

Contract No. HY/2013/04 HZMB HKBCF – Infrastructure Works Stage II (Southern Portion)

Monthly EM&A Report for August 2015

September 2015

China State Construction Engineering (Hong Kong) Limited

Our ref JFP/TK/bw/T355861/02/02/L029
T 2828 5757
E Terence.Kong@mottmac.com.hk
Your ref -

Ramboll Environ Hong Kong Limited
Room 2403, 24/F, Jubilee Centre
18 Fenwick Street
Wanchai, Hong Kong

8 September 2015
By Email

Attn: Mr. Raymond Dai – Independent Environmental Checker

Dear Sir,

**Contract No. HY/2013/04 Hong Kong-Zhuhai-Macao Bridge (HZMB)
Hong Kong Boundary Crossing Facilities – Infrastructure Works Stage II (Southern Portion)
Monthly EM&A Report for August 2015**

In accordance with Condition 5.4 of the Environmental Permit (EP-353/2009/I) covering the captioned contract, we are pleased to submit the certified Monthly EM&A Report for August 2015 for your verification.

Yours faithfully
For MOTT MACDONALD HONG KONG LIMITED



Terence Kong
Environmental Team Leader

Encl.

cc. AECOM – Mr. Alfred Cheng (By Email)
China State Construction Engineering (Hong Kong) Ltd. – Mr. Gary Ng (By Email)

8 September 2015

By Fax (3468 2076) and By Post

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

Attention: Mr. Alfred Cheng

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/2013/04 – HZMB HKBCF – Infrastructure Works Stage II
(Southern Portion)
Monthly Environmental Monitoring & Audit Report for August 2015**

Reference is made to the Environmental Team's submission of the Monthly Environmental Monitoring & Audit Report for August 2015 certified by the ET Leader (ET's ref.: "JFP/TK/bw/T355861/02/02/L029" dated 8 September 2015) and provided to us via e-mail on 8 September 2015.

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

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. Matthew Fung	(By Fax: 3188 6614)
	HyD	Mr. Horace Hong	(By Fax: 3188 6614)
	Mott MacDonald	Mr. Terence Kong	(By Fax: 2827 1823)
	CSCE	Mr. Eddie Tang	(By Fax: 2459 4336)

Internal: DY, YH, LP, CL, ENPO Site

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Executive Summary

This Monthly Environmental Monitoring and Audit (EM&A) Report is prepared for Contract No. HY/2013/04 “Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Infrastructure Works Stage II (Southern Portion)” (hereafter referred to as “the Contract”) for the Highways Department of Hong Kong Special Administrative Region (HKSAR). The Contract was awarded to China State Construction Engineering (Hong Kong) Limited (hereafter referred to as “the Contractor”) and Mott MacDonald Hong Kong Limited (MMHK) was appointed as the Environmental Team (ET) by the Contractor.

The Contract is part of the “Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities” (HZMB HKBCF) Project which is a “Designated Project” under Schedule 2 of the Environmental Impact Assessment (EIA) Ordinance (Cap. 499) and for which an EIA Report (Register No. AEIAR-145/2009) was prepared and approved. The current Environmental Permit (EP) for HKBCF, namely No. EP-353/2009/I, was issued on 17 July 2015. These documents are available through the EIA Ordinance Register. Commencement of the Contract took place on 13 March 2015 and the construction works commenced on 13 July 2015.

Mott MacDonald Hong Kong 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 for the Contract.

This is the 2nd Monthly EM&A Report for the Contract which summaries findings of the EM&A works during the reporting period from 1 to 31 August 2015 (the “reporting period”).

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 AMS7A 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 during the reporting period are listed below:

- Environmental Site Inspection: 5, 13, 20 and 25 August 2015

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 station AMS7A 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 station NMS2 and station NMS3B by the Environmental Team of Contract No. HY/2010/02 during the reporting period.

Complaint Log

There were no complaints 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 Changes

There was no reporting change during the reporting period.

Future Key Issues

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

- Preliminary Bored Piling at Abutment A1101; and
- Predrilling at Box Culvert D, Bridge D9a, D9b, D9c, D10, D11, D14a, D16 subject to actual site possession status.

1 Introduction

1.1 Background

On 13 March 2015, Mott MacDonald Hong Kong Limited (MMHK) was commissioned by China State Construction Engineering (Hong Kong) Limited (also referred to as “the Contractor”) to undertake the Environmental Team (ET) services (including environmental monitoring and audit (EM&A)) for Contract No. HY/2013/04 “Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Infrastructure Works Stage II (Southern Portion)” (“the Contract”) for the Highways Department of Hong Kong Special Administrative Region (HKSAR).

The Contract is part of the “Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities” (HZMB HKBCF) Project which is a “Designated Project” under Schedule 2 of the Environmental Impact Assessment (EIA) Ordinance (Cap. 499) and for which an EIA Report (Register No. AEIAR-145/2009) was prepared and approved. The current Environmental Permit (EP) for HKBCF, namely No. EP-353/2009/I, was issued on 17 July 2015. These documents are available through the EIA Ordinance Register. Commencement of the Contract took place on 13 March 2015 and the construction works commenced on 13 July 2015. The works areas of the contract are shown in **Appendix A**.

This is the 2nd Monthly EM&A Report summarising the findings of EM&A activities conducted under the Contract from 1 to 31 August 2015 (the “reporting period”) and is submitted to fulfil Condition 5.4 of the EP.

1.2 Project Description

The Proposed works under this Contract comprise the following:

- Construction of vehicular bridge and at-grade roads at the southern portion of Hong Kong Boundary Crossing Facilities;
- Construction of associated street lighting, street furniture, road marking, road signage, box culverts and outfalls, drainage, sewerage, fresh water and flushing water supply, irrigation, landscape, electrical and mechanical (E&M), utilities and services works;
- Provisioning of civil engineering works and power supply for Traffic Control and Surveillance System (TCSS); and
- Other works in accordance with the Contract.

1.3 Project Organisation

The organisation chart and lines of communication with respect to the on-site environmental management structure together with the contact information of the key personnel are 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
Engineer or Engineer's Representative (AECOM Asia Co. Ltd.)	Chief Resident Engineer	Alfred Cheng	3958 7471	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
	Environmental Site Supervisor	Ray Yan	5181 8165	3465 2899

Party	Position	Name	Telephone	Fax
Contractor	Site Agent	Eddie Tang	9863 7686	2459 4336
(China State Construction Engineering (Hong Kong) Limited)	Environmental Officer	Gary Ng	9475 6832	2459 4336
Environmental Team	Environmental Team Leader	Terence Kong	2828 5919	2827 1823
(Mott MacDonald Hong Kong Limited)				
24-hour Complaint Hotline	-	-	5236 7111	-

1.4 Construction Programme

The Construction Works Programme of the Project is provided in **Appendix C**.

1.5 Construction Works undertaken during the Reporting Period

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

- 6 nos. predrilling holes completed on BCF Island;
- Contractor's temporary accommodation site formation and concrete base slabe construction on BCF Island; and
- The bored piling works for Pile No. P2 was started on 28 August 2015.

2 Air Quality Monitoring

2.1 Monitoring Locations

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”. The ET of the Contract or another ET of the HZMB project is required to conduct impact air quality monitoring at AMS6 and AMS7A as part of EM&A programme if these air quality monitoring stations are no longer covered under Contract No. HY/2010/02 and HY/2011/03. **Figure 1** shows the locations of air monitoring stations

Table 2.1: Construction Dust Monitoring Locations

Identification No.	Location Description
AMS6 ⁽¹⁾	Dragonair/CNAC (Group) Building
AMS7A ⁽¹⁾	Chu Kong Air-Sea Union Transportation Co. Ltd

Remarks:

- (1) The ET of this Contract should conduct impact air quality monitoring at the AMS listed in the table as part of EM&A programme according to 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

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”.

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, $\mu\text{g}/\text{m}^3$
AMS6 – Dragnair / SNAC (Group) Building (HKIA)	360	500
AMS7A –Chu Kong Air-Sea Union Transportation Co. Ltd.	370	500

Table 2.3: Action and Limit Levels for 24-hour TSP

Monitoring Station	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AMS6 – Dragnair / SNAC (Group) Building (HKIA)	173	260
AMS7A –Chu Kong Air-Sea Union Transportation Co. Ltd.	183	260

The event and action plan is provided in **Appendix D**.

If exceedance(s) at these stations 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

The monitoring results for AMS6 and AMS7A are reported in the monthly EM&A Reports prepared for Contract Nos. HY/2011/03 and HY/2010/02 respectively.

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 station AMS7A by the Environmental Team of Contract No. HY/2010/02 during the reporting period.

3 Noise Monitoring

3.1 Monitoring Locations

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 noise monitoring at NMS2 and NMS3B as part of EM&A programme if these monitoring stations are no longer covered under Contract No. HY/2010/02. **Figure 2** shows the locations of noise monitoring stations.

Table 3.1: Construction Noise Monitoring Locations

Identification No.	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

The monitoring requirements, monitoring equipment, monitoring parameters, frequency and duration, monitoring methodology and monitoring schedule are detailed in the monthly EM&A Reports prepared for Contract No. HY/2010/02.

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.

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

3.3 Monitoring Results

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

Site Inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control mitigation measures for the project. During the reporting period, site inspections were carried out on 5, 13, 20 and 25 August 2015.

Particular observations during the site inspections and corrective actions undertaken by the Contractor are described below.

30 July 2015

- a. Stagnant water pond following recent rainfall was observed at WA3. Subsequently, the stagnant water was reduced. The observation was closed on 5 August 2015.

5 August 2015

- a. No new observations were made.

13 August 2015

- a. Stagnant water was observed in a drip tray. Subsequently, the drip tray was removed. Also, tarpaulin sheet provided to prevent rain from entering the drip tray for a generator was not properly placed and should be improved. Subsequently, the tarpaulin sheet was rectified. The observation was closed on 20 August 2015.

20 August 2015

- a. Some dark smoke emission was observed from a drilling machine. The engine oil was replaced and no further dark smoke emission was observed. The observation was closed on 25 August 2015.
- b. Part of a haul road was observed to be dry. The Contractor was reminded to maintain the required frequency of water spraying at all times. Records of such water spraying should also be regularly maintained. Follow-up actions for the outstanding observation will be inspected during the upcoming site inspections and reported in the coming reporting period.

25 August 2015

- a. No new observations were made.

4.2 Advice on the Solid and Liquid Waste Management Status

The Contractor registered as a chemical waste producer for the Contract. Sufficient numbers of receptacles were available for general refuse collection and sorting.

There was no generation of C&D material during this reporting period. Also, there was no generation of excavated sediment for treatment during this reporting period. Excavated marine sediment will be treated using cement solidification/stabilization (Cement S/S) techniques and will be reused onsite for either backfilling or landscaping (e.g. berm material).

The monthly summary of waste flow table is detailed in **Appendix E**.

The Contractor was reminded that chemical waste containers should be properly treated and stored temporarily in designated chemical waste storage area on site in accordance with the Code of Practice on the Packing, Labelling and Storage of Chemical Waste.

4.3 Environmental Licenses and Permits

The valid environmental licenses and permits during the reporting period are summarized in **Appendix F**.

4.4 Implementation Status of Environmental Mitigation Measures

In response to the site audit findings, the Contractor carried out corrective actions.

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

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 station AMS7A 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 station NMS2 and station 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

There were no complaints received in relation to the environmental impact during the reporting period. The details of cumulative statistics of Environmental Complaints are provided in **Appendix H**.

No notification of summons or prosecutions was received during the reporting period.

Statistics on notifications of summons and successful prosecutions are summarized in **Appendix H**.

5 Future Key Issues

5.1 Construction Programme for the Coming Months

As informed by the Contractor, the major construction activities for September 2015 are summarized in Table 5.1.

Table 5.1: Construction Activities for September 2015

Site Area	Description of Activities
HKBCF	<ul style="list-style-type: none">• Preliminary Bored Piling at Abutment A1101; and• Predrilling at Box Culvert D, Bridge D9a, D9b, D9c, D10, D11, D14a, D16 subject to actual site possession status.

5.2 Environmental Site Inspection Schedule for the Coming Month

The tentative schedule for weekly site inspections for September 2015 is provided in **Appendix I**.

6 Conclusions

6.1 Conclusions

Commencement of the Contract took place on 13 March 2015 and the construction works of the Contract commenced on 13 July 2015.

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 station AMS7A 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 station NMS2 and station NMS3B by the Environmental Team of Contract No. HY/2010/02 during the reporting period.

Environmental site inspections were carried out on 5, 13, 20 and 25 August 2015. Recommendations on remedial actions were given to the Contractor for the deficiencies identified during the site inspections.

There were no complaints received in relation to the environmental impact during the reporting period.

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

Figures

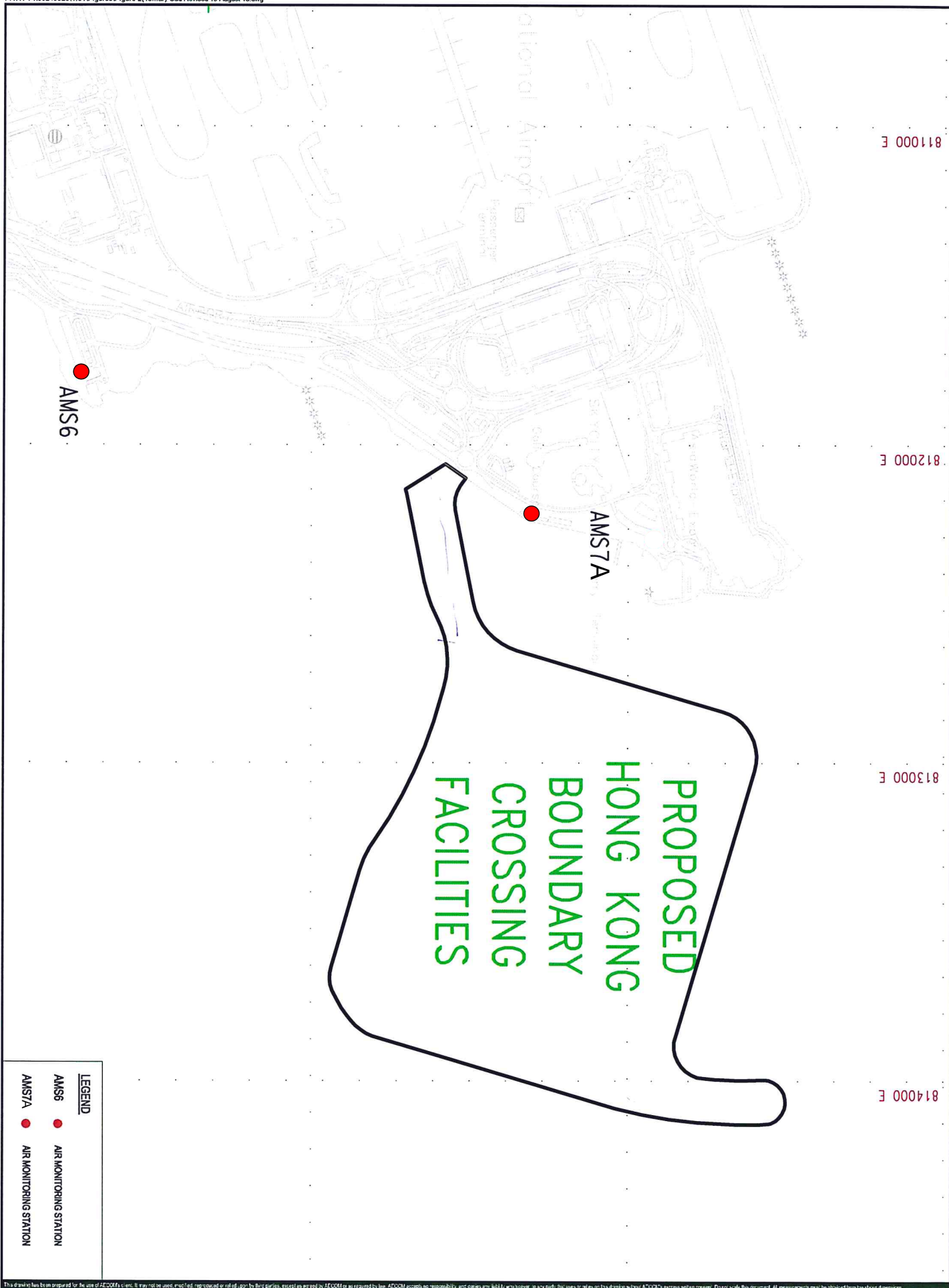
Figure 1 Location of Air Quality Monitoring Stations

Plot File by: Mankyr 19/08/2013
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Project Management Initials:

Checked:

ISO A3 297mm x 420mm



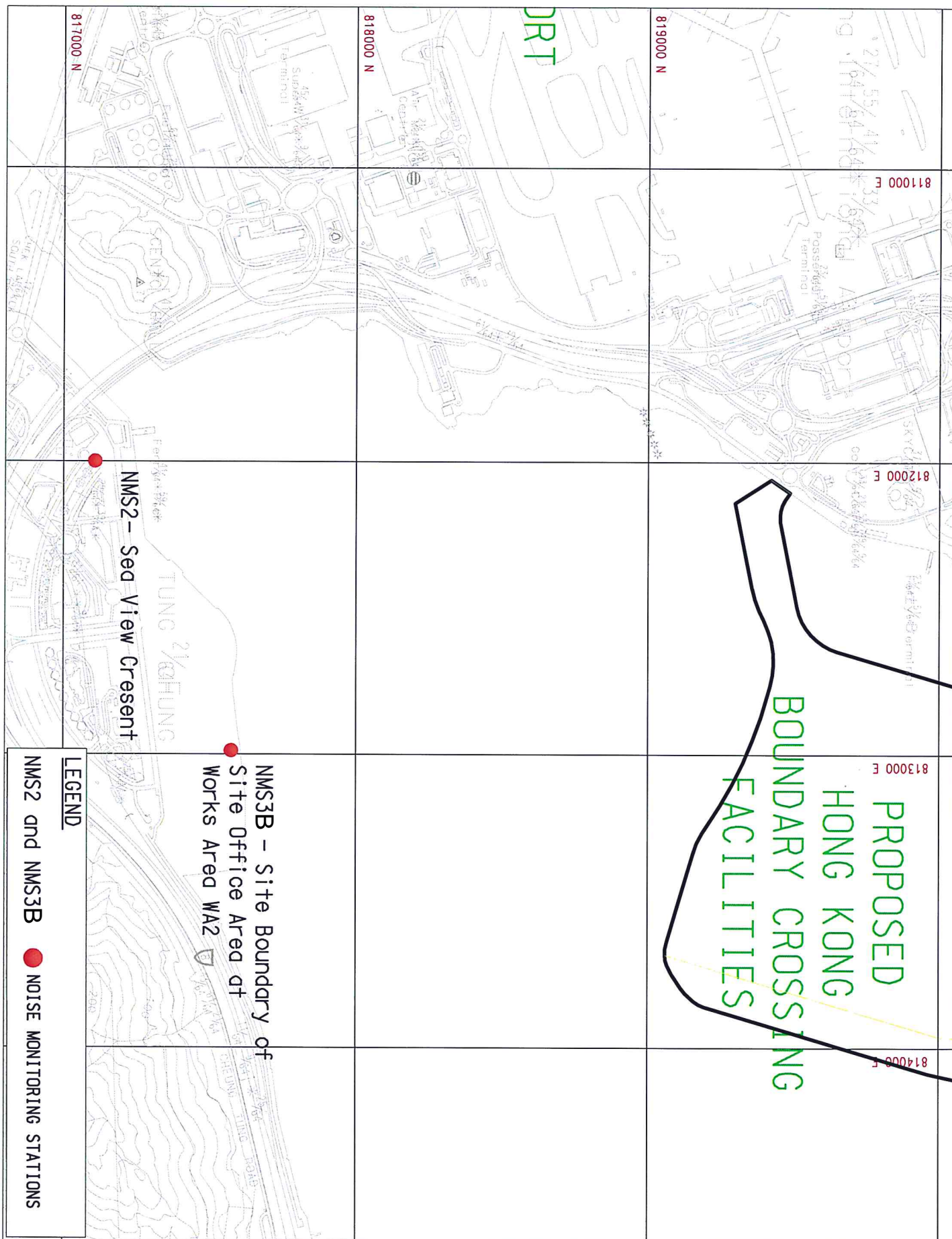
LEGEND	
AMS6	AIR MONITORING STATION
AMSTA	AIR MONITORING STATION

Figure 2 Location of Noise Quality Monitoring Stations

Plot File by: LAMMCL 15/03/2012
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Project Management Initials: Checked:

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Appendix A. Location of Works Areas



NOTES:

- COORDINATES ARE RELATED TO HONG KONG METRIC GRID (1980).
- DIMENSIONS ARE IN MILLIMETER AND CHAINAGE ARE IN METRES UNLESS OTHERWISE SHOWN.

LEGEND:

- SITE BOUNDARY
- WORKS AREA

REV.	DESCRIPTION	DATE
1	TENDER DRAWING	BHGW SC1 FEB.14

HONG KONG-ZHUAHAI-MACAO BRIDGE
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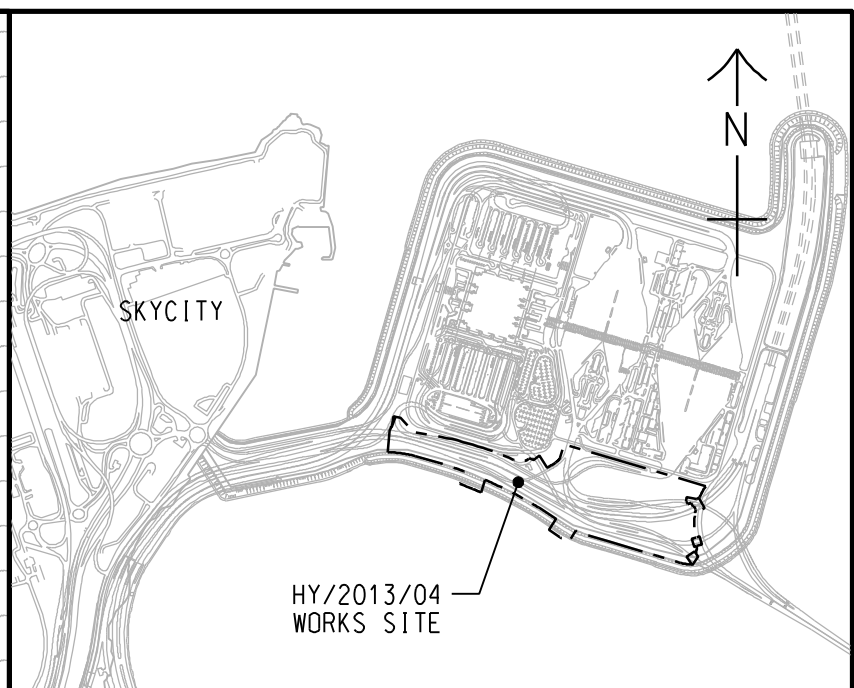
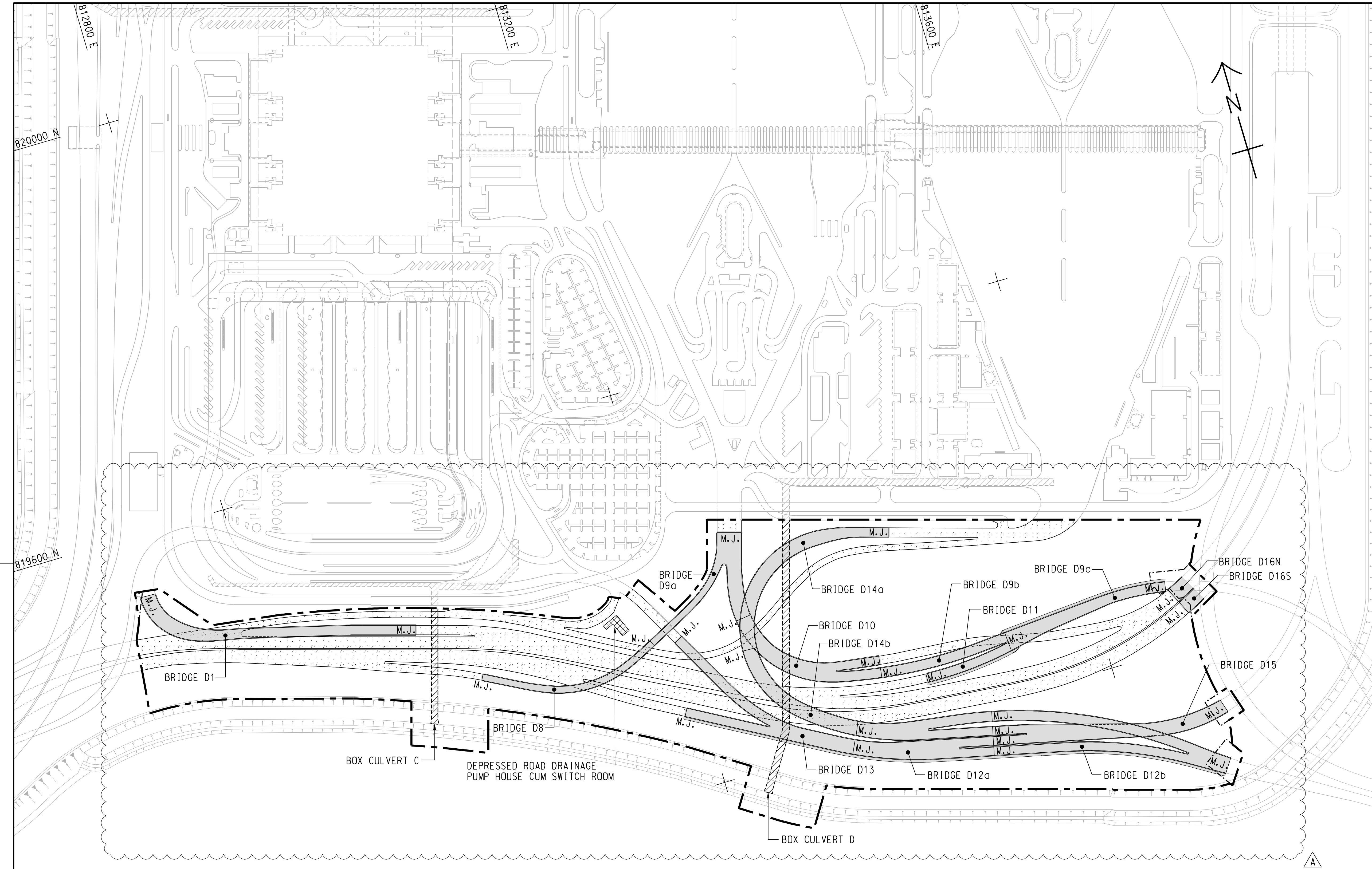
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HONG KONG-ZHUAHAI-MACAO BRIDGE



LOCATION PLAN
SCALE 1 : 25000

- LEGEND:
- SITE BOUNDARY
 - AT-GRADE WORKS LIMIT
 - M.J. MOVEMENT JOINT
 - BRIDGE
 - BUILDING/FACILITIES
 - AT-GRADE ROAD
 - BOX CULVERT

B	WORKING DRAWING	BWCW SCI	APR. 15
A	TENDER ADDENDUM NO. 3	BWCW SCI	MAY. 14
-	TENDER DRAWING	BWCW SCI	FEB. 14

REV.	DESCRIPTION	CHECKED	DATE
REV.	DESCRIPTION	CHECKED	DATE

HONG KONG-ZHUHAI-MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- INFRASTRUCTURE WORKS STAGE II (SOUTHERN PORTION)

GENERAL ARRANGEMENT

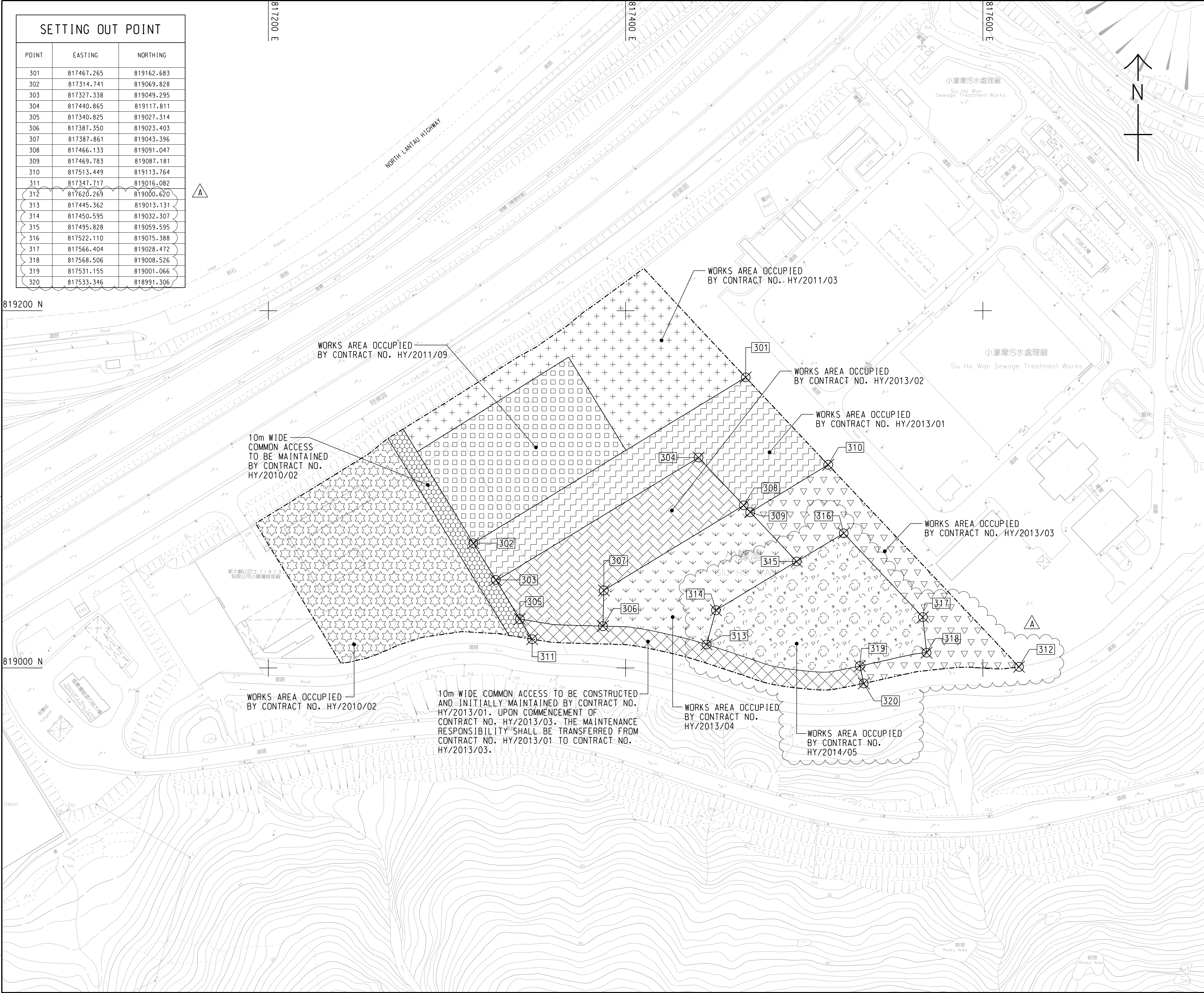
AECOM
Rogers Stirk Harbour + Partners
BURO HAPPOLD ATKINS ADI

Aedas

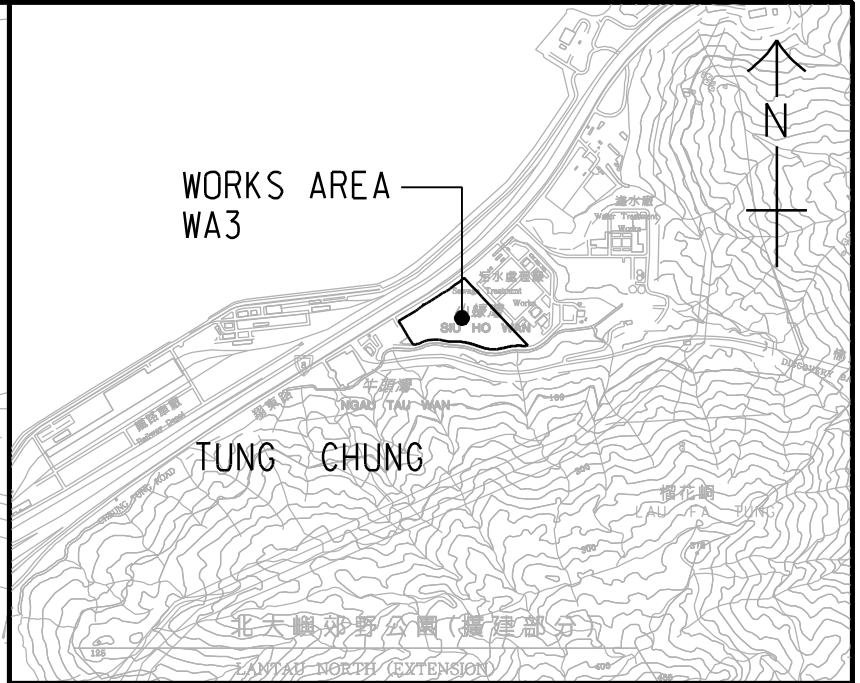
DRG.NO. 60191048/C4/000/C00/1002B
圖紙編號

DESIGNED BY 設計	CONTRACT NO. 合約編號	P. Dir. 批准人
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WSY	WORKING DRAWING	
SCALE 比例		
A1 1 : 2000		
DIMENSIONS ARE IN 尺寸單位		
METRES		

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SETTING OUT POINT		
POINT	EASTING	NORTHING
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302	817314.741	819069.828
303	817327.338	819049.295
304	817440.865	819117.811
305	817340.825	819027.314
306	817387.350	819023.403
307	817387.861	819043.396
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311	817347.717	819016.082
312	817620.269	819000.620
313	817445.362	819013.131
314	817450.595	819032.307
315	817495.828	819059.595
316	817522.110	819075.388
317	817566.404	819028.472
318	817568.506	819008.526
319	817531.155	819001.066
320	817533.346	818991.306



LOCATION PLAN

SCALE 1 : 25000

NOTES:

1. COORDINATES ARE RELATED TO HONG KONG METRIC GRID (1980).

2. DIMENSIONS ARE IN MILLIMETER AND CHAINAGE ARE IN METRES UNLESS OTHERWISE SHOWN.

LEGEND:

WORKS AREA BOUNDARY

PORTION 3.1

PORTION 3.2

PORTION 3.3

PORTION 3.4

PORTION 3.5

PORTION 3.6

PORTION 3.7

PORTION 3.8

PORTION 3.9

PORTION 3.10

B	WORKING DRAWING	BWCW SCI	APR. 15
A	TENDER ADDENDUM NO. 2	BWCW SCI	APR. 14
-	TENDER DRAWING	BWCW SCI	FEB. 14
REV.	DESCRIPTION	DATE	DATE
修訂	內容摘要	檢閱	日期

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

HONG KONG-ZHUHAI-MACAO BRIDGE

HONG KONG BOUNDARY CROSSING FACILITIES

- INFRASTRUCTURE WORKS STAGE II (SOUTHERN PORTION)

WORKS AREA WA3

AECOM

Rogers Stirk Harbour + Partners

BURO HAPPOLD

ATKINS

ADI

+

+

Aedas

DRG.NO.

圖紙編號

60191048/C4/000/C00/1041B

DESIGNED BY	CONTRACT NO.	P. Dir. APPROVED
設計	合約編號	批准人
BWCW	HY/2013/04	TKH

DRAWN BY	STATUS
WSY	制圖

SCALE
比例
A1 1 : 1000

DIMENSIONS ARE IN
尺寸單位
METRES

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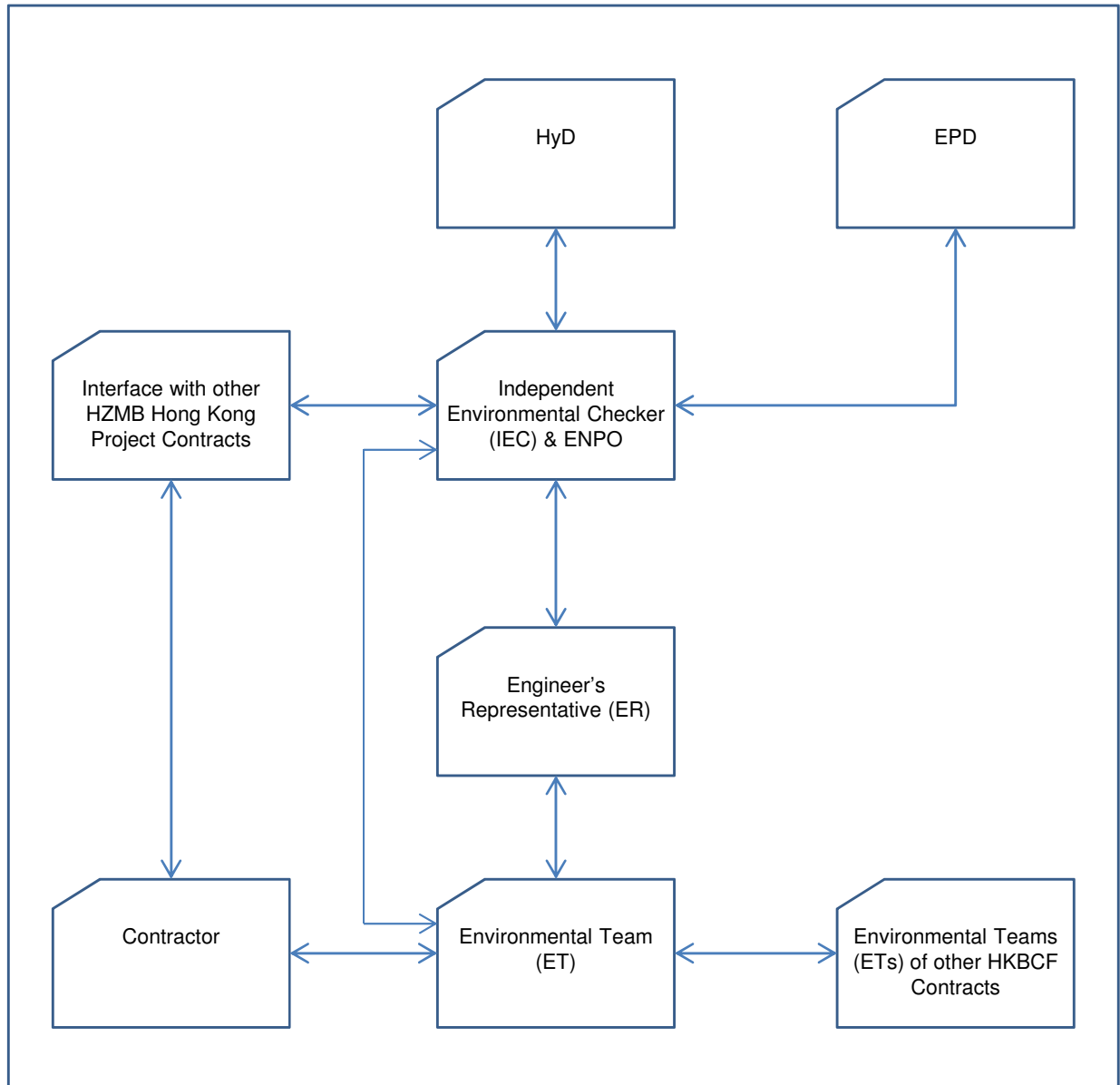
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Plot File by : 2014/4/11 WANGSY

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Appendix B. Project Organization for Environmental Works

Project Organisation for Environmental Works



↔ Line of Communication

Appendix C. Construction Programme

Hong Kong Boundary Crossing Facilities - Infrastructure Works Stage II (Southern Portion) WC							
Contract Key Dates							
CON.KD.0005	Letter of Acceptance (LOA)	0	27-Feb-15*		0	CAL 1 - 7 day	
CON.KD.0010	Commencement Date	0	13-Mar-15		0	CAL 1 - 7 day	14 days from LOA
CON.KD.0020	Completion of the whole of the Works (1520)	0		10-May-19	0	CAL 1 - 7 day	
Possession Dates							
CON.PD.1010	Site Possession of Portion A1 (61)	0	13-May-15*		0	CAL 1 - 7 day	
CON.PD.1020	Site Possession of Portion A2 (61)	0	13-May-15*		0	CAL 1 - 7 day	
CON.PD.1030	Site Possession of Portion A3 (476)	0	01-Jul-16*		0	CAL 1 - 7 day	
CON.PD.1040	Site Possession of Portion A4 (627)	0	29-Nov-16*		0	CAL 1 - 7 day	
CON.PD.1050	Site Possession of Portion A5 (61)	0	13-May-15*		0	CAL 1 - 7 day	
CON.PD.1060	Site Possession of Portion A6 (61)	0	13-May-15*		0	CAL 1 - 7 day	
CON.PD.1070	Site Possession of Portion B1 (92)	0	13-Jun-15*		0	CAL 1 - 7 day	
CON.PD.1080	Site Possession of Portion B2 (123)	0	14-Jul-15*		0	CAL 1 - 7 day	
CON.PD.1090	Site Possession of Portion B3 (476)	0	01-Jul-16*		0	CAL 1 - 7 day	
CON.PD.1100	Site Possession of Portion B4 (627)	0	29-Nov-16*		0	CAL 1 - 7 day	
CON.PD.1130	Site Possession of Portion B5 (123)	0	14-Jul-15*		0	CAL 1 - 7 day	
CON.PD.1140	Site Possession of Portion C1 (184)	0	13-Sep-15*		0	CAL 1 - 7 day	
CON.PD.1150	Site Possession of Portion C2 (184)	0	13-Sep-15*		0	CAL 1 - 7 day	
CON.PD.1160	Site Possession of Portion D1 (183)	0	12-Sep-15*		0	CAL 1 - 7 day	
CON.PD.1170	Site Possession of Portion D2 (488)	0	13-Jul-16*		0	CAL 1 - 7 day	
CON.PD.1180	Site Possession of Portion D3 (183)	0	12-Sep-15*		0	CAL 1 - 7 day	
Contractual Key Dates - Stage / Section Completion of the Works							
CON.FOT.KD01	KD01 - Achievement of Stage 1A (525)	0		18-Aug-16*	0	CAL 1 - 7 day	
CON.FOT.KD02	KD02 - Achievement of Stage 1B (650)	0		21-Dec-16*	0	CAL 1 - 7 day	
CON.FOT.KD03	KD03 - Achievement of Stage 2 (525)	0		18-Aug-16*	0	CAL 1 - 7 day	
CON.FOT.KD04	KD04 - Achievement of Stage 3 (465)	0		19-Jun-16*	0	CAL 1 - 7 day	
CON.FOT.KD05	KD05 - Achievement of Stage 4 (615)	0		16-Nov-16*	0	CAL 1 - 7 day	
CON.FOT.KD06	KD06 - Achievement of Stage 5 (615)	0		16-Nov-16*	0	CAL 1 - 7 day	
CON.FOT.KD07	KD07 - Achievement of Stage 6 (270)	0		07-Dec-15*	0	CAL 1 - 7 day	
CON.FOT.KD08	KD08 - Completion of Section I of the Works (795)	0		15-May-17*	0	CAL 1 - 7 day	
CON.FOT.KD09	KD09 - Completion of Section II of the Works (803)	0		23-May-17*	0	CAL 1 - 7 day	
CON.FOT.KD10	KD10 - Completion of Section III of the Works (803)	0		23-May-17*	0	CAL 1 - 7 day	
CON.FOT.KD11	KD11 - Completion of Section IV of the Works (565)	0		27-Sep-16*	0	CAL 1 - 7 day	
CON.FOT.KD12	KD12 - Completion of Section V of the Works (803)	0		23-May-17*	0	CAL 1 - 7 day	
CON.FOT.KD13	KD13 - Completion of Section VI of the Works (465)	0		19-Jun-16*	0	CAL 1 - 7 day	
CON.FOT.KD14	KD14 - Completion of Section VII of the Works (1155)	0		10-May-18*	0	CAL 1 - 7 day	
CON.FOT.KD15	KD15 - Completion of Section VIIIA of the Works (795)	0		15-May-17*	0	CAL 1 - 7 day	
CON.FOT.KD16	KD16 - Completion of Section VIIIB of the Works (1155)	0		10-May-18*	0	CAL 1 - 7 day	
CON.FOT.KD17	KD17 - Achievement of Stage 7 (718)	0		27-Feb-17*	0	CAL 1 - 7 day	
CON.FOT.KD17A	KD17A - Completion of Section VIIIC of the Works (795)	0		15-May-17*	0	CAL 1 - 7 day	
CON.FOT.KD18	KD18 - Completion of Section VIIID of the Works (1155)	0		10-May-18*	0	CAL 1 - 7 day	


中國建築工程(香港)有限公司
 CHINA STATE CONSTRUCTION ENGINEERING (HONG KONG) LTD.

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Activity ID	Activity Name	Orig Dur	Early Start	Early Finish	Total Float	Calendar	Remarks
PROC.MA.1765	Engineer's Review / Approval	24	05-Jun-15	04-Jul-15	11	CAL 2 - 6 day	
PROC.MA.1770	Mould Fabrication	48	06-Jul-15	29-Aug-15	11	CAL 2 - 6 day	
PROC.MA.1780	Cast Prototype / Inspection and Approval	24	31-Aug-15	26-Sep-15	11	CAL 2 - 6 day	
PROC.MA.2570	Production of Precast Segments (1101 nos @ 4 segments/ day)	276	29-Sep-15	02-Sep-16	11	CAL 2 - 6 day	1101 nos @ 4 segments / day
PROC.MA.2590	Materials Delivery (First Delivery)	0	10-Nov-15		11	CAL 2 - 6 day	
PROC.MA.2650	Materials Delivery (Last Delivery)	0	03-Sep-16		25	CAL 2 - 6 day	
E&M Works and Building Services for Pump House and Switch Room (Design,Supply and Install)							
PROC.SC.1285	Detailed Design and Material/ Equipment Submission & Statutory Approval (FSD/EMSD)	200	08-Apr-15	04-Dec-15	83	CAL 2 - 6 day	
PROC.SC.1287	Engineer's Review / Approval	24	05-Dec-15	05-Jan-16	83	CAL 2 - 6 day	
PROC.SC.1290	Procurement and Manufacturing of Materials	180	06-Jan-16	15-Aug-16	83	CAL 2 - 6 day	
PROC.SC.1300	Materials Delivery (first delivery)	0	16-Aug-16		83	CAL 2 - 6 day	
Steel Structures for Sign Gantry / High Mast Structure & Other Signages							
PROC.MA.1990	Detailed Design / Material Submission	90	08-Apr-15	25-Jul-15	23	CAL 2 - 6 day	
PROC.MA.1995	Engineer's Review / Approval	24	27-Jul-15	22-Aug-15	23	CAL 2 - 6 day	
PROC.MA.2010	Manufacture of Steel Structures	180	24-Aug-15	02-Apr-16	23	CAL 2 - 6 day	
PROC.MA.2020	Material Delivery (first delivery)	0	05-Apr-16		23	CAL 2 - 6 day	
Roads and Bridge Lighting							
PROC.MA.2840	Lighting Arrangement Detailed Design / Material Submission and Approval (within 12 weeks)	72	08-Apr-15	04-Jul-15	139	CAL 2 - 6 day	
PROC.MA.2845	Engineer's Review / Approval	24	06-Jul-15	01-Aug-15	139	CAL 2 - 6 day	
PROC.MA.2850	Manufacture of Road and Bridge Lighting	220	03-Aug-15	29-Apr-16	139	CAL 2 - 6 day	
PROC.MA.2860	Material Delivery (first delivery)	0	30-Apr-16		139	CAL 2 - 6 day	
Irrigation System							
PROC.SC.1180	Detailed Design / Material Submission	160	08-Apr-15	17-Oct-15	98	CAL 2 - 6 day	
PROC.SC.1185	Engineer's Review / Approval	24	19-Oct-15	16-Nov-15	98	CAL 2 - 6 day	
PROC.SC.1190	Procurement and Shipment of Irrigation Materials/Equipment	72	17-Nov-15	15-Feb-16	98	CAL 2 - 6 day	
Soft Landscaping							
PROC.SC.2760	Propose Nursery for Landscape Materials	48	08-Apr-15	04-Jun-15	166	CAL 2 - 6 day	
PROC.SC.2780	Joint Inspection and Engineer's approval	24	05-Jun-15	04-Jul-15	166	CAL 2 - 6 day	
PROC.SC.2790	Landscape Materials Growing	224	06-Jul-15	06-Apr-16	166	CAL 2 - 6 day	
PROC.SC.2810	Materials Delivery (first delivery)	0	07-Apr-16		166	CAL 2 - 6 day	
Construction / Installation							
Initial Works / Site Establishment & Maintenance Works							
Mobilisation and Site Establishment							
CONS.A1.0100	Site Possession / Access to Portion A1, A2, A5 & A6	0	13-May-15		0	CAL 2 - 6 day	
CONS.A1.0110	Mobilisation, Site Clearing and Site Set-up	15	13-May-15	30-May-15	0	CAL 2 - 6 day	
CONS.A1.0120	Install Temporary Facilities / Hygiene Facilities	36	01-Jun-15	14-Jul-15*	0	CAL 2 - 6 day	
Gates and Haul Road Construction							
CONS.A1.1010	Site Possession / Access to Portion A1	0	13-May-15		18	CAL 2 - 6 day	
CONS.A1.1020	Survey/ Setting Out	6	13-May-15	19-May-15	18	CAL 2 - 6 day	
CONS.A1.1030	Construct Gate 1 at Haul Road	14	20-May-15	05-Jun-15	18	CAL 2 - 6 day	
CONS.B1.1010	Site Possession / Access to Portion B1	0	13-Jun-15		12	CAL 2 - 6 day	
CONS.B1.1020	Mobilisation, Site Survey and Setting Out	6	13-Jun-15	19-Jun-15	12	CAL 2 - 6 day	
CONS.B1.1030	Construct Gate 3 and Temporary Haul Road	22	16-Jun-15	13-Jul-15	12	CAL 2 - 6 day	
CONS.B2.1010	Site Possession / Access to Portion B2 & B5	0	14-Jul-15		6	CAL 2 - 6 day	
CONS.B2.1020	Site Survey / Setting out	6	14-Jul-15	20-Jul-15	6	CAL 2 - 6 day	

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Activity ID	Activity Name	Orig Dur	Early Start	Early Finish	Total Float	Calendar	Remarks
Road SOL 102							
Road Formation and Drainage System							
CONS.RW.1970	Survey/ Road Setting Out	6	20-May-15	27-May-15	0	CAL 2 - 6 day	
CONS.RW.1980	Road Formation to Sub-grade (Cut & Fill)	60	28-May-15	07-Aug-15	0	CAL 2 - 6 day	
CONS.RW.1990	Excavate to invert level and install Drainage System (Drain Pipes & Catchpit/Manholes) + Testing & Interface Connection	150	13-Jun-15	10-Dec-15	0	CAL 2 - 6 day	
Installation of Underground Utilities							
CONS.RW.2890	Excavate and Install Fresh WM / Valves & fittings + Testing, Cleaning & Flushing and Interface Connection	150	14-Jul-15	11-Jan-16	0	CAL 2 - 6 day	
CONS.RW.2900	Excavate and Install Common Telecom Ducting and Telecom Ducting by Others	150	25-Jul-15	22-Jan-16	0	CAL 2 - 6 day	
CONS.RW.2910	Excavate and Install ELV/ LV Ducting and Pillar Box for TCSS and Road Lighting	150	08-Aug-15	05-Feb-16	0	CAL 2 - 6 day	
Kerbing and Footings for Railing, Fencing, Signages and Road Lighting							
CONS.RW.2080	Excavate and Construct Footings for Road Lightings / Railing / Fencing and Signages	120	13-Oct-15	08-Mar-16	0	CAL 2 - 6 day	
CONS.RW.2090	Road Formation to Sub-base	90	25-Nov-15	15-Mar-16	0	CAL 2 - 6 day	
CONS.RW.2100	Construct Precast Road Kerblings	90	02-Dec-15	22-Mar-16	0	CAL 2 - 6 day	
Road Works to Road Base and Base Course							
CONS.RW.2170	Road Formation to Road Base	90	26-Jan-16	19-May-16	0	CAL 2 - 6 day	
CONS.RW.2180	Road Formation to Base Course	75	31-Mar-16	30-Jun-16	0	CAL 2 - 6 day	
Installation of Railing and Fencing + Road Lighting and Signages							
CONS.RW.2240	Install Road Railing and Fencing	75	16-May-16	12-Aug-16	0	CAL 2 - 6 day	
CONS.RW.2840	Install Road Ligting and Signages	75	25-Jun-16	23-Sep-16	7	CAL 2 - 6 day	
Final Paving and Road Markings							
CONS.RW.2700	Final Road Paving (Wearing Course)	22	23-Dec-16	20-Jan-17	1	CAL 2 - 6 day	
CONS.RW.2730	Road Markings and Road Signages	18	21-Jan-17	14-Feb-17	13	CAL 2 - 6 day	
Portion A6 - Final Paving and Road Markings							
CONS.RW.2790	Road Clearing	6	15-Mar-18	21-Mar-18	0	CAL 2 - 6 day	
CONS.RW.2920	Final Road Paving (Wearing Course)	24	22-Mar-18	23-Apr-18	0	CAL 2 - 6 day	Note: Late Final Paving due to Site Logistics related to
CONS.RW.2990	Road Markings and Road Signages	14	24-Apr-18	10-May-18	0	CAL 2 - 6 day	
Road SOL 107 / 113							
Road Formation and Drainage System							
CONS.RW.2000	Survey/ Road Setting Out	6	08-Aug-15	14-Aug-15	0	CAL 2 - 6 day	
CONS.RW.2010	Road Formation to Sub-grade (Cut & Fill)	36	15-Aug-15	25-Sep-15	0	CAL 2 - 6 day	
CONS.RW.2020	Excavate to invert level and install Drainage System (Drain Pipes & Catchpit/Manholes) + Testing & Interface Connection	90	26-Sep-15	15-Jan-16	0	CAL 2 - 6 day	
Installation of Underground Utilities							
CONS.RW.2040	Excavate and Install Fresh WM / Valves & fittings + Testing, Cleaning & Flushing and Interface Connection (3 lines)	100	15-Oct-15	16-Feb-16	0	CAL 2 - 6 day	
CONS.RW.2050	Excavate and Install Flush WM / Valves & fittings + Testing, Cleaning & Flushing and Interface Connection (1 line)	90	04-Nov-15	23-Feb-16	0	CAL 2 - 6 day	
CONS.RW.2060	Excavate and Install ELV/ LV Ducting and Pillar Box for TCSS	90	11-Nov-15	01-Mar-16	0	CAL 2 - 6 day	
Kerbing and Footings for Railing, Fencing, Signages and Road Lighting							
CONS.RW.2110	Excavate and Construct Footings for Road Lightings / Railing / Fencing and Signages	75	12-Dec-15	15-Mar-16	0	CAL 2 - 6 day	
CONS.RW.2120	Road Formation to Sub-base	75	19-Dec-15	22-Mar-16	0	CAL 2 - 6 day	
CONS.RW.2130	Construct Precast Road Kerblings	75	29-Dec-15	01-Apr-16	0	CAL 2 - 6 day	
Road Works to Road Base and Base Course							
CONS.RW.2200	Road Formation to Road Base	75	16-Feb-16	19-May-16	14	CAL 2 - 6 day	
CONS.RW.2210	Road Formation to Base Course	75	13-Apr-16	13-Jul-16	14	CAL 2 - 6 day	
Installation of Railing and Fencing + Road Lighting and Signages							
CONS.RW.2260	Install Road Railing and Fencing	60	17-Jun-16	26-Aug-16	0	CAL 2 - 6 day	
CONS.RW.2850	Install Road Ligting and Signages	60	28-Jul-16	08-Oct-16	7	CAL 2 - 6 day	

Activity ID	Activity Name	Orig Dur	Early Start	Early Finish	Total Float	Calendar	Remarks
Final Paving and Road Markings							
CONS.RW.2710	Final Road Paving (Wearing Course)	20	21-Jan-17	16-Feb-17	1	CAL 2 - 6 day	
CONS.RW.2740	Road Markings and Road Signages	16	17-Feb-17	07-Mar-17	11	CAL 2 - 6 day	
Road SOL 108 / 106							
Adjacent to Road SOL 108 / 106 and Abutment A901							
CONS.RW.2070	Excavate and Install Common Telecom Ducting and Others + Backfilling	53	12-Apr-16	15-Jun-16	0	CAL 2 - 6 day	
CONS.RW.2160	Road Formation to subgrade + Drainage System	10	12-Apr-16	22-Apr-16	0	CAL 2 - 6 day	
CONS.RW.2190	Install TCSS/LV/ELV Ducting	10	23-Apr-16	05-May-16	0	CAL 2 - 6 day	
CONS.RW.2230	Excavate and Construct footing for Railing and Road lighting	8	06-May-16	16-May-16	0	CAL 2 - 6 day	
CONS.RW.2250	Road formation to Subbase	6	17-May-16	23-May-16	0	CAL 2 - 6 day	
CONS.RW.2370	Construct Precast Road Kerbings	6	24-May-16	30-May-16	0	CAL 2 - 6 day	
CONS.RW.2380	Road formation to Road base and Base course	8	31-May-16	08-Jun-16	0	CAL 2 - 6 day	
CONS.RW.2390	Install Road Lighting, Railing and Signages	4	10-Jun-16	14-Jun-16	0	CAL 2 - 6 day	
CONS.RW.2400	Final Road Paving and Road markings (KD13 - Completion of Section VI)	4	15-Jun-16	18-Jun-16	0	CAL 2 - 6 day	
Road Works (West of Box Culvet D)							
Road Formation and Drainage System							
Road SOL 101 / 105							
Road Formation and Drainage System							
CONS.RW.2270	Survey/ Road Setting Out	6	14-Sep-15	19-Sep-15	0	CAL 2 - 6 day	
CONS.RW.2280	Road Formation to Sub-grade (Cut & Fill)	75	21-Sep-15	19-Dec-15	2	CAL 2 - 6 day	
CONS.RW.2290	Excavate to invert level and install Drainage System (Drain Pipes & Catchpit/Manholes) + Testing & Interface Connection	150	09-Oct-15	13-Apr-16	2	CAL 2 - 6 day	
Installation of Underground Utilities							
CONS.RW.2295	Excavate and Install HV Cable Ducting on Carriageway	66	18-Sep-15	07-Dec-15	0	CAL 2 - 6 day	
CONS.RW.2300	Handover area to CLP for HV Cable Laying	0		07-Dec-15	0	CAL 2 - 6 day	
CONS.RW.2310	Excavate and Install Fresh WM / Valves & fittings + Testing, Cleaning & Flushing and Interface Connection	150	17-Nov-15	23-May-16	0	CAL 2 - 6 day	
CONS.RW.2320	Excavate and Install Common Telecom Ducting and Others	150	24-Nov-15	30-May-16	0	CAL 2 - 6 day	
CONS.RW.2330	Excavate and Install ELV/ LV Ducting and Pillar Box for TCSS	150	01-Dec-15	06-Jun-16	0	CAL 2 - 6 day	
Kerbing and Footings for Railing, Fencing, Signages and Road Lighting							
CONS.RW.2340	Excavate and Construct Footings for Road Lightings / Railing / Fencing and Signages	120	05-Feb-16	06-Jul-16	0	CAL 2 - 6 day	
CONS.RW.2350	Road Formation to Sub-base	90	22-Mar-16	13-Jul-16	0	CAL 2 - 6 day	
CONS.RW.2360	Construct Precast Road Kerbings	90	01-Apr-16	20-Jul-16	0	CAL 2 - 6 day	
Road Works to Road Base and Base Course							
CONS.RW.2570	Road Formation to Road Base	90	31-May-16	14-Sep-16	2	CAL 2 - 6 day	
CONS.RW.2580	Road Formation to Base Course	75	18-Jul-16	17-Oct-16	2	CAL 2 - 6 day	
Installation of Railing and Fencing + Road Lighting and Signages							
CONS.RW.2630	Install Road Railing and Fencing	90	27-Aug-16	14-Dec-16	0	CAL 2 - 6 day	
CONS.RW.2860	Install Road Lighting and Signages	75	19-Oct-16	17-Jan-17	0	CAL 2 - 6 day	
Final Paving and Road Markings							
CONS.RW.2660	Final Road Paving (Wearing Course)	24	18-Feb-17	17-Mar-17	0	CAL 2 - 6 day	
CONS.RW.2750	Road Markings and Road Signages	18	18-Mar-17	08-Apr-17	2	CAL 2 - 6 day	
CONS.RW.2780	Cleaning and Rectification Works	12	10-Apr-17	26-Apr-17	14	CAL 2 - 6 day	
Road SOL 102 /106/111							
Road Formation and Drainage System							
CONS.RW.2410	Survey/ Road Setting Out	6	21-Sep-15	26-Sep-15	0	CAL 2 - 6 day	
CONS.RW.2420	Road Formation to Sub-grade (Cut & Fill)	48	29-Sep-15	25-Nov-15	0	CAL 2 - 6 day	

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Activity ID	Activity Name	Orig Dur	Early Start	Early Finish	Total Float	Calendar	Remarks	O	N	D	J	F	M	A	M	J	Jul	A	S	O	N	D	J	F	M	A	M	J	Jul	A	S	O	N	D	J	F	M	A	M	J	Jul	A	S	O	N	D	J	F	M	A	M	J	Jul	A	S	O	N	D	J	F	M	A	M	J	Jul	A	S	O	N	D
Zone FC4																																																																						
CONS.C1.8410	Commence Landscape Works	0	15-Nov-16		76	CAL 2 - 6 day	Area 1,800 m2																																																															
CONS.C1.8420	Top Soil to Landscaped Areas	12	15-Nov-16	28-Nov-16	76	CAL 2 - 6 day	1080 m3 / 100 m3 / day																																																															
CONS.C1.8430	Install Irrigation Main Line	24	29-Nov-16	28-Dec-16	76	CAL 2 - 6 day																																																																
CONS.C1.8440	Install Lateral Irrigation Pipes / Sprinklers	12	29-Dec-16	12-Jan-17	76	CAL 2 - 6 day																																																																
CONS.C1.8450	Irrigation Coverage Test	2	13-Jan-17	14-Jan-17	76	CAL 2 - 6 day																																																																
CONS.C1.8460	Soft Landscaping - Shrubs Planting / Ground Cover	18	22-Apr-17	15-May-17	0	CAL 2 - 6 day	1800 m2 / 10 m2 / 10 workers																																																															
CONS.C1.8470	Complete Landscape Works in Zone FC4 W02	0		15-May-17	0	CAL 2 - 6 day																																																																
Irrigation Water Tanks and Booster Pumps																																																																						
CONS.C1.8790	Identify and Agree location with Engineer	12	21-Jul-16	03-Aug-16	4	CAL 2 - 6 day																																																																
CONS.C1.8800	Construct Irrigation Water Tanks and Booster Pump Chamber	48	04-Aug-16	30-Sep-16	4	CAL 2 - 6 day																																																																
CONS.C1.8810	MEP Works - Electrical and Mechanical Installation + T&C	36	03-Oct-16	14-Nov-16	4	CAL 2 - 6 day																																																																
Establishment Period (1 year)																																																																						
CONS.C1.8190	Establishment of Landscape Works	365	16-May-17	15-May-18	0	CAL 1 - 7 day																																																																
Executive Summary																																																																						
Box Culverts																																																																						
Box Culvert D																																																																						
BCD.ES.1010	Box Culvert D - Bored Piling, Testing + Pile caps (Bay 1-15)	172	18-Jun-15	13-Jan-16	0	CAL 2 - 6 day																																																																
BCD.ES.1020	Box Culvert D - RC Box Structure + Backfilling (Bay 1-15)	126	06-Nov-15	12-Apr-16	1	CAL 2 - 6 day																																																																
BCD.ES.1030	Box Culvert D - Bored Piling + Pile Testing (Bay 1-3)	89	21-Dec-15	13-Apr-16	0	CAL 2 - 6 day																																																																
BCD.ES.1040	Box Culvert D - Cofferdam + ELS (Bay 1-3 + Outflow)	140	14-Apr-16	30-Sep-16	0	CAL 2 - 6 day																																																																
BCD.ES.1050	Box Culvert D - Pile Caps+ RC Box Structure (Bay 1-3 + Outflow)	180	03-Oct-16	15-May-17	0	CAL 2 - 6 day																																																																
Box Culvert C																																																																						
BCC.ES.2010	Box Culvert C - Driven H Pile + Pile caps (Bay 4-9)	146	06-Nov-15	06-May-16	0	CAL 2 - 6 day																																																																
BCC.ES.2020	Box Culvert C - Construct RC Box Structure (Bay 4-9)	96	07-Mar-16	05-Jul-16	0	CAL 2 - 6 day																																																																
BCC.ES.2030	Box Culvert C - Driven H Pile + Load Testing (Bay 1-3)	69	09-Apr-16	02-Jul-16	2	CAL 2 - 6 day																																																																
BCC.ES.2040	Box Culvert C - Cofferdam + ELS (Bay 1-3 + Outflow)	126	06-Jul-16	03-Dec-16	0	CAL 2 - 6 day																																																																
BCC.ES.2050	Box Culvert C - Pilecaps + RC Box Structure (Bay 1-3 + Outflow)	127	05-Dec-16	15-May-17	0	CAL 2 - 6 day																																																																
Bridge Works																																																																						
Bridges in Portion A & B																																																																						
BRG.ES.1010	Bridges in Portion A & B - Bored Piling + Pilecaps	309	20-May-15	03-Jun-16	0	CAL 2 - 6 day																																																																
BRG.ES.1020	Bridges in Portion A & B - Column / Pier Head + Bearings	227	24-Oct-15	30-Jul-16	10	CAL 2 - 6 day																																																																
BRG.ES.1030	Bridges in Portion A & B - Decking / Segments Erection + Stitching	309	30-Nov-15	14-Dec-16	25	CAL 2 - 6 day																																																																
BRG.ES.1040	Bridges in Portion A & B - Parapet + Ancillary Works	274	01-Mar-16	03-Feb-17	19	CAL 2 - 6 day																																																																
Bridges in Portion C & D																																																																						
BRG.ES.2010	Bridges in Portion C & D - Bored Piling + Pilecaps	172	26-Sep-15	28-Apr-16	0	CAL 2 - 6 day																																																																
BRG.ES.2020	Bridges in Portion C & D - Column, Pier Head + Bearings	77	23-Feb-16	28-May-16	0	CAL 2 - 6 day																																																																
BRG.ES.2030	Bridges in Portion C & D - Decking / Segments Erection + Stitching	79	23-Apr-16	28-Jul-16	0	CAL 2 - 6 day																																																																
BRG.ES.2040	Bridges in Portion C & D - Parapet + Ancillary Works	218	22-Jun-16	15-Mar-17	11	CAL 2 - 6 day																																																																
Road Works																																																																						
Road Works - East of Box Culvert D																																																																						
RDE.ES.1010	Road Works East of Box Culvert D - Road Formation + Drainage	275	20-May-15	22-Apr-16	0	CAL 2 - 6 day																																																																
RDE.ES.1020	Road Works East of Box Culvert D - U/G Utilities	235	21-Jul-15	05-May-16	0	CAL 2 - 6 day																																																																
RDE.ES.1030	Road Works East of Box Culvert D - Road Formation to Sub-base + Kerbing	147	20-Nov-15	23-May-16	0	CAL 2 - 6 day																																																																
RDE.ES.1040	Road Works East of Box Culvert D - Road Formation to Base Course	107	26-Jan-16	08-Jun-16	0	CAL 2 - 6 day																																																																

Activity ID	Activity Name	Orig Dur	Early Start	Early Finish	Total Float	Calendar	Remarks
RDE.ES.1050	Road Works East of Box Culvert D - Final Paving + Road Marking & Signages	428	25-Nov-16	10-May-18	0	CAL 2 - 6 day	
Road Works - West of Box Culvert D							
RDW.ES.2010	Road Works West of Box Culvert D - Road Formation + Drainage	228	14-Sep-15	23-Jun-16	11	CAL 2 - 6 day	
RDW.ES.2020	Road Works West of Box Culvert D - U/G Utilities	212	17-Nov-15	05-Aug-16	11	CAL 2 - 6 day	
RDW.ES.2030	Road Works West of Box Culvert D - Road Formation to Sub-base + Kerbing	148	22-Mar-16	21-Sep-16	48	CAL 2 - 6 day	
RDW.ES.2040	Road Works West of Box Culvert D - Road Formation to Base Course	154	31-May-16	02-Dec-16	24	CAL 2 - 6 day	
RDW.ES.2050	Road Works West of Box Culvert D - Final Paving + Road Marking & Signages	68	18-Feb-17	15-May-17	0	CAL 2 - 6 day	
Sign Gantry							
SGW.ES.1010	Sign Gantry - Driven H-Pile	213	14-Sep-15	04-Jun-16	0	CAL 2 - 6 day	
SGW.ES.1020	Sign Gantry - Pile caps	140	07-Jan-16	29-Jun-16	0	CAL 2 - 6 day	
SGW.ES.1030	Sign Gantry - Erection of Sign Gantry	90	03-May-16	18-Aug-16	0	CAL 2 - 6 day	
Retaining Walls							
Retaining Walls in Portion A (East)							
RWW.ES.1040	Retaining Walls in Portion A - Excavation	358	22-Jul-15	04-Oct-16	0	CAL 2 - 6 day	
RWW.ES.1050	Retaining Walls in Portion A - Construct Base + Wall Stem	354	19-Aug-15	28-Oct-16	0	CAL 2 - 6 day	
RWW.ES.1060	Retaining Walls in Portion A - Backfill and Reinstate Road	356	16-Sep-15	28-Nov-16	0	CAL 2 - 6 day	
Retaining Walls in Portion C (West)							
RWW.ES.1010	Retaining Walls in Portion C - Excavation	81	17-Jun-16	22-Sep-16	23	CAL 2 - 6 day	
RWW.ES.1020	Retaining Walls in Portion C - Construct Base + Wall Stem	99	09-Jul-16	05-Nov-16	23	CAL 2 - 6 day	
RWW.ES.1030	Retaining Walls in Portion C - Backfill and Reinstate Road	87	03-Sep-16	17-Dec-16	23	CAL 2 - 6 day	
Irrigation and Landscape							
Landscape Works - Water Meter O4							
LSW.ES.1010	Irrigation & Landscape Works WM04 - Top Soil	397	22-Mar-16	27-Jul-17	0	CAL 2 - 6 day	
LSW.ES.1020	Irrigation & Landscape Works WM04 - Install Irrigation Lines (Main & Lateral)	459	17-Jun-16	02-Jan-18	0	CAL 2 - 6 day	
LSW.ES.1030	Irrigation & Landscape Works WM04 - Soft Landscaping Works (AC4 to FC4)	453	27-Oct-16	10-May-18	0	CAL 2 - 6 day	
Landscape Works - Water Meter O2							
LSW.ES.2010	Irrigation & Landscape Works WM02 - Top Soil	130	21-Jul-16	23-Dec-16	0	CAL 2 - 6 day	
LSW.ES.2020	Irrigation & Landscape Works WM02 - Install Irrigation Lines (Main & Lateral)	179	12-Aug-16	20-Mar-17	0	CAL 2 - 6 day	
LSW.ES.2030	Irrigation & Landscape Works WM02 - Soft Landscaping Works (BC4 to FC4)	126	06-Dec-16	15-May-17	0	CAL 2 - 6 day	

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 2015 (Year)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (Note 1)	Chemical Waste	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)
Jan											
Feb											
Mar											
Apr											
May											
Jun											
Sub-total	0	0	0	0	0	0	0	0	0	0	0
Jul	0	0	0	0	0	0	0	0	0	0	0
Aug	0	0	0	0	0	0	0	0	0	0	0
Sep											
Oct											
Nov											
Dec											
Total	0	0	0	0	0	0	0	0	0	0	0

Note: (1) Plastics refer to plastic bottles / containers, plastic sheets / foam from packaging material

Appendix F. Environmental Licenses and Permits

Environmental Licenses and Permits

Item No.	Type of Permit / Licence	Reference No.	Application Date	Date of Issue	Date of Expiry	Remark
1	Environmental Permit under EIAO	EP-353/2009/I	30 Jun 2015	17 Jul 2015	N/A	Issued
2	Construction Dust Notification (HKBCF Southern Portion)	387156	26 Mar 2015	1 Apr 2015	N/A	Notified
3	Construction Waste Disposal Account	7022038	16 Mar 2015	1 Apr 2015	N/A	Account approved
4	Registration as a Chemical Waste Producer (HKBCF Southern Portion)	Waste Producer Number (WPN): 5213-951-C3952-01	27 Mar 2015	27 Apr 2015	N/A	Registration completed
5	Discharge Licence under WPCO (Works Area WA3)	WT00022316-2015	1 Jun 2015	14 Aug 2015	31 Aug 2020	Issued
6	Construction Noise Permit	GW-RS0874-15	24 Jul 2015	7 Aug 2015	1 Feb 2016	Issued

Appendix G. Implementation Schedule for Environmental Mitigation Measures (EMIS)

Appendix G – Implementation Schedule of Environmental Mitigation Measures (EMIS)

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	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	All construction sites	V
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 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; 	All construction sites	V
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 	All construction sites	V
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 	All construction sites	V

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
		<ul style="list-style-type: none"> 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. 		
S5.5.6.3	A3	3) The Contractor should undertake proper watering on all exposed spoil (with at least 8 times per day) throughout the construction phase.	All construction sites	V
S5.5.6.4	A4	4) 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.	All construction sites	V
S5.5.6.4	A5	5) Implement regular dust monitoring under EM&A programme during the construction stage.	Selected representative dust monitoring station	N/A
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. 	Selected representative dust monitoring station	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. 	All construction sites	N/A
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 	All construction sites	V

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
		and practicable; <ul style="list-style-type: none"> material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities. 		
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.	All construction sites	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.	For plant items listed in Appendix 6D of the EIA report at all construction sites	N/A
S6.4.13	N4	4) Select "Quiet plants" which comply with the BS 5228 Part 1 or TM standards.	For plant items listed in Appendix 6D of the EIA report at all construction sites	V
S6.4.14	N5	5) Sequencing operation of construction plants where practicable.	All construction sites where practicable	V
	N6	6) Implement a noise monitoring under EM&A programme.	Selected representative noise monitoring station	N/A
Sediment				
S7.3	S1	1) The requirements as recommended in ETWB TC(W) 34/2002 Management of Dredged/Excavated Sediment shall be included in the Particular Specification as appropriate.	All construction sites	V
Waste Management (Construction Noise)				
S8.3.8	WM1	<u>Construction and Demolition Material</u> The following mitigation measures should be implemented in handling the waste: <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 ETWB TC(W) 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. 	All construction sites	V
S8.3.9-S8.3.11	WM2	<u>C&D Waste</u> <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 	All construction sites	N/A

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
		<p>and wastage.</p> <ul style="list-style-type: none"> The Contractor should recycle as much of the C&D materials as possible on-site. Public fill and C&D waste should be segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. Where practicable, concrete and masonry can be crushed and used as fill. Steel reinforcement bar can be used by scrap steel mills. Different areas of the sites should be considered for such segregation and storage. 		
S8.2.12-S8.3.15	WM3	<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. 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. 	All construction sites	N/A
S8.3.16	WM4	<p><u>Sewage</u></p> <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. 	All construction sites	V
S8.3.17	WM5	<p><u>General Refuse</u></p> <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, aluminium cans, plastic bottles etc., should be provided. Training should be provided to workers about the concepts of site 	All construction sites	V

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
		cleanliness and appropriate waste management procedure, including reduction, reuse and recycling of wastes.		
Water Quality (Construction Phase)				
S9.11.1.7	W2	<p><u>Land Works</u></p> <p>General construction activities on land should also be governed by standard good working practice. Specific measures to be written into the works contracts should include:</p> <ul style="list-style-type: none"> • wastewater from temporary site facilities should be controlled to prevent direct discharge to surface or marine waters; • sewage effluent and discharges from on-site kitchen facilities shall be directed to Government sewer in accordance with the requirements of the W PCO or collected for disposal offsite. The use of soakaways shall be avoided; • storm drainage shall be directed to storm drains via adequately designed sand/silt removal facilities such as sand traps, silt traps and sediment basins. Channels, earth bunds or sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks; • silt removal facilities, channels and manholes shall be maintained and any deposited silt and grit shall be removed regularly, including specifically at the onset of and after each rainstorm; • temporary access roads should be surfaced with crushed stone or gravel; • rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities; • measures should be taken to prevent the washout of construction materials, soil, silt or debris into any drainage system; • open stockpiles of construction materials (e.g. aggregates and sand) on site should be covered with tarpaulin or similar fabric during rainstorms; • manholes (including any newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers; • discharges of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system; • 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 W PCO 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 	Land-based works areas	V

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
		<p>immediately;</p> <ul style="list-style-type: none"> • 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. 		
Ecology (Construction Phase)				
S10.7	E4	Watering to reduce dust generation; prevention of siltation of freshwater habitats; Site runoff should be desilted, to reduce the potential for suspended sediments, organics and other contaminants to enter streams and standing freshwater	Land-based works areas	V
S10.7	E5	Good site practices, including strictly following the permitted works hours, using quieter machines where practicable, and avoiding excessive lightings during night time	Land-based works areas	V
S10.7	E8	<ul style="list-style-type: none"> • Control vessel speed • Skipper training • Predefined and regular routes for working vessels; avoid Brother Islands. 	Marine Traffic	N/A
Fisheries				
S11.7	F4	<ul style="list-style-type: none"> • Maritime Oil Spill Response Plan (MOSRP); • Contingency plan. 	HKBCF	V
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. 	HKBCF	V
Landscape & Visual (Construction Phase)				
S14.3.3.3	LV2	<p><u>Mitigate both Landscape and Visual Impacts</u></p> <p>G1. Grass-hydroseed bare soil surface and stock pile areas.</p>	HKBCF	N/A

EIA Ref.	EM&A Log Ref.	Recommended Mitigation Measures	Location of the measures	Implementation Status
		<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>		
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>		N/A
EM&A				
S15.2.2	EM1	An Independent Environmental Checker needs to be employed as per the EM&A Manual.	All construction sites	V
S15.5 - S15.6	EM2	<p>1) An Environmental Team needs to be employed as per the EM&A Manual.</p> <p>2) Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures.</p> <p>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.</p>	All construction sites	V

Legend: V = 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

Reporting Period	Cumulative Statistics		
	Complaints	Notifications of Summons	Successful Prosecutions
This reporting period	0	0	0
From commencement date of construction to end of reporting month	1	0	0

Appendix I. Environmental Site Inspection Schedule

Environmental Site Inspection Schedule for August 2015

Aug-15						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	3	4	5 Weekly Audit	6	7	8
9	10	11	12	13 Weekly Audit	14	15
16	17	18	19	20 Weekly Audit	21	22
23	24	25 Weekly Audit	26	27	28	29
30	31					

Tentative Environmental Site Inspection Schedule for September 2015

Sep-15						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2 Weekly Audit	3 Public Holiday	4	5
6	7	8	9	10 Weekly Audit	11	12
13	14	15	16	17 Weekly Audit	18	19
20	21	22	23	24 Weekly Audit	25	26
27	28 Public Holiday	29	30 Weekly Audit			