



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

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

**39<sup>TH</sup> MONTHLY ENVIRONMENTAL MONITORING AND  
AUDIT (EM&A) REPORT – JANUARY 2018**

PREPARED FOR  
**CRBC AND KADEN JOINT VENTURE**

<b>Date</b>	<b>Reference No.</b>	<b>Prepared By</b>	<b>Certified By</b>
5 October 2018	TCS00715/14/600/R0396v3	 Ben Tam (Environmental Consultant)	 T.W. Tam (Environmental Team Leader)

Ref.: HYDHZMBEEM00\_0\_6869L.18

08 October 2018

AECOM  
Engineer's Representative's Office  
No. 8 Mong Fat Street, Tuen Mun,  
New Territories, Hong Kong

By Fax (2218 7299) and By Post

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**

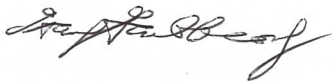
**Contract No. HY/2013/12 TM-CLKL Northern Connection Toll Plaza and  
Associated Works  
39<sup>th</sup> Monthly EM&A Report for January 2018 (EP-354/2009/D)**

Reference is made to the Monthly Environmental Monitoring and Audit (EM&A) Report (Jan. 2018) (AUES reference: TCS00715/14/600/R0396v3 dated 5 Oct. 2018) certified by the ET Leader and provided to us via e-mail on 5 Oct. 2018.

Please be informed that we have no adverse comments on the captioned Report. We write to verify the captioned submission in accordance with Condition 4.4 of EP-354/2009/D.

Thank you for your attention. Please do not hesitate to contact the undersigned or the ENPO Leader Mr. Y. H. Hui should you have any queries.

Yours sincerely,



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

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HyD – Mr. Tony Pang (By Fax: 3188 6614)  
AECOM – Mr. Conrad Ng (By Fax: 3922 9797)  
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Internal: DY, YH, DF, ENPO Site

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**EXECUTIVE SUMMARY**

ES01 This is the 39<sup>th</sup> Monthly EM&A Report presenting the monitoring results and inspection findings for the period from **1 to 31 January 2018** (hereinafter ‘the Reporting Period’).

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

ES02 The EM&A activities conducted in the Reporting Period are summary in below:-

- 24-hours TSP of Air Quality Monitoring –**55 events**
- 1-hour TSP of Air Quality Monitoring – **165 events**
- Cultural Heritage Inspection – **5 events**
- Landfill Gas Monitoring – **26 days**
- Landscape & Visual Monitoring – **4 events**
- Environmental Site Inspection – **5 events**

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

ES03 In the Reporting Period, 6 Action Level exceedances of 1-hour TSP were recorded at ASR5 on 13, 16 and 22 January 2018 according to the measurement results by the ET of Contract HY/2012/08. Investigation reports (IRs) for the exceedances on January 2018 prepared by the ET were endorsed by IEC and the IRs revealed that the exceedances were not project related. The endorsed investigation reports are included in this monthly EM&A Report. The summary of breach of air quality performance is shown below.

Environmental Aspect	Monitoring Parameters	Action Level	Limit Level	Event & Action		
				NOE Issued	Investigation	Corrective Actions
Air Quality	1-hour TSP	<b>6</b>	<b>0</b>	<b>6</b>	<b>6</b>	<b>NA</b>
	24-hour TSP	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>NA</b>

ES04 In last Reporting Period, the exceedance of 24-hour TSP was recorded on 29 December 2017. The investigation reports (IR) was submitted by ET and endorsed by IEC.

ES05 Landfill gas monitoring was conducted at the TD1 works area in this reporting month by the Safety Officer. The monitoring results shown no exceedances were triggered.

ES06 Site inspection for landscape and visual was conducted on weekly basis by the Landscape Architect to ensure the compliance with the intended aims of the mitigation measures. Most of the landscape works such as planting was not yet commenced.

**SITE INSPECTION**

ES07 In the Reporting Period, joint site inspection by the RE, ET and the Contractor was carried out on **2<sup>nd</sup>, 9<sup>th</sup>, 16<sup>th</sup>, 23<sup>rd</sup> and 30<sup>th</sup> January 2018** and the IEC has attended the joint site inspection on **30<sup>th</sup> January 2018**. No non-compliance was recorded during the site inspection but **1** observation and **4** reminders were recorded.

ES08 Inspection for Pitcher Plants of ecology and grave of culture heritage were also carried out during the weekly site inspection. It was observed that the transplanted pitcher plants were properly protected. Establishment period for the pitcher plants was completed at the end of September 2016 and the final pitcher plants report was submitted to AFCD on early December 2016. Since then only the integrity of the protection fence was checked to fulfil the EIA requirement.

**ENVIRONMENTAL COMPLAINT**

ES09 In the Reporting Period, one (1) environmental complaint was received from EPD on 30 January 2018 regarding construction noise and light nuisance created at River Trade Terminal during mid-night. The complainant also complaint dust issue at River Trade Terminal. The investigation report (IR) has been submitted by ET and concluded that the complaint was not project related.

ES10 The statistical summary of environmental complaints is summarized in the following table.

Reporting Period	Environmental Complaint Statistics	
	Frequency	Cumulative
Since the Contract commencement	9	9
January 2018	1	10

#### **NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS**

ES11 No environmental summons or successful prosecutions were recorded in the Reporting Period.

#### **REPORTING CHANGE**

ES12 No reporting changes were made in the Reporting Period.

#### **FUTURE KEY ISSUES**

ES13 During dry season, air quality mitigation measures such as watering of site area for 12 times per day and covering of exposed slopes should be fully implemented to reduce construction dust impact as recommended in the EMIS.

ES14 Moreover, muddy water or other water pollutants from site surface runoff into the public areas will be key environment issue. Special attention should be paid on the water quality mitigation measures to prevent surface runoff flow to public area.

ES15 It was reminded that good housekeeping practice should be maintained. Mosquito control measures should be properly implemented to prevent mosquito breeding on site especially after rain.



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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 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 [B](#) respectively.

1.1.2 The construction 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 This is 39<sup>th</sup> monthly EM&A report presenting the monitoring results and inspection findings for period from **1 to 31 January 2018**.

### 1.2 REPORT STRUCTURE

1.2.1 The Monthly Environmental Monitoring and Audit (EM&A) 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*

*Section 7 Landscape and Visual*

*Section 8 Landfill gas hazard Monitoring*

*Section 9 Waste Management*

*Section 10 Inspections and Audit*

*Section 11 Environmental Complaints 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. The three-months rolling programme of the Contract is enclosed in [Appendix D](#).

- Instrumentation and Monitoring;
- Site Formation – Earthwork at 5SE-D/C170; surface drainage on Slope C, D & E and Portion H;
- Parapet construction for Retaining Structure RW\_A and Bridge G2;
- Temporary Traffic Arrangement at Lung Mun Road and Lung Fu Road;
- Toll Collector Subway & Associated Works;
- Toll Booth Canopy Construction;
- Road pavement works at +19mPD platform ;
- Bridge G1C and H1C by Formtraveller at Portion F;
- Bridge G1b at Portion F;
- Vehicular Underpass – Cable Trough construction and partition wall construction;
- Retaining Structure TP\_G at Portion H;
- Excavation and lateral Support of Construction of Retaining Wall TP\_G;
- Construction of Storage Area at Retaining Wall B

### 2.3 SUMMARY OF ENVIRONMENTAL SUBMISSIONS

2.3.1 The environmental submissions under the EP requirement had been submitted to the EPD and they are 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 EPD on 16 March 2015)
- Baseline Monitoring Report (not yet endorsed by EPD)

2.3.2 Summary of environmental permits, licenses and notifications for the Contract 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	Extend CNP for Flasework Erection	GW-RW0563-17	26-10-2017	24-02-2018
6	Extend CNP for Multiple Task	GW-RW0605-17	25-11-2017	24-05-2018
7	Extent CNP for Tunnel Works	GW-RW0567-17	26-10-2017	22-05-2018
8	CNP for Portion H	GW-RW0568-17	26-10-2017	22-05-2018
9	CNP for Road Paving Works	GW-RW0561-17	26-10-2017	01-02-2018

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

#### 3.1 GENERAL

3.1.1 The major construction activities under the Contract are land-based and no marine work will be involved. In accordance with the Project EM&A Manual requirements, the environmental aspects under the Contract shall be included air quality, ecological, cultural heritage, landscape and visual, landfill gas and site inspection during construction period. In addition, 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

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 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

3.4.1 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.

3.4.2 The air quality monitoring requirements for the Contract is summarized 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	<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 <b><u>Toll Plaza</u></b>
	24-hour TSP	ASR1, ASR5, AQMS1, ASR6, ASR10	Daily every three days	

Condition	Monitoring Parameter	Monitoring Location	Frequency	Monitoring Requirement
				During excavation, slope works, construction of road and superstructures and wind erosion from open sites and stockpiling areas <u><b>Tunnel Buildings</b></u> During excavation, foundation works, construction of superstructures and wind erosion from open sites and stockpiling areas

### 3.5 MONITORING EQUIPMENT

- 3.5.1 The 24-hour and 1-hour TSP levels shall be measured by following the standard high volume sampling method as set out in the *Title 40 of the Code of Federal Regulations, Chapter 1 (Part 50), Appendix B*.
- 3.5.2 A high volume sampler in compliance with the following specifications shall be used for carrying out the 1-hr and 24-hr TSP monitoring:
- (i) 0.6-1.7 m<sup>3</sup>/min (20-60 SCFM) adjustable flow range;
  - (ii) equipped with a timing/control device with +/- 5 minutes accuracy for 24 hours operation;
  - (iii) installed with elapsed-time meter with +/- 2 minutes accuracy for 24 hours operation;
  - (iv) capable of providing a minimum exposed area of 406 cm<sup>2</sup> (63 in<sup>2</sup>);
  - (v) flow control accuracy: +/- 2.5% deviation over 24-hr sampling period;
  - (vi) equipped with a shelter to protect the filter and sampler;
  - (vii) incorporated with an electronic mass flow rate controller or other equivalent devices;
  - (viii) equipped with a flow recorder for continuous monitoring;
  - (ix) provided with a peaked roof inlet;
  - (x) equipped with a manometer;
  - (xi) able to hold and seal the filter paper to the sampler housing in a horizontal position;
  - (xii) easy to change the filter; and
  - (xiii) capable of operating continuously for 24-hr period.
- 3.5.3 Calibration of dust monitoring equipment shall be conducted by the ET upon installation and in bi-monthly intervals during construction phase. The transfer standard shall be traceable to the internationally recognized primary standard and be calibrated annually. The calibration data shall be properly documented for future reference by concerned parties, such as the IEC. All the data shall be converted into standard temperature and pressure condition.
- 3.5.4 The filter paper of 1-hour and 24-hour TSP measurement shall be determined by HOKLAS accredited laboratory.
- 3.5.5 If the ET Leader proposes to use a direct reading dust meter to measure 1-hr TSP levels on an ad hoc basis, he shall submit sufficient information to the IEC to prove that the instrument is capable of achieving a comparable result as that the High Volume Sampler (HVS) and may be used for the 1-hr sampling. The instrument should also be calibrated regularly and the 1-hr sampling shall be checked periodically by the HVS to check the validity and accuracy of the results measured by the direct reading method.
- 3.5.6 According to the Project EM&A Manual, wind data monitoring equipment shall also be provided and set up for logging wind speed and wind direction near the dust monitoring locations. The equipment installation location shall be proposed by the ET Leader and



agreed with the IEC. For installation and operation of wind data monitoring equipment, the following points shall be observed:

- (i) the wind sensors should be installed on masts at an elevated level 10 m above ground so that they are clear of obstructions or turbulence caused by the buildings;
- (ii) the wind data should be captured by a data logger to be down-loaded for processing at least once a month;
- (iii) the wind data monitoring equipment should be re-calibrated at least once every six months; and
- (iv) wind direction should be divided into 16 sectors of 22.5 degrees each.

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

3.6.1 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 Action and Limit Levels for impact dust monitoring are shown in [Tables 3-3](#).

**Table 3-3 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

3.6.2 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](#).

### 3.7 OTHER ENVIRONMENTAL ASPECTS

#### Noise

3.7.1 The TM-CLKL EIA study stated that no existing noise sensitive receiver (NSR) was identified within the Study Area at Tuen Mun. Therefore, no noise monitoring is required for the construction phase of the Contract.

3.7.2 Regular site inspections and audits will be carried out during the construction phase in order to confirm the construction works under the Contract comply with the regulatory noise requirements.

#### Water Quality

3.7.3 No marine works will be undertaken under the Contract. Therefore, no water quality monitoring is required for the construction phase of the Contract.

#### Ecology

3.7.4 No marine works will be undertaken under the Contract and generated marine ecological impact, no dolphin monitoring is required for the construction phase of the Contract.

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

#### Landscape and Visual

3.7.6 Measures 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 in accordance with the EM&A Manual.

**Cultural Heritage**

- 3.7.7 Grave G1 as a heritage resource 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.

**Landfill Gas**

- 3.7.8 During EIA study, landfill gas hazards are likely to be generated from the Pillar Point Valley (PPV) Landfill. Landfill gas monitoring is recommended during construction of the Contract to ensure the works area is free of landfill gas before the worker entered the concerned area.

**3.8 MONITORING SCHEDULE**

- 3.8.1 The monitoring schedule for landscape & visual and landfill gas for the present and next reporting period are presented in *Appendix G*.

## 4 AIR QUALITY MONITORING

### 4.1 GENERAL

4.1.1 The air quality impact monitoring and enhanced Total Suspended Particulates (TSP) level monitoring at five proposed locations are currently carried out 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. The Contract is not required to conduct its own dust monitoring exercise until the Contract HY/2012/08 ends.

### 4.2 AIR QUALITY MONITORING RESULTS IN REPORTING PERIOD

4.2.1 In the Reporting Period, 1-hour and 24-hour TSP monitoring at the five proposed locations are continued to perform by the ET of Contract HY/2012/08. Therefore, no air quality monitoring was conducted by the ET of Contract HY/2013/12. Details information of air quality monitoring results could be referred to the Monthly EM&A Reports of the Contract HY /2012 /08 ([January 2018](#)).

### 4.3 ACTION AND LIMIT (A/L) LEVELS EXCEEDANCE

4.3.1 According to the air quality monitoring result provided by Contract HY/2012/08, 6 Action Level were recorded at ASR5 on 13, 16 and 22 January 2018. The summary of air quality exceedance in the Reporting Period 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
13 January 2018	ASR5	1Hr TSP	345 $\mu\text{g}/\text{m}^3$	Action Level
16 January 2018	ASR5	1Hr TSP	396 $\mu\text{g}/\text{m}^3$	Action Level
16 January 2018	ASR5	1Hr TSP	384 $\mu\text{g}/\text{m}^3$	Action Level
16 January 2018	ASR5	1Hr TSP	345 $\mu\text{g}/\text{m}^3$	Action Level
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

### 4.4 AIR QUALITY EXCEEDANCE INVESTIGATION

4.4.1 Investigation reports (IR) for those exceedances on 13, 16 and 22 January 2018 prepared by the ET were endorsed by IEC and the IRs revealed that the exceedances were not project related. The completed investigation reports are included in [Appendix J](#).

4.4.2 In last Reporting Period, the investigation reports (IR) of the exceedance of 24-hour on 29 December 2017 was submitted by ET. After the investigation, it is concluded that the exceedance were not project related. The IR of the exceedance conducted by the ET is shown in [Appendix J](#).

## **5 ECOLOGY MONITORING**

### **5.1 GENERAL**

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

5.1.2 A total of 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 Inspection for the mitigation measures implementation status of the Pitcher Plant at the final receptor area were performed on **2<sup>nd</sup>, 9<sup>th</sup>, 16<sup>th</sup>, 23<sup>rd</sup> and 30<sup>th</sup> January 2018** by the ET in 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 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.

5.2.3 No matters 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 to prevent any possible damage to the grave and to ensure the 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 the Reporting Period, Grave G1 of inspection was undertaken on **2<sup>nd</sup>, 9<sup>th</sup>, 16<sup>th</sup>, 23<sup>rd</sup> and 30<sup>th</sup> January 2018**. During these inspections, buffer zone was maintained between the working area and the Grave. The nearby areas were clean, and no construction materials or mechanical equipment were stored within or close to the buffer zone.

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 the Reporting Period, site inspection for landscape and visual mitigation measures was undertaken on **5<sup>th</sup>, 12<sup>th</sup>, 19<sup>th</sup> and 26<sup>th</sup> January 2018** by the Registered Landscape Architect.

7.2.2 Most of the landscape works such as planting was not yet commenced, but some transplanting works was commenced on 22 May 2017. The detailed inspection checklists were provided in ***Appendix K***.



## 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 (SO) 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 advised by the SO, the gas analyser would be optimally calibrated by the self-test function to provide the most accurate result. The gas analyser is calibrated and certified by a laboratory accredited under HOKLAS or any other international accreditation scheme at yearly basis.

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
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	No

**8.2 LANDFILL GAS MONITORING RESULT**

8.2.1 In the Reporting Period, landfill gas monitoring was conducted at the zone TD1 which have excavation works was undertaking. A BIOGAS 5000 gas analyser was used for the landfill gas monitoring and the valid calibration certificate is presented in [Appendix H](#).

8.2.2 There were a total of **26** days monitoring were carried by the Safety Officer or an approved and qualified persons. The results of landfill gas measurement are summarized in [Table 8-2](#). Moreover, database of monitoring result and graphical plot are attached in [Appendix I](#).

**Table 8-2 Summary of Landfill Gas Measurement Results**

Landfill Gas Parameter	Action Level	Limit Level	Detectable at TD1	
			Min	Max
<b>Methane</b>	>10% LEL (>0.5% v/v)	>20% LEL (>1% v/v)	0.1%	0.1%
<b>Oxygen</b>	<19%	<18%	20.8%	21.1%
<b>Carbon Dioxide</b>	>0.5%	>1.5%	0.1%	0.2%

8.2.3 The measurement results shown that slightly methane concentration was detected and oxygen concentration measured was over 19.0 % and Carbon Dioxide was between 0.1% and 0.2 %. No exceedance was triggered and therefore 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 arising 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 The quantities of wastes generated under the Contract in this Reporting Period are summarized in [Tables 9-1](#) and [9-2](#) and the Monthly Summary Waste Flow Table is shown in [Appendix L](#). Whenever possible, materials were reused on-site as far as practicable.

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

Type of Waste	Quantity	Disposal Location
Reused in this Contract (Inert) (^000m <sup>3</sup> )	0.180	-
Reused in other Projects (Inert) (^000m <sup>3</sup> )	0.802	1. Lam Tei Quarry 2. Eco Park K.Wah Recycle Facilities 3. Lung Kwu Tan Tailor Recycled Aggregates 4. Liantang BCP Project 5. TM-CLKL Contract 2 - Northern Connection Sub-sea Tunnel Section Project
Disposal as Public Fill (Inert) (^000m <sup>3</sup> )	2.000	Tuen Mum Area 38

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

Type of Waste	Quantity	Disposal Location
Recycled Metal (^000kg)	0	-
Recycled Paper / Cardboard Packaging (^000kg)	0	-
Recycled Plastic (^000kg)	0	-
Chemical Wastes (^000kg)	0	License Collector
General Refuses (^000m <sup>3</sup> )	0.310	WENT

## 10 INSPECTION AND AUDIT

### 10.1 SITE INSPECTION

10.1.1 According to the approved EM&A Manual, the environmental site inspection shall be formulated by ET Leader on weekly basis to confirm the environmental performance of the construction site.

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

10.1.2 In the Reporting Period, joint site inspections to evaluate site environmental performance were carried out by the RE, ET and the Contractor on **2<sup>nd</sup>, 9<sup>th</sup>, 16<sup>th</sup>, 23<sup>rd</sup> and 30<sup>th</sup> January 2018**. No non-compliance was noted but **1** observation and **4** reminders were recorded during site inspection. Moreover, ENPO/IEC has attended joint site inspection on **30<sup>th</sup> January 2018**.

10.1.3 The findings / deficiencies observed during the weekly site inspection in the Reporting Period are listed in **Table 10-1**.

**Table 10-1 Site Observations for the Contract**

Date	Findings / Deficiencies	Follow-Up Status
2 January 2018	• Nil	• NA
9 January 2018	• Sediment cumulated inside the de-silting system should be cleaned more frequency and make sure all water discharge from site should comply with license requirement. (Portion F)	• Not required for reminder.
16 January 2018	• Stagnant water should be removed to prevent mosquito breeding. (TD1)	• Stagnant water cumulated inside the pit was removed.
	• The Contractor was reminded to cover the opened cement bag with impervious sheet to reduce dust generation. (TD1)	• Not required for reminder.
	• The Contractor was reminded to place the free-standing chemical containers into drip tray to avoid land contamination.	• Not required for reminder.
23 January 2018	• Nil	• NA
30 January 2018	• The contractor should review the condition of the temporary drainage system before wet season.	• Not required for reminder.

10.1.4 No outstanding deficiency remained to be rectified in previous Reporting Period which presented in **Table 10-2**.

**Table 10-2 Outstanding Items in Site Inspection of previous Reporting Period**

Date	Findings / Deficiencies	Follow-Up Status
--	• NA	• NA

10.1.5 Air quality mitigation measures such as watering of site area for 12 times per day and covering of exposed slopes should be implemented during the construction period to reduce construction dust impact as recommended in the EMIS.

10.1.6 Good site practice for daily housekeeping is reminded. In addition, clean-up of the waste skips

and wastewater treatment system should be increased to ensure these facilities functional and effective.

10.1.7 In addition, muddy water or other water pollutants from site surface runoff shall not be discharged into public areas. Water quality mitigation measures to prevent surface runoff into the public areas should be paid on special attention.

10.1.8 Stagnant water should be removed as soon as possible after rain to prevent mosquito breeding on site.

*Inspection Checklist for Vulnerable to Contaminated Water Discharge*

10.1.9 Following to the complaint about discharge of milky water to Bufferfully Beach on 2 September 2015. The Contractor proposed to carry out daily inspection of wastewater treatment facilities, concerned discharge points, drainage inlets and outlets during typhoon or wet season.

10.1.10 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.

10.1.11 During the dry season, the frequency of inspection for vulnerable to contaminated water discharge was reduced to once per week by the Contractor at **January 2018**. As requested by the EPD, the associated inspection checklist should be presented in the Monthly EM&A Report and it is shown in *Appendix P*.

## 11 ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

### 11.1 ENVIRONMENTAL COMPLAINT, SUMMONS AND PROSECUTION

11.1.1 In the Reporting Period, no summons and prosecution under the EM&A Programme was lodged. However, one (1) environmental complaint was received and lodged for the Contract and six exceedance of the environmental performance limit (6 Action Level) were recorded for monitoring programme. Follow up actions have been undertaken by the Contractor to resolve the deficiencies. The details of complaint are listed below:-

- 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？還容一船沙石飄揚？屯門碼頭空氣污染指數甚高，這就是原因。”

11.1.2 The investigation for the complaint was completed and concluded that the complaint was not project related. The IR of the complaint is shown in [Appendix O](#).

11.1.3 The statistical summary table of environmental exceedance, complaint, summons and prosecution are presented in [Tables 11-1, 11-2, 11-3 and 11-4](#).

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

Reporting Period	Environmental Aspect / Parameter	Environmental Performance	Event Exceedance		
			Reporting Month	Previous Months	Cumulative
January 2018	Air Quality - 1-hr TSP	Action Level	6	29	35
		Limit Level	0	2	2
	Air Quality - 24-hr TSP	Action Level	0	3	3
		Limit Level	0	3	3

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

Reporting Period	Environmental Complaint Statistics					
	Frequency	Cumulative	Complaint Nature			
			Air	Noise	Water	Others
January 2018	1	10	3	1	6	2

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

Reporting Period	Environmental Summons Statistics				
	Frequency	Cumulative	Complaint Nature		
			Air	Noise	Water
January 2018	0	0	NA	NA	NA

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

Reporting Period	Environmental Prosecution Statistics				
	Frequency	Cumulative	Complaint Nature		
			Air	Noise	Water
January 2018	0	0	NA	NA	NA

11.1.4 In the Reporting Period, no warning letter related to environmental issue was received from the EPD or HyD.



## 12 IMPLEMENTATION STATUS OF MITIGATION MEASURES

### 12.1 GENERAL REQUIREMENTS

12.1.1 The environmental mitigation measures that recommended in the Environmental Mitigation and Enhancement Measures Implementation Schedule (EMIS) for in the Project EM&A Manual covered the issues of air quality, cultural heritage, ecology, landfill gas hazard, landscape & visual, noise, water and waste. The updated EMIS for the Contract is shown in [Appendix M](#).

12.1.2 The Contractor shall implement the required environmental mitigation measures according to the EM&A Manual as subject to the site condition. The environmental mitigation measures implemented by the Contract in this Reporting Period are summarized in [Table 12-1](#) and [Appendix M](#).

**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>

### 12.2 TENTATIVE CONSTRUCTION ACTIVITIES IN THE COMING MONTH

12.2.1 Construction activities as undertaken in the coming month for the Contract lists below:

- Site Formation – Earthwork at 5SE-D/C170; surface drainage on Slope C, D & E and Portion H;
- Parapet construction for Retaining Structure RW\_A and Bridge G2;
- Temporary Traffic Arrangement at Lung Mun Road and Lung Fu Road;
- Toll Collector Subway & Associated Works;
- Toll Booth Canopy Construction;
- Road pavement works at +19mPD platform ;
- Bridge G1C and H1C by Formtraveller at Portion F;

- Bridge G1b at Portion F;
- Vehicular Underpass – Cable Trough construction and partition wall construction;
- Retaining Structure TP\_G at Portion H;
- Excavation and lateral Support of Construction of Retaining Wall TP\_G;
- Backfilling Work of Existing Sewer Culvert between MH1 to MH8;
- Installation of Glazed Lift Shaft for Lift A ,B and footbridge;
- Construction of Storage Area at Retaining Wall B

### **12.3 KEY ENVIRONMENTAL ISSUES FOR THE COMING MONTH**

12.3.1 Key environmental issues to be considered in the coming month include:

- Implementation of dust suppression measures at all times;
- Potential wastewater quality impact due to surface runoff;
- Potential fugitive dust impact due to the dry/loose/exposure soil surface/dusty material;
- Ensure dust suppression measures are implemented properly;
- Sediment catch-pits and silt removal facilities should be regularly maintained;
- Management of chemical wastes;
- Site effluent discharge to the nearby nullah is prohibited;
- Follow-up of improvement on general waste management issues; and
- Implementation of construction noise preventative control measures

### 13 CONCLUSIONS AND RECOMMENDATIONS

#### 13.1 CONCLUSIONS

- 13.1.1 This is 39<sup>th</sup> monthly EM&A report presenting the monitoring results and inspection findings for the period of 1 to 31 January 2018.
- 13.1.2 There were six exceedances of 1-hour TSP measurements trigger in Action Level at ASR5 on 13, 16 and 22 January 2018. NOEs were issued to notify all relevant parties. Investigation reports (IR) for the exceedances prepared by the ET were endorsed by IEC and the IRs revealed that the exceedances were not project related.
- 13.1.3 In last Reporting Period, the investigation reports (IR) for the exceedance of 24-hour TSP was recorded on 29 December 2017 was submitted by ET. After the investigation, it is concluded that the exceedance was not project related.
- 13.1.4 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.
- 13.1.5 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 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.
- 13.1.6 Landfill gas monitoring was conducted at the TD1 works area. The monitoring results shown no exceedances were triggered.
- 13.1.7 In the Reporting Period, one (1) environmental complaint was received from EPD on 30 January 2018 regarding construction noise and light nuisance created at River Trade Terminal during mid-night. The complainant also complaint dust issue at River Trade Terminal. The investigation report (IR) has been submitted by ET and concluded that the complaint was not project related.
- 13.1.8 No notifications of summons, or successful prosecution were received by the Contractor during the Reporting Period.
- 13.1.9 In the Reporting Period, joint site inspection by the RE, ET and the Contractor was carried out on 2<sup>nd</sup>, 9<sup>th</sup>, 16<sup>th</sup>, 23<sup>rd</sup> and 30<sup>th</sup> January 2018 and the IEC has attended the joint site inspection on 30<sup>th</sup> January 2018. No non-compliance was recorded during the site inspection but 1 observation and 4 reminders were recorded.
- 13.1.10 In the Reporting Period, Grave G1 of inspection was undertaken on 2<sup>nd</sup>, 9<sup>th</sup>, 16<sup>th</sup>, 23<sup>rd</sup> and 30<sup>th</sup> January 2018. Based on the inspection findings, the cultural heritage mitigation measures as implemented by the Contractor are fully complied with the EM&A Manual requirements.

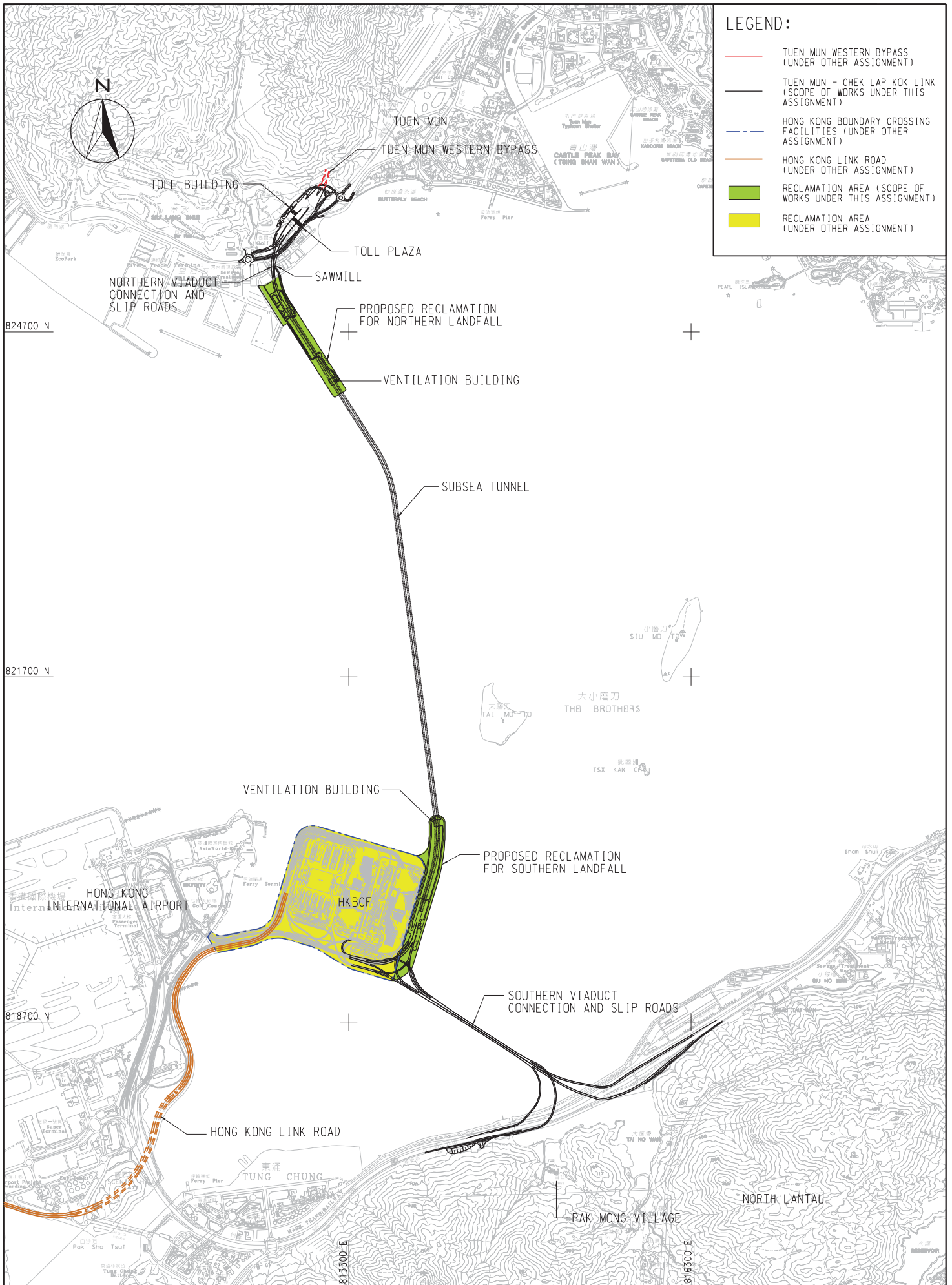
#### 13.2 RECOMMENDATIONS

- 13.2.1 During dry season, air quality mitigation measures such as watering of site area for 12 times per day and covering of exposed slopes should be fully implemented to reduce construction dust impact as recommended in the EMIS.
- 13.2.2 Moreover, muddy water or other water pollutants from site surface runoff into the public areas will be key environment issue. Special attention should be paid on the water quality mitigation measures to prevent surface runoff flow to public area.

- 13.2.3 Stagnant water should be removed as soon as possible after rain to prevent mosquito breeding on site.

## **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



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



**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局  
 Hong Kong - Zhuhai - Macao Bridge  
 Hong Kong Project Management Office

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**ISSUE/REVISION**  
 修訂

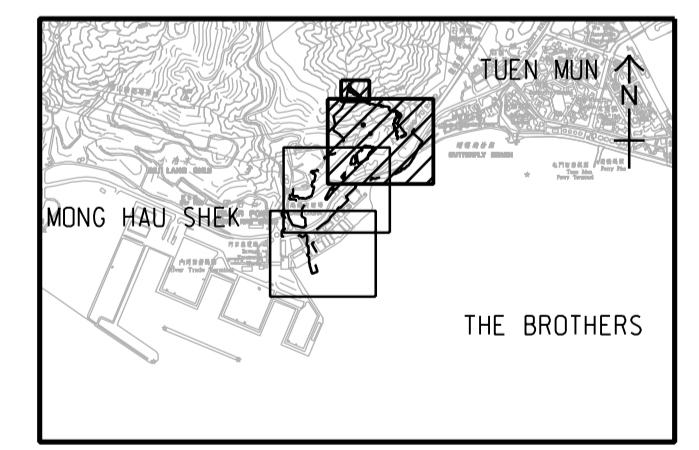
I/R	DATE	DESCRIPTION	CHK.
B	MAR. 14	TENDER ADDENDUM NO. 2	CWN
A	FEB. 14	TENDER ADDENDUM NO. 1	CWN
-	JAN. 14	TENDER DRAWING	CWN

**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

- NOTES:**
- THE DRAWING SHALL BE READ IN CONJUNCTION WITH SHEET NOS. 60240249/C3/1052 TO 1053.
  - ALL COORDINATES ARE IN HONG KONG (1980) GRID SYSTEM UNLESS OTHERWISE SPECIFIED.
  - 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.
  - 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'.

**LEGEND:**

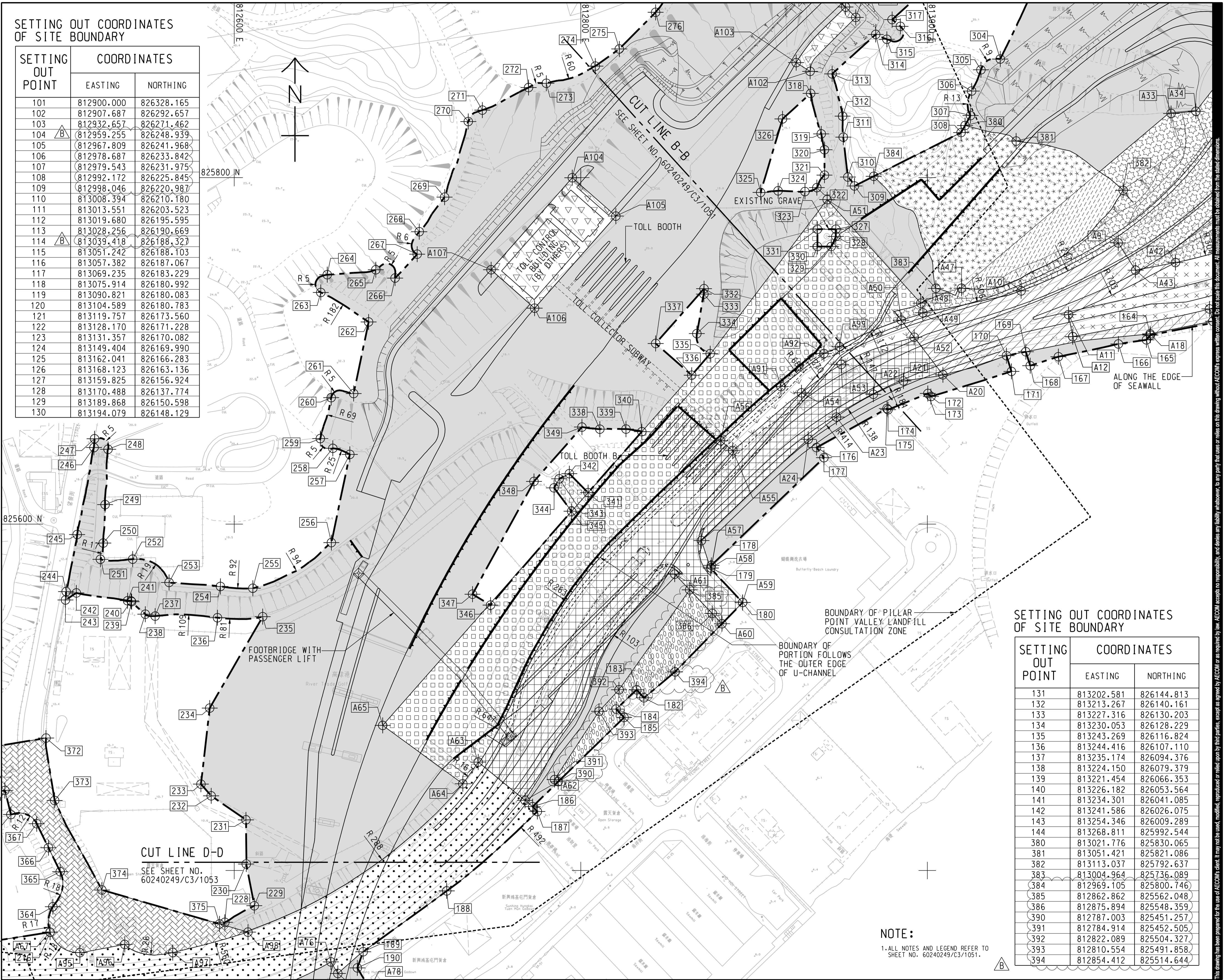
	LIMIT OF SITE BOUNDARY
	PORTION X
	PORTION X1
	PORTION X2
	PORTION A
	PORTION B
	PORTION C
	PORTION D
	PORTION E
	PORTION F
	PORTION G
	PORTION H
	PORTION H1
	PORTION I
	PORTION J
	PORTION K
	AREA 'A'
	AREA 'B' OF PORTION X

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**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.



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

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

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

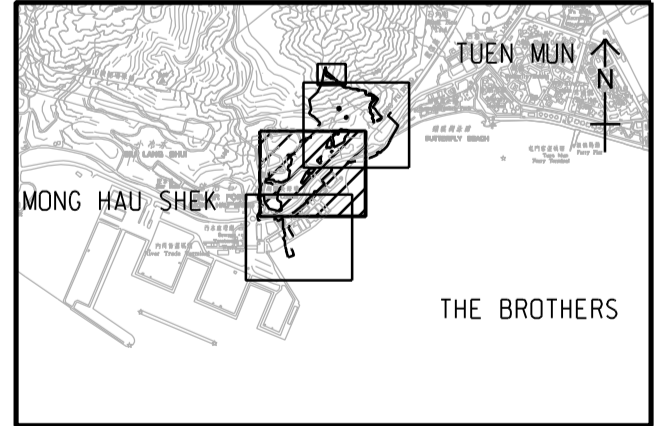
**CONSULTANT**  
 AECOM Asia Company Ltd.  
 www.aecom.com

**SUB-CONSULTANTS**  
 分列工程顧問公司

**ISSUE/REVISION**

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

**SCALE**  
 比例: A1 1:1000  
**DIMENSION UNIT**  
 尺寸單位: METRES



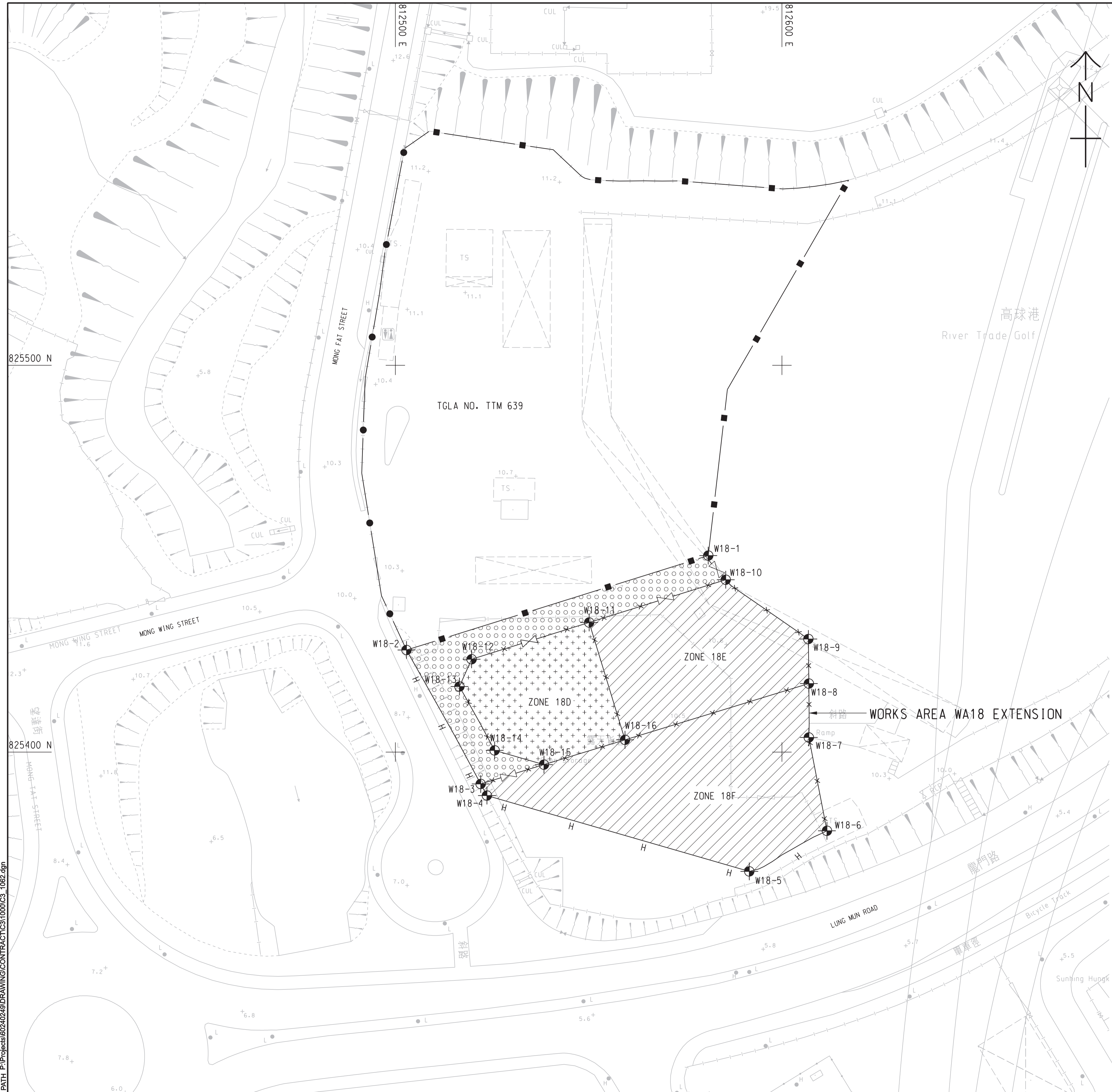
**PROJECT NO.**  
 項目編號: 60240249  
**CONTRACT NO.**  
 合約編號: HY/2013/12

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

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

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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



**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**  
 工程師有限公司  
 AECOM Asia Company Ltd.  
 www.aecom.com

**SUB-CONSULTANTS**  
 分判工程師有限公司

**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 1:500

**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

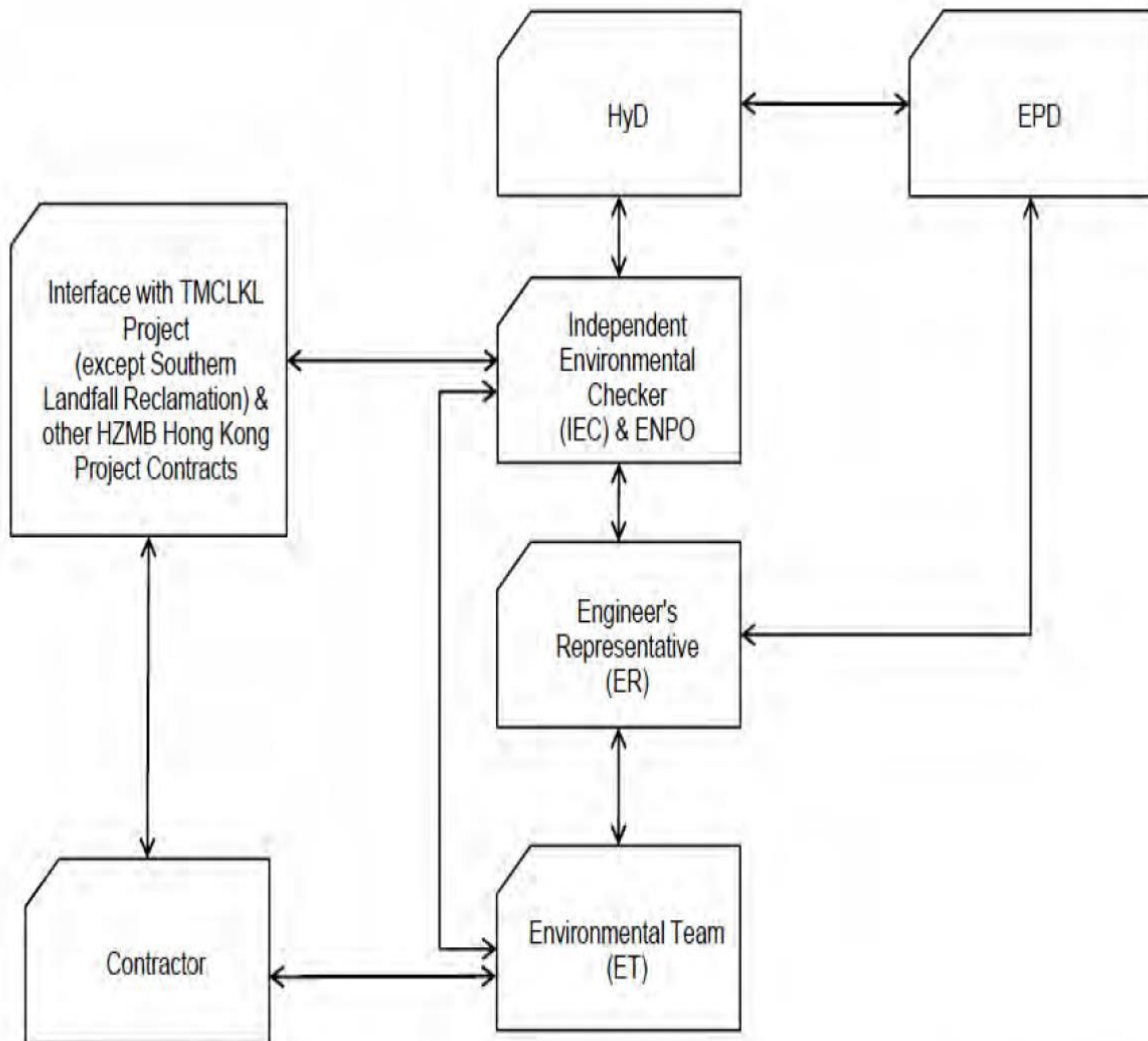
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 圖紙編號  
 60240249/C3/1062B

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## **Appendix C**

### **Organization of the Contract**





↔ Line of Communication

**Project Organization chart**

**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. Stephen W.C. Chan	2762 3669	3188 6614
AECOM	Principal Resident Engineer	Mr. S.W. Fok	2218 7209	2218 7399
AECOM	Chief Resident Engineer	Mr. Albert Yu	2218 7288	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**

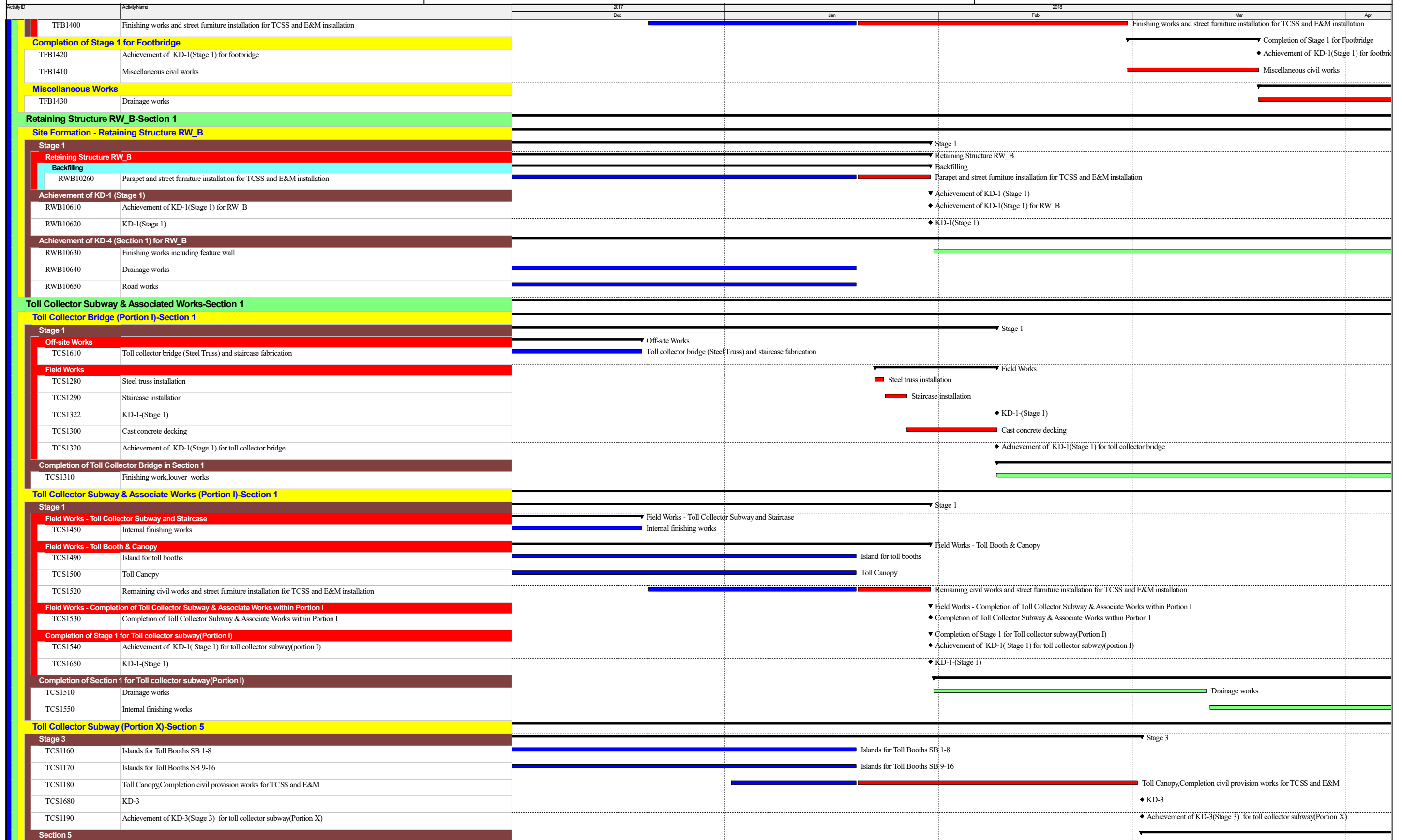
### **Three-Months Rolling Programme**

Activity ID	Activity Name	2017		2018			
		Dec	Jan	Feb	Mar	Apr	
<b>HY/2013/12 TMCLK Northern Connection Toll Plaza and Associated-Works Programme-Rev.4A Monthly Update</b>							<ul style="list-style-type: none"> <li>▼ Achievement of Stages/ Completion of Sec</li> <li>◆ KD1 - Stage 1 Completion Civil provisions</li> </ul>
<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)						
<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						
DM10040	Advance necessary precautionary and protective measure						
<b>Instrumentation and Monitoring</b>							
<b>Ground Settlement Marker</b>							
IM10090	Installation of GSM11,GSM45-46(Outside site boundary)						
IM10110	Installation of GSM35-36,GSM44,GSM47-50(Portion F)						
<b>Vibration Monitoring Point</b>							
IM30020	Installation of VB02(Outside site boundary)						
<b>Tiltmeter</b>							
IM40020	Installation of TM02(Outside site boundary)						
<b>Piezometer/Standpipe</b>							
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>Parapet and Finishing Work</b>							
<b>Parapet and Railing Installation</b>							
TD120940	Parapet and planter installation						Parapet and planter installation
TD120990	Railing installation and street furniture installation for TCSS and E&M installation						Railing installation and street furniture installation for TCSS and E&M installation
<b>Toll Booth Canopy</b>							
<b>Toll booth canopy and island</b>							
TD121270	Toll booth island						Toll booth island
TD121290	Canopy,Completion civil provision works for TCSS and E&M						Canopy,Completion civil provision works for TCSS and E&M
<b>Completion of Stage 1 For TD1</b>							
TD120020	KD-1(Stage 1)						Completion of Stage 1 For TD1
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						
<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>Deck Construction</b>							
TD220720	Falsework removal and MJ installation						Falsework removal and MJ installation
<b>Parapet and Finishing Works</b>							
TD220210	Construct parapet ,planter and street furniture installation for TCSS and E&M installation						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						Feature groove,Completion civil provision works for TCSS and E&M
<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)						KD-1(Stage 1)
<b>Completion of TD2</b>							
TD220010	Drainage works						Drainage works
TD220020	Road works						
<b>Toll Plaza Footbridge-Section 1</b>							
<b>Stage 1</b>							
<b>Field Works</b>							
<b>Concrete Decking , Planters and Finishing Works</b>							
TFB1390	Concrete decking and planter construction						Concrete Decking , Planters and Finishing Works

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

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

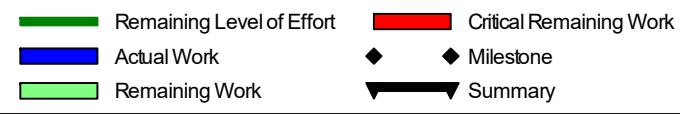
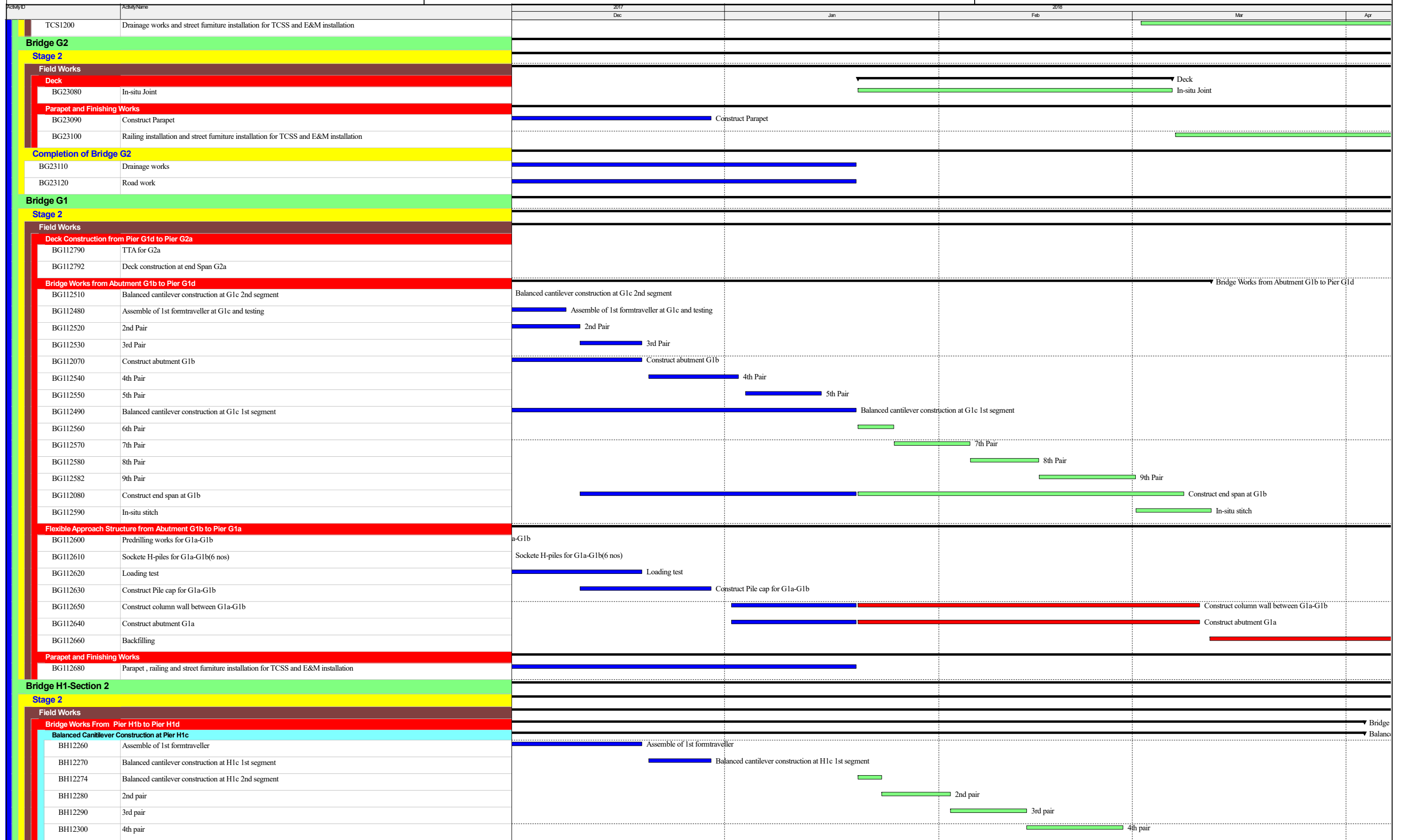
Date	Revision	Checked	Approved
31-01-18	4		



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

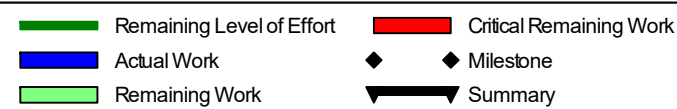
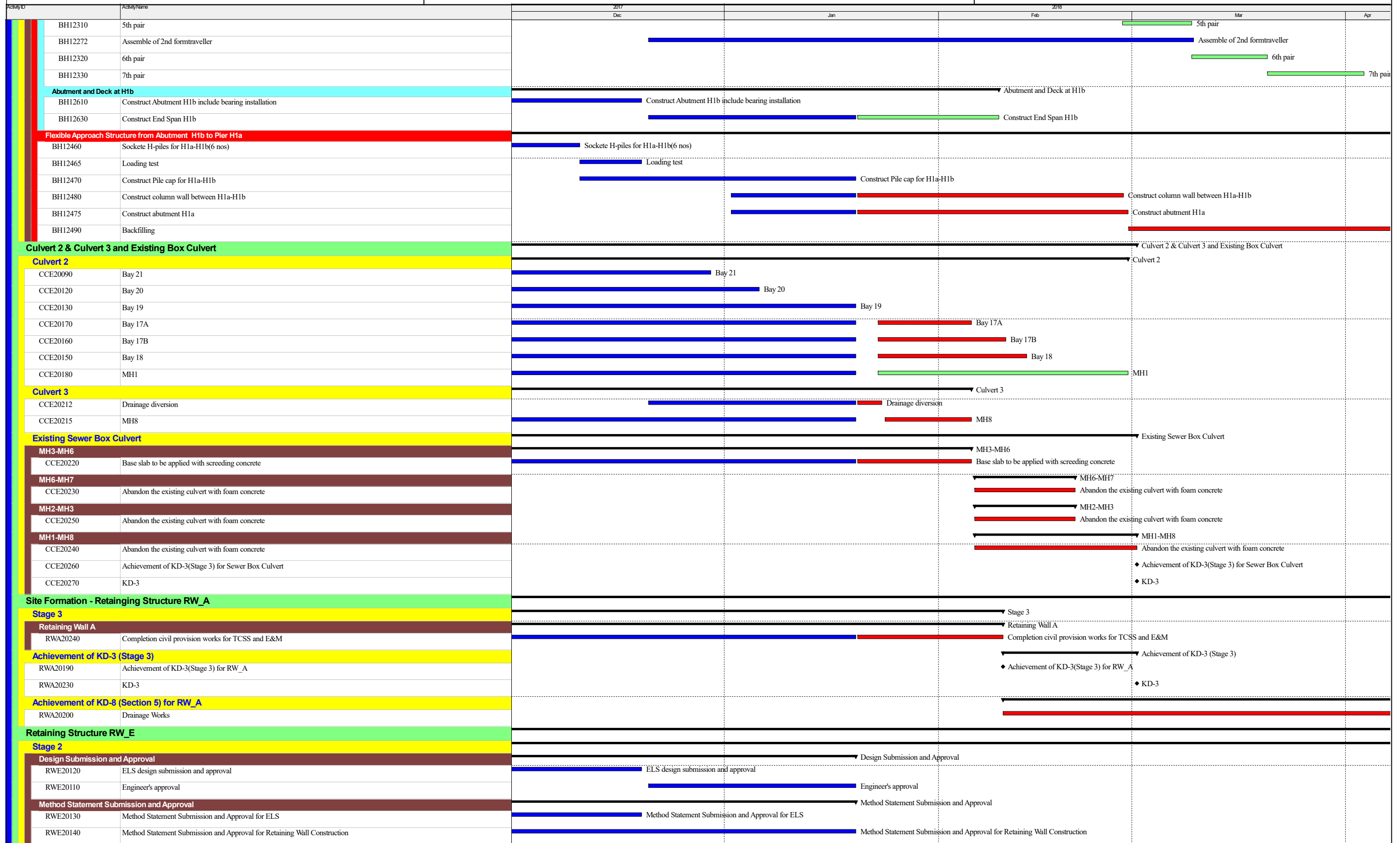
**CRBC - Kaden JV  
Three-Month Rolling Programme**

Date	Revision	Checked	Approved
31-01-18	4		



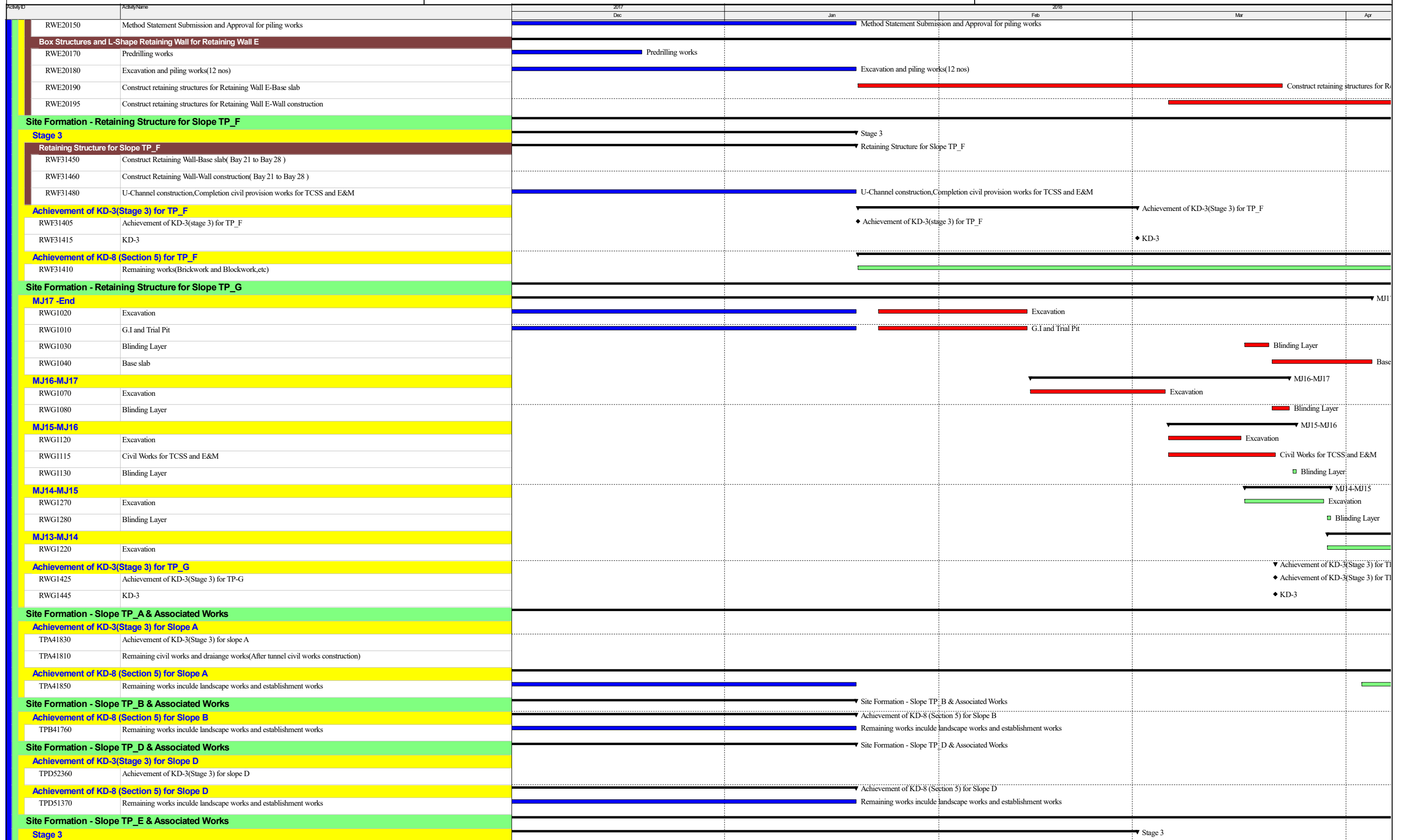
**CRBC - Kaden JV**  
**Three-Month Rolling Programme**

Date	Revision	Checked	Approved
31-01-18	4		



CRBC - Kaden JV  
Three-Month Rolling Programme

Date	Revision	Checked	Approved
31-01-18	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
31-01-18	4		

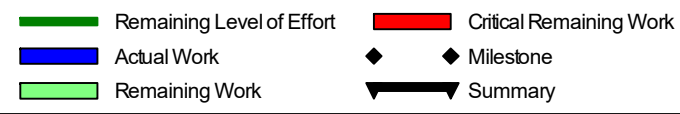
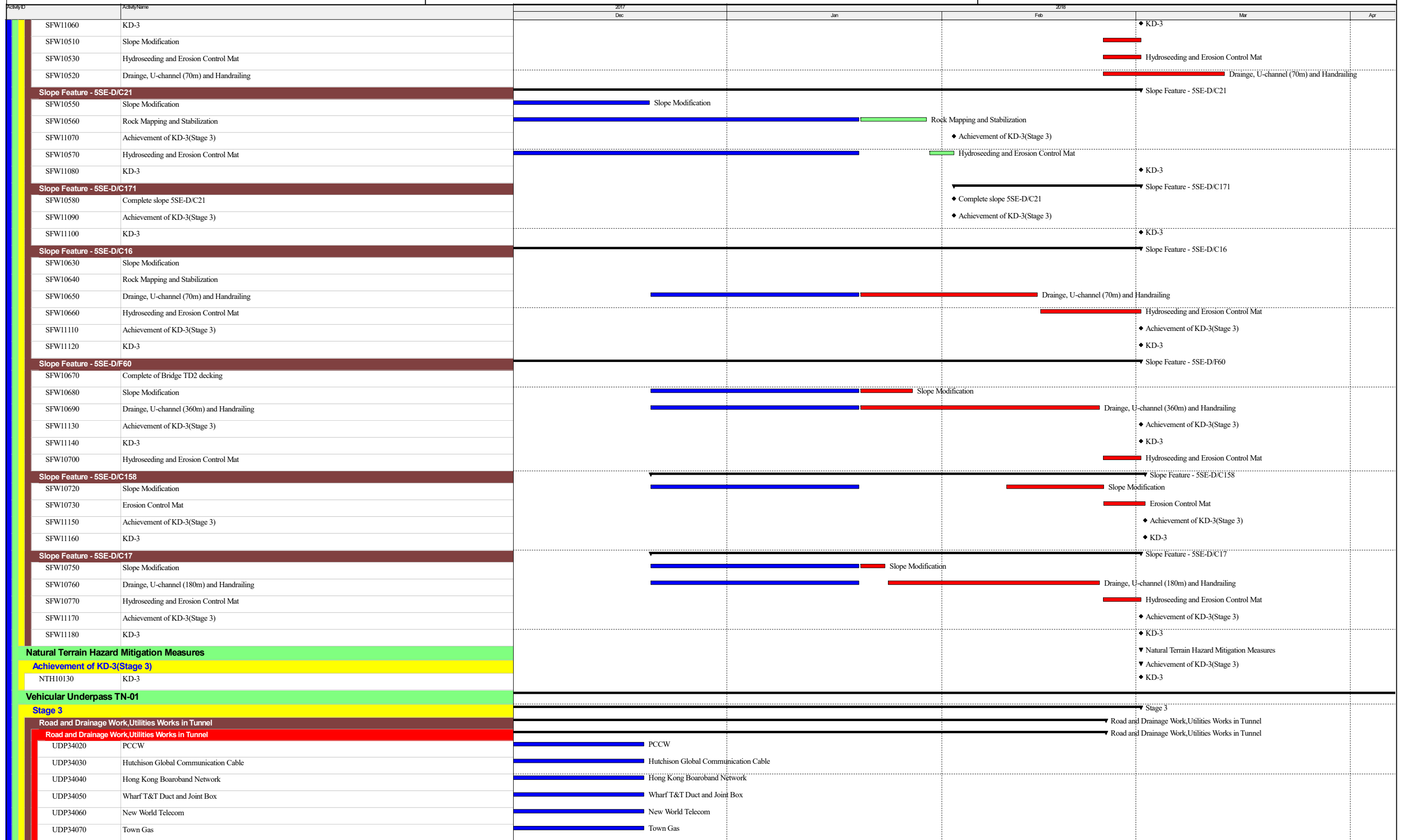
Activity ID	Activity Name	2017		2018		Apr	
		Dec	Jan	Feb	Mar		
<b>Slope Feature - Slope TP_E Remaining Section and 5SE-D/C116</b>							Slope Feature - Slope TP_E Remaining Section and 5SE-D/C116
TPE62310	Mapping & Dowelling						
TPE62700	Achievement of KD-3(Stage 3) for slope E	◆ Achievement of KD-3(Stage 3) for slope E					◆ KD-3
TPE65340	KD-3						
<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>							Slope Feature - 5SE-D/C170
SFW10105	Raking Drain Construction	Raking Drain Construction					
SFW10110	Drainage, U-channel (410m) and Handrailing	Drainage, U-channel (410m) and Handrailing					
SFW10860	KD-3						◆ KD-3
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	Drainage, U-channel (80m) and Handrailing	Drainage, 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)					
SFW10880	KD-3						◆ KD-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)					
SFW10900	KD-3						◆ KD-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)					
SFW10920	KD-3						◆ KD-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)					
SFW10940	KD-3						◆ KD-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)					
SFW10960	KD-3						◆ KD-3
<b>Slope Feature - 5SE-D/C14</b>							Slope Feature - 5SE-D/C14
SFW10350	Slope Modification	Slope Modification					
SFW10360	Drainage, U-channel (60m) and Handrailing	Drainage, U-channel (60m) and Handrailing					
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/C149</b>							Slope Feature - 5SE-D/C149
SFW10380	Complete slope 5SE-D/C152	◆ Complete slope 5SE-D/C152					
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>							
SFW10460	Complete Bridge TD2 Decking						
SFW10470	Slope Modification	Slope Modification					
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
SFW10490	Hydroseeding and Erosion Control Mat						
<b>Slope Feature - 5SE-D/C117</b>							Slope Feature - 5SE-D/C117
SFW11050	Achievement of KD-3(Stage 3)						◆ Achievement of KD-3(Stage 3)

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

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

Date	Revision	Checked	Approved
31-01-18	4		





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

Date	Revision	Checked	Approved
31-01-18	4		

Activity ID	Activity Name	2017		2018			
		Dec	Jan	Feb	Mar	Apr	
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				
UDP34120	TraxComm		TraxComm				
<b>Achievement of KD-3(Stage 3) for TN-01</b>							Achievement of KD-3(Stage 3) for TN-01
UDP30600	Achievement of KD-3(Stage 3) for Vehicular Underpass						◆ Achievement of KD-3(Stage 3) for Vehicular Underpass
UDP30640	KD-3(Stage 3)						◆ KD-3(Stage 3)
<b>Achievement of KD-8 (Section 5) for TN-01</b>							
UDP20640	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>							
<b>Utilities installation ,road and drainage works (TTA stage 1)</b>							Utilities installation ,road and drainage works (TTA stage 1)
LFR10270	Filling Works						Filling Works
<b>Utilities installation ,road and drainage works (TTA Stage 2-0)</b>							Utilities installation ,road and drainage works (TTA Stage 2-0)
LFR10570	TraxComm						TraxComm
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
LFR10540	HKC Cable						HKC Cable
LFR10580	Completion of this stage civil provision for E&M, TCSS						Completion of this stage civil provision for E&M, TCSS
LFR10590	Irrigation System (m)						Irrigation System (m)
LFR10600	Road Pavement						Road Pavement
LFR10550	Pubic Lighting						Pubic Lighting
LFR10560	CLP + CRD						CLP + CRD
LFR10610	TTA for Stage 2						TTA for Stage 2
<b>Utilities installation ,road and drainage works (TTA Stage 2)</b>							Utilities installation ,road and drainage works (TTA Stage 2)
LFR10620	Filling Works						Filling Works
LFR10630	Street Furniture						Street Furniture
LFR10680	PCCW						PCCW
LFR10640	Sign Gantry						Sign Gantry
LFR10690	Hutchison Global Communication Cable						Hutchison Global Communication Cable
LFR10650	E&M, TCSS						E&M, TCSS
LFR10700	Hong Kong Boaroband Network						Hong Kong Boaroband Network
LFR10710	Wharf T&T Duct and Joint Box						Wharf T&T Duct and Joint Box
LFR10660	Drainage Work						Drainage Work
<b>Road and Drainage Work ,Utilities Works at Lung Mun Road</b>							
<b>Lung Mun Road (Westbound)</b>							
<b>Ho Suen Street South</b>							
LMRWA1170	Drainage Work						Drainage Work
LMRWA1220	PCCW						PCCW
LMRWA1230	Hutchison Global Communication Cable						Hutchison Global Communication Cable
LMRWA1240	Hong Kong Boaroband Network						Hong Kong Boaroband Network
LMRWA1190	DN200 CHK 0 - 50						DN200 CHK 0 - 50
LMRWA1200	DN300 CHE 0 - 116						DN300 CHE 0 - 116
LMRWA1210	DN100 CHG 0 - 112						DN100 CHG 0 - 112
LMRWA1250	Wharf T&T Duct and Joint Box						Wharf T&T Duct and Joint Box
LMRWA1260	New World Telecom						New World Telecom

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

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

Date	Revision	Checked	Approved
31-01-18	4		



Activity ID	Activity Name	2017				2018			
		Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
AK10000	Achievement of KD-1( stage 1) for TD1			◆ Achievement of KD-1( stage 1) for TD1					
AK10020	Achievement of KD-1(Stage 1) for TD2			◆ Achievement of KD-1(Stage 1) for TD2					
AK10340	Achievement of KD-3(Stage 3) for slope D			◆ Achievement of KD-3(Stage 3) for slope D					
AK10080	Achievement of KD-1(Stage 1) for Toll Collector Bridge			◆ Achievement of KD-1(Stage 1) for Toll Collector Bridge					
AK10210	Achievement of KD-3(Stage 3) for RW_A			◆ Achievement of KD-3(Stage 3) for RW_A					
AK10380	Achievement of KD-3(Stage 3) for Vehicular Underpass			◆ Achievement of KD-3(Stage 3) for Vehicular Underpass					
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)					
AK10200	Achievement of KD-3(Stage 3) for Sewer Box Culvert			◆ Achievement of KD-3(Stage 3) for Sewer Box Culvert					
AK10360	Achievement of KD-3(Stage 3) for slope E			◆ Achievement of KD-3(Stage 3) for slope E					
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 works near east portal					
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					
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					
AK10040	Achievement of KD-1(Stage 1) for Footbridge			◆ Achievement of KD-1(Stage 1) for Footbridge					
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					

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

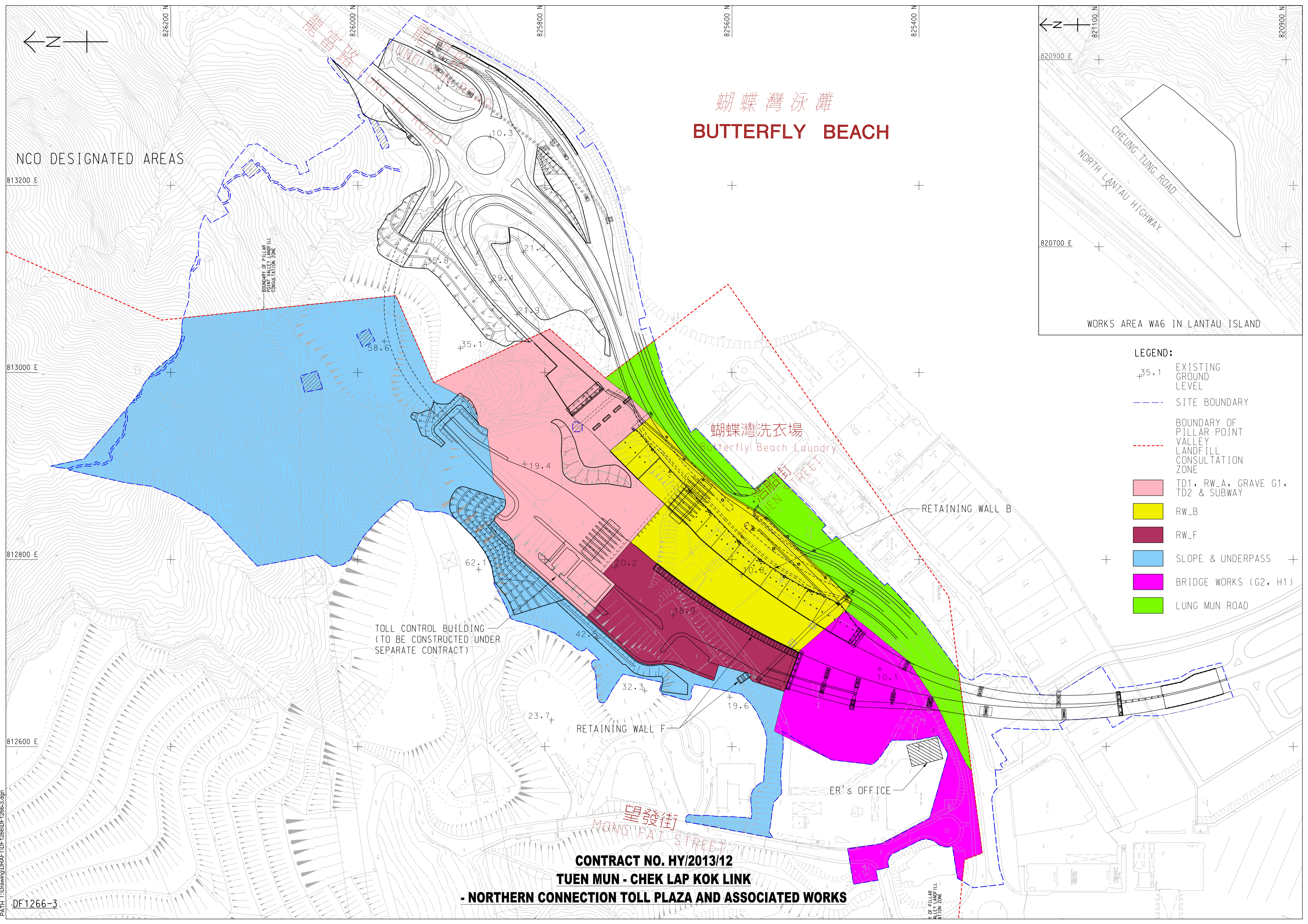
**CRBC - Kaden JV**  
**Three-Month Rolling Programme**

Date	Revision	Checked	Approved
31-01-18	4		

## **Appendix E**

### **Monitoring Locations / Sensitive Receivers 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, GRAVE G1, TD2 & SUBWAY
  - RW\_B
  - RW\_F
  - SLOPE & UNDERPASS
  - BRIDGE WORKS (G2, H1)
  - LUNG MUN ROAD

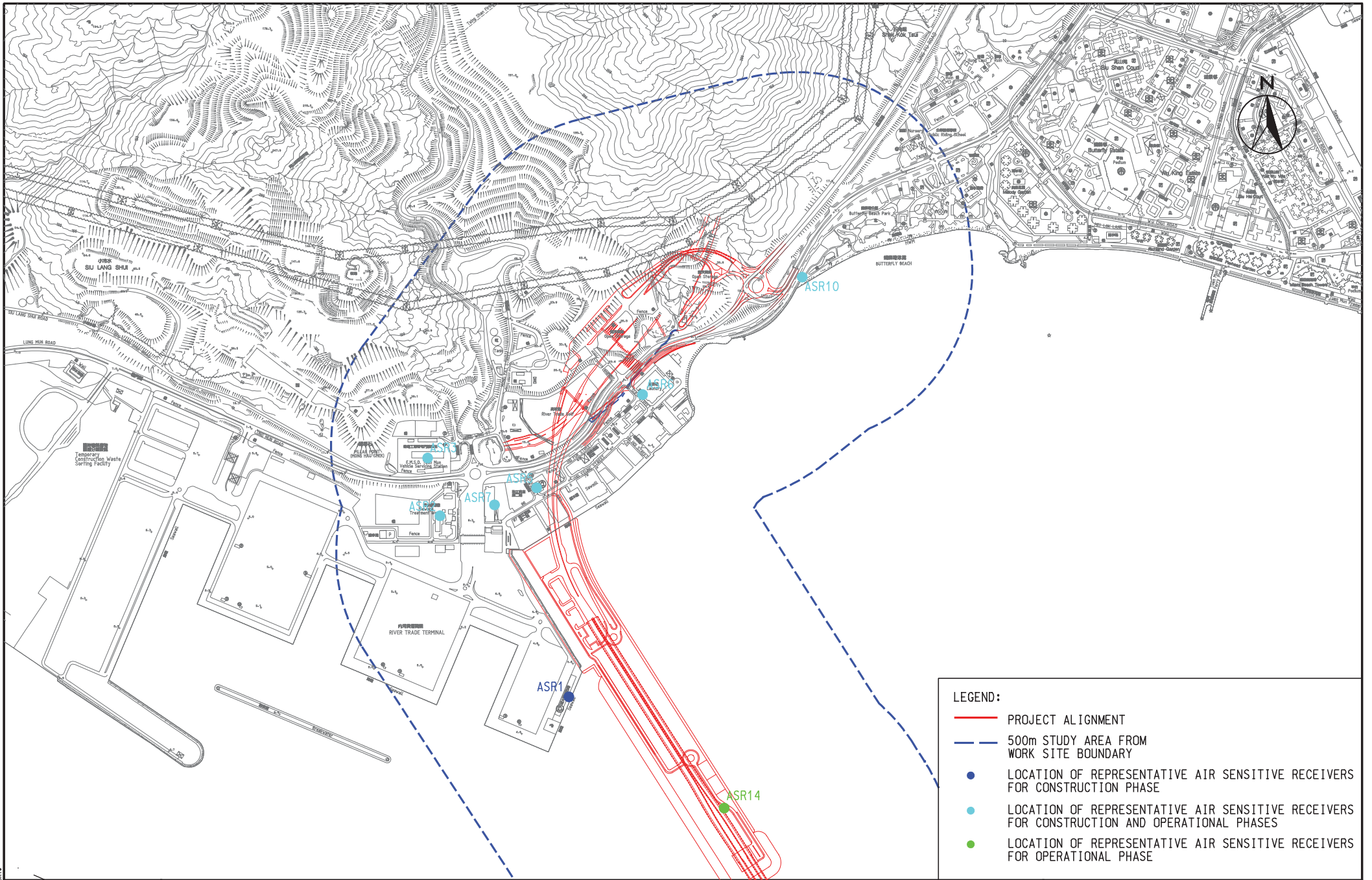
TOLL CONTROL BUILDING  
 (TO BE CONSTRUCTED UNDER  
 SEPARATE CONTRACT)

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

Plot File: byr\_rasc01 10/Mar/17 4:32:51 PM  
 PATH: T:\Drawing\DRAF\1DF1266\DF1266-3.dgn

DF1266-3





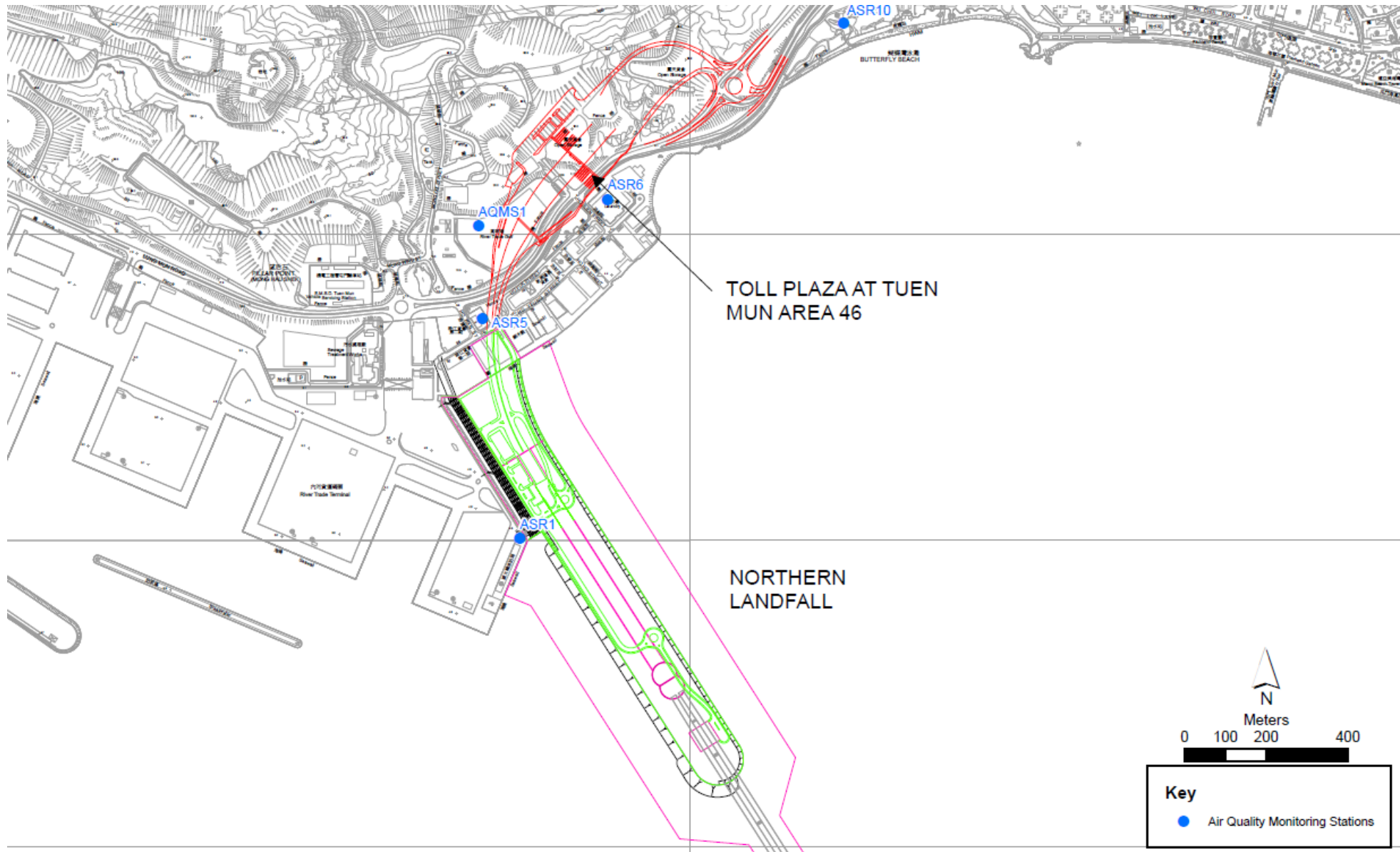
**LEGEND:**

- 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

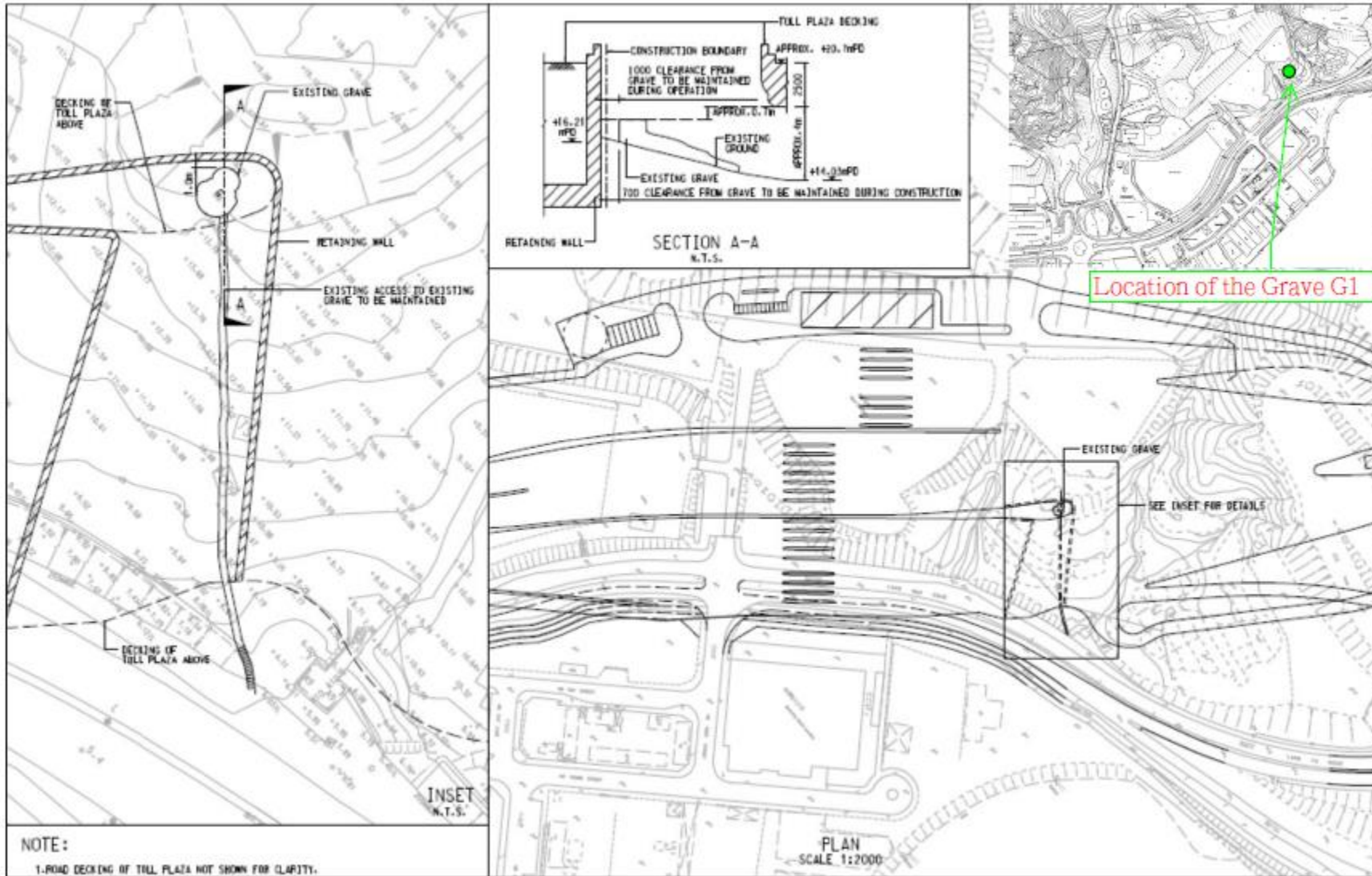
AGREEMENT NO. CE 52/2007(HY)  
 TUEN MUN - CHEK LAP KOK LINK - INVESTIGATION  
**REPRESENTATIVE AIR SENSITIVE RECEIVERS**

SCALE	1 : 10 000	DATE
-------	------------	------

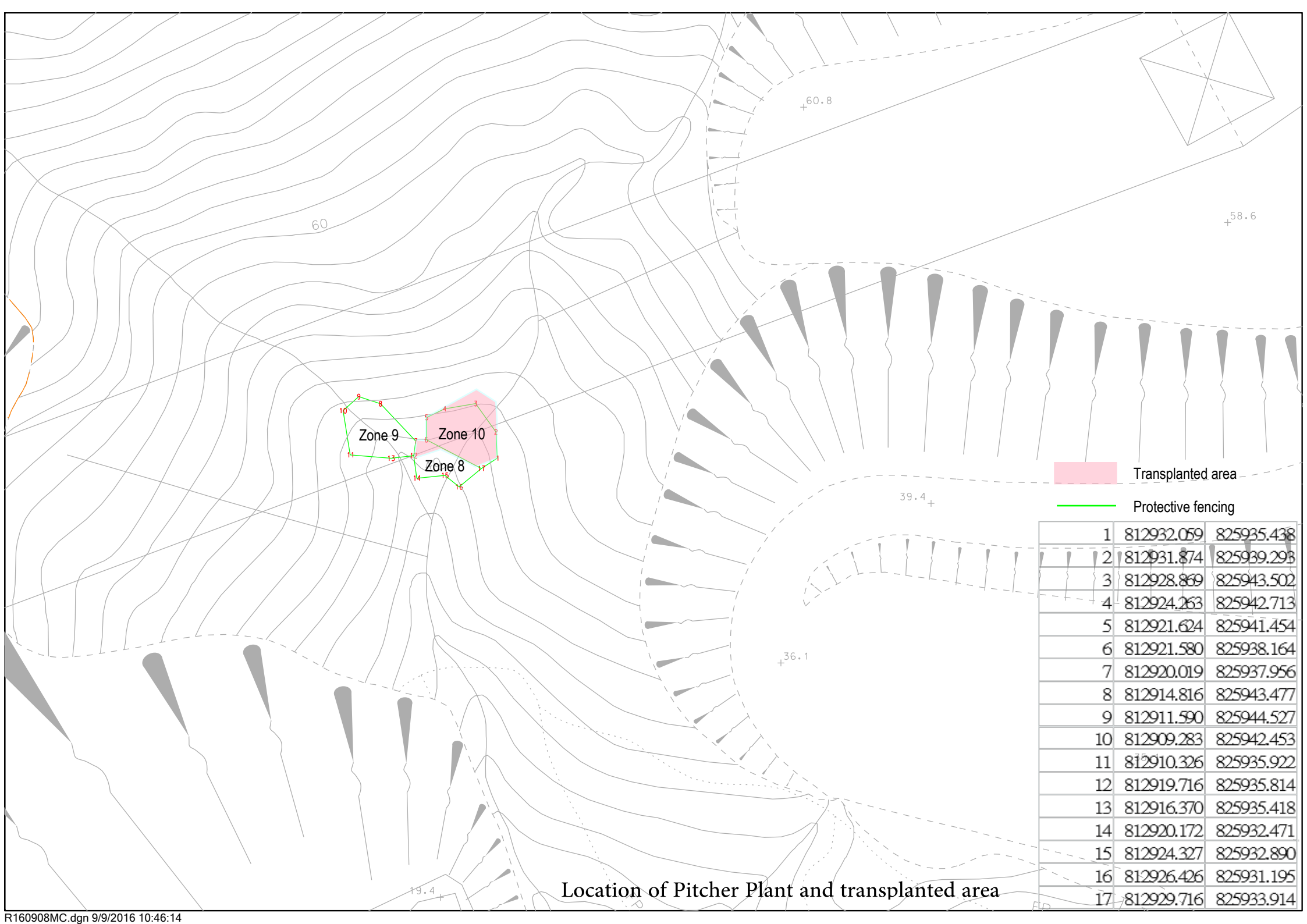




**Air Quality Monitoring Location**



**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

**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%

## **Appendix G**

### **Monitoring Schedule**

**Impact Monitoring Schedule for January 2018**

Date		Landfill Gas Monitoring	Landscape and Visual Monitoring
Mon	1-January-18		
Tue	2-January-18	✓	
Wed	3-January-18	✓	
Thu	4-January-18	✓	
Fri	5-January-18	✓	✓
Sat	6-January-18	✓	
Sun	7-January-18		
Mon	8-January-18	✓	
Tue	9-January-18	✓	
Wed	10-January-18	✓	
Thu	11-January-18	✓	
Fri	12-January-18	✓	✓
Sat	13-January-18	✓	
Sun	14-January-18		
Mon	15-January-18	✓	
Tue	16-January-18	✓	
Wed	17-January-18	✓	
Thu	18-January-18	✓	
Fri	19-January-18	✓	✓
Sat	20-January-18	✓	
Sun	21-January-18		
Mon	22-January-18	✓	
Tue	23-January-18	✓	
Wed	24-January-18	✓	
Thu	25-January-18	✓	
Fri	26-January-18	✓	✓
Sat	27-January-18	✓	
Sun	28-January-18		
Mon	29-January-18	✓	
Tue	30-January-18	✓	
Wed	31-January-18	✓	

✓	Monitoring Day
	Sunday or Public Holiday

**Impact Monitoring Schedule for February 2018**

Date		Landfill Gas Monitoring	Landscape and Visual Monitoring
Thu	1-February-18	✓	
Fri	2-February-18	✓	✓
Sat	3-February-18	✓	
Sun	4-February-18		
Mon	5-February-18	✓	
Tue	6-February-18	✓	
Wed	7-February-18	✓	
Thu	8-February-18	✓	
Fri	9-February-18	✓	✓
Sat	10-February-18	✓	
Sun	11-February-18		
Mon	12-February-18	✓	
Tue	13-February-18	✓	
Wed	14-February-18	✓	
Thu	15-February-18	✓	✓
Fri	16-February-18		
Sat	17-February-18		
Sun	18-February-18		
Mon	19-February-18		
Tue	20-February-18	✓	
Wed	21-February-18	✓	
Thu	22-February-18	✓	
Fri	23-February-18	✓	✓
Sat	24-February-18	✓	
Sun	25-February-18		
Mon	26-February-18	✓	
Tue	27-February-18	✓	
Wed	28-February-18	✓	

✓	Monitoring Day
	Sunday or Public Holiday

## **Appendix H**

### **Calibration Certificates of Monitoring Equipment**

# CERTIFICATION OF CALIBRATION

Date Of Calibration: 20-Jun-2017 Certificate Number: G503226\_2/18640



# Geotech

ISSUED BY: GEOTECHNICAL INSTRUMENTS (UK) LTD

**Customer:** Fugro Geotechnical Services Ltd  
Units 6, 8-11 10/F Worldwide Industrial Centre 43-47 Shan Mei Street  
Fo Tan Sha Tin, N.T. HONG KONG

**Description:** Gas Analyser

**Model:** BIOGAS 5000

**Serial Number:** G503226

### UKAS Accredited results:

Results after adjustment :

Methane (CH <sub>4</sub> )		
Certified Gas (%)	Instrument Reading (%)	Uncertainty (%)
5.1	4.9	0.41
15.0	14.8	0.64
50.0	49.4	0.94

Carbon Dioxide (CO <sub>2</sub> )		
Certified Gas (%)	Instrument Reading (%)	Uncertainty (%)
5.1	5.0	0.43
15.0	14.9	0.70
50.0	50.0	1.1

Oxygen (O <sub>2</sub> )		
Certified Gas (%)	Instrument Reading (%)	Uncertainty (%)
20.9	20.9	0.31

The inwards assessment was carried out 14-Jun-2017.

The maximum adjustment is larger than the inwards assessment uncertainty.

Inwards assessment data is available if requested.

All concentrations are molar.

CH<sub>4</sub>, CO<sub>2</sub> readings recorded at : 37.2 °C ± 1.5 °C

O<sub>2</sub> reading recorded at : 26.8 °C ± 1.5 °C

Barometric Pressure : 1012 mbar ± 3 mbar

Method of Test : The analyser is calibrated in a temperature controlled chamber using a series of reference gases, in compliance with procedure LP004.

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the Issuing laboratory.

Page 1 of 2 | LP015GIUKAS-2.2



# CERTIFICATION OF CALIBRATION

Date Of Calibration: 20-Jun-2017 Certificate Number: G503226\_2/18640



# Geotech

ISSUED BY: GEOTECHNICAL INSTRUMENTS (UK) LTD

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor of  $k=2$ , providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

Calibrations marked 'Non-UKAS Accredited results' on this certificate have been included for completeness.

### Non-UKAS Accredited results:

Barometer (mbar)	
Reference	Instrument Reading
1012	1014

Approved by Signatory

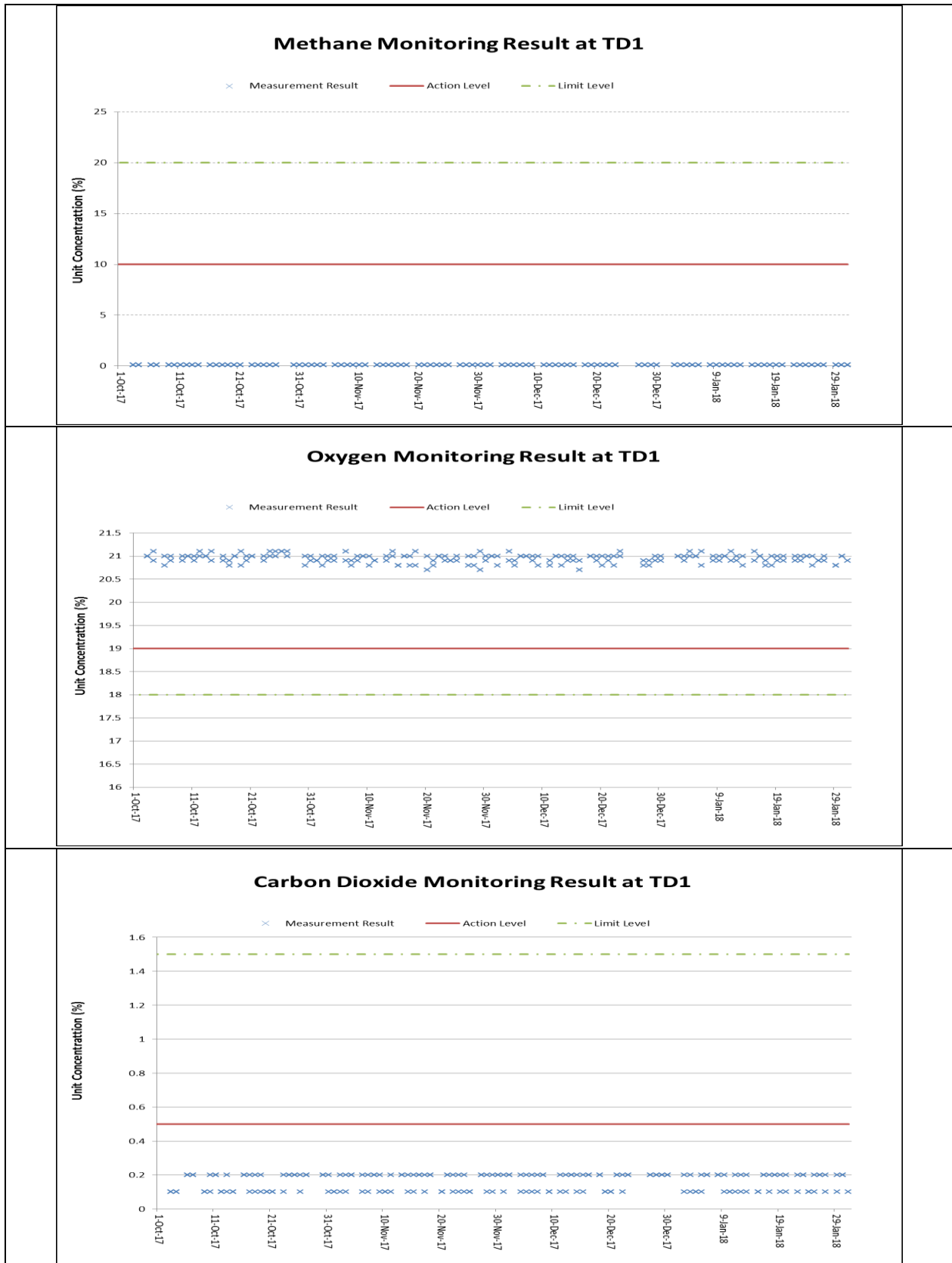
Dawn Hemings

Laboratory Inspection

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## **Appendix I**

### **Landfill Gas Monitoring Results and Graphical Plots**



**Annotation:**  
 During 1 to 31 January 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.

**Landfill Gas Monitoring Results (TD1)**

Monitoring Location	Date	Time	Weather	Temperature (°C)	Methane (%)			Oxygen (%)			Carbon Dioxide (%)		
					Measurement Result	Action Level	Limit Level	Measurement Result	Action Level	Limit Level	Measurement Result	Action Level	Limit Level
TD1	2/1/2018	8:00	Sunny	16	0.1	10	20	20.9	19	18	0.2	0.5	1.5
	2/1/2018	14:00	Sunny	19	0.1	10	20	21	19	18	0.1	0.5	1.5
	3/1/2018	8:00	Fine	18	0.1	10	20	21	19	18	0.2	0.5	1.5
	3/1/2018	14:00		22	0.1	10	20	20.9	19	18	0.2	0.5	1.5
	4/1/2018	8:00	Cloudy	18	0.1	10	20	21	19	18	0.1	0.5	1.5
	4/1/2018	14:00		21	0.1	10	20	21.1	19	18	0.1	0.5	1.5
	5/1/2018	8:00	Cloudy	17	0.1	10	20	21	19	18	0.1	0.5	1.5
	5/1/2018	14:00		23	0.1	10	20	21	19	18	0.1	0.5	1.5
	6/1/2018	8:00	Hazy	16	0.1	10	20	21	19	18	0.2	0.5	1.5
	6/1/2018	14:00		17	0.1	10	20	20.8	19	18	0.2	0.5	1.5
	8/1/2018	8:00	Rain	10	0.1	10	20	21.1	19	18	0.2	0.5	1.5
	8/1/2018	14:00		18	0.1	10	20	20.9	19	18	0.2	0.5	1.5
	9/1/2018	8:00	Rain	8	0.1	10	20	21	19	18	0.2	0.5	1.5
	9/1/2018	14:00		11	0.1	10	20	20.9	19	18	0.1	0.5	1.5
	10/1/2018	8:00	Cloudy	11	0.1	10	20	21	19	18	0.2	0.5	1.5
	10/1/2018	14:00		15	0.1	10	20	21	19	18	0.1	0.5	1.5
	11/1/2018	8:00	Cloudy	12	0.1	10	20	21	19	18	0.1	0.5	1.5
	11/1/2018	14:00		16	0.1	10	20	21.1	19	18	0.2	0.5	1.5
	12/1/2018	8:00	Fine	10	0.1	10	20	20.9	19	18	0.1	0.5	1.5
	12/1/2018	14:00		15	0.1	10	20	20.9	19	18	0.1	0.5	1.5
	13/1/2018	8:00	Fine	11	0.1	10	20	21	19	18	0.2	0.5	1.5
	13/1/2018	14:00		15	0.1	10	20	20.8	19	18	0.1	0.5	1.5
	15/1/2018	8:00	Sunny	13	0.1	10	20	21	19	18	0.2	0.5	1.5
	15/1/2018	14:00		18	0.1	10	20	20.9	19	18	0.1	0.5	1.5
	16/1/2018	8:00	Fine	15	0.1	10	20	21.1	19	18	0.1	0.5	1.5
	16/1/2018	14:00		22	0.1	10	20	21	19	18	0.2	0.5	1.5
	17/1/2018	8:00	Sunny	16	0.1	10	20	21	19	18	0.2	0.5	1.5
	17/1/2018	14:00		26	0.1	10	20	20.8	19	18	0.1	0.5	1.5
	18/1/2018	8:00	Hazy	16	0.1	10	20	20.9	19	18	0.2	0.5	1.5
	18/1/2018	14:00		24	0.1	10	20	20.8	19	18	0.2	0.5	1.5
	19/1/2018	8:00	Rain	18	0.1	10	20	21	19	18	0.2	0.5	1.5
	19/1/2018	14:00		20	0.1	10	20	20.9	19	18	0.2	0.5	1.5
	20/1/2018	8:00	Fine	17	0.1	10	20	21	19	18	0.1	0.5	1.5
	20/1/2018	14:00		22	0.1	10	20	20.9	19	18	0.1	0.5	1.5
	22/1/2018	8:00	Sunny	17	0.1	10	20	21	19	18	0.2	0.5	1.5
	22/1/2018	14:00		25	0.1	10	20	20.9	19	18	0.2	0.5	1.5
	23/1/2018	8:00	Sunny	17	0.1	10	20	21	19	18	0.1	0.5	1.5
	23/1/2018	14:00		23	0.1	10	20	21	19	18	0.2	0.5	1.5
	24/1/2018	8:00	Sunny	16	0.1	10	20	20.9	19	18	0.2	0.5	1.5
	24/1/2018	14:00		18	0.1	10	20	21	19	18	0.1	0.5	1.5
25/1/2018	8:00	Sunny	16	0.1	10	20	21	19	18	0.1	0.5	1.5	
25/1/2018	14:00		19	0.1	10	20	20.8	19	18	0.1	0.5	1.5	
26/1/2018	8:00	Hazy	15	0.1	10	20	21	19	18	0.2	0.5	1.5	
26/1/2018	14:00		18	0.1	10	20	20.9	19	18	0.2	0.5	1.5	
27/1/2018	8:00	Cloudy	14	0.1	10	20	20.9	19	18	0.2	0.5	1.5	
27/1/2018	14:00		17	0.1	10	20	21	19	18	0.1	0.5	1.5	
29/1/2018	8:00	Cloudy	9	0.1	10	20	20.9	19	18	0.2	0.5	1.5	
29/1/2018	14:00		13	0.1	10	20	20.8	19	18	0.1	0.5	1.5	
30/1/2018	8:00	Cloudy	9	0.1	10	20	20.8	19	18	0.2	0.5	1.5	
30/1/2018	14:00		11	0.1	10	20	21	19	18	0.2	0.5	1.5	
31/1/2018	8:00	Rain	8	0.1	10	20	21	19	18	0.2	0.5	1.5	
31/1/2018	14:00		11	0.1	10	20	20.9	19	18	0.1	0.5	1.5	

Remark:

Parameter	Criteria	Measurement
Oxygen	Action Level	< 19%
	Limit Level	< 18%
Methane	Action Level	> 10% LEL (> 0.5% v/v)
	Limit Level	> 20% LEL (> 1% v/v)
Carbon Dioxide	Action Level	> 0.5%
	Limit Level	> 1.5%

## **Appendix J**

### **Investigation Report for Exceedance**

**Contract No. HY/2013/12**  
**Tuen Mun - Chek Lap Kok Link - Northern Connection Toll Plaza and Associated Works**

**Investigation Report on Action or Limit Level Non-compliance**

<b>Date</b>	29 December 2017
<b>Environmental Aspect</b>	Air Quality
<b>Parameter</b>	24-hour TSP
<b>Monitoring Location</b>	ASR10 (Butterfly Beach Park)
<b>Measurement Period</b>	16:06 – 16:06
<b>Action Level (ug/m3)</b>	214
<b>Limit Level (ug/m3)</b>	260
<b>Measured Level (ug/m3)</b>	<b>250</b>
<b>Exceedance</b>	<b>Action Level</b>
<b>Possible reason for Action or Limit Level Non-compliance</b>	<ol style="list-style-type: none"> <li>1. According to site information provided by CRBC-Kaden JV, construction of canopy at TD1, road pavement at +19 Platform and Central Divider, drainage works at Portion H, +19 Platform and Underpass, housekeeping works at Lung Mun Road, construction of column at Portion F and hydroseeding at C150 were conducted on 29 and 30 December 2017.</li> <li>2. To reduce dust impact arising from the construction, mitigation measures for construction dust control were implemented. They include the followings:- <ul style="list-style-type: none"> <li>• water trucks were arranged on haul road to keep road surface wet (refer to photo 1, 8, 10, 11 and water spraying record)</li> <li>• for un-accessible area, water spraying by workers was provided (refer to photo 2, 7 and water spraying record)</li> <li>• Hydro seeding or covered part of the exposed slopes and stockpile by tarpaulin sheet (refer to Photo 3 to 5 and 12)</li> <li>• to set speed control at 8 km/hr for all vehicles using the haul road (refer to photo 6 and 9)</li> </ul> </li> <li>3. According to the weather station setting up at ASR5 under Contract No. HY/2012/08, north-easterly wind was blowing mostly during the time of monitoring. All the construction areas were located at the downstream of the monitoring station ASR10. Another, construction works was undertaken at the public toilet inside the Butterfly Beach Park which located near the ASR10 within 10m and not under the contract HY/2013/12 since mid of October 2017 and until mid of February 2018. Review the monitoring result at other monitoring stations which was located more closely to the major works area +19 platform and Lung Mun Road no exceedance was recorded at similar time. (Ref. to Photo 17 &amp; 18)</li> <li>4. During the weekly site inspection on 27 December 2017 and 2 January 2018, ET was observed that the contractor was properly implemented the dust mitigation measure under EMIS requirement and no environmental issue related to dust aspect was observed. (Ref. to Photo 7 to 11)</li> </ol>

	<p>5. Also, join site inspection and meeting with IEC, ER, Contractor and ET were undertaken on 2 January 2018. No dust emitted from the works area was observed during the inspection. Also ER agreed that dust mitigation measures were implemented properly at those works area during the time of monitoring. Therefore the exceedance of Air Quality Monitoring at ASR10 was due to other pollutant source rather than the construction site. (Ref. to Photo 7, 8 &amp; 10)</p> <p>6. Based on above investigation, the exceedance is unlikely related to the Contract work and no corrective action was required accordingly.</p>
<b>Action to be taken</b>	ET will continue regular audit and inspection for the implemented dust mitigation measures during the construction period.

**Prepared By :** T.W. Tam

**Designation :** Environmental Team Leader

**Signature :**  \_\_\_\_\_

**Date :** 31 January 2018



**Photo Record**



**Photo 1** Watering of haul road by water truck to keep road surface wet



**Photo 2** Water spraying by worker for un-accessible area.



**Photo 3** Covered part of the exposed slopes and stockpile by tarpaulin sheet.



**Photo 4** Hydro seeding for the exposed slope at slop 170



**Photo 5** Covered part of the exposed slopes and stockpile by tarpaulin sheet.



**Photo 6** Set speed control at ~8km/hr for all vehicles using the haul road





**Photo 7** Watering of haul road to keep road surface wet was observed during the joint site inspection on 2 January 2018



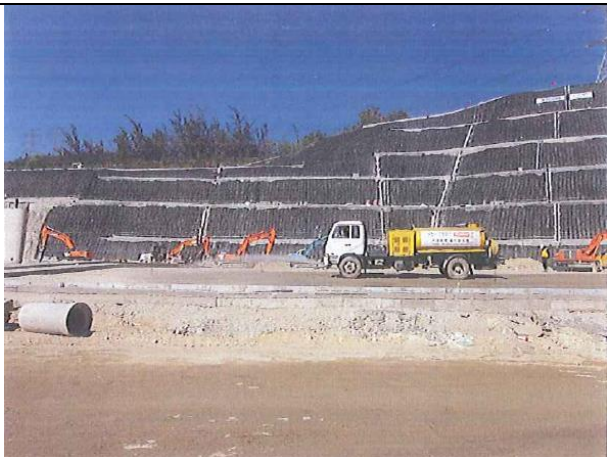
**Photo 8** Site area keeping wet was observed at Portion H during the joint site inspection on 2 January 2018



**Photo 9** Set speed control at ~8km/hr for all vehicles using the haul road at Portion F



**Photo 10** Watering of haul road by water truck to keep road surface wet was observed during the site inspection on 2 January 2018



**Photo 11** Watering of haul road by water truck to keep road surface wet was observed during the site inspection on 27 December 2017



**Photo 12** Hydro-seeding at C150





**Photo 13** Housekeeping works at LMR



**Photo 14** Construction of column at Portion F and most works area was hard paved.



**Photo 15** Road pavement works at Platform 19



**Photo 16** Drainage works at Platform 19



**Photo 17** Construction works was undertaken at public toilet near the ASR10



**Photo 18** Notice from LCSD about construction works at public toilet

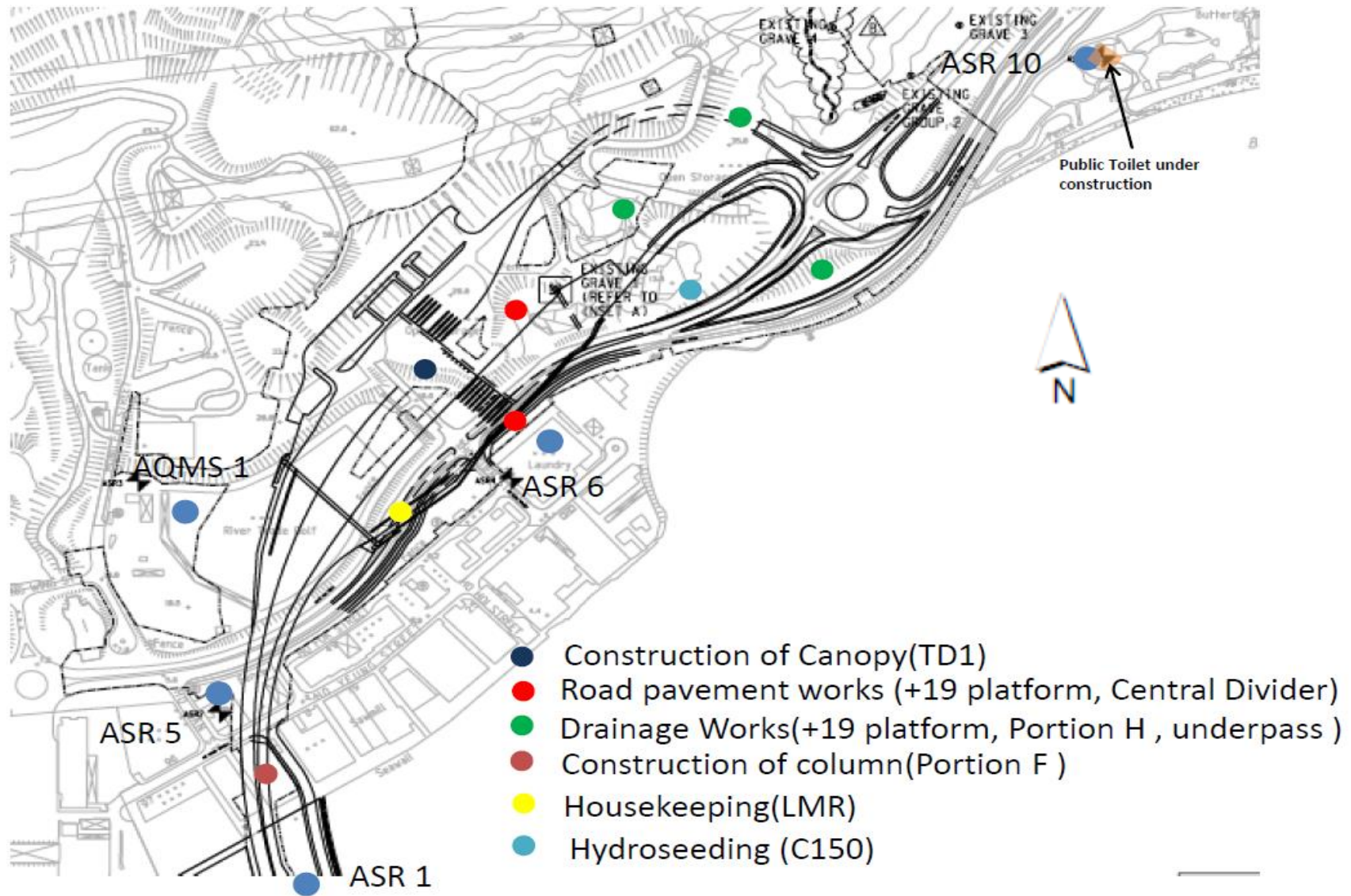


Figure 1. Location Plan



**Table 1. 1-Hr TSP Monitoring Result of 29 December 2017**

TMCLKL	HY/2012/08	29/12/2017	AQMS1	Sunny	13:43	1-hour TSP	158	ug/m3
TMCLKL	HY/2012/08	29/12/2017	AQMS1	Sunny	14:45	1-hour TSP	152	ug/m3
TMCLKL	HY/2012/08	29/12/2017	AQMS1	Sunny	15:47	1-hour TSP	99	ug/m3
TMCLKL	HY/2012/08	29/12/2017	ASR1	Sunny	13:32	1-hour TSP	124	ug/m3
TMCLKL	HY/2012/08	29/12/2017	ASR1	Sunny	14:34	1-hour TSP	144	ug/m3
TMCLKL	HY/2012/08	29/12/2017	ASR1	Sunny	15:36	1-hour TSP	134	ug/m3
TMCLKL	HY/2012/08	29/12/2017	ASR10	Sunny	13:00	1-hour TSP	66	ug/m3
TMCLKL	HY/2012/08	29/12/2017	ASR10	Sunny	14:02	1-hour TSP	104	ug/m3
TMCLKL	HY/2012/08	29/12/2017	ASR10	Sunny	15:04	1-hour TSP	130	ug/m3
TMCLKL	HY/2012/08	29/12/2017	ASR5	Sunny	13:21	1-hour TSP	165	ug/m3
TMCLKL	HY/2012/08	29/12/2017	ASR5	Sunny	14:23	1-hour TSP	184	ug/m3
TMCLKL	HY/2012/08	29/12/2017	ASR5	Sunny	15:25	1-hour TSP	187	ug/m3
TMCLKL	HY/2012/08	29/12/2017	ASR6	Sunny	13:10	1-hour TSP	136	ug/m3
TMCLKL	HY/2012/08	29/12/2017	ASR6	Sunny	14:12	1-hour TSP	210	ug/m3
TMCLKL	HY/2012/08	29/12/2017	ASR6	Sunny	15:14	1-hour TSP	194	ug/m3
TMCLKL	HY/2012/08	29/12/2017	AQMS1	Sunny	16:49	24-hour TSP	105	ug/m3
TMCLKL	HY/2012/08	29/12/2017	ASR1	Sunny	16:38	24-hour TSP	119	ug/m3
TMCLKL	HY/2012/08	29/12/2017	ASR10	Sunny	16:06	24-hour TSP	250	ug/m3
TMCLKL	HY/2012/08	29/12/2017	ASR5	Sunny	16:27	24-hour TSP	140	ug/m3
TMCLKL	HY/2012/08	29/12/2017	ASR6	Sunny	16:16	24-hour TSP	92	ug/m3

**Table 2. Wind Direction and Speed data during Air Quality Monitoring**

Date	Time	Average of Wing Speed (m/s)	Average of Wind Direction (degree)
29/12/2017	16:00	1.8	51
29/12/2017	17:00	2.7	46
29/12/2017	18:00	4	43
29/12/2017	19:00	4	52
29/12/2017	20:00	3.6	48
29/12/2017	21:00	3.1	44
29/12/2017	22:00	2.7	47
29/12/2017	23:00	3.1	46
30/12/2017	0:00	3.6	53
30/12/2017	1:00	2.7	41
30/12/2017	2:00	0.9	50
30/12/2017	3:00	0.9	12
30/12/2017	4:00	1.3	43
30/12/2017	5:00	1.8	44
30/12/2017	6:00	1.3	50
30/12/2017	7:00	0.9	52
30/12/2017	8:00	1.3	72
30/12/2017	9:00	1.3	171
30/12/2017	10:00	1.8	42
30/12/2017	11:00	2.7	192
30/12/2017	12:00	1.8	228
30/12/2017	13:00	1.3	274
30/12/2017	14:00	2.2	195
30/12/2017	15:00	2.2	190
30/12/2017	16:00	1.3	188
30/12/2017	17:00	1.3	226

**Remarks:**

Wind speed and direction data was extracted from the weather station located at ASR5 set up by ET of Contract HY/2012/08



UL7286

# 地盆水車灑水記錄表(2017)

	星期日	星期一	星期二	星期三	星期四	星期五	星期六
	12月24日	12月25日	12月26日	12月27日	12月28日	12月29日	12月30日
8:00 - 8:30				✓	✓	✓	✓
8:30 - 9:00				✓	✓	✓	✓
9:00 - 9:30				✓	✓	✓	✓
9:30 - 10:00				✓	✓	✓	✓
10:00 - 10:30				✓	✓	✓	✓
10:30 - 11:00				✓	✓	✓	✓
11:00 - 11:30				✓	✓	✓	✓
11:30 - 12:00				✓	✓	✓	✓
12:00 - 12:30				✓	✓	✓	✓
12:30 - 13:00				✓	✓	✓	✓
13:00 - 13:30				✓	✓	✓	✓
13:30 - 14:00				✓	✓	✓	✓
14:00 - 14:30				✓	✓	✓	✓
14:30 - 15:00				✓	✓	✓	✓
15:00 - 15:30				✓	✓	✓	✓
15:30 - 16:00				✓	✓	✓	✓
16:00 - 16:30				✓	✓	✓	✓
16:30 - 17:00				✓	✓	✓	✓
17:00 - 17:30				✓	✓	✓	✓
17:30 - 18:00				✓	✓	✓	✓

Wai Lam Lau    Lau Lam Lau    Lau Lam Lau    Lau Lam Lau    Lau Lam Lau

Verified by Tommy Lau (ES)   
 Date 2/1/2018

60837

# 地盆水車灑水記錄表(2017)

	星期日	星期一	星期二	星期三	星期四	星期五	星期六
	12月24日	12月25日	12月26日	12月27日	12月28日	12月29日	12月30日
8:00 - 8:30				✓	✓	✓	✓
8:30 - 9:00				✓	✓	✓	✓
9:00 - 9:30				✓	✓	✓	✓
9:30 - 10:00				✓	✓	✓	✓
10:00 - 10:30				✓	✓	✓	✓
10:30 - 11:00				✓	✓	✓	✓
11:00 - 11:30				✓	✓	✓	✓
11:30 - 12:00				✓	✓	✓	✓
12:00 - 12:30				✓	✓	✓	✓
12:30 - 13:00				✓	✓	✓	✓
13:00 - 13:30				✓	✓	✓	✓
13:30 - 14:00				✓	✓	✓	✓
14:00 - 14:30				✓	✓	✓	✓
14:30 - 15:00				✓	✓	✓	✓
15:00 - 15:30				✓	✓	✓	✓
15:30 - 16:00				✓	✓	✓	✓
16:00 - 16:30				✓	✓	✓	✓
16:30 - 17:00				✓	✓	✓	✓
17:00 - 17:30				✓	✓	✓	✓
17:30 - 18:00				✓	✓	✓	✓

廖 志 傑

Verified by Tommy Law (ES)  
 Date 2/1/2018



# 地盆人手灑水記錄表(2017)

地點:	星期日	星期一	星期二	星期三	星期四	星期五	星期六
	12月24日	12月25日	12月26日	12月27日	12月28日	12月29日	12月30日
Control				✓	✓	✓	✓
Div. Sec				✓	✓	✓	✓
8:00 - 8:30				✓	✓	✓	✓
8:30 - 9:00				✓	✓	✓	✓
9:00 - 9:30				✓	✓	✓	✓
9:30 - 10:00				✓	✓	✓	✓
10:00 - 10:30				✓	✓	✓	✓
10:30 - 11:00				✓	✓	✓	✓
11:00 - 11:30				✓	✓	✓	✓
11:30 - 12:00				✓	✓	✓	✓
12:00 - 12:30				✓	✓	✓	✓
12:30 - 13:00				✓	✓	✓	✓
13:00 - 13:30				✓	✓	✓	✓
13:30 - 14:00				✓	✓	✓	✓
14:00 - 14:30				✓	✓	✓	✓
14:30 - 15:00				✓	✓	✓	✓
15:00 - 15:30				✓	✓	✓	✓
15:30 - 16:00				✓	✓	✓	✓
16:00 - 16:30				✓	✓	✓	✓
16:30 - 17:00				✓	✓	✓	✓
17:00 - 17:30				✓	✓	✓	✓
17:30 - 18:00				✓	✓	✓	✓

Verified by Tommy Law (ES)

Date

*TL*  
2/1/2018

# 地盆人手灑水記錄表(2017)

地點:	星期日	星期一	星期二	星期三	星期四	星期五	星期六
	12月24日	12月25日	12月26日	12月27日	12月28日	12月29日	12月30日
8:00 - 8:30				✓	✓	✓	✓
8:30 - 9:00				✓	✓	✓	✓
9:00 - 9:30				✓	✓	✓	✓
9:30 - 10:00				✓	✓	✓	✓
10:00 - 10:30				✓	✓	✓	✓
10:30 - 11:00				✓	✓	✓	✓
11:00 - 11:30				✓	✓	✓	✓
11:30 - 12:00				✓	✓	✓	✓
12:00 - 12:30				✓	✓	✓	✓
12:30 - 13:00				✓	✓	✓	✓
13:00 - 13:30				✓	✓	✓	✓
13:30 - 14:00				✓	✓	✓	✓
14:00 - 14:30				✓	✓	✓	✓
14:30 - 15:00				✓	✓	✓	✓
15:00 - 15:30				✓	✓	✓	✓
15:30 - 16:00				✓	✓	✓	✓
16:00 - 16:30				✓	✓	✓	✓
16:30 - 17:00				✓	✓	✓	✓
17:00 - 17:30				✓	✓	✓	✓
17:30 - 18:00				✓	✓	✓	✓

Verified by Tommy Law (ES)

Date

*[Signature]*  
2/1/2018



# 地盆人手灑水記錄表(2017)

地點:	星期日	星期一	星期二	星期三	星期四	星期五	星期六
<i>Portion</i>	12月24日	12月25日	12月26日	12月27日	12月28日	12月29日	12月30日
8:00 - 8:30				✓	✓	✓	✓
8:30 - 9:00				✓	✓	✓	✓
9:00 - 9:30				✓	✓	✓	✓
9:30 - 10:00				✓	✓	✓	✓
10:00 - 10:30				✓	✓	✓	✓
10:30 - 11:00				✓	✓	✓	✓
11:00 - 11:30				✓	✓	✓	✓
11:30 - 12:00				✓	✓	✓	✓
12:00 - 12:30				✓	✓	✓	✓
12:30 - 13:00				✓	✓	✓	✓
13:00 - 13:30				✓	✓	✓	✓
13:30 - 14:00				✓	✓	✓	✓
14:00 - 14:30				✓	✓	✓	✓
14:30 - 15:00				✓	✓	✓	✓
15:00 - 15:30				✓	✓	✓	✓
15:30 - 16:00				✓	✓	✓	✓
16:00 - 16:30				✓	✓	✓	✓
16:30 - 17:00				✓	✓	✓	✓
17:00 - 17:30				✓	✓	✓	✓
17:30 - 18:00				✓	✓	✓	✓

*ms ms ms*

Verified by *Tommy Law* (ES)  
Date *2/1/2018*



**Contract No. HY/2013/12**  
**Tuen Mun - Chek Lap Kok Link - Northern Connection Toll Plaza and Associated Works**

**Investigation Report on Action or Limit Level Non-compliance**

<b>Date</b>	13 January 2018
<b>Environmental Aspect</b>	Air Quality
<b>Parameter</b>	1-hour TSP
<b>Monitoring Location</b>	ASR5 (Pillar Point Fire Station)
<b>Measurement Period</b>	8:41 – 9:41
<b>Action Level (ug/m3)</b>	340
<b>Limit Level (ug/m3)</b>	500
<b>Measured Level (ug/m3)</b>	<b>345</b>
<b>Exceedance</b>	<b>Action Level</b>
<b>Possible reason for Action or Limit Level Non-compliance</b>	<ol style="list-style-type: none"> <li>1. According to site information provided by CRBC-Kaden JV, construction of canopy at TD1, road pavement at +19 Platform and Central Divider, drainage works at Portion H, +19 Platform and Underpass, housekeeping works at Underpass, construction of column at Portion F and construction of bamboo scaffolding at footbridge were conducted on 13 January 2018.</li> <li>2. To reduce dust impact arising from the construction, mitigation measures for construction dust control were implemented. They include the followings:- <ul style="list-style-type: none"> <li>• water trucks were arranged on haul road to keep road surface wet (refer to photo 1 and water spraying record)</li> <li>• for un-accessible area, water spraying by workers was provided (refer to photo 2, 8 to 11 and water spraying record)</li> <li>• Hydro seeding or covered part of the exposed slopes and stockpile by tarpaulin sheet (refer to Photo 3 to 5)</li> <li>• to set speed control at 8 km/hr for all vehicles using the haul road (refer to photo 6 and 7)</li> </ul> </li> <li>3. According to the weather station setting up at ASR5 under Contract No. HY/2012/08, north-easterly wind at 1.3 to 1.8 m/s was blowing between 08:00 to 10:00. The closely works area Portion F was located at the downstream of the monitoring station ASR5.</li> <li>4. During the weekly site inspection on 9 &amp; 16 January 2018, ET was observed that the contractor was properly implemented the dust mitigation measure under EMIS requirement and no environmental issue related to dust aspect was observed. (Ref. to Photo 8 to 10)</li> <li>5. Also, join site inspection and meeting with IEC, ER, Contractor and ET were undertaken on 6 February 2018. No dust emitted from the works area was observed during the inspection. Also ER agreed that dust mitigation measures were implemented properly at those works area during the time of monitoring. During the inspection at monitoring station ASR5, we observed a notice stated that some construction activities will be undertaking at Pillar Point Fire Station during the period from end of June 2017 to end of March 2018. (Ref. to</li> </ol>

	<p>Photo 11 &amp; 15 to 17)</p> <p>6. Therefore the exceedance of Air Quality Monitoring at ASR5 was due to other pollutant source rather than the construction site.</p> <p>7. Based on above investigation, the exceedance is unlikely related to the Contract work and no corrective action was required accordingly.</p>
<b>Action to be taken</b>	ET will continue regular audit and inspection for the implemented dust mitigation measures during the construction period.

**Prepared By :** T.W. Tam

**Designation :** Environmental Team Leader

**Signature :**  \_\_\_\_\_

**Date :** 7 February 2018

**Photo Record**



**Photo 1** Watering of haul road by water truck to keep road surface wet



**Photo 2** Water spraying by worker for un-accessible area.



**Photo 3** Covered part of the exposed slopes and stockpile by tarpaulin sheet.



**Photo 4** Hydro seeding for the exposed slope at slop 170



**Photo 5** Covered part of the exposed slopes and stockpile by tarpaulin sheet.



**Photo 6** Set speed control at ~8km/hr for all vehicles using the haul road





**Photo 7** Set speed control at ~8km/hr for all vehicles using the haul road at Portion F



**Photo 8** Site area keeping wet was observed at Portion F during the join site inspection on 9 January 2018



**Photo 9** Site area keeping wet was observed at Portion F during the join site inspection on 9 January 2018



**Photo 10** Site area keeping wet was observed at Portion F during the join site inspection on 16 January 2018



**Photo 11** Watering of haul road to keep road surface wet was observed during the site inspection on 6 February 2018



**Photo 12** Construction of Canopy at TD1





**Photo 13** Road pavement works at Platform 19



**Photo 14** Construction of column at Portion F and most works area was keep wet.



**Photo 15** Construction works was undertaken at Pillar Point Fire Station



**Photo 16** Photo taken on 6 February 2018 at the roof top of Pillar Point Fire Station



**Photo 17** Photo taken on 6 February 2018 at the roof top of Pillar Point Fire Station

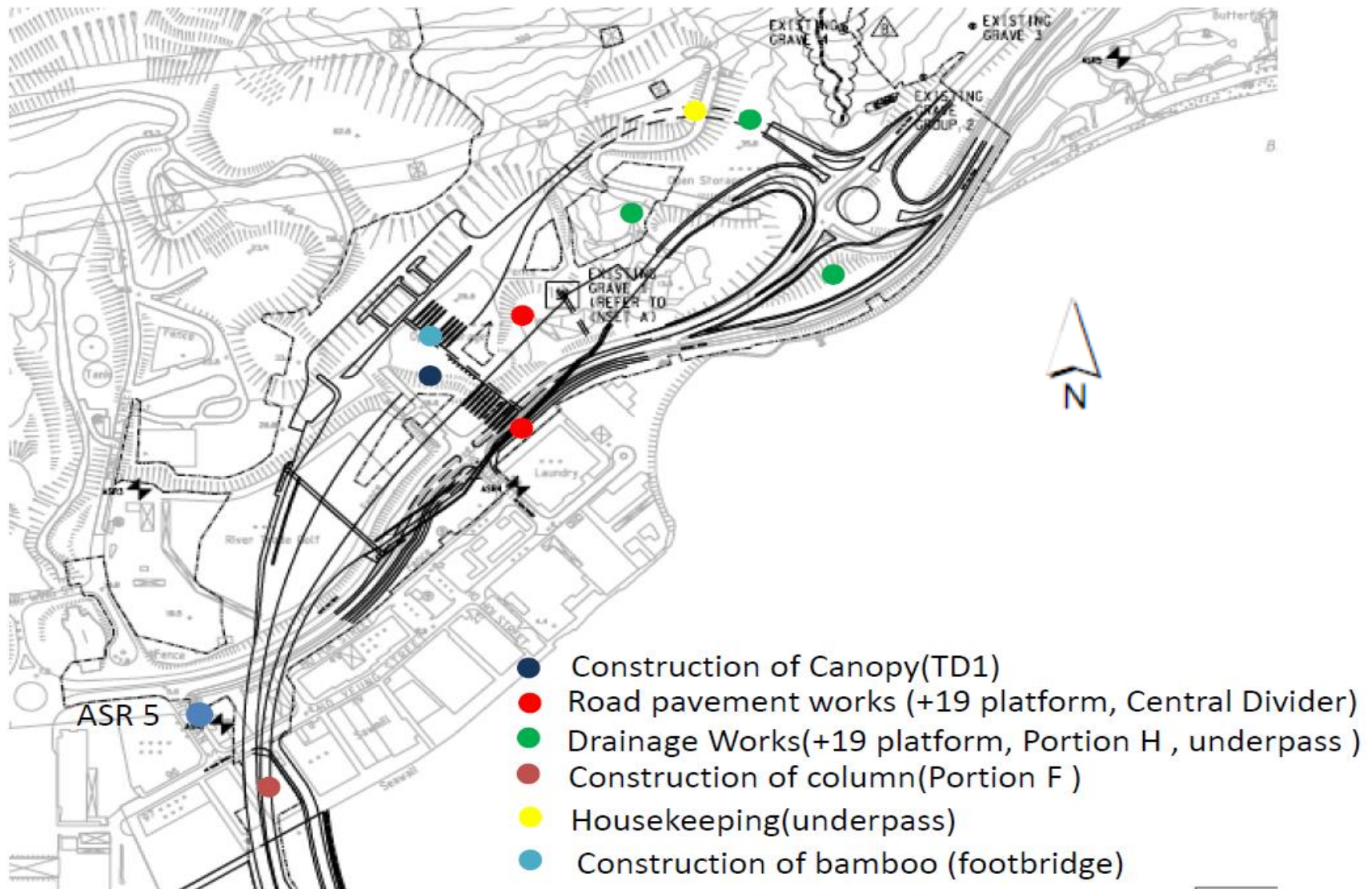


Figure 1. Location Plan

**Table 1. 1-Hr TSP Monitoring Result of 13 January 2018**

TMCLKL	HY/2012/08	13/1/2018	AQMS1	Sunny	9:04	1-hour TSP	116	ug/m3
TMCLKL	HY/2012/08	13/1/2018	AQMS1	Sunny	10:06	1-hour TSP	92	ug/m3
TMCLKL	HY/2012/08	13/1/2018	AQMS1	Sunny	11:08	1-hour TSP	120	ug/m3
TMCLKL	HY/2012/08	13/1/2018	ASR1	Sunny	8:53	1-hour TSP	147	ug/m3
TMCLKL	HY/2012/08	13/1/2018	ASR1	Sunny	9:55	1-hour TSP	144	ug/m3
TMCLKL	HY/2012/08	13/1/2018	ASR1	Sunny	10:57	1-hour TSP	86	ug/m3
TMCLKL	HY/2012/08	13/1/2018	ASR10	Sunny	8:20	1-hour TSP	77	ug/m3
TMCLKL	HY/2012/08	13/1/2018	ASR10	Sunny	9:22	1-hour TSP	65	ug/m3
TMCLKL	HY/2012/08	13/1/2018	ASR10	Sunny	10:24	1-hour TSP	34	ug/m3
TMCLKL	HY/2012/08	13/1/2018	ASR5	Sunny	8:41	1-hour TSP	345	ug/m3
TMCLKL	HY/2012/08	13/1/2018	ASR5	Sunny	9:43	1-hour TSP	275	ug/m3
TMCLKL	HY/2012/08	13/1/2018	ASR5	Sunny	10:45	1-hour TSP	141	ug/m3
TMCLKL	HY/2012/08	13/1/2018	ASR6	Sunny	8:30	1-hour TSP	139	ug/m3
TMCLKL	HY/2012/08	13/1/2018	ASR6	Sunny	9:32	1-hour TSP	96	ug/m3
TMCLKL	HY/2012/08	13/1/2018	ASR6	Sunny	10:34	1-hour TSP	79	ug/m3
TMCLKL	HY/2012/08	13/1/2018	AQMS1	Sunny	12:10	24-hour TSP	50	ug/m3
TMCLKL	HY/2012/08	13/1/2018	ASR1	Sunny	11:59	24-hour TSP	62	ug/m3
TMCLKL	HY/2012/08	13/1/2018	ASR10	Sunny	11:26	24-hour TSP	48	ug/m3
TMCLKL	HY/2012/08	13/1/2018	ASR5	Sunny	11:47	24-hour TSP	78	ug/m3
TMCLKL	HY/2012/08	13/1/2018	ASR6	Sunny	11:36	24-hour TSP	65	ug/m3

**Table 2. Wind Direction and Speed data during Air Quality Monitoring**

Date	Time	Average of Wind Speed (m/s)	Average of Wind Direction (degree)
13/1/2018	8:00	1.8	48
13/1/2018	9:00	1.3	51
13/1/2018	10:00	1.3	56


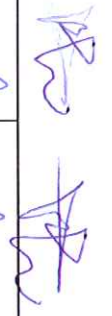


**Remarks:**


Wind speed and direction data was extracted from the weather station located at ASR5 set up by ET of Contract HY/2012/08



# 地盆人手灑水記錄表(2018)

地點: Portlow F	星期日	星期一	星期二	星期三	星期四	星期五	星期六
	1月7日	1月8日	1月9日	1月10日	1月11日	1月12日	1月13日
8:00 - 8:30		✓	✓	✓	✓	✓	✓
8:30 - 9:00		✓	✓	✓	✓	✓	✓
9:00 - 9:30		✓	✓	✓	✓	✓	✓
9:30 - 10:00		✓	✓	✓	✓	✓	✓
10:00 - 10:30		✓	✓	✓	✓	✓	✓
10:30 - 11:00		✓	✓	✓	✓	✓	✓
11:00 - 11:30		✓	✓	✓	✓	✓	✓
11:30 - 12:00		✓	✓	✓	✓	✓	✓
12:00 - 12:30		✓	✓	✓	✓	✓	✓
12:30 - 13:00		✓	✓	✓	✓	✓	✓
13:00 - 13:30		✓	✓	✓	✓	✓	✓
13:30 - 14:00		✓	✓	✓	✓	✓	✓
14:00 - 14:30		✓	✓	✓	✓	✓	✓
14:30 - 15:00		✓	✓	✓	✓	✓	✓
15:00 - 15:30		✓	✓	✓	✓	✓	✓
15:30 - 16:00		✓	✓	✓	✓	✓	✓
16:00 - 16:30		✓	✓	✓	✓	✓	✓
16:30 - 17:00		✓	✓	✓	✓	✓	✓
17:00 - 17:30		✓	✓	✓	✓	✓	✓
17:30 - 18:00		✓	✓	✓	✓	✓	✓

Verified by Tommy Lau (ES)   
 Date 18/1/2018



# 地盆人手灑水記錄表(2018)

地點: <i>Slope Drain</i>	星期日	星期一	星期二	星期三	星期四	星期五	星期六
	1月7日	1月8日	1月9日	1月10日	1月11日	1月12日	1月13日
8:00 - 8:30		✓	✓	✓	✓	✓	✓
8:30 - 9:00		✓	✓	✓	✓	✓	✓
9:00 - 9:30		✓	✓	✓	✓	✓	✓
9:30 - 10:00		✓	✓	✓	✓	✓	✓
10:00 - 10:30		✓	✓	✓	✓	✓	✓
10:30 - 11:00		✓	✓	✓	✓	✓	✓
11:00 - 11:30		✓	✓	✓	✓	✓	✓
11:30 - 12:00		✓	✓	✓	✓	✓	✓
12:00 - 12:30		✓	✓	✓	✓	✓	✓
12:30 - 13:00		✓	✓	✓	✓	✓	✓
13:00 - 13:30		✓	✓	✓	✓	✓	✓
13:30 - 14:00		✓	✓	✓	✓	✓	✓
14:00 - 14:30		✓	✓	✓	✓	✓	✓
14:30 - 15:00		✓	✓	✓	✓	✓	✓
15:00 - 15:30		✓	✓	✓	✓	✓	✓
15:30 - 16:00		✓	✓	✓	✓	✓	✓
16:00 - 16:30		✓	✓	✓	✓	✓	✓
16:30 - 17:00		✓	✓	✓	✓	✓	✓
17:00 - 17:30		✓	✓	✓	✓	✓	✓
17:30 - 18:00		✓	✓	✓	✓	✓	✓

Verified by Tommy Law (ES)

Date

*Tom*

*Tom*

*Tom*

*Tom*

*Tom*

*Tom*

*[Signature]*

18/11/2018

# 地盆人手灑水記錄表(2018)

地點: Carton Mixer	星期日	星期一	星期二	星期三	星期四	星期五	星期六
	1月7日	1月8日	1月9日	1月10日	1月11日	1月12日	1月13日
8:00 - 8:30		✓	✓	✓	✓	✓	✓
8:30 - 9:00		✓	✓	✓	✓	✓	✓
9:00 - 9:30		✓	✓	✓	✓	✓	✓
9:30 - 10:00		✓	✓	✓	✓	✓	✓
10:00 - 10:30		✓	✓	✓	✓	✓	✓
10:30 - 11:00		✓	✓	✓	✓	✓	✓
11:00 - 11:30		✓	✓	✓	✓	✓	✓
11:30 - 12:00		✓	✓	✓	✓	✓	✓
12:00 - 12:30		✓	✓	✓	✓	✓	✓
12:30 - 13:00		✓	✓	✓	✓	✓	✓
13:00 - 13:30		✓	✓	✓	✓	✓	✓
13:30 - 14:00		✓	✓	✓	✓	✓	✓
14:00 - 14:30		✓	✓	✓	✓	✓	✓
14:30 - 15:00		✓	✓	✓	✓	✓	✓
15:00 - 15:30		✓	✓	✓	✓	✓	✓
15:30 - 16:00		✓	✓	✓	✓	✓	✓
16:00 - 16:30		✓	✓	✓	✓	✓	✓
16:30 - 17:00		✓	✓	✓	✓	✓	✓
17:00 - 17:30		✓	✓	✓	✓	✓	✓
17:30 - 18:00		✓	✓	✓	✓	✓	✓

Verified by Tommy Law (ES)

Date

*[Signature]*  
18/1/2018






NL7286

# 地盆水車灑水記錄表(2018)

星期日	星期一	星期二	星期三	星期四	星期五	星期六
1月7日	1月8日	1月9日	1月10日	1月11日	1月12日	1月13日
8:00 - 8:30	✓	✓	✓	✓	✓	✓
8:30 - 9:00	✓	✓	✓	✓	✓	✓
9:00 - 9:30	✓	✓	✓	✓	✓	✓
9:30 - 10:00	✓	✓	✓	✓	✓	✓
10:00 - 10:30	✓	✓	✓	✓	✓	✓
10:30 - 11:00	✓	✓	✓	✓	✓	✓
11:00 - 11:30	✓	✓	✓	✓	✓	✓
11:30 - 12:00	✓	✓	✓	✓	✓	✓
12:00 - 12:30	✓	✓	✓	✓	✓	✓
12:30 - 13:00	✓	✓	✓	✓	✓	✓
13:00 - 13:30	✓	✓	✓	✓	✓	✓
13:30 - 14:00	✓	✓	✓	✓	✓	✓
14:00 - 14:30	✓	✓	✓	✓	✓	✓
14:30 - 15:00	✓	✓	✓	✓	✓	✓
15:00 - 15:30	✓	✓	✓	✓	✓	✓
15:30 - 16:00	✓	✓	✓	✓	✓	✓
16:00 - 16:30	✓	✓	✓	✓	✓	✓
16:30 - 17:00	✓	✓	✓	✓	✓	✓
17:00 - 17:30	✓	✓	✓	✓	✓	✓
17:30 - 18:00	✓	✓	✓	✓	✓	✓

Loi Kam Tin    Loi Kam Tin    Loi Kam Tin    Loi Kam Tin    Loi Kam Tin    Loi Kam Tin    Loi Kam Tin

Verified by Tommy Law (ES)   
 Date 15/1/2018





**Contract No. HY/2013/12**  
**Tuen Mun - Chek Lap Kok Link - Northern Connection Toll Plaza and Associated Works**

**Investigation Report on Action or Limit Level Non-compliance**

<b>Date</b>	16 January 2018		
<b>Environmental Aspect</b>	Air Quality		
<b>Parameter</b>	1-hour TSP		
<b>Monitoring Location</b>	ASR5 (Pillar Point Fire Station)		
<b>Measurement Period</b>	13:22 – 14:22	14:24-15:24	15:26-16:26
<b>Action Level (ug/m<sup>3</sup>)</b>	340		
<b>Limit Level (ug/m<sup>3</sup>)</b>	500		
<b>Measured Level (ug/m<sup>3</sup>)</b>	<b>396</b>	<b>384</b>	<b>345</b>
<b>Exceedance</b>	<b>Action Level</b>		
<b>Possible reason for Action or Limit Level Non-compliance</b>	<ol style="list-style-type: none"> <li>1. According to site information provided by CRBC-Kaden JV, construction of canopy at TD1, road pavement at +19 Platform and Central Divider, drainage works at Portion H, +19 Platform and Underpass, construction of column at Portion F and construction of bamboo scaffolding at footbridge were conducted on 16 January 2018.</li> <li>2. To reduce dust impact arising from the construction, mitigation measures for construction dust control were implemented. They include the followings:- <ul style="list-style-type: none"> <li>• water trucks were arranged on haul road to keep road surface wet (refer to photo 1 and water spraying record)</li> <li>• for un-accessible area, water spraying by workers was provided (refer to photo 2, 8 to 11 and water spraying record)</li> <li>• Hydro seeding or covered part of the exposed slopes and stockpile by tarpaulin sheet (refer to Photo 3 to 5)</li> <li>• to set speed control at 8 km/hr for all vehicles using the haul road (refer to photo 6 and 7)</li> </ul> </li> <li>3. According to the weather station setting up at ASR5 under Contract No. HY/2012/08, south-westerly wind at 1.3 to 1.8 m/s was blowing between 13:00 to 16:00 and east wind at 0.9 m/s was blowing 17:00.</li> <li>4. Review the construction activities at nearby works area Portion F on 16 January 2018, only construction of column was undertaken and most of the site area at Portion F was hard paved. It is unlikely to create heavy construction dust impact. Furthermore, to reduce dust impact arising from the construction area Portion F more effective, the Contractor increase the water spraying frequency to once per 15 mins during working hours.</li> <li>5. During the weekly site inspection 16 January 2018, ET was observed that the contractor was properly implemented the dust mitigation measure under EMIS requirement and no environmental issue related to dust aspect was observed. (Ref. to Photo 8)</li> <li>6. Due to the consecutive 1-hour TSP action level exceedances at ASR5 on 16 January 2018, join site inspection and meeting</li> </ol>		

	<p>with IEC, ER, Contractor and ET were undertaken on 6 February 2018. No dust emitted from the works area was observed during the inspection. Also ER agreed that dust mitigation measures were implemented properly at those works area during the time of monitoring. During the inspection at monitoring station ASR5, we observed a notice stated that some construction activities will be undertaking at Pillar Point Fire Station during the period from end of June 2017 to end of March 2018. (Ref. to Photo 9 &amp; 14 to 16)</p> <p>7. Therefore the exceedance of Air Quality Monitoring at ASR5 was due to other pollutant source rather than the construction site.</p> <p>8. Based on above investigation, the exceedance is unlikely related to the Contract work and no corrective action was required accordingly.</p>
<b>Action to be taken</b>	ET will continue regular audit and inspection for the implemented dust mitigation measures during the construction period.

**Prepared By :** T.W. Tam

**Designation :** Environmental Team Leader

**Signature :** 

**Date :** 7 February 2018



**Photo Record**



**Photo 1** Watering of haul road by water truck to keep road surface wet



**Photo 2** Water spraying by worker for un-accessible area.



**Photo 3** Covered part of the exposed slopes and stockpile by tarpaulin sheet.



**Photo 4** Hydro seeding for the exposed slope at slop 170



**Photo 5** Covered part of the exposed slopes and stockpile by tarpaulin sheet.



**Photo 6** Set speed control at ~8km/hr for all vehicles using the haul road

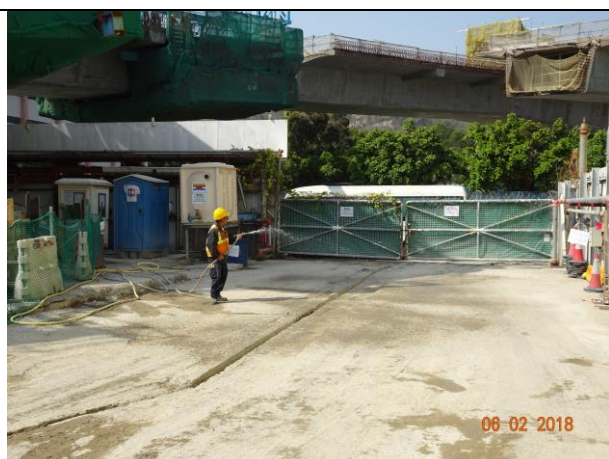




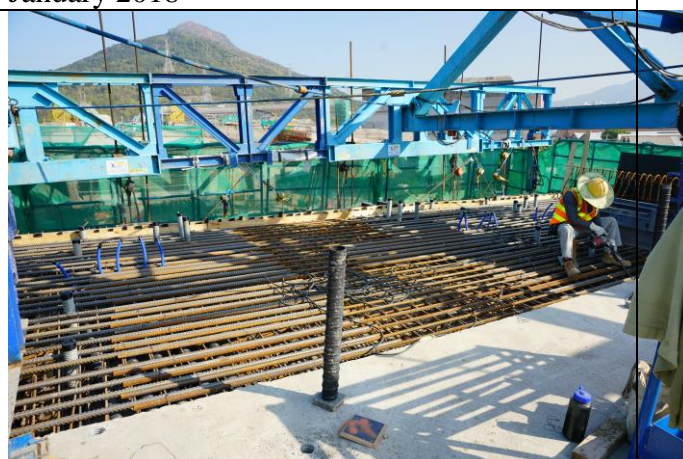
**Photo 7** Set speed control at ~8km/hr for all vehicles using the haul road at Portion F



**Photo 8** Site area keeping wet was observed at Portion F during the joint site inspection on 16 January 2018



**Photo 9** Watering of haul road to keep road surface wet was observed during the site inspection on 6 February 2018



**Photo 10** Construction of Canopy at TD1



**Photo 11** Road pavement works at Platform 19



**Photo 12** Construction of column at Portion F and most works area was keep wet.



**Photo 13** Construction of bamboo scaffolding at footbridge



**Photo 14** Construction works was undertaken at Pillar Point Fire Station



**Photo 15** Photo taken on 6 February 2018 at the roof top of Pillar Point Fire Station



**Photo 16** Photo taken on 6 February 2018 at the roof top of Pillar Point Fire Station



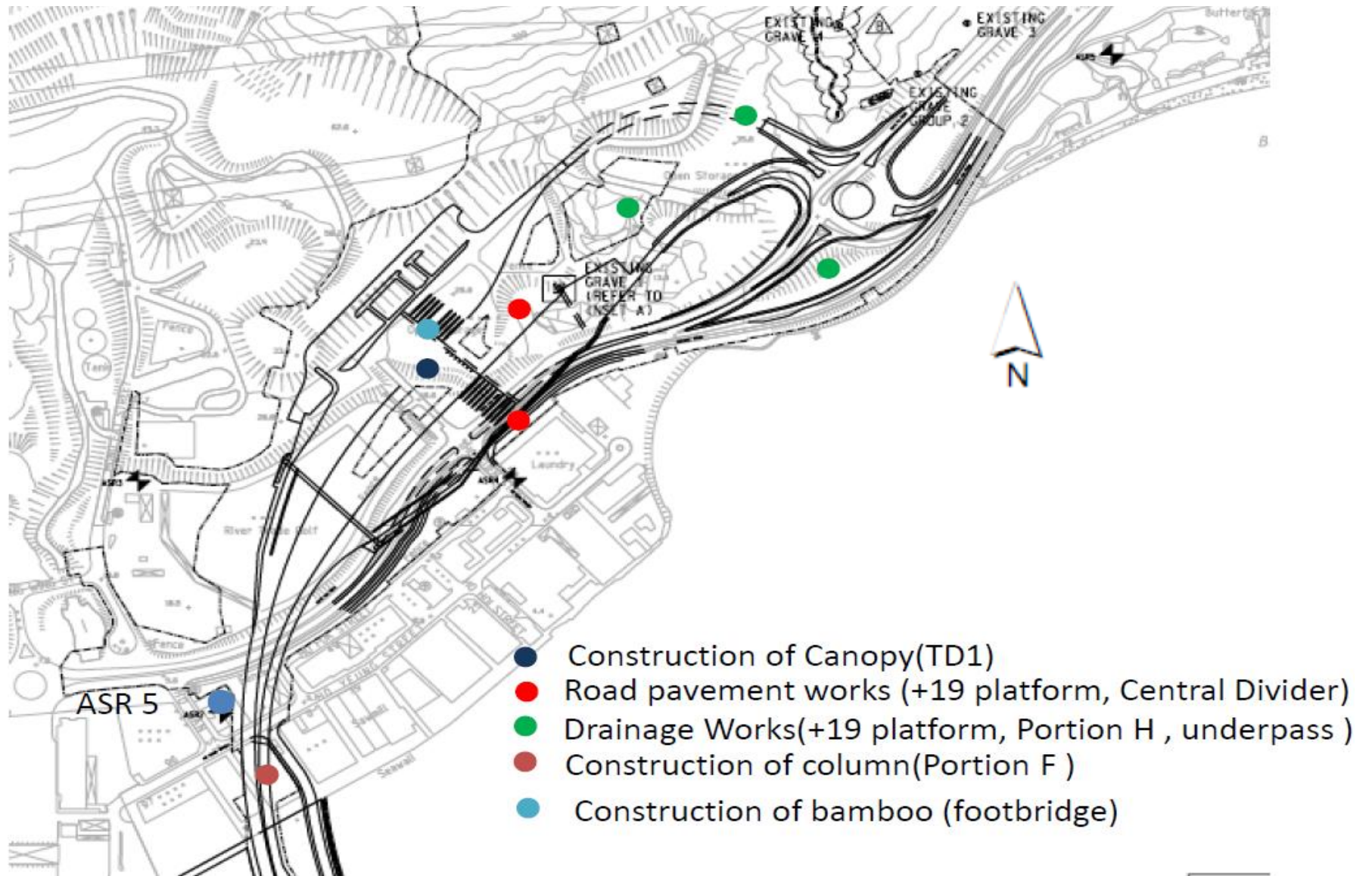


Figure 1. Location Plan

**Table 1. 1-Hr TSP Monitoring Result of 16 January 2018**

TMCLKL	HY/2012/08	16/1/2018	AQMS1	Sunny	13:45	1-hour TSP	198	ug/m3
TMCLKL	HY/2012/08	16/1/2018	AQMS1	Sunny	14:47	1-hour TSP	245	ug/m3
TMCLKL	HY/2012/08	16/1/2018	AQMS1	Sunny	15:49	1-hour TSP	197	ug/m3
TMCLKL	HY/2012/08	16/1/2018	ASR1	Sunny	13:34	1-hour TSP	192	ug/m3
TMCLKL	HY/2012/08	16/1/2018	ASR1	Sunny	14:36	1-hour TSP	192	ug/m3
TMCLKL	HY/2012/08	16/1/2018	ASR1	Sunny	15:38	1-hour TSP	192	ug/m3
TMCLKL	HY/2012/08	16/1/2018	ASR10	Sunny	13:00	1-hour TSP	153	ug/m3
TMCLKL	HY/2012/08	16/1/2018	ASR10	Sunny	14:02	1-hour TSP	198	ug/m3
TMCLKL	HY/2012/08	16/1/2018	ASR10	Sunny	15:04	1-hour TSP	169	ug/m3
TMCLKL	HY/2012/08	16/1/2018	ASR5	Sunny	13:22	1-hour TSP	396	ug/m3
TMCLKL	HY/2012/08	16/1/2018	ASR5	Sunny	14:24	1-hour TSP	384	ug/m3
TMCLKL	HY/2012/08	16/1/2018	ASR5	Sunny	15:26	1-hour TSP	345	ug/m3
TMCLKL	HY/2012/08	16/1/2018	ASR6	Sunny	13:11	1-hour TSP	269	ug/m3
TMCLKL	HY/2012/08	16/1/2018	ASR6	Sunny	14:13	1-hour TSP	287	ug/m3
TMCLKL	HY/2012/08	16/1/2018	ASR6	Sunny	15:15	1-hour TSP	265	ug/m3
TMCLKL	HY/2012/08	16/1/2018	AQMS1	Sunny	16:51	24-hour TSP	154	ug/m3
TMCLKL	HY/2012/08	16/1/2018	ASR1	Sunny	16:40	24-hour TSP	147	ug/m3
TMCLKL	HY/2012/08	16/1/2018	ASR10	Sunny	16:06	24-hour TSP	135	ug/m3
TMCLKL	HY/2012/08	16/1/2018	ASR5	Sunny	16:28	24-hour TSP	197	ug/m3
TMCLKL	HY/2012/08	16/1/2018	ASR6	Sunny	16:17	24-hour TSP	178	ug/m3

**Table 2. Wind Direction and Speed data during Air Quality Monitoring**

Date	Time	Average of Wing Speed (m/s)	Average of Wind Direction (degree)
16/1/2018	13:00	1.8	259
16/1/2018	14:00	1.8	268
16/1/2018	15:00	1.3	230
16/1/2018	16:00	1.3	226
16/1/2018	17:00	0.9	94


**Remarks:**

Wind speed and direction data was extracted from the weather station located at ASR5 set up by ET of Contract HY/2012/08



# 地盆人手灑水記錄表(2018)

地點:	星期日	星期一	星期二	星期三	星期四	星期五	星期六
	1月14日	1月15日	1月16日	1月17日	1月18日	1月19日	1月20日
8:00 - 8:15		✓	✓	✓	✓	✓	✓
8:15 - 8:30		✓	✓	✓	✓	✓	✓
8:30 - 8:45		✓	✓	✓	✓	✓	✓
8:45 - 9:00		✓	✓	✓	✓	✓	✓
9:00 - 9:15		✓	✓	✓	✓	✓	✓
9:15 - 9:30		✓	✓	✓	✓	✓	✓
9:30 - 9:45		✓	✓	✓	✓	✓	✓
9:45 - 10:00		✓	✓	✓	✓	✓	✓
10:00 - 10:15		✓	✓	✓	✓	✓	✓
10:15 - 10:30		✓	✓	✓	✓	✓	✓
10:30 - 10:45		✓	✓	✓	✓	✓	✓
10:45 - 11:00		✓	✓	✓	✓	✓	✓
11:00 - 11:15		✓	✓	✓	✓	✓	✓
11:15 - 11:30		✓	✓	✓	✓	✓	✓
11:30 - 11:45		✓	✓	✓	✓	✓	✓
11:45 - 12:00		✓	✓	✓	✓	✓	✓
12:00 - 12:15		✓	✓	✓	✓	✓	✓
12:15 - 12:30		✓	✓	✓	✓	✓	✓
12:30 - 12:45		✓	✓	✓	✓	✓	✓
12:45 - 13:00		✓	✓	✓	✓	✓	✓
13:00 - 13:15		✓	✓	✓	✓	✓	✓
13:15 - 13:30		✓	✓	✓	✓	✓	✓
13:30 - 13:45		✓	✓	✓	✓	✓	✓
13:45 - 14:00		✓	✓	✓	✓	✓	✓
14:00 - 14:15		✓	✓	✓	✓	✓	✓
14:15 - 14:30		✓	✓	✓	✓	✓	✓
14:30 - 14:45		✓	✓	✓	✓	✓	✓
14:45 - 15:00		✓	✓	✓	✓	✓	✓
15:00 - 15:15		✓	✓	✓	✓	✓	✓
15:15 - 15:30		✓	✓	✓	✓	✓	✓
15:30 - 15:45		✓	✓	✓	✓	✓	✓
15:45 - 16:00		✓	✓	✓	✓	✓	✓
16:00 - 16:15		✓	✓	✓	✓	✓	✓
16:15 - 16:30		✓	✓	✓	✓	✓	✓
16:30 - 16:45		✓	✓	✓	✓	✓	✓
16:45 - 17:00		✓	✓	✓	✓	✓	✓
17:00 - 17:15		✓	✓	✓	✓	✓	✓
17:15 - 17:30		✓	✓	✓	✓	✓	✓
17:30 - 17:45		✓	✓	✓	✓	✓	✓
17:45 - 18:00		✓	✓	✓	✓	✓	✓

  
 22/1/18

# 地盆人手灑水記錄表(2018)


地點: <i>Forster M.</i>	星期日	星期一	星期二	星期三	星期四	星期五	星期六
	1月14日	1月15日	1月16日	1月17日	1月18日	1月19日	1月20日
8:00 - 8:30		✓	✓	✓	✓	✓	✓
8:30 - 9:00		✓	✓	✓	✓	✓	✓
9:00 - 9:30		✓	✓	✓	✓	✓	✓
9:30 - 10:00		✓	✓	✓	✓	✓	✓
10:00 - 10:30		✓	✓	✓	✓	✓	✓
10:30 - 11:00		✓	✓	✓	✓	✓	✓
11:00 - 11:30		✓	✓	✓	✓	✓	✓
11:30 - 12:00		✓	✓	✓	✓	✓	✓
12:00 - 12:30		✓	✓	✓	✓	✓	✓
12:30 - 13:00		✓	✓	✓	✓	✓	✓
13:00 - 13:30		✓	✓	✓	✓	✓	✓
13:30 - 14:00		✓	✓	✓	✓	✓	✓
14:00 - 14:30		✓	✓	✓	✓	✓	✓
14:30 - 15:00		✓	✓	✓	✓	✓	✓
15:00 - 15:30		✓	✓	✓	✓	✓	✓
15:30 - 16:00		✓	✓	✓	✓	✓	✓
16:00 - 16:30		✓	✓	✓	✓	✓	✓
16:30 - 17:00		✓	✓	✓	✓	✓	✓
17:00 - 17:30		✓	✓	✓	✓	✓	✓
17:30 - 18:00		✓	✓	✓	✓	✓	✓

*Handwritten signature*

Verified by *Tommy Lau* (ES)  
 Date *22/1/2018*

# 地盆人手灑水記錄表(2018)

地點: Control Dusky	星期日	星期一	星期二	星期三	星期四	星期五	星期六
	1月14日	1月15日	1月16日	1月17日	1月18日	1月19日	1月20日
8:00 - 8:30	✓	✓	✓	✓	✓	✓	✓
8:30 - 9:00	✓	✓	✓	✓	✓	✓	✓
9:00 - 9:30	✓	✓	✓	✓	✓	✓	✓
9:30 - 10:00	✓	✓	✓	✓	✓	✓	✓
10:00 - 10:30	✓	✓	✓	✓	✓	✓	✓
10:30 - 11:00	✓	✓	✓	✓	✓	✓	✓
11:00 - 11:30	✓	✓	✓	✓	✓	✓	✓
11:30 - 12:00	✓	✓	✓	✓	✓	✓	✓
12:00 - 12:30	✓	✓	✓	✓	✓	✓	✓
12:30 - 13:00	✓	✓	✓	✓	✓	✓	✓
13:00 - 13:30	✓	✓	✓	✓	✓	✓	✓
13:30 - 14:00	✓	✓	✓	✓	✓	✓	✓
14:00 - 14:30	✓	✓	✓	✓	✓	✓	✓
14:30 - 15:00	✓	✓	✓	✓	✓	✓	✓
15:00 - 15:30	✓	✓	✓	✓	✓	✓	✓
15:30 - 16:00	✓	✓	✓	✓	✓	✓	✓
16:00 - 16:30	✓	✓	✓	✓	✓	✓	✓
16:30 - 17:00	✓	✓	✓	✓	✓	✓	✓
17:00 - 17:30	✓	✓	✓	✓	✓	✓	✓
17:30 - 18:00	✓	✓	✓	✓	✓	✓	✓

  
 Verified by Tommy Law (ES)  
 Date 22/1/2018



# 地盆人手灑水記錄表(2018)

地點: Slope Area	星期日	星期一	星期二	星期三	星期四	星期五	星期六
	1月14日	1月15日	1月16日	1月17日	1月18日	1月19日	1月20日
8:00 - 8:30		✓	✓	✓	✓	✓	✓
8:30 - 9:00		✓	✓	✓	✓	✓	✓
9:00 - 9:30		✓	✓	✓	✓	✓	✓
9:30 - 10:00		✓	✓	✓	✓	✓	✓
10:00 - 10:30		✓	✓	✓	✓	✓	✓
10:30 - 11:00		✓	✓	✓	✓	✓	✓
11:00 - 11:30		✓	✓	✓	✓	✓	✓
11:30 - 12:00		✓	✓	✓	✓	✓	✓
12:00 - 12:30		✓	✓	✓	✓	✓	✓
12:30 - 13:00		✓	✓	✓	✓	✓	✓
13:00 - 13:30		✓	✓	✓	✓	✓	✓
13:30 - 14:00		✓	✓	✓	✓	✓	✓
14:00 - 14:30		✓	✓	✓	✓	✓	✓
14:30 - 15:00		✓	✓	✓	✓	✓	✓
15:00 - 15:30		✓	✓	✓	✓	✓	✓
15:30 - 16:00		✓	✓	✓	✓	✓	✓
16:00 - 16:30		✓	✓	✓	✓	✓	✓
16:30 - 17:00		✓	✓	✓	✓	✓	✓
17:00 - 17:30		✓	✓	✓	✓	✓	✓
17:30 - 18:00		✓	✓	✓	✓	✓	✓

Tan Tan Tan Tan Tan Tan Tan

Verified by Tommy Law (ES) *TJ*  
 Date 22/1/2018



NL7286

# 地盆水車灑水記錄表(2018)

星期日	星期一	星期二	星期三	星期四	星期五	星期六
1月14日	1月15日	1月16日	1月17日	1月18日	1月19日	1月20日
8:00 - 8:30	✓	✓	✓	✓	✓	✓
8:30 - 9:00	✓	✓	✓	✓	✓	✓
9:00 - 9:30	✓	✓	✓	✓	✓	✓
9:30 - 10:00	✓	✓	✓	✓	✓	✓
10:00 - 10:30	✓	✓	✓	✓	✓	✓
10:30 - 11:00	✓	✓	✓	✓	✓	✓
11:00 - 11:30	✓	✓	✓	✓	✓	✓
11:30 - 12:00	✓	✓	✓	✓	✓	✓
12:00 - 12:30	✓	✓	✓	✓	✓	✓
12:30 - 13:00	✓	✓	✓	✓	✓	✓
13:00 - 13:30	✓	✓	✓	✓	✓	✓
13:30 - 14:00	✓	✓	✓	✓	✓	✓
14:00 - 14:30	✓	✓	✓	✓	✓	✓
14:30 - 15:00	✓	✓	✓	✓	✓	✓
15:00 - 15:30	✓	✓	✓	✓	✓	✓
15:30 - 16:00	✓	✓	✓	✓	✓	✓
16:00 - 16:30	✓	✓	✓	✓	✓	✓
16:30 - 17:00	✓	✓	✓	✓	✓	✓
17:00 - 17:30	✓	✓	✓	✓	✓	✓
17:30 - 18:00	✓	✓	✓	✓	✓	✓

Loi Kon Tin   Loi Kon Tin   Loi Kon Tin   Loi Kon Tin   Loi Kon Tin   Loi Kon Tin   Loi Kon Tin

Verified by Tommy Law (ES)

Date

*[Signature]*  
22/11/2018

60837

# 地盆水車灑水記錄表(2018)

	星期日	星期一	星期二	星期三	星期四	星期五	星期六
	1月14日	1月15日	1月16日	1月17日	1月18日	1月19日	1月20日
8:00 - 8:30		✓	✓	✓	✓	✓	✓
8:30 - 9:00		✓	✓	✓	✓	✓	✓
9:00 - 9:30		✓	✓	✓	✓	✓	✓
9:30 - 10:00		✓	✓	✓	✓	✓	✓
10:00 - 10:30		✓	✓	✓	✓	✓	✓
10:30 - 11:00		✓	✓	✓	✓	✓	✓
11:00 - 11:30		✓	✓	✓	✓	✓	✓
11:30 - 12:00		✓	✓	✓	✓	✓	✓
12:00 - 12:30		✓	✓	✓	✓	✓	✓
12:30 - 13:00		✓	✓	✓	✓	✓	✓
13:00 - 13:30		✓	✓	✓	✓	✓	✓
13:30 - 14:00		✓	✓	✓	✓	✓	✓
14:00 - 14:30		✓	✓	✓	✓	✓	✓
14:30 - 15:00		✓	✓	✓	✓	✓	✓
15:00 - 15:30		✓	✓	✓	✓	✓	✓
15:30 - 16:00		✓	✓	✓	✓	✓	✓
16:00 - 16:30		✓	✓	✓	✓	✓	✓
16:30 - 17:00		✓	✓	✓	✓	✓	✓
17:00 - 17:30		✓	✓	✓	✓	✓	✓
17:30 - 18:00		✓	✓	✓	✓	✓	✓

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Verified by Tommy Law (ES)  
 Date 20/1/2018

**Contract No. HY/2013/12**  
**Tuen Mun - Chek Lap Kok Link - Northern Connection Toll Plaza and Associated Works**

**Investigation Report on Action or Limit Level Non-compliance**

<b>Date</b>	22 January 2018	
<b>Environmental Aspect</b>	Air Quality	
<b>Parameter</b>	1-hour TSP	
<b>Monitoring Location</b>	ASR5 (Pillar Point Fire Station)	
<b>Measurement Period</b>	13:40-14:40	14:42-15:42
<b>Action Level (ug/m<sup>3</sup>)</b>	340	
<b>Limit Level (ug/m<sup>3</sup>)</b>	500	
<b>Measured Level (ug/m<sup>3</sup>)</b>	<b>363</b>	<b>380</b>
<b>Exceedance</b>	<b>Action Level</b>	
<b>Possible reason for Action or Limit Level Non-compliance</b>	<ol style="list-style-type: none"> <li>1. According to site information provided by CRBC-Kaden JV, construction of canopy at TD1, road pavement at +19 Platform and Central Divider, drainage works at Portion H, +19 Platform and Underpass, construction of column at Portion F and construction of bamboo scaffolding at footbridge were conducted on 22 January 2018.</li> <li>2. To reduce dust impact arising from the construction, mitigation measures for construction dust control were implemented. They include the followings:- <ul style="list-style-type: none"> <li>• water trucks were arranged on haul road to keep road surface wet (refer to photo 1 and water spraying record)</li> <li>• for un-accessible area, water spraying by workers was provided (refer to photo 2, 8 to 11 and water spraying record)</li> <li>• Hydro seeding or covered part of the exposed slopes and stockpile by tarpaulin sheet (refer to Photo 3 to 5)</li> <li>• to set speed control at 8 km/hr for all vehicles using the haul road (refer to photo 6 and 7)</li> </ul> </li> <li>3. According to the weather station setting up at ASR5 under Contract No. HY/2012/08, south-westerly wind at 0.9 to 1.3 m/s was blowing between 13:00 to 14:00 and north-easterly wind at 0.9 to 1.3 m/s was blowing between 15:00 to 16:00.</li> <li>4. Review the construction activities at nearby works area Portion F on 22 January 2018, only construction of column was undertaken and most of the site area at Portion F was hard paved. It is unlikely to create heavy construction dust impact. Furthermore, to reduce dust impact arising from the construction area Portion F more effective, the Contractor increase the water spraying frequency to once per 15 mins during working hours.</li> <li>5. During the weekly site inspection 16 and 23 January 2018, ET was observed that the contractor was properly implemented the dust mitigation measure under EMIS requirement and no environmental issue related to dust aspect was observed. (Ref. to Photo 8 to 10)</li> <li>6. Due to the consecutive 1-hour TSP action level exceedances at ASR5 on 16 January 2018, join site inspection and meeting</li> </ol>	

	<p>with IEC, ER, Contractor and ET were undertaken on 6 February 2018. No dust emitted from the works area was observed during the inspection. Also ER agreed that dust mitigation measures were implemented properly at those works area during the time of monitoring. During the inspection at monitoring station ASR5, we observed a notice stated that some construction activities will be undertaking at Pillar Point Fire Station during the period from end of June 2017 to end of March 2018. (Ref. to Photo 11 &amp; 16 to 18)</p> <p>7. Therefore the exceedance of Air Quality Monitoring at ASR5 was due to other pollutant source rather than the construction site.</p> <p>8. Based on above investigation, the exceedance is unlikely related to the Contract work and no corrective action was required accordingly.</p>
<b>Action to be taken</b>	ET will continue regular audit and inspection for the implemented dust mitigation measures during the construction period.

**Prepared By :** T.W. Tam

**Designation :** Environmental Team Leader

**Signature :** 

**Date :** 7 February 2018



**Photo Record**



**Photo 1** Watering of haul road by water truck to keep road surface wet



**Photo 2** Water spraying by worker for un-accessible area.



**Photo 3** Covered part of the exposed slopes and stockpile by tarpaulin sheet.



**Photo 4** Hydro seeding for the exposed slope at slop 170



**Photo 5** Covered part of the exposed slopes and stockpile by tarpaulin sheet.



**Photo 6** Set speed control at ~8km/hr for all vehicles using the haul road





**Photo 7** Set speed control at ~8km/hr for all vehicles using the haul road at Portion F



**Photo 8** Site area keeping wet was observed at Portion F during the join site inspection on 16 January 2018



**Photo 9** Site area keeping wet was observed at Portion F during the join site inspection on 23 January 2018



**Photo 10** Site area keeping wet was observed at Portion F during the join site inspection on 23 January 2018



**Photo 11** Watering of haul road to keep road surface wet was observed during the site inspection on 6 February 2018



**Photo 12** Construction of drainage a Portion H





**Photo 13** Road pavement works at Platform 19



**Photo 14** Construction of column at Portion F and most works area was keep wet.



**Photo 15** Construction of bamboo scaffolding at footbridge



**Photo 16** Construction works was undertaken at Pillar Point Fire Station



**Photo 17** Photo taken on 6 February 2018 at the roof top of Pillar Point Fire Station



**Photo 18** Photo taken on 6 February 2018 at the roof top of Pillar Point Fire Station





6033

# 地盆水車灑水記錄表(2018)

	星期日	星期一	星期二	星期三	星期四	星期五	星期六
	1月21日	1月22日	1月23日	1月24日	1月25日	1月26日	1月27日
8:00 - 8:30	✓		✓	✓	✓	✓	✓
8:30 - 9:00		✓	✓	✓	✓	✓	✓
9:00 - 9:30		✓	✓	✓	✓	✓	✓
9:30 - 10:00			✓	✓	✓	✓	✓
10:00 - 10:30			✓	✓	✓	✓	✓
10:30 - 11:00			✓	✓	✓	✓	✓
11:00 - 11:30			✓	✓	✓	✓	✓
11:30 - 12:00			✓	✓	✓	✓	✓
12:00 - 12:30		✓	✓	✓	✓	✓	✓
12:30 - 13:00		✓	✓	✓	✓	✓	✓
13:00 - 13:30		✓	✓	✓	✓	✓	✓
13:30 - 14:00		✓	✓	✓	✓	✓	✓
14:00 - 14:30		✓	✓	✓	✓	✓	✓
14:30 - 15:00		✓	✓	✓	✓	✓	✓
15:00 - 15:30		✓	✓	✓	✓	✓	✓
15:30 - 16:00		✓	✓	✓	✓	✓	✓
16:00 - 16:30		✓	✓	✓	✓	✓	✓
16:30 - 17:00		✓	✓	✓	✓	✓	✓
17:00 - 17:30		✓	✓	✓	✓	✓	✓
17:30 - 18:00		✓	✓	✓	✓	✓	✓

Verified by Tommy Law (ES)

Date

29/1/2018

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# 地盆人手灑水記錄表(2018)

地點: <i>29/1/2018</i>	星期日 1月21日	星期一 1月22日	星期二 1月23日	星期三 1月24日	星期四 1月25日	星期五 1月26日	星期六 1月27日
8:00 - 8:15		✓		✓		✓	✓
8:15 - 8:30		✓		✓		✓	✓
8:30 - 8:45		✓		✓		✓	✓
8:45 - 9:00		✓		✓		✓	✓
9:00 - 9:15		✓		✓		✓	✓
9:15 - 9:30		✓		✓		✓	✓
9:30 - 9:45		✓		✓		✓	✓
9:45 - 10:00		✓		✓		✓	✓
10:00 - 10:15		✓		✓		✓	✓
10:15 - 10:30		✓		✓		✓	✓
10:30 - 10:45		✓		✓		✓	✓
10:45 - 11:00		✓		✓		✓	✓
11:00 - 11:15		✓		✓		✓	✓
11:15 - 11:30		✓		✓		✓	✓
11:30 - 11:45		✓		✓		✓	✓
11:45 - 12:00		✓		✓		✓	✓
12:00 - 12:15		✓		✓		✓	✓
12:15 - 12:30		✓		✓		✓	✓
12:30 - 12:45		✓		✓		✓	✓
12:45 - 13:00		✓		✓		✓	✓
13:00 - 13:15		✓		✓		✓	✓
13:15 - 13:30		✓		✓		✓	✓
13:30 - 13:45		✓		✓		✓	✓
13:45 - 14:00		✓		✓		✓	✓
14:00 - 14:15		✓		✓		✓	✓
14:15 - 14:30		✓		✓		✓	✓
14:30 - 14:45		✓		✓		✓	✓
14:45 - 15:00		✓		✓		✓	✓
15:00 - 15:15		✓		✓		✓	✓
15:15 - 15:30		✓		✓		✓	✓
15:30 - 15:45		✓		✓		✓	✓
15:45 - 16:00		✓		✓		✓	✓
16:00 - 16:15		✓		✓		✓	✓
16:15 - 16:30		✓		✓		✓	✓
16:30 - 16:45		✓		✓		✓	✓
16:45 - 17:00		✓		✓		✓	✓
17:00 - 17:15		✓		✓		✓	✓
17:15 - 17:30		✓		✓		✓	✓
17:30 - 17:45		✓		✓		✓	✓
17:45 - 18:00		✓		✓		✓	✓

✓ Certified for Tommy Lam (18)  
Date

*29/1/2018* 

# 地盆水車灑水記錄表(2018)

NL7276

	星期日	星期一	星期二	星期三	星期四	星期五	星期六
8:00 - 8:30	1月21日	1月22日	1月23日	1月24日	1月25日	1月26日	1月27日
8:30 - 9:00		✓	✓	✓	✓	✓	✓
9:00 - 9:30		✓	✓	✓	✓	✓	✓
9:30 - 10:00		✓	✓	✓	✓	✓	✓
10:00 - 10:30		✓	✓	✓	✓	✓	✓
10:30 - 11:00		✓	✓	✓	✓	✓	✓
11:00 - 11:30		✓	✓	✓	✓	✓	✓
11:30 - 12:00		✓	✓	✓	✓	✓	✓
12:00 - 12:30		✓	✓	✓	✓	✓	✓
12:30 - 13:00		✓	✓	✓	✓	✓	✓
13:00 - 13:30		✓	✓	✓	✓	✓	✓
13:30 - 14:00		✓	✓	✓	✓	✓	✓
14:00 - 14:30		✓	✓	✓	✓	✓	✓
14:30 - 15:00		✓	✓	✓	✓	✓	✓
15:00 - 15:30		✓	✓	✓	✓	✓	✓
15:30 - 16:00		✓	✓	✓	✓	✓	✓
16:00 - 16:30		✓	✓	✓	✓	✓	✓
16:30 - 17:00		✓	✓	✓	✓	✓	✓
17:00 - 17:30		✓	✓	✓	✓	✓	✓
17:30 - 18:00		✓	✓	✓	✓	✓	✓

Lot 1000000 Lot 1000000 Lot 1000000 Lot 1000000 Lot 1000000 Lot 1000000

Verified by Tommy Law (ES) 

Date 29/1/2018



# 地盆人手灑水記錄表(2018)

地點:	星期日	星期一	星期二	星期三	星期四	星期五	星期六
Shopeaen -	1月21日	1月22日	1月23日	1月24日	1月25日	1月26日	1月27日
8:00 - 8:30		✓	✓	✓	✓	✓	✓
8:30 - 9:00		✓	✓	✓	✓	✓	✓
9:00 - 9:30		✓	✓	✓	✓	✓	✓
9:30 - 10:00		✓	✓	✓	✓	✓	✓
10:00 - 10:30		✓	✓	✓	✓	✓	✓
10:30 - 11:00		✓	✓	✓	✓	✓	✓
11:00 - 11:30		✓	✓	✓	✓	✓	✓
11:30 - 12:00		✓	✓	✓	✓	✓	✓
12:00 - 12:30		✓	✓	✓	✓	✓	✓
12:30 - 13:00		✓	✓	✓	✓	✓	✓
13:00 - 13:30		✓	✓	✓	✓	✓	✓
13:30 - 14:00		✓	✓	✓	✓	✓	✓
14:00 - 14:30		✓	✓	✓	✓	✓	✓
14:30 - 15:00		✓	✓	✓	✓	✓	✓
15:00 - 15:30		✓	✓	✓	✓	✓	✓
15:30 - 16:00		✓	✓	✓	✓	✓	✓
16:00 - 16:30		✓	✓	✓	✓	✓	✓
16:30 - 17:00		✓	✓	✓	✓	✓	✓
17:00 - 17:30		✓	✓	✓	✓	✓	✓
17:30 - 18:00		✓	✓	✓	✓	✓	✓

Sun Sun Sun Sun Sun Sun Sun

Verified by Tommy Law (ES)

Date 20/1/2018

# 地盆人手灑水記錄表(2018)

地點:	星期日	星期一	星期二	星期三	星期四	星期五	星期六
Post Box 17	1月21日	1月22日	1月23日	1月24日	1月25日	1月26日	1月27日
8:00 - 8:30		✓	✓	✓	✓	✓	✓
8:30 - 9:00		✓	✓	✓	✓	✓	✓
9:00 - 9:30		✓	✓	✓	✓	✓	✓
9:30 - 10:00		✓	✓	✓	✓	✓	✓
10:00 - 10:30		✓	✓	✓	✓	✓	✓
10:30 - 11:00		✓	✓	✓	✓	✓	✓
11:00 - 11:30		✓	✓	✓	✓	✓	✓
11:30 - 12:00		✓	✓	✓	✓	✓	✓
12:00 - 12:30		✓	✓	✓	✓	✓	✓
12:30 - 13:00		✓	✓	✓	✓	✓	✓
13:00 - 13:30		✓	✓	✓	✓	✓	✓
13:30 - 14:00		✓	✓	✓	✓	✓	✓
14:00 - 14:30		✓	✓	✓	✓	✓	✓
14:30 - 15:00		✓	✓	✓	✓	✓	✓
15:00 - 15:30		✓	✓	✓	✓	✓	✓
15:30 - 16:00		✓	✓	✓	✓	✓	✓
16:00 - 16:30		✓	✓	✓	✓	✓	✓
16:30 - 17:00		✓	✓	✓	✓	✓	✓
17:00 - 17:30		✓	✓	✓	✓	✓	✓
17:30 - 18:00		✓	✓	✓	✓	✓	✓

Verified by Tommy Law (FS)

Date

201117 2018

Law

# 地盆人手灑水記錄表(2018)

地點: <i>Plant Order.</i>	星期日	星期一	星期二	星期三	星期四	星期五	星期六
	1月21日	1月22日	1月23日	1月24日	1月25日	1月26日	1月27日
8:00 - 8:30		✓	✓	✓	✓	✓	✓
8:30 - 9:00		✓	✓	✓	✓	✓	✓
9:00 - 9:30		✓	✓	✓	✓	✓	✓
9:30 - 10:00		✓	✓	✓	✓	✓	✓
10:00 - 10:30		✓	✓	✓	✓	✓	✓
10:30 - 11:00		✓	✓	✓	✓	✓	✓
11:00 - 11:30		✓	✓	✓	✓	✓	✓
11:30 - 12:00		✓	✓	✓	✓	✓	✓
12:00 - 12:30		✓	✓	✓	✓	✓	✓
12:30 - 13:00		✓	✓	✓	✓	✓	✓
13:00 - 13:30		✓	✓	✓	✓	✓	✓
13:30 - 14:00		✓	✓	✓	✓	✓	✓
14:00 - 14:30		✓	✓	✓	✓	✓	✓
14:30 - 15:00		✓	✓	✓	✓	✓	✓
15:00 - 15:30		✓	✓	✓	✓	✓	✓
15:30 - 16:00		✓	✓	✓	✓	✓	✓
16:00 - 16:30		✓	✓	✓	✓	✓	✓
16:30 - 17:00		✓	✓	✓	✓	✓	✓
17:00 - 17:30		✓	✓	✓	✓	✓	✓
17:30 - 18:00		✓	✓	✓	✓	✓	✓

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Verified by Tommy Law (ES)

Date 29/1/2018



**Table 1. 1-Hr TSP Monitoring Result of 22 January 2018**

|        |            |           |       |       |       |             |     |       |
|--------|------------|-----------|-------|-------|-------|-------------|-----|-------|
| TMCLKL | HY/2012/08 | 22/1/2018 | AQMS1 | Sunny | 14:03 | 1-hour TSP  | 295 | ug/m3 |
| TMCLKL | HY/2012/08 | 22/1/2018 | AQMS1 | Sunny | 15:05 | 1-hour TSP  | 324 | ug/m3 |
| TMCLKL | HY/2012/08 | 22/1/2018 | AQMS1 | Sunny | 16:07 | 1-hour TSP  | 262 | ug/m3 |
| TMCLKL | HY/2012/08 | 22/1/2018 | ASR1  | Sunny | 13:52 | 1-hour TSP  | 262 | ug/m3 |
| TMCLKL | HY/2012/08 | 22/1/2018 | ASR1  | Sunny | 14:54 | 1-hour TSP  | 253 | ug/m3 |
| TMCLKL | HY/2012/08 | 22/1/2018 | ASR1  | Sunny | 15:56 | 1-hour TSP  | 224 | ug/m3 |
| TMCLKL | HY/2012/08 | 22/1/2018 | ASR10 | Sunny | 13:18 | 1-hour TSP  | 243 | ug/m3 |
| TMCLKL | HY/2012/08 | 22/1/2018 | ASR10 | Sunny | 14:20 | 1-hour TSP  | 249 | ug/m3 |
| TMCLKL | HY/2012/08 | 22/1/2018 | ASR10 | Sunny | 15:22 | 1-hour TSP  | 206 | ug/m3 |
| TMCLKL | HY/2012/08 | 22/1/2018 | ASR5  | Sunny | 13:40 | 1-hour TSP  | 363 | ug/m3 |
| TMCLKL | HY/2012/08 | 22/1/2018 | ASR5  | Sunny | 14:42 | 1-hour TSP  | 380 | ug/m3 |
| TMCLKL | HY/2012/08 | 22/1/2018 | ASR5  | Sunny | 15:44 | 1-hour TSP  | 305 | ug/m3 |
| TMCLKL | HY/2012/08 | 22/1/2018 | ASR6  | Sunny | 13:29 | 1-hour TSP  | 322 | ug/m3 |
| TMCLKL | HY/2012/08 | 22/1/2018 | ASR6  | Sunny | 14:31 | 1-hour TSP  | 310 | ug/m3 |
| TMCLKL | HY/2012/08 | 22/1/2018 | ASR6  | Sunny | 15:33 | 1-hour TSP  | 273 | ug/m3 |
| TMCLKL | HY/2012/08 | 22/1/2018 | AQMS1 | Sunny | 17:09 | 24-hour TSP | 110 | ug/m3 |
| TMCLKL | HY/2012/08 | 22/1/2018 | ASR1  | Sunny | 16:58 | 24-hour TSP | 101 | ug/m3 |
| TMCLKL | HY/2012/08 | 22/1/2018 | ASR10 | Sunny | 16:24 | 24-hour TSP | 72  | ug/m3 |
| TMCLKL | HY/2012/08 | 22/1/2018 | ASR5  | Sunny | 16:46 | 24-hour TSP | 150 | ug/m3 |
| TMCLKL | HY/2012/08 | 22/1/2018 | ASR6  | Sunny | 16:35 | 24-hour TSP | 118 | ug/m3 |

**Table 2. Wind Direction and Speed data during Air Quality Monitoring**

| Date      | Time  | Average of Wind Speed (m/s) | Average of Wind Direction (degree) |
|-----------|-------|-----------------------------|------------------------------------|
| 22/1/2018 | 13:00 | 1.3                         | 256                                |
| 22/1/2018 | 14:00 | 0.9                         | 251                                |
| 22/1/2018 | 15:00 | 1.3                         | 62                                 |
| 22/1/2018 | 16:00 | 0.9                         | 65                                 |

**Remarks:**

Wind speed and direction data was extracted from the weather station located at ASR5 set up by ET of Contract HY/2012/08

## **Appendix K**

### **Checklist for Landscape and Visual Monitoring**

Contract No. HY/2013/12

Tuen Mun – Chek Lap Kok Link – Northern Connection Toll Plaza and Associated Works

Landscape and Visual Checklist



中國路橋  
CRBC



**Monitoring Date: 05<sup>th</sup> January 2018**

| Item | Environmental Protection Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Location/ Timing                   | Implementation Agent             | Status |    |    |    | Remarks                                                                       |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|----------------------------------|--------|----|----|----|-------------------------------------------------------------------------------|
|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                    |                                  | A      | UA | IR | NA |                                                                               |
| 1    | 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, including trees in contractor's works areas. (Tree protection measures will be detailed at Tree Removal Application stage) | All areas /<br>During construction | Design Consultant/<br>Contractor | √      |    |    |    |                                                                               |
| 2    | 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                                                                                                                                      | All areas /<br>During construction | Design Consultant/<br>Contractor | √      |    |    |    | Tree Transplanting works conducted on 22-May-17.                              |
| 3    | Hillside and roadside screen planting to proposed roads, associated structures and slope works                                                                                                                                                                                                                                                                                                                                                                                                                                         | All areas /<br>During construction | Design Consultant/<br>Contractor |        |    |    | √  | Construction of roads planting not commenced yet                              |
| 4    | Hydroseeding or sheeting of soil stockpiles with visually unobtrusive material (in earth tone)                                                                                                                                                                                                                                                                                                                                                                                                                                         | All areas /<br>During construction | Design Consultant/<br>Contractor |        |    |    | √  | No stockpile in the reporting period                                          |
| 5    | Screening of construction works by hoardings around works area in visually unobtrusive colours, to screen works                                                                                                                                                                                                                                                                                                                                                                                                                        | All areas /<br>During construction | Design Consultant/<br>Contractor |        |    |    | √  | For some area, erection of hoarding was not feasible due to the limitation of |



|    |                                                                                                                                                                                                                                                                                     |                                    |                                     |   |  |  |   |                                                                        |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|-------------------------------------|---|--|--|---|------------------------------------------------------------------------|
|    |                                                                                                                                                                                                                                                                                     |                                    |                                     |   |  |  |   | traffic sight line; water barrier with panel was used to screen works. |
| 6  | Control night-time lighting and glare by hooding all lights                                                                                                                                                                                                                         | All areas /<br>During construction | Design<br>Consultant/<br>Contractor | √ |  |  |   | Only temporary traffic management lighting was applied.                |
| 7  | Ensure no run-off into water body adjacent to the Project Area                                                                                                                                                                                                                      | All areas /<br>During construction | Design<br>Consultant/<br>Contractor | √ |  |  |   |                                                                        |
| 8  | Avoidance of excessive height and bulk of buildings and structures                                                                                                                                                                                                                  | All areas /<br>During construction | Design<br>Consultant/<br>Contractor |   |  |  | √ | No high-rise building would be constructed.                            |
| 9  | Recycle/Reuse all felled trees and vegetation, e.g. mulching                                                                                                                                                                                                                        | All areas /<br>During construction | Design<br>Consultant/<br>Contractor |   |  |  | √ |                                                                        |
| 10 | Compensatory tree planting shall be provided to the satisfaction of relevant Government departments. 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 | All areas /<br>During construction | Design<br>Consultant/<br>Contractor |   |  |  | √ | Compensatory planting will be carry out in later stage of the project. |

Legend: A=Acceptable, UA= Unacceptable, IR=Improvement Required, N/A=Not Applicable

Note: All item reference to Technical Memorandum on Environmental Impact Assessment, TM-CLKL EIA Section 10.9 & Project EM&A Manual Section 7.6

Checked and Monitored by: Chung Koon Wah Albert (RLA) No. R-150 (Date) 2/2/2018

Checked by: TIPAN (ET) 7/2/2018 (Date)

Checked by: (IEC) 8/2/2018 (Date)

(T'ANG, FAN CHEONG)



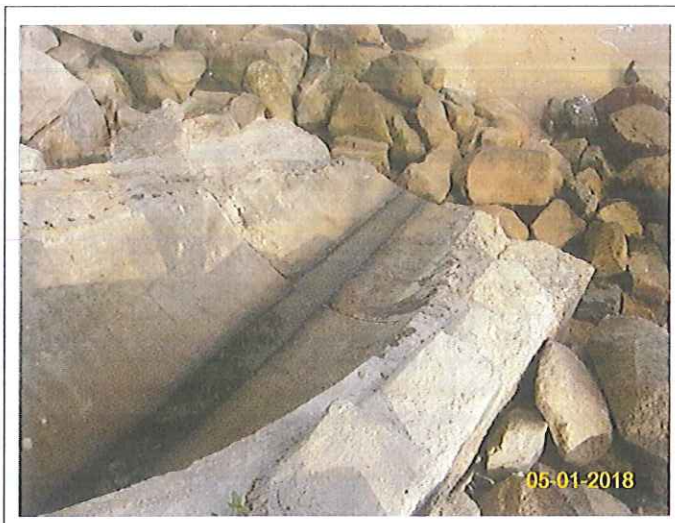
Item 1. Existing trees on boundary of the Project Area should be protected carefully during construction.



Item 2. Tree Transplanting works conducted on 22-May-17.



Item 5. Hoarding with panel around works area & Item 6. Temporary traffic management lighting.



Item 7. Ensure no run-off into water body.



Contract No. HY/2013/12

Tuen Mun – Chek Lap Kok Link – Northern Connection Toll Plaza and Associated Works

Landscape and Visual Checklist



中國路橋  
CRBC



**Monitoring Date: 12<sup>th</sup> January 2018**


| Item | Environmental Protection Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Location/ Timing                   | Implementation Agent             | Status |    |    |    | Remarks                                                                       |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|----------------------------------|--------|----|----|----|-------------------------------------------------------------------------------|
|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                    |                                  | A      | UA | IR | NA |                                                                               |
| 1    | 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, including trees in contractor's works areas. (Tree protection measures will be detailed at Tree Removal Application stage) | All areas /<br>During construction | Design Consultant/<br>Contractor | √      |    |    |    |                                                                               |
| 2    | 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                                                                                                                                      | All areas /<br>During construction | Design Consultant/<br>Contractor | √      |    |    |    | Tree Transplanting works conducted on 22-May-17.                              |
| 3    | Hillside and roadside screen planting to proposed roads, associated structures and slope works                                                                                                                                                                                                                                                                                                                                                                                                                                         | All areas /<br>During construction | Design Consultant/<br>Contractor |        |    |    | √  | Construction of roads planting not commenced yet                              |
| 4    | Hydroseeding or sheeting of soil stockpiles with visually unobtrusive material (in earth tone)                                                                                                                                                                                                                                                                                                                                                                                                                                         | All areas /<br>During construction | Design Consultant/<br>Contractor |        |    |    | √  | No stockpile in the reporting period                                          |
| 5    | Screening of construction works by hoardings around works area in visually unobtrusive colours, to screen works                                                                                                                                                                                                                                                                                                                                                                                                                        | All areas /<br>During construction | Design Consultant/<br>Contractor |        |    |    | √  | For some area, erection of hoarding was not feasible due to the limitation of |

|    |                                                                                                                                                                                                                                                                                     |                                 |                               |   |  |  |   |                                                                        |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|-------------------------------|---|--|--|---|------------------------------------------------------------------------|
|    |                                                                                                                                                                                                                                                                                     |                                 |                               |   |  |  |   | traffic sight line; water barrier with panel was used to screen works. |
| 6  | Control night-time lighting and glare by hooding all lights                                                                                                                                                                                                                         | All areas / During construction | Design Consultant/ Contractor | √ |  |  |   | Only temporary traffic management lighting was applied.                |
| 7  | Ensure no run-off into water body adjacent to the Project Area                                                                                                                                                                                                                      | All areas / During construction | Design Consultant/ Contractor | √ |  |  |   |                                                                        |
| 8  | Avoidance of excessive height and bulk of buildings and structures                                                                                                                                                                                                                  | All areas / During construction | Design Consultant/ Contractor |   |  |  | √ | No high-rise building would be constructed.                            |
| 9  | Recycle/Reuse all felled trees and vegetation, e.g. mulching                                                                                                                                                                                                                        | All areas / During construction | Design Consultant/ Contractor |   |  |  | √ |                                                                        |
| 10 | Compensatory tree planting shall be provided to the satisfaction of relevant Government departments. 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 | All areas / During construction | Design Consultant/ Contractor |   |  |  | √ | Compensatory planting will be carry out in later stage of the project. |

Legend: A=Acceptable, UA= Unacceptable, IR=Improvement Required, N/A=Not Applicable

Note: All item reference to Technical Memorandum on Environmental Impact Assessment, TM-CLKL EIA Section 10.9 & Project EM&A Manual Section 7.6

Checked and Monitored by: Chung Koon Wah Albert (RLA) No. R-150 (Date) 2/2/2018

Checked by:  T. T. Tam (ET) 7/2/2018 (Date)

Checked by:  K. P. Chan (IEC) 8/2/2018 (Date)



Item 1. Existing trees on boundary of the Project Area should be protected carefully during construction.



Item 2. Tree Transplanting works conducted on 22-May-17.





Item 5. Hoarding with panel around works area & Item 6. Temporary traffic management lighting.



Item 7. Ensure no run-off into water body.

Contract No. HY/2013/12

Tuen Mun – Chek Lap Kok Link – Northern Connection Toll Plaza and Associated Works

Landscape and Visual Checklist



中國路橋  
CRBC



**Monitoring Date: 19<sup>th</sup> January 2018**

| Item | Environmental Protection Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Location/ Timing                   | Implementation Agent             | Status |    |    |    | Remarks                                                                       |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|----------------------------------|--------|----|----|----|-------------------------------------------------------------------------------|
|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                    |                                  | A      | UA | IR | NA |                                                                               |
| 1    | 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, including trees in contractor's works areas. (Tree protection measures will be detailed at Tree Removal Application stage) | All areas /<br>During construction | Design Consultant/<br>Contractor | √      |    |    |    |                                                                               |
| 2    | 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                                                                                                                                      | All areas /<br>During construction | Design Consultant/<br>Contractor | √      |    |    |    | Tree Transplanting works conducted on 22-May-17.                              |
| 3    | Hillside and roadside screen planting to proposed roads, associated structures and slope works                                                                                                                                                                                                                                                                                                                                                                                                                                         | All areas /<br>During construction | Design Consultant/<br>Contractor |        |    |    | √  | Construction of roads planting not commenced yet                              |
| 4    | Hydroseeding or sheeting of soil stockpiles with visually unobtrusive material (in earth tone)                                                                                                                                                                                                                                                                                                                                                                                                                                         | All areas /<br>During construction | Design Consultant/<br>Contractor |        |    |    | √  | No stockpile in the reporting period                                          |
| 5    | Screening of construction works by hoardings around works area in visually unobtrusive colours, to screen works                                                                                                                                                                                                                                                                                                                                                                                                                        | All areas /<br>During construction | Design Consultant/<br>Contractor |        |    |    | √  | For some area, erection of hoarding was not feasible due to the limitation of |

|    |                                                                                                                                                                                                                                                                                     |                                 |                               |   |  |  |  |   |                                                                        |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|-------------------------------|---|--|--|--|---|------------------------------------------------------------------------|
|    |                                                                                                                                                                                                                                                                                     |                                 |                               |   |  |  |  |   | traffic sight line; water barrier with panel was used to screen works. |
| 6  | Control night-time lighting and glare by hooding all lights                                                                                                                                                                                                                         | All areas / During construction | Design Consultant/ Contractor | √ |  |  |  |   | Only temporary traffic management lighting was applied.                |
| 7  | Ensure no run-off into water body adjacent to the Project Area                                                                                                                                                                                                                      | All areas / During construction | Design Consultant/ Contractor | √ |  |  |  |   |                                                                        |
| 8  | Avoidance of excessive height and bulk of buildings and structures                                                                                                                                                                                                                  | All areas / During construction | Design Consultant/ Contractor |   |  |  |  | √ | No high-rise building would be constructed.                            |
| 9  | Recycle/Reuse all felled trees and vegetation, e.g. mulching                                                                                                                                                                                                                        | All areas / During construction | Design Consultant/ Contractor |   |  |  |  | √ |                                                                        |
| 10 | Compensatory tree planting shall be provided to the satisfaction of relevant Government departments. 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 | All areas / During construction | Design Consultant/ Contractor |   |  |  |  | √ | Compensatory planting will be carry out in later stage of the project. |

Legend: A=Acceptable, UA= Unacceptable, IR=Improvement Required, N/A=Not Applicable

Note: All item reference to Technical Memorandum on Environmental Impact Assessment, TM-CLKL EIA Section 10.9 & Project EM&A Manual Section 7.6

Checked and Monitored by: Chung Koon Wah Albert (RLA) No. R-150 (Date) 2/2/2018

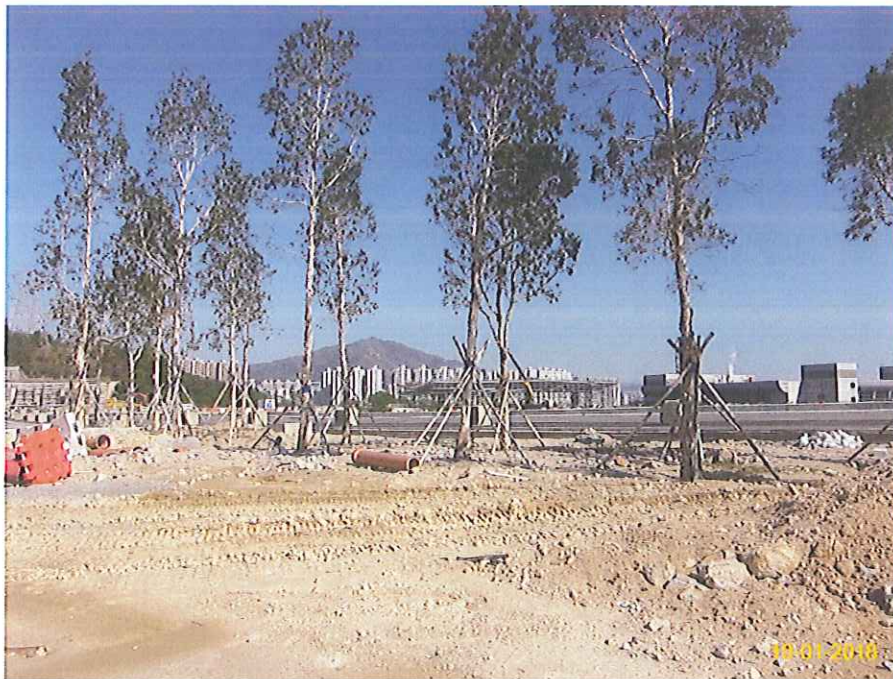
Checked by: [Signature] (ET) 7/2/2018 (Date)

Checked by: [Signature] (IEC) 8/2/2018 (Date)





Item 1. Existing trees on boundary of the Project Area should be protected carefully during construction.



Item 2. Tree Transplanting works conducted on 22-May-17.



Item 5. Hoarding with panel around works area & Item 6. Temporary traffic management lighting.



Item 7. Ensure no run-off into water body.

Contract No. HY/2013/12

Tuen Mun – Chek Lap Kok Link – Northern Connection Toll Plaza and Associated Works

Landscape and Visual Checklist



中國路橋  
CRBC



**Monitoring Date: 26<sup>th</sup> January 2018**

| Item | Environmental Protection Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Location/ Timing                   | Implementation Agent             | Status |    |    |    | Remarks                                                                       |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|----------------------------------|--------|----|----|----|-------------------------------------------------------------------------------|
|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                    |                                  | A      | UA | IR | NA |                                                                               |
| 1    | 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, including trees in contractor's works areas. (Tree protection measures will be detailed at Tree Removal Application stage) | All areas /<br>During construction | Design Consultant/<br>Contractor | √      |    |    |    |                                                                               |
| 2    | 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                                                                                                                                      | All areas /<br>During construction | Design Consultant/<br>Contractor | √      |    |    |    | Tree Transplanting works conducted on 22-May-17.                              |
| 3    | Hillside and roadside screen planting to proposed roads, associated structures and slope works                                                                                                                                                                                                                                                                                                                                                                                                                                         | All areas /<br>During construction | Design Consultant/<br>Contractor |        |    |    | √  | Construction of roads planting not commenced yet                              |
| 4    | Hydroseeding or sheeting of soil stockpiles with visually unobtrusive material (in earth tone)                                                                                                                                                                                                                                                                                                                                                                                                                                         | All areas /<br>During construction | Design Consultant/<br>Contractor |        |    |    | √  | No stockpile in the reporting period                                          |
| 5    | Screening of construction works by hoardings around works area in visually unobtrusive colours, to screen works                                                                                                                                                                                                                                                                                                                                                                                                                        | All areas /<br>During construction | Design Consultant/<br>Contractor |        |    |    | √  | For some area, erection of hoarding was not feasible due to the limitation of |



|    |                                                                                                                                                                                                                                                                                     |                                 |                               |   |  |  |  |   |                                                                        |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|-------------------------------|---|--|--|--|---|------------------------------------------------------------------------|
|    |                                                                                                                                                                                                                                                                                     |                                 |                               |   |  |  |  |   | traffic sight line; water barrier with panel was used to screen works. |
| 6  | Control night-time lighting and glare by hooding all lights                                                                                                                                                                                                                         | All areas / During construction | Design Consultant/ Contractor | √ |  |  |  |   | Only temporary traffic management lighting was applied.                |
| 7  | Ensure no run-off into water body adjacent to the Project Area                                                                                                                                                                                                                      | All areas / During construction | Design Consultant/ Contractor | √ |  |  |  |   |                                                                        |
| 8  | Avoidance of excessive height and bulk of buildings and structures                                                                                                                                                                                                                  | All areas / During construction | Design Consultant/ Contractor |   |  |  |  | √ | No high-rise building would be constructed.                            |
| 9  | Recycle/Reuse all felled trees and vegetation, e.g. mulching                                                                                                                                                                                                                        | All areas / During construction | Design Consultant/ Contractor |   |  |  |  | √ |                                                                        |
| 10 | Compensatory tree planting shall be provided to the satisfaction of relevant Government departments. 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 | All areas / During construction | Design Consultant/ Contractor |   |  |  |  | √ | Compensatory planting will be carry out in later stage of the project. |

Legend: A=Acceptable, UA= Unacceptable, IR=Improvement Required, N/A=Not Applicable

Note: All item reference to Technical Memorandum on Environmental Impact Assessment, TM-CLKL EIA Section 10.9 & Project EM&A Manual Section 7.6

Checked and Monitored by: Chung Koon Wah Albert (RLA) No. R-150 (Date) 2/2/2018

Checked by: [Signature] (ET) 7/2/2018 (Date)

Checked by: [Signature] (IEC) 8/2/2018 (Date)





Item 1. Existing trees on boundary of the Project Area should be protected carefully during construction.

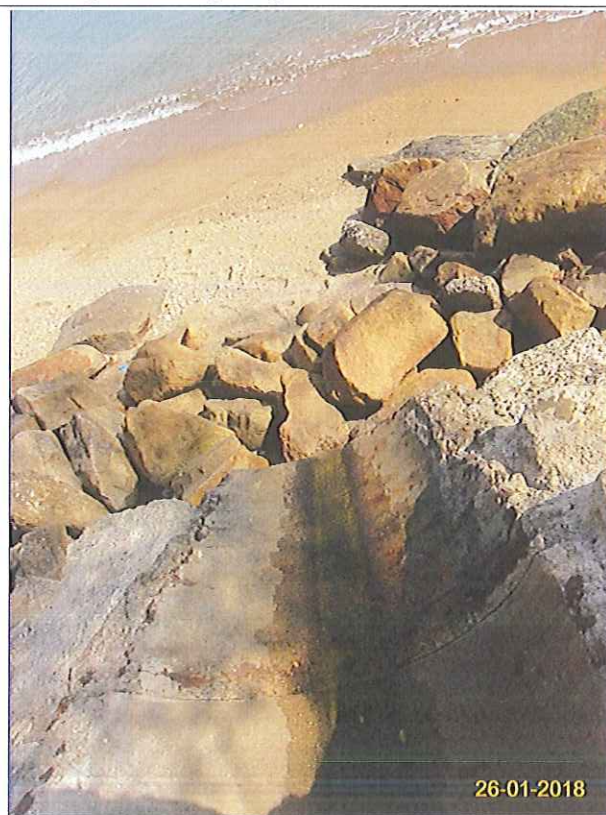


Item 2. Tree Transplanting works was conducted on 22-May-17.





Item 5. Hoarding with panel around works area & Item 6. Temporary traffic management lighting.



Item 7. Ensure no run-off into water body.

## **Appendix L**

### **Monthly Summary Waste Flow Table**

## Appendix A –Monthly Waste Flow Table

Monthly Summary Waste Flow Table for 2018 (year)

| Month     | Annual Quantities of Inert C&D Materials Generated Monthly |                          |                          |                          |                          |                          | Annual Quantities of C&D Wastes Generated Monthly |                                          |                                |                |                          |
|-----------|------------------------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---------------------------------------------------|------------------------------------------|--------------------------------|----------------|--------------------------|
|           | Total Quantity Generated                                   | Broken Concrete          | Reused in the Contract   | Reused in other Projects | Disposed as Public Fill  | Imported Fill            | Metals (see note 4)                               | Paper / cardboard packaging (see note 4) | Plastics & Rubber (see note 2) | Chemical Waste | Others (general refuse)  |
|           | (in '000m <sup>3</sup> )                                   | (in '000m <sup>3</sup> ) | (in '000m <sup>3</sup> ) | (in '000m <sup>3</sup> ) | (in '000m <sup>3</sup> ) | (in '000m <sup>3</sup> ) | (in '000kg)                                       | (in '000kg)                              | (in '000kg)                    | (in '000kg)    | (in '000m <sup>3</sup> ) |
| Jan       | 3.292                                                      | 0.000                    | 0.180                    | 0.802                    | 2.000                    | 0.000                    | 0.000                                             | 0.000                                    | 0.000                          | 0.000          | 0.310                    |
| Feb       | 0.000                                                      |                          |                          |                          |                          |                          |                                                   |                                          |                                |                |                          |
| Mar       | 0.000                                                      |                          |                          |                          |                          |                          |                                                   |                                          |                                |                |                          |
| Apr       | 0.000                                                      |                          |                          |                          |                          |                          |                                                   |                                          |                                |                |                          |
| May       | 0.000                                                      |                          |                          |                          |                          |                          |                                                   |                                          |                                |                |                          |
| June      | 0.000                                                      |                          |                          |                          |                          |                          |                                                   |                                          |                                |                |                          |
| Sub-total | 3.292                                                      |                          |                          |                          |                          |                          |                                                   |                                          |                                |                |                          |
| July      | 0.000                                                      |                          |                          |                          |                          |                          |                                                   |                                          |                                |                |                          |
| Aug       | 0.000                                                      |                          |                          |                          |                          |                          |                                                   |                                          |                                |                |                          |
| Sept      | 0.000                                                      |                          |                          |                          |                          |                          |                                                   |                                          |                                |                |                          |
| Oct       | 0.000                                                      |                          |                          |                          |                          |                          |                                                   |                                          |                                |                |                          |
| Nov       | 0.000                                                      |                          |                          |                          |                          |                          |                                                   |                                          |                                |                |                          |
| Dec       | 0.000                                                      |                          |                          |                          |                          |                          |                                                   |                                          |                                |                |                          |
| Total     | 3.292                                                      | 0.000                    | 0.180                    | 0.802                    | 2.000                    | 0.000                    | 0.000                                             | 0.000                                    | 0.000                          | 0.000          | 0.310                    |

Notes:

- 1 The waste flow table shall also include C&D materials that are specified in the contract to be imported for use at the Site.
- 2 Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging materials.
- 3 Broken concrete for recycling into aggregates.



## **Appendix M**

### **Environmental Mitigation and Enhancement Measures Implementation Schedule (EMIS)**

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**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<br>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<br>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<br>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<br>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<br>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<br>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<br>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<br>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<br>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<br>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<br>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<br>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<br>Manual                 |  | Y |  | ✓ |

**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 |   | ✓      |

**Ecology**

| EIA reference | EM&A Manual reference | Environmental Protection Measures | Location/ Timing | Implementation Agent | Relevant Standard or Requirement | Implementation Stages |   |   | Status |
|---------------|-----------------------|-----------------------------------|------------------|----------------------|----------------------------------|-----------------------|---|---|--------|
|               |                       |                                   |                  |                      |                                  | D                     | C | O |        |

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ENVIRONMENTAL MITIGATION AND ENHANCEMENT MEASURE IMPLEMENTATION SCHEDULE**

|       |           |                                                                                                                            |                                                             |                               |       |   |   |  |   |
|-------|-----------|----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|-------------------------------|-------|---|---|--|---|
| 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 |  | ✓ |

**Landfill Gas Hazard Assessment**

| 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                  | <u>Appointment of Safety Officer</u><br>Appoint a properly trained safety officer and provide with appropriate equipment to measure and monitor LFG hazard. 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 appropriately qualified person. | Construction Stage | Contractor           | EPD/TR8/97 - Landfill Gas Hazard Assessment Guidance Note |                       | Y |   | ✓      |
| 14.12.2       | -                     | <u>Safety Measures - Excavation</u>                                                                                                                                                                                                                                                                                                                     | Construction Stage | Contractor           | EPD/TR8/97 -                                              |                       | Y |   | ✓      |



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|         |   |                                                                                                                                                                                                                                                                                                                                                                           |                                                                           |            |                                                           |  |   |  |   |
|---------|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|------------|-----------------------------------------------------------|--|---|--|---|
|         |   | 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.                                                                                                                                                                                  |                                                                           |            | Landfill Gas Hazard Assessment Guidance Note              |  |   |  |   |
| 14.12.2 | - | <u>Safety Measures – Welding, Flame- Cutting and Hot works</u><br>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><br>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><br>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><br>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 each working day. | Services & utilities / Construction Stage                                 | Contractor | EPD/TR8/97 - Landfill Gas Hazard Assessment Guidance Note |  | Y |  | ✓ |
| 14.12.2 | - | <u>Safety Measures – Fire Safety</u><br>Adequate fire safety equipments should be provided on site. Workers and visitors should be notified of the potential fire hazards. Safety notices should be                                                                                                                                                                       | Construction Stage                                                        | Contractor | EPD/TR8/97 - Landfill Gas Hazard Assessment               |  | Y |  | ✓ |

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|         |   |                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                     |            |                                                           |  |   |  |   |
|---------|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|------------|-----------------------------------------------------------|--|---|--|---|
|         |   | posted around the site warning the anger and potential hazards.                                                                                                                                                                                                                                                                                                                                                                        |                                     |            | Guidance Note                                             |  |   |  |   |
| 14.12.1 | - | <u>Safety Measures – Confined Spaces</u><br>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><br>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, including trees in contractor's works areas. (Tree protection measures will be detailed at Tree Removal Application stage) (CM1) | All areas/detailed design/ during construction | Design Consultant/ Contractor | TMEIA                            | Y                     | Y |   | ✓      |
| 10.9          | 7.6                   | Trees unavoidably affected by the works shall be transplanted where practical. Trees will be                                                                                                                                                                                                                                                                                                                                                                                                                                                 | All areas/detailed design/ during              | Design Consultant/            | TMEIA                            | Y                     | Y |   | NA     |

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|      |     |                                                                                                                                                                                                                                                                                                            |                                                                               |                                     |       |   |   |   |     |
|------|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|-------------------------------------|-------|---|---|---|-----|
|      |     | 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) | construction                                                                  | Contractor                          |       |   |   |   |     |
| 10.9 | 7.6 | Hillside and roadside screen planting to proposed roads, associated structures and slope works (CM3)                                                                                                                                                                                                       | All areas/detailed design/<br>during<br>Construction/<br>post<br>construction | Design<br>Consultant/<br>Contractor | TMEIA | Y | Y |   | NA  |
| 10.9 | 7.6 | Hydroseeding or sheeting of soil stockpiles with visually unobtrusive material (in earth tone) (CM4)                                                                                                                                                                                                       | All areas/detailed design/<br>during<br>Construction/<br>post<br>construction | Design<br>Consultant/<br>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/<br>during<br>Construction                          | Design<br>Consultant/<br>Contractor | TMEIA | Y | Y |   | <>  |
| 10.9 | 7.6 | Control night-time lighting and glare by hooding all lights (CM6)                                                                                                                                                                                                                                          | All areas/detailed design/<br>during<br>Construction                          | Design<br>Consultant/<br>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/<br>during<br>Construction                          | Design<br>Consultant/<br>Contractor | TMEIA | Y | Y |   | ✓   |
| 10.9 | 7.6 | Avoidance of excessive height and bulk of buildings and structures (CM8)                                                                                                                                                                                                                                   | All areas/detailed design/<br>during<br>Construction                          | Design<br>Consultant/<br>Contractor | TMEIA | Y | Y |   | ✓   |
| 10.9 | 7.6 | Recycle/Reuse all felled trees and vegetation, e.g. mulching (CM9)                                                                                                                                                                                                                                         | All areas/detailed design/<br>during<br>Construction                          | Design<br>Consultant/<br>Contractor | TMEIA | Y | Y |   | ✓   |
| 10.9 | 7.6 | Compensatory tree planting shall be provided to the satisfaction of relevant Government departments. 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)                 | All areas/detailed design/<br>during<br>Construction                          | Design<br>Consultant/<br>Contractor | TMEIA | Y | Y |   | NA  |
| 10.9 | 7.6 | Re-vegetation of affected woodland/shrubland with                                                                                                                                                                                                                                                          | All areas/detailed design/<br>during<br>Construction                          | Design                              | TMEIA | Y | Y | Y | N/A |

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|                  |                             | native species (OM1)                                                                                                                                                                                                                                                                                      | during<br>Construction/<br>construction                               | post                    | Consultant/<br>Contractor              |                          |   |   |        |     |
|------------------|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|-------------------------|----------------------------------------|--------------------------|---|---|--------|-----|
| 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/<br>during<br>Construction/<br>construction | post                    | Design<br>Consultant/<br>Contractor    | TMEIA                    | Y | Y | Y      | N/A |
| 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/<br>during<br>Construction/<br>construction | post                    | Design<br>Consultant/<br>Contractor    | TMEIA                    | Y | Y | Y      | N/A |
| 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/<br>during<br>Construction/<br>construction | post                    | Design<br>Consultant/<br>Contractor    | TMEIA                    | Y | Y | Y      | N/A |
| 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/<br>during<br>Construction/<br>construction | post                    | Design<br>Consultant/<br>Contractor    | TMEIA                    | Y | Y | Y      | N/A |
| 10.9             | 7.6                         | Avoidance of excessive height and bulk of buildings and structures (OM6)                                                                                                                                                                                                                                  | All areas/detailed design/<br>during<br>Construction/<br>construction | post                    | Design<br>Consultant/<br>Contractor    | TMEIA                    | Y | Y | Y      | ✓   |
| <b>Waste</b>     |                             |                                                                                                                                                                                                                                                                                                           |                                                                       |                         |                                        |                          |   |   |        |     |
| EIA<br>reference | EM&A<br>Manual<br>reference | Environmental Protection Measures                                                                                                                                                                                                                                                                         | Location/ Timing                                                      | Implementation<br>Agent | Relevant<br>Standard or<br>Requirement | Implementation<br>Stages |   |   | Status |     |
|                  |                             |                                                                                                                                                                                                                                                                                                           |                                                                       |                         |                                        | 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                                                                                                                                                                                                        | Contract mobilisation                                                 | Contractor              | TMEIA,<br>Works Branch                 |                          | 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**

|      |     |                                                                                                                                                                                                                                                                                                                                                |                                            |            |                                                                                                                                                                       |  |   |  |   |
|------|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---|--|---|
|      |     | 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. |                                            |            | Technical Circular No. 5/99 for the Trip-ticket System for Disposal of Construction and Demolition Material                                                           |  |   |  |   |
| 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 management procedures including waste reduction, reuse and recycling                                                                                                                                                                        | Contract mobilisation                      | Contractor | TMEIA                                                                                                                                                                 |  | Y |  | ✓ |
| 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 |  | ✓ |

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|      |     |                                                                                                                                                                                                                                                                                                                                                                                                            |                                             |            |       |  |   |  |   |
|------|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|------------|-------|--|---|--|---|
| 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.                                                                                                                                                                                                                                                              | Toll 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 materials should avoid over-ordering and wastage. | All areas / throughout construction period  | Contractor | TMEIA |  | Y |  | ✓ |
| 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                                                                                                                                              | All areas / throughout construction period  | Contractor | TMEIA |  | Y |  | ✓ |

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ENVIRONMENTAL MITIGATION AND ENHANCEMENT MEASURE IMPLEMENTATION SCHEDULE**

|      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                            |            |       |  |   |  |   |
|------|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|------------|-------|--|---|--|---|
|      |     | 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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                            |            |       |  |   |  |   |
| 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> <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> | All areas / throughout construction period | Contractor | TMEIA |  | Y |  | ✓ |
| 12.6 | 8.1 | Waste oils, chemicals or solvents shall not be                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | All areas / throughout                     | Contractor | TMEIA |  | Y |  | ✓ |

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ENVIRONMENTAL MITIGATION AND ENHANCEMENT MEASURE IMPLEMENTATION SCHEDULE**

|      |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                 |            |             |  |   |  |   |
|------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|------------|-------------|--|---|--|---|
|      |           | disposed of to drain,                                                                                                                                                                                                                                                                                                                                                                                                                                                | construction period                             |            |             |  |   |  |   |
| 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/<br>throughout construction period | Contractor | TMEIA       |  | Y |  | ✓ |
| 12.6 | Section 8 | EM&A of waste handling, storage, transportation, disposal procedures and documentation through the site audit programme shall be undertaken.                                                                                                                                                                                                                                                                                                                         | All areas / throughout construction period      | Contractor | EM&A Manual |  | Y |  | ✓ |

**Water Quality**

| EIA reference | EM&A Manual reference | Environmental Protection Measures | Location/ Timing | Implementation Agent | Relevant Standard or Requirement | Implementation Stages |   |   | Status |
|---------------|-----------------------|-----------------------------------|------------------|----------------------|----------------------------------|-----------------------|---|---|--------|
|               |                       |                                   |                  |                      |                                  | D                     | C | O |        |



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| 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 |  | ✓ |
| 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                                                                                                                                                                                                                                                           | All areas/ throughout construction period | Contractor | TM-EIAO |  | Y |  | ◇ |

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|      |   |                                                                                                                                                                                                                                                                                                         |                                           |            |                                     |  |   |  |   |
|------|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|------------|-------------------------------------|--|---|--|---|
|      |   | materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers.                                                                                                                                                                                  |                                           |            |                                     |  |   |  |   |
| 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<br>Waste Disposal Ordinance |  | Y |  | ✓ |
| 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 |  | ◇ |

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**ENVIRONMENTAL MITIGATION AND ENHANCEMENT MEASURE IMPLEMENTATION SCHEDULE**

|      |           |                                                                                                                                         |                                           |            |             |  |   |  |   |
|------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|------------|-------------|--|---|--|---|
| 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

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

## **Appendix N**

### **Cumulative Statistics on Exceedance and Complaint**



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

| Reporting Period | Environmental Aspect / Parameter | Environmental Performance | Event Exceedance |                                       |
|------------------|----------------------------------|---------------------------|------------------|---------------------------------------|
|                  |                                  |                           | Reporting Period | Cumulative since project commencement |
| January 2018     | Air Quality – 1-hour TSP         | Action Level              | 6                | 35                                    |
|                  |                                  | Limit Level               | 0                | 2                                     |
|                  | Air Quality – 24-hour TSP        | Action Level              | 0                | 3                                     |
|                  |                                  | Limit Level               | 0                | 3                                     |

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

| Reporting Period                      | Environmental Complaint Statistics |            |                  |       |       |        |
|---------------------------------------|------------------------------------|------------|------------------|-------|-------|--------|
|                                       | Frequency                          | Cumulative | Complaint Nature |       |       |        |
|                                       |                                    |            | Air              | Noise | Water | Others |
| January 2018                          | 1                                  | 10         | 3                | 1     | 6     | 2      |
| Cumulative since project commencement | 10                                 | 10         | 3                | 1     | 6     | 2      |

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

| Reporting Period                      | Environmental Summons Statistics |            |                  |       |       |
|---------------------------------------|----------------------------------|------------|------------------|-------|-------|
|                                       | Frequency                        | Cumulative | Complaint Nature |       |       |
|                                       |                                  |            | Air              | Noise | Water |
| January 2018                          | 0                                | 0          | NA               | NA    | NA    |
| Cumulative since project commencement | 0                                | 0          | NA               | NA    | NA    |

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

| Reporting Period                      | Environmental Prosecution Statistics |            |                  |       |       |
|---------------------------------------|--------------------------------------|------------|------------------|-------|-------|
|                                       | Frequency                            | Cumulative | Complaint Nature |       |       |
|                                       |                                      |            | Air              | Noise | Water |
| January 2018                          | 0                                    | 0          | NA               | NA    | NA    |
| Cumulative since project commencement | 0                                    | 0          | NA               | NA    | NA    |

## **Appendix O**

### **Investigation Report for the Complaint**

**Contract No. HY/2013/12****Tuen Mun - Chek Lap Kok Link - Northern Connection Toll Plaza and Associated Works****Investigation Report on Action or Limit Level Non-compliance**

|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Complaint Log No.</b>    | TCS00715/14/300/F0390                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Received Date by ET</b>  | 30 January 2018                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Complaint Details</b>    | The Complainant 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”                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Complaint Location</b>   | Construction Area near River Trade Terminal                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Date of Complaint</b>    | 30 January 2018                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Environmental Aspect</b> | Air, Noise and Light Nuisance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Complainant</b>          | Unknown                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Complaint Route</b>      | via EPD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Investigation Result</b> | <ol style="list-style-type: none"><li>1 A complaint was received via EPD on 30 January 2018, regarding air quality, construction noise and light nuisance at construction area near River Trade Terminal.</li><li>2 Review the layout plan for the Project HY/2013/12 only works area Portion F was located near the River Trade Terminal. According to the site information, no construction works were undertaken at Portion F during night time. Refer to the photo taken on 30 January 2018 by contractor at around 10:00pm and confirmed with ER, only limited lighting was installed at Portion F for security and safety reason. No construction works was undertaking and no noise was generated during night time at Portion F. (Ref. to photo record)</li><li>3 Therefore the complaint about construction noise and light nuisance issue during night time is not related to the project HY/2013/12.</li><li>4 For the air quality issue, no barge was using for this project to import or export any dusty material. To reduce dust impact arising from the construction area Portion F more effective, the Contractor increase the water spraying frequency to once per 15 mins during working hours. Also, no environmental issue related to dust aspect was identify at Portion F during the weekly site inspection in January 2018. (Ref. to photo record)</li><li>5 During the site inspection with IEC, ER, Contractor and ET on 30 January 2018. ET was observed that the contractor was properly implemented the dust mitigation measure under EMIS requirement. (Ref. to photo and water spraying record)</li><li>6 Based on above investigation, the complaint is unlikely related to the Contract work and no corrective action was required accordingly.</li></ol> |
| <b>Action to be taken</b>   | Nil                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

**Prepared By :** T.W. Tam

**Designation :** Environmental Team Leader

**Signature :** 

**Date :** 1 February 2018



**Location Plan:**



Photo Record



Night Condition at Portion F taken on 30 January 2018 10:00 pm



Night Condition at Portion F on 30 January 2018 10:00 pm



Dust mitigation measures at Portion F



Most construction area at Portion F was hard paved



Watering of haul road to keep road surface wet was observed at Portion F during the weekly site inspection on 2 January 2018



Keeping road surface wet to reduce dust impact at Portion F was observed during the weekly site inspection on 9 January 2018





Watering of haul road to keep road surface wet was observed at Portion F during the weekly site inspection on 16 January 2018



Keeping road surface wet to reduce dust impact at Portion F was observed during the weekly site inspection on 23 January 2018



Keeping road surface wet to reduce dust impact at Portion F was observed during the weekly site inspection on 30 January 2018



Keeping road surface wet to reduce dust impact at Portion F was observed during the weekly site inspection on 30 January 2018

### 地盆人手灑水記錄表(2018)

| 地點: <i>Borkon IV</i> | 星期日   | 星期一   | 星期二   | 星期三   | 星期四   | 星期五   | 星期六   |
|----------------------|-------|-------|-------|-------|-------|-------|-------|
|                      | 1月14日 | 1月15日 | 1月16日 | 1月17日 | 1月18日 | 1月19日 | 1月20日 |
| 8:00 - 8:15          |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 8:15 - 8:30          |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 8:30 - 8:45          |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 8:45 - 9:00          |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 9:00 - 9:15          |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 9:15 - 9:30          |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 9:30 - 9:45          |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 9:45 - 10:00         |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 10:00 - 10:15        |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 10:15 - 10:30        |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 10:30 - 10:45        |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 10:45 - 11:00        |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 11:00 - 11:15        |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 11:15 - 11:30        |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 11:30 - 11:45        |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 11:45 - 12:00        |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 12:00 - 12:15        |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 12:15 - 12:30        |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 12:30 - 12:45        |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 12:45 - 13:00        |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 13:00 - 13:15        |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 13:15 - 13:30        |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 13:30 - 13:45        |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 13:45 - 14:00        |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 14:00 - 14:15        |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 14:15 - 14:30        |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 14:30 - 14:45        |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 14:45 - 15:00        |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 15:00 - 15:15        |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 15:15 - 15:30        |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 15:30 - 15:45        |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 15:45 - 16:00        |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 16:00 - 16:15        |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 16:15 - 16:30        |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 16:30 - 16:45        |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 16:45 - 17:00        |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 17:00 - 17:15        |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 17:15 - 17:30        |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 17:30 - 17:45        |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 17:45 - 18:00        |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |

Verified by Tommy Law (ES)

Date

*22/1/2018* *[Handwritten signatures]*



### 地盆人手灑水記錄表(2018)

| 地點: <i>和順</i> | 星期日   | 星期一   | 星期二   | 星期三   | 星期四   | 星期五   | 星期六   |
|---------------|-------|-------|-------|-------|-------|-------|-------|
|               | 1月21日 | 1月22日 | 1月23日 | 1月24日 | 1月25日 | 1月26日 | 1月27日 |
| 8:00 - 8:15   |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 8:15 - 8:30   |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 8:30 - 8:45   |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 8:45 - 9:00   |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 9:00 - 9:15   |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 9:15 - 9:30   |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 9:30 - 9:45   |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 9:45 - 10:00  |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 10:00 - 10:15 |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 10:15 - 10:30 |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 10:30 - 10:45 |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 10:45 - 11:00 |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 11:00 - 11:15 |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 11:15 - 11:30 |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 11:30 - 11:45 |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 11:45 - 12:00 |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 12:00 - 12:15 |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 12:15 - 12:30 |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 12:30 - 12:45 |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 12:45 - 13:00 |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 13:00 - 13:15 |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 13:15 - 13:30 |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 13:30 - 13:45 |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 13:45 - 14:00 |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 14:00 - 14:15 |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 14:15 - 14:30 |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 14:30 - 14:45 |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 14:45 - 15:00 |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 15:00 - 15:15 |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 15:15 - 15:30 |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 15:30 - 15:45 |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 15:45 - 16:00 |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 16:00 - 16:15 |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 16:15 - 16:30 |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 16:30 - 16:45 |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 16:45 - 17:00 |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 17:00 - 17:15 |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 17:15 - 17:30 |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 17:30 - 17:45 |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |
| 17:45 - 18:00 |       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |

*Verified by Tommy Law (LS)*

Date \_\_\_\_\_

*[Handwritten Signature]*  
29/1/2018

### 地盆人手灑水記錄表(2018)

| 地點: Portion F | 星期日   | 星期一   | 星期二   | 星期三   | 星期四  | 星期五  | 星期六  |
|---------------|-------|-------|-------|-------|------|------|------|
|               | 1月28日 | 1月29日 | 1月30日 | 1月31日 | 2月1日 | 2月2日 | 2月3日 |
| 8:00 - 8:15   |       | ✓     | ✓     | ✓     | ✓    | ✓    | ✓    |
| 8:15 - 8:30   |       | ✓     | ✓     | ✓     | ✓    | ✓    | ✓    |
| 8:30 - 8:45   |       | ✓     | ✓     | ✓     | ✓    | ✓    | ✓    |
| 8:45 - 9:00   |       | ✓     | ✓     | ✓     | ✓    | ✓    | ✓    |
| 9:00 - 9:15   |       | ✓     | ✓     | ✓     | ✓    | ✓    | ✓    |
| 9:15 - 9:30   |       | ✓     | ✓     | ✓     | ✓    | ✓    | ✓    |
| 9:30 - 9:45   |       | ✓     | ✓     | ✓     | ✓    | ✓    | ✓    |
| 9:45 - 10:00  |       | ✓     | ✓     | ✓     | ✓    | ✓    | ✓    |
| 10:00 - 10:15 |       | ✓     | ✓     | ✓     | ✓    | ✓    | ✓    |
| 10:15 - 10:30 |       | ✓     | ✓     | ✓     | ✓    | ✓    | ✓    |
| 10:30 - 10:45 |       | ✓     | ✓     | ✓     | ✓    | ✓    | ✓    |
| 10:45 - 11:00 |       | ✓     | ✓     | ✓     | ✓    | ✓    | ✓    |
| 11:00 - 11:15 |       | ✓     | ✓     | ✓     | ✓    | ✓    | ✓    |
| 11:15 - 11:30 |       | ✓     | ✓     | ✓     | ✓    | ✓    | ✓    |
| 11:30 - 11:45 |       | ✓     | ✓     | ✓     | ✓    | ✓    | ✓    |
| 11:45 - 12:00 |       | ✓     | ✓     | ✓     | ✓    | ✓    | ✓    |
| 12:00 - 12:15 |       | ✓     | ✓     | ✓     | ✓    | ✓    | ✓    |
| 12:15 - 12:30 |       | ✓     | ✓     | ✓     | ✓    | ✓    | ✓    |
| 12:30 - 12:45 |       | ✓     | ✓     | ✓     | ✓    | ✓    | ✓    |
| 12:45 - 13:00 |       | ✓     | ✓     | ✓     | ✓    | ✓    | ✓    |
| 13:00 - 13:15 |       | ✓     | ✓     | ✓     | ✓    | ✓    | ✓    |
| 13:15 - 13:30 |       | ✓     | ✓     | ✓     | ✓    | ✓    | ✓    |
| 13:30 - 13:45 |       | ✓     | ✓     | ✓     | ✓    | ✓    | ✓    |
| 13:45 - 14:00 |       | ✓     | ✓     | ✓     | ✓    | ✓    | ✓    |
| 14:00 - 14:15 |       | ✓     | ✓     | ✓     | ✓    | ✓    | ✓    |
| 14:15 - 14:30 |       | ✓     | ✓     | ✓     | ✓    | ✓    | ✓    |
| 14:30 - 14:45 |       | ✓     | ✓     | ✓     | ✓    | ✓    | ✓    |
| 14:45 - 15:00 |       | ✓     | ✓     | ✓     | ✓    | ✓    | ✓    |
| 15:00 - 15:15 |       | ✓     | ✓     | ✓     | ✓    | ✓    | ✓    |
| 15:15 - 15:30 |       | ✓     | ✓     | ✓     | ✓    | ✓    | ✓    |
| 15:30 - 15:45 |       | ✓     | ✓     | ✓     | ✓    | ✓    | ✓    |
| 15:45 - 16:00 |       | ✓     | ✓     | ✓     | ✓    | ✓    | ✓    |
| 16:00 - 16:15 |       | ✓     | ✓     | ✓     | ✓    | ✓    | ✓    |
| 16:15 - 16:30 |       | ✓     | ✓     | ✓     | ✓    | ✓    | ✓    |
| 16:30 - 16:45 |       | ✓     | ✓     | ✓     | ✓    | ✓    | ✓    |
| 16:45 - 17:00 |       | ✓     | ✓     | ✓     | ✓    | ✓    | ✓    |
| 17:00 - 17:15 |       | ✓     | ✓     | ✓     | ✓    | ✓    | ✓    |
| 17:15 - 17:30 |       | ✓     | ✓     | ✓     | ✓    | ✓    | ✓    |
| 17:30 - 17:45 |       | ✓     | ✓     | ✓     | ✓    | ✓    | ✓    |
| 17:45 - 18:00 |       | ✓     | ✓     | ✓     | ✓    | ✓    | ✓    |

Verified by Tommy Law (LS)

Date

  
 16/2/2018

**Appendix P**

**Inspection Checklist for**  
**Vulnerable to Contaminated Water Discharge**

Inspection Checklist for vulnerable to contaminated water discharge

Inspection Date: 2018-01-03 Location: Stream B, Outfall 1  
Name of Inspector: Tommy Law Position of Inspector: EO

Please put a tick  on the appropriate box.

| Item Description |                                                                           | Y                                   | P | N | Remarks |
|------------------|---------------------------------------------------------------------------|-------------------------------------|---|---|---------|
| 1                | Exposed slope protected?                                                  | <input checked="" type="checkbox"/> |   |   |         |
| 2                | Adequacy of wastewater treatment facilities provided?                     | <input checked="" type="checkbox"/> |   |   |         |
| 3                | Sandbags provided at each step and top of side walls?                     | <input checked="" type="checkbox"/> |   |   |         |
| 4                | Is silt screen maintained in good condition?                              | <input checked="" type="checkbox"/> |   |   |         |
| 5                | Remove debris, grit and silt inside the drainage system?                  | <input checked="" type="checkbox"/> |   |   |         |
| 6                | Contaminated water discharge at discharge point / drainage inlet avoided? | <input checked="" type="checkbox"/> |   |   |         |
| 7                | General housekeeping / site tidiness in good condition?                   | <input checked="" type="checkbox"/> |   |   |         |

Legends: Y = Yes, P = Partial, N = No



## Daily Drainage Inspection Record

Inspection Date: 2018-01-03



Stream B Outfall: No water is discharging.



Outfall 1: No water is discharging.

Inspection Checklist for vulnerable to contaminated water discharge

 Inspection Date: 2018-01-10

 Location: Stream B, Outfall 1

 Name of Inspector: Tommy Law

 Position of Inspector: EO

Please put a tick  $\checkmark$  on the appropriate box.

| Item Description |                                                                           | Y            | P | N | Remarks |
|------------------|---------------------------------------------------------------------------|--------------|---|---|---------|
| 1                | Exposed slope protected?                                                  | $\checkmark$ |   |   |         |
| 2                | Adequacy of wastewater treatment facilities provided?                     | $\checkmark$ |   |   |         |
| 3                | Sandbags provided at each step and top of side walls?                     | $\checkmark$ |   |   |         |
| 4                | Is silt screen maintained in good condition?                              | $\checkmark$ |   |   |         |
| 5                | Remove debris, grit and silt inside the drainage system?                  | $\checkmark$ |   |   |         |
| 6                | Contaminated water discharge at discharge point / drainage inlet avoided? | $\checkmark$ |   |   |         |
| 7                | General housekeeping / site tidiness in good condition?                   | $\checkmark$ |   |   |         |

Legends: Y = Yes, P = Partial, N = No

## Daily Drainage Inspection Record

Inspection Date: 2018-01-10



Stream B Outfall: No water is discharging.



Outfall 1: No water is discharging.

Inspection Checklist for vulnerable to contaminated water discharge

Inspection Date: 2018-01-17 Location: Stream B, Outfall 1  
Name of Inspector: Tommy Law Position of Inspector: EO

Please put a tick  $\checkmark$  on the appropriate box.

| Item Description |                                                                           | Y            | P | N | Remarks |
|------------------|---------------------------------------------------------------------------|--------------|---|---|---------|
| 1                | Exposed slope protected?                                                  | $\checkmark$ |   |   |         |
| 2                | Adequacy of wastewater treatment facilities provided?                     | $\checkmark$ |   |   |         |
| 3                | Sandbags provided at each step and top of side walls?                     | $\checkmark$ |   |   |         |
| 4                | Is silt screen maintained in good condition?                              | $\checkmark$ |   |   |         |
| 5                | Remove debris, grit and silt inside the drainage system?                  | $\checkmark$ |   |   |         |
| 6                | Contaminated water discharge at discharge point / drainage inlet avoided? | $\checkmark$ |   |   |         |
| 7                | General housekeeping / site tidiness in good condition?                   | $\checkmark$ |   |   |         |

Legends: Y = Yes, P = Partial, N = No



## Daily Drainage Inspection Record

Inspection Date: 2018-01-17



Stream B Outfall: No water is discharging.



Outfall 1: No water is discharging.

Inspection Checklist for vulnerable to contaminated water discharge

 Inspection Date: 2018-01-24

 Location: Stream B, Outfall 1

 Name of Inspector: Tommy Law

 Position of Inspector: EO

 Please put a tick  $\checkmark$  on the appropriate box.

| Item Description |                                                                           | Y            | P | N | Remarks |
|------------------|---------------------------------------------------------------------------|--------------|---|---|---------|
| 1                | Exposed slope protected?                                                  | $\checkmark$ |   |   |         |
| 2                | Adequacy of wastewater treatment facilities provided?                     | $\checkmark$ |   |   |         |
| 3                | Sandbags provided at each step and top of side walls?                     | $\checkmark$ |   |   |         |
| 4                | Is silt screen maintained in good condition?                              | $\checkmark$ |   |   |         |
| 5                | Remove debris, grit and silt inside the drainage system?                  | $\checkmark$ |   |   |         |
| 6                | Contaminated water discharge at discharge point / drainage inlet avoided? | $\checkmark$ |   |   |         |
| 7                | General housekeeping / site tidiness in good condition?                   | $\checkmark$ |   |   |         |

Legends: Y = Yes, P = Partial, N = No

## Daily Drainage Inspection Record

Inspection Date: 2018-01-24



Stream B Outfall: No water is discharging.



Outfall 1: No water is discharging.