

AUES JOB No.: TCS00715/14



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

**7th QUARTERLY ENVIRONMENTAL MONITORING &
AUDIT SUMMARY REPORT –
(May to July 2016)**

PREPARED FOR

CRBC AND KADEN JOINT VENTURE

Quality Index

| Date | Reference No. | Prepared By | Certified By |
|----------------|-------------------------|---|--|
| 22 August 2016 | TCS00715/14/600/R0225v2 |  Ben Tam (Environmental Consultant) |  T.W. Tam (Environmental Team Leader) |

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Ref.: HYDHZMBEEM00_0_4504L.16

23 August 2016

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

By Fax (2293 6300) and By Post

Attention: Mr. Roger Man

Dear Roger,

**Re: Agreement No. CE 48/2011 (EP)
Environmental Project Office for the
HZMB Hong Kong Link Road, HZMB Hong Kong Boundary Crossing
Facilities, and Tuen Mun-Chek Lap Kok Link – Investigation**

**Contract No. HY/2013/12 TM-CLKL Northern Connection Toll Plaza and
Associated Works
7th Quarterly EM&A Summary Report (May to July 2016)**

Reference is made to the 7th Quarterly Environmental Monitoring and Audit (EM&A) Summary Report (May to July 2016) (AUES reference: TCS00715/14/600/R0225v2 dated 22 August 2016) certified by the ET Leader and provided to us via e-mail on 22 August 2016.

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

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)
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AECOM – Mr. Conrad Ng (By Fax: 3922 9797)
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EXECUTIVE SUMMARY

ES.01. This is the 7th Quarterly EM&A Summary Report for the “Tuen Mun - Chek Lap Kok Link - Northern Connection Toll Plaza and Associated Works” under Environmental Permit No. EP-354/2009/D (hereinafter “the EP”), covering the period from **1 May to 31 July 2016** (hereinafter “Reporting Period”).

ENVIRONMENTAL MONITORING AND AUDIT ACTIVITIES

ES.02. Environmental monitoring activities under the EM&A programme in the Reporting Period are summarized in the following table.

| Environmental Aspect | Environmental Monitoring Parameters / Inspection | Total Occasions |
|-------------------------------|---|-----------------|
| Air Quality | 1-hour TSP | 450 |
| | 24-hour TSP | 150 |
| Cultural heritage inspection | Grave G1 | 13 |
| Landfill Gas Monitoring | Oxygen; Methane & Carbon Dioxide | 75 days |
| Landscape & Visual | Landscape & Visual Monitoring | 13 |
| Joint Site Inspection / Audit | IEC, ET, the Contractor and RE joint site Environmental Inspection and Auditing | 13 |

BREACHES OF ACTION/LIMIT LEVELS

ES.03. In the Reporting Period, no exceedance was recorded for the measured parameter under the Contract. The summary of breach of monitoring performance is shown below.

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

ENVIRONMENTAL COMPLAINT

ES.04. In the Reporting Period, two (2) environmental complaint was received from EPD on 9 May 2016 and 7 June 2016, both are regarding to white color effluent discharging outfall behind sawmill at Ho Yeung Street, Tuen Mun. Investigation report for the complaint has been conducted by the ET and agreed by IEC.

ES.05. In last Reporting Period, a complaint about dust and smoke emission from a drilling rig was observed on the slope near Pillar Point, Tuen Mun was received on 28 April 2016. The investigation report (IR), including the status of improvement works/ mitigation measures, has been submitted by the Contractor.

NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

ES.06. No environmental summons or successful prosecutions were recorded in the Reporting Period.

REPORTING CHANGES

ES.07. No reporting changes were made in the Reporting Period.

FUTURE KEY ISSUES

ES.08. During wet season, 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.

- ES.09. Although in wet 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.
- ES.10. 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. PROJECT 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). The 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:-
- construction of an approximately 5.4 hectares toll plaza and an associated footbridge;
 - construction of associated carriageways including approximately 0.74 kilometre land viaducts, and an approximately 230 metres vehicular underpass to connect the toll plaza and the roundabout at Lung Mun Road/Lung Fu Road;
 - site formation for the construction of the toll plaza, including associated slope works and natural terrain hazard mitigation measures;
 - modification and realignment of the existing Lung Mun Road and Lung Fu Road; and
 - associated waterworks, drainage, sewerage and landscaping works, etc..
- 1.1.3. Action-United Environmental Services & Consulting has been commissioned as an Independent ET to implement the relevant EM&A program in accordance with the approved EM&A Manual, as well as the associated duties.
- 1.1.4. This is the 7th Quarterly EM&A Summary Report covering the period from **1 May to 31 July 2016**.

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*
- Section 3 Summary of Impact Monitoring Requirements*
- 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 Site Inspections*
- 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

2.1 CONTRACT ORGANIZATION

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

2.2 CONSTRUCTION PROGRESS

2.2.1 In the Reporting Period, the major construction activity conducted under the Contract is summarized in below. Moreover, the master construction program and 2-month rolling programme is enclosed in [Appendix D](#).

May 2016

- 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 (Portal Beam Construction) and TD2;
- Toll Plaza Footbridge;
- Retaining Structure RW_A, RW_B and RW_F;
- Toll Collector Subway & Associated Works;
- Bridge G1, G2 and Bridge H1;
- Sewer Culvert at FC1 and FC2;
- Waterproofing and lining at Vehicular Underpass;
- Road and Drainage Works at +11mPD, +19mPD and Portion H.

June 2016

- 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 (Portal Beam Construction) and TD2;
- Toll Plaza Footbridge;
- Retaining Structure RW_A, RW_B and RW_F;
- Toll Collector Subway & Associated Works;
- Bridge G1, G2 and Bridge H1;
- Sewer Culvert at FC1 and FC2;
- Waterproofing and lining at Vehicular Underpass;
- Road and Drainage Works at +11mPD, +19mPD and Portion H.

July 2016

- Instrumentation and Monitoring
- Earthwork on slope D and E
- Construction of slope surface drainage on slope C, D & and E and Portal H
- Road drainage works at +11mPD and +19mPD platform and Portion H
- Construction of Retaining Wall A and B
- Construction of Bored pile at central median
- Box-culvert construction near MH2
- Sewer culvert by hand shield method at FC1, FC2, MH6, MH3 and MH7
- Waterproofing and lining at vehicular Underpass
- Blast door installation at West Portal
- Cascade A construction
- Construction of footbridge Bridge G2 and TD1 decking
- Construction of Toll Collector Subway
- Portal beam formwork erection at Lung Mun Road Central medium (Night works)
- Concreting for portal beam at Lung Mun Road Central medium (Sunday or public holidays)
- Precast Panel Installation at RW_B & TD 1
- Fabrication of form traveler at fire station

2.3 SUMMARY OF ENVIRONMENTAL SUBMISSIONS

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

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

2.3.2 Summary of the relevant permits, licenses, and/or notifications on environmental protection for Contract No. HY/2013/12 are presented in **Table 2-1**.

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

| No. | Type of Permit/ License | Submission Date | Reference/ License No. | Date of Issue | Date of Expiry |
|-----|---|--------------------|---------------------------|---------------|-------------------|
| 1 | Air pollution Control (Construction Dust) Regulation | 06-08-2014 | 377719 | 06-08-2014 | N/A |
| 2 | Chemical Waste Producer Registration - Waste Producers Number | 06-08-2014 | 5117422C389301 | 03-09-2014 | N/A |
| 3 | Variation of Effluent Discharge License | 22-08-15 | WT00023973-2016 | 14-03-16 | 30-09-2019 |
| 4 | Waste Disposal Regulation - Billing Account for Disposal of Construction Waste | 21-07-2014 | 7020460 | 01-08-2014 | N/A |
| 5 | CNP for Multiple Task | 7-10-2015 | GW-RW0520-15 | 05-11-2015 | 04-05-2016 |
| 6 | CNP for MH5 | 23-10-2015 | GW-RW0563-15 | 18-11-2015 | 17-05-2016 |
| 7 | CNP for Tunnel | 13-11-2015 | GW-RW0582-15 | 23-11-2015 | 22-05-2016 |
| 8 | CNP for Multiple Task | 21-04-2016 | GW-RW0520-16 | 05-05-2016 | 04-11-2016 |
| 9 | CNP for MH5 | 25-04-2016 | GW-RW0563-16 | 18-05-2016 | 17-11-2016 |
| 10 | CNP for Tunnel works | 25-04-2016 | GW-RW0582-16 | 23-05-2016 | 22-11-2016 |
| 11 | Extend CNP for Flasework Erection | 07-04-2016 | GW-RW0215-16 | 26-04-2016 | 21-06-2016 |
| 12 | Extend CNP for Flasework Erection | 18-05-2016 | GW-RW0289-16 | 22-06-2016 | 19-08-2016 |

3 SUMMARY OF IMPACT MONITORING REQUIREMENTS

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 LOCATIONS

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 | <u>Northern Connection</u> During excavation works for launching shaft, excavation work for Cut |

| Condition | Monitoring Parameter | Monitoring Location | Frequency | Monitoring Requirement |
|-----------|----------------------|--------------------------------|------------------------|--|
| | 24-hour TSP | ASR1, ASR5, AQMS1, ASR6, ASR10 | Daily every three days | and Cover Tunnel and Cut and Cover Tunnel Construction <u>Toll Plaza</u> During excavation, slope works, construction of road and superstructures and wind erosion from open sites and stockpiling areas <u>Tunnel Buildings</u> During excavation, foundation works, construction of superstructures and wind erosion from open sites and stockpiling areas |

3.5 MONITORING EQUIPMENT

- 3.5.1 The 24-hour and 1-hour TSP levels shall be measured by following the standard high volume sampling method as set out in the *Title 40 of the Code of Federal Regulations, Chapter 1 (Part 50), Appendix B*.
- 3.5.2 The filter paper of 24-hour TSP measurement shall be determined by HOKLAS accredited laboratory. 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 in²);
 - (v) flow control accuracy: +/- 2.5% deviation over 24-hr sampling period;
 - (vi) equipped with a shelter to protect the filter and sampler;
 - (vii) incorporated with an electronic mass flow rate controller or other equivalent devices;
 - (viii) equipped with a flow recorder for continuous monitoring;
 - (ix) provided with a peaked roof inlet;
 - (x) equipped with a manometer;
 - (xi) able to hold and seal the filter paper to the sampler housing in a horizontal position;
 - (xii) easy to change the filter; and
 - (xiii) capable of operating continuously for 24-hr period.
- 3.5.3 Calibration of dust monitoring equipment shall be conducted by the ET upon installation and in bi-monthly intervals during construction phase. The transfer standard shall be traceable to the internationally recognized primary standard and be calibrated annually. The calibration data shall be properly documented for future reference by concerned parties, such as the IEC. All the data shall be converted into standard temperature and pressure condition.
- 3.5.4 The filter paper of 24-hour TSP measurement shall be determined by HOKLAS accredited laboratory.
- 3.5.5 If the ET proposes to use a direct reading dust meter to measure 1-hr TSP levels on an ad hoc basis, he shall submit sufficient information to the IEC to prove that the instrument is capable of achieving a comparable result as that the High Volume Sampler (HVS) and may be used for the

1-hr sampling. The instrument should also be calibrated regularly and the 1-hr sampling shall be checked periodically by the HVS to check the validity and accuracy of the results measured by the direct reading method.

- 3.5.6 According to the Project EM&A Manual, wind data monitoring equipment shall also be provided and set up for logging wind speed and wind direction near the dust monitoring locations. The equipment installation location shall be proposed by the ET and agreed with the IEC. For installation and operation of wind data monitoring equipment, the following points shall be observed:
- (i) the wind sensors should be installed on masts at an elevated level 10 m above ground so that they are clear of obstructions or turbulence caused by the buildings;
 - (ii) the wind data should be captured by a data logger to be down-loaded for processing at least once a month;
 - (iii) the wind data monitoring equipment should be re-calibrated at least once every six months; and
 - (iv) wind direction should be divided into 16 sectors of 22.5 degrees each.

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

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

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

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

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

3.7 OTHER ENVIRONMENTAL ASPECTS

Noise

- 3.7.1 The TM-CLKL EIA study stated that no existing noise sensitive receiver (NSR) was identified within the Study Area at Tuen Mun. Therefore, no noise monitoring is required for the construction phase of the Contract.
- 3.7.2 Regular site inspections and audits will be carried out during the construction phase in order to confirm the construction works under the Contract comply with the regulatory noise requirements.

Water Quality

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

Ecology

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

- 3.7.5 During construction phase, the ET will perform Pitcher Plants inspection at least once every week to report the growth condition 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.

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 SUMMARY OF MONITORING RESULTS

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 (*May 2016, June 2016 and July 2016*).

4.3 ACTION AND LIMIT (A/L) LEVELS EXCEEDANCE

4.3.1 According to the air quality monitoring result provided by Contract HY/2012/08, no exceedances in 1-hour and 24-hour TSP were recorded in the Reporting Period. No Notification on Exceedances (NOEs) was issued by the ET of Contract HY/2012/08. The summary of air quality exceedance in the Reporting Period is shown in *Table 4-1*.

Table 4-1 Summary of Air Quality Monitoring Exceedance

| Date of Exceedance | Monitoring Station | Air Quality Parameter | Result | Exceed |
|--------------------|--------------------|-----------------------|--------|--------|
| NA | NA | NA | -- | -- |

4.4 AIR QUALITY EXCEEDANCE INVESTIGATION

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

5 ECOLOGY MONITORING

5.1 GENERAL

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

5.2 PITCHER PLANTS INSPECTION

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

5.2.2 In the Reporting Period, inspections for implementation status of mitigation measures for the Pitcher Plants were carried out by the ET on **3rd, 10th, 17th, 24th, 31st May 2016, 8th, 15th, 21st, 28th June 2016, 6th, 12th, 20th and 26th July 2016.**

5.2.3 During each inspection, the transplanted pitcher plant was performed random checking at the final receptor area. It was observed that the transplanted pitcher plants were properly protected and the growth was normally in fair condition except three individuals which appeared poor condition in May 2016 were certified dead by the specialist. It is considered that the Pitcher Plant were establishing after transplanting shock and adapting to the condition of the Final Receptor Site and frequent watering is recommended. 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.

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, site inspection for the Grave G1 was undertaken on **3rd, 10th, 17th, 24th, 31st May 2016, 8th, 15th, 21st, 28th June 2016, 6th, 12th, 20th and 26th July 2016**. During these inspections, buffer zone was maintained between the working area and the Grave. The nearby areas were clean, and no construction materials or mechanical equipment were stored within or close to the buffer zone.

6.2.2 Accordingly, the Contractor has had fully implemented cultural heritage mitigation measures in accordance with the 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 by the Registered Landscape Architect on **6th, 13th, 20nd, 27th May 2016, 3rd, 10th, 17th, 24th June 2016, 2nd, 8th, 15th, 22nd and 29th July 2016.**

7.2.2 Most of the landscape works such as planting was not yet commenced. The detailed inspection checklists can be referred to the Monthly EM&A Reports (May 2016, June 2016 and July 2016) of the contract.

8 LANDFILL GAS HAZARD MONITORING

8.1 GENERAL

- 8.1.1 During EIA study, landfill gas hazards are likely to be generated from the Pillar Point Valley (PPV) Landfill. Hence, regular landfill gas monitoring is recommended during construction of the proposed toll plaza.
- 8.1.2 During construction, a Safety Officer should be appointed to carry out the monitoring works. The monitoring frequency and areas to be monitored should be set down prior to commencement of ground-works either by the Safety Officer or an approved and appropriated qualified person. The routine monitoring should be carried out in all excavations, manholes, chambers, relocation of monitoring wells and any other confined spaces that may have been created. All measurements in excavations should be made with the extended monitoring tube located not more than 10 mm from the exposed ground surface. Monitoring should be performed properly to make sure that the area is free of landfill gas before any man enters in the area.
- 8.1.3 For excavations deeper than 1m, measurements should be carried out:
- at the ground surface before excavation commences;
 - immediately before any worker enters the excavation;
 - at the beginning of each working day for the entire period the excavation remains open; and
 - periodically through the working day whilst workers are in the excavation.
- 8.1.4 For excavations between 300mm and 1m deep, measurements should be carried out:
- directly after the excavation has been completed; and
 - periodically whilst the excavation remains open
- 8.1.5 For excavations less than 300mm deep, monitoring may be omitted, at the discretion of the Safety Officer or other appropriately qualified person.
- 8.1.6 To ensure the accuracy of the monitoring data, zeroing of the gas analyser shall be undertaken at the start of each day's monitoring. As part of the QA/QC, calibration of the gas analyser shall be conducted at least once every two weeks according to the specification of the manufacturer's operation manual.

8.2 LANDFILL GAS MONITORING RESULT

- 8.2.1 In the Reporting Period, landfill gas monitoring was conducted at the construction of Retaining Wall B and Retaining Wall F and the locations are illustrated in [Appendix E](#). A BIOGAS 5000 gas analyser was used for the landfill gas monitoring.
- 8.2.2 There were total **75** workings days monitoring were carried by the Safety Officer or an approved and qualified persons in this reporting period. **Table 8-1** is summarized landfill gas measurement results. Moreover, graphical plot are attached in [Appendix G](#).

Table 8-1 Summary of Landfill Gas Measurement Results in Reporting Period

| Landfill Gas Parameter | Action Level | Limit Level | Detectable at Retaining Wall B | | Detectable at Retaining Wall F | |
|------------------------|-------------------------|-----------------------|--------------------------------|-------|--------------------------------|-------|
| | | | Min | Max | Min | Max |
| Methane | >10% LEL (>0.5% v/v) | >20% LEL (>1% v/v) | 0% | 0.1% | 0% | 0.1% |
| Oxygen | <19% | <18% | 21.0% | 21.2% | 21.0% | 21.1% |
| Carbon Dioxide | >0.5% | >1.5% | 0.1% | 0.2% | 0.1% | 0.2% |

- 8.2.3 The measurement results shown that slightly methane concentration was detected and all oxygen concentration was over 21.0% and Carbon Dioxide was between 0.1 and 0.2 %. No corrective action was required accordingly.

9 WASTE MANAGEMENT

9.1 GENERAL WASTE MANAGEMENT

9.1.1 Waste management was carried out by an on-site Environmental Officer or an Environmental Supervisor from time to time.

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 Whenever possible, materials were reused on-site as far as practicable. The quantities of waste for disposal in the Reporting Period are summarized in *Tables 9-1* and *9-2* and the Waste Flow Table is presented in *Appendix H*.

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

| Type of Waste | Quantity | | | Disposal Location |
|--|----------|--------|--------|--|
| | May 16 | Jun 16 | Jul 16 | |
| Reused in this Project (Inert) (in '000 m ³) | 11.511 | 10.647 | 9.589 | - |
| Reused in other Projects (Inert) (in '000 m ³) | 2.658 | 2.935 | 3.134 | <ul style="list-style-type: none"> • Lam Tei Quarry • Eco Park K.wah Recycle Facilities • Lung Kwu Tan Tailor Recycled Aggregates • Laintang BCP • TM-CLKL C2 |
| Disposal as Public Fill (Inert) (in '000 m ³) | 0 | 1.377 | 0.162 | Tuen Mum Area 38 |

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

| Type of Waste | Quantity | | | Disposal Location |
|--|----------|--------|--------|-------------------|
| | May 16 | Jun 16 | Jul 16 | |
| Recycled Metal (in '000kg) | 0 | 0 | 0 | - |
| Recycled Paper / Cardboard Packaging (in '000kg) | 0 | 0 | 0 | - |
| Recycled Plastic (in '000kg) | 0 | 0 | 0 | - |
| Chemical Wastes (in '000kg) | 0 | 0 | 0 | - |
| General Refuses (in '000m ³) | 0.090 | 0.097 | 0.096 | WENT |

9.2.3 To control the site performance on waste management, the Contractor shall ensure that all solid and liquid waste management works are fully in compliance with the relevant license/permit requirements, such as the effluent discharge license and the chemical waste producer registration. The Contractor is also reminded to implement the recommended environmental mitigation measures according to the Environmental Monitoring and Audit Manual.

10 SITE INSPECTIONS

10.1 REQUIREMENTS

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

10.1.2 During the Reporting Period, **13** events of the joint site inspections were undertaken to evaluate the site environmental performance. The summaries of the findings during site inspection are presented in *Tables 10-1 and 10-2*.

Table 10-1 Site Observations for the Contract for the Reporting Period

| Date | Findings / Deficiencies | Follow-Up Status |
|--------------|---|--|
| 3 May 2016 | • Tree protection zone should be set up to protect the retaining tree. (Behine site office) | • Protection zone was set up to protect the retaining tree. |
| | • Stagnant water cumulated on site should be removed after the rainstorm to prevent mosquito breeding. | • Not required for reminder. |
| 10 May 2016 | • Turbidity water discharged into the stream was observed after the rainstorm. The contractor should revirw the drainage and treatment system to make sure all discharge water should comply with discharge license requirement. (Stream B) | • No turbidity water discharged into the stream was observed, also sediment cumulated inside the outlet was cleared. |
| 17 May 2016 | • Stagnant water cumulated inside the idle sedimentation tank was observed. The contractor should clear the stagnant water to prevent mosquito breeding. (Works area near fire station) | • Stagnant water cumulated inside was removed. |
| 24 May 2016 | • Waste batteries scattered on site was observed. The contractor should clean up the batteries and disposed as chemical waste. (Near Lung Mun Road) | • Waste batteries scattered on site was removed. |
| | • Rubbish bin was observed full, the contractor was reminded to clean more frequency. (Workshop near retaining wall B) | • Not required for reminder. |
| 31 May 2016 | • General refuse and C&D waste cumulated on site was observed. Housekeeping should be improved. (Near retaining wall F) | • General refuse and C&D waste cumulated on site was cleared. |
| 8 June 2016 | • Stagnant water cumulated on site after the rainstorm should be clear or mitigation measure should be provided to prevent mosquito breeding. | • Not required for reminder. |
| 15 June 2016 | • C&D waste cumulated on site was observed. The contractor should clean up the waste more frequency. (Retaining Wall B) | • C&D waste cumulated on site was removed. |
| | • Stagnant water cumulated under the retaining wall B should be cleaned or provide proper mitigation measure to prevent mosquito breeding. (Under retaining wall B) | • Stagnant water cumulated under retaining wall B was cleared. |
| | • Broken tarpaulin sheets covering the stockpile were observed. The contractor | • Not required for reminder. |

| Date | Findings / Deficiencies | Follow-Up Status |
|--------------|--|---|
| | was reminded to provide proper maintenance for dust control measures to reduce dust impact. | |
| 21 June 2016 | <ul style="list-style-type: none"> Dust generated at the drilling works was observed. Dust mitigation measures should be provided to reduce dust generation. (Slope E) | <ul style="list-style-type: none"> No dust generated from the drilling works was observed. |
| 28 June 2016 | <ul style="list-style-type: none"> The contractor was reminded to treat the ponding water near the retaining wall B to prevent overflow during the rainstorm. | <ul style="list-style-type: none"> Not required for reminder. |
| 6 July 2016 | <ul style="list-style-type: none"> Dust generated from soil nail works was observed. Dust mitigation measures should be provided to reduce dust impact. (Slope E). | <ul style="list-style-type: none"> No dust generation from soil nail works was observed and dust mitigation measures was provided. |
| | <ul style="list-style-type: none"> Free standing chemical container without drip tray was observed. (Retaining Wall B) | <ul style="list-style-type: none"> Free standing chemical container without drip tray was removed. |
| 12 July 2016 | <ul style="list-style-type: none"> Stagnant water cumulated on site was observed. Stagnant water should be cleaned up to prevent mosquito breeding. (Tunnel East Portal Exit) | <ul style="list-style-type: none"> Stagnant water cumulated on site was removed. |
| | <ul style="list-style-type: none"> NRMM label missing for the mobile crane was observed. (Retaining Wall B) | <ul style="list-style-type: none"> NRMM label was provided. |
| 20 July 2016 | <ul style="list-style-type: none"> Dust emitted from soil nail was observed. Dust mitigation measures should be provided to reduce dust generation. (Slope E) | <ul style="list-style-type: none"> Water spraying was provided for the soil nail works to reduce dust generation. |
| 26 July 2016 | <ul style="list-style-type: none"> C&D material scattered on site and general refuse cumulated on site was observed. Housekeeping should be improved and general refuse should be cleaned more frequency. | <ul style="list-style-type: none"> Housekeeping was improved and general refuse cumulated on site was cleared. |

Table 10-2 Summary of Reminders/Observations of Site Inspection

| Reporting Period | Date of site inspection | Nos. of findings / reminders | Follow-Up Status |
|------------------|--|------------------------------|------------------|
| May 2016 | 3 rd , 10 th , 17 th , 24 th and 31 st May 2016 | 7 | Completed |
| June 2016 | 8 th , 15 th , 21 st and 28 th June 2016 | 6 | Completed |
| July 2016 | 6 th , 12 th , 20 th and 26 th July 2016 | 6 | Completed |

10.1.3 In the Reporting Period, no non-compliance was recorded, however, **19** observations/ reminders were recorded during the site inspections. Minor deficiencies found in the weekly site inspection were in general rectified within the specified deadlines. The environmental performance of the Project was therefore considered satisfactory.

Inspection Checklist for Vulnerable to Contaminated Water Discharge

10.1.4 Following to the complaint about discharge of milky water to Butterfly 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.

10.1.5 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.

- 10.1.6 The daily inspection for vulnerable to contaminated water discharge was temporarily suspended during the dry season and resumed on 5 April 2016. As requested by the EPD, the associated inspection checklist were presented in the Monthly EM&A Report – **May 2016, June 2016 & July 2016.**

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. Moreover, no exceedance of the environmental performance (Action / Limit Levels) was recorded for monitoring programme. However, two (2) environmental complaint was received and lodged for the Contract. Follow up actions have been undertaken by the Contractor to resolve the deficiencies. The details of complaint are listed below:-

- 9 May 2016 - A complaint was received from the EPD on 9 May 2016. The complainant complained that white color effluent discharging outfall behind sawmill at Ho Yeung Street, Tuen Mun. It cannot confirm the source of the white color effluent therefore it considered that the above complaint is not related to the project.
- 7 June 2016 - A complaint was received from the EPD on 7 June 2016. The complainant complained that white color effluent discharging outfall at storm outfall of No.33 Ho Yeung Street, Tuen Mun at around 18:00 and this is a follow up of the complaint EP/RW/0000368066 which received on 9 May 2016 and defecated as not project related complain. EPD visit the upstream area and open the cover of manhole at Ho Fuk Street on 21 June 2016. No water discharge was observed and the manhole was clean and dry in condition. During the joint investigation and inspection by EPD, Aecom and the Contractor, it was found that the white water might come from other facilities or site located at Ho Yeung Street which is not related to this project.

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 agreed by the IEC. It was concluded that the complaint was not related to the works under the Contract.

11.1.3 In last Reporting Period, a complaint about dust and smoke emitted from drilling ring on slope near Pillar Point, Tuen Mun was received on 28 April 2016. The investigation report (IR), including the status of improvement works/ mitigation measures, has been submitted by the Contractor.

11.1.4 Follow up actions have been undertaken by the Contractor to resolve the deficiencies. Investigation for the complaints has been conducted by the ET and the corresponding investigation reports for the complaint have been submitted to relevant parties and presented in the Monthly EM&A Report (May 2016 and June 2016). The statistical summary table of environmental exceedance, complaint, summons and prosecution is presented in *Tables 11-1, 11-2, 11-3 and 11-4*.

Table 11-1 Statistical Summary of Environmental Exceedance

| Reporting Period | Environmental Aspect / Parameter | Environmental Performance | Event Exceedance | | |
|--------------------------------|----------------------------------|---------------------------|------------------|------------------|------------|
| | | | Reporting Period | Previous Periods | Cumulative |
| 1 February 2016 – 31 July 2016 | Air Quality - 1-hr TSP | Action Level | 0 | 4 | 4 |
| | | Limit Level | 0 | 0 | 0 |
| | Air Quality - 24-hr TSP | Action Level | 0 | 0 | 0 |
| | | Limit Level | 0 | 0 | 0 |

Table 11-2 Statistical Summary of Environmental Complaints

| Reporting Period | Environmental Complaint Statistics | | |
|---------------------------------|------------------------------------|------------|--------------------|
| | Frequency | Cumulative | Complaint Nature |
| 23 October 2014 – 30 April 2016 | 4 | 4 | Water (3), Air (1) |

| | | | |
|------------------------------|----------|----------|--------------------|
| 1 May 2016 – 31 July 2016 | 2 | 6 | Water (5), Air (1) |
|------------------------------|----------|----------|--------------------|

Table 11-3 Statistical Summary of Environmental Summons

| Reporting Period | Environmental Summons Statistics | | |
|------------------------------------|----------------------------------|------------|------------------|
| | Frequency | Cumulative | Complaint Nature |
| 23 October 2014 – 30 April 2016 | 0 | 0 | NA |
| 1 May 2016 – 31 July 2016 | 0 | 0 | NA |

Table 11-4 Statistical Summary of Environmental Prosecution

| Reporting Period | Environmental Prosecution Statistics | | |
|------------------------------------|--------------------------------------|------------|------------------|
| | Frequency | Cumulative | Complaint Nature |
| 23 October 2014 – 30 April 2016 | 0 | 0 | NA |
| 1 May 2016 – 31 July 2016 | 0 | 0 | NA |

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 I](#).

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 I](#).

Table 12-1 Environmental Mitigation Measures

| Issues | Environmental Mitigation Measures |
|-------------------------------|--|
| Air Quality | <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • Wire fencing provided for temporary protect Pitcher Plants • Undertake weekly inspection of Pitcher Plants |
| Landfill Gas Hazard | <ul style="list-style-type: none"> • Landfill Gas measurement undertake during trench excavation |
| Water Quality | <ul style="list-style-type: none"> • Temporary drainage system provide for surface runoff prevent discharge to public area • Wastewater to be treated by sedimentation tank before discharge. |
| Noise | <ul style="list-style-type: none"> • Restrain operation time of plants from 07:00 to 19:00 on any working day except for Public Holiday and Sunday. • Keep good maintenance of plants • The noisy plants or works provide mobile noise barriers • Shut down the plants when not in used |
| Waste and Chemical Management | <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • The site was generally kept tidy and clean. |

13 CONCLUSIONS AND RECOMMENDATIONS

13.1 CONCLUSIONS

- 13.1.1 This is 7th Quarterly EM&A report presenting the monitoring results and inspection findings for the Reporting Period from **1 May to 31 July 2016**.
- 13.1.2 No air quality monitoring including 1-hour and 24-hour TSP exceedance was recorded in the Reporting Period.
- 13.1.3 In this Reporting Period, no noise complaint was received by RE, the Contractor, ENPO or HyD. No Action Level exceedances were triggered and no NOE or the associated corrective actions were therefore issued.
- 13.1.4 Site inspection for landscape and visual was conducted on weekly basis by the Landscape Architect to ensure if the existing condition compliance with the intended aims of the mitigation measures. Most of the landscape works such as planting was not yet commenced.
- 13.1.5 Random checking during weekly site inspection were performed on the transplanted Pitcher Plants in the final receptor site. It was observed that the transplanted pitcher plants were properly protected and the growth was normally in fair condition except three individuals which appeared poor condition in May 2016 were certified dead by the specialist. It is considered that the Pitcher Plant were establishing after transplanting shock and adapting to the condition of the Final Receptor Site and frequent watering is recommended.
- 13.1.6 Landfill gas monitoring was conducted at the construction of Retaining Wall B and Retaining Wall F by the Safety Officer. The monitoring results shown no exceedances were triggered.
- 13.1.7 In the Reporting Period, no environmental complaint was received.
- 13.1.8 No notifications of summons, or successful prosecution were received by the Contractor during the Reporting Period.
- 13.1.9 During the Reporting Period, **13** events of the joint site inspections were undertaken to evaluate the site environmental performance. No non-compliance of environmental impacts were observed, indicating the implemented mitigation measures for air quality, construction noise and water quality were effective. Minor deficiencies found in the weekly site inspection were rectified within the specified deadlines. The environmental performance of the Project was considered satisfactory.
- 13.1.10 For cultural heritage, the buffer zone between the working area and the Grave was observed and no construction material or equipment was stored nearby.
- 13.1.11 In the Reporting Period, two (2) environmental complaint was received from EPD on 9 May 2016 and 7 June 2016, both are regarding to white color effluent discharging outfall behind sawmill at Ho Yeung Street, Tuen Mun. Investigation report for the complaint has been conducted by the ET and agreed by IEC.
- 13.1.12 No notifications of summons, or successful prosecution were received by the Contractor during the Reporting Period.

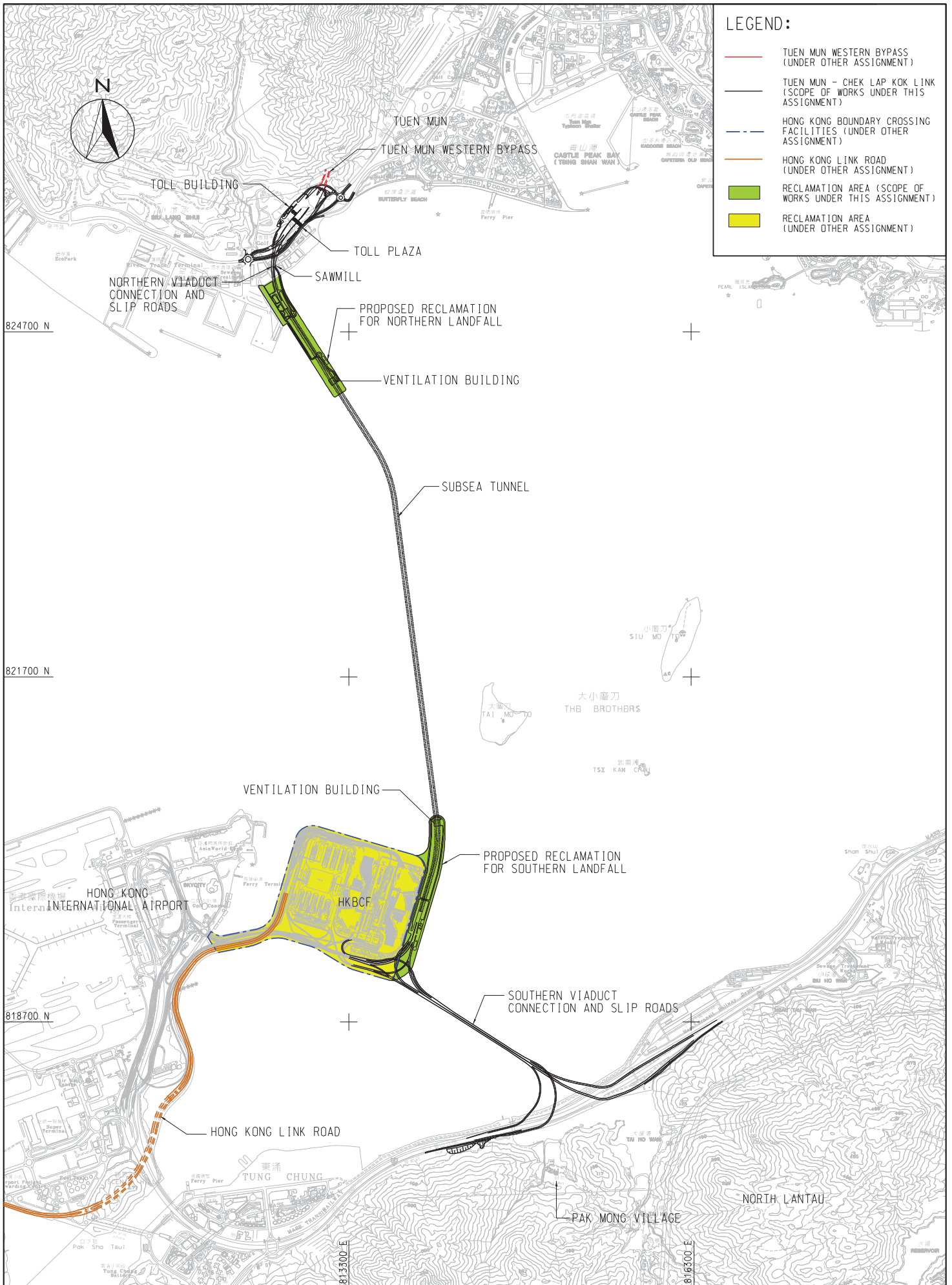
13.2 RECOMMENDATIONS

- 13.2.1 During the wet season, muddy water or other water pollutants from site surface runoff discharged into public areas would be a potential environmental issue. Special attention should be paid on the water quality mitigation measures to prevent surface runoff flow to public area.
- 13.2.2 Air quality mitigation measures such as watering of site area for 12 times per day and covering of exposed slopes should be implemented during the construction period to reduce construction dust impact as recommended in the EMIS.

- 13.2.3 Good practice for daily housekeeping is reminded. Clean-up of waste skips and wastewater treatment system should be increased to ensure these facilities are functioned effectively.
- 13.2.4 Stagnant water should be removed as soon as possible after rain to prevent mosquito breeding on site.

Appendix A

Layout plan of the Project



LEGEND:

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

PROJECT NO. 60044963

AECOM

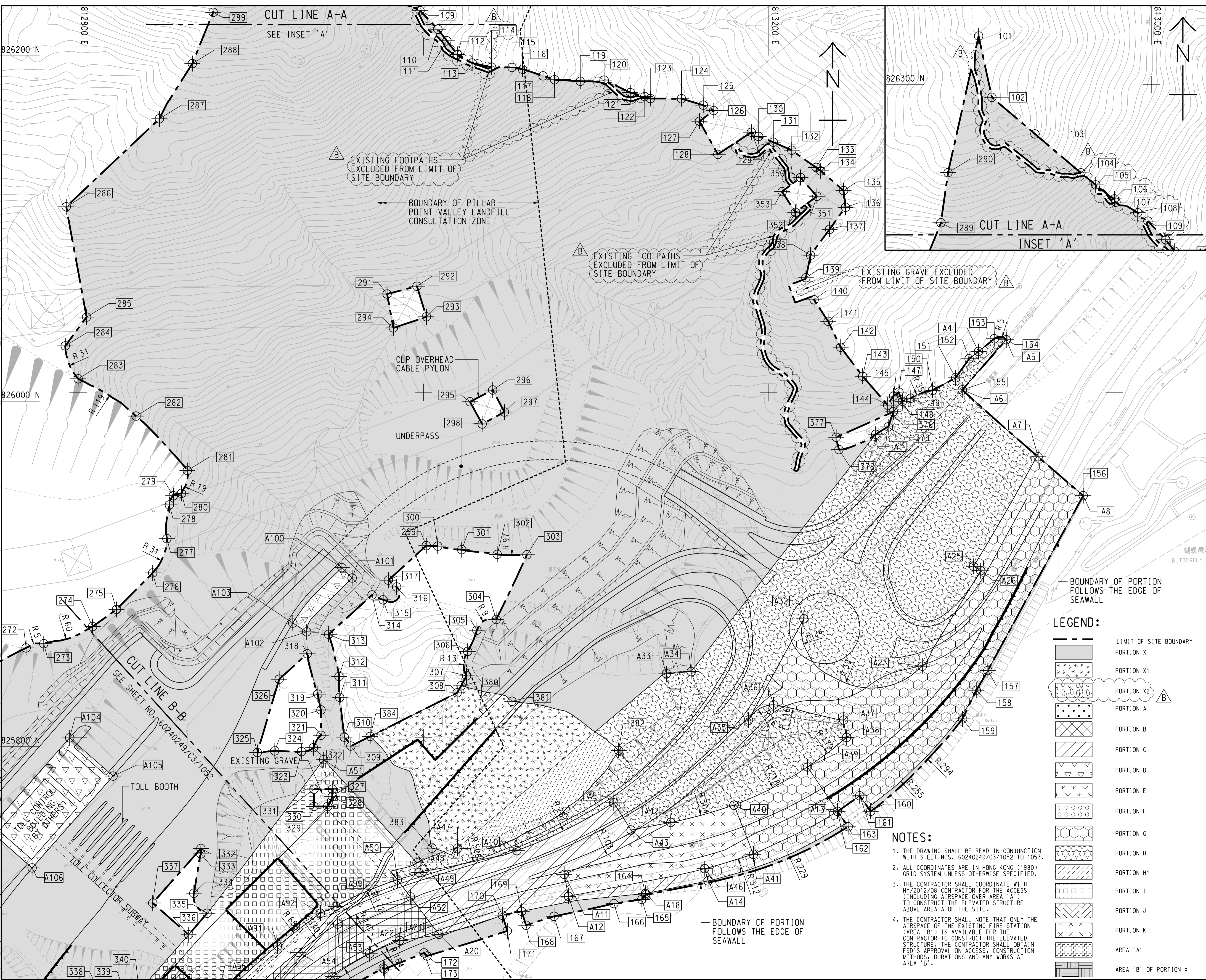
AGREEMENT NO. CE 52/2007(HY)
 TUEN MUN - CHEK LAP KOK LINK - INVESTIGATION
GENERAL LAYOUT OF TM-CLKL

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

Appendix B

Layout plan of the Contract

Project Management Initials: Designer: PI Checked: ALCF Approved: CWN ISO A1 594mm x 841mm
 Plot File by: LINDO 2014/05/19 PATH: P:\Projects\60240249\DRAWING\CONTRACT\C3\1005C3_05E1.dgn



AECOM

PROJECT
 項目
TUEN MUN - CHEK LAP KOK LINK

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

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

CONSULTANT
 工程顧問公司
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SUB-CONSULTANTS
 分判工程顧問公司

ISSUE/REVISION
 修訂

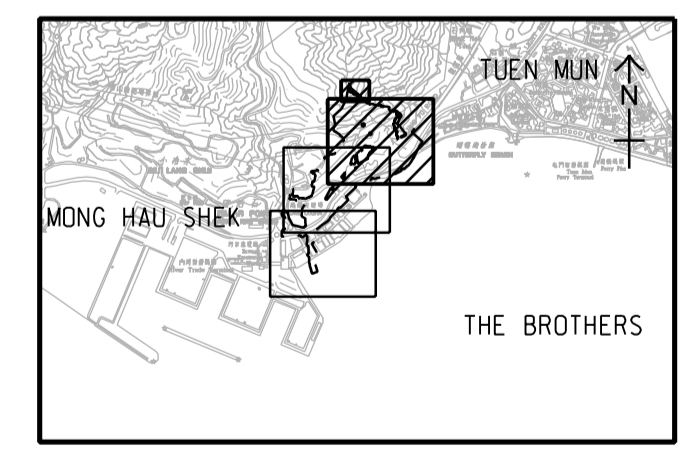
| I/R | DATE | DESCRIPTION | CHK. |
|-----|---------|-----------------------|------|
| B | MAR. 14 | TENDER ADDENDUM NO. 2 | CWN |
| A | FEB. 14 | TENDER ADDENDUM NO. 1 | CWN |
| - | JAN. 14 | TENDER DRAWING | CWN |

STATUS
 階段

SCALE
 比例
 A1 1:1000

DIMENSION UNIT
 尺寸單位
 METRES

KEY PLAN
 索引圖
 1:50000



PROJECT NO.
 項目編號
 60240249

CONTRACT NO.
 合約編號
 HY/2013/12

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

SHEET NUMBER
 圖紙編號
 60240249/C3/1051B

SHEET 1 OF 3

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

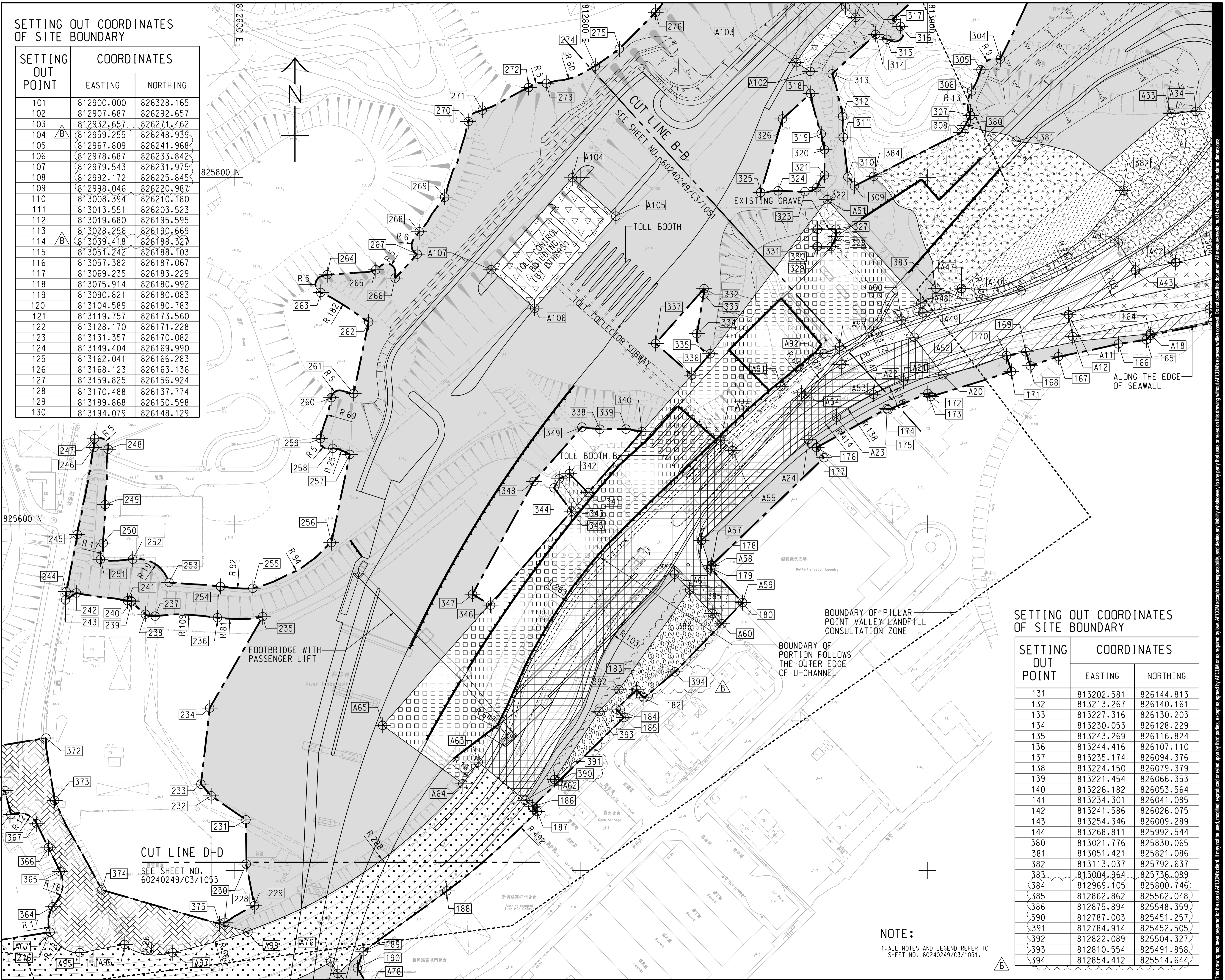
LEGEND:

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

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SETTING OUT COORDINATES OF SITE BOUNDARY

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



SETTING OUT COORDINATES OF SITE BOUNDARY

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

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



PROJECT
 TUEN MUN - CHEK LAP KOK LINK

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

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

CONSULTANT
 土研顧問公司
 AECOM Asia Company Ltd.
 www.aecom.com

SUB-CONSULTANTS
 分列工程師有限公司

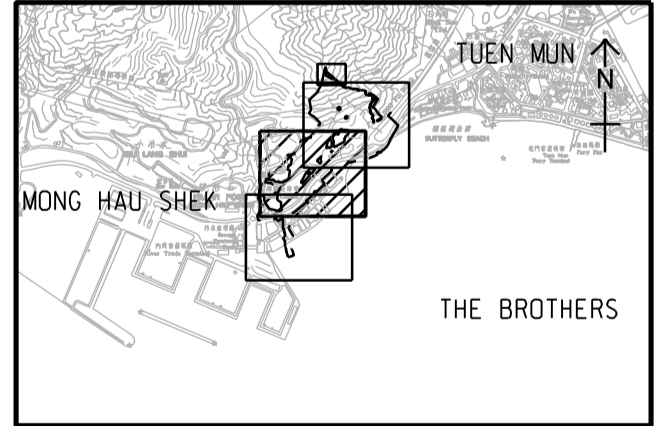
ISSUE/REVISION

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

STATUS
 備核

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

KEY PLAN
 索引圖: 1:50000

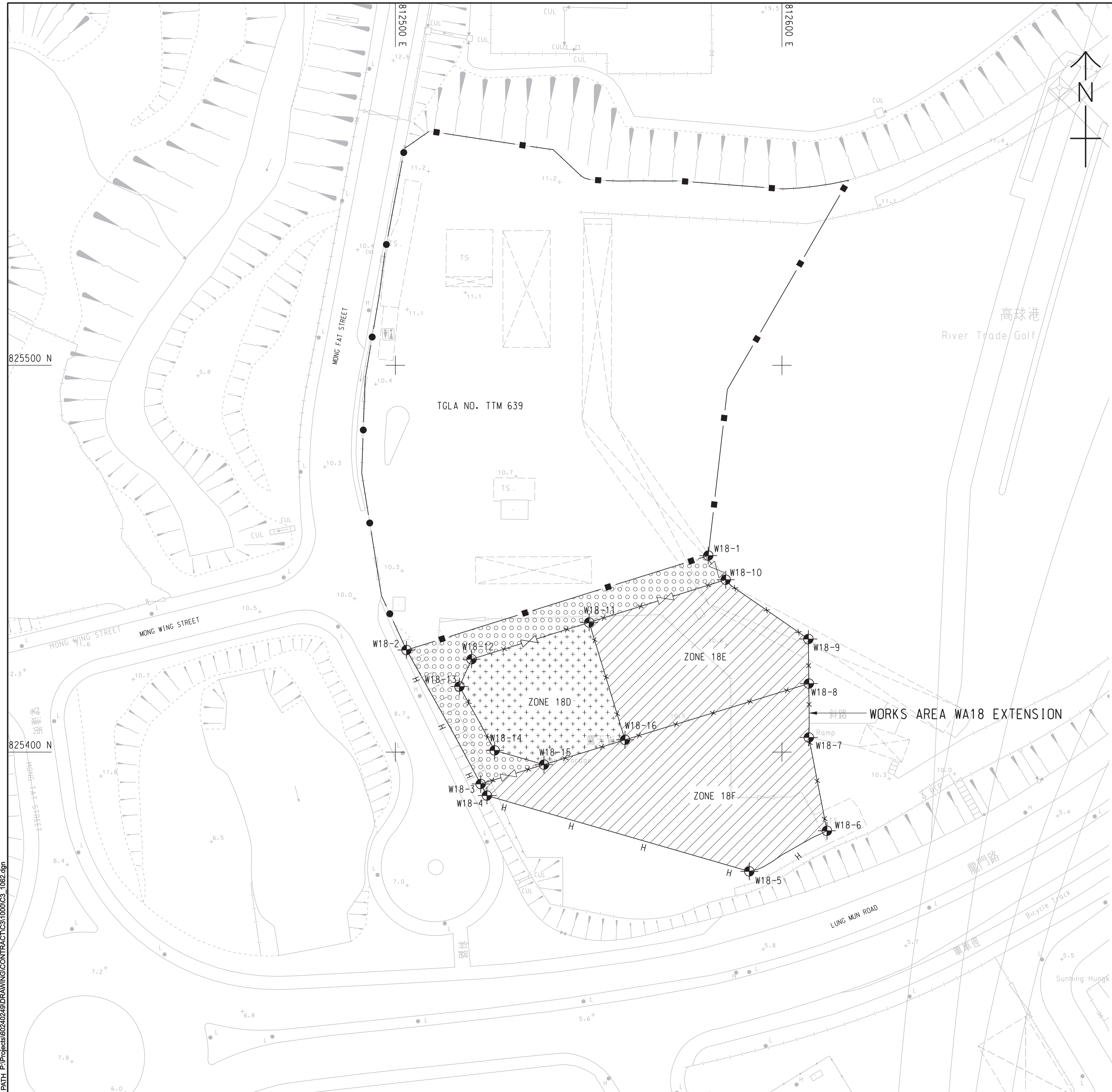


PROJECT NO.
 項目編號: 60240249
CONTRACT NO.
 合約編號: HY/2013/12

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

SHEET NUMBER
 圖紙編號: 60240249/C3/1052B

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NOTES:

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

LEGEND:

- [diagonal lines] WORKS AREA FOR THE CONTRACT
- [grid pattern] COMMON AREA (MAINTAINED UNDER THE CONTRACT) TO BE SHARED-USED WITH OTHER CONTRACTS
- [horizontal lines] 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 symbol] HOARDING AND GATE (TO BE ERRECTED AND MAINTAINED UNDER THIS CONTRACT)
- [chain link symbol] EXISTING CHAIN LINK FENCE MAINTAINED BY OTHERS
- [chain link and gate symbol] CHAIN LINK FENCE AND GATE (TO BE ERRECTED AND MAINTAINED UNDER THIS CONTRACT)
- [hoarding and gate symbol] EXISTING HOARDING AND GATE MAINTAINED BY OTHERS

SETTING OUT CO-ORDINATES OF WORKS AREA WA18 EXTENSION

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



PROJECT
 項目
TUEN MUN - CHEK LAP KOK LINK

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

CLIENT
 業主
HIGHWAYS DEPARTMENT
 港務處
 香港工程處
 Hong Kong - Zhuhai - Macao Bridge
 Hong Kong Project Management Office

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AECOM Asia Company Ltd.
 www.aecom.com

SUB-CONSULTANTS
 分判工程師有限公司

ISSUE/REVISION

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

STATUS
 階段

SCALE
 比例
 A1 1:500

DIMENSION UNIT
 尺寸單位
 METRES

KEY PLAN
 索引圖

PROJECT NO.
 項目編號
 60240249

CONTRACT NO.
 合約編號
 HY/2013/12

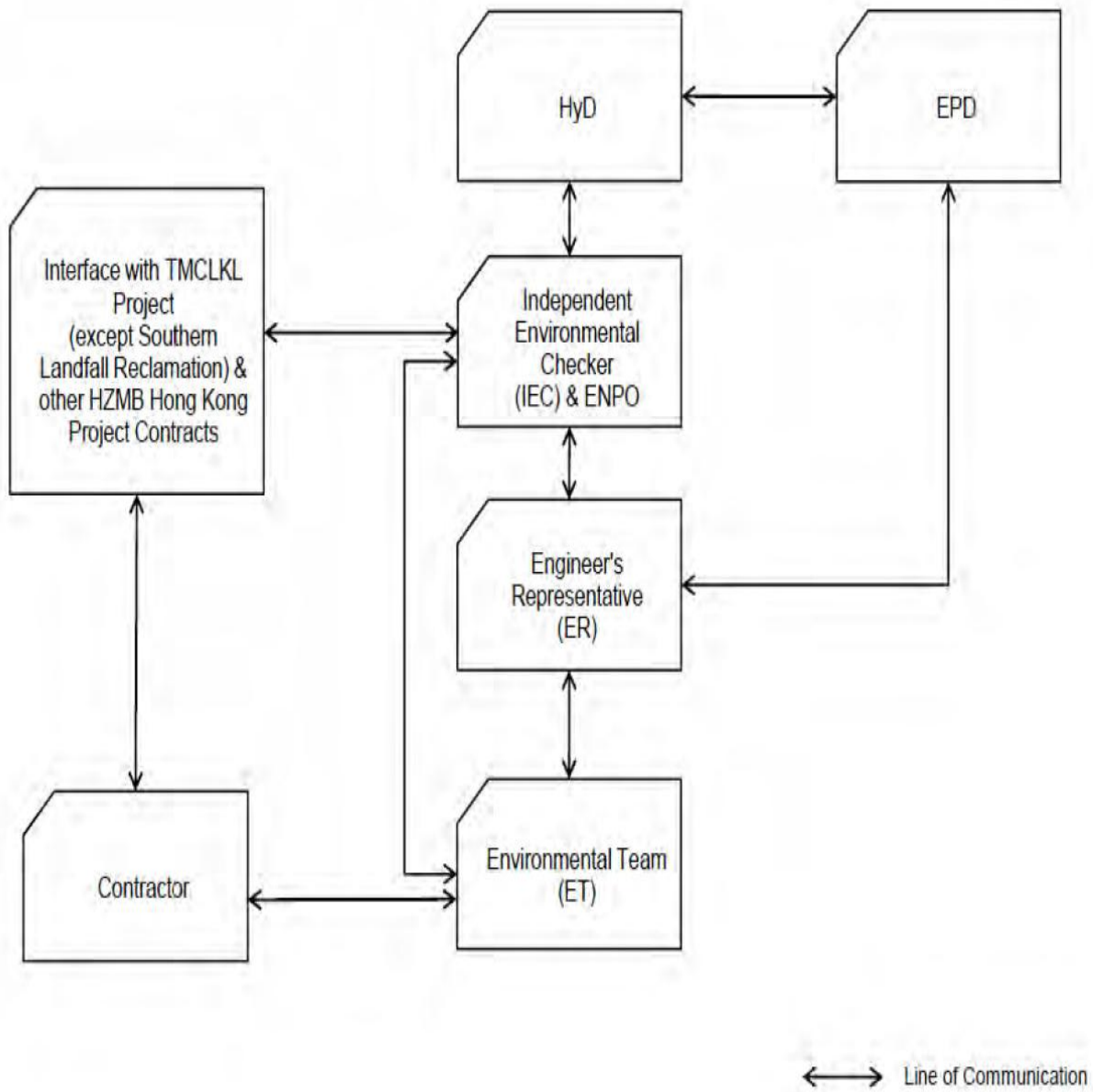
SHEET TITLE
 圖紙名稱
WORKS AREA AND HOARDING PLAN

SHEET NUMBER
 圖紙編號
 60240249/C3/1062B

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Appendix C

Environmental Management Organization Chart



Project Organization chart

Organization chart of the Contractor

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

| Organization | Project Role | Name of Key Staff | Tel No | Fax No. |
|---------------------|---|--------------------------|---------------|----------------|
| HyD | Employer | Mr. Stephen W.C. Chan | 2762 3669 | 3188 6614 |
| AECOM | Principal Resident Engineer | Mr. S.W. Fok | 2218 7209 | 2218 7399 |
| AECOM | Chief Resident Engineer | Mr. Roger Man | 2218 7288 | 2218 7399 |
| AECOM | Resident Engineer (S&E) | Mr. Kelvin Yeung | 2218 7289 | 2218 7399 |
| Ramboll Environ | Environmental Project Office (ENPO) | Mr. YH Hui | 3547 2133 | 3465 2899 |
| Ramboll Environ | Independent Environmental Checker (IEC) | Dr. FC Tsang | 3547 2134 | 3465 2899 |
| CKJV | Deputy Project Manager | Mr. Raymond Suen | 2253 8309 | 2253 8399 |
| CKJV | Site Agent | Mr. Wilson Lau | 2253 8300 | 2253 8399 |
| KJV | Environmental Officer | Mr. HY Tang | 2253 8300 | 2253 8399 |
| CKJV | Environmental Supervisor | Miss Melody Tong | 2253 8300 | 2253 8399 |
| AUES | Environmental Team Leader | Mr. T. W. Tam | 2959 6059 | 2959 6079 |
| AUES | Environmental Consultant | Miss Nicola Hon | 2959 6059 | 2959 6079 |
| AUES | Environmental Consultant | Mr. Ben Tam | 2959 6059 | 2959 6079 |
| HKL | Registered Landscape Architect | Kenneth Ng | 2866 3903 | -- |

Legend:*HyD (Employer) –Highways Department**AECOM (Engineer) – AECOM Asia Co. Ltd.**CKJV (Main Contractor) – CRBC-Kaden Joint Venture**Ramboll Environ (ENPO and IEC) - Ramboll Environ Hong Kong Limited**AUES (ET) – Action-United Environmental Services & Consulting**HKL(RLA) – Hong Kong Landscape*

Appendix D

Construction Programme

| Activity ID | Activity Name | Original Duration | Start | Finish | Calendar | Duration % Complete | Total Float | 2016 | | | | | |
|--|--|-------------------|-------------|-------------|-------------|---------------------|-------------|------|-----|-----|-----|-----|-----|
| | | | | | | | | Apr | May | Jun | Jul | Aug | Sep |
| HY/2013/12 TMCLK Northern Connection Toll Plaza and Associated-Works Programme-Rev.4A Monthly | | | | | | | | | | | | | |
| Programming / Reporting | | | | | | | | | | | | | |
| Detailed Works Programme (DWP) | | | | | | | | | | | | | |
| PR20170 | Acceptance of the DWP | 0 | 09-Feb-15 A | 09-Feb-15 A | GHY12 Cal.3 | 100% | | | | | | | |
| Instrumentation and Monitoring | | | | | | | | | | | | | |
| Utility Settlement Marker | | | | | | | | | | | | | |
| IM60020 | Installation of USM-Remain USM | 90 | 22-Nov-14 A | 09-Oct-15 A | GHY12 Cal.2 | 100% | | | | | | | |
| Toll Plaza Decking TD1-Section 1 | | | | | | | | | | | | | |
| Stage 1 | | | | | | | | | | | | | |
| Design Submission and Approval | | | | | | | | | | | | | |
| TD120120 | Prepare & submit DDA Drawings w/ICE cert(precast beam) | 23 | 23-Jul-15 A | 27-Jul-15 A | GHY12 Cal.3 | 100% | | | | | | | |
| TD120150 | Engineer's comments | 23 | 23-May-15 A | 04-Jun-15 A | GHY12 Cal.3 | 100% | | | | | | | |
| TD120160 | Prepare & submit DDA drawing w/ICE cert(decking) | 23 | 05-Jun-15 A | 12-Nov-15 A | GHY12 Cal.3 | 100% | | | | | | | |
| TD120170 | Acceptance of the DDA Drawing | 23 | 13-Nov-15 A | 26-Jan-16 A | GHY12 Cal.3 | 100% | | | | | | | |
| TD120220 | TWD -Formwork design for in-situ deck | 24 | 20-Apr-16 | 19-May-16 | GHY12 Cal.3 | 0% | 125 | | | | | | |
| Method Statement Submission and Approval | | | | | | | | | | | | | |
| TD121340 | Engineer's comments and approval | 24 | 01-Jun-15 A | 02-Jun-15 A | GHY12 Cal.3 | 100% | | | | | | | |
| TD121350 | MSS for in-situ deck | 24 | 17-Aug-15 A | 17-Jun-16 | GHY12 Cal.3 | 0% | 125 | | | | | | |
| TD121360 | Engineer's comments and approval | 24 | 19-Aug-15 A | 21-Jun-16 | GHY12 Cal.3 | 90% | 125 | | | | | | |
| Field Works | | | | | | | | | | | | | |
| Foundation & Substructure at Central Divider of Lung Mun Road | | | | | | | | | | | | | |
| G.I | | | | | | | | | | | | | |
| TD121050 | Traffic diversion for central divider(G.I) | 26 | 04-Mar-15 A | 07-Apr-15 A | GHY12 Cal.2 | 100% | | | | | | | |
| TD121060 | Trial pit and monitoring point installation | 10 | 07-Mar-15 A | 14-Aug-15 A | GHY12 Cal.2 | 100% | | | | | | | |
| TD121070 | Pre-drilling works TD1 A1-K1 | 30 | 12-Jan-15 A | 07-Apr-15 A | GHY12 Cal.2 | 100% | | | | | | | |
| Portal Construction | | | | | | | | | | | | | |
| Portal Beam 4th(F) | | | | | | | | | | | | | |
| TD121210 | Portal beam 4th(Portal F -Pier 14 to Pier 15) | 60 | 03-Mar-16 A | 27-Mar-16 A | GHY12 Cal.4 | 100% | | | | | | | |
| Portal Beam 5th(E) | | | | | | | | | | | | | |
| TD121220 | Portal beam 5th(Portal E -Pier 11 to Pier 13) | 60 | 10-Mar-16 A | 10-Apr-16 A | GHY12 Cal.4 | 100% | | | | | | | |
| Portal Beam 6th(D) | | | | | | | | | | | | | |
| TD121230 | Portal beam 6th(Portal D -Pier 8 to Pier 10) | 60 | 20-Apr-16 | 07-Jul-16 | GHY12 Cal.4 | 0% | 44 | | | | | | |
| Portal Beam 7th(C) | | | | | | | | | | | | | |
| TD121240 | Portal beam 7th(Portal C -Pier 5 to Pier 7) | 60 | 07-Apr-16 A | 06-Jun-16 | GHY12 Cal.4 | 40% | 215 | | | | | | |
| Portal Beam 8th(B) | | | | | | | | | | | | | |
| TD121250 | Portal beam 8th(Portal B -Pier 3 to Pier 4) | 60 | 20-Apr-16 | 07-Jul-16 | GHY12 Cal.4 | 0% | 191 | | | | | | |
| Portal Beam 9th(K) | | | | | | | | | | | | | |
| TD121260 | Portal beam 9th(Portal H -Pier 22 to Pier 23) | 61 | 12-Jul-16 | 27-Sep-16 | GHY12 Cal.4 | 0% | 129 | | | | | | |
| Deck Construction | | | | | | | | | | | | | |
| Cast in-situ deck between Pier A and Pier B | | | | | | | | | | | | | |
| TD120640 | Portal construction | 56 | 20-Apr-16 | 30-Jun-16 | GHY12 Cal.4 | 0% | 92 | | | | | | |
| TD120650 | Falsework installation | 55 | 02-Aug-16 | 12-Oct-16 | GHY12 Cal.4 | 0% | 13 | | | | | | |
| Precast beam fabrication | | | | | | | | | | | | | |
| TD120720 | Precast beam(Type 1 total-10 nos) | 21 | 30-Dec-15 A | 04-Feb-16 A | GHY12 Cal.2 | 100% | | | | | | | |
| TD120730 | Precast beam(Type 1 total-12 nos) | 24 | 16-Feb-16 A | 17-Mar-16 A | GHY12 Cal.2 | 100% | | | | | | | |
| TD120740 | Precast beam(Type 1 total-13nos) | 26 | 10-Mar-16 A | 22-Apr-16 | GHY12 Cal.2 | 92% | 181 | | | | | | |
| TD120750 | Precast beam(Type 1 total-8 nos) | 16 | 22-Apr-16 | 13-May-16 | GHY12 Cal.2 | 0% | 239 | | | | | | |
| TD120760 | Precast beam(Type 1 total-8 nos) | 16 | 13-May-16 | 04-Jun-16 | GHY12 Cal.2 | 0% | 247 | | | | | | |
| TD120770 | Precast beam(Type 1 total-7 nos) | 14 | 04-Jun-16 | 23-Jun-16 | GHY12 Cal.2 | 0% | 308 | | | | | | |
| TD120780 | Precast beam(Type 1 total-6 nos) | 13 | 23-Jun-16 | 11-Jul-16 | GHY12 Cal.2 | 0% | 308 | | | | | | |
| TD120800 | Precast parapet and planter | 90 | 11-Jul-16 | 04-Nov-16 | GHY12 Cal.2 | 0% | 308 | | | | | | |
| Precast beam installation | | | | | | | | | | | | | |
| TD12000 | Precast beam installation between Portal E and Portal F(6 Nos) | 18 | 11-Aug-16 | 05-Sep-16 | GHY12 Cal.4 | 0% | 17 | | | | | | |
| Toll Plaza Decking TD2-Section 1 | | | | | | | | | | | | | |
| Method Statement Submissions and Approval | | | | | | | | | | | | | |
| TD220120 | MSS for deck construction | 75 | 30-Nov-15 A | 14-Dec-15 A | GHY12 Cal.3 | 100% | | | | | | | |
| Field Works | | | | | | | | | | | | | |
| G.I and Piling Works | | | | | | | | | | | | | |
| DWP-Bored Piles | | | | | | | | | | | | | |

█ Remaining Level of Effort
 █ Remaining Work
 █ Actual Work
 █ Critical Remaining Work
 ◆ ◆ M..
 ▼ ▼ S..

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

| Date | Revision | Checked | Approved |
|-----------|----------|---------|----------|
| 23-May-16 | | | |
| | | | |

| Activity ID | Activity Name | Original Duration | Start | Finish | Calendar | Duration % Complete | Total Float | Apr | May | Jun | Jul | Aug | Sep |
|--|---|-------------------|-------------|-------------|-------------|---------------------|-------------|-----|-----|-----|-----|-----|-----|
| TD220480 | Working platform for pile cap L1-L3 | 13 | 08-May-15 A | 21-Aug-15 A | GHY12 Cal.2 | 100% | | | | | | | |
| TD220490 | Bored piles for P6-P11 | 60 | 12-Jun-15 A | 03-Oct-15 A | GHY12 Cal.2 | 100% | | | | | | | |
| TD220530 | Working platform for pile cap L4 | 5 | 07-Aug-15 A | 08-Aug-15 A | GHY12 Cal.2 | 100% | | | | | | | |
| TD220540 | Bored piles for P12-13 | 20 | 25-Jul-15 A | 21-Aug-15 A | GHY12 Cal.2 | 100% | | | | | | | |
| Base Slab & Pile Cap Construction | | 117 | 21-Jul-15 A | 05-Apr-16 A | GHY12 Cal.2 | 100% | | | | | | | |
| Abutment K-Base Slab | | 93 | 21-Jul-15 A | 15-Dec-15 A | GHY12 Cal.2 | 100% | | | | | | | |
| TD220550 | Preparation works for drainage channel diversion | 30 | 21-Jul-15 A | 03-Aug-15 A | GHY12 Cal.2 | 100% | | | | | | | |
| TD220555 | Drainage channel diversion | 21 | 21-Nov-15 A | 24-Nov-15 A | GHY12 Cal.2 | 100% | | | | | | | |
| TD220560 | ELS for abutment K | 51 | 03-Nov-15 A | 15-Dec-15 A | GHY12 Cal.2 | 100% | | | | | | | |
| Pile Cap L1-L4 | | 79 | 14-Nov-15 A | 12-Mar-16 A | GHY12 Cal.2 | 100% | | | | | | | |
| TD220620 | Pile cap L2 | 15 | 23-Feb-16 A | 12-Mar-16 A | GHY12 Cal.2 | 100% | | | | | | | |
| TD220630 | Sheetpile for Pile cap L3 | 18 | 20-Dec-15 A | 21-Dec-15 A | GHY12 Cal.2 | 100% | | | | | | | |
| TD220632 | ELS for Pile cap L3 | 20 | 21-Dec-15 A | 20-Jan-16 A | GHY12 Cal.2 | 100% | | | | | | | |
| TD220640 | Pile cap L3 | 15 | 25-Feb-16 A | 07-Mar-16 A | GHY12 Cal.2 | 100% | | | | | | | |
| TD220648 | Sheetpile for Pile cap L4 | 10 | 14-Nov-15 A | 15-Nov-15 A | GHY12 Cal.2 | 100% | | | | | | | |
| TD220650 | ELS for Pile cap L4 | 14 | 16-Nov-15 A | 21-Jan-16 A | GHY12 Cal.2 | 100% | | | | | | | |
| TD220660 | Pile cap L4 | 15 | 21-Jan-16 A | 05-Feb-16 A | GHY12 Cal.2 | 100% | | | | | | | |
| Abutment M-Base Slab | | 100 | 06-Nov-15 A | 05-Apr-16 A | GHY12 Cal.2 | 100% | | | | | | | |
| TD220665 | New Design for Abutment M from Engineer | 0 | 06-Nov-15 A | | GHY12 Cal.2 | 100% | | | | | | | |
| TD220670 | ELS for abutment M | 55 | 11-Nov-15 A | 08-Mar-16 A | GHY12 Cal.2 | 100% | | | | | | | |
| TD220680 | Formwork and Reinforcement | 45 | 15-Mar-16 A | 24-Mar-16 A | GHY12 Cal.2 | 100% | | | | | | | |
| TD220690 | Concreting and backfilling | 10 | 30-Mar-16 A | 05-Apr-16 A | GHY12 Cal.2 | 100% | | | | | | | |
| Abutment and Pier Construction | | 115 | 22-Feb-16 A | 16-Jul-16 | GHY12 Cal.2 | 42.95% | 167 | | | | | | |
| Abutment K | | 20 | 20-Apr-16 | 17-May-16 | GHY12 Cal.2 | 0% | 147 | | | | | | |
| TD220270 | Backfill for abutment K | 20 | 20-Apr-16 | 17-May-16 | GHY12 Cal.2 | 0% | 147 | | | | | | |
| Pier L2 | | 26 | 17-Mar-16 A | 09-Apr-16 A | GHY12 Cal.2 | 100% | | | | | | | |
| TD220290 | Pier L2 | 26 | 17-Mar-16 A | 09-Apr-16 A | GHY12 Cal.2 | 100% | | | | | | | |
| Pier L3 | | 26 | 12-Mar-16 A | 09-Apr-16 A | GHY12 Cal.2 | 100% | | | | | | | |
| TD220140 | Pier L3 | 26 | 12-Mar-16 A | 09-Apr-16 A | GHY12 Cal.2 | 100% | | | | | | | |
| Pier L4 | | 20 | 22-Feb-16 A | 06-Apr-16 A | GHY12 Cal.2 | 100% | | | | | | | |
| TD220150 | Pier L4 | 20 | 22-Feb-16 A | 06-Apr-16 A | GHY12 Cal.2 | 100% | | | | | | | |
| Abutment M | | 46 | 17-May-16 | 16-Jul-16 | GHY12 Cal.2 | 0% | 167 | | | | | | |
| TD220160 | Wall for abutment M | 30 | 17-May-16 | 24-Jun-16 | GHY12 Cal.2 | 0% | 167 | | | | | | |
| TD220170 | Backfill for abutment M | 16 | 24-Jun-16 | 16-Jul-16 | GHY12 Cal.2 | 0% | 167 | | | | | | |
| Deck Construction | | 15 | 17-May-16 | 04-Jun-16 | GHY12 Cal.2 | 0% | 189 | | | | | | |
| TD220000 | Construction of walkway | 15 | 17-May-16 | 04-Jun-16 | GHY12 Cal.2 | 0% | 189 | | | | | | |
| Miscellaneous Works | | 60 | 18-Apr-16 A | 29-Jul-16 | GHY12 Cal.2 | 5% | 147 | | | | | | |
| TD220695 | Cascade D construction | 60 | 18-Apr-16 A | 29-Jul-16 | GHY12 Cal.2 | 5% | 147 | | | | | | |
| Toll Plaza Footbridge-Section 1 | | 859 | 03-Nov-14 A | 04-Jul-17 | | 48.66% | 111 | | | | | | |
| Stage 1 | | 859 | 03-Nov-14 A | 04-Jul-17 | | 48.66% | 111 | | | | | | |
| Method Statement Submissions and Approval | | 205 | 04-Dec-15 A | 26-Nov-16 | GHY12 Cal.3 | 10.73% | 162 | | | | | | |
| TFB1050 | MSS for steel truss installation including shop drawings submission | 90 | 04-Dec-15 A | 29-Apr-16 | GHY12 Cal.3 | 90% | 53 | | | | | | |
| TFB1070 | MSS for staircase construction | 40 | 21-Dec-15 A | 22-Aug-16 | GHY12 Cal.3 | 90% | 162 | | | | | | |
| TFB1080 | MSS for lift construction | 40 | 23-Aug-16 | 11-Oct-16 | GHY12 Cal.3 | 0% | 162 | | | | | | |
| TFB1090 | MSS for concrete slab and planter construction over steel truss | 40 | 12-Oct-16 | 26-Nov-16 | GHY12 Cal.3 | 0% | 162 | | | | | | |
| Off-site Works | | 90 | 19-Oct-16 | 08-Feb-17 | GHY12 Cal.2 | 0% | 52 | | | | | | |
| TFB1100 | Steel truss fabrication | 90 | 19-Oct-16 | 08-Feb-17 | GHY12 Cal.2 | 0% | 52 | | | | | | |
| Field Works | | 643 | 03-Nov-14 A | 04-Jul-17 | GHY12 Cal.2 | 47.47% | 86 | | | | | | |
| G.I and Foundation Works | | 54 | 03-Nov-14 A | 25-Feb-15 A | GHY12 Cal.2 | 100% | | | | | | | |
| TFB1160 | Socketted H-Pile for Pier P3(9 Nos) | 18 | 03-Nov-14 A | 30-Nov-14 A | GHY12 Cal.2 | 100% | | | | | | | |
| TFB1170 | Socketted H-Pile for Pier P2(11 Nos) | 36 | 01-Dec-14 A | 31-Dec-14 A | GHY12 Cal.2 | 100% | | | | | | | |
| TFB1190 | Predrilling works at Pier P1,P5,P7 and West staircase | 24 | 02-Jan-15 A | 25-Feb-15 A | GHY12 Cal.2 | 100% | | | | | | | |
| Pile Cap Construction | | 56 | 28-Mar-15 A | 24-Oct-15 A | GHY12 Cal.2 | 100% | | | | | | | |
| TFB1230 | Construct Pile cap for Pier P3 | 20 | 27-Jul-15 A | 20-Oct-15 A | GHY12 Cal.2 | 100% | | | | | | | |
| TFB1240 | Construct pile cap for Pier P2 | 20 | 28-Mar-15 A | 24-Oct-15 A | GHY12 Cal.2 | 100% | | | | | | | |
| Pier Construction | | 194 | 26-Aug-15 A | 24-Sep-16 | GHY12 Cal.2 | 38% | 275 | | | | | | |
| TFB1250 | Construct pier P1(include bearing installation) | 42 | 14-Mar-16 A | 28-May-16 | GHY12 Cal.2 | 30% | 250 | | | | | | |
| TFB1260 | Construct pier P5 | 42 | 16-Dec-15 A | 21-Jun-16 | GHY12 Cal.2 | 60% | 332 | | | | | | |
| TFB1270 | Construct pier P7 | 42 | 09-Mar-16 A | 12-Jul-16 | GHY12 Cal.2 | 60% | 332 | | | | | | |

█ Remaining Level of Effort
 █ Remaining Work
 █ Actual Work
 █ Critical Remaining Work
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CRBC - Kaden JV
Two-Month Rolling Programme

| Date | Revision | Checked | Approved |
|-----------|----------|---------|----------|
| 23-May-16 | | | |
| | | | |

| Activity ID | Activity Name | Original Duration | Start | Finish | Calendar | Duration % Complete | Total Float | 2016 | | | | | |
|--|--|-------------------|-------------|-------------|-------------|---------------------|-------------|-------------------------|-----|-----|-----|-----|-----|
| | | | | | | | | Apr | May | Jun | Jul | Aug | Sep |
| TFB1280 | Construct pier P2 | 42 | 26-Aug-15 A | 13-Sep-16 | GHY12 Cal.2 | 85% | 159 | [Gantt bar: Apr to Sep] | | | | | |
| TFB1290 | Construct pier P3 | 42 | 22-Sep-15 A | 24-Sep-16 | GHY12 Cal.2 | 81% | 159 | [Gantt bar: Apr to Sep] | | | | | |
| Staircase and Lift Construction | | | | | | | | | | | | | |
| TFB1350 | West staircase construction | 48 | 23-Nov-15 A | 04-Jul-17 | GHY12 Cal.2 | 40% | 86 | [Gantt bar: Apr to Sep] | | | | | |
| Retaining Structure RW_B-Section 1 | | | | | | | | | | | | | |
| Site Formation - Retaining Structure RW_B | | | | | | | | | | | | | |
| Stage 1 | | | | | | | | | | | | | |
| Design Submission and Approval | | | | | | | | | | | | | |
| RWB10300 | Engineer's approval | 21 | 14-Jan-15 A | 11-Mar-15 A | GHY12 Cal.3 | 100% | | | | | | | |
| RWB10310 | Alternative Design for RW_B structure | 21 | 15-Jan-15 A | 20-Jan-15 A | GHY12 Cal.3 | 100% | | | | | | | |
| RWB10320 | Engineer's comments | 21 | 09-Mar-15 A | 11-Mar-15 A | GHY12 Cal.3 | 100% | | | | | | | |
| RWB10330 | Alternative Design for RW_B structure submission | 21 | 09-Mar-15 A | 24-Apr-15 A | GHY12 Cal.3 | 100% | | | | | | | |
| RWB10340 | Engineer's approval | 21 | 27-Mar-15 A | 06-May-15 A | GHY12 Cal.3 | 100% | | | | | | | |
| RWB10380 | Engineer's comments and approval | 21 | 16-Jan-15 A | 31-Jan-15 A | GHY12 Cal.3 | 100% | | | | | | | |
| RWB10390 | Falsework design submission | 21 | 13-Apr-15 A | 04-May-15 A | GHY12 Cal.3 | 100% | | | | | | | |
| RWB10400 | Engineer's comments and approval | 21 | 24-Apr-15 A | 06-May-15 A | GHY12 Cal.3 | 100% | | | | | | | |
| Method Statement Submission and Approval | | | | | | | | | | | | | |
| RWB10410 | Method Statement Submission and Approval for Retaining Wall Construction | 17 | 07-Jan-15 A | 13-Jan-15 A | GHY12 Cal.3 | 100% | | | | | | | |
| RWB10420 | Engineer's comments and approval | 17 | 14-Jan-15 A | 31-Jan-15 A | GHY12 Cal.3 | 100% | | | | | | | |
| Retaining Structure RW_B | | | | | | | | | | | | | |
| Excavation | | | | | | | | | | | | | |
| RWB10500 | Excavation of RW_B up to approx +6.0 mPD-(Bay11-13) | 60 | 01-Dec-14 A | 13-Feb-15 A | GHY12 Cal.2 | 100% | | | | | | | |
| RWB10510 | Excavation of RW_B up to approx +6.0 mPD-(Bay14-15) | 40 | 01-Dec-14 A | 13-Apr-15 A | GHY12 Cal.2 | 100% | | | | | | | |
| RWB10530 | Predrilling works remaining works | 68 | 01-Jan-15 A | 02-Jul-15 A | GHY12 Cal.2 | 100% | | | | | | | |
| Structure(Base Slab, Wall, Colum, Top Slab) | | | | | | | | | | | | | |
| Bay 1-7 | | | | | | | | | | | | | |
| RWB10100 | wall and columne-Bay2 to Bay 7 | 85 | 01-Apr-15 A | 21-Sep-15 A | GHY12 Cal.2 | 100% | | | | | | | |
| Bay12-13 | | | | | | | | | | | | | |
| RWB10170 | Bay12-13 and backfilling | 60 | 18-Sep-15 A | 25-Apr-16 | GHY12 Cal.2 | 93% | 162 | [Gantt bar: Apr to Sep] | | | | | |
| Bay14-Bay15 | | | | | | | | | | | | | |
| RWB10210 | Foundation works Bay 15 | 40 | 15-Dec-15 A | 24-Dec-15 A | GHY12 Cal.2 | 100% | | | | | | | |
| RWB10220 | Bay 14-15 | 60 | 07-Jan-16 A | 25-May-16 | GHY12 Cal.2 | 63% | 326 | [Gantt bar: Apr to Sep] | | | | | |
| Backfilling | | | | | | | | | | | | | |
| RWB10230 | Backfilling | 40 | 15-Jul-15 A | 25-Jun-16 | GHY12 Cal.2 | 40% | 414 | [Gantt bar: Apr to Sep] | | | | | |
| RWB10235 | Precast panels installation | 90 | 25-May-16 | 20-Sep-16 | GHY12 Cal.2 | 0% | 348 | [Gantt bar: Apr to Sep] | | | | | |
| RW_B Precast Panel | | | | | | | | | | | | | |
| Precast the Panel | | | | | | | | | | | | | |
| RWB20000 | Precast the Panels(Bay 6-10 nos) | 12 | 20-Apr-16* | 05-May-16 | GHY12 Cal.2 | 0% | 12 | [Gantt bar: Apr to Sep] | | | | | |
| RWB20010 | Precast the Panels(Bay 5-10 nos) | 12 | 04-May-16 | 19-May-16 | GHY12 Cal.2 | 0% | 12 | [Gantt bar: Apr to Sep] | | | | | |
| RWB20020 | Precast the Panels(Bay 7-10nos) | 12 | 18-May-16 | 01-Jun-16 | GHY12 Cal.2 | 0% | 12 | [Gantt bar: Apr to Sep] | | | | | |
| RWB20030 | Precast the Panels(Bay 4-12nos) | 12 | 30-May-16 | 14-Jun-16 | GHY12 Cal.2 | 0% | 12 | [Gantt bar: Apr to Sep] | | | | | |
| RWB20040 | Precast the Panels(Bay 8-10nos) | 12 | 13-Jun-16 | 27-Jun-16 | GHY12 Cal.2 | 0% | 12 | [Gantt bar: Apr to Sep] | | | | | |
| RWB20050 | Precast the Panels(Bay 3-17nos) | 12 | 25-Jun-16 | 11-Jul-16 | GHY12 Cal.2 | 0% | 12 | [Gantt bar: Apr to Sep] | | | | | |
| RWB20060 | Precast the Panels(Bay 9-8nos) | 6 | 09-Jul-16 | 16-Jul-16 | GHY12 Cal.2 | 0% | 16 | [Gantt bar: Apr to Sep] | | | | | |
| RWB20070 | Precast the Panels(Bay 2-5nos) | 6 | 14-Jul-16 | 21-Jul-16 | GHY12 Cal.2 | 0% | 16 | [Gantt bar: Apr to Sep] | | | | | |
| RWB20080 | Precast the Panels(Bay 10-15nos) | 12 | 20-Jul-16 | 03-Aug-16 | GHY12 Cal.2 | 0% | 16 | [Gantt bar: Apr to Sep] | | | | | |
| RWB20090 | Precast the Panels(Bay 11-9nos) | 12 | 02-Aug-16 | 16-Aug-16 | GHY12 Cal.2 | 0% | 39 | [Gantt bar: Apr to Sep] | | | | | |
| RWB20100 | Precast the Panels(Bay 14-12nos) | 12 | 13-Aug-16 | 27-Aug-16 | GHY12 Cal.2 | 0% | 252 | [Gantt bar: Apr to Sep] | | | | | |
| RWB20110 | Precast the Panels(Bay 15-11nos) | 12 | 26-Aug-16 | 09-Sep-16 | GHY12 Cal.2 | 0% | 272 | [Gantt bar: Apr to Sep] | | | | | |
| Installation the Panel | | | | | | | | | | | | | |
| RWB20120 | Installation the Panel Bay 6 | 5 | 06-May-16* | 11-May-16 | GHY12 Cal.2 | 0% | 37 | [Gantt bar: Apr to Sep] | | | | | |
| RWB20130 | Installation the Panel Bay 5 | 5 | 20-May-16 | 25-May-16 | GHY12 Cal.2 | 0% | 32 | [Gantt bar: Apr to Sep] | | | | | |
| RWB20140 | Installation the Panel Bay 7 | 5 | 02-Jun-16 | 07-Jun-16 | GHY12 Cal.2 | 0% | 27 | [Gantt bar: Apr to Sep] | | | | | |
| RWB20150 | Installation the Panel Bay 4 | 5 | 16-Jun-16 | 21-Jun-16 | GHY12 Cal.2 | 0% | 22 | [Gantt bar: Apr to Sep] | | | | | |
| RWB20160 | Installation the Panel Bay 8 | 5 | 28-Jun-16 | 05-Jul-16 | GHY12 Cal.2 | 0% | 17 | [Gantt bar: Apr to Sep] | | | | | |
| RWB20170 | Installation the Panel Bay 3 | 9 | 12-Jul-16 | 22-Jul-16 | GHY12 Cal.2 | 0% | 12 | [Gantt bar: Apr to Sep] | | | | | |
| RWB20180 | Installation the Panel Bay 9 | 5 | 23-Jul-16 | 28-Jul-16 | GHY12 Cal.2 | 0% | 12 | [Gantt bar: Apr to Sep] | | | | | |
| RWB20190 | Installation the Panel Bay 2 | 3 | 29-Jul-16 | 02-Aug-16 | GHY12 Cal.2 | 0% | 12 | [Gantt bar: Apr to Sep] | | | | | |
| RWB20200 | Installation the Panel Bay 10 | 7 | 04-Aug-16 | 11-Aug-16 | GHY12 Cal.2 | 0% | 16 | [Gantt bar: Apr to Sep] | | | | | |

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CRBC - Kaden JV
Two-Month Rolling Programme

| Date | Revision | Checked | Approved |
|-----------|----------|---------|----------|
| 23-May-16 | | | |
| | | | |

| Activity ID | Activity Name | Original Duration | Start | Finish | Calendar | Duration % Complete | Total Float | Apr | May | Jun | Jul | Aug | Sep |
|--|---|-------------------|-------------|-------------|---------------|---------------------|-------------|-----|-----|-----|-----|-----|--|
| RWB20210 | Installation the Panel Bay 11 | 5 | 17-Aug-16 | 22-Aug-16 | GHY12 Cal.2 | 0% | 39 | | | | | | Installation the Panel Bay |
| Toll Collector Subway & Associated Works-Section 1 | | 499 | 20-Oct-15 A | 01-Mar-17 | | 36.67% | 315 | | | | | | |
| Toll Collector Bridge (Portion I)-Section 1 | | 258 | 20-Apr-16 | 01-Mar-17 | GHY12 Cal.3 | 0% | 256 | | | | | | |
| Stage 1 | | 258 | 20-Apr-16 | 01-Mar-17 | GHY12 Cal.3 | 0% | 256 | | | | | | |
| Temporary Works Design(TWD) Submission and Approval | | 60 | 20-Apr-16 | 02-Jul-16 | GHY12 Cal.3 | 0% | 256 | | | | | | Temporary Works Design(TWD) Submission and Approval |
| TCS1240 | TWD -Design of lifting system | 30 | 20-Apr-16 | 26-May-16 | GHY12 Cal.3 | 0% | 256 | | | | | | TWD -Design of lifting system |
| TCS1580 | Engineer's comments and approval | 30 | 27-May-16 | 02-Jul-16 | GHY12 Cal.3 | 0% | 256 | | | | | | Engineer's comments and approval |
| Method Statement Submissions and Approval | | 48 | 04-Jul-16 | 27-Aug-16 | GHY12 Cal.3 | 0% | 256 | | | | | | Method Statement |
| TCS1250 | MSS for toll collector bridge and staircase installation | 24 | 04-Jul-16 | 30-Jul-16 | GHY12 Cal.3 | 0% | 256 | | | | | | MSS for toll collector bridge and staircase installation |
| TCS1590 | Engineer's comments and approval | 24 | 01-Aug-16 | 27-Aug-16 | GHY12 Cal.3 | 0% | 256 | | | | | | Engineer's comments and approval |
| Off-site Works | | 120 | 05-Oct-16 | 01-Mar-17 | GHY12 Cal.3 | 0% | 256 | | | | | | |
| TCS1600 | Engineer's comments and approval | 30 | 05-Oct-16 | 09-Nov-16 | GHY12 Cal.3 | 0% | 256 | | | | | | |
| TCS1610 | Toll collector bridge (Steel Truss) and staircase fabrication | 90 | 10-Nov-16 | 01-Mar-17 | GHY12 Cal.3 | 0% | 256 | | | | | | |
| Toll Collector Subway & Associate Works (Portion I)-Section 1 | | 185 | 03-Dec-15 A | 22-Oct-16 | | 0% | 208 | | | | | | |
| Stage 1 | | 185 | 03-Dec-15 A | 22-Oct-16 | | 0% | 208 | | | | | | |
| Method Statement Submissions and Approval | | 47 | 03-Dec-15 A | 19-May-16 | GHY12 Cal.3 | 49.37% | 175 | | | | | | Method Statement Submissions and Approval |
| TCS1390 | MSS for subway structural works | 24 | 03-Dec-15 A | 17-Dec-15 A | GHY12 Cal.3 | 100% | | | | | | | |
| TCS1630 | Engineer's comments and approval | 24 | 20-Apr-16 | 19-May-16 | GHY12 Cal.3 | 0% | 175 | | | | | | Engineer's comments and approval |
| Field Works - Toll Collector Subway and Staircase | | 185 | 21-Mar-16 A | 22-Oct-16 | | 2.77% | 208 | | | | | | |
| TCS1400 | Site clearance | 24 | 21-Mar-16 A | 25-May-16 A | GHY12 Cal.2 | 100% | | | | | | | Site clearance |
| TCS1410 | Finish L shape structure of RW_B | 0 | | 20-Apr-16 A | GHY12 Cal.1-1 | 100% | | | | | | | Finish L shape structure of RW_B |
| TCS1420 | ELS for (SB22-SB16) | 40 | 25-Apr-16 | 18-Jun-16 | GHY12 Cal.2 | 0% | 162 | | | | | | ELS for (SB22-SB16) |
| TCS1430 | Construction of toll collector subway(from SB22-SB16) | 70 | 23-May-16 | 22-Aug-16 | GHY12 Cal.2 | 0% | 162 | | | | | | Construction of toll collector subway |
| TCS1440 | Construction of staircase | 70 | 22-Jul-16 | 22-Oct-16 | GHY12 Cal.2 | 0% | 162 | | | | | | Construction of staircase |
| Toll Collector Subway (Portion X)-Section 5 | | 427 | 20-Oct-15 A | 19-Dec-16 | | 78.92% | 142 | | | | | | |
| Stage 3 | | 427 | 20-Oct-15 A | 19-Dec-16 | | 78.92% | 142 | | | | | | |
| TCS1072 | Construct Toll Collector Subway SB 1 | 15 | 20-Sep-16 | 05-Oct-16 | GHY12 Cal.1-1 | 0% | 62 | | | | | | |
| TCS1074 | Backfill for SB 1 | 15 | 05-Oct-16 | 20-Oct-16 | GHY12 Cal.1-1 | 0% | 62 | | | | | | |
| TCS1090 | Hand over Portion D | 0 | 19-Dec-16 | | GHY12 Cal.1-1 | 0% | 2 | | | | | | |
| TCS1100 | Excavation Works-S.B 3-8 | 80 | 20-Oct-15 A | 21-Nov-16 | GHY12 Cal.2 | 40% | 132 | | | | | | |
| Bridge G2 | | 317 | 02-Feb-15 A | 22-Feb-17 | | 2.52% | 213 | | | | | | |
| Stage 2 | | 317 | 02-Feb-15 A | 22-Feb-17 | | 2.52% | 213 | | | | | | |
| Temporary Works Design (TWD) Submission and Approval | | 95 | 09-Mar-15 A | 10-May-16 | GHY12 Cal.3 | 82.24% | 176 | | | | | | Temporary Works Design (TWD) Submission and Approval |
| BG23590 | DDA for superstructure(draft) | 17 | 09-Mar-15 A | 16-Mar-15 A | GHY12 Cal.3 | 100% | | | | | | | |
| BG23600 | Engineer's comments | 17 | 17-Mar-15 A | 13-Apr-15 A | GHY12 Cal.3 | 100% | | | | | | | |
| BG23610 | DDA for superstructure submission | 17 | 21-Apr-15 A | 29-Apr-15 A | GHY12 Cal.3 | 100% | | | | | | | |
| BG23620 | Engineer's approval | 17 | 20-Apr-16 | 10-May-16 | GHY12 Cal.3 | 0% | 176 | | | | | | Engineer's approval |
| Method Statement Submissions and Approval | | 17 | 02-Feb-15 A | 13-Feb-15 A | GHY12 Cal.3 | 100% | | | | | | | |
| BG23230 | MSS for pier construction | 17 | 02-Feb-15 A | 13-Feb-15 A | GHY12 Cal.3 | 100% | | | | | | | |
| Field Works | | 235 | 07-Sep-15 A | 22-Feb-17 | GHY12 Cal.2 | 0% | 164 | | | | | | |
| Pier & Abutment Construction | | 124 | 07-Sep-15 A | 26-Apr-16 | GHY12 Cal.2 | 95.65% | 139 | | | | | | Pier & Abutment Construction |
| BG23440 | Construct Pier at G2c-1 | 32 | 04-Nov-15 A | 12-Dec-15 A | GHY12 Cal.2 | 100% | | | | | | | |
| BG23450 | Construct Pier at G2c-2 | 32 | 07-Sep-15 A | 19-Oct-15 A | GHY12 Cal.2 | 100% | | | | | | | |
| BG23460 | Construct Pier at G2b | 36 | 14-Mar-16 A | 26-Apr-16 | GHY12 Cal.2 | 85% | 139 | | | | | | Construct Pier at G2b |
| BG23470 | Construct Pier at G2a | 45 | 18-Nov-15 A | 27-Jan-16 A | GHY12 Cal.2 | 100% | | | | | | | |
| Deck | | 230 | 04-Apr-16 A | 22-Feb-17 | GHY12 Cal.2 | 3% | 164 | | | | | | Deck(G2c) |
| BG23000 | Deck(G2c-G2d2) | 90 | 20-Apr-16 A | 03-Sep-16 | GHY12 Cal.2 | 1% | 164 | | | | | | Deck(G2c) |
| BG23010 | Deck(G2d2-G2c2)&Construct Portal G2c | 75 | 14-Jul-16 | 21-Oct-16 | GHY12 Cal.2 | 0% | 164 | | | | | | |
| BG23040 | Deck(G2c-G2d1) | 60 | 04-Apr-16 A | 22-Feb-17 | GHY12 Cal.2 | 10% | 164 | | | | | | |
| Bridge G1 | | 415 | 28-Nov-14 A | 25-Aug-16 | | 69.16% | 373 | | | | | | Bridge G1 |
| Stage 2 | | 415 | 28-Nov-14 A | 25-Aug-16 | | 69.16% | 373 | | | | | | Stage:2 |
| Design Submission and Approval | | 336 | 28-Nov-14 A | 16-May-16 | GHY12 Cal.3 | 93.75% | 388 | | | | | | Design Submission and Approval |
| BG112220 | Engineer's approval | 21 | 17-Dec-14 A | 08-Jan-15 A | GHY12 Cal.3 | 100% | | | | | | | |
| BG112230 | DDA for substructure(draft) | 21 | 28-Nov-14 A | 09-Dec-14 A | GHY12 Cal.3 | 100% | | | | | | | |
| BG112240 | Engineer's comments | 21 | 09-Dec-14 A | 02-Jan-15 A | GHY12 Cal.3 | 100% | | | | | | | |
| BG112300 | Engineer's approval | 21 | 20-Apr-16 | 16-May-16 | GHY12 Cal.3 | 0% | 259 | | | | | | Engineer's approval |
| Method Statement Submissions and Approval | | 24 | 09-Feb-15 A | 13-Feb-15 A | GHY12 Cal.3 | 100% | | | | | | | |
| BG112330 | MSS-substructure construction | 24 | 09-Feb-15 A | 13-Feb-15 A | GHY12 Cal.3 | 100% | | | | | | | |
| Off-site Works | | 90 | 21-Jan-16 A | 29-Apr-16 | GHY12 Cal.2 | 90% | 258 | | | | | | Off-site Works |

█ Remaining Level of Effort
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CRBC - Kaden JV
Two-Month Rolling Programme

| Date | Revision | Checked | Approved |
|-----------|----------|---------|----------|
| 23-May-16 | | | |
| | | | |

| Activity ID | Activity Name | Original Duration | Start | Finish | Calendar | Duration % Complete | Total Float | 2016 | | | | | |
|---|---|-------------------|-------------|-------------|---------------|---------------------|-------------|---|-----|-----|-----|-----|--|
| | | | | | | | | Apr | May | Jun | Jul | Aug | Sep |
| BG112000 | Form traveller fabrication | 90 | 21-Jan-16 A | 29-Apr-16 | GHY12 Cal.2 | 90% | 258 | Form traveller fabrication | | | | | |
| Field Works | | | | | | | | | | | | | Field Works |
| Substructure Works from Pier G1d to Pier G2a | | | | | | | | | | | | | Substructure Works from Pier G1d to Pier G2a |
| BG112130 | Pierhead segment construction at Pier G1d | 40 | 20-Apr-16 | 11-Jun-16 | GHY12 Cal.2 | 0% | 197 | Pierhead segment construction at Pier G1d | | | | | |
| Deck Construction from Pier G1d to Pier G2a | | | | | | | | | | | | | Deck Construction from Pier G1d to Pier G2a |
| BG112120 | Assemble of 1st formtraveller at G1d and testing | 28 | 22-Jul-16 | 25-Aug-16 | GHY12 Cal.2 | 0% | 197 | Assemble of 1st formtraveller at G1d and testing | | | | | |
| BG112462 | Completion of Pier at G2a | 0 | | 20-Apr-16 | GHY12 Cal.1-1 | 0% | 182 | Completion of Pier at G2a | | | | | |
| Bridge H1-Section 2 | | | | | | | | | | | | | Bridge H1-Section 2 |
| Stage 2 | | | | | | | | | | | | | Stage 2 |
| Design Submission and Approval | | | | | | | | | | | | | Design Submission and Approval |
| BH12680 | TWD -Formwork design for pier | 24 | 18-Aug-15 A | 10-May-16 | GHY12 Cal.3 | 80.42% | 114 | TWD -Formwork design for pier | | | | | |
| BH12690 | TWD -Pierhead construction | 24 | 02-Nov-15 A | 09-Nov-15 A | GHY12 Cal.3 | 100% | | TWD -Pierhead construction | | | | | |
| BH12800 | Engineer's comments | 17 | 09-Dec-14 A | 02-Jan-15 A | GHY12 Cal.3 | 100% | | Engineer's comments | | | | | |
| BH12810 | DDA for substructure submission | 17 | 02-Jan-15 A | 16-Apr-15 A | GHY12 Cal.3 | 100% | | DDA for substructure submission | | | | | |
| BH12820 | Engineer's approval | 17 | 18-Feb-15 A | 30-May-15 A | GHY12 Cal.3 | 100% | | Engineer's approval | | | | | |
| BH12830 | DDA for superstructure(draft) | 17 | 09-Mar-15 A | 16-Mar-15 A | GHY12 Cal.3 | 100% | | DDA for superstructure(draft) | | | | | |
| BH12860 | Engineer's approval | 17 | 20-Apr-16 | 10-May-16 | GHY12 Cal.3 | 0% | 114 | Engineer's approval | | | | | |
| Method Statement Submissions and Approval | | | | | | | | | | | | | Method Statement Submissions and Approval |
| BH12370 | MSS-substructure construction | 24 | 09-Feb-15 A | 13-Feb-15 A | GHY12 Cal.3 | 100% | | MSS-substructure construction | | | | | |
| Off-site Works | | | | | | | | | | | | | Off-site Works |
| BH12720 | Form traveller fabrication | 90 | 21-Jan-16 A | 29-Apr-16 | GHY12 Cal.2 | 90% | 88 | Form traveller fabrication | | | | | |
| Field Works | | | | | | | | | | | | | Field Works |
| Foundation Works& Pier construction | | | | | | | | | | | | | Foundation Works& Pier construction |
| Foundation Works | | | | | | | | | | | | | Foundation Works |
| BH12580 | Bored piles and Foundation for H1d | 65 | 11-Apr-15 A | 30-Dec-15 A | GHY12 Cal.2 | 100% | | Bored piles and Foundation for H1d | | | | | |
| Pier construction | | | | | | | | | | | | | Pier construction |
| BH12558 | Pierhead segment construction at Pier H1d | 40 | 20-Apr-16 | 11-Jun-16 | GHY12 Cal.2 | 0% | 281 | Pierhead segment construction at Pier H1d | | | | | |
| BH12886 | Pierhead segment construction at Pier H1e | 40 | 20-Apr-16 | 11-Jun-16 | GHY12 Cal.2 | 0% | 1 | Pierhead segment construction at Pier H1e | | | | | |
| Culvert 1(TBM)-Stage 4 | | | | | | | | | | | | | Culvert 1(TBM)-Stage 4 |
| Field Works | | | | | | | | | | | | | Field Works |
| TBM Driving | | | | | | | | | | | | | TBM Driving |
| CUL13090 | TBM preparation | 36 | 13-Feb-15 A | 12-May-15 A | GHY12 Cal.2 | 100% | | TBM preparation | | | | | |
| Receiving Pit | | | | | | | | | | | | | Receiving Pit |
| CUL13130 | Trial trench | 7 | 09-Jan-15 A | 16-Jan-15 A | GHY12 Cal.2 | 100% | | Trial trench | | | | | |
| CUL13140 | ELS | 72 | 04-Feb-15 A | 23-Mar-15 A | GHY12 Cal.2 | 100% | | ELS | | | | | |
| FC1 | | | | | | | | | | | | | FC1 |
| CUL13395 | Liasion with CLP and temporary diversion for 11kv cable for construction of FC1 | 89 | 17-Dec-14 A | 10-Mar-15 A | GHY12 Cal.2 | 100% | | Liasion with CLP and temporary diversion for 11kv cable for construction of FC1 | | | | | |
| FC2 | | | | | | | | | | | | | FC2 |
| CUL13450 | Sheetpile installation for FC2 | 21 | 04-Mar-15 A | 14-May-15 A | GHY12 Cal.2 | 100% | | Sheetpile installation for FC2 | | | | | |
| CUL13470 | Construction of chamber FC2 | 30 | 20-Feb-16 A | 25-May-16 | GHY12 Cal.2 | 30% | 486 | Construction of chamber FC2 | | | | | |
| CUL13480 | Backfilling and removal section of sheetpile | 14 | 25-May-16 | 13-Jun-16 | GHY12 Cal.2 | 0% | 486 | Backfilling and removal section of sheetpile | | | | | |
| BY-Pass Sewer between FC1 and FC2(800 Pipe) | | | | | | | | | | | | | BY-Pass Sewer between FC1 and FC2(800 Pipe) |
| CUL13510 | Backfilling | 14 | 21-Mar-16 A | 26-Apr-16 | GHY12 Cal.2 | 60% | 486 | Backfilling | | | | | |
| Completion of KD3A and Remaining Works | | | | | | | | | | | | | Completion of KD3A and Remaining Works |
| CUL13535 | Backfilling | 70 | 20-Apr-16 | 29-Jun-16 | GHY12 Cal.1-1 | 0% | 611 | Backfilling | | | | | |
| Culvert 2 & Culvert 3 and Existing Box Culvert | | | | | | | | | | | | | Culvert 2 & Culvert 3 and Existing Box Culvert |
| Method statement Submission | | | | | | | | | | | | | Method statement Submission |
| CCE20140 | Method statement for screeding the existing box culvert | 24 | 20-Apr-16 | 19-May-16 | GHY12 Cal.3 | 0% | 421 | Method statement for screeding the existing box culvert | | | | | |
| Culvert 2 | | | | | | | | | | | | | Culvert 2 |
| CCE20080 | MH3 construction | 65 | 20-Feb-16 A | 27-Jun-16 | GHY12 Cal.2 | 20% | 263 | MH3 construction | | | | | |
| CCE20090 | Bay 21 | 50 | 28-Jun-16 | 30-Aug-16 | GHY12 Cal.2 | 0% | 286 | Bay 21 | | | | | |
| CCE20120 | Bay 20 | 50 | 01-Sep-16 | 05-Nov-16 | GHY12 Cal.2 | 0% | 286 | Bay 20 | | | | | |
| Culvert 3 | | | | | | | | | | | | | Culvert 3 |
| CCE20085 | MH6 construction | 65 | 05-Apr-16 A | 11-Jul-16 | GHY12 Cal.2 | 5% | 263 | MH6 construction | | | | | |
| CCE20210 | Bay 22 | 90 | 11-Jul-16 | 05-Nov-16 | GHY12 Cal.2 | 0% | 263 | Bay 22 | | | | | |
| Site Formation - Retaining Structure RW_A | | | | | | | | | | | | | Site Formation - Retaining Structure RW_A |
| Stage 3 | | | | | | | | | | | | | Stage 3 |
| Retaining Wall A | | | | | | | | | | | | | Retaining Wall A |
| RWA20100 | Tree works (Portion I) | 24 | 21-Sep-15 A | 21-Jan-16 A | GHY12 Cal.2 | 100% | | Tree works (Portion I) | | | | | |

█ Remaining Level of Effort
 █ Remaining Work
 ◆ ◆ M..
 █ Actual Work
 █ Critical Remaining Work
 ▼ ▼ S..

CRBC - Kaden JV
Two-Month Rolling Programme

| Date | Revision | Checked | Approved |
|-----------|----------|---------|----------|
| 23-May-16 | | | |
| | | | |

| Activity ID | Activity Name | Original Duration | Start | Finish | Calendar | Duration % Complete | Total P/Est | 2016 | | | | | |
|--|---|-------------------|-------------|-------------|---------------|---------------------|-------------|---|-----|-----|-----|-----|-----|
| | | | | | | | | Apr | May | Jun | Jul | Aug | Sep |
| RWA20110 | Site clearance and tree felling | 12 | 25-Jan-16 A | 29-Apr-16 | GHY12 Cal.2 | 30% | 166 | Site clearance and tree felling | | | | | |
| RWA20120 | Commencement of TD2 Abutment M | 0 | 11-Nov-15 A | | GHY12 Cal.1-1 | 100% | | | | | | | |
| RWA20130 | Install ELS and Excavation (Soil: 10,298m3) | 80 | 01-Feb-16 A | 11-Jul-16 | GHY12 Cal.2 | 33% | 166 | Install ELS and Excavation (Soil: 10,298m3) | | | | | |
| RWA20140 | Construct Retaining Wall A from TD2 Abutment M to MJ 11-Base slab | 20 | 12-Jul-16 | 05-Aug-16 | GHY12 Cal.2 | 0% | 166 | Construct Retaining Wall A from TD2 Abutment M to MJ 11-Base slab | | | | | |
| RWA20145 | Construct Retaining Wall A from TD2 Abutment M to MJ 11-Wall construction | 30 | 06-Aug-16 | 12-Sep-16 | GHY12 Cal.2 | 0% | 166 | Construct Retaining Wall A from TD2 Abutment M to MJ 11-Wall construction | | | | | |
| RWA20150 | Construct Cascade D | 24 | 18-Apr-16 A | 14-Oct-16 | GHY12 Cal.2 | 5% | 166 | Construct Cascade D | | | | | |
| RWA20160 | Drainage Diversion of Existing Stream to Cascade D | 12 | 18-Apr-16 A | 29-Oct-16 | GHY12 Cal.2 | 5% | 166 | Drainage Diversion of Existing Stream to Cascade D | | | | | |
| RWA20170 | Construct Retaining Wall A from Bay MJ11 to CH357.8-Base slab | 30 | 23-Feb-16 A | 24-Nov-16 | GHY12 Cal.2 | 30% | 166 | Construct Retaining Wall A from Bay MJ11 to CH357.8-Base slab | | | | | |
| RWA20175 | Construct Retaining Wall A from Bay MJ11 to CH357.8-Wall construction | 42 | 13-Apr-16 A | 13-Jan-17 | GHY12 Cal.2 | 5% | 166 | Construct Retaining Wall A from Bay MJ11 to CH357.8-Wall construction | | | | | |
| Site Formation - Retaining Structure for Slope TP_F | | 827 | 12-May-15 A | 29-Nov-16 | | 72.91% | 734 | | | | | | |
| Stage 3 | | 827 | 12-May-15 A | 08-Aug-16 | | 86.58% | 570 | Stage 3 | | | | | |
| Retaining Structure for Slope TP_F | | 827 | 12-May-15 A | 08-Aug-16 | | 86.58% | 570 | Retaining Structure for Slope TP_F | | | | | |
| RWF31350 | Backfilling | 24 | 17-Dec-15 A | 25-Apr-16 | GHY12 Cal.2 | 80% | 272 | Backfilling | | | | | |
| RWF31430 | New haul road | 19 | 21-Sep-15 A | 02-Oct-15 A | GHY12 Cal.1-1 | 100% | | | | | | | |
| RWF31440 | Excavation bay 21-28 | 25 | 12-May-15 A | 23-Sep-15 A | GHY12 Cal.2 | 100% | | | | | | | |
| RWF31450 | Construct Retaining Wall-Base slab(Bay 21 to Bay 28) | 36 | 18-May-15 A | 07-Oct-15 A | GHY12 Cal.2 | 100% | | | | | | | |
| RWF31470 | Backfilling | 60 | 01-Feb-16 A | 05-May-16 | GHY12 Cal.2 | 80% | 375 | Backfilling | | | | | |
| RWF31480 | U-Channel construction,Completion civil provision works for TCSS and E&M | 72 | 06-May-16 | 08-Aug-16 | GHY12 Cal.2 | 0% | 443 | U-Channel construction,Completion civil provision works for TCSS and E&M | | | | | |
| Achievement of KD-3(Stage 3) for TP_F | | 0 | 08-Aug-16 | 08-Aug-16 | GHY12 Cal.1-1 | 0% | 570 | Achievement of KD-3(Stage 3) for TP_F | | | | | |
| RWF31405 | Achievement of KD-3(stage 3) for TP_F | 0 | | 08-Aug-16 | GHY12 Cal.1-1 | 0% | 570 | Achievement of KD-3(stage 3) for TP_F | | | | | |
| Achievement of KD-8 (Section 5) for TP_F | | 88 | 09-Aug-16 | 29-Nov-16 | GHY12 Cal.2 | 0% | 567 | Achievement of KD-8 (Section 5) for TP_F | | | | | |
| RWF31410 | Remaining works(Brickwork and Blockwork,etc) | 88 | 09-Aug-16 | 29-Nov-16 | GHY12 Cal.2 | 0% | 567 | Remaining works(Brickwork and Blockwork,etc) | | | | | |
| Site Formation - Slope TP_A & Associated Works | | 180 | 01-Oct-14 A | 20-Apr-16 | GHY12 Cal.2 | 99.72% | 103 | Site Formation - Slope TP_A & Associated Works | | | | | |
| Stage 3 | | 180 | 01-Oct-14 A | 20-Apr-16 | GHY12 Cal.2 | 99.72% | 103 | Stage 3 | | | | | |
| Slope Feature - Slope TP_A | | 180 | 01-Oct-14 A | 20-Apr-16 | GHY12 Cal.2 | 99.72% | 103 | Slope Feature - Slope TP_A | | | | | |
| TPA41110 | Raking Drain Construction for slope A1 | 8 | 20-Oct-14 A | 23-Oct-14 A | GHY12 Cal.2 | 100% | | | | | | | |
| TPA41120 | U-channel (140m) and Berm for slope A1 | 21 | 18-Nov-14 A | 30-Nov-14 A | GHY12 Cal.2 | 100% | | | | | | | |
| TPA41130 | Laying Erosion Control Mat for slope A1 | 3 | 11-Nov-14 A | 30-Nov-14 A | GHY12 Cal.2 | 100% | | | | | | | |
| TPA411400 | Excavation of Soil (9200m3) for slope A2 | 20 | 21-Oct-14 A | 02-Dec-14 A | GHY12 Cal.2 | 100% | | | | | | | |
| TPA41150 | Raking Drain Construction for slope A2 | 16 | 24-Nov-14 A | 24-Dec-14 A | GHY12 Cal.2 | 100% | | | | | | | |
| TPA41160 | U-channel and Berm for slope A2 | 21 | 30-Nov-14 A | 31-Dec-14 A | GHY12 Cal.2 | 100% | | | | | | | |
| TPA41170 | Laying Erosion Control Mat for slope A2 | 3 | 02-Dec-14 A | 31-Dec-14 A | GHY12 Cal.2 | 100% | | | | | | | |
| TPA41180 | Excavation of Soil (9323m3) for slope A3 | 40 | 01-Oct-14 A | 02-Dec-14 A | GHY12 Cal.2 | 100% | | | | | | | |
| TPA41190 | Excavation of Rock (8850m3) for slope A3 | 70 | 02-Dec-14 A | 08-Apr-15 A | GHY12 Cal.2 | 100% | | | | | | | |
| TPA41350 | Forming East Portal Formation and temporary ground drainage works | 50 | 10-Mar-15 A | 20-Apr-16 | GHY12 Cal.2 | 99% | 103 | Forming East Portal Formation and temporary ground drainage works | | | | | |
| Site Formation - Slope TP_B & Associated Works | | 197 | 10-Nov-14 A | 20-Apr-16 | GHY12 Cal.2 | 99.65% | 438 | Site Formation - Slope TP_B & Associated Works | | | | | |
| Stage 3 | | 197 | 10-Nov-14 A | 20-Apr-16 | GHY12 Cal.2 | 99.65% | 438 | Stage 3 | | | | | |
| Slope Feature - Slope TP_B | | 197 | 10-Nov-14 A | 20-Apr-16 | GHY12 Cal.2 | 99.65% | 438 | Slope Feature - Slope TP_B | | | | | |
| TPB40800 | U-channel (220m) and Berm for slope B2 | 21 | 26-Nov-14 A | 10-Dec-14 A | GHY12 Cal.2 | 100% | | | | | | | |
| TPB40900 | Laying Erosion Control Mat for slope B2 | 3 | 10-Nov-14 A | 13-Nov-14 A | GHY12 Cal.2 | 100% | | | | | | | |
| TPB41000 | Excavation of Soil (11,200m3) for slope B3 | 40 | 14-Nov-14 A | 30-Dec-14 A | GHY12 Cal.2 | 100% | | | | | | | |
| TPB41210 | U-channel (part) and Berm for slope B3 | 21 | 02-Mar-15 A | 20-Apr-16 | GHY12 Cal.2 | 97.5% | 438 | U-channel (part) and Berm for slope B3 | | | | | |
| TPB41220 | Laying Erosion Control Mat for slope B3 | 3 | 20-Apr-15 A | 20-Apr-16 | GHY12 Cal.2 | 99% | 438 | Laying Erosion Control Mat for slope B3 | | | | | |
| TPB43600 | Forming road formation and temporary ground drainage works | 14 | 20-Apr-15 A | 20-Apr-16 | GHY12 Cal.2 | 99% | 438 | Forming road formation and temporary ground drainage works | | | | | |
| Site Formation - Slope TP_C & Associated Works | | 387 | 18-Dec-14 A | 11-May-17 | | 0% | 468 | | | | | | |
| Stage 3 | | 8 | 18-Dec-14 A | 12-Jan-15 A | GHY12 Cal.2 | 100% | | | | | | | |
| Slope Feature - Slope TP_C | | 8 | 18-Dec-14 A | 12-Jan-15 A | GHY12 Cal.2 | 100% | | | | | | | |
| TPC50600 | Raking Drain Construction for slope C1 | 8 | 18-Dec-14 A | 12-Jan-15 A | GHY12 Cal.2 | 100% | | | | | | | |
| Achievement of KD-3(Stage 3) for Slope C | | 272 | 20-Apr-16 | 16-Jan-17 | | 0% | 409 | Achievement of KD-3(Stage 3) for Slope C | | | | | |
| TPC51310 | Remaining civil works | 50 | 20-Apr-16 | 24-Jun-16 | GHY12 Cal.2 | 0% | 317 | Remaining civil works | | | | | |
| TPC51320 | Achievement of KD-3(Stage 3) for slope C | 0 | | 16-Jan-17 | GHY12 Cal.1-1 | 0% | 409 | Achievement of KD-3(Stage 3) for slope C | | | | | |
| Achievement of KD-8 (Section 5) for Slope C | | 88 | 17-Jan-17 | 11-May-17 | GHY12 Cal.2 | 0% | 361 | Achievement of KD-8 (Section 5) for Slope C | | | | | |
| TPC51330 | Remaining works include landscape works and establishment works | 88 | 17-Jan-17 | 11-May-17 | GHY12 Cal.2 | 0% | 361 | Remaining works include landscape works and establishment works | | | | | |
| Site Formation - Slope TP_D & Associated Works | | 297 | 20-Jan-15 A | 01-Sep-16 | | 54.86% | 343 | Site Formation - Slope TP_D & Associated Works | | | | | |
| Stage 3 | | 199 | 20-Jan-15 A | 01-Sep-16 | GHY12 Cal.2 | 48.67% | 89 | Stage 3 | | | | | |
| Slope Feature - Slope TP_D | | 199 | 20-Jan-15 A | 01-Sep-16 | GHY12 Cal.2 | 48.67% | 89 | Slope Feature - Slope TP_D | | | | | |
| TPD51350 | U-channel (100m) and Berm for slope D1, D2a and D2b | 11 | 20-Jan-15 A | 01-Feb-15 A | GHY12 Cal.2 | 100% | | | | | | | |
| TPD51400 | Excavation of Rock (4,670m3) for slope D3a, D3b and D4 | 40 | 01-Feb-15 A | 30-Mar-15 A | GHY12 Cal.2 | 100% | | | | | | | |
| TPD51750 | U-channel (150m) and Berm for slope D6a and D6b | 21 | 06-Jul-15 A | 10-May-16 | GHY12 Cal.2 | 25% | 89 | U-channel (150m) and Berm for slope D6a and D6b | | | | | |

█ Remaining Level of Effort
 █ Remaining Work
 ◆ ◆ M..
 █ Actual Work
 █ Critical Remaining Work
 ▼ ▼ S..

CRBC - Kaden JV
Two-Month Rolling Programme

| Date | Revision | Checked | Approved |
|-----------|----------|---------|----------|
| 23-May-16 | | | |
| | | | |

| Activity ID | Activity Name | Original Duration | Start | Finish | Calendar | Duration % Complete | Total Float | 2016 | | | | |
|--|---|-------------------|-------------|-------------|---------------|---------------------|-------------|--|-----|-----|-----|-----|
| | | | | | | | | Apr | May | Jun | Jul | Aug |
| TPD51753 | Remaining works in Portion D | 88 | 20-Jan-16 A | 01-Sep-16 | GHY12 Cal.2 | 70% | 89 | [Gantt bar showing progress from Jan to Sep] | | | | |
| TPD52800 | Forming West Portal Formation and temporary ground drainage works | 10 | 21-Jan-16 A | 29-Apr-16 | GHY12 Cal.2 | 10% | 94 | [Gantt bar showing progress from Jan to Apr] | | | | |
| Achievement of KD-7(Section 4) for Slope D | | 0 | 01-Sep-16 | 01-Sep-16 | GHY12 Cal.1-1 | 0% | 112 | [Milestone diamond] | | | | |
| TPD51755 | Hand over of portion D | 0 | 01-Sep-16 | 01-Sep-16 | GHY12 Cal.1-1 | 0% | 112 | [Milestone diamond] | | | | |
| Achievement of KD-3(Stage 3) for Slope D | | 88 | 03-May-16 | 24-Aug-16 | GHY12 Cal.2 | 0% | 270 | [Milestone diamond] | | | | |
| TPD52350 | Remaining civil works and drainage works | 88 | 03-May-16 | 24-Aug-16 | GHY12 Cal.2 | 0% | 270 | [Gantt bar showing progress from May to Aug] | | | | |
| Site Formation - Slope TP_E & Associated Works | | 894 | 13-Nov-14 A | 27-Feb-17 | | 64.89% | 191 | [Summary bar] | | | | |
| Stage 3 | | 894 | 13-Nov-14 A | 27-Feb-17 | | 64.89% | 191 | [Summary bar] | | | | |
| Slope Feature - Slope TP_E at Toll Control Building Area | | 428 | 13-Nov-14 A | 19-Dec-16 | | 43.01% | 2 | [Summary bar] | | | | |
| TPE61120 | Soil Nail RowB Level + 59.20 (Install and grouting) | 25 | 02-Feb-15 A | 05-Feb-15 A | GHY12 Cal.2 | 100% | | [Gantt bar showing completion in Feb] | | | | |
| TPE61170 | Excavation of Rock for slope E2b - stage 2 | 75 | 31-Dec-14 A | 26-Apr-16 | GHY12 Cal.2 | 93% | 2 | [Gantt bar showing progress from Dec to Apr] | | | | |
| TPE61180 | Mapping & Dowelling | 15 | 13-Nov-14 A | 09-May-16 | GHY12 Cal.2 | 40% | 94 | [Gantt bar showing progress from Nov to May] | | | | |
| TPE61210 | Excavation of Rock for slope E3b - stage 1 | 75 | 07-Jan-15 A | 09-May-16 | GHY12 Cal.2 | 80% | 2 | [Gantt bar showing progress from Jan to May] | | | | |
| TPE61220 | Excavation of Rock for slope E3b - stage 2 | 75 | 28-Feb-15 A | 08-Jun-16 | GHY12 Cal.2 | 70% | 2 | [Gantt bar showing progress from Feb to Jun] | | | | |
| TPE61230 | Excavation of Rock for slope E3b - stage 3 | 75 | 26-Mar-15 A | 08-Jul-16 | GHY12 Cal.2 | 70% | 2 | [Gantt bar showing progress from Mar to Jul] | | | | |
| TPE61240 | Excavation of Rock for slope E3b - stage 4 | 75 | 25-May-15 A | 16-Aug-16 | GHY12 Cal.2 | 60% | 2 | [Gantt bar showing progress from May to Aug] | | | | |
| TPE61250 | Mapping & Dowelling | 16 | 17-Aug-16 | 05-Sep-16 | GHY12 Cal.2 | 0% | 2 | [Gantt bar showing start in Aug] | | | | |
| TPE61600 | All remaining works include civil provision for TCSS and E&M | 36 | 29-Oct-16 | 12-Dec-16 | GHY12 Cal.2 | 0% | 2 | [Gantt bar showing start in Oct] | | | | |
| TPE61700 | Hand Over Portion D | 7 | 12-Dec-16 | 19-Dec-16 | GHY12 Cal.1-1 | 0% | 2 | [Gantt bar showing start in Dec] | | | | |
| Slope Feature - Slope TP_E Remaining Section and SSE-D/C116 | | 675 | 02-Jan-15 A | 27-Feb-17 | | 64.06% | 146 | [Summary bar] | | | | |
| TPE62150 | Excavation of Soil/Rock (13,900m3) for slope E2c | 90 | 02-Jan-15 A | 31-Jan-15 A | GHY12 Cal.2 | 100% | | [Gantt bar showing completion in Jan] | | | | |
| TPE62190 | U-channel (200m) and Berm for slope E2c | 40 | 21-Oct-15 A | 05-May-16 | GHY12 Cal.2 | 71% | 146 | [Gantt bar showing progress from Oct to May] | | | | |
| TPE62210 | Excavation of Rock for slope E3c - stage 1 | 75 | 23-Apr-15 A | 25-May-16 | GHY12 Cal.2 | 80% | 146 | [Gantt bar showing progress from Apr to May] | | | | |
| TPE62220 | Excavation of Rock for slope E3c - stage 2 | 75 | 02-Jul-15 A | 14-Jul-16 | GHY12 Cal.2 | 50% | 146 | [Gantt bar showing progress from Jul to Jul] | | | | |
| TPE62230 | Excavation of Rock for slope E3c - stage 3 | 75 | 14-Jul-16 | 21-Oct-16 | GHY12 Cal.2 | 0% | 146 | [Gantt bar showing start in Jul] | | | | |
| TPE62250 | Mapping & Dowelling | 15 | 21-Oct-16 | 09-Nov-16 | GHY12 Cal.2 | 0% | 146 | [Gantt bar showing start in Oct] | | | | |
| TPE62260 | U-channel (150m) and Berm for slope E3c | 40 | 09-Nov-16 | 28-Dec-16 | GHY12 Cal.2 | 0% | 146 | [Gantt bar showing start in Nov] | | | | |
| TPE62300 | Excavation of Rock (7,920m3) for slope E2a | 70 | 21-Apr-15 A | 29-Jun-15 A | GHY12 Cal.2 | 100% | | [Gantt bar showing completion in Apr] | | | | |
| TPE62400 | Excavation of Rock (11,900m3) for slope E3a | 90 | 22-Apr-15 A | 13-Jan-17 | GHY12 Cal.2 | 85% | 146 | [Gantt bar showing progress from Apr to Jan] | | | | |
| TPE62420 | U-channel (220m) and Berm for slope E3a | 40 | 21-Oct-15 A | 27-Feb-17 | GHY12 Cal.2 | 50% | 146 | [Gantt bar showing progress from Oct to Feb] | | | | |
| Site Formation - Slope Upgrading Works | | 184 | 16-Sep-15 A | 15-Dec-16 | | 0% | 341 | [Summary bar] | | | | |
| Stage 3 (Other Slope Features) | | 184 | 16-Sep-15 A | 15-Dec-16 | | 0% | 341 | [Summary bar] | | | | |
| Slope Feature - SSE-D/C170 | | 14 | 21-Feb-16 A | 08-Nov-16 | | 5% | 136 | [Summary bar] | | | | |
| SFW10070 | Excavation of Soil (1,240m3) and Modification Works | 14 | 21-Feb-16 A | 08-Nov-16 | GHY12 Cal.2 | 5% | 136 | [Gantt bar showing progress from Feb to Nov] | | | | |
| Slope Feature - SSE-D/C150 | | 69 | 16-Sep-15 A | 14-Nov-16 | | 0% | 368 | [Summary bar] | | | | |
| SFW10180 | Complete slope E3b - stage 4 | 0 | | 16-Aug-16 | GHY12 Cal.2 | 0% | 341 | [Milestone diamond] | | | | |
| SFW10190 | Slope Modification | 5 | 17-Feb-16 A | 09-Nov-16 | GHY12 Cal.2 | 5% | 341 | [Gantt bar showing progress from Feb to Nov] | | | | |
| SFW10200 | Drainage, U-channel (70m) and Handrailing | 20 | 16-Sep-15 A | 11-Nov-15 A | GHY12 Cal.2 | 100% | | [Gantt bar showing completion in Sep] | | | | |
| SFW10210 | Hydroseeding and Erosion Control Mat | 5 | 01-Dec-15 A | 14-Nov-16 | GHY12 Cal.2 | 15% | 341 | [Gantt bar showing progress from Dec to Nov] | | | | |
| SFW10890 | Achievement of KD-3(Stage 3) | 0 | | 14-Nov-16 | GHY12 Cal.2 | 0% | 368 | [Milestone diamond] | | | | |
| Slope Feature - SSE-D/C152 | | 25 | 30-Oct-15 A | 15-Dec-16 | | 0% | 341 | [Summary bar] | | | | |
| SFW10220 | Complete slope SSE-D/C150 | 0 | | 14-Nov-16 | GHY12 Cal.2 | 0% | 341 | [Milestone diamond] | | | | |
| SFW10230 | Slope Modification | 5 | 15-Nov-16 | 19-Nov-16 | GHY12 Cal.2 | 0% | 341 | [Gantt bar showing start in Nov] | | | | |
| SFW10240 | Drainage, U-channel (90m) and Handrailing | 20 | 21-Nov-16 | 13-Dec-16 | GHY12 Cal.2 | 0% | 341 | [Gantt bar showing start in Nov] | | | | |
| SFW10250 | Hydroseeding and Erosion Control Mat | 5 | 30-Oct-15 A | 15-Dec-16 | GHY12 Cal.2 | 67% | 341 | [Gantt bar showing progress from Oct to Dec] | | | | |
| Slope Feature - SSE-D/C14 | | 0 | 25-Apr-16 | 25-Apr-16 | | 0% | 272 | [Summary bar] | | | | |
| SFW10340 | Complete TP_F Backfilling(Bay1-2) | 0 | | 25-Apr-16 | GHY12 Cal.2 | 0% | 272 | [Milestone diamond] | | | | |
| Slope Feature - SSE-D/C16 | | 0 | 20-Apr-16 | 20-Apr-16 | | 0% | 222 | [Summary bar] | | | | |
| SFW10620 | Complete pier construction at Bridge H1e & G2a | 0 | | 20-Apr-16 | GHY12 Cal.2 | 0% | 222 | [Milestone diamond] | | | | |
| Slope Feature - SSE-D/C17 | | 0 | 05-May-16 | 05-May-16 | | 0% | 375 | [Summary bar] | | | | |
| SFW10740 | Complete of TP_F and TD1 Precast beam installation | 0 | | 05-May-16 | GHY12 Cal.2 | 0% | 375 | [Milestone diamond] | | | | |
| Natural Terrain Hazard Mitigation Measures | | 438 | 27-Nov-14 A | 31-Mar-15 A | | 100% | | [Summary bar] | | | | |
| Natural Terrian Hazard Mitigation Measures | | 80 | 27-Nov-14 A | 27-Dec-14 A | | 100% | | [Summary bar] | | | | |
| Boulders within Blasting Zone | | 80 | 27-Nov-14 A | 27-Dec-14 A | | 100% | | [Summary bar] | | | | |
| NTH10070 | Mitigation measures for 20 boulders within blasting zone | 80 | 27-Nov-14 A | 27-Dec-14 A | GHY12 Cal.2 | 100% | | [Gantt bar showing completion in Nov] | | | | |
| Achievement of KD-3(Stage 3) | | 0 | 31-Mar-15 A | 31-Mar-15 A | | 0% | | [Milestone diamond] | | | | |
| NTH10050 | Achievement of KD-3 for Natural Terrian Hazard | 0 | | 31-Mar-15 A | GHY12 Cal.1-1 | 100% | | [Milestone diamond] | | | | |
| Achievement of KD-8(Section 5) | | 0 | 31-Mar-15 A | 31-Mar-15 A | | 0% | | [Milestone diamond] | | | | |
| NTH10060 | Achievement of KD-8 for Natural Terrian Hazard | 0 | | 31-Mar-15 A | GHY12 Cal.1-1 | 100% | | [Milestone diamond] | | | | |

█ Remaining Level of Effort
 █ Remaining Work
 █ Actual Work
 █ Critical Remaining Work
 ◆ ◆ M..
 ▼ S..

CRBC - Kaden JV
Two-Month Rolling Programme

| Date | Revision | Checked | Approved |
|-----------|----------|---------|----------|
| 23-May-16 | | | |
| | | | |

| Activity ID | Activity Name | Original Duration | Start | Finish | Calendar | Duration % Complete | Total Float | 2016 | | | | | |
|---|--|-------------------|-------------|-------------|-------------|---------------------|-------------|------|-----|-----|-----|-----|-----|
| | | | | | | | | Apr | May | Jun | Jul | Aug | Sep |
| Vehicular Underpass TN-01 | | | | | | | | | | | | | |
| Stage 3 | | | | | | | | | | | | | |
| Blasting Related Submission | | | | | | | | | | | | | |
| Blasting Permit Application | | | | | | | | | | | | | |
| UDP30070 | Prepare and Submission of Revised CBAR | 48 | 30-Mar-15 A | 24-Apr-15 A | GHY12 Cal.3 | 100% | | | | | | | |
| Underpass Excavation from East Portal | | | | | | | | | | | | | |
| Preparation Works | | | | | | | | | | | | | |
| UDP30170 | Site Set Up | 15 | 30-Oct-15 A | 30-Oct-15 A | GHY12 Cal.2 | 100% | | | | | | | |
| Drill and Blast CH489-CH312 | | | | | | | | | | | | | |
| UDP30260 | CH439-CH399 Drill and Blast method (2.5m penetration length/2.0days) | 32 | 23-Nov-15 A | 14-Dec-15 A | GHY12 Cal.2 | 100% | | | | | | | |
| UDP30270 | CH399-CH390 Drill and Blast method (3.0m penetration length/2.0days) | 6 | 16-Dec-15 A | 19-Dec-15 A | GHY12 Cal.2 | 100% | | | | | | | |
| UDP30280 | CH390-CH317 Drill and Blast method (3.0m penetration length/2.0days) | 50 | 21-Dec-15 A | 18-Feb-16 A | GHY12 Cal.2 | 100% | | | | | | | |
| UDP30310 | CH317-CH312 Drill and Break method (1.0m penetration length/4.0days) | 20 | 19-Feb-16 A | 26-Feb-16 A | GHY12 Cal.2 | 100% | | | | | | | |
| Lining Works and Road Works | | | | | | | | | | | | | |
| Water Proofing and Lining Works | | | | | | | | | | | | | |
| UDP4090 | Erection of Waterproofing Platform(West Portal) | 28 | 03-May-16 | 07-Jun-16 | GHY12 Cal.2 | 0% | 108 | | | | | | |
| Type A | | | | | | | | | | | | | |
| Water Proofing and Kicker | | | | | | | | | | | | | |
| CH 310-CH327 | | | | | | | | | | | | | |
| UDP4100 | Bench Waterproofing works(CH310-CH327.6)(Type A) | 10 | 03-May-16 | 13-May-16 | GHY12 Cal.2 | 0% | 94 | | | | | | |
| UDP4110 | Kicker pouring(CH310-CH327.6)(Type A) | 14 | 17-May-16 | 02-Jun-16 | GHY12 Cal.2 | 0% | 94 | | | | | | |
| CH 450-CH503 | | | | | | | | | | | | | |
| UDP4140 | Bench Waterproofing works(CH450-CH503)(Type A) | 18 | 03-Jun-16 | 25-Jun-16 | GHY12 Cal.2 | 0% | 94 | | | | | | |
| UDP4150 | Kicker pouring(CH450-CH503)(Type A) | 21 | 27-Jun-16 | 23-Jul-16 | GHY12 Cal.2 | 0% | 94 | | | | | | |
| Lining | | | | | | | | | | | | | |
| CH 310-CH327 | | | | | | | | | | | | | |
| UDP4160 | Pouring Type A Lining CH312-CH327 | 7 | 08-Jun-16 | 17-Jun-16 | GHY12 Cal.2 | 0% | 108 | | | | | | |
| UDP4170 | Erection of rebar fixing platform for west bulkhead wall | 7 | 18-Jun-16 | 25-Jun-16 | GHY12 Cal.2 | 0% | 268 | | | | | | |
| UDP4190 | Rebar fixing platform for west bulkhead wall | 7 | 27-Jun-16 | 06-Jul-16 | GHY12 Cal.2 | 0% | 268 | | | | | | |
| UDP4230 | Formwork for west bulkhead wall | 14 | 07-Jul-16 | 23-Jul-16 | GHY12 Cal.2 | 0% | 268 | | | | | | |
| UDP4270 | Concrete for west bulkhead wall | 14 | 25-Jul-16 | 10-Aug-16 | GHY12 Cal.2 | 0% | 268 | | | | | | |
| CH 450-CH503 | | | | | | | | | | | | | |
| UDP4180 | Pouring Type A Lining CH450-CH468 | 10 | 07-Jul-16 | 19-Jul-16 | GHY12 Cal.2 | 0% | 94 | | | | | | |
| UDP4210 | Pouring Type A Lining CH468-CH486 | 10 | 20-Jul-16 | 01-Aug-16 | GHY12 Cal.2 | 0% | 94 | | | | | | |
| UDP4220 | Pouring Type A Lining CH486-CH534.9 | 35 | 02-Aug-16 | 13-Sep-16 | GHY12 Cal.2 | 0% | 94 | | | | | | |
| Type B | | | | | | | | | | | | | |
| Water Proofing and Kicker | | | | | | | | | | | | | |
| UDP4000 | Bench waterproofing works and Kick pouring | 49 | 11-Mar-16 A | 08-Nov-16 | GHY12 Cal.2 | 18% | 122 | | | | | | |
| Type C | | | | | | | | | | | | | |
| UDP4130 | Base slab waterproofing and re-bar fixing(Type C) CH503-CH534.9 | 70 | 03-May-16 | 02-Aug-16 | GHY12 Cal.2 | 0% | 205 | | | | | | |
| UDP4200 | Lining type C rebar fixingCH503-CH534.9 | 14 | 03-Aug-16 | 19-Aug-16 | GHY12 Cal.2 | 0% | 205 | | | | | | |
| Road and Drainage Work ,Utilities Works at for Lung Fu Road Roundabout | | | | | | | | | | | | | |
| Section 3 | | | | | | | | | | | | | |
| Utilites installation ,road and drainage works (TTA stage 0) | | | | | | | | | | | | | |
| LFR10020 | Drainage & Sewerage works | 42 | 12-Dec-14 A | 23-Jan-15 A | GHY12 Cal.2 | 100% | | | | | | | |
| Utilites installation ,road and drainage works (TTA stage 0-1) | | | | | | | | | | | | | |
| LFR10050 | Drainage works | 40 | 25-Jan-16 A | 11-Jun-16 | GHY12 Cal.2 | 1% | 94 | | | | | | |
| LFR10060 | DN100,300,700 | 21 | 25-Jan-16 A | 13-Jun-16 | GHY12 Cal.2 | 1% | 94 | | | | | | |
| LFR10070 | PCCW | 15 | 07-Apr-16 A | 03-May-16 | GHY12 Cal.2 | 35% | 0 | | | | | | |
| LFR10080 | Hutchison Global Communication Cable | 15 | 07-Apr-16 A | 10-May-16 | GHY12 Cal.2 | 30% | 0 | | | | | | |
| LFR10090 | Hong Kong Boaroband Network | 15 | 04-May-16 | 24-May-16 | GHY12 Cal.2 | 0% | 0 | | | | | | |
| LFR10100 | Wharf T&T Duct and Joint Box | 15 | 18-May-16 | 06-Jun-16 | GHY12 Cal.2 | 0% | 0 | | | | | | |
| LFR10110 | New World Telecom | 15 | 30-May-16 | 20-Jun-16 | GHY12 Cal.2 | 0% | 0 | | | | | | |
| LFR10120 | Town Gas | 15 | 13-Jun-16 | 04-Jul-16 | GHY12 Cal.2 | 0% | 0 | | | | | | |
| LFR10130 | Smartone Cable | 15 | 25-Jun-16 | 16-Jul-16 | GHY12 Cal.2 | 0% | 0 | | | | | | |
| LFR10140 | HKC Cable | 15 | 09-Jul-16 | 28-Jul-16 | GHY12 Cal.2 | 0% | 0 | | | | | | |
| LFR10150 | Pubic Lighting | 15 | 22-Jul-16 | 10-Aug-16 | GHY12 Cal.2 | 0% | 0 | | | | | | |
| LFR10160 | CLP + CRD | 15 | 04-Aug-16 | 23-Aug-16 | GHY12 Cal.2 | 0% | 0 | | | | | | |
| LFR10170 | Trax Comm | 15 | 17-Aug-16 | 05-Sep-16 | GHY12 Cal.2 | 0% | 0 | | | | | | |

█ Remaining Level of Effort
 █ Remaining Work
 █ Actual Work
 █ Critical Remaining Work
 ◆ ◆ M..
 ▼ ▼ S..

CRBC - Kaden JV
Two-Month Rolling Programme

| Date | Revision | Checked | Approved |
|-----------|----------|---------|----------|
| 23-May-16 | | | |
| | | | |

| Activity ID | Activity Name | Original Duration | Start | Finish | Calendar | Duration % Complete | Total Float | 2016 | | | | | | |
|--|---|-------------------|-------------|-----------|---------------|---------------------|-------------|------|-----|-----|-----|-----|-----|---|
| | | | | | | | | Apr | May | Jun | Jul | Aug | Sep | |
| LFR10180 | Completion of this stage civil provision for E&M, TCSS | 15 | 22-Aug-16 | 09-Sep-16 | GHY12 Cal.2 | 0% | 0 | | | | | | | |
| Utilities installation ,road and drainage works for East Portal | | 47 | 13-Aug-16 | 14-Oct-16 | GHY12 Cal.2 | 0% | 322 | | | | | | | |
| EPA1020 | DN300 CHA 0 - 175&DN100 | 26 | 13-Aug-16 | 14-Sep-16 | GHY12 Cal.2 | 0% | 322 | | | | | | | |
| EPA1030 | Street furniture and sign gantry | 30 | 13-Aug-16 | 21-Sep-16 | GHY12 Cal.2 | 0% | 322 | | | | | | | |
| EPA1040 | PCCW | 10 | 22-Sep-16 | 05-Oct-16 | GHY12 Cal.2 | 0% | 322 | | | | | | | |
| EPA1050 | Hutchison Global Communication Cable | 7 | 06-Oct-16 | 14-Oct-16 | GHY12 Cal.2 | 0% | 322 | | | | | | | |
| Utilities installation ,road and drainage works near portion D | | 16 | 19-Dec-16 | 10-Jan-17 | GHY12 Cal.2 | 0% | 193 | | | | | | | |
| TOLLA1010 | DN300 | 16 | 19-Dec-16 | 10-Jan-17 | GHY12 Cal.2 | 0% | 193 | | | | | | | |
| TOLLA1020 | DN100 | 16 | 19-Dec-16 | 10-Jan-17 | GHY12 Cal.2 | 0% | 193 | | | | | | | |
| Sewage, Irrigation and Road& Drainage Works | | 140 | 04-Jan-16 A | 05-Feb-18 | GHY12 Cal.2 | 40% | 230 | | | | | | | |
| SAI10060 | Sewage, irrigation and road&drainage works -G2-north side | 70 | 04-Jan-16 A | 06-Dec-17 | GHY12 Cal.2 | 50% | 230 | | | | | | | |
| SAI10070 | Sewage, irrigation and road&drainage works- G2-south side | 70 | 14-Jan-16 A | 05-Feb-18 | GHY12 Cal.2 | 30% | 230 | | | | | | | |
| Achievement of Key Dates | | 161 | 08-Aug-16 | 16-Jan-17 | GHY12 Cal.1-1 | 0% | 409 | | | | | | | |
| AK10250 | Achievement of KD-3(stage 3) for TP_F | 0 | | 08-Aug-16 | GHY12 Cal.1-1 | 0% | 570 | | | | | | | ◆ Achievement of KD-3(stage 3) for TP_F |
| AK10320 | Achievement of KD-3(Stage 3) for slope C | 0 | | 16-Jan-17 | GHY12 Cal.1-1 | 0% | 409 | | | | | | | |

█ Remaining Level of Effort
 █ Remaining Work
 ◆ ◆ M..
 █ Actual Work
 █ Critical Remaining Work
 ▼ S..

CRBC - Kaden JV
Two-Month Rolling Programme

| Date | Revision | Checked | Approved |
|-----------|----------|---------|----------|
| 23-May-16 | | | |
| | | | |

| Activity ID | Activity Name | Original Duration | Start | Finish | Total Float | 2016 | | | | | |
|--|--|-------------------|------------|------------|-------------|------|-----|-----|-----|-----|--|
| | | | | | | Jun | Jul | Aug | Sep | Oct | |
| HY/2013/12 TMCLK Northern Connection Toll Plaza and Associated-Works Programme-Rev.4A Monthly | | | | | | | | | | | |
| Site Possession Dates | | | | | | | | | | | |
| PPD1130 | Portion J Possession Date | 0 | 20-06-16 | 20-06-16 | 428 | | | | | | |
| Programming / Reporting | | | | | | | | | | | |
| Detailed Works Programme (DWP) | | | | | | | | | | | |
| PR20170 | Acceptance of the DWP | 0 | 09-02-15 A | 09-02-15 A | | | | | | | |
| Instrumentation and Monitoring | | | | | | | | | | | |
| Utility Settlement Marker | | | | | | | | | | | |
| IM60020 | Installation of USM-Remain USM | 90 | 22-11-14 A | 09-10-15 A | | | | | | | |
| Toll Plaza Decking TD1-Section 1 | | | | | | | | | | | |
| Stage 1 | | | | | | | | | | | |
| Design Submission and Approval | | | | | | | | | | | |
| TD120160 | Prepare & submit DDA drawing w/ICE cert(decking) | 23 | 05-06-15 A | 12-11-15 A | | | | | | | |
| TD120170 | Acceptance of the DDA Drawing | 23 | 13-11-15 A | 26-01-16 A | | | | | | | |
| TD120220 | TWD -Formwork design for in-situ deck | 24 | 20-06-16 | 18-07-16 | 76 | | | | | | |
| Method Statement Submission and Approval | | | | | | | | | | | |
| TD121350 | MSS for in-situ deck | 24 | 17-08-15 A | 15-08-16 | 76 | | | | | | |
| TD121360 | Engineer's comments and approval | 24 | 19-08-15 A | 18-08-16 | 76 | | | | | | |
| Field Works | | | | | | | | | | | |
| Foundation & Substructure at Northern Side of Lung Mun Road | | | | | | | | | | | |
| Pile cap and Pier | | | | | | | | | | | |
| TD120530 | Pile cap and Pier F2-K2 | 88 | 21-04-15 A | 25-02-16 A | | | | | | | |
| Foundation & Substructure at Central Divider of Lung Mun Road | | | | | | | | | | | |
| GI | | | | | | | | | | | |
| TD121070 | Pre-drilling works TD1 A1-K1 | 30 | 12-01-15 A | 07-04-15 A | | | | | | | |
| TD121060 | Trial pit and monitoring point installation | 10 | 07-03-15 A | 14-08-15 A | | | | | | | |
| Bored Pile | | | | | | | | | | | |
| TD121300 | Bored Piles A1-E2(5 Nos) | 61 | 24-08-15 A | 31-10-15 A | | | | | | | |
| Portal Construction | | | | | | | | | | | |
| Portal Beam 8th(B) | | | | | | | | | | | |
| TD121250 | Portal beam 8th(Portal B -Pier 3 to Pier 4) | 60 | 20-06-16 | 05-09-16 | 145 | | | | | | |
| Portal Beam 9th(K) | | | | | | | | | | | |
| TD121260 | Portal beam 9th(Portal H -Pier 22 to Pier 23) | 61 | 22-04-16 A | 19-05-16 A | | | | | | | |
| Deck Construction | | | | | | | | | | | |
| Cast in-situ deck between Pier A and Pier B | | | | | | | | | | | |
| TD120640 | Portal construction | 56 | 23-05-16 A | 15-06-16 A | 2 | | | | | | |
| TD120650 | Falsework installation | 55 | 17-08-16 | 27-10-16 | 1 | | | | | | |
| Precast beam fabrication | | | | | | | | | | | |
| TD120720 | Precast beam(Type 1 total-10 nos) | 21 | 30-12-15 A | 04-02-16 A | | | | | | | |
| TD120730 | Precast beam(Type 1 total-12 nos) | 24 | 16-02-16 A | 17-03-16 A | | | | | | | |
| TD120740 | Precast beam(Type 1 total-13nos) | 26 | 10-03-16 A | 15-06-16 A | | | | | | | |
| TD120750 | Precast beam(Type 1 total-8 nos) | 16 | 15-06-16 A | 05-07-16 | 200 | | | | | | |
| TD120760 | Precast beam(Type 1 total-8 nos) | 16 | 06-07-16 | 25-07-16 | 208 | | | | | | |
| TD120770 | Precast beam(Type 1 total-7 nos) | 14 | 26-07-16 | 11-08-16 | 269 | | | | | | |
| TD120780 | Precast beam(Type 1 total-6 nos) | 13 | 12-08-16 | 27-08-16 | 269 | | | | | | |
| TD120800 | Precast parapet and planter | 90 | 29-08-16 | 20-12-16 | 269 | | | | | | |
| Precast beam installation | | | | | | | | | | | |
| TD12000 | Precast beam installation between Portal E and Portal F(6 Nos) | 18 | 25-08-16 | 20-09-16 | 6 | | | | | | |
| TD12010 | Precast beam installation between portal D and portal E(5 nos) | 10 | 21-09-16 | 04-10-16 | 6 | | | | | | |
| Toll Plaza Decking TD2-Section 1 | | | | | | | | | | | |
| Method Statement Submissions and Approval | | | | | | | | | | | |
| TD220120 | MSS for deck construction | 75 | 30-11-15 A | 14-12-15 A | | | | | | | |
| Field Works | | | | | | | | | | | |
| G.I and Piling Works | | | | | | | | | | | |
| DWP-Bored Piles | | | | | | | | | | | |
| TD220500 | Working platform for Abutment M | 15 | 24-06-15 A | 03-07-15 A | | | | | | | |
| Base Slab & Pile Cap Construction | | | | | | | | | | | |
| Abutment K-Base Slab | | | | | | | | | | | |
| TD220555 | Drainage channel diversion | 21 | 21-11-15 A | 24-11-15 A | | | | | | | |

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

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

| Date | Revision | Checked | Approved |
|----------|----------|---------|----------|
| 25-07-16 | | | |
| | | | |

| Activity ID | Activity Name | Original Duration | Start | Finish | Total Float | 2016 | | | | |
|--|---|-------------------|-------------------|-------------------|-------------|------|-----|-----|-----|-----|
| | | | | | | Jun | Jul | Aug | Sep | Oct |
| TD220560 | ELS for abutment K | 51 | 03-11-15 A | 15-12-15 A | | | | | | |
| Pile Cap L1-L4 | | 50 | 14-11-15 A | 05-02-16 A | | | | | | |
| TD220648 | Sheetpile for Pile cap L4 | 10 | 14-11-15 A | 15-11-15 A | | | | | | |
| TD220632 | ELS for Pile cap L3 | 20 | 21-12-15 A | 20-01-16 A | | | | | | |
| TD220650 | ELS for Pile cap L4 | 14 | 16-11-15 A | 21-01-16 A | | | | | | |
| TD220660 | Pile cap L4 | 15 | 21-01-16 A | 05-02-16 A | | | | | | |
| Abutment M-Base Slab | | 100 | 06-11-15 A | 05-04-16 A | | | | | | |
| TD220665 | New Design for Abutment M from Engineer | 0 | 06-11-15 A | | | | | | | |
| TD220670 | ELS for abutment M | 55 | 11-11-15 A | 08-03-16 A | | | | | | |
| TD220680 | Formwork and Reinforcement | 45 | 15-03-16 A | 24-03-16 A | | | | | | |
| TD220690 | Concreting and backfilling | 10 | 30-03-16 A | 05-04-16 A | | | | | | |
| Abutment and Pier Construction | | 75 | 22-02-16 A | 29-08-16 | 132 | | | | | |
| Abutment K | | 20 | 13-06-16 A | 13-07-16 | 132 | | | | | |
| TD220270 | Backfill for abutment K | 20 | 13-06-16 A | 13-07-16 | 132 | | | | | |
| Pier L2 | | 26 | 17-03-16 A | 09-04-16 A | | | | | | |
| TD220290 | Pier L2 | 26 | 17-03-16 A | 09-04-16 A | | | | | | |
| Pier L3 | | 26 | 12-03-16 A | 09-04-16 A | | | | | | |
| TD220140 | Pier L3 | 26 | 12-03-16 A | 09-04-16 A | | | | | | |
| Pier L4 | | 20 | 22-02-16 A | 06-04-16 A | | | | | | |
| TD220150 | Pier L4 | 20 | 22-02-16 A | 06-04-16 A | | | | | | |
| Abutment M | | 59 | 04-05-16 A | 29-08-16 | 132 | | | | | |
| TD220160 | Wall for abutment M | 30 | 04-05-16 A | 09-08-16 | 132 | | | | | |
| TD220170 | Backfill for abutment M | 16 | 09-08-16 | 29-08-16 | 132 | | | | | |
| Deck Construction | | 15 | 13-07-16 | 02-08-16 | 145 | | | | | |
| TD220000 | Construction of walkway | 15 | 13-07-16 | 02-08-16 | 145 | | | | | |
| Miscellaneous Works | | 60 | 18-04-16 A | 12-08-16 | 136 | | | | | |
| TD220695 | Cascade D construction | 60 | 18-04-16 A | 12-08-16 | 136 | | | | | |
| Toll Plaza Footbridge-Section 1 | | 859 | 01-12-14 A | 20-07-17 | 89 | | | | | |
| Stage 1 | | 859 | 01-12-14 A | 20-07-17 | 89 | | | | | |
| Method Statement Submissions and Approval | | 139 | 04-12-15 A | 21-10-16 | 113 | | | | | |
| TFB1050 | MSS for steel truss installation including shop drawings submission | 90 | 04-12-15 A | 29-06-16 | 4 | | | | | |
| TFB1070 | MSS for staircase construction | 40 | 21-12-15 A | 21-10-16 | 113 | | | | | |
| Field Works | | 643 | 01-12-14 A | 20-07-17 | 68 | | | | | |
| G.I and Foundation Works | | 36 | 01-12-14 A | 25-02-15 A | | | | | | |
| TFB1170 | Socketted H-Pile for Pier P2(11 Nos) | 36 | 01-12-14 A | 31-12-14 A | | | | | | |
| TFB1190 | Predrilling works at Pier P1,P5,P7 and West staircase | 24 | 02-01-15 A | 25-02-15 A | | | | | | |
| Pile Cap Construction | | 56 | 28-03-15 A | 24-10-15 A | | | | | | |
| TFB1230 | Construct Pile cap for Pier P3 | 20 | 27-07-15 A | 20-10-15 A | | | | | | |
| TFB1240 | Construct pile cap for Pier P2 | 20 | 28-03-15 A | 24-10-15 A | | | | | | |
| Pier Construction | | 194 | 26-08-15 A | 13-09-16 | 282 | | | | | |
| TFB1250 | Construct pier P1(include bearing installation) | 42 | 14-03-16 A | 27-07-16 | 205 | | | | | |
| TFB1260 | Construct pier P5 | 42 | 16-12-15 A | 18-08-16 | 287 | | | | | |
| TFB1270 | Construct pier P7 | 42 | 09-03-16 A | 07-09-16 | 287 | | | | | |
| TFB1280 | Construct pier P2 | 42 | 26-08-15 A | 08-09-16 | 166 | | | | | |
| TFB1290 | Construct pier P3 | 42 | 22-09-15 A | 13-09-16 | 166 | | | | | |
| Staircase and Lift Construction | | 48 | 23-11-15 A | 20-07-17 | 68 | | | | | |
| TFB1350 | West staircase construction | 48 | 23-11-15 A | 20-07-17 | 68 | | | | | |
| Retaining Structure RW_B-Section 1 | | 214 | 01-12-14 A | 20-10-16 | 417 | | | | | |
| Site Formation - Retaining Structure RW_B | | 214 | 01-12-14 A | 20-10-16 | 417 | | | | | |
| Stage 1 | | 214 | 01-12-14 A | 20-10-16 | 417 | | | | | |
| Design Submission and Approval | | 63 | 09-03-15 A | 06-05-15 A | | | | | | |
| RWB10320 | Engineer's comments | 21 | 09-03-15 A | 11-03-15 A | | | | | | |
| RWB10330 | Alternative Design for RW_B structure submission | 21 | 09-03-15 A | 24-04-15 A | | | | | | |
| RWB10340 | Engineer's approval | 21 | 27-03-15 A | 06-05-15 A | | | | | | |
| RWB10400 | Engineer's comments and approval | 21 | 24-04-15 A | 06-05-15 A | | | | | | |
| Retaining Structure RW_B | | 167 | 01-12-14 A | 20-10-16 | 325 | | | | | |
| Excavation | | 69 | 01-12-14 A | 02-07-15 A | | | | | | |
| RWB10510 | Excavation of RW_B up to approx +6.0 mPD-(Bay14-15) | 40 | 01-12-14 A | 13-04-15 A | | | | | | |
| RWB10530 | Predrilling works remaining works | 68 | 01-01-15 A | 02-07-15 A | | | | | | |

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

CRBC - Kaden JV
Two-Month Rolling Programme

| Date | Revision | Checked | Approved |
|----------|----------|---------|----------|
| 25-07-16 | | | |
| | | | |

| Activity ID | Activity Name | Original Duration | Start | Finish | Total Float | 2016 | | | | | |
|--|--|-------------------|------------|------------|-------------|--|------------|------------|-----|---|--|
| | | | | | | Jun | Jul | Aug | Sep | Oct | |
| Structure(Base Slab, Wall, Colume, Top Slab) | | | | | | 120 | 01-04-15 A | 23-06-16 | 303 | Structure(Base Slab, Wall, Colume, Top Slab) | |
| Bay 1-7 | | | | | | 85 | 01-04-15 A | 21-09-15 A | | | |
| RWB10100 | wall and colume-Bay2 to Bay 7 | 85 | 01-04-15 A | 21-09-15 A | | | | | | | |
| Bay12-13 | | | | | | 60 | 18-09-15 A | 23-06-16 | 125 | Bay12-13 | |
| RWB10170 | Bay12-13 and backfilling | 60 | 18-09-15 A | 23-06-16 | 125 | Bay12-13 and backfilling | | | | | |
| Bay14-Bay15 | | | | | | 60 | 07-01-16 A | 18-06-16 A | | Bay14-Bay15 | |
| RWB10220 | Bay 14-15 | 60 | 07-01-16 A | 18-06-16 A | | Bay 14-15 | | | | | |
| Backfilling | | | | | | 140 | 15-07-15 A | 20-10-16 | 325 | Backfilling | |
| RWB10230 | Backfilling | 40 | 15-07-15 A | 20-07-16 | 395 | | | | | | |
| RWB10235 | Precast panels installation | 90 | 23-06-16 | 20-10-16 | 325 | | | | | | |
| RW_B Precast Panel | | | | | | 99 | 23-04-16 A | 26-09-16 | 266 | RW_B Precast Panel | |
| Precast the Panel | | | | | | 94 | 23-04-16 A | 20-09-16 | 266 | Precast the Panel | |
| RWB20000 | Precast the Panels(Bay 6-15 nos) | 12 | 20-05-16 A | 25-06-16 | 0 | Precast the Panels(Bay 6-15 nos) | | | | | |
| RWB20010 | Precast the Panels(Bay 5-11 nos) | 12 | 20-05-16 A | 02-07-16 | 0 | Precast the Panels(Bay 5-11 nos) | | | | | |
| RWB20020 | Precast the Panels(Bay 7-10nos) | 12 | 19-05-16 A | 07-07-16 | 0 | Precast the Panels(Bay 7-10nos) | | | | | |
| RWB20030 | Precast the Panels(Bay 4-12nos) | 12 | 20-06-16 A | 20-07-16 | 0 | Precast the Panels(Bay 4-12nos) | | | | | |
| RWB20040 | Precast the Panels(Bay 8-15nos) | 12 | 25-05-16 A | 25-07-16 | 0 | Precast the Panels(Bay 8-15nos) | | | | | |
| RWB20050 | Precast the Panels(Bay 3-17nos) | 12 | 18-05-16 A | 29-07-16 | 0 | Precast the Panels(Bay 3-17nos) | | | | | |
| RWB20070 | Precast the Panels(Bay 2-5nos) | 6 | 23-04-16 A | 01-08-16 | 10 | Precast the Panels(Bay 2-5nos) | | | | | |
| RWB20060 | Precast the Panels(Bay 9-8nos) | 6 | 01-06-16 A | 02-08-16 | 6 | Precast the Panels(Bay 9-8nos) | | | | | |
| RWB20080 | Precast the Panels(Bay 10-15nos) | 12 | 20-06-16 A | 11-08-16 | 10 | Precast the Panels(Bay 10-15nos) | | | | | |
| RWB20090 | Precast the Panels(Bay 11-9nos) | 12 | 09-08-16 | 24-08-16 | 33 | Precast the Panels(Bay 11-9nos) | | | | | |
| RWB20100 | Precast the Panels(Bay 14-12nos) | 12 | 22-08-16 | 06-09-16 | 246 | Precast the Panels(Bay 14-12nos) | | | | | |
| RWB20110 | Precast the Panels(Bay 15-11nos) | 12 | 03-09-16 | 20-09-16 | 266 | Precast the Panels(Bay 15-11nos) | | | | | |
| Installation the Panel | | | | | | 72 | 29-05-16 A | 26-09-16 | 266 | Installation the Panel | |
| RWB20120 | Installation the Panel Bay 6 | 5 | 14-06-16 A | 04-07-16 | 4 | Installation the Panel Bay 6 | | | | | |
| RWB20130 | Installation the Panel Bay 5 | 5 | 04-07-16 | 09-07-16 | 4 | Installation the Panel Bay 5 | | | | | |
| RWB20140 | Installation the Panel Bay 7 | 5 | 09-07-16 | 16-07-16 | 4 | Installation the Panel Bay 7 | | | | | |
| RWB20150 | Installation the Panel Bay 4 | 5 | 21-07-16 | 26-07-16 | 0 | Installation the Panel Bay 4 | | | | | |
| RWB20160 | Installation the Panel Bay 8 | 5 | 05-06-16 A | 29-07-16 | 0 | Installation the Panel Bay 8 | | | | | |
| RWB20170 | Installation the Panel Bay 3 | 9 | 12-06-16 A | 09-08-16 | 0 | Installation the Panel Bay 3 | | | | | |
| RWB20180 | Installation the Panel Bay 9 | 5 | 08-06-16 A | 13-08-16 | 0 | Installation the Panel Bay 9 | | | | | |
| RWB20190 | Installation the Panel Bay 2 | 3 | 29-05-16 A | 17-08-16 | 0 | Installation the Panel Bay 2 | | | | | |
| RWB20200 | Installation the Panel Bay 10 | 7 | 17-08-16 | 25-08-16 | 5 | Installation the Panel Bay 10 | | | | | |
| RWB20210 | Installation the Panel Bay 11 | 5 | 25-08-16 | 01-09-16 | 31 | Installation the Panel Bay 11 | | | | | |
| RWB20220 | Installation the Panel Bay 14 | 5 | 06-09-16 | 12-09-16 | 246 | Installation the Panel Bay 14 | | | | | |
| RWB20230 | Installation the Panel Bay 15 | 5 | 20-09-16 | 26-09-16 | 266 | Installation the Panel Bay 15 | | | | | |
| Toll Collector Subway & Associated Works-Section 1 | | | | | | 420 | 20-10-15 A | 12-12-16 | 183 | Toll Collector Subway & Associated Works-Section 1 | |
| Toll Collector Bridge (Portion I)-Section 1 | | | | | | 84 | 20-06-16 | 27-09-16 | 207 | Toll Collector Bridge (Portion I)-Section 1 | |
| Stage 1 | | | | | | 84 | 20-06-16 | 27-09-16 | 207 | Stage 1 | |
| Temporary Works Design(TWD) Submission and Approval | | | | | | 60 | 20-06-16 | 29-08-16 | 207 | Temporary Works Design(TWD) Submission and Approval | |
| TCS1240 | TWD -Design of lifting system | 30 | 20-06-16 | 25-07-16 | 207 | TWD -Design of lifting system | | | | | |
| TCS1580 | Engineer's comments and approval | 30 | 26-07-16 | 29-08-16 | 207 | Engineer's comments and approval | | | | | |
| Method Statement Submissions and Approval | | | | | | 24 | 30-08-16 | 27-09-16 | 207 | Method Statement Submissions and Approval | |
| TCS1250 | MSS for toll collector bridge and staircase installation | 24 | 30-08-16 | 27-09-16 | 207 | MSS for toll collector bridge and staircase installation | | | | | |
| Toll Collector Subway & Associate Works (Portion I)-Section 1 | | | | | | 202 | 21-04-16 A | 12-12-16 | 156 | Toll Collector Subway & Associate Works (Portion I)-Section 1 | |
| Stage 1 | | | | | | 202 | 21-04-16 A | 12-12-16 | 156 | Stage 1 | |
| Method Statement Submissions and Approval | | | | | | 24 | 20-06-16 | 18-07-16 | 126 | Method Statement Submissions and Approval | |
| TCS1630 | Engineer's comments and approval | 24 | 20-06-16 | 18-07-16 | 126 | Engineer's comments and approval | | | | | |
| Field Works - Toll Collector Subway and Staircase | | | | | | 157 | 21-04-16 A | 12-12-16 | 119 | Field Works - Toll Collector Subway and Staircase | |
| TCS1420 | ELS for (SB22-SB16) | 40 | 21-04-16 A | 04-08-16 | 125 | ELS for (SB22-SB16) | | | | | |
| TCS1430 | Construction of toll collector subway(from SB22-SB16) | 70 | 19-07-16 | 18-10-16 | 119 | Construction of toll collector subway(from SB22-SB16) | | | | | |
| TCS1440 | Construction of staircase | 70 | 14-09-16 | 12-12-16 | 119 | Construction of staircase | | | | | |
| Toll Collector Subway (Portion X)-Section 5 | | | | | | 354 | 20-10-15 A | 14-10-16 | 208 | Toll Collector Subway (Portion X)-Section 5 | |
| Stage 3 | | | | | | 354 | 20-10-15 A | 14-10-16 | 208 | Stage 3 | |
| TCS1072 | Construct Toll Collector Subway SB 1 | 15 | 22-09-16 | 07-10-16 | 60 | Construct Toll Collector Subway SB 1 | | | | | |
| TCS1100 | Excavation Works-S.B 3-8 | 80 | 20-10-15 A | 14-10-16 | 162 | Excavation Works-S.B 3-8 | | | | | |
| Bridge G2 | | | | | | 296 | 05-01-15 A | 13-02-17 | 222 | Bridge G2 | |
| Stage 2 | | | | | | 296 | 05-01-15 A | 13-02-17 | 222 | Stage 2 | |

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

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

| Date | Revision | Checked | Approved |
|----------|----------|---------|----------|
| 25-07-16 | | | |
| | | | |

| Activity ID | Activity Name | Original Duration | Start | Finish | Total Float | 2016 | | | | |
|---|--|-------------------|------------|------------|-------------|--|-----|-----|-----|-----|
| | | | | | | Jun | Jul | Aug | Sep | Oct |
| Temporary Works Design (TWD) Submission and Approval | | | | | | Temporary Works Design (TWD) Submission and Approval | | | | |
| BG23590 | DDA for superstructure(draft) | 17 | 09-03-15 A | 16-03-15 A | | | | | | |
| BG23600 | Engineer's comments | 17 | 17-03-15 A | 13-04-15 A | | | | | | |
| BG23610 | DDA for superstructure submission | 17 | 21-04-15 A | 29-04-15 A | | | | | | |
| BG23620 | Engineer's approval | 17 | 20-06-16 | 09-07-16 | 180 | Engineer's approval | | | | |
| Field Works | | | | | | | | | | |
| Foundation Works | | | | | | | | | | |
| BG23290 | Piling for G2c | 20 | 05-01-15 A | 13-01-15 A | | | | | | |
| Pier & Abutment Construction | | | | | | | | | | |
| BG23450 | Construct Pier at G2c-2 | 32 | 07-09-15 A | 19-10-15 A | | | | | | |
| BG23470 | Construct Pier at G2a | 45 | 18-11-15 A | 27-01-16 A | | | | | | |
| BG23460 | Construct Pier at G2b | 36 | 14-03-16 A | 29-04-16 A | | | | | | |
| Deck | | | | | | | | | | |
| BG23000 | Deck(G2e-G2d2) | 90 | 20-04-16 A | 28-09-16 | 172 | Deck(G2e-G2d2) | | | | |
| BG23010 | Deck(G2d2-G2e2)&Construct Portal G2c | 75 | 08-08-16 | 14-11-16 | 172 | | | | | |
| BG23040 | Deck(G2e-G2d1) | 60 | 04-04-16 A | 13-02-17 | 172 | | | | | |
| Bridge G1 | | | | | | | | | | |
| Stage 2 | | | | | | | | | | |
| Design Submission and Approval | | | | | | | | | | |
| BG112300 | Engineer's approval | 21 | 20-06-16 | 14-07-16 | 210 | Design Submission and Approval | | | | |
| Method Statement Submissions and Approval | | | | | | | | | | |
| BG112330 | MSS-substructure construction | 24 | 09-02-15 A | 13-02-15 A | | | | | | |
| Off-site Works | | | | | | | | | | |
| BG112000 | Form traveller fabrication | 90 | 21-01-16 A | 29-06-16 | 213 | Form traveller fabrication | | | | |
| Field Works | | | | | | | | | | |
| Substructure Works from Pier G1d to Pier G2a | | | | | | | | | | |
| BG112130 | Pierhead segment construction at Pier G1d | 40 | 20-06-16 | 09-08-16 | 152 | Substructure Works from Pier G1d to Pier G2a | | | | |
| Deck Construction from Pier G1d to Pier G2a | | | | | | | | | | |
| BG112462 | Completion of Pier at G2a | 0 | | 20-06-16 | 121 | Completion of Pier at G2a | | | | |
| BG112120 | Assemble of 1st formtraveller at G1d and testing | 28 | 19-09-16 | 25-10-16 | 152 | | | | | |
| Bridge H1-Section 2 | | | | | | | | | | |
| Stage 2 | | | | | | | | | | |
| Design Submission and Approval | | | | | | | | | | |
| BH12830 | DDA for superstructure(draft) | 17 | 09-03-15 A | 16-03-15 A | | | | | | |
| BH12840 | Engineer's comments | 17 | 17-03-15 A | 13-04-15 A | | | | | | |
| BH12810 | DDA for substructure submission | 17 | 02-01-15 A | 16-04-15 A | | | | | | |
| BH12850 | DDA for superstructure submission | 17 | 21-04-15 A | 29-04-15 A | | | | | | |
| BH12820 | Engineer's approval | 17 | 18-02-15 A | 30-05-15 A | | | | | | |
| BH12680 | TWD -Formwork design for pier | 24 | 18-08-15 A | 28-08-15 A | | | | | | |
| BH12690 | TWD -Pierhead construction | 24 | 02-11-15 A | 09-11-15 A | | | | | | |
| BH12860 | Engineer's approval | 17 | 20-06-16 | 09-07-16 | 65 | Engineer's approval | | | | |
| Method Statement Submissions and Approval | | | | | | | | | | |
| BH12370 | MSS-substructure construction | 24 | 09-02-15 A | 13-02-15 A | | | | | | |
| Off-site Works | | | | | | | | | | |
| BH12720 | Form traveller fabrication | 90 | 21-01-16 A | 29-06-16 | 43 | Form traveller fabrication | | | | |
| Field Works | | | | | | | | | | |
| Foundation Works& Pier construction | | | | | | | | | | |
| Foundation Works | | | | | | | | | | |
| BH12580 | Bored piles and Foundation for H1d | 65 | 11-04-15 A | 30-12-15 A | | | | | | |
| Pier construction | | | | | | | | | | |
| BH12886 | Pierhead segment construction at Pier H1e | 40 | 28-04-16 A | 02-07-16 | 0 | Pierhead segment construction at Pier H1e | | | | |
| BH12558 | Pierhead segment construction at Pier H1d | 40 | 20-06-16 | 09-08-16 | 236 | Pierhead segment construction at Pier H1d | | | | |
| Culvert 1(TBM)-Stage 4 | | | | | | | | | | |
| Field Works | | | | | | | | | | |
| TBM Driving | | | | | | | | | | |
| CUL13090 | TBM preparation | 36 | 13-02-15 A | 04-08-15 A | | | | | | |
| CUL13120 | TBM driving | 86 | 15-05-15 A | 04-08-15 A | | | | | | |
| Receiving Pit | | | | | | | | | | |
| CUL13130 | Trial trench | 7 | 09-01-15 A | 16-01-15 A | | | | | | |

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

CRBC - Kaden JV
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| Date | Revision | Checked | Approved |
|----------|----------|---------|----------|
| 25-07-16 | | | |
| | | | |

| Activity ID | Activity Name | Original Duration | Start | Finish | Total Float | 2016 | | | | |
|--|---|-------------------|-------------------|-------------------|-------------|------|-----|-----|-----|-----|
| | | | | | | Jun | Jul | Aug | Sep | Oct |
| CUL13140 | ELS | 72 | 04-02-15 A | 23-03-15 A | | | | | | |
| FC2 | | 267 | 04-03-15 A | 28-07-16 | 452 | | | | | |
| CUL13450 | Sheetpile installation for FC2 | 21 | 04-03-15 A | 14-05-15 A | | | | | | |
| CUL13470 | Construction of chamber FC2 | 30 | 20-02-16 A | 11-07-16 | 452 | | | | | |
| CUL13480 | Backfilling and removal section of sheetpile | 14 | 11-07-16 | 28-07-16 | 452 | | | | | |
| BY-Pass Sewer between FC1 and FC2(1800 Pipe) | | 14 | 21-03-16 A | 22-06-16 | 452 | | | | | |
| CUL13510 | Backfilling | 14 | 21-03-16 A | 22-06-16 | 452 | | | | | |
| Completion of KD3A and Remaining Works | | 70 | 20-06-16 | 29-08-16 | 550 | | | | | |
| CUL13535 | Backfilling | 70 | 20-06-16 | 29-08-16 | 550 | | | | | |
| Culvert 2 & Culvert 3 and Existing Box Culvert | | 245 | 20-02-16 A | 21-12-16 | 301 | | | | | |
| Method statement Submission | | 24 | 20-06-16 | 18-07-16 | 372 | | | | | |
| CCE20140 | Method statement for screeding the existing box culvert | 24 | 20-06-16 | 18-07-16 | 372 | | | | | |
| Culvert 2 | | 105 | 20-02-16 A | 08-10-16 | 257 | | | | | |
| CCE20080 | MH3 construction | 65 | 20-02-16 A | 04-08-16 | 225 | | | | | |
| CCE20090 | Bay 21 | 50 | 04-08-16 | 08-10-16 | 257 | | | | | |
| Culvert 3 | | 190 | 05-04-16 A | 21-12-16 | 225 | | | | | |
| CCE20085 | MH6 construction | 65 | 05-04-16 A | 29-08-16 | 225 | | | | | |
| CCE20210 | Bay 22 | 90 | 29-08-16 | 21-12-16 | 225 | | | | | |
| Site Formation - Retaining Structure RW_A | | 138 | 21-09-15 A | 23-01-17 | 158 | | | | | |
| Stage 3 | | 138 | 21-09-15 A | 23-01-17 | 158 | | | | | |
| Retaining Wall A | | 138 | 21-09-15 A | 23-01-17 | 158 | | | | | |
| RWA20100 | Tree works (Portion 1) | 24 | 21-09-15 A | 21-01-16 A | | | | | | |
| RWA20110 | Site clearance and tree felling | 12 | 25-01-16 A | 14-05-16 A | | | | | | |
| RWA20130 | Install ELS and Excavation (Soil: 10,298m³) | 80 | 01-02-16 A | 04-08-16 | 158 | | | | | |
| RWA20140 | Construct Retaining Wall A from TD2 Abutment M to MJ 11-Base slab | 20 | 05-08-16 | 29-08-16 | 158 | | | | | |
| RWA20145 | Construct Retaining Wall A from TD2 Abutment M to MJ 11-Wall construction | 30 | 30-08-16 | 08-10-16 | 158 | | | | | |
| RWA20150 | Construct Cascade D | 24 | 18-04-16 A | 07-11-16 | 158 | | | | | |
| RWA20160 | Drainage Diversion of Existing Stream to Cascade D | 12 | 18-04-16 A | 19-11-16 | 158 | | | | | |
| RWA20170 | Construct Retaining Wall A from Bay MJ11 to CH357.8-Base slab | 30 | 23-02-16 A | 14-12-16 | 158 | | | | | |
| RWA20175 | Construct Retaining Wall A from Bay MJ11 to CH357.8-Wall construction | 42 | 13-04-16 A | 23-01-17 | 158 | | | | | |
| Site Formation - Retaining Structure for Slope TP_F | | 599 | 08-01-15 A | 27-09-16 | 404 | | | | | |
| Stage 3 | | 599 | 08-01-15 A | 27-09-16 | 404 | | | | | |
| Retaining Structure for Slope TP_F | | 599 | 08-01-15 A | 27-09-16 | 404 | | | | | |
| RWF31306 | Excavation for Bay 20 | 20 | 08-01-15 A | 10-01-15 A | | | | | | |
| RWF31350 | Backfilling | 24 | 17-12-15 A | 23-06-16 | 228 | | | | | |
| RWF31470 | Backfilling | 60 | 01-02-16 A | 25-06-16 | 336 | | | | | |
| RWF31480 | U-Channel construction,Completion civil provision works for TCSS and E&M | 72 | 27-06-16 | 27-09-16 | 404 | | | | | |
| Site Formation - Slope TP_A & Associated Works | | 160 | 01-10-14 A | 20-06-16 | 117 | | | | | |
| Stage 3 | | 160 | 01-10-14 A | 20-06-16 | 117 | | | | | |
| Slope Feature - Slope TP_A | | 160 | 01-10-14 A | 20-06-16 | 117 | | | | | |
| TPA41130 | Laying Erosion Control Mat for slope A1 | 3 | 11-11-14 A | 30-11-14 A | | | | | | |
| TPA41180 | Excavation of Soil (9323m³) for slope A3 | 40 | 01-10-14 A | 02-12-14 A | | | | | | |
| TPA41150 | Raking Drain Construction for slope A2 | 16 | 24-11-14 A | 24-12-14 A | | | | | | |
| TPA41160 | U-channel and Berm for slope A2 | 21 | 30-11-14 A | 31-12-14 A | | | | | | |
| TPA41170 | Laying Erosion Control Mat for slope A2 | 3 | 02-12-14 A | 31-12-14 A | | | | | | |
| TPA41190 | Excavation of Rock (8850m³) for slope A3 | 70 | 02-12-14 A | 08-04-15 A | | | | | | |
| TPA41350 | Forming East Portal Formation and temporary ground drainage works | 50 | 10-03-15 A | 20-06-16 | 117 | | | | | |
| Site Formation - Slope TP_B & Associated Works | | 176 | 10-11-14 A | 20-06-16 | 393 | | | | | |
| Stage 3 | | 176 | 10-11-14 A | 20-06-16 | 393 | | | | | |
| Slope Feature - Slope TP_B | | 176 | 10-11-14 A | 20-06-16 | 393 | | | | | |
| TPB40900 | Laying Erosion Control Mat for slope B2 | 3 | 10-11-14 A | 13-11-14 A | | | | | | |
| TPB41000 | Excavation of Soil (11,200m³) for slope B3 | 40 | 14-11-14 A | 30-12-14 A | | | | | | |
| TPB41100 | Excavation of Rock (17,900m³) for slope B3 | 90 | 02-01-15 A | 22-06-15 A | | | | | | |
| TPB41210 | U-channel (part) and Berm for slope B3 | 21 | 02-03-15 A | 20-06-16 | 393 | | | | | |
| TPB41220 | Laying Erosion Control Mat for slope B3 | 3 | 20-04-15 A | 20-06-16 | 393 | | | | | |
| TPB43600 | Forming road formation and temporary ground drainage works | 14 | 20-04-15 A | 20-06-16 | 393 | | | | | |
| Site Formation - Slope TP_C & Associated Works | | 79 | 18-12-14 A | 22-08-16 | 272 | | | | | |
| Stage 3 | | 48 | 18-12-14 A | 18-06-15 A | | | | | | |
| Slope Feature - Slope TP_C | | 48 | 18-12-14 A | 18-06-15 A | | | | | | |

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

CRBC - Kaden JV
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| Date | Revision | Checked | Approved |
|----------|----------|---------|----------|
| 25-07-16 | | | |
| | | | |

| Activity ID | Activity Name | Original Duration | Start | Finish | Total Float | 2016 | | | | |
|--|---|-------------------|------------|------------|-------------|---|-----|-----|-----|-----|
| | | | | | | Jun | Jul | Aug | Sep | Oct |
| TPC50600 | Raking Drain Construction for slope C1 | 8 | 18-12-14 A | 12-01-15 A | | | | | | |
| TPC50700 | U-channel (350m) and Berm for slope C1 | 25 | 18-12-14 A | 18-06-15 A | | | | | | |
| Achievement of KD-3(Stage 3) for Slope C | | | | | | Achievement of KD-3(Stage 3) for Slope C | | | | |
| TPC51310 | Remaining civil works | 50 | 20-06-16 | 22-08-16 | 272 | | | | | |
| Site Formation - Slope TP_D & Associated Works | | | | | | Remaining civil works | | | | |
| Stage 3 | | | | | | | | | | |
| Slope Feature - Slope TP_D | | | | | | | | | | |
| TPD51350 | U-channel (100m) and Berm for slope D1, D2a and D2b | 11 | 20-01-15 A | 01-02-15 A | | | | | | |
| TPD51400 | Excavation of Rock (4,670m3) for slope D3a, D3b and D4 | 40 | 01-02-15 A | 30-03-15 A | | | | | | |
| TPD51500 | Excavation of Soil (3,260m3) for slope D5 | 40 | 22-04-15 A | 02-07-15 A | | | | | | |
| TPD51450 | U-channel (125m) and Berm for slope D3a, D3b and D4 | 15 | 01-02-15 A | 29-10-15 A | | | | | | |
| TPD52800 | Forming West Portal Formation and temporary ground drainage works | 10 | 21-01-16 A | 29-06-16 | 109 | | | | | |
| TPD51750 | U-channel (150m) and Berm for slope D6a and D6b | 21 | 06-07-15 A | 09-07-16 | 44 | | | | | |
| TPD51753 | Remaining works in Portion D | 88 | 20-01-16 A | 01-11-16 | 44 | | | | | |
| Achievement of KD-3(Stage 3) for Slope D | | | | | | Forming West Portal Formation and temporary ground drainage works | | | | |
| TPD52350 | Remaining civil works and drainage works | 88 | 02-07-16 | 24-10-16 | 225 | | | | | |
| Site Formation - Slope TP_E & Associated Works | | | | | | U-channel (150m) and Berm for slope D6a and D6b | | | | |
| Stage 3 | | | | | | | | | | |
| Slope Feature - Slope TP_E at Toll Control Building Area | | | | | | | | | | |
| TPE61120 | Soil Nail RowB Level + 59.20 (Install and grouting) | 25 | 02-02-15 A | 05-02-15 A | | | | | | |
| TPE61130 | Soil Nail RowC Level + 57.20 (Install and grouting) | 29 | 12-02-15 A | 14-02-15 A | | | | | | |
| TPE61180 | Mapping & Dowelling | 15 | 13-11-14 A | 20-06-16 A | | | | | | |
| TPE61210 | Excavation of Rock for slope E3b - stage 1 | 75 | 07-01-15 A | 20-06-16 A | | | | | | |
| TPE61220 | Excavation of Rock for slope E3b - stage 2 | 75 | 28-02-15 A | 20-06-16 A | | | | | | |
| TPE61170 | Excavation of Rock for slope E2b - stage 2 | 75 | 31-12-14 A | 20-06-16 A | | | | | | |
| TPE61230 | Excavation of Rock for slope E3b - stage 3 | 75 | 26-03-15 A | 11-07-16 | 0 | | | | | |
| TPE61240 | Excavation of Rock for slope E3b - stage 4 | 75 | 25-05-15 A | 18-08-16 | 0 | | | | | |
| TPE61250 | Mapping & Dowelling | 16 | 19-08-16 | 07-09-16 | 0 | | | | | |
| TPE61260 | U-channel (300m) and Berm for slope E3b | 40 | 08-09-16 | 01-11-16 | 0 | | | | | |
| Slope Feature - Slope TP_E Remaining Section and SSE-D/C116 | | | | | | Excavation of Rock for slope E3b - stage 3 | | | | |
| TPE62150 | Excavation of Soil/Rock (13,900m3) for slope E2c | 90 | 02-01-15 A | 31-01-15 A | | | | | | |
| TPE62190 | U-channel (200m) and Berm for slope E2c | 40 | 21-10-15 A | 20-06-16 A | | | | | | |
| TPE62210 | Excavation of Rock for slope E3c - stage 1 | 75 | 23-04-15 A | 20-06-16 A | | | | | | |
| TPE62220 | Excavation of Rock for slope E3c - stage 2 | 75 | 02-07-15 A | 20-06-16 A | | | | | | |
| TPE62400 | Excavation of Rock (11,900m3) for slope E3a | 90 | 22-04-15 A | 20-06-16 A | | | | | | |
| TPE62230 | Excavation of Rock for slope E3c - stage 3 | 75 | 21-05-16 A | 03-09-16 | 197 | | | | | |
| TPE62250 | Mapping & Dowelling | 15 | 05-09-16 | 23-09-16 | 197 | | | | | |
| TPE62260 | U-channel (150m) and Berm for slope E3c | 40 | 24-09-16 | 15-11-16 | 197 | | | | | |
| TPE62410 | Mapping & Dowelling | 15 | 21-05-16 A | 29-11-16 | 197 | | | | | |
| TPE62420 | U-channel (220m) and Berm for slope E3a | 40 | 21-10-15 A | 22-12-16 | 197 | | | | | |
| Site Formation - Slope Upgrading Works | | | | | | Excavation of Rock for slope E3b - stage 4 | | | | |
| Stage 3 (Other Slope Features) | | | | | | Mapping & Dowelling | | | | |
| Slope Feature - SSE-D/C170 | | | | | | | | | | |
| SFW10050 | Site Clearance and Tree Felling | 14 | 21-05-16 A | 20-06-16 A | | | | | | |
| SFW10040 | Implementation of TTA | 11 | 21-05-16 A | 05-10-16 | 147 | | | | | |
| SFW10060 | Prepare Access Road | 7 | 21-05-16 A | 11-10-16 | 145 | | | | | |
| SFW10070 | Excavation of Soil (1,240m3) and Modification Works | 14 | 21-02-16 A | 07-11-16 | 136 | | | | | |
| Slope Feature - SSE-D/C150 | | | | | | U-channel (200m) and Berm for slope E2c | | | | |
| SFW10180 | Complete slope E3b - stage 4 | 0 | | 18-08-16 | 343 | | | | | |
| SFW10190 | Slope Modification | 5 | 17-02-16 A | 09-11-16 | 343 | | | | | |
| SFW10210 | Hydroseeding and Erosion Control Mat | 5 | 01-12-15 A | 11-11-16 | 343 | | | | | |
| Slope Feature - SSE-D/C152 | | | | | | Excavation of Rock for slope E3c - stage 2 | | | | |
| SFW10250 | Hydroseeding and Erosion Control Mat | 5 | 30-10-15 A | 13-12-16 | 343 | | | | | |
| Slope Feature - SSE-D/C121 | | | | | | Excavation of Rock for slope E3c - stage 3 | | | | |
| SFW10260 | Complete slope D6a and D6b | 0 | | 20-06-16 | 122 | | | | | |
| Slope Feature - SSE-D/C122 | | | | | | Excavation of Rock for slope E3a | | | | |
| SFW10300 | Complete slope D6a and D6b | 0 | | 20-06-16 | 482 | | | | | |
| Slope Feature - SSE-D/C14 | | | | | | Excavation of Rock for slope E3c - stage 4 | | | | |
| AK10410 | Possession of Portion X | 0 | 20-06-16 | 23-06-16 | 228 | | | | | |
| | | | | | | Mapping & Dowelling | | | | |

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

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

| Date | Revision | Checked | Approved |
|----------|----------|---------|----------|
| 25-07-16 | | | |
| | | | |

| Activity ID | Activity Name | Original Duration | Start | Finish | Total Float | 2016 | | | | | |
|--|--|-------------------|------------|------------|-------------|------|-----|-----|-----|-----|--|
| | | | | | | Jun | Jul | Aug | Sep | Oct | |
| SFW10340 | Complete TP_F Backfilling(Bay1-2) | 0 | | 23-06-16 | 228 | | | | | | |
| Slope Feature - 5SE-D/C21 | | | | | | | | | | | |
| SFW10540 | Completion of Sewer Culvert 1 | 0 | 20-06-16 | 20-06-16 | 103 | | | | | | |
| Slope Feature - 5SE-D/C171 | | | | | | | | | | | |
| SFW10590 | Slope Modification | 5 | 21-04-16 A | 01-08-17 | 103 | | | | | | |
| Slope Feature - 5SE-D/C16 | | | | | | | | | | | |
| SFW10620 | Complete pier construction at Bridge H1e & G2a | 0 | 20-06-16 | 20-06-16 | 177 | | | | | | |
| Slope Feature - 5SE-D/C17 | | | | | | | | | | | |
| SFW10740 | Complete of TP_F and TD1 Precast beam installation | 0 | 25-06-16 | 25-06-16 | 336 | | | | | | |
| Natural Terrain Hazard Mitigation Measures | | | | | | | | | | | |
| Natural Terrain Hazard Mitigation Measures | | | | | | | | | | | |
| Boulders within Blasting Zone | | | | | | | | | | | |
| NTH10110 | Mitigation measures for 9 boulders within blasting zone | 36 | 29-12-14 A | 31-03-15 A | | | | | | | |
| Vehicular Underpass TN-01 | | | | | | | | | | | |
| Stage 3 | | | | | | | | | | | |
| Blasting Related Submission | | | | | | | | | | | |
| Blasting Permit Application | | | | | | | | | | | |
| UDP30070 | Prepare and Submission of Revised CBAR | 48 | 30-03-15 A | 24-04-15 A | | | | | | | |
| Underpass Excavation from East Portal | | | | | | | | | | | |
| Drill and Blast CH489-CH312 | | | | | | | | | | | |
| UDP30270 | CH399-CH390 Drill and Blast method (3.0m penetration length/2.0days) | 6 | 16-12-15 A | 19-12-15 A | | | | | | | |
| UDP30280 | CH390-CH317 Drill and Blast method (3.0m penetration length/2.0days) | 50 | 21-12-15 A | 18-02-16 A | | | | | | | |
| Lining Works and Road Works | | | | | | | | | | | |
| Water Proofing and Lining Works | | | | | | | | | | | |
| UDP4090 | Erection of Waterproofing Platform(West Portal) | 28 | 03-05-16 A | 11-05-16 A | | | | | | | |
| Type A | | | | | | | | | | | |
| Water Proofing and Kicker | | | | | | | | | | | |
| CH 310-CH327 | | | | | | | | | | | |
| UDP4100 | Bench Waterproofing works(CH310-CH327.6)(Type A) | 10 | 03-04-16 A | 06-07-16 | 109 | | | | | | |
| UDP4110 | Kicker pouring(CH310-CH327.6)(Type A) | 14 | 18-04-16 A | 14-07-16 | 109 | | | | | | |
| CH 450-CH503 | | | | | | | | | | | |
| UDP4140 | Bench Waterproofing works(CH450-CH503)(Type A) | 18 | 24-04-16 A | 25-07-16 | 109 | | | | | | |
| UDP4150 | Kicker pouring(CH450-CH503)(Type A) | 21 | 05-05-16 A | 09-08-16 | 109 | | | | | | |
| Lining | | | | | | | | | | | |
| CH 310-CH327 | | | | | | | | | | | |
| UDP4160 | Pouring Type A Lining CH312-CH327 | 7 | 14-07-16 | 23-07-16 | 109 | | | | | | |
| UDP4170 | Erection of rebar fixing platform for west bulkhead wall | 7 | 23-07-16 | 02-08-16 | 241 | | | | | | |
| UDP4190 | Rebar fixing platform for west bulkhead wall | 7 | 02-08-16 | 10-08-16 | 241 | | | | | | |
| UDP4230 | Formwork for west bulkhead wall | 14 | 10-08-16 | 27-08-16 | 241 | | | | | | |
| UDP4270 | Concrete for west bulkhead wall | 14 | 27-08-16 | 14-09-16 | 241 | | | | | | |
| CH 450-CH503 | | | | | | | | | | | |
| UDP4180 | Pouring Type A Lining CH450-CH468 | 10 | 23-07-16 | 05-08-16 | 109 | | | | | | |
| UDP4210 | Pouring Type A Lining CH468-CH486 | 10 | 05-08-16 | 18-08-16 | 109 | | | | | | |
| UDP4220 | Pouring Type A Lining CH486-CH534.9 | 35 | 18-08-16 | 04-10-16 | 109 | | | | | | |
| Type B | | | | | | | | | | | |
| Lining B | | | | | | | | | | | |
| UDP4010 | Pour Type B Lining CH337-373 | 14 | 31-05-16 A | 20-06-16 A | | | | | | | |
| Type C | | | | | | | | | | | |
| UDP4130 | Base slab waterproofing and re-bar fixing(Type C) CH503-CH534.9 | 70 | 02-07-16 | 28-09-16 | 160 | | | | | | |
| Road and Drainage Work , Utilities Works at for Lung Fu Road Roundabout | | | | | | | | | | | |
| Section 3 | | | | | | | | | | | |
| Utilites installation ,road and drainage works (TTA stage 0) | | | | | | | | | | | |
| LFR10020 | Drainage & Sewerage works | 42 | 12-12-14 A | 23-01-15 A | | | | | | | |
| Utilites installation ,road and drainage works (TTA stage 0-1) | | | | | | | | | | | |
| LFR10070 | PCCW | 15 | 07-04-16 A | 27-06-16 | 0 | | | | | | |
| LFR10080 | Hutchison Global Communication Cable | 15 | 07-04-16 A | 02-07-16 | 0 | | | | | | |
| LFR10090 | Hong Kong Boaroband Network | 15 | 20-05-16 A | 05-07-16 | 0 | | | | | | |
| LFR10100 | Wharf T&T Duct and Joint Box | 15 | 20-05-16 A | 08-07-16 | 0 | | | | | | |
| LFR10110 | New World Telecom | 15 | 20-05-16 A | 11-07-16 | 0 | | | | | | |

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

CRBC - Kaden JV
Two-Month Rolling Programme

| Date | Revision | Checked | Approved |
|----------|----------|---------|----------|
| 25-07-16 | | | |
| | | | |

| Activity ID | Activity Name | Original Duration | Start | Finish | Total Float | 2016 | | | | |
|---|---|-------------------|------------|----------|-------------|------|--|-----|-----|-----|
| | | | | | | Jun | Jul | Aug | Sep | Oct |
| LFR10120 | Town Gas | 15 | 20-05-16 A | 14-07-16 | 0 | | Town Gas | | | |
| LFR10060 | DN100,300,700 | 21 | 25-01-16 A | 19-07-16 | 67 | | DN100,300,700 | | | |
| LFR10130 | Smartone Cable | 15 | 20-05-16 A | 20-07-16 | 0 | | Smartone Cable | | | |
| LFR10050 | Drainage works | 40 | 25-01-16 A | 25-07-16 | 67 | | Drainage works | | | |
| LFR10140 | HKC Cable | 15 | 20-05-16 A | 28-07-16 | 0 | | HKC Cable | | | |
| LFR10150 | Pubic Lighting | 15 | 20-06-16 A | 09-08-16 | 0 | | Pubic Lighting | | | |
| LFR10160 | CLP + CRD | 15 | 03-08-16 | 22-08-16 | 0 | | CLP + CRD | | | |
| LFR10170 | Trax Comm | 15 | 16-08-16 | 03-09-16 | 0 | | Trax Comm | | | |
| LFR10180 | Completion of this stage civil provision for E&M, TCSS | 15 | 20-08-16 | 08-09-16 | 0 | | Completion of this stage civil provision for E&M | | | |
| LFR10190 | Irrigation System | 10 | 08-09-16 | 22-09-16 | 0 | | Irrigation System | | | |
| LFR10200 | Road Pavement | 25 | 08-09-16 | 13-10-16 | 0 | | | | | |
| Road and Drainage Work ,Utilities Works at Lung Mun Road | | 80 | 20-09-16 | 29-12-16 | 96 | | | | | |
| Lung Mun Road (Westbound) | | 80 | 20-09-16 | 29-12-16 | 96 | | | | | |
| Ho Suen Street North | | 80 | 20-09-16 | 29-12-16 | 96 | | | | | |
| LMRWA1000 | Drainage Work | 80 | 20-09-16 | 29-12-16 | 96 | | | | | |
| Utilites installation ,road and drainage works for East Portal | | 88 | 20-06-16 | 12-10-16 | 277 | | | | | |
| EPA1000 | Rock Cutting | 88 | 20-06-16 | 12-10-16 | 277 | | | | | |
| Sewage, Irrigation and Road& Drainage Works | | 140 | 04-01-16 A | 15-01-18 | 248 | | | | | |
| SAI10060 | Sewage, irrigation and road&drainage works -G2-north side | 70 | 04-01-16 A | 21-11-17 | 248 | | | | | |
| SAI10070 | Sewage, irrigation and road&drainage works- G2-south side | 70 | 14-01-16 A | 15-01-18 | 248 | | | | | |

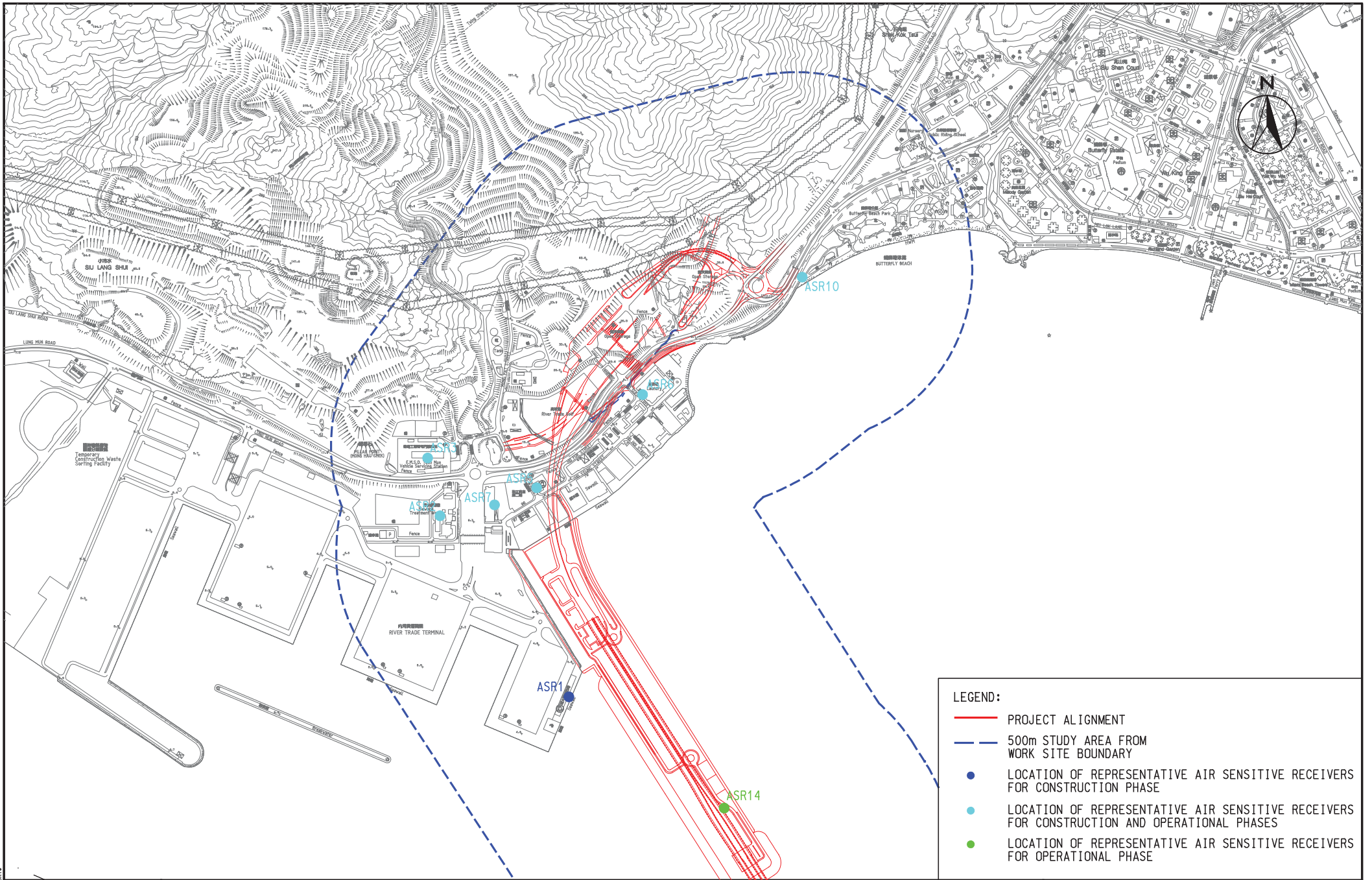
Remaining Level of Effort Critical Remaining Work
 Actual Work Milestone
 Remaining Work Summary

CRBC - Kaden JV
Two-Month Rolling Programme

| Date | Revision | Checked | Approved |
|----------|----------|---------|----------|
| 25-07-16 | | | |
| | | | |

Appendix E

Monitoring Locations / Sensitive Receivers for the Contract

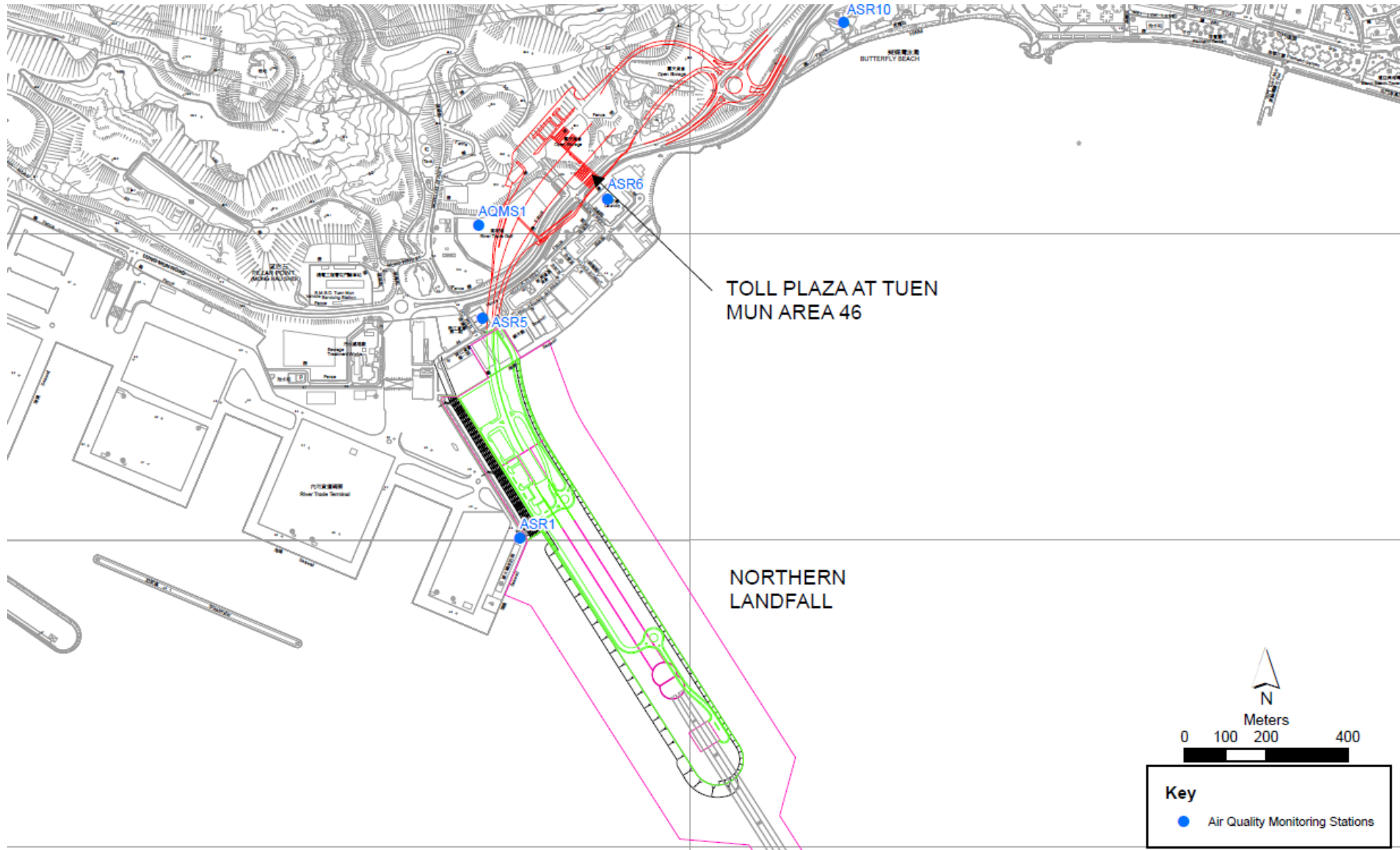


LEGEND:

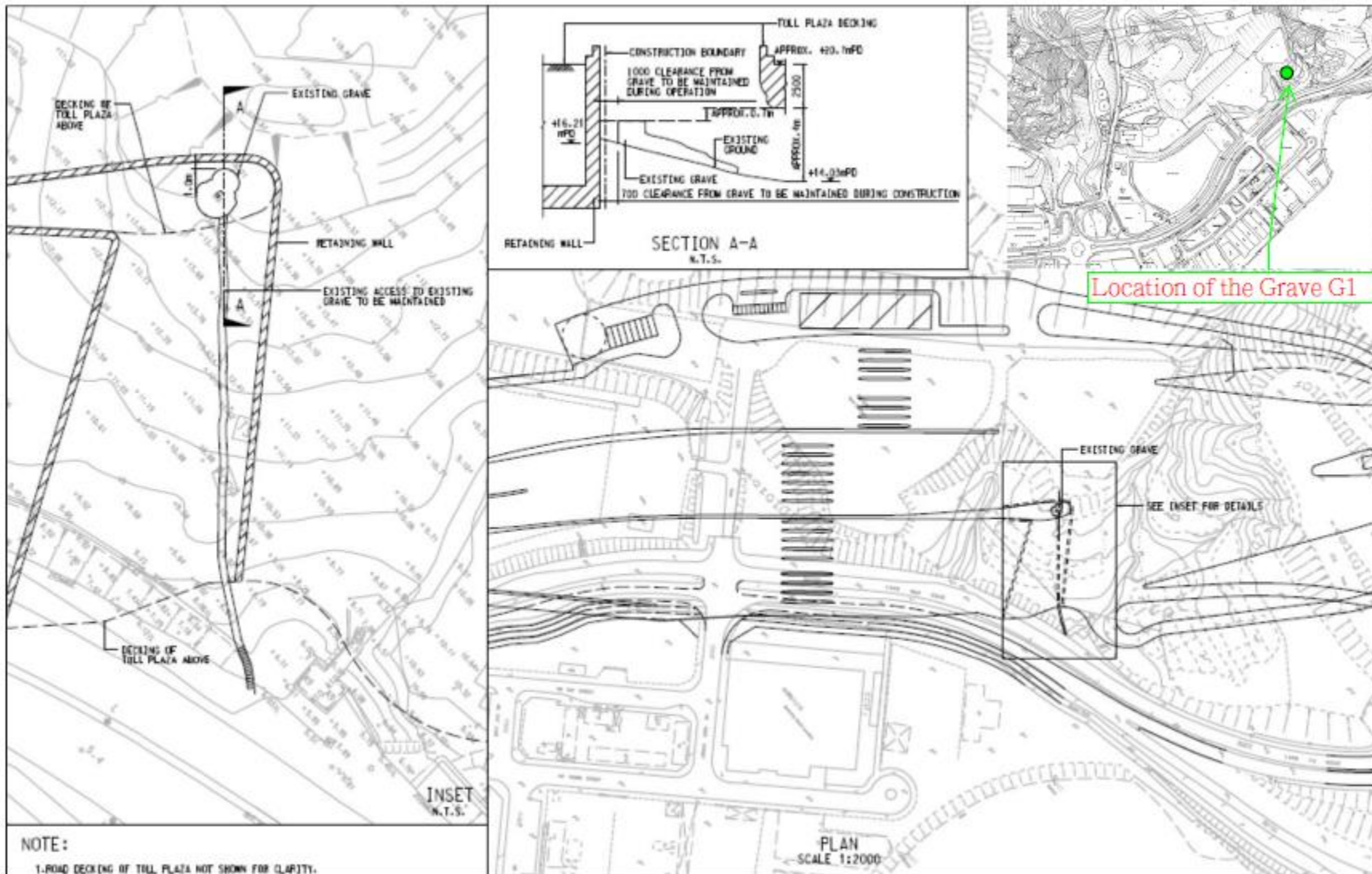
- PROJECT ALIGNMENT
- - - 500m STUDY AREA FROM WORK SITE BOUNDARY
- LOCATION OF REPRESENTATIVE AIR SENSITIVE RECEIVERS FOR CONSTRUCTION PHASE
- LOCATION OF REPRESENTATIVE AIR SENSITIVE RECEIVERS FOR CONSTRUCTION AND OPERATIONAL PHASES
- LOCATION OF REPRESENTATIVE AIR SENSITIVE RECEIVERS FOR OPERATIONAL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

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

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



Air Quality Monitoring Location






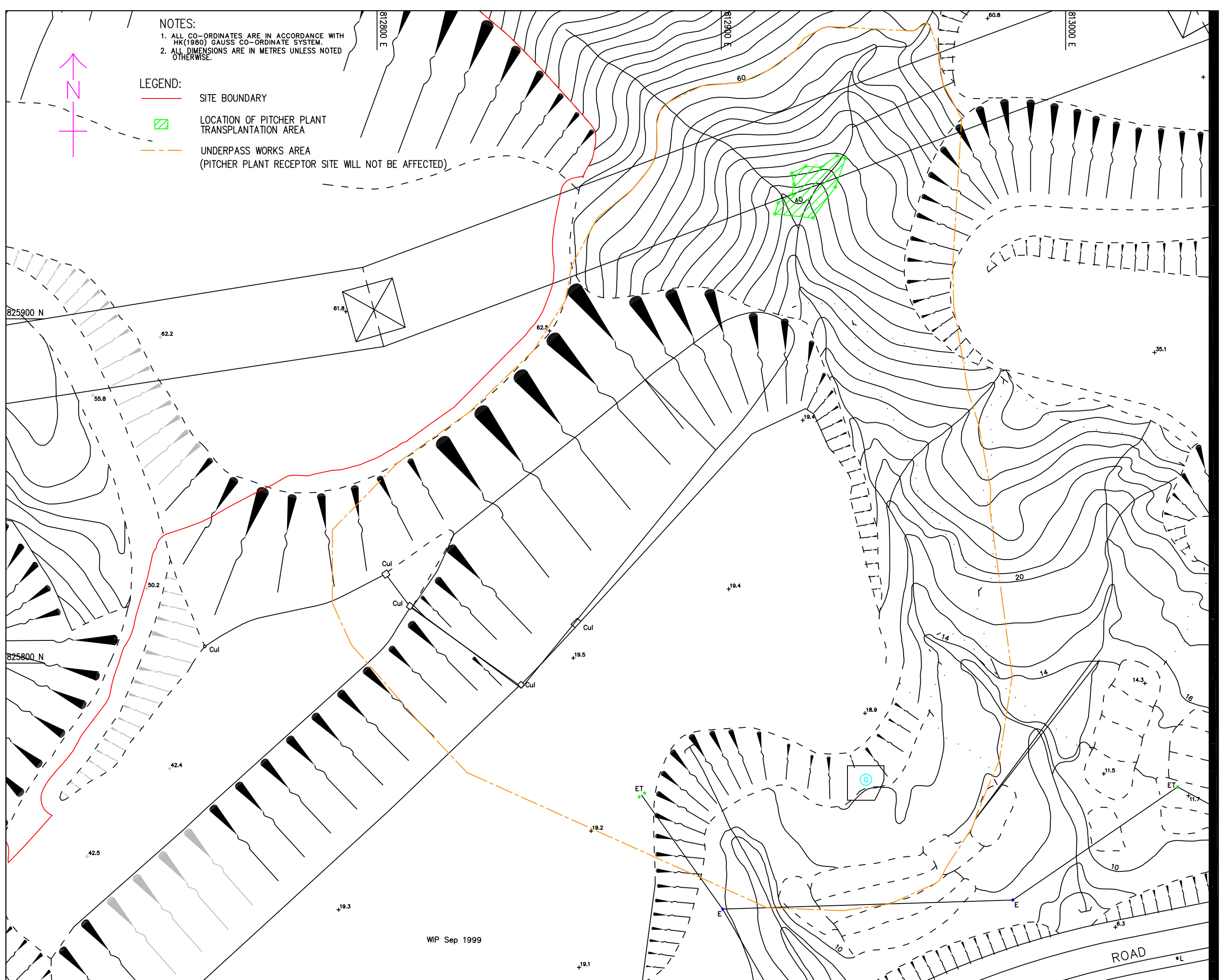
Location of the Grave G1

NOTES:

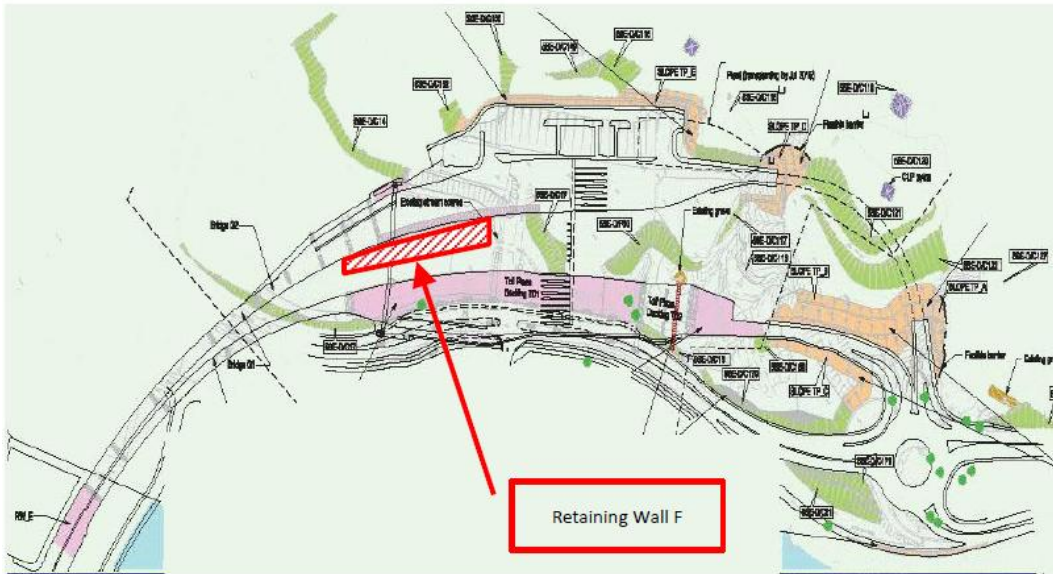
1. ALL CO-ORDINATES ARE IN ACCORDANCE WITH HK(1980) GAUSS CO-ORDINATE SYSTEM.
2. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.

LEGEND:

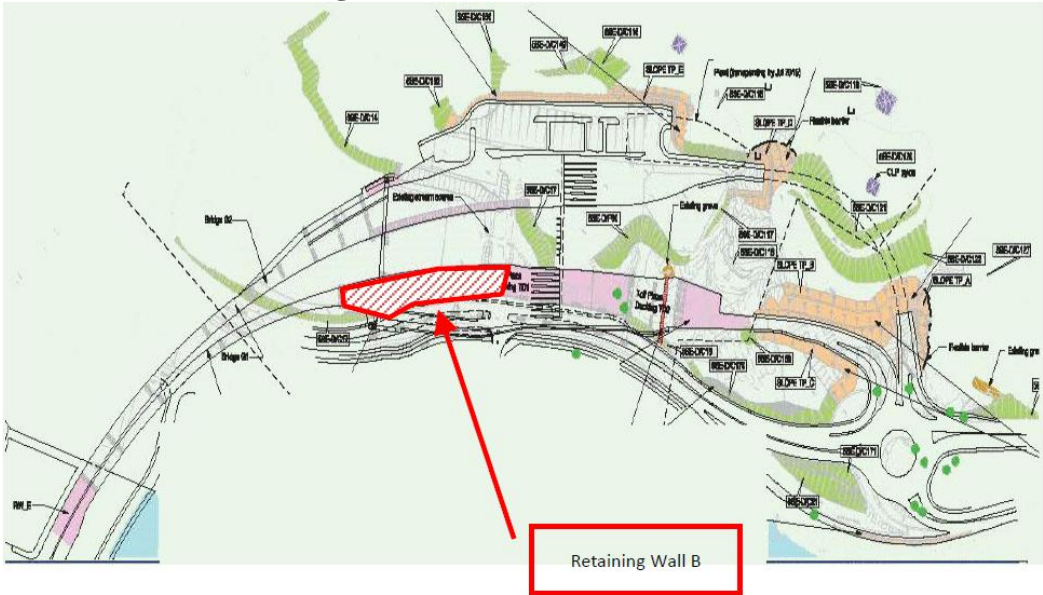
-  SITE BOUNDARY
-  LOCATION OF PITCHER PLANT TRANSPLANTATION AREA
-  UNDERPASS WORKS AREA (PITCHER PLANT RECEPTOR SITE WILL NOT BE AFFECTED)



Location of the Retaining Wall F



Location of the Retaining Wall B



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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 1 Confirm receipt of notification of failure in writing. 2 Notify the Contractor. 3 Ensure remedial measures properly implemented. | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 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 | <ul style="list-style-type: none"> • Check final design conforms to the requirements of EP and prepare report. | <ul style="list-style-type: none"> • Check report. • Recommend remedial design if necessary | <ul style="list-style-type: none"> • Undertake remedial design if necessary | |
| Non- conformity on one occasion | <ul style="list-style-type: none"> • Identify Source • Inform IEC and ER • Discuss remedial actions with IEC, ER and Contractor • Monitor remedial actions until rectification has been completed | <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • Notify Contractor • Ensure remedial measures are properly implemented | <ul style="list-style-type: none"> • Amend working methods • Rectify damage and undertake any necessary replacement |
| Repeated Non-conformity | <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • Notify Contractor • Ensure remedial measures are properly implemented | <ul style="list-style-type: none"> • 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 | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 1. Notify Contractor 2. Ensure remedial measures are properly implemented | <ol style="list-style-type: none"> 1. Amend working methods 2. Rectify damage and undertake any necessary replacement |
| Repeated Non-conformity | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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. | <ol style="list-style-type: none"> 1. Notify the Contractor 2. Ensure remedial measures are properly implemented | <ol style="list-style-type: none"> 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 | <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> 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. | <ul style="list-style-type: none"> 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. | <ul style="list-style-type: none"> Amend working methods Rectify damage and undertake any necessary replacement |
| Repeated Non conformity | <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> 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. | <ul style="list-style-type: none"> Amend working methods Rectify damage and undertake any necessary replacement |

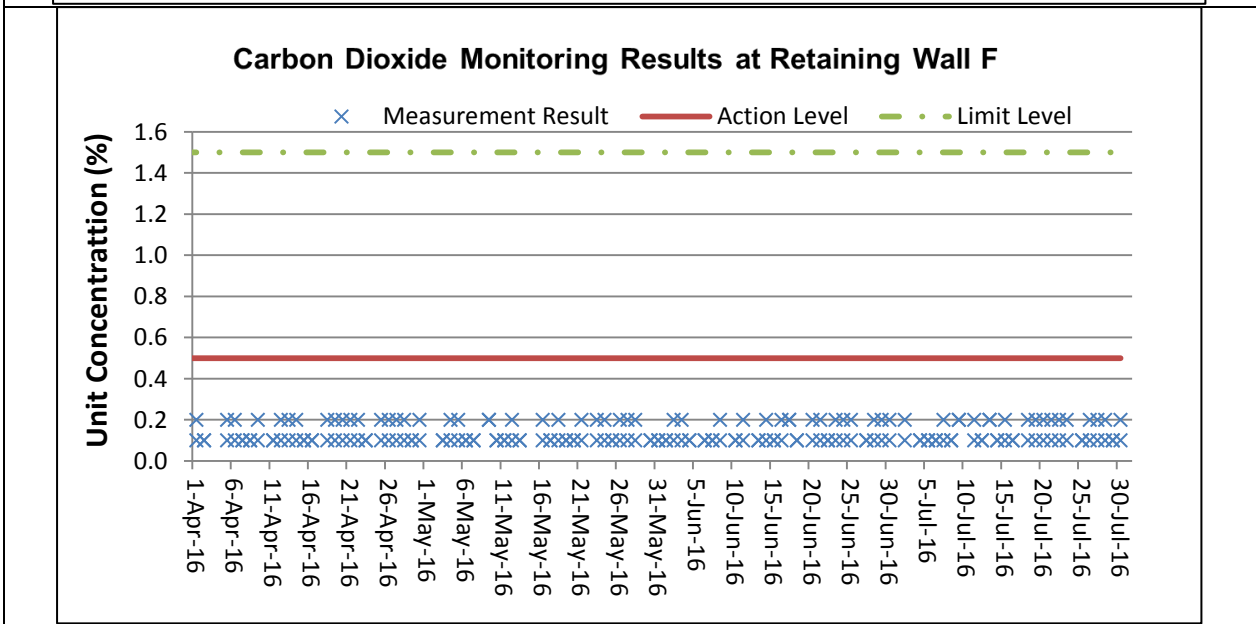
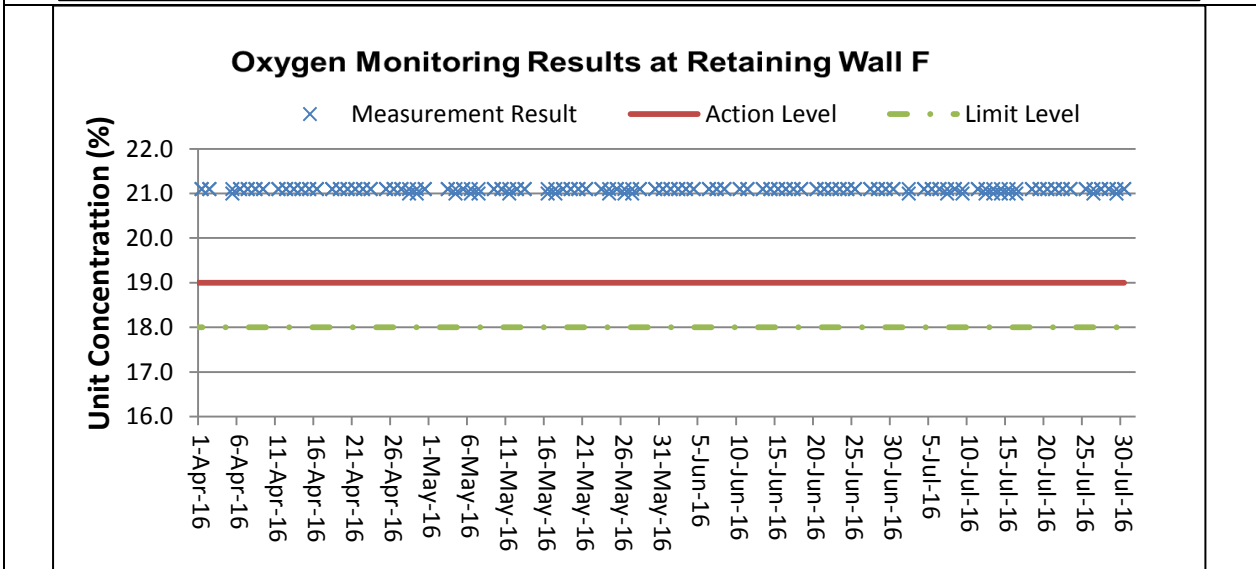
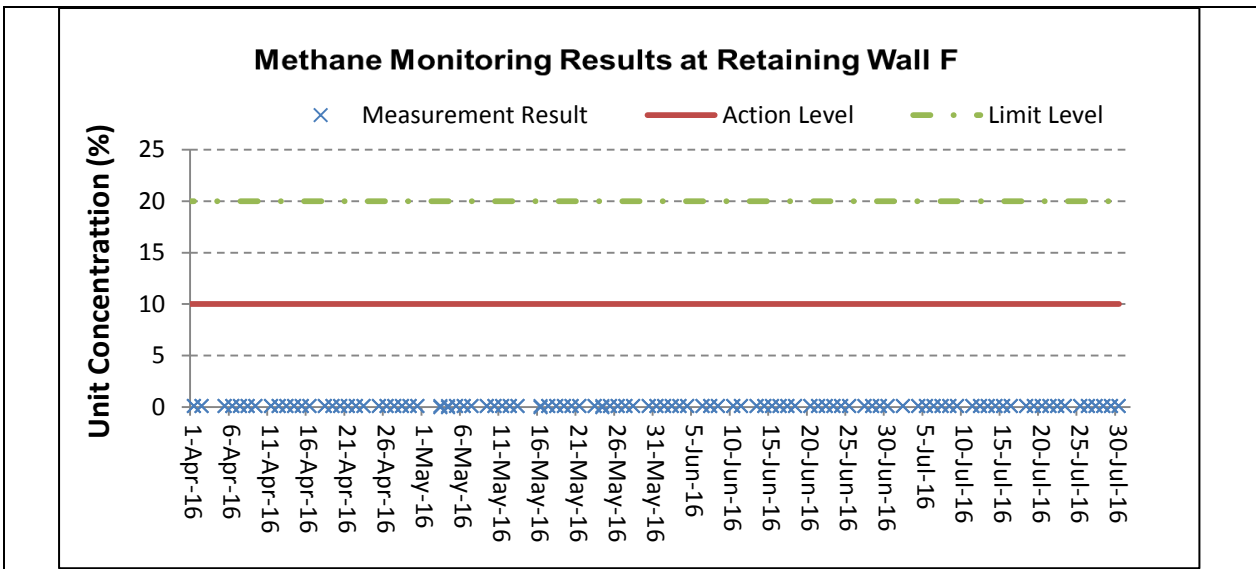
Note: ET – Environmental Specialist, IC(E) – Independent Checker (Environmental), ER – Engineer's Representative

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

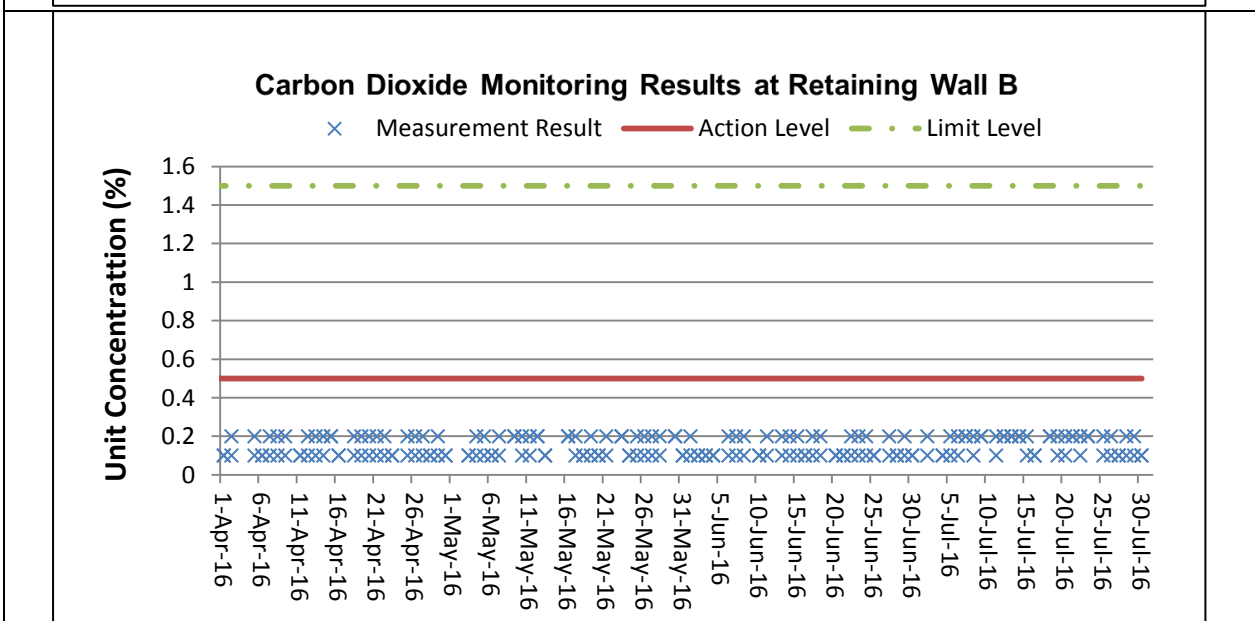
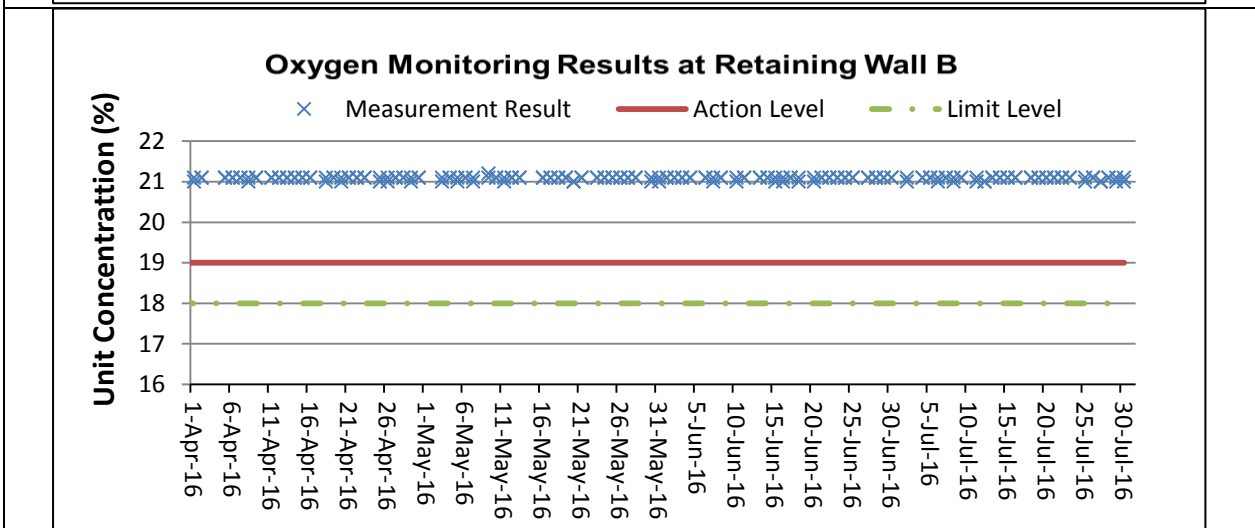
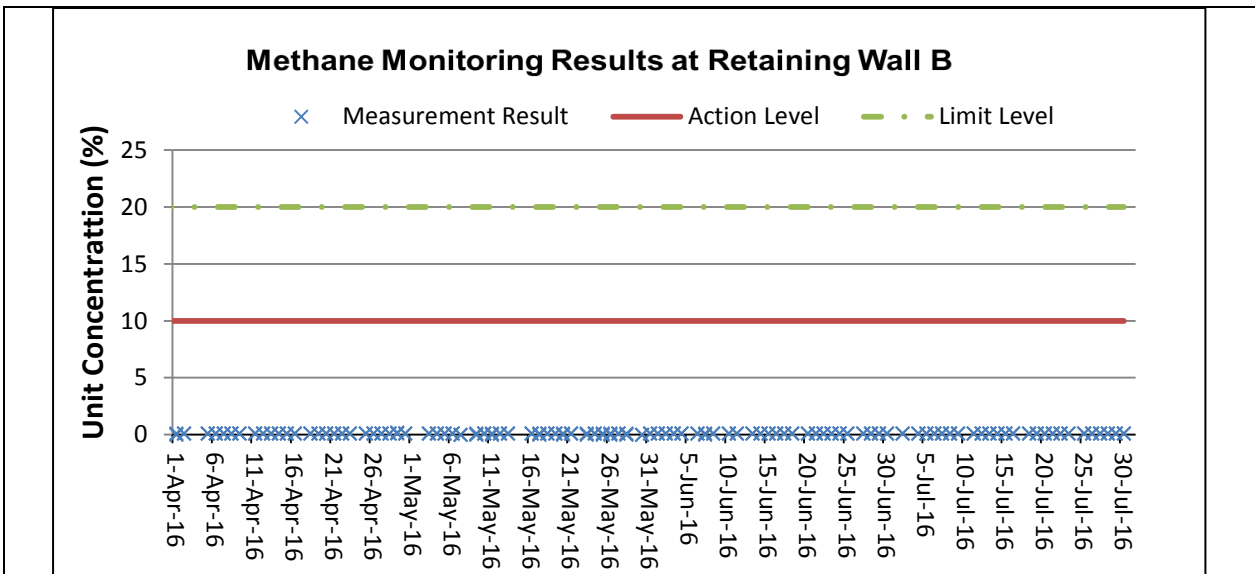
| Parameter | Measurement | Action |
|------------------|------------------------|---|
| Oxygen | < 19% | - Ventilate to restore oxygen to > 19% |
| | < 18% | - Stop work - Evacuate personnel / prohibit entry - Increase ventilation to restore to > 19% |
| Methane | > 10% LEL (> 0.5% v/v) | - Prohibit 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

Landfill Gas Monitoring Graphical Plots



Annotation:
 During 1 May to 31 July 2016, major construction activity was construction of retaining wall F and the specified works included excavation, rock breaking, blinding, formworking, steel-fixing and concreting. The weather condition varied from sunny to rainy. The monitoring data was provided by the Contractor followed to their QA/QC control.



Annotation:
 During 1 May to 31 July 2016, major construction activity was construction of retaining wall B and the specified works included excavation, rock breaking, blinding, formworking, steel-fixing and concreting. The weather condition varied from sunny to rainy. The monitoring data was provided by the Contractor followed to their QA/QC control.

Appendix H

Waste Flow Table

Appendix A –Monthly Waste Flow Table

Monthly Summary Waste Flow Table for 2016 (year)

| Month | Annual Quantities of Inert C&D Materials Generated Monthly | | | | | | Annual Quantities of C&D Wastes Generated Monthly | | | | |
|-----------|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---|-----------------------------|--------------------------------|----------------|--------------------------|
| | Total Quantity Generated | Broken Concrete | Reused in the Contract | Reused in other Projects | Disposed as Public Fill | Imported Fill | Metals | Paper / cardboard packaging | Plastics & 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 | 32.146 | 0.000 | 12.964 | 18.171 | 0.922 | 0 | 0.000 | 0.000 | 0.000 | 0.000 | 0.089 |
| Feb | 14.751 | 0.000 | 7.894 | 5.755 | 1.036 | 0 | 0.000 | 0.000 | 0.000 | 0.000 | 0.066 |
| Mar | 23.310 | 0.000 | 16.333 | 6.392 | 0.496 | 0 | 0.000 | 0.000 | 0.000 | 0.000 | 0.089 |
| Apr | 20.350 | 0.000 | 15.186 | 4.939 | 0.071 | 0 | 0.000 | 0.000 | 0.000 | 0.000 | 0.154 |
| May | 14.259 | 0.000 | 11.511 | 2.658 | 0 | 0 | 0.000 | 0.000 | 0.000 | 0.000 | 0.09 |
| June | 15.056 | 0.000 | 10.647 | 2.935 | 1.377 | 0 | 0.000 | 0.000 | 0.000 | 0.000 | 0.097 |
| Sub-total | 119.872 | 0.000 | 74.535 | 40.850 | 3.902 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.585 |
| July | 12.981 | 0.000 | 9.589 | 3.134 | 0.162 | 0 | 0.000 | 0.000 | 0.000 | 0.000 | 0.096 |
| Aug | | | | | | | | | | | |
| Sept | | | | | | | | | | | |
| Oct | | | | | | | | | | | |
| Nov | | | | | | | | | | | |
| Dec | | | | | | | | | | | |
| Total | 132.853 | 0.000 | 84.124 | 43.984 | 4.064 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.681 |

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 I

Implementation Schedule for Environmental Mitigation Measures

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

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

Cultural Heritage

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

Ecology

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

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ENVIRONMENTAL MITIGATION AND ENHANCEMENT MEASURE IMPLEMENTATION SCHEDULE**

| | | | | | | | | | |
|-------|-----------|--|---|-------------------------------|-------|---|---|--|---|
| 7.13# | 6.3, 6.5# | Fencing or other physical barriers for protection of Pitcher Plant around Zones 8, 9 and 10 and the temporary nursery site | Tuen Mun Area 46 shrubland/ Detailed/ Prior to construction | Design Consultant/ Contractor | TMEIA | Y | Y | | ✓ |
| 7.13 | 6.5 | Audit Pitcher Plant protection measures | Tuen Mun Area 46 | Contractor | TMEIA | | Y | | ✓ |
| 7.13 | 6.5 | The loss of habitat shall be supplemented by enhancement planting in accordance with the landscape mitigation schedule. | All areas / As soon as accessible | Contractor | TMEIA | | Y | | ✓ |
| 7.13 | 6.5 | Spoil heaps shall be covered at all times. | All areas / Throughout construction period | Contractor | TMEIA | | Y | | ✓ |
| 7.13 | 6.5 | Avoid damage and disturbance to the remaining and surrounding natural habitat | All areas / Throughout construction period | Contractor | TMEIA | | Y | | ✓ |
| 7.13 | 6.5 | Placement of equipment in designated areas within the existing disturbed land | All areas / Throughout construction period | Contractor | TMEIA | | Y | | ✓ |
| 7.13 | 6.5 | Disturbed areas to be reinstated immediately after completion of the works. | All areas / Throughout construction period | Contractor | TMEIA | | Y | | ✓ |
| 7.13 | 6.5 | Construction activities should be restricted to the proposed works boundary | All areas / Throughout construction | Contractor | TMEIA | | Y | | ✓ |

Landfill Gas Hazard Assessment

| EIA reference | EM&A Manual reference | Environmental Protection Measures | Location/ Timing | Implementation Agent | Relevant Standard or Requirement | Implementation Stages | | | Status |
|---------------|-----------------------|---|--------------------|----------------------|---|-----------------------|---|---|--------|
| | | | | | | D | C | O | |
| 14.12.2 | 14.2 | <u>Appointment of Safety Officer</u> Appoint a properly trained safety officer and provide with appropriate equipment to measure and monitor LFG hazard. The monitoring frequency and areas to be monitored should be set down prior to commencement of ground-works either by the Safety Officer or an approved and appropriately qualified person. | Construction Stage | Contractor | EPD/TR8/97 - Landfill Gas Hazard Assessment Guidance Note | | Y | | ✓ |
| 14.12.2 | - | <u>Safety Measures - Excavation</u> | Construction Stage | Contractor | EPD/TR8/97 - | | Y | | ✓ |

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

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

Landscape and Visual

| EIA reference | EM&A Manual reference | Environmental Protection Measures | Location/ Timing | Implementation Agent | Relevant Standard or Requirement | Implementation Stages | | | Status |
|---------------|-----------------------|--|--|-------------------------------|----------------------------------|-----------------------|---|---|--------|
| | | | | | | D | C | O | |
| 10.9 | 7.6 | Existing trees on boundary of the Project Area shall be carefully protected during construction. Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works areas. (Tree protection measures will be detailed at Tree Removal Application stage) (CM1) | All areas/detailed design/ during construction | Design Consultant/ Contractor | TMEIA | Y | Y | | ✓ |
| 10.9 | 7.6 | Trees unavoidably affected by the works shall be transplanted where practical. Trees will be | All areas/detailed design/ during | Design Consultant/ | TMEIA | Y | Y | | NA |

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| | | | | | | | | | |
|------|-----|--|---|-------------------------------------|-------|---|---|---|-----|
| | | transplanted straight to their final receptor site and not held in a temporary nursery. A detailed Tree Transplanting Specification shall be provided in the Contract Specification. Sufficient time for necessary tree root and crown preparation periods shall be allowed in the project programme (CM2) | construction | Contractor | | | | | |
| 10.9 | 7.6 | Hillside and roadside screen planting to proposed roads, associated structures and slope works (CM3) | All areas/detailed design/ 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/ during Construction | Design | TMEIA | Y | Y | Y | N/A |

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| | | 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 | | ✓ |

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

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

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ENVIORNMENTAL MITIGATION AND ENHANCEMENT MEASURE IMPLEMENTATION SCHEDULE**

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|------|-----|---|--|------------|-------|--|---|--|---|
| | | disposal. Where practicable, the concrete and masonry should be crushed and used as fill materials. Steel reinforcement bar should be collected for use by scrap steel mills. Different areas of the sites should be considered for segregation and storage activities. | | | | | | | |
| 12.6 | 8.1 | All falsework will be steel instead of wood. | All areas / throughout construction period | Contractor | TMEIA | | Y | | ◇ |
| 12.6 | 8.1 | Chemical waste producers should register with the EPD. Chemical waste should be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes as follows: <ul style="list-style-type: none"> • 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 | | ✓ |

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| | | 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 | |

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

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

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