AUES JOB NO.: TCS00715/14

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

3RD MONTHLY ENVIRONMENTAL MONITORING AND AUDIT (EM&A) REPORT – JANUARY 2015

PREPARED FOR
CRBC AND KADEN JOINT VENTURE

Date	Reference No.	Prepared By	Certified By
10 February 2015	TCS00715/14/600/R0061v2	 Nicola Hon (Environmental Consultant)	 T.W. Tam (Environmental Team Leader)

ENVIRON

Ref.: HYDHZMBEEM00_0_2715L.15

12 February 2014

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

By Fax (2293 6300) and By Post

Attention: Mr. Roger Man

Dear Roger,

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
Monthly EM&A report for January 2015 (EP-354/2009/C)

Reference is made to the Monthly Environmental Monitoring and Audit (EM&A) Report (January 2015) certified by the ET Leader (AUES reference: TCS00715/14/300/L0064 dated 12 February 2015) provided to us via e-mail on 12 February 2015.

We have no adverse comment on the captioned monthly EM&A report. We write to verify the captioned submission in accordance with Condition 4.4 of EP-354/2009/C.

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

Yours sincerely,

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

c.c. HyD – Mr. Stephen Chan (By Fax: 3188 6614)
HyD – Mr. Matthew Fung (By Fax: 3188 6614)
AECOM – Mr. Conrad Ng (By Fax: 3922 9797)
AUES – Mr. T. W. Tam (By Fax: 2959 6079)
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Internal: DY, YH, SLUI, ENPO Site

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EXECUTIVE SUMMARY

ES01 The construction phase of Contract HY/2013/12 was commenced on **23 October 2014**. This is the **3rd** Monthly EM&A Report presenting the monitoring results and inspection findings for the period from **1 to 31 January 2015** (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 – **4 events**
- Landfill Gas Monitoring **– 26 days**
- Landscape & Visual Monitoring – **5 events**
- Environmental Site Inspection – **4 events**

BREACH OF ACTION AND LIMIT (A/L) LEVELS

ES03 In the Reporting Period, no exceedances of 1-hour and 24-hour TSP were recorded according to the measurement results by the ET of Contract HY/2012/08. 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	0	0	0	0	0
	24-hour TSP	0	0	0	0	0

ES04 No noise complaints were received in the Reporting Period.

ES05 Landfill gas monitoring was conducted at the construction of Retaining Wall B and Retaining Wall F 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 if the condition 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 6th, 13th, 20th and 27th January 2015 and the IEC has attended the joint site inspection on 27th January 2015. No non-compliance was observed during the site inspection.

ES08 Inspection for Pitcher Plants of ecology and grave of culture heritage were also carried out during the weekly site inspection.

ENVIRONMENTAL COMPLAINT

ES09 No environmental complaints were received in the Reporting Period. The statistical summary of environmental complaints is summarized in the following table.

Reporting Period	Environmental Complaint Statistics	
	Frequency	Cumulative
Since project commencement	0	0
January 2015	0	0

NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

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

REPORTING CHANGE

ES11 No reporting changes were made in the Reporting Period.

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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 VEP-354/2009C issued on 10 December 2014. 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 **3rd** monthly EM&A report presenting the monitoring results and inspection findings for period from **1** to **31 January 2015**.

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 master construction program of the Contract is enclosed in ***Appendix D***.

- Site Formation – Portion X
- Slope stabilization works – Portion X
- Surface drainage – Portion X
- Ground Investigation Works – Various Locations
- Site Clearance – Various Locations
- Retaining Wall – Portion X and Portion I
- Piling Works – Portion I
- Tree Felling – Portion I and Portion X

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 (not yet endorsed by EPD)
- 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	Submission Date	Reference/ License No.	Date of Issue	Date of Expiry
1	Air pollution Control (Construction Dust) Regulation	06-08-2014	377719	06-08-2014	N/A
2	Chemical Waste Producer Registration - Waste Producers Number	06-08-2014	5117422C389301	03-09-2014	N/A
3	Water Pollution Control Ordinance - Discharge License	13-08-2014	WT00020065-2014	29-09-2014	30-09-2019
4	Waste Disposal Regulation - Billing Account for Disposal of Construction Waste	21-07-2014	7020460	01-08-2014	N/A
5	Permission to Transplant Pitcher Plant	02-12-2014	(7) in AF CON 11/13 pt.4	09-12-2014	08-06-2015
6	CNP for Multiple Task	05-12-2014	GW-RW0949-14	05-12-2014	04-05-2015
7	CNP for GI & Underground Ducting at Lung Mun Road (awaiting for approval)	22-1-2015	-	-	-

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 monitoring air quality 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	**Northern Connection** During excavation works for launching shaft, excavation work for Cut and Cover Tunnel and Cut and Cover Tunnel Construction **Toll Plaza**
	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 **Tunnel Buildings** 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 m3/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 cm2 (63 in^2);
(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 24-hour TSP measurement shall be determined by HOKLAS accredited laboratory.

3.5.5 If the ET 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 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 (μg/m^3)		1-hour TSP (μg/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 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 L&V 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 refer to the Monthly EM&A Reports of the Contract HY /2012 /08 (January 2015).

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, no exceedances in 1-hour and 24-hour TSP were recorded in the Reporting Period. No Notification on Exceedances (NOEs) was issued by the ET of Contract HY/2012/08. 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
NA	NA	NA	--	--

4.4 AIR QUALITY EXCEEDANCE INVESTIGATION

4.4.1 No investigation for exceedance is required for the Reporting Period.

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.

5.2 PITCHER PLANTS INSPECTION

5.2.1 In the Reporting Period, inspections for implementation status of mitigation measures for the Pitcher Plants were carried out by the ET on 6th, 13th, 20th and 27th January 2015.

5.2.2 During weekly site inspection, the transplanted Pitcher Plants at the nursery zone were overall in fair condition. The scaffold structure and chain link fence of protection were implemented properly, no repair or maintenance was required. Moreover, no construction activities were conducted nearby the nursery zone.

5.2.3 Furthermore, random checking was undertaken for the protected areas Zones 8, 9 and 10 during weekly site inspection. During each occasion of site inspection, no construction activities were found to be conducted nearby the protected areas of Pitcher Plants. The chain link fence provided at the protected areas was properly erected. The growths of Pitcher Plants as retained at the protected areas were in normal condition.

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 case 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, site inspection for the Grave G1 was undertaken on **6th**, **13th**, **20th** and **27th January 2015**. During site inspection, buffer zone between the working area and the Grave was maintained and no construction material or equipment was stored nearby the Grave.

6.2.2 Mitigation measures undertaken by the Contractor has fully implemented the EM&A Manual requirements.

7 LANDSCPAE 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 **2th**, **9th**, **16th**, **23rd** and **30th January 2015** by the Registered Landscape Architect. In January 2015, 51 numbers of trees adjacent to butterfly beach laundry were felled.

7.2.2 Most of the landscape works such as planting was not yet commenced. 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.

8.2 LANDFILL GAS MONITORING RESULT

8.2.1 In the Reporting Period, landfill gas monitoring was conducted at the construction of Retaining Wall B and Retaining Wall F and the locations are illustrated in ***Appendix E***. A BIOGAS 5000 gas analysis 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 8-1***. Moreover, database of monitoring result and graphical plot are attached in ***Appendix I***.

Table 8-1 Summary of Landfill Gas Measurement Results

Landfill Gas Parameter	Action Level	Limit Level	Detectable at Retaining Wall B		Detectable at Retaining Wall F	
			Min	Max	Min	Max
Methane	>10% LEL (>0.5% v/v)	>20% LEL (>1% v/v)	0%	0.2%	0%	0.2%
Oxygen	<19%	<18%	20.9%	21.2%	21.0%	21.3%
Carbon Dioxide	>0.5%	>1.5%	0%	0.3%	0%	0.2%

8.2.3 The measurement results shown that slightly methane concentration was detected and oxygen concentration measured was over 20.9% and Carbon Dioxide was between 0.0 and 0.3 %. 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^3)	9.968	-
Reused in other Projects (Inert) (`000m^3)	17.144	HY/2012/08
Disposal as Public Fill (Inert) (`000m^3)	5.664	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 Packing (`000kg)	0	-
Recycled Plastic (`000kg)	0	-
Chemical Wastes (`000kg)	0	-
General Refuses (`000m^3)	0.02	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 ***6th***, ***13th***, ***20th*** and ***27th January 2015***. No non-compliance was noted but **7** observations and **3** reminders were recorded during the four occasions of site inspection. Moreover, ENPO/IEC has attended joint site inspection on ***27 January 2015***.

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
6 Jan 2015	• Waste skips of general refuse disposal was full, the contractor was reminded to clean-up in accordance with WMP requirements.	• The waste skips has been cleared before site inspection on 13 January 2015,
	• Oil leakage from the backhoe was observed. The contractor was requested to clean up a.s.a.p. to prevent contamination.	• The oil leakage has been cleaned immediate after site inspection. No oil leakage from the backhoe was observed on 13 January 2015,
13 Jan 2015	• Muddy water was observed in the u-channel. The contractor was requested to be treated the water before discharge to the public drain.	• The muddy water in the u-channle has been removed during weekly site inspection on 20 January 2015.
	• Stagnant water was cumulated inside the drip tray after rain. The contractor reminded to clean the water.	• Stagnant water cumulated in the drip tray has been removed during site inspection on 27 January 2015,
20 Jan 2015	• Dust emitted from drilling / rock breaking / excavating activities was observed. The contractor was reminded to provide mitigation measures to reduce dust generation from those activities.	• Water spraying during dusty work was obrseved duirng site inspecion on 27 January 2015.
	• Waste skips of general refuse disposal was full, the contractor was reminded to clean-up more frequenctly.	• The waste skips has been cleared before site inspection on 27 January 2015,
	• Sediment was observed in the Wetsep treatment system. The contractor was reminded clean-up the residual regularly to maintain treatment system is in good condition.	• The sediment in the Wetsep treatment system has been cleared before site inspection on 27 January 2015.
27 Jan2015	• As a reminder, water spraying is required for dusty work during dry season to minimize dust generation.	• Not required for reminder.
	• As a reminder, the contractor was reminded to maintain the cut off drain properly to prevent muddy water flow to the public area.	• Not required for reminder.

Date	Findings / Deficiencies	Follow-Up Status
	• As a reminder, stagnant water cumulated inside the u-channel and manhole should be drained away to prevent mosquito breeding.	• Not required for reminder.

10.1.4 The deficiencies in previous Reporting Period have been rectified and they are listed in ***Table 10-2***.

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

Date	Findings / Deficiencies	Follow-Up Status
Nov 2014	• Residual sand, mud and stagnant were observed retained on haul road behind the wheel washing bay. The Contractor should cleaned up the wheel washing bay regularly to make sure its effective.	• Stagnant water near the generator has been cleared before site inspection on 6 January 2015.
30 Dec 2014	• Waste skips of general refuse disposal was filled, the contractor was reminded to clean-up in accordance with WMP requirements.	• The waste skips has been cleared before site inspection on 13 January 2015.

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

10.1.6 For waste management, good practice for daily housekeeping is reminded. Furthermore, clean-up frequency of the waste skips and wastewater treatment system should be increased to ensure these facilities functional and effective.

11 ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

11.1 ENVIRONMENTAL COMPLAINT, SUMMONS AND PROSECUTION

11.1.1 In the Reporting Period, no environmental complaint, summons and prosecution was received For the Contract. Moreover, no exceedance of the environmental performance limit (Action and Limit Levels) was recorded for air quality monitoring. 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 2015	Air Quality - 1-hr TSP	Action Level	0	**4**	**4**
		Limit Level	0	0	0
	Air Quality - 24-hr TSP	Action Level	0	0	0
		Limit Level	0	0	0

Table 11-2 Statistical Summary of Environmental Complaints

Reporting Period	Environmental Complaint Statistics				
	Frequency	Cumulative	Complaint Nature		
			Air	Noise	Water
January 2015	0	0	NA	NA	NA

Table 11-3 Statistical Summary of Environmental Summons

Reporting Period	Environmental Summons Statistics				
	Frequency	Cumulative	Complaint Nature		
			Air	Noise	Water
January 2015	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 2015	0	0	NA	NA	NA

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

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	• Maintain damp / wet surface on access road • Keep slow speed in the sites • All vehicles must use wheel washing facility before off site • Sprayed water during rock breaking works • During transportation by truck, materials loaded lower than the side and tail boards, and covered before transport • Compacted all soil stockpiles • Part of the exposed slopes covered geotextile net
Cultural Heritage	• Set a buffer zone between the working area and the Grave • All construction materials and equipment store far from the Grave • Inspection the Grave to ensure provision mitigation measures effective
Ecology	• Wire fencing provided for temporary protect Pitcher Plants • Undertake weekly inspection of Pitcher Plants
Landfill Gas Hazard	• Landfill Gas measurement undertake during trench excavation
Water Quality	• Temporary drainage system provide for surface runoff prevent discharge to public area • Wastewater to be treated by sedimentation tank before discharge.
Noise	• Restrain operation time of plants from 07:00 to 19:00 on any working day except for Public Holiday and Sunday. • Keep good maintenance of plants • The noisy plants or works provide mobile noise barriers • Shut down the plants when not in used
Waste and Chemical Management	• On-site sorting prior to disposal • Follow requirements and procedures of the “Trip-ticket System” • Predict required quantity of concrete accurately • Collect the unused fresh concrete at designated locations in the sites for subsequent disposal
General	• The site was generally kept tidy and clean.

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 to Slope A, B, C, D, E, F and Upgrading Works
- Excavation to Slope A, B,C,D & E
- Slope stabilization works
- Ground Investigation Works
- Site Clearance
- Piling Works(Bridge TD1,TD2, Bridge G2,Bridge H1& Footbridge)
- Tree Felling
- Construction of Culvert 1
- Construction of east portal for underpass

- Natural terrain hazard mitigation measures and flexible barriers installation
- Retaining Structure RE_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 quality impact due from 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 **3rd** monthly EM&A report presenting the monitoring results and inspection findings for the period of **1** to **31 January 2015**.

13.1.2 No air quality monitoring including 1-hour and 24-hour TSP exceedance was recorded in the Reporting Period. Although air quality monitoring result complied with the performance criteria, the Contractor was reminded to fully implement the dust control measures.

13.1.3 In the Reporting Period, no noise complaint was received by RE, the Contractor, ENPO or HyD. No Action Level exceedances were therefore triggered and no NOE or the associated corrective actions were required.

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

13.1.5 Site inspection was performed for the transplanted Pitcher Plants in the nursery site and protected Zones 8 to 10. The transplanted Pitcher Plant in nursery site was protected by the scaffold structure which surrounded by chain link fencing and the protected Pitcher Plants in Zones 8 to 10 were fenced off by chain link fencing. The condition of the transplanted pitcher plant was in fair condition. No construction activities were found to conduct nearby the nursery site and protection zones.

13.1.6 Landfill gas monitoring was conducted at the construction of Retaining Wall B and Retaining Wall F by the Safety Officer. The monitoring results shown no exceedances were triggered.

13.1.7 No documented a complaint, notification of summons or successful prosecution is received by the Contract.

13.1.8 Joint site inspection by the RE, ET and Contractor was carried out on 6th, 13th, 20th and 27th January 2015. Moreover, ENPO/IEC attended joint site inspection on 27 January 2015. No non-compliance was recorded during the site inspection, **7** observations and 3 reminders were recorded during site inspections.

13.1.9 For cultural heritage, the buffer zone between the working area and the Grave was observed and no construction material or equipment was stored nearby.

13.2 RECOMMENDATIONS

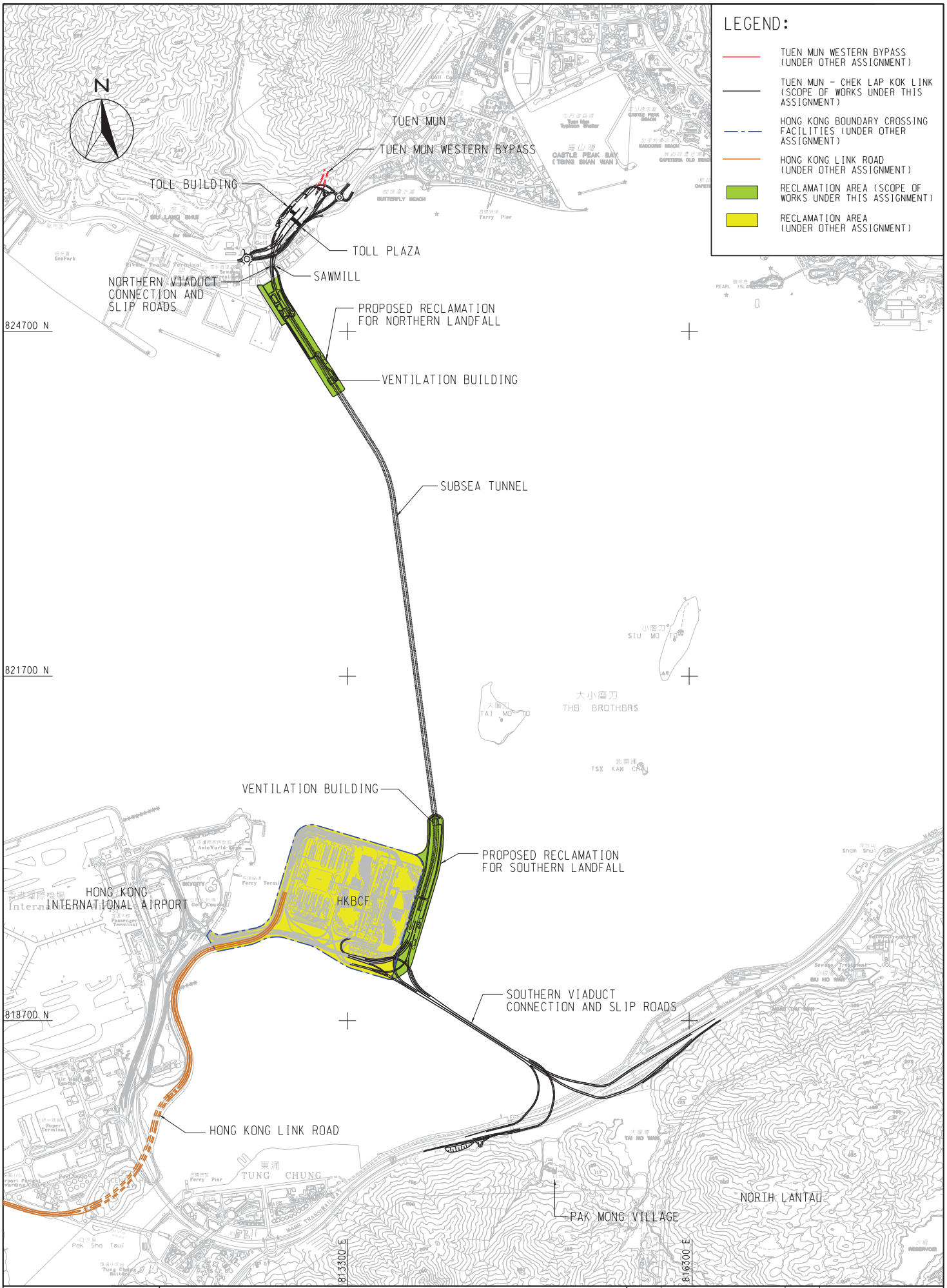
13.2.1 During dry season, special attention should be paid on the potential construction dust impact. The Contractor should fully implement the construction dust mitigation measures such as watering of site area for 12 times per day and covering of exposed slopes should be provided to reduce construction dust impact as recommended in the EMIS.

13.2.2 Water quality mitigation measures such as prevention of muddy water and other water quality pollutants via site surface water runoff get into public area should be avoided.

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

Appendix A

Project Layout Plan



AECOM

AGREEMENT NO. CE 52/2007(HY)
TUEN MUN - CHEK LAP KOK LINK - INVESTIGATION

GENERAL LAYOUT OF TM-CLKL

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

Plotting By: 2009-8-6 CHENCA
PLOT SCALE: 1%2

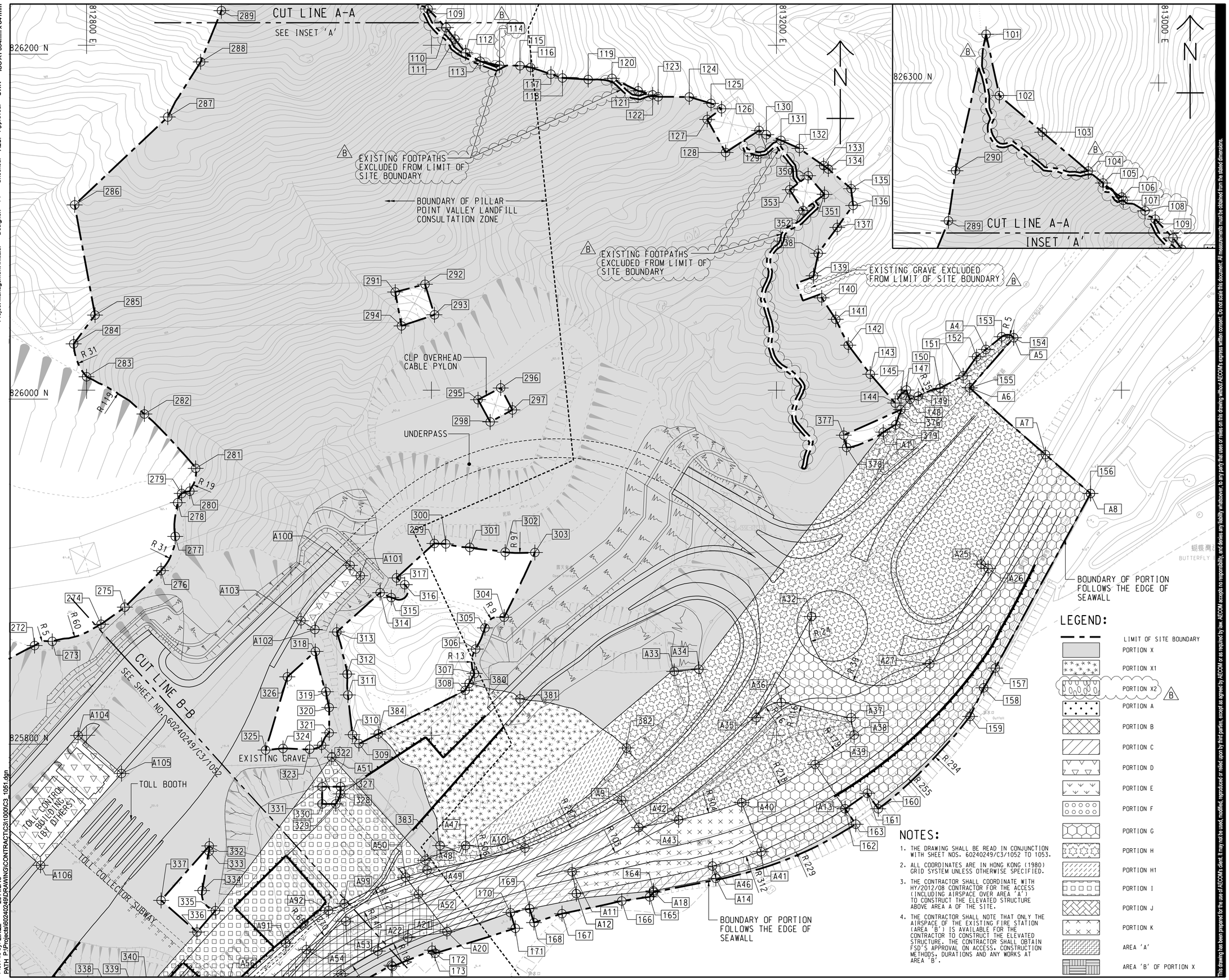
p:\PROJECTS\60044963\DRAWING\FIGURE\EIA REPORT\CH3\FIGURE 3-1.dgn

Appendix B

Layout Plan of the Contract

Project Management Initials: PI | Designer: | Checked: | Approved: ALCF | Drawn: CWN | ISO A1 594mm x 841mm

Plot File by: LXQ2 20140319
PATH: P:\Projects\60240249\DRAWING\CONTRACT\C3\1000\C3_1051.dgn



LEGEND:

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

NOTES:

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

AECOM

PROJECT 項目

TUEN MUN - CHEK LAP KOK LINK

CONTRACT TITLE

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

CLIENT 業主

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

CONSULTANT 工程顧問公司

AECOM Asia Company Ltd.
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ISSUE/REVISION 修訂

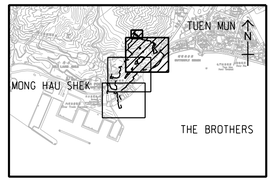
I/R 修訂	DATE 日期	DESCRIPTION 內容摘要	CHK. 核核
			CWN
			CWN
B	MAR. 14	TENDER ADDENDUM NO. 2	CWN
A	FEB. 14	TENDER ADDENDUM NO. 1	CWN
-	JAN. 14	TENDER DRAWING	CWN

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

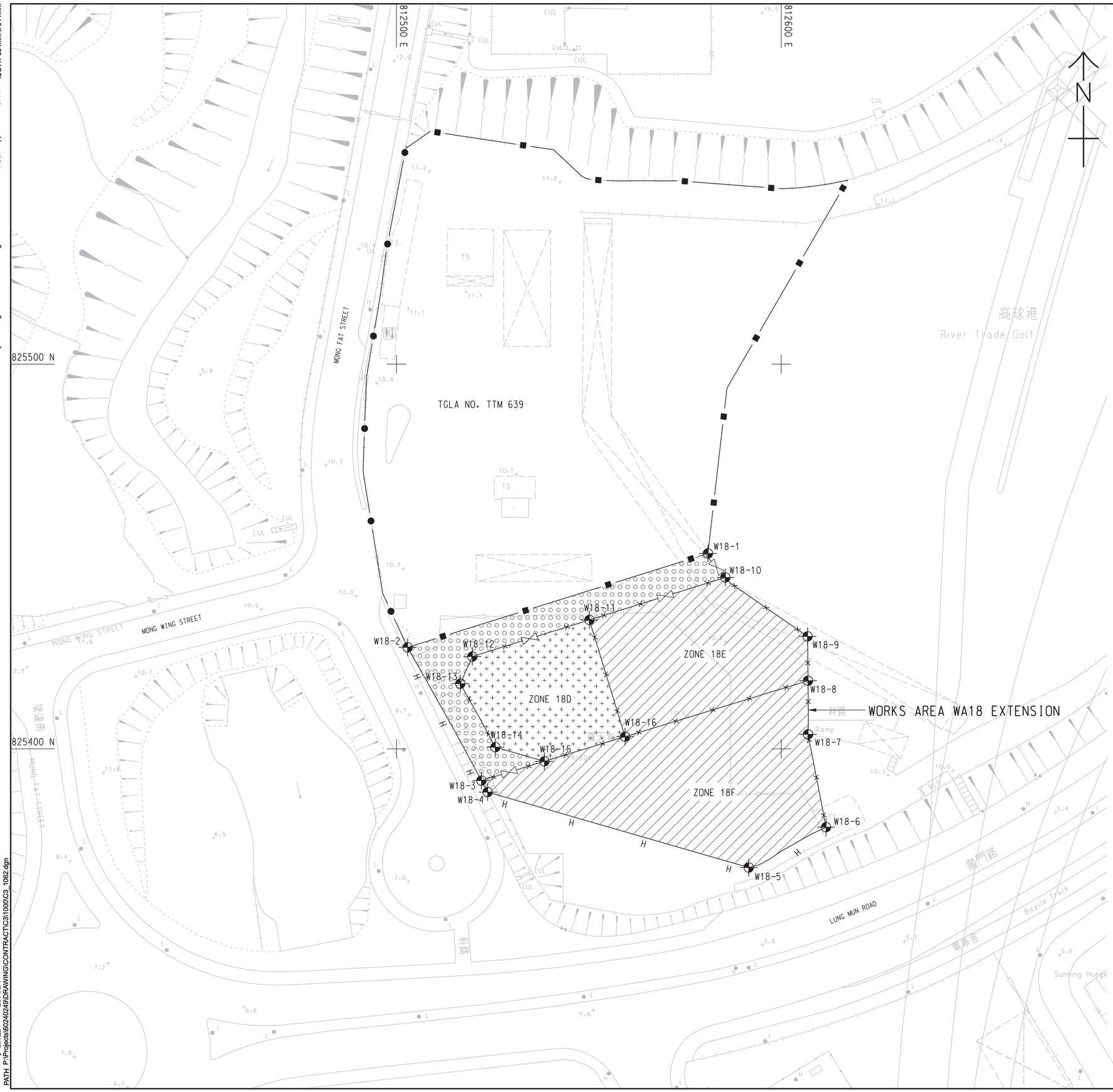
SHEET TITLE 圖紙名稱

PORTIONS OF SITE AND SITE BOUNDARY SETTING OUT PLAN

SHEET 1 OF 3

SHEET NUMBER 圖紙編號

60240249/C3/1051B



NOTES:

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE WORKS AREA KEY PLAN IN SHEET NO. 60240249/C3/1000.
2. DEMARCATION OF THE WORKS AREA SHALL BE DETERMINED ON SITE.
3. REFER TO HIGHWAYS DEPARTMENT STANDARD DRAWING NOS. H6110 AND H6111 FOR DETAILS OF HOARDING.
4. REFER TO HIGHWAYS DEPARTMENT STANDARD DRAWING NOS. H6121 AND H6122 FOR DETAILS OF CHAIN LINK FENCE.
5. REFER TO HIGHWAYS DEPARTMENT STANDARD DRAWING NO. H6121 FOR DETAILS OF GATE.
6. CHAIN LINK FENCE SHALL BE ERECTED 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.
7. THE LOCATION AND WIDTH OF GATE SHOWN ARE INDICATIVE ONLY AND SHALL BE CONFIRMED BY THE ENGINEER.
8. 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-TTM 639. IN CASE OF DISCREPANCY BETWEEN THE BOUNDARY SHOWN ON THIS DRAWING AND THE BOUNDARY INDICATED ON THE ENGINEERING CONDITIONS, THE LATTER SHALL PREVAIL.
9. 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.
10. THE COMMON AREA SHALL BE CONCRETE PAVED BY THE CONTRACTOR.
11. ZONE 18F SHALL BE USED FOR THE SITE ACCOMMODATION OF THE ENGINEER. ZONE 18E SHALL BE USED FOR SITE ACCOMMODATION OF THE CONTRACTOR.
12. 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 COMMENCMENT OF THE WORKS TO 126 DAYS FROM THE DATE FOR COMMENCMENT 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. B

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)
- H — HOARDING AND GATE (TO BE ERECTED AND MAINTAINED UNDER THIS CONTRACT)
- EXISTING CHAIN LINK FENCE MAINTAINED BY OTHERS
- CHAIN LINK FENCE AND GATE (TO BE ERECTED AND MAINTAINED UNDER THIS CONTRACT)
- EXISTING HOARDING AND GATE MAINTAINED BY OTHERS

SETTING OUT CO-ORDINATES OF WORKS AREA WA18 EXTENSION

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

AECOM

PROJECT 項目

TUEN MUN - CHEK LAP KOK LINK

CONTRACT TITLE

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

CLIENT 業主

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

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

STATUS 階段

SCALE 比例 A1 1 : 500

DIMENSION UNIT 尺寸單位 METRES

KEY PLAN 索引圖

PROJECT NO. 項目編號 60240249

CONTRACT NO. 合約編號 HY/2013/12

SHEET TITLE 圖紙名稱

WORKS AREA AND HOARDING PLAN

SHEET 2 OF 2

SHEET NUMBER 圖紙編號

60240249/C3/1062B

Project Management Initials: PI Designer: ALCF Checked: CWN Approved: CWN ISO A1 594mm x 841mm

Plot File by: LIXQ2 2014/3/4
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Project Management Initials: PI | Designer: | Checked: | ALCF Approved: | CWN | ISO A1 594mm x 841mm

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 B	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 B	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

812600 E | 812800 E | 813000 E | 825800 N | 825600 N

CUT LINE B-B
SEE SHEET NO. 60240249/C3/1051

CUT LINE D-D
SEE SHEET NO. 60240249/C3/1053

TOLL CONTROL BUILDING (BY OTHERS)
TOLL BOOTH
TOLL COLLECTOR SUBWAY
TOLL BOOTH B

EXISTING GRAVE

FOOTBRIDGE WITH PASSENGER LIFT

ALONG THE EDGE OF SEAWALL

BOUNDARY OF PILLAR POINT VALLEY LANDFILL CONSULTATION ZONE

BOUNDARY OF PORTION FOLLOWS THE OUTER EDGE OF U-CHANNEL

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

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

Plot File by: LUOMQ 2014/3/18
PATH : P:\Projects\60240249\DRAWING\CONTRACT\C3\1000\C3_1052.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
港珠澳大橋香港工程管理處 Hong Kong - Zhuhai - Macao Bridge Hong Kong Project Management Office

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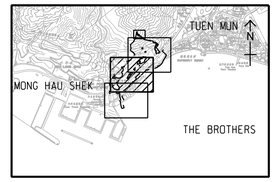
A	FEB. 14	TENDER ADDENDUM NO. 1	CWN
-	JAN. 14	TENDER DRAWING	CWN

STATUS 階段

SCALE 比例
A1 1 : 1000

DIMENSION UNIT 尺寸單位
METRES

KEY PLAN 索引圖引圖 1 : 50000



PROJECT NO. 項目編號
60240249

CONTRACT NO. 合約編號
HY/2013/12

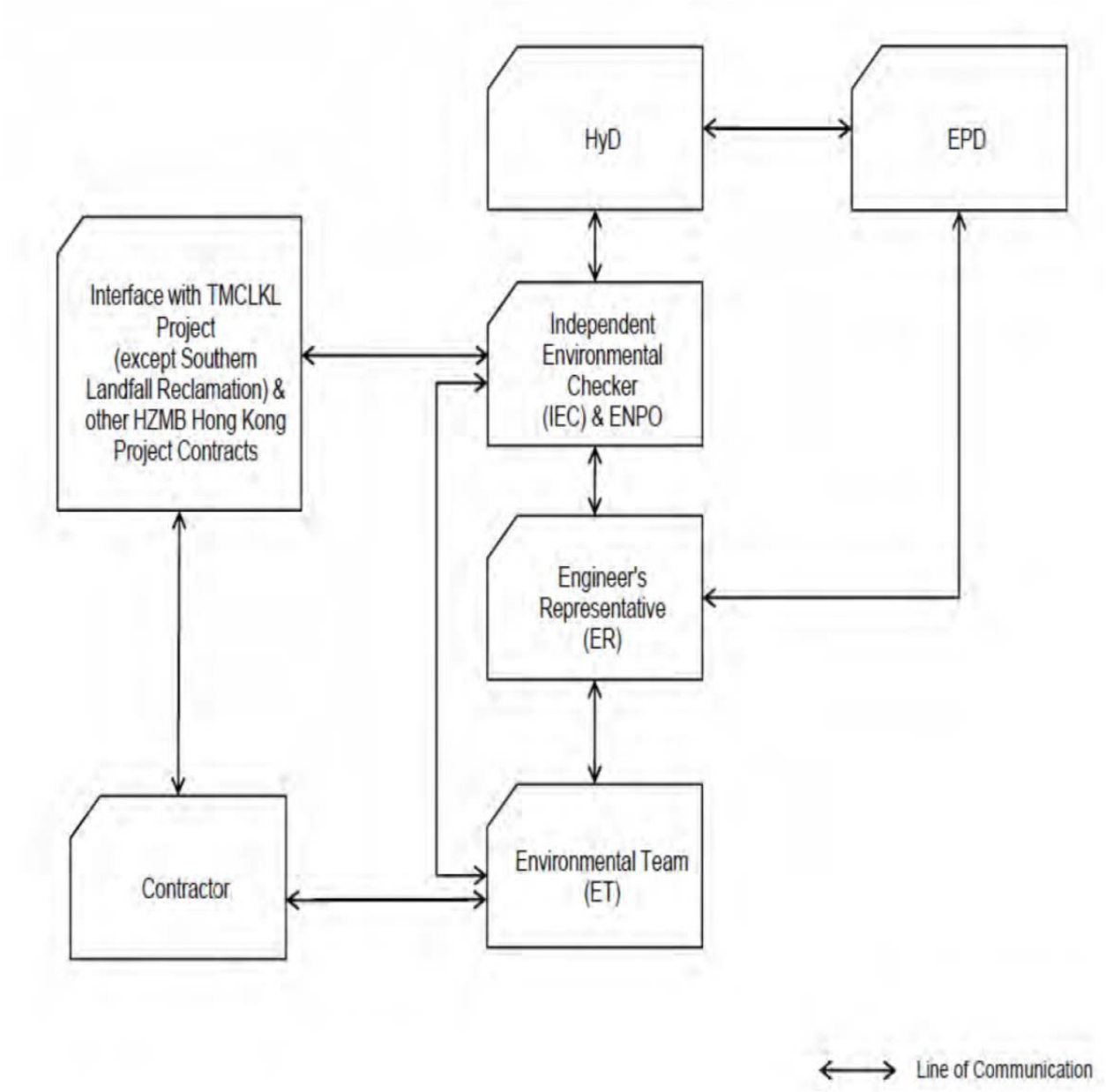
SHEET TITLE 圖紙名稱
PORTIONS OF SITE AND SITE BOUNDARY SETTING OUT PLAN

SHEET 2 OF 3

SHEET NUMBER 圖紙編號
60240249/C3/1052B

Appendix C

Organization of the Contract



Project Organization chart

Organization chart of the Contractor

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

Organization	Project Role	Name of Key Staff	Tel No	Fax No.
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. Roger Man	2218 7288	2218 7399
AECOM	Resident Engineer (S&E)	Mr. Kelvin Yeung	22187289	2218 7399
ENVIRON	Environmental Project Office (ENPO)	Mr. YH Hui	3465 2888	3465 2899
ENVIRON	Independent Environmental Checker (IEC)	Dr. FC Tsang	3465 2828	3465 2899
CKJV	Project Manager	Mr. Simon Tong	2253 8300	2253 8399
CKJV	Site Agent	Mr. John Wong	2253 8300	2253 8399
CKJV	Environmental Officer	Miss Ricci Poon	22733199	2375 3655
CKJV	Environmental Officer	Mr. HY Tang	2253 8300	2253 8399
CKJV	Environmental Supervisor	Miss Melody Tong	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

ENVIRON (IEC and ENPO) – Environ Hong Kong Limited

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

HKL(RLA) – Hong Kong Landscape

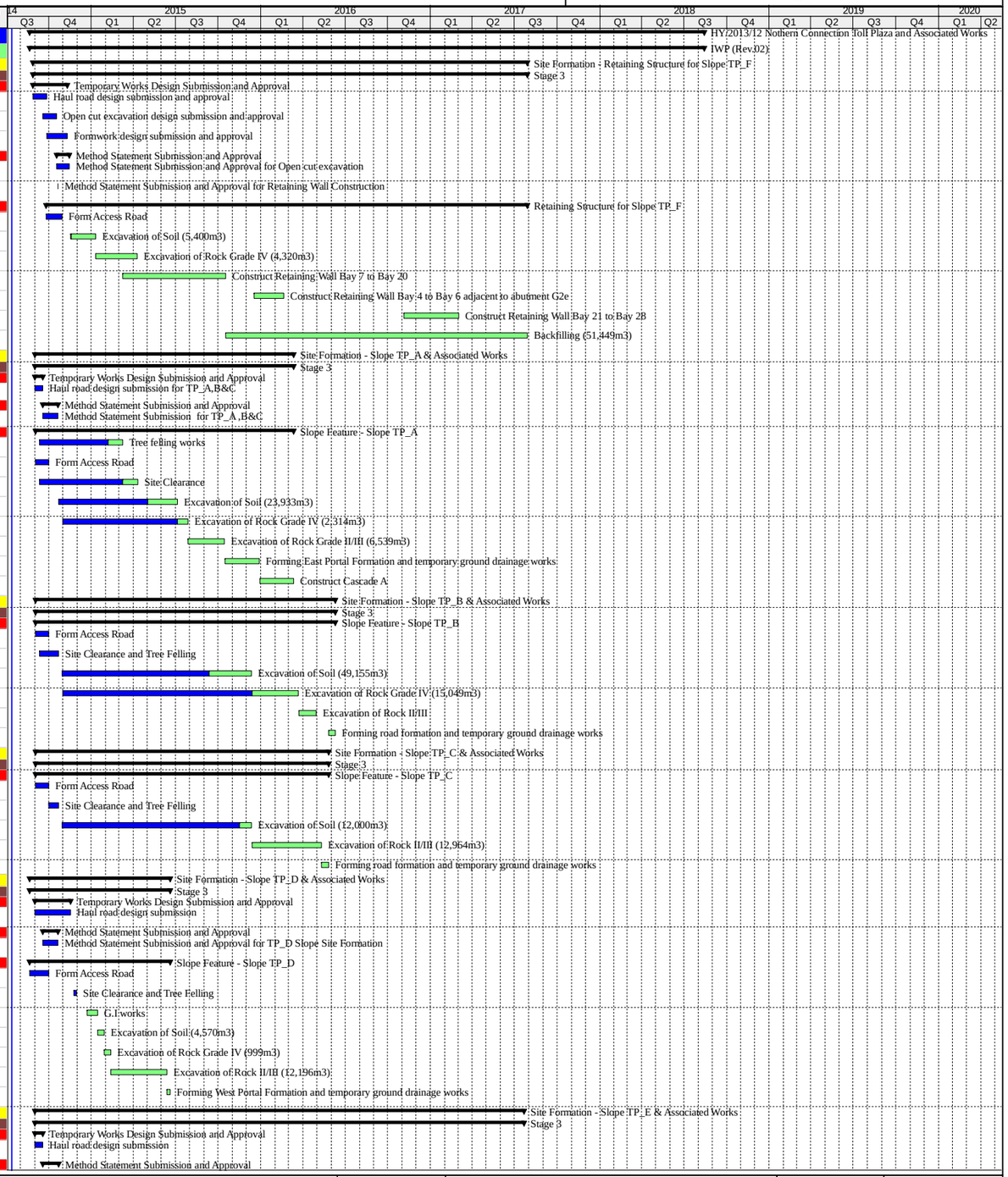
Appendix D

Master Construction Program and Three Months Roll Program

HY/2013/12 TM-CLKL Northern Connection Toll Plaza and Associated Works

CRBC - KADEN Joint Venture

Activity ID	Activity Name	Original Duration	Planned Start	Actual Start	Planned Finish	Actual Finish
HY/2013/12 Nothern Connection Toll Plaza and Associated Works		1445	29-Aug-14	21-Aug-14	13-Aug-18	
IWP (Rev.02)		1445	29-Aug-14	21-Aug-14	13-Aug-18	
Site Formation - Retaining Structure for Slope TP_F		1064	29-Aug-14	29-Aug-14	29-Jul-17	
Stage 3		1064	29-Aug-14	29-Aug-14	29-Jul-17	
Temporary Works Design Submission and Approval		75	29-Aug-14	29-Aug-14	11-Nov-14	11-Nov-14
RWF11000	Haul road design submission and approval	30	29-Aug-14	29-Aug-14	27-Sep-14	27-Sep-14
RWF11050	Open cut excavation design submission and approval	30	18-Sep-14	18-Sep-14	18-Oct-14	18-Oct-14
RWF11100	Formwork design submission and approval	45	27-Sep-14	27-Sep-14	11-Nov-14	11-Nov-14
Method Statement Submission and Approval		32	18-Oct-14	18-Oct-14	18-Nov-14	15-Nov-14
RWF21000	Method Statement Submission and Approval for Open cut excavation	30	18-Oct-14	18-Oct-14	15-Nov-14	15-Nov-14
RWF21050	Method Statement Submission and Approval for Retaining Wall Construction	30	21-Oct-14	21-Oct-14	18-Nov-14	21-Oct-14
Retaining Structure for Slope TP_F		799	27-Sep-14	26-Sep-14	29-Jul-17	
RWF31000	Form Access Road	24	27-Sep-14	26-Sep-14	30-Oct-14	30-Oct-14
RWF31050	Excavation of Soil (5,400m3)	43	18-Nov-14	17-Nov-14	10-Jan-15	
RWF31100	Excavation of Rock Grade IV (4,320m3)	70	10-Jan-15		10-Apr-15	
RWF31300	Construct Retaining Wall Bay 7 to Bay 20	168	09-Mar-15		17-Oct-15	
RWF31325	Construct Retaining Wall Bay 4 to Bay 6 adjacent to abutment G2e	50	17-Dec-15		20-Feb-16	
RWF31350	Construct Retaining Wall Bay 21 to Bay 28	96	04-Nov-16		03-Mar-17	
RWF31400	Backfilling (51,449m3)	504	17-Oct-15		29-Jul-17	
Site Formation - Slope TP_A & Associated Works		520	09-Oct-14	01-Sep-14	12-Mar-16	
Stage 3		520	09-Oct-14	01-Sep-14	12-Mar-16	
Temporary Works Design Submission and Approval		45	09-Oct-14	01-Sep-14	20-Nov-14	18-Sep-14
TPA11000	Haul road design submission for TP_A,B&C	45	09-Oct-14	01-Sep-14	20-Nov-14	18-Sep-14
Method Statement Submission and Approval		45	23-Oct-14	18-Sep-14	04-Dec-14	21-Oct-14
TPA21050	Method Statement Submission for TP_A ,B&C	45	23-Oct-14	18-Sep-14	04-Dec-14	21-Oct-14
Slope Feature - Slope TP_A		309	06-Feb-15	03-Sep-14	12-Mar-16	
TPA31030	Tree felling works	24	06-Feb-15	11-Sep-14	10-Mar-15	
TPA31040	Form Access Road	24	10-Mar-15	03-Sep-14	11-Apr-15	01-Oct-14
TPA31050	Site Clearance	24	11-Apr-15	11-Sep-14	13-May-15	
TPA31100	Excavation of Soil (23,933m3)	48	03-Jun-15	23-Oct-14	05-Aug-15	
TPA31150	Excavation of Rock Grade IV (2,314m3)	18	05-Aug-15	01-Nov-14	27-Aug-15	
TPA31200	Excavation of Rock Grade II/III (6,539m3)	60	29-Jul-15		14-Oct-15	
TPA31250	Forming East Portal Formation and temporary ground drainage works	60	16-Oct-15		29-Dec-15	
TPA31300	Construct Cascade A	60	30-Dec-15		12-Mar-16	
Site Formation - Slope TP_B & Associated Works		207	17-Sep-15	03-Sep-14	10-Jun-16	
Stage 3		207	17-Sep-15	03-Sep-14	10-Jun-16	
Slope Feature - Slope TP_B		207	17-Sep-15	03-Sep-14	10-Jun-16	
TPB31000	Form Access Road	24	17-Sep-15	03-Sep-14	19-Oct-15	01-Oct-14
TPB31050	Site Clearance and Tree Felling	24	20-Oct-15	11-Sep-14	18-Nov-15	23-Oct-14
TPB31100	Excavation of Soil (49,155m3)	72	19-Nov-15	30-Oct-14	17-Feb-16	
TPB31150	Excavation of Rock Grade IV (15,049m3)	80	18-Feb-16	01-Nov-14	01-Jun-16	
TPB31210	Excavation of Rock II/III	28	23-Mar-16		29-Apr-16	
TPB31260	Forming road formation and temporary ground drainage works	11	26-May-16		10-Jun-16	
Site Formation - Slope TP_C & Associated Works		195	17-Sep-15	03-Sep-14	26-May-16	
Stage 3		195	17-Sep-15	03-Sep-14	26-May-16	
Slope Feature - Slope TP_C		195	17-Sep-15	03-Sep-14	26-May-16	
TPC31015	Form Access Road	24	17-Sep-15	03-Sep-14	19-Oct-15	01-Oct-14
TPC31030	Site Clearance and Tree Felling	24	20-Oct-15	02-Oct-14	18-Nov-15	23-Oct-14
TPC31060	Excavation of Soil (12,000m3)	24	18-Jan-16	30-Oct-14	17-Feb-16	
TPC31100	Excavation of Rock II/III (12,964m3)	115	14-Dec-15		11-May-16	
TPC31160	Forming road formation and temporary ground drainage works	11	11-May-16		26-May-16	
Site Formation - Slope TP_D & Associated Works		284	08-Sep-14	21-Aug-14	19-Jun-15	
Stage 3		284	08-Sep-14	21-Aug-14	19-Jun-15	
Temporary Works Design Submission and Approval		30	08-Sep-14	01-Sep-14	09-Oct-14	18-Nov-14
TPD21000	Haul road design submission	30	08-Sep-14	01-Sep-14	09-Oct-14	18-Nov-14
Method Statement Submission and Approval		30	23-Sep-14	18-Sep-14	23-Oct-14	21-Oct-14
TPD11050	Method Statement Submission and Approval for TP_D Slope Site Formation	30	23-Sep-14	18-Sep-14	23-Oct-14	21-Oct-14
Slope Feature - Slope TP_D		220	08-Sep-14	21-Aug-14	19-Jun-15	
TPD31000	Form Access Road	24	08-Sep-14	21-Aug-14	11-Oct-14	01-Oct-14
TPD31025	Site Clearance and Tree Felling	24	24-Nov-14	24-Nov-14	22-Dec-14	30-Nov-14
TPD31035	G.I works	17	22-Dec-14		14-Jan-15	
TPD31100	Excavation of Soil (4,570m3)	12	14-Jan-15		28-Jan-15	
TPD31150	Excavation of Rock Grade IV (999m3)	12	28-Jan-15		11-Feb-15	
TPD31200	Excavation of Rock II/III (12,196m3)	92	11-Feb-15		13-Jun-15	
TPD31250	Forming West Portal Formation and temporary ground drainage works	4	13-Jun-15		19-Jun-15	
Site Formation - Slope TP_E & Associated Works		1047	08-Sep-14	01-Sep-14	21-Jul-17	
Stage 3		1047	08-Sep-14	01-Sep-14	21-Jul-17	
Temporary Works Design Submission and Approval		30	08-Sep-14	01-Sep-14	09-Oct-14	18-Sep-14
TPE11000	Haul road design submission	30	08-Sep-14	01-Sep-14	09-Oct-14	18-Sep-14
Method Statement Submission and Approval		45	23-Sep-14	18-Sep-14	06-Nov-14	23-Oct-14



Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

CRBC - Kaden JV

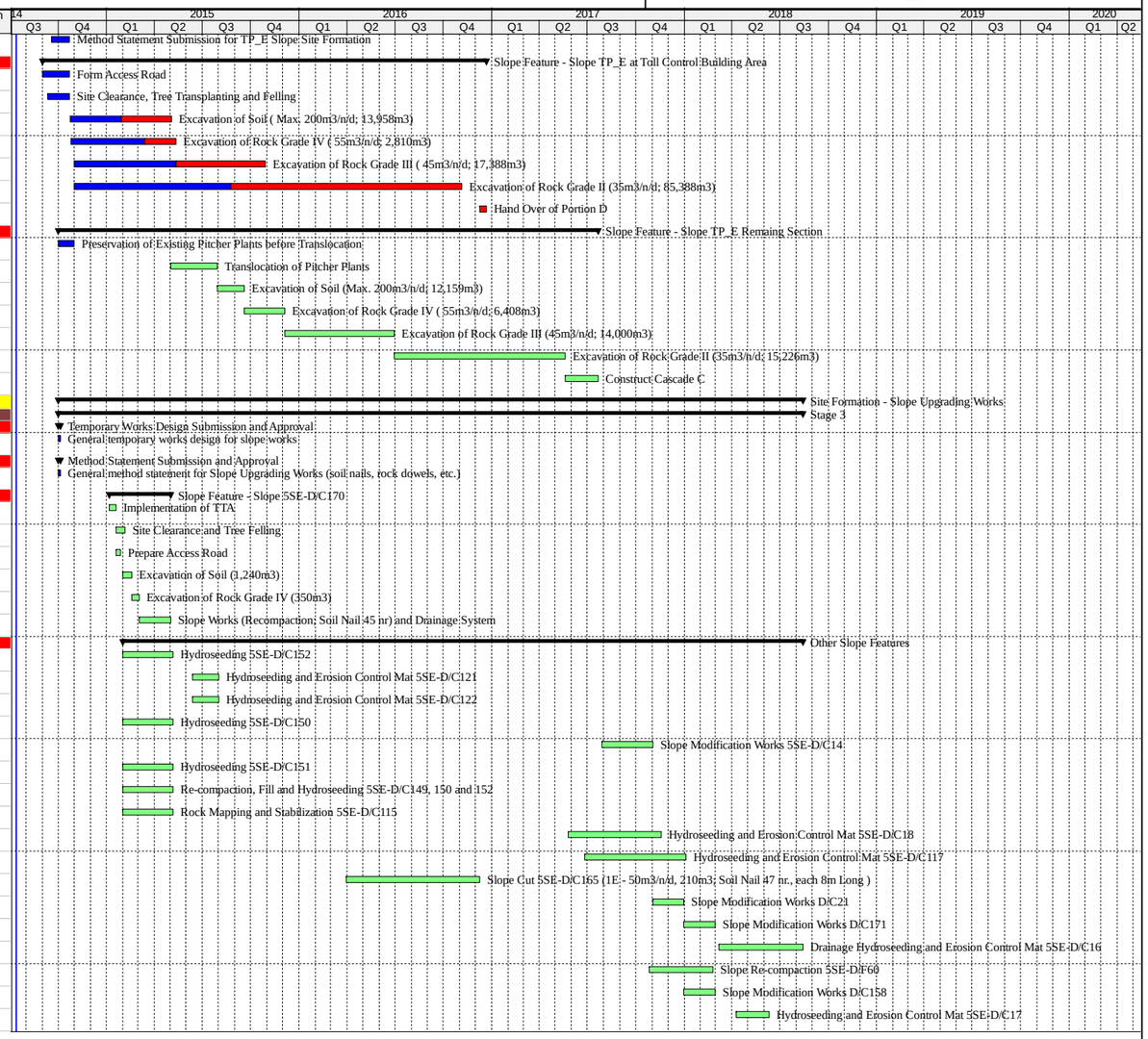
Programme &Progress

Date	Revision	Checked	Approved
30-Nov-14	Draft		

HY/2013/12 TM-CLKL Northern Connection Toll Plaza and Associated Works

CRBC - KADEN Joint Venture

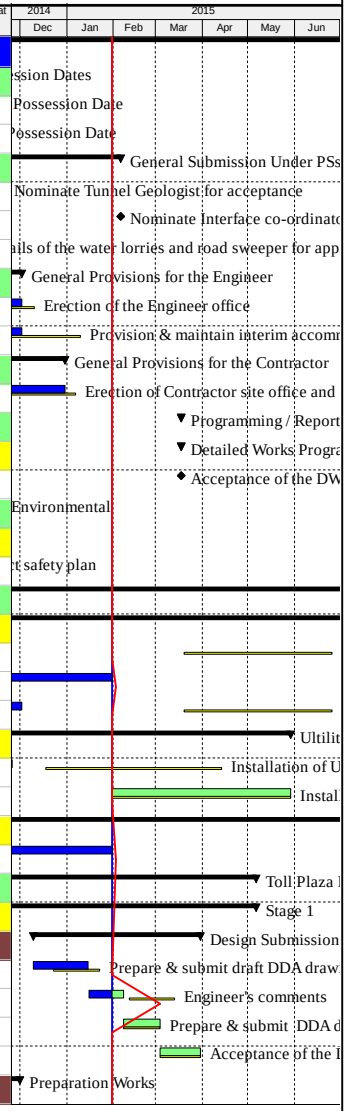
Activity ID	Activity Name	Original Duration	Planned Start	Actual Start	Planned Finish	Actual Finish
TPE21000	Method Statement Submission for TP_E Slope Site Formation	45	23-Sep-14	18-Sep-14	06-Nov-14	23-Oct-14
Slope Feature - Slope TP_E at Toll Control Building Area		804	09-Oct-14	01-Sep-14	21-Dec-16	
TPE31000	Form Access Road	72	09-Oct-14	01-Sep-14	07-Jan-15	23-Oct-14
TPE31050	Site Clearance, Tree Transplanting and Felling	72	11-Nov-14	12-Sep-14	06-Feb-15	23-Oct-14
TPE31100	Excavation of Soil (Max. 200m3/n/d; 13,958m3)	72	28-Jan-15	24-Oct-14	04-May-15	
TPE31150	Excavation of Rock Grade IV (55m3/n/d; 2,810m3)	44	13-Mar-15	25-Oct-14	12-May-15	
TPE31200	Excavation of Rock Grade III (45m3/n/d; 17,388m3)	129	12-May-15	31-Oct-14	29-Oct-15	
TPE31250	Excavation of Rock Grade II (35m3/n/d; 85,388m3)	337	24-Aug-15	01-Nov-14	04-Nov-16	
TPE31300	Hand Over of Portion D	13	08-Dec-16		21-Dec-16	
Slope Feature - Slope TP_E Remaing Section		779	18-Oct-14	02-Oct-14	21-Jul-17	
TPE41000	Preservation of Existing Pitcher Plants before Translocation	154	18-Oct-14	02-Oct-14	02-May-15	31-Oct-14
TPE41020	Translocation of Pitcher Plants	67	02-May-15		29-Jul-15	
TPE41100	Excavation of Soil (Max. 200m3/n/d; 12,159m3)	40	29-Jul-15		18-Sep-15	
TPE41150	Excavation of Rock Grade IV (55m3/n/d; 6,408m3)	60	18-Sep-15		04-Dec-15	
TPE41200	Excavation of Rock Grade III (45m3/n/d; 14,000m3)	160	04-Dec-15		29-Jun-16	
TPE41250	Excavation of Rock Grade II (35m3/n/d; 15,226m3)	250	29-Jun-16		19-May-17	
TPE41300	Construct Cascade C	48	19-May-17		21-Jul-17	
Site Formation - Slope Upgrading Works		1335	17-Dec-14	02-Oct-14	13-Aug-18	
Stage 3		1335	17-Dec-14	02-Oct-14	13-Aug-18	
Temporary Works Design Submission and Approval		30	17-Dec-14	02-Oct-14	17-Jan-15	06-Oct-14
SUW11000	General temporary works design for slope works	30	17-Dec-14	02-Oct-14	17-Jan-15	06-Oct-14
Method Statement Submission and Approval		45	17-Dec-14	02-Oct-14	31-Jan-15	06-Oct-14
SUW21000	General method statement for Slope Upgrading Works (soil nails, rock dowels, etc.)	45	17-Dec-14	02-Oct-14	31-Jan-15	06-Oct-14
Slope Feature - Slope 5SE-D/C170		117	06-Jan-15		02-May-15	
SUW31000	Implementation of TTA	14	06-Jan-15		19-Jan-15	
SUW31050	Site Clearance and Tree Felling	15	19-Jan-15		05-Feb-15	
SUW31100	Prepare Access Road	7	19-Jan-15		27-Jan-15	
SUW31150	Excavation of Soil (1,240m3)	14	31-Jan-15		17-Feb-15	
SUW31200	Excavation of Rock Grade IV (350m3)	9	17-Feb-15		03-Mar-15	
SUW31250	Slope Works (Recompaction; Soil Nail 45 nr) and Drainage System	45	03-Mar-15		02-May-15	
Other Slope Features		992	31-Jan-15		13-Aug-18	
SUW41000	Hydroseeding 5SE-D/C152	72	31-Jan-15		07-May-15	
SUW42000	Hydroseeding and Erosion Control Mat 5SE-D/C121	36	13-Jun-15		01-Aug-15	
SUW43000	Hydroseeding and Erosion Control Mat 5SE-D/C122	36	13-Jun-15		01-Aug-15	
SUW45000	Hydroseeding 5SE-D/C150	72	31-Jan-15		07-May-15	
SUW46000	Slope Modification Works 5SE-D/C14	72	29-Jul-17		02-Nov-17	
SUW47000	Hydroseeding 5SE-D/C151	72	31-Jan-15		07-May-15	
SUW47500	Re-compaction, Fill and Hydroseeding 5SE-D/C149, 150 and 152	72	31-Jan-15		07-May-15	
SUW48000	Rock Mapping and Stabilization 5SE-D/C115	72	31-Jan-15		07-May-15	
SUW49000	Hydroseeding and Erosion Control Mat 5SE-D/C18	136	25-May-17		18-Nov-17	
SUW50000	Hydroseeding and Erosion Control Mat 5SE-D/C117	148	26-Jun-17		03-Jan-18	
SUW51000	Slope Cut 5SE-D/C165 (1E - 50m3/n/d, 210m3; Soil Nail 47 nr., each 8m Long)	196	30-Mar-16		09-Dec-16	
SUW52000	Slope Modification Works D/C21	48	02-Nov-17		30-Dec-17	
SUW53000	Slope Modification Works D/C171	48	30-Dec-17		01-Mar-18	
SUW54000	Drainage Hydroseeding and Erosion Control Mat 5SE-D/C16	120	08-Mar-18		13-Aug-18	
SUW55000	Slope Re-compaction 5SE-D/F60	96	26-Oct-17		24-Feb-18	
SUW56000	Slope Modification Works D/C158	48	30-Dec-17		01-Mar-18	
SUW57000	Hydroseeding and Erosion Control Mat 5SE-D/C17	48	10-Apr-18		11-Jun-18	



Data Date : 31-Jan-15

HY/2013/12 TM-CLKL Northern Connection Toll Plaza and Associated Works

Activity ID	Activity Name	Original Duration	Start	Finish	Calendar	Performance % Complete	Total Float
HY/2013/12 TMCLK Northern Connection Toll Plaza and Associated-Works Programme-Rev.2		1247	29-Jul-14 A	06-Feb-18		0%	301
Site Possession Dates		31	30-Sep-14 A	06-Oct-14 A	GHY12 Cal.1	0%	
PPD1090	Portion E Possession Date	0	06-Oct-14 A		GHY12 Cal.1	100%	
PPD1100	Portion G Possession Date	0	30-Sep-14 A		GHY12 Cal.1	100%	
General Submission Under PSs		61	30-Sep-14 A	05-Feb-15	GHY12 Cal.3	0%	285
PS10220	Nominate Tunnel Geologist for acceptance	0		21-Nov-14 A	GHY12 Cal.3	100%	
PS10260	Nominate Interface co-ordinator for acceptance (EI+14d)	0		05-Feb-15	GHY12 Cal.3	0%	285
PS10340	Submit details of the water lorries and road sweeper for approval	0		30-Sep-14 A	GHY12 Cal.3	100%	
General Provisions for the Engineer		95	29-Jul-14 A	02-Dec-14 A	GHY12 Cal.2	0%	
GP10170	Erection of the Engineer office	72	29-Jul-14 A	02-Dec-14 A	GHY12 Cal.2	100%	
GP10180	Provision & maintain interim accommodation for the Engineer	80	02-Sep-14 A	02-Dec-14 A	GHY12 Cal.2	100%	
General Provisions for the Contractor		80	02-Aug-14 A	31-Dec-14 A	GHY12 Cal.2	0%	
GP20200	Erection of Contractor site office and other facilities	80	02-Aug-14 A	31-Dec-14 A	GHY12 Cal.2	100%	
Programming / Reporting		0	17-Mar-15	17-Mar-15	GHY12 Cal.3	0%	86
Detailed Works Programme (DWP)		0	17-Mar-15	17-Mar-15	GHY12 Cal.3	0%	86
PR20170	Acceptance of the DWP	0		17-Mar-15	GHY12 Cal.3	0%	86
Site Safety & Environmental		0	19-Sep-14 A	19-Sep-14 A	GHY12 Cal.3	0%	
Site Safety		0	19-Sep-14 A	19-Sep-14 A	GHY12 Cal.3	0%	
SE10200	Submit project safety plan	0		19-Sep-14 A	GHY12 Cal.3	100%	
Instrumentation and Monitoring		889	25-Sep-14 A	06-Feb-18	GHY12 Cal.2	0%	230
Ground Settlement Marker		816	25-Sep-14 A	06-Feb-18	GHY12 Cal.2	0%	230
IM10070	Installation of GSM02-03,09,17-18,20	72	27-Sep-14 A	14-Oct-14 A	GHY12 Cal.2	100%	
IM10090	Installation of GSM11,GSM45-46(Outside site boundary)	8	25-Sep-14 A	06-Feb-18	GHY12 Cal.2	33.01%	230
IM10100	Installation of GSM10,13-14,37-42	72	25-Sep-14 A	02-Dec-14 A	GHY12 Cal.2	100%	
Ultility Settlement Marker		125	18-Nov-14 A	29-May-15	GHY12 Cal.2	0%	291
IM20020	Installation of USM5,9,10,14,15,17	90	18-Nov-14 A	26-Nov-14 A	GHY12 Cal.2	100%	
IM60020	Installation of USM-Remain USM	90	31-Jan-15	29-May-15	GHY12 Cal.2	0%	291
Piezometer/Standpipe		7	04-Nov-14 A	06-Nov-17	GHY12 Cal.2	0%	107
IM50025	GI for PADH13-15 and installation piezometer	7	04-Nov-14 A	06-Nov-17	GHY12 Cal.2	33.01%	107
Toll Plaza Decking TD1-Section 1		170	14-Aug-14 A	06-May-15		0%	168
Stage 1		170	14-Aug-14 A	06-May-15		0%	168
Design Submission and Approval		97	10-Dec-14 A	30-Mar-15	GHY12 Cal.3	0%	131
TD120060	Prepare & submit draft DDA drawing w/ICE cert(foundation)	30	10-Dec-14 A	15-Jan-15 A	GHY12 Cal.3	100%	
TD120070	Engineer's comments	29	16-Jan-15 A	07-Feb-15	GHY12 Cal.3	70%	131
TD120080	Prepare & submit DDA drawing w/ICE cert(foundation)	21	07-Feb-15	03-Mar-15	GHY12 Cal.3	0%	131
TD120090	Acceptance of the DDA Drawing	29	03-Mar-15	30-Mar-15	GHY12 Cal.3	0%	131
Preparation Works		49	19-Sep-14 A	01-Dec-14 A	GHY12 Cal.2	0%	



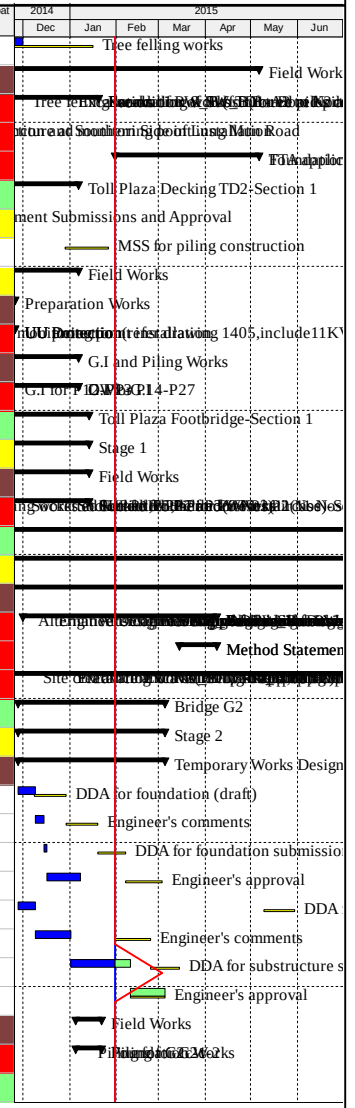
Remaining Level of Effort
Remaining Work
Primary Baseline
Critical Remaini...
Actual Work
Milestone

CRBC - Kaden JV
Three-Month Rolling Programme

Date	Revision	Checked	Approved
15-Jan-15	2		

HY/2013/12 TM-CLKL Northern Connection Toll Plaza and Associated Works

Activity ID	Activity Name	Original Duration	Start	Finish	Calendar	Performance % Complete	Total Float
TD120400	Tree felling works	49	19-Sep-14 A	01-Dec-14 A	GHY12 Cal.2	100%	
Field Works		154	14-Aug-14 A	06-May-15		0%	168
Foundation & Substructure at Northern Side of Lung Mun Road		132	14-Aug-14 A	20-Jan-15 A		0%	
Foundation& Substructure at Southern Side of Lung Mun Road		15	16-Aug-14 A	18-Aug-14 A	GHY12 Cal.2	0%	
Foundation & Substructure at Central Divider of Lung Mun Road		72	31-Jan-15	06-May-15	GHY12 Cal.2	0%	62
Toll Plaza Decking TD2-Section 1		196	05-Aug-14 A	07-Jan-15 A		0%	
Method Statement Submissions and Approval		30	10-Sep-14 A	20-Sep-14 A	GHY12 Cal.3	0%	
TD220080	MSS for piling construction	30	10-Sep-14 A	20-Sep-14 A	GHY12 Cal.3	100%	
Field Works		152	05-Aug-14 A	07-Jan-15 A	GHY12 Cal.2	0%	
Preparation Works		130	05-Aug-14 A	26-Nov-14 A	GHY12 Cal.2	0%	
UU Protection		130	05-Aug-14 A	26-Nov-14 A	GHY12 Cal.2	0%	
G.I and Piling Works		48	22-Oct-14 A	07-Jan-15 A	GHY12 Cal.2	0%	
DWP-G.I		48	22-Oct-14 A	07-Jan-15 A	GHY12 Cal.2	0%	
Toll Plaza Footbridge-Section 1		54	11-Oct-14 A	14-Jan-15 A	GHY12 Cal.2	0%	
Stage 1		54	11-Oct-14 A	14-Jan-15 A	GHY12 Cal.2	0%	
Field Works		54	11-Oct-14 A	14-Jan-15 A	GHY12 Cal.2	0%	
G.I and Foundation Works		54	11-Oct-14 A	14-Jan-15 A	GHY12 Cal.2	0%	
Retaining Structure RW_B-Section 1		342	14-Aug-14 A	25-Aug-15		0%	211
Site Formation - Retaining Structure RW_B		342	14-Aug-14 A	25-Aug-15		0%	211
Stage 1		342	14-Aug-14 A	25-Aug-15		0%	211
Design Submission and Approval		84	01-Dec-14 A	08-Apr-15	GHY12 Cal.3	0%	200
Method Statement Submission and Approval		21	14-Mar-15	08-Apr-15	GHY12 Cal.3	0%	179
Retaining Structure RW_B		267	14-Aug-14 A	25-Aug-15	GHY12 Cal.2	0%	167
Bridge G2		174	28-Nov-14 A	05-Mar-15		0%	245
Stage 2		174	28-Nov-14 A	05-Mar-15		0%	245
Temporary Works Design (TWD) Submission and Approval		172	28-Nov-14 A	05-Mar-15	GHY12 Cal.3	0%	249
BG23510	DDA for foundation (draft)	21	28-Nov-14 A	09-Dec-14 A	GHY12 Cal.3	100%	
BG23520	Engineer's comments	21	09-Dec-14 A	15-Dec-14 A	GHY12 Cal.3	100%	
BG23530	DDA for foundation submission	21	15-Dec-14 A	17-Dec-14 A	GHY12 Cal.3	100%	
BG23540	Engineer's approval	21	17-Dec-14 A	08-Jan-15 A	GHY12 Cal.3	100%	
BG23550	DDA for substructure(draft)	21	28-Nov-14 A	09-Dec-14 A	GHY12 Cal.3	100%	
BG23560	Engineer's comments	21	09-Dec-14 A	02-Jan-15 A	GHY12 Cal.3	100%	
BG23570	DDA for substructure submission	21	02-Jan-15 A	10-Feb-15	GHY12 Cal.3	50%	249
BG23580	Engineer's approval	21	10-Feb-15	05-Mar-15	GHY12 Cal.3	0%	249
Field Works		20	05-Jan-15 A	22-Jan-15 A	GHY12 Cal.2	0%	
Foundation Works		20	05-Jan-15 A	22-Jan-15 A	GHY12 Cal.2	0%	
Bridge G1		6	14-Aug-14 A	21-Aug-14 A	GHY12 Cal.2	0%	



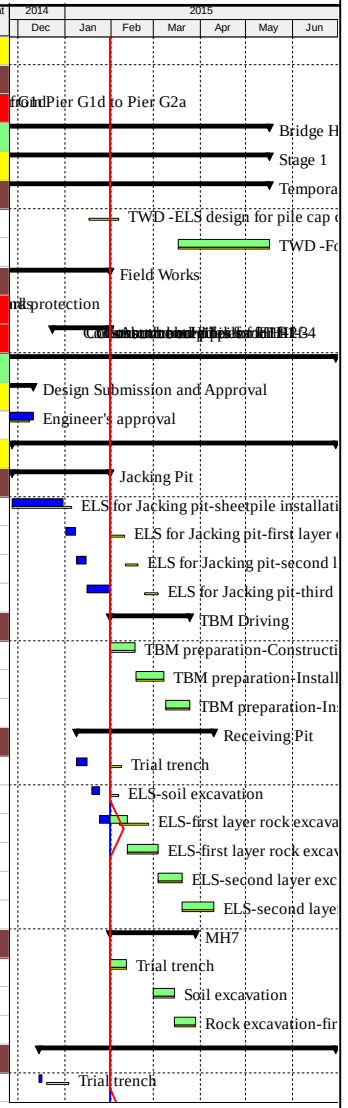
Remaining Level of Effort
Remaining Work
Primary Baseline
Critical Remaini...
Actual Work
Milestone

CRBC - Kaden JV
Three-Month Rolling Programme

Date	Revision	Checked	Approved
15-Jan-15	2		

HY/2013/12 TM-CLKL Northern Connection Toll Plaza and Associated Works

Activity ID	Activity Name	Original Duration	Start	Finish	Calendar	Performance % Complete	Total Float
Stage 2		6	14-Aug-14 A	21-Aug-14 A	GHY12 Cal.2	0%	
Field Works		6	14-Aug-14 A	21-Aug-14 A	GHY12 Cal.2	0%	
Substructure Works from Pier G1d to Pier G2a		6	14-Aug-14 A	21-Aug-14 A	GHY12 Cal.2	0%	
Bridge H1-Section 1		181	08-Aug-14 A	16-May-15		0%	330
Stage 1		181	08-Aug-14 A	16-May-15		0%	330
Temporary Works Design (TWD) Submission and Approval		119	01-Sep-14 A	16-May-15	GHY12 Cal.3	0%	333
BH11010	TWD -ELS design for pile cap construction	21	01-Sep-14 A	26-Sep-14 A	GHY12 Cal.3	100%	
BH11020	TWD -Formwork design for abutment	60	17-Mar-15	16-May-15	GHY12 Cal.3	0%	333
Field Works		117	08-Aug-14 A	31-Jan-15		0%	342
Preparation Works		24	08-Aug-14 A	12-Sep-14 A	GHY12 Cal.2	0%	
Abutment H1f		117	24-Dec-14 A	31-Jan-15		0%	342
Culvert 1(TBM)-Stage 4		243	13-Nov-14 A	29-Jun-15		0%	12
Design Submission and Approval		30	13-Nov-14 A	11-Dec-14 A	GHY12 Cal.3	0%	
CUL13190	Engineer's approval	30	13-Nov-14 A	11-Dec-14 A	GHY12 Cal.3	100%	
Field Works		174	27-Nov-14 A	29-Jun-15	GHY12 Cal.2	0%	9
Jacking Pit		77	27-Nov-14 A	31-Jan-15 A	GHY12 Cal.2	0%	
CUL130301	ELS for Jacking pit-sheetpile installation	30	27-Nov-14 A	31-Dec-14 A	GHY12 Cal.2	100%	
CUL130302	ELS for Jacking pit-first layer excavation	8	02-Jan-15 A	08-Jan-15 A	GHY12 Cal.2	100%	
CUL130303	ELS for Jacking pit-second layer excavation	8	09-Jan-15 A	15-Jan-15 A	GHY12 Cal.2	100%	
CUL130304	ELS for Jacking pit-third layer excavation	8	16-Jan-15 A	31-Jan-15 A	GHY12 Cal.2	100%	
TBM Driving		42	31-Jan-15	24-Mar-15	GHY12 Cal.2	0%	7
CUL130901	TBM preparation-Construction of Trust Wall	14	31-Jan-15	16-Feb-15	GHY12 Cal.2	0%	7
CUL130902	TBM preparation-Installation of Guide Rail	14	17-Feb-15	07-Mar-15	GHY12 Cal.2	0%	7
CUL130903	TBM preparation-Installation of Entrance Ring	14	09-Mar-15	24-Mar-15	GHY12 Cal.2	0%	7
Receiving Pit		52	09-Jan-15 A	09-Apr-15	GHY12 Cal.2	0%	20
CUL13130	Trial trench	7	09-Jan-15 A	16-Jan-15 A	GHY12 Cal.2	100%	
CUL131400	ELS-soil excavation	5	19-Jan-15 A	24-Jan-15 A	GHY12 Cal.2	100%	
CUL131401	ELS-first layer rock excavation	14	24-Jan-15 A	11-Feb-15	GHY12 Cal.2	30%	20
CUL131402	ELS-first layer rock excavation and sheetpile installation	14	11-Feb-15	03-Mar-15	GHY12 Cal.2	0%	20
CUL131403	ELS-second layer excavation(half)	14	03-Mar-15	19-Mar-15	GHY12 Cal.2	0%	20
CUL131404	ELS-second layer excavation(remain section)	14	19-Mar-15	09-Apr-15	GHY12 Cal.2	0%	20
MH7		46	31-Jan-15	28-Mar-15	GHY12 Cal.2	0%	20
CUL13330	Trial trench	9	31-Jan-15	10-Feb-15	GHY12 Cal.2	0%	33
CUL133400	Soil excavation	12	28-Feb-15	14-Mar-15	GHY12 Cal.2	0%	20
CUL133401	Rock excavation-first layer	12	14-Mar-15	28-Mar-15	GHY12 Cal.2	0%	20
FC1		154	15-Dec-14 A	29-Jun-15	GHY12 Cal.2	0%	9
CUL13390	Trial trench	10	15-Dec-14 A	17-Dec-14 A	GHY12 Cal.2	100%	



Remaining Level of Effort
Remaining Work
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Critical Remaini...
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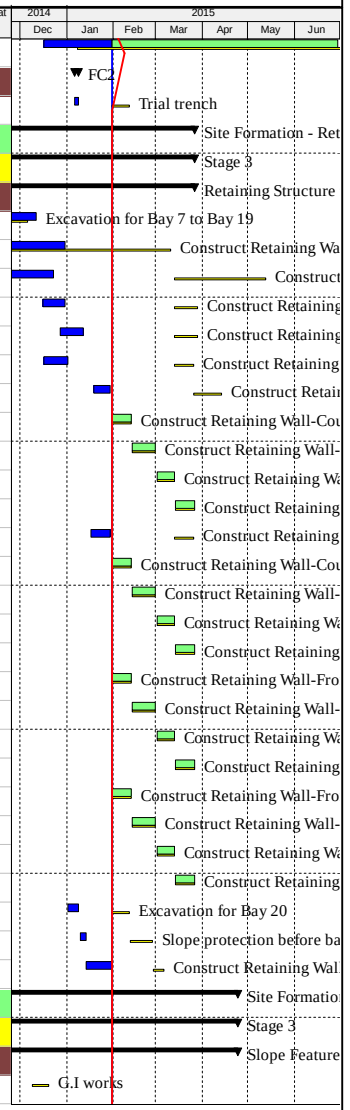
Milestone

CRBC - Kaden JV
Three-Month Rolling Programme

Date	Revision	Checked	Approved
15-Jan-15	2		

HY/2013/12 TM-CLKL Northern Connection Toll Plaza and Associated Works

Activity ID	Activity Name	Original Duration	Start	Finish	Calendar	Performance % Complete	Total Float
CUL13395	Liasion with CLP and temporary diversion for 11kv cable for construction of FC1	141	17-Dec-14 A	29-Jun-15	GHY12 Cal.2	20%	9
FC2		10	06-Jan-15 A	09-Jan-15 A	GHY12 Cal.2	0%	
CUL13440	Trial trench	10	06-Jan-15 A	09-Jan-15 A	GHY12 Cal.2	100%	
Site Formation - Retaining Structure for Slope TP_F		137	19-Sep-14 A	26-Mar-15	GHY12 Cal.2	0%	337
Stage 3		137	19-Sep-14 A	26-Mar-15	GHY12 Cal.2	0%	337
Retaining Structure for Slope TP_F		137	19-Sep-14 A	26-Mar-15	GHY12 Cal.2	0%	337
RWF31050	Excavation for Bay 7 to Bay 19	15	19-Sep-14 A	12-Dec-14 A	GHY12 Cal.2	100%	
RWF31300	Construct Retaining Wall -Base slab (Bay 7 to Bay 19)	90	19-Oct-14 A	31-Dec-14 A	GHY12 Cal.2	100%	
RWF3130200	Construct Retaining Wall-Wall construction Bay 11&13	45	31-Oct-14 A	23-Dec-14 A	GHY12 Cal.2	100%	
RWF3130201	Construct Retaining Wall-Counterfort Wall construction Bay9, 15	14	16-Dec-14 A	31-Dec-14 A	GHY12 Cal.2	100%	
RWF3130202	Construct Retaining Wall-Counterfort Wall construction Bay12,17	14	28-Dec-14 A	12-Jan-15 A	GHY12 Cal.2	100%	
RWF3130203	Construct Retaining Wall-Counterfort Wall construction Bay 9	11	17-Dec-14 A	02-Jan-15 A	GHY12 Cal.2	100%	
RWF3130204	Construct Retaining Wall-Counterfort Wall construction Bay 10	11	19-Jan-15 A	30-Jan-15 A	GHY12 Cal.2	100%	
RWF3130205	Construct Retaining Wall-Counterfort Wall construction Bay 7	11	31-Jan-15	12-Feb-15	GHY12 Cal.2	0%	250
RWF3130206	Construct Retaining Wall-Counterfort Wall construction Bay 8	11	13-Feb-15	28-Feb-15	GHY12 Cal.2	0%	250
RWF3130207	Construct Retaining Wall-Counterfort Wall construction Bay 5	11	02-Mar-15	13-Mar-15	GHY12 Cal.2	0%	250
RWF3130208	Construct Retaining Wall-Counterfort Wall construction Bay 6	11	14-Mar-15	26-Mar-15	GHY12 Cal.2	0%	250
RWF3130209	Construct Retaining Wall-Counterfort Wall construction Bay 14	11	17-Jan-15 A	30-Jan-15 A	GHY12 Cal.2	100%	
RWF3130210	Construct Retaining Wall-Counterfort Wall construction Bay 17	11	31-Jan-15	12-Feb-15	GHY12 Cal.2	0%	239
RWF3130211	Construct Retaining Wall-Counterfort Wall construction Bay 16	11	13-Feb-15	28-Feb-15	GHY12 Cal.2	0%	239
RWF3130212	Construct Retaining Wall-Counterfort Wall construction Bay 19	11	02-Mar-15	13-Mar-15	GHY12 Cal.2	0%	239
RWF3130213	Construct Retaining Wall-Counterfort Wall construction Bay 18	11	14-Mar-15	26-Mar-15	GHY12 Cal.2	0%	239
RWF3130215	Construct Retaining Wall-Front Wall construction Bay 9	11	31-Jan-15	12-Feb-15	GHY12 Cal.2	0%	228
RWF3130216	Construct Retaining Wall-Front Wall construction Bay 10	11	13-Feb-15	28-Feb-15	GHY12 Cal.2	0%	228
RWF3130217	Construct Retaining Wall-Front Wall construction Bay 7	11	02-Mar-15	13-Mar-15	GHY12 Cal.2	0%	228
RWF3130218	Construct Retaining Wall-Front Wall construction Bay 8	11	14-Mar-15	26-Mar-15	GHY12 Cal.2	0%	228
RWF3130221	Construct Retaining Wall-Front Wall construction Bay 14	11	31-Jan-15	12-Feb-15	GHY12 Cal.2	0%	228
RWF3130222	Construct Retaining Wall-Front Wall construction Bay 17	11	13-Feb-15	28-Feb-15	GHY12 Cal.2	0%	228
RWF3130223	Construct Retaining Wall-Front Wall construction Bay 16	11	02-Mar-15	13-Mar-15	GHY12 Cal.2	0%	228
RWF3130224	Construct Retaining Wall-Front Wall construction Bay 19	11	14-Mar-15	26-Mar-15	GHY12 Cal.2	0%	228
RWF3130610	Excavation for Bay 20	10	02-Jan-15 A	09-Jan-15 A	GHY12 Cal.2	100%	
RWF3130611	Slope protection before base slab for Bay 20	10	10-Jan-15 A	14-Jan-15 A	GHY12 Cal.2	100%	
RWF3130612	Construct Retaining Wall -Base slab (Bay 20)	7	14-Jan-15 A	31-Jan-15 A	GHY12 Cal.2	100%	
Site Formation - Slope TP_A & Associated Works		252	11-Sep-14 A	24-Apr-15	GHY12 Cal.2	0%	176
Stage 3		252	11-Sep-14 A	24-Apr-15	GHY12 Cal.2	0%	176
Slope Feature - Slope TP_A		252	11-Sep-14 A	24-Apr-15	GHY12 Cal.2	0%	176
TPA41055	G.I works	10	13-Sep-14 A	16-Sep-14 A	GHY12 Cal.2	100%	



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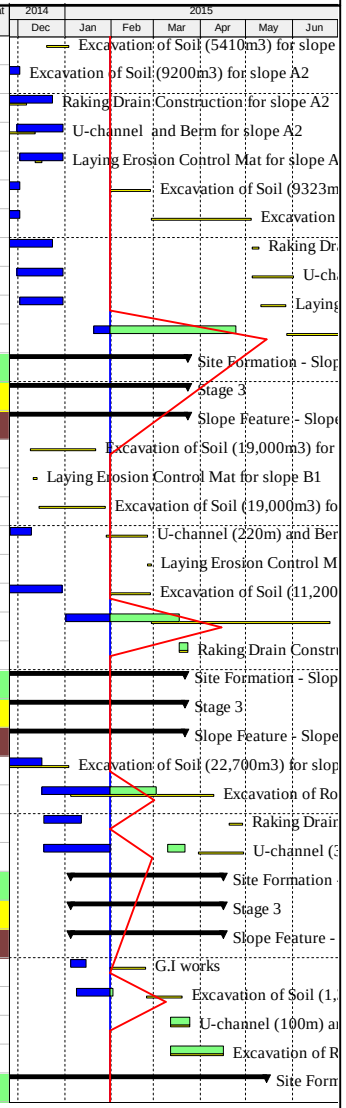
HY/2013/12 TM-CLKL Northern Connection Toll Plaza and Associated Works

Activity ID	Activity Name	Original Duration	Start	Finish	Calendar	Performance % Complete	Total Float
TPA41100	Excavation of Soil (5410m3) for slope A1	10	11-Sep-14 A	20-Oct-14 A	GHY12 Cal.2	100%	
TPA41140	Excavation of Soil (9200m3) for slope A2	20	21-Oct-14 A	02-Dec-14 A	GHY12 Cal.2	100%	
TPA41150	Raking Drain Construction for slope A2	16	24-Nov-14 A	24-Dec-14 A	GHY12 Cal.2	100%	
TPA41160	U-channel and Berm for slope A2	21	30-Nov-14 A	31-Dec-14 A	GHY12 Cal.2	100%	
TPA41170	Laying Erosion Control Mat for slope A2	3	02-Dec-14 A	31-Dec-14 A	GHY12 Cal.2	100%	
TPA41180	Excavation of Soil (9323m3) for slope A3	20	01-Oct-14 A	02-Dec-14 A	GHY12 Cal.2	100%	
TPA41190	Excavation of Rock (8850m3) for slope A3	50	01-Oct-14 A	02-Dec-14 A	GHY12 Cal.2	100%	
TPA41200	Raking Drain Construction for slope A3	5	24-Nov-14 A	24-Dec-14 A	GHY12 Cal.2	100%	
TPA41210	U-channel (240m) and Berm for slope A3	21	30-Nov-14 A	31-Dec-14 A	GHY12 Cal.2	100%	
TPA41220	Laying Erosion Control Mat for slope A3	13	02-Dec-14 A	31-Dec-14 A	GHY12 Cal.2	100%	
TPA41350	Forming East Portal Formation and temporary ground drainage works	80	20-Jan-15 A	24-Apr-15	GHY12 Cal.2	20%	176
Site Formation - Slope TP_B & Associated Works		153	03-Sep-14 A	23-Mar-15	GHY12 Cal.2	0%	540
Stage 3		153	03-Sep-14 A	23-Mar-15	GHY12 Cal.2	0%	540
Slope Feature - Slope TP_B		153	03-Sep-14 A	23-Mar-15	GHY12 Cal.2	0%	540
TPB40300	Excavation of Soil (19,000m3) for slope B1	35	03-Sep-14 A	12-Oct-14 A	GHY12 Cal.2	100%	
TPB40600	Laying Erosion Control Mat for slope B1	3	18-Oct-14 A	21-Oct-14 A	GHY12 Cal.2	100%	
TPB40700	Excavation of Soil (19,000m3) for slope B2	35	13-Oct-14 A	01-Nov-14 A	GHY12 Cal.2	100%	
TPB40800	U-channel (220m) and Berm for slope B2	21	26-Nov-14 A	10-Dec-14 A	GHY12 Cal.2	100%	
TPB40900	Laying Erosion Control Mat for slope B2	3	10-Nov-14 A	13-Nov-14 A	GHY12 Cal.2	100%	
TPB41000	Excavation of Soil (11,200m3) for slope B3	20	14-Nov-14 A	30-Dec-14 A	GHY12 Cal.2	100%	
TPB41100	Excavation of Rock (17,900m3) for slope B3	90	02-Jan-15 A	17-Mar-15	GHY12 Cal.2	60%	540
TPB41200	Raking Drain Construction for slope B3	5	18-Mar-15	23-Mar-15	GHY12 Cal.2	0%	540
Site Formation - Slope TP_C & Associated Works		149	03-Sep-14 A	21-Mar-15	GHY12 Cal.2	0%	500
Stage 3		149	03-Sep-14 A	21-Mar-15	GHY12 Cal.2	0%	500
Slope Feature - Slope TP_C		149	03-Sep-14 A	21-Mar-15	GHY12 Cal.2	0%	500
TPC50400	Excavation of Soil (22,700m3) for slope C1	58	03-Sep-14 A	17-Dec-14 A	GHY12 Cal.2	100%	
TPC50500	Excavation of Rock (11,950m3) for slope C1	75	17-Dec-14 A	02-Mar-15	GHY12 Cal.2	70%	175
TPC50600	Raking Drain Construction for slope C1	8	18-Dec-14 A	12-Jan-15 A	GHY12 Cal.2	100%	
TPC50700	U-channel (350m) and Berm for slope C1	21	18-Dec-14 A	21-Mar-15	GHY12 Cal.2	50%	500
Site Formation - Slope TP_D & Associated Works		56	05-Jan-15 A	16-Apr-15	GHY12 Cal.2	0%	126
Stage 3		56	05-Jan-15 A	16-Apr-15	GHY12 Cal.2	0%	126
Slope Feature - Slope TP_D		56	05-Jan-15 A	16-Apr-15	GHY12 Cal.2	0%	126
TPD51200	G.I works	17	05-Jan-15 A	15-Jan-15 A	GHY12 Cal.2	100%	
TPD51300	Excavation of Soil (1,310m3) for slope D1, D2a and D2b	21	09-Jan-15 A	02-Feb-15	GHY12 Cal.2	95%	126
TPD51350	U-channel (100m) and Berm for slope D1, D2a and D2b	11	12-Mar-15	25-Mar-15	GHY12 Cal.2	0%	126
TPD51400	Excavation of Rock (4,670m3) for slope D3a, D3b and D4	25	12-Mar-15	16-Apr-15	GHY12 Cal.2	0%	126
Site Formation - Slope TP_E & Associated Works		161	16-Oct-14 A	14-May-15	GHY12 Cal.2	0%	115



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Three-Month Rolling Programme

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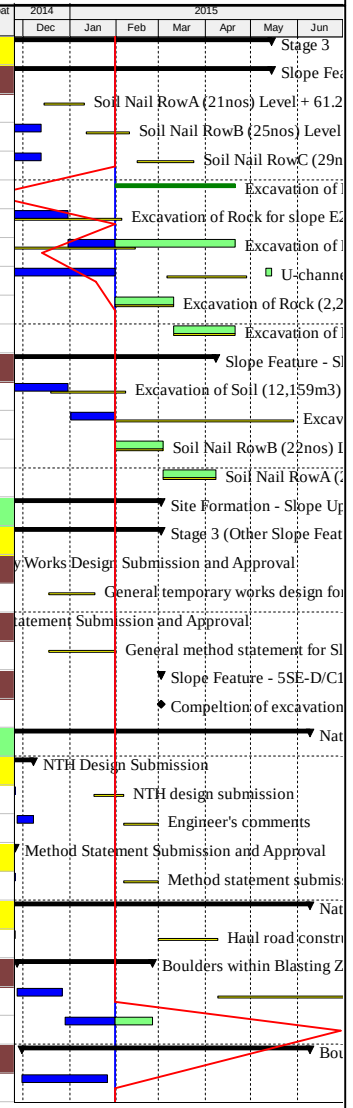
HY/2013/12 TM-CLKL Northern Connection Toll Plaza and Associated Works

Activity ID	Activity Name	Original Duration	Start	Finish	Calendar	Performance % Complete	Total Float
Stage 3		161	16-Oct-14 A	14-May-15	GHY12 Cal.2	0%	115
Slope Feature - Slope TP_E at Toll Control Building Area		138	16-Oct-14 A	14-May-15	GHY12 Cal.2	0%	65
TPE61110	Soil Nail RowA (21nos) Level + 61.20 (Install and grouting)	21	16-Oct-14 A	07-Nov-14 A	GHY12 Cal.2	100%	
TPE61120	Soil Nail RowB (25nos) Level + 59.20 (Install and grouting)	25	16-Oct-14 A	13-Dec-14 A	GHY12 Cal.2	100%	
TPE61130	Soil Nail RowC (29nos) Level + 57.20 (Install and grouting)	29	16-Oct-14 A	13-Dec-14 A	GHY12 Cal.2	100%	
TPE61150	Excavation of Rock (30,200m3) for slope E2b	48	06-Nov-14 A	20-Apr-15	GHY12 Cal.2	0%	55
TPE61160	Excavation of Rock for slope E2b - stage 1	75	06-Nov-14 A	31-Dec-14 A	GHY12 Cal.2	100%	
TPE61170	Excavation of Rock for slope E2b - stage 2	75	31-Dec-14 A	20-Apr-15	GHY12 Cal.2	20%	55
TPE61190	U-channel (150m) and Berm for slope E2b	40	22-Oct-14 A	14-May-15	GHY12 Cal.2	90%	55
TPE61300	Excavation of Rock (2,200m3) for slope E1c	30	31-Jan-15	10-Mar-15	GHY12 Cal.2	0%	84
TPE61350	Excavation of Rock (2,000m3) for slope E1b	30	11-Mar-15	20-Apr-15	GHY12 Cal.2	0%	84
Slope Feature - Slope TP_E Remaing Section and 5SE-D/C116		124	17-Nov-14 A	07-Apr-15	GHY12 Cal.2	0%	144
TPE62100	Excavation of Soil (12,159m3) for slope E	40	17-Nov-14 A	31-Dec-14 A	GHY12 Cal.2	100%	
TPE62150	Excavation of Soil/Rock (13,900m3) for slope E2c	90	02-Jan-15 A	31-Jan-15 A	GHY12 Cal.2	100%	
TPE62160	Soil Nail RowB (22nos) Level + 35.00 for 5SE-D/C-116 (Install and grouting)	24	31-Jan-15	03-Mar-15	GHY12 Cal.2	0%	144
TPE62170	Soil Nail RowA (24nos) Level + 33.00 for 5SE-D/C116 (Install and grouting)	26	04-Mar-15	07-Apr-15	GHY12 Cal.2	0%	144
Site Formation - Slope Upgrading Works		75	01-Oct-14 A	02-Mar-15		0%	728
Stage 3 (Other Slope Features)		75	01-Oct-14 A	02-Mar-15		0%	728
Temporary Works Design Submission and Approval		30	01-Oct-14 A	06-Oct-14 A	GHY12 Cal.3	0%	
SFW10000	General temporary works design for slope works	30	01-Oct-14 A	06-Oct-14 A	GHY12 Cal.3	100%	
Method Statement Submission and Approval		45	01-Oct-14 A	06-Oct-14 A	GHY12 Cal.3	0%	
SFW10010	General method statement for Slope Upgrading Works (soil nails, rock dowels, etc.)	45	01-Oct-14 A	06-Oct-14 A	GHY12 Cal.3	100%	
Slope Feature - 5SE-D/C170		0	02-Mar-15	02-Mar-15	GHY12 Cal.2	0%	175
SFW10065	Compeltion of excavation of TP_C	0	02-Mar-15		GHY12 Cal.2	0%	175
Natural Terrain Hazard Mitigation Measures		336	13-Nov-14 A	09-Jun-15		0%	919
NTH Design Submission		42	13-Nov-14 A	08-Dec-14 A	GHY12 Cal.3	0%	
NTH10000	NTH design submission	21	13-Nov-14 A	26-Nov-14 A	GHY12 Cal.3	100%	
NTH10090	Engineer's comments	21	27-Nov-14 A	08-Dec-14 A	GHY12 Cal.3	100%	
Method Statement Submission and Approval		21	13-Nov-14 A	26-Nov-14 A	GHY12 Cal.3	0%	
NTH10010	Method statement submission for NTH	21	13-Nov-14 A	26-Nov-14 A	GHY12 Cal.3	100%	
Natural Terrian Hazard Mitigation Measures		230	20-Nov-14 A	09-Jun-15	GHY12 Cal.2	0%	711
NTH10040	Haul road construction	30	20-Nov-14 A	26-Nov-14 A	GHY12 Cal.2	100%	
Boulders within Blasting Zone		116	27-Nov-14 A	24-Feb-15	GHY12 Cal.2	0%	281
NTH10070	Mitigation measures for 20 boulders within blasting zone	80	27-Nov-14 A	27-Dec-14 A	GHY12 Cal.2	100%	
NTH10110	Mitigation measures for 9 boulders within blasting zone	36	29-Dec-14 A	24-Feb-15	GHY12 Cal.2	50%	281
Boulders outside Blasting Zone		230	30-Nov-14 A	09-Jun-15	GHY12 Cal.2	0%	711
NTH10080	Mitigation measures for 20 boulders outside blasting zone	80	30-Nov-14 A	26-Jan-15 A	GHY12 Cal.2	100%	



Remaining Level of Effort
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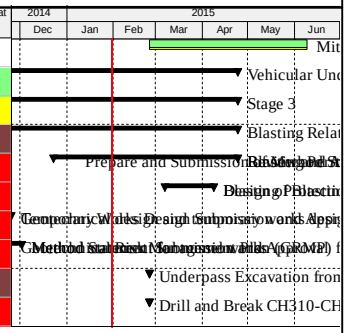
HY/2013/12 TM-CLKL Northern Connection Toll Plaza and Associated Works

Activity ID	Activity Name	Original Duration	Start	Finish	Calendar	Performance % Complete	Total Float
NTH10100	Mitigation measures for 20 boulders outside blasting zone	80	25-Feb-15	09-Jun-15	GHY12 Cal.2	0%	711
Vehicular Underpass TN-01		206	10-Nov-14 A	24-Apr-15		0%	361
Stage 3		206	10-Nov-14 A	24-Apr-15		0%	361
Blasting Related Submission		206	10-Nov-14 A	24-Apr-15	GHY12 Cal.3	0%	365
Blasting Permit Application		206	23-Dec-14 A	24-Apr-15	GHY12 Cal.3	0%	238
Blasting Protection Works		30	07-Mar-15	08-Apr-15	GHY12 Cal.3	0%	382
Temporary Works Design Submission and Approval		90	10-Nov-14 A	25-Nov-14 A	GHY12 Cal.3	0%	
Method Statment Submission and Approval		60	10-Nov-14 A	02-Dec-14 A	GHY12 Cal.3	0%	
Underpass Excavation from West Portal		0	24-Feb-15	24-Feb-15	GHY12 Cal.2	0%	281
Drill and Break CH310-CH320 (Section of Type A Lining)		0	24-Feb-15	24-Feb-15	GHY12 Cal.2	0%	281



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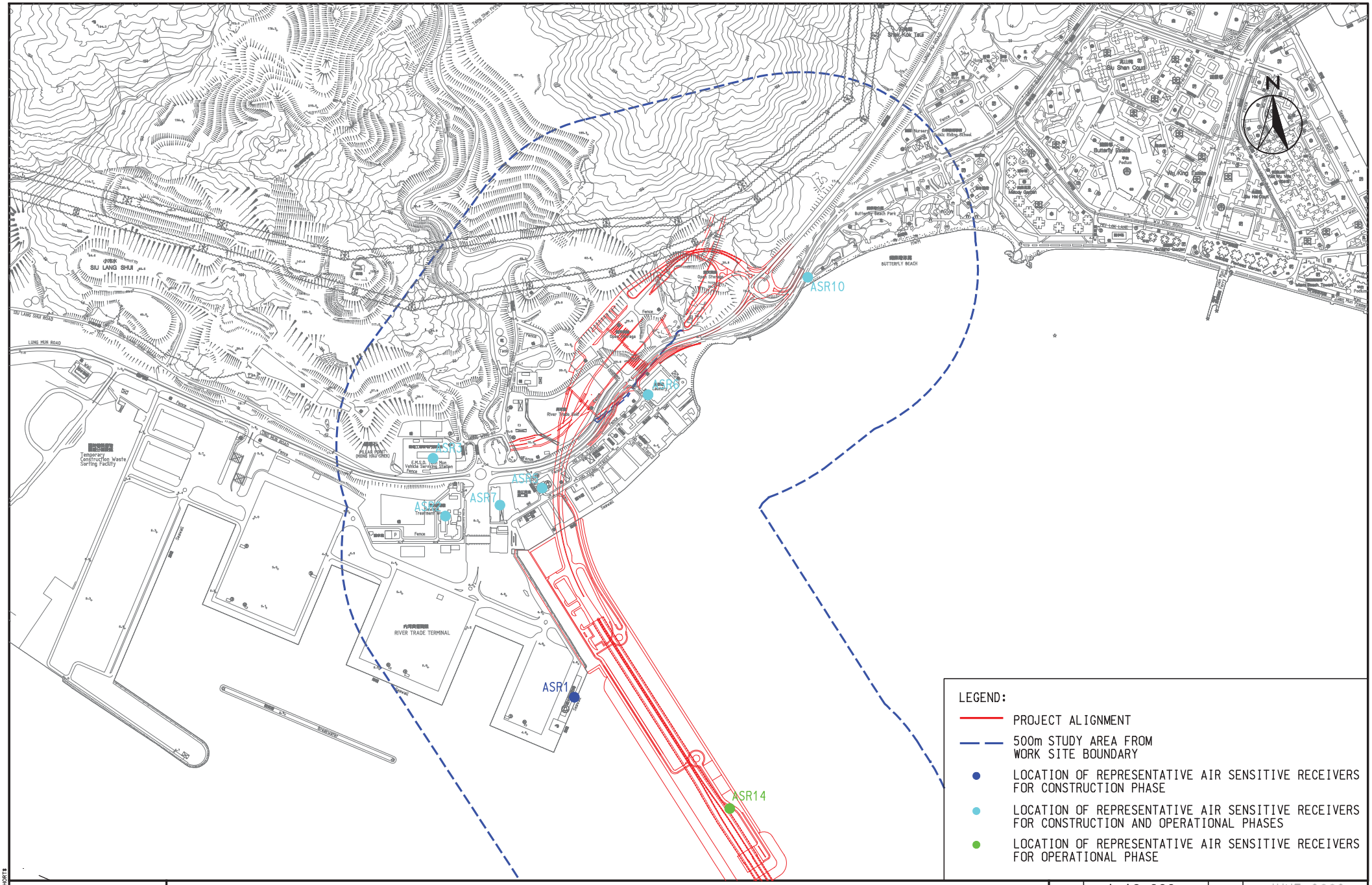
Appendix E

Monitoring Locations / Sensitive Receivers for the Contract

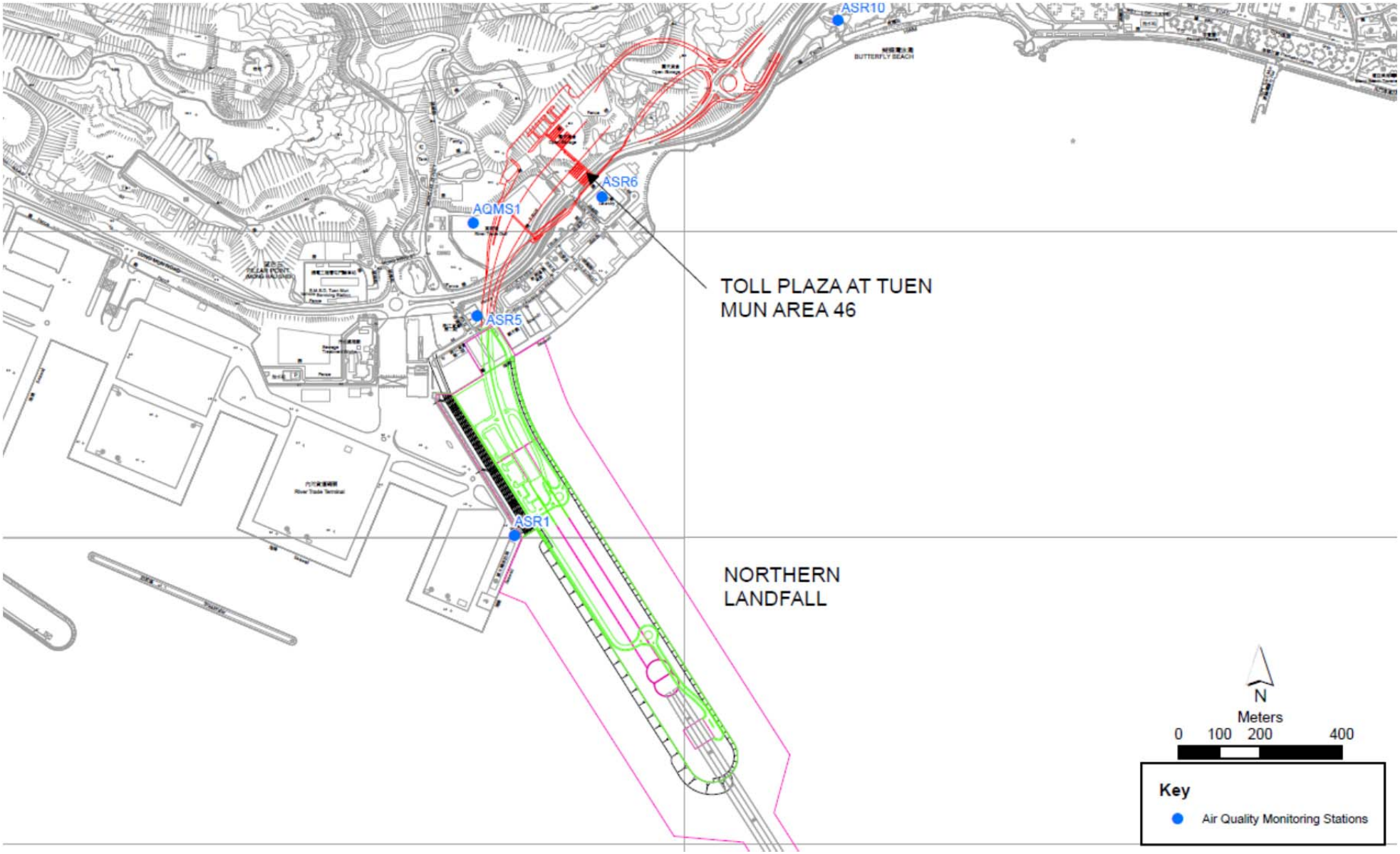


AGREEMENT NO. CE 52/2007(HY)
TUEN MUN – CHEK LAP KOK LINK – INVESTIGATION

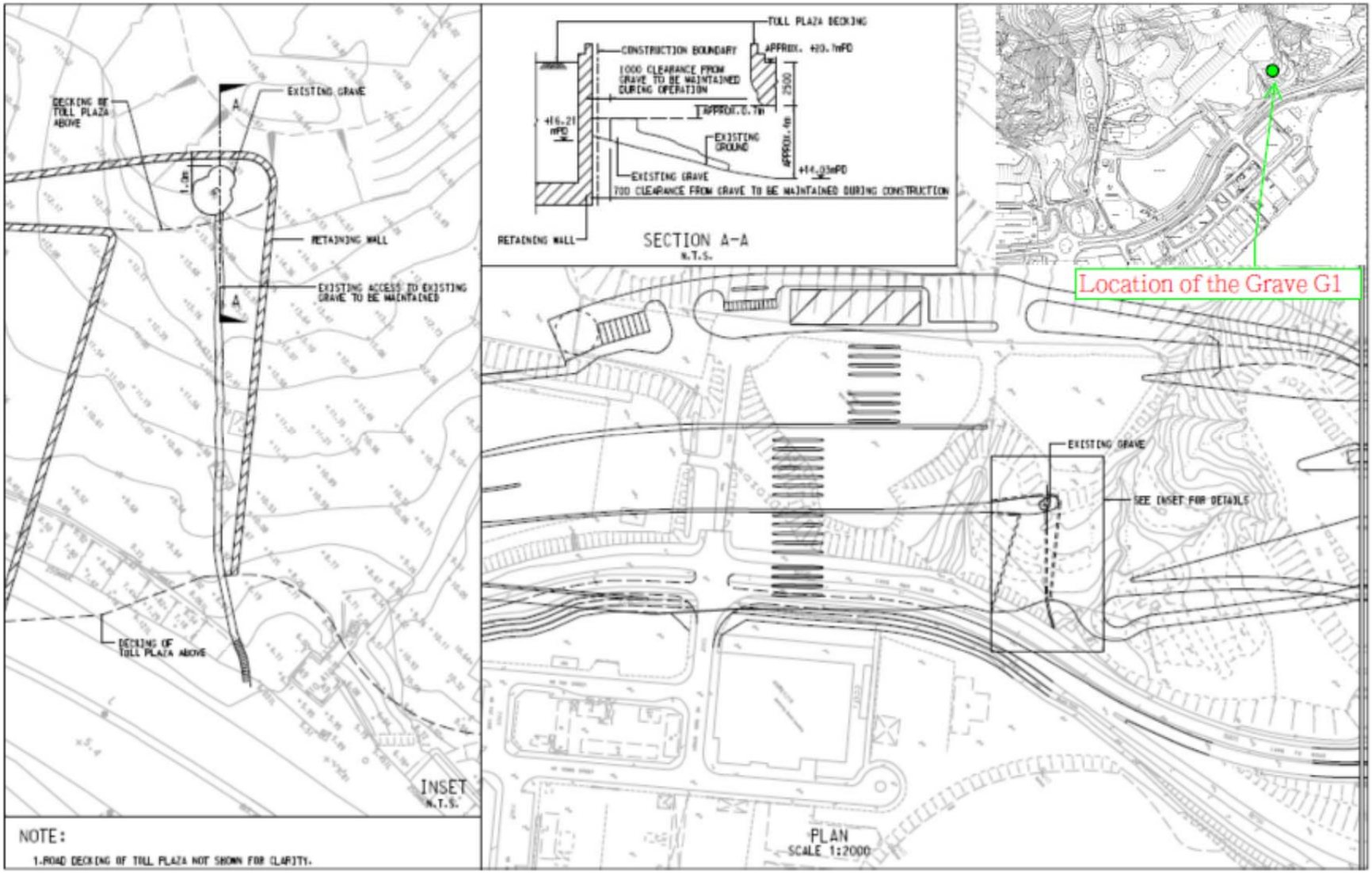
REPRESENTATIVE AIR SENSITIVE RECEIVERS

SCALE	1:10 000	DATE	

Plotting By:7/27/2009
PLOT SCALE: #SCALE#SHORT$



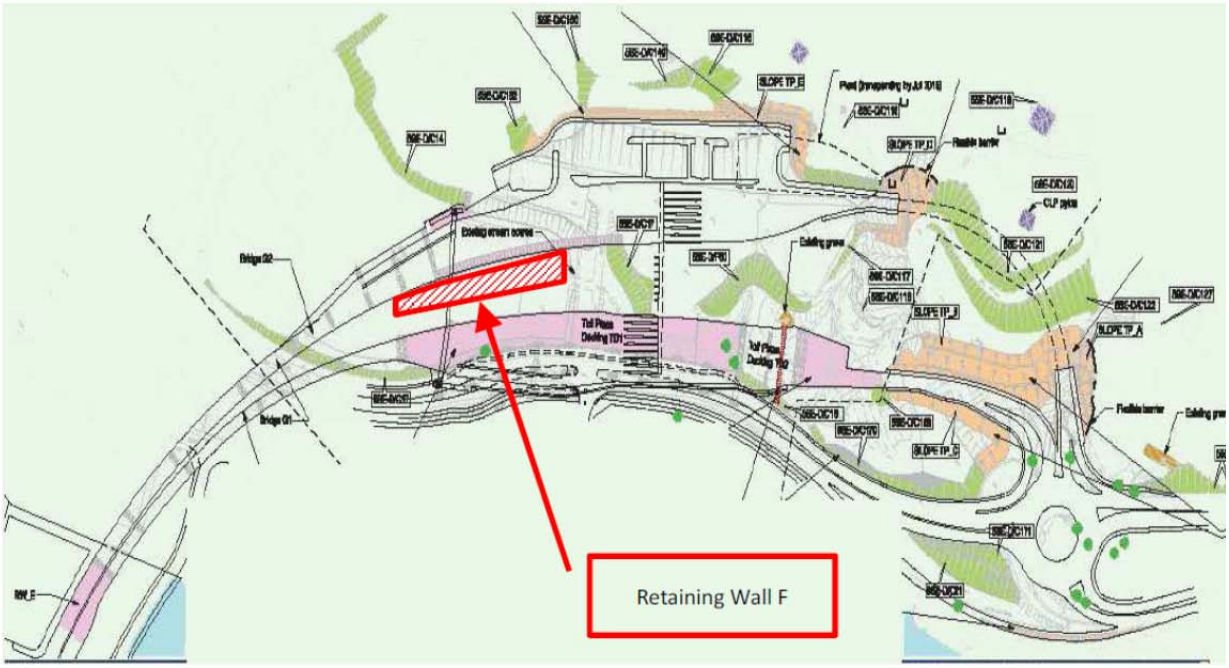
Air Quality Monitoring Location



Location of the Grave G1

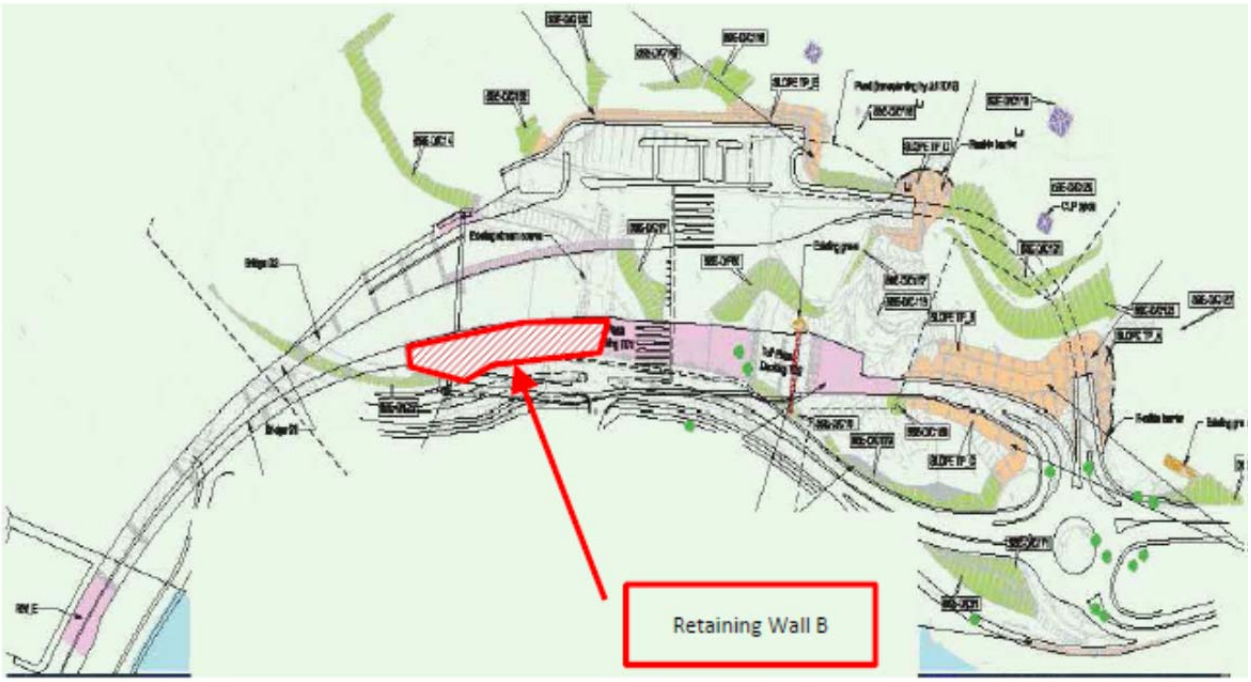
Retaining wall

Retaining Wall F



Location of the Retaining Wall F

Retaining Wall B



Location of the Retaining Wall B

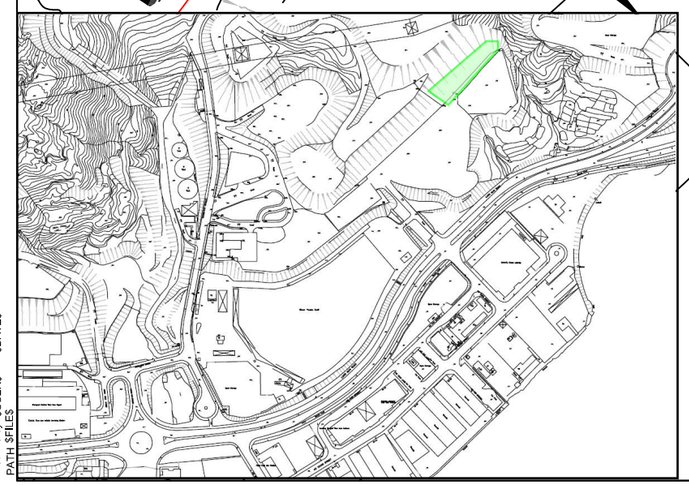
NOTES:

1. ALL CO-ORDINATES ARE IN ACCORDANCE WITH HK(1980) GAUSS CO-ORDINATE SYSTEM.
2. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.

LEGEND:

- SITE BOUNDARY
- LOCATION OF KNOWN POPULATIONS OF PITCHER PLANT
- PROPOSED ALIGNMENT OF FENCING (EXACT ALIGNMENT TO BE DETERMINED ON SITE)
- LOCATION OF PROPOSED NURSERY SITE
- LOCATION OF PROPOSED RECEPTOR SITE
- UNDERPASS WORKS AREA (ZONE 8-10 AND NURSERY SITE WILL NOT BE AFFECTED)

812800 E
812900 E
813000 E
825900 N
825800 N
ZONE 1
ZONE 2
ZONE 3
ZONE 4
ZONE 5
ZONE 6
ZONE 7
ZONE 8
ZONE 9
ZONE 10
ROAD
WIP Sep 1999



Project Management Initials: Designer: NKCC Checked: ALCF Approved: CWN ISO A1 594mm x 841mm

Plot File by: $USER$ $DATE$
PATH: $FILE$

AECOM

PROJECT
TUEN MUN - CHEK LAP KOK LINK

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

CLIENT
HIGHWAYS DEPARTMENT
Hong Kong - Zhuhai - Macao Bridge Hong Kong Project Management Office

CONSULTANT
AECOM Asia Company Ltd.
www.aecom.com

SUB-CONSULTANTS

ISSUE/REVISION

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

STATUS
PRELIMINARY

SCALE
A1 1 : 500

DIMENSION UNIT
METRES

KEY PLAN

PROJECT NO.
60240249

CONTRACT NO.
HY/2013/12

SHEET TITLE
LOCATION OF KNOWN POPULATION OF PITCHER PLANT AND PROPOSED TM-CLKL SITE BOUNDARY

SHEET NUMBER
60240249/C3/6503A

Appendix F

Event and Action Plan

Event and Action Plan for Air Quality

EVENT	ACTION			
	ET(1)	IEC(1)	SOR(1)	Contractor(s)
Action Level				
Exceedance recorded	1 Identify the source. 2 Repeat measurements to confirm findings. If two consecutive measurements exceed Action Level, the exceedance is then confirmed. 3 Inform the IEC and the SOR 4 Investigate the cause of exceedance and check Contractor's working procedures to determine possible mitigation to be implemented. 5 If the exceedance is confirmed to be Project related after investigation, increase monitoring frequency to daily. 6 Discuss with the IEC and the Contractor on remedial actions required. 7 If exceedance continues, arrange meeting with the IEC and the SOR. 8 If exceedance stops, cease additional monitoring.	1 Check monitoring data submitted by the ET. 2 Check the Contractor's working method. 3 If the exceedance is confirmed to be Project related after investigation, discuss with the ET and the Contractor on possible remedial measures. 4 Advise the SOR on the effectiveness of the proposed remedial measures. 5 Supervisor implementation of remedial measures.	1 Confirm receipt of notification of failure in writing. 2 Notify the Contractor. 3 Ensure remedial measures properly implemented.	1 Rectify any unacceptable practice. 2 Amend working methods if appropriate 3 If the exceedance is confirmed to be Project related, submit proposals for remedial actions to IEC within 3 working days of notification 4 Implement the agreed proposals 5 Amend proposal if appropriate.
Limit Level				
Exceedance recorded	1. Identify the source. 2. Repeat measurement to confirm finding. If two consecutive measurements exceed Limit Level, the exceedance is then confirmed. 3. Inform the IEC, the SOR, the DEP and the Contractor. 4. Investigate the cause of exceedance and check Contractor's working procedures to determine possible mitigation to be implemented. 5. If the exceedance is confirmed to be Project related after investigation, increase monitoring frequency to daily. 6. Carry out analysis of the Contractor's working procedures to determine possible mitigation to be implemented. 7. Arrange meeting with the IEC and the SOR to discuss the remedial actions to be taken. 8. Assess effectiveness of the Contractor's remedial actions and keep the IEC, the DEP and the SOR informed of the results. 9. If exceedance stops, cease additional monitoring.	1 Check monitoring data submitted by the ET. 2 Check Contractor's working method. 3 If the exceedance is confirmed to be Project related after investigation, discuss with the ET and the Contractor on possible remedial measures. 4 Advise the SOR on the effectiveness of the proposed remedial measures. 5 Supervisor implementation of remedial measures.	1. Confirm receipt of notification of failure in writing. 2. Notify the Contractor. 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. 4. Ensure remedial measures are properly implemented. 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.	1 Take immediate action to avoid further exceedance. 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. 3 Implement the agreed proposals. 4 Amend proposal if appropriate. 5 Stop the relevant activity of works as determined by the SOR until the exceedance is abated.

Event and Action Plan for Landscape and Visual Impact

EVENT ACTION LEVEL	ACTION			
	ET	**IEC**	**ER**	**Contractor**
Design Check	• Check final design conforms to the requirements of EP and prepare report.	• Check report. • Recommend remedial design if necessary	• Undertake remedial design if necessary	
Non- conformity on one occasion	• Identify Source • Inform IEC and ER • Discuss remedial actions with IEC, ER and Contractor • Monitor remedial actions until rectification has been completed	• Check report • Check Contractor's working method • Discuss with ET and Contractor on possible remedial measures • Advise ER on effectiveness of proposed remedial measures. • Check implementation of remedial measures	• Notify Contractor • Ensure remedial measures are properly implemented	• Amend working methods • Rectify damage and undertake any necessary replacement
Repeated Non-conformity	• Identify Source • Inform IEC and ER • Increase monitoring frequency • Discuss remedial actions with IEC, ER and Contractor • Monitor remedial actions until rectification has been completed • If nonconformity stops, cease additional monitoring	• Check monitoring report • Check Contractor's working method • Discuss with ET and Contractor on possible remedial measures • Advise ER on effectiveness of proposed remedial measures • Supervise implementation of remedial measures	• Notify Contractor • Ensure remedial measures are properly implemented	• Amend working methods • Rectify damage and undertake any necessary replacement

Event / Action Plan for Cultural Heritage

Action Level	ET	IC (E)	ER	Contractor
Non-conformity on one occasion	1. Identify Source 2. Inform the IEC and the ER 3. Discuss remedial actions with the IEC, the ER and the Contractor 4. Monitor remedial actions until rectification has been completed	1. Check report 2. Check the Contractor's working method 3. Discuss with the ET and the Contractor on possible remedial measures 4. Advise the ER on effectiveness of proposed remedial measures. 5. Check implementation of remedial measures.	1. Notify Contractor 2. Ensure remedial measures are properly implemented	1. Amend working methods 2. Rectify damage and undertake any necessary replacement
Repeated Non-conformity	1. Identify Source 2. Inform the IC(E) and the ER 3. Increase monitoring frequency 4. Discuss remedial actions with the IC(E), the ER and the Contractor 5. Monitor remedial actions until 6. rectification has been completed 7. If exceedance stops, cease additional monitoring	1. Check monitoring report 2. Check the Contractor's working method 3. Discuss with the ES and the Contractor on possible remedial measures 4. Advise the ER on effectiveness of proposed remedial measures 5. Supervise implementation of remedial measures.	1. Notify the Contractor 2. Ensure remedial measures are properly implemented	1. Amend working methods 2. Rectify damage and undertake any necessary replacement

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

Event / Action Plan for General Ecology

Action Level	ET	IEC	ER	Contractor
Non-conformity on one occasion	• Identify Source • Inform the IEC and the ER • Discuss remedial actions with the IEC, the ER and the Contractor • Monitor remedial actions until rectification has been completed	• Check report • Check the Contractor's working method • Discuss with the ET and the Contractor on possible remedial measures • Advise the ER on effectiveness of proposed remedial measures. • Check implementation of remedial measures.	• Notify Contractor • Ensure remedial measures are properly implemented • 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.	• Amend working methods • Rectify damage and undertake any necessary replacement
Repeated Non conformity	• Identify Source • Inform the IC(E) and the ER • Increase monitoring frequency • Discuss remedial actions with the • IC(E), the ER and the Contractor • Monitor remedial actions until rectification has been completed • If exceedance stops, cease additional monitoring	• Check monitoring report • Check the Contractor's working method • Discuss with the ES and the Contractor on possible remedial measures • Advise the ER on effectiveness of proposed remedial measures • Supervise implementation of remedial measures	• Notify the Contractor • Ensure remedial measures are properly implemented • 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.	• Amend working methods • Rectify damage and undertake any necessary replacement

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 2015

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

✓	Monitoring Day
	Sunday or Public Holiday

Impact Monitoring Schedule for February 2015

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

✓	Monitoring Day
	Sunday or Public Holiday

Appendix H

Calibration Certificates of Monitoring Equipment

CERTIFICATION OF CALIBRATION

Geotech
A subsidiary of LANTEC

ISSUED BY: GEOTECH LABORATORY
Date Of Calibration: 16-Sep-2014
Certificate Number: G502306_2/13335

UKAS CALIBRATION
No. 4533

Approved by Signatory

Dawn Hemings
Laboratory Inspection

GEOTECHNICAL INSTRUMENTS (UK) LTD
Sovereign House, Queensway, Leamington Spa, Warwickshire, CV31 3JR United Kingdom
Tel: +44 (0) 1926 338111 Fax: +44 (0) 1926 338110
E-mail: service@geotech.co.uk www.geotechuk.com

Customer: ***Fugro Geotechnical Services Ltd***

Units 6, 8-11
10/F Worldwide Industrial Centre
43-47 Shan Mei Street
Fo Tan
Sha Tln, N.T.
HONG KONG

Description: BIOGAS 5000

Model: BIOGAS 5000

Serial Number: G502306

UKAS Accredited results:

Methane (CH4)		
Certified Gas (%)	**Instrument Reading (%)**	**Uncertainty (%)**
5.0	4.9	0.41
15.1	15.0	0.64
50.0	49.3	0.94

Carbon Dioxide (CO2)		
Certified Gas (%)	**Instrument Reading (%)**	**Uncertainty (%)**
5.0	4.9	0.43
15.1	14.9	0.70
50.0	50.0	1.1

Oxygen (O2)		
Certified Gas (%)	**Instrument Reading (%)**	**Uncertainty (%)**
21.1	21.1	0.31

All concentrations are molar.

CH4, CO2 readings recorded at : 31.6 °C ± 1.5 °C

O2 reading recorded at : 21.9 °C ± 1.5 °C

Barometric Pressure : 1008 mbar ± 3 mbar

Method of Test : The analyser is calibrated in a temperature controlled chamber using reference gases.

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.

Appendix I

Landfill Gas Monitoring Results and Graphical Plots

Landfill Gas Monitoring Results (Retaining Wall F)

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
Retaining Wall F	2/1/2015	8:05	Fine	11	0.1	10	20	21.2	19	18	0.2	0.5	1.5
	2/1/2015	14:00		17	0	10	20	21.1	19	18	0.1	0.5	1.5
	3/1/2015	8:05	Fine	11	0	10	20	21.1	19	18	0	0.5	1.5
	3/1/2015	14:00		16	0	10	20	21.1	19	18	0.2	0.5	1.5
	5/1/2015	8:00	Sunny	12	0	10	20	21.1	19	18	0.1	0.5	1.5
	5/1/2015	14:00		19	0.1	10	20	21.2	19	18	0.1	0.5	1.5
	6/1/2015	8:00	Sunny	13	0	10	20	21.1	19	18	0	0.5	1.5
	6/1/2015	14:00		19	0	10	20	21.2	19	18	0.1	0.5	1.5
	7/1/2015	8:05	Fine	12	0	10	20	21.1	19	18	0.1	0.5	1.5
	7/1/2015	14:00		18	0.1	10	20	21.1	19	18	0.2	0.5	1.5
	8/1/2015	8:00	Fine	13	0.1	10	20	21.1	19	18	0.2	0.5	1.5
	8/1/2015	14:00		19	0	10	20	21.2	19	18	0.1	0.5	1.5
	9/1/2015	8:05	Sunny	13	0.1	10	20	21.1	19	18	0	0.5	1.5
	9/1/2015	14:00		20	0	10	20	21.1	19	18	0.2	0.5	1.5
	10/1/2015	8:00	Sunny	12	0	10	20	21.1	19	18	0.1	0.5	1.5
	10/1/2015	14:00		18	0.2	10	20	21.2	19	18	0	0.5	1.5
	12/1/2015	8:05	Fine	11	0.1	10	20	21	19	18	0	0.5	1.5
	12/1/2015	14:00		18	0.2	10	20	21.1	19	18	0.1	0.5	1.5
	13/1/2015	8:00	Sunny	11	0.1	10	20	21.1	19	18	0.1	0.5	1.5
	13/1/2015	14:00		17	0.1	10	20	21	19	18	0	0.5	1.5
	14/1/2015	8:00	Rain	10	0	10	20	21.2	19	18	0	0.5	1.5
	14/1/2015	14:00		15	0	10	20	21.2	19	18	0.2	0.5	1.5
	15/1/2015	8:05	Cloudy	11	0.1	10	20	21	19	18	0.1	0.5	1.5
	15/1/2015	14:00		16	0.1	10	20	21.2	19	18	0.1	0.5	1.5
	16/1/2015	8:00	Sunny	12	0.2	10	20	21.1	19	18	0	0.5	1.5
	16/1/2015	14:00		18	0.1	10	20	21.3	19	18	0.1	0.5	1.5
	17/1/2015	8:05	Sunny	12	0	10	20	21.1	19	18	0	0.5	1.5
	17/1/2015	14:00		19	0.1	10	20	21.1	19	18	0.2	0.5	1.5
	19/1/2015	8:00	Sunny	13	0.1	10	20	21.1	19	18	0.2	0.5	1.5
	19/1/2015	14:00		19	0	10	20	21	19	18	0.1	0.5	1.5
	20/1/2015	8:10	Sunny	13	0.1	10	20	21.1	19	18	0.1	0.5	1.5
	20/1/2015	14:00		18	0.2	10	20	21.1	19	18	0.2	0.5	1.5
	21/1/2015	8:00	Sunny	13	0.1	10	20	21.1	19	18	0.1	0.5	1.5
	21/1/2015	14:00		19	0.1	10	20	21	19	18	0.1	0.5	1.5
	22/1/2015	8:10	Sunny	12	0	10	20	21.1	19	18	0.2	0.5	1.5
	22/1/2015	14:00		18	0.1	10	20	21.1	19	18	0.2	0.5	1.5
	23/1/2015	8:05	Sunny	13	0.1	10	20	21	19	18	0	0.5	1.5
	23/1/2015	14:00		19	0.1	10	20	21.1	19	18	0.1	0.5	1.5
	24/1/2015	8:10	Sunny	13	0.1	10	20	21.1	19	18	0.2	0.5	1.5
	24/1/2015	14:00		19	0	10	20	21.1	19	18	0.2	0.5	1.5
	26/1/2015	8:10	Sunny	18	0.1	10	20	21.2	19	18	0	0.5	1.5
	26/1/2015	14:00		21	0.1	10	20	21	19	18	0.1	0.5	1.5
	27/1/2015	8:10	Sunny	17	0	10	20	21.1	19	18	0.1	0.5	1.5
	27/1/2015	14:00		20	0	10	20	21.1	19	18	0.1	0.5	1.5
	28/1/2015	8:10	Sunny	16	0	10	20	21.1	19	18	0.1	0.5	1.5
	28/1/2015	14:00		19	0.1	10	20	21.1	19	18	0.1	0.5	1.5
	29/1/2015	8:10	Sunny	15	0.1	10	20	21	19	18	0	0.5	1.5
	29/1/2015	14:00		20	0	10	20	21.1	19	18	0.2	0.5	1.5
	30/1/2015	8:10	Sunny	15	0.1	10	20	21.2	19	18	0.1	0.5	1.5
	30/1/2015	14:00		20	0	10	20	21	19	18	0.1	0.5	1.5
	31/1/2015	8:10	Sunny	15	0.1	10	20	21.1	19	18	0.2	0.5	1.5
	31/1/2015	14:00		17	0.1	10	20	21	19	18	0	0.5	1.5

Remark:

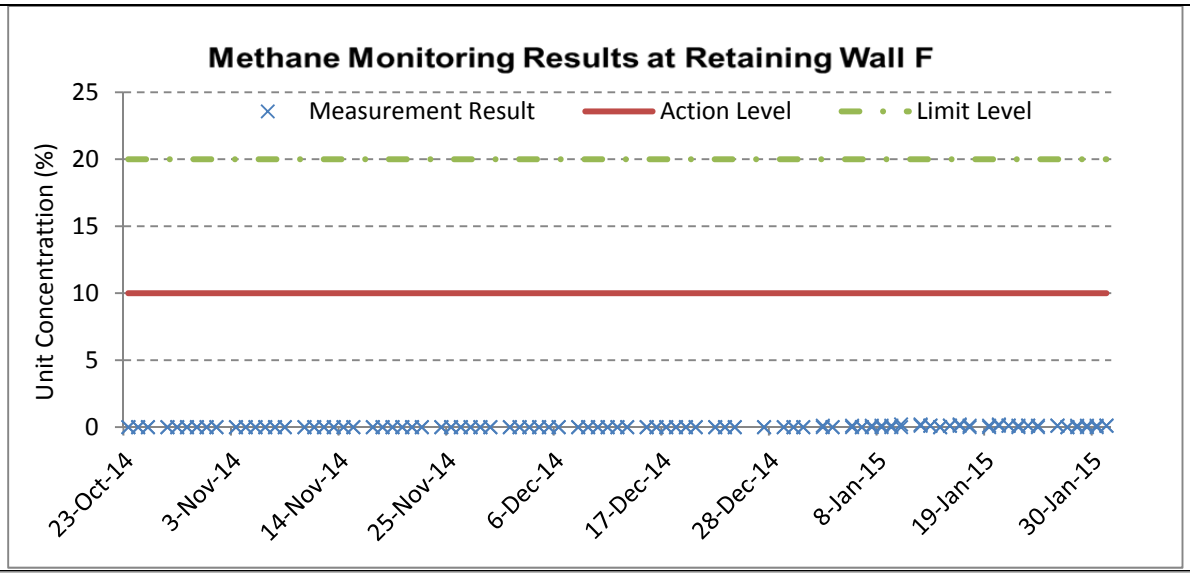
Parameter	Criteria	Measurement
Oxygen	Action Level	< 19%
	Limit Level	< 18%
Methane	Action Level	> 10% LEL (> 0.5% v/v)
	Limit Level	> 20% LEL (>1% v/v)
Carbon Dioxide	Action Level	> 0.5%
	Limit Level	> 1.5%

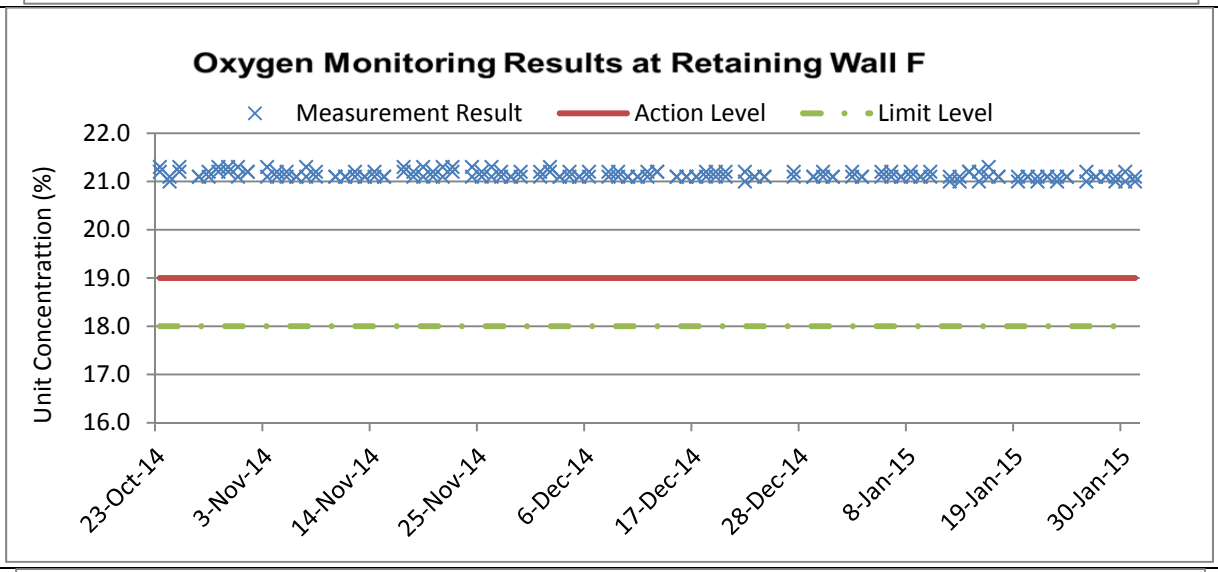
Landfill Gas Monitoring Results (Retaining Wall B)

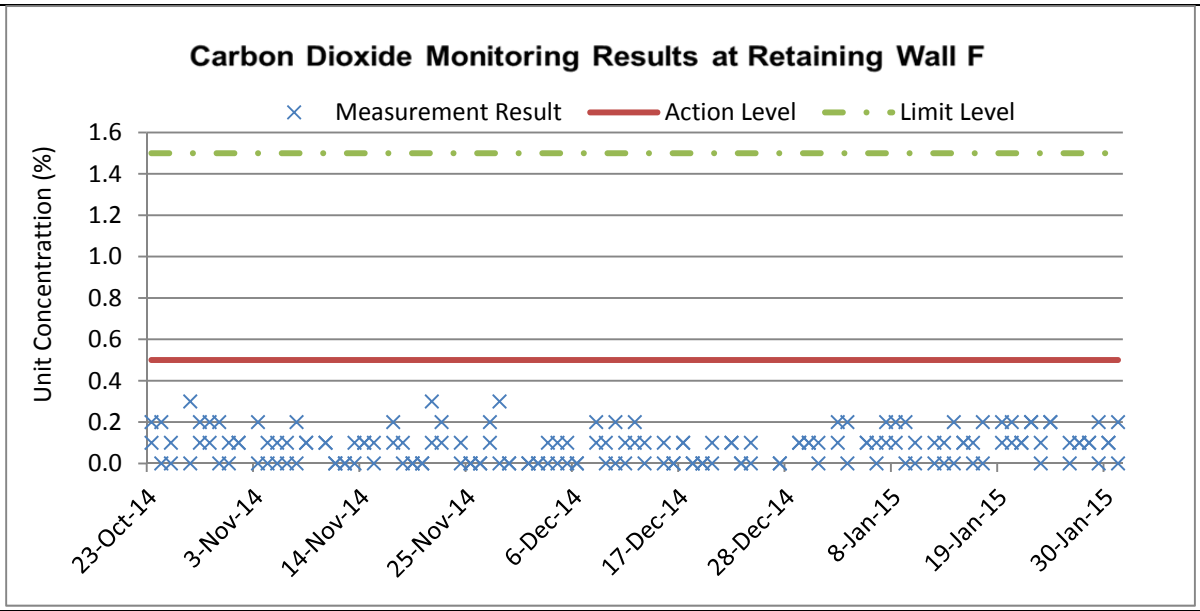
Monitoring Location	Date	Time	Weather	Temperature (°C)	Methane (%)			Oxygen (%)			Carbon Dioxide (%)		
					Measurement Result	Action Level	Limit Level	Measurement Result	Action Level	Limit Level	Measurement Result	Action Level	Limit Level
Retaining Wall B	2/1/2015	8:30	Fine	11	0	10	20	21.1	19	18	0.2	0.5	1.5
	2/1/2015	14:20		17	0	10	20	21.2	19	18	0.1	0.5	1.5
	3/1/2015	8:30	Fine	11	0	10	20	21.1	19	18	0	0.5	1.5
	3/1/2015	14:20		16	0.1	10	20	21.2	19	18	0.1	0.5	1.5
	5/1/2015	8:20	Sunny	12	0	10	20	21.1	19	18	0.1	0.5	1.5
	5/1/2015	14:00		19	0	10	20	21.2	19	18	0	0.5	1.5
	6/1/2015	8:20	Sunny	13	0	10	20	21.1	19	18	0	0.5	1.5
	6/1/2015	14:00		19	0.1	10	20	21.1	19	18	0.2	0.5	1.5
	7/1/2015	8:30	Fine	12	0.1	10	20	21.1	19	18	0.2	0.5	1.5
	7/1/2015	14:20		18	0.1	10	20	21.1	19	18	0.3	0.5	1.5
	8/1/2015	8:20	Fine	13	0	10	20	21.1	19	18	0.1	0.5	1.5
	8/1/2015	14:20		19	0.1	10	20	21.1	19	18	0	0.5	1.5
	9/1/2015	8:30	Sunny	13	0.1	10	20	21.1	19	18	0.3	0.5	1.5
	9/1/2015	14:20		20	0	10	20	21.1	19	18	0.1	0.5	1.5
	10/1/2015	8:20	Sunny	12	0.1	10	20	21.1	19	18	0.2	0.5	1.5
	10/1/2015	14:20		18	0	10	20	21.1	19	18	0	0.5	1.5
	12/1/2015	8:30	Fine	11	0.1	10	20	21.1	19	18	0.2	0.5	1.5
	12/1/2015	14:20		18	0	10	20	21.1	19	18	0.2	0.5	1.5
	13/1/2015	8:20	Sunny	11	0.1	10	20	21.1	19	18	0.2	0.5	1.5
	13/1/2015	14:20		17	0.1	10	20	21.1	19	18	0.1	0.5	1.5
	14/1/2015	8:20	Rain	10	0.1	10	20	21.1	19	18	0.1	0.5	1.5
	14/1/2015	14:20		15	0	10	20	21	19	18	0.2	0.5	1.5
	15/1/2015	8:30	Cloudy	11	0.1	10	20	21.1	19	18	0.2	0.5	1.5
	15/1/2015	14:20		16	0	10	20	21.1	19	18	0.1	0.5	1.5
	16/1/2015	8:20	Sunny	12	0	10	20	21.1	19	18	0.1	0.5	1.5
	16/1/2015	14:20		18	0.1	10	20	21.2	19	18	0.2	0.5	1.5
	17/1/2015	8:30	Sunny	12	0	10	20	21.1	19	18	0.1	0.5	1.5
	17/1/2015	14:20		19	0	10	20	21.1	19	18	0	0.5	1.5
	19/1/2015	8:20	Sunny	13	0.1	10	20	21.1	19	18	0.1	0.5	1.5
	19/1/2015	14:20		19	0.1	10	20	21.1	19	18	0	0.5	1.5
	20/1/2015	8:30	Sunny	13	0	10	20	21.1	19	18	0.1	0.5	1.5
	20/1/2015	14:20		18	0.1	10	20	21.1	19	18	0.2	0.5	1.5
	21/1/2015	8:20	Sunny	13	0.2	10	20	20.9	19	18	0	0.5	1.5
	21/1/2015	14:20		19	0	10	20	21.1	19	18	0.2	0.5	1.5
	22/1/2015	8:30	Sunny	12	0.1	10	20	21	19	18	0.1	0.5	1.5
	22/1/2015	14:20		18	0	10	20	21.2	19	18	0.2	0.5	1.5
	23/1/2015	8:20	Sunny	13	0.1	10	20	21	19	18	0.2	0.5	1.5
	23/1/2015	14:00		19	0.1	10	20	21	19	18	0	0.5	1.5
	24/1/2015	8:30	Sunny	13	0	10	20	21.1	19	18	0.1	0.5	1.5
	24/1/2015	14:20		19	0.2	10	20	21	19	18	0.1	0.5	1.5
	26/1/2015	8:20	Sunny	18	0	10	20	21.1	19	18	0.2	0.5	1.5
	26/1/2015	14:20		21	0	10	20	21.1	19	18	0.1	0.5	1.5
	27/1/2015	8:30	Sunny	17	0.1	10	20	21.1	19	18	0	0.5	1.5
	27/1/2015	14:20		20	0	10	20	21.1	19	18	0.1	0.5	1.5
	28/1/2015	8:20	Sunny	16	0	10	20	21.2	19	18	0	0.5	1.5
	28/1/2015	14:20		19	0	10	20	21.1	19	18	0.1	0.5	1.5
	29/1/2015	8:30	Sunny	15	0.1	10	20	21.2	19	18	0.2	0.5	1.5
	29/1/2015	14:20		20	0.1	10	20	21	19	18	0.2	0.5	1.5
	30/1/2015	8:20	Sunny	15	0	10	20	21.1	19	18	0.1	0.5	1.5
	30/1/2015	14:20		20	0.1	10	20	20.9	19	18	0.1	0.5	1.5
	31/1/2015	8:20	Sunny	15	0.2	10	20	21.1	19	18	0.2	0.5	1.5
	31/1/2015	14:20		17	0	10	20	21	19	18	0	0.5	1.5

Remark:

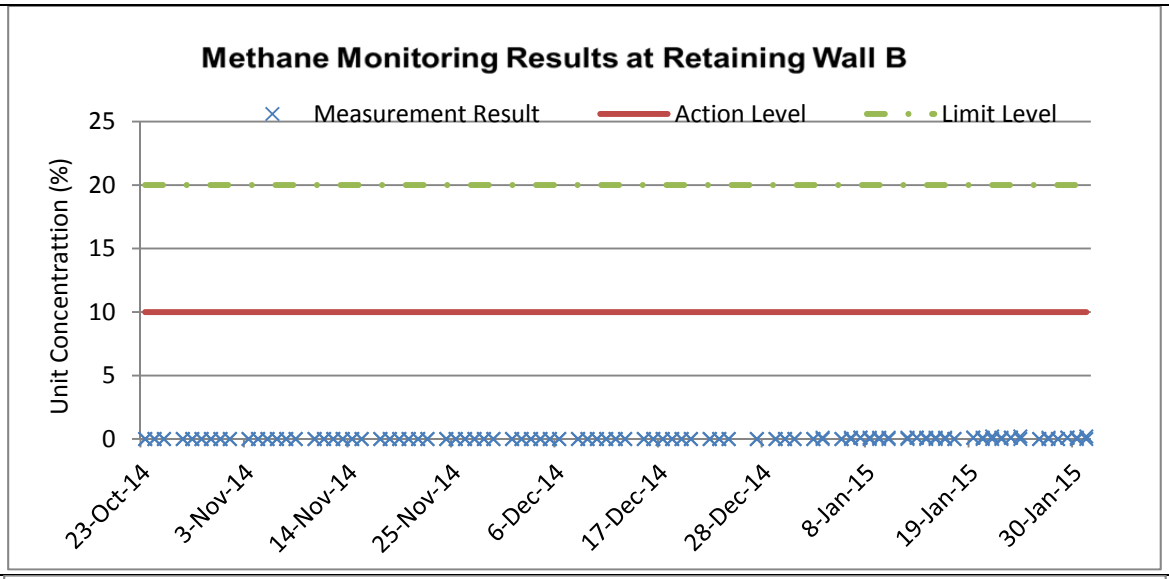
Parameter	Criteria	Measurement
Oxygen	Action Level	< 19%
	Limit Level	< 18%
Methane	Action Level	> 10% LEL (> 0.5% v/v)
	Limit Level	> 20% LEL (>1% v/v)
Carbon Dioxide	Action Level	> 0.5%
	Limit Level	> 1.5%

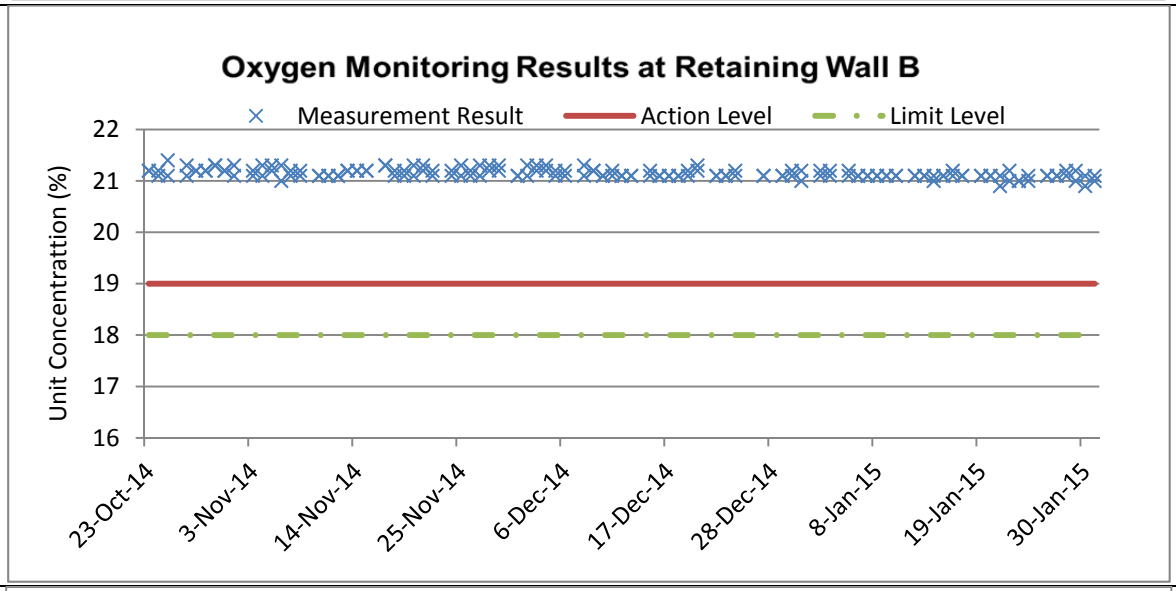


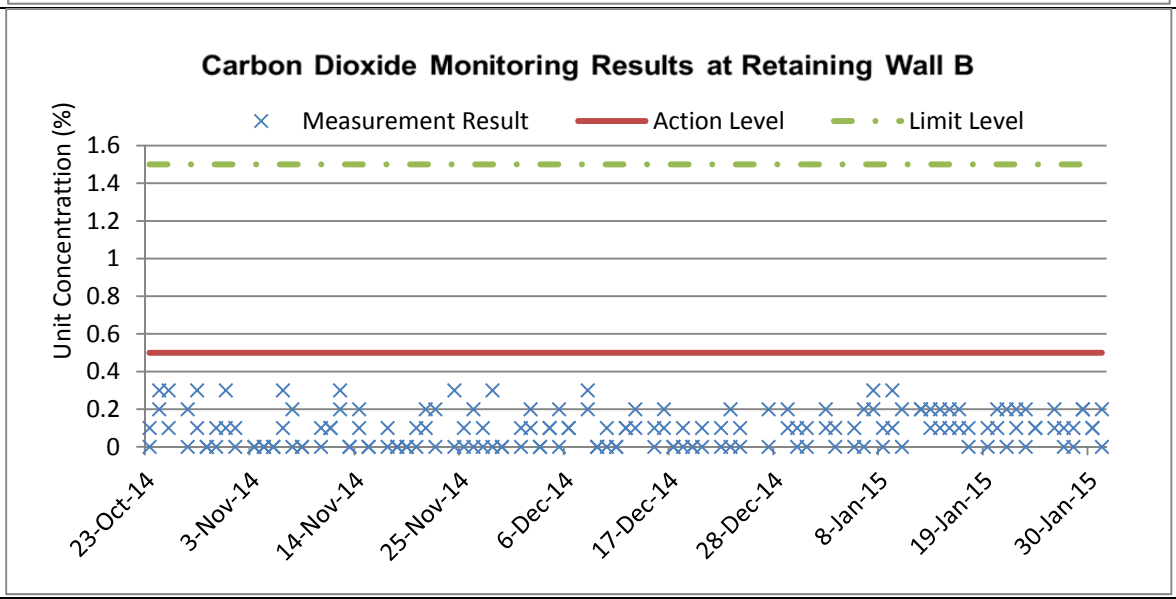




Annotation:
During 23 October 2014 to 31 January 2015, major construction activity was construction of retaining wall F and the specified works included excavation, rock breaking, blinding, formworking, steel-fixing and concreting. The weather condition varied from sunny to rainy. The monitoring data was provided by the Contractor followed to their QA/QC control.







Annotation:
During 23 October 2014 to 31 January 2015, major construction activity was construction of retaining wall B and the specified works included excavation, rock breaking, blinding, formworking, steel-fixing and concreting. The weather condition varied from sunny to rainy. The monitoring data was provided by the Contractor followed to their QA/QC control.

Appendix J

Investigation Report for Exceedance

(Not Used)

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

Monitoring Date: 2nd Jan 2015

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 / During construction	Design Consultant/ 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 / During construction	Design Consultant/ Contractor				√	Tree Transplanting Specification has been specified in P.S., no transplantation works has been carried out at this stage.
3	Hillside and roadside screen planting to proposed roads, associated structures and slope works	All areas / During construction	Design Consultant/ Contractor				√	Construction of roads not commenced yet
4	Hydroseeding or sheeting of soil stockpiles with visually unobtrusive material (in earth tone)	All areas / During construction	Design Consultant/ Contractor	√				
5	Screening of construction works by hoardings around works area in visually unobtrusive colours, to screen works	All areas / During construction	Design Consultant/ 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				√	Recycle of trees yet to be commenced.
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) 30/01/2015

Checked by: (ET) 9/2/15 **(Date)**

Checked by: (IEC) 9/2/2015 **(Date)**

Item 1. Existing trees on boundary of the Project Area have been protected carefully during construction.

Item 4. Hydro-seeding provided at stockpile.

Item 5. Hoarding 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

Monitoring Date: 9th Jan 2015

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 / During construction	Design Consultant/ 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 / During construction	Design Consultant/ Contractor				√	Tree Transplanting Specification has been specified in P.S., no transplantation works has been carried out at this stage.
3	Hillside and roadside screen planting to proposed roads, associated structures and slope works	All areas / During construction	Design Consultant/ Contractor				√	Construction of roads not commenced yet
4	Hydroseeding or sheeting of soil stockpiles with visually unobtrusive material (in earth tone)	All areas / During construction	Design Consultant/ Contractor	√				
5	Screening of construction works by hoardings around works area in visually unobtrusive colours, to screen works	All areas / During construction	Design Consultant/ 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				√	Recycle of trees yet to be commenced
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) 06/02/2015

Checked by: _____ (ET) 9/2/15 (Date)

Checked by: _____ (IEC) 9/2/2015 (Date)

Item 1. Existing trees on boundary of the Project Area have been protected carefully during construction.

Item 4. Hydro-seeding or sheeting provided at stockpile.

Item 5. Hoarding 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

Monitoring Date: 16th Jan 2015

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 / During construction	Design Consultant/ 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 / During construction	Design Consultant/ Contractor				√	Tree Transplanting Specification has been specified in P.S., no transplantation works has been carried out at this stage.
3	Hillside and roadside screen planting to proposed roads, associated structures and slope works	All areas / During construction	Design Consultant/ Contractor				√	Construction of roads not commenced yet
4	Hydroseeding or sheeting of soil stockpiles with visually unobtrusive material (in earth tone)	All areas / During construction	Design Consultant/ Contractor	√				
5	Screening of construction works by hoardings around works area in visually unobtrusive colours, to screen works	All areas / During construction	Design Consultant/ 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				√	Recycle of trees yet to be commenced.
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

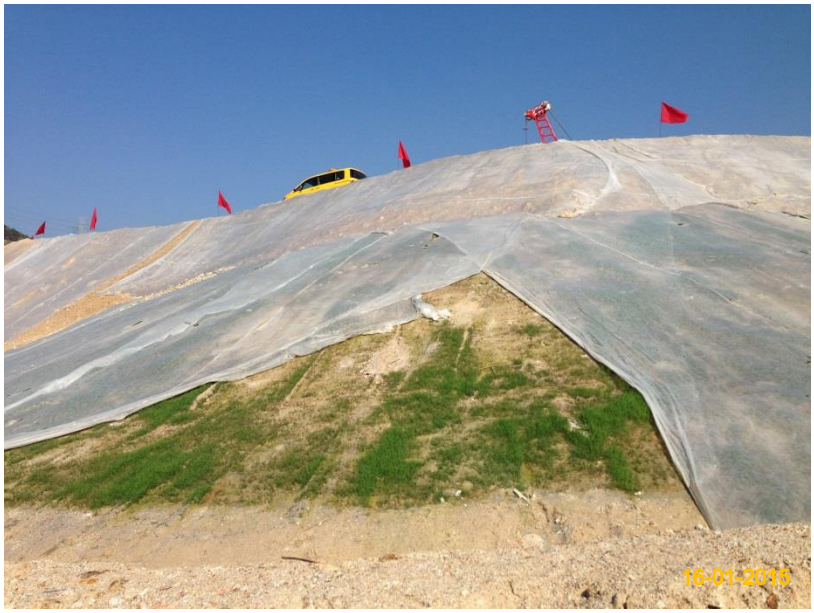
Note: All item reference to Technical Memorandum on Environmental Impact Assessment, TM-CLKL EIA Section 10.9 & Project EM&A Manual Section 7.6

Checked and Monitored by: Chung Koon Wah Albert (RLA) No. R-150 (Date) 30/01/2015

Checked by: **(ET)** 9/2/15. **(Date)**

Checked by: **(IEC)** 9/2/2015 **(Date)**

Item 1. Existing trees on boundary of the Project Area have been protected carefully during construction.



Item 4. Sheeting of soil stockpile was provided.

Item 5. Hoardings 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

Monitoring Date: 23th Jan 2015

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 / During construction	Design Consultant/ 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 / During construction	Design Consultant/ Contractor				√	Tree Transplanting Specification has been specified in P.S., no transplantation works has been carried out at this stage.
3	Hillside and roadside screen planting to proposed roads, associated structures and slope works	All areas / During construction	Design Consultant/ Contractor				√	Construction of roads not commenced yet
4	Hydroseeding or sheeting of soil stockpiles with visually unobtrusive material (in earth tone)	All areas / During construction	Design Consultant/ Contractor	√				
5	Screening of construction works by hoardings around works area in visually unobtrusive colours, to screen works	All areas / During construction	Design Consultant/ 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				√	Recycle of trees yet to be commenced.
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) 06/02/2015

Checked by: _____ (ET) 9/2/15. **(Date)**

Checked by: _____ (IEC) 9/2/2015 **(Date)**

Item 1. Existing trees on boundary of the Project Area have been protected carefully during construction.

Item 4. Hydro-seeding or sheeting provided at stockpile.

Item 5. Water Barrier 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

Monitoring Date: 30th Jan 2015

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 / During construction	Design Consultant/ 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 / During construction	Design Consultant/ Contractor				√	Tree Transplanting Specification has been specified in P.S., no transplantation works has been carried out at this stage.
3	Hillside and roadside screen planting to proposed roads, associated structures and slope works	All areas / During construction	Design Consultant/ Contractor				√	Construction of roads not commenced yet
4	Hydroseeding or sheeting of soil stockpiles with visually unobtrusive material (in earth tone)	All areas / During construction	Design Consultant/ Contractor	√				
5	Screening of construction works by hoardings around works area in visually unobtrusive colours, to screen works	All areas / During construction	Design Consultant/ 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			√		Recycle of trees carried out on 24-Jan-2015
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) 06/02/2015

Checked by: (ET) 9/2/15 **(Date)**

Checked by: (IEC) 9/2/2015 **(Date)**

Item 1. Existing trees on boundary of the Project Area have been protected carefully during construction.

Item 4. Hydro-seeding or sheeting provided at stockpile.

Item 5. Water Barrier with panel around works area.

Item 6. Temporary traffic management lighting.

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

Item 9. Recycle of felled trees

Appendix L

Monthly Summary Waste Flow Table

Monthly Waste Flow Table

Monthly Summary Waste Flow Table for 2015 (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	Paper / cardboard packaging	Plastics (see note 2)	Chemical Waste	Others (general refuse)
	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m^3)
Jan	32.796	0.000	9.968	17.144	5.664	0	0.000	0.000	0.000	0.000	0.02
Feb	-	-	-	-		-	-	-	-	-	-
Mar	-	-	-	-		-	-	-	-	-	-
Apr	-	-	-	-		-	-	-	-	-	-
May	-	-	-	-		-	-	-	-	-	-
June	-	-	-	-		-	-	-	-	-	-
Sub-total	-	-	-	-		-	-	-	-	-	-
July	-	-	-	-		-	-	-	-	-	-
Aug	-	-	-	-		-	-	-	-	-	-
Sept	-	-	-	-		-	-	-	-	-	-
Oct	-	-	-	-		-	-	-	-	-	-
Nov	-	-	-	-		-	-	-	-	-	-
Dec	-	-	-	-		-	-	-	-	-	-
Total	32.796	0.000	9.968	17.144	5.664	0.000	0.000	0.000	0.000	0.000	0.020

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)

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

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

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

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	*Appointment of Safety Officer* 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	-	*Safety Measures - Excavation*	Construction Stage	Contractor	EPD/TR8/97 -		Y		✓

		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	-	*Safety Measures – Welding, Flame- Cutting and Hot works* 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	-	*Safety Measures – Enclosed Spaces* 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	-	*Safety Measures – Electrical Equipment* 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	-	*Safety Measures – Piping* 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	-	*Safety Measures – Fire Safety* 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		✓

		posted around the site warning the anger and potential hazards.			Guidance Note				
14.12.1	-	*Safety Measures – Confined Spaces* 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	-	*Monitoring* 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		✓

		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/ during Construction/ post construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓
10.9	7.6	Hydroseeding or sheeting of soil stockpiles with visually unobtrusive material (in earth tone) (CM4)	All areas/detailed design/ during Construction/ post construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓
10.9	7.6	Screening of construction works by hoardings around works area in visually unobtrusive colours, to screen works (CM5)	All areas/detailed design/ during Construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓
10.9	7.6	Control night-time lighting and glare by hooding all lights (CM6)	All areas/detailed design/ during Construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓
10.9	7.6	Ensure no run-off into water body adjacent to the Project Area (CM7)	All areas/detailed design/ during Construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓
10.9	7.6	Avoidance of excessive height and bulk of buildings and structures (CM8)	All areas/detailed design/ during Construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓
10.9	7.6	Recycle/Reuse all felled trees and vegetation, e.g. mulching (CM9)	All areas/detailed design/ during Construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓
10.9	7.6	Compensatory tree planting shall be provided to the satisfaction of relevant Government departments. 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/ during Construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓
10.9	7.6	Re-vegetation of affected woodland/shrubland with	All areas/detailed design/	Design	TMEIA	Y	Y	Y	N/A

		native species (OM1)	during Construction/ post construction	Consultant/ 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/ during Construction/ post construction	Design Consultant/ 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/ during Construction/ post construction	Design Consultant/ 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/ during Construction/ post construction	Design Consultant/ 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/ during Construction/ post construction	Design Consultant/ 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/ during Construction/ post construction	Design Consultant/ Contractor	TMEIA	Y	Y	Y	N/A
Waste									
EIA reference	**EM&A Manual reference**	**Environmental Protection Measures**	**Location/ Timing**	**Implementation Agent**	**Relevant Standard or Requirement**	**Implementation 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, Works Branch		Y		✓

		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		✓

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

		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: • suitable for the substance to be held, resistant to corrosion, maintained in good conditions and securely closed; • Having a capacity of <450L unless the specifications have been approved by the EPD; and • Displaying a label in English and Chinese according to the instructions prescribed in Schedule 2 of the Regulations. • Clearly labelled and used solely for the storage of chemical wastes; • Enclosed with at least 3 sides; • 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; • Adequate ventilation; • Sufficiently covered to prevent rainfall entering (water collected within the bund must be tested and disposed of as chemical waste, if necessary); and • Incompatible materials are adequately separated.	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		✓

		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/ 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**	

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		<>

		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 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		<>

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 2015	Air Quality – 1-hour TSP	Action Level	0	**4**
		Limit Level	0	0
	Air Quality – 24-hour TSP	Action Level	0	0
		Limit Level	0	0

Table N-2 Statistical Summary of Environmental Complaints

Reporting Period	Environmental Complaint Statistics				
	Frequency	Cumulative	Complaint Nature		
			Air	Noise	Water
January 2015	0	0	NA	NA	NA
Cumulative since project commencement	0	0	NA	NA	NA

Table N-3 Statistical Summary of Environmental Summons

Reporting Period	Environmental Summons Statistics				
	Frequency	Cumulative	Complaint Nature		
			Air	Noise	Water
January 2015	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 2015	0	0	NA	NA	NA
Cumulative since project commencement	0	0	NA	NA	NA