AUES JOB NO.: TCS00715/14

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

36TH MONTHLY ENVIRONMENTAL MONITORING AND AUDIT (EM&A) REPORT – OCTOBER 2017

PREPARED FOR
CRBC AND KADEN JOINT VENTURE

Date	Reference No.	Prepared By	Certified By
13 November 2017	TCS00715/14/600/R0350v2	 Ben Tam (Environmental Consultant)	 T.W. Tam (Environmental Team Leader)

RAMBOLL ENVIRON

Ref.: HYDHZMBEEM00_0_5989L.17 13 November 2017

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. Albert Yu

Dear Mr. Yu,

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
36th Monthly EM&A Report for October 2017 (EP-354/2009/D)

Reference is made to the Monthly Environmental Monitoring and Audit (EM&A) Report (Oct. 2017) (AUES reference: TCS00715/14/600/R0350v2 dated 13 Nov. 2017) certified by the ET Leader and provided to us via e-mail on 13 Nov. 2017.

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

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

Yours sincerely,

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

c.c. HyD – Mr. Stephen Chan (By Fax: 3188 6614)
HyD – Mr. Vico Cheung (By Fax: 3188 6614)
AECOM – Mr. Conrad Ng (By Fax: 3922 9797)
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Internal: DY, YH, ENPO Site

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EXECUTIVE SUMMARY

ES01 This is the **36th** Monthly EM&A Report presenting the monitoring results and inspection findings for the period from **1 to 31 October 2017** (hereinafter 'the Reporting Period').

SUMMARY OF EM&A ACTIVITIES FOR THE REPORTING PERIOD

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

- 24-hours TSP of Air Quality Monitoring –**45 events**
- 1-hour TSP of Air Quality Monitoring – **135 events**
- Cultural Heritage Inspection – **5 events**
- Landfill Gas Monitoring – **23 days**
- Landscape & Visual Monitoring – **4 events**
- Environmental Site Inspection – **5 events**

BREACH OF ACTION AND LIMIT (A/L) LEVELS

ES03 In the Reporting Period, 2 Action Level exceedances of 1-hour TSP and 1 Action Level exceedances of 24-hour TSP was recorded at ASR1 on 21 October 2017; 2 Action Level exceedances of 1-hour TSP was recorded at ASR5 and ASR6 on 27 October 2017 according to the measurement results by the ET of Contract HY/2012/08, investigation reports for the exceedances were prepared by the ET and pending for the IEC review. They will be submitted to all relevant parties and included in the next monthly EM&A Report. The summary of breach of air quality performance is shown below.

Environmental Aspect	Monitoring Parameters	Action Level	Limit Level	Event & Action		
				NOE Issued	Investigation	Corrective Actions
Air Quality	1-hour TSP	**4**	0	**2**	**2**	0
	24-hour TSP	**1**	0	**1**	**1**	0

ES04 In last Reporting Period, the exceedances of 1-hour TSP were recorded on 12, 18 and 27 September 2017. The investigation report (IR) has been submitted by ET.

ES05 No noise complaints were received in the Reporting Period.

ES06 Landfill gas monitoring was conducted at the TD1 works area in this reporting month by the Safety Officer. The monitoring results shown no exceedances were triggered.

ES07 Site inspection for landscape and visual was conducted on weekly basis by the Landscape Architect to ensure the compliance with the intended aims of the mitigation measures. Most of the landscape works such as planting was not yet commenced.

SITE INSPECTION

ES08 In the Reporting Period, joint site inspection by the RE, ET and the Contractor was carried out on **3rd, 10th, 17th, 24th and 31st October 2017** and the IEC has attended the joint site inspection on **10th and 31st October 2017**. No non-compliance was recorded during the site inspection but **5** observations and **7** reminders were recorded.

ES09 Inspection for Pitcher Plants of ecology and grave of culture heritage were also carried out during the weekly site inspection. It was observed that the transplanted pitcher plants were properly protected. Establishment period for the pitcher plants was completed at the end of September 2016 and the final pitcher plants report was submitted to AFCD on early December 2016. Since then only the integrity of the protection fence was checked to fulfil the EIA requirement.

ENVIRONMENTAL COMPLAINT

ES10 In the Reporting Period, one (1) environmental complaint was received from EPD on 24 October 2017 regarding light nuisance created by Tuen Mun - Chek Lap Kok Link Project during mid-night. Investigation report for the complaint has been conducted by the ET and pending for IEC review.

ES11 In last Reporting Period, the complaint regarding construction dust issue at Lung Mun Road, Tuen Mun. The investigation report (IR) has been submitted by ET and concluded that the complaint was project related.

ES12 The statistical summary of environmental complaints is summarized in the following table.

Reporting Period	Environmental Complaint Statistics	
	Frequency	Cumulative
Since the Contract commencement	**8**	**8**
October 2017	**1**	**9**

NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

ES13 No environmental summons or successful prosecutions were recorded in the Reporting Period.

REPORTING CHANGE

ES14 No reporting changes were made in the Reporting Period.

FUTURE KEY ISSUES

ES15 During dry season, air quality mitigation measures such as watering of site area for 12 times per day and covering of exposed slopes should be fully implemented to reduce construction dust impact as recommended in the EMIS.

ES16 Moreover, muddy water or other water pollutants from site surface runoff into the public areas will be key environment issue. Special attention should be paid on the water quality mitigation measures to prevent surface runoff flow to public area.

ES17 It was reminded that good housekeeping practice should be maintained. Mosquito control measures should be properly implemented to prevent mosquito breeding on site especially after rain.

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1 INTRODUCTION

1.1 CONTRACT BACKGROUND

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

1.1.2 The construction works of the Contract mainly include:-

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

1.1.3 This is **36th** monthly EM&A report presenting the monitoring results and inspection findings for period from **1 to 31 October 2017**.

1.2 REPORT STRUCTURE

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

Section 1 *Introduction*
Section 2 *Contract Organization and Construction Progress and Environmental Submissions*
Section 3 *Summary of Impact Monitoring Requirements under the Contract*
Section 4 *Air Quality Monitoring*
Section 5 *Ecology Monitoring*
Section 6 *Cultural Heritage*
Section 7 *Landscape and Visual*
Section 8 *Landfill gas hazard Monitoring*
Section 9 *Waste Management*
Section 10 *Inspections and Audit*
Section 11 *Environmental Complaints and Non-Compliance*
Section 12 *Implementation Status of Mitigation Measures*
Section 13 *Conclusions and Recommendations*

2 CONTRACT ORGANIZATION AND CONSTRUCTION PROGRESS AND ENVIRONMENTAL SUBMISSIONS

2.1 CONTRACT ORGANIZATION

2.1.1 The Contract organization and contact details of key personnel are shown in ***Appendix C***.

2.2 CONSTRUCTION PROGRESS

2.2.1 In the Reporting Period, the major construction activity conducted under the Contract is summarized in below. The three-months rolling programme of the Contract is enclosed in ***Appendix D***.

- Instrumentation and Monitoring
- Site Formation – Earthwork on Slope D and E; surface drainage on Slope C, D & E and Portion H;
- Toll Plaza Decking TD1 and TD2;
- Toll Plaza Footbridge;
- Retaining Structure RW_A, RW_B
- Toll Collector Subway & Associated Works;
- Bridge G1 and H1 by Form Traveller;
- Sewer Culvert at FC1 and FC2;
- Road and Drainage Works at +11mPD, +19mPD and Portion H.
- Toll Booth Canopy

2.3 SUMMARY OF ENVIRONMENTAL SUBMISSIONS

2.3.1 The environmental submissions under the EP requirement had been submitted to the EPD and they are listed in below:

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

2.3.2 Summary of environmental permits, licenses and notifications for the Contract is presented in ***Table 2-1***.

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

No.	Type of Permit/ License	Reference/ License No.	Date of Issue	Date of Expiry
1	Air pollution Control (Construction Dust) Regulation	377719	06-08-2014	N/A
2	Chemical Waste Producer Registration - Waste Producers Number	5117422C389301	03-09-2014	N/A
3	Water Pollution Control Ordinance -Variation of Effluent Discharge License	WT00023973-2016	14-03-16	30-09-2019
4	Water Pollution Control Ordinance – New Variation of Effluent Discharge License	WT00023973-2016	18-05-2016	30-09-2019
5	Waste Disposal Regulation - Billing Account for Disposal of Construction Waste	7020460	01-08-2014	N/A
6	Extend CNP for Flasework Erection	GW-RW0205-17	25-04-2017	25-11-2017
7	Extend CNP for Multiple Task	GW-RW0230-17	10-05-2017	04-11-2017
8	Extent CNP for Tunnel Works	GW-RW0243-17	23-05-2017	22-11-2017
9	CNP for Portion H	GW-RW0242-17	22-05-2017	17-11-2017
10	CNP for Road Paving Works	GW-RW0211-17	25-04-2017	01-11-2017

3 SUMMARY OF IMPACT MONITORING REQUIREMENTS UNDER THE CONTRACT

3.1 GENERAL

3.1.1 The major construction activities under the Contract are land-based and no marine work will be involved. In accordance with the Project EM&A Manual requirements, the environmental aspects under the Contract shall be included air quality, ecological, cultural heritage, landscape and visual, landfill gas and site inspection during construction period. In addition, audit of the contractor's implementation of the construction noise and land-based water quality pollution control measures are also required for the Contract.

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

3.2 AIR QUALITY MONITORING

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

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

3.3 MONITORING LOCATION

3.3.1 The air quality monitoring stations for impact monitoring are listed in ***Table 3-1*** and illustrated in ***Appendix E*****.**

Table 3-1 Air Quality Monitoring Stations under the Contract

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

3.4 MONITORING FREQUENCY

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

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

Table 3-2 Enhanced TSP Monitoring Plan – Construction Phase

Condition	Monitoring Parameter	Monitoring Location	Frequency	Monitoring Requirement
General	1-hour TSP	ASR1, ASR5, AQMS1, ASR6, ASR10	3 times per day every six days	Throughout the Northern Connection, toll plaza and tunnel buildings construction works
	24-hour TSP	ASR1, ASR5, AQMS1, ASR6, ASR10	Daily every six days	
Special	1-hour TSP	ASR1, ASR5, AQMS1, ASR6, ASR10	3 times per day every three days	**Northern Connection** During excavation works for launching shaft, excavation work for Cut and Cover Tunnel and Cut and Cover Tunnel Construction **Toll Plaza**
	24-hour TSP	ASR1, ASR5, AQMS1, ASR6, ASR10	Daily every three days	

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

3.5 MONITORING EQUIPMENT

3.5.1 The 24-hour and 1-hour TSP levels shall be measured by following the standard high volume sampling method as set out in the *Title 40 of the Code of Federal Regulations, Chapter 1 (Part 50), Appendix B.*

3.5.2 A high volume sampler in compliance with the following specifications shall be used for carrying out the 1-hr and 24-hr TSP monitoring:

(i) 0.6-1.7 m3/min (20-60 SCFM) adjustable flow range;
(ii) equipped with a timing/control device with +/- 5 minutes accuracy for 24 hours operation;
(iii) installed with elapsed-time meter with +/- 2 minutes accuracy for 24 hours operation;
(iv) capable of providing a minimum exposed area of 406 cm2 (63 in^2);
(v) flow control accuracy: +/- 2.5% deviation over 24-hr sampling period;
(vi) equipped with a shelter to protect the filter and sampler;
(vii) incorporated with an electronic mass flow rate controller or other equivalent devices;
(viii) equipped with a flow recorder for continuous monitoring;
(ix) provided with a peaked roof inlet;
(x) equipped with a manometer;
(xi) able to hold and seal the filter paper to the sampler housing in a horizontal position;
(xii) easy to change the filter; and
(xiii) capable of operating continuously for 24-hr period.

3.5.3 Calibration of dust monitoring equipment shall be conducted by the ET upon installation and in bi-monthly intervals during construction phase. The transfer standard shall be traceable to the internationally recognized primary standard and be calibrated annually. The calibration data shall be properly documented for future reference by concerned parties, such as the IEC. All the data shall be converted into standard temperature and pressure condition.

3.5.4 The filter paper of 24-hour TSP measurement shall be determined by HOKLAS accredited laboratory.

3.5.5 If the ET Leader proposes to use a direct reading dust meter to measure 1-hr TSP levels on an ad hoc basis, he shall submit sufficient information to the IEC to prove that the instrument is capable of achieving a comparable result as that the High Volume Sampler (HVS) and may be used for the 1-hr sampling. The instrument should also be calibrated regularly and the 1-hr sampling shall be checked periodically by the HVS to check the validity and accuracy of the results measured by the direct reading method.

3.5.6 According to the Project EM&A Manual, wind data monitoring equipment shall also be provided and set up for logging wind speed and wind direction near the dust monitoring locations. The equipment installation location shall be proposed by the ET Leader and

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

(i) the wind sensors should be installed on masts at an elevated level 10 m above ground so that they are clear of obstructions or turbulence caused by the buildings;

(ii) the wind data should be captured by a data logger to be down-loaded for processing at least once a month;

(iii) the wind data monitoring equipment should be re-calibrated at least once every six months; and

(iv) wind direction should be divided into 16 sectors of 22.5 degrees each.

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

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

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

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

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

3.7 OTHER ENVIRONMENTAL ASPECTS

Noise

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

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

Water Quality

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

Ecology

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

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

Landscape and Visual

3.7.6 Measures to mitigate landscape and visual impact during construction should be checked and monitored by a Registered Landscape Architect to ensure compliance with the intended aims

of the mitigation measures in accordance with the EM&A Manual.

Cultural Heritage

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

Landfill Gas

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

3.8 MONITORING SCHEDULE

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

4 AIR QUALITY MONITORING

4.1 GENERAL

4.1.1 The air quality impact monitoring and enhanced Total Suspended Particulates (TSP) level monitoring at five proposed locations are currently carried out by the ET of Contract HY/2012/08. Sharing of impact air quality monitoring data between HY/2012/08 and HY/2013/12 is agreed by all relevant parties. The Contract is not required to conduct its own dust monitoring exercise until the Contract HY/2012/08 ends.

4.2 AIR QUALITY MONITORING RESULTS IN REPORTING PERIOD

4.2.1 In the Reporting Period, 1-hour and 24-hour TSP monitoring at the five proposed locations are continued to perform by the ET of Contract HY/2012/08. Therefore, no air quality monitoring was conducted by the ET of Contract HY/2013/12. Details information of air quality monitoring results could be referred to the Monthly EM&A Reports of the Contract HY /2012 /08 (**October 2017**).

4.3 ACTION AND LIMIT (A/L) LEVELS EXCEEDANCE

4.3.1 According to the air quality monitoring result provided by Contract HY/2012/08, 2 Action Level exceedances of 1-hour TSP and 1 Action Level exceedances of 24-hour TSP was recorded at ASR1 on 21 October 2017; 2 Action Level exceedances of 1-hour TSP was recorded at ASR5 and ASR6 on 27 October 2017. The summary of air quality exceedance in the Reporting Period is shown in ***Table 4-1***.

Table 4-1 Summary of Air Quality Monitoring Exceedance

Date of Exceedance	Monitoring Station	Air Quality Parameter	Result	Exceed
21 October 2017	ASR1	1Hr TSP	372 $\mu g/m^3$	Action Level
21 October 2017	ASR1	1Hr TSP	439 $\mu g/m^3$	Action Level
27 October 2017	ASR5	1Hr TSP	368 $\mu g/m^3$	Action Level
27 October 2017	ASR6	1Hr TSP	388 $\mu g/m^3$	Action Level
21 October 2017	ASR1	24Hr TSP	220 $\mu g/m^3$	Action Level

4.4 AIR QUALITY EXCEEDANCE INVESTIGATION

4.4.1 Investigation report for the exceedances was conducted by ET and pending for IEC review. The IR of the exceedences would be presented in the next Monthly EM&A Report (November 2017).

4.4.2 In last Reporting Period, the investigation report (IR) of the exceedance of 1-hour TSP on 12, 18 and 27 September 2017 has been submitted by ET. After the investigation, it is concluded that the exceedence was not project related. The IR of the exceedence conducted by the ET is shown in ***Appendix J***.

5 ECOLOGY MONITORING

5.1 GENERAL

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

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

5.2 PITCHER PLANTS INSPECTION

5.2.1 Inspection for the mitigation measures implementation status of the Pitcher Plant at the final receptor area were performed on **3rd, 10th, 17th, 24th and 31st October 2017** by the ET in the Reporting Period.

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

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

6 CULTURAL HERITAGE

6.1 GENERAL

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

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

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

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

6.1.3 In the event of non-compliance the responsibilities of the relevant parties is detailed in the Event/ Action Plan in ***Appendix F***.

6.2 GRAVE INSPECTION

6.2.1 In the Reporting Period, Grave G1 of inspection was undertaken on **3rd, 10th, 17th, 24th and 31st October 2017**. During these inspections, buffer zone was maintained between the working area and the Grave. The nearby areas were clean, and no construction materials or mechanical equipment were stored within or close to the buffer zone. Moreover protective measures (hoarding and scaffold with protective net above the grave) was provided for constructing Toll Plaza Decking TD2 deck structure.

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

7 LANDSCAPE AND VISUAL

7.1 GENERAL

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

7.2 LANDSCAPE AND VISUAL INSPECTION

7.2.1 In the Reporting Period, site inspection for landscape and visual mitigation measures was undertaken on **6th, 13th, 20th and 27th October 2017** by the Registered Landscape Architect.

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

8 LANDFILL GAS HAZARD MONITORING

8.1 GENERAL

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

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

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

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

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

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

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

8.1.6 To ensure the accuracy of the monitoring data, zeroing of the gas analyser shall be undertaken at the start of each day's monitoring. As advised by the SO, the gas analyser would be optimally calibrated by the self-test function to provide the most accurate result. The gas analyser is calibrated and certified by a laboratory accredited under HOKLAS or any other international accreditation scheme at yearly basis.

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

Table 8-1 Landfill Gas Monitoring Zone

ID	Location	Excavation >300mm deep undertaken in this reporting period
TD1	TD1, Retaining Wall A, Grave G1 and Subway	Yes
RW-B	Retaining Wall B	No
RW-F	Retaining Wall F	No
S&U	Slope and Underpass	No
BW	Bridge Works (G2, H1)	No
LMR	Lung Mun Road	No

8.2 LANDFILL GAS MONITORING RESULT

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

8.2.2 There were a total of ***23*** days monitoring were carried by the Safety Officer or an approved and qualified persons. The results of landfill gas measurement are summarized in ***Table 8-2***. Moreover, database of monitoring result and graphical plot are attached in ***Appendix I***.

Table 8-2 Summary of Landfill Gas Measurement Results

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

8.2.3 The measurement results shown that slightly methane concentration was detected and oxygen concentration measured was over 19.0 % and Carbon Dioxide was between 0.1% and 0.2 %. No exceedance was triggered and therefore no corrective action was required accordingly.

9 WASTE MANAGEMENT

9.1 GENERAL WASTE MANAGEMENT

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

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

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

9.2 RECORDS OF WASTE QUANTITIES

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

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

9.2.2 The quantities of wastes generated under the Contract in this Reporting Period are summarized in ***Tables 9-1*** and ***9-2*** and the Monthly Summary Waste Flow Table is shown in ***Appendix L***. Whenever possible, materials were reused on-site as far as practicable.

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

Type of Waste	Quantity	Disposal Location
Reused in this Contract (Inert) (`000m^3)	0.754	-
Reused in other Projects (Inert) (`000m^3)	0.491	1. Lam Tei Quarry 2. Eco Park K.Wah Recycle Facilities 3. Lung Kwu Tan Tailor Recycled Aggregates 4. Liantang BCP Project 5. TM-CLKL Contract 2 - Northern Connection Sub-sea Tunnel Section Project
Disposal as Public Fill (Inert) (`000m^3)	1.215	Tuen Mum Area 38

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

Type of Waste	Quantity	Disposal Location
Recycled Metal (`000kg)	0	-
Recycled Paper / Cardboard Packaging (`000kg)	0	-
Recycled Plastic (`000kg)	0	-
Chemical Wastes (`000kg)	0	License Collector
General Refuses (`000m^3)	0.241	WENT

10 INSPECTION AND AUDIT

10.1 SITE INSPECTION

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

Findings / Deficiencies During Reporting Period

10.1.2 In the Reporting Period, joint site inspections to evaluate site environmental performance were carried out by the RE, ET and the Contractor on **3rd, 10th, 17th, 24th and 31st October 2017**. No non-compliance was noted but **5** observation and **7** reminders were recorded during site inspection. Moreover, ENPO/IEC has attended joint site inspection on **10th and 31st October 2017**.

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

Table 10-1 Site Observations for the Contract

Date	Findings / Deficiencies	Follow-Up Status
3 October 2017	• Lifting eyes of concrete block should be filled with sand to prevent stagnant water accmulation. (Lung Mun Road)	• Sand bag was covered the lifting eyes of concrete block to prevent stagnant water accumulation..
	• Proper dust mitigation should be provided for breaking works to reduce dust impact. (Central Divider)	• Not required for reminder.
	• Stockpile storage on site should be covered properly to prevent dust generation.	• Not required for reminder.
10 October 2017	• During the site inspection, dust mitigation was observed at Lung Mun Road Central Divider and no dust emitted from works area was observed. But the contractor be reminded that water spraying should be covered at all exposed area and breaking activities, also stockpile storage on-site should be properly covered. (General)	• Not required for reminder.
17 October 2017	• Stagnant water cumulated inside the lifting eyes of concrete block was observed. Sand should be filled in the lifting eyes to prevent stagnant water accmulation. (Lung Mun Road)	• Sands were filled in the lifting eyes.
	• Stagnant water cumulated inside the drip tray should be removed. (Butterfly Beach)	• Stagnant water was removed
	• Stagnant water cumulated on-site after rainstorm should be removed to prevent mosquito breeding. (General)	• Not required for reminder.
	• Stockpile storage on-site should be covered properly after the works finish everyday. (Butterfly Beach)	• Not required for reminder.
24 October 2017	• Although dust mitigation measures was observed during the site inspection, the contractor was reminded that proper dust control measures should be provided for	• Not required for reminder

Date	Findings / Deficiencies	Follow-Up Status
	dusty activities to reduce dust impact during dry season. (General)	
	• Proper access should be provided to the existing grave area, the contractor was also reminded that proper fencing should be provided for the grave protection zone. (Grave G1)	• Not required for reminder
31 October 2017	• Water spraying should be provided for dusty activities to reduce dust impact. (Platform 19)	• Water spraying was provided by workers during the dusty activities.
	• Water spraying should be covered at all access road inside the site area. (West Portal)	• Water spraying was provided for the access road at West Portal to reduce dust impact.

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

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

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

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

10.1.6 Good site practice for daily housekeeping is reminded. In addition, clean-up of the waste skips and wastewater treatment system should be increased to ensure these facilities functional and effective.

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

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

Inspection Checklist for Vulnerable to Contaminated Water Discharge

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

10.1.10 In addition, specific inspections would also be conducted before and after adverse weather to ensure necessary remedial works would be carried out timely. Should incidental contaminated water discharge be found at the inlet of the associated drainage system, a specific inspection of the relevant drainage pipes would be conducted for traces of deposit, and follow up actions would be taken when necessary.

10.1.11 The daily inspection for vulnerable to contaminated water discharge was conducted by the Contractor at **October 2017** during the wet season. As requested by the EPD, the associated inspection checklist should be presented in the Monthly EM&A Report and it is shown in ***Appendix P*** .

11 ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

11.1 ENVIRONMENTAL COMPLAINT, SUMMONS AND PROSECUTION

11.1.1 In the Reporting Period, no summons and prosecution under the EM&A Programme was lodged. However, one (1) environmental complaint was received and lodged for the Contract and five exceedance of the environmental performance limit (5 Action Level) were recorded for monitoring programme. Follow up actions have been undertaking by the Contractor to resolve the deficiencies. The details of complaint are listed below:-

- 25 October 2017 - A complaint was received from the EPD on 24 October 2017 by District Councillor Mr. YAN Siu-nam. The District Councillor represents the resident who living at Tuen Mun Ferry Pier area to complain that light nuisance created by Tuen Mun - Chek Lap Kok Link Project during mid-night to cause serious impact for their rest.

  Also, the complaint query the schedule for the construction works and the mitigation measures to avoid light nuisance affect to the resident.

11.1.2 During the complaint investigation work, the Contractor was co-operated with the ET in providing all the necessary information and assistance for completion of the investigation. Investigation report (IR) for the complaint has been conducted by the ET and pending for IEC review. It would be presented in the next Monthly EM&A Report (November 2017).

11.1.3 In last Reporting Period, the complaint regarding construction dust issue at Lung Mun Road, Tuen Mun. The investigation was completed and concluded that the complaint was project related, the improvement works for dust mitigation had been completed by contractor. The IR of the complaint is shown in ***Appendix O.***

11.1.4 The statistical summary table of environmental exceedance, complaint, summons and prosecution are presented in ***Tables 11-1, 11-2, 11-3 and 11-4***.

Table 11-1 Statistical Summary of Environmental Exceedance

Reporting Period	Environmental Aspect / Parameter	Environmental Performance	Event Exceedance		
			Reporting Month	Previous Months	Cumulative
October 2017	Air Quality - 1-hr TSP	Action Level	**4**	**14**	**18**
		Limit Level	0	**1**	**1**
	Air Quality - 24-hr TSP	Action Level	**1**	0	**1**
		Limit Level	0	0	0

Table 11-2 Statistical Summary of Environmental Complaints

Reporting Period	Environmental Complaint Statistics					
	Frequency	Cumulative	Complaint Nature			
			Air	Noise	Water	Others
October 2017	**1**	**9**	**2**	NA	**6**	**1**

Table 11-3 Statistical Summary of Environmental Summons

Reporting Period	Environmental Summons Statistics				
	Frequency	Cumulative	Complaint Nature		
			Air	Noise	Water
October 2017	0	0	NA	NA	NA

Table 11-4 Statistical Summary of Environmental Prosecution

Reporting Period	Environmental Prosecution Statistics				
	Frequency	Cumulative	Complaint Nature		
			Air	Noise	Water
October 2017	0	0	NA	NA	NA

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

12 IMPLEMENTATION STATUS OF MITIGATION MEASURES

12.1 GENERAL REQUIREMENTS

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

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

Table 12-1 Environmental Mitigation Measures

Issues	Environmental Mitigation Measures
Air Quality	• Maintain damp / wet surface on access road • Keep slow speed in the sites • All vehicles must use wheel washing facility before off site • Sprayed water during rock breaking works • During transportation by truck, materials loaded lower than the side and tail boards, and covered before transport • Compacted all soil stockpiles • Part of the exposed slopes covered geotextile net
Cultural Heritage	• Set a buffer zone between the working area and the Grave • All construction materials and equipment store far from the Grave • Inspection the Grave to ensure provision mitigation measures effective
Ecology	• Wire fencing provided for temporary protect Pitcher Plants • Undertake weekly inspection of Pitcher Plants
Landfill Gas Hazard	• Landfill Gas measurement undertake during trench excavation
Water Quality	• Temporary drainage system provide for surface runoff prevent discharge to public area • Wastewater to be treated by sedimentation tank before discharge.
Noise	• No operation of powered mechanical equipment is allowed during restricted hours from 19:00 to 07:00 on the following day and whole day during Sunday and public holiday without construction noise permit (CNP) • Keep good maintenance of plants • The noisy plants or works provide mobile noise barriers • Shut down the plants when not in use
Waste and Chemical Management	• On-site sorting prior to disposal • Follow requirements and procedures of the "Trip-ticket System" • Predict required quantity of concrete accurately • Collect the unused fresh concrete at designated locations in the sites for subsequent disposal
General	• The site was generally kept tidy and clean.

12.2 TENTATIVE CONSTRUCTION ACTIVITIES IN THE COMING MONTH

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

- Site Formation – Earthwork at 5SE-D/C170; Surface drainage on Slope C, D & E and Portion H;
- Parapet construction for Retaining Structure RW_A and Bridge G2;
- Temporary Traffic Arrangement at Lung Mun Road and Lung Fu Road;
- Toll Collector Subway & Associated Works;
- Toll booth canopy (pier construction)
- Road pavement works at +19mPD platform ;
- Construction of bus shelter

- Bridge G1C and H1C by Formtraveller at Portion F;
- Bridge G1b at Portion F;
- Vehicular Underpass – profile barrier and drainage works;
- Retaining Structure TP_G at Portion H.

12.3 KEY ENVIRONMENTAL ISSUES FOR THE COMING MONTH

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

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

13 CONCLUSIONS AND RECOMMENDATIONS

13.1 CONCLUSIONS

13.1.1 This is **36th** monthly EM&A report presenting the monitoring results and inspection findings for the period of **1st** to **31st October 2017**.

13.1.2 No exceedances of 24-hour TSP monitoring were recorded in the Reporting Period. However, there were five exceedances of 1-hour and 24-hour TSP measurements trigger in Action and Limit Level at ASR1, ASR5 and ASR6 on 21 and 27 October 2017. NOE were issued to notify all relevant parties and IR are pending for IEC review.

13.1.3 In last Reporting Period, the investigation report (IR) for the exceedance of 1-hour TSP on 12, 18 and 27 September 2017 has been submitted by ET. After the investigation, it is concluded that the exceedence on those monitoring days were not project related.

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

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

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

13.1.7 Landfill gas monitoring was conducted at the TD1 and Lung Mun Road works area. The monitoring results shown no exceedances were triggered.

13.1.8 In the Reporting Period, one (1) environmental complaint was received from EPD on 25 October 2017 regarding light nuisance created by Tuen Mun - Chek Lap Kok Link Project during mid-night. Investigation report for the complaint has been conducted by the ET and pending for IEC review.

13.1.9 In last Reporting Period, the complaint regarding construction dust issue at Lung Mun Road, Tuen Mun. The investigation report (IR) has been submitted by ET and concluded that the complaint was project related.

13.1.10 No notifications of summons, or successful prosecution were received by the Contractor during the Reporting Period.

13.1.11 In the Reporting Period, joint site inspection by the RE, ET and the Contractor was carried out on **3rd, 10th, 17th, 24th and 31st October 2017** and the IEC has attended the joint site inspection on **10th and 31st October 2017**. No non-compliance was recorded during the site inspection but **5** observations and **7** reminders were recorded.

13.1.12 In the Reporting Period, Grave G1 of inspection was undertaken on **3rd, 10th, 17th, 24th and 31st October 2017**. Based on the inspection findings, the cultural heritage mitigation measures as implemented by the Contractor are fully complied with the EM&A Manual requirements.

13.2 RECOMMENDATIONS

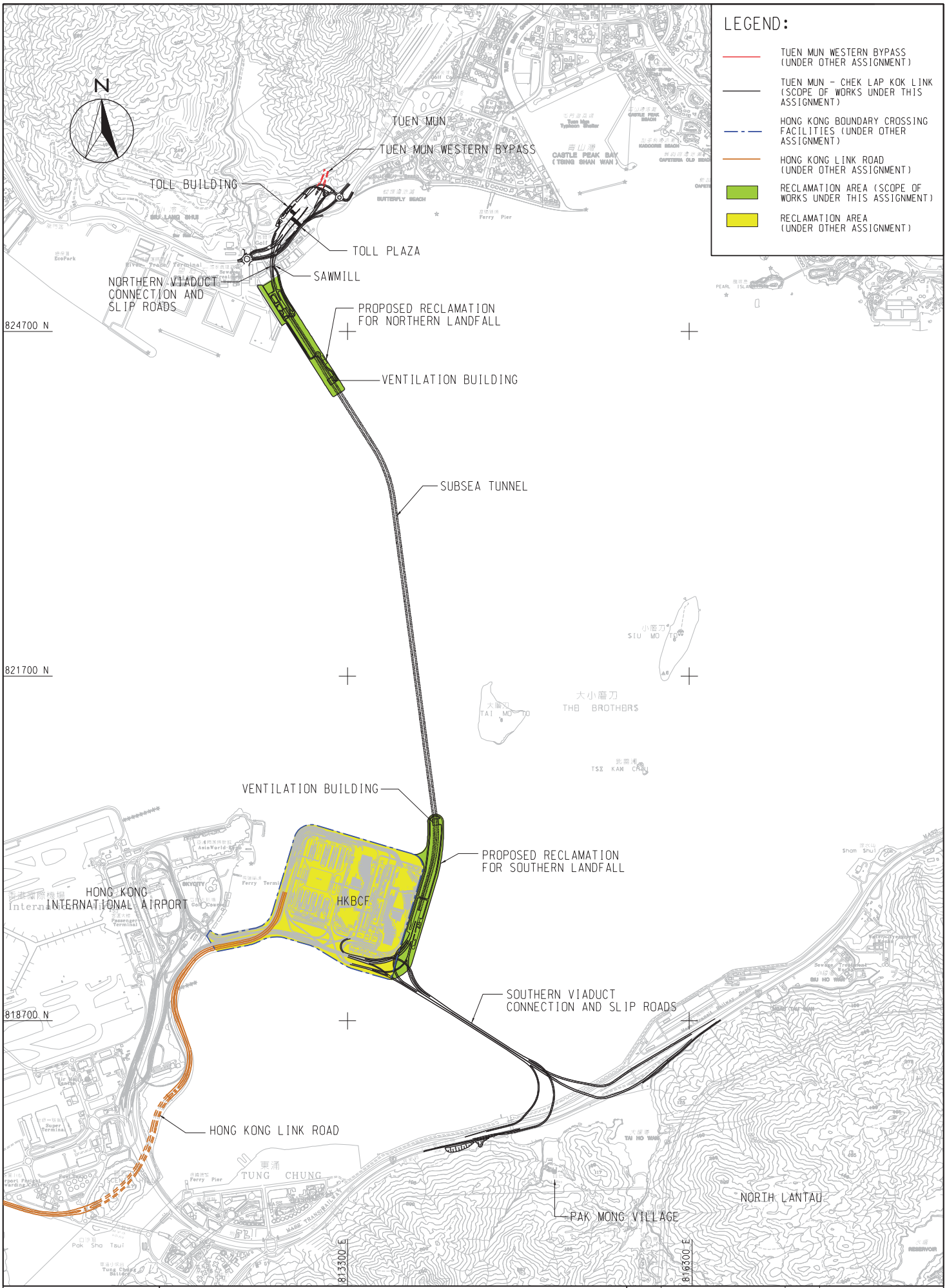
13.2.1 During dry season, air quality mitigation measures such as watering of site area for 12 times per day and covering of exposed slopes should be fully implemented to reduce construction dust impact as recommended in the EMIS.

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

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

Appendix A

Project Layout Plan



AECOM

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

GENERAL LAYOUT OF TM-CLKL

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

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

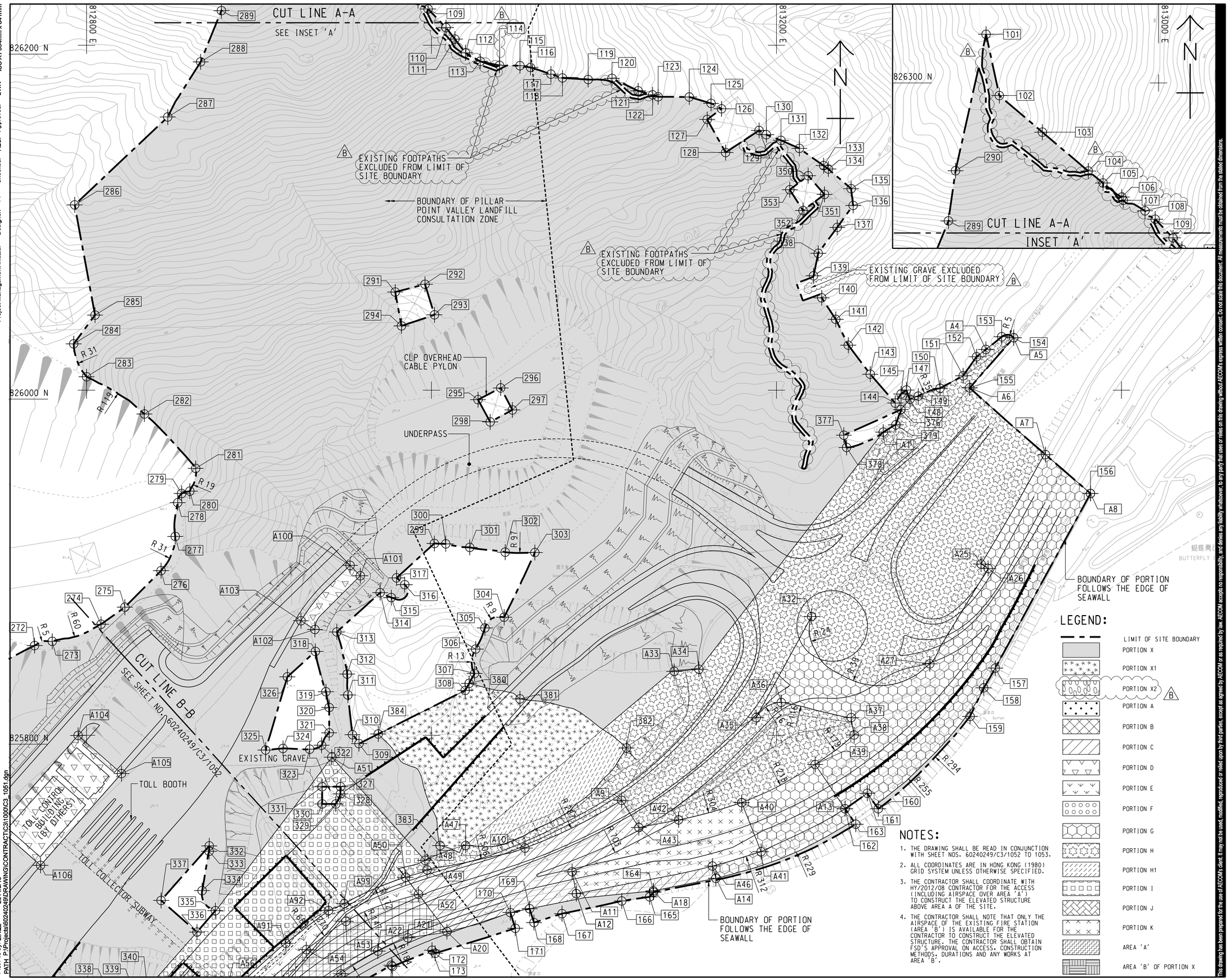
p:\PROJECTS\60044963\DRAWING\FIGURE\EIA REPORT\CH3\FIGURE 3-1.dgn

Appendix B

Layout Plan of the Contract

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

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



LEGEND:

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

NOTES:

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

AECOM

PROJECT 項目

TUEN MUN - CHEK LAP KOK LINK

CONTRACT TITLE

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

CLIENT 業主

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

CONSULTANT 工程顧問公司

AECOM Asia Company Ltd.
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SUB-CONSULTANTS 分判工程顧問公司

ISSUE/REVISION 修訂

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

STATUS 階段

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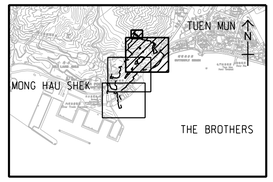
KEY PLAN 索引圖 1 : 50000



PROJECT NO. 項目編號 60240249

CONTRACT NO. 合約編號 HY/2013/12

SHEET TITLE 圖紙名稱

PORTIONS OF SITE AND SITE BOUNDARY SETTING OUT PLAN

SHEET 1 OF 3

SHEET NUMBER 圖紙編號

60240249/C3/1051B

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

SETTING OUT COORDINATES OF SITE BOUNDARY

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

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

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

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

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

EXISTING GRAVE

FOOTBRIDGE WITH PASSENGER LIFT

ALONG THE EDGE OF SEAWALL

BOUNDARY OF PILLAR POINT VALLEY LANDFILL CONSULTATION ZONE

BOUNDARY OF PORTION FOLLOWS THE OUTER EDGE OF U-CHANNEL

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

SETTING OUT COORDINATES OF SITE BOUNDARY

SETTING OUT POINT	COORDINATES	
	EASTING	NORTHING
131	813202.581	826144.813
132	813213.267	826140.161
133	813227.316	826130.203
134	813230.053	826128.229
135	813243.269	826116.824
136	813244.416	826107.110
137	813235.174	826094.376
138	813224.150	826079.379
139	813221.454	826066.353
140	813226.182	826053.564
141	813234.301	826041.085
142	813241.586	826026.075
143	813254.346	826009.289
144	813268.811	825992.544
380	813021.776	825830.065
381	813051.421	825821.086
382	813113.037	825792.637
383	813004.964	825736.089
384	812969.105	825800.746
385	812862.862	825562.048
386	812875.894	825548.359
390	812787.003	825451.257
391	812784.914	825452.505
392	812822.089	825504.327
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Plot File by: LUOMQ 2014/3/18
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AECOM

PROJECT 項目
TUEN MUN - CHEK LAP KOK LINK

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

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

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

STATUS 階段

SCALE 比例
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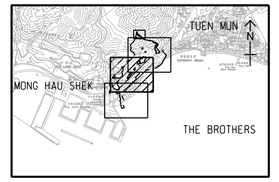
METRES

KEY PLAN 索引圖引圖 1 : 50000



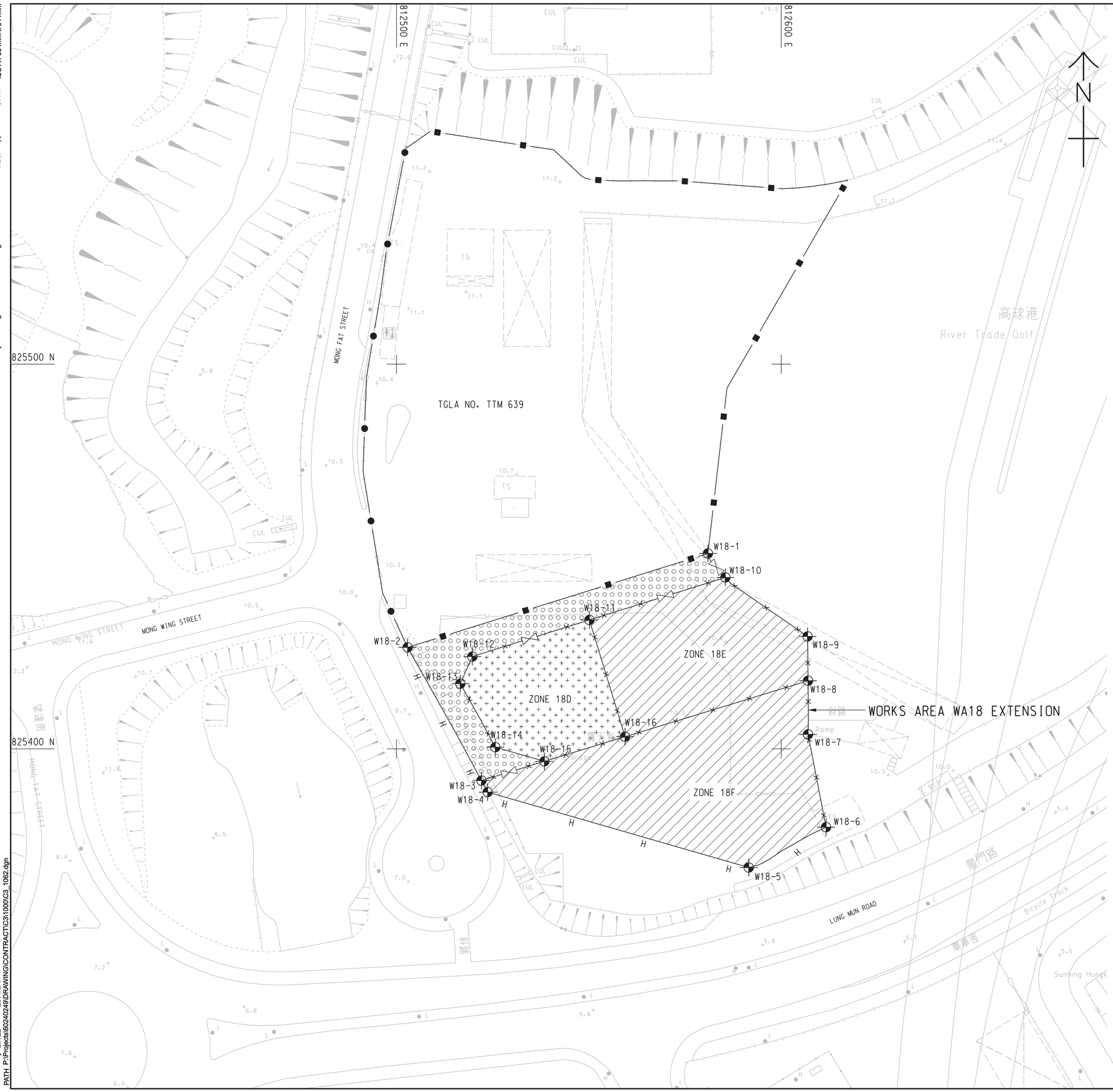
PROJECT NO. 項目編號
60240249

CONTRACT NO. 合約編號
HY/2013/12

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

SHEET 2 OF 3

SHEET NUMBER 圖紙編號
60240249/C3/1052B



NOTES:

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

LEGEND:

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

SETTING OUT CO-ORDINATES OF WORKS AREA WA18 EXTENSION

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

AECOM

PROJECT 項目

TUEN MUN - CHEK LAP KOK LINK

CONTRACT TITLE

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

CLIENT 業主

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

CONSULTANT 工程顧問公司

AECOM Asia Company Ltd.
www.aecom.com

SUB-CONSULTANTS 分判工程顧問公司

ISSUE/REVISION 修訂

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

STATUS 階段

SCALE 比例 A1 1 : 500

DIMENSION UNIT 尺寸單位 METRES

KEY PLAN 索引圖

PROJECT NO. 項目編號 60240249

CONTRACT NO. 合約編號 HY/2013/12

SHEET TITLE 圖紙名稱

WORKS AREA AND HOARDING PLAN

SHEET 2 OF 2

SHEET NUMBER 圖紙編號

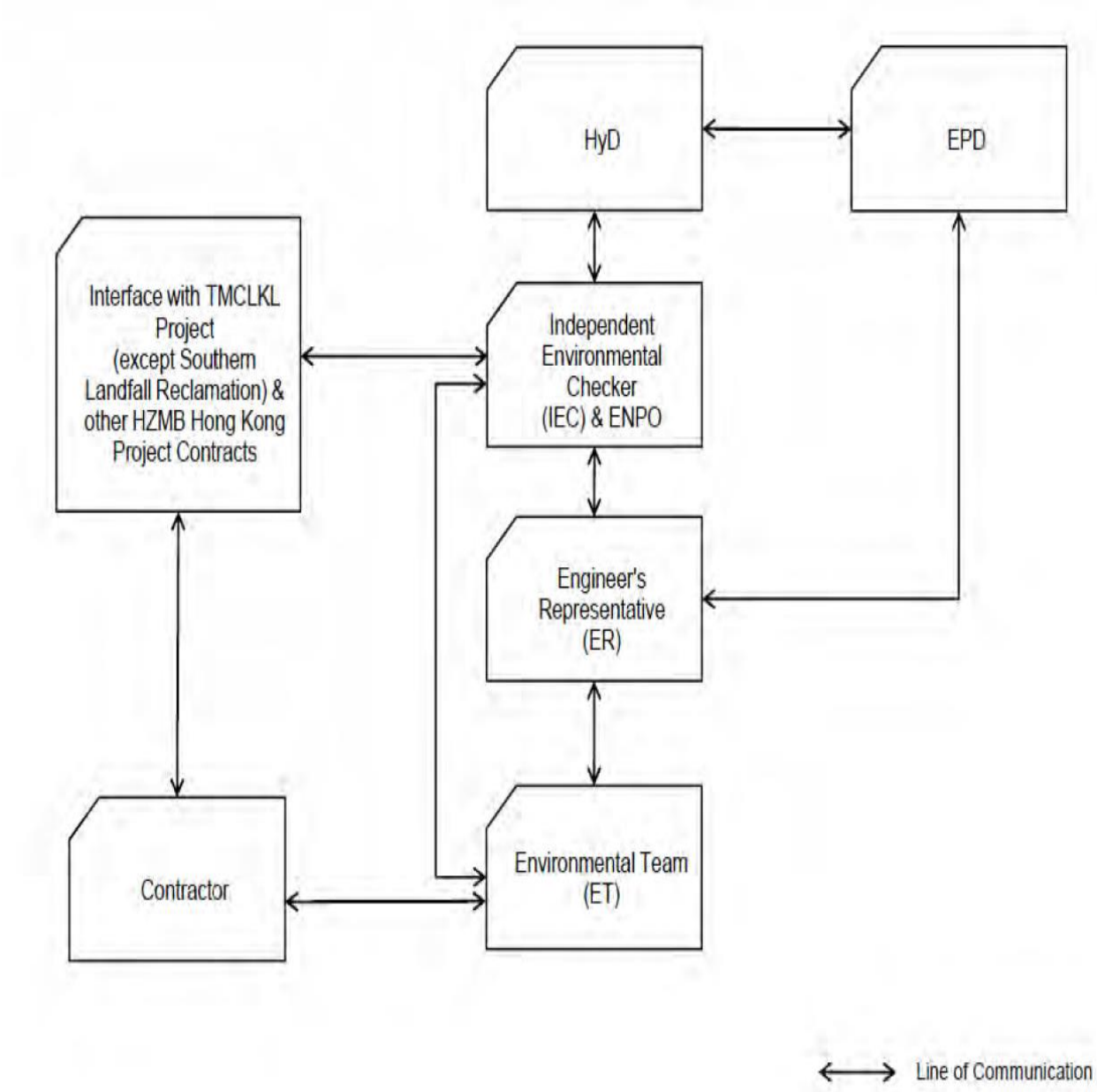
60240249/C3/1062B

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

Plot File by: LIXQ2 2014/3/4
PATH P:\Projects\60240249\DRAWING\CONTRACT\C31000\C3_1062.dgn

Appendix C

Organization of the Contract



Project Organization chart

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

Organization	Project Role	Name of Key Staff	Tel No	Fax No.
HyD	Employer	Mr. Stephen W.C. Chan	2762 3669	3188 6614
AECOM	Principal Resident Engineer	Mr. S.W. Fok	2218 7209	2218 7399
AECOM	Chief Resident Engineer	Mr. Albert Yu	2218 7288	2218 7399
AECOM	Resident Engineer (S&E)	Mr. Kelvin Yeung	22187289	2218 7399
Ramboll Environ	Environmental Project Office (ENPO)	Mr. YH Hui	3465 2850	3465 2899
Ramboll Environ	Independent Environmental Checker (IEC)	Dr. FC Tsang	3465 2851	3465 2899
CKJV	Deputy Project Manager	Mr. Raymond Suen	2253 8309	2253 8399
CKJV	Site Agent	Mr. Wilson Lau	2253 8300	2253 8399
CKJV	Safety and Environmental Manager	Mr. Winson Chung	2273 3185	2375 3655
CKJV	Environmental Officer	Mr. Thomas Tang	2253 8300	2253 8399
CKJV	Environmental Supervisor	Mr. Tommy Law	2253 8300	2253 8399
CKJV	Environmental Supervisor	Mr. Alex Li	2253 8300	2253 8399
AUES	Environmental Team Leader	Mr. T. W. Tam	2959 6059	2959 6079
AUES	Environmental Consultant	Miss Nicola Hon	2959 6059	2959 6079
AUES	Environmental Consultant	Mr. Ben Tam	2959 6059	2959 6079
HKL	Registered Landscape Architect	Kenneth Ng	2866 3903	--

Legend:

HyD (Employer) –Highways Department

AECOM (Engineer) – AECOM Asia Co. Ltd.

CKJV (Main Contractor) – CRBC-Kaden Joint Venture

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

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

HKL(RLA) – Hong Kong Landscape

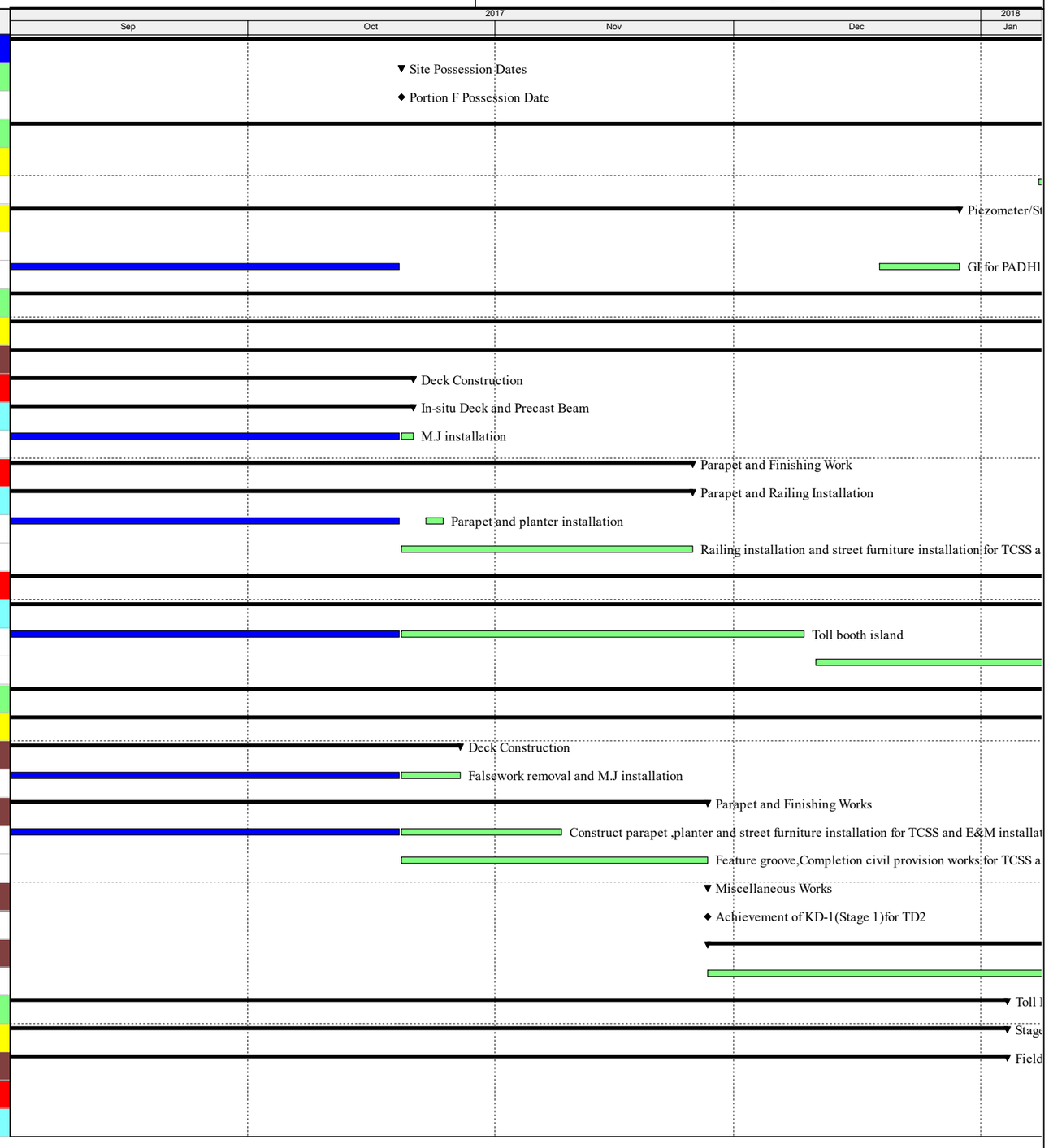
Appendix D

Three-Months Rolling Programme

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

CRBC - KADEN Joint Venture

Activity ID	Activity Name
	HY/2013/12 TMCLK Northern Connection Toll Plaza and Associated-Works Programme-Rev.4A Monthly I
	Site Possession Dates
PPD1140	Portion F Possession Date
	Instrumentation and Monitoring
	Ground Settlement Marker
IM10110	Installation of GSM35-36,GSM44,GSM47-50(Portion F)
	Piezometer/Standpipe
IM50025	GI for PADH13 and installation piezometer
IM60030	GI for PADH14&15 and installation piezometer
	Toll Plaza Decking TD1-Section 1
	Stage 1
	Field Works
	Deck Construction
	In-situ Deck and Precast Beam
TD121150	M.J installation
	Parapet and Finishing Work
	Parapet and Railing Installation
TD120940	Parapet and planter installation
TD120990	Railing installation and street furniture installation for TCSS and E&M installation
	Toll Booth Canopy
	Toll both canopy and island
TD121270	Toll booth island
TD121290	Canopy,Completion civil provision works for TCSS and E&M
	Toll Plaza Decking TD2-Section 1
	Field Works
	Deck Construction
TD220720	Falsework removal and M.J installation
	Parapet and Finishing Works
TD220210	Construct parapet ,planter and street furniture installation for TCSS and E&M installation
TD220230	Feature groove,Completion civil provision works for TCSS and E&M
	Miscellaneous Works
TD220700	Achievement of KD-1(Stage 1)for TD2
	Completion of TD2
TD220010	Drainage works
	Toll Plaza Footbridge-Section 1
	Stage 1
	Field Works
	G.I and Foundation Works
	Foundation for Pier P1,P5,P7 and West staircase



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

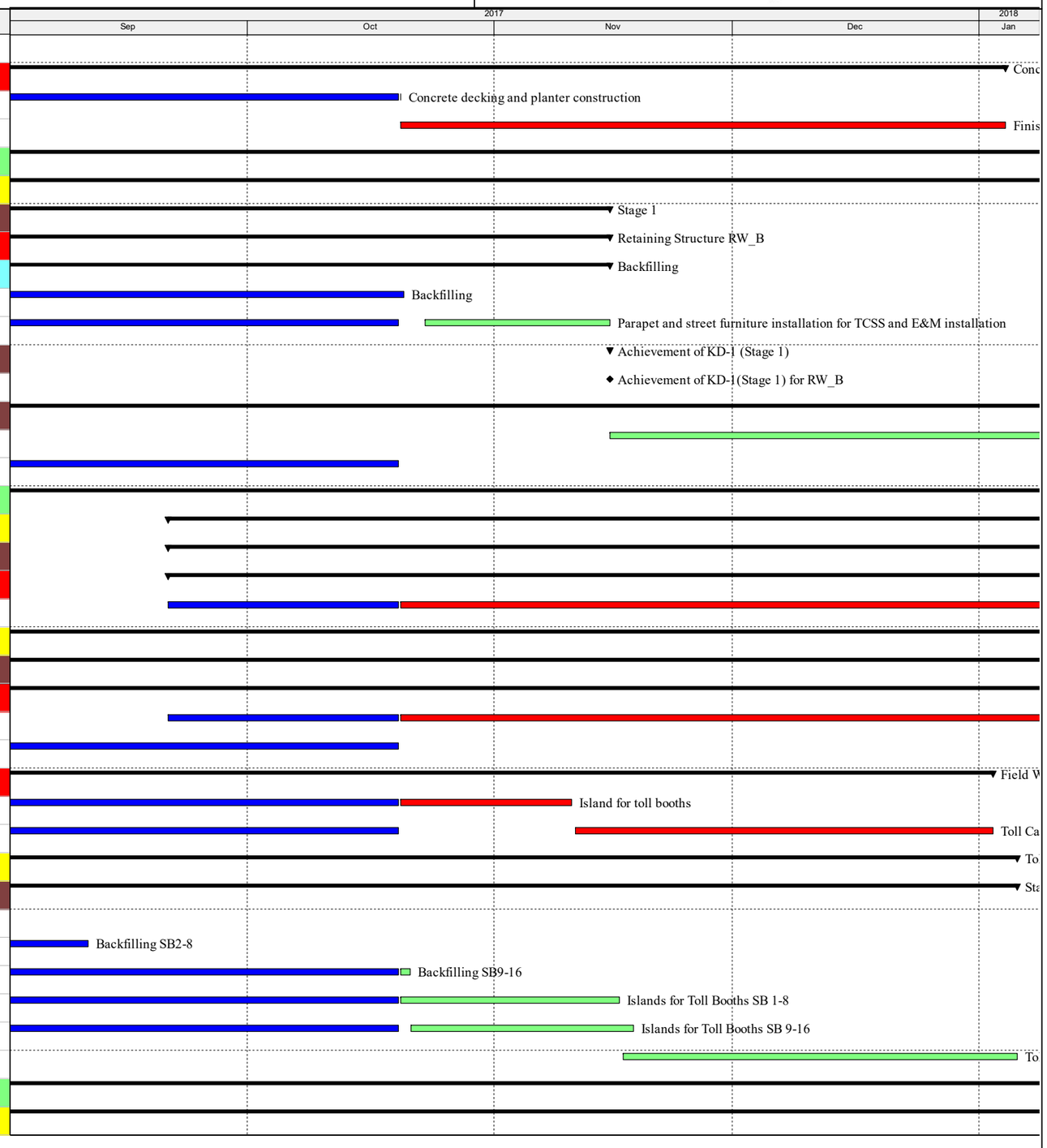
CRBC - Kaden JV
Three-Month Rolling Programme

Date	Revision	Checked	Approved
28-10-17			

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

CRBC - KADEN Joint Venture

Activity ID	Activity Name
TFB1220	Foundation for Pier P1,P5,P7 and West staircase
Concrete Decking , Planters and Finishing Works	
TFB1390	Concrete decking and planter construction
TFB1400	Finishing works and street furniture installation for TCSS and E&M installation
Retaining Structure RW_B-Section 1	
Site Formation - Retaining Structure RW_B	
Stage 1	
Retaining Structure RW_B	
Backfilling	
RWB10230	Backfilling
RWB10260	Parapet and street furniture installation for TCSS and E&M installation
Achievement of KD-1 (Stage 1)	
RWB10610	Achievement of KD-1(Stage 1) for RW_B
Achievement of KD-4 (Section 1) for RW_B	
RWB10630	Finishing works including feature wall
RWB10650	Road works
Toll Collector Subway & Associated Works-Section 1	
Toll Collector Bridge (Portion I)-Section 1	
Stage 1	
Off-site Works	
TCS1610	Toll collector bridge (Steel Truss) and staircase fabrication
Toll Collector Subway & Associate Works (Portion I)-Section 1	
Stage 1	
Field Works - Toll Collector Subway and Staircase	
TCS1450	Internal finishing works
TCS1460	Backfilling
Field Works - Toll Booth & Canopy	
TCS1490	Island for toll booths
TCS1500	Toll Canopy
Toll Collector Subway (Portion X)-Section 5	
Stage 3	
TCS1070	Excavation Works-S.B 1-2
TCS1140	Backfilling SB2-8
TCS1150	Backfilling SB9-16
TCS1160	Islands for Toll Booths SB 1-8
TCS1170	Islands for Toll Booths SB 9-16
TCS1180	Toll Canopy,Completion civil provision works for TCSS and E&M
Bridge G2	
Stage 2	



Remaining Level of Effort
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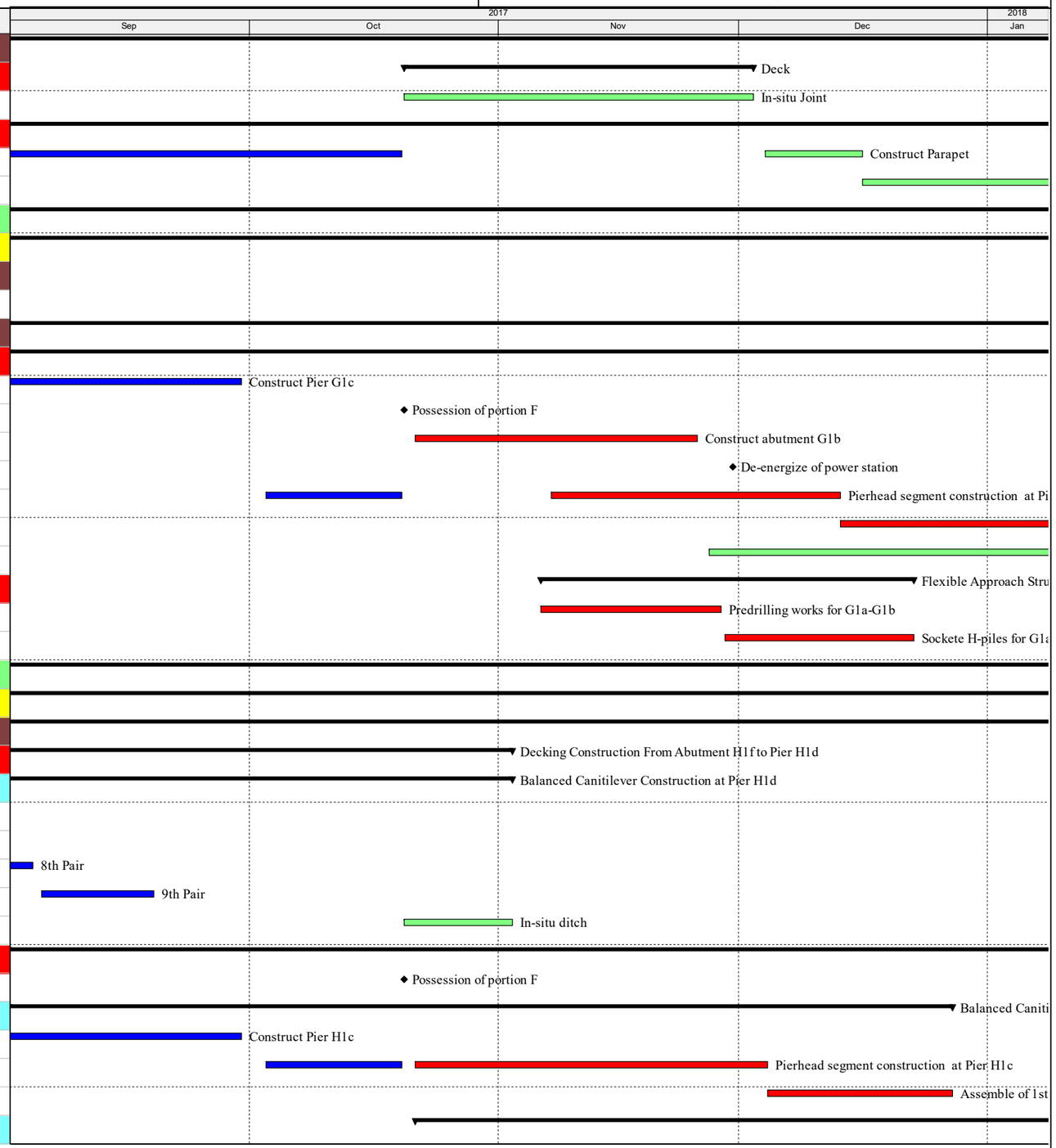
CRBC - Kaden JV
Three-Month Rolling Programme

Date	Revision	Checked	Approved
28-10-17			

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

CRBC - KADEN Joint Venture

Activity ID	Activity Name
	Field Works
	Deck
BG23080	In-situ Joint
	Parapet and Finishing Works
BG23090	Construct Parapet
BG23100	Railing installation and street furniture installation for TCSS and E&M installation
	Bridge G1
	Stage 2
	Design Submission and Approval
BG112290	DDA for superstructure submission
	Field Works
	Bridge Works from Abutment G1b to Pier G1d
BG112090	Construct Pier G1c
BG112050	Possession of portion F
BG112070	Construct abutment G1b
BG112112	De-energize of power station
BG112110	Pierhead segment construction at Pier G1c
BG112480	Assemble of 1st formtraveller at G1c and testing
BG112080	Construct end span at G1b
	Flexible Approach Structure from Abutment G1b to Pier G1a
BG112600	Predrilling works for G1a-G1b
BG112610	Sockete H-piles for G1a-G1b(6 nos)
	Bridge H1-Section 2
	Stage 2
	Field Works
	Decking Construction From Abutment H1f to Pier H1d
	Balanced Canitilever Construction at Pier H1d
BH12190	6th Pair
BH12200	7th Pair
BH12210	8th Pair
BH12230	9th Pair
BH12240	In-situ ditch
	Bridge Works From Pier H1b to Pier H1d
BH12600	Possession of portion F
	Balanced Canitilever Construction at Pier H1c
BH12000	Construct Pier H1c
BH12250	Pierhead segment construction at Pier H1c
BH12260	Assemble of 1st formtraveller
	Abutment and Deck at H1b



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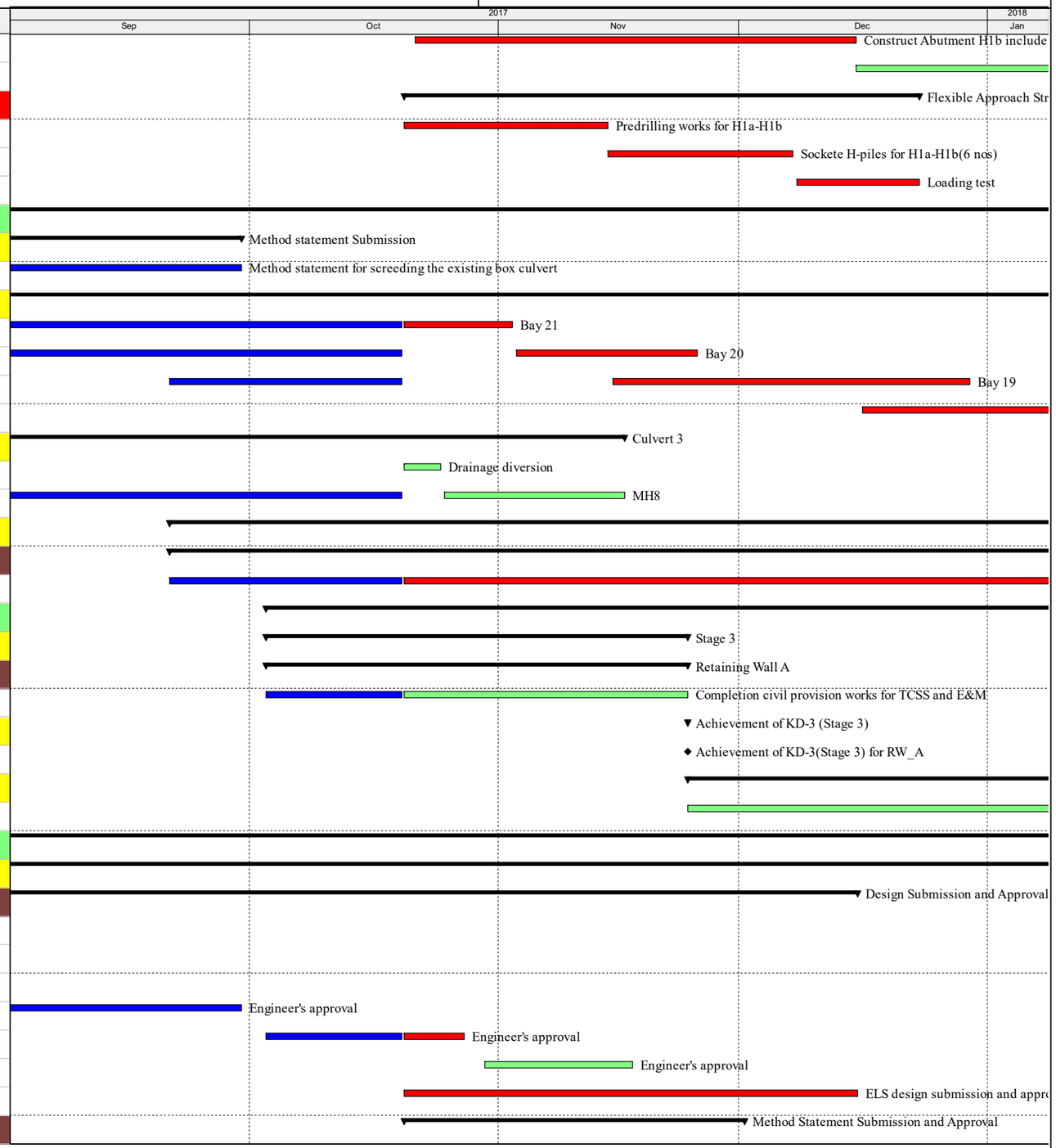
CRBC - Kaden JV
Three-Month Rolling Programme

Date	Revision	Checked	Approved
28-10-17			

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

CRBC - KADEN Joint Venture

Activity ID	Activity Name
BH12610	Construct Abutment H1b include bearing installation
BH12630	Construct End Span H1b
Flexible Approach Structure from Abutment H1b to Pier H1a	
BH12450	Predrilling works for H1a-H1b
BH12460	Sockete H-piles for H1a-H1b(6 nos)
BH12465	Loading test
Culvert 2 & Culvert 3 and Existing Box Culvert	
Method statement Submission	
CCE20140	Method statement for screeding the existing box culvert
Culvert 2	
CCE20090	Bay 21
CCE20120	Bay 20
CCE20130	Bay 19
CCE20150	Bay 18
Culvert 3	
CCE20212	Drainage diversion
CCE20215	MH8
Existing Sewer Box Culvert	
MH3-MH6	
CCE20220	Base slab to be applied with screeding concrete
Site Formation - Retainging Structure RW_A	
Stage 3	
Retaining Wall A	
RWA20240	Completion civil provision works for TCSS and E&M
Achievement of KD-3 (Stage 3)	
RWA20190	Achievement of KD-3(Stage 3) for RW_A
Achievement of KD-8 (Section 5) for RW_A	
RWA20200	Drainage Works
Retaining Structure RW_E	
Stage 2	
Design Submission and Approval	
RWE20080	DDA for superstructure(draft)
RWE20090	Engineer's comments
RWE20100	DDA for superstructure submission
RWE20030	Engineer's approval
RWE20070	Engineer's approval
RWE20110	Engineer's approval
RWE20120	ELS design submission and approval
Method Statement Submission and Approval	



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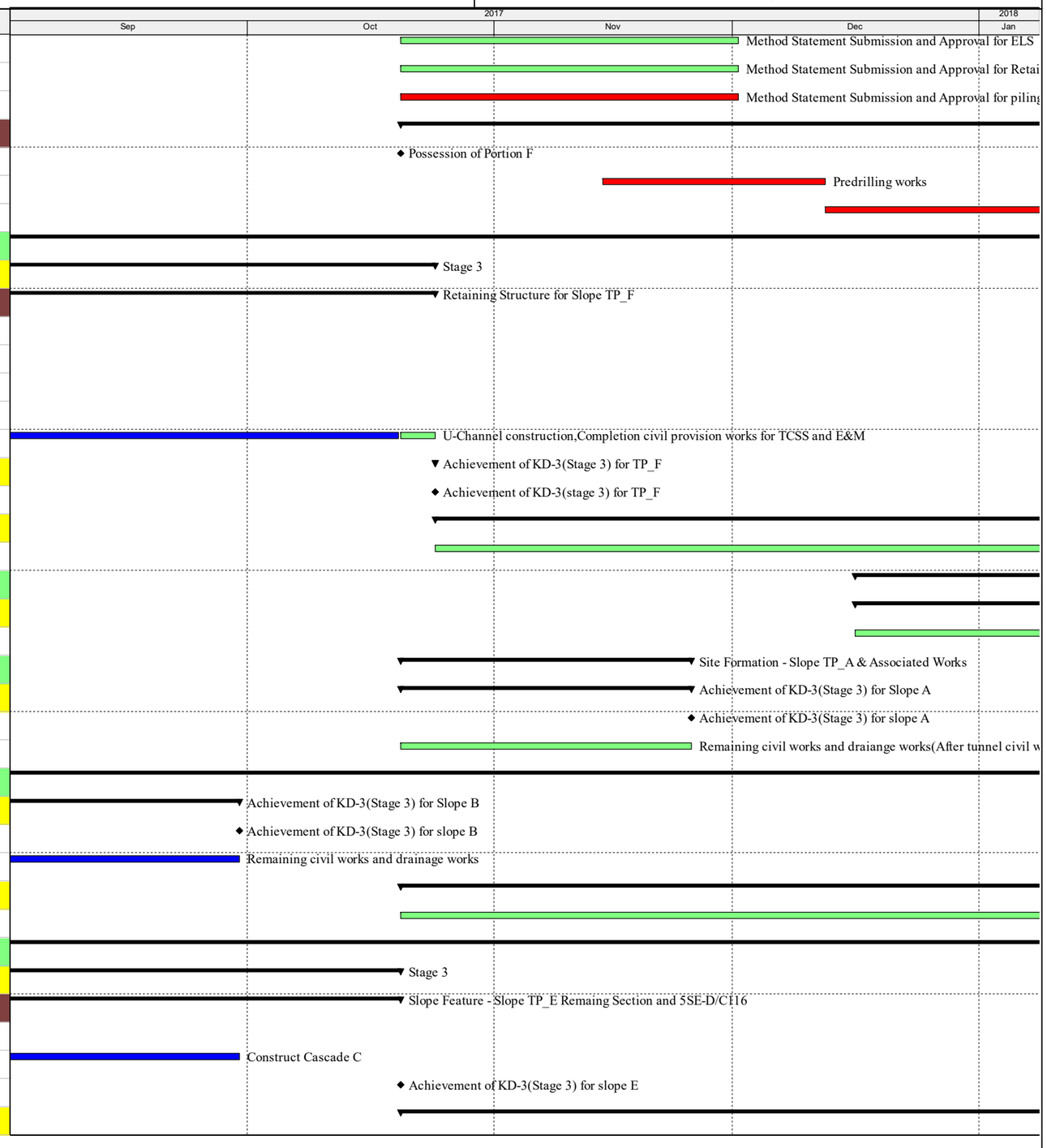
CRBC - Kaden JV
Three-Month Rolling Programme

Date	Revision	Checked	Approved
28-10-17			

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

CRBC - KADEN Joint Venture

Activity ID	Activity Name
RWE20130	Method Statement Submission and Approval for ELS
RWE20140	Method Statement Submission and Approval for Retaining Wall Construction
RWE20150	Method Statement Submission and Approval for piling works
Box Structures and L-Shape Retaining Wall for Retaining Wall E	
RWE20160	Possession of Portion F
RWE20170	Predrilling works
RWE20180	Excavation and piling works(12 nos)
Site Formation - Retaining Structure for Slope TP_F	
Stage 3	
Retaining Structure for Slope TP_F	
RWF31440	Excavation bay 21-28
RWF31430	New haul road
RWF31335	Construct Retaining Wall-Wall construction(Bay 1 to Bay 2)
RWF31350	Backfilling
RWF31480	U-Channel construction,Completion civil provision works for TCSS and E&M
Achievement of KD-3(Stage 3) for TP_F	
RWF31405	Achievement of KD-3(stage 3) for TP_F
Achievement of KD-8 (Section 5) for TP_F	
RWF31410	Remaining works(Brickwork and Blockwork,etc)
Site Formation - Retaining Structure for Slope TP_G	
MJ17 -End	
RWG1010	G.I and Trial Pit
Site Formation - Slope TP_A & Associated Works	
Achievement of KD-3(Stage 3) for Slope A	
TPA41830	Achievement of KD-3(Stage 3) for slope A
TPA41810	Remaining civil works and draiange works(After tunnel civil works construction)
Site Formation - Slope TP_B & Associated Works	
Achievement of KD-3(Stage 3) for Slope B	
TPB41730	Achievement of KD-3(Stage 3) for slope B
TPB41710	Remaining civil works and drainage works
Achievement of KD-8 (Section 5) for Slope B	
TPB41760	Remaining works inculde landscape works and establishment works
Site Formation - Slope TP_E & Associated Works	
Stage 3	
Slope Feature - Slope TP_E Remaing Section and 5SE-D/C116	
TPE62300	Excavation of Rock (7,920m3) for slope E2a
TPE62600	Construct Cascade C
TPE62700	Achievement of KD-3(Stage 3) for slope E
Achievement of KD-8(Section 5) for Slope E	



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CRBC - Kaden JV
Three-Month Rolling Programme

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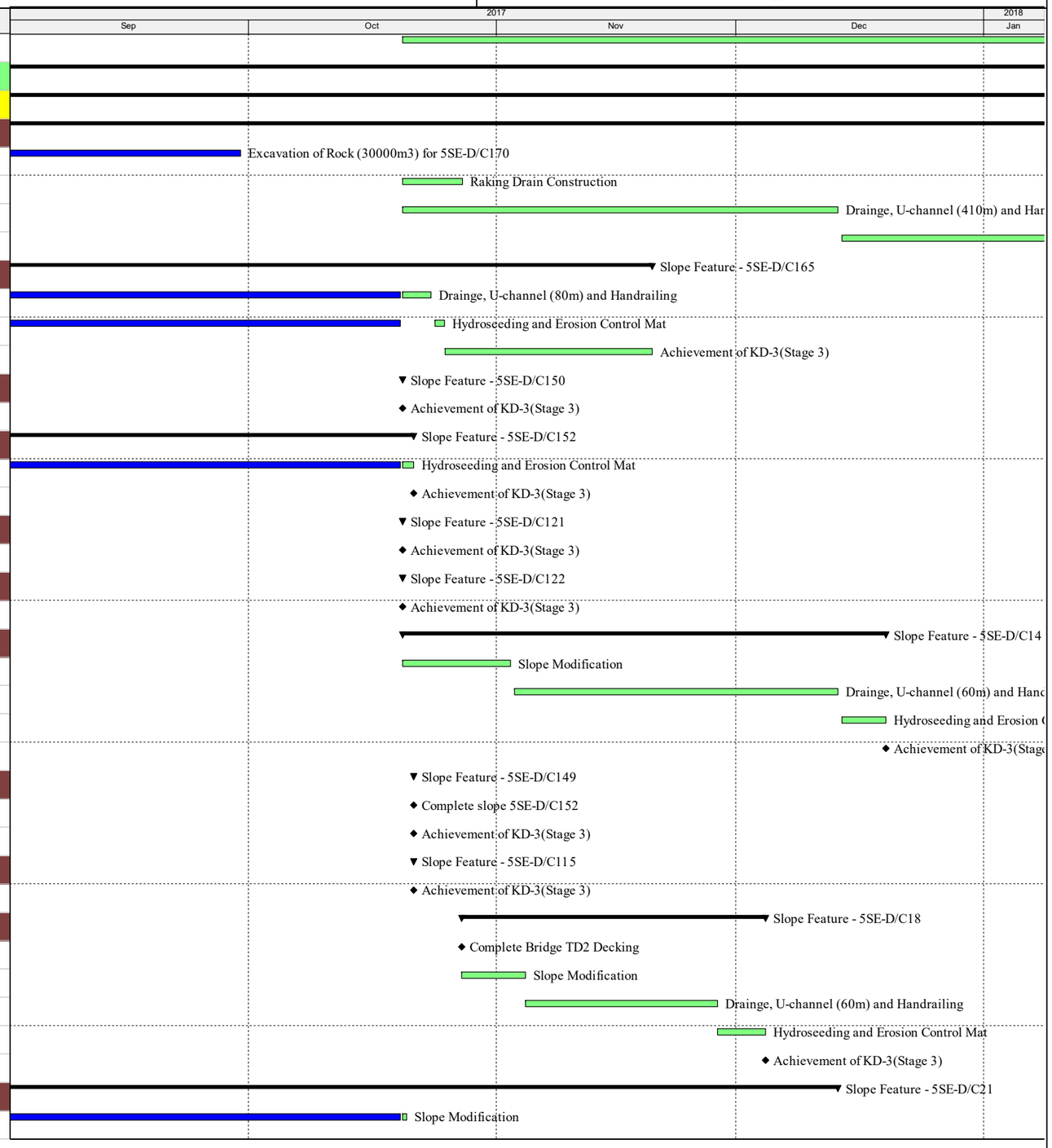
28-10-17			

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

CRBC - KADEN Joint Venture

Activity ID	Activity Name
TPE65320	Remaining works inculde landscape works and establishment works
Site Formation - Slope Upgrading Works	
Stage 3 (Other Slope Features)	
Slope Feature - 5SE-D/C170	
SFW10080	Excavation of Rock (30000m3) for 5SE-D/C170
SFW10105	Raking Drain Construction
SFW10110	Drainge, U-channel (410m) and Handrailing
SFW10850	Achievement of KD-3(Stage 3)
Slope Feature - 5SE-D/C165	
SFW10820	Drainge, U-channel (80m) and Handrailing
SFW10830	Hydroseeding and Erosion Control Mat
SFW10870	Achievement of KD-3(Stage 3)
Slope Feature - 5SE-D/C150	
SFW10890	Achievement of KD-3(Stage 3)
Slope Feature - 5SE-D/C152	
SFW10250	Hydroseeding and Erosion Control Mat
SFW10910	Achievement of KD-3(Stage 3)
Slope Feature - 5SE-D/C121	
SFW10930	Achievement of KD-3(Stage 3)
Slope Feature - 5SE-D/C122	
SFW10950	Achievement of KD-3(Stage 3)
Slope Feature - 5SE-D/C14	
SFW10350	Slope Modification
SFW10360	Drainge, U-channel (60m) and Handrailing
SFW10370	Hydroseeding and Erosion Control Mat
SFW10970	Achievement of KD-3(Stage 3)
Slope Feature - 5SE-D/C149	
SFW10380	Complete slope 5SE-D/C152
SFW10990	Achievement of KD-3(Stage 3)
Slope Feature - 5SE-D/C115	
SFW11010	Achievement of KD-3(Stage 3)
Slope Feature - 5SE-D/C18	
SFW10460	Complete Bridge TD2 Decking
SFW10470	Slope Modification
SFW10480	Drainge, U-channel (60m) and Handrailing
SFW10490	Hydroseeding and Erosion Control Mat
SFW11030	Achievement of KD-3(Stage 3)
Slope Feature - 5SE-D/C21	
SFW10550	Slope Modification



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CRBC - Kaden JV
Three-Month Rolling Programme

Date	Revision	Checked	Approved
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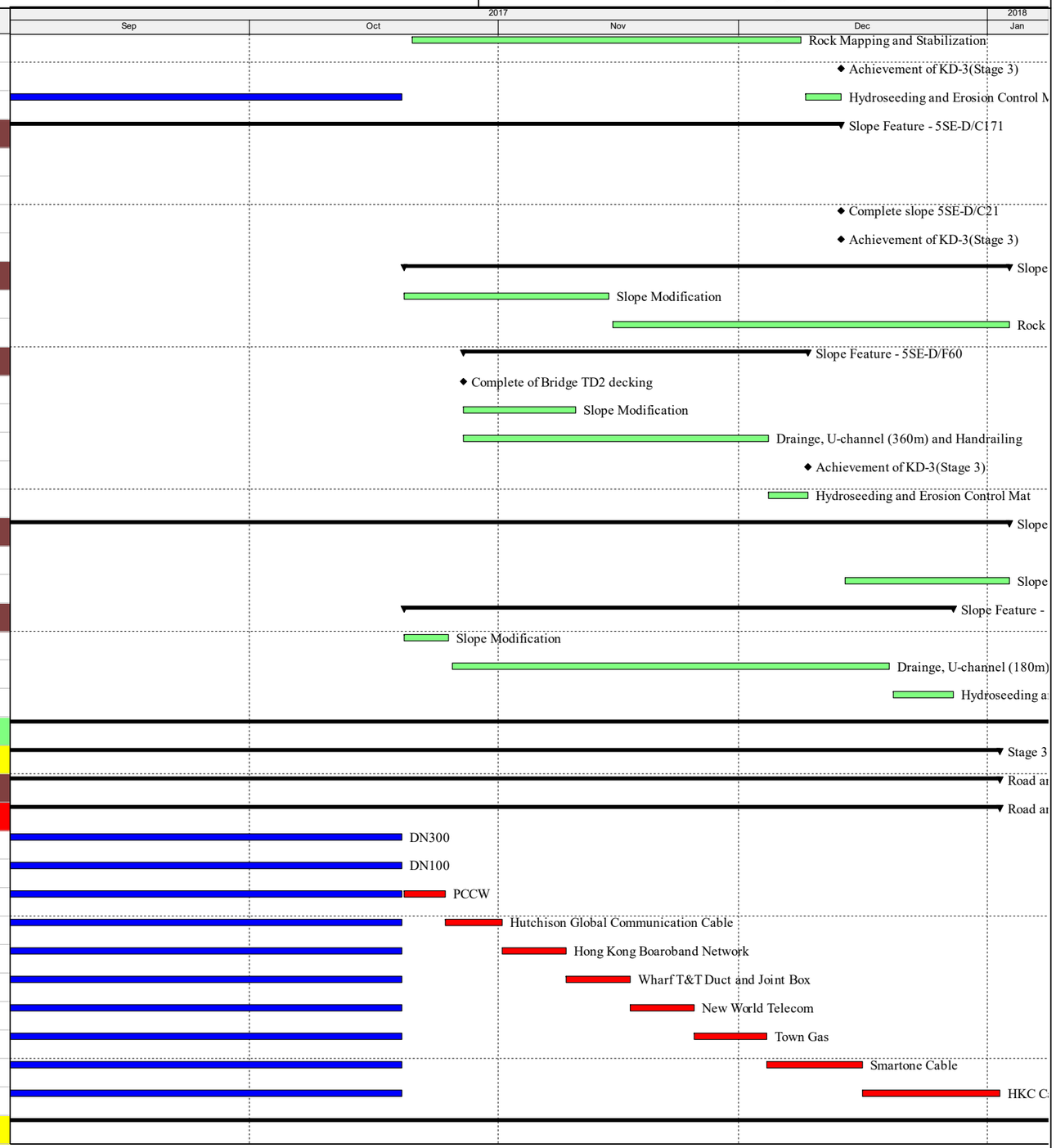
HY/2013/12 TM-CLKL Northern Connection Toll Plaza and Associated Works

CRBC - KADEN Joint Venture

Activity ID	Activity Name
SFW10560	Rock Mapping and Stabilization
SFW11070	Achievement of KD-3(Stage 3)
SFW10570	Hydroseeding and Erosion Control Mat
Slope Feature - 5SE-D/C171	
SFW10600	Drainge, U-channel (110m) and Handrailing
SFW10610	Hydroseeding and Erosion Control Mat
SFW10580	Complete slope 5SE-D/C21
SFW11090	Achievement of KD-3(Stage 3)
Slope Feature - 5SE-D/C16	
SFW10630	Slope Modification
SFW10640	Rock Mapping and Stabilization
Slope Feature - 5SE-D/F60	
SFW10670	Complete of Bridge TD2 decking
SFW10680	Slope Modification
SFW10690	Drainge, U-channel (360m) and Handrailing
SFW11130	Achievement of KD-3(Stage 3)
SFW10700	Hydroseeding and Erosion Control Mat
Slope Feature - 5SE-D/C158	
SFW10710	Complete backfilling of RW_A
SFW10720	Slope Modification
Slope Feature - 5SE-D/C17	
SFW10750	Slope Modification
SFW10760	Drainge, U-channel (180m) and Handrailing
SFW10770	Hydroseeding and Erosion Control Mat
Vehicular Underpass TN-01	
Stage 3	
Road and Drainage Work,Utilities Works in Tunnel	
Road and Drainage Work,Utilities Works in Tunnel	
UDP34000	DN300
UDP34010	DN100
UDP34020	PCCW
UDP34030	Hutchison Global Communication Cable
UDP34040	Hong Kong Boaroband Network
UDP34050	Wharf T&T Duct and Joint Box
UDP34060	New World Telecom
UDP34070	Town Gas
UDP34080	Smartone Cable
UDP34090	HKC Cable
Achievement of KD-8 (Section 5) for TN-01	



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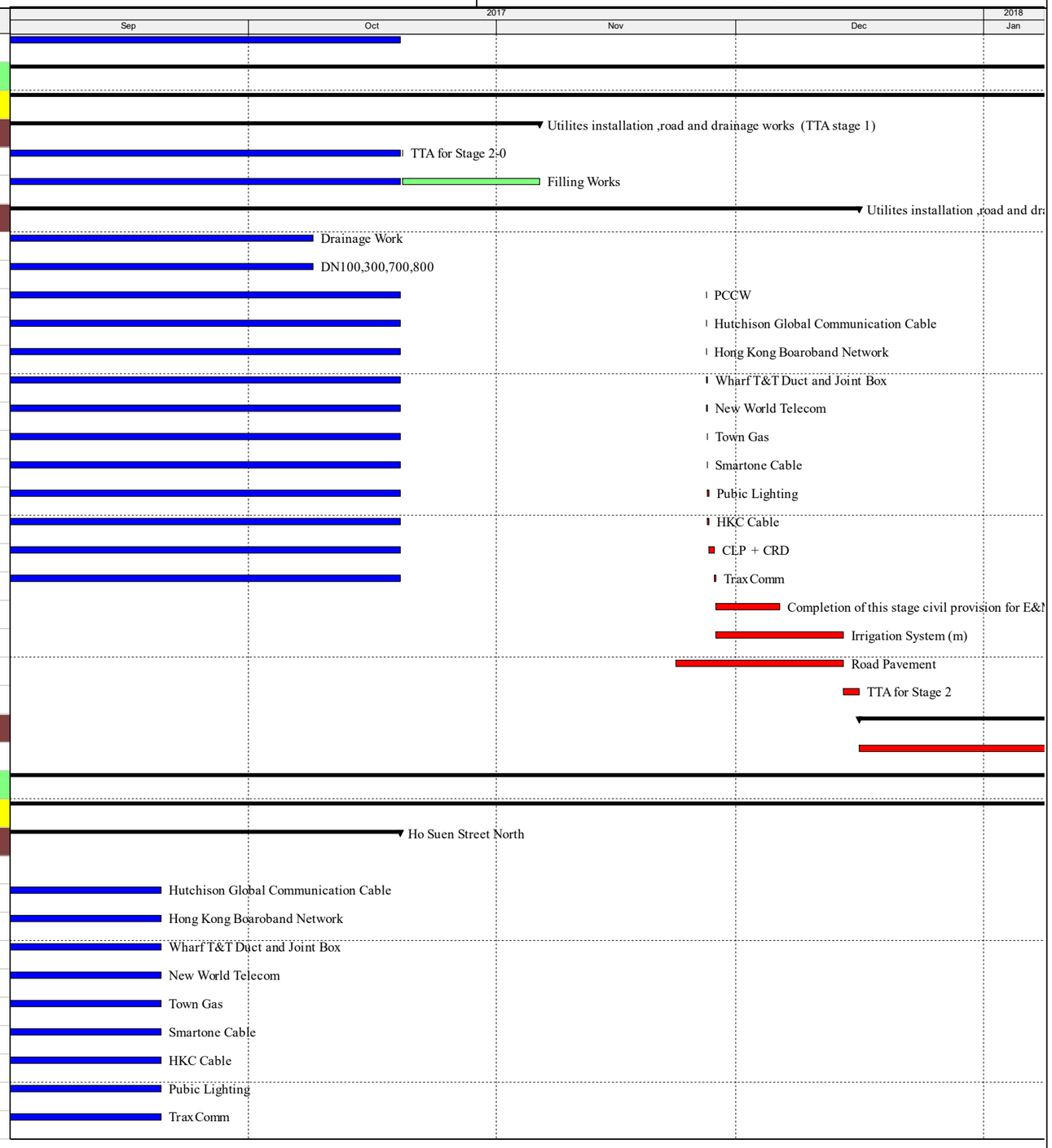
CRBC - Kaden JV
Three-Month Rolling Programme

Date	Revision	Checked	Approved
28-10-17			

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

CRBC - KADEN Joint Venture

Activity ID	Activity Name
UDP20640	Road works and Remaining works(Sundry Metalwork,etc)
Road and Drainage Work ,Utilities Works at for Lung Fu Road Roundabout	
Section 3	
Utilites installation ,road and drainage works (TTA stage 1)	
LFR10440	TTA for Stage 2-0
LFR10270	Filling Works
Utilites installation ,road and drainage works (TTA Stage 2-0)	
LFR10450	Drainage Work
LFR10460	DN100,300,700,800
LFR10470	PCCW
LFR10480	Hutchison Global Communication Cable
LFR10490	Hong Kong Boaroband Network
LFR10500	Wharf T&T Duct and Joint Box
LFR10510	New World Telecom
LFR10520	Town Gas
LFR10530	Smartone Cable
LFR10550	Pubic Lighting
LFR10540	HKC Cable
LFR10560	CLP + CRD
LFR10570	Trax Comm
LFR10580	Completion of this stage civil provision for E&M, TCSS
LFR10590	Irrigation System (m)
LFR10600	Road Pavement
LFR10610	TTA for Stage 2
Utilites installation ,road and drainage works (TTA Stage 2)	
LFR10620	Filling Works
Road and Drainage Work ,Utilities Works at Lung Mun Road	
Lung Mun Road (Westbound)	
Ho Suen Street North	
LMRWA1130	CLP + CRD
LMRWA1050	Hutchison Global Communication Cable
LMRWA1060	Hong Kong Boaroband Network
LMRWA1070	Wharf T&T Duct and Joint Box
LMRWA1080	New World Telecom
LMRWA1090	Town Gas
LMRWA1100	Smartone Cable
LMRWA1110	HKC Cable
LMRWA1120	Pubic Lighting
LMRWA1140	Trax Comm



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

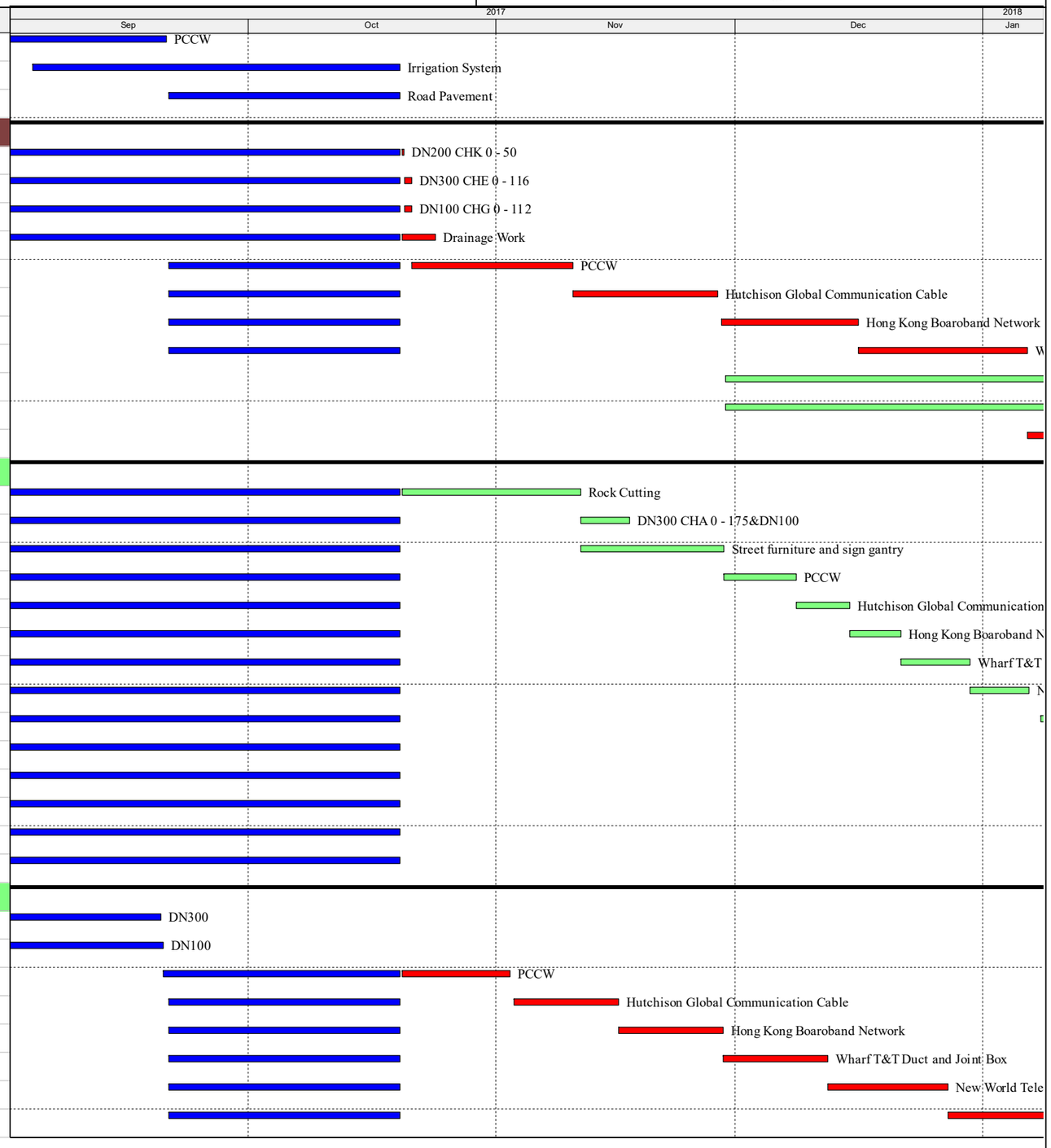
CRBC - Kaden JV
Three-Month Rolling Programme

Date	Revision	Checked	Approved
28-10-17			

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

CRBC - KADEN Joint Venture

Activity ID	Activity Name
LMRWA1040	PCCW
LMRWA1150	Irrigation System
LMRWA1160	Road Pavement
Ho Suen Street South	
LMRWA1190	DN200 CHK 0 - 50
LMRWA1200	DN300 CHE 0 - 116
LMRWA1210	DN100 CHG 0 - 112
LMRWA1170	Drainage Work
LMRWA1220	PCCW
LMRWA1230	Hutchison Global Communication Cable
LMRWA1240	Hong Kong Boaroband Network
LMRWA1250	Wharf T&T Duct and Joint Box
LMRWA1241	Street Furniture(Including eastbound)
LMRWA1242	Sign Gantry(Including eastbound)
LMRWA1260	New World Telecom
Utilites installation ,road and drainage works for East Portal	
EPA1000	Rock Cutting
EPA1020	DN300 CHA 0 - 175&DN100
EPA1030	Street furniture and sign gantry
EPA1040	PCCW
EPA1050	Hutchison Global Communication Cable
EPA1060	Hong Kong Boaroband Network
EPA1070	Wharf T&T Duct and Joint Box
EPA1080	New World Telecom
EPA1090	Town Gas
EPA1100	Smartone Cable
EPA1110	HKC Cable
EPA1120	Pubic Lighting
EPA1130	CLP
EPA1140	TraxComm
Utilites installation ,road and drainage works near portion D	
TOLLA1010	DN300
TOLLA1020	DN100
TOLLA1030	PCCW
TOLLA1040	Hutchison Global Communication Cable
TOLLA1050	Hong Kong Boaroband Network
TOLLA1060	Wharf T&T Duct and Joint Box
TOLLA1070	New World Telecom
TOLLA1080	Town Gas



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

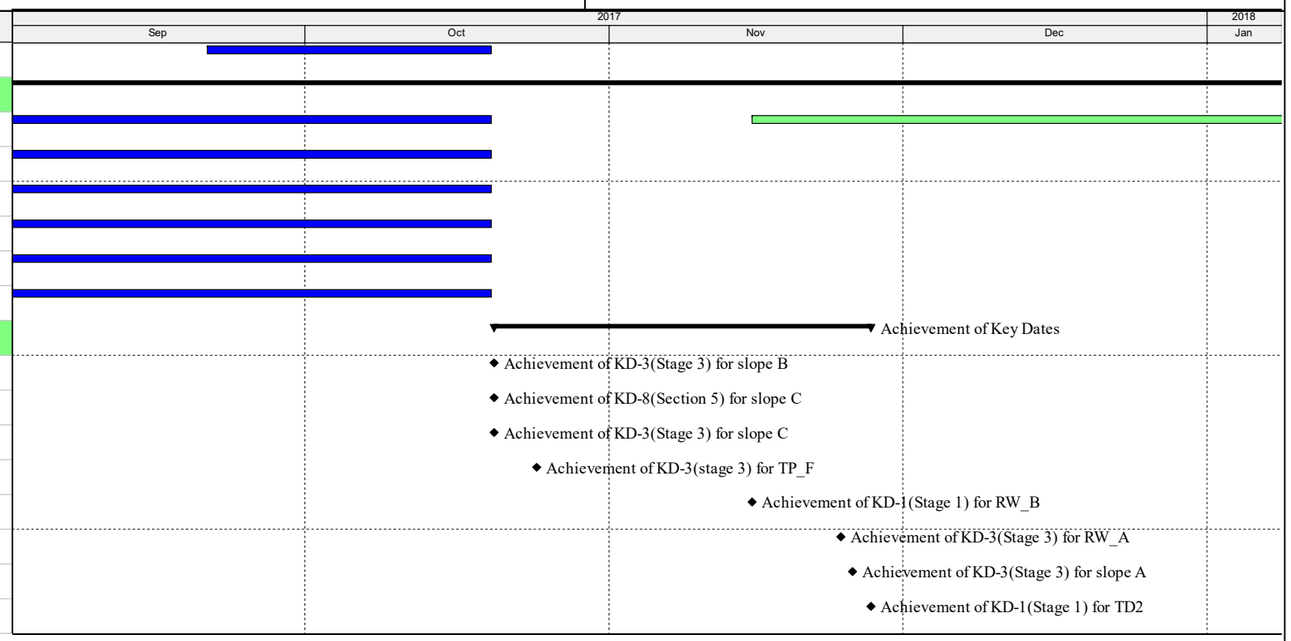
CRBC - Kaden JV
Three-Month Rolling Programme

Date	Revision	Checked	Approved
28-10-17			

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

CRBC - KADEN Joint Venture

Activity ID	Activity Name
TOLLA1090	Smartone Cable
Seweage, Irrigation and Road& Drainage Works	
SAI10020	Seweage, irrigation and road&drainage works - RW_B-north side
SAI10060	Seweage, irrigation and road&drainage works -G2-north side
SAI10070	Seweage, irrigation and road&drainage works- G2-south side
SAI10030	Seweage, irrigation and road&drainage works - RW_B-south side
SAI10040	Seweage, irrigation and road&drainage works -G1&H1-north side
SAI10050	Seweage, irrigation and road&drainage works - G1&H1-south side
Achievement of Key Dates	
AK10300	Achievement of KD-3(Stage 3) for slope B
AK10330	Achievement of KD-8(Section 5) for slope C
AK10320	Achievement of KD-3(Stage 3) for slope C
AK10250	Achievement of KD-3(stage 3) for TP_F
AK10060	Achievement of KD-1(Stage 1) for RW_B
AK10210	Achievement of KD-3(Stage 3) for RW_A
AK10280	Achievement of KD-3(Stage 3) for slope A
AK10020	Achievement of KD-1(Stage 1) for TD2



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

CRBC - Kaden JV
Three-Month Rolling Programme

Date	Revision	Checked	Approved
28-10-17			

Appendix E

Monitoring Locations / Sensitive Receivers for the Contract

826200 N
826000 N
825800 N
825600 N
825400 N

龍運路 LUNG WUN ROAD

龍田路 LUNG TIN ROAD

蝴蝶灣泳灘
BUTTERFLY BEACH

NCO DESIGNATED AREAS

813200 E

BOUNDARY OF PILLAR POINT VALLEY LANDFILL CONSULTATION ZONE

813000 E

812800 E

812600 E

10.3
35.6
21.3
29.4
21.9
35.1
58.6
19.4
62.1
20.2
10.8
18.9
42.8
32.3
19.6
10.1
23.7

TOLL CONTROL BUILDING
(TO BE CONSTRUCTED UNDER
SEPARATE CONTRACT)

RETAINING WALL F

RETAINING WALL B

蝴蝶灣洗衣場
Butterfly Beach Laundry

吉慶街 KUT HING STREET

ER's OFFICE

望發街 MONG FAT STREET

820900 E
821100 N
820900 E
820700 E
CHEUNG TUNG ROAD
NORTH LANTAU HIGHWAY
WORKS AREA WA6 IN LANTAU ISLAND

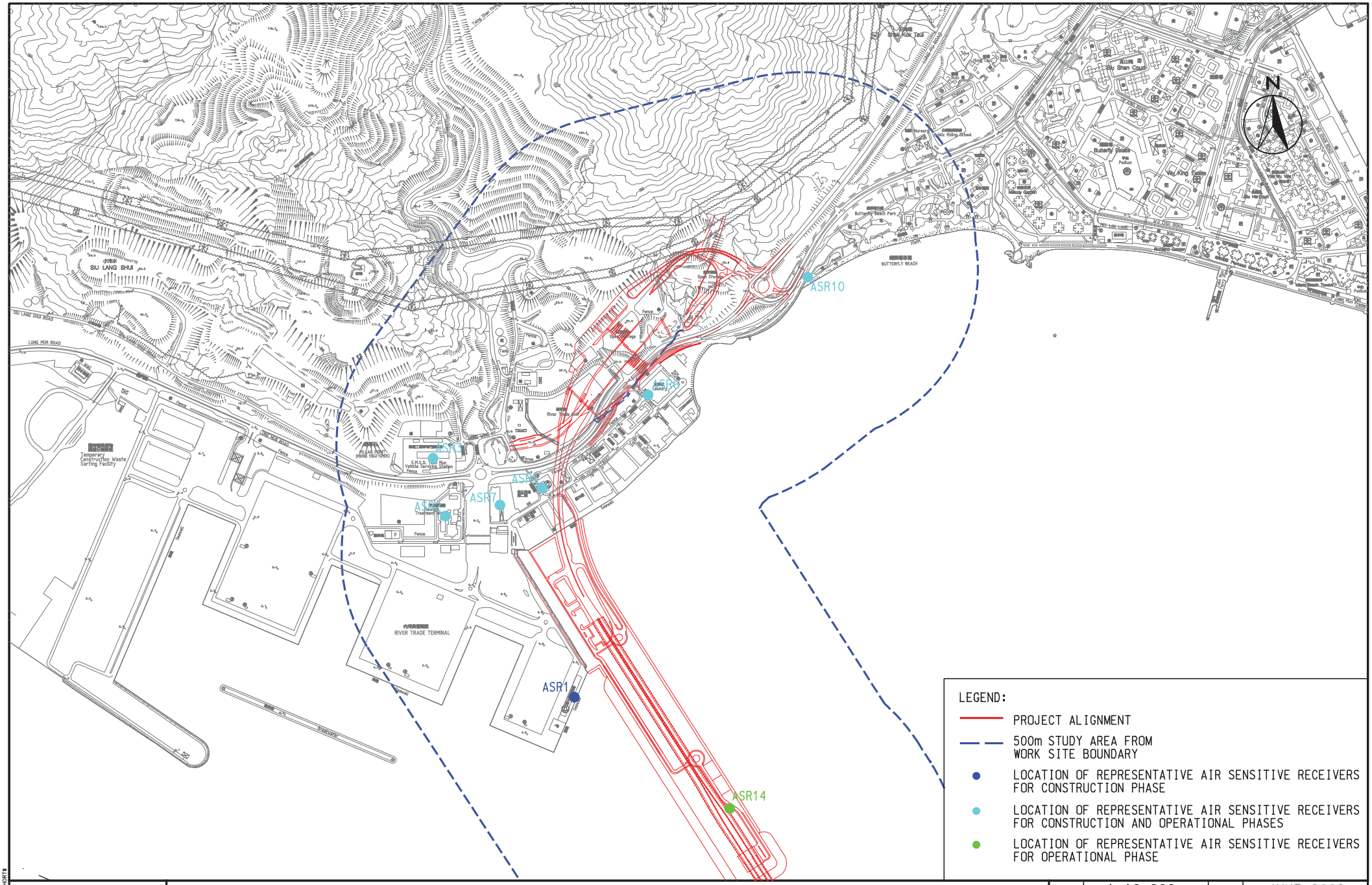
LEGEND:

- 35.1 EXISTING GROUND LEVEL
- SITE BOUNDARY
- BOUNDARY OF PILLAR POINT VALLEY LANDFILL CONSULTATION ZONE
- TD1, RW_A, GRAVE G1, TD2 & SUBWAY
- RW_B
- RW_F
- SLOPE & UNDERPASS
- BRIDGE WORKS (G2, H1)
- LUNG MUN ROAD

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

DF1266-3

Plot File by: rstoc1 10-Mar-17 4:32:51 PM
PATH: T:\Drawing\DRAFT\DF1266\DF1266-3.dgn

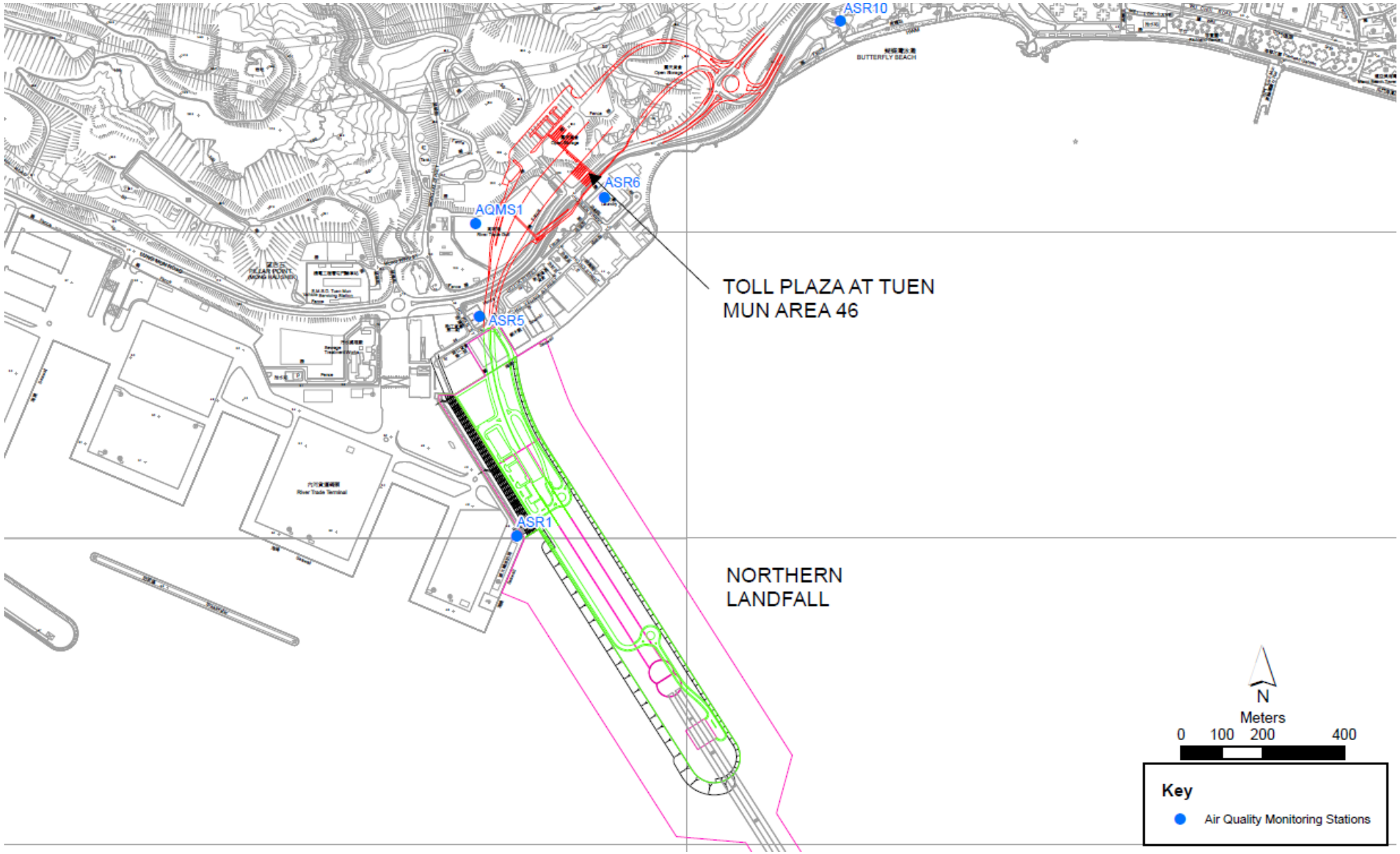


AGREEMENT NO. CE 52/2007(HY)
TUEN MUN – CHEK LAP KOK LINK – INVESTIGATION

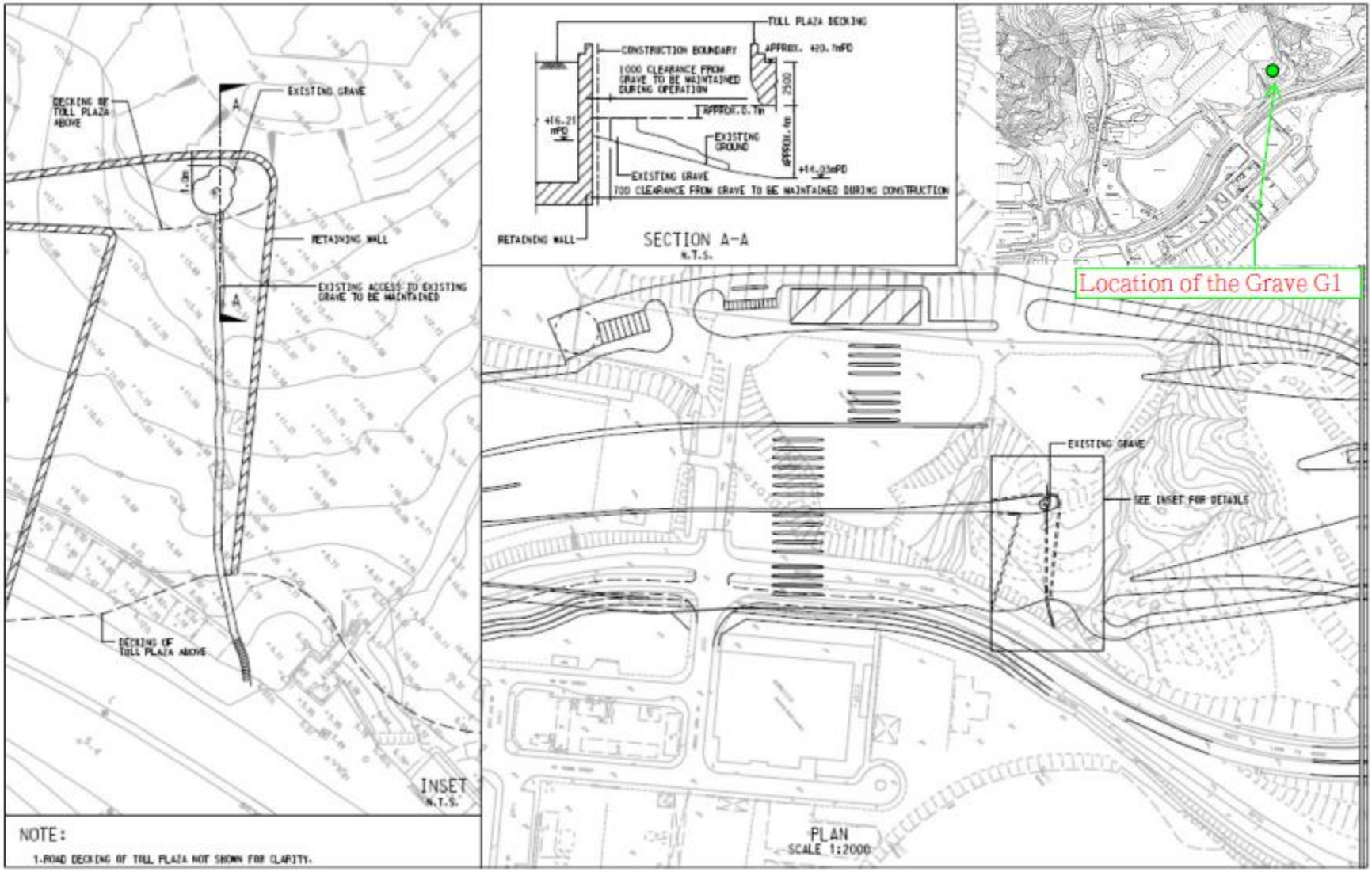
REPRESENTATIVE AIR SENSITIVE RECEIVERS

SCALE	1:10 000	DATE	

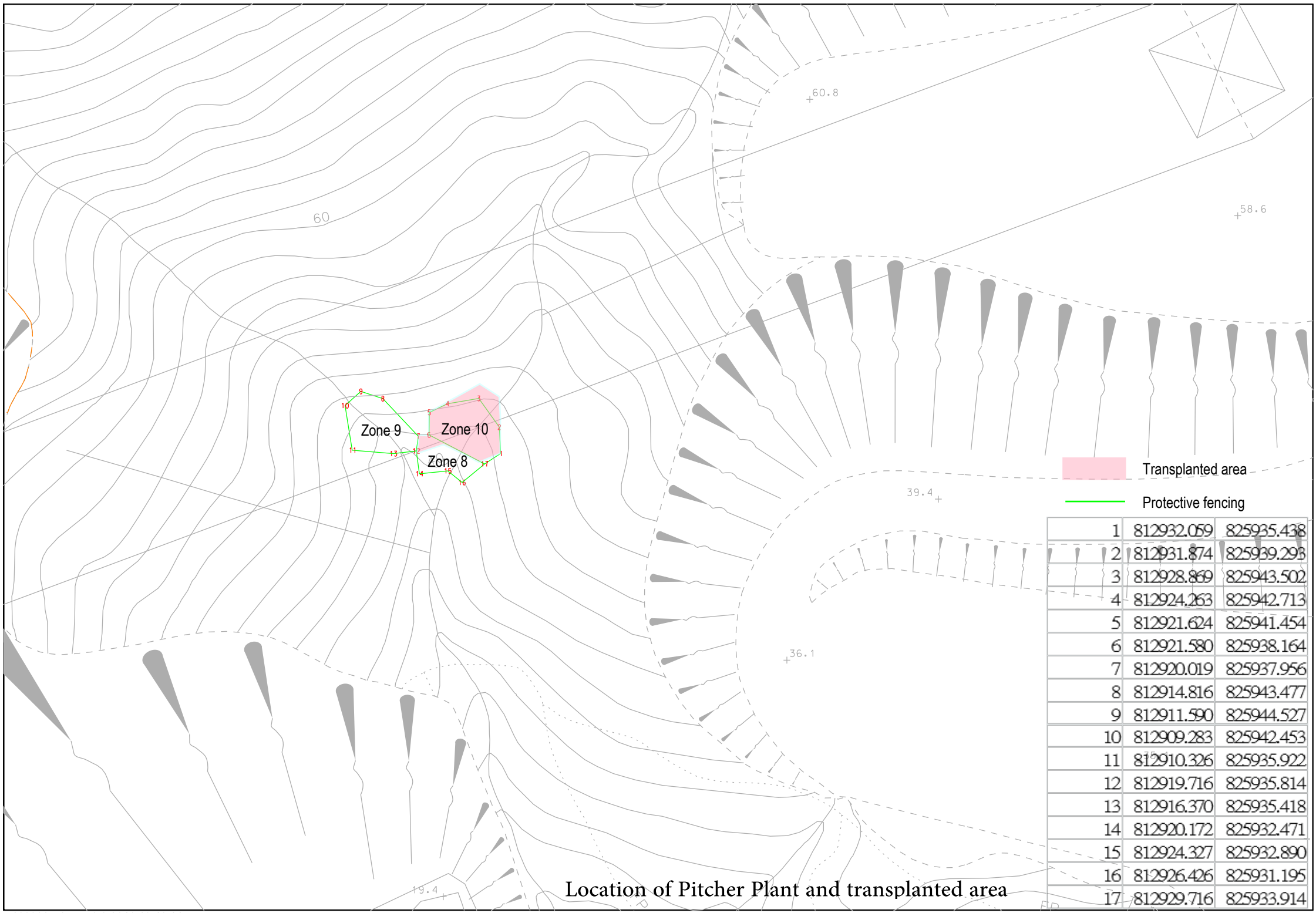
Plotting By:7/27/2009
PLOT SCALE: #SCALE#SHORT$



Air Quality Monitoring Location



Location of the Grave G1



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

Location of Pitcher Plant and transplanted area

R160908MC.dgn 9/9/2016 10:46:14

Appendix F

Event and Action Plan

Event and Action Plan for Air Quality

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

Event and Action Plan for Landscape and Visual Impact

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

Event / Action Plan for Cultural Heritage

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

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

Event / Action Plan for General Ecology

Action Level	ET	IEC	ER	Contractor
Non-conformity on one occasion	• Identify Source • Inform the IEC and the ER • Discuss remedial actions with the IEC, the ER and the Contractor • Monitor remedial actions until rectification has been completed	• Check report • Check the Contractor's working method • Discuss with the ET and the Contractor on possible remedial measures • Advise the ER on effectiveness of proposed remedial measures. • Check implementation of remedial measures.	• Notify Contractor • Ensure remedial measures are properly implemented • Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the works in the case of a serious nonconformity until situation rectified.	• Amend working methods • Rectify damage and undertake any necessary replacement
Repeated Non conformity	• Identify Source • Inform the IC(E) and the ER • Increase monitoring frequency • Discuss remedial actions with the • IC(E), the ER and the Contractor • Monitor remedial actions until rectification has been completed • If exceedance stops, cease additional monitoring	• Check monitoring report • Check the Contractor's working method • Discuss with the ES and the Contractor on possible remedial measures • Advise the ER on effectiveness of proposed remedial measures • Supervise implementation of remedial measures	• Notify the Contractor • Ensure remedial measures are properly implemented • Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the works in the case of a serious nonconformity until situation rectified.	• Amend working methods • Rectify damage and undertake any necessary replacement

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

Actions in the Event of Landfill Gas being Detected in Excavation / Confined Area

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

Appendix G

Monitoring Schedule

Impact Monitoring Schedule for October 2017

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

✓	Monitoring Day
	Sunday or Public Holiday

Impact Monitoring Schedule for November 2017

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

✓	Monitoring Day
	Sunday or Public Holiday

Appendix H

Calibration Certificates of Monitoring Equipment

CERTIFICATION OF CALIBRATION

Date Of Calibration: 20-Jun-2017 **Certificate Number:** G503226_2/18640

4533

Geotech

ISSUED BY: GEOTECHNICAL INSTRUMENTS (UK) LTD

Customer: **Fugro Geotechnical Services Ltd**

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

Description: Gas Analyser

Model: BIOGAS 5000

Serial Number: G503226

UKAS Accredited results:

Results after adjustment :

Methane (CH_4)		
Certified Gas (%)	**Instrument Reading (%)**	**Uncertainty (%)**
5.1	4.9	0.41
15.0	14.8	0.64
50.0	49.4	0.94

Carbon Dioxide (CO_2)		
Certified Gas (%)	**Instrument Reading (%)**	**Uncertainty (%)**
5.1	5.0	0.43
15.0	14.9	0.70
50.0	50.0	1.1

Oxygen (O_2)		
Certified Gas (%)	**Instrument Reading (%)**	**Uncertainty (%)**
20.9	20.9	0.31

The inwards assessment was carried out 14-Jun-2017.
The maximum adjustment is larger than the inwards assessment uncertainty.
Inwards assessment data is available if requested.

All concentrations are molar.

CH_4, CO_2 readings recorded at : 37.2 °C ± 1.5 °C

O2 reading recorded at : 26.8 °C ± 1.5 °C

Barometric Pressure : 1012 mbar ± 3 mbar

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

Geotechnical Instruments (UK) Ltd
Sovereign House, Queensway, Leamington Spa, Warwickshire, CV31 3JR
geotechuk.com service@geotech.co.uk +44 (0)1926 338111

CERTIFICATION OF CALIBRATION

Date Of Calibration: 20-Jun-2017 **Certificate Number:** G503226_2/18640

4533

Geotech

ISSUED BY: GEOTECHNICAL INSTRUMENTS (UK) LTD

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

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

Non-UKAS Accredited results:

Barometer (mbar)	
Reference	**Instrument Reading**
1012	1014

Approved by Signatory

Dawn Hemings

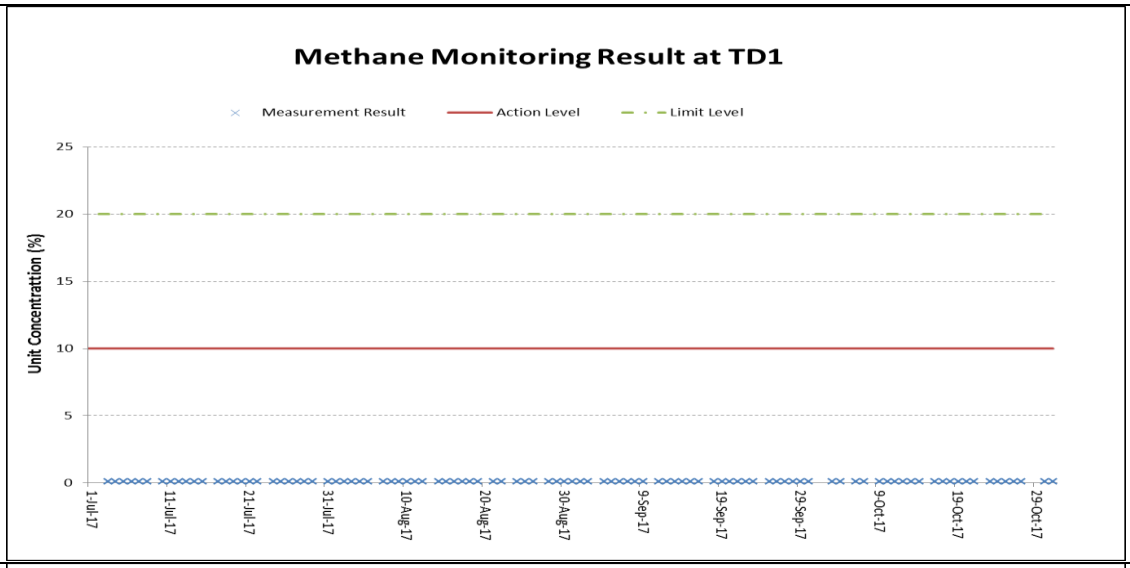
Laboratory Inspection

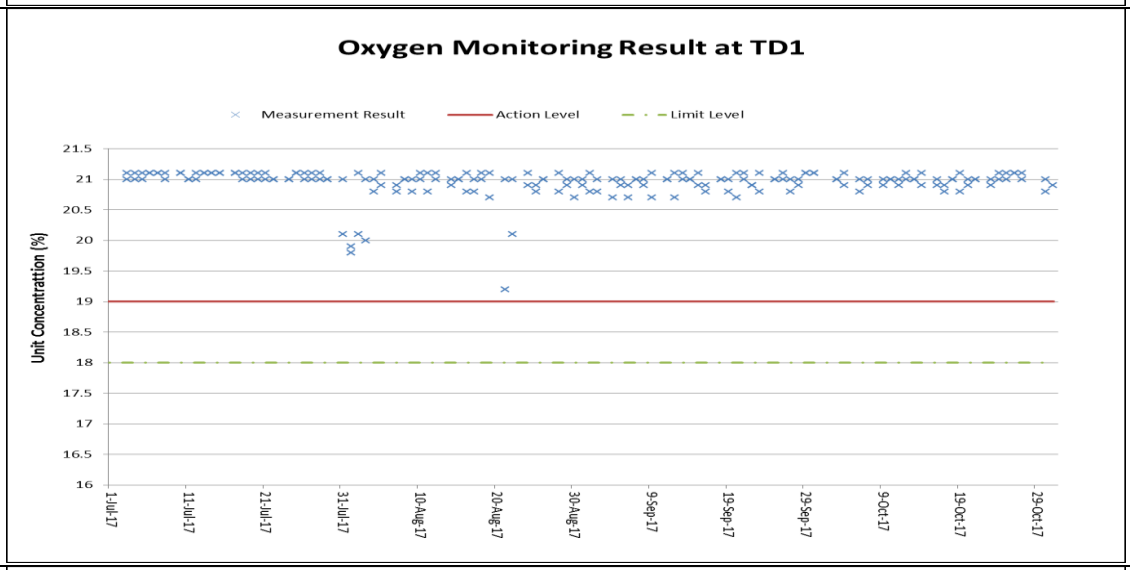
This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national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

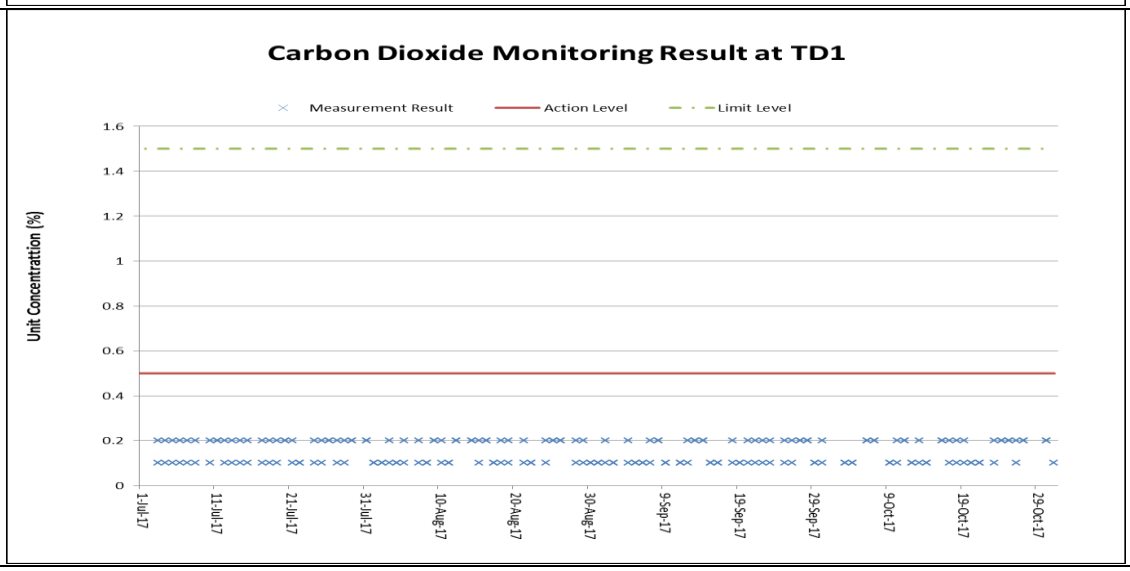
Geotechnical Instruments (UK) Ltd
Sovereign House, Queensway, Leamington Spa, Warwickshire, CV31 3JR
geotechuk.com service@geotech.co.uk +44 (0)1926 338111

Appendix I

Landfill Gas Monitoring Results and Graphical Plots







Annotation:
During 1 to 31 October 2017, major construction activity at TD1 and the specified works included excavation, stitching, blinding, formworking, steel-fixing and concreting. The weather condition varied from sunny to rainy. The monitoring data was provided by the Contractor followed to their QA/QC control.

Landfill Gas Monitoring Results (TD1)

Monitoring Location	Date	Time	Weather	Temperature (°C)	Methane (%)			Oxygen (%)			Carbon Dioxide (%)		
					Measurement Result	Action Level	Limit Level	Measurement Result	Action Level	Limit Level	Measurement Result	Action Level	Limit Level
TD1	3/10/2017	8:00	Sunny	28	0.1	10	20	21.1	19	18	0.2	0.5	1.5
	3/10/2017	14:00		34	0.1	10	20	21	19	18	0.1	0.5	1.5
	4/10/2017	8:00	Cloudy	27	0.1	10	20	21	19	18	0.1	0.5	1.5
	4/10/2017	14:00		31	0.1	10	20	20.9	19	18	0.1	0.5	1.5
	6/10/2017	8:00	Sunny	27	0.1	10	20	21.1	19	18	0.1	0.5	1.5
	6/10/2017	14:00		31	0.1	10	20	21	19	18	0.2	0.5	1.5
	7/10/2017	8:00	Sunny	27	0.1	10	20	20.8	19	18	0.2	0.5	1.5
	7/10/2017	14:00		32	0.1	10	20	20.9	19	18	0.2	0.5	1.5
	9/10/2017	8:00	Fine	27	0.1	10	20	21	19	18	0.2	0.5	1.5
	9/10/2017	14:00		31	0.1	10	20	20.9	19	18	0.1	0.5	1.5
	10/10/2017	8:00	Fine	27	0.1	10	20	21	19	18	0.1	0.5	1.5
	10/10/2017	14:00		32	0.1	10	20	21	19	18	0.1	0.5	1.5
	11/10/2017	8:00	Cloudy	28	0.1	10	20	21	19	18	0.2	0.5	1.5
	11/10/2017	14:00		32	0.1	10	20	21	19	18	0.2	0.5	1.5
	12/10/2017	8:00	Fine	22	0.1	10	20	20.9	19	18	0.2	0.5	1.5
	12/10/2017	14:00		27	0.1	10	20	21	19	18	0.1	0.5	1.5
	13/10/2017	8:00	Cloudy	25	0.1	10	20	21.1	19	18	0.1	0.5	1.5
	13/10/2017	14:00		30	0.1	10	20	21	19	18	0.2	0.5	1.5
	14/10/2017	8:00	Hazy	23	0.1	10	20	21	19	18	0.1	0.5	1.5
	14/10/2017	14:00		27	0.1	10	20	21.1	19	18	0.1	0.5	1.5
	16/10/2017	8:00	Sunny	25	0.1	10	20	20.9	19	18	0.1	0.5	1.5
	16/10/2017	14:00		28	0.1	10	20	20.9	19	18	0.2	0.5	1.5
	17/10/2017	8:00	Rain	24	0.1	10	20	21	19	18	0.2	0.5	1.5
	17/10/2017	14:00		28	0.1	10	20	20.8	19	18	0.2	0.5	1.5
	18/10/2017	8:00	Fine	25	0.1	10	20	20.9	19	18	0.1	0.5	1.5
	18/10/2017	14:00		30	0.1	10	20	21	19	18	0.2	0.5	1.5
	19/10/2017	8:00	Hazy	24	0.1	10	20	21	19	18	0.1	0.5	1.5
	19/10/2017	14:00		28	0.1	10	20	20.8	19	18	0.2	0.5	1.5
	20/10/2017	8:00	Cloudy	23	0.1	10	20	21.1	19	18	0.1	0.5	1.5
	20/10/2017	14:00		28	0.1	10	20	21	19	18	0.1	0.5	1.5
	21/10/2017	8:00	Fine	24	0.1	10	20	20.9	19	18	0.1	0.5	1.5
	21/10/2017	14:00		29	0.1	10	20	21	19	18	0.1	0.5	1.5
	23/10/2017	8:00	Sunny	21	0.1	10	20	21	19	18	0.1	0.5	1.5
	23/10/2017	14:00		28	0.1	10	20	20.9	19	18	0.2	0.5	1.5
	24/10/2017	8:00	Sunny	23	0.1	10	20	21	19	18	0.1	0.5	1.5
	24/10/2017	14:00		28	0.1	10	20	21.1	19	18	0.2	0.5	1.5
	25/10/2017	8:00	Sunny	23	0.1	10	20	21	19	18	0.2	0.5	1.5
	25/10/2017	14:00		28	0.1	10	20	21.1	19	18	0.2	0.5	1.5
	26/10/2017	8:00	Sunny	22	0.1	10	20	21	19	18	0.2	0.5	1.5
	26/10/2017	14:00		28	0.1	10	20	21.1	19	18	0.1	0.5	1.5
	27/10/2017	8:00	Sunny	22	0.1	10	20	21.1	19	18	0.2	0.5	1.5
	27/10/2017	14:00		29	0.1	10	20	21	19	18	0.2	0.5	1.5
	30/10/2017	8:00	Cloudy	21	0.1	10	20	21.1	19	18	0.2	0.5	1.5
	30/10/2017	14:00		25	0.1	10	20	21	19	18	0.2	0.5	1.5
	31/10/2017	8:00	Fine	27	0.1	10	20	20.8	19	18	0.2	0.5	1.5
	31/10/2017	14:00		33	0.1	10	20	20.9	19	18	0.1	0.5	1.5

Remark:

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

Appendix J

Investigation Report for Exceedance

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

Investigation Report on Action or Limit Level Non-compliance

Date	12 September 2017			
Environmental Aspect	Air Quality			
Parameter	1-hour TSP			
Monitoring Location	ASR1 (Tuen Mun Fireboat Station)			ASR5 (Pillar Point Fire Station)
Measurement Period	13:38 – 14:38	14:40 – 15:40	15:42 – 16:42	13:27 – 14:27
Action Level (ug/m^3)	331			340
Limit Level (ug/m^3)	500			500
Measured Level (ug/m^3)	**332**	**545**	**413**	**367**
Exceedance	**Action Level**	**Limit Level**	**Action Level**	**Action Level**
Possible reason for Action or Limit Level Non-compliance	1. According to site information provided by CRBC-Kaden JV, road and drainage Works at Portion H, housekeeping works at TD2 and consecution of column at Portion F were conducted on 12 September 2017. 2. To reduce dust impact arising from the construction, mitigation measures for construction dust control were implemented. They include the followings: • water trucks were arranged on haul road to keep road surface wet (refer to photo 1, 7, 8 and water spraying record) • for un-accessible area, water spraying by workers was provided (refer to photo 2, 12 and water spraying record) • covered part of the exposed slopes and stockpile by tarpaulin sheet (refer to Photo 3 to 5 and 11) • to set speed control at 8 km/hr for all vehicles using the haul road (refer to photo 6) 3. During site inspection on 12 September 2017, it was observed that the dust mitigation measures were implemented and the site condition is acceptable. Photo showing the implemented dust mitigation measures on 12 September 2017 is shown in photo record. 4. Although the works area Portion F was closely to the monitoring location ASR5, during the course of monitoring only mobilize construction materials was undertake on 12 September 2017. It is unlikely to create heavy construction dust impact. According to the wind direction and wind speed data, North-westerly wind at 1.8m/s was blowing between 13:00 to 15:00. The ASR5 was located at upstream of the work area Portion F. (Ref. to Location Plan and Photo 10) 5. The monitoring station ASR1 is located most apart from the construction site. According to other surrounding monitoring stations (AQMS1, ASR6 & 10) which are located closely to works area TD1 and Portion H, no exceedances were recorded at similar time. The TSP concentration in other stations			

	(139-299 ug/m^3) is much lower to the exceeded station ASR1. (Ref to attached monitoring result and wind speed data) 6. Also the contractor was properly implemented the dust mitigation measure under EMIS requirement. Therefore we considered that the cause of exceedance is due to other pollutant source rather than the construction site. 7. Based on above investigation, the exceedance is unlikely related to the Contract work and no corrective action was required accordingly.
Action to be taken	ET will continue regular audit and inspection for the implemented dust mitigation measures during the construction period.

Prepared By : T.W. Tam

Designation : Environmental Team Leader

Signature : 

Date : 12 October 2017

Photo Record

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

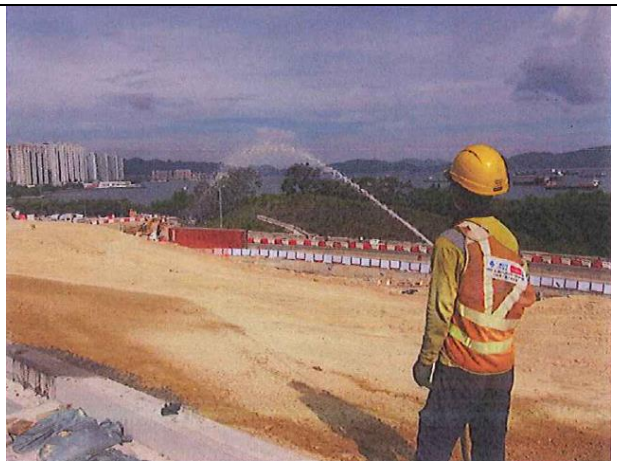


Photo 2 Water spraying by worker for un-accessible area.

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

Photo 4 Covered part of stockpile by tarpaulin sheet at Portion F.

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

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

Photo 7 Watering of haul road by water truck to keep road surface wet was observed during the site inspection on 12 September 2017

Photo 8 Watering of haul road by water truck to keep road surface wet was observed during the site inspection on 12 September 2017

Photo 9 Housekeeping works at TD1 on 12 September 2017.

Photo 10 Consecution of column at Portion F on 12 September 2017.

Photo 11 Covered stockpile by tarpaulin sheet at Portion H.

Photo 12 Water spraying for exposed area at Portion H.

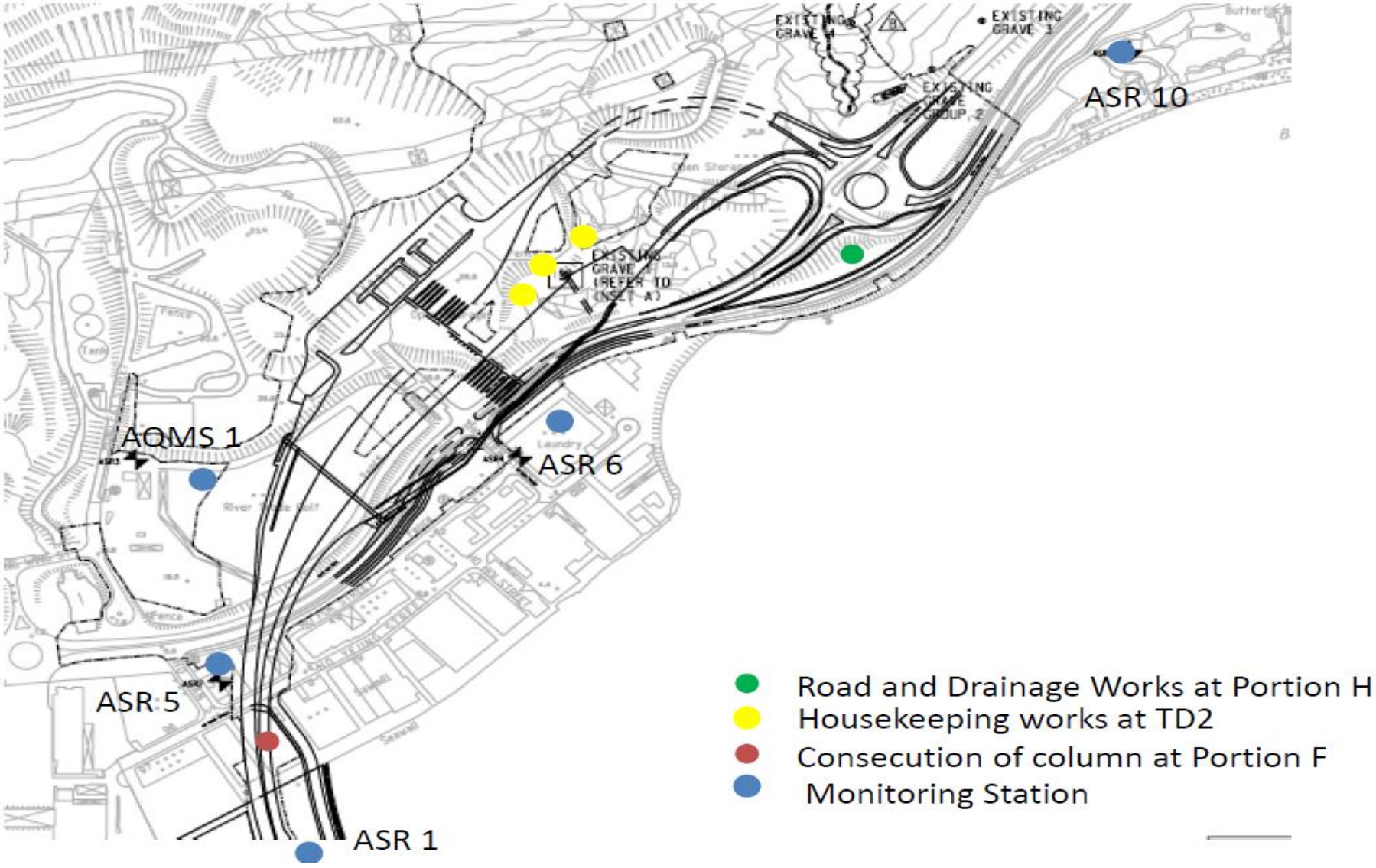


Figure 1. Location Plan

Table 1. 1-Hr TSP Monitoring Result of 12 September 2017

TMCLKL	HY/2012/08	12/9/2017	AQMS1	Sunny	13:49	1-hour TSP	277	ug/m3
TMCLKL	HY/2012/08	12/9/2017	AQMS1	Sunny	14:51	1-hour TSP	209	ug/m3
TMCLKL	HY/2012/08	12/9/2017	AQMS1	Sunny	15:53	1-hour TSP	139	ug/m3
TMCLKL	HY/2012/08	12/9/2017	ASR1	Sunny	13:38	1-hour TSP	332	ug/m3
TMCLKL	HY/2012/08	12/9/2017	ASR1	Sunny	14:40	1-hour TSP	545	ug/m3
TMCLKL	HY/2012/08	12/9/2017	ASR1	Sunny	15:42	1-hour TSP	413	ug/m3
TMCLKL	HY/2012/08	12/9/2017	ASR10	Sunny	13:02	1-hour TSP	165	ug/m3
TMCLKL	HY/2012/08	12/9/2017	ASR10	Sunny	14:04	1-hour TSP	240	ug/m3
TMCLKL	HY/2012/08	12/9/2017	ASR10	Sunny	15:06	1-hour TSP	186	ug/m3
TMCLKL	HY/2012/08	12/9/2017	ASR5	Sunny	13:27	1-hour TSP	367	ug/m3
TMCLKL	HY/2012/08	12/9/2017	ASR5	Sunny	14:29	1-hour TSP	308	ug/m3
TMCLKL	HY/2012/08	12/9/2017	ASR5	Sunny	15:31	1-hour TSP	253	ug/m3
TMCLKL	HY/2012/08	12/9/2017	ASR6	Sunny	13:15	1-hour TSP	285	ug/m3
TMCLKL	HY/2012/08	12/9/2017	ASR6	Sunny	14:17	1-hour TSP	299	ug/m3
TMCLKL	HY/2012/08	12/9/2017	ASR6	Sunny	15:19	1-hour TSP	262	ug/m3

Table 2. Wind Direction and Speed data during 1-Hr TSP Monitoring

Date	Time	Average of Wing Speed (m/s)	Average of Wind Direction (degree)
12/9/2017	**13:00**	**1.8**	**302**
12/9/2017	**14:00**	**1.8**	**280**
12/9/2017	**15:00**	**1.8**	**299**
12/9/2017	**16:00**	**2.2**	**85**

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

NL 7286

地盆水車灑水記錄表(2017)

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

Verified by Tommy Law (EO) Lai kam fai Lai kam fai Lai kam fai Lai kam fai Lai kam fai Lai kam fai

Date 18/9/2017

F-6378

地盆水車灑水記錄表(2017)

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

Verified by Tommy Law (EO)

Date 18/9/2017

地盆人手灑水記錄表(2017)

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

Verified by Tommy Law (EO)

Date 18/9/2017

地盆人手灑水記錄表(2017)

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

Verified by Tommy Law (EO)

Date 17/9/2017

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

Investigation Report on Action or Limit Level Non-compliance

Date	18 September 2017
Environmental Aspect	Air Quality
Parameter	1-hour TSP
Monitoring Location	AQMS 1 (Previous River Trade Golf)
Measurement Period	13:52 – 14:52
Action Level (ug/m^3)	335
Limit Level (ug/m^3)	500
Measured Level (ug/m^3)	**473**
Exceedance	**Action Level**
Possible reason for Action or Limit Level Non-compliance	1. According to site information provided by CRBC-Kaden JV, road pavements works at Platform 19 and East Portal, road and drainage Works at Portion H, housekeeping works at TD2 and consecution of column at Portion F were conducted on 18 September 2017. 2. To reduce dust impact arising from the construction, mitigation measures for construction dust control were implemented. They include the followings:- • water trucks were arranged on haul road to keep road surface wet (refer to photo 1, 7, 8, 12 and water spraying record) • for un-accessible area, water spraying by workers was provided (refer to photo 2 and water spraying record) • covered part of the exposed slopes and stockpile by tarpaulin sheet (refer to Photo 3 to 5 and 13) • to set speed control at 8 km/hr for all vehicles using the haul road (refer to photo 6) 3. During site inspection on 19 September 2017, it was observed that the dust mitigation measures were implemented and the site condition is acceptable. Photo showing the implemented dust mitigation measures on 19 September 2017 is shown in photo record. 4. According to the weather station setting up at ASR5 under Contract No. HY/2012/08, south-easterly wind at 3.6m/s was blowing between 14:00 to 15:00. The Portion F was the only works area have construction activities located at the upstream of the monitoring station AQMS1. Most of the site area at Portion F was hard paved and only consecution of column was undertaken on 18 September 2017. It is unlikely to create heavy construction dust impact. Review the monitoring result at ASR5 which was located more closely to the works area Portion F no exceedence was recorded at similar time. The TSP concentration at ASR5 (148-237 ug/m^3) is much lower to the exceeded station AQMS1. (Ref. to Location Plan and Photo 9) 5. Also the contractor was properly implemented the dust mitigation measure under EMIS requirement. Therefore we considered that the cause of exceedance is due to other

	pollutant source rather than the construction site. 6. Based on above investigation, the exceedance is unlikely related to the Contract work and no corrective action was required accordingly.
Action to be taken	ET will continue regular audit and inspection for the implemented dust mitigation measures during the construction period.

Prepared By : T.W. Tam

Designation : Environmental Team Leader

Signature : 

Date : 12 October 2017

Photo Record

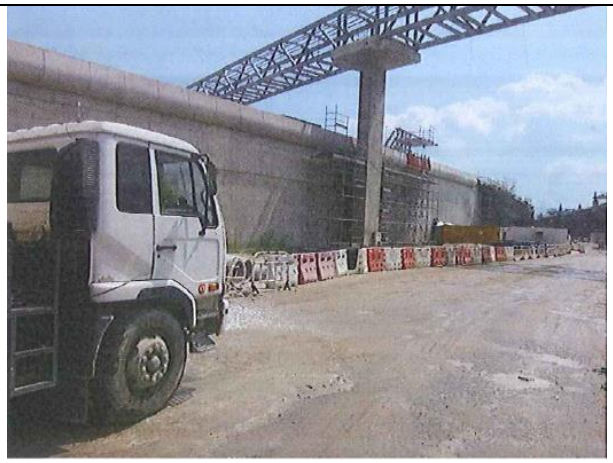


Photo 1 Watering of haul road by water truck to keep road surface wet

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

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

Photo 4 Covered part of stockpile by tarpaulin sheet at Portion F.

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

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

Photo 7 Watering of haul road by water truck to keep road surface wet was observed during the site inspection on 19 September 2017

Photo 8 Watering of haul road by water truck to keep road surface wet was observed during the site inspection on 19 September 2017

Photo 9 Most of works area at Portion F were hard paved.

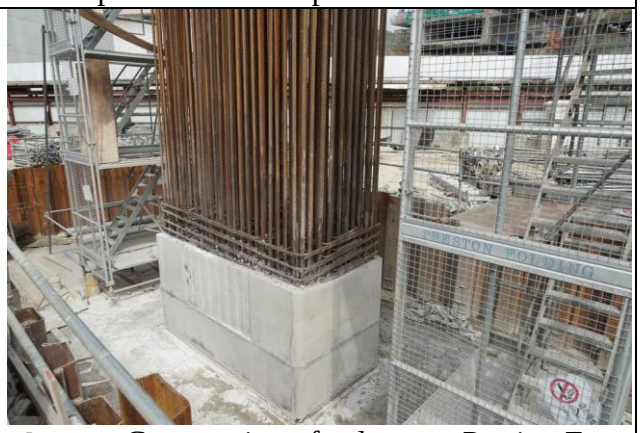


Photo 10 Consecution of column at Portion F on 18 September 2017.

Photo 11 Road and drainage works at Portion H.

Photo 12 Water spraying at Portion H.

 **Photo 13** Stockpile at Portion H was covered with tarpaulin.	 **Photo 14** Housekeeping works at TD2 and most of the works area was hard paved.

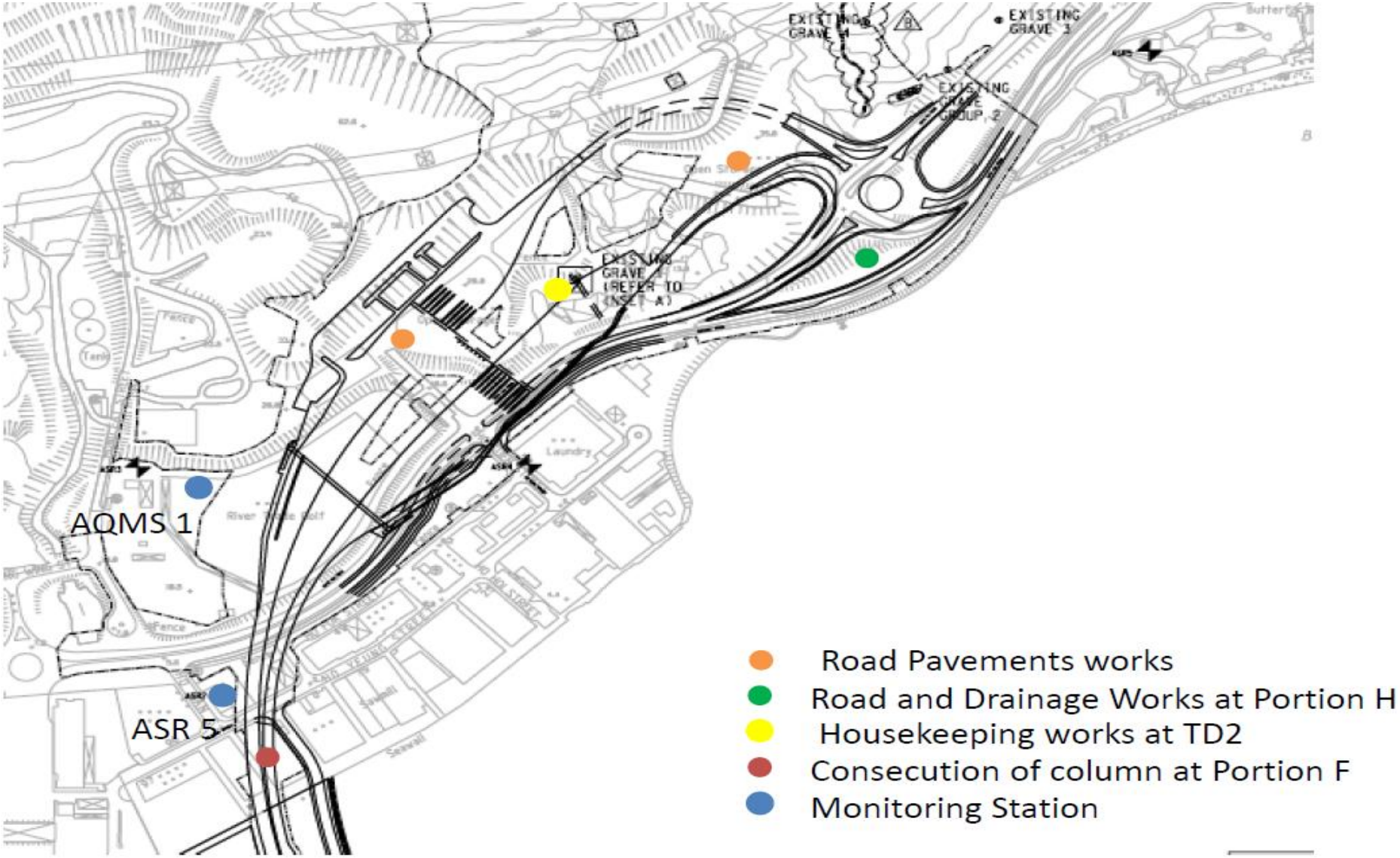


Figure 1. Location Plan

Table 1. 1-Hr TSP Monitoring Result of 18 September 2017

TMCLKL	HY/2012/08	18/9/2017	AQMS1	Sunny	13:52	1-hour TSP	473	ug/m3
TMCLKL	HY/2012/08	18/9/2017	AQMS1	Sunny	14:54	1-hour TSP	312	ug/m3
TMCLKL	HY/2012/08	18/9/2017	AQMS1	Sunny	15:56	1-hour TSP	170	ug/m3
TMCLKL	HY/2012/08	18/9/2017	ASR1	Sunny	13:40	1-hour TSP	204	ug/m3
TMCLKL	HY/2012/08	18/9/2017	ASR1	Sunny	14:42	1-hour TSP	196	ug/m3
TMCLKL	HY/2012/08	18/9/2017	ASR1	Sunny	15:44	1-hour TSP	171	ug/m3
TMCLKL	HY/2012/08	18/9/2017	ASR10	Sunny	13:06	1-hour TSP	104	ug/m3
TMCLKL	HY/2012/08	18/9/2017	ASR10	Sunny	14:08	1-hour TSP	96	ug/m3
TMCLKL	HY/2012/08	18/9/2017	ASR10	Sunny	15:10	1-hour TSP	104	ug/m3
TMCLKL	HY/2012/08	18/9/2017	ASR5	Sunny	13:29	1-hour TSP	237	ug/m3
TMCLKL	HY/2012/08	18/9/2017	ASR5	Sunny	14:31	1-hour TSP	202	ug/m3
TMCLKL	HY/2012/08	18/9/2017	ASR5	Sunny	15:33	1-hour TSP	148	ug/m3
TMCLKL	HY/2012/08	18/9/2017	ASR6	Sunny	13:17	1-hour TSP	194	ug/m3
TMCLKL	HY/2012/08	18/9/2017	ASR6	Sunny	14:19	1-hour TSP	147	ug/m3
TMCLKL	HY/2012/08	18/9/2017	ASR6	Sunny	15:21	1-hour TSP	134	ug/m3

Table 2. Wind Direction and Speed data during 1-Hr TSP Monitoring

Date	Time	Average of Wing Speed (m/s)	Average of Wind Direction (degree)
18/9/2017	**13:00**	**3.1**	**141**
18/9/2017	**14:00**	**3.6**	**128**
18/9/2017	**15:00**	**3.6**	**111**
18/9/2017	**16:00**	**3.6**	**137**

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

地盆人手灑水記錄表(2017)

地點: Slope Area	星期日	星期一	星期二	星期三	星期四	星期五	星期六
	9月17日	9月18日	9月19日	9月20日	9月21日	9月22日	9月23日
8:00 - 8:30		✓	✓	✓	✓	✓	✓
8:30 - 9:00		✓	✓	✓	✓	✓	✓
9:00 - 9:30		✓	✓	✓	✓	✓	✓
9:30 - 10:00		✓	✓	✓	✓	✓	✓
10:00 - 10:30		✓	✓	✓	✓	✓	✓
10:30 - 11:00		✓	✓	✓	✓	✓	✓
11:00 - 11:30		✓	✓	✓	✓	✓	✓
11:30 - 12:00		✓	✓	✓	✓	✓	✓
12:00 - 12:30		✓	✓	✓	✓	✓	✓
12:30 - 13:00		✓	✓	✓	✓	✓	✓
13:00 - 13:30		✓	✓	✓	✓	✓	✓
13:30 - 14:00		✓	✓	✓	✓	✓	✓
14:00 - 14:30		✓	✓	✓	✓	✓	✓
14:30 - 15:00		✓	✓	✓	✓	✓	✓
15:00 - 15:30		✓	✓	✓	✓	✓	✓
15:30 - 16:00		✓	✓	✓	✓	✓	✓
16:00 - 16:30		✓	✓	✓	✓	✓	✓
16:30 - 17:00		✓	✓	✓	✓	✓	✓
17:00 - 17:30		✓	✓	✓	✓	✓	✓
17:30 - 18:00		✓	✓	✓	✓	✓	✓

Verified by Tommy Law (EO)

Date 25/9/2017

地盆人手灑水記錄表(2017)

地點: Portion M	星期日	星期一	星期二	星期三	星期四	星期五	星期六
	9月17日	9月18日	9月19日	9月20日	9月21日	9月22日	9月23日
8:00 - 8:30		✓	✓	✓	✓	✓	✓
8:30 - 9:00		✓	✓	✓	✓	✓	✓
9:00 - 9:30		✓	✓	✓	✓	✓	✓
9:30 - 10:00		✓	✓	✓	✓	✓	✓
10:00 - 10:30		✓	✓	✓	✓	✓	✓
10:30 - 11:00		✓	✓	✓	✓	✓	✓
11:00 - 11:30		✓	✓	✓	✓	✓	✓
11:30 - 12:00		✓	✓	✓	✓	✓	✓
12:00 - 12:30		✓	✓	✓	✓	✓	✓
12:30 - 13:00		✓	✓	✓	✓	✓	✓
13:00 - 13:30		✓	✓	✓	✓	✓	✓
13:30 - 14:00		✓	✓	✓	✓	✓	✓
14:00 - 14:30		✓	✓	✓	✓	✓	✓
14:30 - 15:00		✓	✓	✓	✓	✓	✓
15:00 - 15:30		✓	✓	✓	✓	✓	✓
15:30 - 16:00		✓	✓	✓	✓	✓	✓
16:00 - 16:30		✓	✓	✓	✓	✓	✓
16:30 - 17:00		✓	✓	✓	✓	✓	✓
17:00 - 17:30		✓	✓	✓	✓	✓	✓
17:30 - 18:00		✓	✓	✓	✓	✓	✓

Verified by Tommy Law (EO)

Date 25/9/2017

FG377.

地盆水車灑水記錄表(2017)

	星期日	星期一	星期二	星期三	星期四	星期五	星期六
	9月17日	9月18日	9月19日	9月20日	9月21日	9月22日	9月23日
8:00 - 8:30		✓	✓	✓	✓	✓	✓
8:30 - 9:00		✓	✓	✓	✓	✓	✓
9:00 - 9:30		✓	✓	✓	✓	✓	✓
9:30 - 10:00		✓	✓	✓	✓	✓	✓
10:00 - 10:30		✓	✓	✓	✓	✓	✓
10:30 - 11:00		✓	✓	✓	✓	✓	✓
11:00 - 11:30		✓	✓	✓	✓	✓	✓
11:30 - 12:00		✓	✓	✓	✓	✓	✓
12:00 - 12:30		✓	✓	✓	✓	✓	✓
12:30 - 13:00		✓	✓	✓	✓	✓	✓
13:00 - 13:30		✓	✓	✓	✓	✓	✓
13:30 - 14:00		✓	✓	✓	✓	✓	✓
14:00 - 14:30		✓	✓	✓	✓	✓	✓
14:30 - 15:00		✓	✓	✓	✓	✓	✓
15:00 - 15:30		✓	✓	✓	✓	✓	✓
15:30 - 16:00		✓	✓	✓	✓	✓	✓
16:00 - 16:30		✓	✓	✓	✓	✓	✓
16:30 - 17:00		✓	✓	✓	✓	✓	✓
17:00 - 17:30		✓	✓	✓	✓	✓	✓
17:30 - 18:00		✓	✓	✓	✓	✓	✓

Verified by Tommy Law (EO)

Date 25/9/2017

NL 728

地盆水車灑水記錄表(2017)

	星期日	星期一	星期二	星期三	星期四	星期五	星期六
	9月17日	9月18日	9月19日	9月20日	9月21日	9月22日	9月23日
8:00 - 8:30		✓	✓	✓	✓	✓	✓
8:30 - 9:00		✓	✓	✓	✓	✓	✓
9:00 - 9:30		✓	✓	✓	✓	✓	✓
9:30 - 10:00		✓	✓	✓	✓	✓	✓
10:00 - 10:30		✓	✓	✓	✓	✓	✓
10:30 - 11:00		✓	✓	✓	✓	✓	✓
11:00 - 11:30		✓	✓	✓	✓	✓	✓
11:30 - 12:00		✓	✓	✓	✓	✓	✓
12:00 - 12:30		✓	✓	✓	✓	✓	✓
12:30 - 13:00		✓	✓	✓	✓	✓	✓
13:00 - 13:30		✓	✓	✓	✓	✓	✓
13:30 - 14:00		✓	✓	✓	✓	✓	✓
14:00 - 14:30		✓	✓	✓	✓	✓	✓
14:30 - 15:00		✓	✓	✓	✓	✓	✓
15:00 - 15:30		✓	✓	✓	✓	✓	✓
15:30 - 16:00		✓	✓	✓	✓	✓	✓
16:00 - 16:30		✓	✓	✓	✓	✓	✓
16:30 - 17:00		✓	✓	✓	✓	✓	✓
17:00 - 17:30		✓	✓	✓	✓	✓	✓
17:30 - 18:00		✓	✓	✓	✓	✓	
		Lai Kam Yin	Lai Kam Yin	Lai Kam Yin	Lai Kam Yin	Lai Kam Yin	Lai Kam Yin

Verified by Tommy Law (EO) ✓

Date 25/9/2017

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

Investigation Report on Action or Limit Level Non-compliance

Date	27 September 2017	
Environmental Aspect	Air Quality	
Parameter	1-hour TSP	
Monitoring Location	ASR5 (Pillar Point Fire Station)	
Measurement Period	14:30-15:30	15:32-16:32
Action Level (ug/m^3)	340	340
Limit Level (ug/m^3)	500	500
Measured Level (ug/m^3)	**355**	**456**
Exceedance	**Action Level**	**Action Level**
Possible reason for Action or Limit Level Non-compliance	1. According to site information provided by CRBC-Kaden JV, road pavements works at Platform 19 & Lung Mun Road, drainage Works at Platform 19, housekeeping works at TD2 & Slope 170 and consecution of column at Portion F were conducted on 27 September 2017. 2. To reduce dust impact arising from the construction, mitigation measures for construction dust control were implemented. They include the followings:- • water trucks were arranged on haul road to keep road surface wet (refer to photo 1, 7 and water spraying record) • for un-accessible area, water spraying by workers was provided (refer to photo 2, 13 and water spraying record) • covered part of the exposed slopes and stockpile by tarpaulin sheet (refer to Photo 3 to 5 and 14) • to set speed control at 8 km/hr for all vehicles using the haul road (refer to photo 6) 3. During site inspection on 27 September 2017, it was observed that the dust mitigation measures were implemented and the site condition is acceptable. Photo showing the implemented dust mitigation measures on 27 September 2017 is shown in photo record. 4. According to the weather station setting up at ASR5 under Contract No. HY/2012/08, south-westerly wind at 1.3 to 1.8 m/s was blowing between 14:00 to 17:00. The closely works area Portion F was located at the downstream of the monitoring station ASR5. Another, most of the site area at Portion F was hard paved and only consecution of column was undertaken on 27 September 2017. It is unlikely to create heavy construction dust impact. Review the monitoring result at other monitoring stations which was located more closely to the major works area TD2 and Lung Mun Road no exceedence was recorded at similar time. (Ref. to Location Plan and Photo 9 & 10) 5. Also the contractor was properly implemented the dust mitigation measure under EMIS requirement. Therefore we considered that the cause of exceedance is due to other	

	pollutant source rather than the construction site. 6. Based on above investigation, the exceedance is unlikely related to the Contract work and no corrective action was required accordingly.
Action to be taken	ET will continue regular audit and inspection for the implemented dust mitigation measures during the construction period.

Prepared By : T.W. Tam

Designation : Environmental Team Leader

Signature : 

Date : 19 October 2017

Photo Record

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

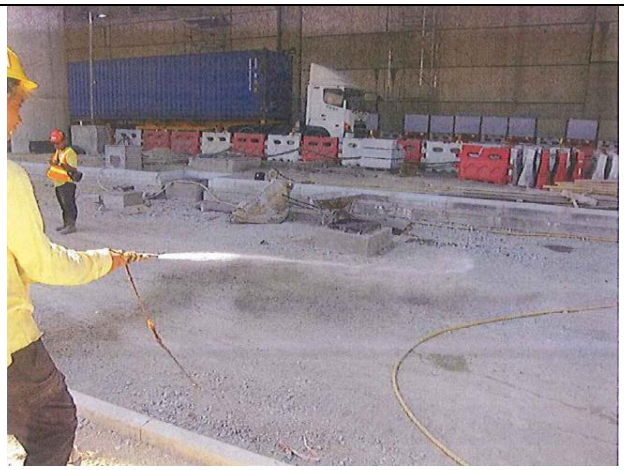


Photo 2 Water spraying by worker for un-accessible area.

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

Photo 4 Covered part of stockpile by tarpaulin sheet at Portion F.

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

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

Photo 7 Watering of haul road by water truck to keep road surface wet was observed during the site inspection on 27 September 2017

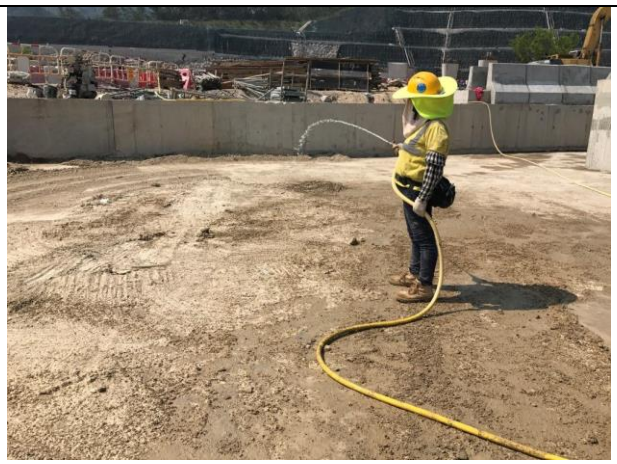
Photo 8 Housekeeping works at TD2 on 27 September 2017

Photo 9 Most of works area at Portion F were hard paved.

Photo 10 Consecution of column at Portion F on 27 September 2017.

Photo 11 Drainage works at Platform 19.

Photo 12 Road pavements works at Platform 19.

 **Photo 13** Water spraying was provided at exposed area near Platform 19.	 **Photo 14** Exposed slope was covered with tarpaulin near TD2.

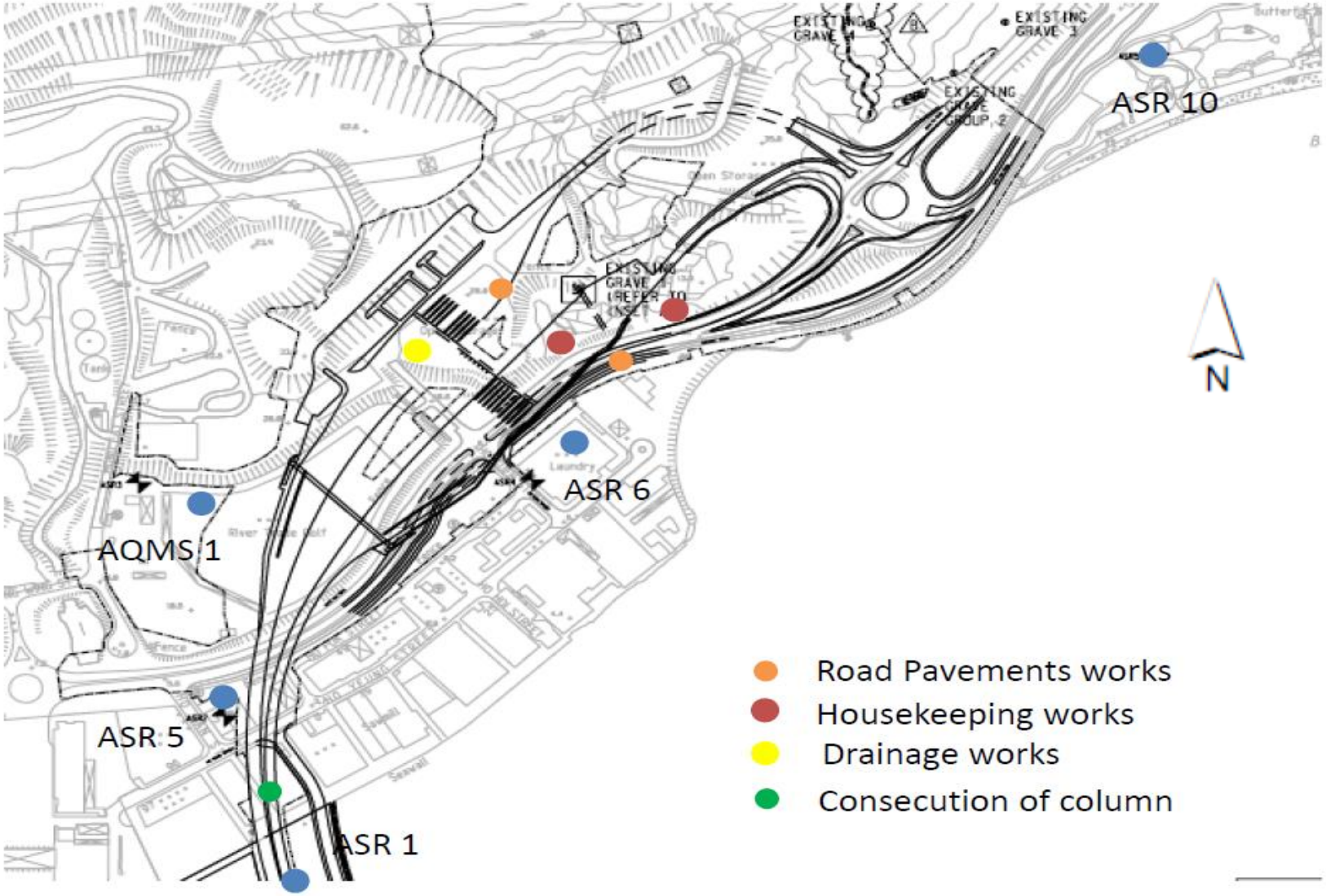


Figure 1. Location Plan

Table 1. 1-Hr TSP Monitoring Result of 27 September 2017

TMCLKL	HY/2012/08	27/9/2017	AQMS1	Sunny	13:50	1-hour TSP	230	ug/m3
TMCLKL	HY/2012/08	27/9/2017	AQMS1	Sunny	14:52	1-hour TSP	233	ug/m3
TMCLKL	HY/2012/08	27/9/2017	AQMS1	Sunny	15:54	1-hour TSP	221	ug/m3
TMCLKL	HY/2012/08	27/9/2017	ASR1	Sunny	13:40	1-hour TSP	275	ug/m3
TMCLKL	HY/2012/08	27/9/2017	ASR1	Sunny	14:42	1-hour TSP	252	ug/m3
TMCLKL	HY/2012/08	27/9/2017	ASR1	Sunny	15:44	1-hour TSP	259	ug/m3
TMCLKL	HY/2012/08	27/9/2017	ASR10	Sunny	13:15	1-hour TSP	159	ug/m3
TMCLKL	HY/2012/08	27/9/2017	ASR10	Sunny	14:17	1-hour TSP	183	ug/m3
TMCLKL	HY/2012/08	27/9/2017	ASR10	Sunny	15:19	1-hour TSP	196	ug/m3
TMCLKL	HY/2012/08	27/9/2017	ASR5	Sunny	13:28	1-hour TSP	321	ug/m3
TMCLKL	HY/2012/08	27/9/2017	ASR5	Sunny	14:30	1-hour TSP	355	ug/m3
TMCLKL	HY/2012/08	27/9/2017	ASR5	Sunny	15:32	1-hour TSP	456	ug/m3
TMCLKL	HY/2012/08	27/9/2017	ASR6	Sunny	13:27	1-hour TSP	297	ug/m3
TMCLKL	HY/2012/08	27/9/2017	ASR6	Sunny	14:29	1-hour TSP	302	ug/m3
TMCLKL	HY/2012/08	27/9/2017	ASR6	Sunny	15:31	1-hour TSP	310	ug/m3

Table 2. Wind Direction and Speed data during 1-Hr TSP Monitoring

Date	Time	Average of Wing Speed (m/s)	Average of Wind Direction (degree)
27/9/2017	**14:00**	**1.3**	**231**
27/9/2017	**15:00**	**1.8**	**201**
27/9/2017	**16:00**	**1.8**	**226**
27/9/2017	**17:00**	**1.3**	**235**

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

FG378

地盆水車灑水記錄表(2017)

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

Verified by Tommy Law (ES) ~~~

Date 29/9/2017

地盆人手灑水記錄表(2017)

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

Verified by Tommy Law (ES) Tommy Law

Date 30/9/2017

NL 7286

地盆水車灑水記錄表(2017)

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

Laikanyi Laikanyi Laikanyi Laikanyi Laikanyi Laikanyi

Verified by Tommy Law (ES) ✓

Date 30/9/2017

地盆人手灑水記錄表(2017)

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

Verified by Tommy Law (ES) 30/9/2017

Date

地盆人手灑水記錄表(2017)

地點: 龍門路中學(洪福邨對出)	星期日	星期一	星期二	星期三	星期四	星期五	星期六
	9月24日	9月25日	9月26日	9月27日	9月28日	9月29日	9月30日
8:00 - 8:30		✓	✓	✓	✓	✓	✓
8:30 - 9:00		✓	✓	✓	✓	✓	✓
9:00 - 9:30		✓	✓	✓	✓	✓	✓
9:30 - 10:00		✓	✓	✓	✓	✓	✓
10:00 - 10:30		✓	✓	✓	✓	✓	✓
10:30 - 11:00		✓	✓	✓	✓	✓	✓
11:00 - 11:30		✓	✓	✓	✓	✓	✓
11:30 - 12:00		✓	✓	✓	✓	✓	✓
12:00 - 12:30		✓	✓	✓	✓	✓	✓
12:30 - 13:00		✓	✓	✓	✓	✓	✓
13:00 - 13:30		✓	✓	✓	✓	✓	✓
13:30 - 14:00		✓	✓	✓	✓	✓	✓
14:00 - 14:30		✓	✓	✓	✓	✓	✓
14:30 - 15:00		✓	✓	✓	✓	✓	✓
15:00 - 15:30		✓	✓	✓	✓	✓	✓
15:30 - 16:00		✓	✓	✓	✓	✓	✓
16:00 - 16:30		✓	✓	✓	✓	✓	✓
16:30 - 17:00		✓	✓	✓	✓	✓	✓
17:00 - 17:30		✓	✓	✓	✓	✓	✓
17:30 - 18:00		✓		✓	✓	✓	✓
		陳俊雄 Rex Chan	陳俊雄 Rex Chan	陳俊雄 Rex Chan	陳俊雄 Rex Chan	陳俊雄 Rex Chan	陳俊雄 Rex Chan

Verified by Tommy Law (ES) _____

Date 30/9/2017.

Appendix K

Checklist for Landscape and Visual Monitoring

Contract No. HY/2013/12

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

Landscape and Visual Checklist

Monitoring Date: 06th October 2017

Item	Environmental Protection Measures	Location/ Timing	Implementation Agent	Status				Remarks
				A	UA	IR	NA	
1	Existing trees on boundary of the Project Area shall be carefully protected during construction. Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works areas. (Tree protection measures will be detailed at Tree Removal Application stage)	All areas / During construction	Design Consultant/ Contractor	√				
2	Trees unavoidably affected by the works shall be transplanted where practical. Trees will be transplanted straight to their final receptor site and not held in a temporary nursery. A detailed Tree Transplanting Specification shall be provided in the Contract Specification. Sufficient time for necessary tree root and crown preparation periods shall be allowed in the project programme	All areas / During construction	Design Consultant/ Contractor	√				Tree Transplanting works conducted on 22-May-17.
3	Hillside and roadside screen planting to proposed roads, associated structures and slope works	All areas / During construction	Design Consultant/ Contractor				√	Construction of roads planting not commenced yet
4	Hydroseeding or sheeting of soil stockpiles with visually unobtrusive material (in earth tone)	All areas / During construction	Design Consultant/ Contractor			√		Sheeting of soil stockpiles shall be in earth tone
5	Screening of construction works by hoardings around works area in visually unobtrusive colours, to screen works	All areas / During construction	Design Consultant/ Contractor				√	For some area, erection of hoarding was not feasible due to the limitation of

								traffic sight line; water barrier with panel was used to screen works.
6	Control night-time lighting and glare by hooding all lights	All areas / During construction	Design Consultant/ Contractor	√				Only temporary traffic management lighting was applied.
7	Ensure no run-off into water body adjacent to the Project Area	All areas / During construction	Design Consultant/ Contractor	√				
8	Avoidance of excessive height and bulk of buildings and structures	All areas / During construction	Design Consultant/ Contractor				√	No high-rise building would be constructed.
9	Recycle/Reuse all felled trees and vegetation, e.g. mulching	All areas / During construction	Design Consultant/ Contractor	√				Recycle of trees carried out licensed recycler was conducted.
10	Compensatory tree planting shall be provided to the satisfaction of relevant Government departments. Required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Felling Application process under ETWBTC 3/2006	All areas / During construction	Design Consultant/ Contractor				√	Compensatory planting will be carry out in later stage of the project.

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

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

Checked and Monitored by: Chung Koon Wah Albert (RLA) No. R-150 (Date) 2/11/2017

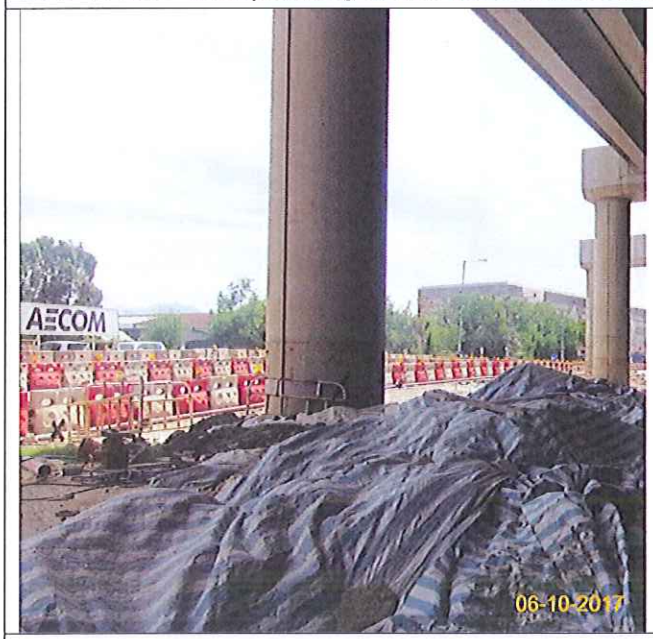
Checked by: T W Tam (ET) 9 Nov 2017 **(Date)**

Checked by: (IEC) 10/11/2017 **(Date)**

(TSANG, FAN CHEONG)

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

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



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

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

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

Item 9. Recycle of felled trees as facilities to reuse.

Contract No. HY/2013/12

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

Landscape and Visual Checklist

Monitoring Date: 13th October 2017

Item	Environmental Protection Measures	Location/ Timing	Implementation Agent	Status				Remarks
				A	UA	IR	NA	
1	Existing trees on boundary of the Project Area shall be carefully protected during construction. Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works areas. (Tree protection measures will be detailed at Tree Removal Application stage)	All areas / During construction	Design Consultant/ Contractor	√				
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7	Ensure no run-off into water body adjacent to the Project Area	All areas / During construction	Design Consultant/ Contractor	√				
8	Avoidance of excessive height and bulk of buildings and structures	All areas / During construction	Design Consultant/ Contractor				√	No high-rise building would be constructed.
9	Recycle/Reuse all felled trees and vegetation, e.g. mulching	All areas / During construction	Design Consultant/ Contractor	√				Recycle of trees carried out licensed recycler was conducted.
10	Compensatory tree planting shall be provided to the satisfaction of relevant Government departments. Required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Felling Application process under ETWBTC 3/2006	All areas / During construction	Design Consultant/ Contractor				√	Compensatory planting will be carry out in later stage of the project.

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

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

Checked and Monitored by: Chung Koon Wah Albert (RLA) No. R-150 (Date) 2/11/2017

Checked by: TW Tam **(ET)** 9 Nov 2017 **(Date)**

Checked by: **(IEC)** 10/11/2017 **(Date)**

(TSANG, FAN CHEONG)

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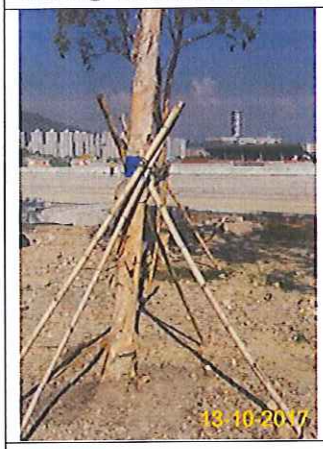

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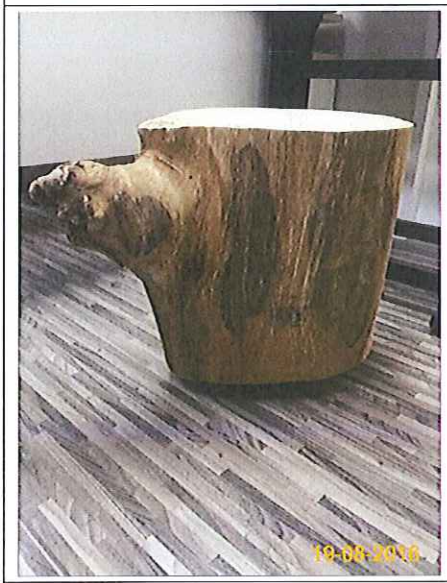
Item 5. Hoarding with panel around works area & Item 6. Temporary traffic management lighting.

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



Item 9. Recycle of felled trees as facilities to reuse.

Contract No. HY/2013/12

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

Landscape and Visual Checklist

Monitoring Date: 20th Oct 2017

Item	Environmental Protection Measures	Location/ Timing	Implementation Agent	Status				Remarks
				A	UA	IR	NA	
1	Existing trees on boundary of the Project Area shall be carefully protected during construction. Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works areas. (Tree protection measures will be detailed at Tree Removal Application stage)	All areas / During construction	Design Consultant/ Contractor	√				
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7	Ensure no run-off into water body adjacent to the Project Area	All areas / During construction	Design Consultant/ Contractor	√				
8	Avoidance of excessive height and bulk of buildings and structures	All areas / During construction	Design Consultant/ Contractor				√	No high-rise building would be constructed.
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Note: All item reference to Technical Memorandum on Environmental Impact Assessment, TM-CLKL EIA Section 10.9 & Project EM&A Manual Section 7.6

Checked and Monitored by: Chung Koon Wah Albert (RLA) No. R-150 (Date) 2/11/2017

Checked by: T W Tam **(ET)** 9 Nov 2017 **(Date)**

Checked by: **(IEC)** 10/11/2017 **(Date)**

(TSANG, FAN CHEUNG)

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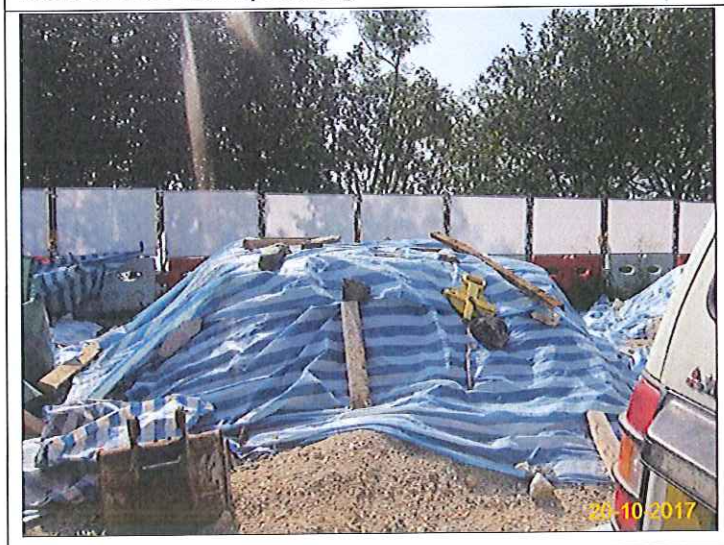

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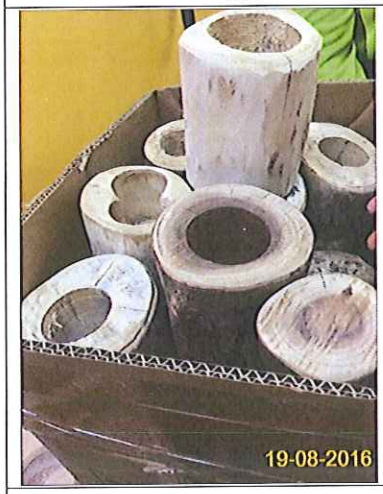

Item 9. Recycle of felled trees as facilities to reuse.

Contract No. HY/2013/12

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

Landscape and Visual Checklist

Monitoring Date: 27th Oct 2017

Item	Environmental Protection Measures	Location/ Timing	Implementation Agent	Status				Remarks
				A	UA	IR	NA	
1	Existing trees on boundary of the Project Area shall be carefully protected during construction. Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works areas. (Tree protection measures will be detailed at Tree Removal Application stage)	All areas / During construction	Design Consultant/ Contractor	√				
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								traffic sight line; water barrier with panel was used to screen works.
6	Control night-time lighting and glare by hooding all lights	All areas / During construction	Design Consultant/ Contractor	✓				Only temporary traffic management lighting was applied.
7	Ensure no run-off into water body adjacent to the Project Area	All areas / During construction	Design Consultant/ Contractor	✓				
8	Avoidance of excessive height and bulk of buildings and structures	All areas / During construction	Design Consultant/ Contractor				✓	No high-rise building would be constructed.
9	Recycle/Reuse all felled trees and vegetation, e.g. mulching	All areas / During construction	Design Consultant/ Contractor				✓	
10	Compensatory tree planting shall be provided to the satisfaction of relevant Government departments. Required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Felling Application process under ETWBTC 3/2006	All areas / During construction	Design Consultant/ Contractor				✓	Compensatory planting will be carry out in later stage of the project.

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

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

Checked and Monitored by: ALBERT CHUNG KOON WAH **(RLA)** No. R-150 **(Date)** 27/10/2017

Checked by: Martin Li **(ET)** 27-10-2017 **(Date)**

Checked by: (TSANG, FAN CHEONG) **(IEC)** 10/11/2017 **(Date)**

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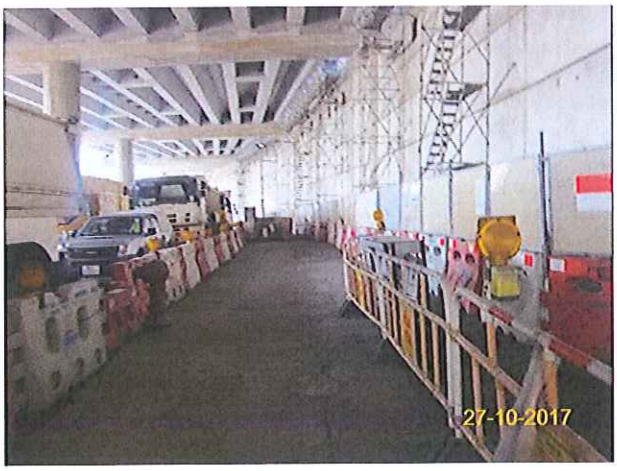
Item 2. Tree Transplanting works was conducted on 22-May-17.



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

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

Appendix L

Monthly Summary Waste Flow Table

Appendix A –Monthly Waste Flow Table

Monthly Summary Waste Flow Table for 2017 (year)

Month		Annual Quantities of Inert C&D Materials Generated Monthly					Annual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals (see note 4)	Paper / cardboard packaging (see note 4)	Plastics & Rubber (see note 2)	Chemical Waste	Others (general refuse)
	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m^3)
Jan	13.334	0.000	4.543	7.512	1.062	0.000	0.000	0.000	0.000	0.000	0.217
Feb	14.323	0.000	1.066	10.617	2.566	0.000	0.000	0.000	0.000	0.000	0.074
Mar	18.707	0.000	2.116	12.844	3.413	0.000	0.000	0.000	0.000	0.000	0.334
Apr	10.839	0.000	2.291	7.287	1.099	0.000	0.000	0.000	0.000	0.000	0.162
May	10.418	0.000	2.089	7.793	0.341	0.000	0.000	0.000	0.000	0.000	0.195
June	7.465	0.000	2.111	4.388	0.789	0.000	0.000	0.000	0.000	0.000	0.177
Sub-total	75.086	0.000	14.216	50.441	9.270	0.000	0.000	0.000	0.000	0.000	1.159
July	6.783	0.000	1.961	3.482	1.120	0.000	0.000	0.000	0.000	0.000	0.220
Aug	4.154	0.000	1.768	1.547	0.660	0.000	0.000	0.000	0.000	0.000	0.179
Sept	2.373	0.000	0.367	0.558	1.274	0.000	0.000	0.000	0.000	0.000	0.174
Oct	2.701	0.000	0.754	0.491	1.215	0.000	0.000	0.000	0.000	0.000	0.241
Nov											
Dec											
Total	91.096	0.000	19.066	56.519	13.539	0.000	0.000	0.000	0.000	0.000	1.973

Notes:

1 The waste flow table shall also include C&D materials that are specified in the contract to be imported for use at the Site.

2 Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging materials.

3 Broken concrete for recycling into aggregates.

Appendix M

Environmental Mitigation and Enhancement Measures Implementation Schedule (EMIS)

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

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

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

Cultural Heritage

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

Ecology

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

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

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

		posted around the site warning the anger and potential hazards.			Guidance Note				
14.12.1	-	*Safety Measures – Confined Spaces* Precautionary measures should include ensuring that staff members are aware of the potential hazards of working in confined spaces, and that appropriate monitoring procedures are in place to prevent hazards in confined spaces.	Confined space / Construction Stage	Contractor	EPD/TR8/97 - Landfill Gas Hazard Assessment Guidance Note		Y		✓
14.12.1	-	*Monitoring* Periodically during ground-works within the Consultation Zone, the works area should be monitored for methane, carbon dioxide and oxygen using appropriately calibrated portable gas detection equipment. Depending on the results of the measurements, actions required will vary. As a minimum these should encompass those actions specified in Table 14.8 of the EIA Report or Table 14.1 of the EM&A Manual.	Construction Stage	Contractor	EPD/TR8/97 - Landfill Gas Hazard Assessment Guidance Note		Y		✓
Landscape and Visual									
EIA reference	**EM&A Manual reference**	**Environmental Protection Measures**	**Location/ Timing**	**Implementation Agent**	**Relevant Standard or Requirement**	**Implementation Stages**			**Status**
						D	**C**	**O**	
10.9	7.6	Existing trees on boundary of the Project Area shall be carefully protected during construction. Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works areas. (Tree protection measures will be detailed at Tree Removal Application stage) (CM1)	All areas/detailed design/ during construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓
10.9	7.6	Trees unavoidably affected by the works shall be transplanted where practical. Trees will be	All areas/detailed design/ during	Design Consultant/	TMEIA	Y	Y		NA

		transplanted straight to their final receptor site and not held in a temporary nursery. A detailed Tree Transplanting Specification shall be provided in the Contract Specification. Sufficient time for necessary tree root and crown preparation periods shall be allowed in the project programme (CM2)	construction	Contractor					
10.9	7.6	Hillside and roadside screen planting to proposed roads, associated structures and slope works (CM3)	All areas/detailed design/ during Construction/ post construction	Design Consultant/ Contractor	TMEIA	Y	Y		NA
10.9	7.6	Hydroseeding or sheeting of soil stockpiles with visually unobtrusive material (in earth tone) (CM4)	All areas/detailed design/ during Construction/ post construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓
10.9	7.6	Screening of construction works by hoardings around works area in visually unobtrusive colours, to screen works (CM5)	All areas/detailed design/ during Construction	Design Consultant/ Contractor	TMEIA	Y	Y		< >
10.9	7.6	Control night-time lighting and glare by hooding all lights (CM6)	All areas/detailed design/ during Construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓
10.9	7.6	Ensure no run-off into water body adjacent to the Project Area (CM7)	All areas/detailed design/ during Construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓
10.9	7.6	Avoidance of excessive height and bulk of buildings and structures (CM8)	All areas/detailed design/ during Construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓
10.9	7.6	Recycle/Reuse all felled trees and vegetation, e.g. mulching (CM9)	All areas/detailed design/ during Construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓
10.9	7.6	Compensatory tree planting shall be provided to the satisfaction of relevant Government departments. Required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Felling Application process under ETWBTC 3/2006 (CM10)	All areas/detailed design/ during Construction	Design Consultant/ Contractor	TMEIA	Y	Y		NA
10.9	7.6	Re-vegetation of affected woodland/shrubland with	All areas/detailed design/	Design	TMEIA	Y	Y	Y	N/A

		native species (OM1)	during Construction/ post construction	Consultant/ Contractor					
10.9	7.6	Tall buffer screen tree / shrub / climber planting where appropriate should be incorporated to soften hard engineering structures and facilities (OM2)	All areas/detailed design/ during Construction/ post construction	Design Consultant/ Contractor	TMEIA	Y	Y	Y	N/A
10.9	7.6	Streetscape elements (e.g. paving, signage, street furniture, lighting etc.) shall be sensitively designed in a manner that responds to the local context, and minimises potential negative landscape and visual impacts. Lighting units should be directional and minimize unnecessary light spill (OM3)	All areas/detailed design/ during Construction/ post construction	Design Consultant/ Contractor	TMEIA	Y	Y	Y	N/A
10.9	7.6	Structure, ornamental tree / shrub / climber planting should be provided along roadside amenity strips, central dividers and newly formed slopes to enhance the townscape quality and further greenery enhancement (OM4)	All areas/detailed design/ during Construction/ post construction	Design Consultant/ Contractor	TMEIA	Y	Y	Y	N/A
10.9	7.6	Aesthetically pleasing design (visually unobtrusive and non-reflective) as regard to the form, material and finishes shall be incorporated to all buildings, engineering structures and associated infrastructure facilities (OM5)	All areas/detailed design/ during Construction/ post construction	Design Consultant/ Contractor	TMEIA	Y	Y	Y	N/A
10.9	7.6	Avoidance of excessive height and bulk of buildings and structures (OM6)	All areas/detailed design/ during Construction/ post construction	Design Consultant/ Contractor	TMEIA	Y	Y	Y	✓
Waste									
EIA reference	**EM&A Manual reference**	**Environmental Protection Measures**	**Location/ Timing**	**Implementation Agent**	**Relevant Standard or Requirement**	**Implementation Stages**			**Status**
						D	**C**	**O**	
12.6		The Contractor shall identify a coordinator for the management of waste.	Contract mobilisation	Contractor	TMEIA		Y		✓
12.6		The Contractor shall prepare and implement a Waste Management Plan which specifies procedures such	Contract mobilisation	Contractor	TMEIA, Works Branch		Y		✓

		as a ticketing system, to facilitate tracking of loads and to ensure that illegal disposal of wastes does not occur, and protocols for the maintenance of records of the quantities of wastes generated, recycled and disposed. A recording system for the amount of waste generated, recycled and disposed (locations) should be established.			Technical Circular No. 5/99 for the Trip-ticket System for Disposal of Construction and Demolition Material				
12.6		The Contractor shall apply for and obtain the appropriate licenses for the disposal of public fill, chemical waste and effluent discharges.	Contract mobilisation	Contractor	TMEIA, Land (Miscellaneous Provisions) Ordinance (Cap 28); Waste Disposal Ordinance (Cap 354); Dumping at Sea Ordinance (Cap 466); Water Pollution Control Ordinance.		Y		✓
12.6	8.1	Training shall be provided to workers about the concepts of site cleanliness and appropriate waste management procedures including waste reduction, reuse and recycling	Contract mobilisation	Contractor	TMEIA		Y		✓
12.6	8.1	The extent of cutting operation should be optimised where possible. Earth retaining structures and bored pile walls should be proposed to minimize the extent of cutting.	All areas / throughout construction period	Contractor	TMEIA		Y		✓

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

		disposal. Where practicable, the concrete and masonry should be crushed and used as fill materials. Steel reinforcement bar should be collected for use by scrap steel mills. Different areas of the sites should be considered for segregation and storage activities.							
12.6	8.1	All falsework will be steel instead of wood.	All areas / throughout construction period	Contractor	TMEIA		Y		<>
12.6	8.1	Chemical waste producers should register with the EPD. Chemical waste should be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes as follows: • suitable for the substance to be held, resistant to corrosion, maintained in good conditions and securely closed; • Having a capacity of <450L unless the specifications have been approved by the EPD; and • Displaying a label in English and Chinese according to the instructions prescribed in Schedule 2 of the Regulations. • Clearly labelled and used solely for the storage of chemical wastes; • Enclosed with at least 3 sides; • Impermeable floor and bund with capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in the area, whichever is greatest; • Adequate ventilation; • Sufficiently covered to prevent rainfall entering (water collected within the bund must be tested and disposed of as chemical waste, if necessary); and • Incompatible materials are adequately separated.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Waste oils, chemicals or solvents shall not be	All areas / throughout	Contractor	TMEIA		Y		✓

		disposed of to drain,	construction period						
12.6	8.1	Adequate numbers of portable toilets should be provided for on-site workers. Portable toilets should be maintained in reasonable states, which will not deter the workers from utilising them.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Night soil should be regularly collected by licensed collectors.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	General refuse arising on-site should be stored in enclosed bins or compaction units separately from C&D and chemical wastes. Sufficient dustbins shall be provided for storage of waste as required under the Public Cleansing and Prevention of Nuisances By-laws. In addition, general refuse shall be cleared daily and shall be disposed of to the nearest licensed landfill or refuse transfer station. Burning of refuse on construction sites is prohibited.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	All waste containers shall be in a secure area on hardstanding;	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Training shall be provided to workers about the concepts of site cleanliness and appropriate waste management procedure, including waste reduction, reuse and recycling.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Office wastes can be reduced by recycling of paper if such volume is sufficiently large to warrant collection. Participation in a local collection scheme by the Contractor should be advocated. Waste separation facilities for paper, aluminum cans, plastic bottles, etc should be provided on-site.	Site Offices/ throughout construction period	Contractor	TMEIA		Y		✓
12.6	Section 8	EM&A of waste handling, storage, transportation, disposal procedures and documentation through the site audit programme shall be undertaken.	All areas / throughout construction period	Contractor	EM&A Manual		Y		✓
Water Quality									
EIA reference	**EM&A Manual reference**	**Environmental Protection Measures**	**Location/ Timing**	**Implementation Agent**	**Relevant Standard or Requirement**	**Implementation Stages**			**Status**
						D	**C**	**O**	

Land Works									
6.10	-	Wastewater from temporary site facilities should be controlled to prevent direct discharge to surface or marine waters.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		<>
6.10	-	Sewage effluent and discharges from onsite kitchen facilities shall be directed to Government sewer in accordance with the Requirements of the WPCO or collected for disposal offsite. The use of soakaways shall be avoided.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Storm drainage shall be directed to storm drains via adequately designed sand/silt removal facilities such as sand traps, silt traps and sediment basins. Channels, earth bunds or sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Silt removal facilities, channels and manholes shall be maintained and any deposited silt and grit shall be removed regularly, including specifically at the onset of and after each rainstorm.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Temporary access roads should be surfaced with crushed stone or gravel.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		<>
6.10	-	Rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		<>
6.10	-	Measures should be taken to prevent the washout of construction materials, soil, silt or debris into any drainage system.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Open stockpiles of construction materials (e.g. aggregates and sand) on site should be covered with tarpaulin or similar fabric during rainstorms.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		<>
6.10	5.8	Manholes (including any newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction	All areas/ throughout construction period	Contractor	TM-EIAO		Y		<>

		materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers.							
6.10	-	Discharges of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	All vehicles and plant should be cleaned before they leave the construction site to ensure that no earth, mud or debris is deposited by them on roads. A wheel washing bay should be provided at every site exit.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Section of construction road between the wheel washing bay and the public road should be surfaced with crushed stone or coarse gravel.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Wastewater generated from concreting, plastering, internal decoration, cleaning work and other similar activities, shall be screened to remove large objects.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Vehicle and plant servicing areas, vehicle wash bays and lubrication facilities shall be located under roofed areas. The drainage in these covered areas shall be connected to foul sewers via a petrol interceptor in accordance with the requirements of the WPCO or collected for off site disposal.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	The Contractor shall prepare an oil / chemical cleanup plan and ensure that leakages or spillages are contained and cleaned up immediately.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.10	-	Waste oil should be collected and stored for recycling or disposal, in accordance with the Waste Disposal Ordinance.	All areas/ throughout construction period	Contractor	TM-EIAO Waste Disposal Ordinance		Y		✓
6.10	-	All fuel tanks and chemical storage areas should be provided with locks and be sited on sealed areas. The storage areas should be surrounded by bunds with a capacity equal to 110% of the storage capacity of the largest tank.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		<>

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

Remarks:

✓	Compliance of Mitigation Measures
< >	Compliance of Mitigation Measures but need improvement.
×	Non-compliance of Mitigation Measures
▲	Non-compliance of Mitigation Measures but rectified by Contractor
△	Deficiency of Mitigation Measures but rectified by Contractor
N/A	Not Applicable in Reporting Period
#	Amended against condition 3.13 of EP-354/2009/C

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

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

Appendix N

Cumulative Statistics on Exceedance and Complaint

Table N-1 Statistical Summary of Environmental Exceedance

Reporting Period	Environmental Aspect / Parameter	Environmental Performance	Event Exceedance	
			Reporting Period	Cumulative since project commencement
October 2017	Air Quality – 1-hour TSP	Action Level	**4**	**18**
		Limit Level	**1**	**1**
	Air Quality – 24-hour TSP	Action Level	**1**	**1**
		Limit Level	0	0

Table N-2 Statistical Summary of Environmental Complaints

Reporting Period	Environmental Complaint Statistics					
	Frequency	Cumulative	Complaint Nature			
			Air	Noise	Water	Others
October 2017	**1**	**9**	**2**	NA	**6**	**1**
Cumulative since project commencement	**9**	**9**	**2**	NA	**6**	**1**

Table N-3 Statistical Summary of Environmental Summons

Reporting Period	Environmental Summons Statistics				
	Frequency	Cumulative	Complaint Nature		
			Air	Noise	Water
October 2017	0	0	NA	NA	NA
Cumulative since project commencement	0	0	NA	NA	NA

Table N-4 Statistical Summary of Environmental Prosecution

Reporting Period	Environmental Prosecution Statistics				
	Frequency	Cumulative	Complaint Nature		
			Air	Noise	Water
October 2017	0	0	NA	NA	NA
Cumulative since project commencement	0	0	NA	NA	NA

Appendix O

Investigation Report for the Complaint

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

Investigation Report on Action or Limit Level Non-compliance

Complaint Log No.	TCS00670/13/300/**F0336**
Received Date by ET	29 September 2017
Complaint Details	A complaint was received from EPD regarding the construction dust was emitted from road works at Lung Mun Road across from warehouse near Tuen Mun River Trade Terminal the details are shown below:- 龍門路未到內河碼頭屯門貨倉對面的路面維修工程, 工人鑽地時沒有灑水,造成很大塵埃, 她曾嘗試致電工程承辦商電話: 69060366,但沒有人接聽, 她要求環保署今天內聯絡承辦商儘快灑水, 改善塵埃問題,煩請跟進及回覆
Complaint Location	Lung Mun Road across from warehouse near Tuen Mun River Trade Terminal`
Date of Complaint	29 September 2017
Environmental Aspect	Construction Dust
Complainant	Unknown
Complaint Route	via EPD
Investigation Result	1 A complaint was received via EPD on 29 September 2017; regarding construction dust was emitted from road works at Lung Mun Road across from warehouse near Tuen Mun River Trade Terminal. (Please refer to Location Map) 2 According to site record, no construction works were conducted across from warehouse, but trim formation and road pavement works were conducted at Central Divider across from Butterfly Beach Laundry on 29 September 2017. Water sprayings had been provided by contractor during trim formation and on exposed soil in accordance with the Environmental Permit requirements. (Photo 1to 3) 3 At 3 October 2017 morning, EPD carried out site inspection at Central Divider along Lung Mun Road. No construction works were carried out across from warehouse, but trim formation and road pavement works were conducted near Butterfly Beach Laundry. EPD commented that additional water jet should be provided for the trim formation works and nearby exposed soil and stockpile should be cover with tarpaulin to further reduce dust generation. 4 In order to enhance the dust suppression measures and prevent the reoccurrence of similar incident, additional one water jet was installed and covered all stockpile with tarpaulin on the captioned area was observed during the weekly site inspection which carried out by the RE, Contractor and ET on 3 October 2017 afternoon (All the improvement mitigation works was completed before 17:00 of 3 October 2017). (Photo 4 to 10) 5 At the weekly site inspection was carried out by the RE, Contractor, IEC and ET on 10 October 2017, there was no sign of dust emission at those works area and mitigation measures such as water spraying and cover stockpile with tarpaulin was observed. But the contractor was reminded that water spraying should be covered all exposed works area within the central

	divider to further reduces the chance of creating dust impact during the coming dry season. 6 In our investigation, the complaint was project related. Although no sign of dust emission was observed during the first and second inspection and dust control measures was provided during the trim formation works, also the contractor had promptly improved the mitigation measures at those works area. The Contractor is reminded to fully implement the dust mitigation measures as recommended in the air pollution control regulation. ET will continue to carry out regular audit and inspection for the implemented dust mitigation measures during the construction period.
Recommendation	The ET recommended that water spraying should be covered all exposed works area within the central divider to further reduces the chance of creating dust impact. Also the contractor should properly implement the dust mitigation measure under EMIS requirement.

Prepared By : T.W. Tam

Designation : Environmental Team Leader

Signature : 

Date : 30 October 2017

Location Plan:

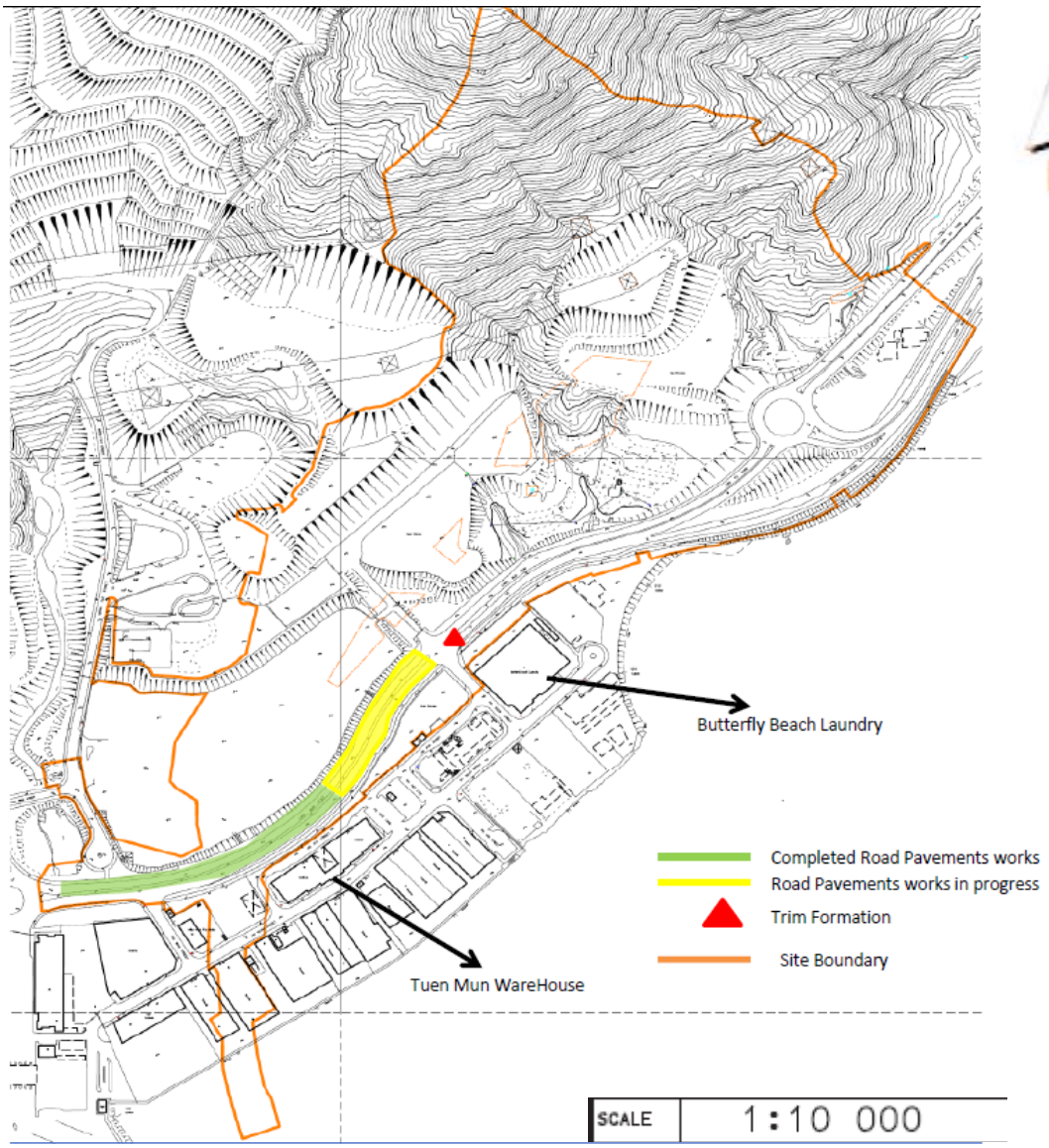


Photo Record

Photo 1
Water spraying for trim formation works on 29 September 2017.

Photo 2
Water spraying for trim formation works on 29 September 2017.


地盆人手灑水記錄表(2017)

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

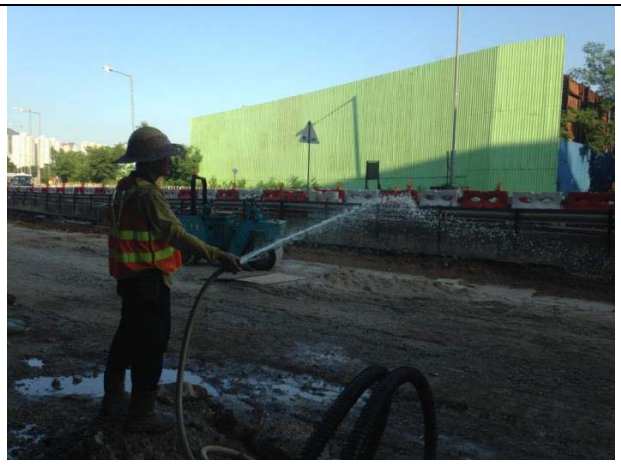
Verified by Tommy Law (ES)
Date 30/9/2017

Photo 3
Water spraying record at Lung Mun Road Central Divider.

Photo 4
Installation of additional water jet at Lung Mun Road Central Divider.

Photo 5
Provide additional water jet for trim formation works.

Photo 6
Provide additional water jet for trim formation works.

 **Photo 7** Water spraying at nearby exposed area to reduce dust suppression.	 **Photo 8** Water spraying at nearby exposed area to reduce dust suppression.
 **Photo 9** Stockpile was covered with tarpaulin to reduce dust suppression.	 **Photo 10** Additional training for dust control was provided to the workers.
 **Photo 11** Water spraying was observed during the weekly inspection on 10 October 2017.	 **Photo 11** Stockpile covered with tarpaulin was observed during the weekly inspection on 10 October 2017.

Appendix P

Inspection Checklist for Vulnerable to Contaminated Water Discharge

中國路橋 CRBC Kaden 基利	Contract No. HY/2013/12 Tuen Mun - Chek Lap Kok Link Northern Connection Toll Plaza and Associated Works

Inspection Checklist for vulnerable to contaminated water discharge

Inspection Date: 2017-10-03 Location: Stream B, Outfall 1

Name of Inspector: Tommy Law Position of Inspector: EO

Please put a tick √ on the appropriate box.

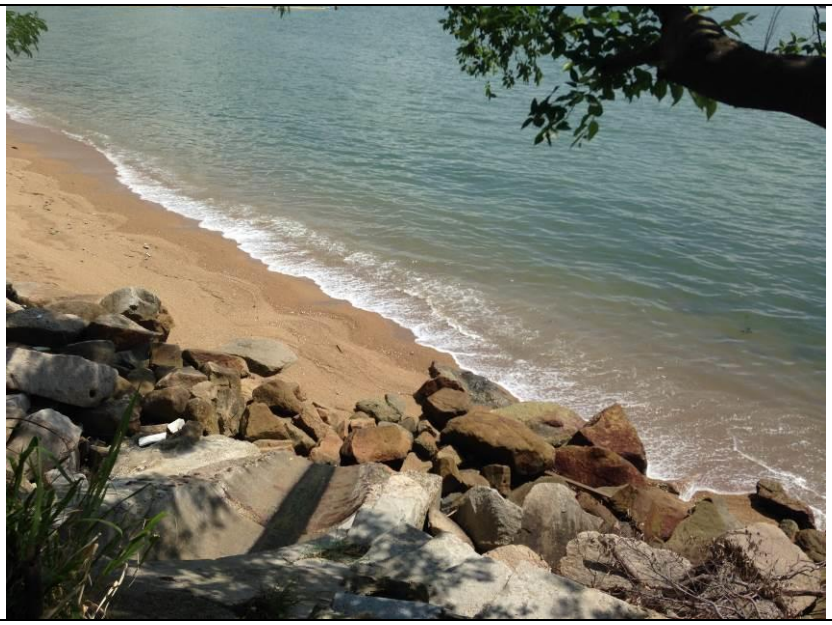
Item Description		Y	P	N	Remarks
1	Exposed slope protected?	√			
2	Adequacy of wastewater treatment facilities provided?	√			
3	Sandbags provided at each step and top of side walls?	√			
4	Is silt screen maintained in good condition?	√			
5	Remove debris, grit and silt inside the drainage system?	√		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

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

Daily Drainage Inspection Record

Inspection Date: 2017-10-03

Stream B Outfall: No water is discharging.



Outfall 1: Clean water is discharging.

中國路橋 CRBC Kaden 基利	Contract No. HY/2013/12 Tuen Mun - Chek Lap Kok Link Northern Connection Toll Plaza and Associated Works

Inspection Checklist for vulnerable to contaminated water discharge

Inspection Date: 2017-10-04 Location: Stream B, Outfall 1

Name of Inspector: Tommy Law Position of Inspector: EO

Please put a tick √ on the appropriate box.

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

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

Daily Drainage Inspection Record

Inspection Date: 2017-10-04

Stream B Outfall: No water is discharging.

Outfall 1: No water is discharging.

中國路橋 CRBC Kaden 基利	Contract No. HY/2013/12 Tuen Mun - Chek Lap Kok Link Northern Connection Toll Plaza and Associated Works

Inspection Checklist for vulnerable to contaminated water discharge

Inspection Date: 2017-10-06 Location: Stream B, Outfall 1

Name of Inspector: Tommy Law Position of Inspector: EO

Please put a tick √ on the appropriate box.

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

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

Daily Drainage Inspection Record

Inspection Date: 2017-10-06

Stream B Outfall: No water is discharging.

Outfall 1: No water is discharging.

中國路橋 CRBC Kaden 基利	Contract No. HY/2013/12 Tuen Mun - Chek Lap Kok Link Northern Connection Toll Plaza and Associated Works

Inspection Checklist for vulnerable to contaminated water discharge

Inspection Date: 2017-10-07 Location: Stream B, Outfall 1

Name of Inspector: Tommy Law Position of Inspector: EO

Please put a tick √ on the appropriate box.

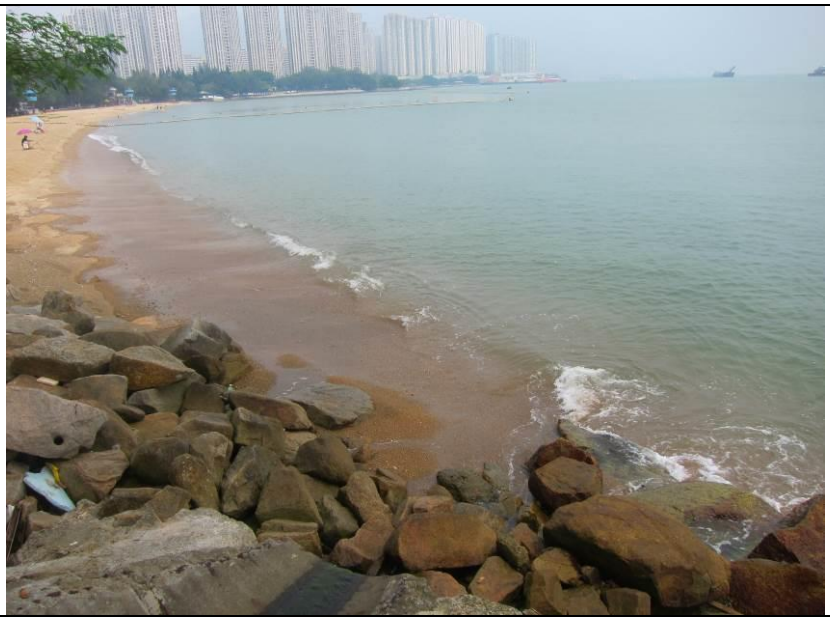
	Item Description	Y	P	N	Remarks
1	Exposed slope protected?	√			
2	Adequacy of wastewater treatment facilities provided?	√			
3	Sandbags provided at each step and top of side walls?	√			
4	Is silt screen maintained in good condition?	√			
5	Remove debris, grit and silt inside the drainage system?	√			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

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

Daily Drainage Inspection Record

Inspection Date: 2017-10-07

Stream B Outfall: No water is discharging.



Outfall 1: No water is discharging.

中國路橋 CRBC Kaden 基利	Contract No. HY/2013/12 Tuen Mun - Chek Lap Kok Link Northern Connection Toll Plaza and Associated Works

Inspection Checklist for vulnerable to contaminated water discharge

Inspection Date: 2017-10-09 Location: Stream B, Outfall 1

Name of Inspector: Tommy Law Position of Inspector: EO

Please put a tick √ on the appropriate box.

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

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

Daily Drainage Inspection Record

Inspection Date: 2017-10-09

Stream B Outfall: No water is discharging.

Outfall 1: Clean water is discharging.

中國路橋 CRBC Kaden 基利	Contract No. HY/2013/12 Tuen Mun - Chek Lap Kok Link Northern Connection Toll Plaza and Associated Works

Inspection Checklist for vulnerable to contaminated water discharge

Inspection Date: 2017-10-10 Location: Stream B, Outfall 1

Name of Inspector: Tommy Law Position of Inspector: EO

Please put a tick √ on the appropriate box.

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

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

Daily Drainage Inspection Record

Inspection Date: 2017-10-10

Stream B Outfall: No water is discharging.

Outfall 1: No water is discharging.

中國路橋 CRBC Kaden 基利	Contract No. HY/2013/12 Tuen Mun - Chek Lap Kok Link Northern Connection Toll Plaza and Associated Works

Inspection Checklist for vulnerable to contaminated water discharge

Inspection Date: 2017-10-11 Location: Stream B, Outfall 1

Name of Inspector: Tommy Law Position of Inspector: EO

Please put a tick √ on the appropriate box.

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

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

Daily Drainage Inspection Record

Inspection Date: 2017-10-11

Stream B Outfall: No water is discharging.

Outfall 1: Clean water is discharging.

中國路橋 CRBC Kaden 基利	Contract No. HY/2013/12 Tuen Mun - Chek Lap Kok Link Northern Connection Toll Plaza and Associated Works

Inspection Checklist for vulnerable to contaminated water discharge

Inspection Date: 2017-10-12 Location: Stream B, Outfall 1

Name of Inspector: Tommy Law Position of Inspector: EO

Please put a tick √ on the appropriate box.

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

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

Daily Drainage Inspection Record

Inspection Date: 2017-10-12

Stream B Outfall: No water is discharging.

Outfall 1: No water is discharging.

中國路橋 CRBC Kaden 基利	Contract No. HY/2013/12 Tuen Mun - Chek Lap Kok Link Northern Connection Toll Plaza and Associated Works

Inspection Checklist for vulnerable to contaminated water discharge

Inspection Date: 2017-10-13 Location: Stream B, Outfall 1

Name of Inspector: Tommy Law Position of Inspector: EO

Please put a tick √ on the appropriate box.

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

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

Daily Drainage Inspection Record

Inspection Date: 2017-10-13

Stream B Outfall: No water is discharging.

Outfall 1: Clean water is discharging.

中國路橋 CRBC Kaden 基利	Contract No. HY/2013/12 Tuen Mun - Chek Lap Kok Link Northern Connection Toll Plaza and Associated Works

Inspection Checklist for vulnerable to contaminated water discharge

Inspection Date: 2017-10-14 Location: Stream B, Outfall 1

Name of Inspector: Tommy Law Position of Inspector: EO

Please put a tick √ on the appropriate box.

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

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

Daily Drainage Inspection Record

Inspection Date: 2017-10-14

Stream B Outfall: Clean water is discharging.

Outfall 1: Clean water is discharging.

中國路橋 CRBC Kaden 基利	Contract No. HY/2013/12 Tuen Mun - Chek Lap Kok Link Northern Connection Toll Plaza and Associated Works

Inspection Checklist for vulnerable to contaminated water discharge

Inspection Date: 2017-10-16 Location: Stream B, Outfall 1

Name of Inspector: Tommy Law Position of Inspector: EO

Please put a tick √ on the appropriate box.

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

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

Daily Drainage Inspection Record

Inspection Date: 2017-10-16

Stream B Outfall: No water is discharging.

Outfall 1: No water is discharging.

中國路橋 CRBC Kaden 基利	Contract No. HY/2013/12 Tuen Mun - Chek Lap Kok Link Northern Connection Toll Plaza and Associated Works

Inspection Checklist for vulnerable to contaminated water discharge

Inspection Date: 2017-10-17 Location: Stream B, Outfall 1

Name of Inspector: Tommy Law Position of Inspector: EO

Please put a tick √ on the appropriate box.

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

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

Daily Drainage Inspection Record

Inspection Date: 2017-10-17

Stream B Outfall: Clean water is discharging.

Outfall 1: Clean water is discharging.

中國路橋 CRBC Kaden 基利	Contract No. HY/2013/12 Tuen Mun - Chek Lap Kok Link Northern Connection Toll Plaza and Associated Works

Inspection Checklist for vulnerable to contaminated water discharge

Inspection Date: 2017-10-18 Location: Stream B, Outfall 1

Name of Inspector: Tommy Law Position of Inspector: EO

Please put a tick √ on the appropriate box.

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

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

Daily Drainage Inspection Record

Inspection Date: 2017-10-18

Stream B Outfall: No water is discharging.

Outfall 1: Clean water is discharging.

中國路橋 CRBC Kaden 基利	Contract No. HY/2013/12 Tuen Mun - Chek Lap Kok Link Northern Connection Toll Plaza and Associated Works

Inspection Checklist for vulnerable to contaminated water discharge

Inspection Date: 2017-10-19 Location: Stream B, Outfall 1

Name of Inspector: Tommy Law Position of Inspector: EO

Please put a tick √ on the appropriate box.

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

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

Daily Drainage Inspection Record

Inspection Date: 2017-10-19

Stream B Outfall: No water is discharging.

Outfall 1: Clean water is discharging.

中國路橋 CRBC Kaden 基利	Contract No. HY/2013/12 Tuen Mun - Chek Lap Kok Link Northern Connection Toll Plaza and Associated Works

Inspection Checklist for vulnerable to contaminated water discharge

Inspection Date: 2017-10-20 Location: Stream B, Outfall 1

Name of Inspector: Tommy Law Position of Inspector: EO

Please put a tick √ on the appropriate box.

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

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

Daily Drainage Inspection Record

Inspection Date: 2017-10-20

Stream B Outfall: No water is discharging.

Outfall 1: Clean water is discharging.

中國路橋 CRBC Kaden 基利	Contract No. HY/2013/12 Tuen Mun - Chek Lap Kok Link Northern Connection Toll Plaza and Associated Works

Inspection Checklist for vulnerable to contaminated water discharge

Inspection Date: 2017-10-21 Location: Stream B, Outfall 1

Name of Inspector: Tommy Law Position of Inspector: EO

Please put a tick √ on the appropriate box.

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

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

Daily Drainage Inspection Record

Inspection Date: 2017-10-21

Stream B Outfall: No water is discharging.

Outfall 1: Clean water is discharging.

中國路橋 CRBC Kaden 基利	Contract No. HY/2013/12 Tuen Mun - Chek Lap Kok Link Northern Connection Toll Plaza and Associated Works

Inspection Checklist for vulnerable to contaminated water discharge

Inspection Date: 2017-10-23 Location: Stream B, Outfall 1

Name of Inspector: Tommy Law Position of Inspector: EO

Please put a tick √ on the appropriate box.

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

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

Daily Drainage Inspection Record

Inspection Date: 2017-10-23

Stream B Outfall: No water is discharging.

Outfall 1: No water is discharging.

中國路橋 CRBC Kaden 基利	Contract No. HY/2013/12 Tuen Mun - Chek Lap Kok Link Northern Connection Toll Plaza and Associated Works

Inspection Checklist for vulnerable to contaminated water discharge

Inspection Date: 2017-10-24 Location: Stream B, Outfall 1

Name of Inspector: Tommy Law Position of Inspector: EO

Please put a tick √ on the appropriate box.

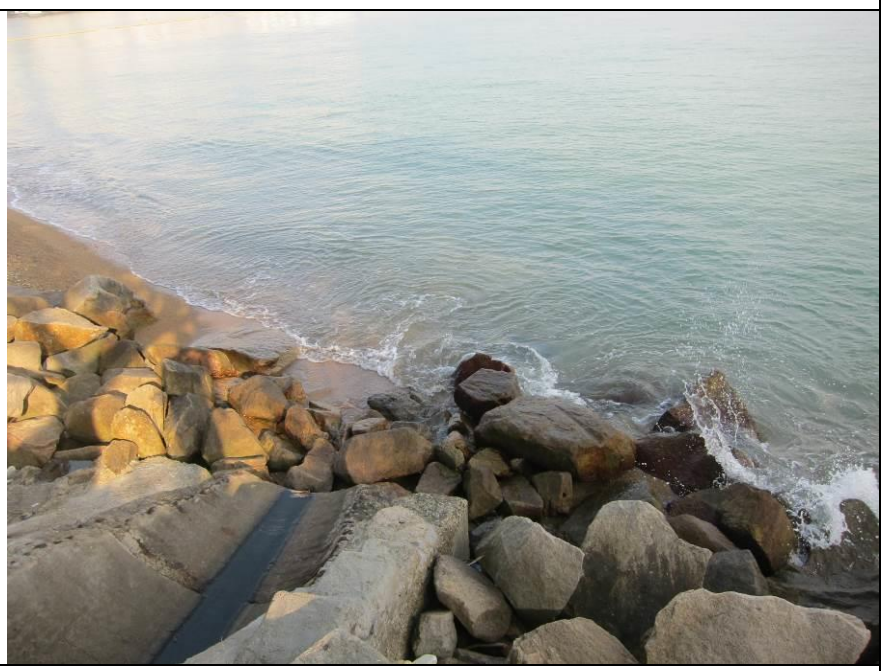
	Item Description	Y	P	N	Remarks
1	Exposed slope protected?	√			
2	Adequacy of wastewater treatment facilities provided?	√			
3	Sandbags provided at each step and top of side walls?	√			
4	Is silt screen maintained in good condition?	√			
5	Remove debris, grit and silt inside the drainage system?	√			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

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

Daily Drainage Inspection Record

Inspection Date: 2017-10-24

Stream B Outfall: No water is discharging.



Outfall 1: No water is discharging.

中國路橋 CRBC Kaden 基利	Contract No. HY/2013/12 Tuen Mun - Chek Lap Kok Link Northern Connection Toll Plaza and Associated Works

Inspection Checklist for vulnerable to contaminated water discharge

Inspection Date: 2017-10-25 Location: Stream B, Outfall 1

Name of Inspector: Tommy Law Position of Inspector: EO

Please put a tick √ on the appropriate box.

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

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

Daily Drainage Inspection Record

Inspection Date: 2017-10-25

Stream B Outfall: No water is discharging.

Outfall 1: No water is discharging.

中國路橋 CRBC Kaden 基利	Contract No. HY/2013/12 Tuen Mun - Chek Lap Kok Link Northern Connection Toll Plaza and Associated Works

Inspection Checklist for vulnerable to contaminated water discharge

Inspection Date: 2017-10-26 Location: Stream B, Outfall 1

Name of Inspector: Tommy Law Position of Inspector: EO

Please put a tick √ on the appropriate box.

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

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

Daily Drainage Inspection Record

Inspection Date: 2017-10-26

Stream B Outfall: No water is discharging.

Outfall 1: No water is discharging.

中國路橋 CRBC Kaden 基利	Contract No. HY/2013/12 Tuen Mun - Chek Lap Kok Link Northern Connection Toll Plaza and Associated Works

Inspection Checklist for vulnerable to contaminated water discharge

Inspection Date: 2017-10-27 Location: Stream B, Outfall 1

Name of Inspector: Tommy Law Position of Inspector: EO

Please put a tick √ on the appropriate box.

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

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

Daily Drainage Inspection Record

Inspection Date: 2017-10-27

Stream B Outfall: No water is discharging.

Outfall 1: No water is discharging.

中國路橋 CRBC Kaden 基利	Contract No. HY/2013/12 Tuen Mun - Chek Lap Kok Link Northern Connection Toll Plaza and Associated Works

Inspection Checklist for vulnerable to contaminated water discharge

Inspection Date: 2017-10-30 Location: Stream B, Outfall 1

Name of Inspector: Tommy Law Position of Inspector: EO

Please put a tick √ on the appropriate box.

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

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

Daily Drainage Inspection Record

Inspection Date: 2017-10-30

Stream B Outfall: No water is discharging.

Outfall 1: No water is discharging.