

JOB NO.: TCS00715/14

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

**BASELINE MONITORING REPORT (REV.03)** 

PREPARED FOR CRBC AND KADEN JOINT VENTURE

Date	Reference No.	Prepared By	Certified By
5 October 2015	TCS00715/14/600/R0033v7	Nicola Hon (Environmental Consultant)	T.W. Tam (Environmental Team Leader)

This report has been prepared by Action-United Environmental Services & Consulting with all reasonable skill, care and diligence within the terms of the Agreement with the client, incorporating our General Terms and Conditions of Business and taking account of the resources devoted to it by agreement with the client. We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above. This report is confidential to the client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies upon the report at their own risk.



Our Ref: TCS00715/14/300/L0124b

**AECOM** 

8/F Grand Central Plaza Tower 2, 138 Shatin Rural Committee Road Shatin

Attn: Mr. Roger Man

5 October 2015 By Email & by post

Dear Sir,

Re: Contract No. HY/2013/12

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

Environmental Permit No.: EP-354/2009/D Baseline Monitoring Report (Rev.03)

We write to certify the Baseline Monitoring Report (TCS00715/14/600/R0033v7) in accordance with Condition 4.3 of the Environmental Permit no. EP-354/2009/D.

Should you have any queries or require further information, please feel free to contact us or the undersigned at Tel: 2959-6059 or Fax: 2959-6079.

Yours sincerely, For and on Behalf of

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

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T. W. Tam

Environmental Team Leader

Encl.

c.c. ENVIRON (IEC)

CRBC - Kaden JV (Contractor)

Mr. F.C. Tsang

Mr. John Wong

By email By email





Ref.: HYDHZMBEEM00\_0\_3451L.15

9 October 2015

**AECOM** 

By Fax (2293 6300) and By Post

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

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
Baseline Monitoring Report (EP-354/2009/D)

Reference is made to the Baseline Monitoring Report (AUES reference: TCS00715/14/600/R0033v7 dated 5 October 2015) certified by the ET Leader and provided to us via e-mail on 5 October 2015.

Please be informed that we have no adverse comments on the captioned report. We write to verify the captioned submission in accordance with Condition 4.3 of EP-354/2009/D.

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

Yours sincerely,

F. C. Tsang

Independent Environmental Checker

Tuen Mun - Chek Lap Kok Link

Traffanthonf

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)

CRBC - Kaden JV - Ms. Winnie Chu (By Fax: 2253 8399)

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

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# CRBC – Kaden Joint Venture Contract No. HY/2013/12



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

Response to comments from EPD & PlanD for Baseline Monitoring Report

Item	EPD's Comments  EPD's Comments	Contractor's Response
	Ax(9) to EP2/N9/A/125 (II) dated 3 July 2015	
2	The interface/scope of the different contracts under the Project (preferably with a	Noted, a plan showing various contracts of
	plan showing the boundary of the various contracts) shall be provided to clearly	TM-CLKL was added in <i>figure 1.2 to 1.5</i> .
	set the scene for the viewing of this report. The various LRs/LCAs as mentioned	Various LRs/LCAs as mentioned in the AEIAR
	in the EIA to be covered by this contract and other TM-CLKL contracts shall be	were all added into the revised report, please
	clearly spelt out to avoid confusion.	refer to item d, f and i below.
Item	PlanD's Comments	Contractor's Response
	( ) in PDTM 4/5/48 dated 30 June 2015	
a.	Majority of the content of this submission are related to contractual arrangement	This Baseline Monitoring Report was prepared
	which is not appropriate for EP submission.	according to the AEIAR, EP and project EM&A
		Manual.
		Since the Tuen Mun - Chek Lap Kok Link
		(TM-CLKL) EIA separated in three different
		Contracts, only content related to Contract 3 -
		HY/2013/12 - Northern Connection Toll Plaza and
		Associated Works will be covered.
b.	To save time, resources and avoid confusion, the Environmental Team Leader	Noted.
	(ET) and Independent Environmental Checker (IEC) should critically review the	
	content before submitting for comment. The IEC and ET are reminded to duly	
	exercise their duties in accordance to EP Conditions 1.9 of this EP.	

# CRBC – Kaden Joint Venture Contract No. HY/2013/12



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

c.	The revised content or drawings should be highlighted or clouded for reference.	Noted. Revised content and drawings was
		highlighted in yellow.
d.	The landscape resources listed in Table 4.1 is inconsistent to the Approved EIA	LRs 8, 9, 10 and 11 are not related to Contract 3 -
	Report. With references Table 10.6 of the Approved EIA Report (AEIAR	HY/2013/12 - Northern Connection Toll Plaza and
	146/2009) LRs 8, 9, 10 and 11 are missing in this report.	Associated Works.
e.	LR02 in Table 4.1 in the BMR is different to Table 10.6 of AEIAR, please review.	Noted and amended.
f.	With reference to Table 10.5 of the AEIAR, there would be impacts on LRs 01,	Baseline result for LRs and LCAs are added in
	02, 03, 04, 06, 10 and 11. However, only photographic records are submitted.	Table 4.2.
	There is no information regarding the monitoring the baseline data, assessment of	Only LR 02, 03, 04 and 06 are added into the report
	non-compliance, identification of remedial works, etc. to readdress the	as LR 01 is related to Contract 2 of TM-CLKL., and
	unacceptable or unanticipated impacts on landscape resource.	10 & 11 are related to Contract 1 of TM-CLKL.
g.	According to Section 3, protected plant species under Forestry Regulations	Added as LR Additional at Table 4.2.
	(subsidiary legislation of the Forest and Country Park Ordinance, Pitcher Plant,	
	was identified within the proposed works area for TM-CLKL toll plaza. As	
	pitcher plants are valuable landscape resources, they should be reflected and	
	updated in the corresponding LR.	
h.	With reference to the section 4.2.1.3, the information regarding the trees to be	Noted, the contractual arrangement has been
	transplanted, removed, felled and retained and Pitcher Plants to be transplanted	removed. Propose treatment according to AEIAR
	are related to contractual arrangement. Hence, the proposed treatment regarding	was added in Table 4.3.
	the captioned EP could not be fully ascertained.	was added in Table 1.5.
i.	There are no information regarding the baseline of the Landscape Character	LCAs were added at Table 4.1 and 4.2 separately.
	Areas (LCAs)	

# CRBC – Kaden Joint Venture Contract No. HY/2013/12



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

		Please note that only LCA01 and 02 are related to Contract 3.
j.	The action taken by ER and Contractor as shown in Table 4.2 appears a contractual arrangement. Should it be revised as project proponent or permit	Noted and revised. The former Table 4.2 was
	holder for consistency of the EP.	changed as Table 4.4.
Item	EPD's Comments	Contractor's Response
	Ax(9) to EP2/N9/A/125 (III) dated 15 July 2015	
2(a).	Please find below additional comment from PlanD:	Noted, an additional LR was added into Table 4.1
	According to the VEP application, approx 05 ha of Pitcher Plants were	and 4.2 presenting the photographic record, baseline condition, description of impact and remedial works

**Baseline Monitoring Report (Rev.03)** 



### **EXECUTIVE SUMMARY**

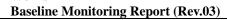
- ES.01 CRBC-Kaden Joint Venture (hereafter "CRBC-Kaden JV") has been awarded by Highways Department as the Main Contractor for the Contract HY/2013/12 Northern Connection Toll Plaza and Associated Works (hereinafter referred as "the Contract") in July 2014. This is a Designated Project to be implemented under Environmental Permit number EP-354/2009/D (hereinafter referred as "the EP").
- ES.02 Action-United Environmental Services & Consulting (hereinafter referred as "AUES") has been commissioned as the Contract Environmental Team (hereinafter referred as "the ET") to implement the relevant EM&A program in accordance with the approved EM&A Manual and the Contract requirements, as well as the associated duties.
- ES.03 According to the Approved EM&A Manual, baseline environmental monitoring is required to be conducted prior to commencement of the construction works. As such, baseline monitoring including air quality, ecology, landscape and visual and cultural heritage was conducted. During the baseline monitoring period, no construction activities under the Project or other external influencing factors of significant concern were observed.
- ES.04 Baseline air quality monitoring was conducted by the ET of HyD Contract HY/2012/08 between 17 and 31 October 2013. The monitoring results and established Action and Limit Level for 1-hour TSP and 24-hour TSP would be adopted for this Contract.
- ES.05 Baseline survey for Pitcher Plant has been conducted within the project area in September 2013 by a suitably qualified ecologist. During the survey, 280 nos. of individual were identified which were in good condition. Moreover, an initial survey for Pitcher Plant by the Contract HY/2013/12 was conducted in mid-September 2014 to confirm the number of existing Pitcher Plant. A total of 280 nos. of individual Pitcher Plant located at Zone 1 to 7 was identified. Since they are occurring on the rocky slope habitat which will be impacted by the proposed slope works (Zone 1 to 7), transplantation is required to minimize impacts to the population.
- ES.06 Initial tree survey and photographic record for existing Landscape was conducted on 22 September 2014 for TM-CLKL prior commencement of the project.
- ES.07 Condition survey for the Grave G1 was conducted on 23 September 2014. The grave was generally in good condition. However, a total of 10 cracks ranged from hairline to 2.8mm were identified in the cement rendering and mortar of bricks of the grave.





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#### 1 INTRODUCTION

# 1.1 BACKGROUND

- 1.1.1.1 According to the findings of the Northwest New Territories (NWNT) Traffic and Infrastructure Review conducted by the Transport Department, Tuen Mun Road, Ting Kau Bridge, Lantau Link and North Lantau Highway (NLH) will be operating beyond capacity after 2016 due to the increase in cross boundary traffic, developments in the NWNT, and possible developments in North Lantau, including the Airport developments, the Lantau Logistics Park (LLP) and the Hong Kong Zhuhai Macao Bridge (HZMB). In order to cope with the anticipated traffic demand, two new connections between NWNT and North Lantau Tuen Mun Chek Lap Kok Link (TM-CLKL) and Tuen Mun Western Bypass (TMWB) are proposed.
- 1.1.1.2 The construction of the Project to be undertaken comprises of several separate contracts. The Contract number HY/2013/12 Northern Connection Toll Plaza and Associated Works (hereinafter referred as "the Contract") is part of the Project, which is located at Pillar Point in Tuen Mun Area 46.
- 1.1.1.3 Layout Plan of the Contract and various contracts of TM-CLKL were shows in *Figure 1.1* and *1.2* respectively. *Figure 1.3*, *1.4* and *1.5* shows different site boundary of each Contract of TM-CLKL:

  Contract 1: HY/2012/07, TMCLKL Southern Connection Viaduct Section Contract 2: HY/2012/08, TMCLKL Northern Connection Sub-sea tunnel Section Contract 3: HY/2013/12 Northern Connection Toll Plaza and Associated Works
- 1.1.1.4 CRBC-Kaden Joint Venture (*hereafter "CRBC-Kaden JV"*) has been awarded by Highways Department as the Main Contractor for the Contract in July 2014. The works of the Contract mainly include:-
  - construction of an approximately 5.4 hectares toll plaza and an associated footbridge;
  - 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;
  - site formation for the construction of the toll plaza, including associated slope works and natural terrain hazard mitigation measures;
  - modification and realignment of the existing Lung Mun Road and Lung Fu Road;
     and
  - associated waterworks, drainage, sewerage and landscaping works, etc..
- 1.1.1.5 The master construction programme is shown in *Appendix A*.
- 1.1.1.6 An Environmental Impact Assessment (EIA) was prepared in accordance with the EIA Study Brief and the Technical Memorandum of the Environmental Impact Assessment (EIAO-TM) which has been submitted under the Environmental Impact Assessment Ordinance (EIAO Register Number AEIAR-146/2009). An Environmental Permit (EP-354/2009) for TM-CLKL was granted by the Director of Environmental Protection (DEP) on 4 November 2009, and EP variations (EP-354/2009/A) issued on 8 December 2010 and (EP-354/2009/B) issued on 28 January 2014 and (EP-354/2009/C) issued on 10 December 2014 and the latest (EP-354/2009/D) issued on 13 March 2015.
- 1.1.1.7 Action-United Environmental Services & Consulting (hereinafter referred as



"AUES") has been commissioned as the Contract Environmental Team (hereinafter referred as "the ET") to implement the relevant EM&A program in accordance with the approved EM&A Manual and the Contract requirements, as well as the associated duties.

#### 1.2 Propose of this Report

- 1.2.1.1 In view of the major construction activities under the Contract are land-based, the environmental aspects such as water quality and marine ecological monitoring should not be related the Contract works. Moreover, all designated noise monitoring locations are located in Lantau and therefore noise monitoring is not required under the Contract. In accordance with the Project EM&A Manual requirements, air quality monitoring, ecological monitoring, cultural heritage, landscape and visual monitoring and landfill gas monitoring and site inspections should be covered in this Contract. Overall, the EM&A works follows the demarcation of monitoring responsibilities set out in ENPO's letter dated 16.10.2014.
- 1.2.1.2 The objective of this Baseline Monitoring Report is to determine the baseline levels of the environmental aspect of air quality, ecology, landscape and visual and cultural heritage around the Project area prior to the commencement of any construction works of the Project.

#### 1.3 STRUCTURE OF THE REPORT

1.3.1.1 The Baseline Monitoring Report is structured into five sections as follow:

Section 1 Introduction

**Section 2** Air Quality Monitoring

**Section 3** Ecology

**Section 4** Landscape and Visual

**Section 5** Cultural Heritage

**Section 6** Conclusion



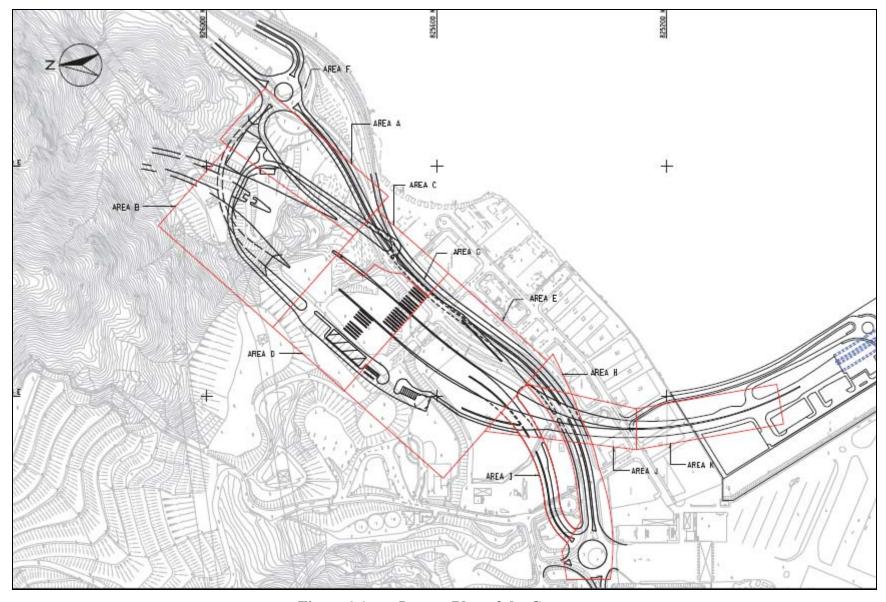


Figure 1.1 Layout Plan of the Contract





擬建「屯門至赤鱲角連接路」

Proposed "Tuen Mun - Chek Lap Kok Link"

Figure 1.2 Various Contracts of TM-CLKL



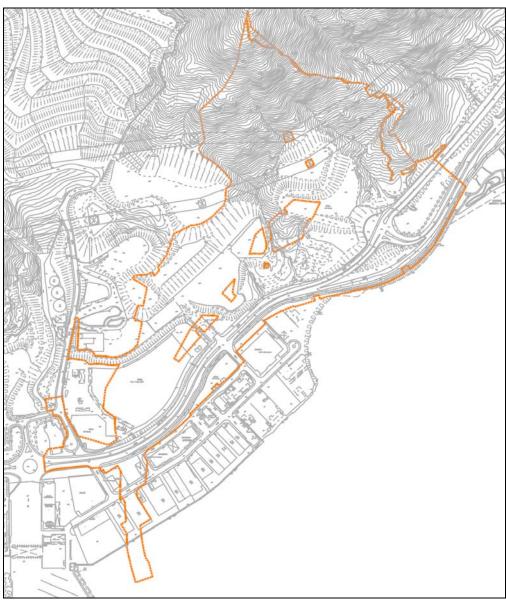


Figure 1.3 Site Boundary of HY/2013/12 - Northern Connection Toll Plaza and Associated Works "The Contract"



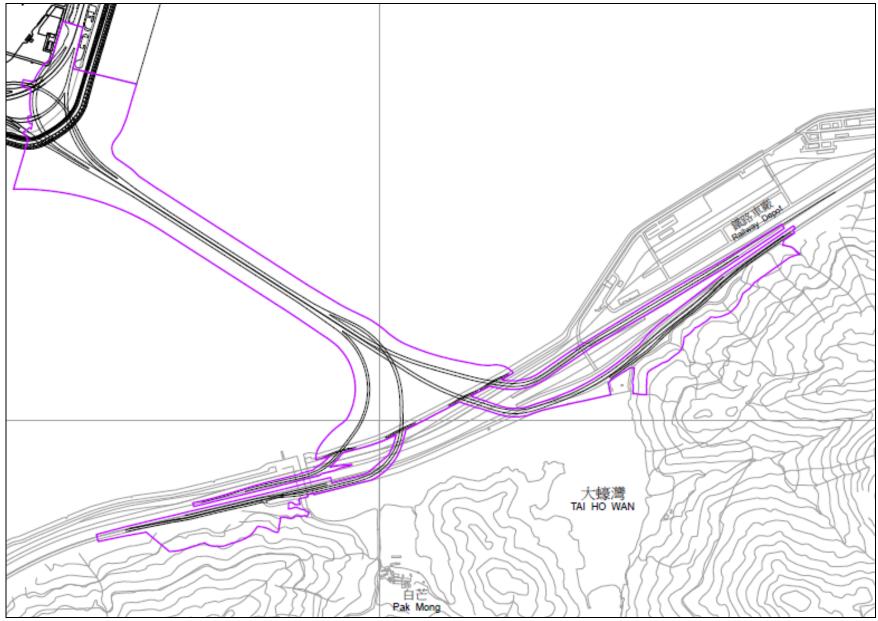


Figure 1.4 Site Boundary HY/2012/07, TMCLKL – Southern Connection Viaduct Section "Contract 1"



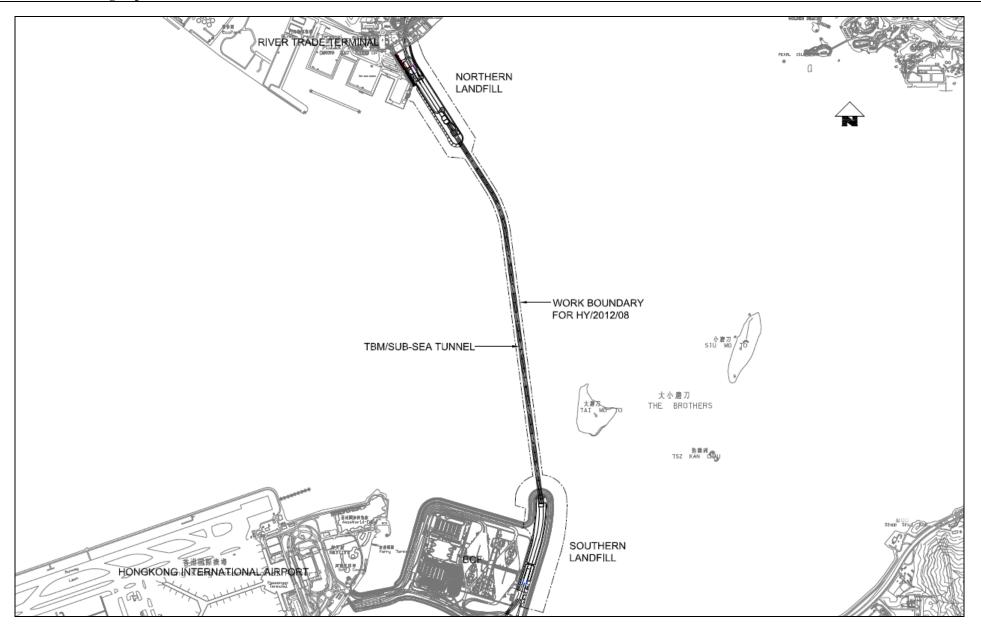


Figure 1.5 Site Boundary HY/2012/08, TMCLKL – Northern Connection Sub-sea tunnel Section "Contract 2"



# 2 AIR QUALITY

# 2.1 Introduction

2.1.1.1 Baseline air quality monitoring has been conducted by the ET of HyD Contract HY/2012/08 between 17 and 31 October 2013 and the associated baseline report has been submitted to the EPD for approval. It is agreed amongst by the Contractor, RE, IEC that this Contract could make use of the baseline monitoring data collected by the ET under HY/2012/08 and therefore no baseline monitoring is required under this Contract.

#### 2.2 MONITORING LOCATIONS

2.2.1.1 The monitoring stations for baseline air quality monitoring are shown *Figure 2.1*. Monitoring parameter, monitoring period and frequency are summarized in *Table 2.1*.

**Table 2.1 Monitoring Frequency and Parameter of Air Quality Monitoring Stations** 

Air quality monitoring station	Location	Landuse	No. of Storey	Parameter	Period	Frequency
ASR1	Tuen Mun Fireboat Station	Office	1			
ASR5	Pillar Point Fire Station	Office	5	1-hour TSP	07:00-19:00 for 1-hour TSP 24 hours for 24-hour TSP	3 times / day for 1-hour TSP  Daily for 24-hour TSP
AQMS1	Previous River Trade Golf	Bare ground	0	24-hour		
ASR6	Butterfly Beach Laundry	Commercial	0	TSP		
ASR10	Butterfly Beach Park	Recreational uses	0			1.51

#### 2.3 MONITORING EQUIPMENT

- 2.3.1.1 High Volume Samplers (HVS) were used to carry out 24-hour TSP monitoring. Direct reading dust meter were also used to measure 1-hour average TSP levels. The 1-hour sampling was determined periodically by HVS to check the validity and accuracy of the results measured by direct reading method.
- 2.3.1.2 Wind data monitoring equipment was set at rooftop of ASR5 (Pillar Point Fire Station) for logging wind speed and wind direction such that the wind sensors are clear of obstructions or turbulence caused by building. The wind data monitoring equipment is recalibrated at least once every six months and the wind directions are divided into 16 sectors of 22.5 degrees each.
- 2.3.1.3 **Table 2.2** summarizes the equipment used in the baseline air quality monitoring programme.

**Table 2.2** Air Quality Monitoring Equipment

Equipment	Model and Make		
HVS Sampler	GMWS-2310 ACCU-VOL		
Calibrator	CM-AIR-43 (S/N 9833620)		
1-hour TSP Dust Meter	Sibata LD-3B		
Wind Anemometer	MetPak, WindSonic		



#### 2.4 MONITORING METHODOLOGY

#### 24-hour TSP

#### Instrumentation

2.4.1.1 High volume Samplers (HVS) completed with appropriate sampling inlets were employed for air quality monitoring. Each sampler was composed of a motor, a filter holder, a flow controller and a sampling inlet and its performance specification complies with that required by USEPA Standard Title 40, Code of Federation Regulations Chapter 1 (Part 50).

#### HVS Installation

- 2.4.1.2 The following guidelines were adopted during the installation of HVS:
  - Sufficient support was provided to secure the samplers against gusty wind.
  - No two samplers were placed less than 2 meters apart.
  - The distance between the sampler and an obstacle, such as buildings, was at least twice the height that the obstacle protrudes above the sampler.
  - A minimum of 2 meters of separation from walls, parapets and penthouses was required for rooftop samples.
  - A minimum of 2 meters separation from any supporting structure, measured horizontally was required.
  - No furnaces or incineration flues were nearby.
  - Airflow around the sampler was unrestricted.

    The samplers were more than 20 meters from the drip line.
  - Any wire fence and gate, to protect the sampler, should not cause any obstruction during monitoring.

# Filter Preparation

- 2.4.1.3 Fiberglass filters were used [Note: these filters have a collection efficiency of larger than 99% for particles of 0.3μm diameter]. A HOKLAS accredited laboratory was responsible for the preparation of 24-hr conditioned and preweighed filter papers for monitoring team.
- 2.4.1.4 All prepared filters were equilibrated in the conditioning environment for 24 hours before weighing. The conditioning environment temperature was around 25 °C and not variable by more than  $\pm 3$  °C; the relative humidity (RH) was <50% and not variable by more than  $\pm 5\%$ . A convenient working RH was 40%.

# Operating/Analytical Procedures

- 2.4.1.5 Operating/analytical procedures for the air quality monitoring were highlighted as follows:
  - Prior to the commencement of the dust sampling, the flow rate of the HVS was properly set (between 1.1 m3/min. and 1.4 m3/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50.
  - The power supply was checked to ensure the sampler worked properly.
  - On sampling, the sampler was operated for 5 minutes to establish thermal equilibrium before placing any filter media at the designated air quality monitoring station.
  - The filter holding frame was then removed by loosening the four nuts and carefully a weighted and conditioned filter was centered with the stamped number upwards, on a supporting screen.
  - The filter was aligned on the screen so that the gasket formed an airtight seal on



the outer edges of the filter. Then the filter holding frame was tightened to the filter holder with swing bolts. The applied pressure should be sufficient to avoid air leakage at the edges.

- The shelter lid was closed and secured with the aluminum strip.
- The timer was then programmed. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number).
- After sampling, the filter was removed and sent to the laboratory for weighing. The elapsed time was also recorded.
- Before weighing, all filters were equilibrated in a conditioning environment for 24 hours. The conditioning environment temperature should be between 25°C and 30°C and not vary by more than ±3°C; the relative humidity (RH) should be < 50% and not vary by more than ±5%. A convenient working RH is 40%. Weighing results were used for further analysis of TSP concentrations collected by each filter.

# Maintenance and Calibration

- 2.4.1.6 The following maintenance/calibration was required for the HVS:
  - The high volume motors and their accessories were properly maintained. Appropriate maintenance such as routine motor brushes replacement and electrical wiring checking were made to ensure that the equipment and necessary power supply are in good working condition.
  - All HVS were calibrated (five point calibration) using Calibration Kit prior to the commencement of the baseline monitoring and thereafter at bi-monthly intervals.

# 1-hour TSP

# Measuring Procedures

- 2.4.1.7 The measuring procedures of the 1-hour dust meter are in accordance with the Manufacturer's Instruction Manual as follows:
  - The 1-hour dust meter is placed at least 1.3 meters above ground.
  - Set POWER to "ON" and make sure that the battery level was not flash or in low level
  - Allow the instrument to stand for about 3 minutes and then the cap of the air sampling inlet has been released.
  - Push the knob at MEASURE position.
  - Set time/mode setting to [BG] by pushing the time setting switch. Then, start the background measurement by pushing the start/stop switch once. It will take 6 sec. to complete the background measurement.
  - Push the time setting switch to change the time setting display to [MANUAL] at the bottom left of the liquid crystal display. Finally, push the start/stop switch to stop the measuring after 1 hour sampling.
  - Information such as sampling date, time, count value and site condition were recorded during the monitoring period.

#### Maintenance and Calibration

- 2.4.1.8 The following maintenance/calibration is required for the 1-hour dust meter;
  - Check and calibrate the meter by HVS to check the validity and accuracy of the results measured by direct reading method at 2-month intervals throughout all stages of the air quality monitoring.



#### 2.5 MONITORING RESULT

2.5.1.1 The monitoring results, name of laboratory and calibration details, and QA/QC results and detection limits to be referred to the Baseline Monitoring Report under the Contract HY/2012/08.

#### 2.6 ACTION AND LIMIT LEVELS

2.6.1.1 The baseline monitoring results formed the basis for determining the air quality criteria for the impact monitoring. The ET shall compare the impact monitoring results with air quality criteria set up for 24-hour TSP and 1-hour TSP. Based on results of the approved Baseline Monitoring Report of HyD Contract HY/2012/08, the proposed Action and Limit Levels are shown in *Tables 2.3*.

Table 2.3 TSP Action and Limit Levels for Impact Air Quality Monitoring

Parameters	Air Quality Monitoring Stations	Action Level (μg/m³)	Limit Level (µg/m³)
2	Ĭ		(με/ΙΙΙ )
24 hour TSP ( $\mu$ g/m <sup>3</sup> )	ASR1	213	260
	ASR5	238	260
	AQMS1	213	260
	ASR6	238	260
	ASR10	214	260
1 hour TSP (μg/m <sup>3</sup> )	ASR1	331	500
	ASR5	340	500
	AQMS1	335	500
	ASR6	338	500
	ASR10	337	500

# 2.7 EVENT AND ACTION PLAN FOR AIR QUALITY

2.7.1.1 In case of non-compliance with the air quality criteria, more frequent monitoring exercise shall be conducted within 24 hours after the result is obtained. This additional monitoring shall be continued until the excessive dust emission or the deterioration in air quality is rectified. The Event/Action Plan for air quality is given in the attached *Table 2.4*.



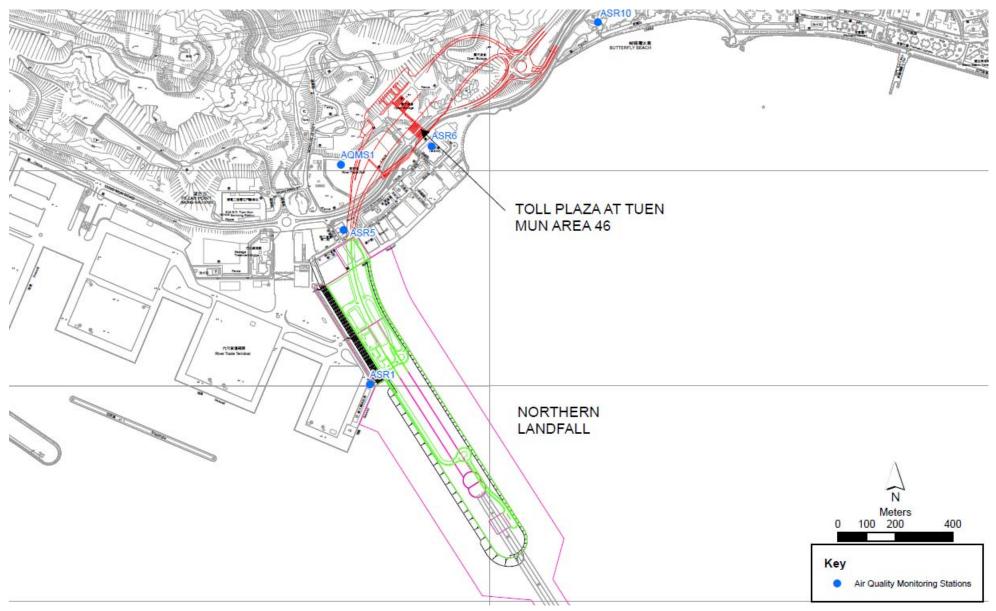


Figure 2.1 Location Map of Air Quality Monitoring Location



**Table 2.4 Event / Action Plan for Air Quality** 

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

Note: ET – Environmental Team, IEC – Independent Environmental Checker, SOR – Supervising Office's Representative



#### 3 ECOLOGY

#### 3.1 Introduction

- 3.1.1.1 Ecological baseline EM&A will consist of undertaking the following:
  - a walk-over survey, prior to construction works, of the land and streams where works will be undertaken. It may be necessary to rope off and protect specific habitats or species of special interest identified during the ecological surveys

# 3.2 BASELINE WALKOVER SURVEY

- 3.2.1.1 The purpose of the walk over survey will be to confirm the existing ecological conditions, with reference to the habitat maps included in the EIA Report and the established baseline conditions, in relation to the extent and condition of the habitats and species noted during the walkover survey. No detailed ecological surveys of flora and fauna will be required at this stage.
- 3.2.1.2 Baseline ecological walkover was conducted on 22 September 2014 and the results are presented in below.

# <u>Observations</u>

3.2.1.3 Two major landscapes within the study area were tall shrubland and plantation according to the habitat map in the approved EIA Report. To better record specific species of native trees and shrubland, a general record about their habit of growth was made.

#### Tall Shrubland

3.2.1.4 Shrubland habitat is densely populated with a mix native tree shrubby plant species within study area. Native tree like *Acacia confuse* as well as other shrubby plant species are planted broadly in this area. Shrublands are widely distributed. The most common one are the *Acacia confusa*, *Leucaena leucocephala*, *Macaranga tanarius* and *Clausena lansium*. They have mixed with each other and get better greening benefit. No significant change to habitat maps in the EIA Report was observed.

#### Plantation

3.2.1.5 Plantation at the study area contain mainly roadside plantation for landscape use within the study area. The plantation part, trees, for instance, *Ficus microcarpa* and *Ficus elastica* are most widely used as roadside (riverside) plant and landscape greening. They are common evergreen trees in Hong Kong and can grow as tall as fifteen meters which are considered to be very aggressive. No significant change to habitat maps in the EIA Report was observed.

#### Stream

3.2.1.6 The outlet of the stream opposite to the River Trade Terminal is now modified to an artificial culvert. Other than that, the habitat types within the Study area are similar to the habitat maps in the EIA report.

# Developed Area

3.2.1.7 The developed area such as warehouses and River Trade Terminal was observed. No significant change to habitat maps in the EIA Report was observed.

Sandy beach



- 3.2.1.8 Part of the Butterfly Beach as designated in EIA, is located at the eastern side of the pillar point. No significant change to habitat maps in the EIA Report was observed.
- 3.2.1.9 The habitat map of Tuen Mun is shown in *Appendix B*.

#### 3.3 BASELINE TRANSLOCATION WORKS - PITCHER PLANT

- 3.3.1.1 During the Environmental Impact Assessment (EIA) Stage of the TM-CLKL (which was approved on 23 October 2009), no Pitcher Plant (Nepenthes mirabilis) was identified within the proposed works area of the toll plaza. It was believed that the Pitcher Plant area identified would not be directly impacted by the toll plaza works and the only mitigation measures required were to install hoarding at the perimeter of the proposed works area to avoid encroachment into the Pitcher Plant area. However, during an ecology survey for the TMWB EIA in late 2011, Pitcher Plant was identified within the proposed works area for the TM-CLKL toll plaza. Plant is protected under the Forestry Regulations (subsidiary legislation of the Forests and Countryside Ordinance, Cap. 96) and the Protection of Endangered Species of Animals and Plants Ordinance (Cap. 586). Discussion with Agriculture, Fisheries and Conservation Department (AFCD) (27 October 2012) has confirmed that if the TM-CLKL project was to impact the Pitcher Plant area that further mitigation measures for the Pitcher Plant would be required under the TM-CLKL project. As such, the project proponent Highways Department (HyD) has appointed AECOM to undertake baseline survey and propose a transplantation strategy for Pitcher Plant to be affected by the proposed TM-CLKL project.
- 3.3.1.2 A baseline Pitcher Plant survey was conducted in September 2013 by a suitably qualified ecologist. The aim of the survey was to update, identify and record the location, number, health condition (i.e. good, fair, or poor), and suitability for transplantation of the affected individuals in order to provide details for the transplantation exercise. Each identified individual was tagged. The habitats present and representative plant species were recorded.
- 3.3.1.3 The assessment area included the slope above the toll plaza on which the Pitcher Plant populations have been previously identified. The slope was surveyed to identify the extent of the Pitcher Plant populations particularly those that occur within and adjacent to the proposed works site.

# Baseline Results on September 2013

- 3.3.1.4 The south-facing slope above the proposed toll plaza supports a mosaic of shrubland, rocky slope, plantation and watercourse habitats. Pitcher Plant was recorded in the rocky slope, shrubland and watercourse habitats. The rocky slope habitat comprised some exposed boulders and bare ground; however, much of it has been naturally regenerated by shrubland species such as Dichotomy Forked Fern (*Dicranopteris pedata*), with some encroachment by scattered Brisbane Box (*Lophostemon confertus*) saplings from the adjacent plantation habitat. This habitat supported a Pitcher Plant population (see Zones 1-7 in *Appendix C*) of approximately 0.5 ha in size and 259 Pitcher Plants (see *Appendix C*, Plates 1-3)).
- 3.3.1.5 In addition, three small areas (see Zones 8 10 in *Appendix C*) of Pitcher Plant were recorded along the watercourse in the shrubland habitat (see *Appendix C*, Plate 4). The watercourse comprised a narrow, shallow flow over bedrock with occasional small, very shallow pooled areas. There is evidence that part of the flow is being



diverted for human use. Riparian vegetation comprised the shrubland habitat in which the watercourse flowed. Abundant tree/shrub species found in the shrubland habitat included Dwarf Mountain Pine (Baeckea frutescens), Pop-gun Seed (Bridelia tomentosa), Eurya spp., Hong Kong Gordonia (Gordonia axillaris), Pond Spice (Litsea glutinosa), Pines (Pinus spp.), Wild Coffee (Psychotria asiatica), Rose Myrtle (Rhodomyrtus tomentosa), Hedge Sageretia (Sageretia thea), and Brisbane Box (Lophostemon confertus). While the understorey was dominated by Dichotomy Forked Fern (Dicranopteris pedata), with frequent Greenbrier (Smilax china), and occasional Hainan Galangal (Alpinia hainanensis), Oriental Blechnum (Blechnum orientale), Bentham's Rosewood (Dalbergia benthami), Dianella (Dianella ensifolia), and Chinese Silvergrass (Miscanthus sinensis).

3.3.1.6 The health and condition of the Pitcher Plant individuals was assessed and each plant was assessed, tagged and photographed by Pegasus Greenland Ltd.. All plants were assessed as being in "fair" health condition as summarized in *Table 3*. As the plants mostly grew on rock faces with thin soils, the successful removal and transport of the existing individuals is likely to be challenging given the weak nature of the plant's roots.

Table 3 Pitcher Plant Numbers and Health Condition Recorded in the Site in September 2013

Zone	No. of Plants Found	Health Condition
1	3	Fair
2	1	Fair
3	15	Fair
4	6	Fair
5	33	Fair
6	185	Fair
7	16	Fair
8	3	Fair
9	8	Fair
10	10	Fair
TOTAL	280	

#### Baseline Results on September 2014

- 3.3.1.7 Before commencement of the construction of the Contract, the initial survey was conducted by Hong Kong Landscape in September 2014 to confirm the location and number of the affected Pitcher Plants by the proposed TM-CLKL project. During the initial survey in September 2014, a total of 280 nos. of individual Pitcher Plant located at Zone 1 to 7 was identified. They are occurring on the rocky slope habitat which will be impacted by the proposed slope works (Zone 1 to 7). Each identified individual were tagged and photographed. The location map of the pitcher plants is shown in *Appendix C*.
- 3.3.1.8 280 nos. of Pitcher Plants identified in the initial survey will require transplantation to minimize impacts to the population. For those unaffected Pitcher Plant in Zone 8 to 10, fencing or other physical barriers will be erected for protection.
- 3.3.1.9 A transplantation proposal for Pitcher Plant in Zone 1 to 7 was submitted to EPD and AFCD for agreement separately.



### 4 LANDSCAPE AND VISUAL ASSESSMENT

#### 4.1 Introduction

4.1.1.1 A one off survey shall be conducted prior to commencement of any construction works. A photographic record of the site at the time of the contractor's possession of the site shall be prepared by the Contractor and approved by the ER.

#### 4.2 BASELINE MONITORING

- 4.2.1.1 Baseline walkover for the exiting landscape condition was conducted on 22 September 2014. During the baseline monitoring, apart from the temporary river trade golf at LR03 was demolished and abandoned, LR01 to LR07 were identified as same as the EIA study.
- 4.2.1.2 The photographic record and monitoring results are shown in *Table 4.1 and 4.2*. The proposed landscape and visual mitigation measures for construction and operation phase are listed in *Table 4.3*. Key plan showing the location and extent of existing landscape and visual resource is shown in *Appendix E*.
- 4.2.1.3 Moreover, a photographic record of baseline condition prepared by the RE was submitted to EPD on 29 September 2014 and the record is presented in *Appendix D* as supplementary information.

# **Observations**

Table 4.1 Baseline Result for Landscape and Visual Impact

Existing Landscape Resources	Photographic record
Seawater body and shoreline near Pillar Point (LR01)	This landscape resources only covered in HY/2012/08, TMCLKL – Northern Connection Sub-sea tunnel Section Contract.
Plantation within the industrial area and sewage treatment plant at Pillar Point (LR02)	
Temporary River Trade Golf (LR03)	



	4) CCC - CCC
Tall Shrubland (LR04)	
Stream (LR05)	
Plantation (LR06)	
Sandy Beach (LR07)	
Seawater body and shoreline	This landscape resources only covered in
north of Tai Ho Wan (LR08)	HY/2012/07, TMCLKL – Southern Connection
	Viaduct Section contract.
Tai Ho Wan (LR09)	This landscape resources only covered in
	HY/2012/07, TMCLKL – Southern Connection
	Viaduct Section contract.
Roadside planting along North	This landscape resources only covered in
Lantau Highway and within	HY/2012/07, TMCLKL – Southern Connection



MTD Six He Wen Denet	Viaduat Castion contract
MTR Siu Ho Wan Depot (LR10)	Viaduct Section contract.
Vegetation at Tai Ho and Pak Mong (LR11)	This landscape resources only covered in HY/2012/07, TMCLKL – Southern Connection Viaduct Section contract.
Stream course at Pak Mong (LR12)	This landscape resources only covered in HY/2012/07, TMCLKL – Southern Connection Viaduct Section contract.
Pitcher Plant at future Toll Plaza area (Additional LR)	
Siu Lang Shui Upland and Hillside Landscape (LCA01)	
Pillar Point Miscellaneous Urban Fringe Landscape (LCA02)	
Pillar Point Industrial Urban Landscape (LCA03)	This landscape resources only covered in HY/2012/08, TMCLKL – Northern Connection Sub-sea tunnel Section Contract.
Inshore Water Landscape near Pillar Point (LCA04)	This landscape resources only covered in HY/2012/08, TMCLKL – Northern Connection Sub-sea tunnel Section Contract.
North Lantau Transportation Corridor Landscape (LCA05)	This landscape resources only covered in HY/2012/07, TMCLKL – Southern Connection Viaduct Section contract.
Tai Ho Upland and Hillside Landscape (LCA06)	This landscape resources only covered in HY/2012/07, TMCLKL – Southern Connection Viaduct Section contract.



Tai Ho Settled Valley Landscape (LCA07)	This landscape resources only covered in HY/2012/07, TMCLKL – Southern Connection Viaduct Section contract.
Pak Mong Upland and Hillside Landscape (LCA08)	This landscape resources only covered in HY/2012/07, TMCLKL – Southern Connection Viaduct Section contract.
Inshore Water Landscape near Tai Ho (LCA09)	This landscape resources only covered in HY/2012/07, TMCLKL – Southern Connection Viaduct Section contract.

**Table 4.2 Baseline Result for Landscape Resources and Landscape Character Areas** 

Existing Landscape Resources	Baseline Condition	Description of Impacts	Remedial Works
Seawater body and shoreline near Pillar Point (LR01)	This landscape resources only covered in HY/2012/08, TMCLKL – Northern Connection Sub-sea tunnel Section Contract.		
Plantation within the industrial area and sewage treatment plant at Pillar Point (LR02)	Plantation within the industrial area and sewage treatment plant at Pillar Point  There are approximately 240 trees at this developed industrial site. The trees are of small to medium size (height: 3-12m, spread: 2-6m, trunk diameter: 95-400mm) and of low to medium amenity value.	<ul> <li>approximately 140 no. of trees will be affected, of which approximately 2 no. of trees are proposed to be transplanted, approximately 10 no. of trees are proposed to be felled, approximately 130 no. of weed trees (<i>Leucaena leucocephala</i>) are proposed to be removed.</li> <li>felled trees are mainly <i>Acacia confusa</i> of low amenity value.</li> </ul>	CM1, CM2, CM9, CM10 and OM4
Abandon River Trade Golf  The Abandon River Trade Golf is classified as developed area. There are 50 Acacia confusa, Caryota ochlandra of medium size and of low to medium amenity value. Due to the artificial and temporary nature, the sensitivity of this landscape resource is considered as medium.		Abandoned River Trade     Golf and will be     permanently lost	CM1, CM2, CM9, CM10 and OM4



Tall Shrubland (LR04)	Tall shrubland and disturbed hillside plantation area at Pillar Point  The area consists of tall shrubland and disturbed hillside plantation. There are more than 3000 trees and tall shrubs on the slope and plantation. The trees are mostly of low to medium size together with approximately 20 mature trees (height: 2-16m, spread: 0.5-10m, trunk diameter: 95-820mm) and of small to medium amenity value.	<ul> <li>approximately 2600 no. of trees will be affected, of which approximately 2300 no. of trees are proposed to be felled, approximately 300 no. of weed trees (Leucaena leucocephala) are proposed to be removed.</li> <li>felled trees are mainly Acacia confusa, Casuarina equisetifolia, Clausena lansium, Dimocarpus longan, Eucalyptus torelliana, Litchi chinensis, Lophostemon confertus, Macaranga tanarius. The trees are of low to medium amenity value</li> <li>approximately 4.2ha tall shrubland will be lost permanently</li> </ul>	CM1, CM2, CM9, CM10 and OM1
Stream (LR05)	Stream course at Pillar Point  The small stream is partly artificial and partly natural. There are several patches of Rhododendron simsii near the stream.	• N.A.	СМ7
Plantation (LR06)	Roadside planting along Lung Mun Road  There are approximately 600 trees along the roadside. The trees are of medium size (height: 1.5-13m, spread: 0.5-8m, trunk diameter: 95-760mm) and of low to medium amenity value.	<ul> <li>approximately 260 no. of trees will be affected, of which approximately 20 no. of trees are proposed to be transplanted, approximately 200 no. of trees are proposed to be felled, approximately 40 no. of weed trees (Leucaena leucocephala) are proposed to be removed.</li> <li>felled trees are mainly Acacia confusa of low amenity value.</li> </ul>	CM1, CM2, CM9, CM10 and OM4
Sandy Beach (LR07)	None	• N.A.	Nil
Seawater body and shoreline north of Tai Ho Wan (LR08)	This landscape resources only covered in HY/2010/02, HKBCF – Reclamation Works contract.		
Tai Ho Wan (LR09)	This landscape resources only covered in HY/2010/02, HKBCF – Reclamation Works contract.		
Roadside planting along	This landscape resources only covered in HY/2010/02, HKBCF – Reclamation Works contract.		



North Lantau Highway and within MTR Siu Ho Wan				
Depot (LR10) Vegetation at Tai Ho and Pak Mong (LR11)	This landscape resources only covered in HY/2012/07, TMCLKL – Southern Connection Viaduct Section contract.			
Stream course at Pak Mong (LR12)		nly covered in HY/2012/07, TMC etion Viaduct Section contract.	CLKL – Southern	
Pitcher Plant (Additional LR)	Existing Pitcher Plant  There are 280 pitcher plant within the construction area of the future toll plaza.	The Construction of the future Toll Plaza underpass at Tuen Mun will affect the protected Pitcher Plant at that location. Therefore, it was proposed to transplant the affected Pitcher Plant.	Pitcher Plant unavoidably affected by the works shall be transplanted subject to the approval of AFCD and EPD. The transplantation works should strictly comply with the condition as stipulated in the license issued by AFCD and the VEP issued by EPD.	
Siu Lang Shui Upland and Hillside Landscape (LCA01)	Siu Lang Shui Upland and Hillside Landscape  This is upland and hillside lie above 40mPD and below 300mPD in which part of the area is former landfill site. The area is dominated with tall shrubland and plantation of medium amenity value. The area is predominantly undeveloped with occasional small buildings.	Toll plaza, slope works and retaining walls are incompatible to undisturbed hillside landscape. More than 1000 trees and approximately 4.2ha tall shrubland will be lost permanently, leading to change in landscape quality	CM1, CM2, CM9, CM10, OM1	
Pillar Point Miscellaneous Urban Fringe Landscape (LCA02)	Pillar Point Miscellaneous Urban Fringe Landscape  The generally low rise developments within the area are of mixed land uses, including typically highways, transportation, storage, parks, residential sites and undeveloped land (hillside). The area is located at the edge of urbanized area.	Toll plaza, slope works and retaining walls are not incompatible to miscellaneous urban fringe landscape which consisted of mixed land uses such as highways, transportation. More than 1000 will be lost permanently, leading to change in landscape quality	CM1, CM2, CM9, CM10 and OM1	
Pillar Point Industrial Urban Landscape (LCA03)	This landscape resources only covered in HY/2012/08, TMCLKL – Northern Connection Sub-sea tunnel Section Contract.			
Inshore Water Landscape near Pillar Point	This landscape resources only covered in HY/2012/08, TMCLKL – Northern Connection Sub-sea tunnel Section Contract.			



n-	
(LCA04)	
North Lantau Transportation Corridor Landscape (LCA05)	This landscape resources only covered in HY/2012/07, TMCLKL – Southern Connection Viaduct Section contract.
Tai Ho Upland and Hillside Landscape (LCA06)	This landscape resources only covered in HY/2012/07, TMCLKL – Southern Connection Viaduct Section contract.
Tai Ho Settled Valley Landscape (LCA07)	This landscape resources only covered in HY/2012/07, TMCLKL – Southern Connection Viaduct Section contract.
Pak Mong Upland and Hillside Landscape (LCA08)	This landscape resources only covered in HY/2012/07, TMCLKL – Southern Connection Viaduct Section contract.
Inshore Water Landscape near Tai Ho (LCA09)	This landscape resources only covered in HY/2012/07, TMCLKL – Southern Connection Viaduct Section contract.

**Table 4.3 Proposed Landscape and Visual Mitigation Measures** 

ID No.	Construction Phase Mitigation Measures
CM1	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).
CM2	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.
CM3	Hillside and roadside screen planting to proposed roads, associated structures and slope works.
CM4	Hydroseeding or sheeting of soil stockpiles with visually unobtrusive material (in earth tone).
CM5	Screening of construction works by hoardings around works area in visually unobtrusive colours, to screen works.
CM6	Control night-time lighting and glare by hooding all lights.
CM7	Ensure no run-off into water body adjacent to the Project Area.
CM8	Avoidance of excessive height and bulk of buildings and structures.
CM9	Recycle/Reuse all felled trees and vegetation practicable, e.g. mulching
CM10	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
ID No.	Operation Phase Mitigation Measures
OM1	Re-vegetation of affected woodland/shrubland with native species.
OM2	Tall buffer screen tree / shrub / climber planting should be incorporated to soften hard engineering structures and facilities.



OM3	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 minimise unnecessary light spill.
OM4	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.
OM5	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.
OM6	Avoidance of excessive height and bulk of buildings and structures

# 4.3 EVENT AND ACTION PLAN

4.3.1.1 Should non-compliance of the landscape and visual impacts occur, actions in accordance with the action plan stated in *Table 4.2* should be carried out.

Table 4.4 Event and Action Plan for Landscape and Visual Impact

EVENT	ACTION			
ACTION LEVEL	ET	IEC	Permit Holder	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 Permit Holder     Discuss remedial actions with IEC, Permit Holder and Contractor     Monitor remedial actions until rectification has been completed	<ul> <li>Check report</li> <li>Check Contractor's working method</li> <li>Discuss with ET and Contractor on possible remedial measures</li> <li>Advise Permit Holder on effectiveness of proposed remedial measures.</li> <li>Check implementation of remedial measures</li> </ul>	Notify     Contractor     Ensure remedial     measures are     properly     implemented	<ul> <li>Amend         working         methods</li> <li>Rectify         damage and         undertake any         necessary         replacement</li> </ul>
Repeated Non- conformity	Identify Source Inform IEC and Permit Holder Increase monitoring frequency Discuss remedial actions with IEC, Permit Holder and Contractor Monitor remedial actions until rectification has been completed If nonconformity stops, cease additional monitoring	<ul> <li>Check monitoring report</li> <li>Check Contractor's working method</li> <li>Discuss with ET and Contractor on possible remedial measures</li> <li>Advise Permit Holder on effectiveness of proposed remedial measures</li> <li>Supervise implementation of remedial measures</li> </ul>	Notify Contractor     Ensure remedial measures are properly implemented	Amend working methods     Rectify damage and undertake any necessary replacement



# 5 CULTURAL HERITAGE

#### 5.1 Introduction

5.1.1.1 The EIA has recommended that EM&A for cultural heritage resources is undertaken during construction phase of the project. Implementation of the mitigation measures recommended by the EIA will be monitored through the site audit programme.

#### 5.2 BASELINE MONITORING

- 5.2.1.1 Prior to construction, a baseline survey of the grave G1 should be undertaken to establish the existing condition.
- 5.2.1.2 The purpose of the baseline condition survey was to record the existing condition of the grave and comprised the following task.
  - 1. Identification of grave near the Project Site;
  - 2. Carry out visual inspection for the condition survey;
  - 3. Record the existing condition and evaluation of structural integrity of the grave;
  - 4. Record the exact location of the grave prior to construction commencement. This information formed the baseline information for reference during construction phase;
  - 5. Submission of all records such as photographs, grave locations, all detected cracks, defects and damage, if any.

#### 5.3 CONDITION SURVEY FINDINGS

- 5.3.1.1 The condition survey was conducted on 23 September 2014 and the finding area presented below.
- 5.3.1.2 The historical grave was identified during the EIA stage of the project and the location of the grave (G1) was shown in *Figure 5.1*. It was observed that plenty of bushes was grown around the grave. The general view of the grave was shown in *Figure 5.2*.

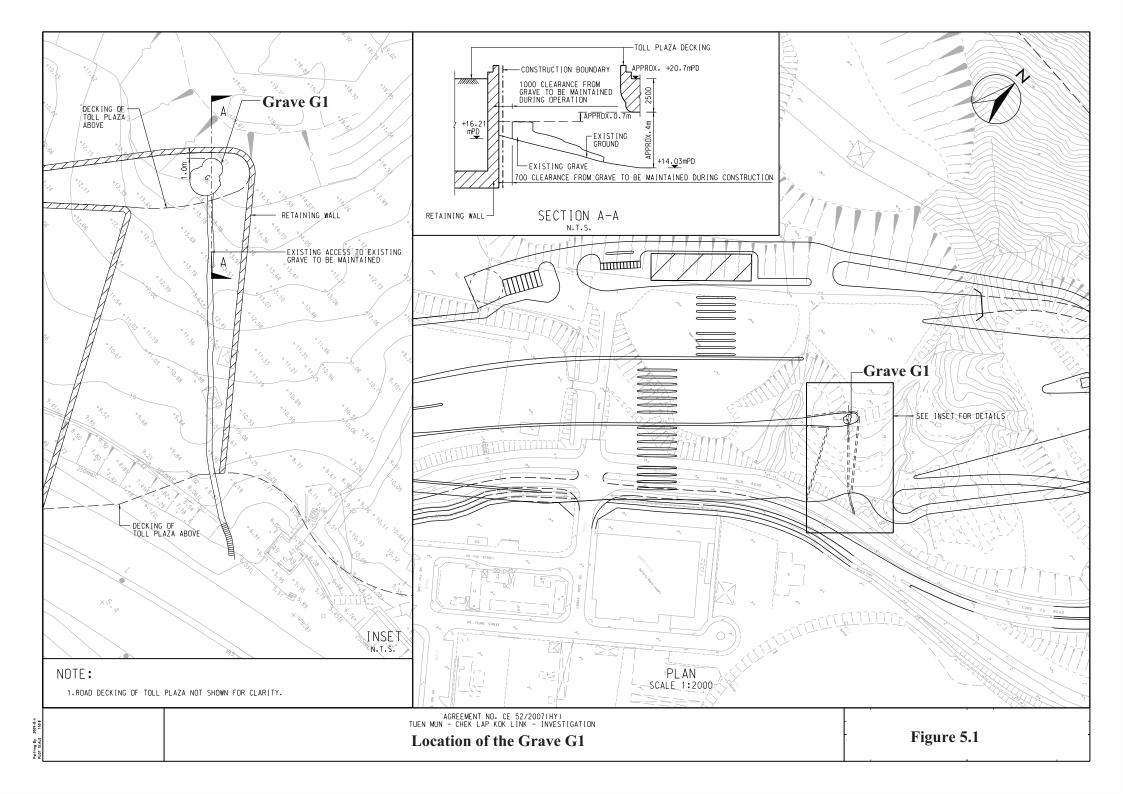






Figure 5.2 General View of the Grave G1

# 5.4 EXISTING CONDITION

5.4.1.1 The Grave G1 is generally in good condition. However, a total of 10 cracks ranged from hairline to 2.8mm were identified in the cement rendering and mortar of bricks of the grave. The location of the cracks are shown in *Figure 5.3*. Detailed information such as crack width and photographic record of the grave are summarized in *Table 5.1*.





Figure 5.3 Existing Cracks of the Grave G1

Table 5.1 Crack width and Photographic record of the Grave G1

Crack No.	Crack Width (mm)	Photographic Record
1	Hairline	
2	1.2	
3	1.5	



Crack No.	Crack Width (mm)	Photographic Record
4	1.0	
5	Hairline	
6	1.0	
7	1.6	



Crack No.	Crack Width (mm)	Photographic Record
8	1.3-4.0	
9	2.5-2.8	
10	0.8-2.1	

#### 5.5 EVENT AND ACTION PLAN

- 5.5.1.1 All measures undertaken by the Contractor during the construction phase in the vicinity of the grave shall be audited by the Environmental Team (ET), on a regular basis to ensure compliance with the intended aims of the recommended mitigation measures. Site inspections should be undertaken at least once per week throughout the construction period adjacent to these properties. The main aim of the survey is prevention of any possible damage to the grave and to ensure that the proposed mitigation measures are implemented. The broad scope of the audit will involve supervision of the following:
  - non-contact effects of the engineering works, such as vibration from pneumatic drills which could cause damage, such as foundation or wall cracks and loosening of tiles or fixtures; and



- contact between the historic structures and equipment and materials associated with the engineering works.
- 5.5.1.2 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 with a minimum of 1.0m set back of the permanent structure and a minimum of 0.7m clearance from the grave, can be maintained during construction, and
  - ensure no stockpiling or equipment storage is affecting the structures.
- 5.5.1.3 In the event of non-compliance the responsibilities of the relevant parties is detailed in the Event /Action plan provided on *Table 5.2*.

Table 5.2 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.	Notify     Contractor     Ensure     remedial     measures are     properly     implemented	Amend working methods     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 rectification has been completed 6. 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.	Notify the Contractor     Ensure remedial measures are properly implemented	Amend working methods     Rectify damage and undertake any necessary replacement

*Note:* 

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



#### 6 CONCLUSIONS

- 6.1.1.1 The Baseline monitoring has been conducted prior commencement of the construction works of the project in accordance with the EM&A Manual of the TM-CLKL. This Baseline Monitoring Report presents the baseline condition for air quality, ecology, landscape and visual and cultural heritage.
- 6.1.1.2 Baseline air quality monitoring was conducted by the ET of HyD Contract HY/2012/08 between 17 and 31 October 2013. The monitoring results and established Action and Limit Level for 1-hour TSP and 24-hour TSP would be adopted for this Contract.
- Baseline survey for Pitcher Plant has been conducted within the project area in September 2013 by a suitably qualified ecologist. During the survey, a total of 280 nos. of individual were identified in Zones 1 to 10 which were in good condition. Moreover, an initial survey for Pitcher Plant by the Contract HY/2013/12 was conducted in mid-September 2014 to confirm the number of existing Pitcher Plant. A total of 280 nos. of individual Pitcher Plant located at Zone 1 to 7 was identified. Since they are occurring on the rocky slope habitat which will be impacted by the proposed slope works (Zone 1 to 7), transplantation is required to minimize impacts to the population.
- 6.1.1.4 Initial tree survey and photographic record for existing Landscape was conducted on 22 September 2014 for TM-CLKL prior commencement of the project.
- 6.1.1.5 Condition survey for the Grave G1 was conducted on 23 September 2014. The grave was generally in good condition. However, a total of 10 cracks ranged from hairline to 2.8mm were identified in the cement rendering and mortar of bricks of the grave.



## Appendix A

**Construction Programme** 

Data Date: 30-Sep-2014 中國路標 CRBC Kaden 期 HY/2013/12 TM-CLKL Northern Connection Toll Plaza and Associated Works Page: 1 CRBC - KADEN Joint Venture nection Toll Plaza and Associated Works ▼ IWP (Rev.01); D Contract Dates ceptance of Tender (LoA % ◆ Acceptance of Tender (LoA) 14-Jul-14 21-Jul-14 Commencement of the Works 21-Jul-14 CD10120 Project Completion 03-Dec-19 KD101 ★ KD1 | Stage | Completion Civil provisions for E&M/TCSS (TD1/TD2/RW\_B/FB1, toll canopy & island
 ★ KD2 - Stage 2 Completion Civil provisions for E&M/TCSS(H1/G1/G2, abstument
 ★ KD3 - Stage 3 Completion Civil provisions for E&M/TCSS (Not included in St1 & 2) KD1 - Stage 1 Completion Civil provisions for E&M/TCSS (TD1/TD2/I 30-Jan-18 TC101 KD10110 KD2 - Stage 2 Completion Civil provisions for E&M/TCSS (H1/G1/G2. 19-Jul-18 RWE3 KD3 - Stage 3 Completion Civil provisions for E&M/TCSS (Not include KD3A - Stage 4 Completion Culvert 1, MH2/4/5/7, FCC, connections to 01-Mar-18 25-Dec-15 CUL10 ◆ KD3A - Stage 4 Completion Culvert 1.: MH2/4/5/7; FCC, connections to WIS culver ► KD4 - Sec 1 Completion TD1, TD2, RW\_B, H1f, TC Subway & KD10140 KD4 - Sec 1 Completion TD1, TD2, RW B, H1f, TC Subway & Bridge 03-Dec-18 CD101 KD5 - Sec 2 Completion Bridges G1, G2 & H2, Civil provisions for E& KD6 - Sec 3 Completion All Works w/in Portions A, B, C, E, G, H, H1, KD7 - Sec 4 Completion All Works within Portion D incl EM&A Implen 03-Dec-18 03-Dec-18 BH110 KD5 - Sec 2 Completion Bridges G1, G2 & H2, Civil provi RWG3 CD101 ♦ KD6 - Sec 3 Completion All Works win Portions A, B, C, E, G, I KD10170 21-Dec-16 ► KD8 + Sec 5 Completion All Remainders of the Works except W KD10180 KD8 - Sec 5 Completion All Remainders of the Works except Works under 03-Dec-18 CUL11 KD9 Sec 6 Completion All Landscape Softworks
 KD10 - Sec 7 Co
 KD11 - Sec 8 Completion All Preservation & Protection to Existin KD9 - See 6 Completion All Landscape Softworks
KD10 - See 7 Completion All Establishment Works for All Landscape So 03-Dec-19 CD101 KD10210 KD11 - Sec 8 Completion All Preservation & Protection to Existing Trees 03-Dec-18 CD101 ◆ Portion I Possession Date ◆ Portion X Possession Date 21-Jul-14 21-Jul-14 CD101 21-Jul-14 AD10110 Portion X Possession Date 21-Jul-14 CD101 100% Portion D Possession Date Portion X1 Possession Date 21-Jul-14 21-Jul-14 21-Jul-14 28-Aug-14 CD101 CD101 ◆ Portion D Possession Date ◆ Portion X1 Possession Date ◆ Portion H1 Possession Date AD10140 Portion H1 Possession Date 21-Jul-14 28-Aug-14 CD101 100% Portion H Possession Date Portion K Possession Date 21-Jul-14 24-Oct-14 CD101 CD101 21-Jul-14 ◆ Portion K Possession Date ◆ Portion X2 Possession Date ◆ Portion B Possession Date 25-Nov-14 23-Nov-14 AD10170 Portion X2 Possession Date CD101 AD10180 Portion B Possession Date CD101 Portion E Possession Date
 Portion G Possession Date
 Portion C Possession Date Portion E Possession Date 23-Jan-15 23-Feb-15 AD10200 Portion G Possession Date CD101 188 278 218 AD10210 Portion C Possession Date 24-Jul-15 CD101 CD101 CD101 Portion A Possession Date 23-Feb-16 ◆ Portion J Possession Date AD10230 Portion J Possession Date 23-Apr-16 AD10240 Portion F Possession Date 01-Sep-17 CD101 ◆ Works Area WA6 Possession Date Works Area WA6 Possession Date Works Area WA18 Ext Possession Date 21-Jul-14 CD101 21-Jul-14 100% 100% Works Area WA18 Ext Possession Date Works Area WA18 Ext (Zone 18 D) Pos CD101 AD1026 21-Jul-14 128 AD10270 Works Area WA18 Ext (Zone 18 D) Possession Date 25-Nov-14 CD101 General Submission Under PSs Nominate surveyor for acceptance 100% ◆ Nominate surveyor for acceptance 28-Jul-14 28-Jul-14 CD101 Nominate Piling Supervisor for accept
 Nominate Site Agent for acceptance PS10110 Nominate Piling Supervisor for acceptance 04-Aug-14 04-Aug-14 CD101 PS1012 Nominate Site Agent for acceptance Nominate Project Manager for acceptance 04-Aug-14 04-Aug-14 04-Aug-14 21-Jul-14 CD101 Nominate Project Manager for acceptance
Nominate CM (Bridge) for acceptance
Nominate CM (Site Formation) for acceptance
Nominate CM (Underpass) for acceptance CD101 PS10140 Nominate CM (Bridge) for acceptance 04-Aug-14 24-Jul-14 100% Nominate CM (Site Formation) for acceptance Nominate CM (Underpass) for acceptance 04-Aug-14 04-Aug-14 29-Jul-14 24-Jul-14 PS10150 CD101 100% Nominate CM (Underpass) for acceptance
Nominate Programming Manager for acceptance
Nominate Risk Manager for acceptance
Nominate Traffic Management Manager for acceptance
Nominate Shrfety Manager for acceptance
Nominate Public Relations Officer for acceptance
Nominate Public Relations Officer for acceptance PS10170 Nominate Programming Manager for acceptance 04-Aug-14 24-Jul-14 CD101 PS10182 Nominate Risk Manager for acceptance 12-Sep-14 08-Aug-14 CD101 100% Nominate Traffic Management Manager for acceptance 13-Oct-14 52 21-Jul-14 CD101 PS10200 Nominate Safety Manager for acceptance 04-Aug-14 PS10210 Nominate Public Relations Officer for acceptance 17-Nov-14 CD101 Nominate Tunnel Geologist for acceptance Nominate Contractor Labour Officer for acceptance 17-Nov-14 Nominate Contractor Labour Officer for acceptance
Nominate Traffic Consultant for acceptance
Nominate Interface co-ordinator for acceptance (
Nominate Interface co-ordinator for acceptance (
Nominate Safety Officer for acceptance PS10230 CD101 30-Sep-14 PS10240 Nominate Traffic Consultant for acceptance 12-Sep-14 24-Jul-14 CD101 Nominate Interface co-ordinator for acceptance (EI+14d) 18-Oct-14 78 Nominate Safety Officer for acceptance 12-Sep-14 100%

Nominate Environmental Officer for acceptance
100%

Submit particulars of the U/G detection capt for appl PS10290 Nominate Environmental Officer for acceptance 04-Aug-14 21-Jul-14 21-Jul-14 CD101 Submit particulars of the U/G detection eqpt for approval Submit details of the water lorries and road sweeper for approval 12-Sep-14 30-Sep-14 PS1033 CD101 Submit details of the water lorries and road sweeper for approve 30-Sep-14 Submit ceans of the water formes and road sweeper for app

Submit record photo for extg bldg/struct/redure/road for accepta
Submit methodology for initial survey for acceptance
Initial survey field work & reporting

Submit weather protection scheme for approval PS10360 Submit record photo for extg bldg/struct/feature/road for acceptance 23-Sep-14 26-Aug-14 CD101 100% PS1037 Submit methodology for initial survey for acceptance Initial survey field work & reporting 04-Aug-14 21-Jul-14 CD101 26-Sep-14 19-Aug-14 30-Sep-14 19-Aug-14 CD101 CD101 68 21-Jul-14 21-Jul-14 Submit weather protection scheme for approval Nominate ICE for acceptance PS10390 Nominate ICE for acceptance 12-Sep-14 24-Jul-14 CD101 100% Acceptance of the ICE proposed
Nominate designer for Alternative Design for Engineer acce
 Acceptance of the designer for Alternative Design
 Establish the TMLG Acceptance of the ICE proposed Nominate designer for Alternative Design for Engineer acceptance 30-Sep-14 12-Sep-14 PS1039 CD101 124 23-Jul-14 98 PS10420 Acceptance of the designer for Alternative Design 30-Sep-14 PS104 05-Sep-14 04-Aug-14 02-Sep-14 PS1043 Establish the TMLG Establish the ULG 12-Sep-14 04-Aug-14 CD101 CD101 Establish the ULG ♦ Establish SLG Establish SLG 12-Sep-14 PS10450 CD101 PS10460 Submit smart card system for approval 23-Jul-14 CD101 Submit smart card system to appear Nominate ET leader for acceptance
General Provisions for the Eng Nominate ET leader for acceptance 12-Sep-14 24-Jul-14 CD101 Submit location/layout for the Engineer office for acceptance Acceptance of the location/layout of the Engineer site office 28-Jul-14 04-Aug-14 Submit location/layout for the Engineer office for accept GP10100 12-Sep-14 CD101 Acceptance of the location/layou of the Engineer site office
 Submit green roof design (Engr office) for approval
 The Engineer review/comment
 Acceptance of the green roof design GP101 CD101 100% 100% Submit green roof design (Engr office) for approval 19-Aug-14 GP10130 30-Sep-14 GP10140 The Engineer review/comment 14 30-Sep-14 15-Oct-14 GP101 Acceptance of the green roof design
Fabrication of the Engineer office (off-site) GP101 GP101 20-Oct-14 412 Faurication of the Engineer office (off-site)

Erection of the Engineer office

Provision & maintain interim acc 03-Oct-14 15-Aug-14 23-Aug-14 11-Oct-14 293 347 GP10170 Erection of the Engineer office 14-Oct-14 29-Jul-14 12-Jan-15 GP101 Provision & maintain interim accommodation for the Engineer Submit contract computer facilities & softwares for approval 12-Sep-14 02-Sep-14 16-Dec-14 CD101 Submit contract computer facilities & softwares for approval
Submit contract cars proposal (8&7-seater/Elect/minibus)
Submit contract survey expl proposal
General Provisions for the Contractor
General Provisions for the Contractor CD101 07-Aug-14 31-Jul-14 GP10230 Submit contract cars proposal (8&7-seater/Elect/minibus) 24-Jul-14 CD101 GP10320 Submit contract survey eqpt proposal 28-Jul-14 21-Jul-14 CD101 100% Submi layout plan for contractor's site office
 Submi layout & détails of the worker's welfare facili 29-Nov-14 28-Jul-14 Submit layout plan for contractor's site office 28-Jul-14 CD101 GP20100

Fabrication of Contractor's site office (off-site)

Erection of Contractor site office and other

Detailed Works Progra

Establish telephone hotline (EI + 4d)

Programmir

Acceptance of the IWP

Initial Works Programme (IWP)

5%
0%
√ 3MRP Part of the Monthly Progress Report, MPR)
0%
← Prepare the 1st 3MRP
0%
← Prepare the 1st 3MRP
0%
← Prepare the 1st 3MRP

CRBC - Kaden JV Remaining Work Critical Remaining Work **Initial Works Programme (Rev.1)** Milestone ▼ Summary

31-Jul-14 02-Aug-14

0 28-Jul-14 24-Jul-14 28-Jul-14

29-Sep-14

12 14-Jul-14 14-Jul-14

166 30-Sep-14 01-Sep-14

60 30-Sep-14 01-Sep-14

0 28-Jul-14 28-Jul-14

28-Inl-14

06-Sep-14

29-Nov-14

24-Jul-14

19-Aug-14

28-Jul-14

07-Aug-14

19-Aug-14

28-Jul-14 24-Jul-14 CD101 28-Jul-14 28-Jul-14 CD101 28-Jul-14 28-Jul-14

24-Jul-14 CD101

GP201

AD102

100%

GP20150

GP20200

GP20210

PR10100

Submit layout & details of the worker's welfare facilities Fabrication of Contractor's site office (off-site)

Erection of Contractor site office and other facilities

Establish telephone hotline (EI + 4d)

Prepare & submit IWF

Prepare & submit DWP

R30100 Prepare the 1st 3MRP utive Summary Programme (ESP)

Date	Revision	Checked	Approved
30-Sep-14	Draft		

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

中國路標 CRBC Kaden 期 CRBC - KADEN Joint Venture

Submit the 1st ESP w/MPR PR40110 Submit the 1st ESP w/MPR 28-Jul-14 28-Jul-14 ▼ Site Safety & Environ Submit draft safety plan (LoA+14d) CD101 SE10100 12-Sep-14 Acceptance of the safety plan
Acceptance of the safety plan
Submit project safety plan
Acceptance of Environmental
Apply billing accepta (disposal/charging scheme) from EPI
Submit environmental plan (EMP) SE10150 30-Sep-14 30-Sep-14 SE1010 Apply billing account (disposal charging scheme) from EPD 21-Jul-14 CD101 SE20050 03-Aug-14 12-Sep-14 30-Sep-14 23-Jul-14 30-Sep-14 SE20100 Submit environmental plan (EMP) CD101 Acceptance of the environmental plan (EMP)
onlinate web site designer
Acceptance of the web site designer Acceptance of the environmental plan (EMP) 100% SE20150 Nominate web site designer 12-Sep-14 13-Aug-14 CD101 SE20160 Acceptance of the web site designe 30-Sep-14 30-Sep-14 SE201: Design and submit of the environmental web site 30-Sep-14 27-Sep-14 Design and submit of the environmental v Acceptance of the web site design
 Activate the environmental web site Acceptance of the web site design SE20210 05-Dec-14 SE201' SE20220 Activate the environmental web site 12-Dec-14 SE202 Existing Trees Existing tree survey field work
Prépare & submit tree survey report 10-Sep-14 CD101 Existing tree survey field work 11-Aug-14 11-Aug-14 10-Sep-14 TR10110 Prepare & submit tree survey report 30 01-Sep-14 18-Aug-14 30-Sep-14 29-Sep-14 TR101 100% Acceptance of the tree survey report
Prepare & submit tree risk assessment report ◆ Acceptance of the tree survey report Prepare & submit tree risk asse 40 12-Sep-14 05-Sep-14 ◆ Acceptance of the tree risk as TR10200 Acceptance of the tree risk assessment report 23-Dec-14 TR101 319 Site Hoarding Site Hoarding
Prepare & submit site hoarding plan Prepare & submit site hoarding plan 24-Jul-14 CD101 04-Aug-14 21-Jul-14 Acceptance of the site hoarding plan
Condition Survey & CIA Reports
Field work for condition survey
Prepare & submit condition survey report SH101 141 SH10140 Acceptance of the site hoarding plan 30-Sep-14 13-Nov-14 03-Nov-14 Field work for condition survey 48 12-Sep-14 07-Aug-14 30 07-Oct-14 15-Sep-14 14-Sep-14 CD101 17-Sep-14 CS101 100% 100% CS10110 Prepare & submit condition survey report CS101 128 Acceptance of the condition survey rep CS10150 Acceptance of the condition survey report 10-Nov-14 24-Nov-14 24-Nov-14 27-Oct-14 01-Sep-14 04-Sep-14 Prepare & submit CIA report ◆ Acceptance of the CIA report rance - Care of the Works CS101 128 Acceptance of the CIA report 0 31-Jul-14 IN10100 Submit TPL+CAR policy draft wording 31-Jul-14 23-Jul-14 CD101 100% ◆ Submit TPL+CAR policy draft wor Submit IPL+CAR policy chart worth
 ▼ Insulance - Brofessional Indenmity
 ▼ Contractor PII
 Submit PII policy
 ▼ CE PII
 Submit PII policy 4 13-Aug-14 11-Aug-14 16-Aug-14 13-Aug-14 0 13-Aug-14 11-Aug-14 11-Aug-14 11-Aug-14 13-Aug-14 11-Aug-14 CD101 IN20100 ICE PII Submit PII policy Submit PII policy 16-Aug-14 13-Aug-14 PS1040 ▼ Site Organization Structure

◆ Submit Contractor site organization struct
▼ Subcontractor Management Plan (SMP) 31-Jul-14 21-Jul-14 CD101 Submit Contractor site organization structure OR10100 100% 31-Jul-14 21-Jul-14 CD101 ◆ Submit SMP Submit SMP
 Risk Management Plan
 Submit risk management plan
 ▼ Temp Drainage Manag
 Submit TDMP
 Site Security Plan MP30100 Submit risk management plan 11-Aug-14 07-Aug-14 CD101 CD101 64 08-Oct-14 MP50100 Submit TDMP 07-Aug-14 04-Aug-14 CD101 Submit site security plan 31-Jul-14 21-Jul-14 CD101 Submit uniform proposal UN10100 ▼ Site Trip Ticket Management Plan (\$TTMP) 31-Jul-14 21-Jul-14 CD101 ◆ Submit STTMP Submit STTMP MP70100 Submit WMP 04-Aug-14 23-Jul-14 CD101 ▼ Public Relations Plan 18-Sep-14 08-Aug-14 CD101 MP90100 Submit public relations plan 100% Temporary Traffic Management Construction Traffic limpact Assessment (CTIA)

Prepare & submit CTIA report (TMLG/TD/The Enginees

Acceptance of The CTIA report TT10100 Prepare & submit CTIA report (TMLG/TD/The Engineer) 40 30-Sep-14 30-Sep-14 ◆ Acceptance of The CTIA report
 Permitting (XP)
 ◆ Serve 2 month notice to HyD for the application of XI Acceptance of The CTIA report TT101 Serve 2 month notice to HyD for the application of XP XP plan registration CD101 TT201 13-Aug-14 25-Aug-14 100% 100% 100% XP plan registration
 XP application processing 90 14-Aug-14 14-Aug-14 TT20200 XP application processing 08-Nov-14 25-Aug-14 TT201 Award of XP

Temp Traffic Arrangement for Lung Mun Roar

Prepare & submittdraft TTA - LMR for bridge works Award of XP for Lung Mun Road 0 18 Sep 14 Prepare & submit draft TTA - LMR for bridge works 05-Sep-14 18-Sep-14 21-Aug-14 The Engineer review & comment TT30150 The Engineer review & comment 30-Sep-14 21-Oct-14 TT301 Revise & submit TTA for approval (TMLG/The Engineer TT30200 Revise & submit TTA for approval (TMLG/The Engineer 20-Oct-14 05-Sep-14 29-Oct-14 TT301 Approval of the TTA scheme (LMR) Tenap Traffic Arrangement for Lung Fu Road Rounds
Prepare & submit draft TTA - LFR R/A for R&D works 163 13-Oct-14 CUL10 TT40100 Prepare & submit draft TTA - LFR R/A for R&D works 60 13-Oct-14 21 05-Dec-14 05-Sep-14 08-Dec-14 The Engineer review & comment
Revise & submit TTA for approval (TMLG/TD/The Engineer) TT40150 TT401 The Engineer review & comment Revise & submit TIA for approval (TMLG/TD/The Eng

• Approval of the TIA scheme (LFR R/A) TT40250 Approval of the TTA scheme (LFR R/A) 21-Mar-15 TT402 ✓ Interface Management
 ✓ Management Plan Submission/Updale/Re
 Puppare & submit Interface Management Plan 12-Sep-14 13-Aug-14 ◆ Acceptance of the plan

Prepare & submit detailed Interface Docume IF10150 Acceptance of the plan 27-Oct-14 IF10100 69 Prepare & submit detailed Interface Document 27-Oct-14 IF10200 PS1026 Acceptance of the detailed Interface Document 15-Nov-14 IF10200 Acceptance of the detailed Interface Documen Prepare draft doc for ACABAS submission DN10150 07-Aug-14 05-Aug-14 PS1042 100% Presentation of ACABAS submission to Hyd/The Engineer Finalize & submit the document to ACABAS 100% 100% Presentation of ACABAS submission to Hvd/The Eng alize & submit the document to ACABA\$ ◆ Verbal confirmation on approval from ACABAS 13-Aug-14 13-Aug-14 26-Aug-14 19-Aug-14 DN102 Verbal confirmation on approval from ACABAS 98 DN10300 30-Sep-14 DN102 ◆ Formal acceptance from ACABAS Formal acceptance from ACABAS AIP Submission

Submi Design Memorandum (DDM) to the Engineer Submit Design Memorandum (DDM) to the Engineer 29-Jul-14 CD101 DN20150 31-Jul-14 Prepare & submit Design Drawings w/ICE cert Finalize & submit Design Drawing w/ICE cert DN20200 Prepare & submit Design Drawings w/ICE cert 13-Aug-14 13-Aug-14 14-Aug-14 14-Aug-14 DN201 100% 13-Oct-14 30-Sep-14 Finalize & submit Design Drawing w/ICE cert 12-Sep-14 DDA (TDI Structure) Submission

Prepare & submisDDA drawing wICE cert

Acceptance of the DDA Drawing
DDA (TDI Pre-cast Bearts) Subm DN40100 Prepare & submit DDA drawing w/ICE cert 30 02-Dec-14 31-Dec-14 DN203 ce of the DDA Draw 12-Feb-15 Prepare & submit DDA Drawings w/IGE cert

Acceptance of the DDA Drawings Prepare & submit DDA Drawings w/ICE cert DN203 224 DN501 224 DN50100 90 28-Apr-15 24-Jul-15 ceptance of the DDA Drawin 29-Oct-15 ▼ DDA (G2 Foundation) Submission 21 01-Nov-14 01-Sep-14 20-Nov-14 02-Dec-14 19-Jan-15 Prepare & submit DDA drawings wICE cert
Acceptance of the DDA Drawings
DDA (Ell & G) Stricture's Submissions
Prepare & submit DDA Drawings w/ICE cert DN202 34 DN511 34 Prepare & submit DDA drawings w/ICE cert Prepare & submit DDA Drawings w/ICE cert ND52100 42 10-Nov-14 18-Dec-14 DN202 213 ND521 213 Acceptance of the DDA Drawings
 DDA (RW\_B Foundation) Submissi

Prepare & submit DDA Drawings w/ICE
 Acceptance of the DDA Drawings Prepare & submit DDA Drawings w/ICE DN202 180 DN50210 60 28-Nov-14 26-Jan-15 DN50220 Acceptance of the DDA Drawing
DDA (RW\_E Piling & Structure) Submission 12-Mar-15 DN502 ■ DDA (RW\_E Piling & Structure) Submissio 15-Feb-1 Prepare & submit DDA Drawings w/ICE DN501 279 DN502 279 Prepare & submit DDA Drawings w/ICE DN50240 DN50250 16-Nov-16 15-Feb-17 ◆ Acceptance of the DDA Drav Acceptance of the DDA Drawings 19 12-Sep-14 21-Jul-14 00-Dec-14 158

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





**Data Date:** 30-Sep-2014 中國路稿 CRBC Kaden 期 HY/2013/12 TM-CLKL Northern Connection Toll Plaza and Associated Works Page: 5 CRBC - KADEN Joint Venture ▼ Field Works - Toll Booth & Canopy 24-Feb-18 27-Apr-18 30-May-18 Island for toll booths 48 23-Dec-17 48 24-Feb-18 TCS10 145 TCS11 145 Island for toll booths Toll Canopy
Miscellan Toll Canopy 27-Apr-18 TCS11 ▼ Field Works - Completion of Toll Collector Subway & Associate Works within Portion I
 ◆ Completion of Toll Collector Subway & Associate Works within Portion I TCS11150 Completion of Toll Collector Subway & Associate Works within Portion I 0 30-May-13 TCS11 145 9 00 Dec 16 Toll Collector Subway (Portion X) Excavation Works Excavation Works 18-Jul-17 TCB11000 168 09-Dec-16 168 10-Feb-17 Construct Toll Collector S Construct Toll Collector Subway TCB11050 16-Sep-17 TCB11 Backfilling Islands for Toll Booths 16-Sep-17 04-Nov-17 31-Jan-18 Backfilling
Islands for Toll Booths TCB11200 Toll Canopy 07-May-18 TCB11 ABWF Works

Gompletion of Toll Collector Sybway Works in Portion X TCB11250 ABWF Works 07-May-18 08-Sep-18 TCB11 Completion of Toll Collector Sybway Works in Portion X 08-Sep-18 TCB11 01-Aug-18 12-Oct-15 316 02-Dec-14 Temporary Works Design (TWD) Submission and Approval TWD -ELS design for pad footing construction 21 02-Dec-14 60 08-Jan-15 DN511 34 BG210 150 BG210 150 BG210750 TWD -ELS design for pad footing construction 22-Dec-14 TWD -Formwork design for footing and pier
TWD -Falsework design for portal construction
TWD -Falsework design for in-situ deck construction 08-Jan-15 17-Jun-15 BG210910 TWD -Falsework design for portal construction 14-Aug-15 TWD -Falsework design for in-situ deck construct issions and Approval 14-Aug-15 12-Oct-15 BG210 Method Statement Submissions and Appro MSS for pad footing construction MSS for pad footing construction MSS for pier construction 60 22-Jan-15 30 10-Nov-15 23-Mar-15 08-Dec-15 BG210 132 BG210 240 BG211760 MSS for deck construction 05-Feb-16 09-Apr-16 BG210 1419 12-Sep-14 01-Aug-18 Preparation Works 26-Sep-14 07-Jan-15 16-Sep-14 16-Sep-14 e clearance Site clearance 12 12-Sep-14 21-Jul-14 CD101 BG212000 Tree felling works 22-Dec-14 01-Sep-14 BG211 100% UU detection 22-Dec-14 16-Aug-14 07-Jan-15 MS100 100% ☐ Predrilling works 07-Jan-15 23-Mar-15 26-Jan-15 14-May-15 Predrilling works 12-Sep-14 Excavation for (G2e-G2b) Excavation for (G2e-G2b) BG210 Piling for G2a BG212150 Piling for G2a 30-Dec-14 28-Jan-15 BG212 Pad footing construction(G2e-G2b) tion(G2e-G2b) Pile Cap Construction
Construct pile cap G2a BG212800 Construct pile cap G2a 28 28-Jan-15 28 28-Jan-15 05-Mar-15 BG212 397 BG212850 Construct Pier at G2a BG212900 Construct Pier from G2e to G2b 22 08-Dec-15 165 26-May-15 07-Jan-16 23-Dec-15 BG211 184 BG212 98 Portal
Construct Portal G2d
Construct Portal G2c 96 23-Dec-15 48 23-Dec-15 48 24-Feb-16 BG213180 Construct Portal G2d 24-Feb-16 BG212 98 BG210 98 Construct Portal G2c Construct Deck G2-1 BG210200 Construct Deck G2-1 BG210250 Construct Deck G2-2 BG210300 In-situ Joint 136 26-Apr-16 136 24-Oct-16 24-Oct-16 Construct Deck G2-2 BG210 98 10-Apr-17 10-Apr-17 02-Jun-17 BG210 In-situ Joint → Parapet and Finishing Work Construct Parapet 24-Jul-17 08-Jul-17 Construct Parapet 40 02-Jun-17 28 02-Jun-17 24 24-Jul-17 02-Jun-17 BG210 98 BG210 110 BG210 Drainage works BG210450 Road work 23-Aug-1 BG210 BG210 98 BG210 98 BG210550 Miscellaneous civil works BG210600 Remaining works 24 23-Aug-17 240 22-Sep-17 Miscellaneous civil works 22-Sep-17 01-Aug-18 ◆ Completion of civil work of G2 22-Sep-17 01-Aug-18 BG210 301 BG210 125 Completion of civil work of G2 BG210650 Completion of G2 817 24-Dec-14 Temporary Works Design (TWD)Submission and Approval TWD -ELS design for pile cap construction 21 24-Dec-14 30 24-Dec-14 30 07-May-15 16-Jan-15 24-Jan-15 05-Jun-15 BG110000 TWD -ELS design for pile cap construction AD101 14 14 TWD -Formwork design for TWD -Pierhead construction CD101 TWD Formwork design for pier TWD -Pierhead construction
TWD-Form traveller design BG110 BG110030 TWD-Form traveller design 03-Jul-15 28-Aug-15 BG110 TWD -Falsework design for end span of Method Statement Submissions and Ap
MSS for deck construction MSS for deck construction BG110 14 ND521 32 Form tranveller fabrication 144 14-Nov-16 18-May-17 1517 06-Sep-14 07-Aug-14 01-Nov-18 Preparation Works Site clearance 24 12-Sep-14 07-Aug-14 14-Oct-14 14-Aug-14 AD101 24 06-Sep-14 08-Aug-14 09-Oct-14 12-Sep-14 MS100 IIII detection 100% Vorks from Pier G1d to Pier G2: Predrilling works for G1d Predrilling works for G1d 14-Aug-14 02-Dec-14 100% ng works for G1d
Install bored pile for G1d
Construct Pile Cap G1d
Construct 15-Dec-14 12-Feb-15 38 384 16-Jan-15 Construct Pile Cap G1d BG110 BG110180 Construct Pier G1d 14 12-Jun-15 03-Jul-15 BG110 ▼ Deck Construction from Pier G1d to Pier G2: BG110 122 BG110 122 88 12-Jul-17 40 21-Sep-17 04-Nov-17 Balanced cantilever construction at G1d

Deck construction at end Span G2a Balanced cantilever construction at G1d Deck construction at end Span G2a ▼ Bridge Works from Abutment G1b to Pier G1d Construct abutment G1b 01-Sep-17 01-Sep-17 19-Sep-17 BG110160 Construct abutment G1b 19-Oct-17 19-Sep-17 10-Jan-18 BG110 BG110 Construct Pier G1c Balanced cantilever construction at G1c Hataniced canninerer consequencing a Gre

Construct end span at Glb

→ Flexible Approach \$tructure from Abutment Glb to Pier Gla BG110300 Construct end span at G1b 23-Dec-17 24-Jan-18 BG110 Predrilling works for G1a-G1b 22-Sep-17 15-Nov-17 BG110100 Predrilling works for G1a-G1b AD102 Install socket H-Pile for G1a-G1b
Construct Pile cap for G1a-G1b
Construct Column for G1a-G1b Install socket H-Pile for G1a-G1b BG110120 22-Sep-17 BG110 BG110140 Construct Pile cap for G1a-G1b 15-Nov-17 05-Jan-18 BG110 BG110150 Construct Column for G1a-G1b 05-Jan-18 24-Feb-18 BG110 Construct beam and Slab for Gla-Glb
Construct side wall
Parapet and Finishing Works 24-Feb-18 Construct beam and Slab for G1a-G1b BG110 BG110220 18-Apr-18 Construct side wall 18-Apr-18 21-May-13 BG110 Construct Parapet

Drainage work

Road work and remaining civil work 01-Jun-18 01-Jun-18 BG110230 Construct Parapet 33 18-Apr-18 BG110 33 18-Apr-18 BG110 Drainage work

TWD-ELS design for pile cap construction
TWD Formwork design for pier
TWD-Pierhead construction

TWD -Form traveller of

Miscellaneous Works
Miscellaneous works

Completion of G1
Completion of G1
Completion of G1

▼ Temporary Works Design (TWD) Submission and Approval

TWD -Falsework design for end span construction

Method Statement Submissions and Approval

MSS-deck construction

Off-site Works
Form tranveller fabrication

Field Works

Road work and remaining civil work

Completion of civil works for G1

TWD -Formwork design for pier

TWD -Pierhead construction TWD -Form traveller design

TWD -ELS design for pile cap construction

TWD -Falsework design for end span construction issions and Approval

Miscellaneous works

Completion of G1

ın (TWD) Submission and A

MSS-deck construction

Form tranveller fabrication

BG110260

BG110280

BH110010

BH110020

01-Jun-18

03-Jan-15 25-Mar-15

27-May-15

03-Jul-15

11-Apr-17

21 60

80 19-Jul-18

19-Jul-18

01-Nov-18

01-Nov-18

23-Jan-15 27-May-15

25-Jun-15 28-Aug-15

15-May-17

BG110

BG110 28

BG110

BG110

BG110

BG110

BG110

BG110

BH110 14

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

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Pactivity ID	Acevsy Name	Original Planned Start Actu Duration Planned Start	al Start Planned Finish Actual Finish	Predecessors lotal Float Performance % Complete 14	2015 2014 2017 2016 2019 2020
BH110070	Site clearance	12 12-Sep-14 07	-Aug-14 26-Sep-14 20-Aug-14	4 BG110 100%	08
BH110080	UU detection and protection		-Aug-14 09-Oct-14 12-Sep-14		UU eletection and protection
Substructure Wor BH110082	s From Abutment H1f to Pier H1d Predrilling works for H1d	223 03-Oct-14 21 5 03-Oct-14 21	-Aug-14 17-Jul-15 -Aug-14 09-Oct-14 27-Aug-14	227 0% 4 BH110 100%	Preddrilling works for H1d Substructure works From Agument H11 to Firet F11 d
BH110084	Predrilling works for H1e	5 03-Oct-14	08-Oct-14	BH110 303 0%	0 Predrilling works;for H1¢ Predrilling works;for H1t
BH110090 BH110092	Predrilling works for H1f Construct bored piles for H1d	11 09-Jan-15 21 16 28-Oct-14	-Aug-14 22-Jan-15 10-Sep-14 17-Nov-14	BH110 100% BH110 38 0%	Construct bored:piles for H1d
BH110094	Construct Pile cap for H1d	22 23-Jan-15	18-Feb-15	BH110 302 0%	Construigt Pile cap for H1d
BH110130 BH110140	Construct bored piles for H1f Construct bored piles for H1e	48 23-Jan-15 24 28-Jan-15	24-Mar-15 28-Feb-15	BH110 217 0% BG212 288 0%	Construct bored piles för H1f
BH110145	Construct pile cap for H1e	28 28-Feb-15	07-Apr-15	BH110 288 0%	Construct@thic cap for H1e
BH110170 BH110210	Construct pile cap for H1f Construct abutment H1f	36 24-Mar-15 48 13-May-15	13-May-15 17-Jul-15	BH110 217 0% BH110 217 0%	Construct pile cap for H1f
BH110220	Construct Pier H1e	14 25-Jun-15	16-Jul-15	BH110 228 0%	
BH110230 Decking Construc	Construct Pier H1d	14 25-Jun-15 160 16-May-17	16-Jul-15 06-Dec-17	BH110 208 0%	
BH110270	Construct End Span H1f	41 17-Jul-17	05-Sep-17	BH110 174 0%	Construct:End Spán H1f
BH110280 BH110290	Balanced cantilever construction at H1e Balanced cantilever construct at at H1d	80 16-May-17 80 26-Aug-17	25-Aug-17 06-Dec-17	BH110 10 0% BH110 10 0%	Balanced cantilever construction at H1d
Bridge Works Fro	Pier H1b to Pier H1d	168 01-Sep-17	03-Apr-18	10 0%	Bridge Works From Pier H1b to Pier H1d
BH110240 BH110250	Construct Pier H1c construct Abutment H1b	14 01-Sep-17 36 01-Sep-17	19-Sep-17 19-Oct-17	AD102 72 0% BH110 118 0%	Construct Abutment H1b
BH110230	Balanced cantilever construction at at H1c	72 07-Dec-17	07-Mar-18	BH110 10 0%	Balanced/cantille/pr cojnstruction at at H1c
BH110310	Construct End Span H1b	24 03-Mar-18	03-Apr-18	BH110 10 0%	Construct End Spán H1b  Construct End Spán H1b  Flexible Approach \$tructure from Abutment H1b to Pier H1a
BH110120	Predrilling works for H1a-H1b	12 01-Sep-17	16-Sep-17	BG110 5 0%	□ Predrilling works for H ka-H i b
BH110160	Sockete H-piles for H1a-H1b	40 22-Sep-17	15-Nov-17	BG110 0 0%	Sockete H-piles for H1ai-H1b  Construct Pile cap for H1ai-H3b
BH110200 BH110260	Construct Pile cap for H1a-H1b Construct Column H1a-H1b	40 15-Nov-17 40 05-Jan-18	04-Jan-18 23-Feb-18	BH110 0 0% BH110 0 0%	Construct Column H1al-H1b
BH110320	Construct Beam and slab H1a-H1b	40 24-Feb-18	18-Apr-18	BH110 0 0%	фессо Construct Béam and slaß H [a-H] b
BH110390 Parapet and Finis	Construct side wall ing Works	25 18-Apr-18 70 18-Apr-18	21-May-18 19-Jul-18	BH110 8 0% 0 0%	Construct side wall  ▼ Parapet land; Finishing Works
BH110330	Construct Parapet	33 18-Apr-18	30-May-18	BH110 0 0%	Upper Construct Paraget
BH110340 BH110350	Drainage work Road Work	33 18-Apr-18 37 30-May-18	30-May-18 19-Jul-18	BH110 0 0% BH110 0 0%	Drainage work
Miscellaneous Wo	rks	80 19-Jul-18	01-Nov-18	27 0%	▼ Miscellanéous Works
BH110360 Completion of G1	Miscellaneous Works	80 19-Jul-18 105 19-Jul-18	01-Nov-18 01-Nov-18	BH110 27 0%	Miscellandous Works  V Topinpletion of G1:
BH110370	Completion civil works of H1	0 0	19-Jul-18	BH110 0 0%	◆ Completion kivil works of H1
BH110380 Site Formation - Reta	Completion of H1 aging Structure RW_A	0 755 27-Jul-15 02	01-Nov-18 -Sep-14 21-Aug-17	BH110 32 0%	→ Completion of H1
Temporary Works De	sign Submission and Approval	120 27-Jul-15	19-Nov-15	326 0%	Temporary Works Design Submission and Apprival
RWA11000 RWA11050	Haul road design submission and approval  ELS design submission and approval	60 27-Jul-15 60 21-Sep-15	21-Sep-15 19-Nov-15	CD101 326 0% RWB1 326 0%	Hard road design submission and approval  ELS design submission and approval
RWA11100	Formwork design submission and approval	60 21-Sep-15	19-Nov-15	RWA1: 326 0%	Formwork design submission and approval
Method Statement S RWA21000	Method Statement Submission and Approval for ELS	120 27-Jul-15 60 27-Jul-15	19-Nov-15 21-Sep-15	RWB2 326 0%	Method: Statement Submisssion and Approval
RWA21050	Method Statement Submission and Approval for ELS  Method Statement Submission and Approval for Retaining Wall Construc	60 21-Sep-15	19-Nov-15	RWA2 326 0%	Method Statement Subnjissibn and Approval for Retaining Wall Construction
Retaining Wall A RWA31000	Prunning for tree transplanting Portion X and I	562 24-Aug-15 02 72 24-Aug-15	-Sep-14 21-Aug-17 25-Nov-15	TR101 197 0%	Prinning for tree transplanting Portion X and I
RWA31015	Transplant existing tree (Portion X and Portion I)	24 25-Nov-15	23-Dec-15	RWA3 197 0%	Transplant existing/tree(Portion X and/Portion I)
RWA31020	Construct haul road	11 14-Apr-16	28-Apr-16 -Sep-14 17-Jun-16	RWA3 111 0% TR101 111 5%	□ Construct faul road □ \$ite clearance and tree felling
RWA31025 RWA31050	Site clearance and tree felling Install ELS and Excavation (Soil: 10,298m3)	12 01-Jun-16 02 92 13-May-16	10-Sep-16	RWA3 111 0%	ljistalji Ej.S ajnd Excavatijon (Soil); 10(,298m3)
RWA31100	Construct Retaining Wall A from TD2 Abutment M to MJ 11	28 11-Jan-17	16-Feb-17	RWA3 56 0%	Construct Retaining Wall A from TD2 Abuthent M to MJ 11
RWA31150 RWA31200	Construct Cascade D Drainage Diversion of Existing Stream to Cascade D	24 16-Feb-17 12 16-Mar-17	16-Mar-17 30-Mar-17	TD211 56 0% RWA3 56 0%	□ Digininge Diversion of Existing Stream to Caseade D
RWA31250	Construct Retaining Wall A from Bay MJ11 to CH357.8	72 30-Mar-17	08-Jul-17	RWA3 56 0%	Construct Retaining Wall 'A from Bay' MJ 1 to CH357.8
RWA31300 Site Formation - Reta	Backfilling Works ning Structure RW_B	34 08-Jul-17 1022 12-Sep-14 14	21-Aug-17 -Aug-14 29-Jun-17	RWA3 56 0%	
	sign Submission and Approval	85 12-Sep-14 05	-Sep-14 03-Dec-14	385 0%	Temporary Works Design Submission and Approval  ELS design submission and approval
RWB11050 RWB11100	ELS design submission and approval Formwork and falsework design submission and approval	21 12-Sep-14 05 60 08-Oct-14	-Sep-14 03-Oct-14 03-Dec-14	CD101 83 70% RWB1 385 0%	First seeing southers to a und approved.
Method Statement S	ibmission and Approval	180 08-Oct-14	01-Apr-15	325 0%	Method Statement Submission and Approval  Method Statement Submission and Approval for ELS
RWB21000 RWB21025	Method Statement Submission and Approval for ELS  Method Statement Submission and Approval for piling works	21 08-Oct-14 60 03-Dec-14	27-Oct-14 31-Jan-15	RWB1 83 0% RWB1 220 0%	Wethod Statement Submission and Approval for piling works
RWB21050	Method Statement Submission and Approval for Retaining Wall Construc	60 31-Jan-15	01-Apr-15	RWB2 325 0%	Method Statement Submission and Approval for Retaining Walt Construction
Retaining Structure RWB31000	Prunning for tree transplanting Portion I	767 13-Oct-14 14 72 13-Oct-14	-Aug-14 29-Jun-17 10-Jan-15	AD101 67 0%	Prunjing for tree transplánting Pértiop I
RWB31030	Site clearance and tree felling	24 13-Oct-14 14	-Aug-14 12-Nov-14	RWB3 67 60%	□ Sité cléaranice and free felling
RWB31040 RWB31060	Transplant existing trees Initial excavation of RW B up to approx +6.0 mPD	24 10-Jan-15 24 27-Oct-14	07-Feb-15 25-Nov-14	RWB3 159 0% RWB3 66 0%	Transplant existing trees  Initial excavation of RW_B up/to approx +6.0 mPb
RWB31080	Predrilling works	48 13-Jan-15 04	-Sep-14 12-Mar-15	TD130 136 5%	Predigilling works
RWB31100 RWB31200	Excavation works and Foundation Works (Soil: 30,000; Rock: 4,756)  Box Structures (M.J. 6 to M.J. 11)	128 13-Mar-15 220 29-Aug-15	28-Aug-15 08-Jun-16	DN502 134 0% TD130 134 0%	Excavation works and Foundation Works (Soil:30,000] Rock: 4,756)  Box Structures (MJ. J. 6 tei M. J. 11)
RWB31401	Box Structures (Abutment H1f to M.J.3)	172 29-Aug-15	06-Apr-16	TFB11 182 0%	Box Structures (Abuthnett Hift to M.J.3)
RWB31501	Box Structures (Abutment M.J. 3 to M.J.6) Construct Drainage Channel in front of Abutment K of TD2	172 29-Aug-15	06-Apr-16	RWB3 182 0% TD211 7 0%	Box \$tructures (Abuthent M.J. 3 to M.J.6)  Construct Drainage Channel in front of Abuthent K of TD2
RWB31526 RWB31551	Box Structures (M.J. 13 to Abutment K of TD2)	24 26-Jan-16 105 26-Feb-16	26-Feb-16 14-Jul-16	RWB3 7 0%	
RWB31701	L-Shape Structures (M.J.11 to M.J.13)	100 14-Jul-16	21-Nov-16	RWB3 7 0%	L-Shape Structures (M.J.11 to M.J.13)  Construct Parapet
RWB31860 Retaining Structure R		45 04-May-17 402 03-Jul-17	29-Jun-17 09-Aug-18	TD130 8 0%	Retaihing Structure RW_E
Temporary Works De	sign Submission and Approval	60 03-Jul-17	28-Aug-17	144 0%	Temporary, Works Design Submission and Approval
RWE11000 RWE11050	Access road design submission and approval  ELS design submission and approval	7 03-Jul-17 60 03-Jul-17	08-Jul-17 28-Aug-17	CD101 104 0% AD102 144 0%	□ Access rdad design submission and approval □ ELS design submission and approval
Method Statement S	bmission and Approval	45 03-Jul-17	14-Aug-17	159 0%	Hethod Statement Submission and Approval:  Method Statement Submission and Approval:  Method Statement Submission and Approval:
RWE21000 RWE21050	Method Statement Submission and Approval for ELS  Method Statement Submission and Approval for Retaining Wall Construc	45 03-Jul-17 45 03-Jul-17	14-Aug-17 14-Aug-17	CD101 159 0% CD101 159 0%	Method Statement Submission and Approvalitor ELS  Method Statement Submission and Approvalifor Retaining Wall Construction
RWE21100	Method Statement Submission and Approval for piling works	45 03-Jul-17	14-Aug-17	CD101 98 0%	Method Statement Submission and Approval for piling works
Box Structures and I RWE31000	-Shape Retaining Wall for Retaining Wall E Predrilling works	247 22-Sep-17 24 22-Sep-17	09-Aug-18 25-Oct-17	BH110 17 0%	The state of th
RWE31050	Excavation and Foundation Works	49 15-Nov-17	15-Jan-18	BH110 1 0%	Excavation and Foundation Works
RWE31110 RWE31150	Construct retaining structures for Retaining Wall E Backfilling structures	72 15-Jan-18 16 18-Apr-18	18-Apr-18 09-May-18	BG110 1 0% BG110 1 0%	Construct refaining structures for Relaining Wall E  ■ Backfilling structures
RWE31200	Parapet and Drainage Works	30 09-May-18	19-Jun-18	RWE3: 1 0%	Parapetland Drainage Works
RWE31225 RWE31250	Civil provision for TCSS and E&M works Remaining works	23 19-Jun-18 17 19-Jul-18	19-Jul-18 09-Aug-18	RWE3: 1 0% RWE3: 91 0%	— Civil provisjon for TCS\$ and E&Mworks  □ Remaining works:
Site Formation - Retai	ning Structure for Slope TP_F	1054 12-Sep-14 11	-Aug-14 01-Aug-17	8 0%	
	Sign Submission and Approval	64 12-Sep-14 25	-Aug-14 12-Nov-14	CD101 39 30%	Temporary Works Design Submission and Approval  Hadi road design submission and approval
RWF11000 RWF11050	Haul road design submission and approval  Open cut excavation design submission and approval	30 12-Sep-14 25 30 30-Sep-14 10	-Aug-14 11-Oct-14 -Sep-14 29-Oct-14	CD101 39 30% CD101 8 90%	Dipper unit except submission and approval
RWF11100	Formwork design submission and approval	45 30-Sep-14	12-Nov-14	RWF11 8 0%	Forniwork design submission and approval
Method Statement S RWF21000	Method Statement Submission and Approval for Open cut excavation	49 04-Oct-14 30 04-Oct-14	19-Nov-14 01-Nov-14	RWF11 27 0%	P → ▼ Method Statement Submission and Approval     Method Statement Submission and Approval för Open cut excavation     Method Statement Submission and Approval för Open cut excavation
RWF21050	Method Statement Submission and Approval for Retaining Wall Construc	30 22-Oct-14	19-Nov-14	RWF11 8 0%	in Method Statement Submission and Approval for Retaining Wall Construction
Retaining Structure RWF31000	or Slope TP_F Form Access Road		-Aug-14 01-Aug-17 -Aug-14 03-Nov-14 30-Sep-14	RWF11 7 0%	Form Access Road Projecture for Slope TP_F
RWF31050	Excavation of Soil (5,400m3)	43 19-Nov-14	12-Jan-15	RWF21 7 0%	Excejvation of Soil (5,400 m3)
RWF31100 RWF31300	Excavation of Rock Grade IV (4,320m3)  Construct Retaining Wall Bay 7 to Bay 20	70 12-Jan-15 168 10-Mar-15	11-Apr-15 19-Oct-15	RWF31 7 0% RWF31 7 0%	Excavation of Rock Grade IV (4;320m3)  Construct Retaining; Wall Bay 7;to Bay 20
RWF31325	Construct Retaining Wall Bay 4 to Bay 6 adjacent to abutment G2e	50 23-Dec-15	26-Feb-16	TFB11 407 0%	Construct Retaining Wall Bay 4 to Bay/6 adjacent to abutment G2e
RWF31350	Construct Retaining Wall Bay 21 to Bay 28	96 18-Oct-16	15-Feb-17	RWF31 133 0%	Construct Rétaining Wall Bay 21 to Bay 28

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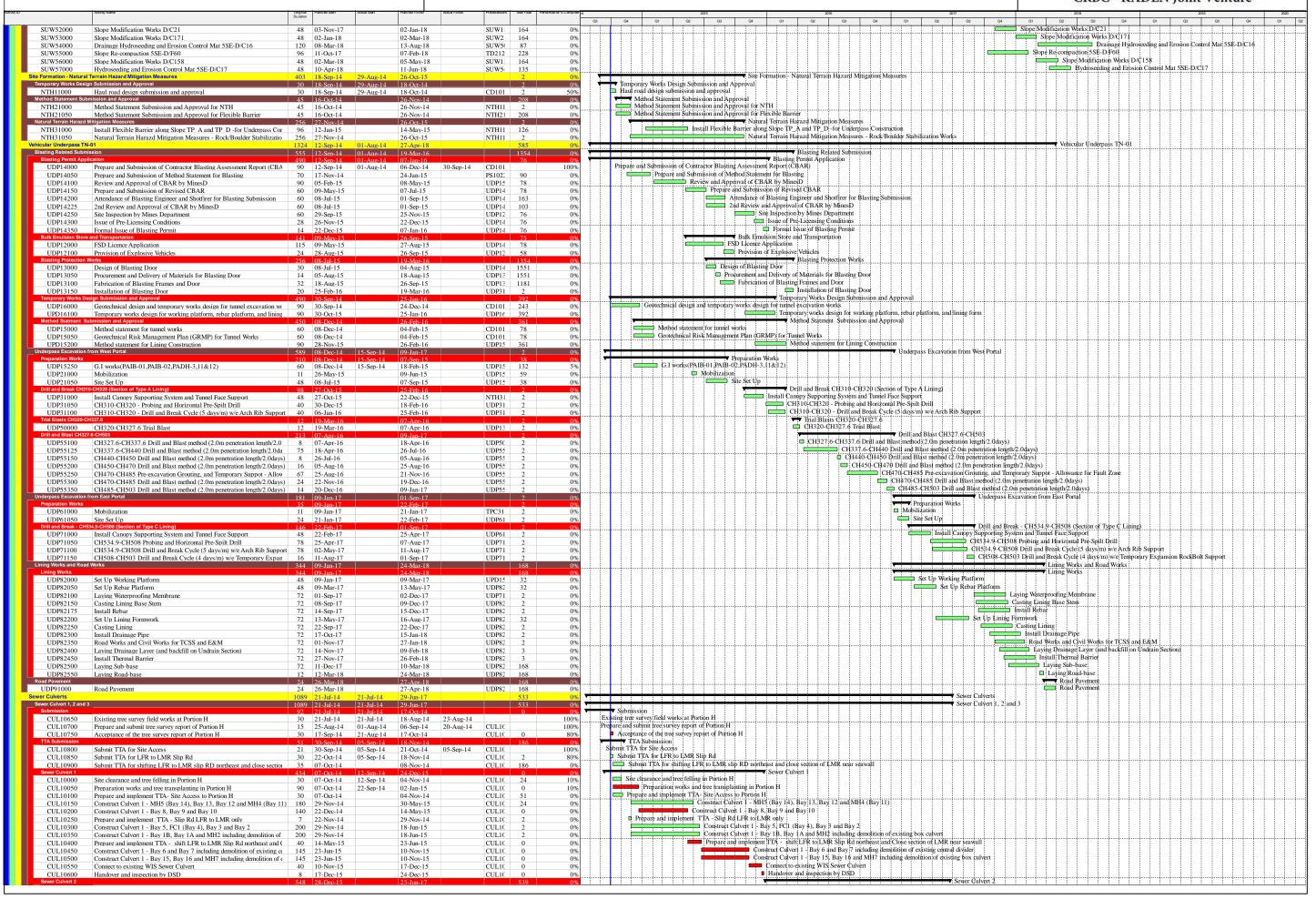
中國路稿 CRBC Kaden 類

The content of the	MATORIO III	APPOR NATE	Urnins   Pagger Sant   James Sent	Tespont Finish (actual Finish Fer	necessors into Host Preference No. complete M.	CRDO REDECTION VENTURE
March   Marc	Politing to	Parting Visitor	Duration	Theretoe I man	Total Total	20 04 01 02 03 04 01 02 03 04 01 02 03 04 01 02 03 04 01 02
Marie						Báckfilling (51,449m3)
March   Marc						Temporary Works Design Submission and Approval:
Part	RWG11000	ELS design submission and approval		16-Dec-15 C		ELS design substraission and approval
March   Marc					170	Method Statement Submission and Approval
Column						
Mark		r Slope TP_G	610 18-Apr-16	19-Jun-18	130 0%	Reikining Skructure for Stope Tip G
The content of the						
March   Marc						St. Formation Steps TD & S. Associated Works
Column						Teimpórary Works Design Submission and Approval
March   Marc	TPA11000 Method Statement Su	Haul road design submission and approval for TP A,B&C				
Minute   M	TPA21050		45 30-Oct-14 29-Sep-14	10-Dec-14 C		
Marie   Mari					500	▼ Slope Feature - Slope TP_A
March   Marc						
Column						
March   Marc						
Part						
Part						📫 Excavation of Rock Grade IV (2:314m3)
Part						
Company						
Marie		TP_B & Associated Works				▼ Sife Formation: - Slope:TP B & Associated Works
Company   Comp			226 10-Sep-15 03-Sep-14	29-Jun-16	151 0%	Slope Feature : Slope TP B
Column   C						
Column						Excavation of Soil (49,155m3)
Column	TPB31150	Excavation of Rock Grade IV (15,049m3)	80 04-Jan-16	14-Apr-16 T	PB31 111 0%	
Part						
The content of the						
Column		TP_C	215 10-Sep-15 03-Sep-14	16-Jun-16	151 0%	▼ Slople Fêatuwe - Ślople FP_C
Control   Cont				13-Oct-15 A		
The control of the						
March   Marc						
Company   Comp	TPC31100	Excavation of Rock II/III (12,964m3)	115 04-Jan-16	01-Jun-16 T	PC31 151 0%	Excaviation of Rock II/III {12,964/m3}
Column   C						
Part					77 070	Temborary Works Desieh Silbmissioh and Abproval
Part   Company   Part	TPD21000	Haul road design submission and approval	30 08-Sep-14 29-Aug-14			$( ) \mapsto t$ and $t$ logic design submitted to the proving $( ) : ( $
Ministration   Mini						Slope Feature - Slope TP ID
March   Marc	TPD31000	Form Access Road	24 19-Sep-14 03-Sep-14	22-Oct-14 T	PD21 48 5%	Form/Access/Road
Process   Proc						
Process   Proc						
Proceedings   Process						□ Exeavation of Rock Graide IV (999m3)
Triple						
Part						
Part	passes .		30 08-Sep-14 11-Aug-14		230 070	Temporary Works Design Submission and Approval
Part   Control			30 08-Sep-14 29-Aug-14			Hauf road design submission and approval
Part   Control			45 30-Sep-14 30-Sep-14 45 30-Sep-14 30-Sep-14			intention Statement Submission and Approval for TP_E Slope Site Formation
Part   Column   Col	Slope Feature - Slope	TP_E (at 5SE-DC/153) at Non-Pitcher Plant Area	748 09-Oct-14 11-Aug-14	27-Oct-16	56 0%	▼ Slope Feature - Slope FP_E (at 5SE-DC/153) at Non-Pitcher Plant-Area
Second Column   Col						
Principal   Prin						
Processor   Contract						
Prof.   120   12						
Trigition   Trig						
Presidence   Pre	TPE31300	Hand Over of Portion D				
Trigit 1970						
TFE-100   First Access Read						
Pick   19	TPE41050	Form Access Road	48 10-Aug-15	12-Oct-15 T	PE31 133 0%	Form Access/Road
Pick   100   December of Read Grant III (1-4) (2-4) (2-4) (1-4)						
Part						Excavation of Rock: Grade H1 (45m8/n/t; 14,0d0m3)
Page	TPE41250	Excavation of Rock Grade II (35m3/n/d; 15,226m3)	136 20-Apr-16	18-Oct-16 T	PE41 133 0%	
Part   Control						
No.						Auc promation residences:  VRoadworks (retain Underbass)
New York   15   15   15   15   15   15   15   1	SFW11000	Road and drainage works and Civil Works for TCSS and E&M (Retainin	160 03-Jul-17	20-Jan-18 R	WB3 8 0%	Rodd and draininge (works and Civil Works für TCS\$ and E&M (Refaining Wall B)
SWI1100   Road and distange works and CNM white for TXSS and EAM (Rearing Wash and CNM white for TXSS and EAM (West For TXS) and EAM (W						
SWI   150   Road and dianage works and Coll Works for TCSS and EAM (files Post   150   1						
SFW1120  Road Parenter (IA) Area in Section 1   1.0						Road and drafnage works and Civil Works for ITCSS and E&M (East Portal Area to Lung Pu Road Roundabout)
SWI   120   Roof Payment (All Arm in Section 5)   24   28 Feb   8   10 Aug   8   50   10 Aug   8   12   20   10 Aug   8   12   20   10 Aug   10 A	SFW11200	Road and drainage works and Civil Works for TCSS and E&M (West Pol		28-Feb-18 U	DP82 2 0%	
13.5   17-20-14   13-Au-15   13						
Temporary Works Design Statisticates and Approval   SUW 21000   General networks   30   17-Dec 14   17-Jan 15   CD101   15   0 n     SUW 21000   General networks   30   17-Dec 14   17-Jan 15   CD101   15   0 n     SUW 21010   General networks   30   17-Dec 14   17-Jan 15   CD101   15   0 n     SUW 21010   General networks   30   17-Dec 14   17-Jan 15   CD101   15   0 n     SUW 21010   General networks   30   17-Dec 14   17-Jan 15   CD101   15   0 n     SUW 21010   General networks   30   17-Dec 14   17-Jan 15   CD101   17-Dec 14   17-Dec 14   17-Jan 15   CD101   17-Dec 14   17-Dec						▼ \$ite Fortpatión - Slope Upgråding Works
Method Statement and Approved   45   12-Dec 14   31-Jan-15   5U   55   0%	Temporary Works Des	ign Submission and Approval	30 17-Dec-14	17-Jan-15	55 0%	🕶 Temporary Works Design Submission and Approval
SUV21000   General method statement for Slope Upgrading Works (soil nails, rock, do d. pt.)   17-ber.14   13-bar.15   17-ber.14   15-bar.15   17-bar.15   17-bar			30   17-Dec-14		D101 55 0%	
Stop	SUW21000	General method statement for Slope Upgrading Works (soil nails, rock do	45 17-Dec-14 45 17-Dec-14	31-Jan-15 S	JW1: 55 0%	⊨ General method statement for Slopie Üpgrakling Works (soil narils, riock idowels, etc.);
SUW31100   Site Clearance and Tree Felling   Type Access Road   Type Access Road Road   Type Access Road   Type Access Road Road Road   Type Access Road Road Road Road   Type Access Road Road Road Road Road Road Road Road	Slope Feature - Slope	5SE-D/C170	118 05-Jan-15	02-May-15	87 0%	Slope Feature Slope 5SF D/C 170
SUW31100   Pepara Access Road   7   17-Jan-15   25-Jan-15   T730   49   0%   17-pepara Access Road   18-Jan-15   17-Jan-15						
SUW31150 Excavation of Soil (1.240m3)  14 31-Jan-15 17-Feb-15 SUW3 44 0%   Excavation of Soil (1.240m3)  SUW31200 Excavation of Soil (1.240m3)  9 17-Feb-15 03-Mar-15 SUW3 46 0%   Excavation of Soil (1.240m3)  SUW31200 Excavation of Soil (1.240m3)  9 17-Feb-15 03-Mar-15 SUW3 46 0%   Excavation of Soil (1.240m3)  SUW31200 Excavation of Soil (1.240m3)  9 17-Feb-15 SUW3 46 0%   Excavation of Soil (1.240m3)  SUW31200 Excavation of Soil (1.240m3)  9 17-Feb-15 SUW3 46 0%   Excavation of Soil (1.240m3)  SUW31200 Excavation of Soil (1.240m3)  SUW31200 Excavation of Soil (1.240m3)  9 17-Feb-15 SUW3 46 0%   Excavation of Soil (1.240m3)  SUW31200 Excavation of Soil (1.240m3)  SUW31200 Excavation of Soil (1.240m3)  9 17-Feb-15 SUW3 46 0%   Excavation of Soil (1.240m3)  SUW31200 Excavation of Soil (1.240m3)  SUW31200 Excavation of Soil (1.240m3)  9 17-Feb-15 SUW3 46 0%   Excavation of Soil (1.240m3)  SUW31200 Excava						□ Prepare Access Road
SUW31250   Slope Works (Recompaction; Soil Nail 45 nr) and Drainage System   45   03-Mar-15   02-May-15   SUW3   66   096	SUW31150	Excavation of Soil (1,240m3)	14 31-Jan-15	17-Feb-15 S	JW3 44 0%	
Other Slope Features   593   \$1 Jan-15   51 Jan-15						
SUW41000 Hydroseeding SSE-D/C152 72 31-Jan-15 07-May-15 SUW2 104 0% SUW42000 Hydroseeding and Erosion Control Mat 5SE-D/C121 36 20-May-15 08-Jul-15 SUW1 38 0% Hydroseeding and Erosion Control Mat 5SE-D/C122 36 20-May-15 08-Jul-15 SUW1 38 0% Hydroseeding and Erosion Control Mat 5SE-D/C122 36 20-May-15 08-Jul-15 TPD31 38 0% Hydroseeding SSE-D/C140 Hydroseeding and Erosion Control Mat 5SE-D/C121 Hydroseeding and Erosion Control Mat 5SE-D/C121 Hydroseeding and Erosion Control Mat 5SE-D/C121 Hydroseeding SSE-D/C140 Hydroseeding and Erosion Control Mat SSE-D		Stope works (Recompaction; Soil Ivail 45 nr) and Drainage System				▼ Other Slope Features
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SUW51000   Slope Cut 5SE-D/C165 (1E - 50m3/p/d, 210m3; Soil Nail 47 nr., each 8   196   30-Mar-16   09-Dec-16   SUW4'   558   0%	SUW49000					Hydro'sceding' and Ercision' Control Mat 55\E-1\/C\!17
	SUW50000					di la

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

中國路稿 CRBC Kaden 期



Data Date: 30-Sep-2014 中國路稿 CRBC Kaden 期 HY/2013/12 TM-CLKL Northern Connection Toll Plaza and Associated Works Page: 9 CRBC - KADEN Joint Venture Construct Culvert 2 - Bay 21, Bay 20 and Bay 19 under closure section of 180 28-Dec-15 24-Jun-16 CUL10 533 Construct Culvert 2 Bay 18, Bay 179 bind Bay 17A unifor closure section of LMR near seawall

Construct Culvert 2 Mill tunder closure section of LMR near seawall

Handover and inspection by DSD Construct Culvert 2 - Bay 18, Bay 17B and Bay 17A under closure section 14-Dec-16 533 533 CUL11050 Construct Culvert 2 - MH1 under closure section of LMR near seawall 15-Dec-16 15-Jun-17 CUL11 Handover and inspection by DSD 23-Jun-1 CUL11 ▼ Sewer Culvert 3 Construct Gulvert 3 - Bay 22 and MH6 under closure section of LMR near seawall Construct Culvert 3 - Bay 22 and MH6 under closure section of LMR ne 180
Prepare and implement TTA- realignment of temp. LFR to LMR Sliproac 14 28-Dec-15 25-Jun-16 24-Jun-16 09-Jul-16 CUL1( CUL11 Prepare and implement TTA-irealignment of tempt LFR to LMR Sliproad for MH8 under closure

Construct Culvert 3 - MH8 under closure section of LMR near seawall Construct Culvert 3 - MH8 under closure section of LMR near seawall 180 09-Jul-16 30-Dec-16 CUL11 Handover and inspection by DSD 29-Jun-17 CUL11 Handover and inspection by DSD ▼ Road and drainage works under LFR R/A TTA stage I

Drainage & Sewerage works 75 02-May-15 Road and drainage works under LFR R/A TTA stage 1 35 02-May-15 24 02-Jun-15 11 04-Jul-15 Drainage & Sewerage works Watermains 17-Jun-15 04-Jul-15 SUW3 Watermains watermans

Irrigation / UU / PL

Roadworks

Road and drainage works under LFR R/A/TTA stage 2a

Irriginage & Sewerage works

Watermains Irrigation / UU / PL LF10200 20-Jul-15 LF101: Roadworks rks under LFR R/A TTA stage 2a 20-Jul-15 08-Aug-15 LF1020 08-Aug-15 07-Sep-15 LF20150 09-Oct-15 LF2010 ■ Irrigation / UU / PL ■ Roadworks LF20200 Irrigation / UU / PL 09-Oct-15 17-Oct-15 17-Oct-15 LF201: Road and drainage works under LFR R/A TTA stage 2b

Drainage & Sewerage works

Watermains under LFR R/A TTA stage 2b AD102 24 09-Nov-15 20 07-Dec-15 Drainage & Sewerage works 07-Dec-15 LF30150 02-Jan-16 LF3010 ☐ Irrigation / UU / PL ☐ Roadworks Irrigation / UU / PL ks under LFR R/A TTA stage 3a ▼ Road and drainage works under LFR R/A TTA stage 8a

Drainage & Sewerage works 72 28-Jan-16 32 03-May-16 LF302: LF40100 Drainage & Sewerage works 03-May-16 Watermains Irrigation / UU / PL 14-Jun-16 28-Jun-16 ☐ Irrigation / UU / PL 14-Jun-16 28-Jun-16 09-Aug-16 LF4020 Roadworks ks under LFR R/A TTA stage 3b ▼ Road and drainage works under LFR R/A TTA stage 3b Drainage & Sewerage work Watermains
Irrigation / UU / PL
Roadworks Irrigation / UU / PL LF50200 19-Dec-16 05-Jan-17 05-Jan-17 LF501: 15-Feb-17 LF5020 s under LFR R/A TTA stage 4a 71 15 Ech 1 Road and drainage works under LFR R/A TTA stage 4a Road and drainage & Sewerage works
Watermains
Irrigation / UU / PL LF60100 Drainage & Sewerage works 15-Feb-17 21-Jun-17 LF502: 96 15-Feb-17 32 21-Jun-17 LF60150 Watermains 02-Aug-17 LF6010 Irrigation / UU / PI LF60200 02-Ang-17 LF601 Roadworks Road and drainage works under LFR R/A TTA stage 4b s under LFR R/A TTA stage 4b LF602: 72 25-Sep-17 32 27-Dec-17 LF70100 Drainage & Sewerage works 27-Dec-17 LF70150 03-Feb-18 LF7010 Irrigation / UU / PL Irrigation / UU / PL Roadworks Road and drainage works under LFR R/A TTA stage 5

Drainage & Sewerage works 32 20-Feb-18 82 29-Mar-18 LF7020 Roadworks ks under LFR R/A TTA stage 5 24 29-Mar-18 20 04-May-18 6 30-May-18 Drainage & Sewerage works 04-May-18 30-May-18 LF702: LF801: Irrigation / UU / PL 07-Jun-18 LF80200 07-Jun-18 20-Jul-18 LF8020 Roadworks age works under LFR R/A final TTA at Co ▼ Road and drainage works under LFR R/A final TFA at Completion
Roadworks
□ Nightwork for re-surfacing LF95100 LF95150 24 20-Jul-18 14 20-Aug-18 LF802: 66 LF9510 65 Nightwork for re-surfacing 05-Sep-18 R&D works in Section 1 of the work 250 11-Nov-16 R&D works in Section 1 of the works 07-Ian-18 Road & Drainage works under LMR TTA stage 1

Road & Drainage works under LMR TTA stage 2

Road & Drainage works under LMR TTA stage 2 Road & Drainage works under LMR TTA stage LM10150 06-Mar-17 06-Aug-17 Road & Drainage works under LMR TTA stage: 06-Aug-17 Road & Drainage works under LMR TTA stage 07-Jan-18 LM101 Road & Drainage works inder LMR TTA stage 1

Road & Drainage works inder LMR TTA stage 2

Road & Drainage works under LMR TTA stage 2

Road & Drainage works under LMR TTA stage 2

Road & Drainage works under LMR TTA stage 3

Road & Drainage works under LMR TTA stage 4 LM20100 LM20150 Road & Drainage works under LMR TTA stage 1 90 11-Nov-16 90 10-Apr-17 TT302 49 LM201 49 Road & Drainage works under LMR TTA stage 2 10-Sep-1 Road & Drainage works under LMR TTA stage 1
Road & Drainage works under LMR TTA stage 2
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Civil provision for E&MTCSS in Section 3 of the works

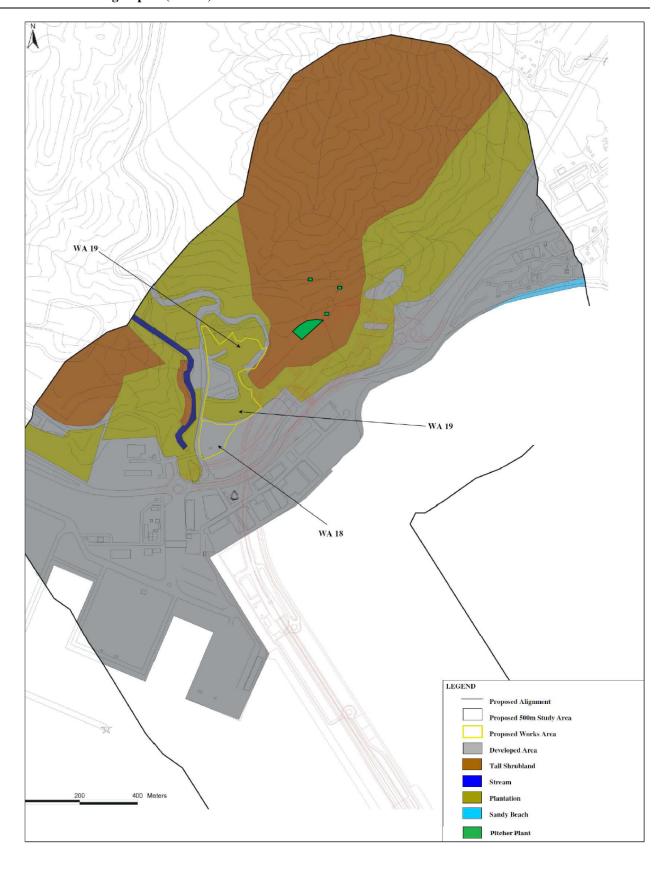
In Portion G/H/H1/J/K (LMR TTA related) In Portion G/H/H1/J/K (LMR TTA related) LM302 11 90 10-Sep-17 10-Feb-18



## Appendix B

**Habitat Map of Tuen Mun** 







## **Appendix C**

**Location of Pitcher Plant** 





Plate 1: Pitcher Plant (Nepenthes mirabilis ) in Rocky Slope habitat at the Donor Site



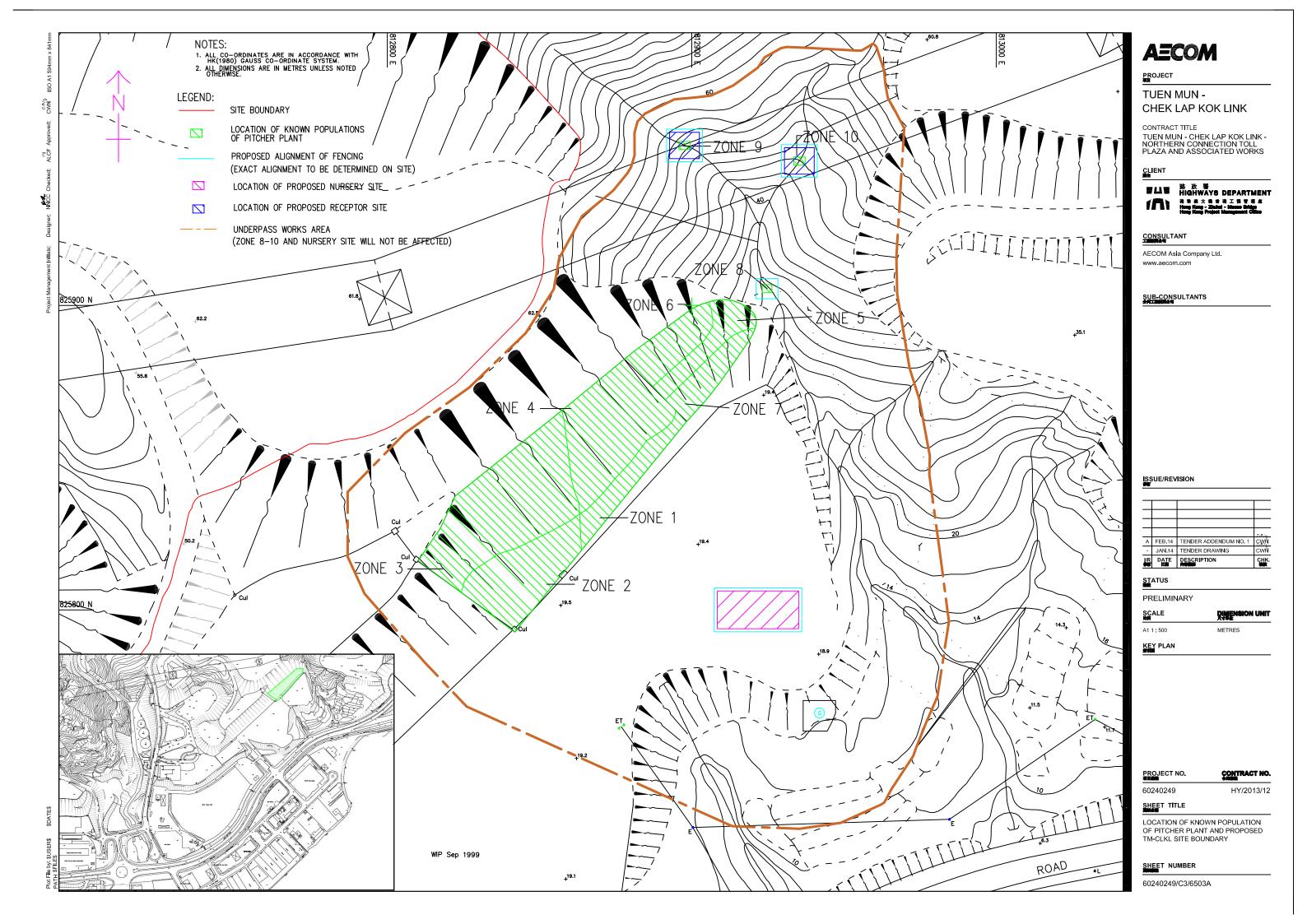
Plate 3: Tagged Pitcher Plant (Zone 6 in Rocky Slope habitat)



Plate 2: Pitcher Plant population in Donor Site - Zone 6 (looking west)



Plate 4: Tagged Pitcher Plant (Zone 10 in Shrubland habitat)





## Appendix D

Photographic Record of Baseline Condition for Landscape and Visual



**AECOM** 8/F, Grand Central Plaza, Tower 2, 138 Shatin Rural Committee Road, Shatin, Hong Kong

香港新界沙田鄉事會路 138 號 新城市中央廣場第2座8樓 www.aecom.com

Engineer's Representative's Office No. 8 Mong Fat Street, Tuen Mun, New Territories, Hong Kong 香港新界屯門望發街8號

+ 852 2293 6200 tel

+ 852 2293 6300 fax

Your Ref:

Our Ref : C3/(HY/2013/12)/M45/002/B000211

B000211

29 September 2014

Director of Environmental Protection **Environmental Assessment Division** Regional Assessment Group **Environmental Protection Department** 27/F, Southorn Centre 130 Hennessy Road Wan Chai Hong Kong

Attn: Ms. Marlene Y. H. Ho

Dear Sirs.

Contract No. HY/2013/12 Tuen Mun - Chek Lap Kok Link

- Northern Connection Toll Plaza and Associated Works

#### Photographic Record of Baseline Condition

Pursuant to Clause 7.4.1.1 of the EM&A Manual No. CE35/2011 EP, we would like to submit a copy of the Photographic Record for this Contract for your record.

Should you have any queries, please feel free to contact my Resident Engineer (S&E), Mr. Kelvin Yeung at 6906 1933.

Yours faithfully, For and on behalf of AECOM Asia Co. Ltd.

Roger Man

Chief Resident Engineer

Transportation

Encl.

CE/NWNT, HyD - Attn: Mr. Stephen W. C. Chan CC w/e (1 hardcopy + 1 softcopy) ENPO Attn: Mr. Y. H. Hui

w/o

**IEC**  Attn: Mr. F. C. Tsang w/e(1 hardcopy + 1 softcopy) AECOM - Attn: Mr. Conrad Ng

w/o CKJV Attn: Mr. John Wong w/o

AUES - Attn: Mr. T. W. Tam w/e(1 hardcopy + 1 softcopy)

RM/RW/wl

Your Ref:

Our Ref : C3/(HY/2013/12)/M45/002/B000211



General view of works area B at northern bound of Lung Mun Road (opposite to Butterfly Beach Laundry)



General view of works area D



General view of works area G at southern bound of Lung Mun Road

Your Ref:

Our Ref : C3/(HY/2013/12)/M45/002/B000211



General view of works area I at southwest side of site entrance at Ho Sheun Street



General View of works area X facing north side



General view of works area WA18 at south-west side



## **Appendix E**

# **Key Plan of Landscape and Visual Resource**

