

**AUES JOB No.: TCS00715/14**

**TUEN MUN - CHEK LAP KOK LINK**



**CONTRACT NO. HY/2013/12 –**

**NORTHERN CONNECTION TOLL PLAZA AND  
ASSOCIATED WORKS**

**4<sup>TH</sup> ANNUAL ENVIRONMENTAL MONITORING AND  
AUDIT (EM&A) REVIEW REPORT – NOVEMBER 2017  
TO OCTOBER 2018**

PREPARED FOR

**CRBC AND KADEN JOINT VENTURE**

<b>Date</b>	<b>Reference No.</b>	<b>Prepared By</b>	<b>Certified By</b>
23 May 2019	TCS00715/14/600/R0521v2	 Ben Tam (Environmental Consultant)	 T.W. Tam (Environmental Team Leader)

31 May 2019

By Fax (2218 7299) and By Post

AECOM Asia Company Limited  
Supervising Officer's Representative Office  
No. 8 Mong Fat Street, Tuen Mun, New Territories, Hong Kong

Attention: Mr. Roger Man

Dear Mr. Man,

**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/2013/12  
TM-CLKL – Northern Connection Toll Plaza and Associated Works  
4<sup>th</sup> Annual EM&A Report for November 2017 - October 2018**

Reference is made to the Environmental Team's submission of the Annual EM&A report for November 2017 - October 2018 (ET's ref.: "TCS00715/14/600/R0521v2" dated 23 May 2019) certified by the ET Leader and provided to us via e-mail on 23 May 2019.

Please be informed that we have no adverse comments on the captioned submission.

Thank you for very much your attention. Please feel free to contact the undersigned or the ENPO Leader, Mr. Y H Hui, should you require further information.

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



F. C. Tsang  
Independent Environmental Checker  
Tuen Mun-Chek Lap Kok Link

c.c.

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Internal: DY, YH, RY, DF, HW, ENPO Site

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### EXECUTIVE SUMMARY

ES01 In August 2014, CRBC-Kaden Joint Venture (*hereafter “CRBC-Kaden JV”*) has been awarded the *Contract No. HY/2013/12 -Northern Connection Toll Plaza and Tunnel Section of the Tuen Mun – Chek Lap Kok Link* (hereinafter called “the Contract”) by the Highways Department (HyD). The construction phase of the Contract was commenced on **23 October 2014**.

ES02 Before the Contract commencement, the baseline air quality monitoring was carried out by the ET of HY/2012/08 from **16<sup>th</sup> to 31<sup>st</sup> October 2013**. A set of Action and Limit Levels (A/L Levels) of air quality performance criteria was proposed by ET of HY/2012/08 which has been verified by IEC and endorsed by EPD. The Action and Limit Levels of the air quality adopted for the Contract is shown in *Table ES-01*.

**Table ES-01 Action and Limit Levels of Air Quality Monitoring**

Monitoring Station	24-hour TSP, ( $\mu\text{g}/\text{m}^3$ )		1-hour TSP, ( $\mu\text{g}/\text{m}^3$ )	
	Action Level	Limit Level	Action Level	Limit Level
ASR1	213	260	331	500
ASR5	238	260	340	500
AQMS1	213	260	335	500
ASR6	238	260	338	500
ASR10	214	260	337	500

ES03 In September 2013, baseline survey for Pitcher Plant has been conducted within the project area by a suitably qualified ecologist. In mid-September 2014, Contract HY/2013/12 has also conducted a one-off survey to confirm the number of existing Pitcher Plant. For cultural heritage, a condition survey for the grave was conducted on **23 September 2014**. The Baseline Monitoring Report for the Contract was submitted on **7 October 2014** for IEC’s verification and **25 November 2014** for EPD’s endorsement.

ES04 This is the **4<sup>th</sup>** Annual EM&A Review Report for the “*Tuen Mun - Chek Lap Kok Link - Northern Connection Toll Plaza and Associated Works*” under Environmental Permit No. EP-354/2009/D (hereinafter “the EP”), covering the period from **1 November 2017 to 31 October 2018** (hereinafter “Reporting Period”).

### SUMMARY OF EM&A ACTIVITIES FOR THE REPORTING PERIOD

ES05 In the Reporting Period, the EM&A activities is summarized in *Table ES-02*.

**Table ES-02 Summary EM&A Activities Undertaken in the Reporting Period**

Environmental Aspect	Environmental Monitoring Parameters / Inspection	Sub-total Occasions				Total
		1 <sup>st</sup> Quarter	2 <sup>nd</sup> Quarter	3 <sup>rd</sup> Quarter	4 <sup>th</sup> Quarter	
Air Quality	1-hour TSP	465	420	465	450	<b>1800</b>
	24-hour TSP	155	140	155	150	<b>600</b>
Cultural heritage inspection	Grave G1	13	12	14	13	<b>52</b>
Landfill Gas Monitoring	Oxygen; Methane & Carbon Dioxide	76 days	67 days	48 days	76 days	<b>267 days</b>
Landscape & Visual	Landscape & Visual Monitoring	13	13	13	13	<b>52</b>
Joint Site Inspection / Audit	IEC, ET, the Contractor and RE joint site Environmental Inspection and Auditing	13	12	14	13	<b>52</b>

### BREACH OF ACTION AND LIMIT (A/L) LEVELS

- ES06 In according with the air quality measurement results by the ET of Contract HY/2012/08 total 29 Action Level and 2 Limit Level exceedances of 1-hour TSP were recorded; 2 Action Level and 3 Limit Level exceedance of 24-hour TSP was recorded in the Reporting Period.
- ES07 For landfill gas monitoring, the concentration of all parameters were detected within the acceptable levels. Moreover, no noise complaint was received in the Reporting Period. *Table ES-03* is summarized breach of environmental performance criteria.

**Table ES-03 Action and Limit (A/L) Levels Breach Summarized in the Reporting Period**

Environmental Aspect	Monitoring Parameters	Action Level	Limit Level	Event & Action		
				NOE Issued	Investigation	Corrective Actions
Air Quality	1-hour TSP	29	2	27	27	0
	24-hour TSP	2	3	5	5	0
Landfill Gas Monitoring	Oxygen	0	0	0	0	0
	Methane	0	0	0	0	0
	Carbon Dioxide	0	0	0	0	0

### ENVIRONMENTAL COMPLAINT

- ES08 Only (1) environmental complaint was received in the first quarter of Reporting Period. The complaint received on 30 January 2018 regarding construction noise and light nuisance created at River Trade Terminal during mid-night. The complainant also complained dust issue at River Trade Terminal. The statistics of environmental complaint is listed in *Table ES-04*.

**Table ES-04 Statistical Summary of Environmental Complaints**

Reporting Period	Complaint Nature				Total Registered
	Water Quality	Construction Dust	Construction Noise	Others	
1 November 2017 – 31 October 2018	NA	•30 January 2018	•30 January 2018	•30 January 2018	1

- ES09 Complaint investigation was conducted by the ET and the corresponding investigation report for the complaint was submitted to relevant parties. Based on investigation results, the complaint was not project related.

### NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

- ES10 No environmental summons or successful prosecutions were recorded in the Reporting Period.

### SITE INSPECTION

- ES11 For past twelve months, total 52 occasions joint site inspection were carried out by the RE, IEC, ET and the Contractor. For joint site inspections, no non-compliance was observed. However, 97 observations/reminders were recorded within the past twelve months.
- ES12 During each occasion of site inspection, Pitcher Plants of ecology and grave of culture heritage were also to inspect and audit.

### FUTURE KEY ISSUES

- ES13 Construction dust emission would be a key environmental issue during construction work of the Contract at dry season. Dust mitigation measures such as watering at least 12 times per day on all exposed soil within the Project site and associated work areas in Tuen Mun area throughout the construction period should be implemented in accordance with the EP requirement.

- ES14 Muddy water or other water pollutants from sites surface flow to public area should be avoided. Water quality mitigation measures to prevent surface runoff to impact public areas should be fully implemented.

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## **1 INTRODUCTION**

### **1.1 CONTRACT BACKGROUND**

1.1.1 CRBC-Kaden Joint Venture (hereafter “CRBC-Kaden JV”) is commissioned by the Highways Department (HyD) as the Main Contractor of the Contract No. HY/2013/12 – Northern Connection Toll Plaza and Tunnel Section ((hereafter “the Contract”) and this Contract is part of the Tuen Mun – Chek Lap Kok Link (TM-CLK Link Project). TM-CLK Link Project is a Designated Project under the latest Environmental Permit number EP-354/2009/D issued on 13 March 2015. The layout Plan of the Project and the Contract are showed in [Appendix A](#) and [Appendix B](#) respectively.

1.1.2 The works of the Contract mainly include:-

- a. construction of an approximately 5.4 hectares toll plaza and an associated footbridge;
- b. construction of associated carriageways including approximately 0.74 kilometre land viaducts, and an approximately 230 metres vehicular underpass to connect the toll plaza and the roundabout at Lung Mun Road/Lung Fu Road;
- c. site formation for the construction of the toll plaza, including associated slope works and natural terrain hazard mitigation measures;
- d. modification and realignment of the existing Lung Mun Road and Lung Fu Road; and
- e. associated waterworks, drainage, sewerage and landscaping works, etc..

1.1.3 AECOM Asia Company Limited as the Resident Engineer (RE) and Ramboll Hong Kong Limited as the Independent Environmental Checker (IEC) and Environmental Project Office (ENPO) were employed by the HyD. For implementation of the environmental monitoring and audit (EM&A) programme under the Contract, CRBC-Kaden JV has appointed Action-United Environmental Services & Consulting (AUES) as the Environmental Team (ET) to responsible relevant environmental monitoring work.

1.1.4 Construction phase of the Contract was commenced on **23 October 2014**. This is the Forth (4<sup>th</sup>) Annual EM&A Review Report to summarize the monitoring results and inspection findings with the Contractor performance from **1 November 2017 to 31 October 2018** (hereinafter “Reporting Period”) for the past twelve months.

### **1.2 REPORT STRUCTURE**

1.2.1 The Annual Environmental Monitoring and Audit (EM&A) Review Report is structured into the following sections:-

*Section 1 Introduction*

*Section 2 Contract Organization and Construction Progress and Environmental Submissions*

*Section 3 Summary of Impact Monitoring Requirements under the Contract*

*Section 4 Air Quality Monitoring*

*Section 5 Ecology Monitoring*

*Section 6 Cultural Heritage*

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*Section 8 Landfill gas hazard Monitoring*

*Section 9 Waste Management*

*Section 10 Inspection and Auditing*

*Section 11 Environmental Complaint and Non-Compliance*

*Section 12 Implementation Status of Mitigation Measures*

*Section 13 Conclusions and Recommendations*



## **2 CONTRACT ORGANIZATION AND CONSTRUCTION PROGRESS AND ENVIRONMENTAL SUBMISSIONS**

### **2.1 CONTRACT ORGANIZATION**

2.1.1 The Contract organization and contact details of key personnel are shown in [Appendix C](#).

### **2.2 CONSTRUCTION PROGRESS**

2.2.1 In the Reporting Period, the major construction activity conducted under the Contract is summarized in below. Moreover, the master construction program of the Contract is enclosed in [Appendix D](#).

- Instrumentation and Monitoring
- Site Formation – Earthwork on Slope D and E; surface drainage on slope C, D & E and Portion H
- Toll Plaza Decking TD1, TD2
- Toll Plaza Footbridge
- Retaining Structure RW\_A, RW\_B, Bridg G2 and TP\_G
- Bridge G1, Bridge H1 by Form Traveller
- Toll Collector Subway & Associated Works
- Sewer Culvert at FC1 and FC2
- Road and Drainage Works +11mPD, +19mPD, LMR central median and Portion H
- Sewer culvert at FC1 and FC2
- Construction of bus shelter
- Toll Booth Canopy
- Road pavement works at +19mPD platform
- Vehicular Underpass – Cable Trough construction and partition wall construction
- Excavation and lateral Support of Construction of Retaining Wall TP\_G
- Parapet construction for Retaining Structure RW\_A and Bridge G2
- Temporary Traffic Arrangement at Lung Mun Road and Lung Fu Road
- Backfilling Work of Existing Sewer Culvert between MH1 to MH8
- Construction of Storage Area at Retaining Wall B
- Retaining Structure TP\_G at Portion H
- Construction of Retaining Walls RW\_E and HAS at Portion F
- Construction of planter at Footbridge
- Drainage works at Lung Mun Road
- Laying Watermain at Portion G
- E & M Works at Retaining Wall B
- Pre-stressing of External Tendons at H1
- Installation of VE panels at RW\_B

### **2.3 SUMMARY OF ENVIRONMENTAL SUBMISSIONS**

2.3.1 In according to the EP, the required documents have submitted to EPD for retention which listed in below:

- Monitoring Plan on construction dust (submission refer to Contract HY/2012/08)
- Landscape and Visual Plan (not yet endorsed by EPD)
- Waste Management Plan (endorsed by the EPD on 16 March 2015)
- Baseline Monitoring Report (not yet endorsed by EPD)

2.3.2 Summary of the relevant permits, licenses, and/or notifications on environmental protection as obtained by the Contract in the past twelve months is presented in *Table 2-1*.

**Table 2-1 Status of Environmental Licenses and Permits of the Contract**

No.	Type of Permit/ License	Reference/ License No.	Date of Issue	Date of Expiry
1	Air pollution Control (Construction Dust) Regulation	377719	06-08-2014	N/A
2	Chemical Waste Producer Registration - Waste Producers Number	5117422C389301	03-09-2014	N/A
3	Water Pollution Control Ordinance -Variation of Effluent Discharge License	WT00023973-2016	25-10-2017	30-09-2019
4	Waste Disposal Regulation - Billing Account for Disposal of Construction Waste	7020460	01-08-2014	N/A
5	CNP for Multiple Task	GW-RW0230-17	08-05-2017	04-11-2017
		GW-RW0605-17	25-11-2017	24-05-2018
		GW-RW0154-18	25-05-2018	24-11-2018
6	CNP for Tunnel	GW-RW0243-17	23-05-2017	22-11-2017
		GW-RW0567-17	26-10-2017	22-05-2018
		GW-RW0140-18	23-05-2018	22-11-2018
7	CNP for falsework erection	GW-RW0205-17	25-04-2017	25-11-2017
		GW-RW0563-17	26-10-2017	24-02-2018
		GW-RW0066-18	26-02-2018	19-05-2018
8	CNP for Portion H Roundabout	GW-RW0242-17	22-05-2017	17-11-2017
		GW-RW0568-17	26-10-2017	22-05-2018
9	CNP for Road Paving Works	GW-RW0155-18	25-05-2018	17-11-2018
		GW-RW0211-17	25-04-2017	01-11-2017
		GW-RW0561-17	26-10-2017	01-02-2018
10	CNP for Lung Mun Road	GW-RW0044-18	01-02-2018	28-04-2018
		GW-RW0174-18	20-05-2018	12-08-2018
		GW-RW0334-18	13-08-2018	17-11-2018
11	CNP for Lung Fu Road	GW-RW0135-18	02-05-2018	27-07-2018
		GW-RW0289-18	30-07-2018	27-10-2018
		GW-RW0436-18	29-10-2018	01-12-2018

*Note: CNP is Control Noise Permit*

### 3 SUMMARY OF IMPACT MONITORING REQUIREMENTS UNDER THE CONTRACT

#### 3.1 GENERAL

3.1.1 In view of the construction works under the Contract, the major construction activities are land-based. In accordance with the Project EM&A Manual requirements, environmental aspect monitoring should be conducted including air quality, ecological (Pitcher plant), cultural heritage and site inspections during construction period. In addition, landscape and visual (L&V) monitoring, landfill gas monitoring and audit of the contractor’s implementation of the construction noise and land-based water quality pollution control measures are also required for the Contract.

3.1.2 A summary of construction phase EM&A requirements are presented in the sub-sections below.

#### 3.2 AIR QUALITY MONITORING PARAMETERS

3.2.1 The construction phase air quality monitoring shall cover the following parameters:

- 1-hour TSP; and
- 24-hour TSP

#### 3.3 MONITORING LOCATION

3.3.1 The air quality monitoring stations for impact monitoring are listed in **Table 3.1** and illustrated in **Appendix E**.

**Table 3-1 Designated Air Quality Monitoring Stations under the Contract**

ID	Location	Air monitoring station Description
ASR1	Tuen Mun Fireboat Station	EM&A Manual
ASR5	Pillar Point Fire Station	EM&A Manual
AQMS1	Previous River Trade Golf	Enhanced TSP Level under EP condition 2.4
ASR6	Butterfly Beach Laundry	Enhanced TSP Level under EP condition 2.4
ASR10	Butterfly Beach Park	Enhanced TSP Level under EP condition 2.4

#### 3.4 MONITORING FREQUENCY

##### General Requirement

3.4.1 For regular impact monitoring, the sampling frequency of at least once in every six days shall be strictly observed at five of the designated monitoring stations for 24-hr TSP monitoring. For 1-hr TSP monitoring, the sampling frequency of at least three times in every six days should be undertaken at five locations when the highest dust impact occurs. The stations to be monitored should be selected based on the prevailing wind direction and their proximity to the active construction works.

##### Special Requirement

3.4.2 As per Condition 2.4 of the EP of TM-CLKL, an enhanced monitoring plan on TSP level at Tuen Mun (“the Enhanced TSP Monitoring Plan”) is required to be submitted to the DEP for approval at least 1 month before the commencement of construction of the Project. Details of the Enhanced TSP Monitoring Plan under Contract No. HY/2012/08 could be found from the project website. The air quality monitoring work under this Contract will follow the monitoring requirement of enhanced TSP monitoring under the project.

3.4.3 The air quality monitoring requirements for the Contract is shown in **Table 3-2**.

**Table 3-2 Enhanced TSP Monitoring Plan – Construction Phase**

Condition	Monitoring Parameter	Monitoring Location	Frequency	Monitoring Requirement
General	1-hour TSP	ASR1, ASR5, AQMS1, ASR6, ASR10	3 times per day every six days	Throughout the Northern Connection, toll plaza and tunnel buildings construction works
	24-hour TSP	ASR1, ASR5, AQMS1, ASR6, ASR10	Daily every six days	
Special	1-hour TSP	ASR1, ASR5, AQMS1, ASR6, ASR10	3 times per day every three days	<p><b><u>Northern Connection</u></b>                      During excavation works for launching shaft, excavation work for Cut and Cover Tunnel and Cut and Cover Tunnel Construction</p> <p><b><u>Toll Plaza</u></b>                      During excavation, slope works, construction of road and superstructures and wind erosion from open sites and stockpiling areas</p> <p><b><u>Tunnel Buildings</u></b>                      During excavation, foundation works, construction of superstructures and wind erosion from open sites and stockpiling areas</p>
	24-hour TSP	ASR1, ASR5, AQMS1, ASR6, ASR10	Daily every three days	

### 3.5 DERIVATION OF ACTION/LIMIT (A/L) LEVELS

3.5.1 The baseline monitoring results formed the basis for determining the air quality criteria for the impact monitoring. The ET shall compare the impact monitoring results with air quality criteria set up for 24-hour TSP and 1-hour TSP. Based on results of the approved Baseline Monitoring Report of HyD Contract HY/2012/08, the proposed Action and Limit Levels are shown in *Tables 3-3*.

**Table 3-3 TSP Action and Limit Levels for Impact Air Quality Monitoring**

Air Quality Monitoring Stations	24-hour TSP ( $\mu\text{g}/\text{m}^3$ )		1-hour TSP ( $\mu\text{g}/\text{m}^3$ )	
	Action Level	Limit Level	Action Level	Limit Level
ASR1	213	260	331	500
ASR5	238	260	340	500
AQMS1	213	260	335	500
ASR6	238	260	338	500
ASR10	214	260	337	500

3.5.2 Should non-compliance of the environmental quality criteria occurs, remedial actions will be triggered according to the Event and Action Plan which presented in *Appendix F*.

### 3.6 OTHER ENVIRONMENTAL ASPECTS

#### Noise

3.6.1 The TM-CLKL EIA study concluded that no existing noise sensitive receiver (NSR) was identified within the Study Area at Tuen Mun. Therefore, no planned NSR designated at the Project sites of Tuen Mun. Based upon this, no noise monitoring is necessary for construction phase under the Contract.

3.6.2 Regular site inspections and audits will be carried out during the construction phase in order to confirm compliance with the regulatory requirements and conformity of the Contractor with regard to noise control and contract conditions.

#### Water Quality

3.6.3 No marine works will be undertaken under the Contract. Based upon this, no water quality monitoring is necessary for construction phase.

#### Ecology

3.6.4 Since the Works of the Contract would not generate marine ecological impact, no dolphin monitoring under the Contract was conducted.

3.6.5 During construction phase, the ET will perform Pitcher Plants inspection at least once every week to report the growth condition (only undertaken at Establish period) and protection measures.

#### Landscape and Visual

3.6.6 According to EIA recommendation, site inspection and audit shall be required to be undertaken in the operation stage. Measures to mitigate landscape and visual impacts during construction should be checked and monitored by a Registered Landscape Architect to ensure compliance with the intended aims of the mitigation measures in accordance with the EM&A Manual.

#### Cultural Heritage

3.6.7 Grave G1 of heritage resources is situated near the proposed toll plaza in Tuen Mun. Site inspections should be undertaken at least once per week throughout the construction period to ensure compliance with the intended aims of recommended mitigation measures.

#### Monitoring and Measurement of Landfill Gas

3.6.8 During EIA study, landfill gas hazards are likely to be generated from the Pillar Point Valley (PPV) Landfill. Hence, regular landfill gas monitoring is recommended during construction of the proposed toll plaza. Safety Officer or an approved and appropriated qualified person should be carried out the monitoring works to make sure the area free of landfill gas before any man enters in the area.

3.6.9 Depending on the results of the measurements, actions required will vary and should be set down by the Safety Officer or other appropriately qualified person. As a minimum these should encompass those actions specified as follow:

**Table 3-4 Actions in the Event of Landfill Gas being Detected in Excavation / Confined Area**

Parameter	Measurement	Action
Oxygen	< 19%	- Ventilate to restore oxygen to > 19%
	< 18%	- Stop work - Evacuate personnel / prohibit entry - Increase ventilation to restore to > 19%
Methane	> 10% LEL (> 0.5% v/v)	- Prohibit hot work - Ventilate to restore methane to < 10% LEL
	> 20% LEL (>1% v/v)	- Stop work - Evacuate personnel / prohibit entry - Increase ventilation to restore to < 10%
Carbon Dioxide	> 0.5%	- Ventilate to restore oxygen to < 0.5%
	> 1.5%	- Stop work - Evacuate personnel / prohibit entry - Increase ventilation to restore to < 0.5%

## 4 AIR QUALITY MONITORING

### 4.1 GENERAL

4.1.1 According to the Updated EM&A Manual and the Enhanced Total Suspended Particulates (TSP) Monitoring Plan, the air quality impact monitoring was conducted at the five air quality monitoring stations during the Reporting Period by the ET of Contract HY/2012/08. Sharing of impact air quality monitoring data between HY/2012/08 and HY/2013/12 is agreed by all relevant parties. Therefore the Contract is not required to conduct its own dust monitoring exercise until the Contract HY/2012/08 is ended.

### 4.2 AIR QUALITY MONITORING RESULTS IN REPORTING PERIOD

4.2.1 In the Reporting Period, total 1,800 of 1-hr TSP measurements and 600 events of 24-hours TSP monitoring at five proposed locations were carried out by the ET of Contract HY/2012/08. Detailed air quality monitoring results and statistical analysis of the trends of air quality data during the Reporting Period can be referred to the Monthly EM&A Reports (from November 2017 to October 2018) and the Fifth Annual EM&A Review Report (November 2017 to October 2018) prepared by the ET of Contract HY/2012/08.

### 4.3 SUMMARY OF ACTION AND LIMIT (A/L) LEVELS EXCEEDANCE (NON-COMPLIANCE)

4.3.1 According to the air quality monitoring result provided by Contract HY/2012/08, total 29 Action Level and 2 Limit Level exceedances of 1-hour TSP were recorded; 2 Action Level and 3 Limit Level exceedance of 24-hour TSP was recorded in the Reporting Period. Notification on Exceedances (NOEs) were issued after receiving the monitoring result from the Contract HY/2012/08. The summary of air quality exceedance is shown in *Table 4-1*.

**Table 4-1 Summary of Air Quality Monitoring Exceedance**

Date of Exceedance	Monitoring Station	Air Quality Parameter	Result	Exceed
2 November 2017	ASR5	1Hr TSP	351 µg/m <sup>3</sup>	Action Level
2 November 2017	ASR10	1Hr TSP	403 µg/m <sup>3</sup>	Action Level
2 November 2017	ASR10	1Hr TSP	816 µg/m <sup>3</sup>	Limit Level
11 November 2017	ASR5	1Hr TSP	389 µg/m <sup>3</sup>	Action Level
29 November 2017	ASR10	1Hr TSP	455 µg/m <sup>3</sup>	Action Level
8 December 2017	ASR5	1Hr TSP	353 µg/m <sup>3</sup>	Action Level
11 December 2017	ASR1	1Hr TSP	399 µg/m <sup>3</sup>	Action Level
11 December 2017	ASR1	1Hr TSP	443 µg/m <sup>3</sup>	Action Level
11 December 2017	ASR5	1Hr TSP	417 µg/m <sup>3</sup>	Action Level
20 December 2017	ASR1	1Hr TSP	357 µg/m <sup>3</sup>	Action Level
20 December 2017	ASR5	1Hr TSP	372 µg/m <sup>3</sup>	Action Level
26 December 2017	ASR1	1Hr TSP	407 µg/m <sup>3</sup>	Action Level
8 December 2017	ASR1	24Hr TSP	328 µg/m <sup>3</sup>	Limit Level
8 December 2017	ASR5	24Hr TSP	279 µg/m <sup>3</sup>	Limit Level
11 December 2017	ASR1	24Hr TSP	218 µg/m <sup>3</sup>	Action Level
17 December 2017	ASR5	24Hr TSP	265 µg/m <sup>3</sup>	Limit Level
29 December 2017	ASR10	24Hr TSP	250µg/m <sup>3</sup>	Action Level
13 January 2018	ASR5	1Hr TSP	345 µg/m <sup>3</sup>	Action Level
16 January 2018	ASR5	1Hr TSP	396 µg/m <sup>3</sup>	Action Level
16 January 2018	ASR5	1Hr TSP	384 µg/m <sup>3</sup>	Action Level
16 January 2018	ASR5	1Hr TSP	345 µg/m <sup>3</sup>	Action Level

Date of Exceedance	Monitoring Station	Air Quality Parameter	Result	Exceed
22 January 2018	ASR5	1Hr TSP	363 $\mu\text{g}/\text{m}^3$	Action Level
22 January 2018	ASR5	1Hr TSP	380 $\mu\text{g}/\text{m}^3$	Action Level
3 February 2018	ASR1	1Hr TSP	392 $\mu\text{g}/\text{m}^3$	Action Level
3 February 2018	ASR5	1Hr TSP	455 $\mu\text{g}/\text{m}^3$	Action Level
2 March 2018	ASR1	1Hr TSP	460 $\mu\text{g}/\text{m}^3$	Action Level
20 March 2018	ASR1	1Hr TSP	446 $\mu\text{g}/\text{m}^3$	Action Level
13 April 2018	ASR5	1Hr TSP	389 $\mu\text{g}/\text{m}^3$	Action Level
26 August 2018	ASR1	1Hr TSP	417 $\mu\text{g}/\text{m}^3$	Action Level
29 August 2018	ASR1	1Hr TSP	403 $\mu\text{g}/\text{m}^3$	Action Level
7 September 2018	ASR1	1Hr TSP	392 $\mu\text{g}/\text{m}^3$	Action Level
28 September 2018	ASR1	1Hr TSP	584 $\mu\text{g}/\text{m}^3$	Limit Level
28 September 2018	ASR1	1Hr TSP	417 $\mu\text{g}/\text{m}^3$	Action Level
4 October 2018	ASR1	1Hr TSP	340 $\mu\text{g}/\text{m}^3$	Action Level
10 October 2018	ASR1	1Hr TSP	451 $\mu\text{g}/\text{m}^3$	Action Level
31 October 2018	ASR1	1Hr TSP	371 $\mu\text{g}/\text{m}^3$	Action Level

#### 4.4 AIR QUALITY EXCEEDANCE INVESTIGATION

- 4.4.1 Investigation for the 1-hour and 24-hour TSP exceedance was undertaken upon received the monitoring results by the ET.
- 4.4.2 For the exceednances in the reporting period, the investigation reports were submitted to all relevant parties and concluded that those exceedances are unlikely related to the Contract work and no corrective action was required accordingly. The detailed investigation reports and findings can be referred to the Monthly EM&A Reports of the contract.



## **5 ECOLOGY MONITORING**

### **5.1 GENERAL**

5.1.1 According to the EM&A Manual requirements, regularly inspection for Pitcher Plants at least once every week to report its growth and protection measure situation shall be conducted during construction period.

5.1.2 Total 181 pitcher plants were transplanted to final receptor site and the rest of the Pitcher Plant individuals (certified dead by the specialist) were not transplanted and were treated as general refuse. All the transplantation of pitcher plant from the nursery site to final receptor site was completed on 10<sup>th</sup> September 2015.

### **5.2 PITCHER PLANTS INSPECTION**

5.2.1 A total **52** occasions of inspection were carried out by the Contractor and ET during the Reporting Period.

5.2.2 Establishment period for the pitcher plants was completed at the end of September 2016, the joint site completion of Establishment period visit with AFCD was undertaken on 23 September 2016 and the final pitcher plants report was submitted to AFCD on early December 2016. Therefore after 23 September 2016, only the integrity of the protection fence was checked to fulfill the EIA requirement. During each inspection, the protection mitigation measures were checked at the final receptor area to make sure no site activities were undertaken inside the protection zone. Besides, no construction activities were observed to be carried out at the surrounding of the final receptor area. The condition of chain link fence is good and no repair or maintenance is required.

5.2.3 No matter the completion of establishment period, the Contractor should properly maintain the fencing along the receptor area to avoid disturbance to the pitcher plants under the EIA requirement.

## **6 CULTURAL HERITAGE**

### **6.1 GENERAL**

6.1.1 According to the EM&A Manual requirements, regular inspection for heritage resource Grave G1 shall be audited by the ET at least once every week to ensure recommended mitigation measures implemented during construction period. The aim of the survey is prevention of any possible damage to the grave and to ensure that proposed mitigation measures are implemented. The broad scope of the audit will involve supervision of the following:

- Non-contact effects of the engineering works, such as vibration from pneumatic drills which could cause damage, such as foundation or wall cracks and loosening of tiles or fixtures; and
- Contact between the historic structures and equipment and materials associated with the engineering works.

6.1.2 Specifically, the monitoring programme will entail the following tasks:

- The extent of the agreed works areas should be regularly checked during the construction phase to ensure the buffer is being maintained; and
- Ensure no stockpiling or equipment storage is affecting the structure.

6.1.3 In the event of non-compliance the responsibilities of the relevant parties is detailed in the Event/ Action Plan in [Appendix F](#).

### **6.2 GRAVE INSPECTION**

6.2.1 In this Reporting Period, there are total **52 occasions** to carry out the Grave G1 inspection. During site inspection, buffer zone was observed between the working area and the Grave and no construction material or equipment was stored nearby the Grave.

6.2.2 Since construction works very close to buffer zone of the Grave G1, cultural heritage mitigation measures and protection measures as provided by the Contractor, therefore has fully implemented in accordance with EM&A Manual requirements

## **7 LANDSCAPE AND VISUAL**

### **7.1 GENERAL**

7.1.1 According to EM&A Manual requirements, monitoring of Contractor's operations during construction period to report on Contractor's compliance should be carried out on weekly basis. Measure to mitigate landscape and visual impact during construction should be checked and monitored by a Registered Landscape Architect to ensure compliance with the intended aims of the mitigation measures. Moreover, the progress of the engineering works shall be regularly reviewed on site to identify the earliest practical opportunities for the landscape works to be undertaken.

### **7.2 LANDSCAPE AND VISUAL INSPECTION**

7.2.1 In this Reporting Period, Registered Landscape Architect with the Contractor had undertaken a total of **52** occasions of inspection.

7.2.2 During the Reporting Period, most of the landscape works such as planting was not yet commenced, but some transplanting works was commenced on 22 May 2017. Existing trees on boundary of the project area were properly protected and no damage of the existing trees were record in this Reporting Period. Felled trees during construction were collected by a licensed collector for recycling. The detailed inspection checklists can be referred to relevant Monthly EM&A Reports of the Contract.

## 8 LANDFILL GAS HAZARD MONITORING

### 8.1 GENERAL

8.1.1 During EIA study, landfill gas hazards are likely to be generated from the Pillar Point Valley (PPV) Landfill. Hence, regular landfill gas monitoring is recommended during construction of the proposed toll plaza.

8.1.2 During construction, a Safety Officer should be appointed to carry out the monitoring works. The monitoring frequency and areas to be monitored should be set down prior to commencement of ground-works either by the Safety Officer or an approved and appropriated qualified person. The routine monitoring should be carried out in all excavations, manholes, chambers, relocation of monitoring wells and any other confined spaces that may have been created. All measurements in excavations should be made with the extended monitoring tube located not more than 10 mm from the exposed ground surface. Monitoring should be performed properly to make sure that the area is free of landfill gas before any man enters in the area.

8.1.3 For excavations deeper than 1m, measurements should be carried out:

- at the ground surface before excavation commences;
- immediately before any worker enters the excavation;
- at the beginning of each working day for the entire period the excavation remains open; and
- periodically through the working day whilst workers are in the excavation.

8.1.4 For excavations between 300mm and 1m deep, measurements should be carried out:

- directly after the excavation has been completed; and
- periodically whilst the excavation remains open

8.1.5 For excavations less than 300mm deep, monitoring may be omitted, at the discretion of the Safety Officer or other appropriately qualified person.

8.1.6 To ensure the accuracy of the monitoring data, zeroing of the gas analyser shall be undertaken at the start of each day's monitoring. As part of the QA/QC, calibration of the gas analyser shall be conducted at least once every two weeks according to the specification of the manufacturer's operation manual.

8.1.7 The landfill consultation zone was divided into 6 monitoring zones. The landfill gas monitoring zones are summarized in Table 8-1 and the layout plan for the monitoring zone is illustrated in [Appendix E](#).

**Table 8-1 Landfill Gas Monitoring Zone**

ID	Location	Excavation >300mm deep undertaken in this reporting period
TD1	TD1, Retaining Wall A, Grave G1 and Subway	Yes (Suspended between 7 June and 10 July 2018 & after 14 September 2018)
RW-B	Retaining Wall B	No
RW-F	Retaining Wall F	No
S&U	Slope and Underpass	No
BW	Bridge Works (G2, H1)	No
LMR	Lung Mun Road	Yes (Starting from 3 April 2018 & Suspended between 7 June and 10 July 2018)

## 8.2 LANDFILL GAS MONITORING RESULT

8.2.1 A BIOGAS 5000 gas analyser was used for the landfill gas monitoring. In the past twelve months, landfill gas monitoring was conducted at monitoring zone TD1 & LMR between November 2017 and October 2018. For the monitoring zone LMR, the excavation works was resumed on 3 April 2018, therefore the landfill gas monitoring at LMR was resumed after 3 April 2018. For the monitoring zone TD1, the excavation works was completed after 14 September 2018, therefore the landfill gas monitoring at TD1 was suspended after 14 September 2018. Moreover, during the period from 7 June to 10 July 2018, no excavation works was undertaken at both zones, therefore the landfill gas monitoring was temporary suspended.

8.2.2 There were total 266 monitoring days carried out by the Safety Officer or an approved and qualified persons. Landfill gas measurement results in the past twelve months are summarized in Table 8-2. Moreover, graphical plot are attached in [Appendix G](#).

**Table 8-2 Summary of Landfill Gas Measurement Results in this Annual for TD1 & LMR**

Para.	Action Level	Limit Level	In Period	Detectable at TD1		Detectable at LMR	
				Min	Max	Min	Max
Methane	>10% LEL (>0.5% v/v)	>20% LEL (>1% v/v)	Nov 2017 to Jan 2018	0.1%	0.1%	Nil*	Nil*
			Feb 2018 to Apr 2018	0.1%	0.1%	0.1%	0.1%
			May 2018 to Jul 2018	0.1%	0.1%	0.1%	0.1%
			Aug 2018 to Oct 2018	0.1%	0.1%	0.1%	0.1%
Oxygen	<19%	<18%	Nov 2017 to Jan 2018	20.7%	21.1%	Nil*	Nil*
			Feb 2018 to Apr 2018	20.8%	21.0%	20.8%	21.0%
			May 2018 to Jul 2018	20.8%	21.1%	20.8%	21.0%
			Aug 2018 to Oct 2018	20.8%	21.1%	20.8%	21.0%
Carbon Dioxide	>0.5%	>1.5%	Nov 2017 to Jan 2018	0.1%	0.2%	Nil*	Nil*
			Feb 2018 to Apr 2018	0.1%	0.2%	0.1%	0.2%
			May 2018 to Jul 2018	0.1%	0.2%	0.1%	0.2%
			Aug 2018 to Oct 2018	0.1%	0.2%	0.1%	0.2%

Remark\*: No monitoring was undertaken at this period

8.2.3 The measurement results shown that slightly methane concentration was detected and all oxygen concentration was measured between 19.2% and 21.1% and Carbon Dioxide was between 0.1 % and 0.2 %. No corrective action was required accordingly.

## 9 WASTE MANAGEMENT

### 9.1 GENERAL WASTE MANAGEMENT

9.1.1 Waste management was carried out by an on-site Environmental Officer or an Environmental Supervisor from time to time. The effective management of waste arisings during the construction phase will be monitored through the site audit programme. The aims of the waste audit are:

- to ensure the waste arising from the works are handled, stored, collected, transferred and disposed of in an environmentally acceptable manner; and
- to encourage the reuse and recycling of material.

9.1.2 In addition to the site inspections, the ET shall review the documentation procedures prepared by the Waste Coordinator once a week to ensure proper records are being maintained and procedures undertaken in accordance with the Waste Management Plan.

### 9.2 RECORDS OF WASTE QUANTITIES

9.2.1 All types of waste arising from the construction work are classified into the following:

- Construction & Demolition (C&D) Material;
- Chemical Waste;
- General Refuse; and
- Excavated Soil.

9.2.2 In the past twelve months, total quantities of waste disposal are summarized in *Tables 9-1* and *9-2*.

**Table 9-1 Summary of Quantities of Inert C&D Materials**

Type of Waste	Quantity				Total	Disposal Location
	Nov 2017 – Jan 2018	Feb 2018 – Apr 2018	May 2018 – Jul 2018	Aug 2018 – Oct 2018		
Reused in this Contract (Inert) (‘000m <sup>3</sup> )	1.344	0.413	0.331	0.113	<b>2.201</b>	-
Reused in other Projects (Inert) (‘000m <sup>3</sup> )	2.899	1.272	0.516	0.083	<b>4.770</b>	<ul style="list-style-type: none"> <li>• TM-CLKL C2 HY/2012/08</li> <li>• Lam Tei Quarry</li> <li>• Eco Park K.wah Recycle Facilities</li> <li>• Lung Kwu Tan Tailor Recycled Aggregates</li> <li>• Laintang BCP</li> </ul>
Disposal as Public Fill (Inert) (‘000m <sup>3</sup> )	5.237	11.139	5.601	7.524	<b>29.501</b>	Tuen Mun Area 38

**Table 9-2 Summary of Quantities of C&D Wastes**

Type of Waste	Quantity				Total	Disposal Location
	Nov 2017 – Jan 2018	Feb 2018 – Apr 2018	May 2018 – Jul 2018	Aug 2018 – Oct 2018		
Recycled Metal (‘000kg)	0	0	0	0	<b>0</b>	-
Recycled Paper / Cardboard Packing (‘000kg)	0	0	0	0	<b>0</b>	-
Recycled Plastic (‘000kg)	0	0	0	0	<b>0</b>	-
Chemical Wastes (‘000kg)	0	0.040	0	0.040	<b>0.080</b>	Licensed collector
General Refuses (‘000m <sup>3</sup> )	1.543	0.493	0.542	0.681	<b>3.259</b>	WENT

9.2.3 Whenever possible, materials were reused on-site as far as practicable.

## 10 INSPECTION AND AUDITING

### 10.1 SITE INSPECTION

10.1.1 According to the approved EM&A Manual, the environmental site inspection shall be formulated by ET Leader. Weekly environmental site inspections should carry out to confirm the environmental performance.

#### *Findings / Deficiencies During Reporting Period*

10.1.2 In the past twelve months, total 52 events of joint site inspection to evaluate site environmental performance has been carried out by the RE, ET and the Contractor. Moreover, IEC or ENPO attended total 14 occasions' joint site inspection. The quantity of reminders/observations is summarized in **Table 10-1**.

**Table 10-1 Summary of Reminders/Observations of Site Inspection for the Annual**

Reporting Period	Date of site inspection	Nos. of findings / reminders	Follow-Up Status
November 2017	7 <sup>th</sup> , 14 <sup>th</sup> , 21 <sup>st</sup> and 28 <sup>th</sup> November 2017	5	Completed
December 2017	5 <sup>th</sup> , 12 <sup>th</sup> , 21 <sup>st</sup> and 27 <sup>th</sup> December 2017	8	Completed
January 2018	2 <sup>nd</sup> , 9 <sup>th</sup> , 16 <sup>th</sup> , 23 <sup>rd</sup> and 30 <sup>th</sup> January 2018	5	Completed
February 2018	6 <sup>th</sup> , 13 <sup>th</sup> , 20 <sup>th</sup> and 27 <sup>th</sup> February 2018	6	Completed
March 2018	6 <sup>th</sup> , 13 <sup>th</sup> , 20 <sup>th</sup> and 27 <sup>th</sup> March 2018	6	Completed
April 2018	3 <sup>rd</sup> , 10 <sup>th</sup> , 17 <sup>th</sup> and 24 <sup>th</sup> April 2018	8	Completed
May 2018	2 <sup>nd</sup> , 8 <sup>th</sup> , 15 <sup>th</sup> , 23 <sup>rd</sup> and 30 <sup>th</sup> May 2018	8	Completed
June 2018	5 <sup>th</sup> , 13 <sup>th</sup> , 19 <sup>th</sup> and 26 <sup>th</sup> June 2018	9	Completed
July 2018	3 <sup>rd</sup> , 11 <sup>th</sup> , 17 <sup>th</sup> , 24 <sup>th</sup> and 31 <sup>st</sup> July 2018	12	Completed
August 2018	7 <sup>th</sup> , 14 <sup>th</sup> , 21 <sup>st</sup> and 28 <sup>th</sup> August 2018	14	Completed
September 2018	4 <sup>th</sup> , 11 <sup>th</sup> , 18 <sup>th</sup> and 26 <sup>th</sup> September 2018	6	Completed
October 2018	2 <sup>nd</sup> , 10 <sup>th</sup> , 16 <sup>th</sup> , 23 <sup>rd</sup> and 30 <sup>th</sup> October 2018	10	Completed

10.1.3 In the past twelve months, there are no non-compliance recorded, however, **97** observations/reminders were recorded during the site inspections. The minor deficiencies found in the weekly site inspections were in general rectified within the specified deadlines. The environmental performance of the Project was therefore considered satisfactory.

## 11 ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

### 11.1 ENVIRONMENTAL COMPLAINT, SUMMONS AND PROSECUTION

11.1.1 For the Contract, no summons and prosecution was received in the Reporting Period. However, there are one environmental complaint and 36 exceedances of action / limit levels recorded during the Reporting Period. The statistical summary table of environmental exceedance, complaint, summons and prosecution is presented in *Tables 11-1, 11-2, 11-3 and 11-4*.

**Table 11-1 Statistical Summary of Environmental Exceedance**

Reporting Period	Environmental Aspect		Exceedance Statistics	
			Action	Limit
1 November 2017 – 31 October 2018	Air Quality	1-hour TSP	29	2
		24-hour TSP	2	3
	Landfill Gas	Methane	0	0
		Oxygen	0	0
		Carbon Dioxide	0	0

**Table 11-2 Statistical Summary of Environmental Complaints**

Reporting Period	Complaint Nature				Total Registered
	Water Quality	Construction Dust	Construction Noise	Others	
1 November 2017 – 31 October 2018	NA	• 30 January 2018	• 30 January 2018	• 30 January 2018	1

**Table 11-3 Statistical Summary of Environmental Summons**

Reporting Period	Environmental Summons Statistics			
	Cumulative	Complaint Nature		
		Air	Noise	Water
1 November 2017 – 31 October 2018	0	NA	NA	NA

**Table 11-4 Statistical Summary of Environmental Prosecution**

Reporting Period	Environmental Prosecution Statistics			
	Cumulative	Complaint Nature		
		Air	Noise	Water
1 November 2017 – 31 October 2018	0	NA	NA	NA

### 11.2 SUMMARY RECORD OF ALL COMPLAINTS, ACTION AND WORKING PROCEDURES

11.2.1 During the complaint investigation work, the Contractor was co-operated with the ET in providing all the necessary information and assistance for completion of the investigation. Investigation reports for the complaints have completed by the ET and submitted to all relevant parties and they are summarized in below.

#### **Complaint received on 30 January 2018:**

A complaint was received from the EPD on 30 January 2018 to complaint that “晚上12點或凌晨3點至5點，點解內河碼頭還有工程要做，不是晚上11點前應該不可發出噪音嗎？而且可以無限發光，已經是凌晨了有這需要嗎？已經是凌晨了，為何開着咁多大光燈？至於在日頭觀察，為何內河碼頭及港珠澳大橋工程，不是應該把沙石灑水避免空氣污染嗎？為何沒有依程序灑水，令沙塵飄到屯門碼頭？還容一船船沙石飄揚？屯門碼頭空氣污染指數甚高，這就是原因.” After the investigation it was concluded that the complaint was



project related, the improvement works for dust mitigation had been completed by contractor. The detailed investigation report can be referred to the Monthly EM&A Reports (**January 2018**) of the contract.

*Inspection Checklist for Vulnerable to Contaminated Water Discharge*

- 11.2.2 Following the complaint about discharge of milky water to Bufferfuly Beach on 2 September 2015, the Contractor proposed to carry out inspection of wastewater treatment facilities, concerned discharge points, drainage inlets and outlets daily during typhoon or wet season and once per week at dry season.
- 11.2.3 In addition, specific inspections would also be conducted before and after adverse weather to ensure necessary remedial works would be carried out timely. Should incidental contaminated water discharge be found at the inlet of the associated drainage system, a specific inspection of the relevant drainage pipes would be conducted for traces of deposit, and follow up actions would be taken when necessary.
- 11.2.4 The inspection for vulnerable to contaminated water discharge was conducted by the Contractor daily during wet season (April to October 2018) and weekly during dry season (November 2017 to March 2018). As requested by the EPD, the associated inspection checklist should be presented in the respective Monthly EM&A Report.

## 12 IMPLEMENTATION STATUS OF MITIGATION MEASURES

### 12.1 GENERAL REQUIREMENTS

12.1.1 The environmental mitigation measures that recommended in the Environmental Mitigation Measures Implementation Schedule (EMMIS) in the Project EM&A Manual covered the issues of Air Quality, Cultural Heritage, Ecology, Landfill Gas Hazard, Landscape & Visual, Noise, Water and Waste and they are presented in [Appendix H](#).

12.1.2 In the past twelve months, environmental mitigation measures generally implemented by the Contract are listed in [Table 12-1](#).

**Table 12-1 Environmental Mitigation Measures**

Issues	Environmental Mitigation Measures
Air Quality	<ul style="list-style-type: none"> <li>• Maintain damp / wet surface on access road</li> <li>• Keep slow speed in the sites</li> <li>• All vehicles must use wheel washing facility before off site</li> <li>• Sprayed water during rock breaking works</li> <li>• During transportation by truck, materials loaded lower than the side and tail boards, and covered before transport</li> <li>• Compacted all soil stockpiles</li> <li>• Part of the exposed slopes covered geotextile net</li> </ul>
Cultural Heritage	<ul style="list-style-type: none"> <li>• Set a buffer zone between the working area and the Grave</li> <li>• All construction materials and equipment store far from the Grave</li> <li>• Inspection the Grave to ensure provision mitigation measures effective</li> </ul>
Ecology	<ul style="list-style-type: none"> <li>• Wire fencing provided for temporary protect Pitcher Plants</li> <li>• Undertake weekly inspection of Pitcher Plants</li> </ul>
Landfill Gas Hazard	<ul style="list-style-type: none"> <li>• Landfill Gas measurement undertake during trench excavation</li> </ul>
Water Quality	<ul style="list-style-type: none"> <li>• Temporary drainage system provide for surface runoff prevent discharge to public area</li> <li>• Wastewater to be treated by sedimentation tank before discharge.</li> </ul>
Noise	<ul style="list-style-type: none"> <li>• No operation of powered mechanical equipment is allowed during restricted hours from 19:00 to 07:00 on the following day and whole day during Sunday and public holiday without construction noise permit (CNP)</li> <li>• Keep good maintenance of plants</li> <li>• The noisy plants or works provide mobile noise barriers</li> <li>• Shut down the plants when not in use</li> </ul>
Waste and Chemical Management	<ul style="list-style-type: none"> <li>• On-site sorting prior to disposal</li> <li>• Follow requirements and procedures of the “Trip-ticket System”</li> <li>• Predict required quantity of concrete accurately</li> <li>• Collect the unused fresh concrete at designated locations in the sites for subsequent disposal</li> </ul>
General	<ul style="list-style-type: none"> <li>• The site was generally kept tidy and clean.</li> </ul>

### **13 CONCLUSIONS AND RECOMMENDATIONS**

#### **13.1 CONCLUSIONS**

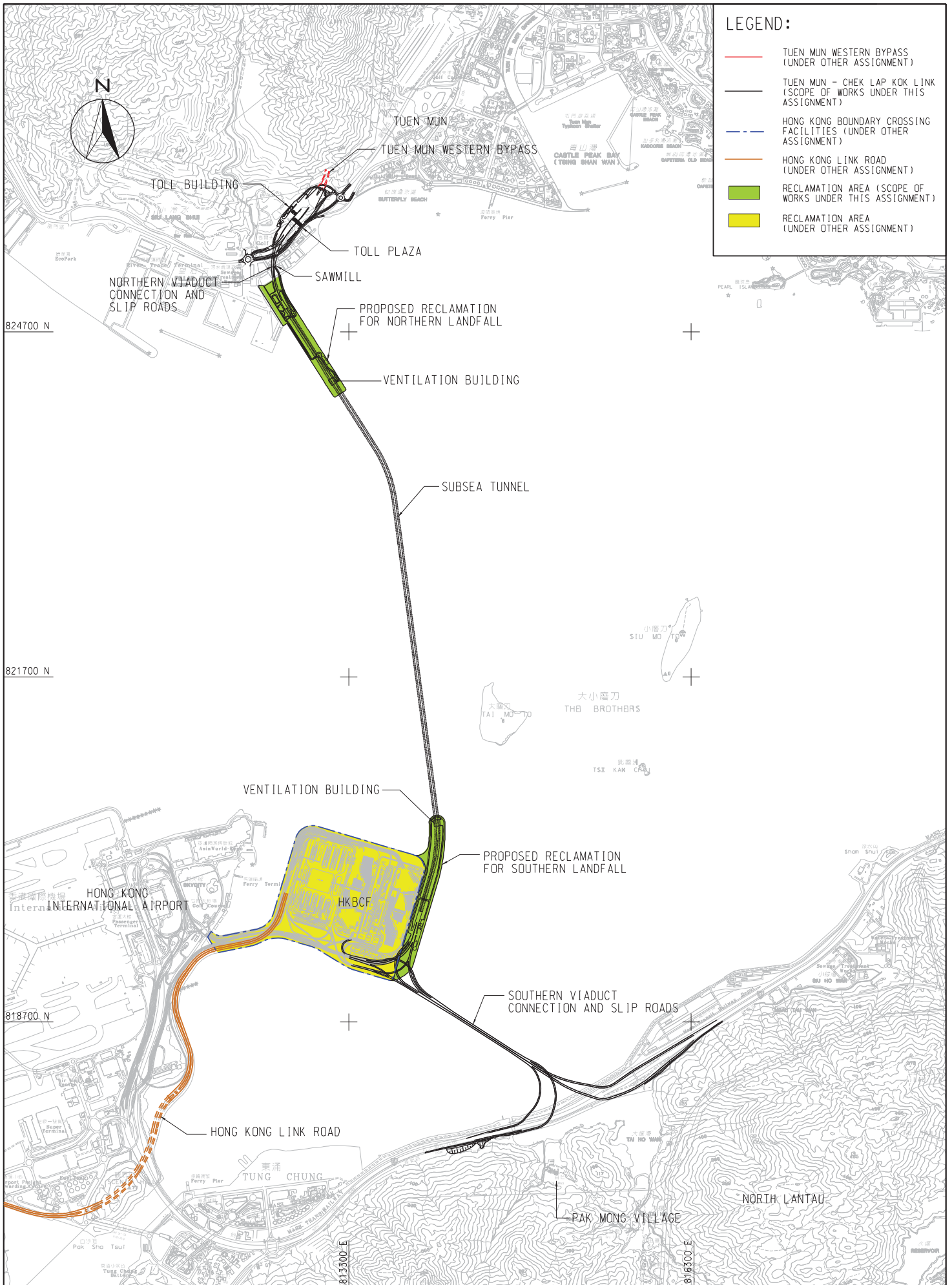
- 13.1.1 This is 4<sup>th</sup> Annual EM&A Review Report presenting the monitoring results and inspection findings for the Reporting Period from **1 November 2017** to **31 October 2018**.
- 13.1.2 In the Reporting Period, total 29 Action Level and 2 Limit Level exceedances of 1-hour TSP were recorded; 2 Action Level and 3 Limit Level exceedance of 24-hour TSP was recorded.
- 13.1.3 Site inspection for landscape and visual was conducted on weekly basis by the Landscape Architect to ensure the compliance of the intended aims of the mitigation measures. Most of the landscape works such as planting was not yet commenced.
- 13.1.4 Landfill gas monitoring was conducted at TD1 & LMR between November 2017 and October 2018 while excavation works was undertaken in the consultation zone by the Safety Officer. The monitoring results shown no exceedances were triggered.
- 13.1.5 No notifications of summons or successful prosecution were received during the Reporting Period. However, one complaint about the air quality issue, noise issue and night-time light nuisance was received during the Reporting Period. Investigations were conducted and the complaint was not project related.
- 13.1.6 Joint site inspection by the RE, ET and CRBC-Kaden JV was carried in accordance with the EM&A Manual. Moreover, the IEC attended a total of **14** joint site inspections during the Reporting Period. No non-compliance was recorded during the site inspection but **total 97** observations/reminders were recorded in the past twelve months. All the deficiencies were rectified before next site inspection date.
- 13.1.7 A total **52** occasions of Pitcher Plant inspection were carried out by the Contractor and ET during the Reporting Period at the final receptor site. Establishment period for the pitcher plants was completed at the end of September 2016, the join site completion of Establishment period visit with AFCD was undertaken on 23 September 2016 and the final pitcher plants report was submitted to AFCD on early December 2016. Therefore after 23 September 2016, only the integrity of the protection fence was checked to fulfil the EIA requirement. During each inspection, the protection mitigation measures were checking at the final receptor area to make sure no site activities was undertaken inside the protection zone. Besides, no construction activities were observed to be carried out at the surrounding of the final receptor area. The condition of chain link fence is good and no repair or maintenance is required.
- 13.1.8 For cultural heritage in the past twelve months, the buffer zone between the working area and the Grave was observed and no construction material or equipment was stored nearby.

#### **13.2 RECOMMENDATIONS**

- 13.2.1 The construction phase monitoring programme ensured that any environmental impact to the receivers would be readily detected and timely actions could be taken to rectify any non-compliance. Assessment and analysis of monitoring results collected demonstrated the environmental acceptability of the Project. The regular site inspection and waste audit ensured that all the mitigation measures on waste management were effectively implemented.
- 13.2.2 The EM&A programme effectively monitored the environmental impacts from the construction phase of the Project and no particular recommendation was advised for the improvement of the programme.
- 13.2.3 It is considered that the environmental acceptability of the Contract in the past twelve months was satisfactory and acceptable.

# **Appendix A**

## **Project Layout Plan**



**LEGEND:**

- TUEN MUN WESTERN BYPASS (UNDER OTHER ASSIGNMENT)
- TUEN MUN - CHEK LAP KOK LINK (SCOPE OF WORKS UNDER THIS ASSIGNMENT)
- - - HONG KONG BOUNDARY CROSSING FACILITIES (UNDER OTHER ASSIGNMENT)
- HONG KONG LINK ROAD (UNDER OTHER ASSIGNMENT)
- RECLAMATION AREA (SCOPE OF WORKS UNDER THIS ASSIGNMENT)
- RECLAMATION AREA (UNDER OTHER ASSIGNMENT)

PROJECT NO. 60044963

**AECOM**

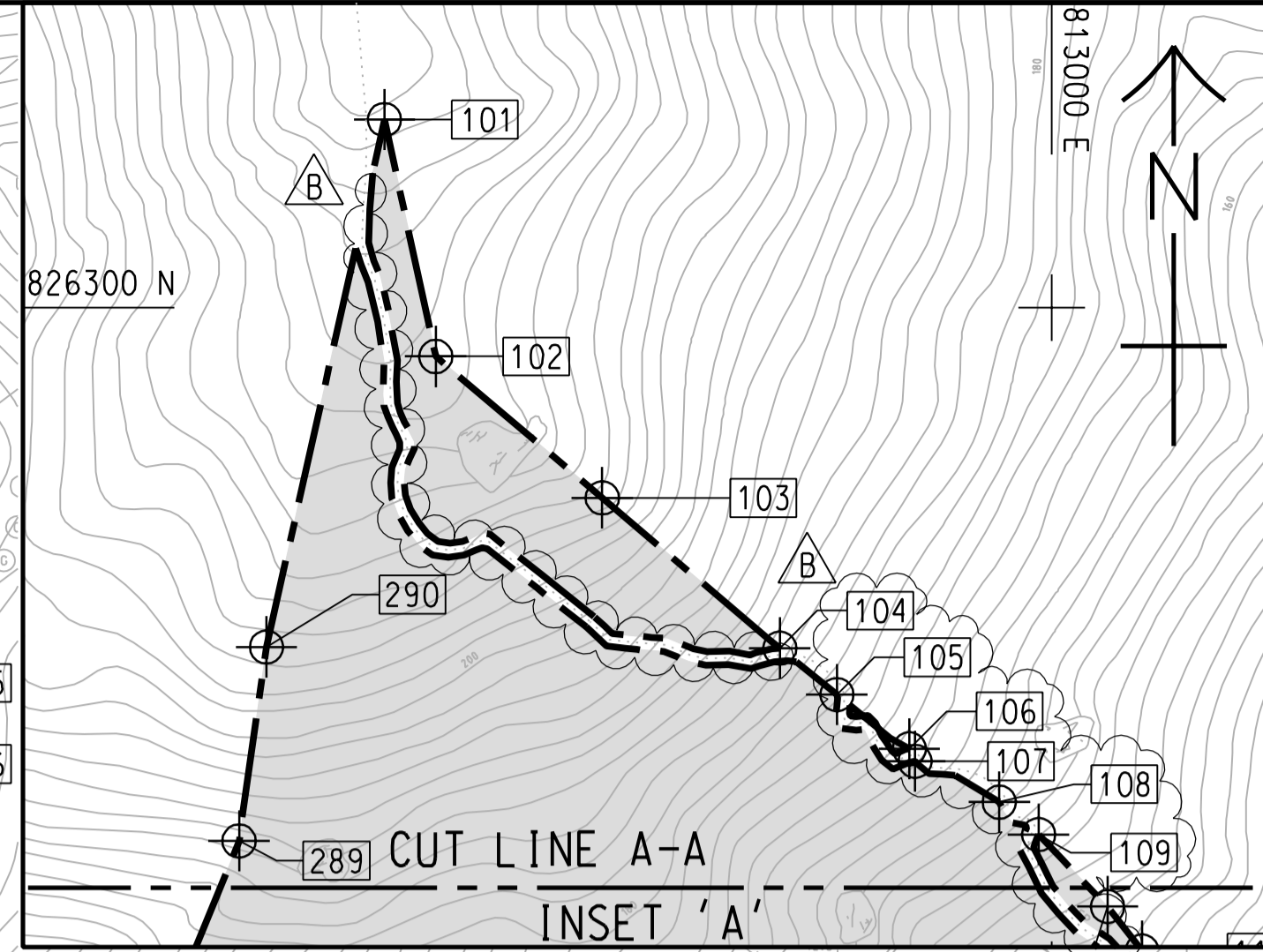
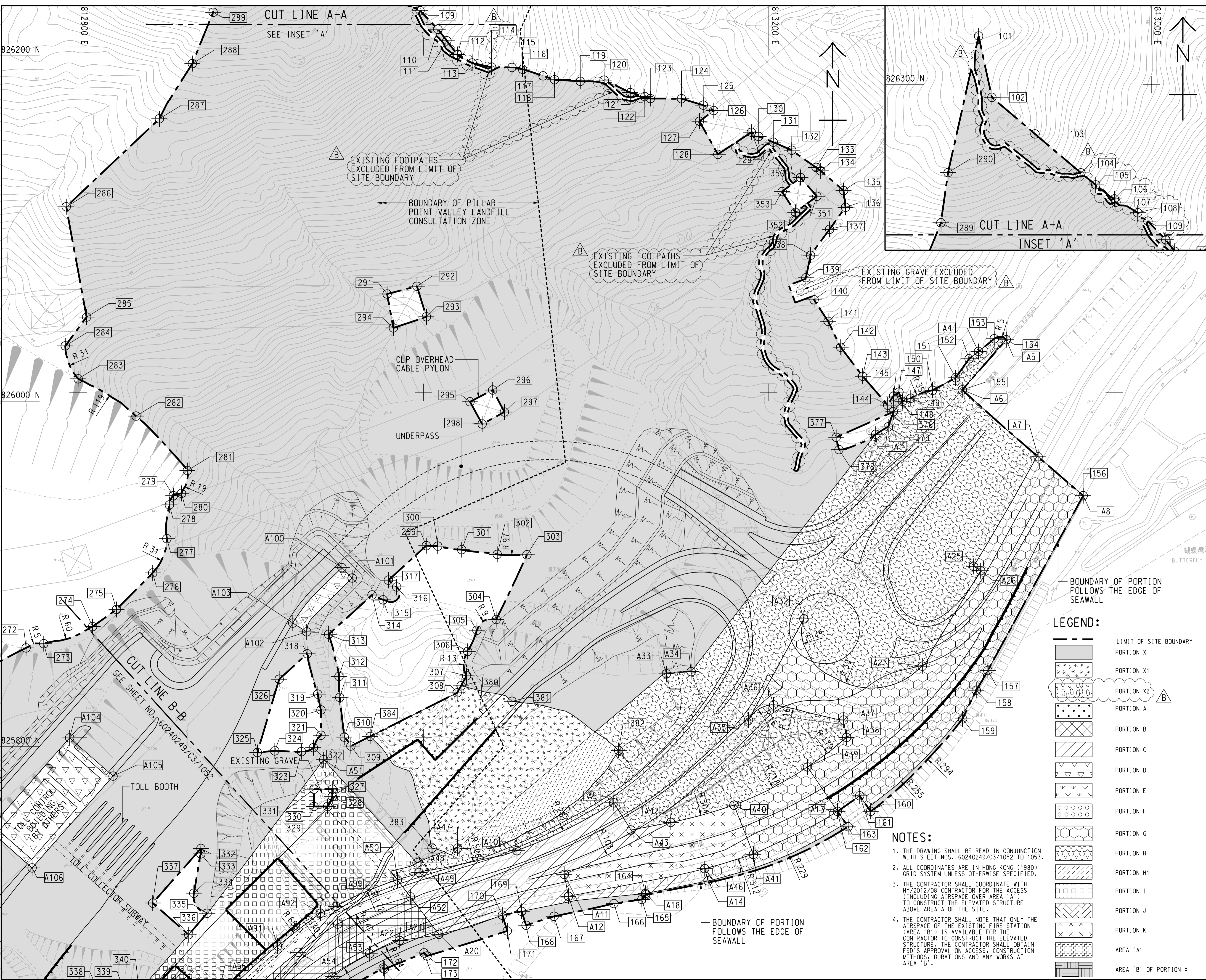
AGREEMENT NO. CE 52/2007(HY)  
 TUEN MUN - CHEK LAP KOK LINK - INVESTIGATION  
 GENERAL LAYOUT OF TM-CLKL

SCALE	A3 1:30000	DATE	JUL. 2009
CHECK	--	DRAWN	WYP
JOB NO.	60044963	DRAWING NO.	Fig 2.1
		REV	A

**Appendix B**

**Layout Plan of the Contract**

Project Management Initials: Designer: PI Checked: ALCF Approved: CWN ISO A1 594mm x 841mm  
 Plot File by: LINDO 2014/05/19 PATH: P:\Projects\60240249\DRAWING\CONTRACT\C3\1005C3\_05E1.dgn



**LEGEND:**

	LIMIT OF SITE BOUNDARY
	PORTION X
	PORTION X1
	PORTION X2
	PORTION A
	PORTION B
	PORTION C
	PORTION D
	PORTION E
	PORTION F
	PORTION G
	PORTION H
	PORTION H1
	PORTION I
	PORTION J
	PORTION K
	AREA 'A'
	AREA 'B' OF PORTION X

- NOTES:**
1. THE DRAWING SHALL BE READ IN CONJUNCTION WITH SHEET NOS. 60240249/C3/1052 TO 1053.
  2. ALL COORDINATES ARE IN HONG KONG (1980) GRID SYSTEM UNLESS OTHERWISE SPECIFIED.
  3. THE CONTRACTOR SHALL COORDINATE WITH HY/2012/08 CONTRACTOR FOR THE ACCESS (INCLUDING AIRSPACE OVER AREA 'A') TO CONSTRUCT THE ELEVATED STRUCTURE ABOVE AREA A OF THE SITE.
  4. THE CONTRACTOR SHALL NOTE THAT ONLY THE AIRSPACE OF THE EXISTING FIRE STATION (AREA 'B') IS AVAILABLE FOR THE CONTRACTOR TO CONSTRUCT THE ELEVATED STRUCTURE. THE CONTRACTOR SHALL OBTAIN FSD'S APPROVAL ON ACCESS, CONSTRUCTION METHODS, DURATIONS AND ANY WORKS AT AREA 'B'.

**AECOM**

**PROJECT**  
項目  
**TUEN MUN - CHEK LAP KOK LINK**

**CONTRACT TITLE**  
TUEN MUN - CHEK LAP KOK LINK - NORTHERN CONNECTION TOLL PLAZA AND ASSOCIATED WORKS

**CLIENT**  
業主  
路政署  
**HIGHWAYS DEPARTMENT**  
港務大樓香港工程管理處  
Hong Kong - Zhuhai - Macao Bridge  
Hong Kong Project Management Office

**CONSULTANT**  
工程顧問公司  
AECOM Asia Company Ltd.  
www.aecom.com

**SUB-CONSULTANTS**  
分判工程顧問公司

**ISSUE/REVISION**  
修訂

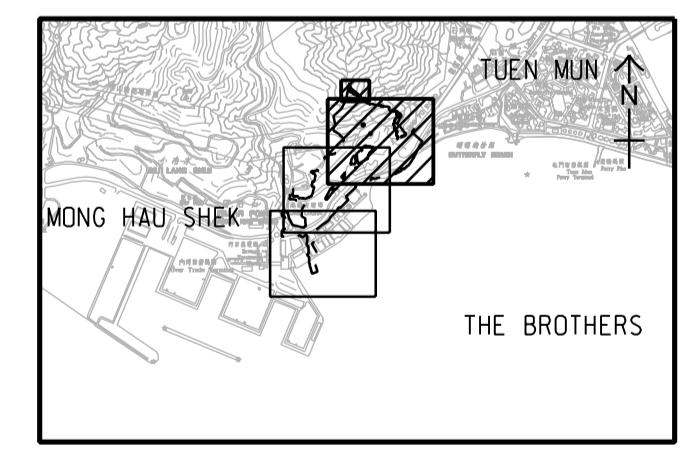
I/R	DATE	DESCRIPTION	CHK.
B	MAR. 14	TENDER ADDENDUM NO. 2	CWN
A	FEB. 14	TENDER ADDENDUM NO. 1	CWN
-	JAN. 14	TENDER DRAWING	CWN

**STATUS**  
階段

**SCALE**  
比例  
A1 1:1000

**DIMENSION UNIT**  
尺寸單位  
METRES

**KEY PLAN**  
索引圖  
1:50000



**PROJECT NO.**  
項目編號  
60240249

**CONTRACT NO.**  
合約編號  
HY/2013/12

**SHEET TITLE**  
圖紙名稱  
**PORTIONS OF SITE AND SITE BOUNDARY SETTING OUT PLAN**

**SHEET NUMBER**  
圖紙編號  
60240249/C3/1051B

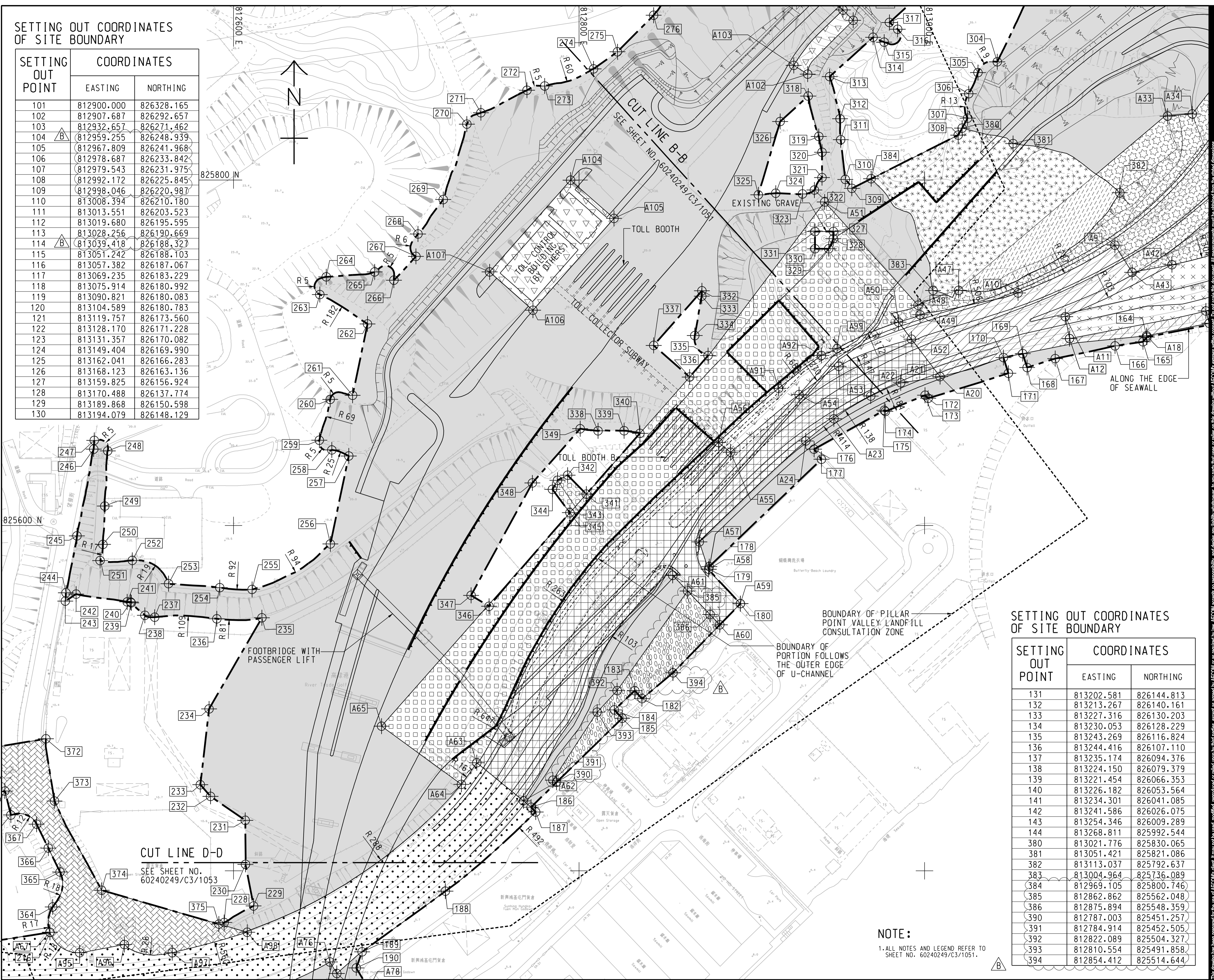
SHEET 1 OF 3

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Project Management Initials: Designer: PL Checked: ALCF Approved: CWN ISO A1 594mm x 841mm  
 Plot File by: LUONQ 2014/03/18  
 PATH: P:\proj\60240249\DRAWING\CONTRACT\C3\10052.dgn

**SETTING OUT COORDINATES OF SITE BOUNDARY**

SETTING OUT POINT	COORDINATES	
	EASTING	NORTHING
101	812900.000	826328.165
102	812907.687	826292.657
103	812932.657	826271.462
104	812959.255	826248.939
105	812967.809	826241.968
106	812978.687	826233.842
107	812979.543	826231.975
108	812992.172	826225.845
109	812998.046	826220.987
110	813008.394	826210.180
111	813013.551	826203.523
112	813019.680	826195.595
113	813028.256	826190.669
114	813039.418	826188.327
115	813051.242	826188.103
116	813057.382	826187.067
117	813069.235	826183.229
118	813075.914	826180.992
119	813090.821	826180.083
120	813104.589	826180.783
121	813119.757	826173.560
122	813128.170	826171.228
123	813131.357	826170.082
124	813149.404	826169.990
125	813162.041	826166.283
126	813168.123	826163.136
127	813159.825	826156.924
128	813170.488	826137.774
129	813189.868	826150.598
130	813194.079	826148.129



**SETTING OUT COORDINATES OF SITE BOUNDARY**

SETTING OUT POINT	COORDINATES	
	EASTING	NORTHING
131	813202.581	826144.813
132	813213.267	826140.161
133	813227.316	826130.203
134	813230.053	826128.229
135	813243.269	826116.824
136	813244.416	826107.110
137	813235.174	826094.376
138	813224.150	826079.379
139	813221.454	826066.353
140	813226.182	826053.564
141	813234.301	826041.085
142	813241.586	826026.075
143	813254.346	826009.289
144	813268.811	825992.544
380	813021.776	825830.065
381	813051.421	825821.086
382	813113.037	825792.637
383	813004.964	825736.089
384	812969.105	825800.746
385	812862.862	825562.048
386	812875.894	825548.359
390	812787.003	825451.257
391	812784.914	825452.505
392	812822.089	825504.327
393	812810.554	825491.858
394	812854.412	825514.644

**NOTE:**  
 1. ALL NOTES AND LEGEND REFER TO SHEET NO. 60240249/C3/1051.

**AECOM**

**PROJECT**  
 項目  
**TUEN MUN - CHEK LAP KOK LINK**

**CONTRACT TITLE**  
 合約編號  
**TUEN MUN - CHEK LAP KOK LINK - NORTHERN CONNECTION TOLL PLAZA AND ASSOCIATED WORKS**

**CLIENT**  
 業主  
**HIGHWAYS DEPARTMENT**  
 路政署  
 香港橋樑工程處  
 Hong Kong - Zhuhai - Macao Bridge  
 Hong Kong Project Management Office

**CONSULTANT**  
 工程顧問公司  
**AECOM Asia Company Ltd.**  
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 分判工程顧問公司

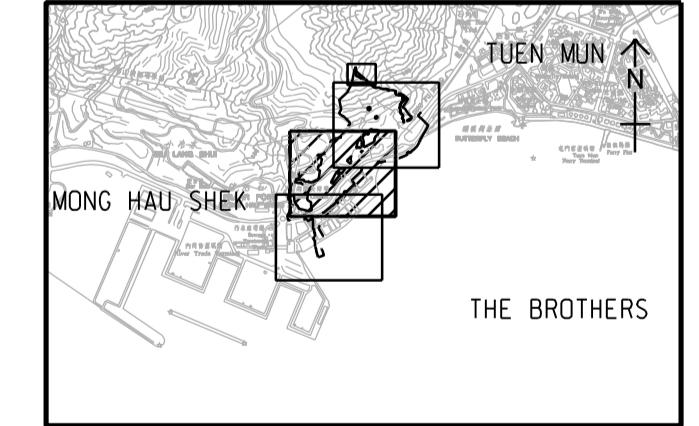
**ISSUE/REVISION**  
 修訂

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A	FEB. 14	TENDER ADDENDUM NO. 1	CWN
-	JAN. 14	TENDER DRAWING	CWN

**STATUS**  
 階段

**SCALE**  
 比例  
 A1 1:1000

**DIMENSION UNIT**  
 尺寸單位  
 METRES



**PROJECT NO.**  
 項目編號  
 60240249

**CONTRACT NO.**  
 合約編號  
 HY/2013/12

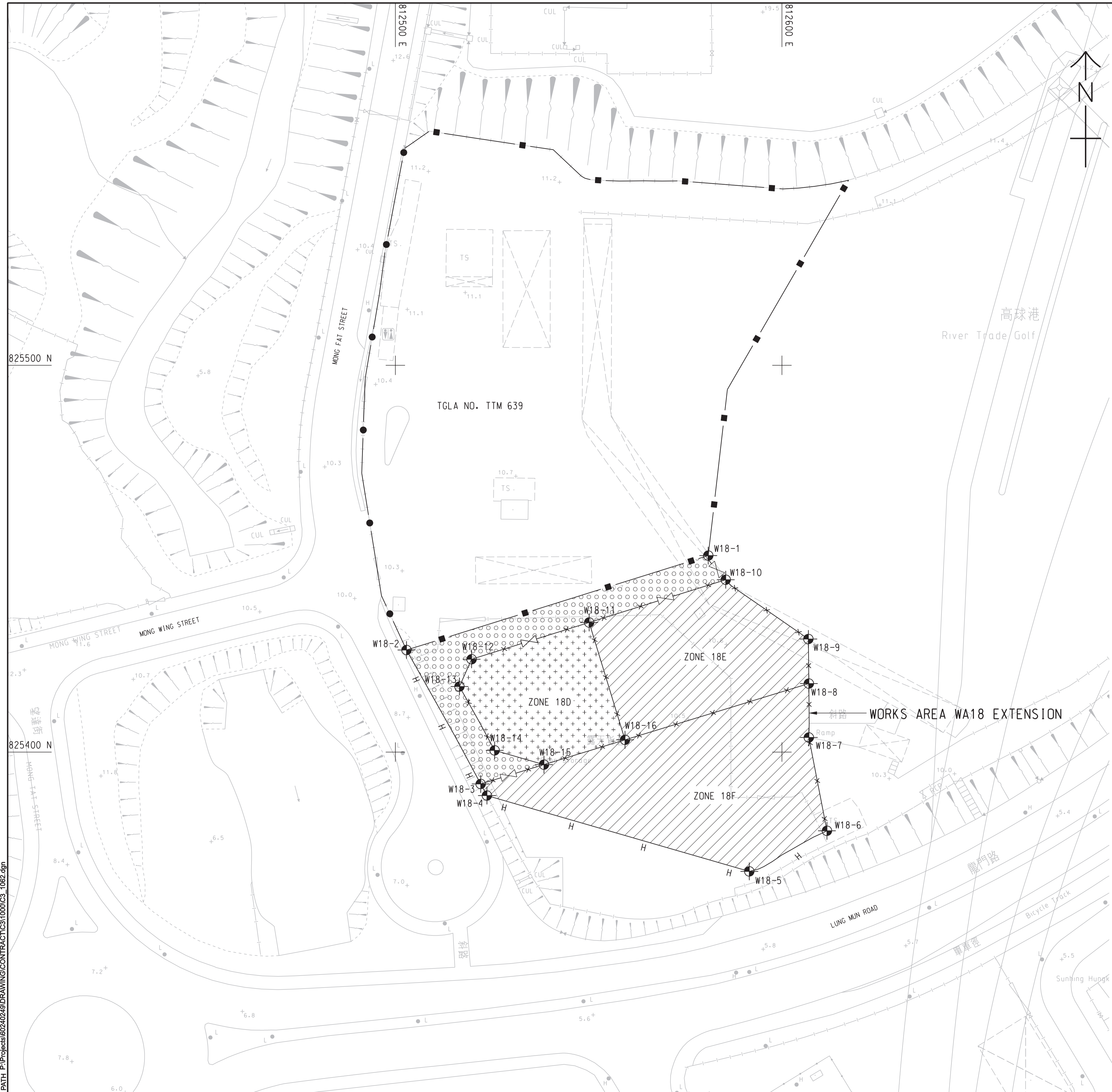
**SHEET TITLE**  
 圖紙名稱  
**PORTIONS OF SITE AND SITE BOUNDARY SETTING OUT PLAN**

**SHEET NUMBER**  
 圖紙編號  
 60240249/C3/1052B

SHEET 2 OF 3

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**NOTES:**

- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE WORKS AREA KEY PLAN IN SHEET NO. 60240249/C3/1000.
- DEMARCATON OF THE WORKS AREA SHALL BE DETERMINED ON SITE.
- REFER TO HIGHWAYS DEPARTMENT STANDARD DRAWING NOS. H6110 AND H6111 FOR DETAILS OF HOARDING.
- REFER TO HIGHWAYS DEPARTMENT STANDARD DRAWING NOS. H6121 AND H6122 FOR DETAILS OF CHAIN LINK FENCE.
- REFER TO HIGHWAYS DEPARTMENT STANDARD DRAWING NO. H6121 FOR DETAILS OF GATE.
- CHAIN LINK FENCE SHALL BE ERRECTED ALONG THE WORKS AREA BOUNDARY. THE ALIGNMENT AND EXTENT OF HOARDING AND CHAIN LINK FENCE SHOWN ARE INDICATIVE ONLY AND SHALL BE CONFIRMED BY THE ENGINEER.
- THE LOCATION AND WIDTH OF GATE SHOWN ARE INDICATIVE ONLY AND SHALL BE CONFIRMED BY THE ENGINEER.
- THE SETTING OUT INFORMATION AND WORKS AREA CONDITIONS SHOWN IN THIS DRAWING ARE FOR REFERENCE ONLY. THE WORKS AREA BOUNDARY SHALL BE IN ACCORDANCE WITH THE ENGINEERING CONDITIONS FOR TEMPORARY GOVERNMENT LAND ALLOCATION NO. GLA-TM 639. IN CASE OF DISCREPANCY BETWEEN THE BOUNDARY SHOWN ON THIS DRAWING AND THE BOUNDARY INDICATED ON THE ENGINEERING CONDITIONS, THE LATTER SHALL PREVAIL.
- THE WORKS AREAS SHOWN ON THIS DRAWING ARE TO BE SHARED-USED AMONG THE TM-CLKL RELATED CONTRACTS. THE AREAS HATCHED WITH ARE TENTATIVELY ALLOCATED FOR THE USE BY THE CONTRACT.
- THE COMMON AREA SHALL BE CONCRETE PAVED BY THE CONTRACTOR.
- ZONE 18F SHALL BE USED FOR THE SITE ACCOMMODATION OF THE ENGINEER. ZONE 18E SHALL BE USED FOR SITE ACCOMMODATION OF THE CONTRACTOR.
- ZONE 18D IS TO BE USED BY THE CONTRACTOR OF CONTRACT NO. HY/2012/08-TUEN MUN-CHEK LAP KOK LINK-NORTHERN CONNECTION SUB-SEA TUNNEL SECTION TO STORE PLANT AND EQUIPMENT ASSOCIATED WITH THE TBM TUNNELS FROM THE DATE FOR COMMENCEMENT OF THE WORKS TO 126 DAYS FROM THE DATE FOR COMMENCEMENT OF THE WORKS. THE CONTRACTOR SHALL LIAISE AND PROVIDE FREE AND UNOBSTRUCTED 24-HOUR ACCESS FOR THE CONTRACTOR OF CONTRACT NO. HY/2012/08 TO ZONE 18D. THE CONTRACTOR SHALL BE GIVEN THE POSSESSION OF ZONE 18D IN ACCORDANCE WITH APPENDIX TO FORM OF TENDER-P.3.

**LEGEND:**

- WORKS AREA FOR THE CONTRACT
- COMMON AREA (MAINTAINED UNDER THE CONTRACT) TO BE SHARED-USED WITH OTHER CONTRACTS
- AREA TO BE USED BY THE CONTRACTOR OF CONTRACT NO. HY/2012/08 AND WORKS AREA FOR THIS CONTRACT TO BE EARLY HANDED OVER BY THE CONTRACTOR (SEE NOTES NO. 12 ABOVE)
- HOARDING AND GATE (TO BE ERRECTED AND MAINTAINED UNDER THIS CONTRACT)
- EXISTING CHAIN LINK FENCE MAINTAINED BY OTHERS
- CHAIN LINK FENCE AND GATE (TO BE ERRECTED AND MAINTAINED UNDER THIS CONTRACT)
- EXISTING HOARDING AND GATE MAINTAINED BY OTHERS

**SETTING OUT CO-ORDINATES OF WORKS AREA WA18 EXTENSION**

POINT	CO-ORDINATES	
	EASTING	NORTHING
W18-1	812580.934	825450.791
W18-2	812502.880	825426.380
W18-3	812522.068	825391.750
W18-4	812523.679	825388.756
W18-5	812591.556	825369.151
W18-6	812611.638	825379.647
W18-7	812606.954	825403.769
W18-8	812606.951	825417.705
W18-9	812606.832	825429.231
W18-10	812585.456	825444.557
W18-11	812550.126	825433.508
W18-12	812519.715	825423.997
W18-13	812516.580	825416.947
W18-14	812525.682	825400.438
W18-15	812538.435	825396.754
W18-16	812559.404	825403.166

**AECOM**

**PROJECT**  
 項目  
**TUEN MUN - CHEK LAP KOK LINK**

**CONTRACT TITLE**  
 TUEN MUN - CHEK LAP KOK LINK - NORTHERN CONNECTION TOLL PLAZA AND ASSOCIATED WORKS

**CLIENT**  
 業主  
 路政署  
**HIGHWAYS DEPARTMENT**  
 港務處大樓香港工程發展處  
 Hong Kong - Zhuhai - Macao Bridge  
 Hong Kong Project Management Office

**CONSULTANT**  
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**AECOM Asia Company Ltd.**  
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 分判工程師有限公司

**ISSUE/REVISION**  
 修訂

NO.	DATE	DESCRIPTION	CHK.
B	MAR. 14	TENDER ADDENDUM NO. 2	CWN
A	FEB. 14	TENDER ADDENDUM NO. 1	CWN
-	JAN. 14	TENDER DRAWING	CWN

**STATUS**  
 階段

**SCALE**  
 比例  
 A1 1:500

**DIMENSION UNIT**  
 尺寸單位  
 METRES

**KEY PLAN**  
 索引圖

**PROJECT NO.**  
 項目編號  
 60240249

**CONTRACT NO.**  
 合約編號  
 HY/2013/12

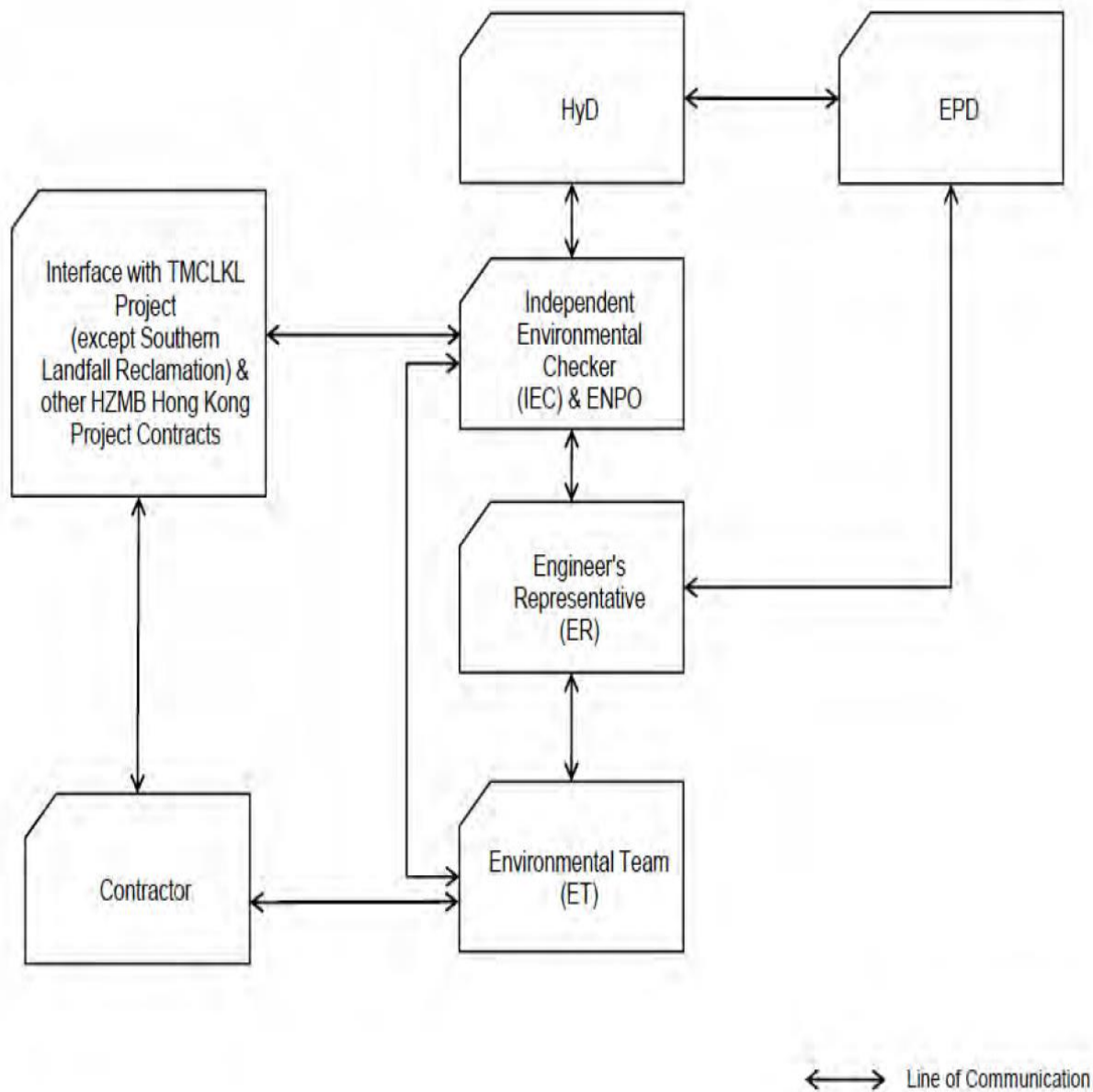
**SHEET TITLE**  
 圖紙名稱  
**WORKS AREA AND HOARDING PLAN**

**SHEET NUMBER**  
 圖紙編號  
 60240249/C3/1062B

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## **Appendix C**

### **Organization of the Contract**



**Project Organization chart**

**Organization chart of the Contractor**

**Contact Details of Key Personnel for the Contract HY/2013/12**

<b>Organization</b>	<b>Project Role</b>	<b>Name of Key Staff</b>	<b>Tel No</b>	<b>Fax No.</b>
HyD	Employer	Mr. C. W. Chow	2762 4182	3188 6614
AECOM	Principal Resident Engineer	Mr. S.W. Fok	2218 7209	2218 7399
AECOM	Chief Resident Engineer	Mr. Roger Man	2293 6388	2218 7399
AECOM	Resident Engineer (S&E)	Mr. Kelvin Yeung	22187289	2218 7399
Ramboll	Environmental Project Office (ENPO)	Mr. YH Hui	3465 2850	3465 2899
Ramboll	Independent Environmental Checker (IEC)	Dr. FC Tsang	3465 2851	3465 2899
CKJV	Deputy Project Manager	Mr. Raymond Suen	2253 8309	2253 8399
CKJV	Site Agent	Mr. Wilson Lau	2253 8300	2253 8399
CKJV	Safety and Environmental Manager	Mr. Winson Chung	2273 3185	2375 3655
CKJV	Environmental Officer	Mr. Thomas Tang	2253 8300	2253 8399
CKJV	Environmental Supervisor	Mr. Tommy Law	2253 8300	2253 8399
CKJV	Environmental Supervisor	Mr. Alex Li	2253 8300	2253 8399
AUES	Environmental Team Leader	Mr. T. W. Tam	2959 6059	2959 6079
AUES	Environmental Consultant	Miss Nicola Hon	2959 6059	2959 6079
AUES	Environmental Consultant	Mr. Ben Tam	2959 6059	2959 6079
HKL	Registered Landscape Architect	Kenneth Ng	2866 3903	--

**Legend:**

*HyD (Employer) –Highways Department*

*AECOM (Engineer) – AECOM Asia Co. Ltd.*

*CKJV (Main Contractor) – CRBC-Kaden Joint Venture*

*Ramboll (ENPO and IEC) – Ramboll Hong Kong Limited*

*AUES (ET) – Action-United Environmental Services & Consulting*

*HKL(RLA) – Hong Kong Landscape*

## **Appendix D**

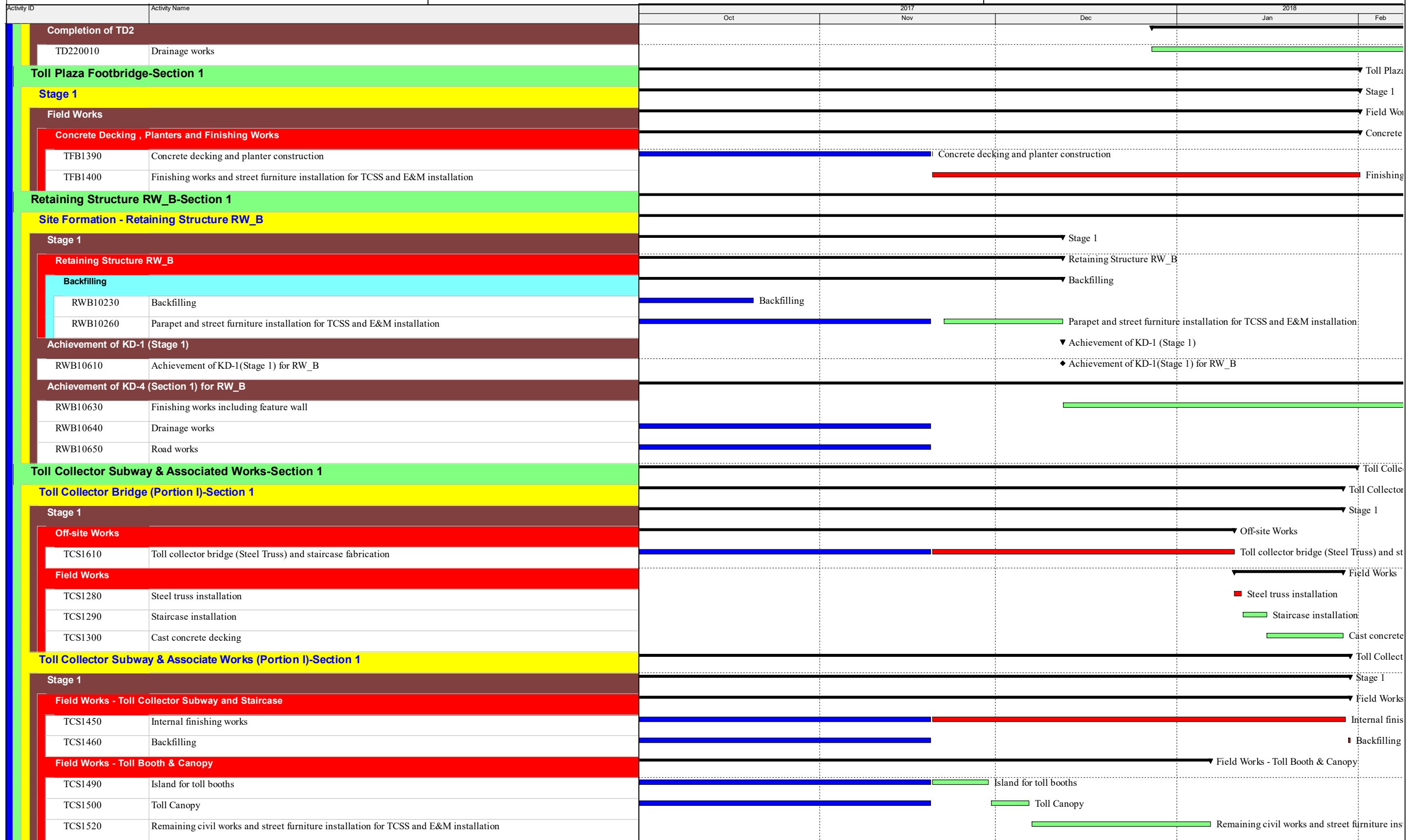
### **Master Construction Program**

Activity ID	Activity Name	2017		2018	
		Oct	Nov	Dec	Jan
<b>HY/2013/12 TMCLK Northern Connection Toll Plaza and Associated-Works Programme-Rev.4A Monthly I</b>					
<b>Site Possession Dates</b>					
PPD1140	Portion F Possession Date				
<b>Dismantling of HY/2012/04 Project Office at WA6</b>					
DM10010	Appointment of specialist subcontractor for demolition				
<b>Instrumentation and Monitoring</b>					
<b>Ground Settlement Marker</b>					
IM10110	Installation of GSM35-36,GSM44,GSM47-50(Portion F)				
<b>Piezometer/Standpipe</b>					
IM50025	GI for PADH13 and installation piezometer				
IM60030	GI for PADH14&15 and installation piezometer				
<b>Toll Plaza Decking TD1-Section 1</b>					
<b>Stage 1</b>					
<b>Field Works</b>					
<b>Deck Construction</b>					
<b>In-situ Deck and Precast Beam</b>					
TD121150	M.J installation				
<b>Parapet and Finishing Work</b>					
<b>Parapet and Railing Installation</b>					
TD120940	Parapet and planter installation				
TD120990	Railing installation and street furniture installation for TCSS and E&M installation				
<b>Toll Booth Canopy</b>					
<b>Toll both canopy and island</b>					
TD121270	Toll booth island				
TD121290	Canopy,Completion civil provision works for TCSS and E&M				
<b>Completion of Stage 1 For TD1</b>					
TD120010	Achievement of KD-1( stage 1) for TD1				
<b>Completion of TD1 in Section 1</b>					
<b>Drainage Works and Water Works</b>					
TD121000	Water works				
<b>Toll Plaza Decking TD2-Section 1</b>					
<b>Field Works</b>					
<b>Deck Construction</b>					
TD220720	Falsework removal and M.J installation				
<b>Parapet and Finishing Works</b>					
TD220210	Construct parapet ,planter and street furniture installation for TCSS and E&M installation				
TD220230	Feature groove,Completion civil provision works for TCSS and E&M				
<b>Miscellaneous Works</b>					
TD220700	Achievement of KD-1(Stage 1)for TD2				

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

**CRBC - Kaden JV  
Three-Month Rolling Programme**

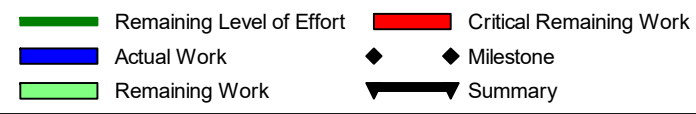
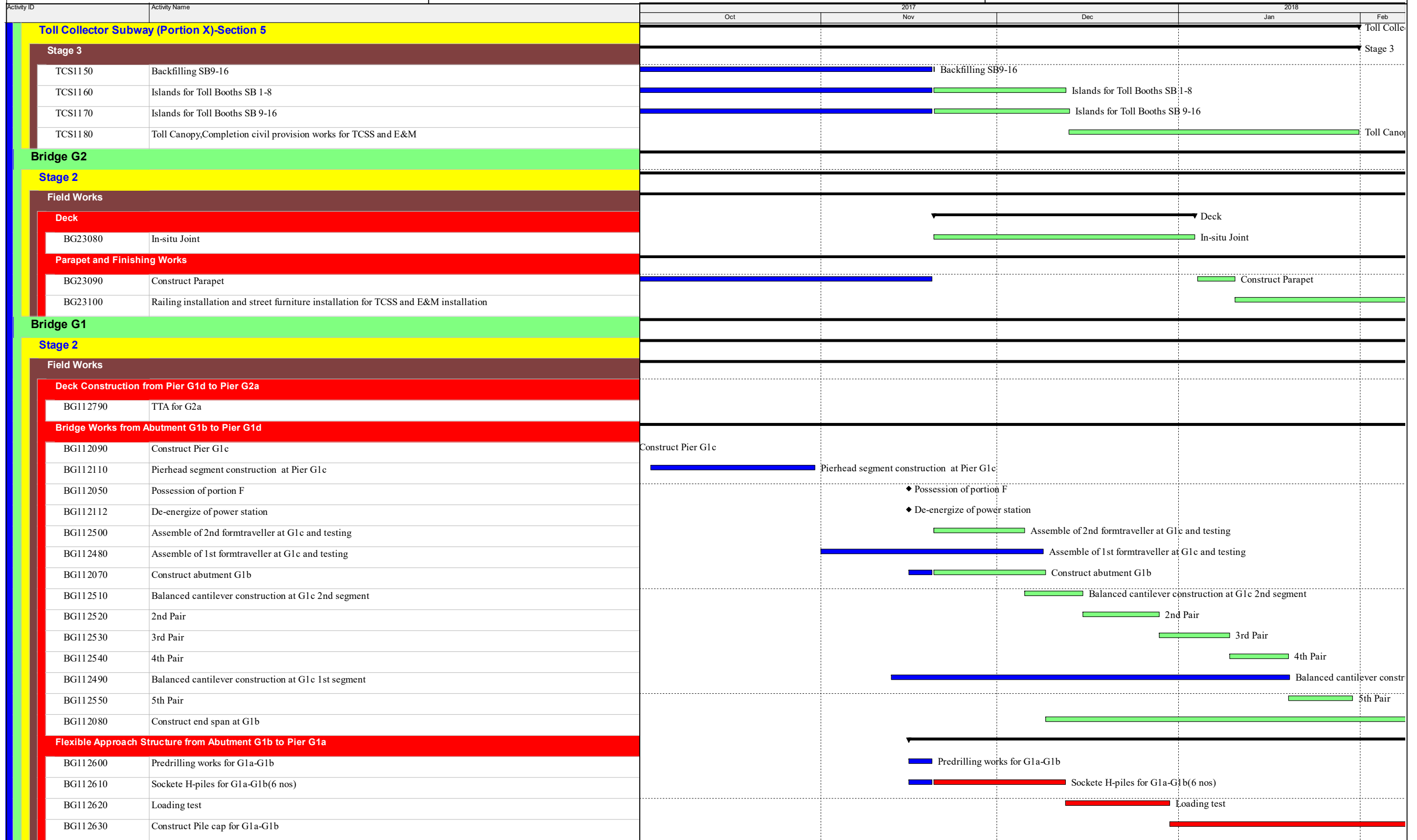
Date	Revision	Checked	Approved
28-11-17	4		



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

**CRBC - Kaden JV  
Three-Month Rolling Programme**

Date	Revision	Checked	Approved
28-11-17	4		



**CRBC - Kaden JV**  
**Three-Month Rolling Programme**

Date	Revision	Checked	Approved
28-11-17	4		





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

**CRBC - Kaden JV  
Three-Month Rolling Programme**

Date	Revision	Checked	Approved
28-11-17	4		

Activity ID	Activity Name	Oct	2017 Nov	Dec	2018 Jan	Feb
<b>Stage 3</b>						
<b>Retaining Wall A</b>						
RWA20240	Completion civil provision works for TCSS and E&M	[Gantt bar: Oct to Dec]				
▼ Achievement of KD-3 (Stage 3)						
RWA20190	Achievement of KD-3(Stage 3) for RW_A	[Milestone: Dec]				
<b>Achievement of KD-8 (Section 5) for RW_A</b>						
RWA20200	Drainage Works	[Gantt bar: Dec to Feb]				
<b>Retaining Structure RW_E</b>						
<b>Stage 2</b>						
<b>Design Submission and Approval</b>						
RWE20080	DDA for superstructure(draft)	[Gantt bar: Oct to Dec]				
RWE20090	Engineer's comments	[Gantt bar: Oct to Dec]				
RWE20100	DDA for superstructure submission	[Gantt bar: Oct to Dec]				
RWE20070	Engineer's approval	[Gantt bar: Oct to Dec]				
RWE20110	Engineer's approval	[Gantt bar: Nov to Dec]				
RWE20120	ELS design submission and approval	[Gantt bar: Dec to Jan]				
<b>Method Statement Submission and Approval</b>						
RWE20130	Method Statement Submission and Approval for ELS	[Gantt bar: Dec to Jan]				
RWE20140	Method Statement Submission and Approval for Retaining Wall Construction	[Gantt bar: Dec to Jan]				
RWE20150	Method Statement Submission and Approval for piling works	[Gantt bar: Dec to Jan]				
<b>Box Structures and L-Shape Retaining Wall for Retaining Wall E</b>						
RWE20160	Possession of Portion F	[Milestone: Dec]				
RWE20170	Predrilling works	[Gantt bar: Dec to Jan]				
RWE20180	Excavation and piling works(12 nos)	[Gantt bar: Dec to Feb]				
<b>Site Formation - Retaining Structure for Slope TP_F</b>						
<b>Stage 3</b>						
<b>Retaining Structure for Slope TP_F</b>						
RWF31440	Excavation bay 21-28	[Gantt bar: Oct to Dec]				
RWF31430	New haul road	[Gantt bar: Oct to Dec]				
RWF31450	Construct Retaining Wall-Base slab( Bay 21 to Bay 28 )	[Gantt bar: Oct to Dec]				
RWF31350	Backfilling	[Gantt bar: Oct to Dec]				
RWF31480	U-Channel construction,Completion civil provision works for TCSS and E&M	[Gantt bar: Oct to Dec]				
▼ Achievement of KD-3(Stage 3) for TP_F						
RWF31405	Achievement of KD-3(stage 3) for TP_F	[Milestone: Dec]				
<b>Achievement of KD-8 (Section 5) for TP_F</b>						
RWF31410	Remaining works(Brickwork and Blockwork,etc)	[Gantt bar: Dec to Feb]				
<b>Site Formation - Retaining Structure for Slope TP_G</b>						
<b>MJ17 -End</b>						
RWG1020	Excavation	[Gantt bar: Dec to Feb]				

█ Remaining Level of Effort    █ Critical Remaining Work  
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Activity ID	Activity Name	2017					2018	
		Oct	Nov	Dec	Jan	Feb		
RWG1010	G.I and Trial Pit							G.I and Trial Pit
<b>MJ16-MJ17</b>								MJ16-MJ17
RWG1070	Excavation							Excavation
<b>Site Formation - Slope TP_A &amp; Associated Works</b>								Site Formation - Slope TP_A & Associated Works
<b>Achievement of KD-3(Stage 3) for Slope A</b>								Achievement of KD-3(Stage 3) for Slope A
TPA41830	Achievement of KD-3(Stage 3) for slope A							◆ Achievement of KD-3(Stage 3) for slope A
TPA41810	Remaining civil works and drainge works(After tunnel civil works construction)							Remaining civil works and drainge works(After tunnel civil works)
<b>Site Formation - Slope TP_B &amp; Associated Works</b>								
<b>Achievement of KD-3(Stage 3) for Slope B</b>								Achievement of KD-3(Stage 3) for Slope B
TPB41730	Achievement of KD-3(Stage 3) for slope B							Achievement of KD-3(Stage 3) for slope B
<b>Achievement of KD-8 (Section 5) for Slope B</b>								
TPB41760	Remaining works inculde landscape works and establishment works							
<b>Site Formation - Slope TP_E &amp; Associated Works</b>								
<b>Stage 3</b>								Stage 3
<b>Slope Feature - Slope TP_E Remaing Section and 5SE-D/C116</b>								Slope Feature - Slope TP_E Remaing Section and 5SE-D/C116
TPE62300	Excavation of Rock (7,920m3) for slope E2a							
TPE62700	Achievement of KD-3(Stage 3) for slope E							◆ Achievement of KD-3(Stage 3) for slope E
<b>Achievement of KD-8(Section 5) for Slope E</b>								
TPE65320	Remaining works inculde landscape works and establishment works							
<b>Site Formation - Slope Upgrading Works</b>								
<b>Stage 3 (Other Slope Features)</b>								
<b>Slope Feature - 5SE-D/C170</b>								
SFW10105	Raking Drain Construction							Raking Drain Construction
SFW10110	Drainge, U-channel (410m) and Handrailing							Drainge, U-channel (410m) and Handrailing
SFW10850	Achievement of KD-3(Stage 3)							◆ Achievement of KD-3(Stage 3)
<b>Slope Feature - 5SE-D/C165</b>								Slope Feature - 5SE-D/C165
SFW10820	Drainge, U-channel (80m) and Handrailing							Drainge, U-channel (80m) and Handrailing
SFW10830	Hydroseeding and Erosion Control Mat							Hydroseeding and Erosion Control Mat
SFW10870	Achievement of KD-3(Stage 3)							◆ Achievement of KD-3(Stage 3)
<b>Slope Feature - 5SE-D/C150</b>								Slope Feature - 5SE-D/C150
SFW10890	Achievement of KD-3(Stage 3)							◆ Achievement of KD-3(Stage 3)
<b>Slope Feature - 5SE-D/C152</b>								Slope Feature - 5SE-D/C152
SFW10250	Hydroseeding and Erosion Control Mat							Hydroseeding and Erosion Control Mat
SFW10910	Achievement of KD-3(Stage 3)							◆ Achievement of KD-3(Stage 3)
<b>Slope Feature - 5SE-D/C121</b>								Slope Feature - 5SE-D/C121
SFW10930	Achievement of KD-3(Stage 3)							◆ Achievement of KD-3(Stage 3)
<b>Slope Feature - 5SE-D/C122</b>								Slope Feature - 5SE-D/C122
SFW10950	Achievement of KD-3(Stage 3)							◆ Achievement of KD-3(Stage 3)
<b>Slope Feature - 5SE-D/C14</b>								Slope Feature - 5SE-D/C14

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SFW10350	Slope Modification													
SFW10360	Drainage, U-channel (60m) and Handrailing													
SFW10370	Hydroseeding and Erosion Control Mat													
SFW10970	Achievement of KD-3(Stage 3)													
<b>Slope Feature - 5SE-D/C149</b>														
SFW10380	Complete slope 5SE-D/C152													
SFW10990	Achievement of KD-3(Stage 3)													
<b>Slope Feature - 5SE-D/C115</b>														
SFW11010	Achievement of KD-3(Stage 3)													
<b>Slope Feature - 5SE-D/C18</b>														
SFW10460	Complete Bridge TD2 Decking													
SFW10470	Slope Modification													
SFW10480	Drainage, U-channel (60m) and Handrailing													
SFW10490	Hydroseeding and Erosion Control Mat													
SFW11030	Achievement of KD-3(Stage 3)													
<b>Slope Feature - 5SE-D/C21</b>														
SFW10550	Slope Modification													
SFW10560	Rock Mapping and Stabilization													
SFW11070	Achievement of KD-3(Stage 3)													
SFW10570	Hydroseeding and Erosion Control Mat													
<b>Slope Feature - 5SE-D/C171</b>														
SFW10610	Hydroseeding and Erosion Control Mat													
SFW10580	Complete slope 5SE-D/C21													
SFW11090	Achievement of KD-3(Stage 3)													
<b>Slope Feature - 5SE-D/C16</b>														
SFW10630	Slope Modification													
SFW10640	Rock Mapping and Stabilization													
<b>Slope Feature - 5SE-D/F60</b>														
SFW10670	Complete of Bridge TD2 decking													
SFW10680	Slope Modification													
SFW10690	Drainage, U-channel (360m) and Handrailing													
SFW11130	Achievement of KD-3(Stage 3)													
SFW10700	Hydroseeding and Erosion Control Mat													
<b>Slope Feature - 5SE-D/C158</b>														
SFW10710	Complete backfilling of RW_A													
SFW10720	Slope Modification													
<b>Slope Feature - 5SE-D/C17</b>														
SFW10750	Slope Modification													
SFW10760	Drainage, U-channel (180m) and Handrailing													

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		Oct	Nov	Dec	Jan	Feb
SFW10770	Hydroseeding and Erosion Control Mat					Hydroseeding and
SFW11170	Achievement of KD-3(Stage 3)					◆ Achievement of KI
<b>Vehicular Underpass TN-01</b>						
<b>Stage 3</b>						
Road and Drainage Work, Utilities Works in Tunnel						
Road and Drainage Work, Utilities Works in Tunnel						
UDP34000	DN300	DN300				
UDP34010	DN100	DN100				
UDP34020	PCCW	PCCW				
UDP34030	Hutchison Global Communication Cable	Hutchison Global Communication Cable				
UDP34040	Hong Kong Boaroband Network	Hong Kong Boaroband Network				
UDP34050	Wharf T&T Duct and Joint Box	Wharf T&T Duct and Joint Box				
UDP34060	New World Telecom	New World Telecom				
UDP34070	Town Gas	Town Gas				
UDP34080	Smartone Cable	Smartone Cable				
UDP34090	HKC Cable	HKC Cable				
UDP34100	Pubic Lighting	Pubic Lighting				
UDP34110	CLP	CLP				
UDP34130	Completion of this stage civil provision for E&M, TCSS	Completion of this stage civil provision for E&M, TCSS				
<b>Achievement of KD-8 (Section 5) for TN-01</b>						
UDP20640	Road works and Remaining works(Sundry Metalwork,etc)	Road works and Remaining works(Sundry Metalwork,etc)				
<b>Road and Drainage Work ,Utilities Works at for Lung Fu Road Roundabout</b>						
<b>Section 3</b>						
Utilites installation ,road and drainage works (TTA stage 1)						
LFR10440	TTA for Stage 2-0	TTA for Stage 2-0				
LFR10270	Filling Works	Filling Works				
Utilites installation ,road and drainage works (TTA Stage 2-0)						
LFR10450	Drainage Work	Drainage Work				
LFR10460	DN100,300,700,800	DN100,300,700,800				
LFR10470	PCCW	PCCW				
LFR10480	Hutchison Global Communication Cable	Hutchison Global Communication Cable				
LFR10490	Hong Kong Boaroband Network	Hong Kong Boaroband Network				
LFR10500	Wharf T&T Duct and Joint Box	Wharf T&T Duct and Joint Box				
LFR10510	New World Telecom	New World Telecom				
LFR10520	Town Gas	Town Gas				
LFR10530	Smartone Cable	Smartone Cable				
LFR10550	Pubic Lighting	Pubic Lighting				
LFR10560	CLP + CRD	CLP + CRD				
LFR10570	TraxComm	TraxComm				

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LFR10540	HKC Cable	[Gantt bar: HKC Cable, Oct 2017 - Dec 2017]									
LFR10580	Completion of this stage civil provision for E&M, TCSS	[Gantt bar: Completion of this stage civil provision for E&M, TCSS, Dec 2017 - Jan 2018]									
LFR10590	Irrigation System (m)	[Gantt bar: Irrigation System (m), Dec 2017 - Jan 2018]									
LFR10600	Road Pavement	[Gantt bar: Road Pavement, Dec 2017 - Jan 2018]									
LFR10610	TTA for Stage 2	[Gantt bar: TTA for Stage 2, Dec 2017 - Jan 2018]									
<b>Utilites installation ,road and drainage works (TTA Stage 2)</b>		[Summary bar: Utilites installation ,road and drainage works (TTA Stage 2), Dec 2017 - Jan 2018]									
LFR10620	Filling Works	[Gantt bar: Filling Works, Dec 2017 - Jan 2018]									
LFR10680	PCCW	[Gantt bar: PCCW, Jan 2018 - Feb 2018]									
LFR10630	Street Furniture	[Gantt bar: Street Furniture, Jan 2018 - Feb 2018]									
LFR10660	Drainage Work	[Gantt bar: Drainage Work, Jan 2018 - Feb 2018]									
<b>Road and Drainage Work ,Utilities Works at Lung Mun Road</b>		[Summary bar: Road and Drainage Work ,Utilities Works at Lung Mun Road, Dec 2017 - Feb 2018]									
<b>Lung Mun Road (Westbound)</b>		[Summary bar: Lung Mun Road (Westbound), Dec 2017 - Feb 2018]									
<b>Ho Suen Street North</b>		[Summary bar: Ho Suen Street North, Dec 2017 - Feb 2018]									
LMRWA1150	Irrigation System	[Gantt bar: Irrigation System, Dec 2017 - Jan 2018]									
LMRWA1160	Road Pavement	[Gantt bar: Road Pavement, Dec 2017 - Jan 2018]									
<b>Ho Suen Street South</b>		[Summary bar: Ho Suen Street South, Dec 2017 - Feb 2018]									
LMRWA1190	DN200 CHK 0 - 50	[Gantt bar: DN200 CHK 0 - 50, Dec 2017 - Jan 2018]									
LMRWA1200	DN300 CHE 0 - 116	[Gantt bar: DN300 CHE 0 - 116, Dec 2017 - Jan 2018]									
LMRWA1210	DN100 CHG 0 - 112	[Gantt bar: DN100 CHG 0 - 112, Dec 2017 - Jan 2018]									
LMRWA1170	Drainage Work	[Gantt bar: Drainage Work, Dec 2017 - Jan 2018]									
LMRWA1220	PCCW	[Gantt bar: PCCW, Dec 2017 - Jan 2018]									
LMRWA1230	Hutchison Global Communication Cable	[Gantt bar: Hutchison Global Communication Cable, Dec 2017 - Jan 2018]									
LMRWA1240	Hong Kong Boaroband Network	[Gantt bar: Hong Kong Boaroband Network, Dec 2017 - Jan 2018]									
LMRWA1250	Wharf T&T Duct and Joint Box	[Gantt bar: Wharf T&T Duct and Joint Box, Dec 2017 - Jan 2018]									
LMRWA1260	New World Telecom	[Gantt bar: New World Telecom, Dec 2017 - Jan 2018]									
LMRWA1241	Street Furniture(Including eastbound)	[Gantt bar: Street Furniture(Including eastbound), Jan 2018 - Feb 2018]									
LMRWA1242	Sign Gantry(Including eastbound)	[Gantt bar: Sign Gantry(Including eastbound), Jan 2018 - Feb 2018]									
LMRWA1270	Town Gas	[Gantt bar: Town Gas, Jan 2018 - Feb 2018]									
<b>Utilites installation ,road and drainage works for East Portal</b>		[Summary bar: Utilites installation ,road and drainage works for East Portal, Dec 2017 - Feb 2018]									
EPA1000	Rock Cutting	[Gantt bar: Rock Cutting, Dec 2017 - Jan 2018]									
EPA1020	DN300 CHA 0 - 175&DN100	[Gantt bar: DN300 CHA 0 - 175&DN100, Dec 2017 - Jan 2018]									
EPA1030	Street furniture and sign gantry	[Gantt bar: Street furniture and sign gantry, Dec 2017 - Jan 2018]									
EPA1040	PCCW	[Gantt bar: PCCW, Dec 2017 - Jan 2018]									
EPA1050	Hutchison Global Communication Cable	[Gantt bar: Hutchison Global Communication Cable, Dec 2017 - Jan 2018]									
EPA1060	Hong Kong Boaroband Network	[Gantt bar: Hong Kong Boaroband Network, Dec 2017 - Jan 2018]									
EPA1070	Wharf T&T Duct and Joint Box	[Gantt bar: Wharf T&T Duct and Joint Box, Dec 2017 - Jan 2018]									
EPA1080	New World Telecom	[Gantt bar: New World Telecom, Dec 2017 - Jan 2018]									
EPA1090	Town Gas	[Gantt bar: Town Gas, Dec 2017 - Jan 2018]									
EPA1100	Smartone Cable	[Gantt bar: Smartone Cable, Dec 2017 - Jan 2018]									

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		Oct	Nov	Dec	Jan	Feb
EPA1110	HKC Cable	[Actual Work]				[Critical Remaining Work]
EPA1120	Pubic Lighting	[Actual Work]				[Critical Remaining Work]
EPA1130	CLP	[Actual Work]				[Critical Remaining Work]
EPA1140	TraxComm	[Actual Work]				[Critical Remaining Work]
<b>Utilites installation ,road and drainage works near portion D</b>						
TOLLA1030	PCCW	[Actual Work]		[Critical Remaining Work]		
TOLLA1040	Hutchison Global Communication Cable	[Actual Work]		[Critical Remaining Work]		
TOLLA1050	Hong Kong Boaroband Network	[Actual Work]		[Critical Remaining Work]		
TOLLA1060	Wharf T&T Duct and Joint Box	[Actual Work]		[Critical Remaining Work]		
TOLLA1070	New World Telecom	[Actual Work]		[Critical Remaining Work]		
TOLLA1080	Town Gas	[Actual Work]			[Critical Remaining Work]	
TOLLA1090	Smartone Cable	[Actual Work]			[Critical Remaining Work]	
TOLLA1100	HKC Cable				[Remaining Work]	
TOLLA1092	Street Furniture				[Critical Remaining Work]	
TOLLA1094	Sign Gantry				[Critical Remaining Work]	
<b>Sewage, Irrigation and Road&amp; Drainage Works</b>						
SAII0020	Sewage, irrigation and road&drainage works - RW_B-north side	[Actual Work]				[Remaining Work]
SAII0060	Sewage, irrigation and road&drainage works -G2-north side	[Actual Work]				
SAII0070	Sewage, irrigation and road&drainage works- G2-south side	[Actual Work]				
SAII0030	Sewage, irrigation and road&drainage works - RW_B-south side	[Actual Work]				
SAII0040	Sewage, irrigation and road&drainage works -G1&H1-north side	[Actual Work]				
SAII0050	Sewage, irrigation and road&drainage works - G1&H1-south side	[Actual Work]				
<b>Achievement of Key Dates</b>						
AK10300	Achievement of KD-3(Stage 3) for slope B			◆ Achievement of KD-3(Stage 3) for slope B		
AK10330	Achievement of KD-8(Section 5) for slope C			◆ Achievement of KD-8(Section 5) for slope C		
AK10320	Achievement of KD-3(Stage 3) for slope C			◆ Achievement of KD-3(Stage 3) for slope C		
AK10250	Achievement of KD-3(stage 3) for TP_F			◆ Achievement of KD-3(stage 3) for TP_F		
AK10060	Achievement of KD-1(Stage 1) for RW_B			◆ Achievement of KD-1(Stage 1) for RW_B		
AK10210	Achievement of KD-3(Stage 3) for RW_A			◆ Achievement of KD-3(Stage 3) for RW_A		
AK10280	Achievement of KD-3(Stage 3) for slope A			◆ Achievement of KD-3(Stage 3) for slope A		
AK10020	Achievement of KD-1(Stage 1) for TD2			◆ Achievement of KD-1(Stage 1) for TD2		
AK10000	Achievement of KD-1( stage 1) for TD1			◆ Achievement of KD-1( stage 1) for TD1		
AK10455	Achievement of KD-3(Stage 3) for Road and draiange Works under TD1			◆ Achievement of KD-3(Stage 3) for Road and draiange Works under TD1		

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<b>HY/2013/12 TMCLK Northern Connection Toll Plaza and Associated-Works Programme-Rev.4A Monthly Update</b>								
<b>Achievement of Stages/ Completion of Sections</b>								
KD10100	KD1 - Stage 1 Completion Civil provisions for E&M/TCSS (TD1/TD2/RW_B/FB1, toll canopy & islands, TC bridge & subway)	D1 - Stage 1 Completion Civil provisions for E&M/TCSS (TD1/TD2/RW_B/FB1, toll canopy & islands, TC bridge & subway)						Achievement of Stages/
KD10120	KD3 - Stage 3 Completion Civil provisions for E&M/TCSS (Not included in St1 & 2)							◆ KD3 - Stage 3 Complet
<b>Dismantling of HY/2012/04 Project Office at WA6</b>								
DM10010	Appointment of specialist subcontractor for demolition	Appointment of specialist subcontractor for demolition						
DM10020	Prepare and submit method statement	Prepare and submit method statement						
DM10030	Approval of method statement	Approval of method statement						
DM10040	Advance necessary precautionary and protective measure	Advance necessary precautionary and protective measure						
<b>Toll Plaza Decking TD1-Section 1</b>								
<b>Stage 1</b>								
<b>Completion of Stage 1 For TD1</b>								
TD120020	KD-1(Stage 1)	D-1(Stage 1)						
TD120010	Achievement of KD-1( stage 1) for TD1	Achievement of KD-1( stage 1) for TD1						
<b>Completion of TD1 in Section 1</b>								
<b>Drainage Works and Water Works</b>								
TD121000	Water works	Water works						
TD121010	Drainage work	Drainage work						
<b>Road pavement and road furniture</b>								
TD121020	Road pavement and remain furniture	Road pavement and remain furniture						
<b>Toll Plaza Decking TD2-Section 1</b>								
<b>Field Works</b>								
<b>Miscellaneous Works</b>								
TD220700	Achievement of KD-1(Stage 1)for TD2	Achievement of KD-1(Stage 1)for TD2						
TD220730	KD-1(Stage 1)	D-1(Stage 1)						
<b>Completion of TD2</b>								
TD220010	Drainage works	Drainage works						
TD220020	Road works	Road works						
TD220240	Miscellaneous civil works	Miscellaneous civil works						
<b>Toll Plaza Footbridge-Section 1</b>								
<b>Completion of Stage 1 for Footbridge</b>								
TFB1420	Achievement of KD-1(Stage 1) for footbridge	Achievement of KD-1(Stage 1) for footbridge						
TFB1410	Miscellaneous civil works	Miscellaneous civil works						
<b>Miscellaneous Works</b>								
TFB1430	Drainage works	Drainage works						
TFB1440	Finishing works	Finishing works						
<b>Retaining Structure RW_B-Section 1</b>								
<b>Site Formation - Retaining Structure RW_B</b>								
<b>Achievement of KD-1 (Stage 1)</b>								
Achievement of KD-1 (Stage 1)								

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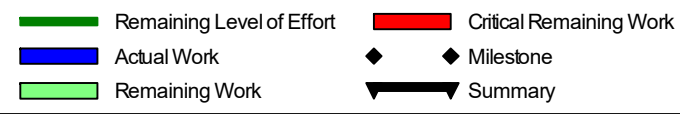
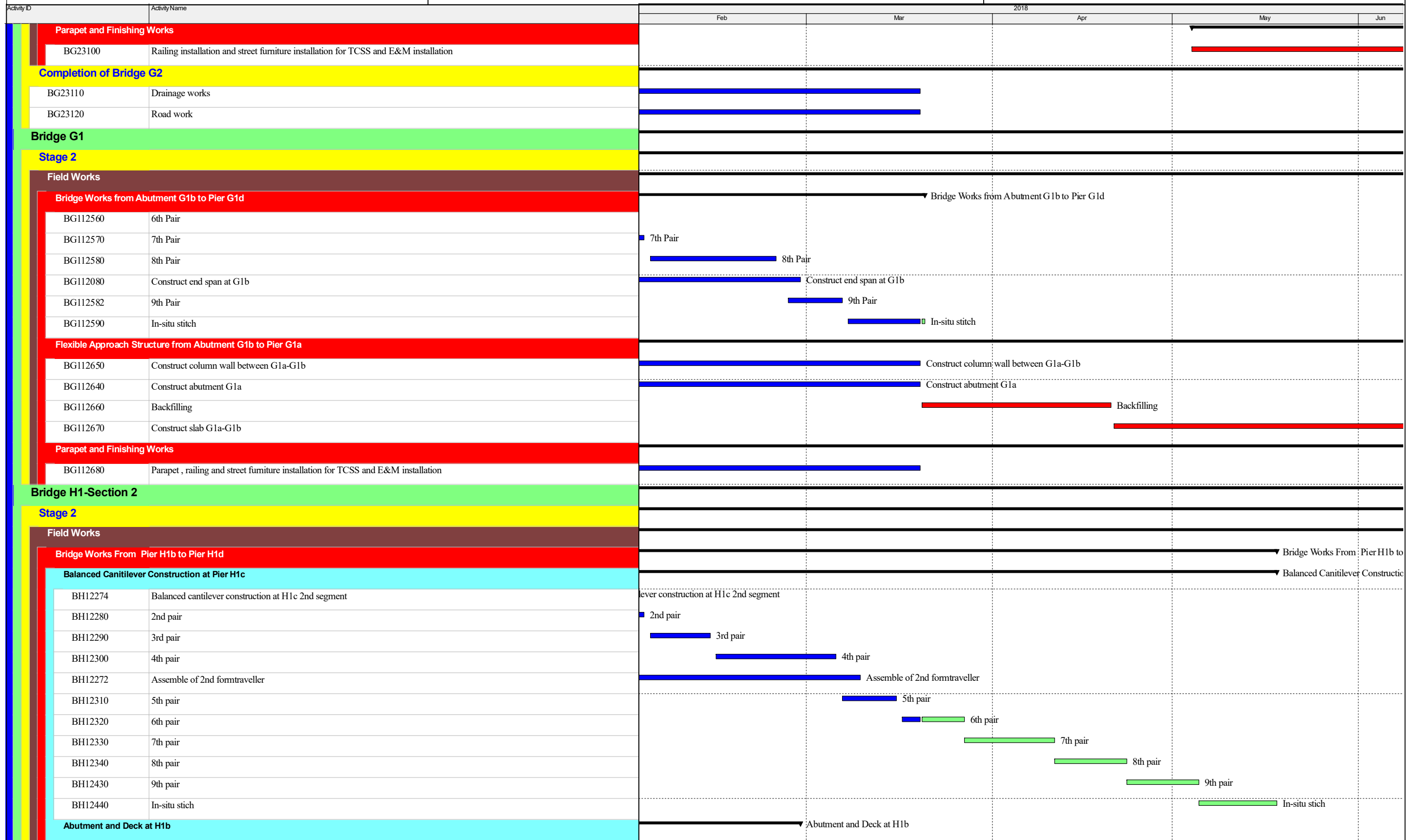


Activity ID	Activity Name	2018	Feb	Mar	Apr	May	Jun
RWB10610	Achievement of KD-1(Stage 1) for RW_B	Achievement of KD-1(Stage 1) for RW_B					
RWB10620	KD-1(Stage 1)	KD-1(Stage 1)					
<b>Achievement of KD-4 (Section 1) for RW_B</b>							
RWB10630	Finishing works including feature wall	[Actual Work: Feb-Mar, Remaining Work: Mar-Jun]					
RWB10640	Drainage works	[Actual Work: Feb-Mar]					
RWB10650	Road works	[Actual Work: Feb-Mar]					
<b>Toll Collector Subway &amp; Associated Works-Section 1</b>							
<b>Toll Collector Bridge (Portion I)-Section 1</b>							
<b>Stage 1</b>		Stage 1					
<b>Field Works</b>		Field Works					
TCS1280	Steel truss installation	[Actual Work: Feb-Mar]					
TCS1290	Staircase installation	[Actual Work: Feb-Mar]					
TCS1322	KD-1(Stage 1)	[Actual Work: Feb-Mar]					
TCS1300	Cast concrete decking	[Actual Work: Feb-Mar]					
TCS1320	Achievement of KD-1(Stage 1) for toll collector bridge	[Actual Work: Feb-Mar]					
<b>Completion of Toll Collector Bridge in Section 1</b>		[Summary: Feb-Jun]					
TCS1310	Finishing work,louwer works	[Actual Work: Mar-Jun]					
<b>Toll Collector Subway &amp; Associate Works (Portion I)-Section 1</b>							
<b>Stage 1</b>		Stage 1					
<b>Field Works - Completion of Toll Collector Subway &amp; Associate Works within Portion I</b>		Field Works - Completion of Toll Collector Subway & Associate Works within Portion I					
TCS1530	Completion of Toll Collector Subway & Associate Works within Portion I	[Actual Work: Feb-Mar]					
<b>Completion of Stage 1 for Toll collector subway(Portion I)</b>		[Summary: Feb-Mar]					
TCS1540	Achievement of KD-1( Stage 1) for toll collector subway(portion I)	[Actual Work: Feb-Mar]					
TCS1650	KD-1(Stage 1)	[Actual Work: Feb-Mar]					
<b>Completion of Section 1 for Toll collector subway(Portion I)</b>		[Summary: Feb-Mar]					
TCS1510	Drainage works	[Actual Work: Mar-Jun]					
TCS1550	Internal finishing works	[Actual Work: Mar-Jun]					
<b>Toll Collector Subway (Portion X)-Section 5</b>							
<b>Stage 3</b>		Stage 3					
TCS1680	KD-3	[Milestone: Mar]					
TCS1180	Toll Canopy,Completion civil provision works for TCSS and E&M	[Actual Work: Feb-Mar]					
TCS1190	Achievement of KD-3(Stage 3) for toll collector subway(Portion X)	[Actual Work: Feb-Mar]					
<b>Section 5</b>		Section 5					
TCS1200	Drainage works and street furniture installation for TCSS and E&M installation	[Actual Work: Mar-Jun]					
<b>Bridge G2</b>							
<b>Stage 2</b>		Stage 2					
<b>Field Works</b>		Field Works					
<b>Deck</b>		Deck					
BG23080	In-situ Joint	[Actual Work: Mar-Jun]					

█ Remaining Level of Effort    █ Critical Remaining Work  
█ Actual Work    ◆ Milestone  
█ Remaining Work    ▶ Summary

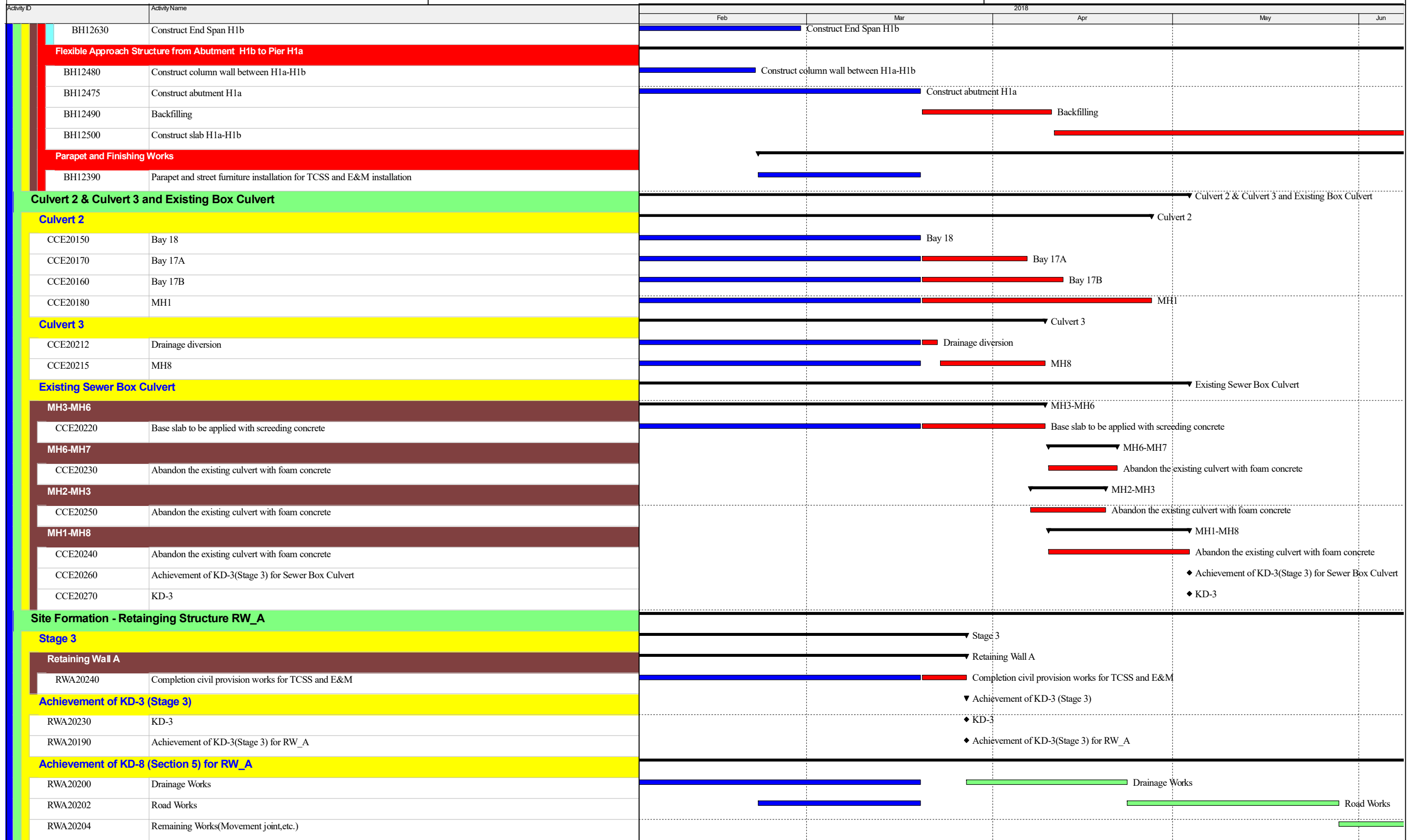
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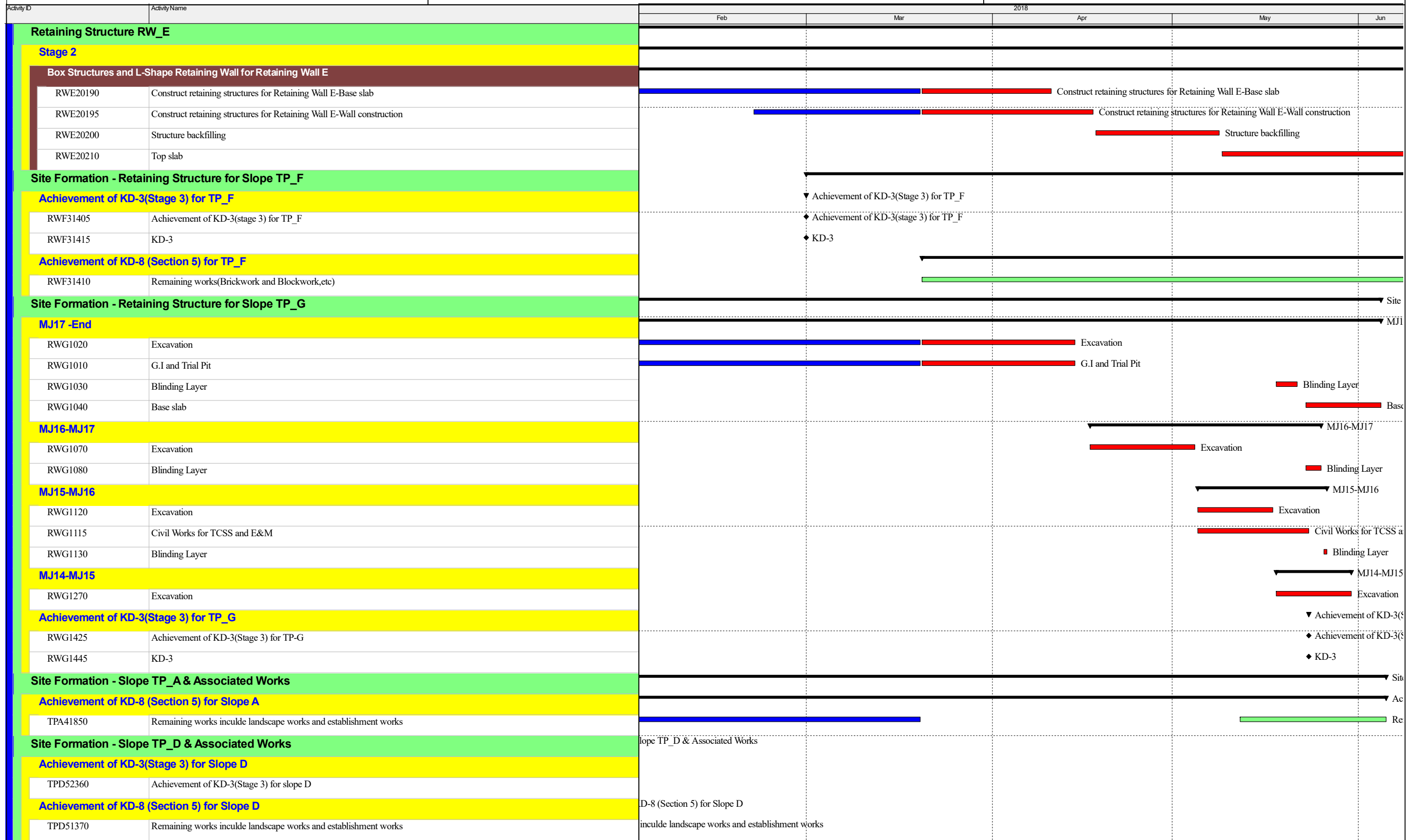
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Activity ID		Activity Name		2018					
				Feb	Mar	Apr	May	Jun	
<b>Site Formation - Slope TP_E &amp; Associated Works</b>									
<b>Stage 3</b>									
<b>Slope Feature - Slope TP_E Remaining Section and 5SE-D/C116</b>									
TPE62310	Mapping & Dowelling								
TPE62320	U-channel (100m) and Berm for slope E2a								
TPE65340	KD-3								
TPE62700	Achievement of KD-3(Stage 3) for slope E								
<b>Achievement of KD-8(Section 5) for Slope E</b>									
TPE65320	Remaining works include landscape works and establishment works								
<b>Site Formation - Slope Upgrading Works</b>									
<b>Stage 3 (Other Slope Features)</b>									
<b>Slope Feature - 5SE-D/C170</b>									
SFW10110	Drainage, U-channel (410m) and Handrailing								
SFW10860	KD-3								
SFW10850	Achievement of KD-3(Stage 3)								
<b>Slope Feature - 5SE-D/C165</b>									
SFW10870	Achievement of KD-3(Stage 3)								
SFW10880	KD-3								
<b>Slope Feature - 5SE-D/C150</b>									
SFW10890	Achievement of KD-3(Stage 3)								
SFW10900	KD-3								
<b>Slope Feature - 5SE-D/C152</b>									
SFW10250	Hydroseeding and Erosion Control Mat								
SFW10910	Achievement of KD-3(Stage 3)								
SFW10920	KD-3								
<b>Slope Feature - 5SE-D/C121</b>									
SFW10930	Achievement of KD-3(Stage 3)								
SFW10940	KD-3								
<b>Slope Feature - 5SE-D/C122</b>									
SFW10950	Achievement of KD-3(Stage 3)								
SFW10960	KD-3								
<b>Slope Feature - 5SE-D/C14</b>									
SFW10350	Slope Modification								
SFW10360	Drainage, U-channel (60m) and Handrailing								
SFW10370	Hydroseeding and Erosion Control Mat								
SFW10970	Achievement of KD-3(Stage 3)								
SFW10980	KD-3								
<b>Slope Feature - 5SE-D/C149</b>									
SFW10380	Complete slope 5SE-D/C152								

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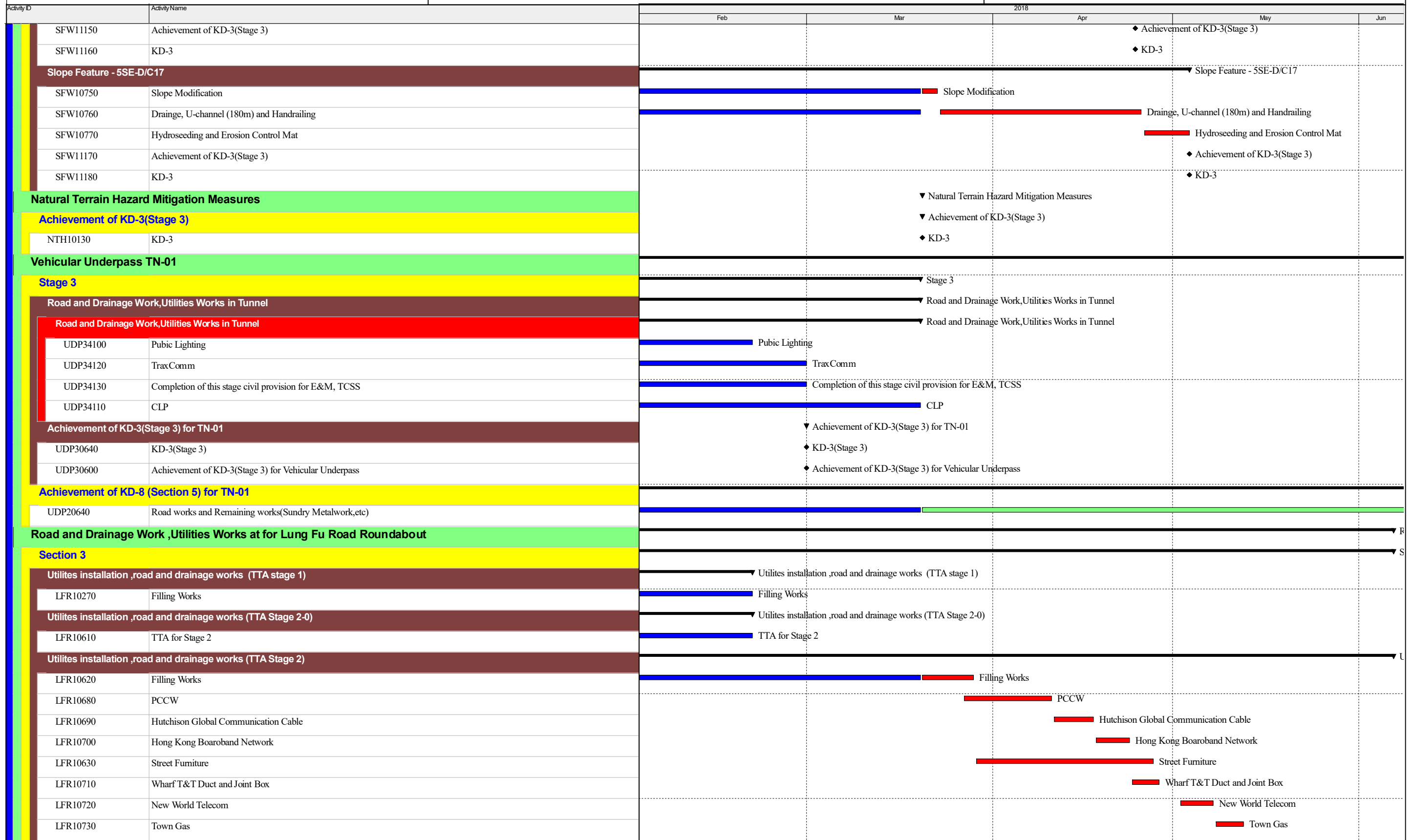
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Activity ID	Activity Name	2018					
		Feb	Mar	Apr	May	Jun	
SFW10990	Achievement of KD-3(Stage 3)			◆ Achievement of KD-3(Stage 3)			
SFW11000	KD-3		◆ KD-3				
<b>Slope Feature - 5SE-D/C115</b>			▼ Slope Feature - 5SE-D/C115				
SFW11010	Achievement of KD-3(Stage 3)		◆ Achievement of KD-3(Stage 3)				
SFW11020	KD-3		◆ KD-3				
<b>Slope Feature - 5SE-D/C18</b>				▼ Slope Feature - 5SE-D/C18			
SFW10480	Drainage, U-channel (60m) and Handrailing			Drainage, U-channel (60m) and Handrailing			
SFW11030	Achievement of KD-3(Stage 3)		◆ Achievement of KD-3(Stage 3)				
SFW11040	KD-3		◆ KD-3				
<b>Slope Feature - 5SE-D/C117</b>					▼ Slope Feature - 5SE-D/C117		
SFW10500	Complete of Tunnel						
SFW11050	Achievement of KD-3(Stage 3)		◆ Achievement of KD-3(Stage 3)				
SFW11060	KD-3		◆ KD-3				
SFW10510	Slope Modification			■ Slope Modification			
SFW10530	Hydroseeding and Erosion Control Mat			■ Hydroseeding and Erosion Control Mat			
SFW10520	Drainage, U-channel (70m) and Handrailing			■ Drainage, U-channel (70m) and Handrailing			
<b>Slope Feature - 5SE-D/C21</b>					▼ Slope Feature - 5SE-D/C21		
SFW10560	Rock Mapping and Stabilization			■ Rock Mapping and Stabilization			
SFW11070	Achievement of KD-3(Stage 3)			◆ Achievement of KD-3(Stage 3)			
SFW11080	KD-3			◆ KD-3			
SFW10570	Hydroseeding and Erosion Control Mat			■ Hydroseeding and Erosion Control Mat			
<b>Slope Feature - 5SE-D/C171</b>					▼ Slope Feature - 5SE-D/C171		
SFW10580	Complete slope 5SE-D/C21			◆ Complete slope 5SE-D/C21			
SFW11090	Achievement of KD-3(Stage 3)			◆ Achievement of KD-3(Stage 3)			
SFW11100	KD-3			◆ KD-3			
<b>Slope Feature - 5SE-D/C16</b>					▼ Slope Feature - 5SE-D/C16		
SFW10650	Drainage, U-channel (70m) and Handrailing			■ Drainage, U-channel (70m) and Handrailing			
SFW10660	Hydroseeding and Erosion Control Mat			■ Hydroseeding and Erosion Control Mat			
SFW11110	Achievement of KD-3(Stage 3)			◆ Achievement of KD-3(Stage 3)			
SFW11120	KD-3			◆ KD-3			
<b>Slope Feature - 5SE-D/F60</b>					▼ Slope Feature - 5SE-D/F60		
SFW10680	Slope Modification			■ Slope Modification			
SFW10690	Drainage, U-channel (360m) and Handrailing			■ Drainage, U-channel (360m) and Handrailing			
SFW11130	Achievement of KD-3(Stage 3)			◆ Achievement of KD-3(Stage 3)			
SFW11140	KD-3			◆ KD-3			
SFW10700	Hydroseeding and Erosion Control Mat			■ Hydroseeding and Erosion Control Mat			
<b>Slope Feature - 5SE-D/C158</b>					▼ Slope Feature - 5SE-D/C158		
SFW10720	Slope Modification			■ Slope Modification			
SFW10730	Erosion Control Mat			■ Erosion Control Mat			

■ Remaining Level of Effort    ■ Critical Remaining Work  
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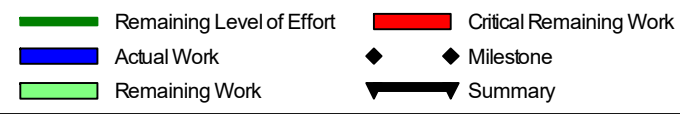
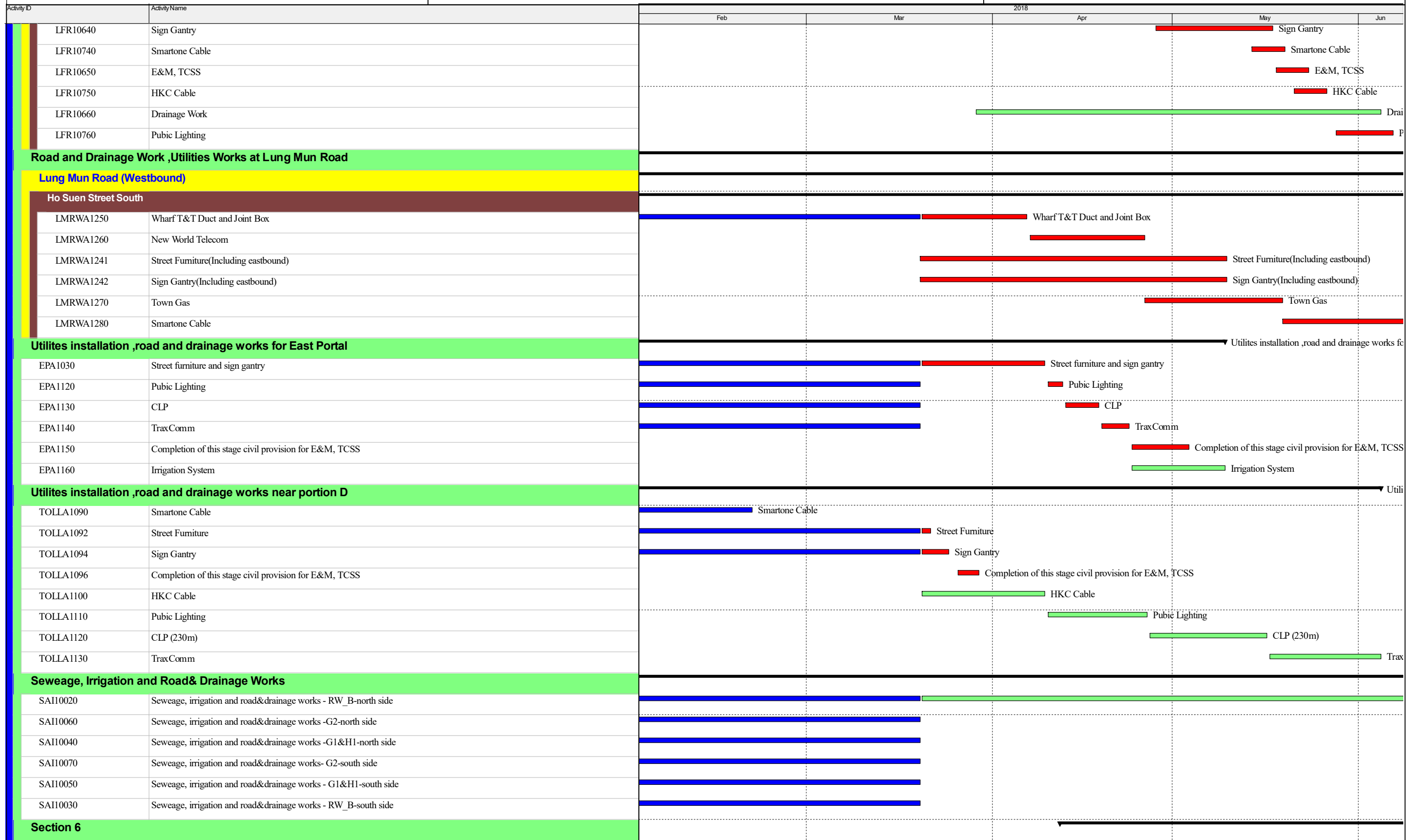
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Activity ID	Activity Name	2018				
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SEC61000	Landscape softworks in KD-1 area					
<b>Section 8</b>						
SEC81000	Preservation and protection trees in KD-1 area					
<b>Achievement of Key Dates</b>		Achievement of Key Dates				
AK10060	Achievement of KD-1(Stage 1) for RW_B					
AK10080	Achievement of KD-1(Stage 1) for Toll Collector Bridge					
AK10105	Achievement of KD-1( Stage 1) for Toll Collector Subway(portion I)					
AK10000	Achievement of KD-1( stage 1) for TD1					
AK10020	Achievement of KD-1(Stage 1) for TD2					
AK10040	Achievement of KD-1(Stage 1) for Footbridge					
AK10120	Achievement of KD-3(Stage 3) for Toll Collector Subway(Portion X)			◆ Achievement of KD-3(Stage 3) for Toll Collector Subway(Portion X)		
AK10340	Achievement of KD-3(Stage 3) for slope D			◆ Achievement of KD-3(Stage 3) for slope D		
AK10300	Achievement of KD-3(Stage 3) for slope B			◆ Achievement of KD-3(Stage 3) for slope B		
AK10280	Achievement of KD-3(Stage 3) for slope A			◆ Achievement of KD-3(Stage 3) for slope A		
AK10320	Achievement of KD-3(Stage 3) for slope C			◆ Achievement of KD-3(Stage 3) for slope C		
AK10250	Achievement of KD-3(stage 3) for TP_F			◆ Achievement of KD-3(stage 3) for TP_F		
AK10330	Achievement of KD-8(Section 5) for slope C			◆ Achievement of KD-8(Section 5) for slope C		
AK10380	Achievement of KD-3(Stage 3) for Vehicular Underpass			◆ Achievement of KD-3(Stage 3) for Vehicular Underpass		
AK10210	Achievement of KD-3(Stage 3) for RW_A			◆ Achievement of KD-3(Stage 3) for RW_A		
AK10360	Achievement of KD-3(Stage 3) for slope E			◆ Achievement of KD-3(Stage 3) for slope E		
AK10200	Achievement of KD-3(Stage 3) for Sewer Box Culvert				◆ Achievement of KD-3(Stage 3) for Sewer Box Culvert	
AK10470	Achievement of KD-3(Stage 3) for Road and drainage works near east portal				◆ Achievement of KD-3(Stage 3) for Road and drainage v	
AK10350	Achievement of KD-8(Section 5) for slope D				◆ Achievement of KD-8(Section 5) for slope D	
AK10310	Achievement of KD-8(Section 5) for slope B				◆ Achievement of KD-8(Section 5) for slope B	
AK10480	Achievement of KD-8(Section 5)for Road and drainage works near east portal				◆ Achievement of KD-8(Section 5)for Road and	
AK10455	Achievement of KD-3(Stage 3) for Road and draiange Works under TD1				◆ Achievement of KD-3(Stage 3) for Road and	
AK10430	Achievement of KD-3(Stage 3) for RW_G				◆ Achievement of KD-3(Stage 3) for RW_G	
AK10400	Achievement of KD-3(Stage 3) for Roundabout works				◆ Achievement of KD-3(Stage 3) for Roundabout works	

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				May	Jun	Jul	Aug	Sep
<b>HY/2013/12 TMCLK Northern Connection Toll Plaza and Associated-Works Programme-Rev.4A Monthly Update</b>								
<b>Achievement of Stages/ Completion of Sections</b>								
KD10120	KD3 - Stage 3 Completion Civil provisions for E&M/TCSS (Not included in St1 & 2)		Achievement of Stages/ Completion of Sec					
KD10110	KD2 - Stage 2 Completion Civil provisions for E&M/TCSS (H1/G1/G2, abutment w/in Area A)		◆ KD2 - Stage 2 Completion Civil provisions					
<b>Dismantling of HY/2012/04 Project Office at WA6</b>								
▼ Dismantling of HY/2012/04 Project Office at WA6								
DM10010	Appointment of specialist subcontractor for demolition							
DM10020	Prepare and submit method statement							
DM10060	Completion of Demolition		◆ Completion of Demolition					
DM10055	Demolition Works		■ Demolition Works					
<b>Toll Plaza Decking TD1-Section 1</b>								
<b>Completion of TD1 in Section 1</b>								
<b>Drainage Works and Water Works</b>								
TD121000	Water works		■ Water works					
TD121010	Drainage work		■ Drainage work					
<b>Road pavement and road furniture</b>								
TD121020	Road pavement and remain furniture		■					
<b>Toll Plaza Decking TD2-Section 1</b>								
<b>Field Works</b>								
<b>Completion of TD2</b>								
TD220010	Drainage works		■ Drainage works					
TD220020	Road works		■ Road works					
TD220240	Miscellaneous civil works		■ Miscellaneous civil w					
TD220250	Remaining works(Including Earthing System,Lightning Protection System)		■					
<b>Toll Plaza Footbridge-Section 1</b>								
<b>Stage 1</b>								
<b>Field Works</b>								
<b>Staircase and Lift Construction</b>								
TFB1350	West staircase construction		■					
<b>Miscellaneous Works</b>								
TFB1430	Drainage works		■ Drainage works					
TFB1440	Finishing works		■ Finishing works					
TFB1450	Remaining works(Fences, Handrailing, Guard-railing, Gates,etc)		■					

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<b>Retaining Structure RW_B-Section 1</b>						
<b>Site Formation - Retaining Structure RW_B</b>						
<b>Achievement of KD-4 (Section 1) for RW_B</b>						
RWB10630	Finishing works including feature wall	[Actual Work]				Finishing [Remaining Work]
RWB10640	Drainage works	[Actual Work]				Drainage [Remaining Work]
RWB10650	Road works	[Actual Work]				[Remaining Work]
<b>Toll Collector Subway &amp; Associated Works-Section 1</b>						
<b>Toll Collector Bridge (Portion I)-Section 1</b>						
<b>Completion of Toll Collector Bridge in Section 1</b>						
TCS1310	Finishing work,louver works	[Actual Work]				Finishing work,louver works [Critical Remaining Work]
TCS1330	Drainage works,Completion civil provision works for TCSS and E&M					[Critical Remaining Work]
<b>Toll Collector Subway &amp; Associate Works (Portion I)-Section 1</b>						
<b>Completion of Section 1 for Toll collector subway(Portion I)</b>						
TCS1510	Drainage works	[Actual Work]				Drainage works [Remaining Work]
TCS1550	Internal finishing works	[Actual Work]				Internal finishing works [Remaining Work]
TCS1560	Remaining works(Doors, Windows,etc.)					[Remaining Work]
<b>Toll Collector Subway (Portion X)-Section 5</b>						
<b>Section 5</b>						
TCS1200	Drainage works and street furniture installation for TCSS and E&M installation	[Actual Work]				Drainage works and street furniture installation [Remaining Work]
TCS1210	Finishing works	[Actual Work]				Finishing works [Remaining Work]
TCS1220	Miscellaneous					[Remaining Work]
<b>Bridge G2</b>						
<b>Stage 2</b>		Stage 2				
<b>Field Works</b>		Field Works				
<b>Deck</b>		Deck				
BG23080	In-situ Joint	[Actual Work]				In-situ Joint
<b>Parapet and Finishing Works</b>		Parapet and Finishing Works				
BG23100	Railing installation and street furniture installation for TCSS and E&M installation	[Actual Work]				Railing installation and street furniture installation for TCSS and E&M installation [Remaining Work]
<b>Achievement of KD-2(Stage 2) for Bridge G2</b>		Achievement of KD-2(Stage 2) for Bridge G2				
BG23500	Achievement of KD-2(Stage 2)for Bridge G2					◆ Achievement of KD-2(Stage 2)for Bridge G2
BG23630	KD-2					◆ KD-2
<b>Completion of Bridge G2</b>						
BG23110	Drainage works	[Actual Work]				Drainage works [Remaining Work]

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BG23120	Road work	[Bar chart showing work from May to Sep]				
<b>Bridge G1</b>		[Summary bar for Bridge G1]				
<b>Stage 2</b>		[Summary bar for Stage 2]				
<b>Field Works</b>		[Summary bar for Field Works]				
<b>Flexible Approach Structure from Abutment G1b to Pier G1a</b>		[Summary bar for Flexible Approach Structure]				
BG112670	Construct slab G1a-G1b	[Bar chart for Construct slab G1a-G1b]				
<b>Parapet and Finishing Works</b>		[Summary bar for Parapet and Finishing Works]				
BG112680	Parapet, railing and street furniture installation for TCSS and E&M installation	[Bar chart for Parapet, railing and street furniture installation]				
<b>Achievement of KD-2(Stage 2) for Bridge G1</b>		[Summary bar for Achievement of KD-2]				
BG112700	Achievement of KD-2(Stage 2)for Bridge G1	[Milestone marker]				
BG112710	KD-2	[Milestone marker]				
<b>Completion of Bridge G1</b>		[Summary bar for Completion of Bridge G1]				
BG112720	Drainage work	[Bar chart for Drainage work]				
BG112730	Road Work	[Bar chart for Road Work]				
<b>Bridge H1-Section 2</b>		[Summary bar for Bridge H1-Section 2]				
<b>Stage 2</b>		[Summary bar for Stage 2]				
<b>Field Works</b>		[Summary bar for Field Works]				
<b>Bridge Works From Pier H1b to Pier H1d</b>		[Summary bar for Bridge Works]				
<b>Balanced Canitilever Construction at Pier H1c</b>		[Summary bar for Balanced Canitilever Construction]				
BH12340	8th pair	[Bar chart for 8th pair]				
BH12430	9th pair	[Bar chart for 9th pair]				
BH12440	In-situ stich	[Bar chart for In-situ stich]				
<b>Flexible Approach Structure from Abutment H1b to Pier H1a</b>		[Summary bar for Flexible Approach Structure]				
BH12500	Construct slab H1a-H1b	[Bar chart for Construct slab H1a-H1b]				
<b>Parapet and Finishing Works</b>		[Summary bar for Parapet and Finishing Works]				
BH12390	Parapet and street furniture installation for TCSS and E&M installation	[Bar chart for Parapet and street furniture installation]				
<b>Achievement of KD-2(Stage 2) for Bridge H1</b>		[Summary bar for Achievement of KD-2]				
BH12710	KD-2	[Milestone marker]				
BH12650	Achievement of KD-2(Stage 2)for Bridge H1	[Milestone marker]				
<b>Completion of Bridge H1</b>		[Summary bar for Completion of Bridge H1]				
BH12400	Drainage work	[Bar chart for Drainage work]				
BH12410	Road Work	[Bar chart for Road Work]				
<b>Culvert 2 &amp; Culvert 3 and Existing Box Culvert</b>		[Summary bar for Culvert 2 & Culvert 3 and Existing Box Culvert]				

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<b>Culvert 2</b>		▼ Culvert 2				
CCE20160	Bay 17B	■ Bay 17B				
CCE20170	Bay 17A	■ Bay 17A				
CCE20180	MH1	■ MH1				
<b>Culvert 3</b>		▼ Culvert 3				
CCE20212	Drainage diversion	■ Drainage diversion				
CCE20215	MH8	■ MH8				
<b>Existing Sewer Box Culvert</b>		▼ Existing Sewer Box Culvert				
<b>MH6-MH7</b>		▼ MH6-MH7				
CCE20230	Abandon the existing culvert with foam concrete	■ Abandon the existing culvert with foam concrete				
<b>MH2-MH3</b>		▼ MH2-MH3				
CCE20250	Abandon the existing culvert with foam concrete	■ Abandon the existing culvert with foam concrete				
<b>MH1-MH8</b>		▼ MH1-MH8				
CCE20240	Abandon the existing culvert with foam concrete	■ Abandon the existing culvert with foam concrete				
CCE20260	Achievement of KD-3(Stage 3) for Sewer Box Culvert	◆ Achievement of KD-3(Stage 3) for Sewer Box Culvert				
CCE20270	KD-3	◆ KD-3				
<b>Site Formation - Retaining Structure RW_A</b>		▼ Site Formation - Retaining Structure RW_A				
<b>Achievement of KD-3 (Stage 3)</b>		▼ Achievement of KD-3 (Stage 3)				
RWA20230	KD-3	◆ KD-3				
RWA20190	Achievement of KD-3(Stage 3) for RW_A	◆ Achievement of KD-3(Stage 3) for RW_A				
<b>Achievement of KD-8 (Section 5) for RW_A</b>		▼ Achievement of KD-8 (Section 5) for RW_A				
RWA20202	Road Works	■ Road Works				
RWA20204	Remaining Works(Movement joint,etc.)	■ Remaining Works(Movement joint,etc.)				
<b>Retaining Structure RW_E</b>		▼ Retaining Structure RW_E				
<b>Stage 2</b>		▼ Stage 2				
<b>Box Structures and L-Shape Retaining Wall for Retaining Wall E</b>		▼ Box Structures and L-Shape Retaining Wall				
RWE20190	Construct retaining structures for Retaining Wall E-Base slab	■ Construct retaining structures for Retaining Wall E-Base slab				
RWE20195	Construct retaining structures for Retaining Wall E-Wall construction	■ Construct retaining structures for Retaining Wall E-Wall construction				
RWE20200	Structure backfilling	■ Structure backfilling				
RWE20210	Top slab	■ Top slab				
RWE20220	Parapet and railing Works,Completion civil provision works for TCSS and E&M	■ Parapet and railing Works,Completion civil provision works for TCSS and E&M				
<b>Achievement of KD-2(Stage 2) for RW_E</b>		▼ Achievement of KD-2(Stage 2) for RW_E				

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RWE20230	Achievement of KD-2(Stage 2) for RW_E			◆ Achievement of KD-2(Stage 2) for RW_E		
RWE20260	KD-2			◆ KD-2		
<b>Achievement of KD-5 (Section 2) for RW_E</b>				▼		
RWE20240	Remaining works( Door, etc.)			■		
<b>Site Formation - Retaining Structure for Slope TP_F</b>				▼ Site Formation - Retaining Structure for Slope TP_F		
<b>Stage 3</b>						
<b>Retaining Structure for Slope TP_F</b>						
RWF31470	Backfilling					
<b>Achievement of KD-8 (Section 5) for TP_F</b>				▼ Achievement of KD-8 (Section 5) for TP_F		
RWF31410	Remaining works(Brickwork and Blockwork,etc)		■	■ Remaining works(Brickwork and Blockwork,etc)		
RWF31420	Achievement of KD-8(section 5) for TP_F			◆ Achievement of KD-8(section 5) for TP_F		
<b>Site Formation - Retaining Structure for Slope TP_G</b>						
<b>MJ17 -End</b>						▼ MJ17 -En
RWG1010	G.I and Trial Pit		■ G.I and Trial Pit			
RWG1020	Excavation		■	■ Excavation		
RWG1030	Blinding Layer				■ Blinding Layer	
RWG1040	Base slab				■ Base slab	
<b>MJ16-MJ17</b>						▼ MJ16-MJ17
RWG1070	Excavation				■ Excavation	
RWG1080	Blinding Layer				■ Blinding Layer	
<b>MJ15-MJ16</b>						▼ MJ15-MJ16
RWG1120	Excavation				■ Excavation	
RWG1115	Civil Works for TCSS and E&M				■ Civil Works for TC	
RWG1130	Blinding Layer				■ Blinding Layer	
<b>MJ14-MJ15</b>						▼ MJ14-MJ15
RWG1270	Excavation				■ Excavation	
RWG1280	Blinding Layer				■ Blinding Lay	
<b>MJ13-MJ14</b>						▼ M.
RWG1220	Excavation				■ Ex	
<b>Achievement of KD-3(Stage 3) for TP_G</b>						▼ Achievement of KI
RWG1425	Achievement of KD-3(Stage 3) for TP-G					◆ Achievement of KI

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RWG1445	KD-3				◆ KD-3	
<b>Site Formation - Slope TP_A &amp; Associated Works</b>		▶ Site Formation - Slope TP_A & Associated Works				
<b>Achievement of KD-8 (Section 5) for Slope A</b>		▶ Achievement of KD-8 (Section 5) for Slope A				
TPA41850	Remaining works include landscape works and establishment works	▶ Remaining works include landscape works and establishment works				
TPA41880	Achievement of KD-8(Section 5) for slope A	◆ Achievement of KD-8(Section 5) for slope A				
<b>Site Formation - Slope TP_B &amp; Associated Works</b>						
<b>Achievement of KD-8 (Section 5) for Slope B</b>						
TPB41800	Achievement of KD-8(Section 5) for slope B					
<b>Site Formation - Slope TP_D &amp; Associated Works</b>						
<b>Achievement of KD-8 (Section 5) for Slope D</b>						
TPD51380	Achievement of KD-8(Section 5) for slope D					
<b>Site Formation - Slope TP_E &amp; Associated Works</b>		▶ Site Formation - Slope TP_E & Associated Works				
<b>Stage 3</b>						
<b>Slope Feature - Slope TP_E Remaining Section and 5SE-D/C116</b>						
TPE62400	Excavation of Rock (11,900m3) for slope E3a					
<b>Achievement of KD-8(Section 5) for Slope E</b>		▶ Achievement of KD-8(Section 5) for Slope E				
TPE65320	Remaining works include landscape works and establishment works	▶ Remaining works include landscape works and establishment works				
TPE65330	Achievement of KD-8(Section 5) for slope E	◆ Achievement of KD-8(Section 5) for slope E				
<b>Site Formation - Slope Upgrading Works</b>		▶ Site Formation - Slope Upgrading Works				
<b>Stage 3 (Other Slope Features)</b>		▶ Stage 3 (Other Slope Features)				
<b>Slope Feature - 5SE-D/C170</b>						
SFW10860	KD-3					
<b>Slope Feature - 5SE-D/C165</b>						
SFW10880	KD-3					
<b>Slope Feature - 5SE-D/C14</b>		▶ Slope Feature - 5SE-D/C14				
SFW10360	Drainge, U-channel (60m) and Handrailing	▶ Drainge, U-channel (60m) and Handrailing				
SFW10350	Slope Modification	▶ Slope Modification				
SFW10370	Hydroseeding and Erosion Control Mat	▶ Hydroseeding and Erosion Control Mat				
SFW10970	Achievement of KD-3(Stage 3)	◆ Achievement of KD-3(Stage 3)				
SFW10980	KD-3	◆ KD-3				
<b>Slope Feature - 5SE-D/C117</b>		▶ Slope Feature - 5SE-D/C117				
SFW10510	Slope Modification	▶ Slope Modification				

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SFW11050	Achievement of KD-3(Stage 3)	◆ Achievement of KD-3(Stage 3)				
SFW11060	KD-3	◆ KD-3				
SFW10520	Drainage, U-channel (70m) and Handrailing	▬ Drainage, U-channel (70m) and Handrailing				
SFW10530	Hydroseeding and Erosion Control Mat	▬ Hydroseeding and Erosion Control Mat				
<b>Slope Feature - 5SE-D/C21</b>		▼ Slope Feature - 5SE-D/C21				
SFW11070	Achievement of KD-3(Stage 3)	◆ Achievement of KD-3(Stage 3)				
SFW11080	KD-3	◆ KD-3				
SFW10570	Hydroseeding and Erosion Control Mat	▬ Hydroseeding and Erosion Control Mat				
SFW10560	Rock Mapping and Stabilization	▬ Rock Mapping and Stabilization				
<b>Slope Feature - 5SE-D/C171</b>		▼ Slope Feature - 5SE-D/C171				
SFW11090	Achievement of KD-3(Stage 3)					
SFW11100	KD-3					
SFW10580	Complete slope 5SE-D/C21	◆ Complete slope 5SE-D/C21				
<b>Slope Feature - 5SE-D/C16</b>		▼ Slope Feature - 5SE-D/C16				
SFW10660	Hydroseeding and Erosion Control Mat	▬ Hydroseeding and Erosion Control Mat				
SFW10650	Drainage, U-channel (70m) and Handrailing	▬ Drainage, U-channel (70m) and Handrailing				
SFW11110	Achievement of KD-3(Stage 3)	◆ Achievement of KD-3(Stage 3)				
SFW11120	KD-3	◆ KD-3				
<b>Slope Feature - 5SE-D/F60</b>		▼ Slope Feature - 5SE-D/F60				
SFW10680	Slope Modification	▬ Slope Modification				
SFW11130	Achievement of KD-3(Stage 3)	◆ Achievement of KD-3(Stage 3)				
SFW11140	KD-3	◆ KD-3				
SFW10690	Drainage, U-channel (360m) and Handrailing	▬ Drainage, U-channel (360m) and Handrailing				
SFW10700	Hydroseeding and Erosion Control Mat	▬ Hydroseeding and Erosion Control Mat				
<b>Slope Feature - 5SE-D/C158</b>		▼ Slope Feature - 5SE-D/C158				
SFW10720	Slope Modification	▬ Slope Modification				
SFW10730	Erosion Control Mat	▬ Erosion Control Mat				
SFW11150	Achievement of KD-3(Stage 3)	◆ Achievement of KD-3(Stage 3)				
SFW11160	KD-3	◆ KD-3				
<b>Slope Feature - 5SE-D/C17</b>		▼ Slope Feature - 5SE-D/C17				

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SFW10750	Slope Modification	Slope Modification				
SFW10760	Drainage, U-channel (180m) and Handrailing	Drainage, U-channel (180m) and Handrailing				
SFW10770	Hydroseeding and Erosion Control Mat	Hydroseeding and Erosion Control Mat				
SFW11170	Achievement of KD-3(Stage 3)	◆ Achievement of KD-3(Stage 3)				
SFW11180	KD-3	◆ KD-3				
<b>Vehicular Underpass TN-01</b>		Vehicular Underpass TN-01				
<b>Achievement of KD-8 (Section 5) for TN-01</b>		Achievement of KD-8 (Section 5) for				
UDP20640	Road works and Remaining works(Sundry Metalwork,etc)	Road works and Remaining works(				
UDP20650	Achievement of KD-8(Section 5)for Vehicular Underpass	◆ Achievement of KD-8(Section 5)for				
<b>Road and Drainage Work ,Utilities Works at for Lung Fu Road Roundabout</b>						
<b>Section 3</b>						
<b>Utilites installation ,road and drainage works (TTA Stage 2)</b>						
LFR10620	Filling Works	Filling Works				
LFR10680	PCCW	PCCW				
LFR10690	Hutchison Global Communication Cable	Hutchison Global Communication Cable				
LFR10700	Hong Kong Boaroband Network	Hong Kong Boaroband Network				
LFR10710	Wharf T&T Duct and Joint Box	Wharf T&T Duct and Joint Box				
LFR10630	Street Furniture	Street Furniture				
LFR10720	New World Telecom	New World Telecom				
LFR10730	Town Gas	Town Gas				
LFR10640	Sign Gantry	Sign Gantry				
LFR10740	Smartone Cable	Smartone Cable				
LFR10650	E&M, TCSS	E&M, TCSS				
LFR10750	HKC Cable	HKC Cable				
LFR10760	Pubic Lighting	Pubic Lightin				
LFR10660	Drainage Work	Drainage Wo				
LFR10770	CLP + CRD	CLP + C				
LFR10670	DN700,800					
<b>Road and Drainage Work ,Utilities Works at Lung Mun Road</b>		Ro				
<b>Lung Mun Road (Westbound)</b>		Lu				

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<b>Ho Suen Street South</b>		▼ Ho				
LMRWA1250	Wharf T&T Duct and Joint Box	Wharf T&T Duct and Joint Box				
LMRWA1260	New World Telecom					
LMRWA1241	Street Furniture(Including eastbound)	Street Furniture(Including e				
LMRWA1242	Sign Gantry(Including eastbound)	Sign Gantry(Including eastt				
LMRWA1270	Town Gas	Town Gas				
LMRWA1280	Smartone Cable	Sr				
<b>Utilites installation ,road and drainage works for East Portal</b>		▼ Utilites installation ,road and drainage w				
EPA1150	Completion of this stage civil provision for E&M, TCSS	, TCSS				
EPA1030	Street furniture and sign gantry	Street furniture and sign gantry				
EPA1160	Irrigation System	Irrigation System				
<b>Utilites installation ,road and drainage works near portion D</b>		▼ U				
TOLLA1100	HKC Cable					
TOLLA1110	Pubic Lighting					
TOLLA1120	CLP (230m)					
TOLLA1130	TraxComm					
TOLLA1096	Completion of this stage civil provision for E&M, TCSS	, TCSS				
TOLLA1094	Sign Gantry	Sign Gantry				
TOLLA1150	Irrigation System	Irrigation System				
TOLLA1160	Landscapping	Landscapping				
TOLLA1170	Footpath Pavement	F				
<b>Sewage, Irrigation and Road&amp; Drainage Works</b>						
SAI10060	Sewage, irrigation and road&drainage works -G2-north side	Sewage, irrigation and roa				
SAI10020	Sewage, irrigation and road&drainage works - RW_B-north side	Sewage, irrigation an				
SAI10040	Sewage, irrigation and road&drainage works -G1&H1-north side	Sewage,				
SAI10070	Sewage, irrigation and road&drainage works- G2-south side					
SAI10030	Sewage, irrigation and road&drainage works - RW_B-south side					
SAI10050	Sewage, irrigation and road&drainage works - G1&H1-south side					
<b>Section 6</b>		▼				

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SEC61000	Landscape softworks in KD-1 area					
SEC61020	Landscape softworks in KD-2 area					
SEC61040	Landscape softworks in KD-3 area					
<b>Section 8</b>						
SEC81000	Preservation and protection trees in KD-1 area					
SEC81040	Preservation and protection trees in KD-3 area					
SEC81020	Preservation and protection trees in KD-2 area					
<b>Achievement of Key Dates</b>						
AK10210	Achievement of KD-3(Stage 3) for RW_A					
AK10360	Achievement of KD-3(Stage 3) for slope E					
AK10380	Achievement of KD-3(Stage 3) for Vehicular Underpass					
AK10470	Achievement of KD-3(Stage 3) for Road and drainage works near east portal					
AK10350	Achievement of KD-8(Section 5) for slope D					
AK10310	Achievement of KD-8(Section 5) for slope B					
AK10290	Achievement of KD-8(Section 5) for slope A					
AK10330	Achievement of KD-8(Section 5) for slope C					
AK10260	Achievement of KD-8(section 5) for TP_F					
AK10140	Achievement of KD-2(Stage 2)for Bridge G2					
AK10170	Achievement of KD-2(Stage 2)for Bridge H1					
AK10230	Achievement of KD-2(Stage 2) for RW_E					
AK10150	Achievement of KD-2(Stage 2)for Bridge G1					
AK10480	Achievement of KD-8(Section 5)for Road and drainage works near east portal					
AK10200	Achievement of KD-3(Stage 3) for Sewer Box Culvert					
AK10390	Achievement of KD-8(Section 5)for Vehicular Underpass					
AK10455	Achievement of KD-3(Stage 3) for Road and draiange Works under TD1					
AK10400	Achievement of KD-3(Stage 3) for Roundabout works					
AK10430	Achievement of KD-3(Stage 3) for RW_G					

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<b>HY/2013/12 TMCLK Northern Connection Toll Plaza and Associated-Works Programme-Rev.4A Monthly Update</b>								
<b>Achievement of Stages/ Completion of Sections</b>				▼ Achievement of Stages/ Completion of Sections				
KD10110	KD2 - Stage 2 Completion Civil provisions for E&M/TCSS (H1/G1/G2, abutment w/in Area A)			◆ KD2 - Stage 2 Completion Civil provisions for E&M/TCSS (H1/G1/G2, abutment w/in A				
<b>EOTO No.1</b>								
EOTO1010	EOTO No.1 for KD7							
EOTO1020	EOTO No.1 for KD1							
EOTO1030	EOTO No.1 for KD3							
<b>Dismantling of HY/2012/04 Project Office at WA6</b>								
DM10030	Approval of method statement							
DM10040	Advance necessary precautionary and protective measure							
DM10050	Demolition Works-preparation works							
DM10055	Demolition Works							
<b>Toll Plaza Decking TD1-Section 1</b>				▼ Toll Plaza Decking TD1-Section 1				
<b>Completion of TD1 in Section 1</b>				▼ Completion of TD1 in Section 1				
<b>Drainage Works and Water Works</b>				▼ Drainage Works and Water Works				
TD121000	Water works			Water works				
TD121010	Drainage work			Drainage work				
<b>Road pavement and road furniture</b>				▼ Road pavement and road furniture				
TD121020	Road pavement and remain furniture			Road pavement and remain furniture				
<b>Completion of TD1 in Section 1</b>				▼ Completion of TD1 in Section 1				
TD121030	Achievement of KD-4( section 1) for TD1			◆ Achievement of KD-4( section 1) for TD1				
TD121040	KD-4			◆ KD-4				
<b>Toll Plaza Decking TD2-Section 1</b>				▼ Toll Plaza De				
<b>Field Works</b>				▼ Field Works				
<b>Completion of TD2</b>				▼ Completion o				
TD220020	Road works			Road works				
TD220240	Miscellaneous civil works			Miscellaneous civil works				
TD220250	Remaining works(Including Earthing System,Lightning Protection System)			Remaining w				

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		Aug	Sep	Oct	Nov	Dec
<b>Toll Plaza Footbridge-Section 1</b>		▼ Toll Plaza Footbridge-Section 1				
<b>Miscellaneous Works</b>		▼ Miscellaneous Works				
TFB1440	Finishing works	■ Finishing works				
TFB1450	Remaining works(Fences, Handrailing, Guard-railing, Gates,etc)	■ Remaining works(Fences, Handrailing, Guard-railing, Gates,etc)				
<b>Completion of footbridge in section 1</b>		▼ Completion of footbridge in section 1				
TFB1460	Achievement of KD-4 (Section 1) for footbridge	◆ Achievement of KD-4 (Section 1) for footbridge				
<b>Retaining Structure RW_B-Section 1</b>		▼ Retaining Structure RW_B-Section 1				
<b>Site Formation - Retaining Structure RW_B</b>		▼ Site Formation - Retaining Structure RW_B				
<b>Achievement of KD-4 (Section 1) for RW_B</b>		▼ Achievement of KD-4 (Section 1) for RW_B				
RWB10640	Drainage works	■ Drainage works				
RWB10630	Finishing works including feature wall	■ Finishing works including feature wall				
RWB10660	Achievement of KD-4(Section 1) for RW_B	◆ Achievement of KD-4(Section 1) for RW_B				
RWB10650	Road works	■ Road works				
<b>Toll Collector Subway &amp; Associated Works-Section 1</b>		▼ Toll Collector Subway & Associated Works-Section 1				
<b>Toll Collector Bridge (Portion I)-Section 1</b>		▼ Toll Collector Bridge (Portion I)-Section 1				
<b>Completion of Toll Collector Bridge in Section 1</b>		▼ Completion of Toll Collector Bridge in Section 1				
TCS1310	Finishing work,louver works	■ Finishing work,louver works				
TCS1330	Drainage works,Completion civil provision works for TCSS and E&M	■ Drainage works,Completion civil provision works for TCSS and E&M				
TCS1350	Achievement of KD-4 (Section 1) for toll collector bridge	◆ Achievement of KD-4 (Section 1) for toll collector bridge				
<b>Toll Collector Subway &amp; Associate Works (Portion I)-Section 1</b>		▼ Toll Collector Subway & Associate Works (Portion I)-Section 1				
<b>Completion of Section 1 for Toll collector subway(Portion I)</b>		▼ Completion of Section 1 for Toll collector subway(Portion I)				
TCS1550	Internal finishing works	■ Internal finishing works				
TCS1560	Remaining works(Doors, Windows,etc.)	■ Remaining works(Doors, Windows,etc.)				
<b>Toll Collector Subway (Portion X)-Section 5</b>		▼ Toll Collector Subway (Portion X)-Section 5				
<b>Section 5</b>		▼ Section 5				
TCS1200	Drainage works and street furniture installation for TCSS and E&M installation	■ Drainage works and street furniture installation for TCSS and E&M installation				
TCS1210	Finishing works	■ Finishing works				
TCS1230	Achievement of KD-8(Section 5)for toll collector subway(Portion X)	◆ Achievement of KD-8(Section 5)for toll collector subway(Portion X)				

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TCS1220	Miscellaneous	Miscellaneous				
<b>Bridge G2</b>		▼ Bridge G2				
<b>Stage 2</b>						
<b>Achievement of KD-2(Stage 2) for Bridge G2</b>		Achievement of KD-2(Stage 2) for Bridge G2				
BG23630	KD-2					
BG23500	Achievement of KD-2(Stage 2)for Bridge G2	Achievement of KD-2(Stage 2)for Bridge G2				
<b>Completion of Bridge G2</b>		▼ Completion o				
BG23110	Drainage works	■ Drainage works				
BG23120	Road work	■ Road work				
BG23130	Remaining works(include Lightning Protection System,Earthing System,etc)	■ Remaining w				
<b>Bridge G1</b>		▼ Stage 2				
<b>Stage 2</b>		▼ Field Works				
<b>Field Works</b>		▼ Flexible Approach Structure from Abutment G1b to Pier G1a				
<b>Flexible Approach Structure from Abutment G1b to Pier G1a</b>		Construct slab G1a-G1b				
BG112670	Construct slab G1a-G1b	Construct slab G1a-G1b				
<b>Parapet and Finishing Works</b>		▼ Parapet and Finishing Works				
BG112680	Parapet , railing and street furniture installation for TCSS and E&M installation	■ Parapet , railing and street furniture installation for TCSS and E&M installation				
<b>Achievement of KD-2(Stage 2) for Bridge G1</b>		▼ Achievement of KD-2(Stage 2) for Bridge G1				
BG112700	Achievement of KD-2(Stage 2)for Bridge G1	◆ Achievement of KD-2(Stage 2)for Bridge G1				
BG112710	KD-2	◆ KD-2				
<b>Completion of Bridge G1</b>		▼ Drainage work				
BG112720	Drainage work	■ Drainage work				
BG112730	Road Work	■ Road Work				
BG112740	Miscellaneous Works	■ Miscellaneous Works				
<b>Bridge H1-Section 2</b>		▼ Stage 2				
<b>Stage 2</b>		▼ Field Works				
<b>Field Works</b>		▼ Flexible Approach Structure from Abutment H1b to Pier H1a				
<b>Flexible Approach Structure from Abutment H1b to Pier H1a</b>						

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BH12500	Construct slab H1a-H1b	Construct slab H1a-H1b				
<b>Parapet and Finishing Works</b>		Parapet and Finishing Works				
BH12390	Parapet and street furniture installation for TCSS and E&M installation	Parapet and street furniture installation for TCSS and E&M installation				
<b>Achievement of KD-2(Stage 2) for Bridge H1</b>		Achievement of KD-2(Stage 2) for Bridge H1				
BH12710	KD-2	◆ KD-2				
BH12650	Achievement of KD-2(Stage 2)for Bridge H1	◆ Achievement of KD-2(Stage 2)for Bridge H1				
<b>Completion of Bridge H1</b>		Completion of Bridge H1				
BH12400	Drainage work	Drainage work				
BH12410	Road Work	Road Work				
BH12640	Miscellaneous Works	Miscellaneous Works				
<b>Culvert 2 &amp; Culvert 3 and Existing Box Culvert</b>		Culvert 2 & Culvert 3 and Existing Box Culvert				
<b>Culvert 2</b>		Culvert 2				
CCE20170	Bay 17A	Bay 17A				
CCE20180	MH1	MH1				
<b>Culvert 3</b>		Culvert 3				
CCE20215	MH8	MH8				
CCE20212	Drainage diversion	Drainage diversion				
<b>Existing Sewer Box Culvert</b>		Existing Sewer Box Culvert				
<b>MH2-MH3</b>		MH2-MH3				
CCE20250	Abandon the existing culvert with foam concrete	Abandon the existing culvert with foam concrete				
<b>MH1-MH8</b>		MH1-MH8				
CCE20240	Abandon the existing culvert with foam concrete	Abandon the existing culvert with foam concrete				
CCE20260	Achievement of KD-3(Stage 3) for Sewer Box Culvert	◆ Achievement of KD-3(Stage 3) for Sewer Box Culvert				
CCE20270	KD-3	◆ KD-3				
<b>Site Formation - Retaining Structure RW_A</b>		Site Formation - Retaining Structure				
<b>Achievement of KD-8 (Section 5) for RW_A</b>		Achievement of KD-8 (Section 5)				
RWA20202	Road Works	Road Works				
RWA20204	Remaining Works(Movement joint,etc.)	Remaining Works(Movement joint,etc.)				

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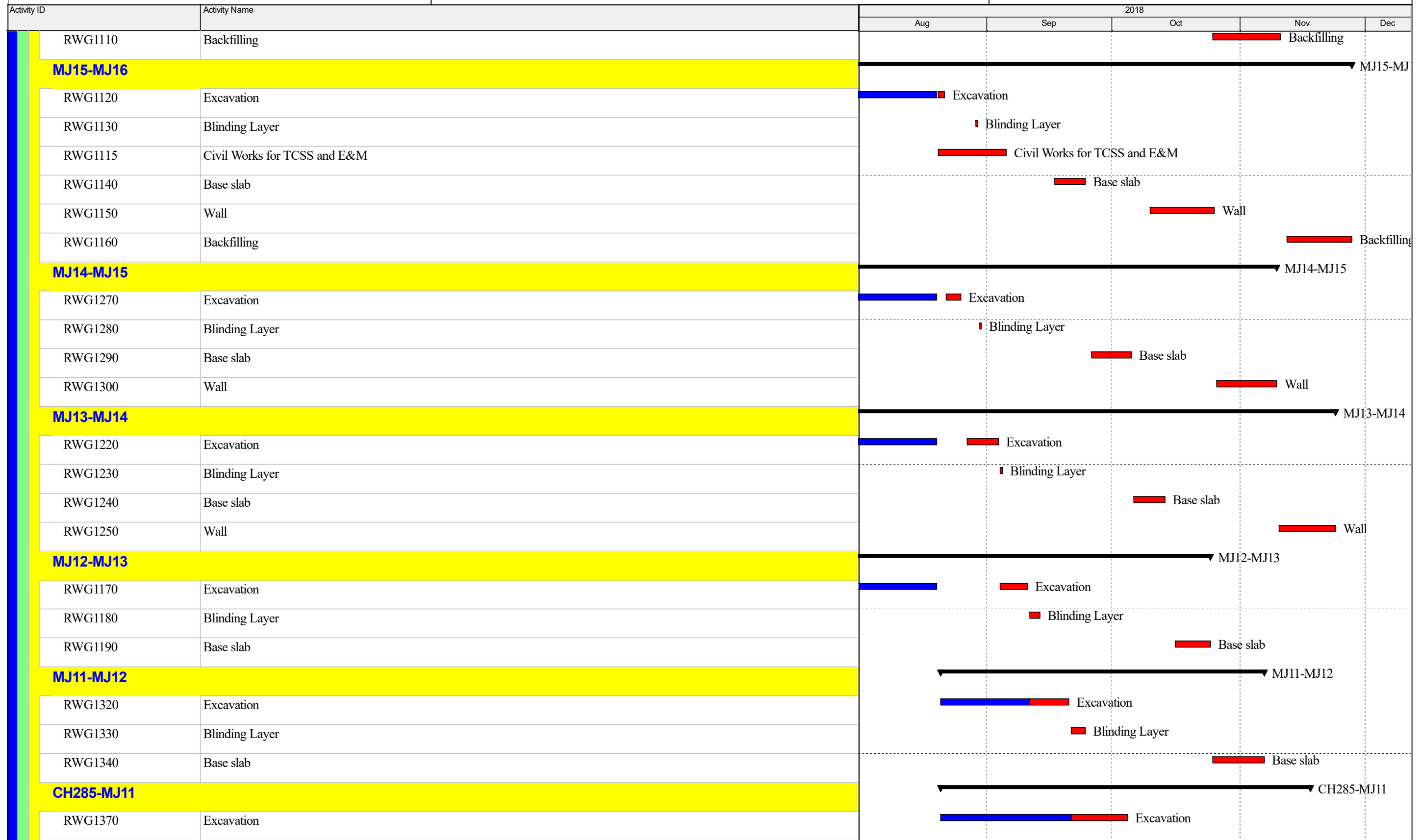
Activity ID	Activity Name	2018				
		Aug	Sep	Oct	Nov	Dec
RWA20210	Achievement of KD-8(Section 5) for RW_A					◆ Achievement of KD-8(Section 5)
<b>Retaining Structure RW_E</b>		▼ Stage 2				
<b>Stage 2</b>		▼ Box Structures and L-Shape Retaining Wall for Retaining Wall E				
<b>Box Structures and L-Shape Retaining Wall for Retaining Wall E</b>		▼ Structure backfilling				
RWE20200	Structure backfilling	■ Structure backfilling				
RWE20210	Top slab	■ Top slab				
RWE20220	Parapet and railing Works,Completion civil provision works for TCSS and E&M	■ Parapet and railing Works,Completion civil provision works for TCSS and E&M				
<b>Achievement of KD-2(Stage 2) for RW_E</b>		▼ Achievement of KD-2(Stage 2) for RW_E				
RWE20230	Achievement of KD-2(Stage 2) for RW_E	◆ Achievement of KD-2(Stage 2) for RW_E				
RWE20260	KD-2	◆ KD-2				
<b>Achievement of KD-5 (Section 2) for RW_E</b>		▼ Achievement of KD-5 (Section 2) for RW_E				
RWE20240	Remaining works( Door, etc.)	■ Remaining works( Door, etc.)				
<b>Site Formation - Retaining Structure for Slope TP_F</b>		▼ Site Formation - Retaining Structure for Slope TP_F				
<b>Achievement of KD-8 (Section 5) for TP_F</b>		▼ Achievement of KD-8 (Section 5) for TP_F				
RWF31410	Remaining works(Brickwork and Blockwork,etc)	■ Remaining works(Brickwork and Blockwork,etc)				
RWF31420	Achievement of KD-8(section 5) for TP_F	◆ Achievement of KD-8(section 5) for TP_F				
<b>Site Formation - Retaining Structure for Slope TP_G</b>		▼ Site Formation - Retaining Structure for Slope TP_G				
<b>MJ17 -End</b>		▼ MJ17 -End				
RWG1030	Blinding Layer	■ Blinding Layer				
RWG1040	Base slab	■ Base slab				
RWG1020	Excavation	■ Excavation				
RWG1050	Wall	■ Wall				
RWG1060	Backfilling	■ Backfilling				
<b>MJ16-MJ17</b>		▼ MJ16-MJ17				
RWG1080	Blinding Layer	■ Blinding Layer				
RWG1070	Excavation	■ Excavation				
RWG1090	Base slab	■ Base slab				
RWG1100	Wall	■ Wall				

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

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█ Remaining Level of Effort     █ Critical Remaining Work  
█ Actual Work     ◆ Milestone  
█ Remaining Work      Summary

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Activity ID	Activity Name	2018				
		Aug	Sep	Oct	Nov	Dec
RWG1380	Blinding Layer			■ Blinding Layer		
RWG1390	Base slab				■ Base slab	
<b>Achievement of KD-3(Stage 3) for TP_G</b>				▼ Achievement of KD-3(Stage 3) for TP_G		
RWG1425	Achievement of KD-3(Stage 3) for TP-G			◆ Achievement of KD-3(Stage 3) for TP-G		
RWG1445	KD-3			◆ KD-3		
<b>Site Formation - Slope TP_E &amp; Associated Works</b>				→ Site Formation - Slope TP_E & Associated Works		
<b>Stage 3</b>						
<b>Slope Feature - Slope TP_E Remaining Section and 5SE-D/C116</b>						
TPE62420	U-channel (220m) and Berm for slope E3a					
<b>Achievement of KD-8(Section 5) for Slope E</b>				→ Achievement of KD-8(Section 5) for Slope E		
TPE65320	Remaining works inculde landscape works and establishment works			■ Remaining works inculde landscape works and establishment works		
TPE65330	Achievement of KD-8(Section 5) for slope E			◆ Achievement of KD-8(Section 5) for slope E		
<b>Vehicular Underpass TN-01</b>				→ Vehicular Underpass TN-01		
<b>Achievement of KD-8 (Section 5) for TN-01</b>				→ Achievement of KD-8 (Section 5) for TN-01		
UDP20640	Road works and Remaining works(Sundry Metalwork,etc)			■ Road works and Remaining works(Sundry Metalwork,etc)		
UDP20650	Achievement of KD-8(Section 5)for Vehicular Underpass			◆ Achievement of KD-8(Section 5)for Vehicular Underpass		
<b>Road and Drainage Work ,Utilities Works at for Lung Fu Road Roundabout</b>				→ Road and Drainage Work ,Utilities Works at for Lung Fu Road Roundabout		
<b>Section 3</b>						
<b>Utilites installation ,road and drainage works (TTA Stage 2)</b>				→ Utilites installation		
LFR10620	Filling Works			■ Filling Works		
LFR10680	PCCW			■ PCCW		
LFR10690	Hutchison Global Communication Cable			■ Hutchison Global Communication Cable		
LFR10700	Hong Kong Boaroband Network			■ Hong Kong Boaroband Network		
LFR10710	Wharf T&T Duct and Joint Box			■ Wharf T&T Duct and Joint Box		
LFR10630	Street Furniture			■ Street Furniture		
LFR10720	New World Telecom			■ New World Telecom		
LFR10730	Town Gas			■ Town Gas		
LFR10640	Sign Gantry			■ Sign Gantry		

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

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Activity ID	Activity Name	2018				
		Aug	Sep	Oct	Nov	Dec
LFR10740	Smartone Cable			Smartone Cable		
LFR10650	E&M, TCSS			E&M, TCSS		
LFR10750	HKC Cable			HKC Cable		
LFR10760	Pubic Lighting			Pubic Lighting		
LFR10660	Drainage Work		Drainage Work			
LFR10770	CLP + CRD			CLP + CRD		
LFR10780	TraxComm			TraxComm		
LFR10790	Irrigation System			Irrigation System		
LFR10800	TTA Stage 2-1			TTA Stage 2-1		
LFR10670	DN700,800			DN700,800		
<b>Utilites installation ,road and drainage works (TTA Stage 2-1)</b>					Utilites i	
LFR10220	CLP+ CRD				CLP+ C	
<b>Road and Drainage Work ,Utilities Works at Lung Mun Road</b>					Road and	
<b>Lung Mun Road (Westbound)</b>					Lung Mu	
<b>Ho Suen Street South</b>					Ho Suen	
LMRWA1250	Wharf T&T Duct and Joint Box	Wharf T&T Duct and Joint Box				
LMRWA1260	New World Telecom	New World Telecom				
LMRWA1241	Street Furniture(Including eastbound)	Street Furniture(Including eastbound)				
LMRWA1242	Sign Gantry(Including eastbound)	Sign Gantry(Including eastbound)				
LMRWA1270	Town Gas		Town Gas			
LMRWA1280	Smartone Cable			Smartone Cable		
LMRWA1290	HKC Cable				HKC Cab	
<b>Utilites installation ,road and drainage works for East Portal</b>					Utilites installation ,road	
EPA1160	Irrigation System		Irrigation System			
<b>Utilites installation ,road and drainage works near portion D</b>					Utilites installation ,road	
TOLLA1150	Irrigation System		Irrigation System			
TOLLA1160	Landscapping		Landscapping			
TOLLA1170	Footpath Pavement			Footpath Pavement		

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

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Activity ID	Activity Name	2018				
		Aug	Sep	Oct	Nov	Dec
<b>Sewage, Irrigation and Road&amp; Drainage Works</b>		Sewage, irrigation and road& drainage works -G2-north side				
SAI10060	Sewage, irrigation and road& drainage works -G2-north side	Sewage, irrigation and road& drainage works -G2-north side				
SAI10040	Sewage, irrigation and road& drainage works -G1&H1-north side	Sewage, irrigation and road& drainage works -G1&H1-				
SAI10020	Sewage, irrigation and road& drainage works - RW _B-north side	Sewage, irrigation and road& drainage works - RW				
SAI10050	Sewage, irrigation and road& drainage works - G1&H1-south side	Sewage, irrigation				
SAI10070	Sewage, irrigation and road& drainage works- G2-south side	Sewage, irrigation				
SAI10030	Sewage, irrigation and road& drainage works - RW _B-south side	Sewage,				
<b>Section 6</b>		Landscape softworks in KD-1 area				
SEC61000	Landscape softworks in KD-1 area	Landscape softworks in KD-1 area				
SEC61040	Landscape softworks in KD-3 area	Landscape softworks in KD-3 area				
SEC61020	Landscape softworks in KD-2 area	Landscape softworks in KD-2 area				
<b>Section 8</b>		Preservation and protection trees in KD-1 area				
SEC81000	Preservation and protection trees in KD-1 area	Preservation and protection trees in KD-1 area				
SEC81040	Preservation and protection trees in KD-3 area	Preservation and protection trees in KD-3 area				
SEC81020	Preservation and protection trees in KD-2 area	Preservation and protection trees in KD-2 area				
<b>Achievement of Key Dates</b>		Achievement of Key Dates				
AK10140	Achievement of KD-2(Stage 2)for Bridge G2	Achievement of KD-2(Stage 2)for Bridge G2				
AK10350	Achievement of KD-8(Section 5) for slope D	◆ Achievement of KD-8(Section 5) for slope D				
AK10310	Achievement of KD-8(Section 5) for slope B	◆ Achievement of KD-8(Section 5) for slope B				
AK10290	Achievement of KD-8(Section 5) for slope A	◆ Achievement of KD-8(Section 5) for slope A				
AK10330	Achievement of KD-8(Section 5) for slope C	◆ Achievement of KD-8(Section 5) for slope C				
AK10260	Achievement of KD-8(section 5) for TP_F	◆ Achievement of KD-8(section 5) for TP_F				
AK10150	Achievement of KD-2(Stage 2)for Bridge G1	◆ Achievement of KD-2(Stage 2)for Bridge G1				
AK10230	Achievement of KD-2(Stage 2) for RW_E	◆ Achievement of KD-2(Stage 2) for RW_E				
AK10480	Achievement of KD-8(Section 5)for Road and drainage works near east portal	◆ Achievement of KD-8(Section 5)for Road and drainage works near east portal				
AK10430	Achievement of KD-3(Stage 3) for RW_G	◆ Achievement of KD-3(Stage 3) for RW_G				
AK10170	Achievement of KD-2(Stage 2)for Bridge H1	◆ Achievement of KD-2(Stage 2)for Bridge H1				
AK10100	Achievement of KD-4 (Section 1) for Toll Collector Bridge	◆ Achievement of KD-4 (Section 1) for Toll Collector Bridge				

█ Remaining Level of Effort    █ Critical Remaining Work  
█ Actual Work    ◆ Milestone  
█ Remaining Work     Summary

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Activity ID	Activity Name	2018				
		Aug	Sep	Oct	Nov	Dec
AK10390	Achievement of KD-8(Section 5)for Vehicular Underpass			◆ Achievement of KD-8(Section 5)for Vehicular Underpass		
AK10200	Achievement of KD-3(Stage 3) for Sewer Box Culvert			◆ Achievement of KD-3(Stage 3) for Sewer Box Culvert		
AK10070	Achievement of KD-4(Section 1) for RW_B			◆ Achievement of KD-4(Section 1) for RW_B		
AK10455	Achievement of KD-3(Stage 3) for Road and draiange Works under TD1			◆ Achievement of KD-3(Stage 3) for Road and draian		
AK10010	Achievement of KD-4( section 1) for TD1			◆ Achievement of KD-4( section 1) for TD1		
AK10400	Achievement of KD-3(Stage 3) for Roundabout works			◆ Achievement of KD-3(Stage 3) for Roundabout		
AK10050	Achievement of KD-4 (Section 1) for Footbridge			◆ Achievement of KD-4 (Section 1) for Footbri		
AK10220	Achievement of KD-8(Section 5) for RW_A			◆ Achievement of KD-8(Section 5)		
AK10370	Achievement of KD-8(Section 5) for slope E				◆ Achievement of KD-8(S	
AK10130	Achievement of KD-8(Section 5)for Toll Collector Subway(Portion X)				◆ Achievement of KD-	

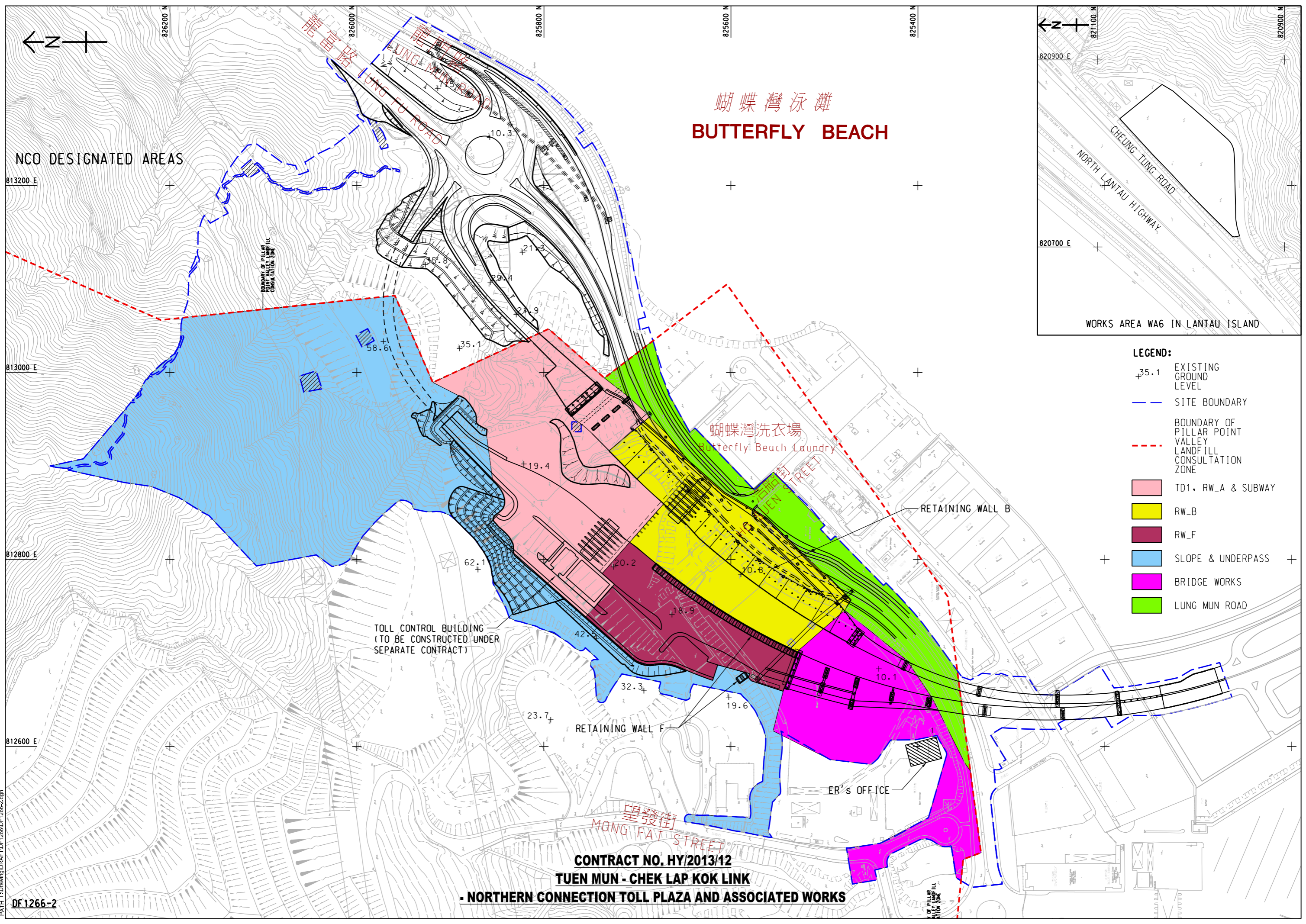
█ Remaining Level of Effort    █ Critical Remaining Work  
█ Actual Work    ◆ Milestone  
█ Remaining Work    ▼ Summary

**CRBC - Kaden JV  
Three-Month Rolling Programme**

Date	Revision	Checked	Approved
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## **Appendix E**

### **Monitoring Locations for the Contract**



蝴蝶灣泳灘  
**BUTTERFLY BEACH**

NCO DESIGNATED AREAS

WORKS AREA WA6 IN LANTAU ISLAND

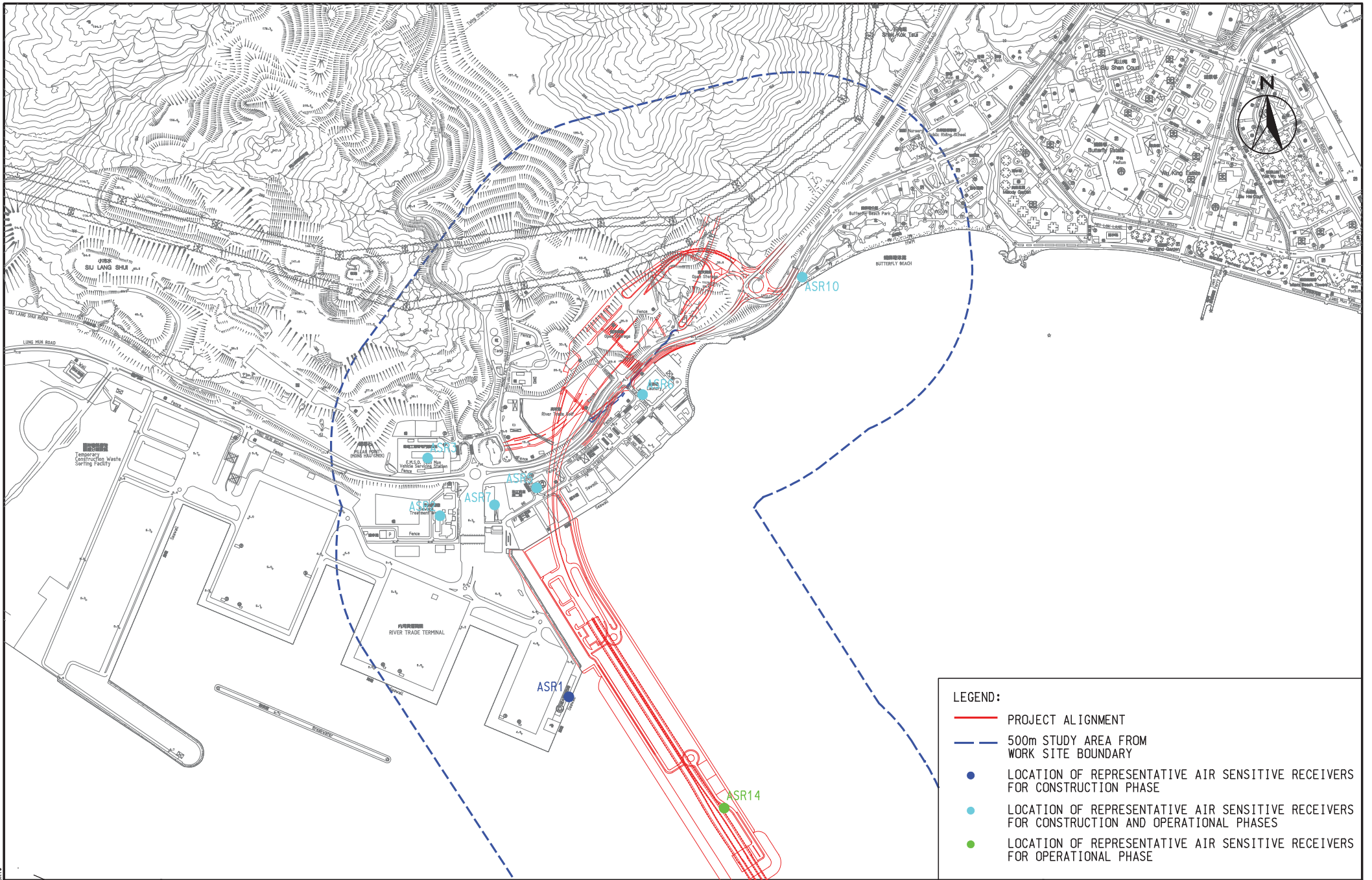
- LEGEND:**
- +35.1 EXISTING GROUND LEVEL
  - SITE BOUNDARY
  - BOUNDARY OF PILLAR POINT VALLEY LANDFILL CONSULTATION ZONE
  - TD1, RW\_A & SUBWAY
  - RW\_B
  - RW\_F
  - SLOPE & UNDERPASS
  - BRIDGE WORKS
  - LUNG MUN ROAD

TOLL CONTROL BUILDING  
 (TO BE CONSTRUCTED UNDER  
 SEPARATE CONTRACT)

**CONTRACT NO. HY/2013/12**  
**TUEN MUN - CHEK LAP KOK LINK**  
**- NORTHERN CONNECTION TOLL PLAZA AND ASSOCIATED WORKS**

Plot File: bvc\_rnc1 11/9/2016 10:37:34 AM  
 PATH: T:\Drawing\DRAF\DF1266\DF1266-2.dgn

DF1266-2



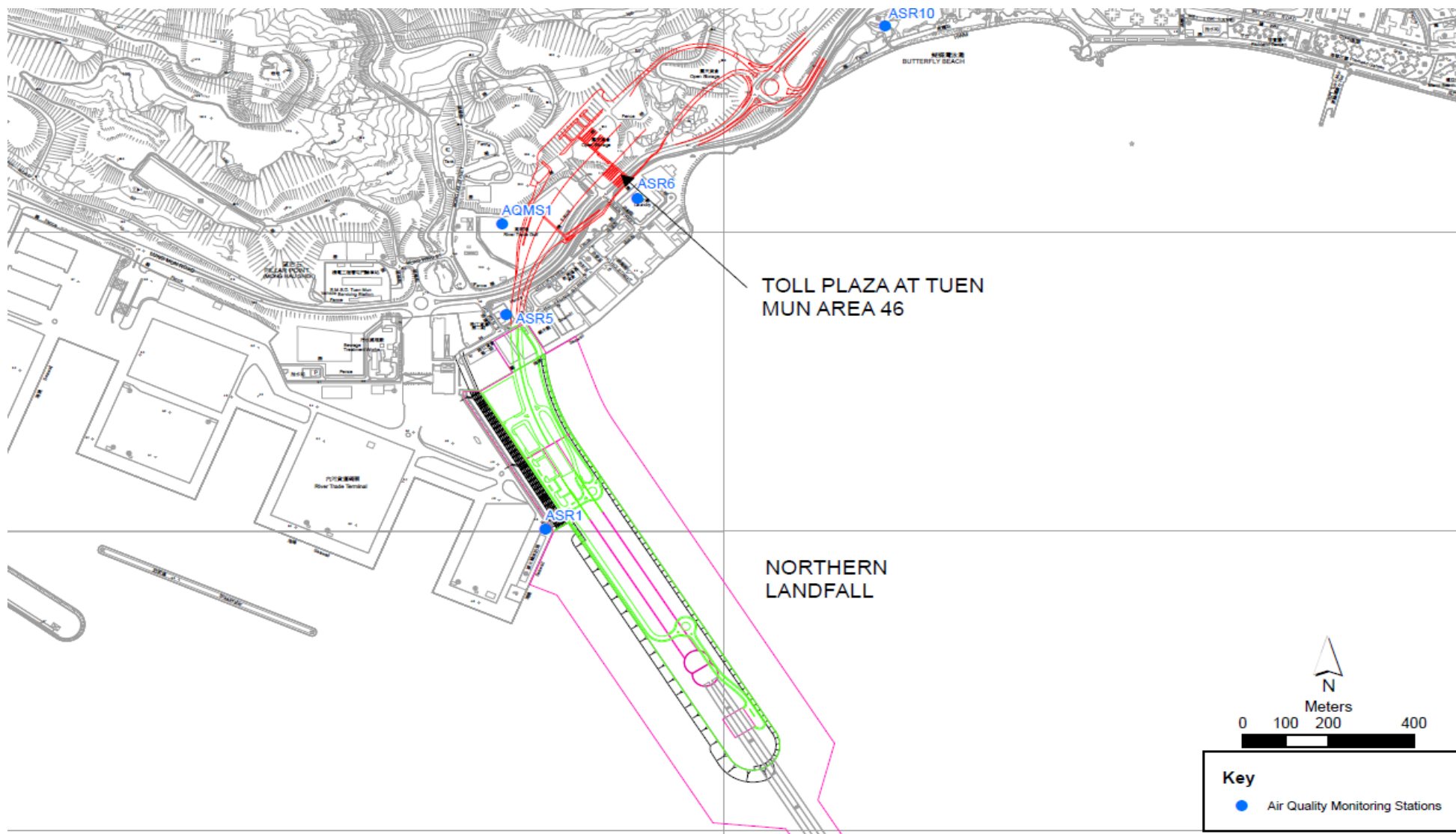
**LEGEND:**

- PROJECT ALIGNMENT
- - - 500m STUDY AREA FROM WORK SITE BOUNDARY
- LOCATION OF REPRESENTATIVE AIR SENSITIVE RECEIVERS FOR CONSTRUCTION PHASE
- LOCATION OF REPRESENTATIVE AIR SENSITIVE RECEIVERS FOR CONSTRUCTION AND OPERATIONAL PHASES
- LOCATION OF REPRESENTATIVE AIR SENSITIVE RECEIVERS FOR OPERATIONAL PHASE

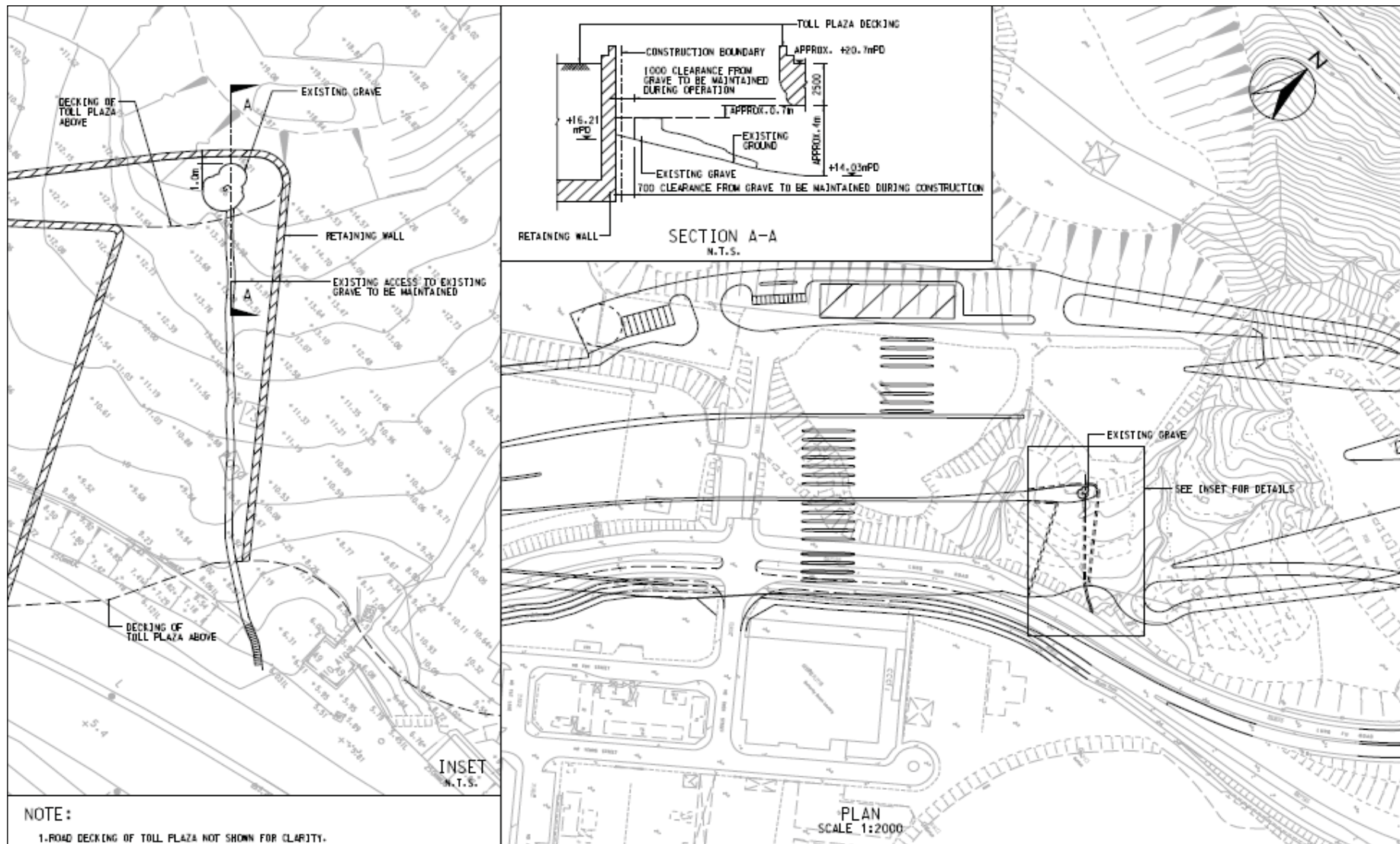
AGREEMENT NO. CE 52/2007(HY)  
 TUEN MUN - CHEK LAP KOK LINK - INVESTIGATION  
**REPRESENTATIVE AIR SENSITIVE RECEIVERS**

SCALE	1 : 10 000	DATE
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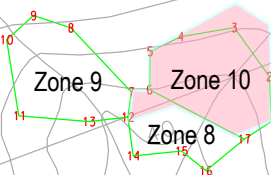
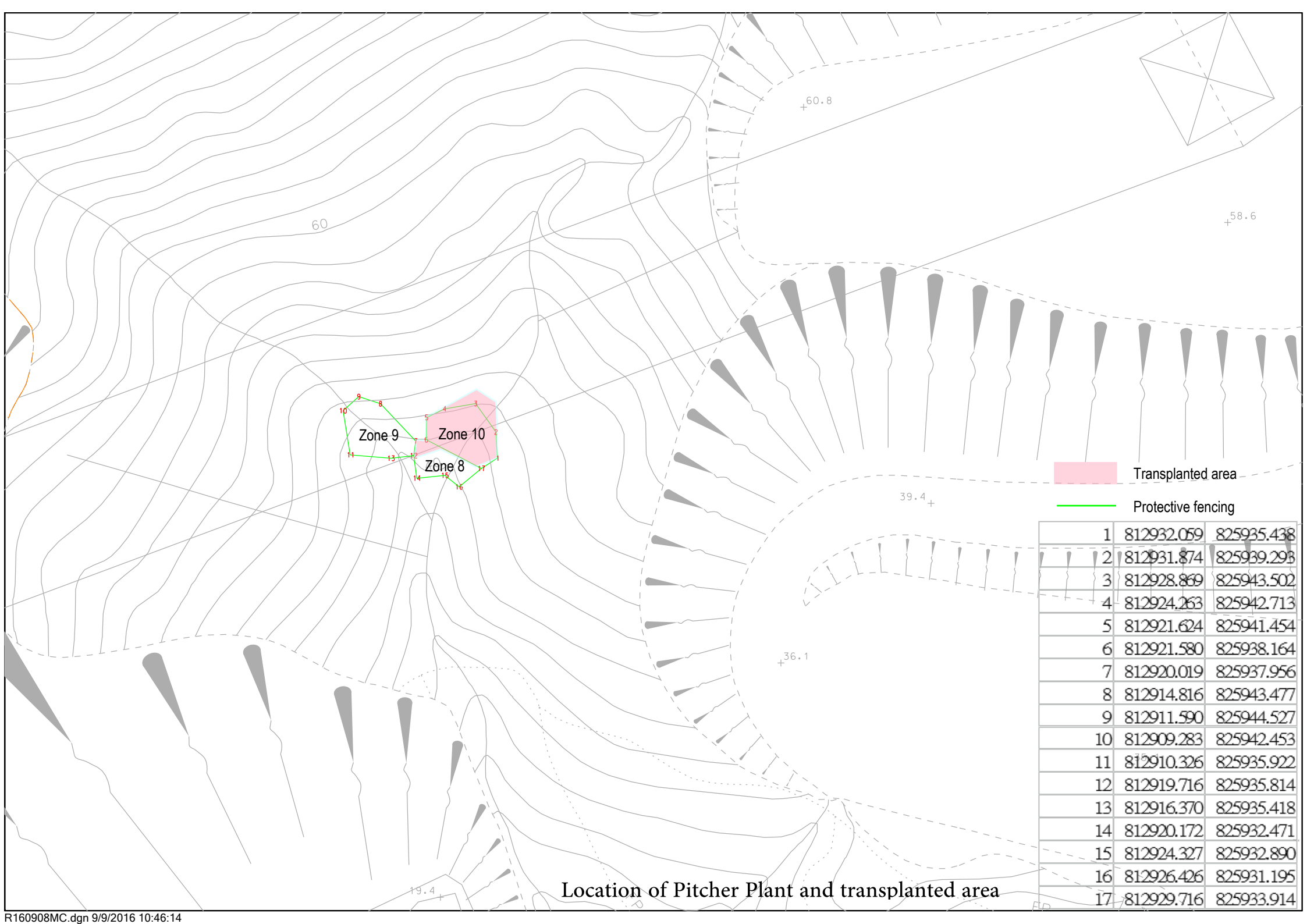




**Air Quality Monitoring Location**



**Location of the Grave G1**



Transplanted area  
 Protective fencing

1	812932.059	825935.438
2	812931.874	825939.293
3	812928.869	825943.502
4	812924.263	825942.713
5	812921.624	825941.454
6	812921.580	825938.164
7	812920.019	825937.956
8	812914.816	825943.477
9	812911.590	825944.527
10	812909.283	825942.453
11	812910.326	825935.922
12	812919.716	825935.814
13	812916.370	825935.418
14	812920.172	825932.471
15	812924.327	825932.890
16	812926.426	825931.195
17	812929.716	825933.914

Location of Pitcher Plant and transplanted area

## **Appendix F**

### **Event and Action Plan**

### Event and Action Plan for Air Quality

EVENT	ACTION			
	ET <sup>(1)</sup>	IEC <sup>(1)</sup>	SOR <sup>(1)</sup>	Contractor(s)
<b>Action Level</b>				
Exceedance recorded	<ol style="list-style-type: none"> <li>1 Identify the source.</li> <li>2 Repeat measurements to confirm findings. If two consecutive measurements exceed Action Level, the exceedance is then confirmed.</li> <li>3 Inform the IEC and the SOR</li> <li>4 Investigate the cause of exceedance and check Contractor's working procedures to determine possible mitigation to be implemented.</li> <li>5 If the exceedance is confirmed to be Project related after investigation, increase monitoring frequency to daily.</li> <li>6 Discuss with the IEC and the Contractor on remedial actions required.</li> <li>7 If exceedance continues, arrange meeting with the IEC and the SOR.</li> <li>8 If exceedance stops, cease additional monitoring.</li> </ol>	<ol style="list-style-type: none"> <li>1 Check monitoring data submitted by the ET.</li> <li>2 Check the Contractor's working method.</li> <li>3 If the exceedance is confirmed to be Project related after investigation, discuss with the ET and the Contractor on possible remedial measures.</li> <li>4 Advise the SOR on the effectiveness of the proposed remedial measures.</li> <li>5 Supervisor implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1 Confirm receipt of notification of failure in writing.</li> <li>2 Notify the Contractor.</li> <li>3 Ensure remedial measures properly implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1 Rectify any unacceptable practice.</li> <li>2 Amend working methods if appropriate</li> <li>3 If the exceedance is confirmed to be Project related, submit proposals for remedial actions to IEC within 3 working days of notification</li> <li>4 Implement the agreed proposals</li> <li>5 Amend proposal if appropriate.</li> </ol>
<b>Limit Level</b>				
Exceedance recorded	<ol style="list-style-type: none"> <li>1. Identify the source.</li> <li>2. Repeat measurement to confirm finding. If two consecutive measurements exceed Limit Level, the exceedance is then confirmed.</li> <li>3. Inform the IEC, the SOR, the DEP and the Contractor.</li> <li>4. Investigate the cause of exceedance and check Contractor's working procedures to determine possible mitigation to be implemented.</li> <li>5. If the exceedance is confirmed to be Project related after investigation, increase monitoring frequency to daily.</li> <li>6. Carry out analysis of the Contractor's working procedures to determine possible mitigation to be implemented.</li> <li>7. Arrange meeting with the IEC and the SOR to discuss the remedial actions to be taken.</li> <li>8. Assess effectiveness of the Contractor's remedial actions and keep the IEC, the DEP and the SOR informed of the results.</li> <li>9. If exceedance stops, cease additional monitoring.</li> </ol>	<ol style="list-style-type: none"> <li>1 Check monitoring data submitted by the ET.</li> <li>2 Check Contractor's working method.</li> <li>3 If the exceedance is confirmed to be Project related after investigation, discuss with the ET and the Contractor on possible remedial measures.</li> <li>4 Advise the SOR on the effectiveness of the proposed remedial measures.</li> <li>5 Supervisor implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing.</li> <li>2. Notify the Contractor.</li> <li>3. If the exceedance is confirmed to be Project related after investigation, in consultation with the IEC, agree with the Contractor on the remedial measures to be implemented.</li> <li>4. Ensure remedial measures are properly implemented.</li> <li>5. If exceedance continues, consider what activity of the work is responsible and instruct the Contractor to stop that activity of work until the exceedance is abated.</li> </ol>	<ol style="list-style-type: none"> <li>1 Take immediate action to avoid further exceedance.</li> <li>2 If the exceedance is confirmed to be Project related after investigation, submit proposals for remedial actions to IEC within 3 working days of notification.</li> <li>3 Implement the agreed proposals.</li> <li>4 Amend proposal if appropriate.</li> <li>5 Stop the relevant activity of works as determined by the SOR until the exceedance is abated.</li> </ol>

### Event and Action Plan for Landscape and Visual Impact

EVENT ACTION LEVEL	ACTION			
	ET	IEC	ER	Contractor
Design Check	<ul style="list-style-type: none"> <li>Check final design conforms to the requirements of EP and prepare report.</li> </ul>	<ul style="list-style-type: none"> <li>Check report.</li> <li>Recommend remedial design if necessary</li> </ul>	<ul style="list-style-type: none"> <li>Undertake remedial design if necessary</li> </ul>	
Non- conformity on one occasion	<ul style="list-style-type: none"> <li>Identify Source</li> <li>Inform IEC and ER</li> <li>Discuss remedial actions with IEC, ER and Contractor</li> <li>Monitor remedial actions until rectification has been completed</li> </ul>	<ul style="list-style-type: none"> <li>Check report</li> <li>Check Contractor's working method</li> <li>Discuss with ET and Contractor on possible remedial measures</li> <li>Advise ER on effectiveness of proposed remedial measures.</li> <li>Check implementation of remedial measures</li> </ul>	<ul style="list-style-type: none"> <li>Notify Contractor</li> <li>Ensure remedial measures are properly implemented</li> </ul>	<ul style="list-style-type: none"> <li>Amend working methods</li> <li>Rectify damage and undertake any necessary replacement</li> </ul>
Repeated Non-conformity	<ul style="list-style-type: none"> <li>Identify Source</li> <li>Inform IEC and ER</li> <li>Increase monitoring frequency</li> <li>Discuss remedial actions with IEC, ER and Contractor</li> <li>Monitor remedial actions until rectification has been completed</li> <li>If nonconformity stops, cease additional monitoring</li> </ul>	<ul style="list-style-type: none"> <li>Check monitoring report</li> <li>Check Contractor's working method</li> <li>Discuss with ET and Contractor on possible remedial measures</li> <li>Advise ER on effectiveness of proposed remedial measures</li> <li>Supervise implementation of remedial measures</li> </ul>	<ul style="list-style-type: none"> <li>Notify Contractor</li> <li>Ensure remedial measures are properly implemented</li> </ul>	<ul style="list-style-type: none"> <li>Amend working methods</li> <li>Rectify damage and undertake any necessary replacement</li> </ul>

### Event / Action Plan for Cultural Heritage

Action Level	ET	IC (E)	ER	Contractor
Non-conformity on one occasion	<ol style="list-style-type: none"> <li>1. Identify Source</li> <li>2. Inform the IEC and the ER</li> <li>3. Discuss remedial actions with the IEC, the ER and the Contractor</li> <li>4. Monitor remedial actions until rectification has been completed</li> </ol>	<ol style="list-style-type: none"> <li>1. Check report</li> <li>2. Check the Contractor's working method</li> <li>3. Discuss with the ET and the Contractor on possible remedial measures</li> <li>4. Advise the ER on effectiveness of proposed remedial measures.</li> <li>5. Check implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Notify Contractor</li> <li>2. Ensure remedial measures are properly implemented</li> </ol>	<ol style="list-style-type: none"> <li>1. Amend working methods</li> <li>2. Rectify damage and undertake any necessary replacement</li> </ol>
Repeated Non-conformity	<ol style="list-style-type: none"> <li>1. Identify Source</li> <li>2. Inform the IC(E) and the ER</li> <li>3. Increase monitoring frequency</li> <li>4. Discuss remedial actions with the IC(E), the ER and the Contractor</li> <li>5. Monitor remedial actions until</li> <li>6. rectification has been completed</li> <li>7. If exceedance stops, cease additional monitoring</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring report</li> <li>2. Check the Contractor's working method</li> <li>3. Discuss with the ES and the Contractor on possible remedial measures</li> <li>4. Advise the ER on effectiveness of proposed remedial measures</li> <li>5. Supervise implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Notify the Contractor</li> <li>2. Ensure remedial measures are properly implemented</li> </ol>	<ol style="list-style-type: none"> <li>1. Amend working methods</li> <li>2. Rectify damage and undertake any necessary replacement</li> </ol>

*Note:*

ET – Environmental Specialist, IEC – Independent Environmental Checker, ER – Engineer's Representative

**Event / Action Plan for General Ecology**

<b>Action Level</b>	<b>ET</b>	<b>IEC</b>	<b>ER</b>	<b>Contractor</b>
Non-conformity on one occasion	<ul style="list-style-type: none"> <li>Identify Source</li> <li>Inform the IEC and the ER</li> <li>Discuss remedial actions with the IEC, the ER and the Contractor</li> <li>Monitor remedial actions until rectification has been completed</li> </ul>	<ul style="list-style-type: none"> <li>Check report</li> <li>Check the Contractor's working method</li> <li>Discuss with the ET and the Contractor on possible remedial measures</li> <li>Advise the ER on effectiveness of proposed remedial measures.</li> <li>Check implementation of remedial measures.</li> </ul>	<ul style="list-style-type: none"> <li>Notify Contractor</li> <li>Ensure remedial measures are properly implemented</li> <li>Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the works in the case of a serious nonconformity until situation rectified.</li> </ul>	<ul style="list-style-type: none"> <li>Amend working methods</li> <li>Rectify damage and undertake any necessary replacement</li> </ul>
Repeated Non conformity	<ul style="list-style-type: none"> <li>Identify Source</li> <li>Inform the IC(E) and the ER</li> <li>Increase monitoring frequency</li> <li>Discuss remedial actions with the IC(E), the ER and the Contractor</li> <li>Monitor remedial actions until rectification has been completed</li> <li>If exceedance stops, cease additional monitoring</li> </ul>	<ul style="list-style-type: none"> <li>Check monitoring report</li> <li>Check the Contractor's working method</li> <li>Discuss with the ES and the Contractor on possible remedial measures</li> <li>Advise the ER on effectiveness of proposed remedial measures</li> <li>Supervise implementation of remedial measures</li> </ul>	<ul style="list-style-type: none"> <li>Notify the Contractor</li> <li>Ensure remedial measures are properly implemented</li> <li>Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the works in the case of a serious nonconformity until situation rectified.</li> </ul>	<ul style="list-style-type: none"> <li>Amend working methods</li> <li>Rectify damage and undertake any necessary replacement</li> </ul>

Note: ET – Environmental Specialist, IC(E) – Independent Checker (Environmental), ER – Engineer's Representative

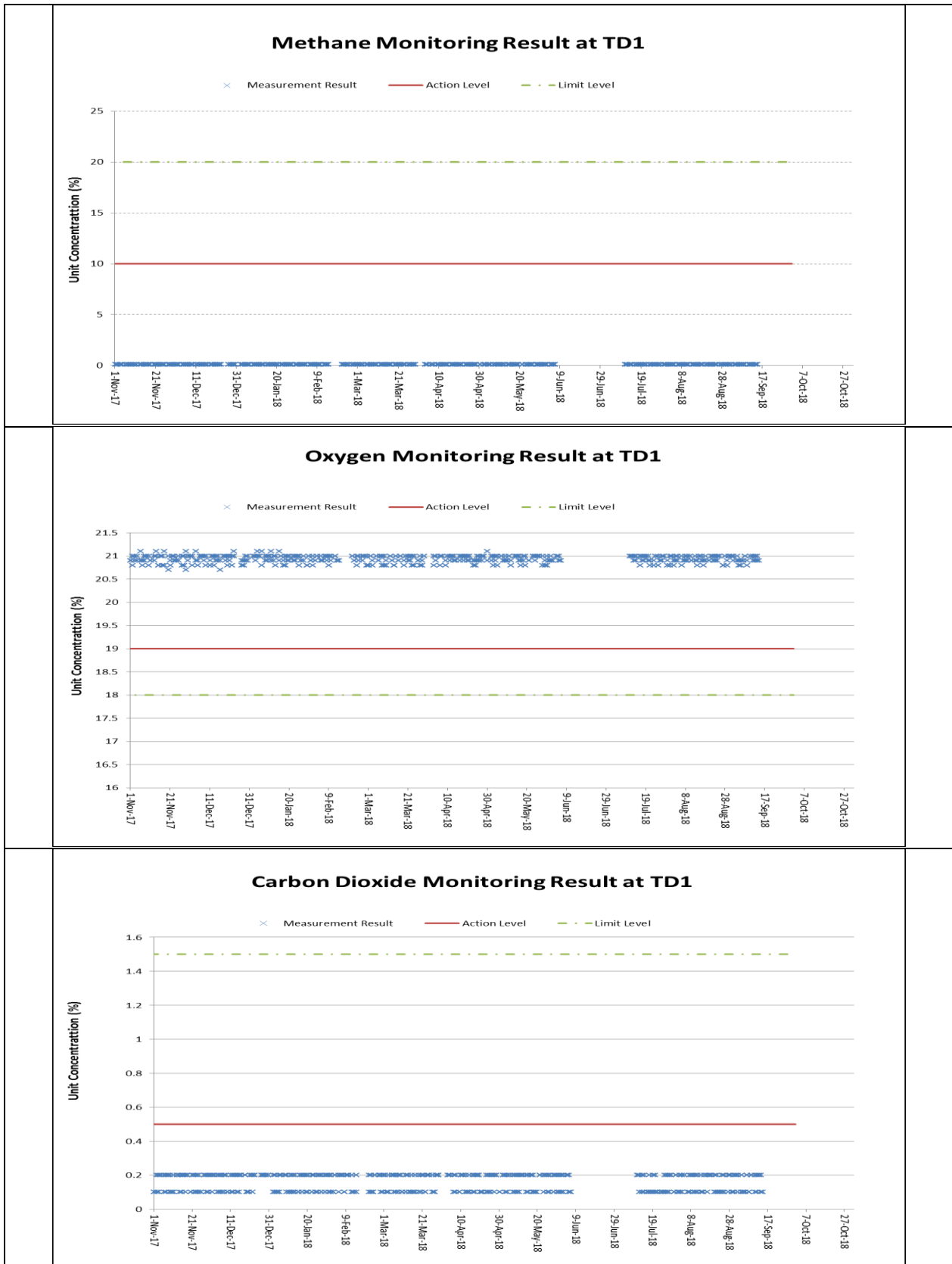


## **Appendix G**

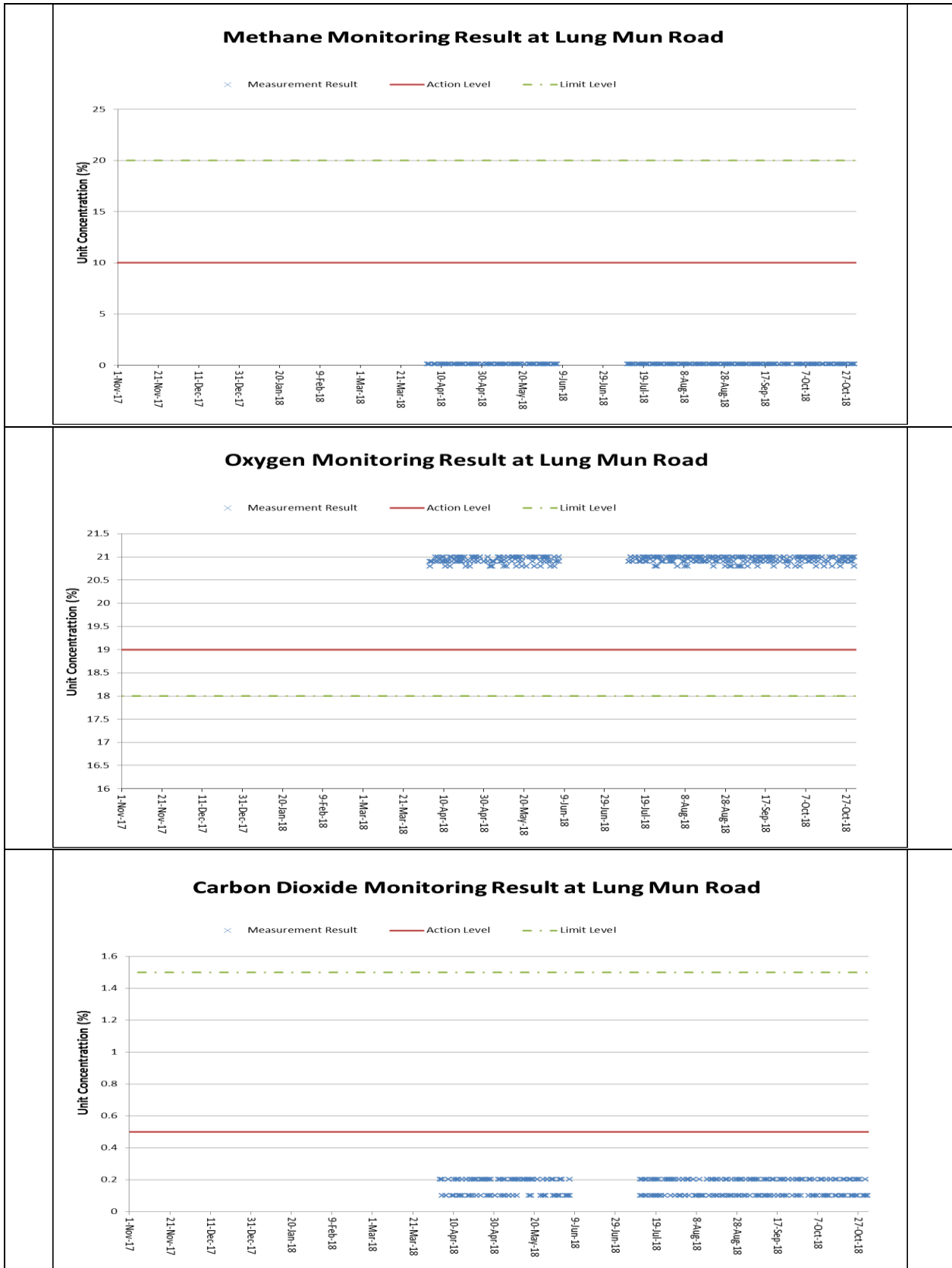
### **Graphical Plot of Monitoring Results**

#### **I. Landfill Gas**

**GRAPHICAL PLOT OF LANDFILL GAS MONITORING RESULTS**



**Annotation:**  
 During 1 November 2017 to 6 June 2018 and 11 July to 13 September 2018, major construction activity at TD1 and the specified works included excavation, stitching, blinding, formworking, steel-fixing and concreting. The weather condition varied from sunny to rainy. The monitoring data was provided by the Contractor followed to their QA/QC control.



Annotation:  
 During 3 April to 6 June 2018 and 11 July to 31 October 2018, major construction activity at Lung Mun Road and the specified works included excavation, blinding, formworking, steel-fixing and concreting. The weather condition varied from sunny to rainy. The monitoring data was provided by the Contractor followed to their QA/QC control.

## **Appendix H**

### **Environmental Mitigation Measures Implementation Schedule (EMMIS)**

**CONTRACT NO. HY/2013/12**

**TUEN MUN – CHECK LAP KOK LINK – NORTHERN CONNECTION TOLL PLAZA AND ASSOCIATED WORKS  
ENVIRONMENTAL MITIGATION AND ENHANCEMENT MEASURE IMPLEMENTATION SCHEDULE**

Air Quality									
EIA reference	EM&A Manual reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status *
						D	C	O	
4.8.1	3.8	An effective watering programme of twice daily watering with complete coverage, is estimated to reduce by 50%. This is recommended for all areas in order to reduce dust levels to a minimum;	All areas / throughout construction period	Contractor	TMEIA Avoid smoke impacts and disturbance		Y		✓
4.8.1	3.8	Watering of the construction sites in Lantau for 8 times/day and in Tuen Mun for 12 times/day to reduce dust emissions by 87.5% and 91.7% respectively and shall be undertaken.	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		✓
4.8.1	3.8	The Contractor shall, to the satisfaction of the Engineer, install effective dust suppression measures and take such other measures as may be necessary to ensure that at the Site boundary and any nearby sensitive receiver, dust levels are kept to acceptable levels.	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		✓
4.8.1	3.8	The Contractor shall not burn debris or other materials on the works areas.	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		✓
4.8.1	3.8	In hot, dry or windy weather, the watering programme shall maintain all exposed road surfaces and dust sources wet.	All unpaved haul roads / throughout construction period in hot, dry or windy weather	Contractor	TMEIA Avoid smoke impacts and disturbance		Y		✓
4.8.1	3.8	Where breaking of oversize rock/concrete is required, watering shall be implemented to control dust. Water spray shall be used during the handling of fill material at the site and at active cuts, excavation and fill sites where dust is likely to be created.	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		△
4.8.1	3.8	Open dropping heights for excavated materials shall be controlled to a maximum height of 2m to minimise the fugitive dust arising from unloading.	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		✓

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4.8.1	3.8	During transportation by truck, materials shall not be loaded to a level higher than the side and tail boards, and shall be dampened or covered before transport.	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		✓
4.8.1	3.8	Materials having the potential to create dust shall not be loaded to a level higher than the side and tail boards, and shall be covered by a clean tarpaulin. The tarpaulin shall be properly secured and shall extend at least 300mm over the edges of the side and tail boards.	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		✓
4.8.1	3.8	No earth, mud, debris, dust and the like shall be deposited on public roads. Wheel washing facility shall be usable prior to any earthworks excavation activity on the site.	construction period	Contractor	TMEIA Avoid dust generation		Y		△
4.8.1	3.8	Areas of exposed soil shall be minimized to areas in which works have been completed shall be restored as soon as is practicable.	All exposed surfaces / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		✓
4.8.1	3.8	All stockpiles of aggregate or spoil shall be enclosed or covered and water applied in dry or windy condition.	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		△
4.11	Section 3	EM&A in the form of 1 hour and 24 hour dust monitoring and site audit	All representative existing ASRs / throughout construction period	Contractor	EM&A Manual		Y		✓ Monitoring for 1 hour and 24 hour dust monitoring were undertaken by the ET of Contract HY/2012/08

**Cultural Heritage**

EIA reference	EM&A Manual reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
						D	C	O	
11.8	Section 9	EM&A in the form of audit of the mitigation measures	All areas / throughout construction period	Highways Department	EIAO-TM		Y		✓

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<b>Ecology</b>									
EIA reference	EM&A Manual reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
						D	C	O	
7.13#	6.3, 6.5#	Fencing or other physical barriers for protection of Pitcher Plant around Zones 8, 9 and 10 and the temporary nursery site	Tuen Mun Area 46 shrubland/ Detailed/ Prior to construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓
7.13	6.5	Audit Pitcher Plant protection measures	Tuen Mun Area 46	Contractor	TMEIA		Y		✓
7.13	6.5	The loss of habitat shall be supplemented by enhancement planting in accordance with the landscape mitigation schedule.	All areas / As soon as accessible	Contractor	TMEIA		Y		✓
7.13	6.5	Spoil heaps shall be covered at all times.	All areas / Throughout construction period	Contractor	TMEIA		Y		✓
7.13	6.5	Avoid damage and disturbance to the remaining and surrounding natural habitat	All areas / Throughout construction period	Contractor	TMEIA		Y		✓
7.13	6.5	Placement of equipment in designated areas within the existing disturbed land	All areas / Throughout construction period	Contractor	TMEIA		Y		✓
7.13	6.5	Disturbed areas to be reinstated immediately after completion of the works.	All areas / Throughout construction period	Contractor	TMEIA		Y		✓
7.13	6.5	Construction activities should be restricted to the proposed works boundary	All areas / Throughout construction	Contractor	TMEIA		Y		✓
<b>Landfill Gas Hazard Assessment</b>									
EIA reference	EM&A Manual reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
						D	C	O	
14.12.2	14.2	<i>Appointment of Safety Officer</i> Appoint a properly trained safety officer and provide with appropriate equipment to measure and monitor LFG hazard. The monitoring frequency and areas to	Construction Stage	Contractor	EPD/TR8/97 - Landfill Gas Hazard Assessment		Y		✓

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		be monitored should be set down prior to commencement of ground-works either by the Safety Officer or an approved and appropriately qualified person.			Guidance Note				
14.12.2	-	<u>Safety Measures - Excavation</u> Staff should receive appropriate training on working in areas susceptible to landfill gas, fire and explosion hazards. Excavation procedures and code of practice should be implemented.	Construction Stage	Contractor	EPD/TR8/97 - Landfill Gas Hazard Assessment Guidance Note		Y		✓
14.12.2	-	<u>Safety Measures – Welding, Flame- Cutting and Hot works</u> Hot works should be confined to open areas away from any trench or excavation. Should hot works must be carried out in trenches or confined space, “permit to work” procedures should be followed.	Construction Stage	Contractor	EPD/TR8/97 - Landfill Gas Hazard Assessment Guidance Note		Y		✓
14.12.2	-	<u>Safety Measures – Enclosed Spaces</u> Site offices or buildings located within PPV Landfill Consultation Zone which have the capacity to accumulate landfill gas, then they should either be located in an area which has been proven to be free of landfill gas; or be raised clear of the ground by a minimum of 500mm.	Site office, building, tunnel, subway, confined area / Construction Stage	Contractor	EPD/TR8/97 - Landfill Gas Hazard Assessment Guidance Note		Y		✓
14.12.2	-	<u>Safety Measures – Electrical Equipment</u> Any electrical equipment, such as motors and extension cords, should be intrinsically safe.	Construction Stage	Contractor	EPD/TR8/97 - Landfill Gas Hazard Assessment Guidance Note		Y		✓
14.12.2	-	<u>Safety Measures – Piping</u> During piping assembly or conduiting construction, all valves/seals should be closed immediately after installation. As construction progresses, all valves/seals should be closed as installed to prevent the migration of gases through the pipeline/conduit. All piping/conduiting should be capped at the end of	Services & utilities / Construction Stage	Contractor	EPD/TR8/97 - Landfill Gas Hazard Assessment Guidance Note		Y		✓



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		each working day.							
14.12.2	-	<u>Safety Measures – Fire Safety</u> Adequate fire safety equipments should be provided on site. Workers and visitors should be notified of the potential fire hazards. Safety notices should be posted around the site warning the anger and potential hazards.	Construction Stage	Contractor	EPD/TR8/97 - Landfill Gas Hazard Assessment Guidance Note		Y		✓
14.12.1	-	<u>Safety Measures – Confined Spaces</u> Precautionary measures should include ensuring that staff members are aware of the potential hazards of working in confined spaces, and that appropriate monitoring procedures are in place to prevent hazards in confined spaces.	Confined space / Construction Stage	Contractor	EPD/TR8/97 - Landfill Gas Hazard Assessment Guidance Note		Y		✓
14.12.1	-	<u>Monitoring</u> Periodically during ground-works within the Consultation Zone, the works area should be monitored for methane, carbon dioxide and oxygen using appropriately calibrated portable gas detection equipment. Depending on the results of the measurements, actions required will vary. As a minimum these should encompass those actions specified in Table 14.8 of the EIA Report or Table 14.1 of the EM&A Manual.	Construction Stage	Contractor	EPD/TR8/97 - Landfill Gas Hazard Assessment Guidance Note		Y		✓

**Landscape and Visual**

EIA reference	EM&A Manual reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
						D	C	O	
10.9	7.6	Existing trees on boundary of the Project Area shall be carefully protected during construction. Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees,	All areas/detailed design/ during construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓

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		including trees in contractor's works areas. (Tree protection measures will be detailed at Tree Removal Application stage) (CM1)							
10.9	7.6	Trees unavoidably affected by the works shall be transplanted where practical. Trees will be transplanted straight to their final receptor site and not held in a temporary nursery. A detailed Tree Transplanting Specification shall be provided in the Contract Specification. Sufficient time for necessary tree root and crown preparation periods shall be allowed in the project programme (CM2)	All areas/detailed design/during construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓
10.9	7.6	Hillside and roadside screen planting to proposed roads, associated structures and slope works (CM3)	All areas/detailed design/during Construction/post construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓
10.9	7.6	Hydroseeding or sheeting of soil stockpiles with visually unobtrusive material (in earth tone) (CM4)	All areas/detailed design/during Construction/post construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓
10.9	7.6	Screening of construction works by hoardings around works area in visually unobtrusive colours, to screen works (CM5)	All areas/detailed design/during Construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓
10.9	7.6	Control night-time lighting and glare by hooding all lights (CM6)	All areas/detailed design/during Construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓
10.9	7.6	Ensure no run-off into water body adjacent to the Project Area (CM7)	All areas/detailed design/during Construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓
10.9	7.6	Avoidance of excessive height and bulk of buildings and structures (CM8)	All areas/detailed design/during Construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓
10.9	7.6	Recycle/Reuse all felled trees and vegetation, e.g. mulching (CM9)	All areas/detailed design/during Construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓
10.9	7.6	Compensatory tree planting shall be provided to the satisfaction of relevant Government departments.	All areas/detailed design/during	Design Consultant/	TMEIA	Y	Y		✓

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		Required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Felling Application process under ETWBTC 3/2006 (CM10)	Construction	Contractor					
10.9	7.6	Re-vegetation of affected woodland/shrubland with native species (OM1)	All areas/detailed design/ during Construction/ post construction	Design Consultant/ Contractor	TMEIA	Y	Y	Y	√*
10.9	7.6	Tall buffer screen tree / shrub / climber planting where appropriate should be incorporated to soften hard engineering structures and facilities (OM2)	All areas/detailed design/ during Construction/ post construction	Design Consultant/ Contractor	TMEIA	Y	Y	Y	√*
10.9	7.6	Streetscape elements (e.g. paving, signage, street furniture, lighting etc.) shall be sensitively designed in a manner that responds to the local context, and minimises potential negative landscape and visual impacts. Lighting units should be directional and minimize unnecessary light spill (OM3)	All areas/detailed design/ during Construction/ post construction	Design Consultant/ Contractor	TMEIA	Y	Y	Y	√*
10.9	7.6	Structure, ornamental tree / shrub / climber planting should be provided along roadside amenity strips, central dividers and newly formed slopes to enhance the townscape quality and further greenery enhancement (OM4)	All areas/detailed design/ during Construction/ post construction	Design Consultant/ Contractor	TMEIA	Y	Y	Y	√*
10.9	7.6	Aesthetically pleasing design (visually unobtrusive and non-reflective) as regard to the form, material and finishes shall be incorporated to all buildings, engineering structures and associated infrastructure facilities (OM5)	All areas/detailed design/ during Construction/ post construction	Design Consultant/ Contractor	TMEIA	Y	Y	Y	√*
10.9	7.6	Avoidance of excessive height and bulk of buildings and structures (OM6)	All areas/detailed design/ during Construction/ post construction	Design Consultant/ Contractor	TMEIA	Y	Y	Y	√*
<b>Waste</b>									
<b>EIA reference</b>	<b>EM&amp;A Manual</b>	<b>Environmental Protection Measures</b>	<b>Location/ Timing</b>	<b>Implementation Agent</b>	<b>Relevant Standard or</b>	<b>Implementation Stages</b>			<b>Status</b>

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	reference				Requirement	D	C	O	
12.6		The Contractor shall identify a coordinator for the management of waste.	Contract mobilisation	Contractor	TMEIA		Y		✓
12.6		The Contractor shall prepare and implement a Waste Management Plan which specifies procedures such as a ticketing system, to facilitate tracking of loads and to ensure that illegal disposal of wastes does not occur, and protocols for the maintenance of records of the quantities of wastes generated, recycled and disposed. A recording system for the amount of waste generated, recycled and disposed (locations) should be established.	Contract mobilisation	Contractor	TMEIA, Works Branch Technical Circular No. 5/99 for the Trip-ticket System for Disposal of Construction and Demolition Material		Y		✓
12.6		The Contractor shall apply for and obtain the appropriate licenses for the disposal of public fill, chemical waste and effluent discharges.	Contract mobilisation	Contractor	TMEIA, Land (Miscellaneous Provisions) Ordinance (Cap 28); Waste Disposal Ordinance (Cap 354); Dumping at Sea Ordinance (Cap 466); Water Pollution Control Ordinance.		Y		✓
12.6	8.1	Training shall be provided to workers about the concepts of site cleanliness and appropriate waste	Contract mobilisation	Contractor	TMEIA		Y		✓

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		management procedures including waste reduction, reuse and recycling							
12.6	8.1	The extent of cutting operation should be optimised where possible. Earth retaining structures and bored pile walls should be proposed to minimize the extent of cutting.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Inert C&D materials from the toll plaza cut slopes shall be reused for construction of the raised platform for the toll plaza where possible.	Tol Plaza / toll plaza construction period	Contractor	TMEIA		Y		✓
12.6	8.1	The site and surroundings shall be kept tidy and litter free.	All areas / throughout construction period	Contractor	TMEIA		Y		◇
12.6	8.1	No waste shall be burnt on site.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	The Contractor shall be prohibited from disposing of C&D materials at any sensitive locations. The Contractor should propose the final disposal sites in the EMP and WMP for approval before implementation.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Stockpiled material shall be covered by tarpaulin and /or watered as appropriate to prevent windblown dust/ surface run off.	All areas / throughout construction period	Contractor	TMEIA		Y		△
12.6	8.1	Excavated material in trucks shall be covered by tarpaulins to reduce the potential for spillage and dust generation.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Wheel washing facilities shall be used by all trucks leaving the site to prevent transfer of mud onto public roads.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Standard formwork or pre-fabrication should be used as far as practicable so as to minimise the C&D materials arising. The use of more durable formwork/ plastic facing for construction works should be considered. The use of wooden hoardings should be avoided and metal hoarding should be used to facilitate recycling. Purchasing of construction	All areas / throughout construction period	Contractor	TMEIA		Y		✓

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		materials should avoid over-ordering and wastage.							
12.6	8.1	The Contractor should recycle as many C&D materials (this is a waste section) as possible on-site. The public fill and C&D waste should be segregated and stored in separate containers or skips to facilitate the reuse or recycling of materials and proper disposal. Where practicable, the concrete and masonry should be crushed and used as fill materials. Steel reinforcement bar should be collected for use by scrap steel mills. Different areas of the sites should be considered for segregation and storage activities.	All areas / throughout construction period	Contractor	TMEIA		Y		<>
12.6	8.1	All falsework will be steel instead of wood.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Chemical waste producers should register with the EPD. Chemical waste should be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes as follows: <ul style="list-style-type: none"> <li>• suitable for the substance to be held, resistant to corrosion, maintained in good conditions and securely closed;</li> <li>• Having a capacity of &lt;450L unless the specifications have been approved by the EPD; and</li> <li>• Displaying a label in English and Chinese according to the instructions prescribed in Schedule 2 of the Regulations.</li> <li>• Clearly labelled and used solely for the storage of chemical wastes;</li> <li>• Enclosed with at least 3 sides;</li> <li>• Impermeable floor and bund with capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in the area, whichever is greatest;</li> <li>• Adequate ventilation;</li> </ul>	All areas / throughout construction period	Contractor	TMEIA		Y		✓

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		<ul style="list-style-type: none"> <li>Sufficiently covered to prevent rainfall entering (water collected within the bund must be tested and disposed of as chemical waste, if necessary); and</li> <li>Incompatible materials are adequately separated.</li> </ul>							
12.6	8.1	Waste oils, chemicals or solvents shall not be disposed of to drain,	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Adequate numbers of portable toilets should be provided for on-site workers. Portable toilets should be maintained in reasonable states, which will not deter the workers from utilising them.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Night soil should be regularly collected by licensed collectors.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	General refuse arising on-site should be stored in enclosed bins or compaction units separately from C&D and chemical wastes. Sufficient dustbins shall be provided for storage of waste as required under the Public Cleansing and Prevention of Nuisances By-laws. In addition, general refuse shall be cleared daily and shall be disposed of to the nearest licensed landfill or refuse transfer station. Burning of refuse on construction sites is prohibited.	All areas / throughout construction period	Contractor	TMEIA		Y		◇
12.6	8.1	All waste containers shall be in a secure area on hardstanding;	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Training shall be provided to workers about the concepts of site cleanliness and appropriate waste management procedure, including waste reduction, reuse and recycling.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Office wastes can be reduced by recycling of paper if such volume is sufficiently large to warrant collection. Participation in a local collection scheme by the Contractor should be advocated. Waste separation facilities for paper, aluminum cans, plastic bottles, etc should be provided on-site.	Site Offices/ throughout construction period	Contractor	TMEIA		Y		✓
12.6	Section 8	EM&A of waste handling, storage, transportation, disposal procedures and documentation through the	All areas / throughout construction period	Contractor	EM&A Manual		Y		✓

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		site audit programme shall be undertaken.							
<b>Water Quality</b>									
EIA reference	EM&A Manual reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status
						D	C	O	
Land Works									
6.10	-	Wastewater from temporary site facilities should be controlled to prevent direct discharge to surface or marine waters.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Sewage effluent and discharges from onsite 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.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	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.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	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.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Temporary access roads should be surfaced with crushed stone or gravel.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Measures should be taken to prevent the washout of construction materials, soil, silt or debris into any drainage system.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓



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6.10	-	Open stockpiles of construction materials (e.g. aggregates and sand) on site should be covered with tarpaulin or similar fabric during rainstorms.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		△
6.10	5.8	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.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Discharges of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	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.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Section of construction road between the wheel washing bay and the public road should be surfaced with crushed stone or coarse gravel.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Wastewater generated from concreting, plastering, internal decoration, cleaning work and other similar activities, shall be screened to remove large objects.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	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.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	The Contractor shall prepare an oil / chemical cleanup plan and ensure that leakages or spillages are contained and cleaned up immediately.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Waste oil should be collected and stored for recycling or disposal, in accordance with the Waste Disposal Ordinance.	All areas/ throughout construction period	Contractor	TM-EIAO Waste Disposal Ordinance		Y		✓

**CONTRACT NO. HY/2013/12**  
**TUEN MUN – CHECK LAP KOK LINK – NORTHERN CONNECTION TOLL PLAZA AND ASSOCIATED WORKS**  
**ENVIRONMENTAL MITIGATION AND ENHANCEMENT MEASURE IMPLEMENTATION SCHEDULE**

6.10	-	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.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		△
6.10	Section 5	All construction works shall be subject to routine audit to ensure implementation of all EIA recommendations and good working practice.	All areas/ throughout construction period	Contractor	EM&A Manual		Y		✓

Remarks:

- ✓ Compliance of Mitigation Measures
- <> Compliance of Mitigation Measures but need improvement.
- × Non-compliance of Mitigation Measures
- ▲ Non-compliance of Mitigation Measures but rectified by Contractor
- △ Deficiency of Mitigation Measures but rectified by Contractor
- N/A Not Applicable in Reporting Period
- # Amended against condition 3.13 of EP-354/2009/C
- \* In Progress and subject to approved L&V Plan

Legend: D=Design, C=Construction, O=Operation

Note: Funding Agent for all mitigation measures will be the Highways Department of the Hong Kong SAR Government