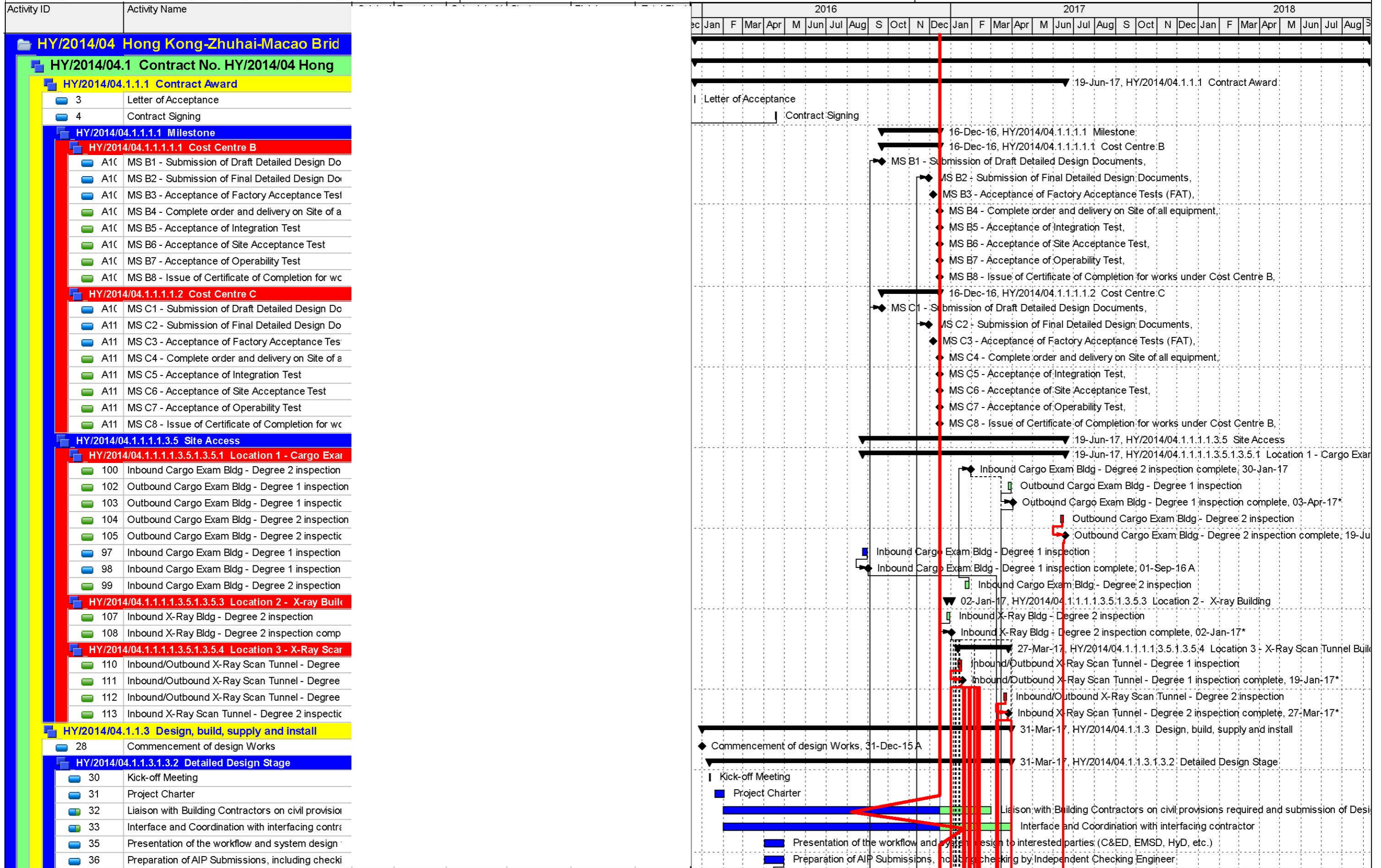
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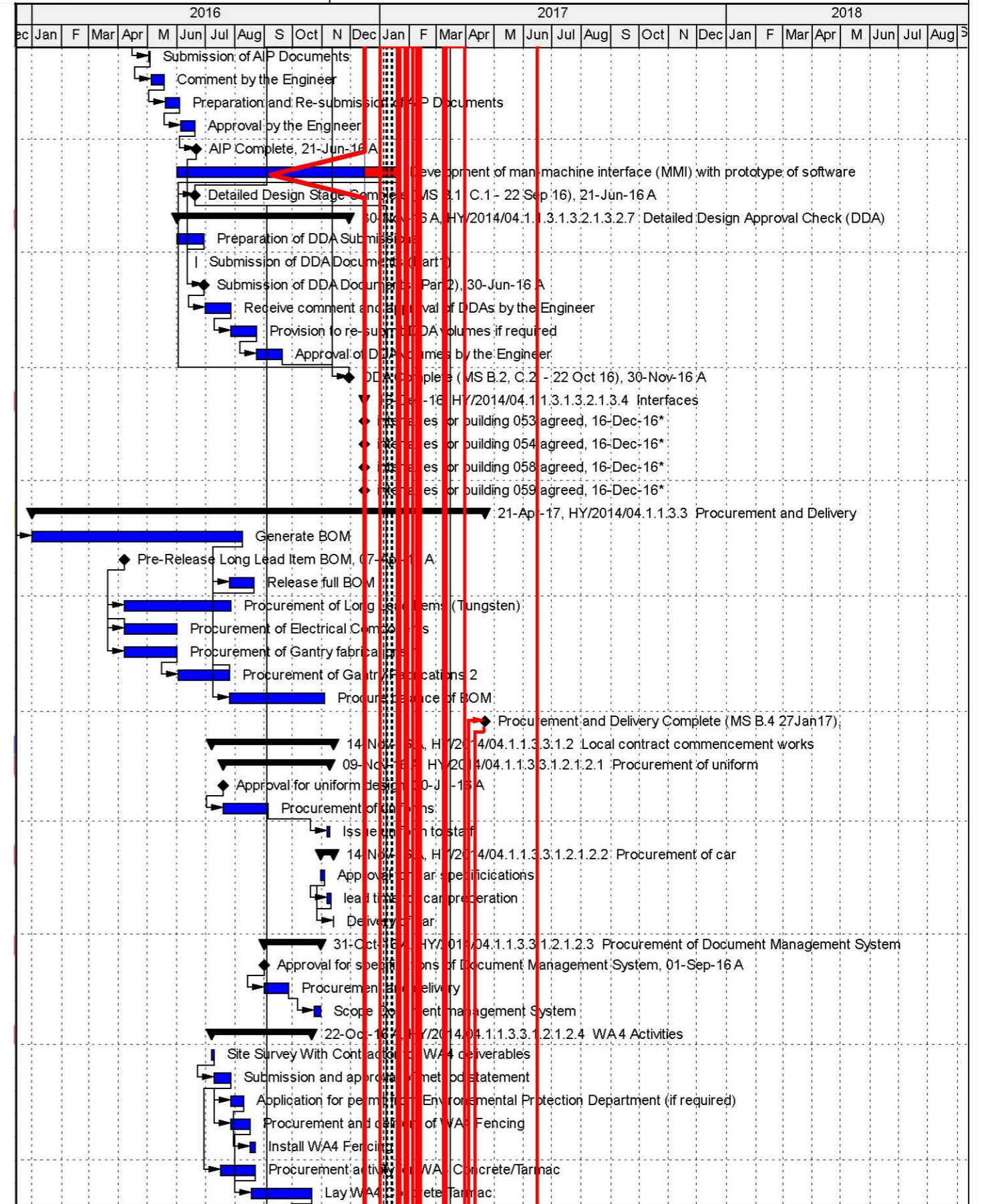


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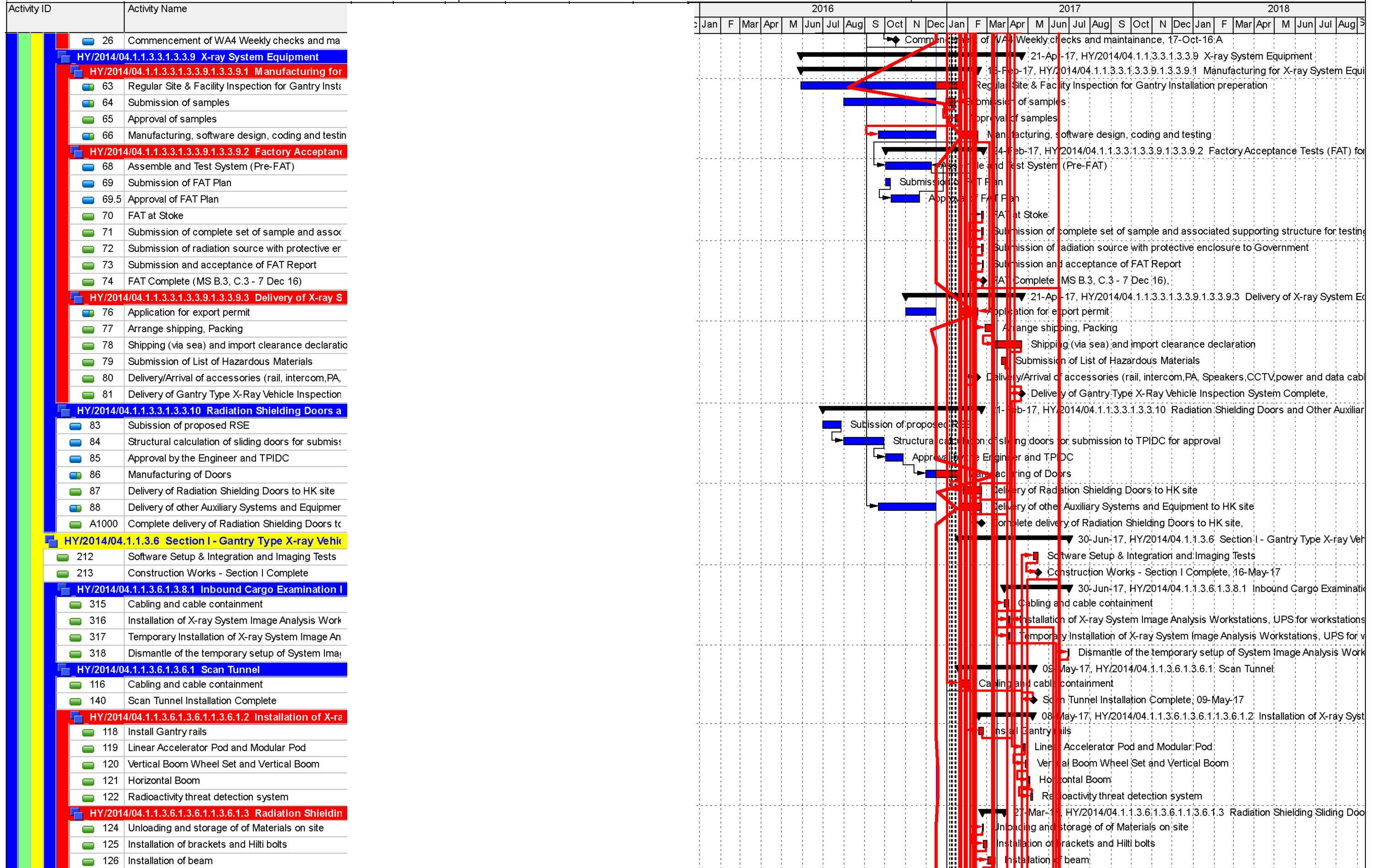


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Activity ID	Activity Name
37	Submission of AIP Documents
38	Comment by the Engineer
39	Preparation and Re-submission of AIP Documents
40	Approval by the Engineer
41	AIP Complete
42	Development of man-machine interface (MMI) with prototype of software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

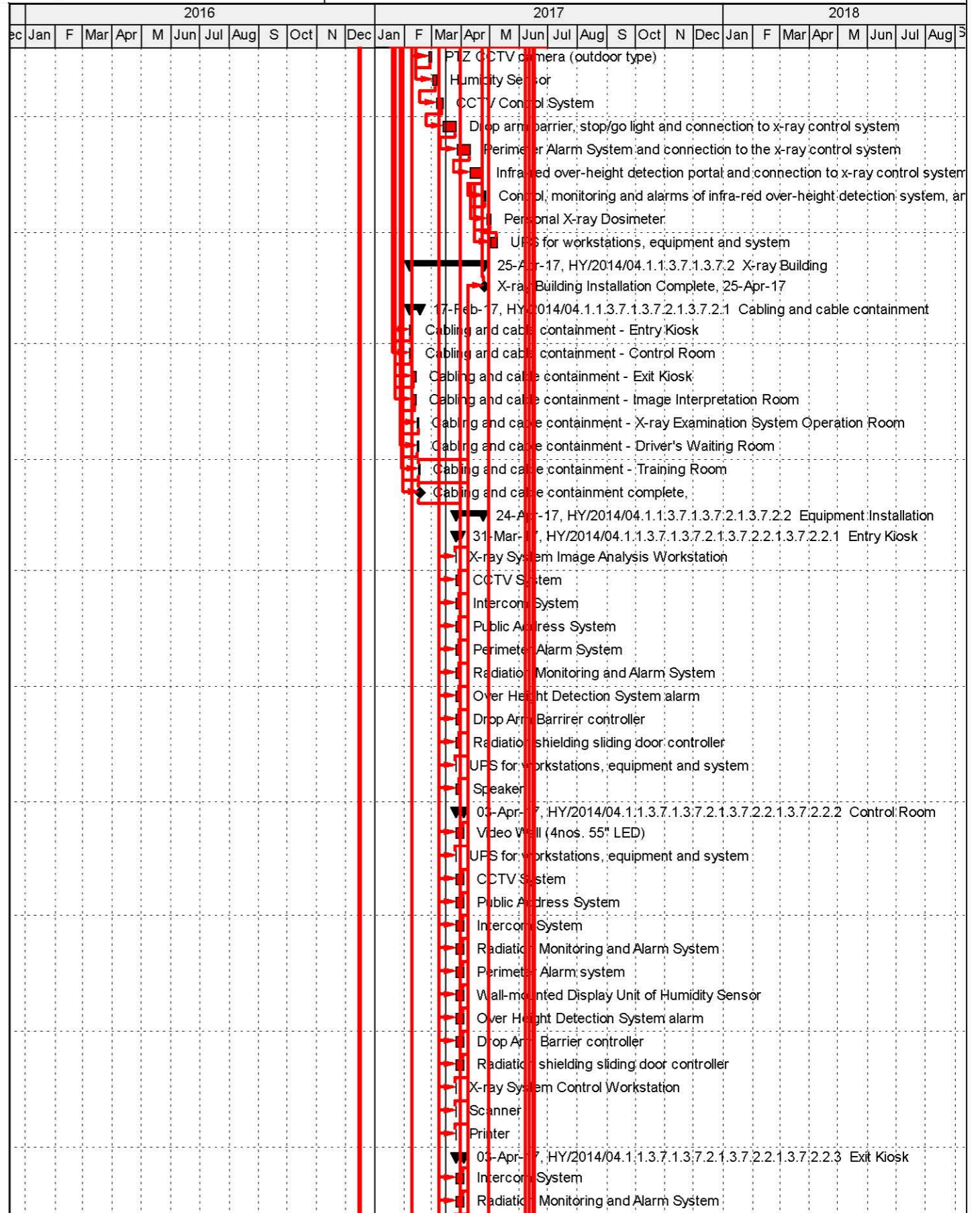


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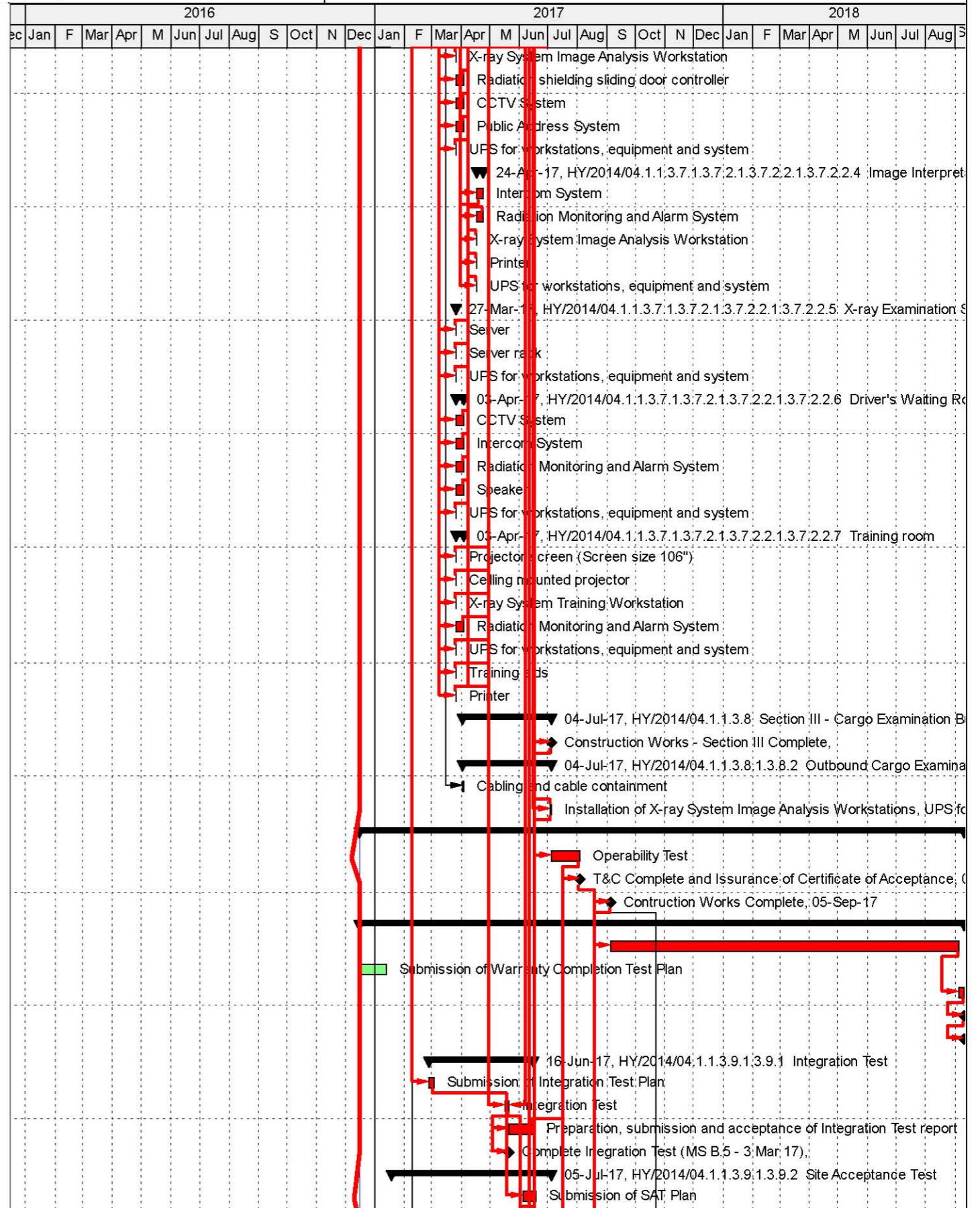


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230	PTZ CCTV camera (outdoor type)
231	Humidity Sensor
232	CCTV Control System
233	Drop arm barrier, stop/go light and connection to
234	Perimeter Alarm System and connection to the x-
235	Infra-red over-height detection portal and connec
236	Control, monitoring and alarms of infra-red over-l
237	Personal X-ray Dosimeter
238	UPS for workstations, equipment and system
HY/2014/04.1.1.3.7.1.3.7.2 X-ray Building	
310	X-ray Building Installation Complete
HY/2014/04.1.1.3.7.1.3.7.2.1.3.7.2.1 Cabling and cable	
242	Cabling and cable containment - Entry Kiosk
243	Cabling and cable containment - Control Room
244	Cabling and cable containment - Exit Kiosk
245	Cabling and cable containment - Image Interpret
246	Cabling and cable containment - X-ray Examinati
247	Cabling and cable containment - Driver's Waiting
248	Cabling and cable containment - Training Room
249	Cabling and cable containment complete
HY/2014/04.1.1.3.7.1.3.7.2.1.3.7.2.2 Equipment Install	
HY/2014/04.1.1.3.7.1.3.7.2.1.3.7.2.2.1 Entry	
242	X-ray System Image Analysis Workstation
243	CCTV System
244	Intercom System
245	Public Address System
246	Perimeter Alarm System
247	Radiation Monitoring and Alarm System
248	Over Height Detection System alarm
249	Drop Arm Barrier controller
250	Radiation shielding sliding door controller
251	UPS for workstations, equipment and system
252	Speaker
HY/2014/04.1.1.3.7.1.3.7.2.1.3.7.2.2.1.3.7.2.2.2 Conti	
253	Video Wall (4nos. 55" LED)
254	UPS for workstations, equipment and system
255	CCTV System
256	Public Address System
257	Intercom System
258	Radiation Monitoring and Alarm System
259	Perimeter Alarm system
260	Wall-mounted Display Unit of Humidity Sensor
261	Over Height Detection System alarm
262	Drop Arm Barrier controller
263	Radiation shielding sliding door controller
264	X-ray System Control Workstation
265	Scanner
266	Printer
HY/2014/04.1.1.3.7.1.3.7.2.1.3.7.2.2.1.3.7.2.2.3 Exit Kiosk	
267	Intercom System
268	Radiation Monitoring and Alarm System



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



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

APPENDIX D

Event and Action Plan

Event/Action Plan for Air Quality

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

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

Event / Action Plan for Construction Noise Monitoring

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

APPENDIX E

Waste Flow Table

Monthly Summary Waste Flow Table for 2017



Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	a. Total Quantity Generated (see Note 8)	b. Hard Rock and Large Broken Concrete (see Note 9)	c. Reused in the Contract	d. Reused in Other Projects	e. Disposed as Public Fill (see Note 10)	f. Imported Fill	g. Metals (see Note 5)	h. Paper / Cardboard Packaging (see Note 5)	i. Plastics (see Note 3) (see Note 5)	j. Chemical Waste	k. Others, e.g. general refuse
	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m ³)
January	1.390	0.010	1.380	0.000	0.010	0.000	0.000	0.000	0.000	0.000	0.197
February	1.070	0.003	1.067	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.143
March	0.266	0.202	0.064	0.000	0.202	0.000	5.840	0.000	0.000	0.000	0.269
April	0.249	0.013	0.236	0.000	0.013	0.000	0.000	0.000	0.000	0.000	0.220
May											
June											
Sub-total	2.975	0.228	2.747	0.000	0.228	0.000	5.840	0.000	0.000	0.000	0.829
July											
August											
September											
October											
November											
December											
Total	2.975	0.228	2.747	0.000	0.228	0.000	5.840	0.000	0.000	0.000	0.829

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

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

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

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

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



ATAL Technologies Ltd.

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

Location: Artificial Island of HKIAP (C1 & C8 Area)

Ver: 1st
Date: Apr 2017

Monthly Summary Waste Flow Table for 2017

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

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

APPENDIX F

Environmental Licenses and Permits

Environmental License/ Permits /Notification Register

LCAL H2642

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

Item No.	Permit/License or Registration Application			Permit/License/ Notification/ Registration Description	Permit/License/ Registration Number	Issue/Start Date	Expiry Date	Issuing Office	Remark
	Work Area	Date	Reference						
1	All Areas	30 Jun 2015	N/A	Environmental Permit for Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities	EP-353/2009/I	17 Jul 15	N/A	EPD	Superseded by EP-353/2009/J
2	All Areas	18 Feb 2016	N/A	Environmental Permit for Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities	EP-353/2009/J	25 Feb 2016	N/A	EPD	Superseded by EP-353/2009/K
3	All Areas	24 Mar 2016	N/A	Environmental Permit for Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities	EP-353/2009/K	11 Apr 2016	N/A	EPD	-
4	All Areas	30 Dec 2015	N/A	Billing Account for disposal of construction waste	7024342	16 Feb 2016	N/A	EPD	-
5	All Areas	30 Dec 2015	RABF-LTR- EPD-000001	Notification that notifiable works are anticipated to commence (Form NA).	Acknowledge Receipt Ref. No. 397571	06 Jan 2016	N/A	EPD	-
6	All Areas	04 Jan 2016	RABF-LTR- EPD-000002	Registration as Chemical Waste Producer for disposal of spent batteries, used lubrication oil and surplus paint at RABF area	WPN 5213-951-L2846-02	19 Feb 2016	N/A	EPD	-

Environmental License/ Permits /Notification Register

LCAL H2642

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

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

Environmental License/ Permits /Notification Register

LCAL H2642

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

Item No.	Permit/License or Registration Application			Permit/License/ Notification/ Registration Description	Permit/License/ Registration Number	Issue/Start Date	Expiry Date	Issuing Office	Remark
	Work Area	Date	Reference						
11	All Areas	16 Nov 2016	RABF-LTR-EPD-000020	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS1195-16	30 Nov 2016	29 May 2017	EPD	Superseded by GW-RS1315-16
12	All Areas	08 Dec 2016	RABF-LTR-EPD-000023	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS1315-16	22 Dec 2016	21 Jun 2017	EPD	Superseded by GW-RS0131-17
13	WA3	13 Jan 2017	RABF-LTR-EPD-000026	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00. (Non-designated area)	GW-RS0070-17	27 Jan 2017	26 Jul 2017	EPD	-
14	All areas	03 Feb 2017	RABF-LTR-EPD-000028	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS0131-17	17 Feb 2017	16 Aug 2017	EPD	Superseded by GW-RS0306-17



Environmental License/ Permits /Notification Register

LCAL H2642

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

								Date: April 2017		Remark
Item No.	Permit/License or Registration Application			Permit/License/ Notification/ Registration Description	Permit/License/ Registration Number	Issue/Start Date	Expiry Date	Issuing Office		
	Work Area	Date	Reference							
15	All areas	20 Mar 2017	RABF-LTR-EPD-000035	CNP for the use of powered mechanical equipment for the purpose of carry out works from 19:00 to 23:00 and 23:00 to 07:00. (Non-designated area)	GW-RS0306-17	05 Apr 2017	02 Oct 2017	EPD	-	

Environmental License/ Permits /Notification Register

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

Item No.	Permit/License or Registration Application			Permit/License/ Notification/ Registration Description	Permit/License/ Registration Number	Issue/Start Date	Expiry Date	Issuing Office	Remark
	Work Area	Date	Reference						
1	All Areas	24 Mar 2016	N/A	Environmental Permit for Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities	EP-353/2009/K	11 Apr 2016	N/A	EPD	-
2	Building 023, 025 and 032	31 Jul 2015	WFG14980	Billing Account for disposal of construction waste	7023015	20 Aug 2015	N/A	EPD	-
3.	N.A.	N.A.	N.A.	Registration as Chemical Waste Producer for disposal chemical waste	N.A.	N.A.	N.A.	N.A.	#

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

Environmental License/ Permits /Notification Register

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

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

Remarks:

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

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

APPENDIX G

Implementation Schedule for Environmental Mitigation Measures (EMIS)

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

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

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

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

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

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

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to implement the measures?	What requirements or standards for the measures to achieve?	Implementation Status
S6.4.13	N4	4) Select "Quiet plants" which comply with the BS 5228 Part 1 or TM standards.	Reduce the noise levels of plant items	Contractor	For plant items listed in Appendix 6D of the EIA report at all construction sites	Construction stage	<ul style="list-style-type: none"> Noise Control Ordinance & its TM Annex 5, TM-EIA 	√
S6.4.14	N5	5) Sequencing operation of construction plants where practicable.	Operate sequentially within the same work site to reduce the construction airborne noise	Contractor	All construction sites where practicable	Construction stage	<ul style="list-style-type: none"> Noise Control Ordinance Annex 5, TM-EIA 	√
/	N6	6) Implement a noise monitoring under EM&A programme.	Monitor the construction noise levels at the selected representative locations	Contractor	Selected representative noise monitoring station	Construction stage	<ul style="list-style-type: none"> Noise Control Ordinance Annex 5, TM-EIA 75dB(A) for residential premises 	√ (The noise monitoring works under EM&A programme for the Contract are covered by Contract No. HY/2010/02.)
Sediment								
S7.3	S1	1) The requirements as recommended in ETWB TC 34/2002 Management of Dredged/Excavated Sediment shall be included in the Particular Specification as appropriate.	Develop sediment disposal arrangement	Engineer	All construction sites	Design stage	<ul style="list-style-type: none"> Waste Disposal Ordinance ETW B TC 34/2002 	N/A

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

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

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

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

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

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

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

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

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

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

APPENDIX H

Statistics on Environmental Complaints, Notification of Summons and Successful Prosecutions

Statistics on Environmental Complaints, Notifications of Summons and Successful Prosecutions

For Contract No. HY/2014/05

Reporting Period	Cumulative Statistics		
	Complaints	Notifications of Summons	Successful Prosecutions
This reporting period	0	0	0
From commencement date of contract to end of reporting month	3	0	0

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

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

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

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

APPENDIX I

Environmental Site Inspection Schedule

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

Environmental Site Inspection Schedule for May 2017

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

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

Environmental Site Inspection Schedule for May 2017

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

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

Environmental Site Inspection Schedule for May 2017

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