**JOB NO.: TCS00864/16**

# CEDD SERVICE CONTRACT NO. NTE/07/2016 ENVIRONMENTAL TEAM FOR DEVELOPMENT OF ANDERSON ROAD QUARRY SITE – SITE FORMATION AND ASSOCIATED INFRASTRUCTURE WORKS

# MONTHLY ENVIRONMENTAL MONITORING AND AUDIT REPORT (OCTOBER 2019)

**PREPARED FOR**
**CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT (CEDD)**

| Date | Reference No. | Prepared By | Certified By |
|---|---|---|---|
| 19 November 2019 | TCS00864/16/600/R0329v2 | Nicola Hon (Environmental Consultant) | Tam Tak Wing (Environmental Team Leader) |

| Version | Date | Remarks |
|---|---|---|
| 1 | 14 November 2019 | First Submission |
| 2 | 19 November 2019 | Amended according to IEC's comments on 18 November 2019 |
| | | |
| | | |

ANEWR

Civil Engineering and Development Department
East Development Office
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11 Hoi Ting Road
Yau Ma Tei
Kowloon

Your reference:

Our reference: HKCEDD10/50/106140

Date: 20 November 2019

Attention: Mr Leung Siu Kau, Kelvin

**BY POST**

Dear Sirs

Agreement No.: NTE 08/2016
Independent Environmental Checker for Development of Anderson Road Quarry Site – Site Formation and Associated Infrastructure Works
Monthly Environmental Monitoring and Audit Report (October 2019)

We refer to the emails of 15, 19 and 20 November 2019 from Action-United Environmental Services and Consulting attaching a Monthly Environmental Monitoring and Audit Report (October 2019) for the captioned project.

We have no further comment and hereby verify the captioned report.

Should you have any queries, please do not hesitate to contact the undersigned or our Ms Hazel Chan on 2618 2831.

Yours faithfully
ANEWR CONSULTING LIMITED

Adi Lee
Independent Environmental Checker

LYMA/CYYH/lhmh

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## EXECUTIVE SUMMARY

ES01 Action-United Environmental Services & Consulting (AUES) has been awarded the Civil Engineering and Development Department (CEDD) Service Contract No. NTE/07/2016 Environmental Team for Development of Anderson Road Quarry Site – Site Formation and Associated Infrastructure Works (hereinafter called "the Service Contract") on 15 December 2016. The commencement date of the Service Contract is from December 2016 and the Contract Period is 70 months.

ES02 The Services under the Service Contract is to provide environmental monitoring and audit (EM&A) services for the Works Contracts pursuant to the requirement of Environmental Team (ET) under the EM&A manual to ensure that the environmental performance of the Works Contracts comply with the requirement specified in the EM&A Manual and EIA Report of Development of Anderson Road Quarry and other relevant statutory requirements.

ES03 To facilitate the project management and implementation, the Service Contract is divided to three CEDD contracts including Contract 1 (NE/2016/01), Contract 2 (NE/2016/05) and Contract 3 (NE/2017/03). As advised by the Resident Engineer (RE), the date for commencement of Contract 1 was on 21 December 2016 and the major construction works has been commenced on 12 April 2017. The date for commencement of Contract 2 was 31 March 2017 and the major construction activities have been commenced on 2 May 2017. Furthermore, Contract 3 was commenced on 31 May 2018 and the major construction activities works was commenced in November 2018. The EM&A programme under the Project was commenced on 12 April 2017 pursuant to the requirement under the EM&A manual.

ES04 This is the **31st** monthly EM&A report presenting the monitoring results and inspection findings for the reporting period from **1 to 31 October 2019** (hereinafter 'the Reporting Period').

### ENVIRONMENTAL MONITORING AND AUDIT ACTIVITIES

ES05 Environmental monitoring activities under the EM&A programme in the Reporting Period are summarized in the following table.

| Environmental Aspect | Environmental Monitoring Parameters / Inspection | Reporting Period | |
|---|---|---|---|
| | | Number of Active Monitoring Locations | Total Occasions |
| Air Quality | 1-hour TSP | **5** | **75** |
| | 24-hour TSP | **4** | **20** |
| Construction Noise | $L_{eq(30min)}$ Daytime | **5** | **20** |
| | $L_{eq(30min)}$ Daytime for Contract NE/2017/03 | **3** | **12** |

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

ES06 No exceedance of air quality was recorded in the Reporting Period. For construction noise monitoring, no Limit Level exceedance was recorded but one noise complaint (which triggered Action Level) was received in the reporting period. The environmental exceedance, NOE issued and investigation of exceedance are summarized in the following table.

| Environmental Aspect | Monitoring Parameters | Action Level | Limit Level | Event & Action | | |
|---|---|---|---|---|---|---|
| | | | | NOE Issued | Investigation | Corrective Actions |
| Air Quality | 1-hour TSP | 0 | 0 | 0 | NA | NA |
| | 24-hour TSP | 0 | 0 | 0 | NA | NA |
| Construction Noise | $L_{eq(30min)}$ Daytime | **1** | 0 | 0 | Project-related | The Contractor will enhance the noise mitigation measures. |

**ENVIRONMENTAL COMPLAINT**

ES07 In the reporting period, one environmental complaint was received. In the Reporting Period, a public complaint was received by 1823 on 15 October 2019 regarding the noise generated from construction work at Tseung Kwan O Tunnel Bus to Bus Interchange Pedestrian Connectivity Facilities E12. In our investigation, Kwan On has implemented noise mitigation measures to reduce the noise impact to the nearby resident. Nevertheless, since the construction site is close to the residential area, adequate noise mitigation measures shall be provided to reduce to noise nuisance to the public. As the works were carried out within the non-restricted hours, it is considered that the works under the contract did not breach the Noise Control Ordinance.

**NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS**

ES08 No environmental summons or successful prosecutions for the Project were recorded in the Reporting Period.

**REPORTING CHANGE**

ES09 No reporting changes were made in the Reporting Period.

**SITE INSPECTION**

ES10 In this Reporting Period, joint site inspection to evaluate the site environmental performance for ***Contract 1*** was carried out by the RE, ET and Contractor on **2nd, 10th, 15th, 22nd and 29th October 2019** in which IEC joined the site inspection with SSEMC on **10th October 2019**. No non-compliance was noted during the site inspection.

ES11 In this Reporting Period, joint site inspection to evaluate the site environmental performance for ***Contract 2*** was carried out by the RE, ET and Contractor on **2nd, 9th, 16th, 23rd and 30th October 2019** in which IEC joined the site inspection with SSEMC on **23rd October 2019**. No non-compliance was noted during the site inspection.

ES12 In this Reporting Period, joint site inspection to evaluate the site environmental performance for ***Contract 3*** was carried out by the RE, ET and Contractor on **4th, 11th, 18th and 25th October 2019** in which IEC joined the site inspection with SSEMC on **11th October 2019.** No non-compliance was noted during the site inspection.

**FUTURE KEY ISSUES**

ES13 In coming dry season, the Contractors should fully implement air quality mitigation measures to reduce construction dust emission as far as practicable. Furthermore, since construction site is highly visible to the resident at nearby estates, noise mitigation measures such as using of quiet plants should be implemented in accordance with the EM&A requirement.

ES14 Since construction site is highly visible to the resident at nearby estates, the Contractors should fully implement air quality mitigation measures to reduce construction dust emission.

ES15 Construction noise would be a key environmental issue during construction work of the Project. Noise mitigation measures such as using quiet plants should be implemented in accordance with the EM&A requirement.

ES16 In addition, all effluent discharge shall be ensure to fulfill Technical Memorandum of Effluent Discharged into Drainage and Sewerage Systems, inland and Coastal Waters criteria or discharge permits stipulation.

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# 1. INTRODUCTION

## 1.1 PROJECT BACKGROUND

1.1.1 Action-United Environmental Services & Consulting (hereinafter referred as "AUES") has been awarded the CEDD Service Contract No. NTE/07/2016 Environmental Team for Development of Anderson Road Quarry Site – Site Formation and Associated Infrastructure Works (hereinafter called "the Service Contract") on 15 December 2016. The commencement date of the Service Contract was December 2016 and the Contract Period is 70 months. The Services under the Service Contract is to provide environmental monitoring and audit (EM&A) services for the Works Contracts pursuant to the requirement of Environmental Team (ET) under the EM&A manual to ensure that the environmental performance of the Works Contracts comply with the requirement specified in the EM&A Manual and EIA Report of Development of Anderson Road Quarry and other relevant statutory requirements.

1.1.2 Development of Anderson Road Quarry is to provide land and the associated infrastructures for the proposed land used at the existing Anderson Road Quarry Site at the North-eastern of East Kowloon according to the final Recommended Outline Development Plan (hereinafter named as the Project Works).

1.1.3 To facilitate the project management and implementation, the Service Contract is divided to three CEDD contracts including Contract 1 (NE/2016/01), Contract 2 (NE/2016/05) and Contract 3 (NE/2017/03). The date for commencement of Contract 1 was on 21 December 2016 and the major construction works commenced on 12 April 2017. The date for commencement of Contract 2 was 31 March 2017 and the major construction activities commenced on 2 May 2017. Contract 3 was commenced on 31 May 2018 but the major construction activities works have not yet commenced in this reporting period. The EM&A programme under the Project was commenced on 12 April 2017 pursuant to the requirement under the EM&A manual.

1.1.4 According to the Approved EM&A Manual, air quality and construction noise are required to be monitored during the construction phase of the Project. As part of the EM&A program, baseline monitoring to determine the ambient environmental conditions is required to be carried out before construction work of the Project commencement. Hence, baseline air quality and background noise monitoring were conducted on ***17th January 2017*** to ***30th January 2017***, ***16th February 2017*** to ***2nd March 2017 and 26th March 2017 to 8th April 2017***. Furthermore, Baseline Monitoring Report, which certified by Environmental Team Leader (ETL) and verified by the Independent Environmental Checker (IEC) has been submitted to Environmental Protection Department (EPD) on ***9 May 2017*** for endorsement.

1.1.5 This is the **31st** monthly EM&A report presenting the monitoring results and inspection findings for the reporting period from **1 to 31 October 2019**.

## 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*** *Project Organization and Construction Progress*
***Section 3*** *Summary of Impact Monitoring Requirements*
***Section 4*** *Air Quality Monitoring*
***Section 5*** *Construction Noise Monitoring*
***Section 6*** *Waste Management*
***Section 7*** *Site Inspections*
***Section 8*** *Environmental Complaints and Non-Compliance*
***Section 9*** *Implementation Status of Mitigation Measures*
***Section 10*** *Conclusions and Recommendations*

## 2. PROJECT ORGANIZATION AND CONSTRUCTION PROGRESS

### 2.1 CONSTRUCTION CONTRACT PACKAGING

2.1.1 To facilitate the project management and implementation, the Project was divided by 3 works contracts as described in following. The details of each contract are summarized below and the delineation of each contract is shown in ***Appendix A***.

*Contract 1 (Contract No. NE/2016/01)*

2.1.2 Commencement date of Contract 1 was in late December 2016 and the major scope of work of Contract 1 is listed below:

- Formation of about 40 hectares (ha) of land platforms at the ARQ site and the associated geotechnical works;
- Road works including construction of approximately 3-kilometer long vehicular roads, footpaths, cycle tracks, an approximately 130-meter long underpass at the southern end an a public transport terminus at the northern end at the ARQ site;
- Provision of and improvement to water supply, drainage and sewerage systems as well as landscaping works; and
- Construction of proposed subway structures and lift tower structures of pedestrian connectivity facilities.

*Contract 2 (Contract No. NE/2016/05)*

2.1.3 Commencement date of Contract 2 was 31 March 2017 and the major Scope of Work of the Contract 2 is listed below:

(i) Construction of the following pedestrian connectivity facilities with covered elevated walkways, covered at grad walkways, escalators, life towers with associate staircase and lifts:-
  (a) Linking Hiu Kwong street with Hiu Ming Street (E1)
  (b) Linking the proposed "Footbridge Link at Sau Ming Road" with Hiu Ming Street (E2, C1 and E3)
  (c) Linking the proposed bus-to-bus interchange at Tseung Kwan O Tunnel Toll Plaza with Lin Tak Road (E12)

(ii) Construction of bus-to-bus interchange (BBI) at Tseung Kwan O Tunnel Toll Plaza;

(iii) Associated landscape works;

(iv) Construction of green routes connecting to Jordan Valley Park and Choi Wing Road; and

(v) Slope improvement works in the vicinity of Po Lam Road South and other associated works.

*Contract 3 (Contract No. NE/2017/03)*

2.1.4 The commencement date of Contract 3 is on 31 May 2018 and the major Scope of Work of the Contract 3 is listed below:

(i) Site formation and road works in the following sections:-
  (a) at junction of Clear Water Bay Road (CWBR) and On Sau Road constructed under the Development at Anderson Road (DAR) project including the provision of U-turn facility and noise mitigation measures (RIW1);
  (b) at New Clear Water Bay Road (NCWBR) near Shun Lee Tsuen Road including the road widening works at NCWBR, modification of existing subway structure and provision of noise mitigation measures (RIW2); and
  (c) at the junction of Lin Tak Road and Sau Mau Ping Road, construction of flyover above Tseung Kwan O Road, provision of loading and unloading bays along Lin Tak Road and noise mitigation measures (RIW3).

(ii) construction of the following pedestrian connectivity facilities with covered elevated walkways, escalators and lift towers with associated staircases and lifts:-

(a) linking Anderson Road Quarry site with the DAR Site (except the works covered under Contract 1) (System A and System B);
(b) linking Hiu Ming Street with Hiu Yuk Path (E8); and
(c) linking the proposed bus-bus interchange at Tseung Kwan O Tunnel Toll Plaza with Sau Mau Ping Road (E11).

(iii) Associated landscape works.

## 2.2 PROJECT ORGANIZATION

2.2.1 The project organization structure for Contracts 1 and 2 is shown in ***Appendix B***.

## 2.3 CONSTRUCTION PROGRESS

2.3.1 The three-months rolling construction program for Contracts 1 and 2 are enclosed in ***Appendix C*** while the construction program for Contract 3 has not yet provided by the Contractor in this Reporting Period. As provided by the Contractors, the major construction activities conducted in the Reporting Period are summarized in below.

*Contract 1 (NE/2016/01)*

1. Implementation of Temporary Traffic Arrangement at the junction between On Sau Road and Road L4, Po Lam Road near Po Tat Estate and Po Lam Road near Ma Yau Tong Village;
2. Construction of the superstructures at South Towers and footing at North Tower of Pedestrian Connectivity System B (PCSB);
3. Construction of drainage pipe in Roads L1 and L2;
4. Construction of sewerage and grey water pipes in Road L1;
5. Construction of drainage works near the box culvert BC1 and BC2;
6. Construction of water mains in Road L5;
7. Construction of Box Culvert BC1 and BC2;
8. Construction of underground tie beams and erection of steel posts for Public Transport Terminus;
9. Road Improvement Works at Po Lam Road;
10. Tunnel lining and benching excavation works at West Portal and East Portal;
11. Construction of Fresh Water Pumping Station;
12. Backfilling works for Retaining Wall RWA 13;
13. Construction of Fresh Water Service Reservoir;
14. Construction of retaining walls of Artificial Flood Attenuation Lake;
15. Construction of top slab and walls for Underground Stormwater Retention Tank (USRT);
16. Construction of Noise Barrier footings and Retaining Walls RWA12 for Road L4;
17. Site formation works at slope A1 of East Portal and slope A3 of West Portal near PCSB;
18. Rock breaking & excavation activity of site formation works at Road L4 and Pedestrain Connectivity System A (PCSA); and
19. Rock Slope Survey and Slope Stabilization at Portion B1.

*Contract 2 (NE/2016/05)*

1. Portion 1: Continue Piling works for Pile Cap E1 –PC4 and E1-PC5. Backfilling with no-fines concrete around pile cap E1-RS1, E1-PC1 and E1-PC 2.
2. Portion 2: Rock breaking for E3-F1.
3. Portion 3: Relocation of existing pedestrian crossing
4. Portion 4: Rectification of defects
5. Portion 5:
   -Footing construction of the covered walkway footing BBI-NB-F2,F1a, F1b.
   -Footing construction for Northern and Southern High Mast footings
   -Drainage Works
6. Portion 6:

-Rock breaking for rock cut slope and BBI Footing.
-Fixing formwork, reinforcement and place concrete for RWE12.

*Contract 3 (NE/2017/03)*

Works in Road Improvement Works 1 (RIW1)

- Preparation works for ELS at RWC2 Type 1 and 1a area are in progress;
- No fine concrete construction at RWC2 area is in progress;
- Sheetpile installation at KS27 is in progress;
- ELS works at FE1 is in progress;
- Construction of Slip Road 2 drainage works is in progress;
- Construction of piezometer at RWC2 completed; and
- Drilling holes for NDT for determination existing bored piles at Lee On Flyover is in progress.

Works in Road Improvement Works 2 (RIW2)

- Soil nail installation at Zone 4 and 5 are in progress; and
- Site clearance for Portion 6 is in progress.

Works in Road Improvement Works 3 (RIW3)

- Form haul-road & pre-drilling at slope D1 is in-progress;
- Excavate trial-pit at Slope D2 are in-progress;
- Rock excavation works using drill and split method at Slope D3 along Lin Tak Road are in-progress;
- Installation of chain link fence and vehicular gates at EPD access road at Slope D3 is underway.

Pedestrian Connectivity Facility E8 (PC-E8)

- Excavation works for Footing F4, F5 & F6 are in-progress;
- Install sheet pile for Footing F8 is in-progress;
- R.C. works for Pier P1 is in progress.

Pedestrian Connectivity Facility E11 (PC-E11)

- Socketed H-pile construction for PC1 is in-progress.
- Excavation and install lateral support for pile cap construction of PC2, PC3 and PC4 are in-progress.

Pedestrian Connectivity Facilities Systems A (PC-SYA)

- Rock excavation in-progress.

Pedestrian Connectivity Facilities Systems B (PC-SYB)

- Socket H pile construction at SYB-A1 in progress;
- Preparation works for SYB-PC-8 in progress;
- Site clearance, UU Detection and Trial pit inspection at PC2 & PC1 in progress;
- Pre-drilling works at PC2 was commenced on Oct 19; and
- Socketed-H piles construction at PC3 is in progress.

Tseung Kwan O Bus-Bus Interchange New Public Toilet (BBI-Toilet)

- Construction of manhole adjacent to public toilet is in progress;
- ABWF, E&M works are in progress.

2.3.2 Summary of the relevant permits, licenses, and/or notifications on environmental protection for the Project of contracts 1 and 2 are presented in ***Tables 2-1, 2-2 and 2-3***.

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

| Item | Description | License/Permit Status | | |
|---|---|---|---|---|
| | | Permit no./ account | Valid Period | Status |

| | | no./ Ref. no. | From | To | |
|---|---|---|---|---|---|
| 1 | Form NA – Notification pursuant to Air pollution Control (Construction Dust) Regulation | EPD ref. no. 411762 | NA | NA | valid |
| | Form NB – Notification pursuant to Air pollution Control (Construction Dust) Regulation | EPD ref. no. 412730 | NA | NA | valid |
| 2 | Chemical Waste Producer Registration | Registration no. WPN 5213-292-C4115-01 | 15 Feb 17 | End of project | valid |
| 3 | Water Pollution Control Ordinance – Discharge License | WT00027252-2017 | 20 Mar 17 | 31 Mar 22 | valid |
| 4 | Waste Disposal Regulation – Billing Account for Disposal of Construction Waste | Account no. 7026925 | 20 Jan 17 | End of project | valid |
| 5 | Construction Noise Permit | GW-RE0655-19 | 13 Sep 19 | 13 Dec 19 | valid |
| | | GW-RE0738-19 | 19 Sep 19 | 12 Mar 20 | valid |

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

| Item | Description | License/Permit Status | | | |
|---|---|---|---|---|---|
| | | Permit no./ account no./ Ref. no. | Valid Period | | Status |
| | | | From | To | |
| 1 | Notification pursuant to Air pollution Control (Construction Dust) Regulation | EPD ref. no. 312173 | NA | NA | valid |
| 2 | Chemical Waste Producer Registration | Registration no. WPN 5213-294-K2890-08 | 3 Jul 17 | End of Project | Valid |
| 3 | Water Pollution Control Ordinance – Discharge License | WT00028685-2017 | 02 Aug 17 | 31 Aug 22 | Valid |
| | | WT00028686-2017 | 02 Aug 17 | 31 Aug 22 | Valid |
| | | WT00028687-2017 | 02 Aug 17 | 31 Aug 22 | Valid |
| 4 | Waste Disposal Regulation – Billing Account for Disposal of Construction Waste | Account no.7027548 | 12 Apr 17 | End of project | Valid |

**Table 2-3 Status of Environmental Licenses and Permits of the Contract 3**

| Item | Description | License/Permit Status | | | |
|---|---|---|---|---|---|
| | | Permit no./ account no./ Ref. no. | Valid Period | | Status |
| | | | From | To | |
| 1 | Form NA – Notification pursuant to Air Pollution Control (Construction Dust) | Notification to EPD on 29 May 2018. | | | |

| Item | Description | License/Permit Status | | | |
|---|---|---|---|---|---|
| | | Permit no./ account no./ Ref. no. | Valid Period | | Status |
| | | | From | To | |
| | Regulation | | | | |
| 2 | Chemical Waste Producer Registration | **For Area R1W3 (E11)** Registration no. WPN : 5213-294-C4239-04 | 6-Aug-18 | End of Project | Valid |
| | | **For Area System A** Registration no. WPN: 5213-293-C4239-05 | 6-Aug-18 | End of Project | Valid |
| | | **For Area System B** Registration no. WPN 5213-294-C4239-03 | 6-Aug-18 | End of Project | Valid |
| | | **For Area E8** Registration no. WPN 5213-292-C4239-06 | 6-Aug-18 | End of Project | Valid |
| 3 | Water Pollution Control Ordinance – Discharge License | **For Area R1W3 (E11)** WT00032742-2018 | 18-Jan-19 | 31-Jan-24 | Valid |
| | | **For Area System A** WT00033223-2019 | 31-Jan-19 | 31-Jan-24 | Valid |
| | | **For Area System B** WT00033229-2019 | 24-Jun-19 | 30-Jun-24 | Valid |
| | | **For Area E8** WT00033224-2019 | 21-Mar-19 | 31-Mar-24 | Valid |
| 4 | Waste Disposal Regulation – Billing Account for Disposal of Construction Waste | Account no.7031075 | 20 July 2018 | End of project | Valid |
| 5 | CNP for Lifting Oscillators of Area RIW1 KS27 | - | - | - | Refuse |
| | CNP for loading and unloading of Stone Monument at RIW2 | - | - | - | Refuse |

# 3. SUMMARY OF IMPACT MONITORING REQUIREMENTS

## 3.1 GENERAL

3.1.1 The Environmental Monitoring and Audit requirements are set out in the Approved EM&A manual. Environmental issues such as air quality, construction noise and water quality were identified as the key issues during the construction phase of the Project.

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

## 3.2 MONITORING PARAMETERS

3.2.1 The EM&A program of construction phase monitoring shall cover the following environmental issues:

- Air quality; and
- Construction noise

3.2.2 A summary of the monitoring parameters is presented in ***Table 3-1.***

**Table 3-1 Summary of EM&A Requirements**

| Environmental Issue | Parameters |
|---|---|
| Air Quality | • 1-hour TSP by Real-Time Portable Dust Meter; and<br>• 24-hour TSP by High Volume Air Sampler |
| Noise | • Leq(30min) in normal working days (Monday to Saturday) 07:00-19:00 except public holiday<br>• Supplementary information for data auditing, statistical results such as $L_{10}$ and $L_{90}$ shall also be obtained for reference. |

## 3.3 MONITORING LOCATIONS

3.3.1 According to the EM&A Manual Section 4.6, seven (7) most representative and affected air sensitive receivers (ASR) were selected as air monitoring stations (AQM). During site visit at the subject site before the baseline monitoring, it was noted that some planned ASRs identified in the EM&A Manual are still under construction/ has not yet constructed and there were no suitable location to set up the high volume sampler to carry out the baseline 24-hour TSP monitoring. Therefore, a proposed change for the baseline monitoring programme was submitted and agreed by EPD before the baseline monitoring.

3.3.2 The impact air quality monitoring locations are listed in ***Table 3-2*** and illustrated in ***Appendix D.***

**Table 3-2 Impact Monitoring Stations – Air Quality**

| ID | ASR ID in EIA | Location in the EM&A Manual | Identified Location during Site Visit | Status |
|---|---|---|---|---|
| AMS-1 | ACYC-01 | Chi Yum Ching She | Ground of Chi Yum Ching facing the project site | Replaced by AMS-1a |
| AMS-1a (*) | ACYC-01 | Tan Shan Village No. 5 - 6 | Ground of Tan Shan Village No. 5 - 6 facing the project site | Active (*) |
| AMS-2 (#) | DARB-13 | Block 8, Site B | Ground of Fung Tai House of On Tai Estate | Active |
| AMS-3 | DARC-16 | Planned Clinic and Community Centre, Site C2 Note 1 | Ground of Planned Clinic and Community Centre facing Anderson Road | Not yet commenced |
| AMS-4 | DARC-26 | Planned School, Site C2 Note 2 | Ground of Planned School facing Anderson Road | Not yet commenced |
| AMS-5 | DARE-06 | Block 5, DAR Site E | Main roof of Oi Tat House of On Tat Estate facing the project site | Active |
| AMS-6 | DARE-17 | Block 9, Site E | Main roof of Hau Tat House of On | Active |

| ID | ASR ID in EIA | Location in the EM&A Manual | Identified Location during Site Visit | Status |
|---|---|---|---|---|
| | | | Tat Estate facing the project site | |
| AMS-7 | AMYT-04 | Ma Yau Tong Village | Balcony at 2nd floor of Village House Anderson Road No. 1 facing the project site | Active |

*Note 1: The ASR is under construction and not yet in operation.*
*Note 2: The ASR is not yet constructed.*
*(#) AMS-2 was activated on 26 November 2018 since Fung Tai House became an air sensitive receiver. hour TSP monitoring was commenced on 26 November 2018 while installation of HVS for 24-hour TSP was pending approval from Housing Authority.*
*(*) 24-hour TSP monitoring at AMS1 was abandoned since May 2019 due to lack of power supply and the landlord was unreachable. The alternation location of AMS1a was activated on 15 June 2019 for 1-hour and 24-hour TSP monitoring. The proposal was agreed by EPD on 9 Aug 2019.*

**Construction Noise**

3.3.3 According to the EM&A Manual Section 5.5, three (3) most representative and affected noise sensitive receivers (NSR) were selected as monitoring stations. As recommended by the RE and agreed by IEC, one (1) additional noise monitoring location is proposed to add in Oi Tat House of On Tat Estate (hereafter "NMS-4") to oversee the possible noise impact pose to the resident in On Tat Estate, which is an existing NSR close to the major works activities. Moreover, review of impact monitoring location was proposed to IEC in view of the current site condition and it was agreed by all parties. The details of noise monitoring location are listed in ***Table 3-3*** and illustrated in ***Appendix D***.

**Table 3-3 Impact Monitoring Stations – Construction Noise**

| ID | NSR ID in EIA | Location | Status |
|---|---|---|---|
| NMS-1 | Site C2 – School 05 Note 1 | Ground of planned school at DAR facing the project site | Not yet commenced |
| NMS-2 | Site E – School Note 1 | Ground area between the planned school and Him Tat House facing the project site | Not yet commenced |
| NMS-3 | Site C2 – R102 Note 1 | Ground of Ancillary Facilities Building facing the project site | Not yet commenced |
| NMS-4* | Oi Tat House | 1m from the exterior of ground floor façade of Oi Tat House of On Tat Estate facing the project site | Active |
| NMS-4a# | Oi Tat House | Rooftop of Oi Tat House where 1m from the exterior of Oi Tat House facing the project site | Active |
| NMS-5# | Hau Tat House | 22/F, refuge floor of Hau Tat House where 1m from the exterior of Hau Tat House facing the project site. | Active |
| NMS-6~ | Yung Tai House of On Tai Estate | Rooftop of Yung Tai House where 1m from the exterior of the building facing the project site) | Active |
| NMS-7~ | Chi Tai House of On Tai Estate | Rooftop of Chi Tai House where 1m from the exterior of the building facing the project site | Active |
| NMS-8^ | No. 3-4 Ma Yau Tong Village | 1m from the exterior of the building façade and facing the construction site | Active |

*Note 1: The NSR is under construction and not yet in operation.*
*Remark:*
*(*) Additional noise monitoring location was recommended by RE and agreed by IEC. It was temporary suspended and the monitoring location is relocated to NMS4a with effective on 15 Nov 2017.*
*(#) Review of noise monitoring locations was proposed by ET and NMS-5 was effective on 15 November 2017.*

(ˉ) *Review of noise monitoring locations was proposed by ET and NMS-6 and NMS-7 were effective on 28 Feb 2018.*

(ˆ) *Review of noise monitoring locations was proposed by ET and NMS-8 was effective on 18 April 2018. Noise monitoring at NMS-8 was started on 3 May 2018 upon commencement of construction at relevant section.*

*Addition Construction Noise Monitoring Location*

3.3.4 A Work Instruction was issued from AECOM to AUES in November 2018 for installing three additional noise monitoring stations under Contract 3. According to the Work Instruction, one noise monitoring station was proposed to install at System A Area and two station monitoring points were proposed to install at E8 Area. The noise monitoring locations are shown in ***Table 3-4*** below and illustrated in ***Appendix D***.

**Table 3-4 Additional Impact Monitoring Stations – Construction Noise**

| ID | Location | Description |
|---|---|---|
| CN1 | Holm Glad College | Ground floor of Holm Glad College, where 1m from the exterior of the building facing E8 |
| CN2 | Leung Shek Chee College | Ground floor of Leung Shek Chee College, where 1m from the exterior of the building facing E8 |
| CN3 | Oi Tat House of On Tat Estate | Ground floor of Oi Tat House of On Tat Estate, where 1m from the exterior of the building facing System A |

## 3.4 MONITORING FREQUENCY AND PERIOD

3.4.1 The requirements of impact monitoring in the approved *EM&A Manual* and presented as follows.

*Air Quality Monitoring*

3.4.2 Frequency of impact air quality monitoring is as follows:

- 1-hour TSP 3 times every six days during course of works throughout the construction period
- 24-hour TSP Once every 6 days during course of works throughout the construction period

*Noise Monitoring*

3.4.3 Noise monitoring will be to conduct at the all available designated monitoring stations. The monitoring frequency shall depend on the scale of the construction activities. The following is an initial guide on the regular monitoring frequency for each station on a weekly basis when noise generating activities are underway:

- one set of $Leq_{(30min)}$ measurements between 07:00 and 19:00 hours on normal weekdays

## 3.5 MONITORING EQUIPMENT

*Air Quality Monitoring*

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.* If the ET proposes to use a direct reading dust meter to measure 1-hour TSP levels, it shall submit sufficient information to the IEC to prove that the instrument is capable of achieving a comparable results to the HVS. The instrument should be calibrated regularly, and the 1-hour sampling shall be determined on yearly basis by the HVS to check the validity and accuracy of the results measured by direct reading method. The filter paper of 24-hour TSP measurement shall be determined by HOKLAS accredited laboratory.

3.5.2 All equipment to be used for air quality monitoring is listed in ***Table 3-5***.

**Table 3-5 Air Quality Monitoring Equipment**

| Equipment | Model |
|---|---|

| Equipment | | Model |
|---|---|---|
| 24-hour TSP | High Volume Air Sampler | TISCH High Volume Air Sampler, HVS Model TE-5170 |
| | Calibration Kit | TISCH Model TE-5025A |
| 1- hour TSP | Portable Dust Meter | Sibata LD-3B Laser Dust Monitor |

*Noise Monitoring*

3.5.3 Sound level meter in compliance with the International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1) specifications shall be used for carrying out the noise monitoring. The sound level meter shall be checked using an acoustic calibrator. The wind speed shall be checked with a portable wind speed meter capable of measuring the wind speed in $ms^{-1}$.

3.5.4 Noise equipment as perform for construction phase monitoring is listed in ***Table 3-6***.

**Table 3-6 Construction Noise Monitoring Equipment**

| Equipment | Model |
|---|---|
| Integrating Sound Level Meter | Rion NL-52, B&K-2238, B&K-2250 |
| Calibrator | B&K4231 |
| Portable Wind Speed Indicator | Anemometer AZ Instrument 8908 |

## 3.6 MONITORING METHODOLOGY

*1-hour TSP*

3.6.1 The 1-hour TSP monitor was a brand named "Sibata LD-3 Laser Dust monitor Particle Mass Profiler & Counter" which is a portable, battery-operated laser photometer. The 1-hour TSP meter provides a real time 1-hour TSP measurement based on $90^{o}$ light scattering. The 1-hour TSP monitor consists of the following:

(a.) A pump to draw sample aerosol through the optic chamber where TSP is measured;

(b.) A sheath air system to isolate the aerosol in the chamber to keep the optics clean for maximum reliability; and

(c.) A built-in data logger compatible with Windows based program to facilitate data collection, analysis and reporting.

3.6.2 The 1-hour TSP meter to be used will be within the valid period, calibrated by the manufacturer prior to purchasing. Zero response of the instrument will be checked before and after each monitoring event.

*24-hour TSP*

3.6.3 The equipment used for 24-hour TSP measurement is Thermo Andersen Model GS2310 TSP high volume air sampling system, which complied with *EPA Code of Federal Regulation, Appendix B to Part 50*. The High Volume Air Sampler (HVS) consists of the following:

(a.) An anodized aluminum shelter;

(b.) A 8"x10" stainless steel filter holder;

(c.) A blower motor assembly;

(d.) A continuous flow/pressure recorder;

(e.) A motor speed-voltage control/elapsed time indicator;

(f.) A 7-day mechanical timer, and

(g.) A power supply of 220v/50 Hz

3.6.4 For HVS for 24-hour TSP monitoring, the HVS is mounted in a metallic cage with a top for protection and also it is sat on the existing ground or the roof of building. The flow rate of the HVS between $0.6m^3$/min and $1.7m^3$/min will be properly set in accordance with the

manufacturer's instruction to within the range recommended in *EPA Code of Federal Regulation, Appendix B to Part 50*. Glass Fiber Filter 8" x 10" of TE-653 will be used for 24-Hour TSP monitoring and would be supplied by laboratory. The general procedures of sampling are described as below:-

- A horizontal platform with appropriate support to secure the samples against gusty wind should be provided;
- No two samplers should be placed less than 2 meters apart;
- The distance between the sampler and an obstacle, such as building, must be at least twice the height that the obstacle protrudes above the sample;
- A minimum of 2 meters of separation from any supporting structure, measured horizontally is required;
- Before placing any filter media at the HVS, the power supply will be checked to ensure the sampler work properly;
- The filter paper will be set to align on the screen of HVS to ensure that the gasket formed an air tight seal on the outer edges of the filter. Then filter holder frame will be tightened to the filter hold with swing bolts. The holding pressure should be sufficient to avoid air leakage at the edge;
- The mechanical timer will be set for a sampling period of 24 hours (00:00 mid-night to 00:00 mid-night next day). Information will be recorded on the field data sheet, which would be included the sampling data, starting time, the weather condition at current and the filter paper ID with the initial weight;
- After sampling, the filter paper will be collected and transfer from the filter holder of the HVS to a sealed envelope and sent to a local HOKLAS accredited laboratory for quantifying.

3.6.5 All the sampled 24-hour TSP filters will be kept in normal air conditioned room conditions, i.e. 70% HR (Relative Humidity) and 25$^{o}$C, for six months prior to disposal.

3.6.6 The HVS used for 24-hour TSP monitoring will be calibrated before the commencement for sampling, and after in two months interval for 1 point checking of maintenance and six months interval for five points calibrate in accordance with the manufacturer's instruction using the NIST-certified standard calibrator (Tisch Calibration Kit Model TE-5025A) to establish a relationship between the follow recorder meter reading in cfm (cubic feet per minute) and the standard flow rate, Qstd, in $m^3$/min. Motor brushes of HVS will be regularly replaced of about five hundred hours per time. The calibration certificates of all monitoring equipment used for the impact monitoring program in the Reporting Period and the HOKLAS accredited certificate of laboratory are attached in ***Appendix E***.

*Noise Monitoring*

3.6.7 As referred to in the Technical Memorandum (TM) issued under the NCO, sound level meters in compliance with the International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804:1985 (Type 1) specifications shall be used for carrying out the noise monitoring. Immediately prior to and following each noise measurement the accuracy of the sound level meter shall be checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements may be accepted as valid only if the calibration levels from before and after the noise measurement agree to within 1.0 dB.

3.6.8 All noise measurements will be performed with the meter set to FAST response and on the A-weighted equivalent continuous sound pressure level (Leq). $Leq_{(30\ min)}$ in six consecutive $Leq_{(5\ min)}$ measurements will be used as the monitoring parameter for the time period between 07:00-19:00 hours on weekdays throughout the construction period.

3.6.9 The sound level meter will be mounted on a tripod at a height of 1.2 m and placed at the assessment point and oriented such that the microphone is pointed to the site with the microphone facing perpendicular to the line of sight. The windshield will be fitted for all

measurements. Where a measurement is to be carried out at a building, the assessment point would normally be at a position 1 m from the exterior of the building façade. Where a measurement is to be made for noise being received at a place other than a building, the assessment point would be at a position 1.2 m above the ground in a free-field situation, i.e. at least 3.5 m away from reflective surfaces such as adjacent buildings or walls.

3.6.10 Immediately prior to and following each noise measurement the accuracy of the sound level meter will be checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements will be accepted as valid only if the calibration level from before and after the noise measurement agrees to within 1.0 dB.

3.6.11 Noise measurements will not be made in fog, rain, wind with a steady speed exceeding 5m/s or wind with gusts exceeding 10m/s. The wind speed will be checked with a portable wind speed meter capable of measuring the wind speed in m/s.

3.6.12 The sound level meter and calibrator are calibrated and certified by a laboratory accredited under HOKLAS or any other international accreditation scheme at yearly basis. The calibration certificates of all monitoring equipment used for the impact monitoring program in the Reporting Period is attached in ***Appendix E***.

***Meteorological Information***

3.6.13 The meteorological information including wind direction, wind speed, humidity, rainfall, air pressure and temperature etc. during baseline monitoring is extracted from the closest Hong Kong Observatory Station. To obtain the most appropriate meteorological information where available, the data of temperature is extracted from the Kwun Tong Observatory Station; the data of wind speed and wind direction are extracted from Kai Tak Observatory Station and the data of humidity is extracted from King's Park Station.

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

3.7.1 The baseline results form the basis for determining the environmental acceptance criteria for the impact monitoring. According to the approved Environmental Monitoring and Audit Manual, the air quality, construction noise were set up, namely Action and Limit levels are listed in ***Tables 3-7 and 3-8***.

**Table 3-7 Action and Limit Levels for Air Quality Monitoring**

| Monitoring Station | Action Level (μg /m$^3$) | | Limit Level (μg/m$^3$) | |
|---|---|---|---|---|
| | 1-hour TSP | 24-hour TSP | 1-hour TSP | 24-hour TSP |
| **AMS-1** | 313 | 154 | 500 | 260 |
| **AMS-1a*(*)*** | 313 | 154 | 500 | 260 |
| **AMS-2** | 319 | 165 | 500 | 260 |
| **AMS-3** | 319 | 165 | 500 | 260 |
| **AMS-4** | 315 | 165 | 500 | 260 |
| **AMS-5** | 299 | 166 | 500 | 260 |
| **AMS-6** | 303 | 168 | 500 | 260 |
| **AMS-7** | 307 | 156 | 500 | 260 |

*(*) 24-hour TSP monitoring at AMS1 was abandoned since May 2019 due to lack of power supply and the landlord was unreachable. The alternation location of AMS1a was activated on 15 June 2019 for 1-hour and 24-hour TSP monitoring. The proposal was agreed by EPD on 9 Aug 2019.*

**Table 3-8 Action and Limit Levels for Construction Noise**

| Monitoring Location | Action Level | Limit Level in dB(A) |
|---|---|---|
| | **Time Period: 0700-1900 hours on normal weekdays** | |
| **NMS-1** | When one or more documented | ***75*** dB(A) [Note 1] / |

| Monitoring Location | Action Level | Limit Level in dB(A) |
|---|---|---|
| | Time Period: 0700-1900 hours on normal weekdays | |
| **NMS-2** | complaints are received | ***70*** dB(A)[Note 2] / ***65*** dB(A)[Note 2] |
| **NMS-3** | | ***75*** dB(A) |
| **NMS-4*** | | ***75*** dB(A) |
| **NMS-4a#** | | ***75*** dB(A) |
| **NMS-5#** | | ***75*** dB(A) |
| **NMS-6~** | | ***75*** dB(A) |
| **NMS-7~** | | ***75*** dB(A) |
| **NMS-8^** | | ***75*** dB(A) |
| **CN1+** | | ***70*** dB(A)[Note 2] / ***65*** dB(A)[Note 2] |
| **CN2+** | | ***70*** dB(A)[Note 2] / ***65*** dB(A)[Note 2] |
| **CN3+** | | ***75*** dB(A) |

Note 1: Locations NMS-1 and NMS-2 are planned school as NSRs which are still under construction/ not yet constructed; hence the Limit Levels of 75dB(A) is adopted for NMS-1 and NMS-2 until the school is occupied and in operation.

Note 2: Noise Limit Levels for school is 70dB(A) and should be reduced to 65dB(A) during examination period.

Note: If works are to be carried out during restricted hours, the conditions stipulated in the construction noise permit issued by the Noise Control Authority have to be followed.

Remark: (*) Additional noise monitoring location was recommended by RE and agreed by IEC. It was temporary suspended and the monitoring location is relocated to NMS4a with effective on 15 Nov 2017.
(#) Review of noise monitoring locations was proposed by ET and NMS-5 was effective on 15 Nov 2017.
(~) Review of noise monitoring locations was proposed by ET and NMS-6 and NMS-7 were effective on 28 Feb 2018.
(^) Review of noise monitoring locations was proposed by ET and NMS-8 was effective on 18 April 2018. Noise monitoring at NMS-8 was started on 3 May 2018 upon commencement of construction at relevant section.
(+) Additional noise monitoring locations as instructed by AECOM which effective in Dec 18.

3.7.2 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.***

## 3.8 DATA MANAGEMENT AND DATA QA/QC CONTROL

3.8.1 All monitoring data will be handled by the ET's in-house data recording and management system. The monitoring data recorded in the equipment will be downloaded directly from the equipment at the end of each monitoring day. The downloaded monitoring data will input into a computerized database properly maintained by the ET. The laboratory results will be input directly into the computerized database and checked by personnel other than those who input the data.

3.8.2 For monitoring parameters that require laboratory analysis, the local laboratory shall follow the QA/QC requirements as set out under the HOKLAS scheme for the relevant laboratory tests.

# 4. AIR QUALITY MONITORING

## 4.1 GENERAL

4.1.1 In the Reporting Period, air quality monitoring was performed at the active designated monitoring locations AMS-1a, AMS-2, AMS-5, AMS-6 and AMS-7. Since installation of HVS for 24-hour TSP at AMS-2 was pending approval from Housing Authority, only 1-hour TSP monitoring was conducted at AMS-2. No monitoring was conducted at AMS-3 and AMS-4 since they are planned ASR which are still under construction/ not yet constructed.

4.1.2 The air quality monitoring schedule is presented in ***Appendix G*** and the monitoring results are summarized in the following sub-sections.

## 4.2 RESULTS OF AIR QUALITY MONITORING

4.2.1 In the Reporting Period, a total of ***75*** events of 1-hour TSP monitoring and ***20*** events of 24-hours TSP were carried out and the monitoring results are summarized in ***Tables 4-1 to 4-5***. The detailed 24-hour TSP monitoring data are presented in ***Appendix H*** and the relevant graphical plots are shown in ***Appendix I***.

**Table 4-1 Summary of 24-hour and 1-hour TSP Monitoring Results (AMS-1a)**

| Date | 24-hour TSP (μg/m$^3$) | 1-hour TSP (μg/m$^3$) | | | | |
|---|---|---|---|---|---|---|
| | | Date | Start Time | 1st reading | 2nd reading | 3rd reading |
| 3-Oct-19 | 42 | 5-Oct-19 | 12:41 | 65 | 66 | 63 |
| 9-Oct-19 | 64 | 11-Oct-19 | 9:16 | 83 | 88 | 96 |
| 15-Oct-19 | 14 | 17-Oct-19 | 14:20 | 65 | 62 | 63 |
| 21-Oct-19 | 20 | 23-Oct-19 | 9:01 | 77 | 73 | 75 |
| 26-Oct-19 | 46 | 29-Oct-19 | 12:38 | 63 | 64 | 60 |
| Average (Range) | **37 (14 - 64)** | Average (Range) | | **71 (60 - 96)** | | |

**Table 4-2 Summary of 1-hour TSP Monitoring Results (AMS-2)**

| 1-hour TSP (μg/m$^3$) | | | | |
|---|---|---|---|---|
| Date | Start Time | 1st reading | 2nd reading | 3rd reading |
| 5-Oct-19 | 9:14 | 86 | 84 | 83 |
| 11-Oct-19 | 9:42 | 86 | 94 | 105 |
| 17-Oct-19 | 9:08 | 71 | 77 | 75 |
| 23-Oct-19 | 9:28 | 82 | 80 | 79 |
| 29-Oct-19 | 9:09 | 66 | 67 | 68 |
| Average (Range) | | **80 (66 – 105)** | | |

**Table 4-3 Summary of 24-hour and 1-hour TSP Monitoring Results (AMS-5)**

| Date | 24-hour TSP (μg/m$^3$) | 1-hour TSP (μg/m$^3$) | | | | |
|---|---|---|---|---|---|---|
| | | Date | Start Time | 1st reading | 2nd reading | 3rd reading |
| 3-Oct-19 | 96 | 5-Oct-19 | 9:32 | 74 | 75 | 71 |
| 9-Oct-19 | 20 | 11-Oct-19 | 14:14 | 107 | 115 | 121 |
| 15-Oct-19 | 42 | 17-Oct-19 | 9:21 | 68 | 72 | 74 |
| 21-Oct-19 | 64 | 23-Oct-19 | 9:52 | 72 | 74 | 69 |
| 26-Oct-19 | 61 | 29-Oct-19 | 9:31 | 65 | 66 | 63 |
| Average (Range) | **57 (20 – 96)** | Average (Range) | | **79 (63 – 121)** | | |

**Table 4-4 Summary of 24-hour and 1-hour TSP Monitoring Results (AMS-6)**

| Date | 24-hour TSP (μg/m³) | 1-hour TSP (μg/m³) | | | | |
|---|---|---|---|---|---|---|
| | | Date | Start Time | 1st reading | 2nd reading | 3rd reading |
| 3-Oct-19 | 17 | 5-Oct-19 | 10:10 | 79 | 77 | 76 |
| 9-Oct-19 | 41 | 11-Oct-19 | 14:03 | 110 | 102 | 118 |
| 15-Oct-19 | 49 | 17-Oct-19 | 10:10 | 72 | 67 | 64 |
| 21-Oct-19 | 27 | 23-Oct-19 | 13:24 | 65 | 69 | 72 |
| 26-Oct-19 | 14 | 29-Oct-19 | 10:13 | 64 | 62 | 61 |
| Average (Range) | **30 (14 – 49)** | Average (Range) | | **77 (61 – 118)** | | |

**Table 4-5 Summary of 24-hour and 1-hour TSP Monitoring Results (AMS-7)**

| Date | 24-hour TSP (μg/m³) | 1-hour TSP (μg/m³) | | | | |
|---|---|---|---|---|---|---|
| | | Date | Start Time | 1st reading | 2nd reading | 3rd reading |
| 3-Oct-19 | 21 | 5-Oct-19 | 14:21 | 83 | 85 | 83 |
| 9-Oct-19 | 36 | 11-Oct-19 | 13:38 | 113 | 118 | 129 |
| 15-Oct-19 | 30 | 17-Oct-19 | 13:40 | 86 | 77 | 78 |
| 21-Oct-19 | 24 | 23-Oct-19 | 13:46 | 72 | 70 | 75 |
| 26-Oct-19 | 20 | 29-Oct-19 | 13:44 | 72 | 74 | 72 |
| Average (Range) | **26 (20 – 36)** | Average (Range) | | **86 (70 – 129)** | | |

4.2.2 As shown in ***Tables 4-1 to 4-5***, all the 1-hour TSP and 24-hour TSP monitoring results in the Reporting Period were below the Action and Limit Levels. No Notification of Exceedance (NOE) was issued in this Reporting Period.

4.2.3 The meteorological data during the impact monitoring days are summarized in ***Appendix J***.

# 5. CONSTRUCTION NOISE MONITORING

## 5.1 GENERAL

5.1.1 In the Reporting Period, noise monitoring was only performed at the additional monitoring locations NMS4a, NMS5, NMS6, NMS7 and NMS8. No monitoring was conducted at the designated monitoring locations NMS1, NMS2 and NMS3 since they are the planned NSR and still under the construction or not yet constructed.

5.1.2 In addition, a Work Instruction was issued from AECOM to AUES in November 2018 for installing three additional noise monitoring stations, i.e., CN1, CN2 and CN3 for Contract 3. Impact noise monitoring was performed at the three additional noise monitoring locations since December 2018.

5.1.3 The noise monitoring schedule is presented in ***Appendix G*** and the monitoring results are summarized in the following sub-sections.

## 5.2 NOISE MONITORING RESULTS IN REPORTING MONTH

5.2.1 In the Reporting Period, a total of **20** events noise measurements were carried out at the designated locations under Contract 1. The noise monitoring results at the designated locations are summarized in ***Tables 5-1.*** The detailed noise monitoring data are presented in ***Appendix H*** and the relevant graphical plots are shown in ***Appendix I***.

**Table 5-1 Summary of Construction Noise Monitoring Results for Contract 1**

| Construction Noise Level ($L_{eq30min}$), dB(A) | | | | | |
|---|---|---|---|---|---|
| **Date** | **NMS4a** | **NMS5** | **NMS6** | **NMS7** | **NMS8** |
| 11-Oct-19 | 67 | 64 | 59 | 64 | 62 |
| 17-Oct-19 | 66 | 66 | 57 | 63 | 63 |
| 23-Oct-19 | 66 | 66 | 58 | 57 | 61 |
| 29-Oct-19 | 67 | 67 | 57 | 66 | 59 |
| **Limit Level** | **75 dB(A)** | | | | |

5.2.2 For the additional noise monitoring under Contract 3, a total of **12** events noise measurements were performed for the Contract. The noise monitoring results are summarized in ***Tables 5-2.*** The detailed noise monitoring data are presented in ***Appendix H*** and the relevant graphical plots are shown in ***Appendix I***.

**Table 5-2 Summary of Construction Noise Monitoring Results for Contract 3**

| Construction Noise Level ($L_{eq30min}$), dB(A) | | | |
|---|---|---|---|
| **Date** | **CN1** | **CN2** | **CN3** |
| 5-Oct-19 | 63 | 62 | 67 |
| 11-Oct-19 | 64 | 62 | 66 |
| 18-Oct-19 | 70 | 65 | 68 |
| 24-Oct-19 | 65 | 65 | 67 |
| **Limit Level** | ***70*** dB(A)[Note 1] / ***65*** dB(A)[Note 1] | ***70*** dB(A)[Note 1] / ***65*** dB(A)[Note 1] | **75 dB(A)** |

*Note 1: Noise Limit Levels for school is 70dB(A) and should be reduced to 65dB(A) during examination period.*

5.2.3 As shown in ***Tables 5-1 and 5-2,*** no Limit Level exceedance was recorded in this Reporting Period. However, one noise complaint (which triggered Action level exceedance) was received under the Project. The investigation for the noise complaint is included in Section 8 of the report.

# 6. WASTE MANAGEMENT

## 6.1 GENERAL WASTE MANAGEMENT

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

## 6.2 RECORDS OF WASTE QUANTITIES

6.2.1 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.

6.2.2 The quantities of waste for disposal in this Reporting Period are summarized in ***Tables 6-1*** and ***6-2*** and the Monthly Summary Waste Flow Table is shown in ***Appendix K***. Whenever possible, materials were reused on-site as far as practicable.

**Table 6-1 Summary of Quantities of Inert C&D Materials**

| Type of Waste | Contract 1 | | Contract 2 | | Contract 3 | |
|---|---|---|---|---|---|---|
| | Quantity | Disposal Location | Quantity | Disposal Location | Quantity | Disposal Location |
| Total generated Inert C&D Materials ('000$m^3$) (#) | 45.740 | - | 0.6487 | - | 3.763 | - |
| Hard Rock and Large Broken Concrete ('000$m^3$) | 3.614 | - | 0 | - | 0 | - |
| Reused in this Contract (Inert) ('000$m^3$) | 45.461 | - | 0.098 | - | 0.098 | - |
| Reused in other Projects (Inert) ('000$m^3$) | 0.279 | * | 0 | - | 1.508 | * |
| Disposal as Public Fill (Inert) ('000$m^3$) | 0 | - | 0.469 | TKO 137 | 3.666 | TKO 137 |

*Remark (#): The total generated inert C&D materials will not take account for the hard rock and large broken concrete.*
*(*) Approved alternative disposal ground.*

**Table 6-2 Summary of Quantities of C&D Wastes**

| Type of Waste | Contract 1 | | Contract 2 | | Contract 3 | |
|---|---|---|---|---|---|---|
| | Quantity | Disposal Location | Quantity | Disposal Location | Quantity | Disposal Location |
| Recycled Metal ('000kg) | 0.018 | Licensed collector | 0 | - | 0.003 | Licensed collector |
| Recycled Paper / Cardboard Packing ('000kg) | 0 | Licensed collector | 0 | - | 0.011 | Licensed collector |
| Recycled Plastic ('000kg) | 0.013 | Licensed collector | 0 | - | 0.006 | Licensed collector |
| Chemical Wastes ('000kg) | 0 | - | 0 | - | 0 | - |
| General Refuses ('000$m^3$) | 0.127 | SENT | 0.082 | SENT | 0.019 | SENT |

# 7. SITE INSPECTION

## 7.1 REQUIREMENTS

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

## 7.2 FINDINGS / DEFICIENCIES DURING THE REPORTING MONTH

***Contract 1***

7.2.1 In the Reporting Period, joint site inspection for Contract 1 to evaluate site environmental performance was carried out by the RE, ET and the Contractor on **2nd, 10th, 15th, 22nd and 29th October 2019** in which IEC joined the site inspection with SSEMC on **10th October 2019**. No non-compliance was noted. The findings / deficiencies of ***Contract 1*** that observed during the weekly site inspection are listed in ***Table 7-1***.

**Table 7-1 Site Observations of Contract 1**

| Date | Findings / Deficiencies | Follow-Up Status |
|---|---|---|
| 2 October 2019 | • Water spraying frequency should be increased for the haul road to reduce dust impact. (Site haul road)<br>• Oil stain under the empty oil drums should be cleaned. (USRT) | • Water spraying had been provided for the haul road to reduce dust impact.<br>• Oil stain on the ground was cleaned and the emptied oil drum had been removed. |
| 10 October 2019 | • Stagnant water cumulated inside the drip tray should be cleaned. (PTT)<br>• Water spraying frequent for the haul road should be increased during the dry season to reduce dust impact. (Site Haul Road) | • Stagnant water cumulated inside the drip tray was cleaned.<br>• Reminder only. |
| 15 October 2019 | • Drip tray should be provided for chemical storage on-site. (TWR1)<br>• Turbidity water discharged from site was observed. Turbidity water should be diverted to proper de-silting facilities prior discharge from site and make sure discharge water comply with license requirement. (Q2) | • Chemical containers without drip tray were removed.<br>• Piping discharging turbidity water was blocked and no turbidity water discharged in Q2 was observed |
| 22 October 2019 | • Emptied cement bags scattered on-site was observed. Emptied cement bags should be wetted before disposal and stored in designated waste storage area. (TWR1) | • Emptied cement bags were removed. |
| 29 October 2019 | • No adverse environmental issue was observed. | • NA. |

***Contract 2***

7.2.2 In the Reporting Period, joint site inspection for Contract 2 to evaluate site environmental performance was carried out by the RE, ET and the Contractor on **2nd, 9th, 16th, 23rd and 30th October 2019** in which IEC joined the site inspection with SSEMC on **23rd October 2019**. No non-compliance was noted. The findings / deficiencies of ***Contract 2*** that observed during the weekly site inspection are listed in ***Table 7-2***.

**Table 7-2 Site Observations of Contract 2**

| Date | Findings / Deficiencies | Follow-Up Status |
|---|---|---|
| 2 October 2019 | • Mobile crane without NRMM label was observed at portion 1. The Contractor was advised to provide NRMM label for crane within site area.<br>• The Contractor was reminded to dispose the broken sand bags. | • NRMM label was provided for Mobile Crane used within site area.<br>• Reminder only. |
| 9 October 2019 | • Accumulation of stagnant water at drip tray was observed at portion 1. The Contractor was advised to clean the stagnant water and dispose as chemical waste.<br>• Oil drum was observed on the ground at portion 1. The Contractor should place oil drum inside drip tray.<br>• The Contractor was reminded to maintain the tree protection zone properly for retained tree.<br>• The Contractor was reminded to provide acoustic materials for breaker using within site area. | • Stagnant water within drip tray was removed.<br>• Proper mitigation measure was provided for oil drum<br>• Reminder only..<br>• Reminder only.. |
| 16 October 2019 | • The Contractor was reminded to remove construction materials near tree protection zone.<br>• The Contractor was reminded to provide proper mitigation measure to avoid surface run-off out of site. | • Reminder only..<br>• Reminder only.. |
| 23 October 2019 | • Accumulation of wastes was observed at Portion 1 and 2. The Contractor was advised to remove the wastes as soon as possible.<br>• The Contractor was reminded to provide temporary noise barrier at Portion 6. | • Wastes were removed.<br>• Reminder only. |
| 30 October 2019 | • Improper tree protection zone was observed at Portion 2. The Contractor should provide proper mitigation measure for retained trees.<br>• Accumulation of silt at public u-channel was observed at Portion 2. The Contractor was advised to remove the silt at public u-channel as soon as possible. | • Proper tree protection zone was provided for retained trees..<br>• To be followed up. |

***Contract 3***

7.2.3 In the Reporting Period, joint site inspection for Contract 3 to evaluate site environmental performance was carried out by the RE, ET and the Contractor on **4th, 11th, 18th and 25th October 2019** in which IEC joined the site inspection with SSEMC on **11th October 2019**. No non-compliance was noted. The findings / deficiencies of ***Contract 3*** that observed during the weekly site inspection are listed in ***Table 7-3***

**Table 7-3 Site Observations of Contract 3**

| Date | Findings / Deficiencies | Follow-Up Status |
|---|---|---|
| 4 October 2019 | • No adverse environmental problem was observed. | • NA. |
| 11 October | • The Contractor was reminded to remove stagnant | • Reminder only. |

| Date | Findings / Deficiencies | Follow-Up Status |
|---|---|---|
| 2019 | water at E11.<br>• The Contractor was reminded to dispose the construction wastes regularly at F1. | • Reminder only. |
| 18 October 2019 | • The Contractor was reminded to remove stagnant water at System A. | • Reminder only. |
| 25 October 2019 | • The Contractor was reminded to keep good housekeeping on site at F1.<br>• The Contractor was reminded to remove stagnant water at F1. | • Reminder only.<br>• Reminder only. |

# 8. ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

## 8.1 ENVIRONMENTAL COMPLAINT, SUMMONS AND PROSECUTION

8.1.1 In the Reporting Period, one (1) environmental complaint was received for Contractor 2 relating to the noise generated from construction work at Tseung Kwan O Tunnel Bus to Bus Interchange Pedestrian Connectivity Facilities E12. Besides, no summons and prosecution under the EM&A Programme was lodged for the project. Investigation for the complaint was undertaken by the ET and presented in following sections. .

*Complaint received for Contract 2*

A public complaint was received by 1823 on 15 October regarding the noise generated from construction work at Tseung Kwan O Tunnel Bus to Bus Interchange Pedestrian Connectivity Facilities E12. In our investigation, Kwan On has implemented noise mitigation measures to reduce the noise impact to the nearby resident. Nevertheless, since the construction site is close to the residential area, adequate noise mitigation measures shall be provided to reduce to noise nuisance to the public. As the works were carried out within the non-restricted hours, it is considered that the works under the contract did not breach the Noise Control Ordinance. Kwan On was reminded to implement the mitigation measures as far as practicable as recommended in the EM&A Programme.

8.1.2 The complaint log is shown in ***Appendix M.***

8.1.3 The statistical summary table of environmental complaint, summons and prosecution is presented in ***Tables 8-1, 8-2*** and ***8-3***.

**Table 8-1 Statistical Summary of Environmental Complaints**

| Reporting Period | Contract no. | Environmental Complaint Statistics | | |
|---|---|---|---|---|
| | | Frequency | Cumulative | Complaint Nature |
| 1 Apr 2017 – 30 Sep 2019 | 1 | 0 | **40** | **Dust, Noise and light nuisance** |
| 21 Mar 2017 – 30 Sep 2019 | 2 | 0 | **5** | **Noise** |
| 31 May 2018 – 30 Sep 2019 | 3 | 0 | **1** | **Waste Management** |
| 1 – 31 October 2019 | 1 | 0 | **40** | NA |
| | 2 | **1** | **6** | **Noise** |
| | 3 | 0 | **1** | NA |

**Table 8-2 Statistical Summary of Environmental Summons**

| Reporting Period | Contract no. | Environmental Summons Statistics | | |
|---|---|---|---|---|
| | | Frequency | Cumulative | Summons Nature |
| 1 Apr 2017 – 30 Sep 2019 | 1 | 0 | 0 | NA |
| 21 Mar 2017 – 30 Sep 2019 | 2 | 0 | 0 | NA |
| 31 May 2018 – 30 Sep 2019 | 3 | 0 | 0 | NA |
| 1 – 31 October 2019 | 1 | 0 | 0 | NA |
| | 2 | 0 | 0 | NA |
| | 3 | 0 | 0 | NA |

**Table 8-3 Statistical Summary of Environmental Prosecution**

| Reporting Period | Contract no. | Environmental Prosecution Statistics | | |
|---|---|---|---|---|
| | | Frequency | Cumulative | Prosecution Nature |
| 1 Apr 2017 – 30 Sep 2019 | 1 | 0 | 0 | NA |
| 21 Mar 2017 – 30 Sep 2019 | 2 | 0 | 0 | NA |
| 31 May 2018 – 30 Sep 2019 | 3 | 0 | 0 | NA |
| 1 – 31 October 2019 | 1 | 0 | 0 | NA |

| | | | | |
|---|---|---|---|---|
| | 2 | 0 | 0 | NA |
| | 3 | 0 | 0 | NA |

# 9. IMPLEMENTATION STATUS OF MITIGATION MEASURES

## 9.1 GENERAL REQUIREMENTS

9.1.1 The environmental mitigation measures that recommended in the Implementation Schedule for Environmental Mitigation Measures (ISEMM) in the approved EM&A Manual covered the issues of dust, noise, water and waste and they are summarized presented in ***Appendix L.***

9.1.2 All contracts under the Project shall be implementing the required environmental mitigation measures according to the approved EM&A Manual as subject to the site condition. Environmental mitigation measures generally implemented in this Reporting Period are summarized in ***Table 9-1***.

**Table 9-1 Environmental Mitigation Measures**

| Issues | Environmental Mitigation Measures |
|---|---|
| Water Quality | • Wastewater to be treated by filtration system; such as, silt curtain or sedimentation tank before discharge.<br>• Replace silt curtain materials if necessary |
| Air Quality | • Maintain damp / wet surface on access road<br>• Keep slow speed in the sites<br>• All vehicles must use wheel washing facility before off site<br>• All vehicles must use wheel washing facility before off site<br>• Sprayed water during breaking works |
| Noise | • Restrain operation time of plants from 07:00 to 19:00 on any working day except for Public Holiday and Sunday.<br>• Keep good maintenance of plants<br>• Place noisy plants away from residence or school<br>• Provide noise barriers or hoarding to enclose the noisy plants or works<br>• Shut down the plants when not in used. |
| Waste and Chemical Management | • On-site sorting prior to disposal<br>• Follow requirements and procedures of the “Trip-ticket System”<br>• Predict required quantity of<br>• concrete accurately<br>• Collect the unused fresh concrete at designated locations in the sites for subsequent disposal |
| General | • The site was generally kept tidy and clean. |

## 9.2 TENTATIVE CONSTRUCTION ACTIVITIES IN THE COMING MONTH

9.2.1 Construction activities for Contract 1 in the coming month are listed below:

1. Implementation of Temporary Traffic Arrangement at the junction between On Sau Road and Road L4, Po Lam Road near Po Tat Estate and Po Lam Road near Ma Yau Tong Village;
2. Construction of the superstructures at South Towers and footing at North Tower of Pedestrian Connectivity System B (PCSB);
3. Construction of drainage, sewerage, grey water and water mains pipes in Road L1;
4. Construction of drainage, sewerage and grey water pipes in Road L2;
5. Construction of sewerage and grey water pipes in Road L3;
6. Construction of drainage pipes in Road L4;
7. Construction of water mains in Road L5;
8. Construction of Box Culvert BC2;
9. Construction of underground tie beams and erection of column and roof cover panels for Public Transport Terminus;
10. Road Improvement Works at Po Lam Road;
11. Tunnel lining and benching excavation works at West Portal and East Portal;
12. Construction of Fresh Water Pumping Station;
13. Construction of Fresh and Salt Water Service Reservoirs;
14. Backfilling works for Retaining Wall RWA 13 and PWA 14;

15. Construction of retaining walls of Artificial Flood Attenuation Lake;
16. Construction of top slab and walls for Underground Stormwater Retention Tank (USRT);
17. Construction of Retaining Walls RWA12 for Road L4;
18. Soil nailing works at slope A1 of East Portal and slope A3 of West Portal near PCSB;
19. Slope works at Slope A4 and A5;
20. Rock breaking & excavation activity of site formation works at Road L4 and Pedestrian Connectivity System A (PCSA);
21. Rock Slope Survey and Slope Stabilization at Portion B1;
22. Construction of Retaining Wall RWA9 for Road L3; and
23. Construction of Pedestrian Connectivity System A (PCSA).

9.2.2 Construction activities for Contract 2 in the coming month are listed below:

- Portion 1: Continue grouting works for piles at Pile Cap E1 –PC3.
  Construction for pile cap E1 –PC3 & E1 –PC5.
  Construction of Pier E1-P1.
  Backfilling with no-fines concrete around pile cap E1-PC6.
- Portion 2: Continue rock Excavation for E3-F1.
  Existing lighting removal.
  Installation of rock dowel and shotcreting.
- Portion 3: Rock Excavation for E2-F3 and E2-F4.
  Tree branch pruning of Tree No. P-T00967.
- Portion 4: Rectification of defects.
- Portion 5:
  -Installation of steel post
  -Relocation of High Masts
  -Drainage Works
- Portion 6:
  -Rock breaking for rock cut slope and BBI Footing.
  -Fixing formwork, reinforcement and place concrete for RWE12

9.2.3 Construction activities for Contract 3 in the coming month are listed below:

<u>Road Improvement Works 1 (RIW1)</u>
- Site formation and temporary soil nail installation at RWC2 Type 1 & 1a;
- Site formation and temporary soil nail installation for RIW2 Type 6,7 & 8;
- Piling Platform 1 & 2 construction at RWC2 Type 4-6 area;
- No-fines concrete construction at RWC2 area;
- Construction of drainage works at Slip Road 2;
- ELS construction at KS27; and
- ELS construction at FE1.

<u>Road Improvement Works 2 (RIW2)</u>
- Soil nail installation at Slope C1 at Zone 4 and 5;
- Site clearance and slope profile formation at Slope C1 at Zone 5 & 6;
- Removal of Lamp posts and erect temporary lamp posts;
- Piling Platform erection and Sheetpile installation for Portion 5; and
- Before sheetpile installation along the road.

<u>Road Improvement Works 3 (RIW3)</u>
- Stage 1 rock excavation at Slope D3;
- Retaining wall construction at Slope D3;
- Shotcreting works at Slope D1;
- Pre-drilling works at Slope D1; and
- Mass concrete wall construction at Slope D2.

Pedestrian Connectivity Facility E8 (PC-E8)
- Construction of haul road and temporary working platform at upper portion;
- Excavation works for Footing F4, F5 and F6;
- Excavation and install lateral support for Footing F8;
- Construction of Sump Pit; and
- Construction of Footing F6.

Pedestrian Connectivity Facility E11 (PC-E11)
- Construction of socketed H-piles at PC-1 and PC-6
- Excavation and install lateral support for pile cap construction; and
- Construction of pile cap RC works.

Pedestrian Connectivity Facility System A (PC-SYA)
- Construction of footing; and
- Bar-bending Schedule for underground retaining wall construction.

Pedestrian Connectivity Facility System A (PC-SYB)
- Construction of socketed H-piles at pile cap PC-3 and SYB-A2.

Tseung Kwan O Bus-Bus Interchange New Public Toilet (BBI-Toilet)
- Construction of Public Toilet (RC works);
- E&M works;
- ABWF; and
- Laying of lighting cable.

## 9.3 KEY ISSUES FOR THE COMING MONTH

9.3.1 Key issues to be considered in the coming month include:
- Implementation of dust suppression measures at all times;
- Potential wastewater quality impact due to surface runoff;
- Potential fugitive dust quality impact due from the dry/loose/exposure soil surface/dusty material;
- Disposal of empty engine oil containers within site area;
- Ensure dust suppression measures are implemented properly;
- Sediment catch-pits and silt removal facilities should be regularly maintained;
- Management of chemical wastes;
- Discharge of site effluent to the nearby wetland, stockpiling or disposal of materials, and any dredging or construction area at this area are prohibited;
- Follow-up of improvement on general waste management issues; and
- Implementation of construction noise preventative control measures

9.3.2 In coming dry season, the Contractors should fully implement air quality mitigation measures to reduce construction dust emission as far as practicable. Furthermore, since construction site is highly visible to the resident at nearby estates, noise mitigation measures such as using of quiet plants should be implemented in accordance with the EM&A requirement.

9.3.3 The Contractors should pay special attention on water quality mitigation measures and fully implement according to the ISEMM of the EM&A Manual, in particular to prevent muddy water or other water pollutants from site surface overflow to public area should be properly maintained. The implementation of water quality mitigation measures conducted by the Contractor is shown in ***Appendix N***.

# 10. CONCLUSIONS AND RECOMMENDATIONS

## 10.1 CONCLUSIONS

10.1.1 This is **31st** monthly EM&A report presenting the monitoring results and inspection findings for the Reporting Period from **1** to **31 October 2019**.

10.1.2 No 24-hour or 1-hour TSP monitoring results that triggered the Action or Limit Levels were recorded. No NOEs or the associated corrective actions were therefore issued.

10.1.3 In the Reporting Period, no Limit Level exceedance was recorded and no Notification of Exceedance was issued. However, one noise complaint (which triggered Action Level) was received for the project. Investigation for the complaint was undertaken by the ET (refer to S10.1.4).

10.1.4 In the reporting period, a public complaint received by 1823 on 15 October 2019 regarding the noise generated from construction work at Tseung Kwan O Tunnel Bus to Bus Interchange Pedestrian Connectivity Facilities E12. In our investigation, Kwan On has implemented noise mitigation measures to reduce the noise impact to the nearby resident. Nevertheless, since the construction site is close to the residential area, adequate noise mitigation measures shall be provided to reduce to noise nuisance to the public. As the works were carried out within the non-restricted hours, it is considered that the works under the contract did not breach the Noise Control Ordinance. Kwan On was reminded to implement the mitigation measures as far as practicable as recommended in the EM&A Programme.

10.1.5 No notification of summons or successful prosecution was received under the Project.

10.1.6 During the Reporting Period, weekly joint site inspection by the RE, ET with the relevant Main-contractor was carried out for Contracts 1, 2 and 3 in accordance with the EM&A Manual stipulation whereas IEC performed monthly site inspection for both contracts. No non-compliance observed during the site inspection.

## 10.2 RECOMMENDATIONS

10.2.1 In coming dry season, the Contractors should fully implement air quality mitigation measures to reduce construction dust emission as far as practicable. Furthermore, since construction site is highly visible to the resident at nearby estates, noise mitigation measures such as using of quiet plants should be implemented in accordance with the EM&A requirement.

10.2.2 Since construction site is highly visible to the resident at nearby estates, the Contractors should fully implement air quality mitigation measures to reduce construction dust emission.

10.2.3 Construction noise would be a key environmental issue during construction work of the Project. Noise mitigation measures such as using quiet plants should be implemented in accordance with the EM&A requirement.

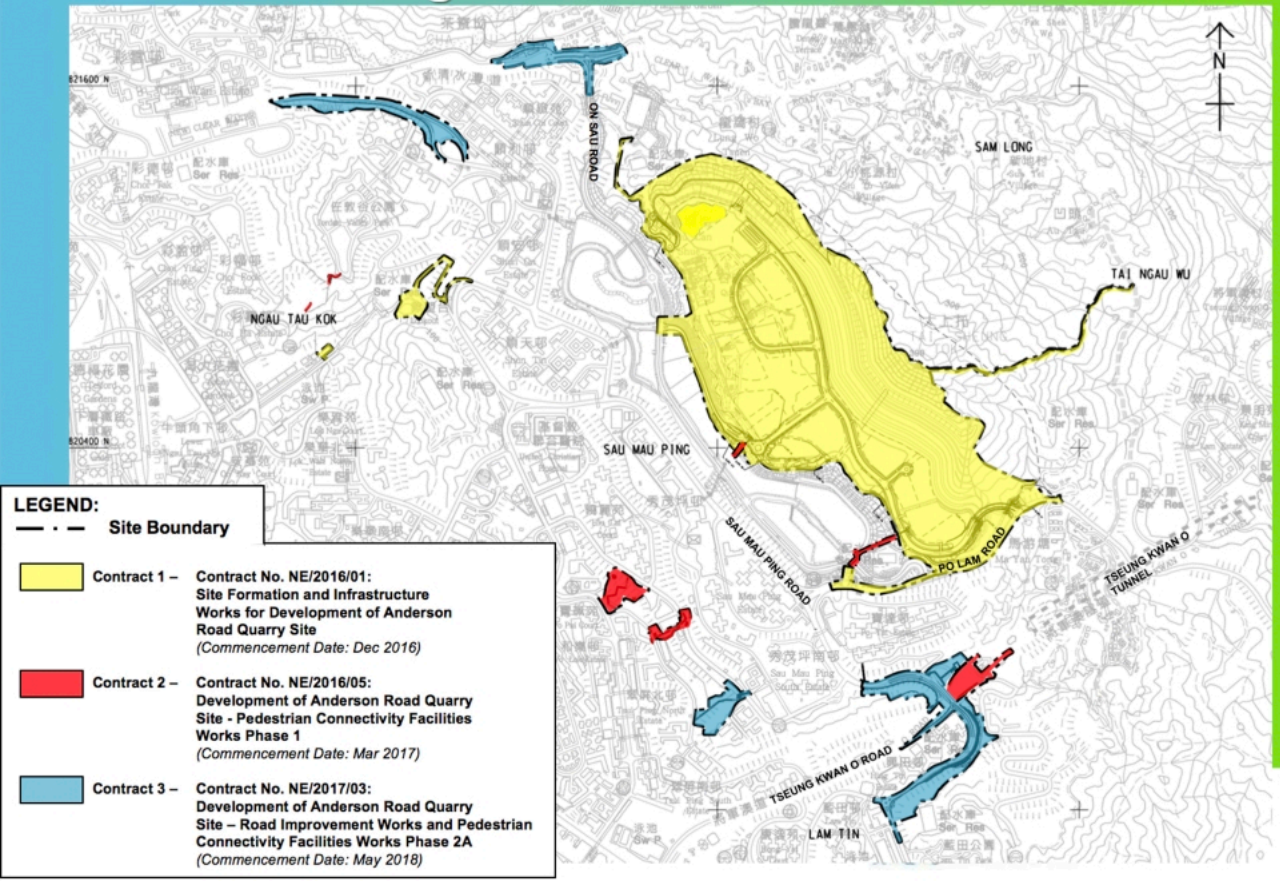
10.2.4 In addition, all effluent discharge shall be ensure to fulfill Technical Memorandum of Effluent Discharged into Drainage and Sewerage Systems, inland and Coastal Waters criteria or discharge permits stipulation.

10.2.5 Mosquito control measures should be continued to prevent mosquito breeding on site.

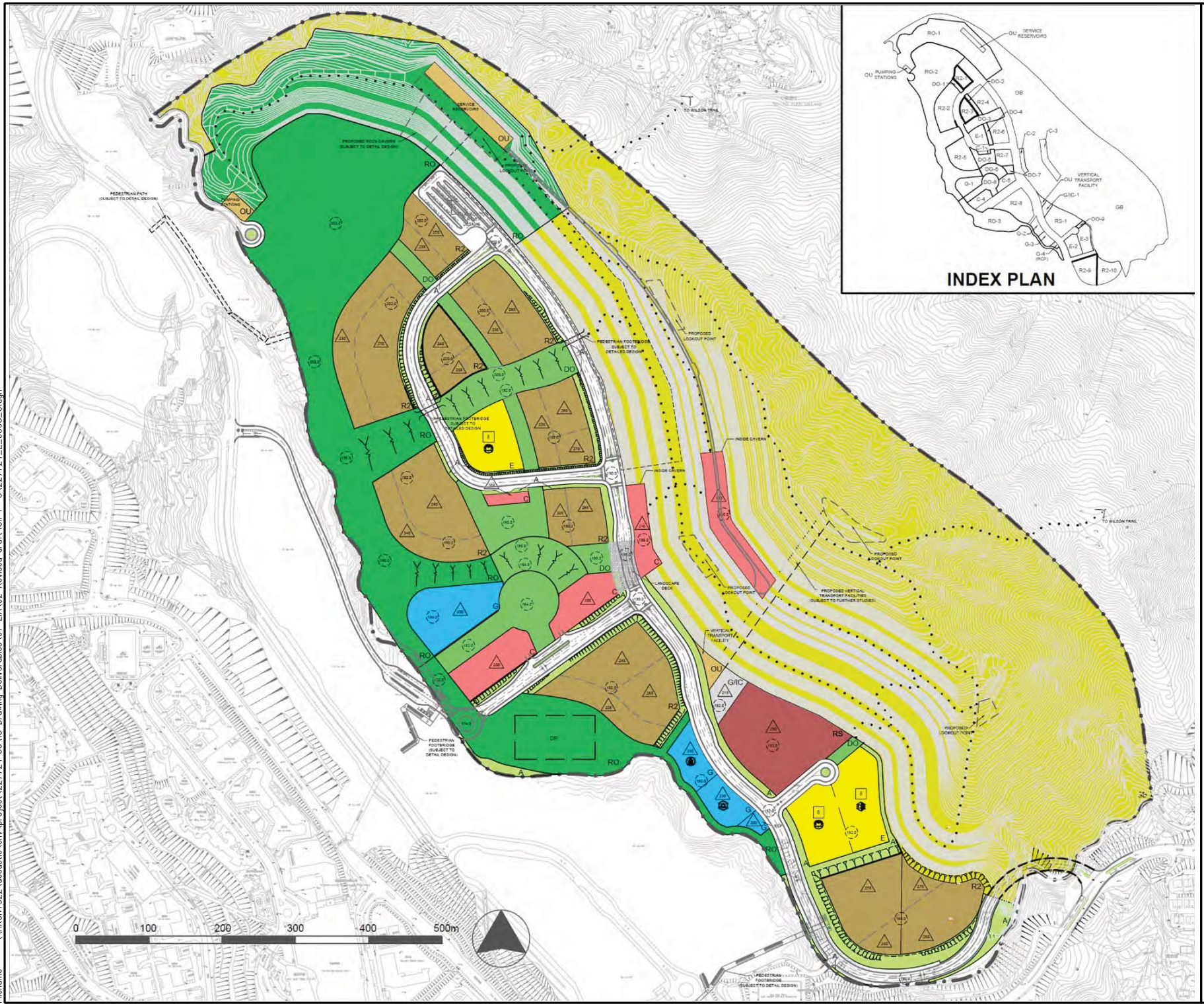
# Appendix A

# Layout plan of the Project

# Contract Packages



# Layout plan of Contract 1 (NE/2016/01)




| Rev | Description | By | Date |
|---|---|---|---|
| C | THIRD ISSUE | GL | 03/14 |
| B | SECOND ISSUE | GL | 01/14 |
| A | FIRST ISSUE | GL | 10/13 |

Consultant

**ARUP**

Contract No. and Title

**Agreement No. CE 18/2012(CE)**

**Development of Anderson Road Quarry - Investigation**

Drawing title

Recommended Outline Development Plan

| Drawing no. | Rev. |
|---|---|
| 227724/E/0003 | C |

| Drawn | Date | Checked | Approved |
|---|---|---|---|
| GL | 03/14 | TC | ST |

Scale: AS SHOWN

Status: PRELIMINARY

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Printed by : 3/31/2014
Filename : \\HKGNTS22\acoustic\env\project\227724-50\13 Drawing Deliverables\07 EIA\02 Revised draft\Ch 1 - 3\227724_E_0003_C.dgn

# Layout plan of Contract 2 (NE/2016/05)

LEGEND:

SITE BOUNDARY

PORTION 1

N

841600 E

841700 E

841800 E

820000 N

819900 N

819800 N

曉光街

HIU KWONG STREET

曉和閣
Hiu Wo House

曉順閣
Hiu Shun House

遊樂場

道路
Road

新生命教育協會呂郭碧鳳中學
NLSI Lui Kwok Pat Fung College

觀塘瑪利諾書院
Kwun Tong Maryknoll College

天主教
耶穌復活堂
Resurrection Parish

TSUI PING ROAD
彩道

寶珮街

寶瑛閣
Po Ying House

Playground

PO PUI STREET

寶珊閣
Po Wu House

寶珮苑
PO PUI COURT

寶珊閣
Po Shan House

翠楣樓
Tsui Mei House

翠楊樓
Tsui Yeung House

HIU MING STREET

曉明閣
Hiu Ming Court

曉光閣
Hiu Kwong Court

平台
Podium

曉華大廈
Hiu Wah Building

富華閣
Fu Wah Court

曉光街休憩花園
Hiu Kwong Street Rest Garden

RCP

CUL

SHR

CW

EW

NGAU TAU KOK

TSUI LAM

KWUN TONG

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**PROJECT**
項目

DEVELOPMENT OF
ANDERSON ROAD
QUARRY SITE - INVESTIGATION,
DESIGN AND CONSTRUCTION

CONTRACT TITLE
PEDESTRIAN CONNECTIVITY
FACILITIES WORKS PHASE 1

**CLIENT**
業主

土木工程拓展署
Civil Engineering and
Development Department

**CONSULTANT**
工程顧問公司

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**ISSUE/REVISION**
修訂

| I/R 修訂 | DATE 日期 | DESCRIPTION 內容摘要 | CHK. 複核 |
|---|---|---|---|
| - | OCT. 16 | TENDER DRAWING | AC |

**STATUS**
階段

**SCALE** 比例
A1 1 : 500

**DIMENSION UNIT** 尺寸單位
METRES

**KEY PLAN** 索引圖 A1 1 : 60000

**PROJECT NO.** 項目編號
60328348

**CONTRACT NO.** 合約編號
NE/2016/05

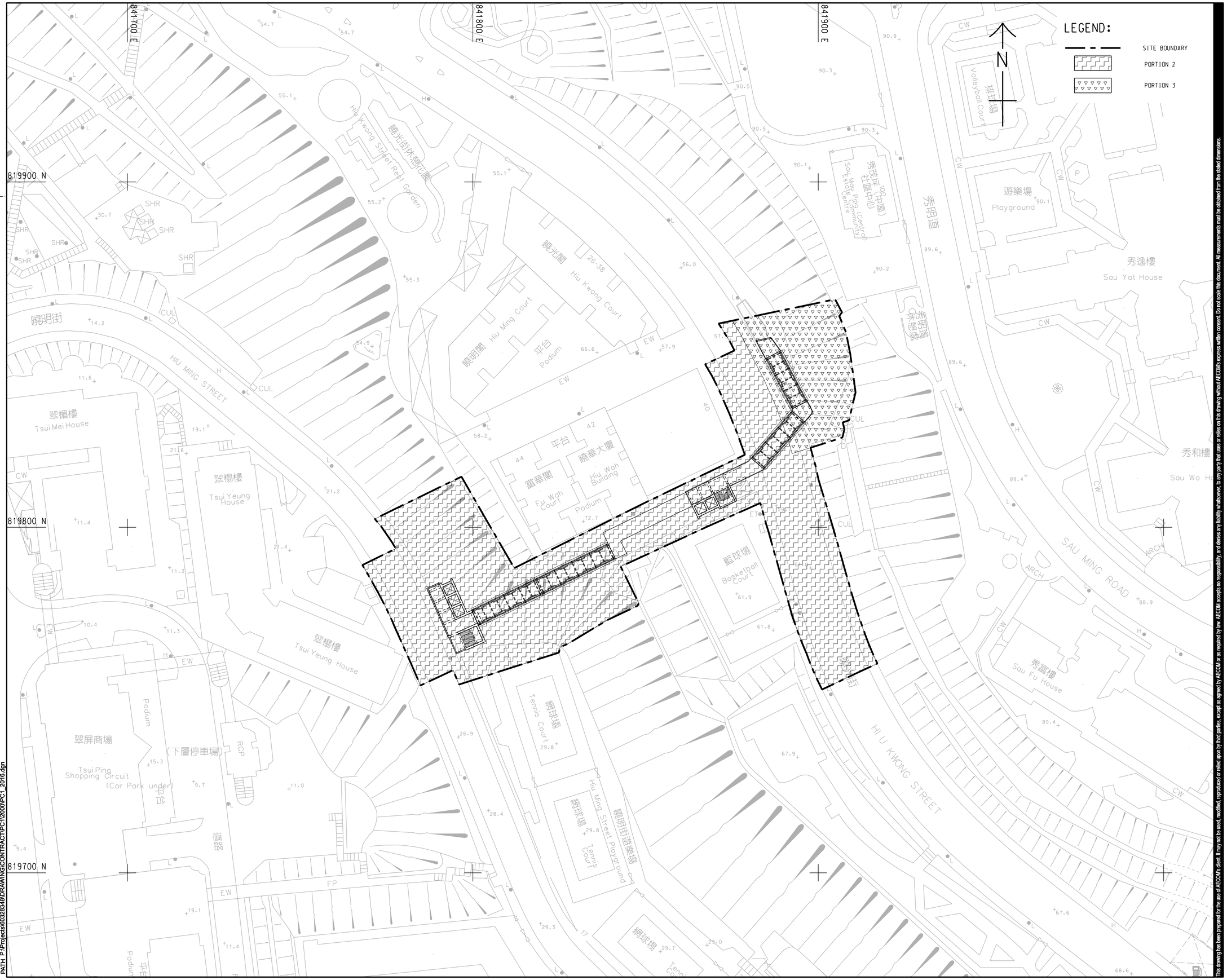
**SHEET TITLE**
圖紙名稱
E1 - PORTION OF SITE

**SHEET NUMBER**
圖紙編號
60328348/PC1/1016

Project Management Initials: Designer: PCTK Checked: AC Approved: BWCW ISO A1 594mm x 841mm

Plot File by: CHENHK 2016/10/24
PATH: P:\Projects\60328348\DRAWING\CONTRACT\PC1\1\1000\PC1_1016.dgn

Project Management Initials: Designer: PC/TK Checked: AC Approved: BWCW ISO A1 594mm x 841mm




Plot File by: WANGGLW 2016/10/24
PATH P:\Projects\60328348\DRAWING\CONTRACT\PC1\2000\PC1_2016.dgn

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**PROJECT** 項目

DEVELOPMENT OF ANDERSON ROAD QUARRY SITE - INVESTIGATION, DESIGN AND CONSTRUCTION

CONTRACT TITLE
PEDESTRIAN CONNECTIVITY FACILITIES WORKS PHASE 1

**CLIENT** 業主

土木工程拓展署
Civil Engineering and Development Department

**CONSULTANT** 工程顧問公司

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**ISSUE/REVISION** 修訂

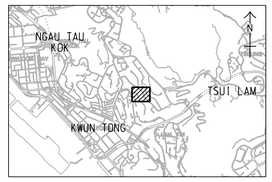
| I/R 修訂 | DATE 日期 | DESCRIPTION 內容摘要 | CHK. 核核 |
|---|---|---|---|
| - | OCT. 16 | TENDER DRAWING | AC |

**STATUS** 階段

**SCALE** 比例
A1 1 : 500

**DIMENSION UNIT** 尺寸單位
METRES

**KEY PLAN** 索引圖 A1 1 : 60000




**PROJECT NO.** 項目編號
60328348

**CONTRACT NO.** 合約編號
NE/2016/05

**SHEET TITLE** 圖紙名稱
E2-C1-E3 - PORTION OF SITE

**SHEET NUMBER** 圖紙編號
60328348/PC1/2016

Project Management Initials: | Designer: PCTK | Checked: AC | Approved: BWCW | ISO A1 594mm x 841mm

842700 E | 842800 E | 842900 E

819700 N

819600 N

819500 N

LEGEND:

- SITE BOUNDARY
- PORTION 4
- PORTION 5
- PORTION 6

N

Road | 道路 | Elevated Road | 高架道路 | 連德道 | 兒童遊樂場 | 平台 (下層停車場) Podium (Car Park under) | 香港環境保護署 Environmental Protection Department | CUL | FP | TS | PH | WT

Plot File by: WANGGLW 2016/10/25
PATH: P:\projects\60328348\drawing\contract\pc1\3000\PC1_3016.dgn

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**PROJECT** 項目

DEVELOPMENT OF ANDERSON ROAD QUARRY SITE - INVESTIGATION, DESIGN AND CONSTRUCTION

CONTRACT TITLE
PEDESTRIAN CONNECTIVITY FACILITIES WORKS PHASE 1

**CLIENT** 業主

土木工程拓展署
Civil Engineering and Development Department

**CONSULTANT** 工程顧問公司

AECOM Asia Company Ltd.
www.aecom.com

**SUB-CONSULTANTS** 分判工程顧問公司

**ISSUE/REVISION** 修訂

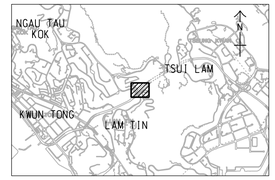
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|---|---|---|---|
| - | OCT. 16 | TENDER DRAWING | AC |

**STATUS** 階段

**SCALE** 比例
A1 1 : 500

**DIMENSION UNIT** 尺寸單位
METRES

**KEY PLAN** 索引圖 A1 1 : 60000



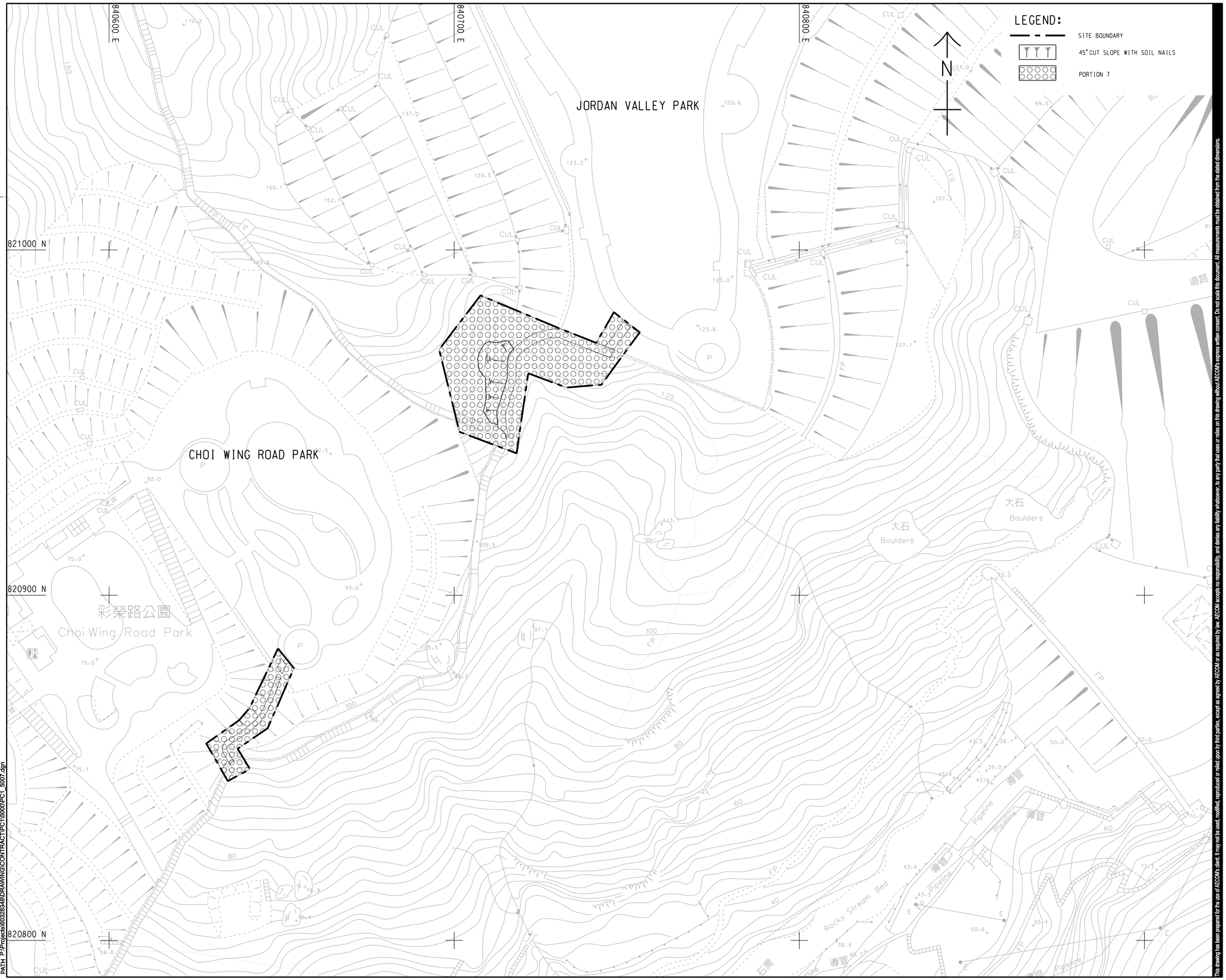

**PROJECT NO.** 項目編號
60328348

**CONTRACT NO.** 合約編號
NE/2016/05

**SHEET TITLE** 圖紙名稱
E12 AND BBI - PORTION OF SITE

**SHEET NUMBER** 圖紙編號
60328348/PC1/3016

Project Management Initials: | Designer: PCTK | Checked: AC | Approved: BWCW | ISO A1 594mm x 841mm




Plot File by: WANGGLW 2016/10/26
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**PROJECT** 項目

DEVELOPMENT OF ANDERSON ROAD QUARRY SITE - INVESTIGATION, DESIGN AND CONSTRUCTION

CONTRACT TITLE
PEDESTRIAN CONNECTIVITY FACILITIES WORKS PHASE 1

**CLIENT** 業主

土木工程拓展署
Civil Engineering and Development Department

**CONSULTANT** 工程顧問公司

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**ISSUE/REVISION** 修訂

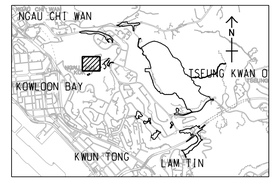
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| | | | |
| - | OCT. 16 | TENDER DRAWING | AC |

**STATUS** 階段

**SCALE** 比例
A1 1 : 500

**DIMENSION UNIT** 尺寸單位
METRES

**KEY PLAN** 索引圖 A1 1 : 60000



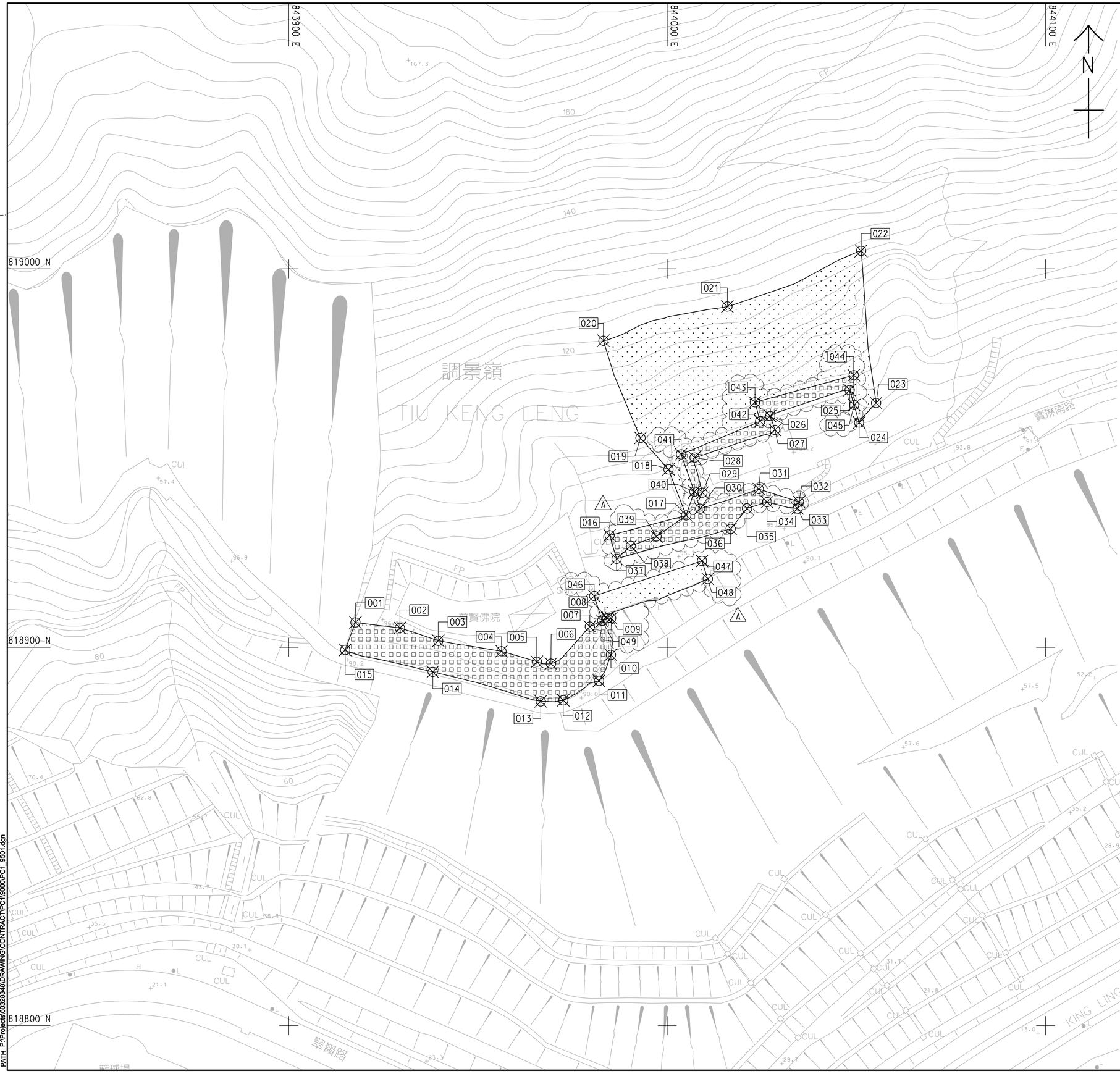

**PROJECT NO.** 項目編號
60328348

**CONTRACT NO.** 合約編號
NE/2016/05

**SHEET TITLE** 圖紙名稱
GREEN ROUTE - PORTION OF SITE

**SHEET NUMBER** 圖紙編號
60328348/PC1/5007

Project Management Initials: | Designer: PC/TK | Checked: AC | Approved: BWCW | ISO A1 594mm x 841mm




## SETTING OUT POINTS

| POINTS | EASTING | NORTHING |
|---|---|---|
| 001 | 843917.587 | 818906.541 |
| 002 | 843929.342 | 818905.094 |
| 003 | 843939.483 | 818901.709 |
| 004 | 843956.219 | 818898.942 |
| 005 | 843965.528 | 818896.168 |
| 006 | 843969.261 | 818895.667 |
| 007 | 843979.545 | 818905.452 |
| 008 | 843984.131 | 818907.650 |
| 009 | 843985.175 | 818907.685 |
| 010 | 843985.110 | 818897.974 |
| 011 | 843981.962 | 818891.121 |
| 012 | 843972.510 | 818885.990 |
| 013 | 843966.562 | 818885.703 |
| 014 | 843938.026 | 818893.479 |
| 015 | 843914.8936 | 818899.2916 |
| 016 | 843917.5873 | 818906.5418 |
| 017 | 844004.9983 | 818934.8475 |
| 018 | 844000.3294 | 818947.0185 |
| 019 | 843992.9288 | 818955.3047 |
| 020 | 843983.1315 | 818980.9995 |
| 021 | 844015.8829 | 818990.0481 |
| 022 | 844051.2430 | 819004.7564 |
| 023 | 844055.1790 | 818964.5518 |
| 024 | 844050.7010 | 818959.3870 |
| 025 | 844048.1970 | 818967.9590 |
| 026 | 844027.1930 | 818961.0890 |
| 027 | 844028.4560 | 818957.440 |
| 028 | 844007.2170 | 818950.1120 |
| 029 | 844009.2850 | 818940.8450 |
| 030 | 844008.6995 | 818936.6258 |
| 031 | 844024.2060 | 818941.7840 |
| 032 | 844034.8059 | 818938.4355 |
| 033 | 844034.4315 | 818936.6727 |
| 034 | 844026.3820 | 818938.3480 |
| 035 | 844021.0980 | 818936.6740 |
| 036 | 844016.7340 | 818931.2790 |
| 037 | 843986.6120 | 818923.3580 |
| 038 | 843990.360 | 818926.797 |
| 039 | 843997.172 | 818929.287 |
| 040 | 844007.154 | 818941.102 |
| 041 | 844003.647 | 818950.980 |
| 042 | 844024.555 | 818959.707 |
| 043 | 844023.162 | 818964.725 |
| 044 | 844049.278 | 818971.887 |
| 045 | 844049.396 | 818964.017 |
| 046 | 843980.693 | 818913.535 |
| 047 | 844009.179 | 818922.804 |
| 048 | 844010.709 | 818918.044 |
| 049 | 843982.791 | 818907.077 |

Plot File by: WANGGLW 2016/11/16
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**PROJECT** 項目

DEVELOPMENT OF ANDERSON ROAD QUARRY SITE - INVESTIGATION, DESIGN AND CONSTRUCTION

CONTRACT TITLE
PEDESTRIAN CONNECTIVITY FACILITIES WORKS PHASE 1

**CLIENT** 業主

土木工程拓展署
Civil Engineering and Development Department

**CONSULTANT** 工程顧問公司

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**ISSUE/REVISION** 修訂

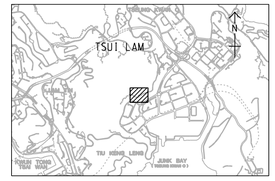
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|---|---|---|---|
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| | | | |
| | | | |
| A | NOV. 16 | TENDER ADDENDUM NO. 1 | AC |
| - | OCT. 16 | TENDER DRAWING | AC |

**STATUS** 階段

**SCALE** 比例
A1 1 : 500

**DIMENSION UNIT** 尺寸單位
METRES

**KEY PLAN** 索引圖 A1 1 : 60000




**PROJECT NO.** 項目編號
60328348

**CONTRACT NO.** 合約編號
NE/2016/05

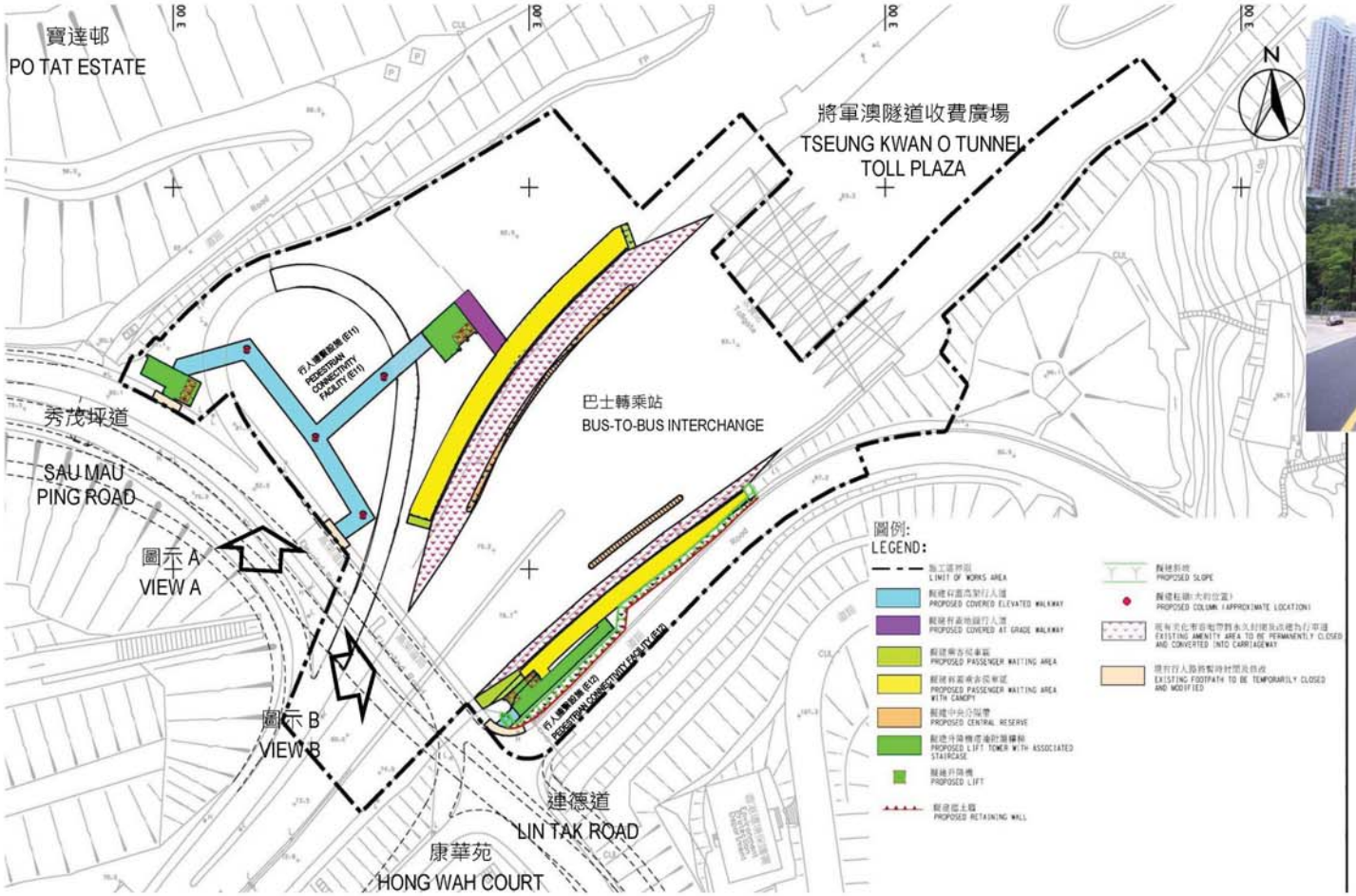
**SHEET TITLE** 圖紙名稱

INFRASTRUCTURAL WORKS AT PO LAM ROAD SOUTH TIU KENG LENG – PORTION OF SITE

**SHEET NUMBER** 圖紙編號

60328348/PC1/9501A

# Layout plan of Contract 3 (NE/2017/03) (Non-Designated Area)






圖示 A VIEW A



圖示 B VIEW B

圖則名稱 Drawing Title

行人連繫設施(巴士轉乘站、E11及E12) - 平面圖及構思圖

Pedestrian Connectivity Facilities (Bus-to-Bus Interchange, E11 and E12) - Layout Plan and Artist's Impression

項目編號 Item No.
765CL

比例 Scale

圖則編號 Drawing No.
附件五 Appendix 5

辦事處 Office
新界東拓展處
NEW TERRITORIES EAST DEVELOPMENT OFFICE

土木工程拓展署
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

Project Management Initials: | Designer: | CCYT Checked: | AWYC Approved: HKT | ISO A1 594mm x 841mm

842000 N
819600 E
820400 N
820200 N
842600 E
842500 E
842100 E
842400 E

SLOPE NO. E8-1
SLOPE NO. E8-2
PEDESTRIAN CONNECTIVITY E8 SEE DRAWING NO. 60328348/R&P/3501
HIU YUK PATH
HIU MING STREET
HIU KWONG STREET
PARK STRIP
梁式芝書院 Leung Shek Chee College
曉育徑
足球場 Football Field
The Hong Kong Ching Chung Hau Po Woon Primary School
ROAD L4 (CONSTRUCTED UNDER SEPERATE CONTRACT)
EXISTING BOX CULVERT
PEDESTRIAN CONNECTIVITY SYSTEM A SEE DRAWING NO. 60328348/R&P/3101
PEDESTRIAN CONNECTIVITY SYSTEM A (CONSTRUCTED UNDER SEPERATE CONTRACT)
ROAD L1 (CONSTRUCTED UNDER SEPERATE CONTRACT)
PEDESTRIAN CONNECTIVITY SYSTEM B (CONSTRUCTED UNDER SEPERATE CONTRACT)
SLOPE NO. B1
SLOPE NO. B2
PEDESTRIAN CONNECTIVITY SYSTEM B SEE DRAWING NO. 60328348/R&P/3301
ON SAU ROAD
秀茂坪淨水配水庫 Sau Mau Ping Salt Water Service Reservoir

NOTES:

1. FOR NOTES AND LEGEND REFER TO DRAWING NO. 60328348/R&P/1001.
2. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING NOS. 60328348/R&P/1001 TO 1008.

Plot File by: WUMT 2017/11/9
PATH P:\Projects\60328348\DRAWING\CONTRACT\R&P\1000\R&P_1008.dgn

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**PROJECT** 項目

DEVELOPMENT OF ANDERSON ROAD QUARRY SITE - INVESTIGATION, DESIGN AND CONSTRUCTION

CONTRACT TITLE
DEVELOPMENT OF ANDERSON ROAD QUARRY SITE - ROAD IMPROVEMENT WORKS AND PEDESTRIAN CONNECTIVITY FACILITIES WORKS PHASE 2A

**CLIENT** 業主

土木工程拓展署
Civil Engineering and Development Department

**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

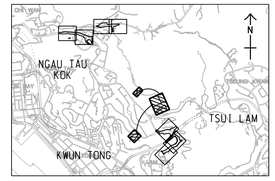
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| A | NOV. 17 | TENDER ADDENDUM NO. 1 | AWYC |
| - | OCT. 17 | TENDER DRAWING | AWYC |

**STATUS** 階段

**SCALE** 比例
A1 1 : 500

**DIMENSION UNIT** 尺寸單位
METRES

**KEY PLAN** 索引圖 A1 1 : 60000




**PROJECT NO.** 項目編號
60328348

**CONTRACT NO.** 合約編號
NE/2017/03

**SHEET TITLE** 圖紙名稱
GENERAL LAYOUT

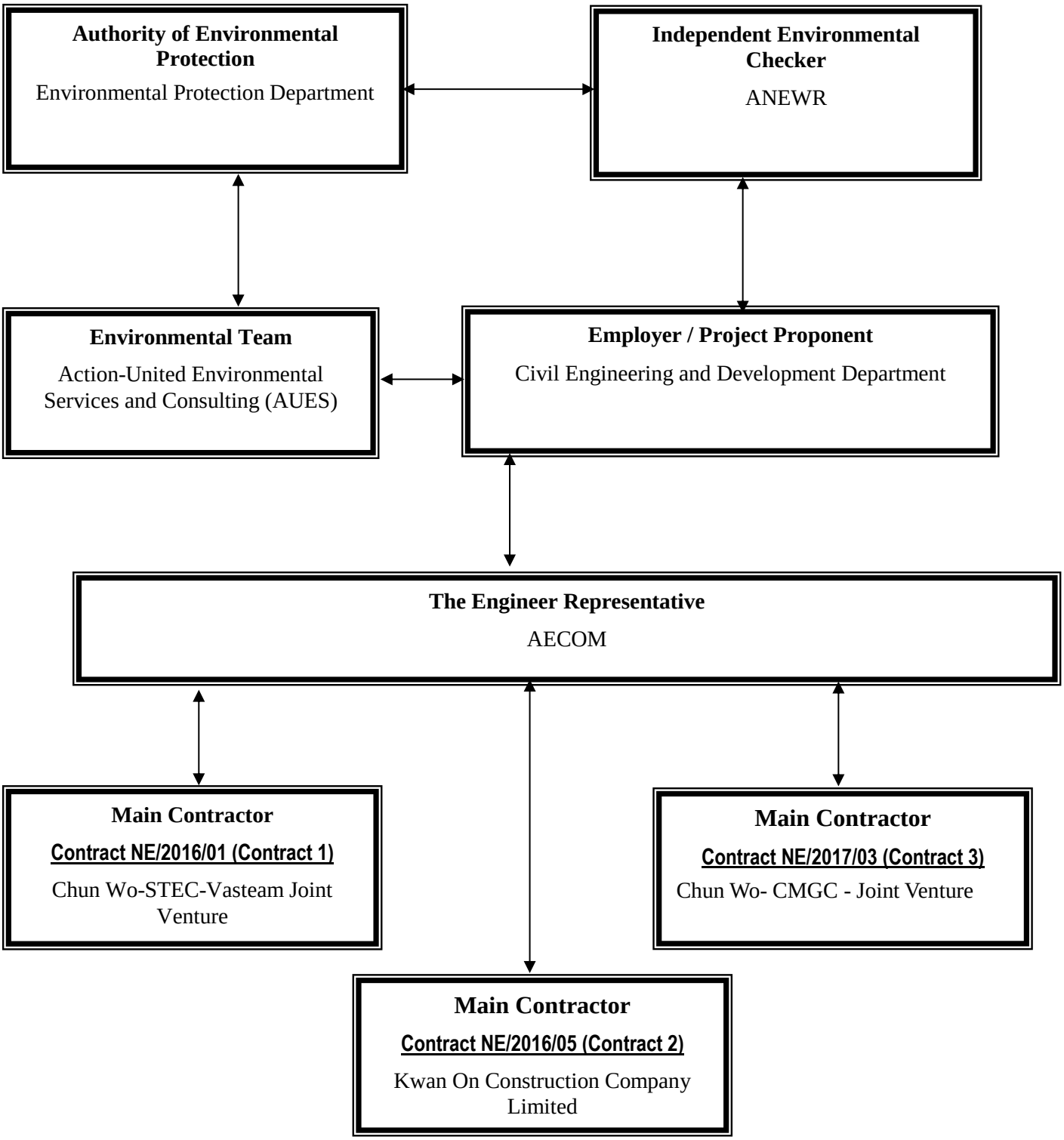
SHEET 8 OF 8

**SHEET NUMBER** 圖紙編號
60328348/R&P/1008A

# Appendix B

# Project Organization Structure

## Project Organization Structure



## Contact Details of Key Personnel for Contract 1 – NE/2016/01

| Organization | Project Role | Name of Key Staff | Tel No. | Fax No. |
|---|---|---|---|---|
| CEDD | Engineer | Leung Siu Kau, Kelvin | 2301 1383 | 2739 0076 |
| AECOM | Chief Resident Engineer | Lee, Yu Ching Paul | 5723 6880 | 2473 3221 |
| AECOM | Senior Resident Engineer | Li, Ling Tommy | 9389 8792 | 2473 3221 |
| ANEWR | Independent Environmental Checker | Adi Lee | 2618 2836 | 3007 8648 |
| CSVJV | Project Manager | William Leung | 2638 7181 | 2744 6937 |
| CSVJV | Site Agent | TY Leung | 2638 7181 | 2744 6937 |
| CSVJV | Project Environmental Manager | Shelton Chan | 2638 7181 | 2744 6937 |
| CSVJV | Environmental Officer | Ken Chiu | 2638 7181 | 2744 6937 |
| AUES | Environmental Team Leader | T. W. Tam | 2959 6059 | 2959 6079 |
| AUES | Environmental Consultant | Nicola Hon | 2959 6059 | 2959 6079 |
| AUES | Environmental Consultant | Ben Tam | 2959 6059 | 2959 6079 |

Legend:

*CEDD (Employer) – Civil Engineering and Development Department*

*AECOM (Engineer) – AECOM Asia Co. Ltd.*

*CSVJV (Main Contractor) – Chun Wo-STEC-Vasteam Joint Venture*

*ANEWR (IEC) –ANewR Consulting Limited*

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

## Contact Details of Key Personnel for Contract 2 – NE/2016/05

| Organization | Project Role | Name of Key Staff | Tel No. | Fax No. |
|---|---|---|---|---|
| CEDD | Engineer | Leung Siu Kau, Kelvin | 2301 1383 | 2739 0076 |
| AECOM | Chief Resident Engineer | Lee, Yu Ching Paul | 5723 6880 | 2473 3221 |
| AECOM | Senior Resident Engineer | Vincent Yuen | 5599 1466 | 2473 3221 |
| ANEWR | Independent Environmental Checker | Adi Lee | 2618 2836 | 3007 8648 |
| KOCCL | Project Director | Ambrose Kwong | 2889 2675 | 2558 6900 |
| KOCCL | Site Agent | Yung, Shui Heng | 6012 4284 | 2558 6900 |
| KOCCL | Safety and Environmental Manager | Joly C K Kwong | 6111 5711 | 2558 6900 |
| KOCCL | Environmental Officer | Lee Kwan Ho, Byron | 6671 0383 | 2558 6900 |
| AUES | Environmental Team Leader | T. W. Tam | 2959 6059 | 2959 6079 |
| AUES | Environmental Consultant | Nicola Hon | 2959 6059 | 2959 6079 |
| AUES | Environmental Consultant | Ben Tam | 2959 6059 | 2959 6079 |

Legend:

*CEDD (Employer) – Civil Engineering and Development Department*

*AECOM (Engineer) – AECOM Asia Co. Ltd.*

*KOCCL (Main Contractor) –Kwan On Construction Company Limited*

*ANEWR (IEC) –ANewR Consulting Limited*

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

## Contact Details of Key Personnel for Contract 3 –NE/2017/03

| Organization | Project Role | Name of Key Staff | Tel No. | Fax No. |
|---|---|---|---|---|
| CEDD | Engineer | Leung Siu Kau, Kelvin | 2301 1383 | 2739 0076 |
| AECOM | Chief Resident Engineer | Lee, Yu Ching Paul | 5723 6880 | 2473 3221 |
| AECOM | Senior Resident Engineer | Brad Chan | 5506 0068 | 2473 3221 |
| ANEWR | Independent Environmental Checker | Adi Lee | 2618 2836 | 3007 8648 |
| CW – CMGC - JV | Construction Manager | William Leung | 9464 1392 | 3965 9900 |
| CW – CMGC - JV | Site Agent | Chris Lam | 9801 9974 | 3965 9900 |
| CW – CMGC - JV | Environmental Officer | King Lam | 9570 6187 | 3965 9900 |
| CW – CMGC - JV | Environmental Supervisor | Belle Mak | 6094 1580 | 3965 9900 |
| AUES | Environmental Team Leader | T. W. Tam | 2959 6059 | 2959 6079 |
| AUES | Environmental Consultant | Nicola Hon | 2959 6059 | 2959 6079 |
| AUES | Environmental Consultant | Ben Tam | 2959 6059 | 2959 6079 |

Legend:

*CEDD (Employer) – Civil Engineering and Development Department*

*AECOM (Engineer) – AECOM Asia Co. Ltd.*

*CW – CMGC - JV (Main Contractor) – Chun Wo- CMGC - Joint Venture*

*ANEWR (IEC) –ANewR Consulting Limited*

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

# Appendix C

## Construction Programme

(a) Contract 1 (NE/2016/01)
(b) Contract 2 (NE/2016/05)
(c) Contract 3 (NE/2017/03)

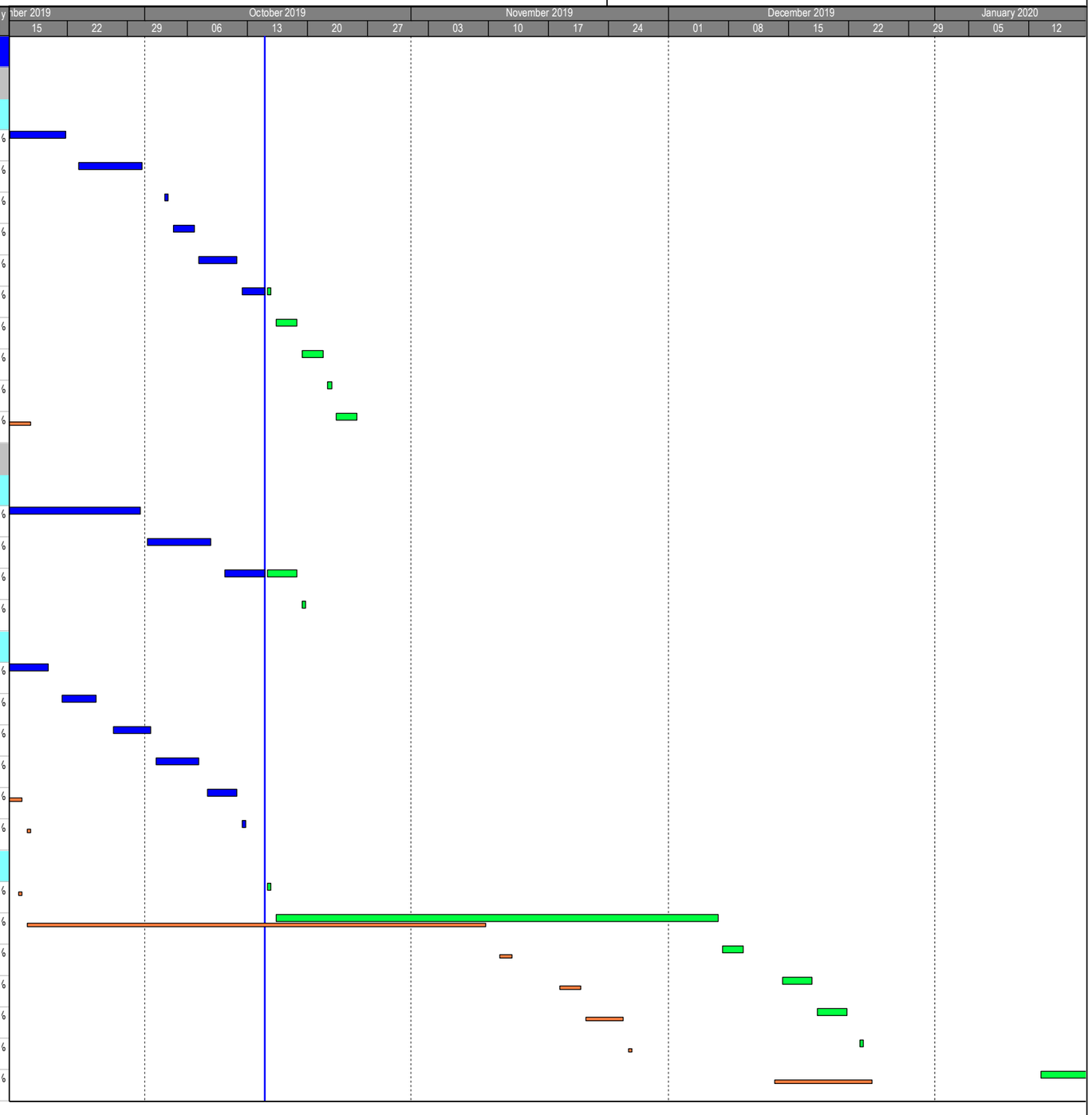
# Contract 1 (NE/2016/01)

俊和－上隧－浩隆聯營
CHUN WO – STEC – VASTEAM JOINT VENTURE

# CONTRACT NO. NE/2016/01 DEVELOPMENT OF ANDERSON ROAD QUARRY SITE INVESTIGATION, DESIGN AND CONSTRUCTION
## 3 - MONTH ROLLING PROGRAMME


Cut-Off Data Date: 15-Oct-19

| Activity ID | Activity Name | BL1 Duration | BL1 Start | BL1 Finish | Duration | Start | Finish |
|---|---|---|---|---|---|---|---|
| **Anderson Rd Sub-programme (Oct 19)** | | | | | | | |
| **Box Culvert BC1** | | | | | | | |
| **Bay 1** | | | | | | | |
| BC1-1010 | Base Slab formwork erection | 3d | 15-Aug-19 08:00 | 17-Aug-19 18:00 | 6d | 15-Sep-19 08:00 A | 21-Sep-19 18:00 A |
| BC1-1020 | Rebar fixing + cleaning | 4d | 19-Aug-19 08:00 | 22-Aug-19 18:00 | 7d | 23-Sep-19 08:00 A | 30-Sep-19 18:00 A |
| BC1-1030 | Concreting | 1d | 23-Aug-19 08:00 | 23-Aug-19 18:00 | 1d | 03-Oct-19 08:00 A | 03-Oct-19 18:00 A |
| BC1-1040 | Formwork removal | 2d | 24-Aug-19 08:00 | 26-Aug-19 18:00 | 2d | 04-Oct-19 08:00 A | 06-Oct-19 18:00 A |
| BC1-1050 | Falsework erection | 4d | 27-Aug-19 08:00 | 30-Aug-19 18:00 | 4d | 07-Oct-19 08:00 A | 11-Oct-19 18:00 A |
| BC1-1060 | Wall & soffit formwork erection | 5d | 31-Aug-19 08:00 | 05-Sep-19 18:00 | 3d | 12-Oct-19 08:00 A | 15-Oct-19 18:00 |
| BC1-1070 | Rebar fixing | 3d | 06-Sep-19 08:00 | 09-Sep-19 18:00 | 3d | 16-Oct-19 08:00 | 18-Oct-19 18:00 |
| BC1-1080 | External Wall formwork erection + cleaning | 2d | 10-Sep-19 08:00 | 11-Sep-19 18:00 | 2d | 19-Oct-19 08:00 | 21-Oct-19 18:00 |
| BC1-1090 | Concreting | 1d | 12-Sep-19 08:00 | 12-Sep-19 18:00 | 1d | 22-Oct-19 08:00 | 22-Oct-19 18:00 |
| BC1-1100 | Formwork removal | 3d | 13-Sep-19 08:00 | 17-Sep-19 18:00 | 3d | 23-Oct-19 08:00 | 25-Oct-19 18:00 |
| **Box Culvert BC2** | | | | | | | |
| **Bay 12** | | | | | | | |
| BC2-1170 | Falsework + soffit formwork erection | 10d | 21-Aug-19 08:00 | 31-Aug-19 18:00 | 13d | 13-Sep-19 13:00 A | 30-Sep-19 12:00 A |
| BC2-1180 | Rebar fixing | 4d | 02-Sep-19 08:00 | 05-Sep-19 18:00 | 5d | 01-Oct-19 08:00 A | 08-Oct-19 18:00 A |
| BC2-1190 | Wall formwork erection | 6d | 06-Sep-19 08:00 | 12-Sep-19 18:00 | 8d | 10-Oct-19 08:00 A | 18-Oct-19 18:00 |
| BC2-1200 | Concreting | 1d | 13-Sep-19 08:00 | 13-Sep-19 18:00 | 1d | 19-Oct-19 08:00 | 19-Oct-19 18:00 |
| **Bay 13** | | | | | | | |
| BC2-1250 | Backfilling | 14d | 16-Aug-19 08:00 | 31-Aug-19 18:00 | 24d | 22-Aug-19 08:00 A | 19-Sep-19 18:00 A |
| BC2-1260 | Working platform erection | 3d | 02-Sep-19 08:00 | 04-Sep-19 18:00 | 3d | 21-Sep-19 08:00 A | 25-Sep-19 08:00 A |
| BC2-1270 | Chamber wall formwork | 3d | 05-Sep-19 08:00 | 07-Sep-19 18:00 | 3d | 27-Sep-19 08:00 A | 01-Oct-19 18:00 A |
| BC2-1280 | Rebar fixing | 3d | 09-Sep-19 08:00 | 11-Sep-19 18:00 | 4d | 02-Oct-19 08:00 A | 07-Oct-19 08:00 A |
| BC2-1290 | External Wall formwork erection + cleaning | 3d | 12-Sep-19 08:00 | 16-Sep-19 18:00 | 4d | 08-Oct-19 08:00 A | 11-Oct-19 18:00 A |
| BC2-1300 | Concreting | 1d | 17-Sep-19 08:00 | 17-Sep-19 18:00 | 1d | 12-Oct-19 08:00 A | 12-Oct-19 18:00 A |
| **Bay 16** | | | | | | | |
| BC2-1440 | Handover area after completion of USRT | 1d | 16-Sep-19 08:00 | 16-Sep-19 18:00 | 1d | 15-Oct-19 08:00* | 15-Oct-19 18:00 |
| BC2-1450 | Backfilling work to bottom of BC | 45d | 17-Sep-19 08:00 | 09-Nov-19 18:00 | 45d | 16-Oct-19 08:00 | 06-Dec-19 18:00 |
| BC2-1460 | Grade 200 + blinding layer | 2d | 11-Nov-19 08:00 | 12-Nov-19 18:00 | 2d | 07-Dec-19 08:00 | 09-Dec-19 18:00 |
| BC2-1470 | Base Slab Formowork erection | 3d | 18-Nov-19 08:00 | 20-Nov-19 18:00 | 3d | 14-Dec-19 08:00 | 17-Dec-19 18:00 |
| BC2-1480 | Rebar fixing + cleaning | 4d | 21-Nov-19 08:00 | 25-Nov-19 18:00 | 4d | 18-Dec-19 08:00 | 21-Dec-19 18:00 |
| BC2-1490 | Concreting | 1d | 26-Nov-19 08:00 | 26-Nov-19 18:00 | 1d | 23-Dec-19 08:00 | 23-Dec-19 18:00 |
| BC2-1500 | Falsework + soffit formwork erection | 10d | 13-Dec-19 08:00 | 24-Dec-19 18:00 | 10d | 13-Jan-20 08:00 | 23-Jan-20 18:00 |

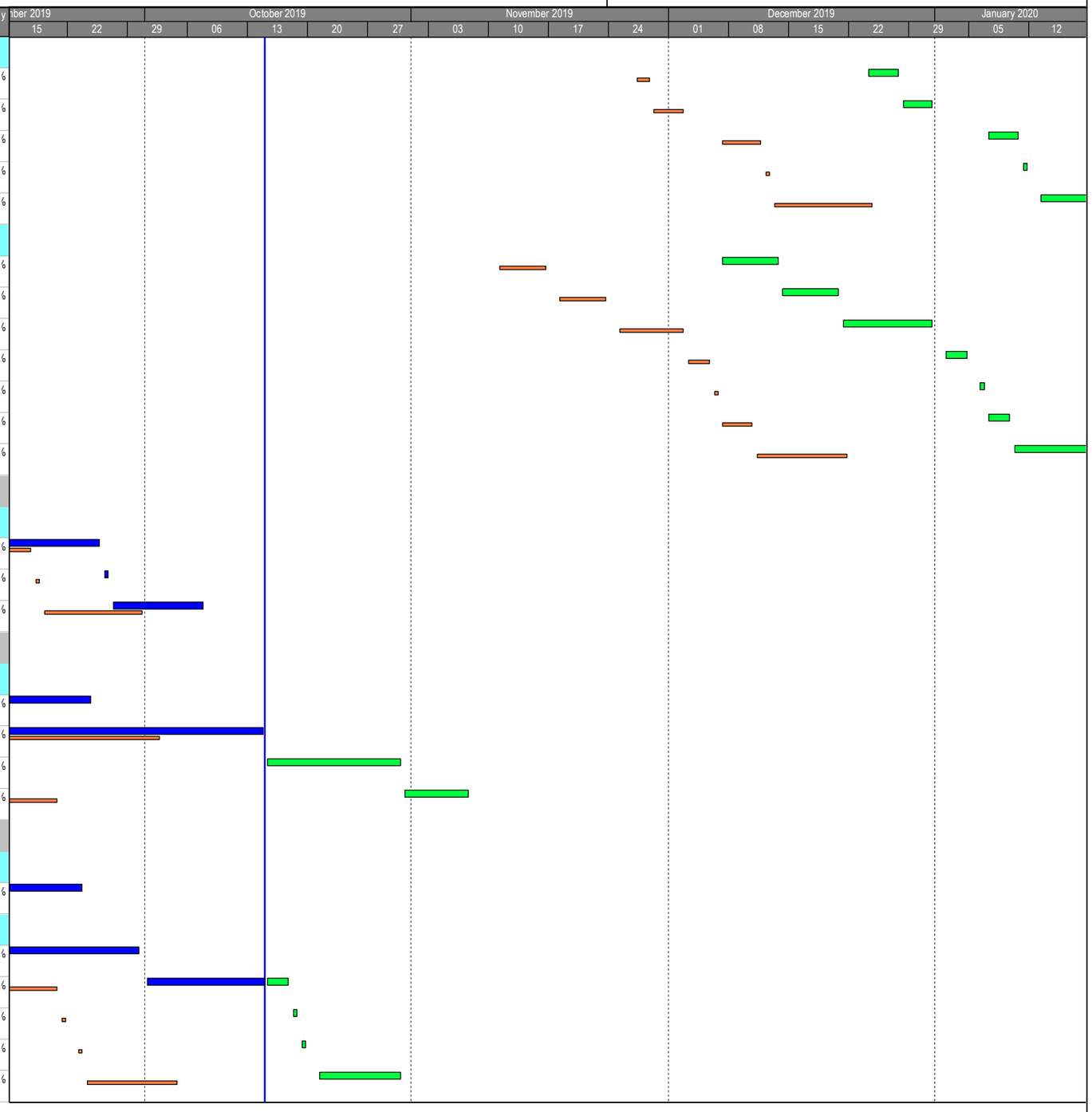



Primary Baseline
Actual Work
Baseline Milestone
Milestone
Forecast Work

**3 Month Rolling Programme**
Anderson Rd Sub-programme (Oct 19)
23-Oct-19

| Date | Revision | Checked | Approved |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| Activity ID | Activity Name | BL1 Duration | BL1 Start | BL1 Finish | Duration | Start | Finish |
|---|---|---|---|---|---|---|---|
| **Bay 17** | | | | | | | |
| BC2-1540 | Grade 200 + blinding layer | 2d | 27-Nov-19 08:00 | 28-Nov-19 18:00 | 2d | 24-Dec-19 08:00 | 27-Dec-19 18:00 |
| BC2-1550 | Base Slab Formowork erection | 3d | 29-Nov-19 08:00 | 02-Dec-19 18:00 | 3d | 28-Dec-19 08:00 | 31-Dec-19 18:00 |
| BC2-1560 | Rebar fixing + cleaning | 4d | 07-Dec-19 08:00 | 11-Dec-19 18:00 | 4d | 07-Jan-20 08:00 | 10-Jan-20 18:00 |
| BC2-1570 | Concreting | 1d | 12-Dec-19 08:00 | 12-Dec-19 18:00 | 1d | 11-Jan-20 08:00 | 11-Jan-20 18:00 |
| BC2-1580 | Falsework + soffit formwork erection | 10d | 13-Dec-19 08:00 | 24-Dec-19 18:00 | 10d | 13-Jan-20 08:00 | 23-Jan-20 18:00 |
| **Bay 18** | | | | | | | |
| BC2-1680 | Grade 200 + blinding layer | 6d | 11-Nov-19 08:00 | 16-Nov-19 18:00 | 6d | 07-Dec-19 08:00 | 13-Dec-19 18:00 |
| BC2-1690 | Base Slab Formwork erection | 6d | 18-Nov-19 08:00 | 23-Nov-19 18:00 | 6d | 14-Dec-19 08:00 | 20-Dec-19 18:00 |
| BC2-1700 | Rebar fixing + cleaning | 7d | 25-Nov-19 08:00 | 02-Dec-19 18:00 | 7d | 21-Dec-19 08:00 | 31-Dec-19 18:00 |
| BC2-1710 | Stair formwork erection | 3d | 03-Dec-19 08:00 | 05-Dec-19 18:00 | 3d | 02-Jan-20 08:00 | 04-Jan-20 18:00 |
| BC2-1720 | Concreting | 1d | 06-Dec-19 08:00 | 06-Dec-19 18:00 | 1d | 06-Jan-20 08:00 | 06-Jan-20 18:00 |
| BC2-1730 | Formwork removal | 3d | 07-Dec-19 08:00 | 10-Dec-19 18:00 | 3d | 07-Jan-20 08:00 | 09-Jan-20 18:00 |
| BC2-1740 | Falsework + soffit formwork erection | 10d | 11-Dec-19 08:00 | 21-Dec-19 18:00 | 10d | 10-Jan-20 08:00 | 21-Jan-20 18:00 |
| **Fresh Water Pumping Station** | | | | | | | |
| **Stage 4 - Roof** | | | | | | | |
| FWP-1270 | Roof (stage 4) RC fixing | 14d | 31-Aug-19 08:00 | 17-Sep-19 18:00 | 16d | 06-Sep-19 08:00 A | 25-Sep-19 18:00 A |
| FWP-1280 | Roof (stage 4) Concreting | 1d | 18-Sep-19 08:00 | 18-Sep-19 18:00 | 1d | 26-Sep-19 08:00 A | 26-Sep-19 18:00 A |
| FWP-1290 | Roof (stage 4) Curing | 10d | 19-Sep-19 08:00 | 30-Sep-19 18:00 | 7d | 27-Sep-19 08:00 A | 07-Oct-19 18:00 A |
| **Salt Water Reservoir** | | | | | | | |
| **Roof & Other** | | | | | | | |
| SWR-1350 | Roof - Remove formworks & site clearance | 7d | 06-Sep-19 08:00 | 13-Sep-19 18:00 | 8d | 15-Sep-19 08:00 A | 24-Sep-19 18:00 A |
| SWR-1360 | Other - Construct external staircase | 30d | 27-Aug-19 08:00 | 02-Oct-19 18:00 | 34d | 02-Sep-19 08:00 A | 14-Oct-19 18:00 A |
| SWR-1370 | Other - Construct penthouse, planter & U-channel, etc | 14d | 27-Aug-19 08:00 | 11-Sep-19 18:00 | 14d | 15-Oct-19 08:00 | 30-Oct-19 18:00 |
| SWR-1380 | Other - Remove formwork and site clearance | 7d | 12-Sep-19 08:00 | 20-Sep-19 18:00 | 7d | 31-Oct-19 08:00 | 07-Nov-19 18:00 |
| **Fresh Water Reservoir** | | | | | | | |
| **Wall Bay 3 2nd Layer** | | | | | | | |
| FWR-1570 | Wall B3 2nd - Curing | 9d | 02-Sep-19 08:00 | 11-Sep-19 18:00 | 11d | 10-Sep-19 08:00 A | 23-Sep-19 18:00 A |
| **Wall Bay 4 2nd Layer** | | | | | | | |
| FWR-1690 | Wall B4 2nd - Working platform (outside) | 7d | 15-Aug-19 08:00 | 22-Aug-19 18:00 | 12d | 15-Sep-19 08:00 A | 30-Sep-19 08:00 A |
| FWR-1700 | Wall B4 2nd - External formworks with pattern | 18d | 30-Aug-19 08:00 | 20-Sep-19 18:00 | 13d | 01-Oct-19 08:00 A | 17-Oct-19 18:00 |
| FWR-1710 | Wall B4 2nd - Final condition & survey check | 1d | 21-Sep-19 08:00 | 21-Sep-19 18:00 | 1d | 18-Oct-19 08:00 | 18-Oct-19 18:00 |
| FWR-1720 | Wall B4 2nd - Concreting | 1d | 23-Sep-19 08:00 | 23-Sep-19 18:00 | 1d | 19-Oct-19 08:00 | 19-Oct-19 18:00 |
| FWR-1730 | Wall B4 2nd - Curing | 9d | 24-Sep-19 08:00 | 04-Oct-19 18:00 | 9d | 21-Oct-19 08:00 | 30-Oct-19 18:00 |



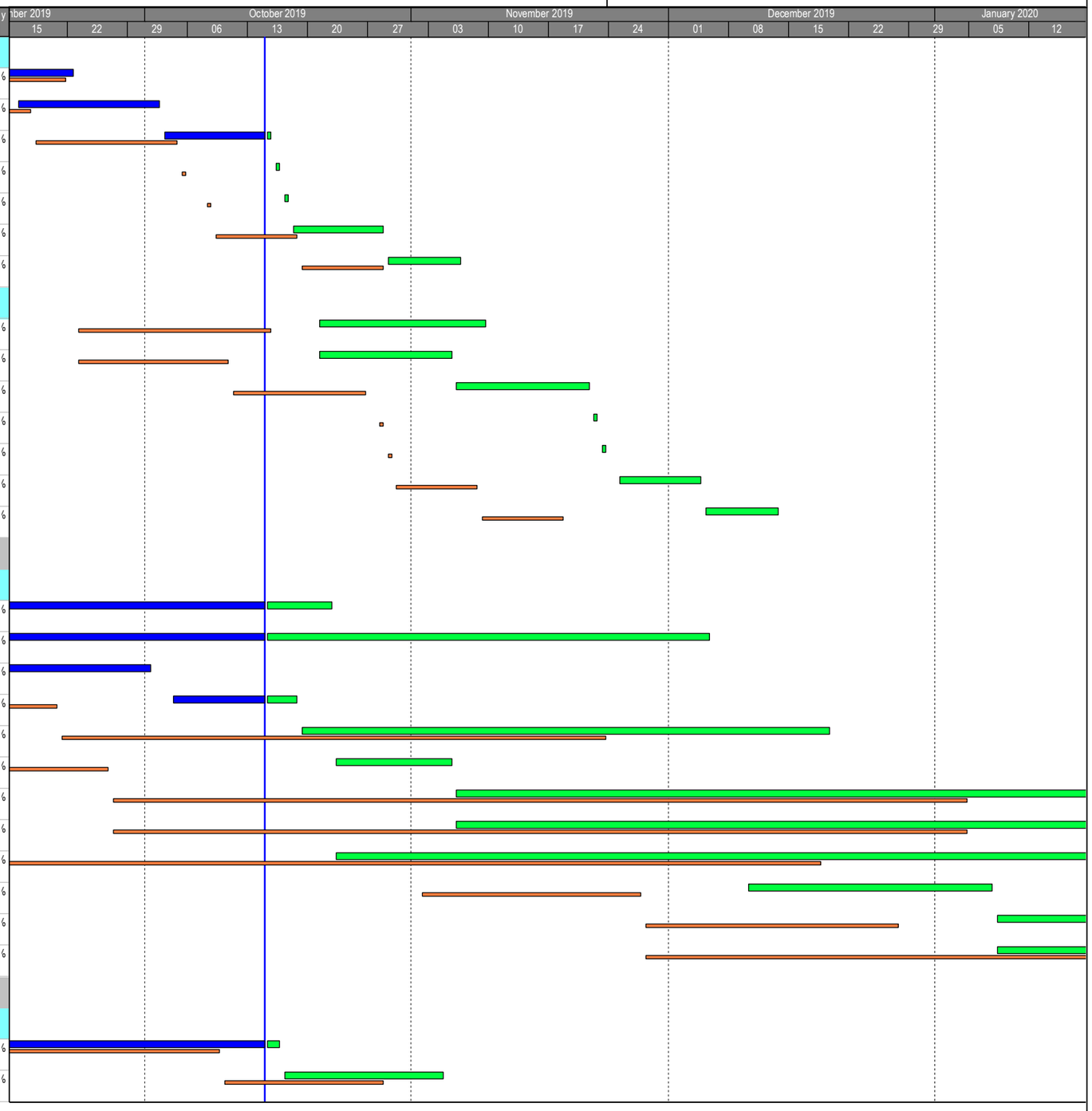

Primary Baseline
Actual Work
Baseline Milestone
Milestone
Forecast Work

## 3 Month Rolling Programme

Anderson Rd Sub-programme (Oct 19)
23-Oct-19

| Date | Revision | Checked | Approved |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| Activity ID | Activity Name | BL1 Duration | BL1 Start | BL1 Finish | Duration | Start | Finish |
|---|---|---|---|---|---|---|---|
| **Roof Bay 1 & 3** | | | | | | | |
| FWR-1800 | Roof Bay 1 & 3 - Scaffolding | 18d | 31-Aug-19 08:00 | 21-Sep-19 18:00 | 9d | 11-Sep-19 08:00 A | 22-Sep-19 18:00 A |
| FWR-1810 | Roof Bay 1 & 3 - formworks | 14d | 31-Aug-19 08:00 | 17-Sep-19 18:00 | 14d | 16-Sep-19 08:00 A | 02-Oct-19 18:00 A |
| FWR-1820 | Roof Bay 1 & 3 - RC fixing | 14d | 18-Sep-19 08:00 | 04-Oct-19 18:00 | 10d | 03-Oct-19 08:00 A | 15-Oct-19 18:00 |
| FWR-1830 | Roof Bay 1 & 3 - final condition & survey check | 1d | 05-Oct-19 08:00 | 05-Oct-19 18:00 | 1d | 16-Oct-19 08:00 | 16-Oct-19 18:00 |
| FWR-1840 | Roof Bay 1 & 3 - Concreting | 1d | 08-Oct-19 08:00 | 08-Oct-19 18:00 | 1d | 17-Oct-19 08:00 | 17-Oct-19 18:00 |
| FWR-1850 | Roof Bay 1 & 3 - Curing | 9d | 09-Oct-19 08:00 | 18-Oct-19 18:00 | 9d | 18-Oct-19 08:00 | 28-Oct-19 18:00 |
| FWR-1860 | Roof Bay 1 & 3 - Remove formworks & site clearance | 8d | 19-Oct-19 08:00 | 28-Oct-19 18:00 | 8d | 29-Oct-19 08:00 | 06-Nov-19 18:00 |
| **Roof Bay 2 & 4** | | | | | | | |
| FWR-1900 | Roof Bay 2 & 4 - Scaffolding | 18d | 23-Sep-19 08:00 | 15-Oct-19 18:00 | 18d | 21-Oct-19 08:00 | 09-Nov-19 18:00 |
| FWR-1910 | Roof Bay 2 & 4 - formworks | 14d | 23-Sep-19 08:00 | 10-Oct-19 18:00 | 14d | 21-Oct-19 08:00 | 05-Nov-19 18:00 |
| FWR-1920 | Roof Bay 2 & 4 - RC fixing | 14d | 11-Oct-19 08:00 | 26-Oct-19 18:00 | 14d | 06-Nov-19 08:00 | 21-Nov-19 18:00 |
| FWR-1930 | Roof Bay 2 & 4 - final condition & survey check | 1d | 28-Oct-19 08:00 | 28-Oct-19 18:00 | 1d | 22-Nov-19 08:00 | 22-Nov-19 18:00 |
| FWR-1940 | Roof Bay 2 & 4 - Concreting | 1d | 29-Oct-19 08:00 | 29-Oct-19 18:00 | 1d | 23-Nov-19 08:00 | 23-Nov-19 18:00 |
| FWR-1950 | Roof Bay 2 & 4 - Curing | 9d | 30-Oct-19 08:00 | 08-Nov-19 18:00 | 9d | 25-Nov-19 08:00 | 04-Dec-19 18:00 |
| FWR-1960 | Roof Bay 2 & 4 - Remove formworks & site clearance | 8d | 09-Nov-19 08:00 | 18-Nov-19 18:00 | 8d | 05-Dec-19 08:00 | 13-Dec-19 18:00 |
| **Pedestrian Connection System A & B** | | | | | | | |
| **PC system B** | | | | | | | |
| PCB-1020 | System B - Structure of south tower | 96d | 08-Apr-19 08:00 | 03-Aug-19 18:00 | 161d | 08-Apr-19 08:00 A | 22-Oct-19 18:00 |
| PCB-1030 | System B - Structure of north tower | 96d | 01-Apr-19 08:00 | 29-Jul-19 18:00 | 204d | 01-Apr-19 08:00 A | 05-Dec-19 18:00 |
| PCB-1050 | System B - Structure of subway & sump pit | 61d | 15-Apr-19 08:00 | 29-Jun-19 18:00 | 138d | 15-Apr-19 08:00 A | 01-Oct-19 18:00 A |
| PCB-1060 | System B - Waterproof membrance installation for subway | 11d | 07-Sep-19 08:00 | 20-Sep-19 18:00 | 12d | 04-Oct-19 08:00 A | 18-Oct-19 18:00 |
| PCB-1070 | System B - Backfill subway | 53d | 21-Sep-19 08:00 | 23-Nov-19 18:00 | 53d | 19-Oct-19 08:00 | 19-Dec-19 18:00 |
| PCB-1080 | System B - Waterproof menbrance installation for lift tower | 12d | 12-Sep-19 08:00 | 26-Sep-19 18:00 | 12d | 23-Oct-19 08:00 | 05-Nov-19 18:00 |
| PCB-1090 | System B - Backfill south tower | 81d | 27-Sep-19 08:00 | 04-Jan-20 18:00 | 81d | 06-Nov-19 08:00 | 14-Feb-20 18:00 |
| PCB-1100 | System B - Backfill north tower | 81d | 27-Sep-19 08:00 | 04-Jan-20 18:00 | 81d | 06-Nov-19 08:00 | 14-Feb-20 18:00 |
| PCB-1110 | System B - ABWF | 81d | 12-Sep-19 08:00 | 18-Dec-19 18:00 | 81d | 23-Oct-19 08:00 | 31-Jan-20 18:00 |
| PCB-1120 | System B - E&M | 22d | 02-Nov-19 08:00 | 27-Nov-19 18:00 | 22d | 10-Dec-19 08:00 | 07-Jan-20 18:00 |
| PCB-1130 | System B - E&M T&C | 24d | 28-Nov-19 08:00 | 27-Dec-19 18:00 | 24d | 08-Jan-20 08:00 | 07-Feb-20 18:00 |
| PCB-1140 | System B - Lift installation | 75d | 28-Nov-19 08:00 | 29-Feb-20 18:00 | 75d | 08-Jan-20 08:00 | 08-Apr-20 18:00 |
| **Artificial Flood Attenuation Lake** | | | | | | | |
| **Retaining wall Part 1 Bay 13-17)** | | | | | | | |
| ART-1090 | Art retain wall - Part 1 backfill by course material | 30d | 02-Sep-19 08:00 | 09-Oct-19 18:00 | 36d | 02-Sep-19 08:00 A | 16-Oct-19 18:00 |
| ART-1100 | Art retain wall - Part 1 bay 13 | 16d | 10-Oct-19 08:00 | 28-Oct-19 18:00 | 16d | 17-Oct-19 08:00 | 04-Nov-19 18:00 |



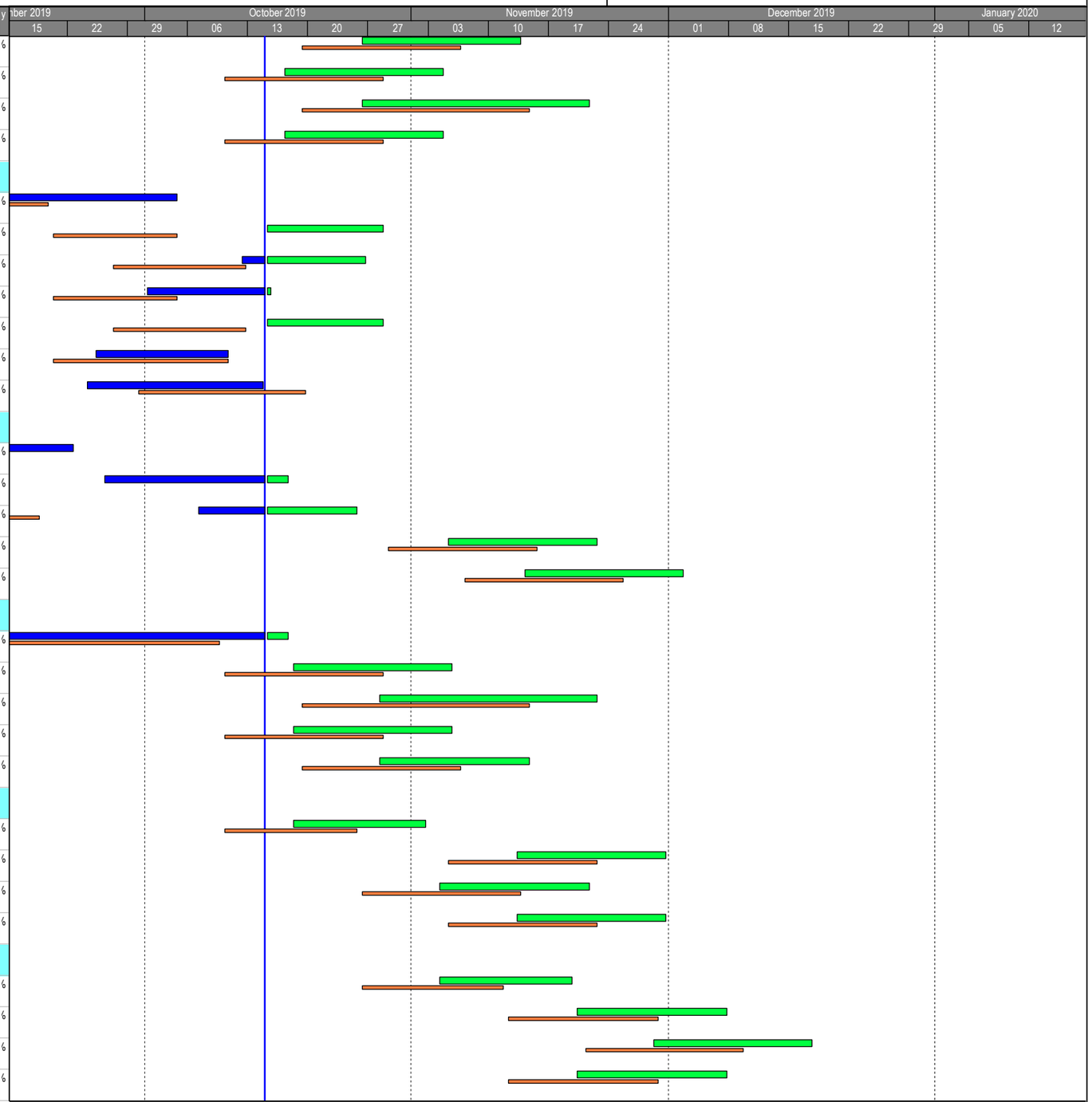

Primary Baseline
Forecast Work
Actual Work
Baseline Milestone
Milestone

## 3 Month Rolling Programme

Anderson Rd Sub-programme (Oct 19)
23-Oct-19

| Date | Revision | Checked | Approved |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| Activity ID | Activity Name | BL1 Duration | BL1 Start | BL1 Finish | Duration | Start | Finish |
|---|---|---|---|---|---|---|---|
| ART-1110 | Art retain wall - Part 1 bay 14 | 16d | 19-Oct-19 08:00 | 06-Nov-19 18:00 | 16d | 26-Oct-19 08:00 | 13-Nov-19 18:00 |
| ART-1120 | Art retain wall - Part 1 bay 15 | 16d | 10-Oct-19 08:00 | 28-Oct-19 18:00 | 16d | 17-Oct-19 08:00 | 04-Nov-19 18:00 |
| ART-1130 | Art retain wall - Part 1 bay 16 | 23d | 19-Oct-19 08:00 | 14-Nov-19 18:00 | 23d | 26-Oct-19 08:00 | 21-Nov-19 18:00 |
| ART-1140 | Art retain wall - Part 1 bay 17 | 16d | 10-Oct-19 08:00 | 28-Oct-19 18:00 | 16d | 17-Oct-19 08:00 | 04-Nov-19 18:00 |
| **Retaining wall Part 8 Bay 32-37)** | | | | | | | |
| ART-1150 | Art retain wall - Part 8 excavation | 30d | 15-Aug-19 08:00 | 19-Sep-19 18:00 | 26d | 03-Sep-19 08:00 A | 04-Oct-19 18:00 A |
| ART-1160 | Art retain wall - Part 8 bay 32 | 12d | 20-Sep-19 08:00 | 04-Oct-19 18:00 | 12d | 15-Oct-19 08:00 | 28-Oct-19 18:00 |
| ART-1170 | Art retain wall - Part 8 bay 33 | 12d | 27-Sep-19 08:00 | 12-Oct-19 18:00 | 13d | 12-Oct-19 08:00 A | 26-Oct-19 18:00 |
| ART-1180 | Art retain wall - Part 8 bay 34 | 12d | 20-Sep-19 08:00 | 04-Oct-19 18:00 | 11d | 01-Oct-19 08:00 A | 15-Oct-19 18:00 |
| ART-1190 | Art retain wall - Part 8 bay 35 | 12d | 27-Sep-19 08:00 | 12-Oct-19 18:00 | 12d | 15-Oct-19 08:00 | 28-Oct-19 18:00 |
| ART-1200 | Art retain wall - Part 8 bay 36 | 16d | 20-Sep-19 08:00 | 10-Oct-19 18:00 | 12d | 25-Sep-19 08:00 A | 10-Oct-19 18:00 A |
| ART-1210 | Art retain wall - Part 8 bay 37 | 16d | 30-Sep-19 08:00 | 19-Oct-19 18:00 | 16d | 24-Sep-19 08:00 A | 14-Oct-19 18:00 A |
| **Retaining wall Part 2 Bay 9-12)** | | | | | | | |
| ART-1220 | Art retain wall - Part 2 backfill by course material, excavation, 300mm rock fill, HDPE | 17d | 02-Jul-19 08:00 | 20-Jul-19 18:00 | 70d | 02-Jul-19 08:00 A | 22-Sep-19 18:00 A |
| ART-1230 | Art retain wall - Part 2 bay 9 | 16d | 23-Aug-19 08:00 | 10-Sep-19 18:00 | 17d | 26-Sep-19 08:00 A | 17-Oct-19 18:00 |
| ART-1240 | Art retain wall - Part 2 bay 10 | 14d | 02-Sep-19 08:00 | 18-Sep-19 18:00 | 16d | 07-Oct-19 08:00 A | 25-Oct-19 18:00 |
| ART-1250 | Art retain wall - Part 2 bay 11 | 16d | 29-Oct-19 08:00 | 15-Nov-19 18:00 | 16d | 05-Nov-19 08:00 | 22-Nov-19 18:00 |
| ART-1260 | Art retain wall - Part 2 bay 12 | 16d | 07-Nov-19 08:00 | 25-Nov-19 18:00 | 16d | 14-Nov-19 08:00 | 02-Dec-19 18:00 |
| **Retaining wall Part 3 Bay 3-6)** | | | | | | | |
| ART-1270 | Art retain wall - Part 3 backfill with SRT | 30d | 02-Sep-19 08:00 | 09-Oct-19 18:00 | 30d | 10-Sep-19 08:00 A | 17-Oct-19 18:00 |
| ART-1280 | Art retain wall - Part 3 bay 3 | 16d | 10-Oct-19 08:00 | 28-Oct-19 18:00 | 16d | 18-Oct-19 08:00 | 05-Nov-19 18:00 |
| ART-1290 | Art retain wall - Part 3 bay 4 | 23d | 19-Oct-19 08:00 | 14-Nov-19 18:00 | 23d | 28-Oct-19 08:00 | 22-Nov-19 18:00 |
| ART-1300 | Art retain wall - Part 3 bay 5 | 16d | 10-Oct-19 08:00 | 28-Oct-19 18:00 | 16d | 18-Oct-19 08:00 | 05-Nov-19 18:00 |
| ART-1310 | Art retain wall - Part 3 bay 6 | 16d | 19-Oct-19 08:00 | 06-Nov-19 18:00 | 16d | 28-Oct-19 08:00 | 14-Nov-19 18:00 |
| **Retaining wall Part 4 Bay22-24)** | | | | | | | |
| ART-1320 | Art retain wall - Part 4 backfill by course material, excavation, 300mm rock fill | 14d | 10-Oct-19 08:00 | 25-Oct-19 18:00 | 14d | 18-Oct-19 08:00 | 02-Nov-19 18:00 |
| ART-1330 | Art retain wall - Part 4 bay 22 | 16d | 05-Nov-19 08:00 | 22-Nov-19 18:00 | 16d | 13-Nov-19 08:00 | 30-Nov-19 18:00 |
| ART-1340 | Art retain wall - Part 4 bay 23 | 16d | 26-Oct-19 08:00 | 13-Nov-19 18:00 | 16d | 04-Nov-19 08:00 | 21-Nov-19 18:00 |
| ART-1350 | Art retain wall - Part 4 bay 24 | 16d | 05-Nov-19 08:00 | 22-Nov-19 18:00 | 16d | 13-Nov-19 08:00 | 30-Nov-19 18:00 |
| **Retaining wall Part 5 Bay 29-31)** | | | | | | | |
| ART-1360 | Art retain wall - Part 5 excavation, 300mm rock fill | 14d | 26-Oct-19 08:00 | 11-Nov-19 18:00 | 14d | 04-Nov-19 08:00 | 19-Nov-19 18:00 |
| ART-1370 | Art retain wall - Part 5 bay 29 | 16d | 12-Nov-19 08:00 | 29-Nov-19 18:00 | 16d | 20-Nov-19 08:00 | 07-Dec-19 18:00 |
| ART-1380 | Art retain wall - Part 5 bay 30 | 16d | 21-Nov-19 08:00 | 09-Dec-19 18:00 | 16d | 29-Nov-19 08:00 | 17-Dec-19 18:00 |
| ART-1390 | Art retain wall - Part 5 bay 31 | 16d | 12-Nov-19 08:00 | 29-Nov-19 18:00 | 16d | 20-Nov-19 08:00 | 07-Dec-19 18:00 |



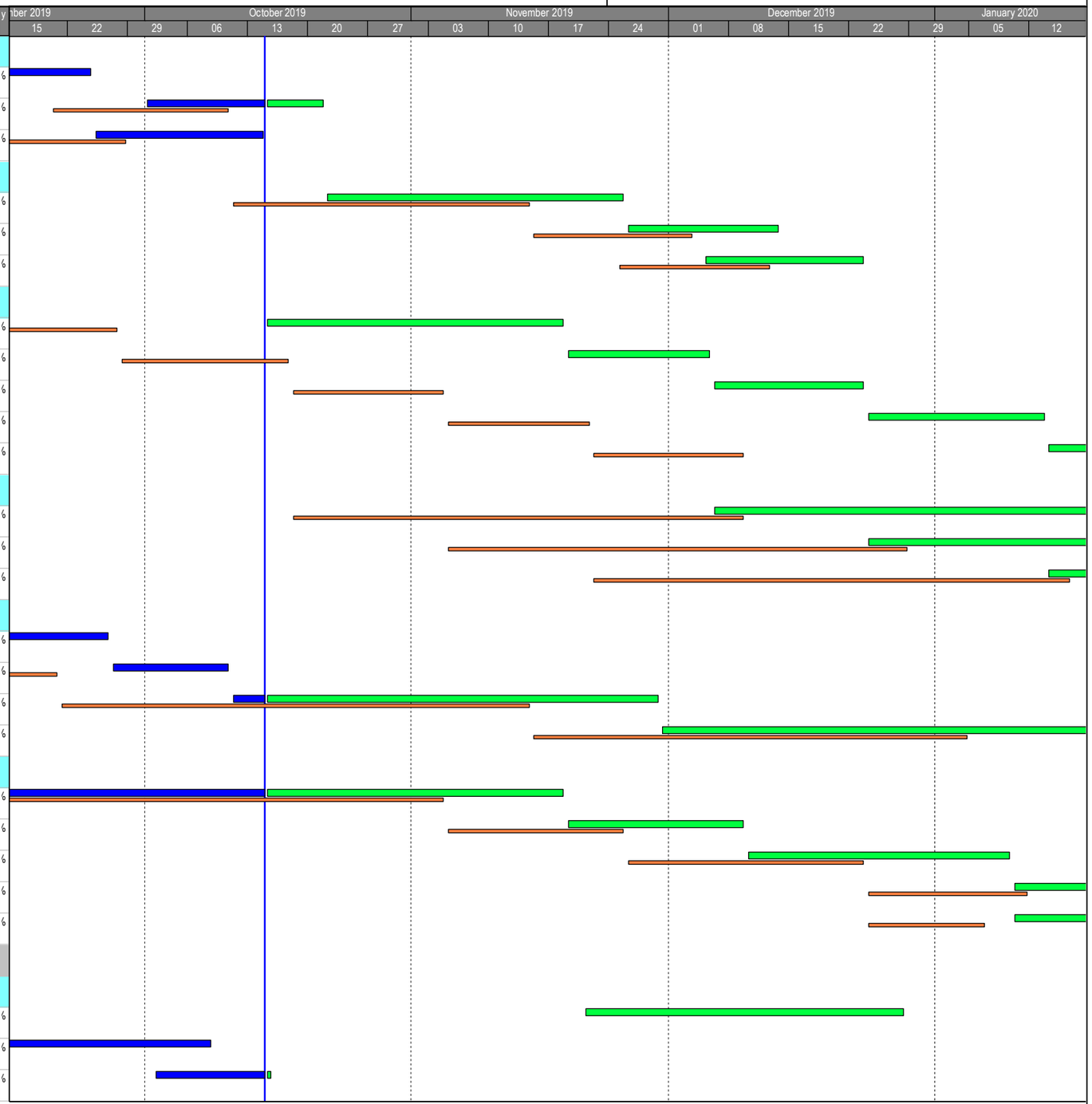

Primary Baseline
Forecast Work
Actual Work
Baseline Milestone
Milestone

## 3 Month Rolling Programme

Anderson Rd Sub-programme (Oct 19)
23-Oct-19

| Date | Revision | Checked | Approved |
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| | | | |
| | | | |
| | | | |

| Activity ID | Activity Name | BL1 Duration | BL1 Start | BL1 Finish | Duration | Start | Finish |
|---|---|---|---|---|---|---|---|
| **Retaining wall Part 6 Bay 1-2)** | | | | | | | |
| ART-1410 | Art retain wall - Part 6 excavation | 14d | 24-Aug-19 08:00 | 09-Sep-19 18:00 | 15d | 06-Sep-19 08:00 A | 24-Sep-19 18:00 A |
| ART-1420 | Art retain wall - Part 6 bay 1 | 16d | 20-Sep-19 08:00 | 10-Oct-19 18:00 | 16d | 01-Oct-19 08:00 A | 21-Oct-19 18:00 |
| ART-1430 | Art retain wall - Part 6 bay 2 | 16d | 10-Sep-19 08:00 | 28-Sep-19 18:00 | 15d | 25-Sep-19 08:00 A | 14-Oct-19 18:00 A |
| **Retaining wall Part 7 Bay 1-2 Wall A)** | | | | | | | |
| ART-1440 | Art retain wall - Part 7 backfill with SRT | 30d | 11-Oct-19 08:00 | 14-Nov-19 18:00 | 30d | 22-Oct-19 08:00 | 25-Nov-19 18:00 |
| ART-1450 | Art retain wall - Part 7 bay 1 | 16d | 15-Nov-19 08:00 | 03-Dec-19 18:00 | 16d | 26-Nov-19 08:00 | 13-Dec-19 18:00 |
| ART-1460 | Art retain wall - Part 7 bay 2 | 16d | 25-Nov-19 08:00 | 12-Dec-19 18:00 | 16d | 05-Dec-19 08:00 | 23-Dec-19 18:00 |
| **Water testing (stem wall)** | | | | | | | |
| ART-1800 | Art retain wall - Preparation work for Test set up | 30d | 23-Aug-19 08:00 | 27-Sep-19 18:00 | 30d | 15-Oct-19 08:00 | 18-Nov-19 18:00 |
| ART-1810 | Art retain wall - Bay 20-28 | 15d | 28-Sep-19 08:00 | 17-Oct-19 18:00 | 15d | 19-Nov-19 08:00 | 05-Dec-19 18:00 |
| ART-1820 | Art retain wall - Bay 10-19 | 15d | 18-Oct-19 08:00 | 04-Nov-19 18:00 | 15d | 06-Dec-19 08:00 | 23-Dec-19 18:00 |
| ART-1830 | Art retain wall - Bay 1-9 | 15d | 05-Nov-19 08:00 | 21-Nov-19 18:00 | 15d | 24-Dec-19 08:00 | 13-Jan-20 18:00 |
| ART-1840 | Art retain wall - Bay 39-46 | 15d | 22-Nov-19 08:00 | 09-Dec-19 18:00 | 15d | 14-Jan-20 08:00 | 03-Feb-20 18:00 |
| **Backfill at back of retaining wall** | | | | | | | |
| ART-1880 | Art retain wall - Bay 20-28 | 45d | 18-Oct-19 08:00 | 09-Dec-19 18:00 | 45d | 06-Dec-19 08:00 | 03-Feb-20 18:00 |
| ART-1890 | Art retain wall - Bay 10-19 | 45d | 05-Nov-19 08:00 | 28-Dec-19 18:00 | 45d | 24-Dec-19 08:00 | 20-Feb-20 18:00 |
| ART-1900 | Art retain wall - Bay 1-9 | 45d | 22-Nov-19 08:00 | 16-Jan-20 18:00 | 45d | 14-Jan-20 08:00 | 09-Mar-20 18:00 |
| **Construction of island** | | | | | | | |
| ART-2000 | Art Lake - Excavation & backfill (+196) | 14d | 15-Aug-19 08:00 | 30-Aug-19 18:00 | 17d | 06-Sep-19 08:00 A | 26-Sep-19 18:00 A |
| ART-2010 | Art Lake - Sub-soil drain, 300mm granular bed, HDPE memberance | 17d | 31-Aug-19 08:00 | 20-Sep-19 18:00 | 10d | 27-Sep-19 08:00 A | 10-Oct-19 18:00 A |
| ART-2020 | Art Lake - Construction of base | 45d | 21-Sep-19 08:00 | 14-Nov-19 18:00 | 43d | 11-Oct-19 08:00 A | 29-Nov-19 18:00 |
| ART-2030 | Art Lake - Construction of wall | 41d | 15-Nov-19 08:00 | 04-Jan-20 18:00 | 41d | 30-Nov-19 08:00 | 20-Jan-20 18:00 |
| **Treatment Plant** | | | | | | | |
| ART-1560 | Treatment plant - Excavation with rock breaking (by open cut) | 60d | 23-Aug-19 08:00 | 04-Nov-19 18:00 | 63d | 03-Sep-19 08:00 A | 18-Nov-19 18:00 |
| ART-1570 | Treatment plant - Construct the base(S3) | 18d | 05-Nov-19 08:00 | 25-Nov-19 18:00 | 18d | 19-Nov-19 08:00 | 09-Dec-19 18:00 |
| ART-1580 | Treatment plant - Construct the wall(W4,5,8,9,15,16,17,10) | 24d | 26-Nov-19 08:00 | 23-Dec-19 18:00 | 24d | 10-Dec-19 08:00 | 09-Jan-20 18:00 |
| ART-1590 | Treatment plant - Construct the Roof (S4) | 14d | 24-Dec-19 08:00 | 11-Jan-20 18:00 | 14d | 10-Jan-20 08:00 | 29-Jan-20 18:00 |
| ART-1600 | Treatment plant - Rockfilling/backfilling(by course material), 5.5m Depth | 9d | 24-Dec-19 08:00 | 06-Jan-20 18:00 | 9d | 10-Jan-20 08:00 | 20-Jan-20 18:00 |
| **Underpass Tunnel** | | | | | | | |
| **Tunnel Permanent Lining** | | | | | | | |
| TUN-3010 | Tunnel Lining Bay 1 CH2389 to CH2395 | 0d | | | 30d | 21-Nov-19 08:00 | 28-Dec-19 08:00 |
| TUN-3090 | Tunnel Lining Bay 11 CH2435 to CH2440 | 0d | | | 38d | 22-Aug-19 08:00 A | 08-Oct-19 18:00 A |
| TUN-3100 | Tunnel Lining Bay 12 CH2440 to CH2446 | 0d | | | 11d | 02-Oct-19 08:00 A | 15-Oct-19 18:00 |

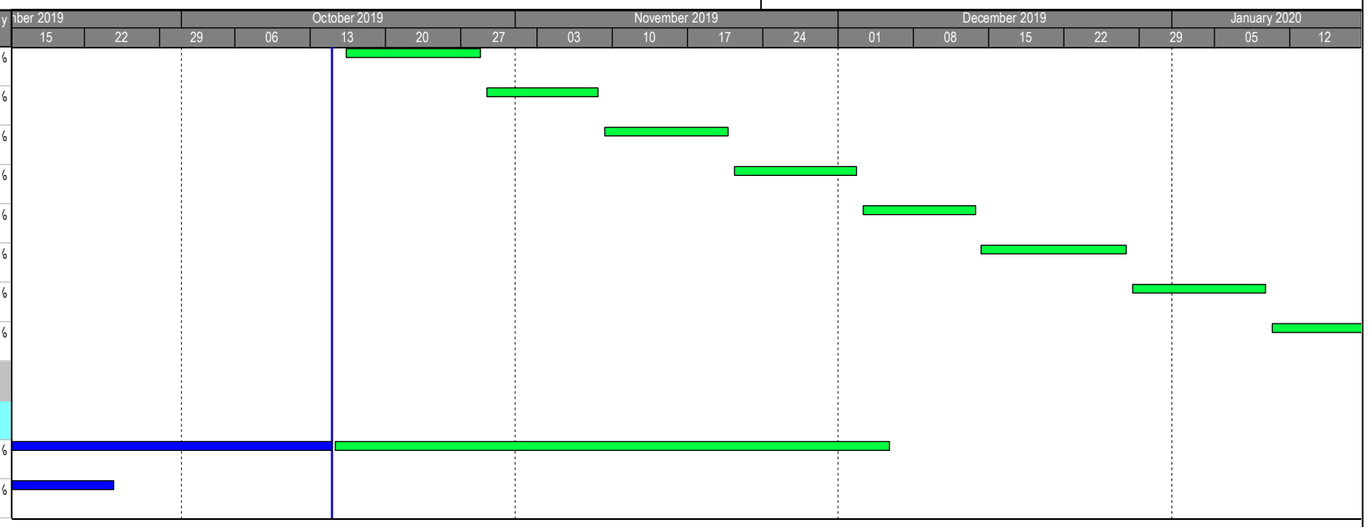



Primary Baseline
Actual Work
Baseline Milestone
Milestone
Forecast Work

**3 Month Rolling Programme**
Anderson Rd Sub-programme (Oct 19)
23-Oct-19

| Date | Revision | Checked | Approved |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| Activity ID | Activity Name | BL1 Duration | BL1 Start | BL1 Finish | Duration | Start | Finish |
|---|---|---|---|---|---|---|---|
| TUN-3110 | Tunnel Lining Bay 13 CH2446 to CH2452 | 0d | | | 11d | 16-Oct-19 08:00 | 28-Oct-19 18:00 |
| TUN-3120 | Tunnel Lining Bay 14 CH2452 to CH2458 | 0d | | | 10d | 29-Oct-19 08:00 | 08-Nov-19 18:00 |
| TUN-3130 | Tunnel Lining Bay 15 CH2458 to CH2463 | 0d | | | 10d | 09-Nov-19 08:00 | 20-Nov-19 18:00 |
| TUN-3140 | Tunnel Lining Bay 16 CH2463 to CH2469 | 0d | | | 10d | 21-Nov-19 08:00 | 02-Dec-19 18:00 |
| TUN-3150 | Tunnel Lining Bay 17 CH2469 to CH2475 | 0d | | | 10d | 03-Dec-19 08:00 | 13-Dec-19 18:00 |
| TUN-3160 | Tunnel Lining Bay 18 CH2475 to CH2481 | 0d | | | 10d | 14-Dec-19 08:00 | 27-Dec-19 18:00 |
| TUN-3170 | Tunnel Lining Bay 19 CH2481 to CH2487 | 0d | | | 10d | 28-Dec-19 08:00 | 09-Jan-20 18:00 |
| TUN-3180 | Tunnel Lining Bay 20 CH2487 to CH2493 | 0d | | | 10d | 10-Jan-20 08:00 | 21-Jan-20 18:00 |
| **Road L4 (RWA18, Noise Barrier, RWA12, Utilities & Road Works)** | | | | | | | |
| **Retaining Wall RWA12** | | | | | | | |
| L4-3440 | L4 (RWA12) - Bay 17-20 construct wall & backfill upto +165 | 0d | | | 101d | 07-Aug-19 08:00 A | 05-Dec-19 18:00 |
| L4-3620 | L4 (RWA12) - Bay 21 construct wall & backfill upto +164 | 0d | | | 37d | 12-Aug-19 08:00 A | 24-Sep-19 18:00 A |




Primary Baseline
Actual Work
Baseline Milestone
Milestone
Forecast Work

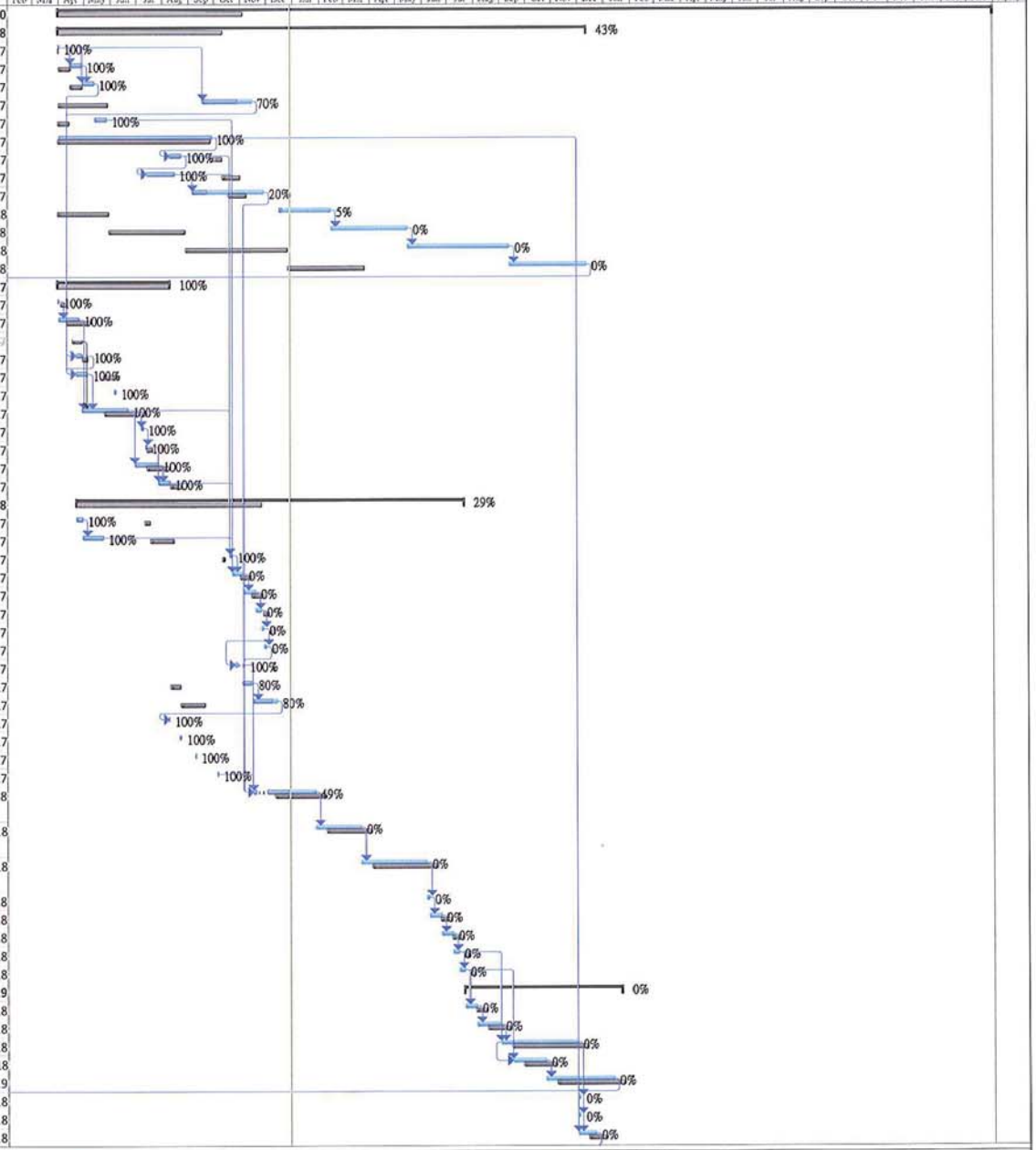
**3 Month Rolling Programme**
Anderson Rd Sub-programme (Oct 19)
23-Oct-19

| Date | Revision | Checked | Approved |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

# Contract 2 (NE/2016/05)

Revised programme for Section A-E1_Dec 17

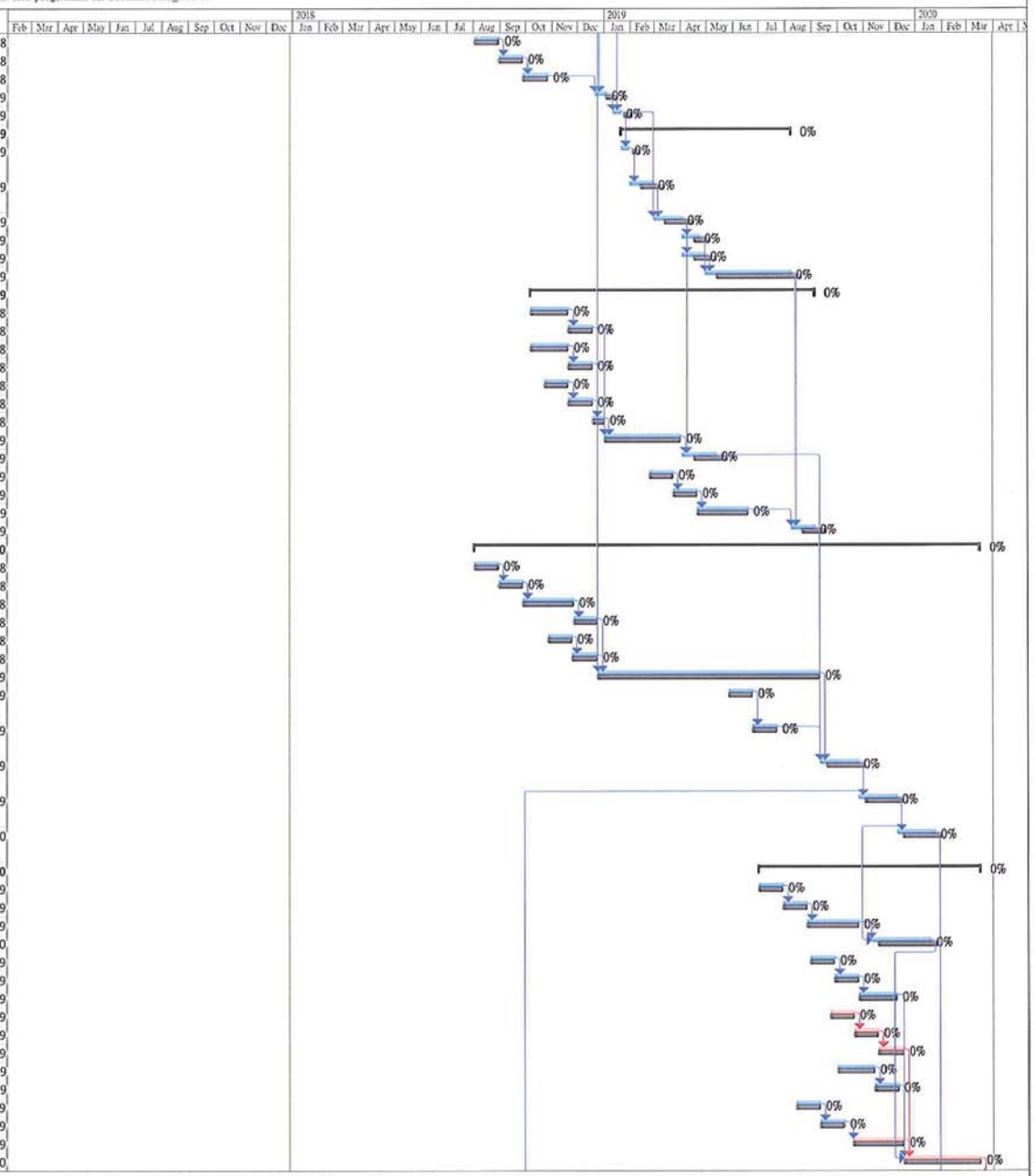
| ITEM | ID | Task Name | Duration | Remaining Duration | Start | Finish |
|---|---|---|---|---|---|---|
| 1 | A.1.1 | **Section A, Portion 1 - Escalator (E1)** | **1096 days** | **986.55 days** | **Fri 31/3/17** | **Mon 30/3/20** |
| 2 | A.1.1.1 | **Pre Construction Works** | **620 days** | **354.65 days** | **Fri 31/3/17** | **Mon 10/12/18** |
| 3 | A.1.1.1.1 | Access Date for Portion 1 | 1 day | 0 days | Fri 31/3/17 | Fri 31/3/17 |
| 4 | A.1.1.1.2 | Site Clearance | 14 days | 0 days | Fri 14/4/17 | Thu 27/4/17 |
| 5 | A.1.1.1.3 | Site Condition Survey | 14 days | 0 days | Fri 28/4/17 | Thu 11/5/17 |
| 6 | A.1.1.1.4 | Initial site survey and submission | 58 days | 17.4 days | Sun 17/9/17 | Mon 13/11/17 |
| 7 | 1.1.5 | Carry out Tree Survey and Report Submission | 14 days | 0 days | Sat 13/5/17 | Fri 26/5/17 |
| 8 | A.1.1.1.5 | Application for Excavation Permit (XP) | 180 days | 0 days | Sat 1/4/17 | Wed 27/9/17 |
| 9 | A.1.1.1.7 | Implement TTA at Hiu Ming Street/Hiu Kwong Street | 14 days | 0 days | Wed 9/8/17 | Tue 22/8/17 |
| 10 | A.1.1.1.8 | Erection of Hoarding | 33 days | 0 days | Thu 13/7/17 | Mon 14/8/17 |
| 11 | A.1.1.1.9 | Tree Fell | 84 days | 67.2 days | Tue 5/9/17 | Mon 27/11/17 |
| 12 | A.1.1.1.10 | Design submission of Escalator | 60 days | 57 days | Sat 16/12/17 | Tue 13/2/18 |
| 13 | A.1.1.1.11 | Comment of design submission of Escalator | 90 days | 90 days | Wed 14/2/18 | Mon 14/5/18 |
| 14 | 1.1.12 | Second design submission of Escalator | 120 days | 120 days | Tue 15/5/18 | Tue 11/9/18 |
| 15 | 1.1.13 | Approval of design submission of Escalator | 90 days | 90 days | Wed 12/9/18 | Mon 10/12/18 |
| 16 | A.1.1.2 | **Ground Investigation** | **132 days** | **0 days** | **Fri 31/3/17** | **Wed 9/8/17** |
| 17 | A.1.1.2.1 | Proposal of ground investigation specialist | 1 day | 0 days | Fri 31/3/17 | Fri 31/3/17 |
| 18 | A.1.1.2.2 | Approval of ground investigation specialist | 24 days | 0 days | Sat 1/4/17 | Mon 24/4/17 |
| 19 | ~~A.1.1.2.3~~ | ~~Submission of Construction impact assessment~~ | ~~12 days~~ | ~~12 days~~ | ~~Mon 17/4/17~~ | ~~Fri 28/4/17~~ |
| 20 | A.1.1.2.4 | Establishment of Drilling rigs | 7 days | 0 days | Fri 21/4/17 | Fri 5/5/17 |
| 21 | A.1.1.2.5 | Inspection Pits (10 nr) | 14 days | 0 days | Fri 21/4/17 | Thu 4/5/17 |
| 22 | 1.2.6 | Additional Inspection Pit ( PMI 1 & PMI 2) | 2 days | 0 days | Mon 5/6/17 | Tue 6/6/17 |
| 23 | A.1.1.2.6 | Predrilling (10 nr) | 54 days | 0 days | Fri 28/4/17 | Tue 20/6/17 |
| 24 | 1.2.8 | Additional Pre-drilling ( PMI 3) | 2 days | 0 days | Fri 7/7/17 | Sat 8/7/17 |
| 25 | A.1.1.2.7 | Demobilization of Drilling rigs | 1 day | 0 days | Wed 12/7/17 | Wed 12/7/17 |
| 26 | A.1.1.2.8 | In-situ testing and result submission | 28 days | 0 days | Thu 29/6/17 | Wed 26/7/17 |
| 27 | A.1.1.2.9 | Laboratory tests | 14 days | 0 days | Thu 27/7/17 | Wed 9/8/17 |
| 28 | A.1.1.3 | **Piling Works (Pr-bored Socket H-Pile)** | **454.4 days** | **322.53 days** | **Sat 22/4/17** | **Fri 20/7/18** |
| 29 | A.1.1.3.1 | Proposal of Piling Specialist | 7 days | 0 days | Sat 22/4/17 | Fri 28/4/17 |
| 30 | A.1.1.3.2 | Approval of Piling Specialist | 24 days | 0 days | Sat 29/4/17 | Mon 22/5/17 |
| 31 | A.1.1.3.3 | Establishment of Piling rigs (1 nr) | 3 days | 0 days | Thu 19/10/17 | Sat 21/10/17 |
| 32 | A.1.1.3.4 | Construction of Preliminary Pile (1 nr) | 13 days | 13 days | Sun 22/10/17 | Fri 3/11/17 |
| 33 | A.1.1.3.5 | Establishment of pile testing equipment | 14 days | 14 days | Sat 4/11/17 | Fri 17/11/17 |
| 34 | A.1.1.3.6 | Load Test Preliminary Pile (1 nr) | 7 days | 7 days | Sat 18/11/17 | Fri 24/11/17 |
| 35 | A.1.1.3.7 | Submission of Load Test Report (Preliminary Pile) | 3 days | 3 days | Sat 25/11/17 | Mon 27/11/17 |
| 36 | A.1.1.3.8 | Review of Load Test result | 3 days | 3 days | Tue 28/11/17 | Thu 30/11/17 |
| 37 | A.1.1.3.9 | Establishment of Piling rigs (1 nr) | 3 days | 0 days | Wed 25/10/17 | Sat 4/11/17 |
| 38 | A.1.1.3.10 | Submission of temporary working platform design | 12 days | 2.4 days | Fri 3/11/17 | Tue 14/11/17 |
| 39 | A.1.1.3.11 | Approval of temporary working platform design | 28 days | 5.6 days | Wed 15/11/17 | Tue 12/12/17 |
| 40 | A.1.1.3.11a | CCTV on uncharted Manhole (PMI 12) | 1 day | 0 days | Tue 8/8/17 | Tue 8/8/17 |
| 41 | A.1.1.3.11b | Demolition of Uncharted Manhole (PMI 15) | 2 days | 0 days | Mon 21/8/17 | Tue 22/8/17 |
| 42 | A.1.1.2.11c | Revised Pile Loading Schedule (PMI 17) | 1 day | 0 days | Fri 8/9/17 | Fri 8/9/17 |
| 43 | A.1.1.2.11d | Pile Sleeve Not Required For E1-RS1 & E1-PC1 (PMI 19) | 1 day | 0 days | Wed 4/10/17 | Wed 4/10/17 |
| 44 | A.1.1.3.12 | Construction of Main Pile for pile cap E1-RS1 and E1-PC1(34nrs) | 60 days | 30.4 days | Wed 15/11/17 | Fri 26/1/18 |
| 45 | A.1.1.3.13 | Construction of main pile for pile cap E1 PC6 and E1-PC5 (30 nrs) | 53 days | 53 days | Fri 26/1/18 | Tue 20/3/18 |
| 46 | A.1.1.3.14 | Construction of main pile for pile cap E1 PC2, E1 PC3 and E1 PC4 (44nrs) | 77 days | 77 days | Tue 20/3/18 | Tue 5/6/18 |
| 47 | A.1.1.3.15 | Establishment of Drilling rigs for proof drill (1 nr) | 3 days | 3 days | Tue 5/6/18 | Fri 8/6/18 |
| 48 | A.1.1.3.16 | Selection and Carry out Proof drill (2 nrs) | 14 days | 14 days | Fri 8/6/18 | Fri 22/6/18 |
| 49 | A.1.1.3.17 | Establishment of pile testing equipment | 14 days | 14 days | Fri 22/6/18 | Fri 6/7/18 |
| 50 | A.1.1.3.18 | Selection and Carry Out Load Test Main Pile (1 nr) | 7 days | 7 days | Fri 6/7/18 | Fri 13/7/18 |
| 51 | A.1.1.3.19 | Submission of Load Test Report (Main Pile) | 7 days | 7 days | Fri 13/7/18 | Fri 20/7/18 |
| 52 | A.1.1.4 | **Pile Cap & Footing** | **184 days** | **184 days** | **Fri 20/7/18** | **Sun 20/1/19** |
| 53 | A.1.1.4.1 | Submission of temporary works for ELS | 14 days | 14 days | Fri 20/7/18 | Fri 3/8/18 |
| 54 | A.1.1.4.2 | Approval of temporary works for ELS | 28 days | 28 days | Fri 3/8/18 | Fri 31/8/18 |
| 55 | A.1.1.4.3 | Installing ELS Works | 90 days | 90 days | Fri 31/8/18 | Thu 29/11/18 |
| 56 | A.1.1.4.4 | Pile cap (E1-PC1 and E1-PC2 ) | 39 days | 39 days | Fri 14/9/18 | Tue 23/10/18 |
| 57 | A.1.1.4.5 | Pile Cap (E1-PC3 ~ PC6) | 79 days | 79 days | Tue 23/10/18 | Thu 10/1/19 |
| 58 | A.1.1.4.5a | Interface detail E1-RS1 (PMI 30) | 3 days | 3 days | Thu 29/11/18 | Sun 2/12/18 |
| 59 | A.1.1.4.5b | Water Pipe Diversion (PMI 16) | 3 days | 3 days | Thu 29/11/18 | Sun 2/12/18 |
| 60 | A.1.1.4.6 | Retaining structure (E1-RS1) | 21 days | 21 days | Thu 29/11/18 | Thu 20/12/18 |




Critical, Critical Split, Critical Progress, Task, Split, Task Progress, Manual Task, Start-only, Finish-only, Duration-only, Baseline, Baseline Split, Baseline Milestone, Milestone, Summary Progress, Summary, Manual Summary, Project Summary, External Tasks, External Milestone, Inactive Task, Inactive Milestone, Inactive Summary, Deadline

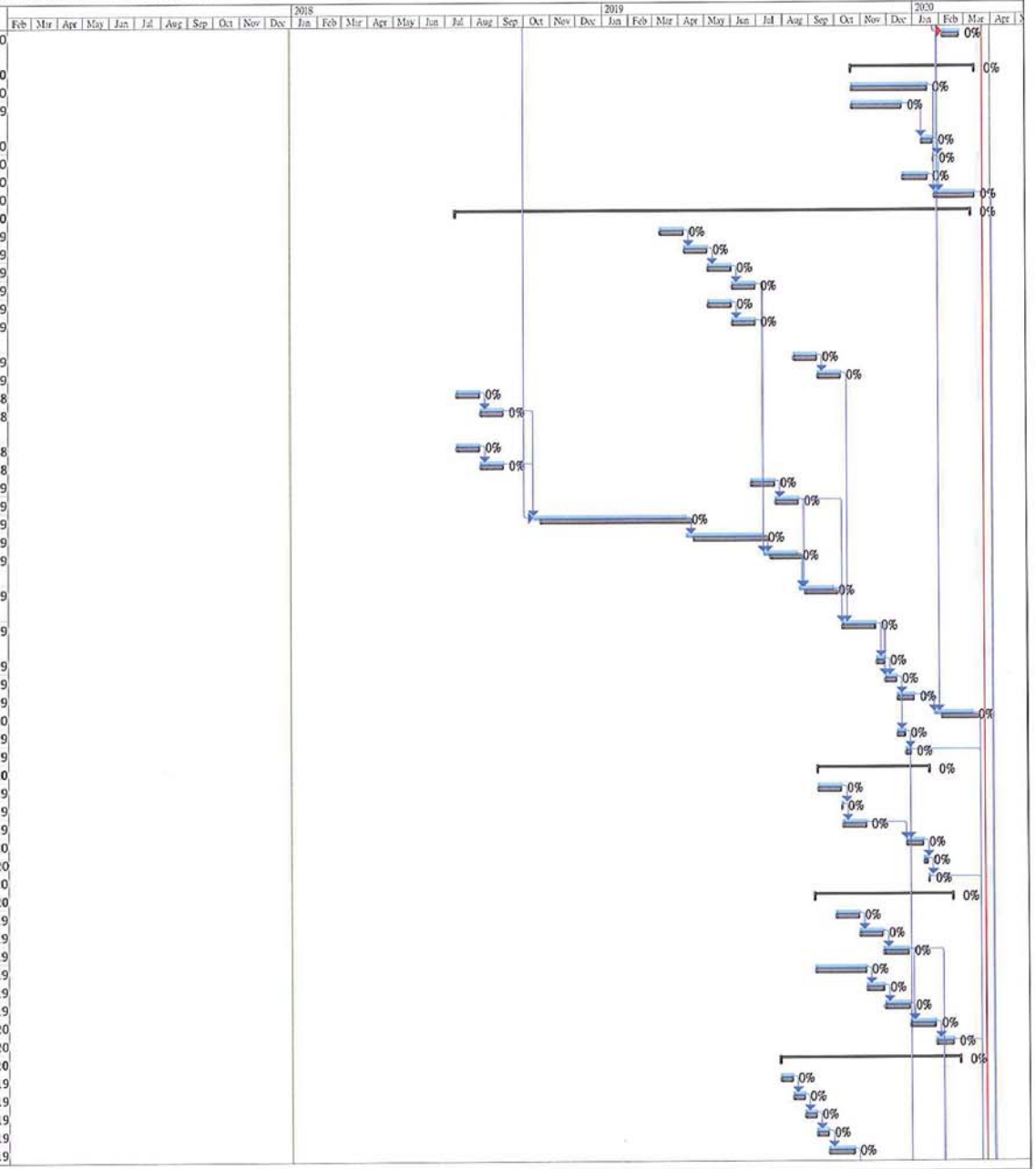
Revised programme for Section A-E1_Dec 17

| ITEM | ID | Task Name | Duration | Remaining Duration | Start | Finish |
|---|---|---|---|---|---|---|
| 61 | A.1.1.4.7 | Material submission of water proofing works | 28 days | 28 days | Thu 2/8/18 | Wed 29/8/18 |
| 62 | A.1.1.4.8 | Approval of material of water proofing wroks | 28 days | 28 days | Thu 30/8/18 | Wed 26/9/18 |
| 63 | A.1.1.4.9 | Procurement to delivery of water proofing material | 30 days | 30 days | Thu 27/9/18 | Fri 26/10/18 |
| 64 | A.1.1.4.10 | Waterproofing Works | 14 days | 14 days | Thu 20/12/18 | Thu 3/1/19 |
| 65 | A.1.1.4.11 | Backfilling | 10 days | 10 days | Thu 10/1/19 | Sun 20/1/19 |
| **66** | **A.1.1.5** | **Superstructures** | **199 days** | **199 days** | **Sun 20/1/19** | **Wed 7/8/19** |
| 67 | A.1.1.5.1 | Submission of temporary work design and method for piers construction | 10 days | 10 days | Sun 20/1/19 | Wed 30/1/19 |
| 68 | A.1.1.5.2 | Approval to temporary works design and method for piers construction | 28 days | 28 days | Wed 30/1/19 | Wed 27/2/19 |
| 69 | A.1.1.5.3 | Construction of piers (E1-P1 ~ P5) | 34 days | 34 days | Wed 27/2/19 | Tue 2/4/19 |
| 70 | A.1.1.5.4 | Conatruction of Ramp Structures | 20 days | 20 days | Tue 2/4/19 | Mon 22/4/19 |
| 71 | A.1.1.5.5 | Construction of Abutment (E1-PC6) | 27 days | 27 days | Tue 2/4/19 | Mon 29/4/19 |
| 72 | A.1.1.5.6 | Construction of deck slab with cast in items | 100 days | 100 days | Mon 29/4/19 | Wed 7/8/19 |
| **73** | **A.1.1.6** | **Construction of Bearings and Movement Joints** | **333.4 days** | **333.4 days** | **Sat 6/10/18** | **Wed 4/9/19** |
| 74 | A.1.1.6.1 | Proposal of Bridge Bearing Specialist | 45 days | 45 days | Sat 6/10/18 | Mon 19/11/18 |
| 75 | A.1.1.6.2 | Approval of Bridge Bearing Specialist | 28 days | 28 days | Tue 20/11/18 | Mon 17/12/18 |
| 76 | A.1.1.6.3 | Design submission of Bridge Bearing | 45 days | 45 days | Sat 6/10/18 | Mon 19/11/18 |
| 77 | A.1.1.6.4 | Approval of design submission of Bridge bearing | 28 days | 28 days | Tue 20/11/18 | Mon 17/12/18 |
| 78 | A.1.1.6.5 | Material submission of Bridge Bearing | 28 days | 28 days | Tue 23/10/18 | Mon 19/11/18 |
| 79 | A.1.1.6.6 | Approval of material submission to Bridge Bearing | 28 days | 28 days | Tue 20/11/18 | Mon 17/12/18 |
| 80 | A.1.1.6.7 | Testing and submission of result of Bridge Bearing | 14 days | 14 days | Tue 18/12/18 | Mon 31/12/18 |
| 81 | A.1.1.6.8 | Procurement and delivery of Bridge Bearing | 90 days | 90 days | Tue 1/1/19 | Sun 31/3/19 |
| 82 | A.1.1.6.9 | Installation of Bearings (6 nr) | 40 days | 40 days | Tue 2/4/19 | Sun 12/5/19 |
| 83 | A.1.1.6.10 | Material submission of movement joints | 28 days | 28 days | Sat 23/2/19 | Fri 22/3/19 |
| 84 | A.1.1.6.11 | Approval of material submission of movement joints | 28 days | 28 days | Sat 23/3/19 | Fri 19/4/19 |
| 85 | A.1.1.6.12 | Procurement to delivery of movement joints | 60 days | 60 days | Sat 20/4/19 | Tue 18/6/19 |
| 86 | A.1.1.6.13 | Construction of MJ (3 nr) | 28 days | 28 days | Wed 7/8/19 | Wed 4/9/19 |
| **87** | **A.1.1.7** | **Installation of Escalators (E1-ES01 to ES-12)** | **592 days** | **592 days** | **Thu 2/8/18** | **Sun 15/3/20** |
| 88 | A.1.1.7.1 | Proposal of Escalator Specialist | 28 days | 28 days | Thu 2/8/18 | Wed 29/8/18 |
| 89 | A.1.1.7.2 | Approval of Escalator Specialist | 28 days | 28 days | Thu 30/8/18 | Wed 26/9/18 |
| 90 | A.1.1.7.3 | Submission of Escalator E&M (SEM) | 60 days | 60 days | Thu 27/9/18 | Sun 25/11/18 |
| 91 | A.1.1.7.4 | Approval of Escalator E&M (SEM) | 28 days | 28 days | Mon 26/11/18 | Sun 23/12/18 |
| 92 | A.1.1.7.5 | Material submission of escalator | 28 days | 28 days | Sat 27/10/18 | Fri 23/11/18 |
| 93 | A.1.1.7.6 | Approval of material submission of escalator | 30 days | 30 days | Sat 24/11/18 | Sun 23/12/18 |
| 94 | A.1.1.7.7 | Procurement to delivery of escalator | 260 days | 260 days | Mon 24/12/18 | Mon 9/9/19 |
| 95 | A.1.1.7.8 | Submission of method statement for installation of escalator | 28 days | 28 days | Mon 27/5/19 | Sun 23/6/19 |
| 96 | A.1.1.7.9 | Approval of method statement for installation of escalator | 28 days | 28 days | Mon 24/6/19 | Sun 21/7/19 |
| 97 | A.1.1.7.10 | Installation of escalators and associate works (E1-RS1 to E1-P2) | 45 days | 45 days | Tue 10/9/19 | Thu 24/10/19 |
| 98 | A.1.1.7.11 | Installation of escalator and associate works (E1-P2 to E1 P4) | 45 days | 45 days | Fri 25/10/19 | Sun 8/12/19 |
| 99 | A.1.1.7.12 | Escalator Installation and associate works (E1-P4 to E1-ABT) | 45 days | 45 days | Mon 9/12/19 | Wed 22/1/20 |
| **100** | **A.1.1.7.13** | **Parapet and Roofing** | **259 days** | **259 days** | **Mon 1/7/19** | **Sun 15/3/20** |
| 101 | A.1.1.7.14 | Material submission of Plexiglass | 28 days | 28 days | Mon 1/7/19 | Sun 28/7/19 |
| 102 | A.1.1.7.15 | Approval of material of Plexiglass | 28 days | 28 days | Mon 29/7/19 | Sun 25/8/19 |
| 103 | A.1.1.7.16 | Procurement to delivery of Plexiglass | 60 days | 60 days | Mon 26/8/19 | Thu 24/10/19 |
| 104 | A.1.1.7.17 | Construction of pedestrian Plexiglass parapet | 70 days | 70 days | Sat 9/11/19 | Fri 17/1/20 |
| 105 | A.1.1.7.18 | Material submission of fall arrest system | 28 days | 28 days | Fri 30/8/19 | Thu 26/9/19 |
| 106 | A.1.1.7.19 | Approval of material of fall arrrest system | 28 days | 28 days | Fri 27/9/19 | Thu 24/10/19 |
| 107 | A.1.1.7.20 | Procurement of fall arrest system | 45 days | 45 days | Fri 25/10/19 | Sun 8/12/19 |
| 108 | A.1.1.7.21 | Material submission of corrugated steel roof | 28 days | 28 days | Sun 22/9/19 | Sat 19/10/19 |
| 109 | A.1.1.7.22 | Approval of material for corrugated steel roof | 28 days | 28 days | Sun 20/10/19 | Sat 16/11/19 |
| 110 | A.1.1.7.23 | Procurement of corrugated steel roof | 30 days | 30 days | Sun 17/11/19 | Mon 16/12/19 |
| 111 | A.1.1.7.24 | Design submission of roof system | 44 days | 44 days | Mon 30/9/19 | Tue 12/11/19 |
| 112 | A.1.1.7.25 | Approval of design submission of roof system | 28 days | 28 days | Wed 13/11/19 | Tue 10/12/19 |
| 113 | A.1.1.7.26 | Proposal of off site fabrication of steelworks | 28 days | 28 days | Tue 13/8/19 | Mon 9/9/19 |
| 114 | A.1.1.7.27 | Approval of off site fabrication of steelworks | 28 days | 28 days | Tue 10/9/19 | Mon 7/10/19 |
| 115 | A.1.1.7.28 | Fabrication of steelworks | 60 days | 60 days | Fri 18/10/19 | Mon 16/12/19 |
| 116 | A.1.1.7.29 | Erect Canopy and roofing system | 90 days | 90 days | Tue 17/12/19 | Sun 15/3/20 |




Critical
Critical Split
Critical Progress
Task
Split
Task Progress
Manual Task
Start-only
Finish-only
Duration-only
Baseline
Baseline Split
Baseline Milestone
Milestone
Summary Progress
Summary
Manual Summary
Project Summary
External Tasks
External Milestone
Inactive Task
Inactive Milestone
Inactive Summary
Deadline

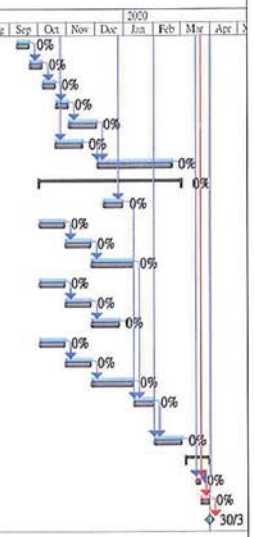
| ITEM | ID | Task Name | Duration | Remaining Duration | Start | Finish |
|---|---|---|---|---|---|---|
| 117 | A.1.1.7.30 | Decking construction connecting to existing footpath | 20 days | 20 days | Tue 4/2/20 | Sun 23/2/20 |
| **118** | **A.1.1.8** | **Drainage works construction** | **145 days** | **145 days** | **Sun 20/10/19** | **Thu 12/3/20** |
| 119 | A.1.1.8.1 | Application of XP for carriageway of Hiu Ming Street | 90 days | 90 days | Sun 20/10/19 | Fri 17/1/20 |
| 120 | A.1.1.8.2 | TTA application for drainage works at carriageway of Hiu Ming Street | 60 days | 60 days | Sun 20/10/19 | Wed 18/12/19 |
| 121 | A.1.1.8.3 | Road works advice | 14 days | 14 days | Fri 10/1/20 | Thu 23/1/20 |
| 122 | A.1.1.8.4 | Implementation of TTA | 1 day | 1 day | Fri 24/1/20 | Fri 24/1/20 |
| 123 | A.1.1.8.5 | Procurement to delivery of material of drainage | 30 days | 30 days | Thu 19/12/19 | Fri 17/1/20 |
| 124 | A.1.1.8.6 | Construction of drainage | 48 days | 48 days | Sat 25/1/20 | Thu 12/3/20 |
| **125** | **A.1.1.9** | **E & M Works** | **605 days** | **605 days** | **Thu 12/7/18** | **Sat 7/3/20** |
| 126 | A.1.1.9.1 | Proposal of Specialist for E&M works | 28 days | 28 days | Sat 9/3/19 | Fri 5/4/19 |
| 127 | A.1.1.9.2 | Approval of Specialist for E&M works | 28 days | 28 days | Sat 6/4/19 | Fri 3/5/19 |
| 128 | A.1.1.9.3 | Material submission of cable tray | 28 days | 28 days | Sat 4/5/19 | Fri 31/5/19 |
| 129 | A.1.1.9.4 | Approval of material submission of cable tray | 28 days | 28 days | Sat 1/6/19 | Fri 28/6/19 |
| 130 | A.1.1.9.5 | Material submission of cables,conduits, fittings | 28 days | 28 days | Sat 4/5/19 | Fri 31/5/19 |
| 131 | A.1.1.9.6 | Approval of material submission of cables, conduits, fittings | 28 days | 28 days | Sat 1/6/19 | Fri 28/6/19 |
| 132 | A.1.1.9.7 | Material submission of lightings | 28 days | 28 days | Mon 12/8/19 | Sun 8/9/19 |
| 133 | A.1.1.9.8 | Approval of material submission of lightings | 28 days | 28 days | Mon 9/9/19 | Sun 6/10/19 |
| 134 | A.1.1.9.9 | Material submission of pillar box c/w accessories | 28 days | 28 days | Thu 12/7/18 | Wed 8/8/18 |
| 135 | A.1.1.9.10 | Approval of material submission of pillar box c/w accessories | 28 days | 28 days | Thu 9/8/18 | Wed 5/9/18 |
| 136 | A.1.1.9.11 | Material submission of MCB distribution board | 28 days | 28 days | Thu 12/7/18 | Wed 8/8/18 |
| 137 | A.1.1.9.12 | Approval of MCB distribution board | 28 days | 28 days | Thu 9/8/18 | Wed 5/9/18 |
| 138 | A.1.1.9.13 | Material submission of communication cables | 28 days | 28 days | Sun 23/6/19 | Sat 20/7/19 |
| 139 | A.1.1.9.14 | Approval of communication cables | 28 days | 28 days | Sun 21/7/19 | Sat 17/8/19 |
| 140 | A.1.1.9.15 | Positioning,/Construction/Installation of Pillar Box | 180 days | 180 days | Wed 10/10/18 | Sun 7/4/19 |
| 141 | A.1.1.9.16 | Application of Power Supply | 90 days | 90 days | Mon 8/4/19 | Sat 6/7/19 |
| 142 | A.1.1.9.17 | Trenching works and laying of ducting and power cables | 40 days | 40 days | Sun 7/7/19 | Thu 15/8/19 |
| 143 | A.1.1.9.18 | Trenching works and laying of telecommunication cables | 40 days | 40 days | Sun 18/8/19 | Thu 26/9/19 |
| 144 | A.1.1.9.19 | Trenching works and laying of lighting/communication cables | 40 days | 40 days | Mon 7/10/19 | Fri 15/11/19 |
| 145 | A.1.1.9.20 | Connection of Telecommunication cables | 10 days | 10 days | Sat 16/11/19 | Mon 25/11/19 |
| 146 | A.1.1.9.21 | Lighting/Communication connections | 14 days | 14 days | Tue 26/11/19 | Mon 9/12/19 |
| 147 | A.1.1.9.22 | Finishing Works | 21 days | 21 days | Tue 10/12/19 | Mon 30/12/19 |
| 148 | A.1.1.9.23 | T&C of Escalator and Submission of Form LE5 to EMSD | 45 days | 45 days | Thu 23/1/20 | Sat 7/3/20 |
| 149 | A.1.1.9.24 | Reinstatement of footpath/stair | 10 days | 10 days | Tue 10/12/19 | Thu 19/12/19 |
| 150 | A.1.1.9.25 | Demobilization and Clean up the Site | 7 days | 7 days | Fri 20/12/19 | Thu 26/12/19 |
| **151** | **A.1.1.10** | **Landscaping Works** | **131 days** | **131 days** | **Sun 8/9/19** | **Thu 16/1/20** |
| 152 | A.1.1.10.1 | Submission of proposal of Landscape specialist | 28 days | 28 days | Sun 8/9/19 | Sat 5/10/19 |
| 153 | A.1.1.10.2 | Nursery Inspection | 1 day | 1 day | Sun 6/10/19 | Sun 6/10/19 |
| 154 | A.1.1.10.3 | Approval of proposal of Landscape specialist | 28 days | 28 days | Mon 7/10/19 | Sun 3/11/19 |
| 155 | A.1.1.10.4 | Construction of hard and soft Landscape works | 21 days | 21 days | Fri 20/12/19 | Thu 9/1/20 |
| 156 | A.1.1.10.5 | Rectification of detects | 5 days | 5 days | Fri 10/1/20 | Tue 14/1/20 |
| 157 | A.1.1.10.6 | General tidy up | 2 days | 2 days | Wed 15/1/20 | Thu 16/1/20 |
| **158** | **A.1.1.11** | **Road and Pavings / traffic Signs** | **162 days** | **162 days** | **Wed 4/9/19** | **Wed 12/2/20** |
| 159 | A.1.1.11.1 | Material submission of road pavers | 28 days | 28 days | Sat 28/9/19 | Fri 25/10/19 |
| 160 | A.1.1.11.2 | Approval of material submission of road pavers | 28 days | 28 days | Sat 26/10/19 | Fri 22/11/19 |
| 161 | A.1.1.11.3 | Procurement to delivery of road pavers | 30 days | 30 days | Sat 23/11/19 | Sun 22/12/19 |
| 162 | A.1.1.11.4 | Ordering to delivery of concrete kerbs from CSD | 60 days | 60 days | Wed 4/9/19 | Sat 2/11/19 |
| 163 | A.1.1.11.5 | Construction of kerbs | 21 days | 21 days | Sun 3/11/19 | Sat 23/11/19 |
| 164 | A.1.1.11.6 | Construction of footpath | 30 days | 30 days | Sun 24/11/19 | Mon 23/12/19 |
| 165 | A.1.1.11.7 | Construction of paved area | 30 days | 30 days | Tue 24/12/19 | Wed 22/1/20 |
| 166 | A.1.1.11.8 | Installation of traffic/Directional Signs | 21 days | 21 days | Thu 23/1/20 | Wed 12/2/20 |
| **167** | **A.1.1.12** | **External Finishes** | **211 days** | **211 days** | **Thu 25/7/19** | **Thu 20/2/20** |
| 168 | A.1.1.12.1 | Material submission of tiles | 14 days | 14 days | Thu 25/7/19 | Wed 7/8/19 |
| 169 | A.1.1.12.2 | Comment of material submission of tiles | 14 days | 14 days | Thu 8/8/19 | Wed 21/8/19 |
| 170 | A.1.1.12.3 | 2nd submission of material of tiles | 14 days | 14 days | Thu 22/8/19 | Wed 4/9/19 |
| 171 | A.1.1.12.4 | Approval of material of tiles | 14 days | 14 days | Thu 5/9/19 | Wed 18/9/19 |
| 172 | A.1.1.12.5 | Procurement to delivery of tiles | 30 days | 30 days | Thu 19/9/19 | Fri 18/10/19 |




Critical, Critical Split, Critical Progress, Task, Split, Task Progress, Manual Task, Start-only, Finish-only, Duration-only, Baseline, Baseline Split, Baseline Milestone, Milestone, Summary Progress, Summary, Manual Summary, Project Summary, External Tasks, External Milestone, Inactive Task, Inactive Milestone, Inactive Summary, Deadline

Revised programme for Section A-E1_Dec 17

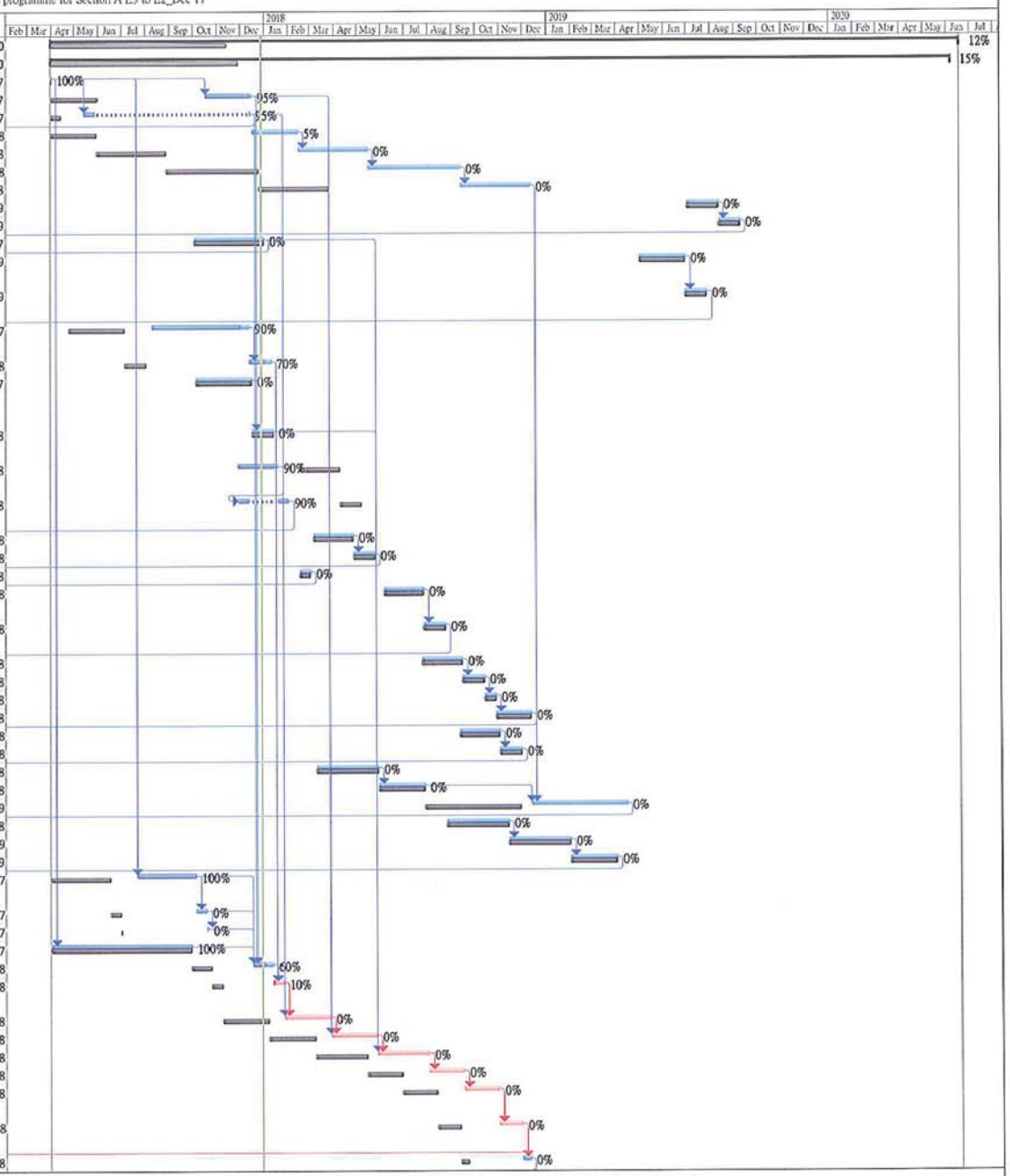
| ITEM | ID | Task Name | Duration | Remaining Duration | Start | Finish |
|---|---|---|---|---|---|---|
| 173 | A.1.1.12.6 | Material submission of paint | 14 days | 14 days | Sun 8/9/19 | Sat 21/9/19 |
| 174 | A.1.1.12.7 | Comment of matreial submission of paint | 14 days | 14 days | Sun 22/9/19 | Sat 5/10/19 |
| 175 | A.1.1.12.8 | 2nd submission of paints | 14 days | 14 days | Sun 6/10/19 | Sat 19/10/19 |
| 176 | A.1.1.12.9 | Approval of material submission of paints | 14 days | 14 days | Sun 20/10/19 | Sat 2/11/19 |
| 177 | A.1.1.12.10 | Procurement to delivery of paints | 30 days | 30 days | Sun 3/11/19 | Mon 2/12/19 |
| 178 | A.1.1.12.11 | Construction of Tactile/Cermaric/Concrete Tiles | 30 days | 30 days | Sat 19/10/19 | Sun 17/11/19 |
| 179 | A.1.1.12.12 | Texture Spray/Fungus Resistant Paint | 80 days | 80 days | Tue 3/12/19 | Thu 20/2/20 |
| **180** | **A.1.1.13** | **Construction of Sau Mau Ping Memorial Park** | **152 days** | **152 days** | **Wed 2/10/19** | **Sun 1/3/20** |
| 181 | A.1.1.13.1 | Slope improvement work (11NE-D/CR222) | 21 days | 21 days | Tue 10/12/19 | Mon 30/12/19 |
| 182 | A.1.1.13.2 | Material submission of Pavillion | 28 days | 28 days | Wed 2/10/19 | Tue 29/10/19 |
| 183 | A.1.1.13.3 | Approval ot material submission of Pavillion | 28 days | 28 days | Wed 30/10/19 | Tue 26/11/19 |
| 184 | A.1.1.13.4 | Procurement to delivery of Pavillion | 45 days | 45 days | Wed 27/11/19 | Fri 10/1/20 |
| 185 | A.1.1.13.5 | Material submission of Bench | 28 days | 28 days | Wed 2/10/19 | Tue 29/10/19 |
| 186 | A.1.1.13.6 | Approval to material submission of Bench | 28 days | 28 days | Wed 30/10/19 | Tue 26/11/19 |
| 187 | A.1.1.13.7 | Procument to delivery of Bench | 30 days | 30 days | Wed 27/11/19 | Thu 26/12/19 |
| 188 | A.1.1.13.8 | Material submission of Pole Light | 28 days | 28 days | Wed 2/10/19 | Tue 29/10/19 |
| 189 | A.1.1.13.9 | Approval of material submission of Pole Light | 28 days | 28 days | Wed 30/10/19 | Tue 26/11/19 |
| 190 | A.1.1.13.10 | Procurement to delivery of Pole light | 45 days | 45 days | Wed 27/11/19 | Fri 10/1/20 |
| 191 | A.1.1.13.11 | Construction of Pavillon/Bench/Pole Light with ducting | 21 days | 21 days | Sat 11/1/20 | Fri 31/1/20 |
| 192 | A.1.1.13.12 | Construction of Pavers | 30 days | 30 days | Sat 1/2/20 | Sun 1/3/20 |
| **193** | **A.1.1.14** | **General Inspection and Tidy up of Portion 1** | **25 days** | **25 days** | **Fri 6/3/20** | **Mon 30/3/20** |
| 194 | A.1.1.14.1 | General Inspection and tidy up of Portion 1 | 5 days | 5 days | Mon 16/3/20 | Fri 20/3/20 |
| 195 | A.1.1.14.2 | Allowabale Terminal Float | 10 days | 10 days | Sat 21/3/20 | Mon 30/3/20 |
| 196 | A.1.1.14.3 | Completion of works | 0 days | 0 days | Mon 30/3/20 | Mon 30/3/20 |




Critical | Task | Manual Task | Duration-only | Baseline Milestone | Summary | External Tasks | Inactive Milestone
Critical Split | Split | Start-only | Baseline | Milestone | Manual Summary | External Milestone | Inactive Summary
Critical Progress | Task Progress | Finish-only | Baseline Split | Summary Progress | Project Summary | Inactive Task | Deadline

Revised programme for Section A E3 to E2_Dec 17

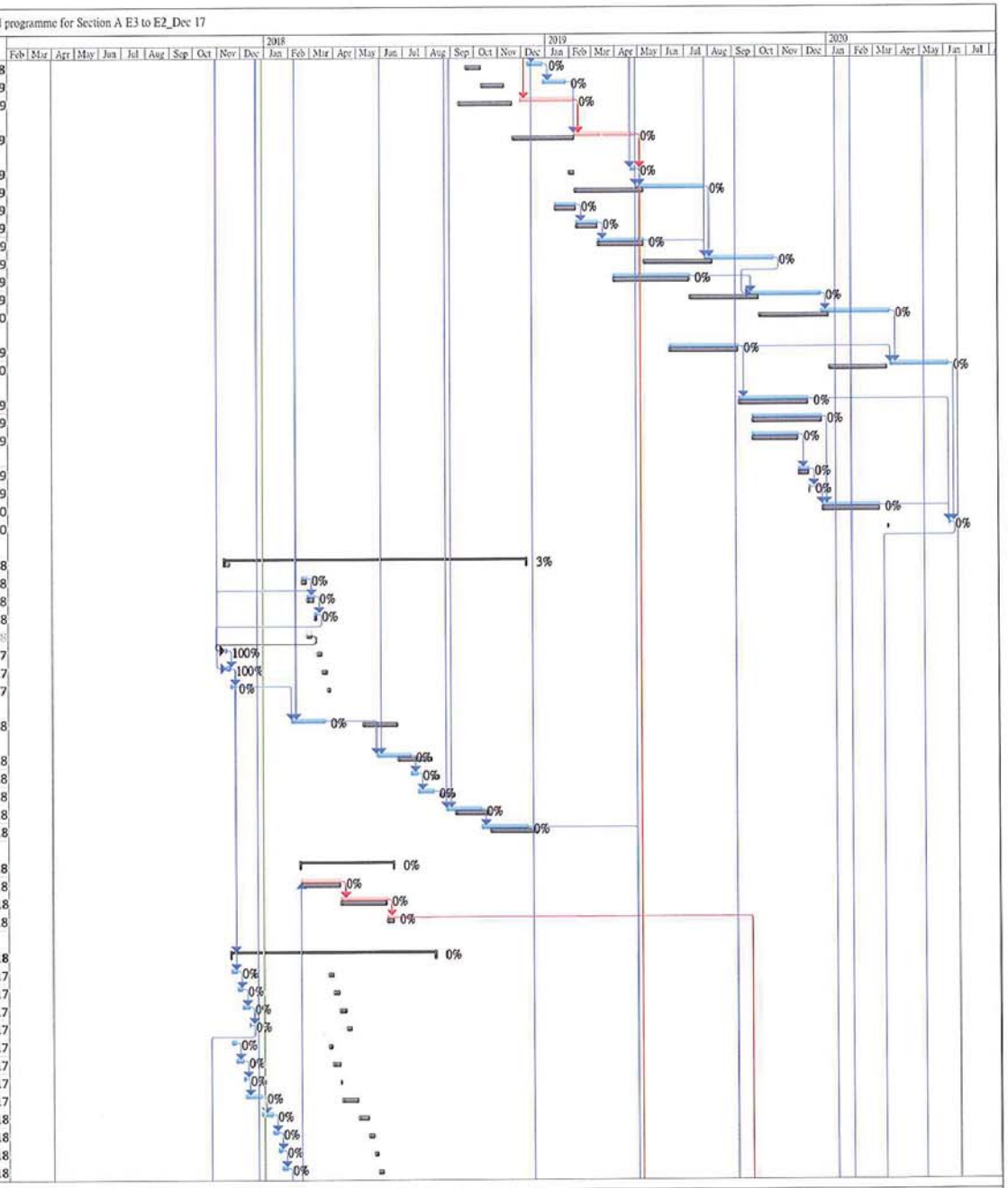
| ID | Task Name | Duration | Remaining Duration | Start | Finish |
|---|---|---|---|---|---|
| A.2.1 | Section A | 1175 days | 1039.17 days | Fri 31/3/17 | Wed 17/6/20 |
| A.2.1.1 | E3 and E2 Footbridge and lift Tower | 1164 days | 994.66 days | Fri 31/3/17 | Sat 6/6/20 |
| A.2.1.1.1 | Access Date of Portion 2 | 1 day | 0 days | Fri 31/3/17 | Fri 31/3/17 |
| A.2.1.1.2 | Initial Site survey | 60 days | 3 days | Tue 17/10/17 | Fri 15/12/17 |
| A.2.1.1.3 | Initial Tree survey | 15 days | 0.75 days | Sat 13/5/17 | Wed 13/12/17 |
| A.2.1.1.4 | Design submission of lift | 60 days | 57 days | Sat 16/12/17 | Tue 13/2/18 |
| A.2.1.1.5 | Comment of design submission of lift | 90 days | 90 days | Wed 14/2/18 | Mon 14/5/18 |
| A.2.1.1.5a | Second design submission of lift | 120 days | 120 days | Tue 15/5/18 | Tue 11/9/18 |
| A.2.1.1.5b | Approval of design submission of lift | 90 days | 90 days | Wed 12/9/18 | Mon 10/12/18 |
| A.2.1.1.6 | Design submission of lighting at footbridge | 41 days | 41 days | Tue 2/7/19 | Sun 11/8/19 |
| A.2.1.1.7 | Approval of design submission of lighting for footbridge | 28 days | 28 days | Mon 12/8/19 | Sun 8/9/19 |
| A.2.1.1.8 | Proposal of Concrete Batching Plant and mixes | 90 days | 90 days | Tue 3/10/17 | Sun 31/12/17 |
| A.2.1.1.9 | Submission of shop drawing for irrigation system and submersible pump for the footbridge | 60 days | 60 days | Wed 1/5/19 | Sat 29/6/19 |
| A.2.1.1.10 | Acceptance of shop drawing for irrigation system and submersible pump system | 28 days | 28 days | Sun 30/6/19 | Sat 27/7/19 |
| A.2.1.1.11 | Method Statement submission for excavation of rock for bridge tower E3-ST1 and approval | 126 days | 12.6 days | Wed 9/8/17 | Tue 12/12/17 |
| A.2.1.1.12 | Approval of method statement of excavation of rock | 28 days | 8.4 days | Wed 13/12/17 | Tue 9/1/18 |
| A.2.1.1.13 | Method Statement Submission for installation and Temporary works design for concreting of bridge tower E3-ST1 | 72 days | 72 days | Thu 5/10/17 | Fri 15/12/17 |
| A.2.1.1.14 | Approval of method statement of temporary works design for concreting of bridge tower of bridge tower E3-ST1 | 28 days | 28 days | Sat 16/12/17 | Fri 12/1/18 |
| A.2.1.1.15 | Method Statement submission for installation of socket H piles including predrill location and Proof Drill location | 52 days | 5.2 days | Tue 28/11/17 | Thu 18/1/18 |
| A.2.1.1.16 | Approval of method statement for installation of socket H piles including predrill and proof drill location | 28 days | 2.8 days | Tue 28/11/17 | Thu 1/2/18 |
| A.2.1.1.17 | Submission of Method statement for testing of socket H piles | 52 days | 52 days | Mon 5/3/18 | Wed 25/4/18 |
| A.2.1.1.18 | Approval of method statement for testing of socket H piles | 28 days | 28 days | Thu 26/4/18 | Wed 23/5/18 |
| A.2.1.1.19 | Submission of construction impact assessment | 14 days | 14 days | Fri 16/2/18 | Thu 1/3/18 |
| A.2.1.1.20 | Submission of method statement for formwork design for casting the bridge piers footing and bridge piers | 52 days | 52 days | Mon 4/6/18 | Wed 25/7/18 |
| A.2.1.1.21 | Approval of method statement for formwork design for casting bridge piers footing and piers | 28 days | 28 days | Thu 26/7/18 | Wed 22/8/18 |
| A.2.1.1.22 | Design and Material Submission of proposed bridge bearings | 52 days | 52 days | Tue 24/7/18 | Thu 13/9/18 |
| A.2.1.1.23 | Approval of design and material of bridge bearing | 28 days | 28 days | Fri 14/9/18 | Thu 11/10/18 |
| A.2.1.1.24 | Testing and result submission of bridge bearing | 15 days | 15 days | Fri 12/10/18 | Fri 26/10/18 |
| A.2.1.1.25 | Procurement, ordering and delivery of bridge bearings | 45 days | 45 days | Sat 27/10/18 | Mon 10/12/18 |
| A.2.1.1.26 | Submission of method statement for erection of steel truss | 52 days | 52 days | Mon 10/9/18 | Wed 31/10/18 |
| A.2.1.1.27 | Approval of method statement for erection of steel truss | 28 days | 28 days | Thu 1/11/18 | Wed 28/11/18 |
| A.2.1.1.28 | Method statement submission for proposed lift installation | 80 days | 80 days | Fri 9/3/18 | Sun 27/5/18 |
| A.2.1.1.29 | Material Submission of Proposed Lift | 60 days | 60 days | Mon 28/5/18 | Thu 26/7/18 |
| A.2.1.1.30 | Procurement, ordering & delivery of proposed lift | 124 days | 124 days | Tue 11/12/18 | Sat 13/4/19 |
| A.2.1.1.31 | Design and Material Submission of glazing and louvres | 80 days | 80 days | Fri 24/8/18 | Sun 11/11/18 |
| A.2.1.1.32 | Method Statement of glazing and louvre installation | 80 days | 80 days | Mon 12/11/18 | Wed 30/1/19 |
| A.2.1.1.33 | Procurement, ordering and delivery of louvres & glazing | 60 days | 60 days | Thu 31/1/19 | Sun 31/3/19 |
| A.2.1.1.35 | Approval of TTA to block FP of Hiu Ming St and Hiu Kwong Street for erection of Hoarding | 76 days | 0 days | Thu 20/7/17 | Tue 3/10/17 |
| A.2.1.1.36 | Road Works Advice | 14 days | 14 days | Wed 4/10/17 | Tue 17/10/17 |
| A.2.1.1.37 | Implementation of TTA | 1 day | 1 day | Wed 18/10/17 | Wed 18/10/17 |
| A.2.1.1.38 | Application of Excavation permit | 180 days | 0 days | Sat 1/4/17 | Wed 27/9/17 |
| A.2.1.1.39 | Erection of Hoardings for footbridge E3, E2 | 26 days | 10.4 days | Sat 16/12/17 | Wed 10/1/18 |
| A.2.1.1.40 | Mobilisation of excavator for breaking of rock for escalator tower E3-ST1 | 14 days | 12.6 days | Thu 11/1/18 | Wed 24/1/18 |
| A.2.1.1.41 | Breaking of 50% of rock for escalator tower E3-ST1 | 60 days | 60 days | Thu 25/1/18 | Sun 25/3/18 |
| A.2.1.1.42 | Breaking of remaining 50% of rock for escalator tower E3-ST1 | 60 days | 60 days | Mon 26/3/18 | Thu 24/5/18 |
| A.2.1.1.43 | Construction of E3-ST1 substructure E3-PC1 | 67 days | 67 days | Fri 25/5/18 | Mon 30/7/18 |
| A.2.1.1.44 | Construction E3 superstructure E3 -ST1up to level 34mPD | 45 days | 45 days | Tue 31/7/18 | Thu 13/9/18 |
| A.2.1.1.45 | Contruction of E3 superstructure E3-ST1 from 34mPD to 43.6mPD | 45 days | 45 days | Fri 14/9/18 | Sun 28/10/18 |
| A.2.1.1.46 | Infill the space with no fine concrete between rock slope and edge of E3-ST1 | 30 days | 30 days | Mon 29/10/18 | Tue 27/11/18 |
| A.2.1.1.47 | Erect tubular platform for rock slope survey | 10 days | 10 days | Wed 28/11/18 | Fri 7/12/18 |




Critical, Critical Split, Critical Progress, Task, Split, Task Progress, Manual Task, Start-only, Finish-only, Duration-only, Baseline, Baseline Split, Baseline Milestone, Milestone, Summary Progress, Summary, Manual Summary, Project Summary, External Tasks, External Milestone, Inactive Task, Inactive Milestone, Inactive Summary, Deadline

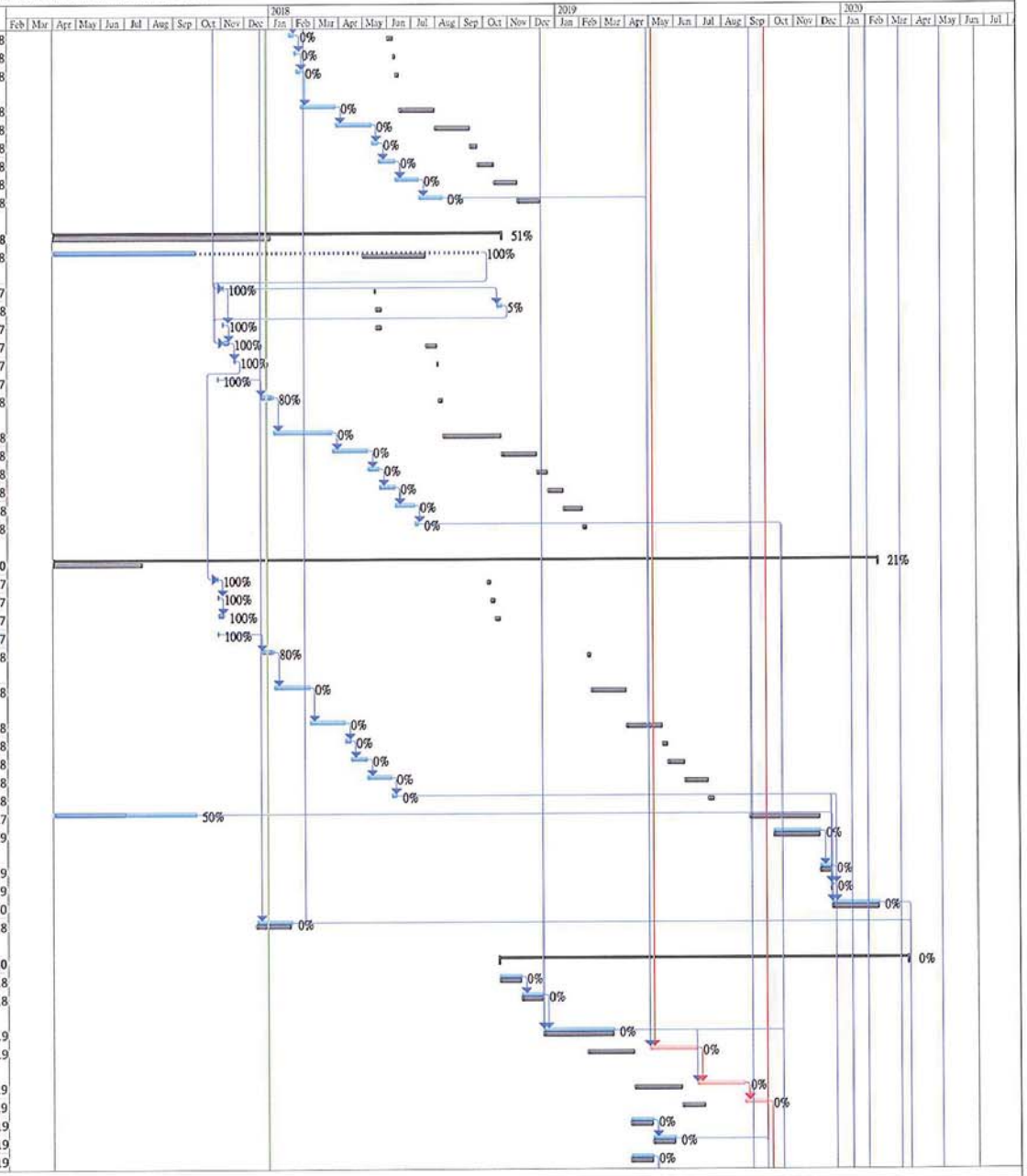
Revised programme for Section A E3 to E2_Dec 17

| ID | Task Name | Duration | Remaining Duration | Start | Finish |
|---|---|---|---|---|---|
| A.2.1.1.48 | Rock slope survey | 20 days | 20 days | Sat 8/12/18 | Thu 27/12/18 |
| A.2.1.1.49 | Rock slope stabilization works to be instructed | 30 days | 30 days | Fri 28/12/18 | Sat 26/1/19 |
| A.2.1.1.50 | Construction of E3 Superstructure E3-ST1 from 43.6mPD to 59.7mPD | 70 days | 70 days | Wed 28/11/18 | Tue 5/2/19 |
| A.2.1.1.51 | Construction of E3 Superstructure E3-ST1 from 59.7mPD to 71.2mPD | 80 days | 80 days | Wed 6/2/19 | Fri 26/4/19 |
| A.2.1.1.52 | Installation of bridge bearing | 7 days | 7 days | Sat 20/4/19 | Fri 26/4/19 |
| A.2.1.1.53 | Installation of lift (3nrs) | 90 days | 90 days | Sat 27/4/19 | Thu 25/7/19 |
| A.2.1.1.54 | Design of glazing and louver | 28 days | 28 days | Sat 12/1/19 | Fri 8/2/19 |
| A.2.1.1.55 | Approval of design for glazing and louver | 28 days | 28 days | Sat 9/2/19 | Fri 8/3/19 |
| A.2.1.1.56 | Procurement to delivery of glazing and louver | 60 days | 60 days | Sat 9/3/19 | Tue 7/5/19 |
| A.2.1.1.57 | Installation of glazing and louver | 90 days | 90 days | Fri 26/7/19 | Wed 23/10/19 |
| A.2.1.1.58 | Application of telecommunication lines | 100 days | 100 days | Fri 29/3/19 | Sat 6/7/19 |
| A.2.1.1.59 | Installation of E&M for the lift towers | 90 days | 90 days | Tue 24/9/19 | Sun 22/12/19 |
| A.2.1.1.60 | Positioning, Construction, installation and connection of pillar box | 90 days | 90 days | Mon 23/12/19 | Sat 21/3/20 |
| A.2.1.1.61 | Application and connection of power supply | 90 days | 90 days | Mon 10/6/19 | Sat 7/9/19 |
| A.2.1.1.62 | Testing and comminissioning of lifts and submission of form LE5 to EMSD | 75 days | 75 days | Sun 22/3/20 | Thu 4/6/20 |
| A.2.1.1.63 | Decoration and Finishings works for E3-ST1 | 90 days | 90 days | Sun 8/9/19 | Fri 6/12/19 |
| A.2.1.1.64 | Application of XP for Drainage works at Hiu Ming Street | 90 days | 90 days | Wed 25/9/19 | Mon 23/12/19 |
| A.2.1.1.65 | Approval of TTA for construction of Drainage works at Hiu Ming Street | 60 days | 60 days | Wed 25/9/19 | Sat 23/11/19 |
| A.2.1.1.66 | Road Works Advice | 14 days | 14 days | Sun 24/11/19 | Sat 7/12/19 |
| A.2.1.1.67 | Implementation of TTA | 1 day | 1 day | Sun 8/12/19 | Sun 8/12/19 |
| A.2.1.1.68 | Drainage works at Hiu Ming Street | 75 days | 75 days | Tue 24/12/19 | Sat 7/3/20 |
| A.2.1.1.69 | General tidy up | 2 days | 2 days | Fri 5/6/20 | Sat 6/6/20 |
| **A.2.1.2** | **Pile Cap E3-PC3 and E3 Abutment** | **392 days** | **379.8 days** | **Thu 9/11/17** | **Wed 5/12/18** |
| A.2.1.2.1 | Set up tubular platform for removal of soil nails at Slope E3b | 7 days | 7 days | Fri 16/2/18 | Thu 22/2/18 |
| A.2.1.2.2 | Removal of soil nails (19nrs) at slope E3b | 10 days | 10 days | Fri 23/2/18 | Sun 4/3/18 |
| A.2.1.2.3 | Removal of tubular platform | 3 days | 3 days | Mon 5/3/18 | Wed 7/3/18 |
| ~~A.2.1.2.4~~ | ~~Mobilization of plants for predrilling for pile cap E3-PC-3~~ | ~~2 days~~ | ~~2 days~~ | ~~Fri 23/2/18~~ | ~~Thu 1/3/18~~ |
| A.2.1.2.5 | Setting up of plants for predrill for pile cap E3-PC3 | 2 days | 0 days | Thu 9/11/17 | Fri 10/11/17 |
| A.2.1.2.6 | Predrill for pile cap E3-PC3 | 6 days | 0 days | Fri 10/11/17 | Wed 15/11/17 |
| A.2.1.2.7 | Mobilization of plants for drilling for installation of pre-bored socket H piles (9 nrs) for pile cap E3-PC3 | 4 days | 4 days | Thu 16/11/17 | Sun 19/11/17 |
| A.2.1.2.8 | Drilling and installation of pre-bored socket H piles (9 nrs)for pile cap E3-PC3 | 45 days | 45 days | Fri 2/2/18 | Sun 18/3/18 |
| A.2.1.2.9 | Testing of piles | 45 days | 45 days | Thu 24/5/18 | Sat 7/7/18 |
| A.2.1.2.10 | Proof Drilling | 9 days | 9 days | Sun 8/7/18 | Mon 16/7/18 |
| A.2.1.2.11 | Excavation with temporary shoring for pile cap E3-PC3 | 21 days | 21 days | Tue 17/7/18 | Mon 6/8/18 |
| A.2.1.2.12 | Construction of Pile caps E3-PC3 | 45 days | 45 days | Thu 23/8/18 | Sat 6/10/18 |
| A.2.1.2.13 | Construction of E3 Abutment | 60 days | 60 days | Sun 7/10/18 | Wed 5/12/18 |
| **A.2.1.3** | **Substructure of Covered Walkway** | **122 days** | **122 days** | **Wed 14/2/18** | **Fri 15/6/18** |
| A.2.1.3.1 | Excavation of footing of covered walkway footing | 52 days | 52 days | Wed 14/2/18 | Fri 6/4/18 |
| A.2.1.3.2 | Construction of footing of covered walkway footing | 60 days | 60 days | Sat 7/4/18 | Tue 5/6/18 |
| A.2.1.3.3 | Backfill the footing of the covered walkway | 10 days | 10 days | Wed 6/6/18 | Fri 15/6/18 |
| **A.2.1.4** | **Pile Cap E3-PC2 and column** | **266 days** | **266 days** | **Thu 16/11/17** | **Wed 8/8/18** |
| A.2.1.4.1 | Mobilization of plants for predrilling for pile cap E3-PC 2 | 7 days | 7 days | Thu 16/11/17 | Wed 22/11/17 |
| A.2.1.4.2 | Setting up of plants for predrill for pile cap E3-PC2 | 7 days | 7 days | Thu 23/11/17 | Wed 29/11/17 |
| A.2.1.4.3 | Predrill for pile cap E3-PC2 | 9 days | 9 days | Thu 30/11/17 | Fri 8/12/17 |
| A.2.1.4.4 | Demobilization of predrill rig | 1 day | 1 day | Sat 9/12/17 | Sat 9/12/17 |
| A.2.1.4.5 | Site clearance for soil nails for zone 1 | 5 days | 5 days | Thu 16/11/17 | Mon 20/11/17 |
| A.2.1.4.6 | Erection of tubular scaffold platform for soil nails for zone 1 | 10 days | 10 days | Tue 21/11/17 | Thu 30/11/17 |
| A.2.1.4.7 | Setting out of soil nails | 2 days | 2 days | Fri 1/12/17 | Sat 2/12/17 |
| A.2.1.4.8 | Construction of soil nails (29nrs) | 21 days | 21 days | Sun 3/12/17 | Sat 23/12/17 |
| A.2.1.4.9 | Construction of soil nails heads (29nrs) | 14 days | 14 days | Sun 24/12/17 | Sat 6/1/18 |
| A.2.1.4.10 | Removal of tubular scaffold platform | 7 days | 7 days | Sun 7/1/18 | Sat 13/1/18 |
| A.2.1.4.11 | Site clearance for soil nails for zone 2 | 5 days | 5 days | Sun 14/1/18 | Thu 18/1/18 |
| A.2.1.4.12 | Erection of tubular scaffold platform for soil nails for zone 2 | 7 days | 7 days | Fri 19/1/18 | Thu 25/1/18 |



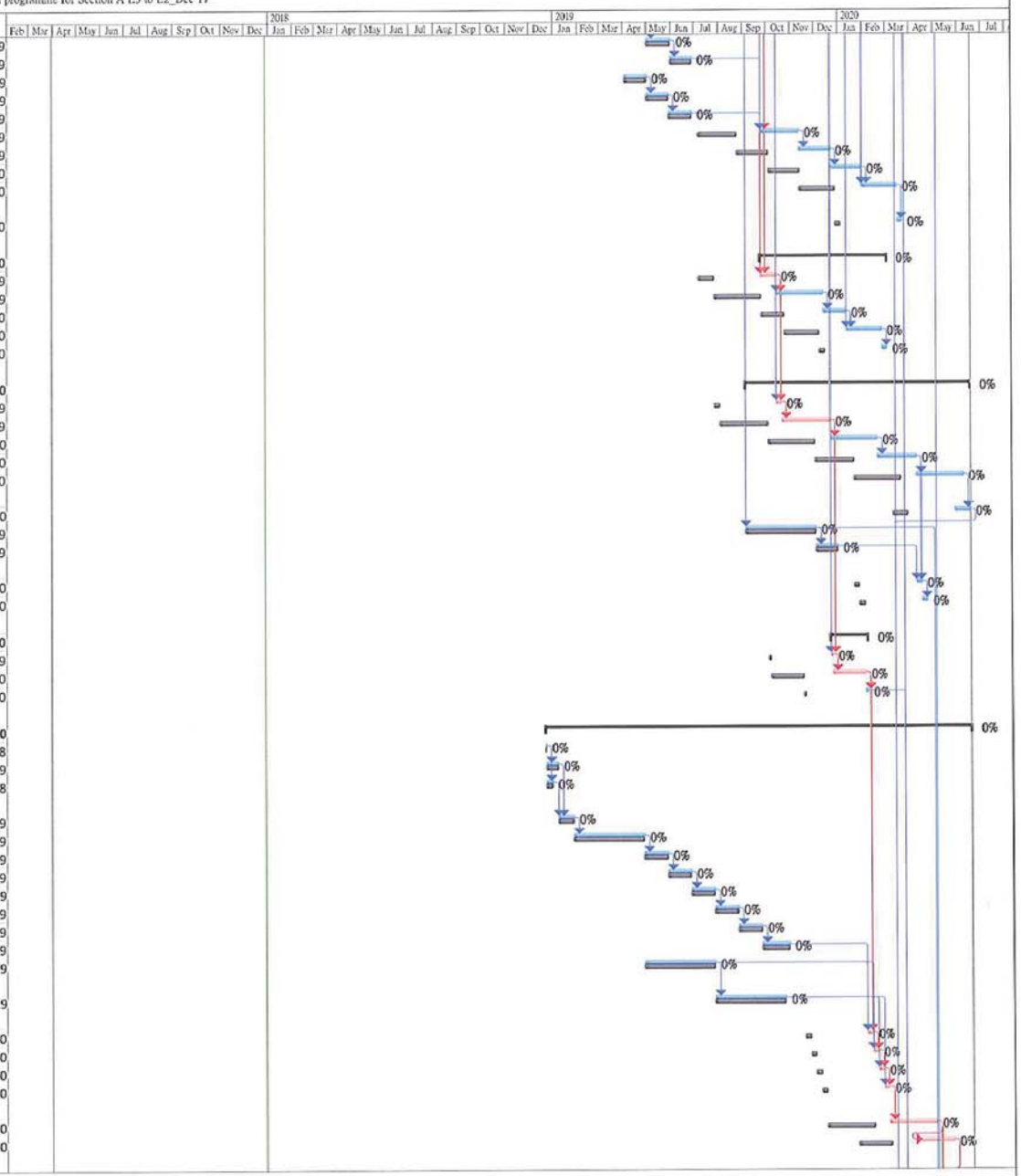

Critical, Critical Split, Critical Progress, Task, Split, Task Progress, Manual Task, Start-only, Finish-only, Duration-only, Baseline, Baseline Split, Baseline Milestone, Milestone, Summary Progress, Summary, Manual Summary, Project Summary, External Tasks, External Milestone, Inactive Task, Inactive Milestone, Inactive Summary, Deadline

| ID | Task Name | Duration | Remaining Duration | Start | Finish |
|---|---|---|---|---|---|
| A.2.1.4.13 | Removal of soil nails (7nrs) | 7 days | 7 days | Fri 26/1/18 | Thu 1/2/18 |
| A.2.1.4.14 | Removal of tubular scaffold platform from zone 2 | 3 days | 3 days | Fri 2/2/18 | Sun 4/2/18 |
| A.2.1.4.15 | Mobilization of plant for drilling and installation of pre-bored socket H piles | 5 days | 5 days | Mon 5/2/18 | Fri 9/2/18 |
| A.2.1.4.16 | Drilling and construction of pre-bored socket H piles (9nrs) | 45 days | 45 days | Sat 10/2/18 | Mon 26/3/18 |
| A.2.1.4.17 | Testing of piles | 45 days | 45 days | Tue 27/3/18 | Thu 10/5/18 |
| A.2.1.4.18 | Proof Drilling | 9 days | 9 days | Fri 11/5/18 | Sat 19/5/18 |
| A.2.1.4.19 | Excavation with shoring for construction of pile cap E3-PC2 | 21 days | 21 days | Sun 20/5/18 | Sat 9/6/18 |
| A.2.1.4.20 | Construction of pile cap E3-PC2 | 30 days | 30 days | Sun 10/6/18 | Mon 9/7/18 |
| A.2.1.4.21 | Construction of Column E3-P1 | 30 days | 30 days | Tue 10/7/18 | Wed 8/8/18 |
| **A.2.1.5** | **Pile Cap E2-PC1** | **571 days** | **278.11 days** | **Sat 1/4/17** | **Tue 23/10/18** |
| A.2.1.5.1 | Application of Excavation permit for area occupied by pile cap E2-PC1 | 180 days | 0 days | Sat 1/4/17 | Thu 27/9/18 |
| A.2.1.5.2 | Mobilization of plant for predrill for pile cap E2-PC1 | 1 day | 0 days | Thu 2/11/17 | Thu 2/11/17 |
| A.2.1.5.3 | Initial site survey | 7 days | 6.65 days | Wed 17/10/18 | Tue 23/10/18 |
| A.2.1.5.4 | Setting up plant for predrill for pile cap E2-PC1 | 1 day | 0 days | Thu 2/11/17 | Fri 3/11/17 |
| A.2.1.5.5 | Predrill for pile cap E2-PC1 | 7 days | 0 days | Fri 3/11/17 | Thu 9/11/17 |
| A.2.1.5.6 | Demobilization of predrill rig | 1 day | 0 days | Fri 17/11/17 | Fri 17/11/17 |
| A.2.1.5.6a | Pile Sleeve Not Required for E2-PC1 & PC2 (PMI 20) | 1 day | 0 days | Thu 26/10/17 | Thu 26/10/17 |
| A.2.1.5.7 | Mobilization of plant for drilling and installation of pre-bored socket H piles | 16 days | 3.2 days | Thu 21/12/17 | Fri 5/1/18 |
| A.2.1.5.8 | Drilling and construction for pre-bored socket H piles(35nrs) | 75 days | 75 days | Sat 6/1/18 | Wed 21/3/18 |
| A.2.1.5.9 | Testing of piles | 45 days | 45 days | Thu 22/3/18 | Sat 5/5/18 |
| A.2.1.5.10 | Proof Drilling | 14 days | 14 days | Sun 6/5/18 | Sat 19/5/18 |
| A.2.1.5.11 | Excavation with temporary shoring for pile cap E2-PC1 | 20 days | 20 days | Sun 20/5/18 | Fri 8/6/18 |
| A.2.1.5.12 | Construction of pile cap E2-PC1 | 25 days | 25 days | Sat 9/6/18 | Tue 3/7/18 |
| A.2.1.5.13 | Backfill the pile cap E2-PC1 | 5 days | 5 days | Wed 4/7/18 | Sun 8/7/18 |
| **A.2.1.6** | **Substructure E2-PC2** | **1049 days** | **831.43 days** | **Sat 1/4/17** | **Thu 13/2/20** |
| A.2.1.6.1 | Mobilization of plants for predrilling for pile cap E2-PC 2 | 1 day | 0 days | Wed 25/10/17 | Wed 25/10/17 |
| A.2.1.6.2 | Setting up plant for predrill for pile pile cap E2-PC2 | 1 day | 0 days | Thu 26/10/17 | Thu 26/10/17 |
| A.2.1.6.3 | Predrill for pile cap E2-PC2 | 7 days | 0 days | Fri 27/10/17 | Thu 2/11/17 |
| A2.1.6.3a | Pile Sleeve Not Required for E2-PC1 & PC2 (PMI 20) | 1 day | 0 days | Thu 26/10/17 | Thu 26/10/17 |
| A.2.1.6.4 | Mobilization of plants for drilling and installation of pre-bored socket H Ples for pile cap E2-PC2 | 15 days | 3 days | Fri 22/12/17 | Fri 5/1/18 |
| A.2.1.6.5 | Drilling and installation of pre-bored socket H piles for pile cap E2-PC2 | 45 days | 45 days | Sat 6/1/18 | Mon 19/2/18 |
| A.2.1.6.6 | Testing of piles | 45 days | 45 days | Tue 20/2/18 | Thu 5/4/18 |
| A.2.1.6.7 | Proof Drilling | 7 days | 7 days | Fri 6/4/18 | Thu 12/4/18 |
| A.2.1.6.8 | Excavation with shoring for pile cap E2-PC2 | 21 days | 21 days | Fri 13/4/18 | Thu 3/5/18 |
| A.2.1.6.9 | Construction of pile cap E2-PC2 | 30 days | 30 days | Fri 4/5/18 | Sat 2/6/18 |
| A.2.1.6.10 | Backfill the pile cap E2-PC2 | 7 days | 7 days | Sun 3/6/18 | Sat 9/6/18 |
| A.2.1.6.11 | Application of XP for Drainage works at Hiu Kwong Street | 180 days | 90 days | Sat 1/4/17 | Wed 27/9/17 |
| A.2.1.6.12 | Approval of TTA for construction of Drainage works at Hiu Kwong Street | 60 days | 60 days | Wed 2/10/19 | Sat 30/11/19 |
| A.2.1.6.13 | Road Works Advice | 14 days | 14 days | Sun 1/12/19 | Sat 14/12/19 |
| A.2.1.6.14 | Implementation of TTA | 1 day | 1 day | Sun 15/12/19 | Sun 15/12/19 |
| A.2.1.6.15 | Construction of Drainage works at Hiu Kwong Street | 60 days | 60 days | Mon 16/12/19 | Thu 13/2/20 |
| A.2.1.6.16 | Trees felling works between E3-ST1 and E3 abutment | 45 days | 45 days | Thu 14/12/17 | Sat 27/1/18 |
| **A.2.1.7** | **Steel Bridge between E3-ST1 and E3 Abutment** | **522 days** | **522 days** | **Thu 18/10/18** | **Sun 22/3/20** |
| A.2.1.7.1 | Proposal of off site fabrication of steelworks for E2 and E3 | 28 days | 28 days | Thu 18/10/18 | Wed 14/11/18 |
| A.2.1.7.2 | Approval of off site fabrication of steelworks for bridge E2 and E3 | 28 days | 28 days | Thu 15/11/18 | Wed 12/12/18 |
| A.2.1.7.3 | Fabbrication and Delivery of fabricated steelworks | 90 days | 90 days | Thu 13/12/18 | Tue 12/3/19 |
| A.2.1.7.4 | Construction of launching platform for steel bridge between E3-ST1 and E3 abutment | 60 days | 60 days | Sat 27/4/19 | Tue 25/6/19 |
| A.2.1.7.5 | Assembly of steel truss between E3 tower and E3 abutment | 60 days | 60 days | Wed 26/6/19 | Sat 24/8/19 |
| A.2.1.7.6 | Bridge launching between E3-ST1 and E3 Abutment | 29 days | 29 days | Sun 25/8/19 | Sun 22/9/19 |
| A.2.1.7.7 | Design submission of roof system | 28 days | 28 days | Wed 3/4/19 | Tue 30/4/19 |
| A.2.1.7.8 | Approval of design of roof system | 28 days | 28 days | Wed 1/5/19 | Tue 28/5/19 |
| A.2.1.7.9 | Material submission of corrugated steel roof | 28 days | 28 days | Wed 3/4/19 | Tue 30/4/19 |




Critical | Task | Manual Task | Duration-only | Baseline Milestone | Summary | External Tasks | Inactive Milestone
Critical Split | Split | Start-only | Baseline | Milestone | Manual Summary | External Milestone | Inactive Summary
Critical Progress | Task Progress | Finish-only | Baseline Split | Summary Progress | Project Summary | Inactive Task | Deadline

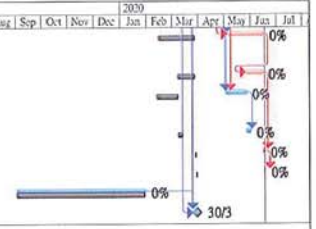
| ID | Task Name | Duration | Remaining Duration | Start | Finish |
|---|---|---|---|---|---|
| A.2.1.7.10 | Approval of corrugated steel roof | 30 days | 30 days | Wed 1/5/19 | Thu 30/5/19 |
| A.2.1.7.11 | Procurement to delivery of corrugated steel roof | 28 days | 28 days | Fri 31/5/19 | Thu 27/6/19 |
| A.2.1.7.12 | Material submission of fall arrest system | 28 days | 28 days | Wed 3/4/19 | Tue 30/4/19 |
| A.2.1.7.13 | Approval of fall arrest system | 28 days | 28 days | Wed 1/5/19 | Tue 28/5/19 |
| A.2.1.7.14 | Procurement to delivery of fall arrest system | 30 days | 30 days | Wed 29/5/19 | Thu 27/6/19 |
| A.2.1.7.15 | Roof construction of the steel truss E3-ST1 to E3 abutment | 50 days | 50 days | Mon 23/9/19 | Mon 11/11/19 |
| A.2.1.7.16 | Construction of screeding and paving blocks | 40 days | 40 days | Tue 12/11/19 | Sat 21/12/19 |
| A.2.1.7.17 | Installation of parapets and planters | 40 days | 40 days | Sun 22/12/19 | Thu 30/1/20 |
| A.2.1.7.18 | Installation of lightings to steel truss between E3 tower and E3 abutment | 45 days | 45 days | Fri 31/1/20 | Sun 15/3/20 |
| A.2.1.7.19 | Installation of irrigation pipe and water point | 7 days | 7 days | Mon 16/3/20 | Sun 22/3/20 |
| **A.2.1.8** | **Superstructure of Covered Walkway** | **162 days** | **162 days** | **Mon 23/9/19** | **Mon 2/3/20** |
| A.2.1.8.1 | Expose the substructure of the Covered Walkway | 20 days | 20 days | Mon 23/9/19 | Sat 12/10/19 |
| A.2.1.8.2 | Construction of columns and beams for covered walkway | 60 days | 60 days | Sun 13/10/19 | Wed 11/12/19 |
| A.2.1.8.3 | Installation of steel sheet roof for the covered walkway | 30 days | 30 days | Thu 12/12/19 | Fri 10/1/20 |
| A.2.1.8.4 | Installation of Lighting to covered walkway | 45 days | 45 days | Sat 11/1/20 | Mon 24/2/20 |
| A.2.1.8.5 | Installation of irrigation pipe | 7 days | 7 days | Tue 25/2/20 | Mon 2/3/20 |
| **A.2.1.9** | **Superstructure of E2-LT1 and Lift** | **287 days** | **287 days** | **Wed 4/9/19** | **Tue 16/6/20** |
| A.2.1.9.1 | Excavation to expose footing E2-PC1 | 7 days | 7 days | Sun 13/10/19 | Sat 19/10/19 |
| A.2.1.9.2 | Construction of superstructure of lift tower E2-LT1 | 62 days | 62 days | Sun 20/10/19 | Fri 20/12/19 |
| A.2.1.9.3 | Installation of lift (2nrs) | 60 days | 60 days | Sat 21/12/19 | Tue 18/2/20 |
| A.2.1.9.4 | Installation of E&M for the lift towers and Pillar Box | 50 days | 50 days | Wed 19/2/20 | Wed 8/4/20 |
| A.2.1.9.5 | Testing and comminissioning of lifts and submission of form LE5 to EMSD | 60 days | 60 days | Thu 9/4/20 | Sun 7/6/20 |
| A.2.1.9.6 | Installation of louver and finishing works | 20 days | 20 days | Thu 28/5/20 | Tue 16/6/20 |
| A.2.1.9.7 | Application for connection to existing water mains | 90 days | 90 days | Wed 4/9/19 | Mon 2/12/19 |
| A.2.1.9.8 | Trenching works for connection of existing water connection point | 28 days | 28 days | Tue 3/12/19 | Mon 30/12/19 |
| A.2.1.9.9 | Installation of water meter box | 7 days | 7 days | Thu 9/4/20 | Wed 15/4/20 |
| A.2.1.9.10 | Planting works on bridge | 7 days | 7 days | Thu 16/4/20 | Wed 22/4/20 |
| **A.2.1.10** | **Superstructure of E2-P1** | **48 days** | **48 days** | **Sat 21/12/19** | **Thu 6/2/20** |
| A.2.1.10.1 | Excavation to expose Pile cap E2-PC2 for column E2-P1 | 3 days | 3 days | Sat 21/12/19 | Mon 23/12/19 |
| A.2.1.10.2 | Construction of column for E2-P1 | 42 days | 42 days | Tue 24/12/19 | Mon 3/2/20 |
| A.2.1.10.3 | General tidy up | 3 days | 3 days | Tue 4/2/20 | Thu 6/2/20 |
| **A.3.1.11** | **Bridge between E2-P1 to E2-P3** | **545 days** | **545 days** | **Fri 21/12/18** | **Wed 17/6/20** |
| A.3.1.11.1 | Access date of E2 between Pier E2-P2 to E2-P3 (Portion 3) | 1 day | 1 day | Fri 21/12/18 | Fri 21/12/18 |
| A.3.1.11.2 | Initial site survey | 15 days | 15 days | Sat 22/12/18 | Sat 5/1/19 |
| A.3.1.11.3 | Erection of Hoarding at South bound footpath of Hiu Kwong St | 8 days | 8 days | Sat 22/12/18 | Sat 29/12/18 |
| A.3.1.11.4 | Excavation of inspection pits to locate utilities | 20 days | 20 days | Sun 6/1/19 | Fri 25/1/19 |
| A.3.1.11.5 | Diversion of utilities by UU | 90 days | 90 days | Sat 26/1/19 | Thu 25/4/19 |
| A.3.1.11.6 | Excavation with shoring for construction of E2-F3 | 30 days | 30 days | Fri 26/4/19 | Sat 25/5/19 |
| A.3.1.11.7 | Construction of pad footing of E2-F3 | 30 days | 30 days | Sun 26/5/19 | Mon 24/6/19 |
| A.3.1.11.8 | Construction of column for E2-P2 | 30 days | 30 days | Tue 25/6/19 | Wed 24/7/19 |
| A.3.1.11.9 | Excavation with shoring for construction of E2-F4 | 30 days | 30 days | Thu 25/7/19 | Fri 23/8/19 |
| A.3.1.11.10 | Construction of pad footing of E2-F4 | 30 days | 30 days | Sat 24/8/19 | Sun 22/9/19 |
| A.3.1.11.11 | Construction of column for E2-P3 and the bridge deck | 35 days | 35 days | Mon 23/9/19 | Sun 27/10/19 |
| A.3.1.11.12 | Off site Fabrication of Steel deck truss between E2-LT1 to E2-P1, E2-P1 to E2-P2 | 90 days | 90 days | Fri 26/4/19 | Wed 24/7/19 |
| A.3.1.11.13 | Off site Fabrication of Steel deck truss between E2-P2 to E2-P3 and E2-P3 to bridge constructed by others | 90 days | 90 days | Thu 25/7/19 | Tue 22/10/19 |
| A.3.1.11.14 | Lifting of steel truss between E2-LT1 to E2-P1 | 7 days | 7 days | Tue 4/2/20 | Mon 10/2/20 |
| A.3.1.11.15 | Lifting of steel truss between E2-P1 to E2-P2 | 7 days | 7 days | Tue 11/2/20 | Mon 17/2/20 |
| A.3.1.11.16 | Lifting of Truss between E2-P2 to E2-P3 | 7 days | 7 days | Tue 18/2/20 | Mon 24/2/20 |
| A.3.1.11.17 | Lifting of truss for E2-P3 to connect to bridge constructed by others | 7 days | 7 days | Tue 25/2/20 | Mon 2/3/20 |
| A.3.1.11.18 | Roof installation of the bridge from E2-LT1 to E2-P3 | 60 days | 60 days | Tue 3/3/20 | Fri 1/5/20 |
| A.3.1.11.19 | Screeding and paving blocks for the bridge from E2-LT1 to E2-P3 | 42 days | 42 days | Sun 12/4/20 | Sat 23/5/20 |




Critical, Critical Split, Critical Progress, Task, Split, Task Progress, Manual Task, Start-only, Finish-only, Duration-only, Baseline, Baseline Split, Baseline Milestone, Milestone, Summary Progress, Summary, Manual Summary, Project Summary, External Tasks, External Milestone, Inactive Task, Inactive Milestone, Inactive Summary, Deadline

Revised programme for Section A E3 to E2_Dec 17

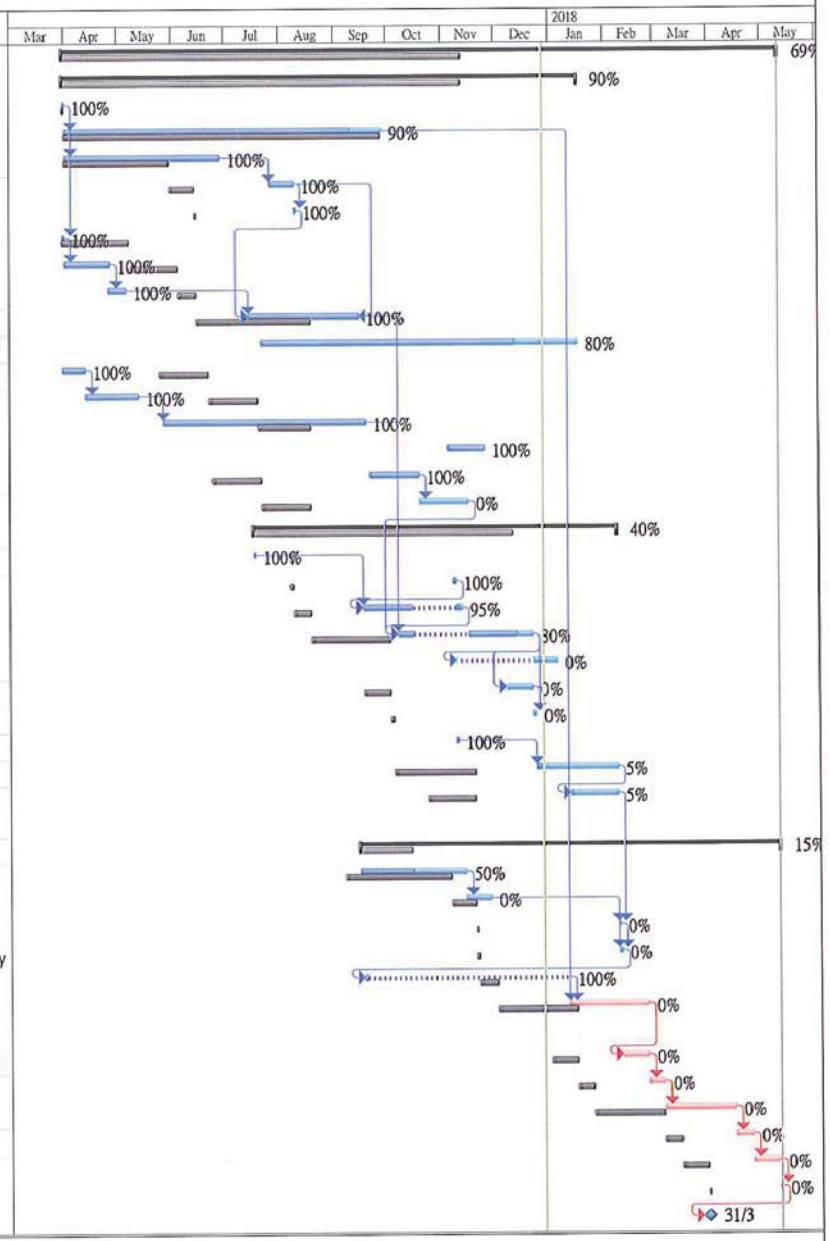
| ID | Task Name | Duration | Remaining Duration | Start | Finish |
|---|---|---|---|---|---|
| A.3.1.11.20 | Electrical installation and lighting works for bridge from E2-LT1 to E2-P3 | 42 days | 42 days | Mon 4/5/20 | Sun 14/6/20 |
| A.3.1.11.21 | Tubular handrail and planter on bridge from E2-LT1 to E2-P3 | 20 days | 20 days | Tue 26/5/20 | Sun 14/6/20 |
| A.3.1.11.22 | Trenching works for connection of existing water connection point | 25 days | 25 days | Sat 2/5/20 | Tue 26/5/20 |
| A.3.1.11.23 | Water meter box and water point construction | 5 days | 5 days | Wed 27/5/20 | Sun 31/5/20 |
| A.3.1.11.24 | Planting works on bridge | 2 days | 2 days | Mon 15/6/20 | Tue 16/6/20 |
| A.3.1.11.25 | General tidy up for Portion 3 | 1 day | 1 day | Wed 17/6/20 | Wed 17/6/20 |
| A.3.1.11.26 | Overall landscape works | 150 days | 150 days | Mon 2/9/19 | Wed 29/1/20 |
| A.3.1.11.27 | Completion of works | 0 days | 0 days | Mon 30/3/20 | Mon 30/3/20 |




Critical | Task | Manual Task | Duration-only | Baseline Milestone | Summary | External Tasks | Inactive Milestone
Critical Split | Split | Start-only | Baseline | Milestone | Manual Summary | External Milestone | Inactive Summary
Critical Progress | Task Progress | Finish-only | Baseline Split | Summary Progress | Project Summary | Inactive Task | Deadline

Revised programme for Section B_Dec 17

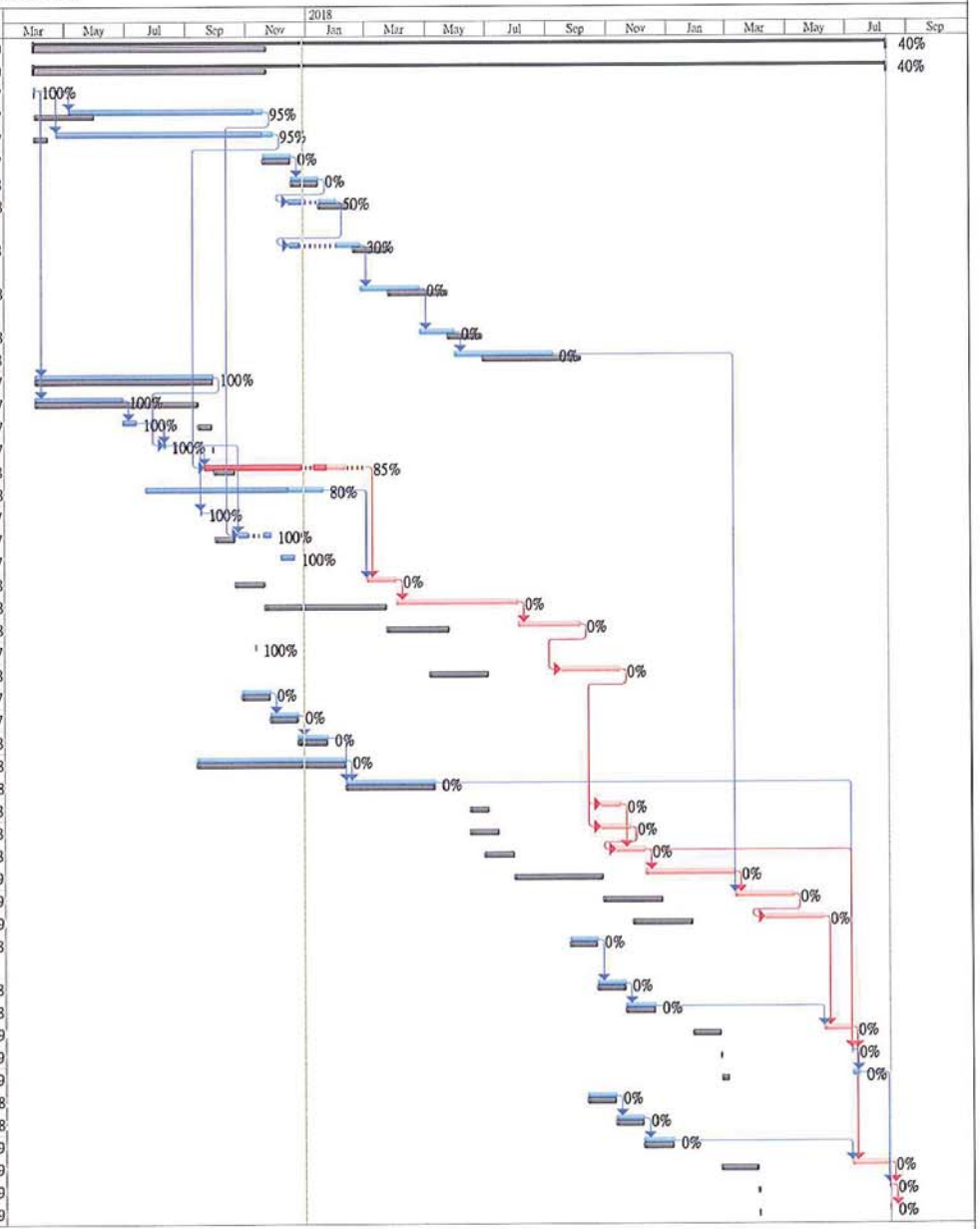
| ID | Task Name | Duration | Remaining Duration | Start | Finish | Predecessors |
|---|---|---|---|---|---|---|
| **B.4.1** | **SECTION B - CONSTRUCTION OF SLIP ROAD** | **406 days** | **127.14 days** | **Fri 31/3/17** | **Thu 10/5/18** | |
| **B.4.1.1** | **PRE CONSTRUCTION WORKS** | **292 days** | **29.97 days** | **Fri 31/3/17** | **Tue 16/1/18** | |
| B.4.1.1.1 | Access Date of Portion 4 | 1 day | 0 days | Fri 31/3/17 | Fri 31/3/17 | |
| B.4.1.1.2 | Application of Excavation Permit | 180 days | 18 days | Sat 1/4/17 | Wed 27/9/17 | 3 |
| B.4.1.1.3 | Application of TTA and approval | 88 days | 0 days | Sat 1/4/17 | Tue 27/6/17 | 3 |
| B.4.1.1.4 | Road works advice | 14 days | 0 days | Wed 26/7/17 | Tue 8/8/17 | 5 |
| B.4.1.1.5 | Implementation of TTA for ingress and egress | 1 day | 0 days | Wed 9/8/17 | Wed 9/8/17 | 6 |
| B.4.1.1.6 | Proposal of landscape specialist | 1 day | 0 days | Fri 31/3/17 | Fri 31/3/17 | 3FS-1 day |
| B.4.1.1.7 | Approval to proposal of landscape specialist | 26 days | 0 days | Sat 1/4/17 | Wed 26/4/17 | 8 |
| B.4.1.1.10 | Tree survey | 10 days | 0 days | Wed 26/4/17 | Fri 5/5/17 | 9 |
| B.4.1.1.11 | Trees Transplant | 63 days | 0 days | Fri 14/7/17 | Thu 14/9/17 | 10,6FF,7 |
| B.4.1.1.11a | Landscaping Works (PMI 9) | 180 days | 36 days | Fri 21/7/17 | Tue 16/1/18 | |
| B.4.1.1.12 | Submission of material for drainage works | 13 days | 0 days | Fri 31/3/17 | Wed 12/4/17 | |
| B.4.1.1.13 | Approval of submission for drainage works | 30 days | 0 days | Thu 13/4/17 | Fri 12/5/17 | 13 |
| B.4.1.1.16 | Procurement and delivery of drainage pipes and material | 115 days | 0 days | Sat 27/5/17 | Mon 18/9/17 | 14 |
| 1.1.14 | Material Test for Drainage Pipe (PMI 21) | 21 days | 0 days | Sat 4/11/17 | Fri 24/11/17 | |
| B.4.1.1.17 | Submission of method statement for Drainage works | 28 days | 0 days | Thu 21/9/17 | Wed 18/10/17 | |
| B.4.1.1.18 | Approval of method statement for drainage works | 28 days | 28 days | Thu 19/10/17 | Wed 15/11/17 | 17 |
| **B.4.1.2** | **First Stage Works** | **206 days** | **124.1 days** | **Mon 17/7/17** | **Wed 7/2/18** | |
| B.4.1.2.1 | Utilities Detection | 1 day | 0 days | Mon 17/7/17 | Mon 17/7/17 | |
| B.4.1.2.2 | Survey of existing drainage | 2 days | 0 days | Tue 7/11/17 | Wed 8/11/17 | |
| B.4.1.2.3 | Initial site survey | 31 days | 1.55 days | Sun 17/9/17 | Sun 12/11/17 | 21,20 |
| B.4.1.2.4 | Drainage works at first stage | 45 days | 9 days | Sat 7/10/17 | Thu 21/12/17 | 11,15,22,18 |
| B.4.1.2.4a | Revised Drainage Works (PMI 26) | 14 days | 13.95 days | Thu 9/11/17 | Thu 4/1/18 | 23 |
| B.4.1.2.5 | Draw pits construction | 15 days | 15 days | Thu 7/12/17 | Thu 21/12/17 | 23FS-15 days |
| B.4.1.2.6 | Laying street lighting cables | 2 days | 2 days | Fri 22/12/17 | Sat 23/12/17 | 23,25 |
| B.4.1.2.6a | Revised Setting Out amd Vertical Road Profile (PMI 25) | 1 day | 0 days | Thu 9/11/17 | Thu 9/11/17 | |
| B.4.1.2.7 | Road works | 46 days | 43.7 days | Sun 24/12/17 | Wed 7/2/18 | 27 |
| B.4.1.2.8 | Construct Temporary road before implementation of road closure | 27 days | 25.65 days | Fri 12/1/18 | Wed 7/2/18 | 28FS-27 days |
| **B.4.1.3** | **Second Stage Works** | **238 days** | **202.41 days** | **Fri 15/9/17** | **Thu 10/5/18** | |
| B.4.1.3.1 | Application of TTA to divert traffic of existing slip road | 60 days | 30 days | Fri 15/9/17 | Mon 13/11/17 | |
| B.4.1.3.2 | Road Works advice | 14 days | 14 days | Tue 14/11/17 | Mon 27/11/17 | 31 |
| B.4.1.3.3 | Implementation of TTA to divert traffic to Temp slip road | 1 day | 1 day | Thu 8/2/18 | Thu 8/2/18 | 32,29 |
| B.4.1.3.4 | Utilities detection and Suirvey of existing drainage | 2 days | 2 days | Thu 8/2/18 | Fri 9/2/18 | 32,33FS-1 day |
| B.4.1.3.5 | Initial site survey | 2 days | 0 days | Sun 17/9/17 | Wed 10/1/18 | 34 |
| B.4.1.3.6 | Drainage works at entrance of existing slip road (D101+ others) | 45 days | 45 days | Thu 11/1/18 | Sat 24/2/18 | 35,4 |
| B.4.1.3.7 | Draw pits construction | 15 days | 15 days | Sat 10/2/18 | Sat 24/2/18 | 36FS-15 days |
| B.4.1.3.8 | Laying street lighting cables | 9 days | 9 days | Sun 25/2/18 | Mon 5/3/18 | 37 |
| B.4.1.3.9 | Road works | 40 days | 40 days | Tue 6/3/18 | Sat 14/4/18 | 38 |
| B.4.1.3.10 | Remaining clash barriers and road markings | 10 days | 10 days | Sun 15/4/18 | Tue 24/4/18 | 39 |
| B.4.1.3.11 | Reinstate works area | 15 days | 15 days | Wed 25/4/18 | Wed 9/5/18 | 40 |
| B.4.1.3.12 | General tidy up | 1 day | 1 day | Thu 10/5/18 | Thu 10/5/18 | 41 |
| B.4.1.3.13 | Completion of works | 0 days | 0 days | Sat 31/3/18 | Sat 31/3/18 | 42 |




Critical, Critical Split, Critical Progress, Task, Split, Task Progress, Manual Task, Start-only, Finish-only, Duration-only, Baseline, Baseline Split, Baseline Milestone, Milestone, Summary Progress, Summary, Manual Summary, Project Summary, External Tasks, External Milestone, Inactive Task, Inactive Milestone, Inactive Summary, Deadline

Revised programme for Section C_Dec 17

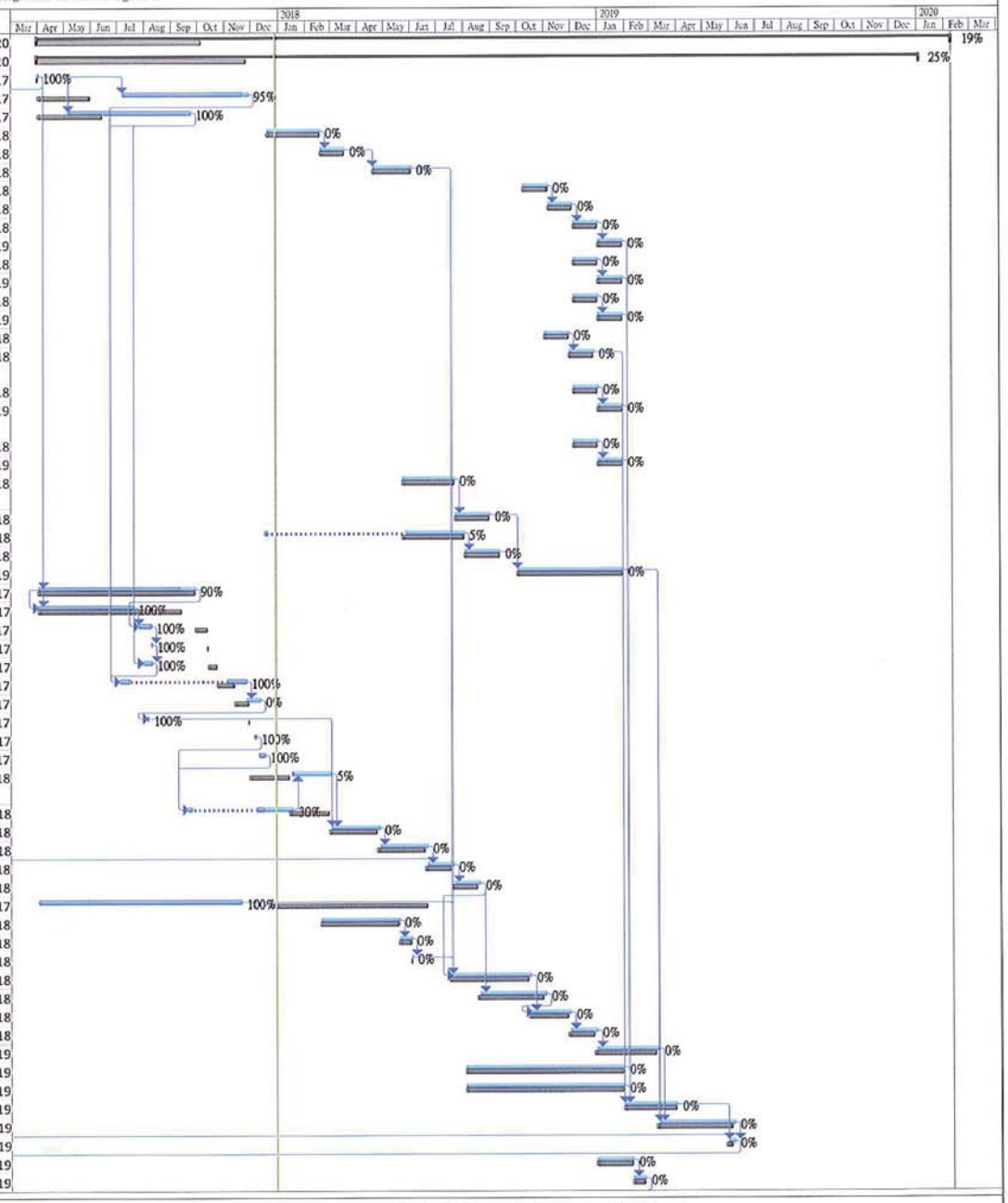
| ITEM | ID | Task Name | Duration | Remaining Duration | Start | Finish |
|---|---|---|---|---|---|---|
| 1 | C.5.1 | **SECTION C - CONSTRUCTION OF BUS BUS INTERCHANGE** | **863.75 days** | **520.28 days** | **Fri 31/3/17** | **Sun 11/8/19** |
| 2 | C.5.1.1 | **Works not within TKOT carriageway** | **863.75 days** | **520.28 days** | **Fri 31/3/17** | **Sun 11/8/19** |
| 3 | C.5.1.1.1 | Access Date of Portion 5 | 1 day | 0 days | Fri 31/3/17 | Fri 31/3/17 |
| 4 | C.5.1.1.2 | Initial Site Survey | 197 days | 9.85 days | Fri 5/5/17 | Fri 17/11/17 |
| 5 | C.5.1.1.3 | Tree survey | 220 days | 11 days | Sat 22/4/17 | Mon 27/11/17 |
| 6 | C.5.1.1.4 | Proposal of strucutral steel erectors | 28 days | 28 days | Sat 18/11/17 | Fri 15/12/17 |
| 7 | C.5.1.1.5 | Approval of structural steel erectors | 28 days | 28 days | Sat 16/12/17 | Fri 12/1/18 |
| 8 | C.5.1.1.6 | Submission of method statement of construction of covered walkway | 35 days | 17.5 days | Wed 13/12/17 | Tue 30/1/18 |
| 9 | C.5.1.1.7 | Approval of method statement of construction of covered walkway | 35 days | 24.5 days | Thu 14/12/17 | Fri 23/2/18 |
| 10 | C.5.1.1.8 | Submission of offsite fabrication of steel for covered walkway | 60 days | 60 days | Sat 24/2/18 | Tue 24/4/18 |
| 11 | C.5.1.1.9 | Approval of proposal offsite fabrication of covered walkway | 35 days | 35 days | Wed 25/4/18 | Tue 29/5/18 |
| 12 | C.5.1.1.10 | Fabrication of covered walkway | 100 days | 100 days | Wed 30/5/18 | Thu 6/9/18 |
| 13 | C.5.1.1.11 | Application of XP | 180 days | 0 days | Sat 1/4/17 | Wed 27/9/17 |
| 14 | C.5.1.1.12 | Application of TTA for loading and unloading area | 88 days | 0 days | Sat 1/4/17 | Tue 27/6/17 |
| 15 | C.5.1.1.13 | Road works advice | 14 days | 0 days | Wed 28/6/17 | Tue 11/7/17 |
| 16 | C.5.1.1.14 | Implementation of TTA | 1 day | 0 days | Wed 9/8/17 | Wed 9/8/17 |
| 17 | C.5.1.1.15 | Tree Fellings | 131 days | 19.65 days | Tue 19/9/17 | Thu 1/3/18 |
| 18 | C.5.1.1.15a | Landscaping Works (PMI 9) | 180 days | 36 days | Fri 21/7/17 | Tue 16/1/18 |
| 19 | C.5.1.1.16 | Utilities detection | 1 day | 0 days | Fri 15/9/17 | Fri 15/9/17 |
| 20 | C.5.1.1.17 | Excavation of inpsection pit for locating existing utilities | 17 days | 0 days | Mon 23/10/17 | Fri 24/11/17 |
| 21 | C.5.1.1.17a | Excavation of inpsection pit for locating existing TCS (PMI 32) | 14 days | 0 days | Tue 5/12/17 | Mon 18/12/17 |
| 22 | C.5.1.1.18 | Arrangement with UU companies for diversion of UU | 30 days | 30 days | Thu 1/3/18 | Sat 31/3/18 |
| 23 | C.5.1.1.19 | Diversion of utilities | 123 days | 123 days | Sat 31/3/18 | Wed 1/8/18 |
| 24 | C.5.1.1.20 | Construction of footing of covered walkway | 63 days | 63 days | Wed 1/8/18 | Wed 3/10/18 |
| 25 | C.5.1.1.20a | Revised Drainage Works at Portion 4 & 5 (PMI 26) | 1 day | 0 days | Thu 9/11/17 | Thu 9/11/17 |
| 26 | C.5.1.1.21 | Drainage works D201 to D207 above the footing | 60 days | 60 days | Thu 13/9/18 | Mon 12/11/18 |
| 27 | C.5.1.1.22 | Material submission of Pillar box c.w accessories | 28 days | 28 days | Fri 27/10/17 | Thu 23/11/17 |
| 28 | C.5.1.1.23 | Approval of material submission of Pillar box c/w accessories | 28 days | 28 days | Fri 24/11/17 | Thu 21/12/17 |
| 29 | C.5.1.1.24 | Procurement to delivery of pillar box and accessories | 30 days | 30 days | Fri 22/12/17 | Sat 20/1/18 |
| 30 | C.5.1.1.25 | Positioning and construction of pillar box | 150 days | 150 days | Mon 11/9/17 | Wed 7/2/18 |
| 31 | C.5.1.1.26 | Application of Power Supply | 90 days | 90 days | Thu 8/2/18 | Tue 8/5/18 |
| 32 | C.5.1.1.27 | Construct draw pits | 20 days | 20 days | Tue 23/10/18 | Mon 12/11/18 |
| 33 | C.5.1.1.28 | Laying of TCS cables by others | 30 days | 30 days | Tue 23/10/18 | Thu 22/11/18 |
| 34 | C.5.1.1.29 | Laying of cables for lighting | 30 days | 30 days | Wed 7/11/18 | Fri 7/12/18 |
| 35 | C.5.1.1.30 | Construction of new high mast lighting and other lightings | 90 days | 90 days | Fri 7/12/18 | Thu 7/3/19 |
| 36 | C.5.1.1.31 | Installation of posts and beams for covered walkway | 60 days | 60 days | Thu 7/3/19 | Mon 6/5/19 |
| 37 | C.5.1.1.32 | Installation of glass cover for covered walkway | 60 days | 60 days | Sat 6/4/19 | Wed 5/6/19 |
| 38 | C.5.1.1.33 | Material submission of fittings and lighting for covered walkway | 28 days | 28 days | Sat 22/9/18 | Fri 19/10/18 |
| 39 | C.5.1.1.34 | Approval of fitting and lightings for covered walkway | 28 days | 28 days | Sat 20/10/18 | Fri 16/11/18 |
| 40 | C.5.1.1.35 | Procurement to delivery of lightings | 30 days | 30 days | Sat 17/11/18 | Sun 16/12/18 |
| 41 | C.5.1.1.36 | Installation of lighting of covered walkway | 28 days | 28 days | Wed 5/6/19 | Wed 3/7/19 |
| 42 | C.5.1.1.37 | Connection of power supply to lightings | 1 day | 1 day | Wed 3/7/19 | Thu 4/7/19 |
| 43 | C.5.1.1.38 | Testing and commissioning of electrical works | 7 days | 7 days | Thu 4/7/19 | Thu 11/7/19 |
| 44 | C.5.1.1.39 | Material submission of paver blocks | 28 days | 28 days | Wed 10/10/18 | Tue 6/11/18 |
| 45 | C.5.1.1.40 | Approval to submission of paver blocks | 28 days | 28 days | Wed 7/11/18 | Tue 4/12/18 |
| 46 | C.5.1.1.41 | Procurement to delivery of paver blocks | 30 days | 30 days | Wed 5/12/18 | Thu 3/1/19 |
| 47 | C.5.1.1.42 | Construction of paving blocks for covered walkway | 37 days | 37 days | Wed 3/7/19 | Fri 9/8/19 |
| 48 | C.5.1.1.43 | General tidy up | 2 days | 2 days | Fri 9/8/19 | Sun 11/8/19 |
| 49 | C.5.1.1.44 | Completion of Works | 1 day | 1 day | Sat 10/8/19 | Sun 11/8/19 |




Critical
Critical Split
Critical Progress
Task
Split
Task Progress
Manual Task
Start-only
Finish-only
Duration-only
Baseline
Baseline Split
Baseline Milestone
Milestone
Summary Progress
Summary
Manual Summary
Project Summary
External Tasks
External Milestone
Inactive Task
Inactive Milestone
Inactive Summary
Deadline

Revised programme for Section D_Dec 17

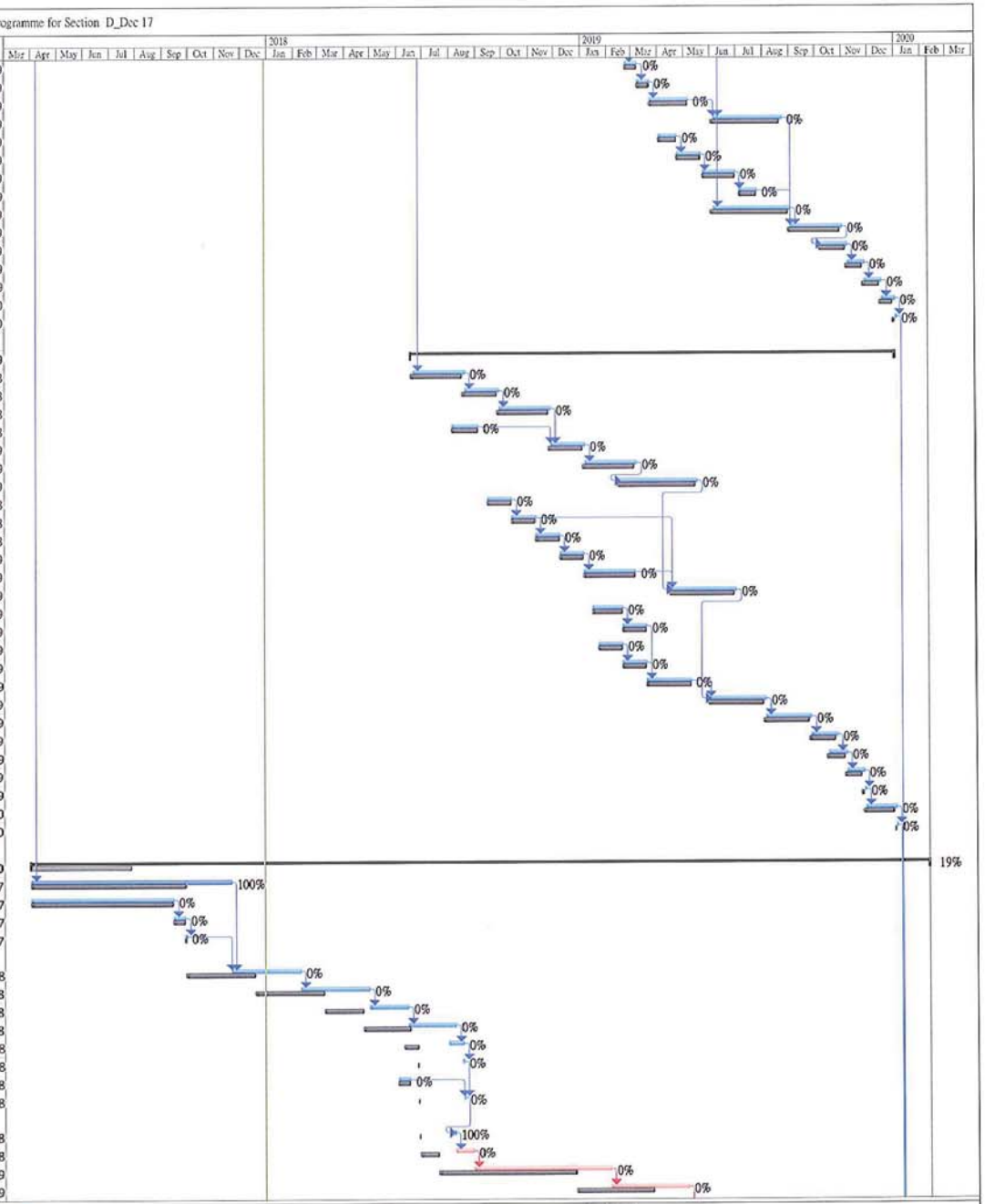
| ITEM | ID | Task Name | Duration | Remaining Duration | Start | Finish |
|---|---|---|---|---|---|---|
| 1 | D.6.1 | **Section D** | **1045 days** | **851.52 days** | **Fri 31/3/17** | **Sat 8/2/20** |
| 2 | D.6.1.1 | **Construction E12 Footbridge and Lift Tower** | **1008.5 days** | **756.87 days** | **Fri 31/3/17** | **Fri 3/1/20** |
| 3 | D.6.1.1.1 | Access Date for Portion 6 | 1 day | 0 days | Fri 31/3/17 | Fri 31/3/17 |
| 4 | D.6.1.1.2 | Initial Site Survey | 145 days | 7.25 days | Thu 6/7/17 | Mon 27/11/17 |
| 5 | D.6.1.1.3 | Tree survey | 141 days | 0 days | Fri 5/5/17 | Fri 22/9/17 |
| 6 | D.6.1.1.4 | Submission of material for water mains | 60 days | 60 days | Tue 19/12/17 | Fri 16/2/18 |
| 7 | D.6.1.1.5 | Approval to submission of water mains | 28 days | 28 days | Sat 17/2/18 | Fri 16/3/18 |
| 8 | D.6.1.1.6 | Procurement to Delivery of water mains material | 45 days | 45 days | Wed 18/4/18 | Fri 1/6/18 |
| 9 | D.6.1.1.7 | Proposal of E&M Specialist | 28 days | 28 days | Mon 8/10/18 | Sun 4/11/18 |
| 10 | D.6.1.1.8 | Approval of E&M Specialist | 28 days | 28 days | Mon 5/11/18 | Sun 2/12/18 |
| 11 | D.6.1.1.9 | Material submission of cable tray | 28 days | 28 days | Tue 4/12/18 | Mon 31/12/18 |
| 12 | D.6.1.1.10 | Approval of material submission of cable tray | 28 days | 28 days | Tue 1/1/19 | Mon 28/1/19 |
| 13 | D.6.1.1.11 | Material submission of cables, conduit, fittings | 28 days | 28 days | Tue 4/12/18 | Mon 31/12/18 |
| 14 | D.6.1.1.12 | Approval of material submission of cables conduit, fittings | 28 days | 28 days | Tue 1/1/19 | Mon 28/1/19 |
| 15 | D.6.1.1.13 | Material submission of proposed lightings | 28 days | 28 days | Tue 4/12/18 | Mon 31/12/18 |
| 16 | D.6.1.1.14 | Approval of proposed lighting | 28 days | 28 days | Tue 1/1/19 | Mon 28/1/19 |
| 17 | D.6.1.1.15 | Material submission of pillar box c/w accessories | 28 days | 28 days | Thu 1/11/18 | Wed 28/11/18 |
| 18 | D.6.1.1.16 | Approval of material submission of pillar box c/w accessories | 28 days | 28 days | Thu 29/11/18 | Wed 26/12/18 |
| 19 | D.6.1.1.17 | Material submission of MCB distribution board | 28 days | 28 days | Tue 4/12/18 | Mon 31/12/18 |
| 20 | D.6.1.1.18 | Approval of material submission of MCB distribution board | 28 days | 28 days | Tue 1/1/19 | Mon 28/1/19 |
| 21 | D.6.1.1.15 | Material submission of communication cables | 28 days | 28 days | Tue 4/12/18 | Mon 31/12/18 |
| 22 | D.6.1.1.14 | Approval of submission of communication cables | 28 days | 28 days | Tue 1/1/19 | Mon 28/1/19 |
| 23 | D.6.1.1.15 | Submission of Lift Structural E&M (SEM), layout and installation drawings | 60 days | 60 days | Tue 22/5/18 | Fri 20/7/18 |
| 24 | D.6.1.1.14 | Approval of Lift's SEM, layout and installation drawings | 40 days | 40 days | Sat 21/7/18 | Wed 29/8/18 |
| 25 | D.6.1.1.15 | Material submission of proposed lifts | 71 days | 67.45 days | Sat 16/12/17 | Tue 31/7/18 |
| 26 | D.6.1.1.14 | Approval of submission of proposed lift | 41 days | 41 days | Wed 1/8/18 | Mon 10/9/18 |
| 27 | D.6.1.1.12 | Procurement to delivery of lift | 120 days | 120 days | Mon 1/10/18 | Mon 28/1/19 |
| 28 | D.6.1.1.13 | Excavation Permit | 180 days | 18 days | Sat 1/4/17 | Wed 27/9/17 |
| 29 | D.6.1.1.14 | Application of TTA for loading and unloading area | 109 days | 0 days | Sat 1/4/17 | Tue 18/7/17 |
| 30 | D.6.1.1.15 | Road Works advice | 14 days | 0 days | Tue 25/7/17 | Mon 7/8/17 |
| 31 | D.6.1.1.16 | Implementation of TTA | 1 day | 0 days | Tue 8/8/17 | Tue 8/8/17 |
| 32 | D.6.1.1.17 | Erection of hoarding | 10 days | 0 days | Sun 30/7/17 | Tue 8/8/17 |
| 33 | D.6.1.1.18 | Site Clearance and Tree felling | 34 days | 0 days | Mon 3/7/17 | Fri 24/11/17 |
| 34 | D.6.1.1.19 | Construct temporary drainage systems | 16 days | 16 days | Sat 25/11/17 | Sun 10/12/17 |
| 35 | D.6.1.1.20 | Utilities Detection | 1 day | 0 days | Fri 4/8/17 | Fri 4/8/17 |
| 36 | D.6.1.1.20a | CCTV Inspection on uncharted Leachate pipes (PMI 27) | 2 days | 0 days | Mon 4/12/17 | Tue 5/12/17 |
| 37 | D.6.1.1.20b | Revised RWE12 level (PMI 34) | 7 days | 0 days | Sat 9/12/17 | Fri 15/12/17 |
| 38 | D.6.1.1.21 | Predrill for Excavation of rocks from retaining wall CH97.5 to CH45 | 45 days | 42.75 days | Mon 15/1/18 | Thu 1/3/18 |
| 39 | D.6.1.1.22 | Predrill for Excavation of rocks from retaining wall CH45 to CH0 | 45 days | 31.5 days | Tue 19/9/17 | Tue 16/1/18 |
| 40 | D.6.1.1.23 | Excavation of rock from retaining wall chainage CH97.5 to CH45 | 55 days | 55 days | Thu 1/3/18 | Wed 25/4/18 |
| 41 | D.6.1.1.22 | Excavation of rock from retaining wall chainage CH45 to CH0 | 55 days | 55 days | Wed 25/4/18 | Tue 19/6/18 |
| 42 | D.6.1.1.23 | Construction of Retaining walls chainage CH97.5 to CH 45 | 30 days | 30 days | Tue 19/6/18 | Thu 19/7/18 |
| 43 | D.6.1.1.24 | Construction of Retaining walls chainage CH45 to CH 0 | 30 days | 30 days | Thu 19/7/18 | Sat 18/8/18 |
| 44 | D.6.1.1.25 | XP application for works in TKOT carriageway | 232 days | 0 days | Sat 1/4/17 | Sat 18/11/17 |
| 45 | D.6.1.1.26 | Application of TTA for diversion of water mains | 90 days | 90 days | Sat 17/2/18 | Thu 17/5/18 |
| 46 | D.6.1.1.27 | Road works advice | 14 days | 14 days | Fri 18/5/18 | Thu 31/5/18 |
| 47 | D.6.1.1.28 | Implementation of TTA for water mains diversion | 1 day | 1 day | Fri 1/6/18 | Fri 1/6/18 |
| 48 | D.6.1.1.29 | Diversion of water mains | 90 days | 90 days | Tue 17/7/18 | Mon 15/10/18 |
| 49 | D.6.1.1.30 | Rock slope treatment | 75 days | 75 days | Sat 18/8/18 | Thu 1/11/18 |
| 50 | D.6.1.1.31 | Construction of substructure of lift tower | 45 days | 45 days | Mon 15/10/18 | Thu 29/11/18 |
| 51 | D.6.1.1.32 | Construction E12-P1, E12, P2 | 30 days | 30 days | Thu 29/11/18 | Sat 29/12/18 |
| 52 | D.6.1.1.33 | Construction of lift tower superstructures | 70 days | 70 days | Sat 29/12/18 | Sat 9/3/19 |
| 53 | D.6.1.1.34 | Application of Power Supply | 180 days | 180 days | Thu 2/8/18 | Mon 28/1/19 |
| 54 | D.6.1.1.35 | Positioning/Construction/installation of Pillar Box | 180 days | 180 days | Thu 2/8/18 | Mon 28/1/19 |
| 55 | D.6.1.1.36 | Trenching works for laying cables and communication cables | 60 days | 60 days | Tue 29/1/19 | Fri 29/3/19 |
| 56 | D.6.1.1.37 | Lift car installations | 87 days | 87 days | Sat 9/3/19 | Tue 4/6/19 |
| 57 | D.6.1.1.38 | Connection of cables and communication cables to lift car | 7 days | 7 days | Tue 28/5/19 | Tue 4/6/19 |
| 58 | D.6.1.1.39 | Submission of material for glazing and louver | 41 days | 41 days | Sat 29/12/18 | Thu 7/2/19 |
| 59 | D.6.1.1.40 | Comment of submission for glazing and louver | 14 days | 14 days | Fri 8/2/19 | Thu 21/2/19 |




Critical | Task | Manual Task | Duration-only | Baseline Milestone | Summary | External Tasks | Inactive Milestone
Critical Split | Split | Start-only | Baseline | Milestone | Manual Summary | External Milestone | Inactive Summary
Critical Progress | Task Progress | Finish-only | Baseline Split | Summary Progress | Project Summary | Inactive Task | Deadline

Revised programme for Section D_Dec 17

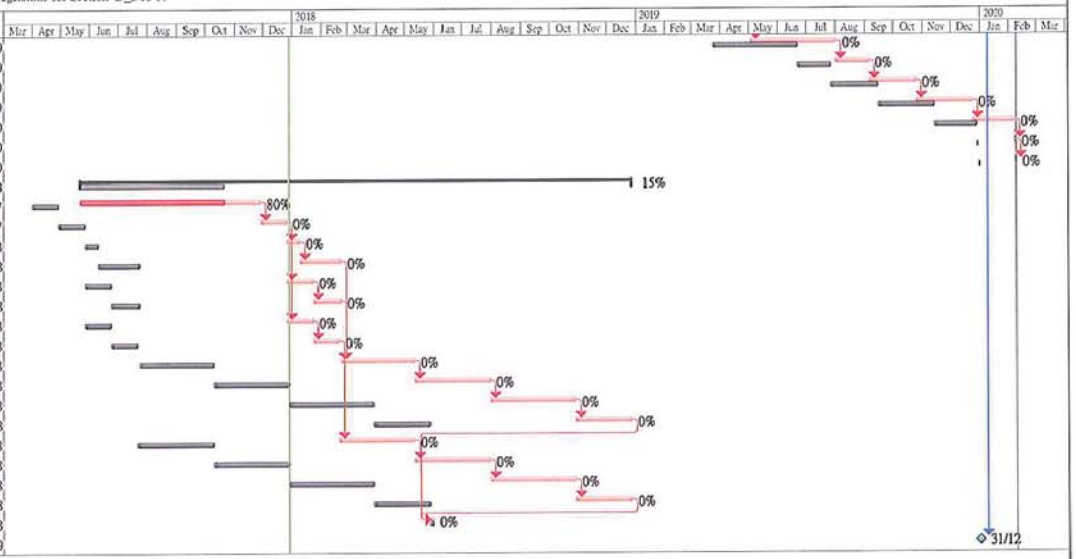
| ITEM | ID | Task Name | Duration | Remaining Duration | Start | Finish |
|---|---|---|---|---|---|---|
| 60 | D.6.1.1.41 | Second submission of proposal of glazing and louver | 14 days | 14 days | Fri 22/2/19 | Thu 7/3/19 |
| 61 | D.6.1.1.42 | Approval of glazing and louver | 14 days | 14 days | Fri 8/3/19 | Thu 21/3/19 |
| 62 | D.6.1.1.43 | Procurement to delivery of glazing and louver | 45 days | 45 days | Fri 22/3/19 | Sun 5/5/19 |
| 63 | D.6.1.1.44 | Glazing and louvers installation | 80 days | 80 days | Tue 4/6/19 | Fri 23/8/19 |
| 64 | D.6.1.1.45 | Submission of sump pump system | 21 days | 21 days | Tue 2/4/19 | Mon 22/4/19 |
| 65 | D.6.1.1.46 | Approval to submission of sump pump system | 28 days | 28 days | Tue 23/4/19 | Mon 20/5/19 |
| 66 | D.6.1.1.47 | Procurement to delivery of sump pump | 38 days | 38 days | Thu 23/5/19 | Sat 29/6/19 |
| 67 | D.6.1.1.48 | Installation of sump pump system | 20 days | 20 days | Fri 5/7/19 | Wed 24/7/19 |
| 68 | D.6.1.1.49 | Installation of E&M works | 90 days | 90 days | Tue 4/6/19 | Mon 2/9/19 |
| 69 | D.6.1.1.50 | T&C for lift and submission of form LE5 to EMSD | 60 days | 60 days | Mon 2/9/19 | Fri 1/11/19 |
| 70 | D.6.1.1.51 | Construction of staircase footing | 30 days | 30 days | Tue 8/10/19 | Thu 7/11/19 |
| 71 | D.6.1.1.52 | Construction of staircase | 20 days | 20 days | Thu 7/11/19 | Wed 27/11/19 |
| 72 | D.6.1.1.53 | construction of cover for staircase | 20 days | 20 days | Wed 27/11/19 | Tue 17/12/19 |
| 73 | D.6.1.1.54 | Installation of lighting to staircase | 15 days | 15 days | Tue 17/12/19 | Wed 1/1/20 |
| 74 | D.6.1.1.55 | General tidy up | 2 days | 2 days | Wed 1/1/20 | Fri 3/1/20 |
| 75 | | | | | | |
| **76** | **D.6.1.2** | **Covered Walkway** | **563 days** | **563 days** | **Sun 17/6/18** | **Tue 31/12/19** |
| 77 | D.6.1.2.1 | Construction of footing BB1-SB-F4 | 60 days | 60 days | Tue 19/6/18 | Sat 18/8/18 |
| 78 | D.6.1.2.2 | Construction of footing BB1-SB-F3 | 40 days | 40 days | Sat 18/8/18 | Thu 27/9/18 |
| 79 | D.6.1.2.3 | Construction of tooting BB1-SB-F2, BB1-SB-F1 | 60 days | 60 days | Thu 27/9/18 | Mon 26/11/18 |
| 80 | D.6.1.2.4 | Procurement to delivery of drainage material | 30 days | 30 days | Sat 4/8/18 | Sun 2/9/18 |
| 81 | D.6.1.2.5 | Construct the drainage from Manhole D701 to D702 | 40 days | 40 days | Mon 26/11/18 | Sat 5/1/19 |
| 82 | D.6.1.2.6 | Construct the drainage from Manhole D702 to D803 | 60 days | 60 days | Sat 5/1/19 | Wed 6/3/19 |
| 83 | D.6.1.2.7 | Relocation of street lighting cables and lighting | 90 days | 90 days | Fri 15/2/19 | Thu 16/5/19 |
| 84 | D.6.1.2.8 | Proposal of steel works specialist | 28 days | 28 days | Fri 14/9/18 | Thu 11/10/18 |
| 85 | D.6.1.2.9 | Approval of steelworks specialist | 28 days | 28 days | Fri 12/10/18 | Thu 8/11/18 |
| 86 | D.6.1.2.10 | Submission of off site fabrication of steelworks | 28 days | 28 days | Fri 9/11/18 | Thu 6/12/18 |
| 87 | D.6.1.2.11 | Approval of off site fabrication of steel works | 28 days | 28 days | Fri 7/12/18 | Thu 3/1/19 |
| 88 | D.6.1.2.12 | Off site fabrication of steelworks | 60 days | 60 days | Fri 4/1/19 | Mon 4/3/19 |
| 89 | D.6.1.2.13 | construction of columns for covered walkway | 75 days | 75 days | Tue 16/4/19 | Sun 30/6/19 |
| 90 | D.6.1.2.14 | Design submission of roof structure | 35 days | 35 days | Mon 14/1/19 | Sun 17/2/19 |
| 91 | D.6.1.2.15 | Approval to design of roof structure | 28 days | 28 days | Mon 18/2/19 | Sun 17/3/19 |
| 92 | D.6.1.2.16 | Material submission of roof panels | 28 days | 28 days | Mon 21/1/19 | Sun 17/2/19 |
| 93 | D.6.1.2.17 | Approval of material submission of roof panels | 28 days | 28 days | Mon 18/2/19 | Sun 17/3/19 |
| 94 | D.6.1.2.18 | Procurement to delivery of roof panels | 51 days | 51 days | Mon 18/3/19 | Tue 7/5/19 |
| 95 | D.6.1.2.19 | construction of roof structures of covered walkway | 64 days | 64 days | Fri 31/5/19 | Sat 3/8/19 |
| 96 | D.6.1.2.20 | construction of paving blocks to covered walkway | 53 days | 53 days | Sat 3/8/19 | Wed 25/9/19 |
| 97 | D.6.1.2.21 | Installation of lighting to covered walkway and bridges | 30 days | 30 days | Wed 25/9/19 | Fri 25/10/19 |
| 98 | D.6.1.2.22 | Connection of bridge drainage to manholes | 21 days | 21 days | Tue 15/10/19 | Tue 5/11/19 |
| 99 | D.6.1.2.23 | Construction of water points | 20 days | 20 days | Tue 5/11/19 | Mon 25/11/19 |
| 100 | D.6.1.2.24 | Connection of water to irrigation pipes | 2 days | 2 days | Mon 25/11/19 | Wed 27/11/19 |
| 101 | D.6.1.2.25 | Construction of Paving blocks to other area | 35 days | 35 days | Wed 27/11/19 | Wed 1/1/20 |
| 102 | D.6.1.2.26 | General tidy up | 1 day | 1 day | Wed 1/1/20 | Thu 2/1/20 |
| 103 | | | | | | |
| **104** | **D.6.1.3** | **Works in TKOT Carriageway** | **1044 days** | **850.79 days** | **Sat 1/4/17** | **Sat 8/2/20** |
| 105 | D.6.1.3.1 | Excavation Permit for drainage works in TKOT carriageway | 232 days | 0 days | Sat 1/4/17 | Sat 18/11/17 |
| 106 | D.6.1.3.2 | Application of TTA for drainage works in TKOT carriageway | 165 days | 165 days | Sat 1/4/17 | Tue 12/9/17 |
| 107 | D.6.1.3.3 | Road works advice | 14 days | 14 days | Wed 13/9/17 | Tue 26/9/17 |
| 108 | D.6.1.3.4 | Implementation of TTA for drainage works in Southbound carriageway | 1 day | 1 day | Wed 27/9/17 | Wed 27/9/17 |
| 109 | D.6.1.3.5 | Drainage from Manhole D601 to D607 | 80 days | 80 days | Sun 19/11/17 | Tue 6/2/18 |
| 110 | D.6.1.3.6 | Drainage works from Manhole D607 to D803 | 80 days | 80 days | Wed 7/2/18 | Fri 27/4/18 |
| 111 | D.6.1.3.7 | Construction of bus bay island | 45 days | 45 days | Sat 28/4/18 | Mon 11/6/18 |
| 112 | D.6.1.3.8 | Reconstruction of Concrete Pavement | 55 days | 55 days | Tue 12/6/18 | Sun 5/8/18 |
| 113 | D.6.1.3.9 | Road Marking | 17 days | 17 days | Sun 29/7/18 | Tue 14/8/18 |
| 114 | D.6.1.3.10 | completion of works in TKOT Southbound carriageway | 1 day | 1 day | Tue 14/8/18 | Tue 14/8/18 |
| 115 | D.6.1.311 | Road Works Advice for TTA in Northbound carriageway | 14 days | 14 days | Thu 31/5/18 | Wed 13/6/18 |
| 116 | D.6.1.3.12 | Implementation of TTA for drainage works in Northbound carriageway | 1 day | 1 day | Wed 15/8/18 | Wed 15/8/18 |
| 117 | D.6.1.3.13 | Utilitiies Detection | 1 day | 0 days | Sat 4/8/18 | Sat 4/8/18 |
| 118 | D.6.1.3.14 | Inspection Pit to locate existing utilities | 21 days | 21 days | Sun 5/8/18 | Sat 25/8/18 |
| 119 | D.6.1.3.15 | Diversion of utilities | 160 days | 160 days | Sun 26/8/18 | Fri 1/2/19 |
| 120 | D.6.1.3.16 | Drainage works D401 to D410 | 90 days | 90 days | Sat 2/2/19 | Thu 2/5/19 |




Critical, Critical Split, Critical Progress, Task, Split, Task Progress, Manual Task, Start-only, Finish-only, Duration-only, Baseline, Baseline Split, Baseline Milestone, Milestone, Summary Progress, Summary, Manual Summary, Project Summary, External Tasks, External Milestone, Inactive Task, Inactive Milestone, Inactive Summary, Deadline

Revised programme for Section D_Dec 17

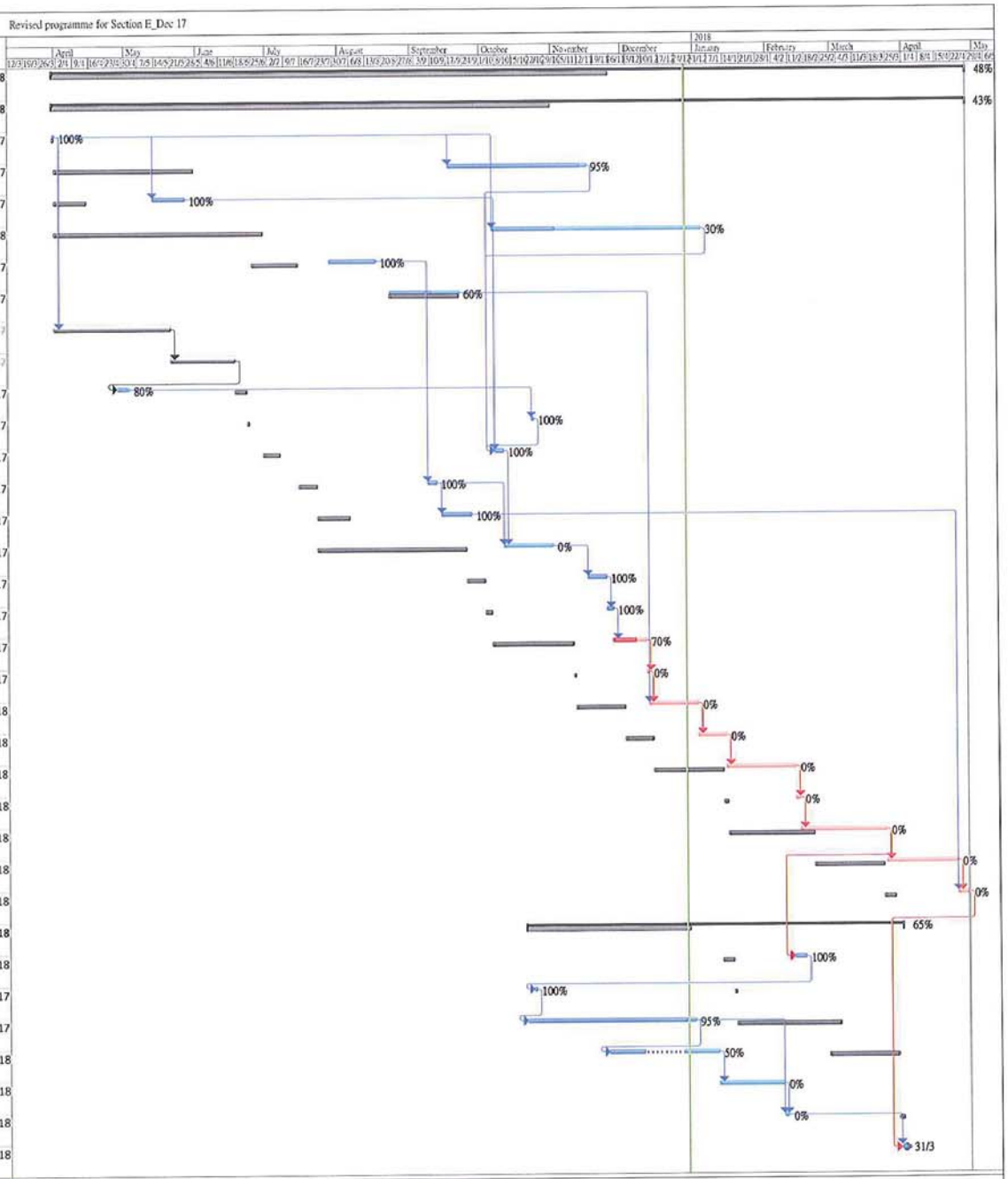
| ITEM | ID | Task Name | Duration | Remaining Duration | Start | Finish |
|---|---|---|---|---|---|---|
| 121 | D.6.1.3.17 | Drainage works D410 to D419 | 90 days | 90 days | Fri 3/5/19 | Wed 31/7/19 |
| 122 | D.6.1.3.18 | Drainage works D301 | 35 days | 35 days | Thu 1/8/19 | Wed 4/9/19 |
| 123 | D.6.1.3.19 | Construction of kerb for Bus Bay kerb island | 50 days | 50 days | Thu 5/9/19 | Thu 24/10/19 |
| 124 | D.6.1.3.20 | Laying of Subbase and pavement for Bus Bay | 60 days | 60 days | Fri 25/10/19 | Mon 23/12/19 |
| 125 | D.6.1.3.21 | Remaining Road Marking and signage | 45 days | 45 days | Tue 24/12/19 | Thu 6/2/20 |
| 126 | D.6.1.3.22 | General tidy up | 1 day | 1 day | Fri 7/2/20 | Fri 7/2/20 |
| 127 | D.6.1.3.23 | Completion of Works | 1 day | 1 day | Sat 8/2/20 | Sat 8/2/20 |
| **128** | **D.6.1.4** | **AUTOTOLL** | **584 days** | **496.2 days** | **Mon 22/5/17** | **Wed 26/12/18** |
| 129 | D.6.1.4.1 | Proposal of Specialist for MTC and ETC system | 190 days | 38 days | Mon 22/5/17 | Mon 27/11/17 |
| 130 | D.6.1.4.2 | Approval of Specialist for MTC and ETC system | 28 days | 28 days | Tue 28/11/17 | Mon 25/12/17 |
| 131 | D.6.1.4.3 | Material submission of Autotoll System | 14 days | 14 days | Tue 26/12/17 | Mon 8/1/18 |
| 132 | D.6.1.4.4 | Approval of material submission of autotoll system | 44 days | 44 days | Tue 9/1/18 | Wed 21/2/18 |
| 133 | D.6.1.4.5 | Statuory submission of Auto Toll system | 28 days | 28 days | Tue 26/12/17 | Mon 22/1/18 |
| 134 | D.6.1.4.6 | Approval of Auto Toll System | 30 days | 30 days | Tue 23/1/18 | Wed 21/2/18 |
| 135 | D.6.1.4.7 | Method statement submission of Swapping of autotoll system | 28 days | 28 days | Tue 26/12/17 | Mon 22/1/18 |
| 136 | D.6.1.4.8 | Approval of method statement of swapping of autotoll system | 28 days | 28 days | Tue 23/1/18 | Mon 19/2/18 |
| 137 | D.6.1.4.9 | Activation of manual toll system of Lane 2 | 78 days | 78 days | Thu 22/2/18 | Thu 10/5/18 |
| 138 | D.6.1.4.10 | Deactivation of autotoll system in Lane 2 | 80 days | 80 days | Fri 11/5/18 | Sun 29/7/18 |
| 139 | D.6.1.4.11 | Inatallation and activation of autotoll system in Lane 1 | 90 days | 90 days | Mon 30/7/18 | Sat 27/10/18 |
| 140 | D.6.1.4.12 | Testing and commissioning of autotoll and manual toll system | 60 days | 60 days | Sun 28/10/18 | Wed 26/12/18 |
| 141 | D.6.1.4.13 | Activation of manual toll system of Lane 11 | 80 days | 80 days | Tue 20/2/18 | Thu 10/5/18 |
| 142 | D.6.1.4.14 | Deactivation of autotoll system in Lane 11 | 80 days | 80 days | Fri 11/5/18 | Sun 29/7/18 |
| 143 | D.6.1.4.15 | Inatallation and activation of autotoll system in Lane 1 | 90 days | 90 days | Mon 30/7/18 | Sat 27/10/18 |
| 144 | D.6.1.4.16 | Testing and commissioning of autotoll and manual toll system | 60 days | 60 days | Sun 28/10/18 | Wed 26/12/18 |
| 145 | D.6.1.4.17 | General tidy up | 3 days | 3 days | Mon 28/5/18 | Wed 30/5/18 |
| 146 | D.6.1.4.18 | Completion of works | 0 days | 0 days | Tue 31/12/19 | Tue 31/12/19 |




Critical, Critical Split, Critical Progress, Task, Split, Task Progress, Manual Task, Start-only, Finish-only, Duration-only, Baseline, Baseline Split, Baseline Milestone, Milestone, Summary Progress, Summary, Manual Summary, Project Summary, External Tasks, External Milestone, Inactive Task, Inactive Milestone, Inactive Summary, Deadline

Revised programme for Section E_Dec 17

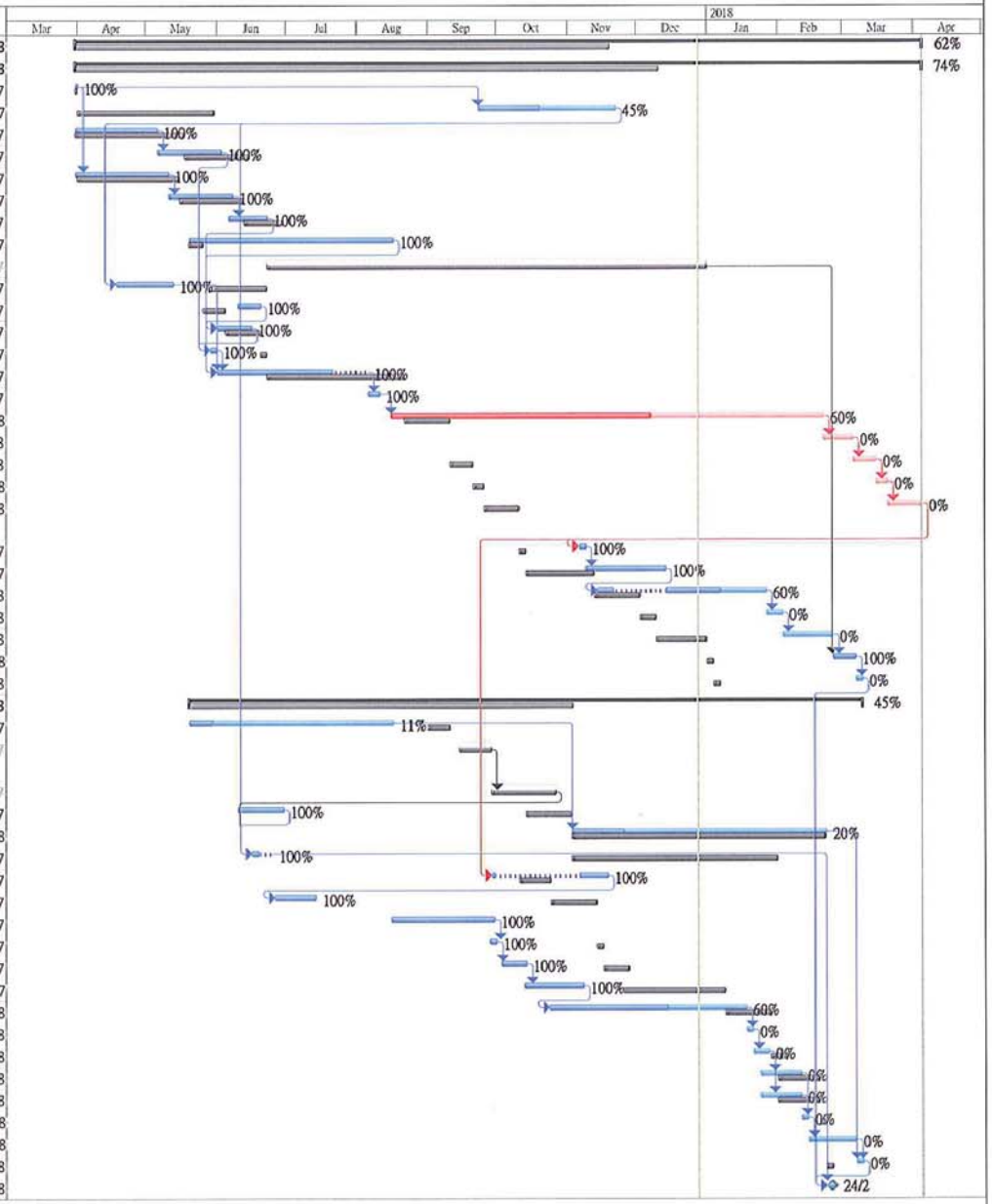
| ITEM | ID | Task Name | Duration | Remaining Duration | Start | Finish |
|---|---|---|---|---|---|---|
| 1 | E.7.1 | **SECTION E - HIKING TRAILS (JORDAN SECTION & CHOI WAN SECTION)** | **393 days** | **202.63 days** | **Fri 31/3/17** | **Fri 27/4/18** |
| 2 | E.7.1.1 | **CONSTRUCTION OF HIKING TRAIL (Jordan section)** | **393 days** | **223.44 days** | **Fri 31/3/17** | **Fri 27/4/18** |
| 3 | E.7.1.1.1 | Access Date of Portion 7 | 1 day | 0 days | Fri 31/3/17 | Fri 31/3/17 |
| 4 | E.7.1.1.2 | Initial Survey of Site (Jordan and Choi Wan Section) | 60 days | 3 days | Sun 17/9/17 | Wed 15/11/17 |
| 5 | E.7.1.1.3 | Tree survey and submission (Jordan and Choi Wan Section) | 14 days | 0 days | Sat 13/5/17 | Fri 26/5/17 |
| 6 | E.7.1.1.4 | Mobilization of plant, access , equipment, material | 90 days | 63 days | Fri 6/10/17 | Wed 3/1/18 |
| 7 | E.7.1.1.5 | Submission of construction impact assessment | 20 days | 0 days | Fri 28/7/17 | Wed 16/8/17 |
| 8 | E.7.1.1.6 | Procurement to delivery of soil nails | 30 days | 12 days | Wed 23/8/17 | Thu 21/9/17 |
| 9 | E.7.1.1.7 | Submission of method statement of excavation of slope | 50 days | 50 days | Sat 1/4/17 | Sat 20/5/17 |
| 10 | E.7.1.1.8 | Approval of Method Statement of excavation of slope | 28 days | 28 days | Sun 21/5/17 | Sat 17/6/17 |
| 11 | E.7.1.1.9 | Construction of Hoarding | 5 days | 1 day | Fri 28/4/17 | Tue 2/5/17 |
| 12 | E.7.1.1.10 | Utilities detection | 1 day | 0 days | Mon 23/10/17 | Mon 23/10/17 |
| 13 | E.7.1.1.11 | Construction of confirmation Trial Pit TP1 | 4 days | 0 days | Sat 7/10/17 | Tue 10/10/17 |
| 14 | E.7.1.1.12 | Construction of confirmation borehole J1-BH1 | 4 days | 0 days | Fri 8/9/17 | Mon 11/9/17 |
| 15 | E.7.1.1.13 | Construct borehole J1-BH2 and test samples | 13 days | 0 days | Thu 14/9/17 | Tue 26/9/17 |
| 16 | E.7.1.1.14 | Excavation of slope and drainage construction | 21 days | 21 days | Wed 11/10/17 | Tue 31/10/17 |
| 17 | E.7.1.1.15 | Erection of tubular platform for soil nails | 8 days | 0 days | Thu 16/11/17 | Thu 23/11/17 |
| 18 | E.7.1.1.16 | Setting out of soil nails | 3 days | 0 days | Fri 24/11/17 | Sun 26/11/17 |
| 19 | E.7.1.1.17 | Construction of Test nails TN1 and TN2 | 14 days | 4.2 days | Mon 27/11/17 | Sun 10/12/17 |
| 20 | E.7.1.1.18 | Pull out tests for TN1 and TN2 | 1 day | 1 day | Mon 11/12/17 | Mon 11/12/17 |
| 21 | E.7.1.1.19 | Construction of soil nails (45nrs) | 21 days | 21 days | Tue 12/12/17 | Mon 1/1/18 |
| 22 | E.7.1.1.20 | Construction of soil nail heads | 12 days | 12 days | Tue 2/1/18 | Sat 13/1/18 |
| 23 | E.7.1.1.21 | Construction of staircase | 30 days | 30 days | Sun 14/1/18 | Mon 12/2/18 |
| 24 | E.7.1.1.22 | Hydroseeding of slope | 2 days | 2 days | Tue 13/2/18 | Wed 14/2/18 |
| 25 | E.7.1.1.23 | Construction of hiking trail | 37 days | 37 days | Thu 15/2/18 | Fri 23/3/18 |
| 26 | E.7.1.1.24 | Construction of Planter walls with planting | 30 days | 30 days | Sat 24/3/18 | Sun 22/4/18 |
| 27 | E.7.1.1.25 | General tidy up | 5 days | 5 days | Mon 23/4/18 | Fri 27/4/18 |
| 28 | E.7.1.2 | **CONSTRUCTION OF HIKING TRAIL (Choi Wan section)** | **162 days** | **57.05 days** | **Fri 20/10/17** | **Sat 31/3/18** |
| 29 | E.7.1.2.1 | Erection of hoarding | 5 days | 0 days | Mon 12/2/18 | Fri 16/2/18 |
| 30 | E.7.1.2.2 | Utilities detection | 1 day | 0 days | Mon 23/10/17 | Mon 23/10/17 |
| 31 | E.7.1.2.3 | Construction of hiking trail | 72 days | 3.6 days | Fri 20/10/17 | Sat 30/12/17 |
| 32 | E.7.1.2.4 | Construction of planter walls with planting | 30 days | 15 days | Fri 24/11/17 | Tue 9/1/18 |
| 33 | E.7.1.2.4a | Landscaping Works (PMI 33) | 28 days | 28 days | Wed 10/1/18 | Tue 6/2/18 |
| 34 | E.7.1.2.5 | General tidy up | 2 days | 2 days | Wed 7/2/18 | Thu 8/2/18 |
| 35 | E.7.1.2.6 | Completion of Works | 0 days | 0 days | Sat 31/3/18 | Sat 31/3/18 |




Critical, Critical Split, Critical Progress, Task, Split, Task Progress, Manual Task, Start-only, Finish-only, Duration-only, Baseline, Baseline Split, Baseline Milestone, Milestone, Summary Progress, Summary, Manual Summary, Project Summary, External Tasks, External Milestone, Inactive Task, Inactive Milestone, Inactive Summary, Deadline

Revised programme for Section F_Dec 17

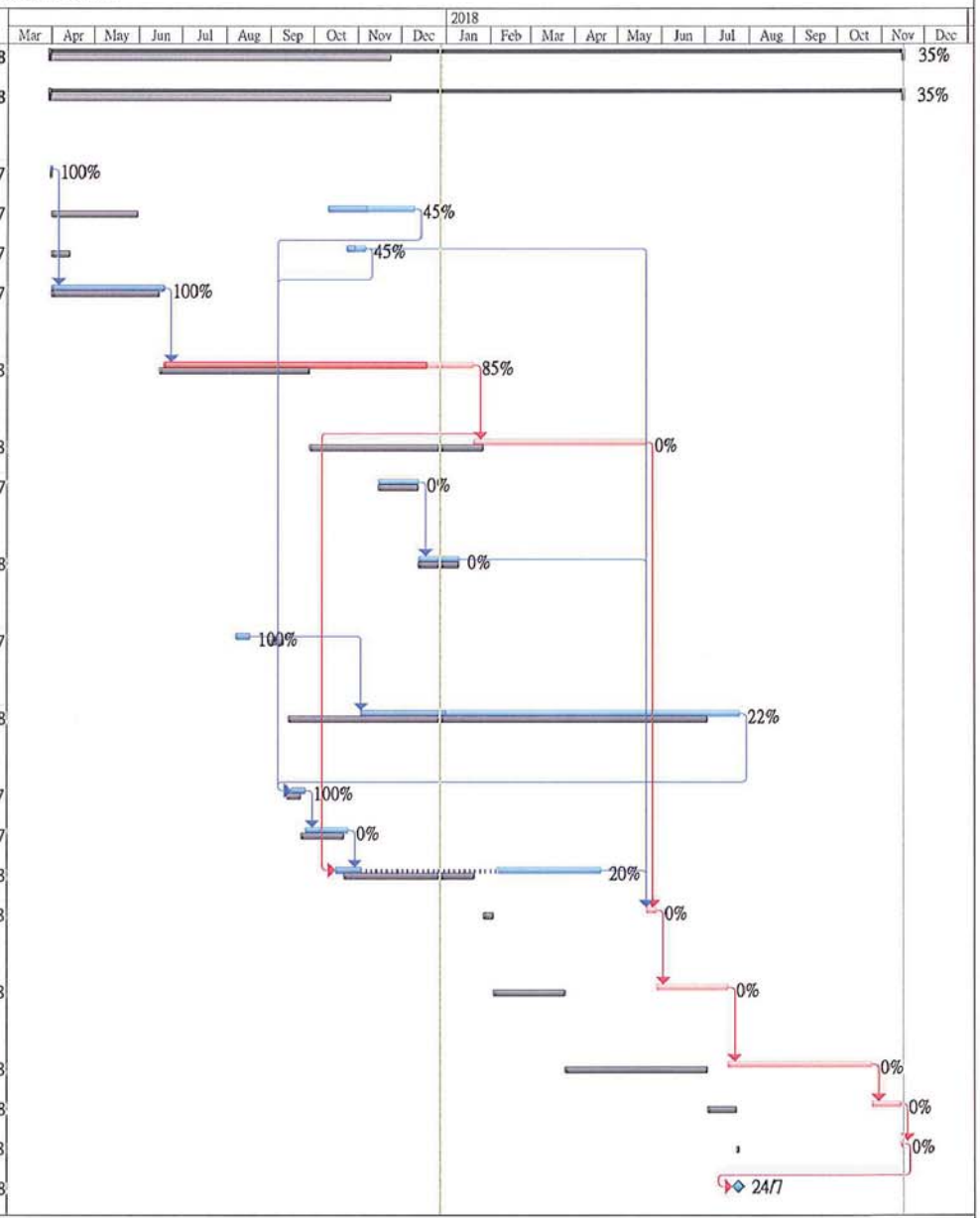
| ITEM | ID | Task Name | Duration | Remaining Duration | Start | Finish |
|---|---|---|---|---|---|---|
| 1 | F.8.1 | **SECTION F - ENTRUSTED SLOPES (SITE A & SITE B)** | **370 days** | **139.57 days** | **Fri 31/3/17** | **Wed 4/4/18** |
| 2 | F.8.1.1 | **CONSTRUCTION OF SOIL NAILS IN SITE B** | **370 days** | **97.85 days** | **Fri 31/3/17** | **Wed 4/4/18** |
| 3 | F.8.1.1.1 | Access Date of Portion 8 | 1 day | 0 days | Fri 31/3/17 | Fri 31/3/17 |
| 4 | F.8.1.1.2 | Initial Site Survey for site A and Site B | 60 days | 33 days | Sat 23/9/17 | Tue 21/11/17 |
| 5 | F.8.1.1.3 | Submission of method statement of soil nailing works | 36 days | 0 days | Fri 31/3/17 | Fri 5/5/17 |
| 6 | F.8.1.1.4 | Approval of method statement of soil nailing works | 28 days | 0 days | Sat 6/5/17 | Fri 2/6/17 |
| 7 | F.8.1.1.5 | Material submission of soil nailing system | 41 days | 0 days | Fri 31/3/17 | Wed 10/5/17 |
| 8 | F.8.1.1.6 | Approval of material for soil nailing system | 28 days | 0 days | Thu 11/5/17 | Wed 7/6/17 |
| 9 | F.8.1.1.7 | Procurement to delivery of soil nails system | 17 days | 0 days | Tue 6/6/17 | Thu 22/6/17 |
| 10 | F.8.1.1.8 | Submission of Construction Impact Assessment | 89 days | 0 days | Sat 20/5/17 | Wed 16/8/17 |
| ~~11~~ | ~~F.8.1.1.9~~ | ~~Monitoring of ground movement and ground water~~ | ~~192 days~~ | ~~192 days~~ | ~~Fri 23/6/17~~ | ~~Sun 31/12/17~~ |
| 12 | F.8.1.1.10 | General site clrearance | 25 days | 0 days | Tue 18/4/17 | Fri 12/5/17 |
| 13 | F.8.1.1.11 | Tree Survey for slope features 11NE-D/C709, C714, C711 | 10 days | 0 days | Sat 10/6/17 | Mon 19/6/17 |
| 14 | F.8.1.1.12 | Erection of tubular Scaffold for slope 11NE-D/C709, C714 | 15 days | 0 days | Thu 1/6/17 | Thu 15/6/17 |
| 15 | F.8.1.1.13 | Setting out of soil nails | 3 days | 0 days | Mon 29/5/17 | Wed 31/5/17 |
| 16 | F.8.1.1.14 | Construction of soil nail (198nrs) | 50.4 days | 0 days | Thu 1/6/17 | Sat 5/8/17 |
| 17 | F.8.1.1.14a | Additional soil nail (13nrs) (PMI 22) | 5 days | 0 days | Sun 6/8/17 | Thu 10/8/17 |
| 18 | F.8.1.1.15 | Construction of soil nail heads | 189 days | 75.6 days | Wed 16/8/17 | Tue 20/2/18 |
| 19 | F.8.1.1.15a | Additional soil nail heads (13nrs) (PMI 22) | 13 days | 13 days | Wed 21/2/18 | Mon 5/3/18 |
| 20 | F.8.1.1.16 | Construction of sprayed concrete | 10 days | 10 days | Tue 6/3/18 | Thu 15/3/18 |
| 21 | F.8.1.1.17 | Removal of tubular scaffold and tidy up | 5 days | 5 days | Fri 16/3/18 | Tue 20/3/18 |
| 22 | F.8.1.1.18 | Erection of tubular scaffold for slope feature 11NE-D/C711 | 15 days | 15 days | Wed 21/3/18 | Wed 4/4/18 |
| 23 | F.8.1.1.19 | Setting out of soil nails | 3 days | 0 days | Mon 6/11/17 | Wed 8/11/17 |
| 24 | F.8.1.1.20 | Construction of soil nails (82nrs) | 35 days | 0 days | Thu 9/11/17 | Wed 13/12/17 |
| 25 | F.8.1.1.21 | Construction of soil nails heads | 51 days | 20.4 days | Tue 14/11/17 | Fri 26/1/18 |
| 26 | F.8.1.1.22 | Removal of tubular scaffold and tidy up | 7 days | 7 days | Sat 27/1/18 | Fri 2/2/18 |
| 27 | F.8.1.1.23 | Laying of non-biodegradable control mat | 22 days | 22 days | Sat 3/2/18 | Sat 24/2/18 |
| 28 | F.8.1.1.24 | hydroseeding of slope | 10 days | 0 days | Sun 25/2/18 | Tue 6/3/18 |
| 29 | F.8.1.1.25 | General tidy up site | 3 days | 3 days | Wed 7/3/18 | Fri 9/3/18 |
| 30 | F.8.1.2 | **CONSTRUCTION OF SOIL NAILS IN SITE A** | **294 days** | **162.14 days** | **Sat 20/5/17** | **Fri 9/3/18** |
| 31 | F.8.1.2.1 | Submission of Construction Impact Assessment | 89 days | 79 days | Sat 20/5/17 | Wed 16/8/17 |
| ~~32~~ | ~~F.8.1.2.2~~ | ~~Submission of method statement of demolition of terrace~~ | ~~14 days~~ | ~~14 days~~ | ~~Fri 15/9/17~~ | ~~Thu 28/9/17~~ |
| ~~33~~ | ~~F.8.1.2.3~~ | ~~Approval to method statement of demolition of terrace~~ | ~~28 days~~ | ~~28 days~~ | ~~Fri 29/9/17~~ | ~~Thu 26/10/17~~ |
| 34 | F.8.1.2.4 | Tree Survey | 20 days | 0 days | Sat 10/6/17 | Thu 29/6/17 |
| 35 | F.8.1.2.5 | Monitoring of ground movement and ground water | 111 days | 88.8 days | Fri 3/11/17 | Wed 21/2/18 |
| 36 | F.8.1.2.6 | Demolition of existing terrace structure | 3 days | 0 days | Fri 16/6/17 | Sat 24/6/17 |
| 37 | F.8.1.2.7 | Erection of Tubular Platform | 14 days | 0 days | Fri 29/9/17 | Sat 18/11/17 |
| 38 | F.8.1.2.8 | Stripping of 500mm thick top soil | 18 days | 0 days | Mon 26/6/17 | Thu 13/7/17 |
| 39 | F.8.1.2.8a | Verification Inspection Pits (PMI 14) | 45 days | 0 days | Wed 16/8/17 | Fri 29/9/17 |
| 40 | F.8.1.2.9 | Setting out of soil nails | 3 days | 0 days | Thu 28/9/17 | Sat 30/9/17 |
| 41 | F.8.1.2.10 | Pull Out Test (4 nrs) | 11 days | 0 days | Tue 3/10/17 | Fri 13/10/17 |
| 42 | F.8.1.2.11 | Construction of soil nail (162nrs) | 26 days | 0 days | Fri 13/10/17 | Tue 7/11/17 |
| 43 | F.8.1.2.12 | Construction of soil nail heads | 86 days | 34.4 days | Tue 24/10/17 | Wed 17/1/18 |
| 44 | F.8.1.2.12a | Remove of Dead Tree Stump (PMI 28) | 3 days | 3 days | Thu 18/1/18 | Sat 20/1/18 |
| 45 | F.8.1.2.13 | Removal of tubular scaffold and tidy up | 7 days | 7 days | Sun 21/1/18 | Sat 27/1/18 |
| 46 | F.8.1.2.14 | Laying of biodegradable control mat | 18 days | 18 days | Wed 24/1/18 | Sat 10/2/18 |
| 47 | F.8.1.2.15 | Construction of granite stone wall | 18 days | 18 days | Wed 24/1/18 | Sat 10/2/18 |
| 48 | F.8.1.2.16 | Hydroseeding of slope | 3 days | 3 days | Sun 11/2/18 | Tue 13/2/18 |
| 49 | F.8.1.2.16a | Erection of Chain Fence | 21 days | 21 days | Wed 14/2/18 | Tue 6/3/18 |
| 50 | F.8.1.2.17 | General tidy up site | 3 days | 3 days | Wed 7/3/18 | Fri 9/3/18 |
| 51 | F.8.1.2.18 | Completion of Works | 0 days | 0 days | Sat 24/2/18 | Sat 24/2/18 |




Critical | Task | Manual Task | Duration-only | Baseline Milestone | Summary | External Tasks | Inactive Milestone
Critical Split | Split | Start-only | Baseline | Milestone | Manual Summary | External Milestone | Inactive Summary
Critical Progress | Task Progress | Finish-only | Baseline Split | Summary Progress | Project Summary | Inactive Task | Deadline

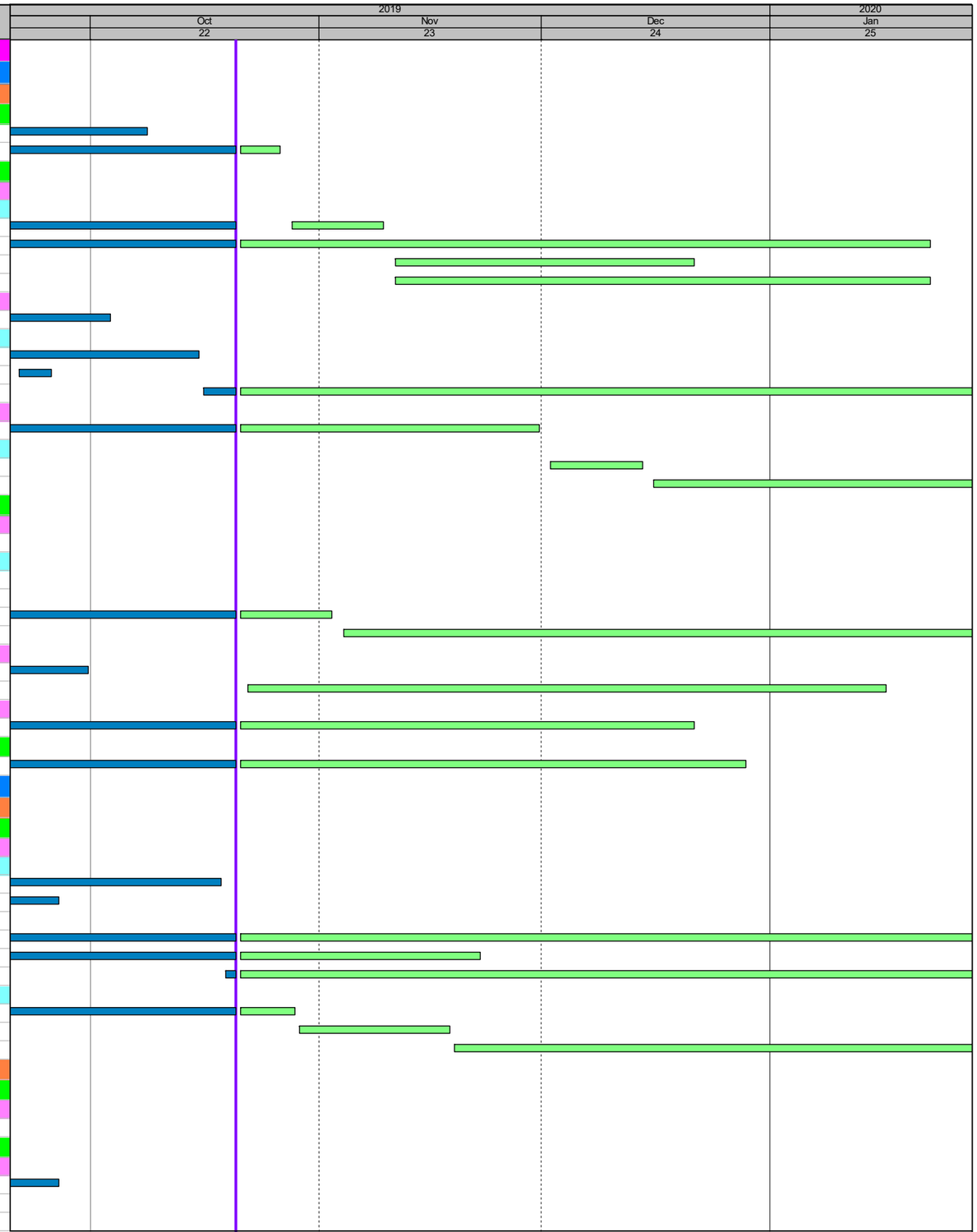
Revised programme for Section F1_Dec 17

| ITEM | ID | Task Name | Duration | Remaining Duration | Start | Finish |
|---|---|---|---|---|---|---|
| 1 | F1.9.1 | **SECTION F1 - FLEXIBLE BARRIER** | **595 days** | **388.28 days** | **Fri 31/3/17** | **Thu 15/11/18** |
| 2 | F1.9.1.1 | **CONSTRUCTION OF Flexible barriers near Tiu King Leng** | **595 days** | **388.28 days** | **Fri 31/3/17** | **Thu 15/11/18** |
| 3 | F1.9.1.1.1 | Access Date for Portion 9 | 1 day | 0 days | Fri 31/3/17 | Fri 31/3/17 |
| 4 | F1.9.1.1.2 | Initial Site Survey | 60 days | 33 days | Wed 11/10/17 | Sat 9/12/17 |
| 5 | F1.9.1.1.3 | Initial Tree Survey | 13 days | 7.15 days | Tue 24/10/17 | Sun 5/11/17 |
| 6 | F1.9.1.1.4 | Material and design submission for flexible barrier systems | 78 days | 0 days | Sat 1/4/17 | Sat 17/6/17 |
| 7 | F1.9.1.1.5 | Approval to material and design submission for flexible barrier system | 216 days | 32.4 days | Sun 18/6/17 | Fri 19/1/18 |
| 8 | F1.9.1.1.6 | Procurement of flexible barriers | 121 days | 121 days | Sat 20/1/18 | Sun 20/5/18 |
| 9 | F1.9.1.1.7 | Submission of method statement for Flexible barrier construction | 28 days | 28 days | Wed 15/11/17 | Tue 12/12/17 |
| 10 | F1.9.1.1.8 | Approval of method statement for flexible barrier construction | 28 days | 28 days | Wed 13/12/17 | Tue 9/1/18 |
| 11 | F1.9.1.1.9 | Submission of construction impact assessment | 10 days | 0 days | Mon 7/8/17 | Wed 16/8/17 |
| 12 | F1.9.1.1.10 | Monitoring of vibration and ground water level | 264 days | 205.4 days | Fri 3/11/17 | Tue 24/7/18 |
| 13 | F1.9.1.1.11 | Construction of piezometers (2nr) (PMI 4) | 10 days | 0 days | Fri 15/9/17 | Sun 24/9/17 |
| 14 | F1.9.1.1.12 | Ground Investigation works | 30 days | 30 days | Mon 25/9/17 | Tue 24/10/17 |
| 15 | F1.9.1.1.13 | Construction of Baffles | 91 days | 72.8 days | Mon 16/10/17 | Wed 18/4/18 |
| 16 | F1.9.1.1.14 | General site clearance for Flexible barriers | 7 days | 7 days | Mon 21/5/18 | Sun 27/5/18 |
| 17 | F1.9.1.1.15 | Erection of tubular platform for flexible barrier construction | 50 days | 50 days | Mon 28/5/18 | Mon 16/7/18 |
| 18 | F1.9.1.1.16 | Erection of flexible barriers | 100 days | 100 days | Tue 17/7/18 | Wed 24/10/18 |
| 19 | F1.9.1.1.17 | Removal of platform | 20 days | 20 days | Thu 25/10/18 | Tue 13/11/18 |
| 20 | F1.9.1.1.18 | General tidy up | 2 days | 2 days | Wed 14/11/18 | Thu 15/11/18 |
| 21 | F1.9.1.1.19 | Completion of works | 0 days | 0 days | Tue 24/7/18 | Tue 24/7/18 |



# Contract 3 (NE/2017/03)

| Activity ID | Activity Name | Duration | Start | Finish |
|---|---|---|---|---|
| **NE2017/03 - ARQ PHASE 2A - Monthly Programme Update (201910)-0 _191017** | | 1139 | 15-Nov-18 A | 12-Nov-22 |
| **Road Improvement Works Location 1 (RIW1)** | | 516 | 14-Dec-18 A | 18-Dec-20 |
| **Construction Works** | | 516 | 14-Dec-18 A | 18-Dec-20 |
| **Preliminary Works** | | 154 | 17-May-19 A | 26-Oct-19 |
| CON10090 | Preparation works & erect working platform for non-destructive test for the Lee | 119 | 17-May-19 A | 08-Oct-19 A |
| CON10130 | Non-destructive test for the Lee On Road Flyover | 65 | 20-Jul-19 A | 26-Oct-19 |
| **Slope Works and Retaining Wall RWC2 Works** | | 462 | 14-May-19 A | 18-Dec-20 |
| **Workfront 1 (RWC2 CH452 to CH270) (RW Type 4, 5, 6, 7 &8)** | | 153 | 18-Jul-19 A | 22-Jan-20 |
| **Foundation Works (RWC2 CH452 to CH270) (RW Type 4, 5, 6, 7 & 8)** | | 153 | 18-Jul-19 A | 22-Jan-20 |
| CON10190 | Cut slope works (RWC2 type 4, 6, 7, 8) | 90 | 18-Jul-19 A | 09-Nov-19 |
| CON10290 | upgrading works at Feature No. 11NEA/F60 (by pip-by-pit method) - Stage 1 | 133 | 18-Jul-19 A | 22-Jan-20 |
| CON10210 | Pre-drill & construct bored pile (1no, 36d/no, 1 team) | 36 | 11-Nov-19 | 21-Dec-19 |
| CON10230 | ELS works to footing (RWC2 type 4, 6, 7, 8) | 60 | 11-Nov-19 | 22-Jan-20 |
| **Workfront 2 (RWC2 CH98 to CH-9) (RW Type 1a, 1 & 2)** | | 200 | 08-Jul-19 A | 04-Mar-20 |
| CON10550 | Form haul road (RWC2 type 1a, 1, 2) | 48 | 08-Jul-19 A | 03-Oct-19 A |
| **Foundation Works (RWC2 CH98 to CH-9) (RW Type 1a, 1 &2)** | | 152 | 15-Jul-19 A | 04-Mar-20 |
| CON10570 | Install sheet pile (RWC2 type 1a, 1, 2) | 60 | 15-Jul-19 A | 15-Oct-19 A |
| CON10590 | boulders were found and need addition time for process | 4 | 21-Sep-19 A | 25-Sep-19 A |
| CON10610 | ELS to RW pile cap (RWC2 type 1a, 1, 2) | 120 | 16-Oct-19 A | 04-Mar-20 |
| **Workfront 3 (RWC2 CH270 to CH98) (RW Type 3 & 3a)** | | 462 | 14-May-19 A | 18-Dec-20 |
| CON10710 | Form haul road (RWC2 type 3, 3a) | 168 | 14-May-19 A | 30-Nov-19 |
| **Foundation Works (RWC2 CH270 to CH98) (RW Type 3 & 3a)** | | 312 | 02-Dec-19 | 18-Dec-20 |
| CON10730 | Moblishion works for socket H-pile works (RWC2 type 3) | 12 | 02-Dec-19 | 14-Dec-19 |
| CON10750 | Pre-drill & construct socket H-pile works (RWC2 type 3; 400nos, 3d/no, 4 team | 300 | 16-Dec-19 | 18-Dec-20 |
| **Noise Barrier Works** | | 423 | 14-Dec-18 A | 06-Jun-20 |
| **Works in Slip Road 2** | | 423 | 14-Dec-18 A | 06-Jun-20 |
| DUR10130 | duration summary of slip road 2 | 423 | 14-Dec-18 A | 06-Jun-20 |
| **Gasmain Diversiion under Slip Road 2** | | 328 | 21-May-19 A | 28-Mar-20 |
| CON11090 | New town-gas-main planning works (by town-gas company, 8wk request by tc | 96 | 21-May-19 A | 11-Sep-19 A |
| DUR10110 | Duration of gasmain diversion after 28/8/2019 | 172 | 29-Aug-19 A | 28-Mar-20 |
| CON11110 | Procedure for Towngas new requirement on SLG meeting (such as: an instruc | 40 | 12-Sep-19 A | 02-Nov-19 |
| CON11130 | Civil provision works on Towngas new request (12wk) | 72 | 04-Nov-19 | 01-Feb-20 |
| **NBW (CT5-PC1 ~ CT5-PC3)** | | 232 | 21-May-19 A | 16-Jan-20 |
| CON11290 | Site formation works & form haul road (CT5) | 111 | 21-May-19 A | 30-Sep-19 A |
| CON11330 | Construct socket H-pile works (CT5-PC1 ~ CT5-PC3) (12nos, 6d/no, 1 team) | 72 | 22-Oct-19 | 16-Jan-20 |
| **NBW (FE1-PC3b ~ FE1-PC8b)** | | 60 | 09-Sep-19 A | 21-Dec-19 |
| CON11430 | Site formation works & form haul road (FE1 "b" side) | 60 | 09-Sep-19 A | 21-Dec-19 |
| **Works in Subway KS27** | | 210 | 15-Apr-19 A | 28-Dec-19 |
| CON12310 | Site clearance, uu diversion & ELS works (KS27 west side) | 210 | 15-Apr-19 A | 28-Dec-19 |
| **Road Improvement Works Location 2 (RIW2)** | | 1085 | 06-Mar-19 A | 12-Nov-22 |
| **Construction Works in Slope C3 (Portion B)** | | 202 | 15-Jun-19 A | 13-Feb-20 |
| **Slope Works at Portion B** | | 202 | 15-Jun-19 A | 13-Feb-20 |
| **Earth Works** | | 202 | 15-Jun-19 A | 13-Feb-20 |
| **Haul Road & Soil Nail Works** | | 202 | 04-Jul-19 A | 13-Feb-20 |
| CON20490 | Drill & install soil nails (Zone 1, 55nos 8m dp, 3d/no, 3 team) | 89 | 04-Jul-19 A | 18-Oct-19 A |
| CON20450 | Form haul road from Zone 4 to Zone 5 | 36 | 16-Jul-19 A | 26-Sep-19 A |
| CON20530 | Moblization & setup for soil nails works from Zone 4 to Zone 6) | 12 | 27-Aug-19 A | 09-Sep-19 A |
| CON20510 | Drill & install soil nails (Zone 2 to Zone 3, 119nos 8m dp, 3d/no, 3 team) | 120 | 09-Sep-19 A | 05-Feb-20 |
| CON20550 | Drill & install soil nails (Zone 4, 55nos 8m dp, 3d/no, 3 team) | 60 | 10-Sep-19 A | 22-Nov-19 |
| CON20570 | Drill & install soil nails (Zone 5 & Zone 6, 92nos 10m dp, 3d/no, 3 team) | 96 | 19-Oct-19 A | 13-Feb-20 |
| **Cut Slope & Fill Slope Works** | | 160 | 15-Jun-19 A | 03-Feb-20 |
| CON20630 | CE #68 Gasmain diversion along Clean Water Bay Road | 91 | 15-Jun-19 A | 28-Oct-19 |
| CON20650 | Install sheet pile to RW bay 9 to bay 13 | 18 | 29-Oct-19 | 18-Nov-19 |
| CON20670 | ELS to RW bay 9 to bay 13 formation | 60 | 19-Nov-19 | 03-Feb-20 |
| **Construction Noise Semi-Enclosure SE2 (Portion C)** | | 1085 | 06-Mar-19 A | 12-Nov-22 |
| **Preliminary Works** | | 1085 | 06-Mar-19 A | 12-Nov-22 |
| **Site Set-up Works** | | 1085 | 06-Mar-19 A | 12-Nov-22 |
| DUR20030 | Trees preservation duration works period at portion C | 1085 | 06-Mar-19 A | 12-Nov-22 |
| **Construction Works** | | 182 | 02-Aug-19 A | 11-Mar-20 |
| **Road Works** | | 47 | 02-Aug-19 A | 26-Sep-19 A |
| CON21590 | Construct haul road near junction at clear water bay road | 47 | 02-Aug-19 A | 26-Sep-19 A |
| CON21390 | District Welcome Signboard relocation | 17 | 09-Aug-19 A | 28-Aug-19 A |
| CON21410 | Make good works for District Welcome Signboard relocation | 12 | 29-Aug-19 A | 11-Sep-19 A |




Actual Work
Remaining Work
Milestone

**NE/2017/03 Development of Anderson Road Quarry Site - Investigation Design & Construction**
**Development of Anderson Road Quarry Site Road - Improvement Works & Pedestrian Connectivity Facilities Works Phase 2A**
3-Month Rolling Programme

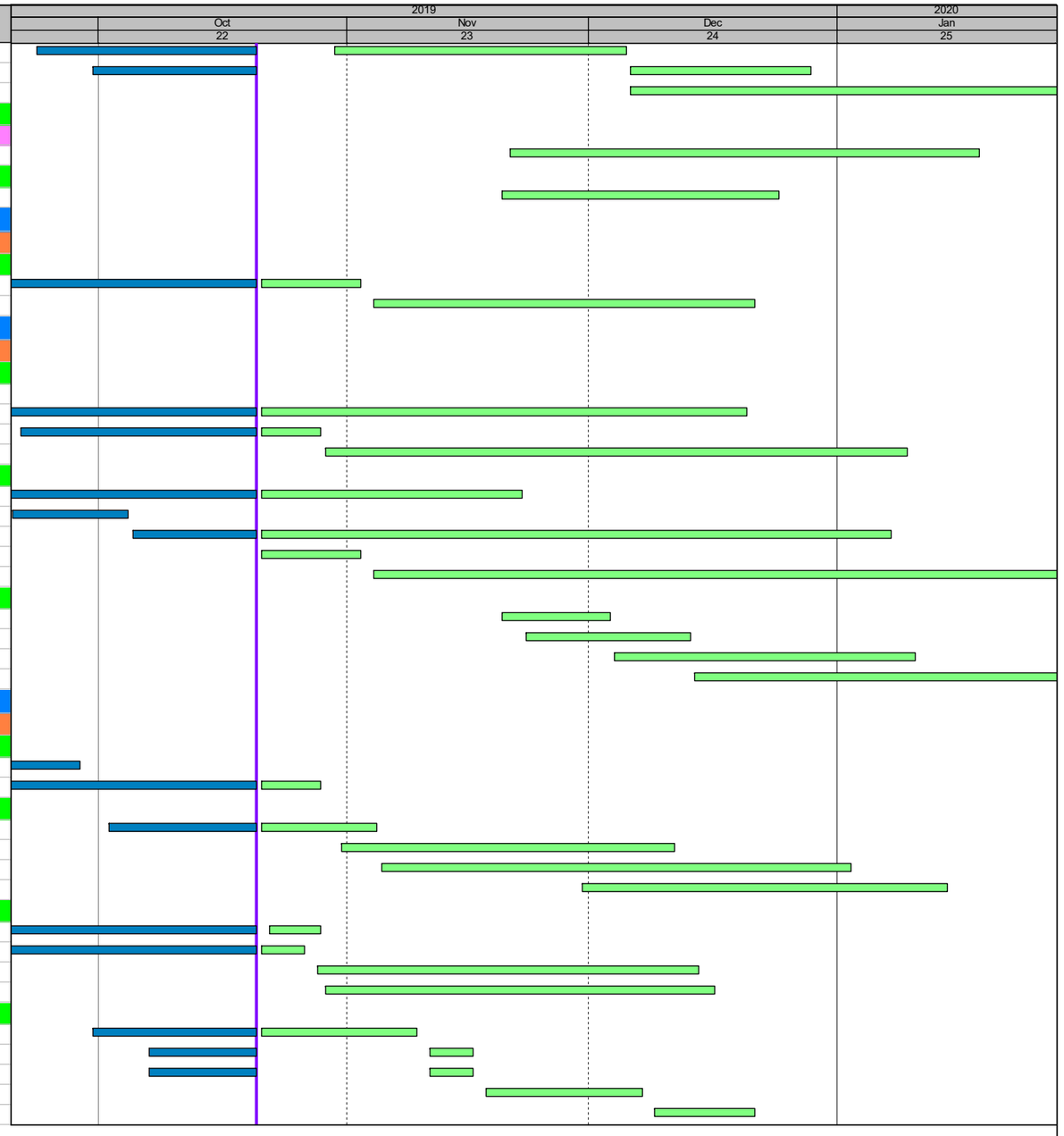
| Activity ID | Activity Name | Duration | Start | Finish |
|---|---|---|---|---|
| **Noise Semi-Enclosure Sub-structure Works** | | 170 | 05-Aug-19 A | 11-Mar-20 |
| **Phase 1 (CT4, SE2 Bay4 to Bay12)** | | 170 | 05-Aug-19 A | 11-Mar-20 |
| CON21630 | Site formation works (CT4, SE2 Bay4 to Bay12; L=110m) | 37 | 05-Aug-19 A | 30-Oct-19 |
| CON21650 | Pre-drill & construct piling fdn (CT4, SE2 Bay4 to Bay12) | 108 | 31-Oct-19 | 11-Mar-20 |
| **Road Improvement Works Location 3 (RIW3)** | | 410 | 02-Mar-19 A | 29-Oct-20 |
| **Construction Works** | | 410 | 02-Mar-19 A | 29-Oct-20 |
| **Works in Slope D1** | | 352 | 23-Apr-19 A | 29-Jun-20 |
| **Preparation Works** | | 213 | 23-Apr-19 A | 07-Jan-20 |
| CON30050 | Install monitoring & instrumentation (Slope D1) | 136 | 23-Apr-19 A | 11-Oct-19 A |
| CON30030 | Form haul road A | 134 | 25-Apr-19 A | 11-Oct-19 A |
| CON30070 | Form haul road B | 65 | 21-Oct-19 | 07-Jan-20 |
| **Slope Works (Slope D1)** | | 72 | 12-Oct-19 A | 07-Jan-20 |
| CON30110 | Slope works at slope D1 (stage 1, 15% completed) | 72 | 12-Oct-19 A | 07-Jan-20 |
| **Construction of Retaining Wall RWD1** | | 173 | 16-Sep-19 A | 29-Jun-20 |
| **Foundation Works (RWD1)** | | 173 | 16-Sep-19 A | 29-Jun-20 |
| CON30229 | Pre-drill at RWD1 | 90 | 16-Sep-19 A | 25-Nov-19 |
| CON30230 | Construct piling foundation at RWD1 (CH0~CH94) | 173 | 26-Nov-19 | 29-Jun-20 |
| **Works in Slope D2** | | 296 | 02-Mar-19 A | 23-Mar-20 |
| **Construction of Retaining Wall RWD2** | | 296 | 02-Mar-19 A | 23-Mar-20 |
| CON30730 | Site clearance works (slope D2) | 171 | 02-Mar-19 A | 27-Sep-19 A |
| CON30750 | Design reviewing, excavate trial pit & ground investigation works | 129 | 25-Apr-19 A | 28-Oct-19 |
| CON30770 | Install monitoring & instrumentation (Slope D2) | 60 | 29-Oct-19 | 09-Jan-20 |
| CON30790 | Install sheet pile, support & slope works at slope D2 (L=75m) | 90 | 03-Dec-19 | 23-Mar-20 |
| **Works in Slope D3** | | 365 | 23-May-19 A | 29-Oct-20 |
| **Slope Works (Slope D3)** | | 365 | 23-May-19 A | 29-Oct-20 |
| CON31050 | Cut slope works (CH0 to CH115) (L=115m, 10697m3, 30m3/d) | 365 | 23-May-19 A | 29-Oct-20 |
| CON31070 | Construct RWD3 (CH0 to CH60) | 150 | 18-Dec-19 | 23-Jun-20 |
| **Pedestrian Connectivity Facility (PC-E8)** | | 354 | 21-Feb-19 A | 22-May-20 |
| **Construction Works** | | 354 | 21-Feb-19 A | 22-May-20 |
| **Preparation Works** | | 347 | 21-Feb-19 A | 22-May-20 |
| **Trees Works** | | 347 | 01-Apr-19 A | 22-May-20 |
| DUR40010 | Trees preservation duration works period at portion G | 347 | 01-Apr-19 A | 22-May-20 |
| **Hoarding Works & Site Set-up** | | 185 | 21-Feb-19 A | 02-Nov-19 |
| CON40290 | Relocate existing street lighting (AA6955) at Hiu Yuk Path (by CLPE's contract | 185 | 21-Feb-19 A | 02-Nov-19 |
| CON40310 | Form haul road (from Hiu Yuk Path site access to PC E8-F4) | 127 | 06-May-19 A | 05-Oct-19 A |
| **Earth Works** | | 162 | 05-Aug-19 A | 27-Dec-19 |
| CON40550 | Working platform for F4, F5 & F6 excavation works | 59 | 05-Aug-19 A | 26-Oct-19 |
| CON40410 | Construct soldier pile wall to E8-ABT (4.5d/no, 4nos) | 18 | 17-Aug-19 A | 05-Sep-19 A |
| CON40450 | ELS to E8-F4 (approx 1783m3, @25m3/d) | 72 | 08-Oct-19 A | 19-Dec-19 |
| CON40570 | ELS to E8-F7 (approx 1378m3, @25m3/d) | 55 | 08-Oct-19 A | 27-Dec-19 |
| CON40430 | ELS to E8-F5 (approx 1700m3, @25m3/d) | 68 | 08-Oct-19 A | 21-Nov-19 |
| CON40470 | ELS to E8-F6 (approx 1960m3, @25m3/d) | 79 | 13-Nov-19 A | 19-Dec-19 |
| **Footing Construction** | | 46 | 28-Oct-19 | 19-Dec-19 |
| CON40770 | Construct footing E8-F3 (65m3) & backfilling | 24 | 28-Oct-19 | 23-Nov-19 |
| CON40790 | Construct footing E8-F5 (65m3) & backfilling | 24 | 22-Nov-19 | 19-Dec-19 |
| **Pier Construction** | | 151 | 21-Aug-19 A | 22-Feb-20 |
| CON40890 | Construct pier E8-P1 (2 pour) | 63 | 21-Aug-19 A | 02-Dec-19 |
| CON40910 | Construct pier E8-P2 (3 pour) | 72 | 25-Nov-19 | 22-Feb-20 |
| **Escalator Pit Construction** | | 60 | 03-Dec-19 | 17-Feb-20 |
| CON41030 | Construct escalator pit F1>P1 | 60 | 03-Dec-19 | 17-Feb-20 |
| **E&M Works** | | 156 | 25-Mar-19 A | 31-Oct-19 |
| CON41930 | Application for power supply & energization (PC-E8) | 156 | 25-Mar-19 A | 31-Oct-19 |
| **Pedestrian Connectivity Facility (PC-E11)** | | 856 | 15-Nov-18 A | 15-Jan-22 |
| **Construction Works** | | 856 | 15-Nov-18 A | 15-Jan-22 |
| **Preliminary Works** | | 856 | 08-Jan-19 A | 15-Jan-22 |
| DUR40030 | Trees preservation duration works period at portion E | 856 | 08-Jan-19 A | 15-Jan-22 |
| **Foundation Works** | | 366 | 15-Nov-18 A | 16-Jan-20 |
| CON42090 | Pre-drill & construct socket H-pile works for E11-PC1 to E11-PC5 (89nos, 6d/n | 366 | 15-Nov-18 A | 10-Dec-19 |
| CON42130 | Mobilization to Portion FII | 3 | 21-Oct-19 | 23-Oct-19 |
| CON42150 | Construct socket H-pile works for E11-PC6 (49nos, 6d/no, 1 rig) | 70 | 24-Oct-19 | 16-Jan-20 |
| **Sub-structure Works** | | 155 | 14-Aug-19 A | 20-Feb-20 |
| CON42170 | ELS & construct sub-structure for E11-PC4 | 55 | 14-Aug-19 A | 30-Oct-19 |




Actual Work
Remaining Work
Milestone

**NE/2017/03 Development of Anderson Road Quarry Site - Investigation Design & Construction**
**Development of Anderson Road Quarry Site Road - Improvement Works & Pedestrian Connectivity Facilities Works Phase 2A**
3-Month Rolling Programme

| Activity ID | Activity Name | Duration | Start | Finish |
|---|---|---|---|---|
| CON42190 | ELS & construct sub-structure for E11-PC3 | 54 | 23-Sep-19 A | 05-Dec-19 |
| CON42210 | ELS & construct sub-structure for E11-PC2 | 30 | 30-Sep-19 A | 28-Dec-19 |
| CON42230 | ELS & construct sub-structure for E11-PC5 | 60 | 06-Dec-19 | 20-Feb-20 |
| **Super-structure Works / Erect Bridge Steel Frame** | | 48 | 21-Nov-19 | 18-Jan-20 |
| **RC Works** | | 48 | 21-Nov-19 | 18-Jan-20 |
| CON42310 | Construct pier E11-P3 | 48 | 21-Nov-19 | 18-Jan-20 |
| **Provide Temporary Access form Lin Tak Road to New Bus-Bus Interchange** | | 30 | 20-Nov-19 | 24-Dec-19 |
| CON42990 | Provide temporary access form lin tak road to new bus-bus interchange | 30 | 20-Nov-19* | 24-Dec-19 |
| **Pedestrian Connectivity Facility System A (SYA)** | | 271 | 24-Jan-19 A | 21-Dec-19 |
| **Construction Works** | | 271 | 24-Jan-19 A | 21-Dec-19 |
| **Sub-structure Works** | | 271 | 24-Jan-19 A | 21-Dec-19 |
| CON50170 | Excavate & install support at SYA-F1 (+144 to +130.5mPD, 2321m3, 10.1m3/c | 204 | 24-Jan-19 A | 02-Nov-19 |
| CON50210 | Construct footing SYA-F1 (+130.5 ~ +134mPD) | 42 | 04-Nov-19 | 21-Dec-19 |
| **Pedestrian Connectivity Facility System B (SYB)** | | 248 | 26-Mar-19 A | 28-Mar-20 |
| **Construction Works** | | 248 | 26-Mar-19 A | 28-Mar-20 |
| **Preliminary Works** | | 181 | 20-May-19 A | 09-Jan-20 |
| CON50810 | Form haul road (at upper portion: PC-A1 to PC8) | 102 | 20-May-19 A | 18-Sep-19 A |
| CON50830 | Form haul road (till to near PC7) | 78 | 19-Sep-19 A | 20-Dec-19 |
| CON50850 | Erect hoarding at portion L (near existing footbridge side) | 30 | 21-Sep-19 A | 28-Oct-19 |
| CON50870 | Site clearance at portion L (to PC-2) | 60 | 29-Oct-19 | 09-Jan-20 |
| **Foundation Works** | | 248 | 26-Mar-19 A | 28-Mar-20 |
| CON50950 | Pre-drill & construct socket H-pile works at SYB-PC3 (63nos, 6d/no, 1 rig) | 189 | 26-Mar-19 A | 22-Nov-19 |
| CON50970 | Moblisation of socketted H pile plant to SYS-A1 | 12 | 20-Sep-19 A | 04-Oct-19 A |
| CON50990 | Pre-drill & construct socket H-pile works at SYB-A1 under Portion K (18nos, 6c | 108 | 05-Oct-19 A | 07-Jan-20 |
| CON51010 | Moblisation of socketted H pile plant to SYS-PC8 | 12 | 21-Oct-19 | 02-Nov-19 |
| CON51030 | Pre-drill & construct socket H-pile works at SYB-PC8 (20nos, 6d/no, 1 team) | 120 | 04-Nov-19 | 28-Mar-20 |
| **Earth Works** | | 69 | 20-Nov-19 | 14-Feb-20 |
| CON51290 | Install sheet pile at SYB-PC6 | 12 | 20-Nov-19 | 03-Dec-19 |
| CON51330 | Install sheet pile at SYB-PC3 (63m L, 4m/d, 1 team) | 18 | 23-Nov-19 | 13-Dec-19 |
| CON51310 | Excavate & install support at SYB-PC6 | 30 | 04-Dec-19 | 10-Jan-20 |
| CON51350 | Excavate & install support at SYB-PC3 (810m3, 25m3/d, 1 team + 12d) | 48 | 14-Dec-19 | 14-Feb-20 |
| **Bus-Bus Interchange Public Toilet (BBI Toilet)** | | 309 | 29-Dec-18 A | 14-Jan-20 |
| **Construction Works** | | 309 | 29-Dec-18 A | 14-Jan-20 |
| **Bus-Bus Interchange Public Toilet** | | 188 | 29-Dec-18 A | 28-Oct-19 |
| CON43050 | Construct Public Toilet | 188 | 29-Dec-18 A | 28-Sep-19 A |
| CON43070 | Application for power supply & energization (BBI Toilet) | 90 | 29-Jan-19 A | 28-Oct-19 |
| **ABWF Works** | | 86 | 02-Oct-19 A | 14-Jan-20 |
| CON43090 | Lay wall plastering, floor screening & block works (BBI Toilet) | 36 | 02-Oct-19 A | 04-Nov-19 |
| CON43110 | Lay wall tiles & floor tiles (BBI Toilet) | 36 | 31-Oct-19 | 11-Dec-19 |
| CON43130 | Associated Landscape Works (BBI Toilet) | 48 | 05-Nov-19 | 02-Jan-20 |
| CON43150 | Install cabinet & sanitary fittings (BBI Toilet) | 36 | 30-Nov-19 | 14-Jan-20 |
| **Electrical & MVAC Installation** | | 65 | 26-Aug-19 A | 16-Dec-19 |
| CON43170 | Install E&M works (1st fix) | 42 | 26-Aug-19 A | 28-Oct-19 |
| CON43210 | Install MVAC works (1st fix) | 42 | 02-Sep-19 A | 26-Oct-19 |
| CON43230 | Install MVAC works (2nd fix) | 42 | 28-Oct-19 | 14-Dec-19 |
| CON43190 | Install E&M works (2nd fix) | 42 | 29-Oct-19 | 16-Dec-19 |
| **Plumbing & Drainage Services Installation** | | 70 | 30-Sep-19 A | 21-Dec-19 |
| CON43250 | Lay watermain (BBI Toilet) | 24 | 30-Sep-19 A | 09-Nov-19 |
| CON43270 | Install plumbing equipment (BBI Toilet) | 24 | 07-Oct-19 A | 16-Nov-19 |
| CON43290 | Install drainage pipe (BBI Toilet) | 30 | 07-Oct-19 A | 16-Nov-19 |
| CON43310 | CCTV to drainage pipe (BBI Toilet) | 18 | 18-Nov-19 | 07-Dec-19 |
| CON43330 | Prepare & submit CCTV record (BBI Toilet) | 12 | 09-Dec-19 | 21-Dec-19 |




Actual Work
Remaining Work
Milestone

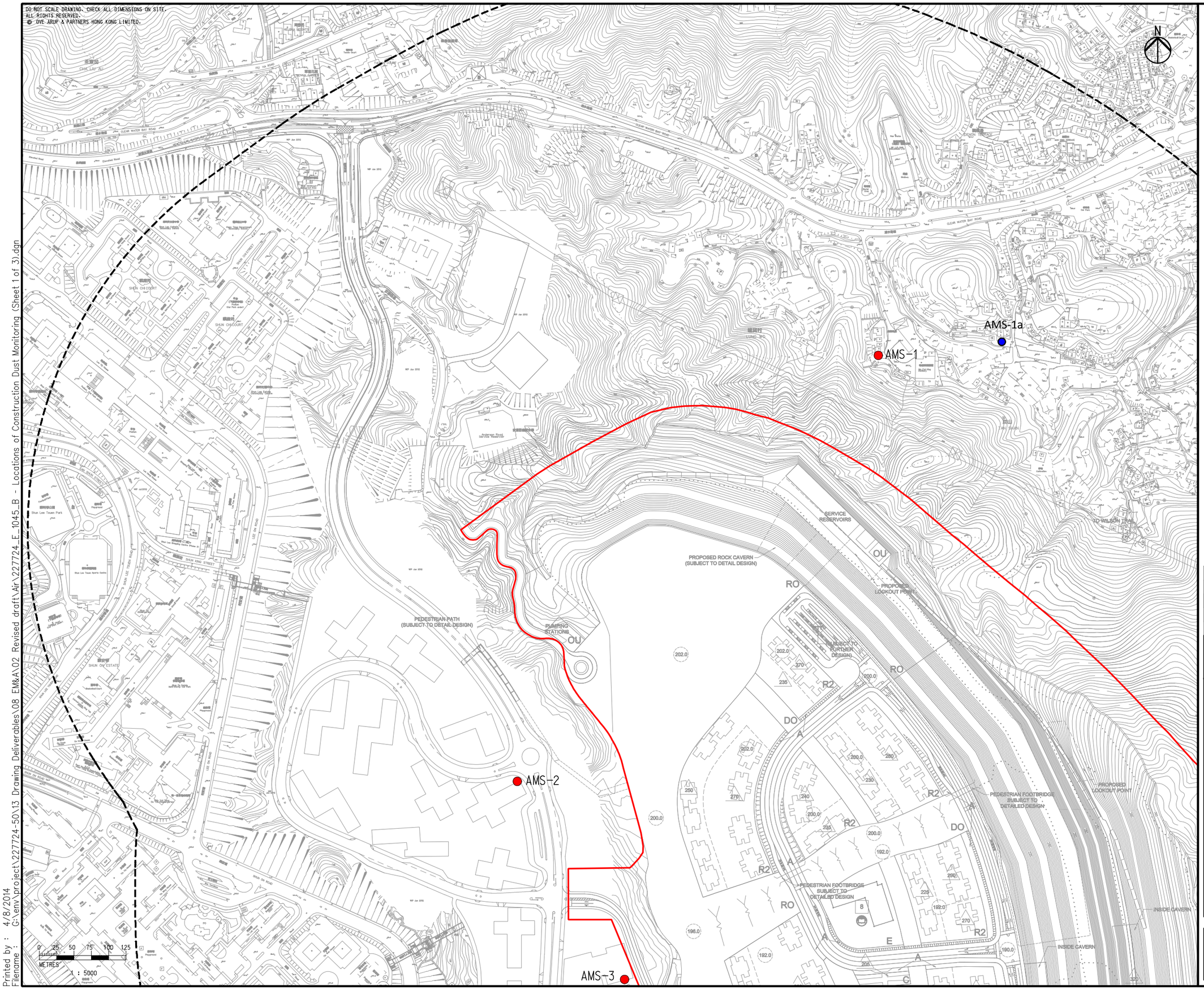
**NE/2017/03 Development of Anderson Road Quarry Site - Investigation Design & Construction**
**Development of Anderson Road Quarry Site Road - Improvement Works & Pedestrian Connectivity Facilities Works Phase 2A**
3-Month Rolling Programme

# Appendix D

# Monitoring Locations for Impact Monitoring

# Monitoring Locations for Contract 1 (NE/2016/01)

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Legend

- Study Area
- 500m Assessment Area
- Dust Monitoring Locations
- Alternate Dust Monitoring Location

| Rev | Description | By | Date |
|---|---|---|---|
| | | | |
| | | | |
| B | SECOND ISSUE | GL | 03/14 |
| A | FIRST ISSUE | GL | 10/13 |

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**ARUP**

Contract No. and Title

Agreement No. CE 18/2012(CE)

Development of Anderson Road Quarry - Investigation

Drawing title

Locations of Construction Dust Monitoring (Sheet 1 of 3)

| Drawing no. | | Rev. |
|---|---|---|
| 227724/E/1045 | | B |
| Drawn: GL | Date: 03/14 | Checked: TC | Approved: ST |
| Scale: 1:5000 @A3 | | Status: PRELIMINARY |

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Filename : G:\env\project\227724-50\13 Drawing Deliverables\08 EM&A\02 Revised draft\Air\227724_E_1045_B - Locations of Construction Dust Monitoring (Sheet 1 of 3).dgn

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HVS in AMS-1 for 24-Hour TSP





AMS-1

AMS-2

AMS-3

N

Legend

- Study Area
- 500m Assessment Area
- Dust Monitoring Locations

| Rev | Description | By | Date |
|---|---|---|---|
| B | SECOND ISSUE | GL | 03/14 |
| A | FIRST ISSUE | GL | 10/13 |

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**ARUP**

Contract No. and Title

**Agreement No. CE 18/2012(CE)**

**Development of Anderson Road Quarry - Investigation**

Drawing title

Locations of Construction Dust Monitoring (Sheet 1 of 3)

| Drawing no. | Rev. |
|---|---|
| 227724/E/1045 | B |

| Drawn | Date | Checked | Approved |
|---|---|---|---|
| GL | 03/14 | TC | ST |

Scale: 1:5000 @A3

Status: PRELIMINARY

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AMS-3
AMS-4
AMS-5
AMS-6





HVS in AMS-5 for 24-Hour TSP





HVS in AMS-6 for 24-Hour TSP



Legend

- Study Area
- 500m Assessment Area
- Dust Monitoring Locations

| Rev | Description | By | Date |
|---|---|---|---|
| B | SECOND ISSUE | GL | 03/14 |
| A | FIRST ISSUE | GL | 10/13 |

Consultant

**ARUP**

Contract No. and Title

**Agreement No. CE 18/2012(CE)**

**Development of Anderson Road Quarry - Investigation**

Drawing title

Locations of Construction Dust Monitoring (Sheet 2 of 3)

| Drawing no. | Rev. |
|---|---|
| 227724/E/1046 | B |

| Drawn | Date | Checked | Approved |
|---|---|---|---|
| GL | 03/14 | TC | ST |

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Status: PRELIMINARY

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0 25 50 75 100 125
METRES
1 : 5000

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Legend

- Study Area
- 500m Assessment Area
- Dust Monitoring Locations

AMS-5

AMS-6

AMS-7






HVS in AMS-7 for 24-Hour TSP

0 20 40 60 80 100
METRES
1 : 5000

| Rev | Description | By | Date |
|---|---|---|---|
| B | SECOND ISSUE | GL | 03/14 |
| A | FIRST ISSUE | GL | 10/13 |

Consultant

**ARUP**

Contract No. and Title

**Agreement No. CE 18/2012(CE)**

**Development of Anderson Road Quarry - Investigation**

Drawing title

Locations of Construction Dust Monitoring (Sheet 3 of 3)

| Drawing no. | Rev. |
|---|---|
| 227724/E/1047 | B |

| Drawn | Date | Checked | Approved |
|---|---|---|---|
| GL | 03/14 | TC | ST |

Scale: 1:5000 @A3

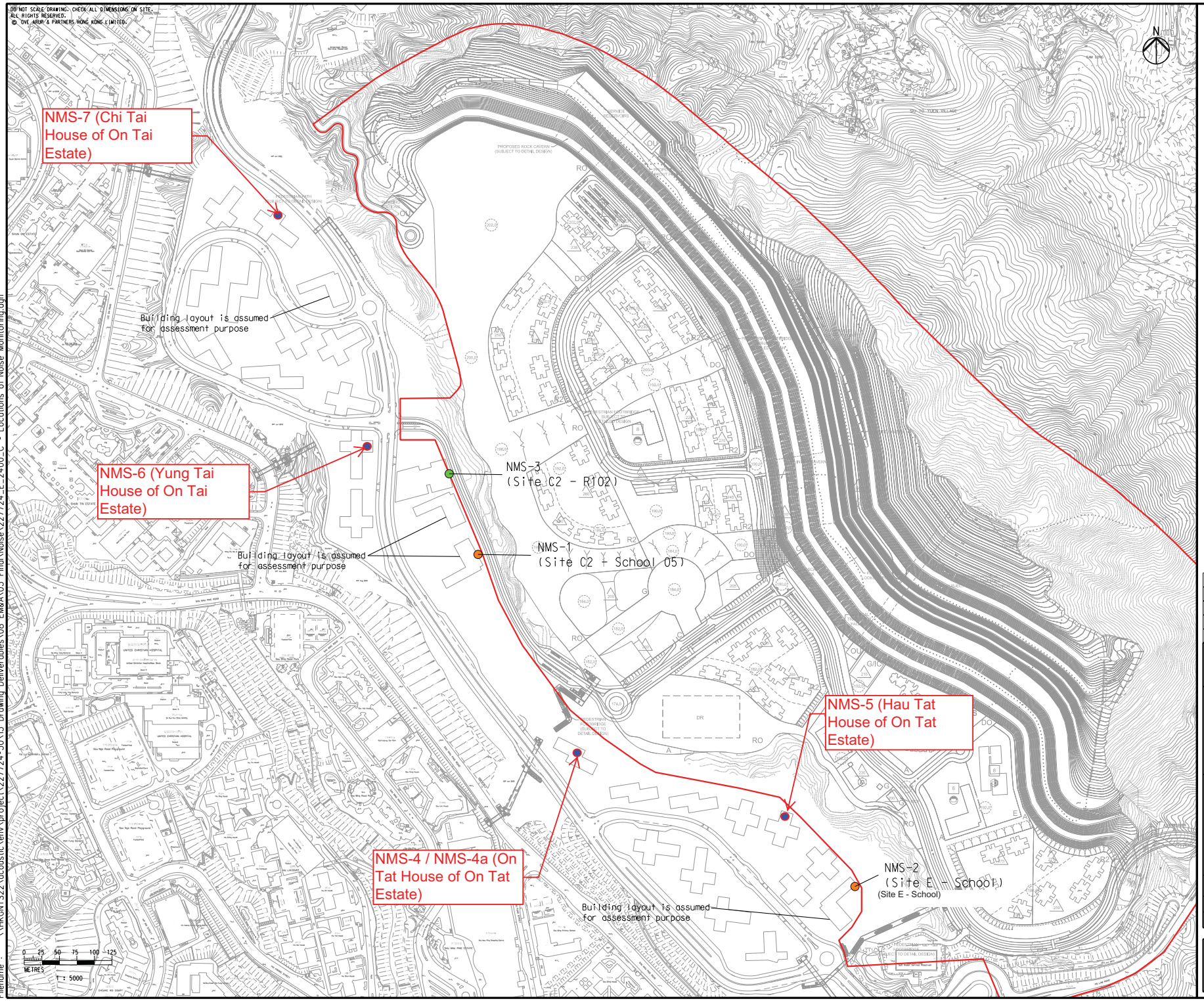
Status: PRELIMINARY

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Filename : G:\env\project\227724-50\13 Drawing Deliverables\08 EM&A\02 Revised draft\Air\227724_E_1047_B - Locations of Construction Dust Monitoring (Sheet 3 of 3).dgn

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Legend

- Study Area
- Construction Noise Monitoring Location
- Construction and Operational Road Traffic Noise Monitoring Location
- Review Noise monitoring Location

| Rev | Description | By | Date |
|---|---|---|---|
| C | THIRD ISSUE | GL | 05/14 |
| B | SECOND ISSUE | GL | 03/14 |
| A | FIRST ISSUE | GL | 10/13 |

Consultant

ARUP

Contract No. and Title

Agreement No. CE 18/2012(CE)

Development of Anderson Road Quarry - Investigation

Drawing title

Locations of Noise Monitoring

| Drawing no. | Rev. |
|---|---|
| 227724/E/2400 | C |

| Drawn | Date | Checked | Approved |
|---|---|---|---|
| GL | 05/14 | TC | ST |

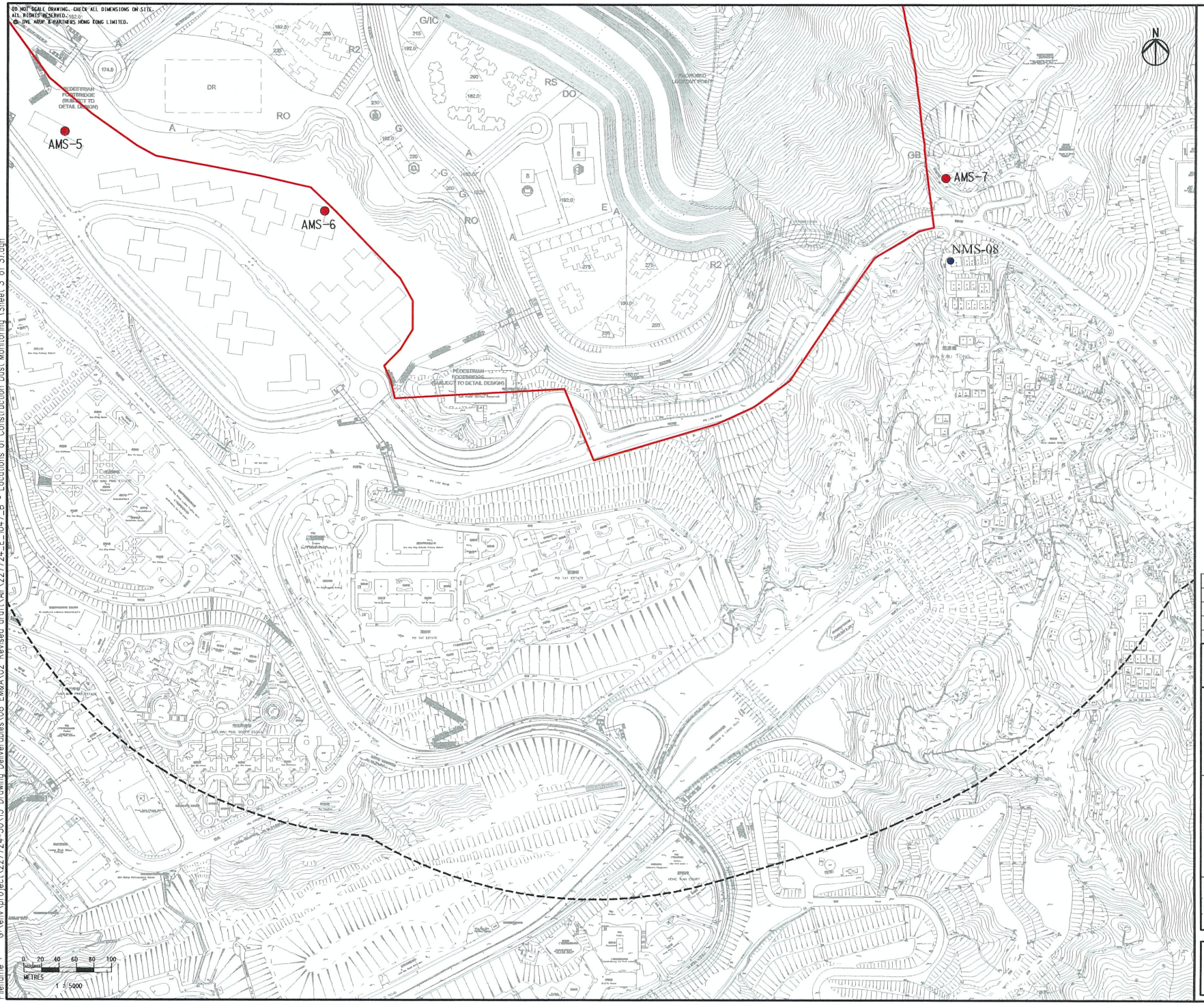
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Filename : \\HKGNTS22\acoustic\env\project\227724-50\13 Drawing Deliverables\08 EM&A\03 Final\Noise\227724_E_2400_C - Locations of Noise Monitoring.dgn




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| Rev | Description | By | Date |
|---|---|---|---|
| B | SECOND ISSUE | GL | 03/14 |
| A | FIRST ISSUE | GL | 10/13 |

Consultant

Contract No. and Title

**Agreement No. CE 18/2012(CE)**

**Development of Anderson Road Quarry - Investigation**

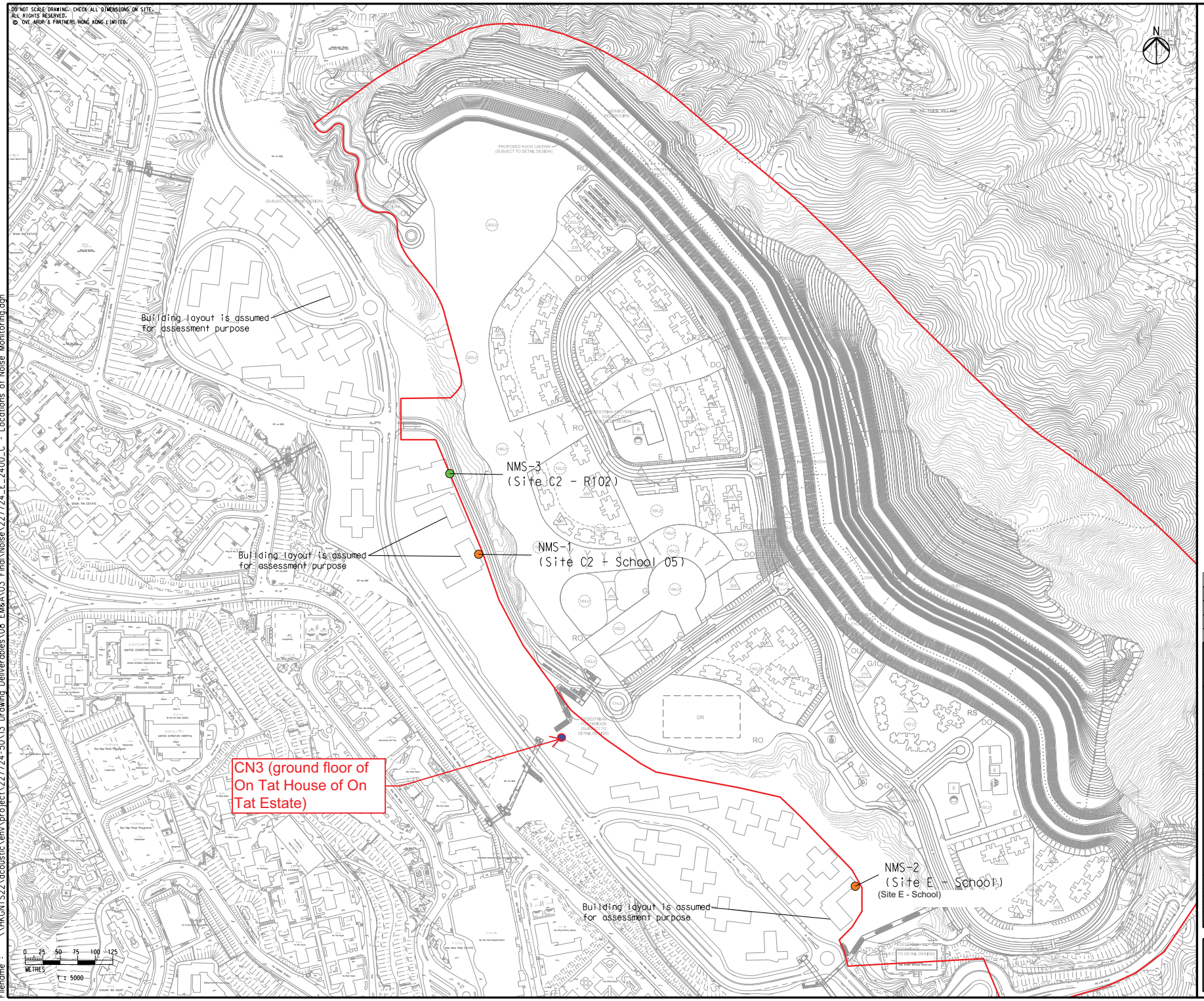
Drawing title

Locations of Construction Dust and Noise Monitoring

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Filename : G:\env\project\227724-50\13 Drawing Deliverables\08 EM&A\02 Revised draft\Air\227724_E_1047_B - Locations of Construction Dust Monitoring (Sheet 3 of 3).dgn

# Monitoring Locations for Contract 3 (NE/2017/03)




Legend

- Study Area
- Construction Noise Monitoring Location
- Construction and Operational Road Traffic Noise Monitoring Location
- Noise monitoring Location

| Rev | Description | By | Date |
|---|---|---|---|
| C | THIRD ISSUE | GL | 05/14 |
| B | SECOND ISSUE | GL | 03/14 |
| A | FIRST ISSUE | GL | 10/13 |

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ARUP

Contract No. and Title

Agreement No. CE 18/2012(CE)

Development of Anderson Road Quarry - Investigation

Drawing title

Locations of Noise Monitoring

| Drawing no. | Rev. |
|---|---|
| 227724/E/2400 | C |

| Drawn | Date | Checked | Approved |
|---|---|---|---|
| GL | 05/14 | TC | ST |

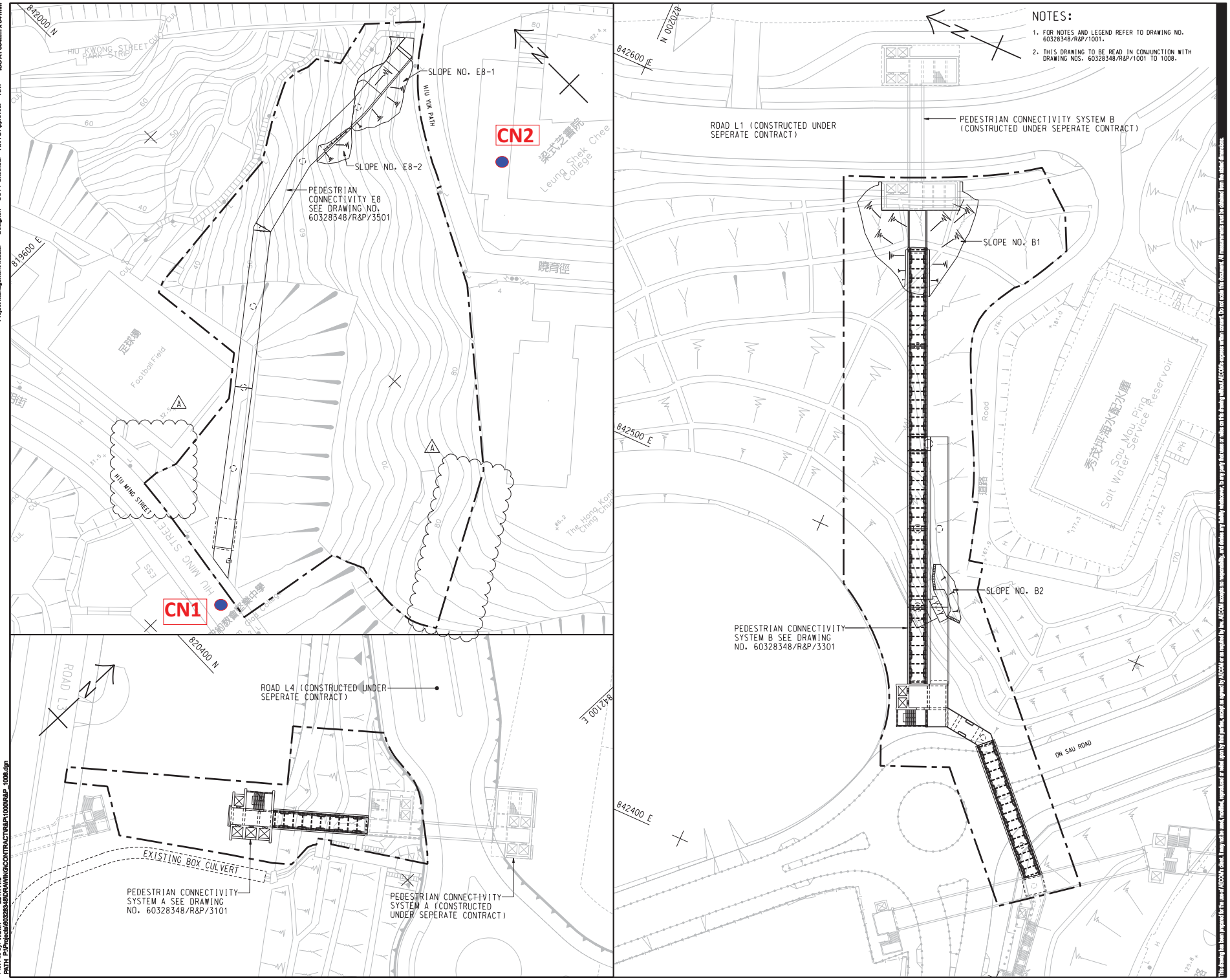
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Filename : \\HKGNTS22\acoustic\env\project\227724-50\13 Drawing Deliverables\08 EM&A\03 Final Noise\227724_E_2400_C - Locations of Noise Monitoring.dgn




noise monitoring location

AECOM

**PROJECT**

DEVELOPMENT OF ANDERSON ROAD QUARRY SITE - INVESTIGATION, DESIGN AND CONSTRUCTION

**CONTRACT TITLE**

DEVELOPMENT OF ANDERSON ROAD QUARRY SITE - ROAD IMPROVEMENT WORKS AND PEDESTRIAN CONNECTIVITY FACILITIES WORKS PHASE 2A

**CLIENT**

土木工程拓展署 Civil Engineering and Development Department

**CONSULTANT**

AECOM Asia Company Ltd.
www.aecom.com

**SUB-CONSULTANTS**

**ISSUE/REVISION**

| MR | DATE | DESCRIPTION | CHK. |
|---|---|---|---|
| A | NOV. 17 | TENDER ADDENDUM NO. 1 | AWYC |
| - | OCT. 17 | TENDER DRAWING | AWYC |

**STATUS**

**SCALE** A1 1 : 500

**DIMENSION UNIT** METRES

**KEY PLAN** A1 1 : 60000

**PROJECT NO.** 60328348

**CONTRACT NO.** NE/2017/03

**SHEET TITLE**

GENERAL LAYOUT

SHEET 8 OF 8

**SHEET NUMBER**

60328348/R&P/1008A

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Project Management Initials: Designer: CCYT Checked: AWYC Approved: HKT ISO A1 594mm x 841mm

Plot File by: WUMT 2017/11/9
PATH: P:\Projects\60328348\DRAWING\CONTRACT\R&P\1000\R&P_1008.dgn

# Appendix E

# Calibration Certificate of Monitoring Equipment and HOKLAS-accreditation Certificate of the Testing Laboratory

# TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Chi Yum Ching She
Location ID : AMS1
Model:TISCH High Volume Air Sampler TE-5170

Date of Calibration: 17-Aug-19
Next Calibration Date: 17-Oct-19
Technician: Mr. Fai So

## CONDITIONS

| | | | |
|---|---|---|---|
| Sea Level Pressure (hPa) | 1005.6 | Corrected Pressure (mm Hg) | 754.2 |
| Temperature (°C) | 28.0 | Temperature (K) | 301 |

## CALIBRATION ORIFICE

| | | | |
|---|---|---|---|
| Make-> | TISCH | Qstd Slope -> | 2.0968 |
| Model-> | TE-5025A | Qstd Intercept -> | -0.00065 |
| Serial # -> | 1941 | | |

## CALIBRATION

| Plate No. | H20 (L) (in) | H2O (R) (in) | H20 (in) | Qstd (m3/min) | I (chart) | IC corrected | LINEAR REGRESSION |
|---|---|---|---|---|---|---|---|
| 18 | 4 | 4 | 8 | 1.337 | 64 | 63.44 | Slope = 29.3864 |
| 13 | 3.3 | 3.3 | 6.6 | 1.215 | 58 | 57.49 | Intercept = 23.3369 |
| 10 | 2.6 | 2.6 | 5.2 | 1.078 | 56 | 55.51 | Corr. coeff. = 0.9919 |
| 7 | 1.7 | 1.7 | 3.4 | 0.872 | 50 | 49.56 | |
| 5 | 1.1 | 1.1 | 2.2 | 0.701 | 44 | 43.61 | |

***Calculations :***

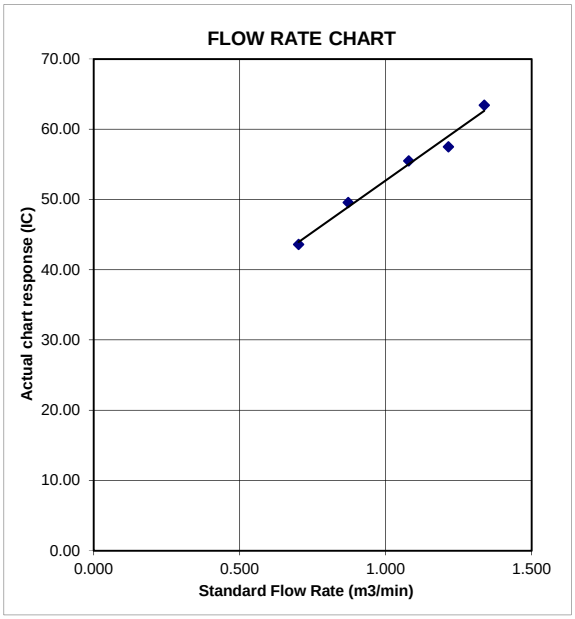
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart respones
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration ( deg K )
Pstd = actual pressure during calibration ( mm Hg )

***For subsequent calculation of sampler flow:***

1/m(( I )[Sqrt(298/Tav)(Pav/760)]-b)

m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure



# TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

| | |
|---|---|
| Location : Chi Yum Ching She | Date of Calibration: 16-Oct-19 |
| Location ID : AMS1 | Next Calibration Date: 16-Dec-19 |
| Model:TISCH High Volume Air Sampler TE-5170 | Technician: Mr. Fai So |

**CONDITIONS**

| | | | |
|---|---|---|---|
| Sea Level Pressure (hPa) | 1018.3 | Corrected Pressure (mm Hg) | 763.725 |
| Temperature (°C) | 25.5 | Temperature (K) | 299 |

**CALIBRATION ORIFICE**

| | | | |
|---|---|---|---|
| Make-> | TISCH | Qstd Slope -> | 2.0968 |
| Model-> | TE-5025A | Qstd Intercept -> | -0.00065 |
| Serial # -> | 1941 | | |

**CALIBRATION**

| Plate No. | H20 (L) (in) | H2O (R) (in) | H20 (in) | Qstd (m3/min) | I (chart) | IC corrected | LINEAR REGRESSION |
|---|---|---|---|---|---|---|---|
| 18 | 4 | 4 | 8 | 1.351 | 64 | 64.10 | Slope = 29.8351 |
| 13 | 3.2 | 3.2 | 6.4 | 1.209 | 58 | 58.09 | Intercept = 23.2220 |
| 10 | 2.6 | 2.6 | 5.2 | 1.090 | 56 | 56.09 | Corr. coeff. = 0.9952 |
| 7 | 1.7 | 1.7 | 3.4 | 0.881 | 50 | 50.08 | |
| 5 | 1.1 | 1.1 | 2.2 | 0.709 | 44 | 44.07 | |

***Calculations :***

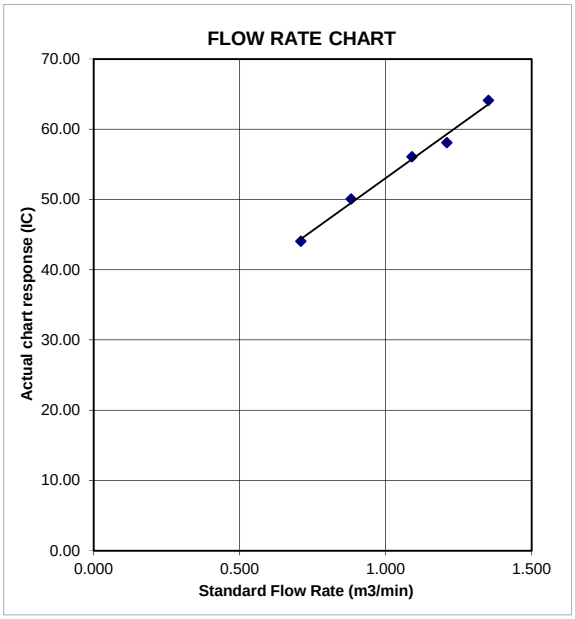
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart respones
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration ( deg K )
Pstd = actual pressure during calibration ( mm Hg )

***For subsequent calculation of sampler flow:***

1/m(( I )[Sqrt(298/Tav)(Pav/760)]-b)

m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure



# TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

| | | | |
|---|---|---|---|
| Location : | Oi Tat House | Date of Calibration: | 2-Oct-19 |
| Location ID : | AMS 5 | Next Calibration Date: | 2-Dec-19 |
| Model:TISCH High Volume Air Sampler TE-5170 | | Technician: Mr. Fai So | |

**CONDITIONS**

| | | | |
|---|---|---|---|
| Sea Level Pressure (hPa) | 1011.2 | Corrected Pressure (mm Hg) | 758.4 |
| Temperature (ºC) | 29.5 | Temperature (K) | 303 |

**CALIBRATION ORIFICE**

| | | | |
|---|---|---|---|
| Make-> | TISCH | Qstd Slope -> | 2.0968 |
| Model-> | TE-5025A | Qstd Intercept -> | -0.00065 |
| Serial # -> | 1941 | | |

**CALIBRATION**

| Plate No. | H20 (L) (in) | H2O (R) (in) | H20 (in) | Qstd (m3/min) | I (chart) | IC corrected | LINEAR REGRESSION |
|---|---|---|---|---|---|---|---|
| 18 | 6.1 | 6 | 12.1 | 1.645 | 53 | 52.55 | Slope = 35.0834 |
| 13 | 4.7 | 4.7 | 9.4 | 1.450 | 45 | 44.62 | Intercept = -5.4339 |
| 10 | 3.5 | 3.5 | 7 | 1.251 | 39 | 38.67 | Corr. coeff. = 0.9987 |
| 7 | 2.4 | 2.4 | 4.8 | 1.036 | 32 | 31.73 | |
| 5 | 1.2 | 1.2 | 2.4 | 0.733 | 20 | 19.83 | |

***Calculations :***

Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]

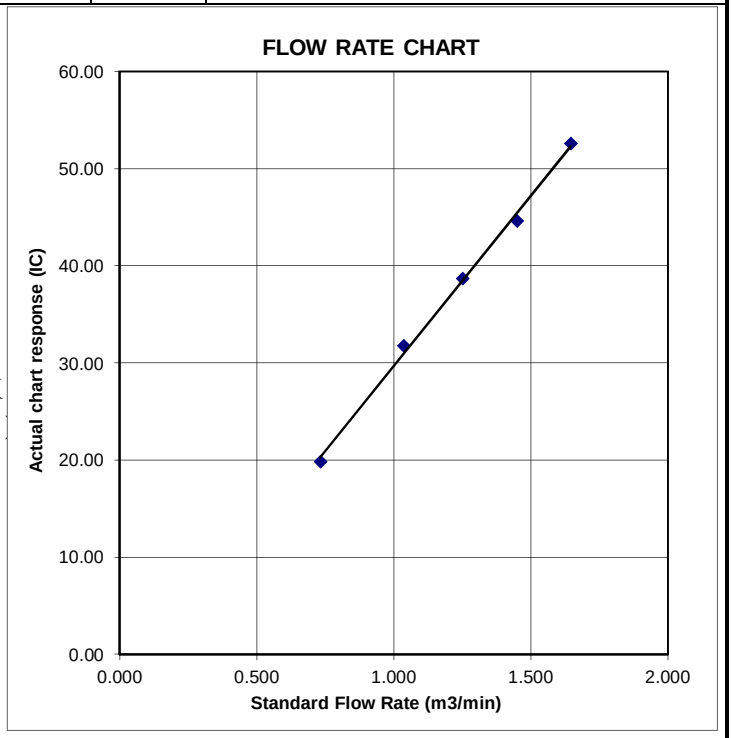
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart respones
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration ( deg K
Pstd = actual pressure during calibration ( mm Hg

***For subsequent calculation of sampler flow:***

1/m(( I )[Sqrt(298/Tav)(Pav/760)]-b)

m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure



# TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

| | | | |
|---|---|---|---|
| Location : | Hau Tat House | Date of Calibration: | 2-Oct-19 |
| Location ID : | AMS 6 | Next Calibration Date: | 2-Dec-19 |
| Model:TISCH High Volume Air Sampler TE-5170 | | Technician: Mr. Fai So | |

## CONDITIONS

| | | | |
|---|---|---|---|
| Sea Level Pressure (hPa) | 1011.2 | Corrected Pressure (mm Hg) | 758.4 |
| Temperature (°C) | 29.5 | Temperature (K) | 303 |

## CALIBRATION ORIFICE

| | | | |
|---|---|---|---|
| Make-> | TISCH | Qstd Slope -> | 2.0968 |
| Model-> | TE-5025A | Qstd Intercept -> | -0.00065 |
| Serial # -> | 1941 | | |

## CALIBRATION

| Plate No. | H20 (L) (in) | H2O (R) (in) | H20 (in) | Qstd (m3/min) | I (chart) | IC corrected | LINEAR REGRESSION |
|---|---|---|---|---|---|---|---|
| 18 | 6.2 | 6.2 | 12.4 | 1.665 | 56 | 55.52 | Slope = 36.1555 |
| 13 | 4.5 | 4.5 | 9 | 1.419 | 47 | 46.60 | Intercept = -4.8489 |
| 10 | 3.5 | 3.5 | 7 | 1.251 | 40 | 39.66 | Corr. coeff. = 0.9994 |
| 7 | 2.1 | 2.1 | 4.2 | 0.969 | 31 | 30.74 | |
| 5 | 1.1 | 1.0 | 2.1 | 0.686 | 20 | 19.83 | |

***Calculations :***

Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]

IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate

IC = corrected chart respones

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration ( deg K

Pstd = actual pressure during calibration ( mm Hg

***For subsequent calculation of sampler flow:***

1/m(( I )[Sqrt(298/Tav)(Pav/760)]-b)

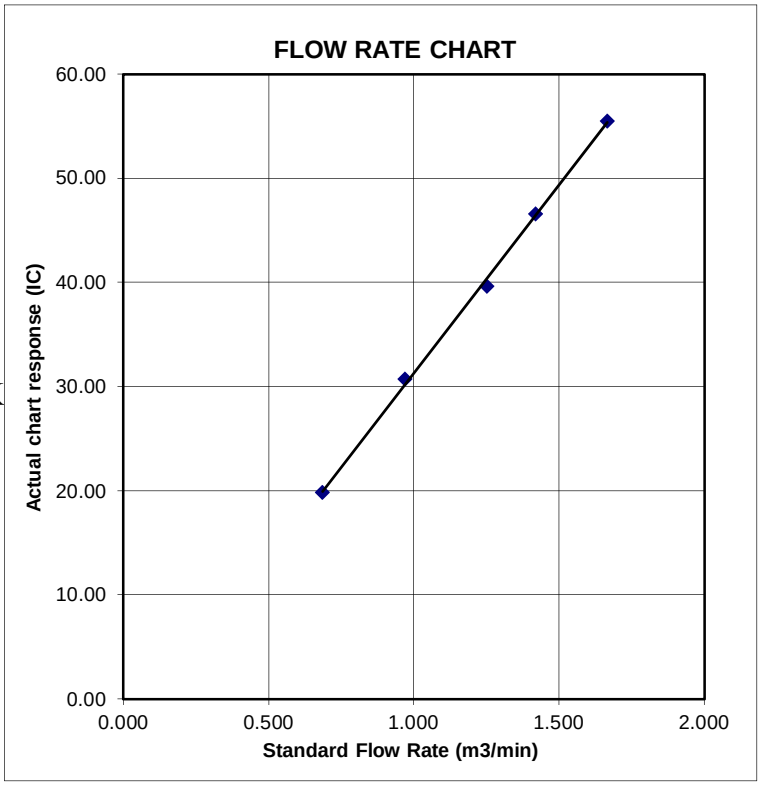
m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure



# TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

| | |
|---|---|
| Location : Ma Yau Tong Village | Date of Calibration: 2-Oct-19 |
| Location ID : AMS 7 | Next Calibration Date: 2-Dec-19 |
| Model:TISCH High Volume Air Sampler TE-5170 | Technician: Mr. Fai So |

## CONDITIONS

| | | | |
|---|---|---|---|
| Sea Level Pressure (hPa) | 1011.2 | Corrected Pressure (mm Hg) | 758.4 |
| Temperature (°C) | 29.5 | Temperature (K) | 303 |

## CALIBRATION ORIFICE

| | | | |
|---|---|---|---|
| Make-> | TISCH | Qstd Slope -> | 2.0968 |
| Model-> | TE-5025A | Qstd Intercept -> | -0.00065 |
| Serial # -> | 1941 | | |

## CALIBRATION

| Plate No. | H20 (L) (in) | H2O (R) (in) | H20 (in) | Qstd (m3/min) | I (chart) | IC corrected | LINEAR REGRESSION |
|---|---|---|---|---|---|---|---|
| 18 | 6.1 | 6.1 | 12.2 | 1.652 | 45 | 44.62 | Slope = 28.5476 |
| 13 | 5.2 | 5.1 | 10.3 | 1.518 | 40 | 39.66 | Intercept = -3.2574 |
| 10 | 3.7 | 3.7 | 7.4 | 1.287 | 33 | 32.72 | Corr. coeff. = 0.9986 |
| 7 | 2.1 | 2.1 | 4.2 | 0.969 | 25 | 24.79 | |
| 5 | 1.1 | 1.1 | 2.2 | 0.702 | 17 | 16.86 | |

***Calculations :***

Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]

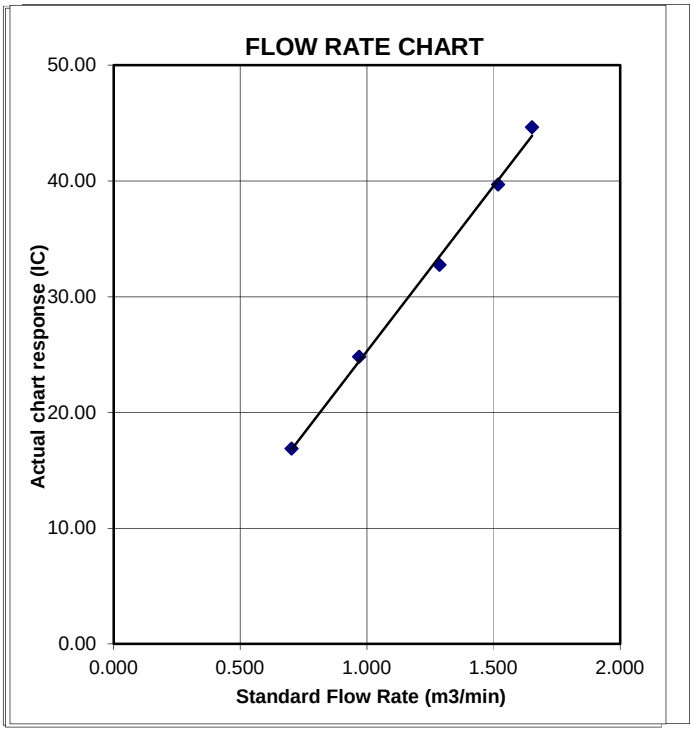
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart respones
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration ( deg K )
Pstd = actual pressure during calibration ( mm Hg )

***For subsequent calculation of sampler flow:***

1/m(( I )[Sqrt(298/Tav)(Pav/760)]-b)

m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure



TISCH Environmental

| RECALIBRATION DUE DATE: |
|---|
| February 5, 2020 |

# Certificate of Calibration

| Calibration Certification Information | | | | |
|---|---|---|---|---|
| **Cal. Date:** | February 5, 2019 | **Rootsmeter S/N:** 438320 | **Ta:** 293 | °K |
| **Operator:** | Jim Tisch | | **Pa:** 753.1 | mm Hg |
| **Calibration Model #:** | TE-5025A | **Calibrator S/N:** **1941** | | |

| Run | Vol. Init (m3) | Vol. Final (m3) | ΔVol. (m3) | ΔTime (min) | ΔP (mm Hg) | ΔH (in H2O) |
|---|---|---|---|---|---|---|
| 1 | 1 | 2 | 1 | 1.4830 | 3.2 | 2.00 |
| 2 | 3 | 4 | 1 | 1.0430 | 6.4 | 4.00 |
| 3 | 5 | 6 | 1 | 0.9300 | 7.9 | 5.00 |
| 4 | 7 | 8 | 1 | 0.8870 | 8.7 | 5.50 |
| 5 | 9 | 10 | 1 | 0.7320 | 12.7 | 8.00 |

**Data Tabulation**

| Vstd (m3) | Qstd (x-axis) | $\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}$ (y-axis) | Va | Qa (x-axis) | $\sqrt{\Delta H\left(Ta/Pa\right)}$ (y-axis) |
|---|---|---|---|---|---|
| 1.0036 | 0.6767 | 1.4197 | 0.9958 | 0.6714 | 0.8821 |
| 0.9993 | 0.9581 | 2.0078 | 0.9915 | 0.9506 | 1.2475 |
| 0.9973 | 1.0723 | 2.2448 | 0.9895 | 1.0640 | 1.3947 |
| 0.9962 | 1.1231 | 2.3544 | 0.9884 | 1.1144 | 1.4628 |
| 0.9908 | 1.3536 | 2.8395 | 0.9831 | 1.3431 | 1.7642 |
| **QSTD** | **m=** | **2.09680** | **QA** | **m=** | **1.31298** |
| | **b=** | **-0.00065** | | **b=** | **-0.00040** |
| | **r=** | **0.99999** | | **r=** | **0.99999** |

**Calculations**

| | | | |
|---|---|---|---|
| **Vstd=** | ΔVol((Pa-ΔP)/Pstd)(Tstd/Ta) | **Va=** | ΔVol((Pa-ΔP)/Pa) |
| **Qstd=** | Vstd/ΔTime | **Qa=** | Va/ΔTime |

**For subsequent flow rate calculations:**

**Qstd=** $1/m\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right)-b\right)$

**Qa=** $1/m\left(\left(\sqrt{\Delta H\left(Ta/Pa\right)}\right)-b\right)$

| Standard Conditions | |
|---|---|
| Tstd: | 298.15 °K |
| Pstd: | 760 mm Hg |

| Key |
|---|
| ΔH: calibrator manometer reading (in H2O) |
| ΔP: rootsmeter manometer reading (mm Hg) |
| Ta: actual absolute temperature (°K) |
| Pa: actual barometric pressure (mm Hg) |
| b: intercept |
| m: slope |

| RECALIBRATION |
|---|
| US EPA recommends annual recalibration per 1998 40 Code of Federal Regulations Part 50 to 51, Appendix B to Part 50, Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere, 9.2.17, page 30 |

Tisch Environmental, Inc.
145 South Miami Avenue
Village of Cleves, OH 45002

www.tisch-env.com
TOLL FREE: (877)263-7610
FAX: (513)467-9009

# ALS Technichem (HK) Pty Ltd

## ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

## SUB-CONTRACTING REPORT

| | | | | | |
|---|---|---|---|---|---|
| CONTACT | : | MR BEN TAM | WORK ORDER | : | **HK1908931** |
| CLIENT | : | **ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING** | | | |
| ADDRESS | : | RM A 20/F., GOLD KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T. HONG KONG | SUB-BATCH | : | 1 |
| | | | DATE RECEIVED | : | 25-FEB-2019 |
| | | | DATE OF ISSUE | : | 4-MAR-2019 |
| PROJECT | : | ---- | NO. OF SAMPLES | : | 1 |
| | | | CLIENT ORDER | : | ---- |

## *General Comments*

- **Sample(s) were received in ambient condition.**
- **Sample(s) analysed and reported on an as received basis.**
- **Calibration was subcontracted to and analysed by Action United Enviro Services.**

## *Signatories*

This document has been signed by those names that appear on this report and are the authorised signatories

| *Signatories* | *Position* |
|---|---|
| Richard Fung | General Manager |

This is the Final Report and supersedes any preliminary report with this batch number.

Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

ALS Technichem (HK) Pty Ltd
Part of the ALS Laboratory Group
11/F. Chung Shun Knitting Centre 1 - 3 Wing Yip Street Kwai Chung N.T. Hong Kong
**Tel. +852 2610 1044** Fax. +852 2610 2021 **www.alsglobal.com**

WORK ORDER : HK1908931
SUB-BATCH : 1
CLIENT : ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING
PROJECT : ----

| ALS Lab ID | Client's Sample ID | Sample Type | Sample Date | External Lab Report No. |
|---|---|---|---|---|
| HK1908931-001 | S/N: 3Y6505 | AIR | 25-Feb-2019 | S/N: 3Y6505 |

# Equipment Verification Report (TSP)

**Equipment Calibrated:**

| | |
|---|---|
| Type: | Laser Dust monitor |
| Manufacturer: | Sibata LD-3B |
| Serial No. | 3Y6505 |
| Equipment Ref: | EQ114 |
| Job Order | HK1908931 |

**Standard Equipment:**

| | |
|---|---|
| Standard Equipment: | Higher Volume Sampler |
| Location & Location ID: | AUES office (calibration room) |
| Equipment Ref: | HVS 018 |
| Last Calibration Date: | 21 December 2018 |

**Equipment Verification Results:**

Testing Date: 7 January 2019

| Hour | Time | Mean Temp °C | Mean Pressure (hPa) | Concentration in mg/m$^3$ (Standard Equipment) | Total Count (Calibrated Equipment) | Count/Minute (Total Count/60min) |
|---|---|---|---|---|---|---|
| 2hr07min | 09:01 ~ 11:08 | 18.5 | 1021.4 | 0.045 | 2318 | 18.3 |
| 2hr11min | 11:13 ~ 13:24 | 18.5 | 1021.4 | 0.032 | 1433 | 11.0 |
| 2hr07min | 13:30 ~ 15:37 | 18.5 | 1021.4 | 0.089 | 5022 | 39.7 |

Sensitivity Adjustment Scale Setting (Before Calibration) 602 (CPM)

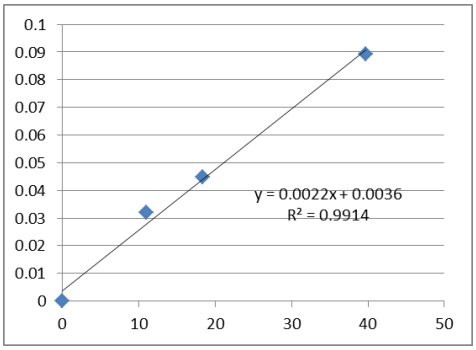
Sensitivity Adjustment Scale Setting (After Calibration) 602 (CPM)

**Linear Regression of Y or X**

Slope (K-factor): 0.0022

Correlation Coefficient 0.9957

Date of Issue 14 January 2019




Remarks:

1. **Strong** Correlation (R>0.8)
2. Factor 0.0022 should be apply for TSP monitoring

*If R<0.5, repair or re-verification is required for the equipment

Operator : Martin Li Signature : Date : 14 January 2019

QC Reviewer : Ben Tam Signature : Date : 14 January 2019

# TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

| | | | |
|---|---|---|---|
| Location : | Gold King Industrial Building, Kwai Chung | Date of Calibration: | 21-Dec-18 |
| Location ID : | Calibration Room | Next Calibration Date: | 21-Mar-19 |

## CONDITIONS

| | | | |
|---|---|---|---|
| Sea Level Pressure (hPa) | 1016.1 | Corrected Pressure (mm Hg) | 762.075 |
| Temperature (°C) | 22.4 | Temperature (K) | 295 |

## CALIBRATION ORIFICE

| | | | |
|---|---|---|---|
| Make-> | TISCH | Qstd Slope -> | 2.02017 |
| Model-> | 5025A | Qstd Intercept -> | -0.03691 |
| Calibration Date-> | 13-Feb-18 | Expiry Date-> | 13-Feb-19 |

## CALIBRATION

| Plate No. | H20 (L) (in) | H2O (R) (in) | H20 (in) | Qstd (m3/min) | I (chart) | IC corrected | LINEAR REGRESSION |
|---|---|---|---|---|---|---|---|
| 18 | 5.7 | 5.7 | 11.4 | 1.699 | 56 | 56.32 | Slope = 34.0074 |
| 13 | 4.4 | 4.4 | 8.8 | 1.495 | 51 | 51.29 | Intercept = -0.4093 |
| 10 | 3.4 | 3.4 | 6.8 | 1.317 | 45 | 45.26 | Corr. coeff. = 0.9972 |
| 8 | 2.3 | 2.3 | 4.6 | 1.086 | 36 | 36.21 | |
| 5 | 1.4 | 1.4 | 2.8 | 0.851 | 28 | 28.16 | |

***Calculations :***

Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]

IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate

IC = corrected chart respones

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration ( deg K )

Pstd = actual pressure during calibration ( mm Hg )

***For subsequent calculation of sampler flow:***

1/m(( I )[Sqrt(298/Tav)(Pav/760)]-b)

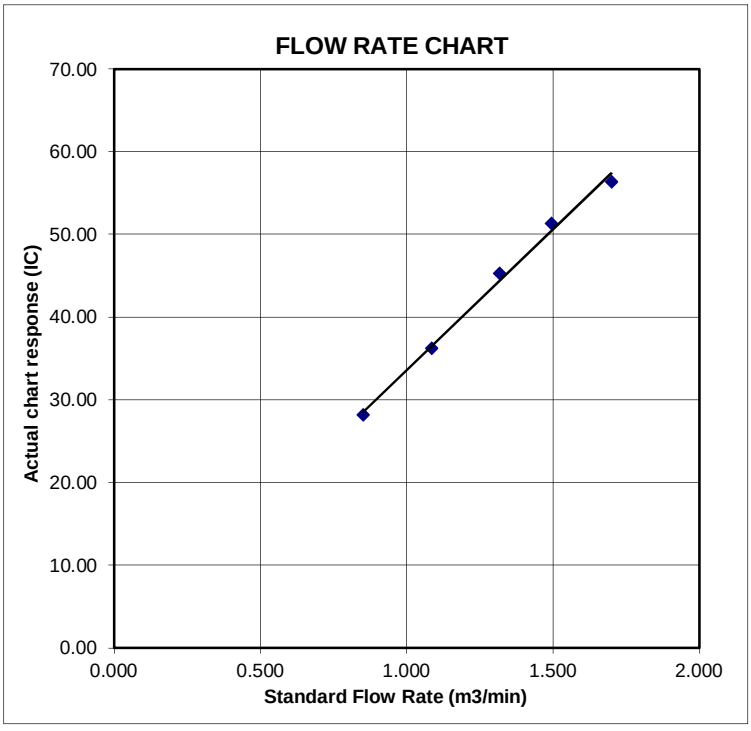
m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure



TISCH Environmental

| RECALIBRATION DUE DATE: |
|---|
| February 13, 2019 |

# Certificate of Calibration

| Calibration Certification Information | | | | |
|---|---|---|---|---|
| **Cal. Date:** | February 13, 2018 | **Rootsmeter S/N:** 438320 | **Ta:** 293 | °K |
| **Operator:** | Jim Tisch | | **Pa:** 763.3 | mm Hg |
| **Calibration Model #:** | TE-5025A | **Calibrator S/N:** **1612** | | |

| Run | Vol. Init (m3) | Vol. Final (m3) | ΔVol. (m3) | ΔTime (min) | ΔP (mm Hg) | ΔH (in H2O) |
|---|---|---|---|---|---|---|
| 1 | 1 | 2 | 1 | 1.3970 | 3.2 | 2.00 |
| 2 | 3 | 4 | 1 | 1.0000 | 6.3 | 4.00 |
| 3 | 5 | 6 | 1 | 0.8900 | 7.9 | 5.00 |
| 4 | 7 | 8 | 1 | 0.8440 | 8.7 | 5.50 |
| 5 | 9 | 10 | 1 | 0.7010 | 12.6 | 8.00 |

**Data Tabulation**

| Vstd (m3) | Qstd (x-axis) | $\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}$ (y-axis) | Va | Qa (x-axis) | $\sqrt{\Delta H\left(Ta/Pa\right)}$ (y-axis) |
|---|---|---|---|---|---|
| 1.0172 | 0.7281 | 1.4293 | 0.9958 | 0.7128 | 0.8762 |
| 1.0130 | 1.0130 | 2.0213 | 0.9917 | 0.9917 | 1.2392 |
| 1.0109 | 1.1358 | 2.2599 | 0.9896 | 1.1120 | 1.3854 |
| 1.0098 | 1.1964 | 2.3702 | 0.9886 | 1.1713 | 1.4530 |
| 1.0046 | 1.4331 | 2.8586 | 0.9835 | 1.4030 | 1.7524 |
| **QSTD** | **m=** | **2.02017** | **QA** | **m=** | **1.26500** |
| | **b=** | **-0.03691** | | **b=** | **-0.02263** |
| | **r=** | **0.99988** | | **r=** | **0.99988** |

**Calculations**

| | | | |
|---|---|---|---|
| **Vstd=** | ΔVol((Pa-ΔP)/Pstd)(Tstd/Ta) | **Va=** | ΔVol((Pa-ΔP)/Pa) |
| **Qstd=** | Vstd/ΔTime | **Qa=** | Va/ΔTime |

**For subsequent flow rate calculations:**

**Qstd=** $1/m\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right)-b\right)$

**Qa=** $1/m\left(\left(\sqrt{\Delta H\left(Ta/Pa\right)}\right)-b\right)$

| Standard Conditions | |
|---|---|
| Tstd: | 298.15 °K |
| Pstd: | 760 mm Hg |

| Key |
|---|
| ΔH: calibrator manometer reading (in H2O) |
| ΔP: rootsmeter manometer reading (mm Hg) |
| Ta: actual absolute temperature (°K) |
| Pa: actual barometric pressure (mm Hg) |
| b: intercept |
| m: slope |

**RECALIBRATION**

US EPA recommends annual recalibration per 1998 40 Code of Federal Regulations Part 50 to 51, Appendix B to Part 50, Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere, 9.2.17, page 30

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FAX: (513)467-900

# ALS Technichem (HK) Pty Ltd

## ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

## SUB-CONTRACTING REPORT

| | | | | | |
|---|---|---|---|---|---|
| CONTACT | : | MR BEN TAM | WORK ORDER | : | **HK1912134** |
| CLIENT | : | **ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING** | | | |
| ADDRESS | : | RM A 20/F., GOLD KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T. HONG KONG | SUB-BATCH | : | 1 |
| | | | DATE RECEIVED | : | 20-MAR-2019 |
| | | | DATE OF ISSUE | : | 22-MAR-2019 |
| PROJECT | : | ---- | NO. OF SAMPLES | : | 1 |
| | | | CLIENT ORDER | : | ---- |

## *General Comments*

- **Sample(s) were received in ambient condition.**
- **Sample(s) analysed and reported on an as received basis.**
- **Calibration was subcontracted to and analysed by Action United Enviro Services.**

## *Signatories*

This document has been signed by those names that appear on this report and are the authorised signatories

| *Signatories* | *Position* |
|---|---|
| Richard Fung | General Manager |

This is the Final Report and supersedes any preliminary report with this batch number.

Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

ALS Technichem (HK) Pty Ltd
Part of the ALS Laboratory Group
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**Tel. +852 2610 1044** Fax. +852 2610 2021 **www.alsglobal.com**

WORK ORDER : HK1912134
SUB-BATCH : 1
CLIENT : ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING
PROJECT : ----

| ALS Lab ID | Client's Sample ID | Sample Type | Sample Date | External Lab Report No. |
|---|---|---|---|---|
| HK1912134-001 | S/N: 3Y6502 | AIR | 20-Mar-2019 | 3Y6502 |

# Equipment Verification Report (TSP)

**Equipment Calibrated:**

| | |
|---|---|
| Type: | Laser Dust monitor |
| Manufacturer: | Sibata LD-3B |
| Serial No. | 3Y6502 |
| Equipment Ref: | EQ113 |
| Job Order | HK1912134 |

**Standard Equipment:**

| | |
|---|---|
| Standard Equipment: | Higher Volume Sampler |
| Location & Location ID: | AUES office (calibration room) |
| Equipment Ref: | HVS 018 |
| Last Calibration Date: | 12 February 2019 |

**Equipment Verification Results:**

Calibration Date: 11 March 2019

| Hour | Time | Mean Temp °C | Mean Pressure (hPa) | Concentration in mg/m$^3$ (Standard Equipment) | Total Count (Calibrated Equipment) | Count/Minute (Total Count/60min) |
|---|---|---|---|---|---|---|
| 2hr00min | 09:21 ~ 11:21 | 18.4 | 1014.9 | 0.021 | 2670 | 22.3 |
| 2hr00min | 11:30 ~ 13:30 | 18.4 | 1014.9 | 0.025 | 2917 | 24.3 |
| 2hr00min | 13:40 ~ 15:40 | 18.4 | 1014.9 | 0.032 | 3301 | 27.5 |

Sensitivity Adjustment Scale Setting (Before Calibration) 573 (CPM)

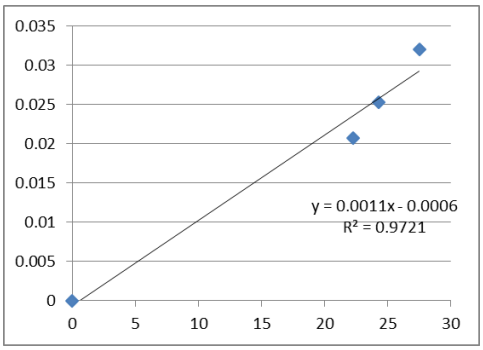
Sensitivity Adjustment Scale Setting (After Calibration) 573 (CPM)

**Linear Regression of Y or X**

Slope (K-factor): 0.0011

Correlation Coefficient (R) 0.9860

Date of Issue 15 March 2019




Remarks:

1. **Strong** Correlation (R>0.8)
2. Factor 0.0011 should be apply for TSP monitoring

*If R<0.5, repair or re-verification is required for the equipment

Operator : Fai So Signature : Date : 15 March 2019

QC Reviewer : Ben Tam Signature : Date : 15 March 2019

# TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

| | | | |
|---|---|---|---|
| Location : | Gold King Industrial Building, Kwai Chung | Date of Calibration: | 12-Feb-19 |
| Location ID : | Calibration Room | Next Calibration Date: | 12-May-19 |

## CONDITIONS

| | | | |
|---|---|---|---|
| Sea Level Pressure (hPa) | 1024.2 | Corrected Pressure (mm Hg) | 768.15 |
| Temperature (°C) | 19.0 | Temperature (K) | 292 |

## CALIBRATION ORIFICE

| | | | |
|---|---|---|---|
| Make-> | TISCH | Qstd Slope -> | 2.02017 |
| Model-> | 5025A | Qstd Intercept -> | -0.03691 |
| Calibration Date-> | 13-Feb-18 | Expiry Date-> | 13-Feb-19 |

## CALIBRATION

| Plate No. | H20 (L) (in) | H2O (R) (in) | H20 (in) | Qstd (m3/min) | I (chart) | IC corrected | LINEAR REGRESSION |
|---|---|---|---|---|---|---|---|
| 18 | 4 | 7.7 | 11.7 | 1.738 | 60 | 60.94 | Slope = 35.5369 |
| 13 | 2.8 | 6.9 | 9.7 | 1.584 | 52 | 52.81 | Intercept = -1.8924 |
| 10 | 1.9 | 5.4 | 7.3 | 1.377 | 46 | 46.72 | Corr. coeff. = 0.9951 |
| 8 | 0.6 | 4 | 4.6 | 1.097 | 38 | 38.59 | |
| 5 | -0.4 | 3.1 | 2.7 | 0.844 | 27 | 27.42 | |

***Calculations :***

Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]

IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate

IC = corrected chart respones

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration ( deg K )

Pstd = actual pressure during calibration ( mm Hg )

***For subsequent calculation of sampler flow:***

1/m(( I )[Sqrt(298/Tav)(Pav/760)]-b)

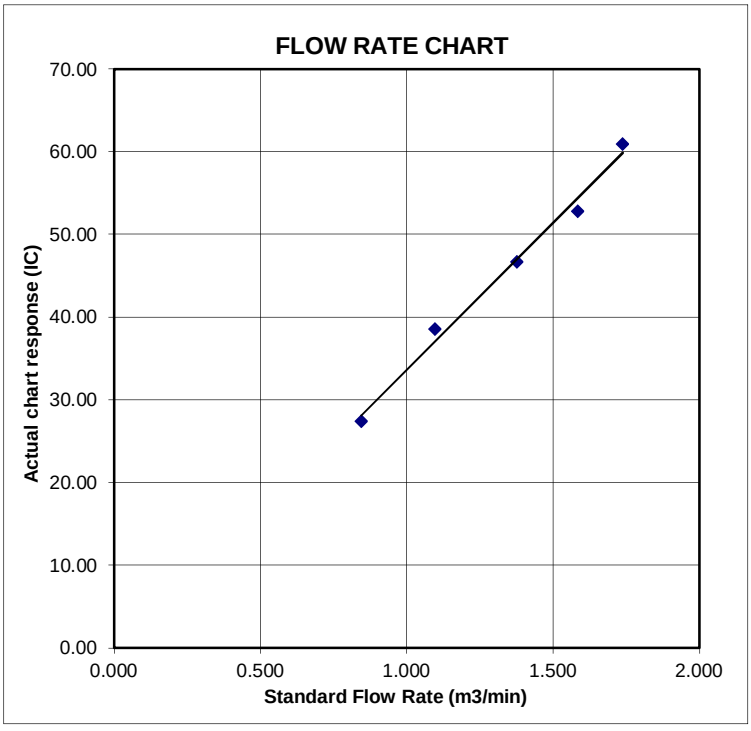
m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure



TISCH Environmental

| RECALIBRATION DUE DATE: |
|---|
| February 13, 2019 |

# Certificate of Calibration

| Calibration Certification Information | | | | |
|---|---|---|---|---|
| **Cal. Date:** | February 13, 2018 | **Rootsmeter S/N:** 438320 | **Ta:** 293 | °K |
| **Operator:** | Jim Tisch | | **Pa:** 763.3 | mm Hg |
| **Calibration Model #:** | TE-5025A | **Calibrator S/N:** **1612** | | |

| Run | Vol. Init (m3) | Vol. Final (m3) | ΔVol. (m3) | ΔTime (min) | ΔP (mm Hg) | ΔH (in H2O) |
|---|---|---|---|---|---|---|
| 1 | 1 | 2 | 1 | 1.3970 | 3.2 | 2.00 |
| 2 | 3 | 4 | 1 | 1.0000 | 6.3 | 4.00 |
| 3 | 5 | 6 | 1 | 0.8900 | 7.9 | 5.00 |
| 4 | 7 | 8 | 1 | 0.8440 | 8.7 | 5.50 |
| 5 | 9 | 10 | 1 | 0.7010 | 12.6 | 8.00 |

**Data Tabulation**

| Vstd (m3) | Qstd (x-axis) | $\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}$ (y-axis) | Va | Qa (x-axis) | $\sqrt{\Delta H\left(Ta/Pa\right)}$ (y-axis) |
|---|---|---|---|---|---|
| 1.0172 | 0.7281 | 1.4293 | 0.9958 | 0.7128 | 0.8762 |
| 1.0130 | 1.0130 | 2.0213 | 0.9917 | 0.9917 | 1.2392 |
| 1.0109 | 1.1358 | 2.2599 | 0.9896 | 1.1120 | 1.3854 |
| 1.0098 | 1.1964 | 2.3702 | 0.9886 | 1.1713 | 1.4530 |
| 1.0046 | 1.4331 | 2.8586 | 0.9835 | 1.4030 | 1.7524 |
| **QSTD** | **m=** | **2.02017** | **QA** | **m=** | **1.26500** |
| | **b=** | **-0.03691** | | **b=** | **-0.02263** |
| | **r=** | **0.99988** | | **r=** | **0.99988** |

**Calculations**

| | | | |
|---|---|---|---|
| **Vstd=** | ΔVol((Pa-ΔP)/Pstd)(Tstd/Ta) | **Va=** | ΔVol((Pa-ΔP)/Pa) |
| **Qstd=** | Vstd/ΔTime | **Qa=** | Va/ΔTime |

**For subsequent flow rate calculations:**

**Qstd=** $1/m\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right)-b\right)$

**Qa=** $1/m\left(\left(\sqrt{\Delta H\left(Ta/Pa\right)}\right)-b\right)$

| Standard Conditions | |
|---|---|
| Tstd: | 298.15 °K |
| Pstd: | 760 mm Hg |

| Key |
|---|
| ΔH: calibrator manometer reading (in H2O) |
| ΔP: rootsmeter manometer reading (mm Hg) |
| Ta: actual absolute temperature (°K) |
| Pa: actual barometric pressure (mm Hg) |
| b: intercept |
| m: slope |

**RECALIBRATION**

US EPA recommends annual recalibration per 1998 40 Code of Federal Regulations Part 50 to 51, Appendix B to Part 50, Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere, 9.2.17, page 30

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FAX: (513)467-900

# ALS Technichem (HK) Pty Ltd

## ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

## SUB-CONTRACTING REPORT

| | | | | | |
|---|---|---|---|---|---|
| CONTACT | : | MR BEN TAM | WORK ORDER | : | **HK1908930** |
| CLIENT | : | **ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING** | | | |
| ADDRESS | : | RM A 20/F., GOLD KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T. HONG KONG | SUB-BATCH | : | 1 |
| | | | DATE RECEIVED | : | 25-FEB-2019 |
| | | | DATE OF ISSUE | : | 4-MAR-2019 |
| PROJECT | : | ---- | NO. OF SAMPLES | : | 1 |
| | | | CLIENT ORDER | : | ---- |

## *General Comments*

- **Sample(s) were received in ambient condition.**
- **Sample(s) analysed and reported on an as received basis.**
- **Calibration was subcontracted to and analysed by Action United Enviro Services.**

## *Signatories*

This document has been signed by those names that appear on this report and are the authorised signatories

| *Signatories* | *Position* |
|---|---|
| Richard Fung | General Manager |

This is the Final Report and supersedes any preliminary report with this batch number.

Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

ALS Technichem (HK) Pty Ltd
Part of the ALS Laboratory Group
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**Tel. +852 2610 1044** Fax. +852 2610 2021 **www.alsglobal.com**

WORK ORDER : HK1908930
SUB-BATCH : 1
CLIENT : ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING
PROJECT : ----

| ALS Lab ID | Client's Sample ID | Sample Type | Sample Date | External Lab Report No. |
|---|---|---|---|---|
| HK1908930-001 | S/N: 3Y6503 | AIR | 25-Feb-2019 | S/N: 3Y6503 |

# Equipment Verification Report (TSP)

**Equipment Calibrated:**

| | |
|---|---|
| Type: | Laser Dust monitor |
| Manufacturer: | Sibata LD-3B |
| Serial No. | 3Y6503 |
| Equipment Ref: | EQ112 |
| Job Order | HK1908930 |

**Standard Equipment:**

| | |
|---|---|
| Standard Equipment: | Higher Volume Sampler |
| Location & Location ID: | AUES office (calibration room) |
| Equipment Ref: | HVS 018 |
| Last Calibration Date: | 21 December 2018 |

**Equipment Verification Results:**

Testing Date: 7 January 2019

| Hour | Time | Mean Temp °C | Mean Pressure (hPa) | Concentration in mg/m$^3$ (Standard Equipment) | Total Count (Calibrated Equipment) | Count/Minute (Total Count/60min) |
|---|---|---|---|---|---|---|
| 2hr07min | 09:01 ~ 11:08 | 18.5 | 1021.4 | 0.045 | 2403 | 19.0 |
| 2hr11min | 11:13 ~ 13:24 | 18.5 | 1021.4 | 0.032 | 1577 | 12.1 |
| 2hr07min | 13:30 ~ 15:37 | 18.5 | 1021.4 | 0.089 | 5129 | 40.5 |

Sensitivity Adjustment Scale Setting (Before Calibration) 655 (CPM)

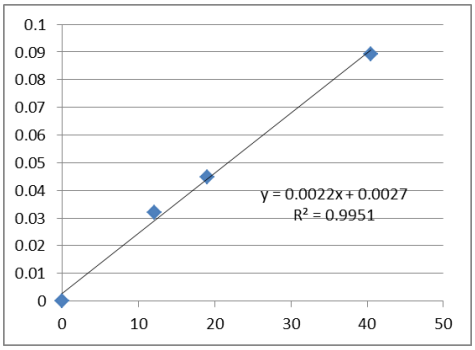
Sensitivity Adjustment Scale Setting (After Calibration) 655 (CPM)

**Linear Regression of Y or X**

Slope (K-factor): 0.0022

Correlation Coefficient 0.9975

Date of Issue 14 January 2019




Remarks:

1. **Strong** Correlation (R>0.8)
2. Factor 0.0022 should be apply for TSP monitoring

*If R<0.5, repair or re-verification is required for the equipment

Operator : Martin Li Signature : Date : 14 January 2019

QC Reviewer : Ben Tam Signature : Date : 14 January 2019

# TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

| | | | |
|---|---|---|---|
| Location : | Gold King Industrial Building, Kwai Chung | Date of Calibration: | 21-Dec-18 |
| Location ID : | Calibration Room | Next Calibration Date: | 21-Mar-19 |

## CONDITIONS

| | | | |
|---|---|---|---|
| Sea Level Pressure (hPa) | 1016.1 | Corrected Pressure (mm Hg) | 762.075 |
| Temperature (°C) | 22.4 | Temperature (K) | 295 |

## CALIBRATION ORIFICE

| | | | |
|---|---|---|---|
| Make-> | TISCH | Qstd Slope -> | 2.02017 |
| Model-> | 5025A | Qstd Intercept -> | -0.03691 |
| Calibration Date-> | 13-Feb-18 | Expiry Date-> | 13-Feb-19 |

## CALIBRATION

| Plate No. | H20 (L) (in) | H2O (R) (in) | H20 (in) | Qstd (m3/min) | I (chart) | IC corrected | LINEAR REGRESSION |
|---|---|---|---|---|---|---|---|
| 18 | 5.7 | 5.7 | 11.4 | 1.699 | 56 | 56.32 | Slope = 34.0074 |
| 13 | 4.4 | 4.4 | 8.8 | 1.495 | 51 | 51.29 | Intercept = -0.4093 |
| 10 | 3.4 | 3.4 | 6.8 | 1.317 | 45 | 45.26 | Corr. coeff. = 0.9972 |
| 8 | 2.3 | 2.3 | 4.6 | 1.086 | 36 | 36.21 | |
| 5 | 1.4 | 1.4 | 2.8 | 0.851 | 28 | 28.16 | |

***Calculations :***

Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]

IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate

IC = corrected chart respones

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration ( deg K )

Pstd = actual pressure during calibration ( mm Hg )

***For subsequent calculation of sampler flow:***

1/m(( I )[Sqrt(298/Tav)(Pav/760)]-b)

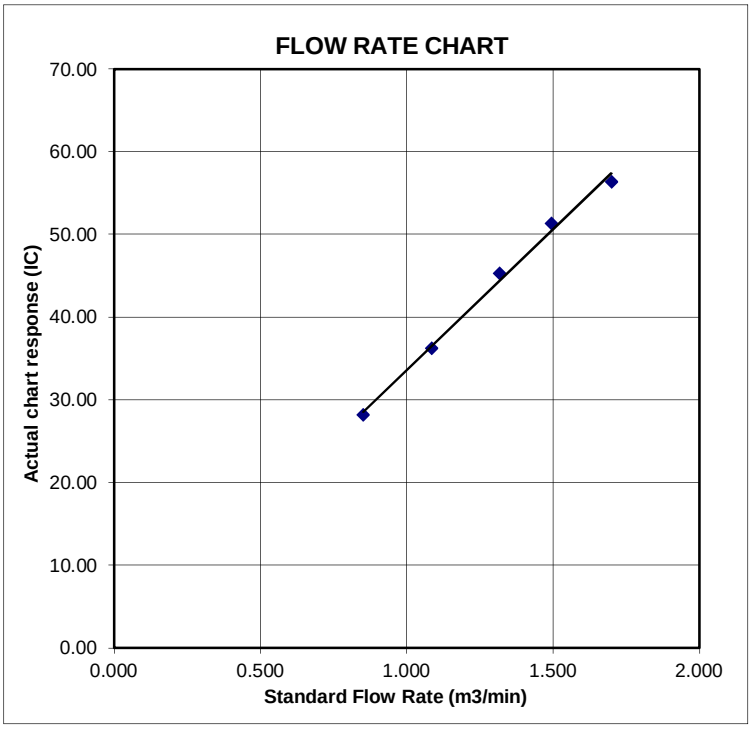
m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure



TISCH Environmental

| RECALIBRATION DUE DATE: |
|---|
| February 13, 2019 |

# Certificate of Calibration

| Calibration Certification Information | | | | |
|---|---|---|---|---|
| **Cal. Date:** | February 13, 2018 | **Rootsmeter S/N:** 438320 | **Ta:** 293 | °K |
| **Operator:** | Jim Tisch | | **Pa:** 763.3 | mm Hg |
| **Calibration Model #:** | TE-5025A | **Calibrator S/N:** **1612** | | |

| Run | Vol. Init (m3) | Vol. Final (m3) | ΔVol. (m3) | ΔTime (min) | ΔP (mm Hg) | ΔH (in H2O) |
|---|---|---|---|---|---|---|
| 1 | 1 | 2 | 1 | 1.3970 | 3.2 | 2.00 |
| 2 | 3 | 4 | 1 | 1.0000 | 6.3 | 4.00 |
| 3 | 5 | 6 | 1 | 0.8900 | 7.9 | 5.00 |
| 4 | 7 | 8 | 1 | 0.8440 | 8.7 | 5.50 |
| 5 | 9 | 10 | 1 | 0.7010 | 12.6 | 8.00 |

**Data Tabulation**

| Vstd (m3) | Qstd (x-axis) | $\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}$ (y-axis) | Va | Qa (x-axis) | $\sqrt{\Delta H\left(Ta/Pa\right)}$ (y-axis) |
|---|---|---|---|---|---|
| 1.0172 | 0.7281 | 1.4293 | 0.9958 | 0.7128 | 0.8762 |
| 1.0130 | 1.0130 | 2.0213 | 0.9917 | 0.9917 | 1.2392 |
| 1.0109 | 1.1358 | 2.2599 | 0.9896 | 1.1120 | 1.3854 |
| 1.0098 | 1.1964 | 2.3702 | 0.9886 | 1.1713 | 1.4530 |
| 1.0046 | 1.4331 | 2.8586 | 0.9835 | 1.4030 | 1.7524 |
| **QSTD** | **m=** | **2.02017** | **QA** | **m=** | **1.26500** |
| | **b=** | **-0.03691** | | **b=** | **-0.02263** |
| | **r=** | **0.99988** | | **r=** | **0.99988** |

**Calculations**

| | | | |
|---|---|---|---|
| **Vstd=** | ΔVol((Pa-ΔP)/Pstd)(Tstd/Ta) | **Va=** | ΔVol((Pa-ΔP)/Pa) |
| **Qstd=** | Vstd/ΔTime | **Qa=** | Va/ΔTime |

**For subsequent flow rate calculations:**

**Qstd=** $1/m\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right)-b\right)$

**Qa=** $1/m\left(\left(\sqrt{\Delta H\left(Ta/Pa\right)}\right)-b\right)$

| Standard Conditions | |
|---|---|
| Tstd: | 298.15 °K |
| Pstd: | 760 mm Hg |

| Key |
|---|
| ΔH: calibrator manometer reading (in H2O) |
| ΔP: rootsmeter manometer reading (mm Hg) |
| Ta: actual absolute temperature (°K) |
| Pa: actual barometric pressure (mm Hg) |
| b: intercept |
| m: slope |

**RECALIBRATION**

US EPA recommends annual recalibration per 1998 40 Code of Federal Regulations Part 50 to 51, Appendix B to Part 50, Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere, 9.2.17, page 30

Tisch Environmental, Inc.
145 South Miami Avenue
Village of Cleves, OH 45002

www.tisch-env.cor
TOLL FREE: (877)263-761(
FAX: (513)467-900

# ALS Technichem (HK) Pty Ltd

## ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

## SUB-CONTRACTING REPORT

| | | | | | |
|---|---|---|---|---|---|
| CONTACT | : | MR BEN TAM | WORK ORDER | : | **HK1908929** |
| CLIENT | : | **ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING** | | | |
| ADDRESS | : | RM A 20/F., GOLD KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T. HONG KONG | SUB-BATCH | : | 1 |
| | | | DATE RECEIVED | : | 25-FEB-2019 |
| | | | DATE OF ISSUE | : | 4-MAR-2019 |
| PROJECT | : | ---- | NO. OF SAMPLES | : | 1 |
| | | | CLIENT ORDER | : | ---- |

## *General Comments*

- **Sample(s) were received in ambient condition.**
- **Sample(s) analysed and reported on an as received basis.**
- **Calibration was subcontracted to and analysed by Action United Enviro Services.**

## *Signatories*

This document has been signed by those names that appear on this report and are the authorised signatories

| *Signatories* | *Position* |
|---|---|
| Richard Fung | General Manager |

This is the Final Report and supersedes any preliminary report with this batch number.

Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

ALS Technichem (HK) Pty Ltd
Part of the ALS Laboratory Group
11/F. Chung Shun Knitting Centre 1 - 3 Wing Yip Street Kwai Chung N.T. Hong Kong
**Tel. +852 2610 1044** Fax. +852 2610 2021 **www.alsglobal.com**

WORK ORDER : HK1908929
SUB-BATCH : 1
CLIENT : ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING
PROJECT : ----

| ALS Lab ID | Client's Sample ID | Sample Type | Sample Date | External Lab Report No. |
|---|---|---|---|---|
| HK1908929-001 | S/N: 366410 | AIR | 25-Feb-2019 | S/N: 366410 |

# Equipment Verification Report (TSP)

**Equipment Calibrated:**

| | |
|---|---|
| Type: | Laser Dust monitor |
| Manufacturer: | Sibata LD-3B |
| Serial No. | 366410 |
| Equipment Ref: | EQ110 |
| Job Order | HK1908929 |

**Standard Equipment:**

| | |
|---|---|
| Standard Equipment: | Higher Volume Sampler |
| Location & Location ID: | AUES office (calibration room) |
| Equipment Ref: | HVS 018 |
| Last Calibration Date: | 21 December 2018 |

**Equipment Verification Results:**

Testing Date: 7 January 2019

| Hour | Time | Mean Temp °C | Mean Pressure (hPa) | Concentration in mg/m$^3$ (Standard Equipment) | Total Count (Calibrated Equipment) | Count/Minute (Total Count/60min) |
|---|---|---|---|---|---|---|
| 2hr07min | 09:01 ~ 11:08 | 18.5 | 1021.4 | 0.045 | 2377 | 18.8 |
| 2hr11min | 11:13 ~ 13:24 | 18.5 | 1021.4 | 0.032 | 1522 | 11.6 |
| 2hr07min | 13:30 ~ 15:37 | 18.5 | 1021.4 | 0.089 | 5117 | 40.4 |

Sensitivity Adjustment Scale Setting (Before Calibration) 674 (CPM)

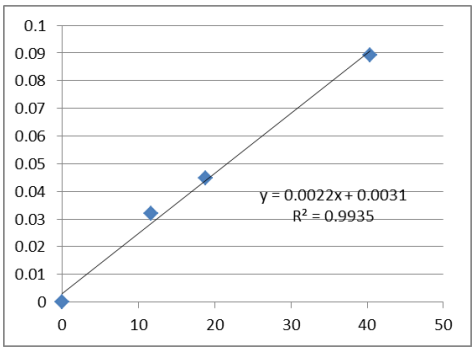
Sensitivity Adjustment Scale Setting (After Calibration) 674 (CPM)

**Linear Regression of Y or X**

Slope (K-factor): 0.0022

Correlation Coefficient 0.9967

Date of Issue 14 January 2019




Remarks:

1. **Strong** Correlation (R>0.8)
2. Factor 0.0022 should be apply for TSP monitoring

*If R<0.5, repair or re-verification is required for the equipment

Operator : Martin Li Signature : Date : 14 January 2019

QC Reviewer : Ben Tam Signature : Date : 14 January 2019

# TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

| | | | |
|---|---|---|---|
| Location : | Gold King Industrial Building, Kwai Chung | Date of Calibration: | 21-Dec-18 |
| Location ID : | Calibration Room | Next Calibration Date: | 21-Mar-19 |

## CONDITIONS

| | | | |
|---|---|---|---|
| Sea Level Pressure (hPa) | 1016.1 | Corrected Pressure (mm Hg) | 762.075 |
| Temperature (°C) | 22.4 | Temperature (K) | 295 |

## CALIBRATION ORIFICE

| | | | |
|---|---|---|---|
| Make-> | TISCH | Qstd Slope -> | 2.02017 |
| Model-> | 5025A | Qstd Intercept -> | -0.03691 |
| Calibration Date-> | 13-Feb-18 | Expiry Date-> | 13-Feb-19 |

## CALIBRATION

| Plate No. | H20 (L) (in) | H2O (R) (in) | H20 (in) | Qstd (m3/min) | I (chart) | IC corrected | LINEAR REGRESSION |
|---|---|---|---|---|---|---|---|
| 18 | 5.7 | 5.7 | 11.4 | 1.699 | 56 | 56.32 | Slope = 34.0074 |
| 13 | 4.4 | 4.4 | 8.8 | 1.495 | 51 | 51.29 | Intercept = -0.4093 |
| 10 | 3.4 | 3.4 | 6.8 | 1.317 | 45 | 45.26 | Corr. coeff. = 0.9972 |
| 8 | 2.3 | 2.3 | 4.6 | 1.086 | 36 | 36.21 | |
| 5 | 1.4 | 1.4 | 2.8 | 0.851 | 28 | 28.16 | |

***Calculations :***

Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]

IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate

IC = corrected chart respones

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration ( deg K )

Pstd = actual pressure during calibration ( mm Hg )

***For subsequent calculation of sampler flow:***

1/m(( I )[Sqrt(298/Tav)(Pav/760)]-b)

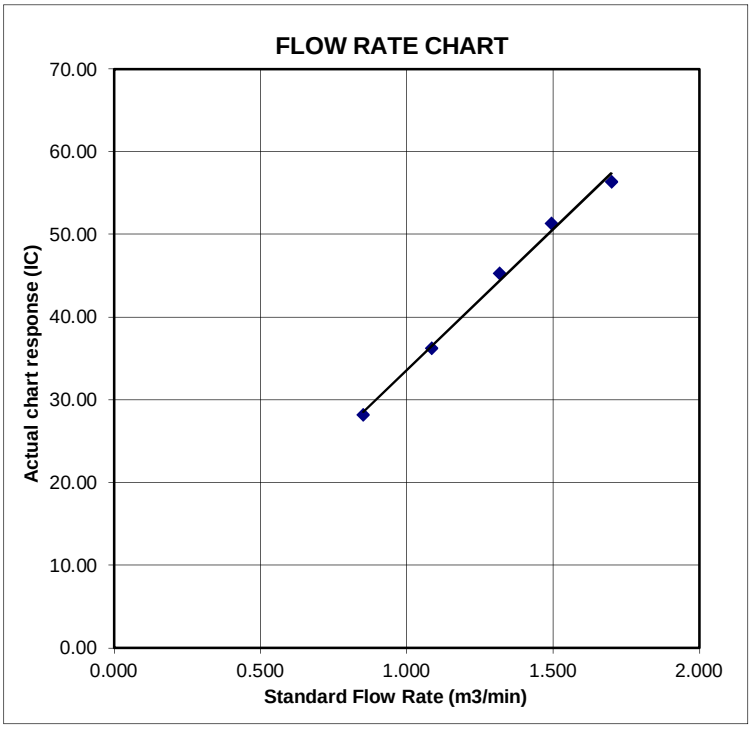
m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure



輝創工程有限公司
Sun Creation Engineering Limited
Calibration & Testing Laboratory

# Certificate of Calibration
# 校正證書

Certificate No. : C193171
證書編號

**ITEM TESTED / 送檢項目** ( Job No. / 序引編號 : IC19-1098 ) Date of Receipt / 收件日期 : 14 June 2019

Description / 儀器名稱 : Integrating Sound Level Meter (EQ010)
Manufacturer / 製造商 : Brüel & Kjær
Model No. / 型號 : 2238
Serial No. / 編號 : 2285721
Supplied By / 委託者 : Action-United Environmental Services and Consulting
Unit A, 20/F., Gold King Industrial Building,
35-41 Tai Lin Pai Road, Kwai Chung, N.T.

**TEST CONDITIONS / 測試條件**

Temperature / 溫度 : (23 ± 2)°C Relative Humidity / 相對濕度 : (50 ± 25)%
Line Voltage / 電壓 : ---

**TEST SPECIFICATIONS / 測試規範**

Calibration check

**DATE OF TEST / 測試日期** : 19 June 2019

**TEST RESULTS / 測試結果**

The results apply to the particular unit-under-test only.
The results do not exceed manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- The Bruel & Kjaer Calibration Laboratory, Denmark
- Agilent Technologies / Keysight Technologies
- Fluke Everett Service Center, USA

Tested By 測試 : Cheuk
K P Cheuk
Assistant Engineer

Certified By 核證 : 
K C Lee
Engineer

Date of Issue 簽發日期 : 20 June 2019

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# Certificate of Calibration
# 校正證書

Certificate No. : C193171
證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.

2. Self-calibration using laboratory acoustic calibrator was performed before the test from 6.1.1.2 to 6.4.

3. The results presented are the mean of 3 measurements at each calibration point.

4. Test equipment :

| Equipment ID | Description | Certificate No. |
|---|---|---|
| CL280 | 40 MHz Arbitrary Waveform Generator | C190176 |
| CL281 | Multifunction Acoustic Calibrator | CDK1806821 |

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

6.1.1.1 Before Self-calibration

| UUT Setting | | | | Applied Value | | UUT Reading (dB) |
|---|---|---|---|---|---|---|
| Range (dB) | Parameter | Frequency Weighting | Time Weighting | Level (dB) | Freq. (kHz) | |
| 50 - 130 | $L_{AFP}$ | A | F | 94.00 | 1 | 94.1 |

6.1.1.2 After Self-calibration

| UUT Setting | | | | Applied Value | | UUT Reading (dB) | IEC 60651 Type 1 Spec. (dB) |
|---|---|---|---|---|---|---|---|
| Range (dB) | Parameter | Frequency Weighting | Time Weighting | Level (dB) | Freq. (kHz) | | |
| 50 - 130 | $L_{AFP}$ | A | F | 94.00 | 1 | 94.1 | ± 0.7 |

6.1.2 Linearity

| UUT Setting | | | | Applied Value | | UUT Reading (dB) |
|---|---|---|---|---|---|---|
| Range (dB) | Parameter | Frequency Weighting | Time Weighting | Level (dB) | Freq. (kHz) | |
| 50 - 130 | $L_{AFP}$ | A | F | 94.00 | 1 | 94.1 (Ref.) |
| | | | | 104.00 | | 104.1 |
| | | | | 114.00 | | 114.0 |

IEC 60651 Type 1 Spec. : ± 0.4 dB per 10 dB step and ± 0.7 dB for overall different.

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# Certificate of Calibration
# 校正證書

Certificate No. : C193171
證書編號

6.2 Time Weighting

6.2.1 Continuous Signal

| UUT Setting | | | | Applied Value | | UUT Reading (dB) | IEC 60651 Type 1 Spec. (dB) |
|---|---|---|---|---|---|---|---|
| Range (dB) | Parameter | Frequency Weighting | Time Weighting | Level (dB) | Freq. (kHz) | | |
| 50 - 130 | $L_{AFP}$ | A | F | 94.00 | 1 | 94.1 | Ref. |
| | $L_{ASP}$ | | S | | | 94.1 | ± 0.1 |
| | $L_{AIP}$ | | I | | | 94.2 | ± 0.1 |

6.2.2 Tone Burst Signal (2 kHz)

| UUT Setting | | | | Applied Value | | UUT Reading (dB) | IEC 60651 Type 1 Spec. (dB) |
|---|---|---|---|---|---|---|---|
| Range (dB) | Parameter | Frequency Weighting | Time Weighting | Level (dB) | Burst Duration | | |
| 30 - 110 | $L_{AFP}$ | A | F | 106.0 | Continuous | 106.0 | Ref. |
| | $L_{AFMax}$ | | | | 200 ms | 105.0 | -1.0 ± 1.0 |
| | $L_{ASP}$ | | S | | Continuous | 106.0 | Ref. |
| | $L_{ASMax}$ | | | | 500 ms | 102.0 | -4.1 ± 1.0 |

6.3 Frequency Weighting

6.3.1 A-Weighting

| UUT Setting | | | | Applied Value | | UUT Reading (dB) | IEC 60651 Type 1 Spec. (dB) |
|---|---|---|---|---|---|---|---|
| Range (dB) | Parameter | Frequency Weighting | Time Weighting | Level (dB) | Freq. | | |
| 50 - 130 | $L_{AFP}$ | A | F | 94.00 | 31.5 Hz | 54.8 | -39.4 ± 1.5 |
| | | | | | 63 Hz | 67.9 | -26.2 ± 1.5 |
| | | | | | 125 Hz | 77.9 | -16.1 ± 1.0 |
| | | | | | 250 Hz | 85.4 | -8.6 ± 1.0 |
| | | | | | 500 Hz | 90.8 | -3.2 ± 1.0 |
| | | | | | 1 kHz | 94.1 | Ref. |
| | | | | | 2 kHz | 95.3 | +1.2 ± 1.0 |
| | | | | | 4 kHz | 95.1 | +1.0 ± 1.0 |
| | | | | | 8 kHz | 93.0 | -1.1 (+1.5 ; -3.0) |
| | | | | | 12.5 kHz | 89.8 | -4.3 (+3.0 ; -6.0) |

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.
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# Certificate of Calibration
# 校正證書

Certificate No. : C193171
證書編號

6.3.2 C-Weighting

| UUT Setting | | | | Applied Value | | UUT Reading (dB) | IEC 60651 Type 1 Spec. (dB) |
|---|---|---|---|---|---|---|---|
| Range (dB) | Parameter | Frequency Weighting | Time Weighting | Level (dB) | Freq. | | |
| 50 - 130 | $L_{CFP}$ | C | F | 94.00 | 31.5 Hz | 91.2 | -3.0 ± 1.5 |
| | | | | | 63 Hz | 93.3 | -0.8 ± 1.5 |
| | | | | | 125 Hz | 93.9 | -0.2 ± 1.0 |
| | | | | | 250 Hz | 94.1 | 0.0 ± 1.0 |
| | | | | | 500 Hz | 94.1 | 0.0 ± 1.0 |
| | | | | | 1 kHz | 94.1 | Ref. |
| | | | | | 2 kHz | 93.9 | -0.2 ± 1.0 |
| | | | | | 4 kHz | 93.3 | -0.8 ± 1.0 |
| | | | | | 8 kHz | 91.0 | -3.0 (+1.5 ; -3.0) |
| | | | | | 12.5 kHz | 87.9 | -6.2 (+3.0 ; -6.0) |

6.4 Time Averaging

| UUT Setting | | | | Applied Value | | | | | UUT Reading (dB) | IEC 60804 Type 1 Spec. (dB) |
|---|---|---|---|---|---|---|---|---|---|---|
| Range (dB) | Parameter | Frequency Weighting | Integrating Time | Frequency (kHz) | Burst Duration (ms) | Burst Duty Factor | Burst Level (dB) | Equivalent Level (dB) | | |
| 30 - 110 | $L_{Aeq}$ | A | 10 sec. | 4 | 1 | 1/10 | 110.0 | 100 | 100.0 | ± 0.5 |
| | | | | | | $1/10^2$ | | 90 | 89.9 | ± 0.5 |
| | | | 60 sec. | | | $1/10^3$ | | 80 | 79.9 | ± 1.0 |
| | | | 5 min. | | | $1/10^4$ | | 70 | 69.8 | ± 1.0 |

Remarks : - UUT Microphone Model No. : 4188 & S/N : 2812707

- Mfr's Spec. : IEC 60651 Type 1 & IEC 60804 Type 1

- Uncertainties of Applied Value :

| | | |
|---|---|---|
| 94 dB | : 31.5 Hz - 125 Hz | : ± 0.35 dB |
| | 250 Hz - 500 Hz | : ± 0.30 dB |
| | 1 kHz | : ± 0.20 dB |
| | 2 kHz - 4 kHz | : ± 0.35 dB |
| | 8 kHz | : ± 0.45 dB |
| | 12.5 kHz | : ± 0.70 dB |
| 104 dB | : 1 kHz | : ± 0.10 dB (Ref. 94 dB) |
| 114 dB | : 1 kHz | : ± 0.10 dB (Ref. 94 dB) |
| Burst equivalent level | | : ± 0.2 dB (Ref. 110 dB continuous sound level) |

- The uncertainties are for a confidence probability of not less than 95 %.

Note :
Only the original copy or the laboratory's certified true copy is valid.

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.
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Sun Creation Engineering Limited – Calibration & Testing Laboratory
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輝創工程有限公司
Sun Creation Engineering Limited
Calibration & Testing Laboratory

# Certificate of Calibration
# 校正證書

Certificate No. : C193189
證書編號

**ITEM TESTED / 送檢項目** ( Job No. / 序引編號 : IC19-1098 ) Date of Receipt / 收件日期 : 18 June 2019

| | | |
|---|---|---|
| Description / 儀器名稱 | : | Sound Level Meter (EQ016) |
| Manufacturer / 製造商 | : | Rion |
| Model No. / 型號 | : | NL-52 |
| Serial No. / 編號 | : | 00464681 |
| Supplied By / 委託者 | : | Action-United Environmental Services and Consulting<br>Unit A, 20/F., Gold King Industrial Building,<br>35-41 Tai Lin Pai Road, Kwai Chung, N.T. |

**TEST CONDITIONS / 測試條件**

Temperature / 溫度 : (23 ± 2)°C Relative Humidity / 相對濕度 : (50 ± 25)%

Line Voltage / 電壓 : ---

**TEST SPECIFICATIONS / 測試規範**

Calibration check

**DATE OF TEST / 測試日期** : 20 June 2019

**TEST RESULTS / 測試結果**

The results apply to the particular unit-under-test only.
The results do not exceed manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- The Bruel & Kjaer Calibration Laboratory, Denmark
- Agilent Technologies / Keysight Technologies
- Fluke Everett Service Center, USA

Tested By 測試 : Cheuk
K P Cheuk
Assistant Engineer

Certified By 核證 :
K C Lee
Engineer

Date of Issue 簽發日期 : 20 June 2019

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.
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c/o 香港新界屯門興安里一號四樓
Tel/電話: (852) 2927 2606 Fax/傳真: (852) 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

# Certificate of Calibration
# 校正證書

Certificate No. : C193189
證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.

2. Self-calibration was performed before the test.

3. The results presented are the mean of 3 measurements at each calibration point.

4. Test equipment :

| Equipment ID | Description | Certificate No. |
|---|---|---|
| CL280 | 40 MHz Arbitrary Waveform Generator | C190176 |
| CL281 | Multifunction Acoustic Calibrator | CDK1806821 |

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

| UUT Setting | | | | Applied Value | | UUT Reading (dB) | IEC 61672 Class 1 Spec. (dB) |
|---|---|---|---|---|---|---|---|
| Range (dB) | Function | Frequency Weighting | Time Weighting | Level (dB) | Freq. (kHz) | | |
| 30 - 130 | $L_A$ | A | Fast | 94.00 | 1 | 93.5 | ± 1.1 |

6.1.2 Linearity

| UUT Setting | | | | Applied Value | | UUT Reading (dB) |
|---|---|---|---|---|---|---|
| Range (dB) | Function | Frequency Weighting | Time Weighting | Level (dB) | Freq. (kHz) | |
| 30 - 130 | $L_A$ | A | Fast | 94.00 | 1 | 93.5 (Ref.) |
| | | | | 104.00 | | 103.5 |
| | | | | 114.00 | | 113.5 |

IEC 61672 Class 1 Spec. : ± 0.6 dB per 10 dB step and ± 1.1 dB for overall different.

6.2 Time Weighting

| UUT Setting | | | | Applied Value | | UUT Reading (dB) | IEC 61672 Class 1 Spec. (dB) |
|---|---|---|---|---|---|---|---|
| Range (dB) | Function | Frequency Weighting | Time Weighting | Level (dB) | Freq. (kHz) | | |
| 30 - 130 | $L_A$ | A | Fast | 94.00 | 1 | 93.5 | Ref. |
| | | | Slow | | | 93.5 | ± 0.3 |

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.
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# Certificate of Calibration
# 校正證書

Certificate No. : C193189
證書編號

6.3 Frequency Weighting

6.3.1 A-Weighting

| UUT Setting | | | | Applied Value | | UUT Reading (dB) | IEC 61672 Class 1 Spec. (dB) |
|---|---|---|---|---|---|---|---|
| Range (dB) | Function | Frequency Weighting | Time Weighting | Level (dB) | Freq. | | |
| 30 - 130 | $L_A$ | A | Fast | 94.00 | 63 Hz | 67.3 | -26.2 ± 1.5 |
| | | | | | 125 Hz | 77.4 | -16.1 ± 1.5 |
| | | | | | 250 Hz | 84.8 | -8.6 ± 1.4 |
| | | | | | 500 Hz | 90.3 | -3.2 ± 1.4 |
| | | | | | 1 kHz | 93.5 | Ref. |
| | | | | | 2 kHz | 94.8 | +1.2 ± 1.6 |
| | | | | | 4 kHz | 94.5 | +1.0 ± 1.6 |
| | | | | | 8 kHz | 92.5 | -1.1 (+2.1 ; -3.1) |
| | | | | | 12.5 kHz | 89.1 | -4.3 (+3.0 ; -6.0) |

6.3.2 C-Weighting

| UUT Setting | | | | Applied Value | | UUT Reading (dB) | IEC 61672 Class 1 Spec. (dB) |
|---|---|---|---|---|---|---|---|
| Range (dB) | Function | Frequency Weighting | Time Weighting | Level (dB) | Freq. | | |
| 30 - 130 | $L_C$ | C | Fast | 94.00 | 63 Hz | 92.7 | -0.8 ± 1.5 |
| | | | | | 125 Hz | 93.4 | -0.2 ± 1.5 |
| | | | | | 250 Hz | 93.5 | 0.0 ± 1.4 |
| | | | | | 500 Hz | 93.6 | 0.0 ± 1.4 |
| | | | | | 1 kHz | 93.5 | Ref. |
| | | | | | 2 kHz | 93.4 | -0.2 ± 1.6 |
| | | | | | 4 kHz | 92.8 | -0.8 ± 1.6 |
| | | | | | 8 kHz | 90.6 | -3.0 (+2.1 ; -3.1) |
| | | | | | 12.5 kHz | 87.2 | -6.2 (+3.0 ; -6.0) |

Remarks : - UUT Microphone Model No. : UC-59 & S/N : 07619

- Mfr's Spec. : IEC 61672 Class 1

- Uncertainties of Applied Value :

| | | |
|---|---|---|
| 94 dB : | 63 Hz - 125 Hz | : ± 0.35 dB |
| | 250 Hz - 500 Hz | : ± 0.30 dB |
| | 1 kHz | : ± 0.20 dB |
| | 2 kHz - 4 kHz | : ± 0.35 dB |
| | 8 kHz | : ± 0.45 dB |
| | 12.5 kHz | : ± 0.70 dB |
| 104 dB : | 1 kHz | : ± 0.10 dB (Ref. 94 dB) |
| 114 dB : | 1 kHz | : ± 0.10 dB (Ref. 94 dB) |

- The uncertainties are for a confidence probability of not less than 95 %.

Note :
Only the original copy or the laboratory's certified true copy is valid.

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

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輝創工程有限公司
Sun Creation Engineering Limited
Calibration & Testing Laboratory

# Certificate of Calibration
# 校正證書

Certificate No. : C192957
證書編號

**ITEM TESTED / 送檢項目** ( Job No. / 序引編號 : IC19-1098 ) Date of Receipt / 收件日期 : 30 May 2019

Description / 儀器名稱 : Sound Level Meter (EQ017)
Manufacturer / 製造商 : Brüel & Kjær
Model No. / 型號 : 2250
Serial No. / 編號 : 3012330
Supplied By / 委託者 : Action-United Environmental Services and Consulting
Unit A, 20/F., Gold King Industrial Building,
35-41 Tai Lin Pai Road, Kwai Chung, N.T.

**TEST CONDITIONS / 測試條件**

Temperature / 溫度 : (23 ± 2)°C Relative Humidity / 相對濕度 : (50 ± 25)%
Line Voltage / 電壓 : ---

**TEST SPECIFICATIONS / 測試規範**

Calibration check

**DATE OF TEST / 測試日期** : 7 June 2019

**TEST RESULTS / 測試結果**

The results apply to the particular unit-under-test only.
The results do not exceed manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- The Bruel & Kjaer Calibration Laboratory, Denmark
- Agilent Technologies / Keysight Technologies
- Fluke Everett Service Center, USA

Tested By 測試 : H T Wong, Technical Officer

Certified By 核證 : K C Lee, Engineer

Date of Issue 簽發日期 : 12 June 2019

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.
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輝創工程有限公司 — 校正及檢測實驗所
c/o 香港新界屯門興安里一號四樓
Tel/電話: (852) 2927 2606 Fax/傳真: (852) 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

# Certificate of Calibration
# 校正證書

Certificate No. : C192957
證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.

2. Self-calibration using laboratory acoustic calibrator was performed before the test 6.1.1.2 to 6.3.2.

3. The results presented are the mean of 3 measurements at each calibration point.

4. Test equipment :

| Equipment ID | Description | Certificate No. |
|---|---|---|
| CL280 | 40 MHz Arbitrary Waveform Generator | C190176 |
| CL281 | Multifunction Acoustic Calibrator | CDK1806821 |

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

6.1.1.1 Before Self-calibration

| UUT Setting | | Applied Value | | UUT Reading |
|---|---|---|---|---|
| Range (dB) | Main | Level (dB) | Freq. (kHz) | (dB) |
| 20 - 140 | LAF (SPL) | 94.00 | 1 | 94.1 |

6.1.1.2 After Self-calibration

| UUT Setting | | Applied Value | | UUT Reading | IEC 61672 Class 1 |
|---|---|---|---|---|---|
| Range (dB) | Main | Level (dB) | Freq. (kHz) | (dB) | Spec. (dB) |
| 20 - 140 | LAF (SPL) | 94.00 | 1 | 94.0 | ± 1.1 |

6.1.2 Linearity

| UUT Setting | | Applied Value | | UUT Reading |
|---|---|---|---|---|
| Range (dB) | Main | Level (dB) | Freq. (kHz) | (dB) |
| 20 - 140 | LAF (SPL) | 94.00 | 1 | 94.0 (Ref.) |
| | | 104.00 | | 104.0 |
| | | 114.00 | | 114.0 |

IEC 61672 Class 1 Spec. : ± 0.6 dB per 10 dB step and ± 1.1 dB for overall different.

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# Certificate of Calibration
# 校正證書

Certificate No. : C192957
證書編號

6.2 Time Weighting

| UUT Setting | | Applied Value | | UUT Reading (dB) | IEC 61672 Class 1 Spec. (dB) |
|---|---|---|---|---|---|
| Range (dB) | Main | Level (dB) | Freq. (kHz) | | |
| 20 - 140 | LAF (SPL) | 94.00 | 1 | 94.0 | Ref. |
| | LAS (SPL) | | | 94.0 | ± 0.3 |

6.3 Frequency Weighting

6.3.1 A-Weighting

| UUT Setting | | Applied Value | | UUT Reading (dB) | IEC 61672 Class 1 Spec. (dB) |
|---|---|---|---|---|---|
| Range (dB) | Main | Level (dB) | Freq. | | |
| 20 - 140 | LAF (SPL) | 94.00 | 63 Hz | 67.8 | -26.2 ± 1.5 |
| | | | 125 Hz | 77.8 | -16.1 ± 1.5 |
| | | | 250 Hz | 85.3 | -8.6 ± 1.4 |
| | | | 500 Hz | 90.7 | -3.2 ± 1.4 |
| | | | 1 kHz | 94.0 | Ref. |
| | | | 2 kHz | 95.2 | +1.2 ± 1.6 |
| | | | 4 kHz | 95.0 | +1.0 ± 1.6 |
| | | | 8 kHz | 92.9 | -1.1(+2.1 ; -3.1) |
| | | | 12.5 kHz | 89.3 | -4.3(+3.0 ; -6.0) |

6.3.2 C-Weighting

| UUT Setting | | Applied Value | | UUT Reading (dB) | IEC 61672 Class 1 Spec. (dB) |
|---|---|---|---|---|---|
| Range (dB) | Main | Level (dB) | Freq. | | |
| 20 - 140 | LCF (SPL) | 94.00 | 63 Hz | 93.2 | -0.8 ± 1.5 |
| | | | 125 Hz | 93.8 | -0.2 ± 1.5 |
| | | | 250 Hz | 94.0 | 0.0 ± 1.4 |
| | | | 500 Hz | 94.0 | 0.0 ± 1.4 |
| | | | 1 kHz | 94.0 | Ref. |
| | | | 2 kHz | 93.8 | -0.2 ± 1.6 |
| | | | 4 kHz | 93.2 | -0.8 ± 1.6 |
| | | | 8 kHz | 91.0 | -3.0 (+2.1 ; -3.1) |
| | | | 12.5 kHz | 87.4 | -6.2 (+3.0 ; -6.0) |

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# Certificate of Calibration
# 校正證書

Certificate No. : C192957
證書編號

Remarks : - UUT Microphone Model No. : 4189 & S/N : 3130396

- Mfr's Spec. : IEC 61672 Class 1

- Uncertainties of Applied Value :

| | | | |
|---|---|---|---|
| 94 dB | : | 63 Hz - 125 Hz | : ± 0.35 dB |
| | | 250 Hz - 500 Hz | : ± 0.30 dB |
| | | 1 kHz | : ± 0.20 dB |
| | | 2 kHz - 4 kHz | : ± 0.35 dB |
| | | 8 kHz | : ± 0.45 dB |
| | | 12.5 kHz | : ± 0.70 dB |
| 104 dB | : | 1 kHz | : ± 0.10 dB (Ref. 94 dB) |
| 114 dB | : | 1 kHz | : ± 0.10 dB (Ref. 94 dB) |

- The uncertainties are for a confidence probability of not less than 95 %.

Note :
Only the original copy or the laboratory's certified true copy is valid.

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

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Sun Creation Engineering Limited
Calibration & Testing Laboratory

# Certificate of Calibration
# 校正證書

Certificate No. : C192956
證書編號

**ITEM TESTED / 送檢項目** ( Job No. / 序引編號 : IC19-1098 ) Date of Receipt / 收件日期 : 30 May 2019

Description / 儀器名稱 : Sound Calibrator (EQ082)
Manufacturer / 製造商 : Brüel & Kjær
Model No. / 型號 : 4231
Serial No. / 編號 : 2713428
Supplied By / 委託者 : Action-United Environmental Services and Consulting
Unit A, 20/F., Gold King Industrial Building,
35-41 Tai Lin Pai Road, Kwai Chung, N.T.

**TEST CONDITIONS / 測試條件**

Temperature / 溫度 : (23 ± 2)°C Relative Humidity / 相對濕度 : (50 ± 25)%
Line Voltage / 電壓 : ---

**TEST SPECIFICATIONS / 測試規範**

Calibration check

**DATE OF TEST / 測試日期** : 7 June 2019

**TEST RESULTS / 測試結果**

The results apply to the particular unit-under-test only.
The results do not exceed manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- The Bruel & Kjaer Calibration Laboratory, Denmark
- Agilent Technologies / Keysight Technologies
- Fluke Everett Service Center, USA

Tested By 測試 : H T Wong
Technical Officer

Certified By 核證 : K C Lee
Engineer

Date of Issue 簽發日期 : 12 June 2019

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.
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Calibration & Testing Laboratory

# Certificate of Calibration
# 校正證書

Certificate No. : C192956
證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours before the commencement of the test.

2. The results presented are the mean of 3 measurements at each calibration point.

3. Test equipment :

| Equipment ID | Description | Certificate No. |
|---|---|---|
| CL130 | Universal Counter | C183775 |
| CL281 | Multifunction Acoustic Calibrator | CDK1806821 |
| TST150A | Measuring Amplifier | C181288 |

4. Test procedure : MA100N.

5. Results :

5.1 Sound Level Accuracy

| UUT Nominal Value | Measured Value (dB) | Mfr's Spec. (dB) | Uncertainty of Measured Value (dB) |
|---|---|---|---|
| 94 dB, 1 kHz | 94.0 | ± 0.2 | ± 0.2 |
| 114 dB, 1 kHz | 114.1 | | |

5.2 Frequency Accuracy

| UUT Nominal Value (kHz) | Measured Value (kHz) | Mfr's Spec. | Uncertainty of Measured Value (Hz) |
|---|---|---|---|
| 1 | 1.000 0 | 1 kHz ± 0.1 % | ± 0.1 |

Remark : The uncertainties are for a confidence probability of not less than 95 %.

Note :
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**Hong Kong Accreditation Service**
香港認可處

# Certificate of Accreditation
# 認可證書

*This is to certify that*
*特此證明*

## ALS TECHNICHEM (HK) PTY LIMITED

**11/F., Chung Shun Knitting Centre, 1-3 Wing Yip Street, Kwai Chung, New Territories, Hong Kong**
香港新界葵涌永業街1-3號忠信針織中心11樓

*has been accepted by the HKAS Executive, on the recommendation of the Accreditation Advisory Board, as a*
*為香港認可處執行機關根據認可諮詢委員會建議而接受的*

## HOKLAS Accredited Laboratory
## 「香港實驗所認可計劃」認可實驗所

*This laboratory meets the requirements of ISO / IEC 17025 : 2005 – General requirements for the competence*
*此實驗所符合ISO / IEC 17025 : 2005 –《測試及校正實驗所能力的通用規定》所訂的要求，*
*of testing and calibration laboratories and it has been accredited for performing specific tests or calibrations as*
*獲認可進行載於香港實驗所認可計劃《認可實驗所名冊》內下述測試類別中的指定*
*listed in the HOKLAS Directory of Accredited Laboratories within the test category of*
*測試或校正工作*

## Environmental Testing
## 環境測試

*This laboratory is accredited in accordance with the recognised International Standard ISO / IEC 17025 : 2005.*
*本實驗所乃根據公認的國際標準 ISO / IEC 17025 : 2005 獲得認可。*
*This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory*
*這項認可資格演示在指定範疇所需的技術能力及實驗所質量管理體系的運作*
*quality management system (see joint IAF-ILAC-ISO Communiqué).*
*(見國際認可論壇、國際實驗所認可合作組織及國際標準化組織的聯合公報)。*

*The common seal of the Hong Kong Accreditation Service is affixed hereto by the authority of the HKAS Executive*
*香港認可處根據認可處執行機關的權限在此蓋上通用印章*

CHAN Sing Sing, Terence, Executive Administrator
執行幹事 陳成城
Issue Date : 5 May 2009
簽發日期：二零零九年五月五日

Registration Number : HOKLAS 066
註冊號碼：

Date of First Registration : 15 September 1995
首次註冊日期：一九九五年九月十五日

*This certificate is issued subject to the terms and conditions laid down by HKAS*
*本證書按照香港認可處訂立的條款及條件發出*

L 000552

# Appendix F

# Event and Action Plan

**Event / Action Plan for construction dust**

| Event | Action | | | |
|---|---|---|---|---|
| | **ET** | **IEC** | **ER** | **Contractor** |
| Action Level exceedance for one sample | 1. Identify source, investigate the causes of exceedance and propose remedial measures;<br>2. Inform IEC, ER and Contractor;<br>3. Repeat measurement to confirm finding; and<br>4. Increase monitoring frequency to daily. | 1. Check monitoring data submitted by ET;<br>2. Check Contractor's working method; and<br>3. Review and advise the ET and ER on the effectiveness of the proposed remedial measures. | 1. Notify Contractor. | 1. Identify source, investigate the causes of exceedance and propose remedial measures;<br>2. Rectify any unacceptable practice and implement remedial measures; and<br>3. Amend working methods agreed with ER if appropriate. |
| Action Level exceedance for two or more consecutive samples | 1. Identify source, investigate the causes of exceedance and propose remedial measures;<br>2. Inform IEC, ER and Contractor;<br>3. Advise the ER and Contractor on the effectiveness of the proposed remedial measures;<br>4. Repeat measurements to confirm findings;<br>5. Increase monitoring frequency to daily;<br>6. Discuss with IEC, ER and Contractor on remedial actions required;<br>7. If exceedance continues, arrange meeting with IEC and ER; and<br>8. If exceedance stops, cease additional monitoring. | 1. Check monitoring data submitted by ET;<br>2. Check Contractor's working method;<br>3. Discuss with ET and Contractor on possible remedial measures;<br>4. Advise the ET and ER on the effectiveness of the proposed remedial measures; and<br>5. Supervise Implementation of remedial measures. | 1. Confirm receipt of notification of failure in writing;<br>2. Notify Contractor; and<br>3. Supervise and ensure remedial measures properly implemented. | 1. Identify source, investigate the causes of exceedance and propose remedial measures;<br>2. Submit proposals for remedial actions to ER with a copy to ET and IEC within 3 working days of notification;<br>3. Implement the agreed proposals; and<br>4. Amend proposal if appropriate. |
| Limit Level exceedance for one sample | 1. Identify source, investigate the causes of exceedance and propose remedial measures;<br>2. Inform ER, Contractor, IEC and EPD;<br>3. Repeat measurement to confirm finding;<br>4. Increase monitoring frequency to daily; and<br>5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results. | 1. Check monitoring data submitted by ET;<br>2. Check Contractor's working method;<br>3. Discuss with ET, ER and Contractor on possible remedial measures;<br>4. Advise the ER and ET on the effectiveness of the proposed remedial measures; and<br>5. Supervise implementation of remedial measures. | 1. Confirm receipt of notification of failure in writing;<br>2. Notify Contractor; and<br>3. Supervise and ensure remedial measures properly implemented. | 1. Identify source, investigate the causes of exceedance and propose remedial measures;<br>2. Take immediate action to avoid further exceedance;<br>3. Submit proposals for remedial actions to ER with a copy to ET and IEC within 3 working days of notification;<br>4. Implement the agreed proposals; and<br>5. Amend proposal if appropriate. |
| Limit Level exceedance for two or more consecutive samples | 1. Notify IEC, ER, Contractor and EPD;<br>2. Identify source;<br>3. Repeat measurement to confirm findings;<br>4. Increase monitoring frequency to daily;<br>5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented;<br>6. Arrange meeting with IEC, Contractor and ER to discuss the remedial actions to be taken;<br>7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; and<br>8. If exceedance stops, cease additional monitoring. | 1. Check monitoring data submitted by ET;<br>2. Check Contractor's working method;<br>3. Discuss amongst ER, ET, and Contractor on the potential remedial actions;<br>4. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; and<br>5. Supervise the implementation of remedial measures. | 1. Confirm receipt of notification of failure in writing;<br>2. Notify Contractor;<br>3. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented;<br>4. Supervise and ensure remedial measures properly implemented; and<br>5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated. | 1. Identify source, investigate the causes of exceedance and propose remedial measures;<br>2. Take immediate action to avoid further exceedance;<br>3. Submit proposals for remedial actions to ER with a copy to ET and IEC within 3 working days of notification;<br>4. Implement the agreed proposals;<br>5. Resubmit proposals if problem still not under control; and<br>6. Stop the relevant portion of works as determined by the ER until the exceedance is abated. |

**Event and Action Plan for Construction Noise**

| Event | Action | | | |
|---|---|---|---|---|
| | **ET** | **IEC** | **ER** | **Contractor** |
| Action Level Exceedance | 1. Notify IEC, ER and Contractor;<br>2. Carry out investigation;<br>3. Report the results of investigation to the IEC, ER and Contractor;<br>4. Discuss with the Contractor and formulate remedial measures; and<br>5. Increase monitoring frequency to check mitigation effectiveness. | 1. Review the analysed results submitted by the ET;<br>2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; and<br>3. Supervise the implementation of remedial measures. | 1. Confirm receipt of notification of failure in writing;<br>2. Notify Contractor;<br>3. Require Contractor to propose remedial measures for the analysed noise problem; and<br>4. Ensure remedial measures are properly implemented. | 1. Submit noise mitigation proposals to IEC and ER; and<br>2. Implement noise mitigation proposals. |
| Limit Level Exceedance | 1. Identify source;<br>2. Inform IEC, ER, EPD and Contractor;<br>3. Repeat measurements to confirm findings;<br>4. Increase monitoring frequency;<br>5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented;<br>6. Inform IEC, ER and EPD the causes and actions taken for the exceedances;<br>7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; and<br>8. If exceedance stops, cease additional monitoring. | 1. Discuss amongst ER, ET, and Contractor on the potential remedial actions;<br>2. Review Contractors remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; and<br>3. Supervise the implementation of remedial measures. | 1. Confirm receipt of notification of failure in writing;<br>2. Notify Contractor;<br>3. Require Contractor to propose remedial measures for the analysed noise problem;<br>4. Ensure remedial measures properly implemented; and<br>5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated. | 1. Take immediate action to avoid further exceedance;<br>2. Submit proposals for remedial actions to IEC within 3 working days of notification;<br>3. Implement the agreed proposals;<br>4. Resubmit proposals if problem still not under control; and<br>5. Stop the relevant portion of works as determined by the ER until the exceedance is abated. |

# Appendix G

# Impact Monitoring Schedule

## Impact Monitoring Schedule for the Reporting Period

| Date | | NOISE MONITORING (0700 – 1900) | AIR QUALITY MONITORING | |
|---|---|---|---|---|
| | | | 1-HOUR TSP | 24-HOUR TSP |
| Tue | 1-Oct-19 | | | |
| Wed | 2-Oct-19 | | | |
| Thu | 3-Oct-19 | | | ✓ |
| Fri | 4-Oct-19 | | | |
| Sat | 5-Oct-19 | CN1, CN2, CN3 | ✓ | |
| Sun | 6-Oct-19 | | | |
| Mon | 7-Oct-19 | | | |
| Tue | 8-Oct-19 | | | |
| Wed | 9-Oct-19 | | | ✓ |
| Thu | 10-Oct-19 | | | |
| Fri | 11-Oct-19 | NMS-4a, NMS5, NMS6, NMS7, NMS8, CN1, CN2, CN3 | ✓ | |
| Sat | 12-Oct-19 | | | |
| Sun | 13-Oct-19 | | | |
| Mon | 14-Oct-19 | | | |
| Tue | 15-Oct-19 | | | ✓ |
| Wed | 16-Oct-19 | | | |
| Thu | 17-Oct-19 | NMS-4a, NMS5, NMS6, NMS7, NMS8 | ✓ | |
| Fri | 18-Oct-19 | CN1, CN2, CN3 | | |
| Sat | 19-Oct-19 | | | |
| Sun | 20-Oct-19 | | | |
| Mon | 21-Oct-19 | | | ✓ |
| Tue | 22-Oct-19 | | | |
| Wed | 23-Oct-19 | NMS-4a, NMS5, NMS6, NMS7, NMS8 | ✓ | |
| Thu | 24-Oct-19 | CN1, CN2, CN3 | | |
| Fri | 25-Oct-19 | | | |
| Sat | 26-Oct-19 | | | ✓ |
| Sun | 27-Oct-19 | | | |
| Mon | 28-Oct-19 | | | |
| Tue | 29-Oct-19 | NMS-4a, NMS5, NMS6, NMS7, NMS8 | ✓ | |
| Wed | 30-Oct-19 | | | |
| Thu | 31-Oct-19 | | | |

| | |
|---|---|
| ✓ | Monitoring Day |
| | Sunday or Public Holiday |

## Impact Monitoring Schedule for next Reporting Period

| Date | | NOISE MONITORING (0700 – 1900) | AIR QUALITY MONITORING | |
|---|---|---|---|---|
| | | | 1-HOUR TSP | 24-HOUR TSP |
| Fri | 1-Nov-19 | | | ✓ |
| Sat | 2-Nov-19 | CN1, CN2, CN3 | | |
| Sun | 3-Nov-19 | | | |
| Mon | 4-Nov-19 | NMS-4a, NMS5, NMS6, NMS7, NMS8 | ✓ | |
| Tue | 5-Nov-19 | CN1, CN2, CN3 | | |
| Wed | 6-Nov-19 | | | |
| Thu | 7-Nov-19 | | | ✓ |
| Fri | 8-Nov-19 | | | |
| Sat | 9-Nov-19 | | ✓ | |
| Sun | 10-Nov-19 | | | |
| Mon | 11-Nov-19 | CN1, CN2, CN3 | | |
| Tue | 12-Nov-19 | | | |
| Wed | 13-Nov-19 | | | ✓ |
| Thu | 14-Nov-19 | | | |
| Fri | 15-Nov-19 | NMS-4a, NMS5, NMS6, NMS7, NMS8 | ✓ | |
| Sat | 16-Nov-19 | | | |
| Sun | 17-Nov-19 | | | |
| Mon | 18-Nov-19 | | | |
| Tue | 19-Nov-19 | | | ✓ |
| Wed | 20-Nov-19 | | | |
| Thu | 21-Nov-19 | NMS-4a, NMS5, NMS6, NMS7, NMS8 | ✓ | |
| Fri | 22-Nov-19 | CN1, CN2, CN3 | | |
| Sat | 23-Nov-19 | | | |
| Sun | 24-Nov-19 | | | |
| Mon | 25-Nov-19 | | | ✓ |
| Tue | 26-Nov-19 | | | |
| Wed | 27-Nov-19 | NMS-4a, NMS5, NMS6, NMS7, NMS8 | ✓ | |
| Thu | 28-Nov-19 | CN1, CN2, CN3 | | |
| Fri | 29-Nov-19 | | | |
| Sat | 30-Nov-19 | | | ✓ |

| | |
|---|---|
| ✓ | Monitoring Day |
| | Sunday or Public Holiday |

# Appendix H

# Database of Monitoring Result

## 24-HOUR TSP MONITORING RESULT DATABASE

**24-hour TSP Monitoring Data for AMS1a**

| DATE | SAMPLE NUMBER | ELAPSED TIME | | | CHART READING | | | AVG TEMP | AVG AIR PRESS | STANDARD FLOW RATE | AIR VOLUME | FILTER WEIGHT (g) | | DUST WEIGHT COLLECTED | 24-hr TSP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | INITIAL | FINAL | (min) | MIN | MAX | AVG | (℃) | (hPa) | ($m^3$/min) | (std $m^3$) | INITIAL | FINAL | (g) | (μg/$m^3$) |
| 3-Oct-19 | 24645 | 21523.6 | 21547.6 | 1440 | 40 | 41 | 40.5 | 26.8 | 1012.4 | 0.58 | 834 | 2.678 | 2.7128 | 0.0348 | 42 |
| 9-Oct-19 | 24768 | 21547.6 | 21571.6 | 1440 | 42 | 44 | 43 | 27.8 | 1014.7 | 0.66 | 955 | 2.6802 | 2.7417 | 0.0615 | 64 |
| 15-Oct-19 | 24873 | 21571.6 | 21595.58 | 1438.8 | 42 | 44 | 43 | 25.9 | 1013.8 | 0.67 | 960 | 2.6842 | 2.6972 | 0.013 | 14 |
| 21-Oct-19 | 24816 | 21595.58 | 21619.58 | 1440.0 | 42 | 44 | 43 | 25.3 | 1014 | 0.66 | 954 | 2.6888 | 2.7078 | 0.019 | 20 |
| 26-Oct-19 | 24815 | 21619.58 | 21643.58 | 1440.0 | 40 | 42 | 41 | 25.9 | 1017 | 0.60 | 859 | 2.6669 | 2.7063 | 0.0394 | 46 |

**24-hour TSP Monitoring Data for AMS-5**

| DATE | SAMPLE NUMBER | ELAPSED TIME | | | CHART READING | | | AVG TEMP | AVG AIR PRESS | STANDARD FLOW RATE | AIR VOLUME | FILTER WEIGHT (g) | | DUST WEIGHT COLLECTED | 24-hr TSP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | INITIAL | FINAL | (min) | MIN | MAX | AVG | (℃) | (hPa) | ($m^3$/min) | (std $m^3$) | INITIAL | FINAL | (g) | (μg/$m^3$) |
| 3-Oct-19 | 24795 | 8135.24 | 8159.32 | 1444.80 | 38 | 40 | 39.0 | 26.8 | 1012.4 | 1.26 | 1824 | 2.6762 | 2.8512 | 0.1750 | 96 |
| 9-Oct-19 | 24695 | 8159.32 | 8183.52 | 1452.00 | 37 | 38 | 37.5 | 26.3 | 1013.3 | 1.22 | 1774 | 2.6702 | 2.7058 | 0.0356 | 20 |
| 15-Oct-19 | 24770 | 8183.52 | 8207.54 | 1441.20 | 40 | 42 | 41.0 | 25 | 1019 | 1.33 | 1912 | 2.6930 | 2.7730 | 0.0800 | 42 |
| 21-Oct-19 | 24872 | 8207.54 | 8231.57 | 1441.80 | 38 | 40 | 39.0 | 25.3 | 1014 | 1.27 | 1826 | 2.6786 | 2.7957 | 0.1171 | 64 |
| 26-Oct-19 | 24878 | 8231.57 | 8255.58 | 1440.60 | 40 | 42 | 41.0 | 25.9 | 1017 | 1.32 | 1907 | 2.7082 | 2.8240 | 0.1158 | 61 |

**24-hour TSP Monitoring Data for AMS-6**

| DATE | SAMPLE NUMBER | ELAPSED TIME | | | CHART READING | | | AVG TEMP | AVG AIR PRESS | STANDARD FLOW RATE | AIR VOLUME | FILTER WEIGHT (g) | | DUST WEIGHT COLLECTED | 24-hr TSP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | INITIAL | FINAL | (min) | MIN | MAX | AVG | (℃) | (hPa) | ($m^3$/min) | (std $m^3$) | INITIAL | FINAL | (g) | (μg/$m^3$) |
| 3-Oct-19 | 24725 | 13339.30 | 13363.49 | 1451.40 | 33 | 34 | 33.5 | 26.8 | 1012.4 | 1.06 | 1535 | 2.6657 | 2.6920 | 0.0263 | 17 |
| 9-Oct-19 | 24769 | 13363.49 | 13387.57 | 1444.80 | 34 | 36 | 35.0 | 27.8 | 1014.7 | 1.10 | 1587 | 2.6928 | 2.7586 | 0.0658 | 41 |
| 15-Oct-19 | 24874 | 13387.57 | 13411.58 | 1440.60 | 34 | 36 | 35.0 | 26 | 1019 | 1.10 | 1589 | 2.7162 | 2.7940 | 0.0778 | 49 |
| 21-Oct-19 | 24880 | 13411.58 | 13435.58 | 1440.00 | 34 | 36 | 35.0 | 24.9 | 1017.8 | 1.10 | 1590 | 2.7035 | 2.7466 | 0.0431 | 27 |
| 26-Oct-19 | 24817 | 13435.58 | 13459.60 | 1441.20 | 22 | 24 | 23.0 | 25.9 | 1017 | 0.77 | 1110 | 2.6932 | 2.7086 | 0.0154 | 14 |

**24-hour TSP Monitoring Data for AMS-7**

| DATE | SAMPLE NUMBER | ELAPSED TIME | | | CHART READING | | | AVG TEMP | AVG AIR PRESS | STANDARD FLOW RATE | AIR VOLUME | FILTER WEIGHT (g) | | DUST WEIGHT COLLECTED | 24-hr TSP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | INITIAL | FINAL | (min) | MIN | MAX | AVG | (℃) | (hPa) | ($m^3$/min) | (std $m^3$) | INITIAL | FINAL | (g) | (μg/$m^3$) |
| 3-Oct-19 | 24694 | 8700.00 | 8724.21 | 1452.60 | 36 | 37 | 36.5 | 26.8 | 1012.4 | 1.39 | 2017 | 2.6818 | 2.7239 | 0.0421 | 21 |
| 9-Oct-19 | 24767 | 8724.21 | 8748.23 | 1441.20 | 38 | 40 | 39.0 | 27.8 | 1014.7 | 1.47 | 2125 | 2.7026 | 2.7782 | 0.0756 | 36 |
| 15-Oct-19 | 24875 | 8748.23 | 8772.25 | 1441.20 | 40 | 42 | 41.0 | 26 | 1019 | 1.55 | 2237 | 2.7277 | 2.7953 | 0.0676 | 30 |
| 21-Oct-19 | 24879 | 8772.25 | 8796.25 | 1440.00 | 40 | 40 | 40.0 | 24.9 | 1014.8 | 1.52 | 2184 | 2.7233 | 2.7755 | 0.0522 | 24 |
| 26-Oct-19 | 24818 | 8796.25 | 8820.22 | 1438.20 | 44 | 46 | 45.0 | 25.9 | 1017 | 1.69 | 2432 | 2.7106 | 2.7583 | 0.0477 | 20 |

## NOISE MONITORING RESULT DATABASE

**Noise Measurement Results (dB) of NMS4a**

| Date | Start Time | 1st Leq (5min) | | | 2nd Leq (5min) | | | 3rd Leq (5min) | | | 4th Leq (5min) | | | 5th Leq (5min) | | | 6th Leq (5min) | | | Leq30min, dB(A) | Limit Level dB(A) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Leq, dB(A) | L10, dB(A) | L90, dB(A) | Leq, dB(A) | L10, dB(A) | L90, dB(A) | Leq, dB(A) | L10, dB(A) | L90, dB(A) | Leq, dB(A) | L10, dB(A) | L90, dB(A) | Leq, dB(A) | L10, dB(A) | L90, dB(A) | Leq, dB(A) | L10, dB(A) | L90, dB(A) | | |
| 11-Oct-19 | 14:17 | 66.8 | 68.9 | 61.3 | 67.4 | 69.4 | 62.7 | 67.8 | 69.9 | 63.9 | 67.2 | 69.3 | 62.2 | 66.5 | 68.1 | 61.1 | 67.3 | 69.7 | 62.5 | 67 | 75 |
| 17-Oct-19 | 9:22 | 66.3 | 69.5 | 56.7 | 65.5 | 67 | 61.5 | 65.2 | 67.5 | 62 | 67.1 | 70 | 61.5 | 64.6 | 66.5 | 61 | 66.1 | 68 | 57 | 66 | 75 |
| 23-Oct-19 | 9:11 | 63.1 | 67 | 52.5 | 64.2 | 68.5 | 52 | 64.2 | 67.5 | 50 | 66.9 | 68 | 52 | 66.2 | 69.5 | 51.5 | 67.1 | 73 | 52 | 66 | 75 |
| 29-Oct-19 | 9:30 | 67.8 | 69.5 | 64 | 68.1 | 70 | 65 | 66.9 | 69.5 | 59.5 | 67.4 | 70 | 61.5 | 65.4 | 67.5 | 62 | 64.6 | 66.5 | 61 | 67 | 75 |

**Noise Measurement Results (dB) of NMS5**

| Date | Start Time | 1st Leq (5min) | | | 2nd Leq (5min) | | | 3rd Leq (5min) | | | 4th Leq (5min) | | | 5th Leq (5min) | | | 6th Leq (5min) | | | Leq30min, dB(A) | Limit Level dB(A) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Leq, dB(A) | L10, dB(A) | L90, dB(A) | Leq, dB(A) | L10, dB(A) | L90, dB(A) | Leq, dB(A) | L10, dB(A) | L90, dB(A) | Leq, dB(A) | L10, dB(A) | L90, dB(A) | Leq, dB(A) | L10, dB(A) | L90, dB(A) | Leq, dB(A) | L10, dB(A) | L90, dB(A) | | |
| 11-Oct-19 | 14:58 | 64.5 | 66.8 | 61.2 | 63.8 | 66 | 59.8 | 63.7 | 66 | 60.8 | 63.7 | 65.6 | 60.7 | 64.8 | 66.3 | 60.2 | 63.1 | 65.1 | 59.8 | 64 | 75 |
| 17-Oct-19 | 10:13 | 63.7 | 68.5 | 60 | 65.6 | 67.5 | 62.5 | 64.8 | 66.5 | 62 | 65.3 | 66.1 | 61.8 | 66.9 | 69.5 | 63.5 | 66.3 | 68 | 56 | 66 | 75 |
| 23-Oct-19 | 10:07 | 65.8 | 68.5 | 58.5 | 63.8 | 65 | 58.5 | 68.3 | 61 | 57.5 | 64.2 | 66.5 | 56 | 66.6 | 68 | 57 | 62 | 65 | 59 | 66 | 75 |
| 29-Oct-19 | 10:11 | 67.8 | 67.5 | 66.5 | 65.9 | 67 | 63.5 | 68.6 | 71 | 64 | 66.9 | 70 | 60.7 | 65.9 | 69.1 | 60.1 | 65.3 | 68.6 | 55 | 67 | 75 |

**Noise Measurement Results (dB) of NMS6**

| Date | Start Time | 1st Leq (5min) | | | 2nd Leq (5min) | | | 3rd Leq (5min) | | | 4th Leq (5min) | | | 5th Leq (5min) | | | 6th Leq (5min) | | | Leq30min, dB(A) | Limit Level dB(A) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Leq, dB(A) | L10, dB(A) | L90, dB(A) | Leq, dB(A) | L10, dB(A) | L90, dB(A) | Leq, dB(A) | L10, dB(A) | L90, dB(A) | Leq, dB(A) | L10, dB(A) | L90, dB(A) | Leq, dB(A) | L10, dB(A) | L90, dB(A) | Leq, dB(A) | L10, dB(A) | L90, dB(A) | | |
| 11-Oct-19 | 10:46 | 58.8 | 59.9 | 54.5 | 59.2 | 61.1 | 55.8 | 59.6 | 60.8 | 54.2 | 56.5 | 59.5 | 53.6 | 59.2 | 61.3 | 54.6 | 59.1 | 61.1 | 55.9 | 59 | 75 |
| 17-Oct-19 | 11:09 | 57.2 | 59.8 | 54.7 | 58.6 | 60.3 | 56.3 | 56.2 | 59 | 52.1 | 55.2 | 57.6 | 51.9 | 56.9 | 59.4 | 53 | 54.1 | 55.5 | 51.3 | 57 | 75 |
| 23-Oct-19 | 10:55 | 57.4 | 61.5 | 51.5 | 59.7 | 62.5 | 51.5 | 58.9 | 62.5 | 52 | 53.8 | 55.5 | 51 | 56.1 | 59.5 | 51.5 | 57.4 | 60.5 | 51.5 | 58 | 75 |
| 29-Oct-19 | 11:00 | 56.1 | 55 | 51.4 | 58.1 | 59.7 | 55.9 | 55.5 | 57.5 | 51.5 | 55.3 | 58.7 | 51.2 | 56.7 | 59 | 53.2 | 57.2 | 59.6 | 53.9 | 57 | 75 |

**Noise Measurement Results (dB) of NMS7**

| Date | Start Time | 1st Leq (5min) | | | 2nd Leq (5min) | | | 3rd Leq (5min) | | | 4th Leq (5min) | | | 5th Leq (5min) | | | 6th Leq (5min) | | | Leq30min, dB(A) | Limit Level dB(A) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Leq, dB(A) | L10, dB(A) | L90, dB(A) | Leq, dB(A) | L10, dB(A) | L90, dB(A) | Leq, dB(A) | L10, dB(A) | L90, dB(A) | Leq, dB(A) | L10, dB(A) | L90, dB(A) | Leq, dB(A) | L10, dB(A) | L90, dB(A) | Leq, dB(A) | L10, dB(A) | L90, dB(A) | | |
| 11-Oct-19 | 10:03 | 62.5 | 66 | 55.8 | 63.3 | 66.5 | 55.4 | 63.6 | 67.7 | 55.8 | 64.7 | 67.9 | 57.9 | 64.5 | 66.8 | 55.9 | 62.1 | 66.8 | 56.6 | 64 | 75 |
| 17-Oct-19 | 13:04 | 62.3 | 64.5 | 58 | 63.8 | 65.5 | 61.2 | 64.3 | 67.5 | 58 | 64.1 | 67 | 58.5 | 62.4 | 63.5 | 58 | 61.7 | 65 | 54 | 63 | 75 |
| 23-Oct-19 | 13:05 | 53.5 | 55.5 | 51 | 56.1 | 59 | 52 | 57.4 | 60.5 | 52 | 55.3 | 57.5 | 51.5 | 60.5 | 63 | 52.5 | 56.5 | 60 | 51.5 | 57 | 75 |
| 29-Oct-19 | 13:03 | 65.5 | 67.6 | 63.2 | 66.7 | 69.5 | 61 | 67.5 | 70.5 | 61 | 66.4 | 69.5 | 60.5 | 65.9 | 69.7 | 61.5 | 64.8 | 69.4 | 59.8 | 66 | 75 |

**Noise Measurement Results (dB) of NMS8**

| Date | Start Time | 1st Leq (5min) | | | 2nd Leq (5min) | | | 3rd Leq (5min) | | | 4th Leq (5min) | | | 5th Leq (5min) | | | 6th Leq (5min) | | | Leq30min, dB(A) | Limit Level dB(A) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Leq, dB(A) | L10, dB(A) | L90, dB(A) | Leq, dB(A) | L10, dB(A) | L90, dB(A) | Leq, dB(A) | L10, dB(A) | L90, dB(A) | Leq, dB(A) | L10, dB(A) | L90, dB(A) | Leq, dB(A) | L10, dB(A) | L90, dB(A) | Leq, dB(A) | L10, dB(A) | L90, dB(A) | | |
| 11-Oct-19 | 15:54 | 62.6 | 65.4 | 58.9 | 62.1 | 64.7 | 58.5 | 63.4 | 67.4 | 56.1 | 59.5 | 62.1 | 55.3 | 60.2 | 63.1 | 55.8 | 61.4 | 64 | 56.7 | 62 | 75 |
| 17-Oct-19 | 13:30 | 62.6 | 66.5 | 53.5 | 64.8 | 66 | 53.5 | 61.2 | 63.5 | 57 | 63.5 | 64 | 52.5 | 62.9 | 65.5 | 52 | 60.6 | 62 | 56.5 | 63 | 75 |
| 23-Oct-19 | 14:12 | 60.8 | 63.5 | 52.5 | 59.9 | 62.5 | 52 | 61.2 | 63.5 | 53.5 | 63.8 | 68 | 52 | 57.5 | 61.5 | 50.5 | 60 | 64 | 53 | 61 | 75 |
| 29-Oct-19 | 14:10 | 61.7 | 63.5 | 55 | 59.8 | 61.6 | 54.2 | 58.6 | 61.5 | 53.5 | 56.3 | 59 | 52 | 57.6 | 61.5 | 52 | 56.6 | 58 | 53.5 | 59 | 75 |

**Noise Measurement Results (dB) of CN1**

| Date | Start Time | 1st Leq (5min) | | | 2nd Leq (5min) | | | 3rd Leq (5min) | | | 4th Leq (5min) | | | 5th Leq (5min) | | | 6th Leq (5min) | | | Leq30min, dB(A) | Limit Level dB(A) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Leq, dB(A) | L10, dB(A) | L90, dB(A) | Leq, dB(A) | L10, dB(A) | L90, dB(A) | Leq, dB(A) | L10, dB(A) | L90, dB(A) | Leq, dB(A) | L10, dB(A) | L90, dB(A) | Leq, dB(A) | L10, dB(A) | L90, dB(A) | Leq, dB(A) | L10, dB(A) | L90, dB(A) | | |
| 5-Oct-19 | 11:14 | 62.6 | 64.5 | 59.0 | 61.8 | 63.0 | 58.5 | 63.2 | 66.0 | 59.0 | 63.7 | 65.2 | 61.9 | 63.6 | 64.7 | 62.5 | 62.3 | 64.6 | 57.2 | 63 | 70 |
| 11-Oct-19 | 11:26 | 62.9 | 65.7 | 59.1 | 64.9 | 58.0 | 60.8 | 66.1 | 68.6 | 62.1 | 62.6 | 66.3 | 58.5 | 60.0 | 62.5 | 56.5 | 63.7 | 67.2 | 58.7 | 64 | 70 |
| 18-Oct-19 | 13:18 | 65.4 | 68.9 | 58.8 | 66.3 | 69.0 | 59.0 | 73.8 | 70.0 | 59.9 | 73.4 | 70.5 | 59.2 | 68.5 | 69.1 | 58.4 | 65.5 | 68.5 | 59.9 | 70 | 70 |
| 24-Oct-19 | 14:45 | 66.7 | 68.1 | 64.4 | 65.8 | 68.2 | 60.6 | 66.5 | 69.9 | 59.4 | 65.0 | 58.1 | 60.9 | 64.0 | 65.1 | 62.8 | 64.1 | 67.6 | 59.1 | 65 | 70 |

**Noise Measurement Results (dB) of CN2**

| Date | Start Time | 1st Leq (5min) | | | 2nd Leq (5min) | | | 3rd Leq (5min) | | | 4th Leq (5min) | | | 5th Leq (5min) | | | 6th Leq (5min) | | | Leq30min, dB(A) | Limit Level dB(A) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Leq, dB(A) | L10, dB(A) | L90, dB(A) | Leq, dB(A) | L10, dB(A) | L90, dB(A) | Leq, dB(A) | L10, dB(A) | L90, dB(A) | Leq, dB(A) | L10, dB(A) | L90, dB(A) | Leq, dB(A) | L10, dB(A) | L90, dB(A) | Leq, dB(A) | L10, dB(A) | L90, dB(A) | | |
| 5-Oct-19 | 10:32 | 58.7 | 61.1 | 54 | 60.5 | 62.7 | 56.7 | 63 | 64.6 | 60.9 | 61.7 | 63.2 | 57.4 | 62 | 63.4 | 60.3 | 62.5 | 63.9 | 60.8 | 62 | 70 |
| 11-Oct-19 | 10:37 | 61.9 | 62.7 | 61 | 61.5 | 62.1 | 60.8 | 62.1 | 62.9 | 61.2 | 62.5 | 63.2 | 61.8 | 63.4 | 64.3 | 62.5 | 63.1 | 64.1 | 62.3 | 62 | 70 |
| 18-Oct-19 | 11:13 | 62.5 | 64.4 | 57.2 | 65.6 | 64.4 | 58.3 | 67.8 | 69.3 | 59.8 | 63.9 | 65.6 | 58.5 | 65.8 | 68.9 | 59.3 | 62.1 | 66.1 | 57.4 | 65 | 70 |
| 24-Oct-19 | 14:03 | 63.3 | 65.3 | 61.6 | 62.5 | 63.9 | 60.8 | 63.7 | 64.8 | 61.4 | 65.8 | 66.9 | 64.1 | 66.7 | 71.8 | 62.3 | 63.5 | 65.8 | 59.9 | 65 | 70 |

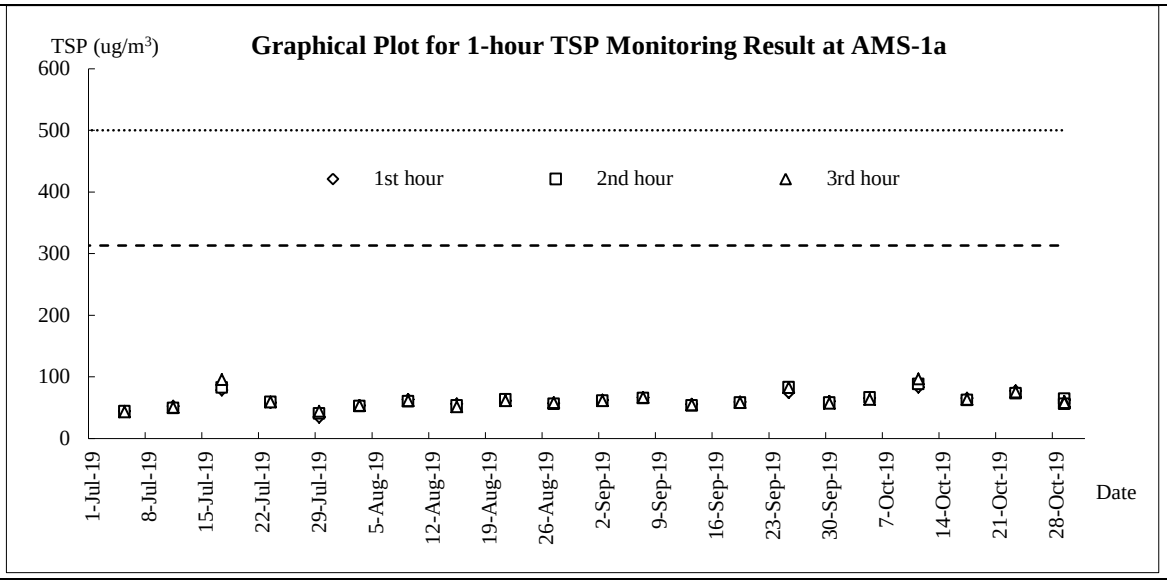
**Noise Measurement Results (dB) of CN3**

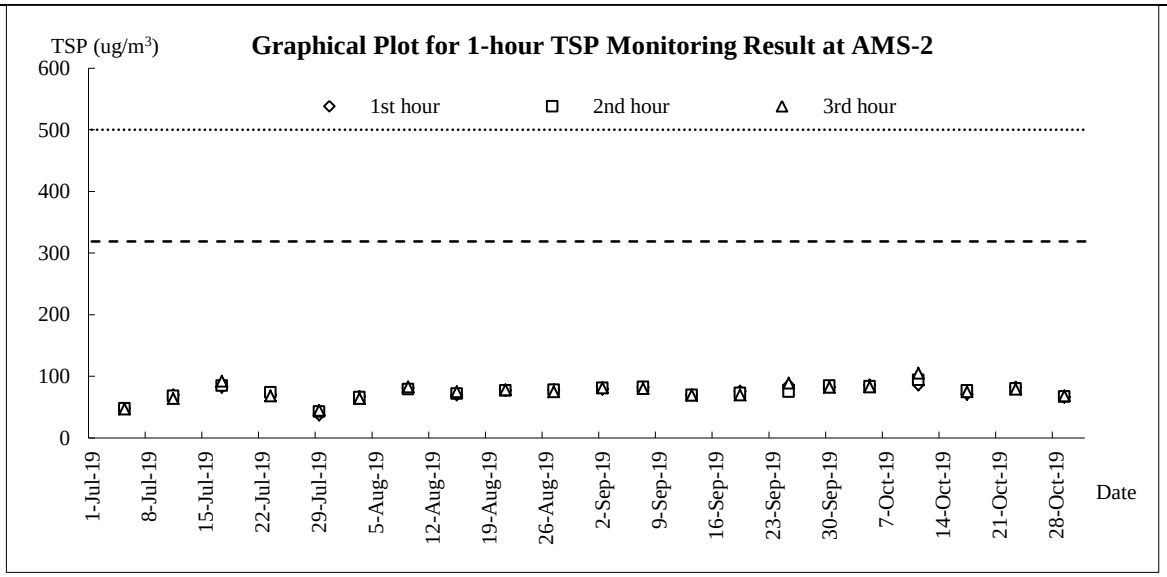
| Date | Start Time | 1st Leq (5min) | | | 2nd Leq (5min) | | | 3rd Leq (5min) | | | 4th Leq (5min) | | | 5th Leq (5min) | | | 6th Leq (5min) | | | Leq30min, dB(A) | Limit Level dB(A) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Leq, dB(A) | L10, dB(A) | L90, dB(A) | Leq, dB(A) | L10, dB(A) | L90, dB(A) | Leq, dB(A) | L10, dB(A) | L90, dB(A) | Leq, dB(A) | L10, dB(A) | L90, dB(A) | Leq, dB(A) | L10, dB(A) | L90, dB(A) | Leq, dB(A) | L10, dB(A) | L90, dB(A) | | |
| 5-Oct-19 | 9:30 | 67.2 | 70.3 | 62.4 | 66.3 | 64.5 | 54.5 | 68.1 | 70.6 | 65.1 | 65.6 | 68.6 | 59 | 66.8 | 69.4 | 62.8 | 66 | 67.8 | 59 | 67 | 75 |
| 11-Oct-19 | 9:32 | 65.3 | 67.1 | 63.2 | 65.2 | 67.8 | 62.3 | 65.9 | 67.1 | 64.8 | 65.2 | 66.6 | 63.5 | 67.8 | 70.1 | 64.6 | 66 | 68.2 | 63.6 | 66 | 75 |
| 18-Oct-19 | 9:49 | 66.8 | 68.7 | 63.1 | 66.7 | 68.4 | 63.7 | 69.3 | 71.2 | 65.8 | 69.6 | 70.4 | 65 | 67.5 | 68.3 | 64.8 | 69.5 | 71.5 | 65.9 | 68 | 75 |
| 24-Oct-19 | 13:08 | 66.5 | 67.5 | 63.5 | 67.3 | 68.7 | 62.2 | 65.8 | 68.8 | 61.8 | 67.4 | 69.3 | 61.3 | 66.8 | 69.4 | 62.8 | 65.7 | 68.8 | 60.9 | 67 | 75 |

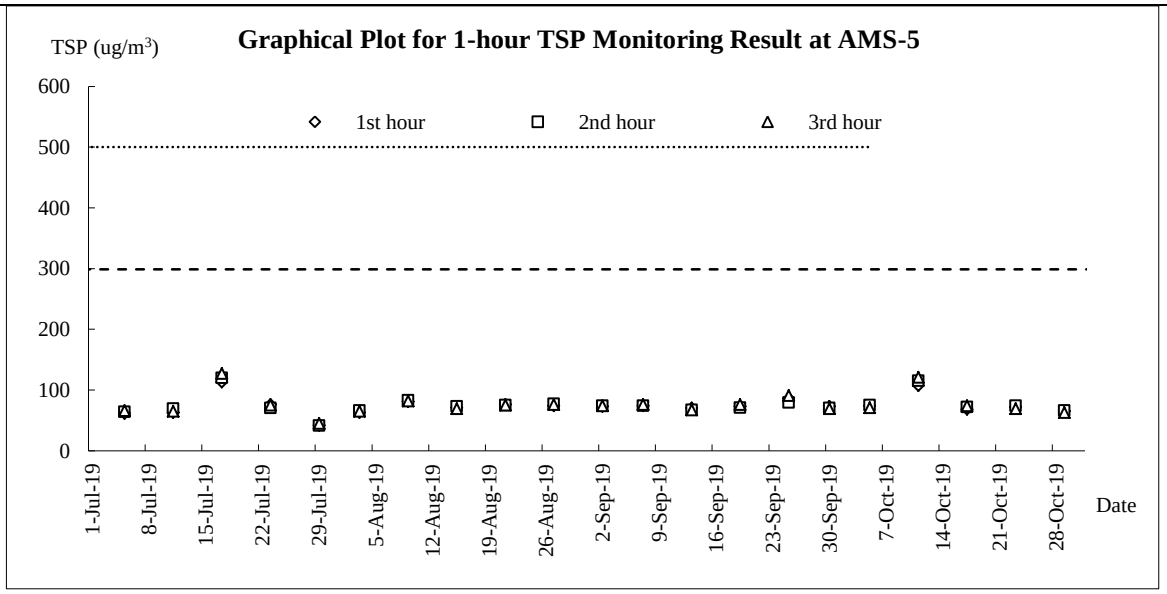
# Appendix I

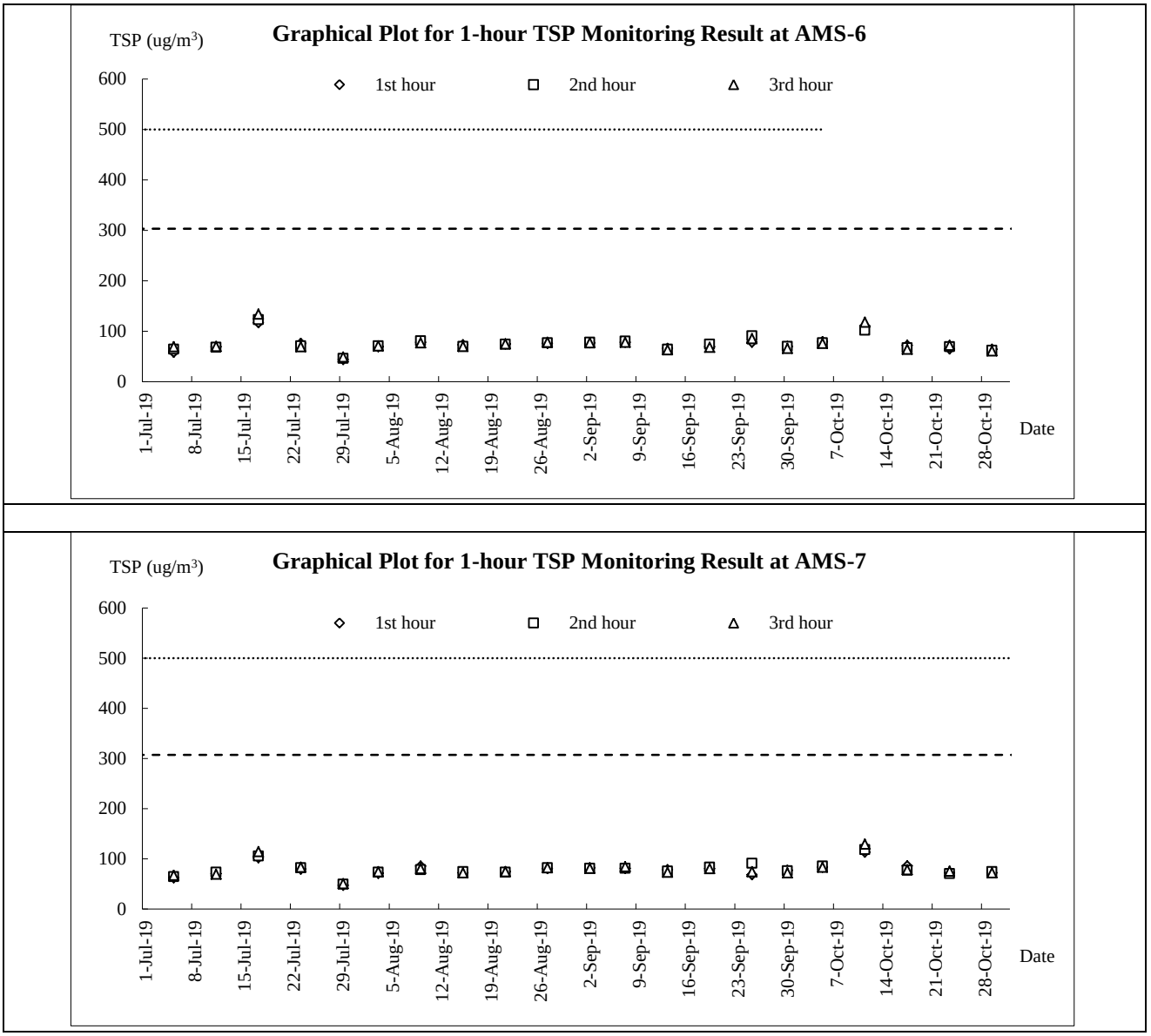
# Graphical Plots for Monitoring Result

## Air Quality – 1-hour TSP



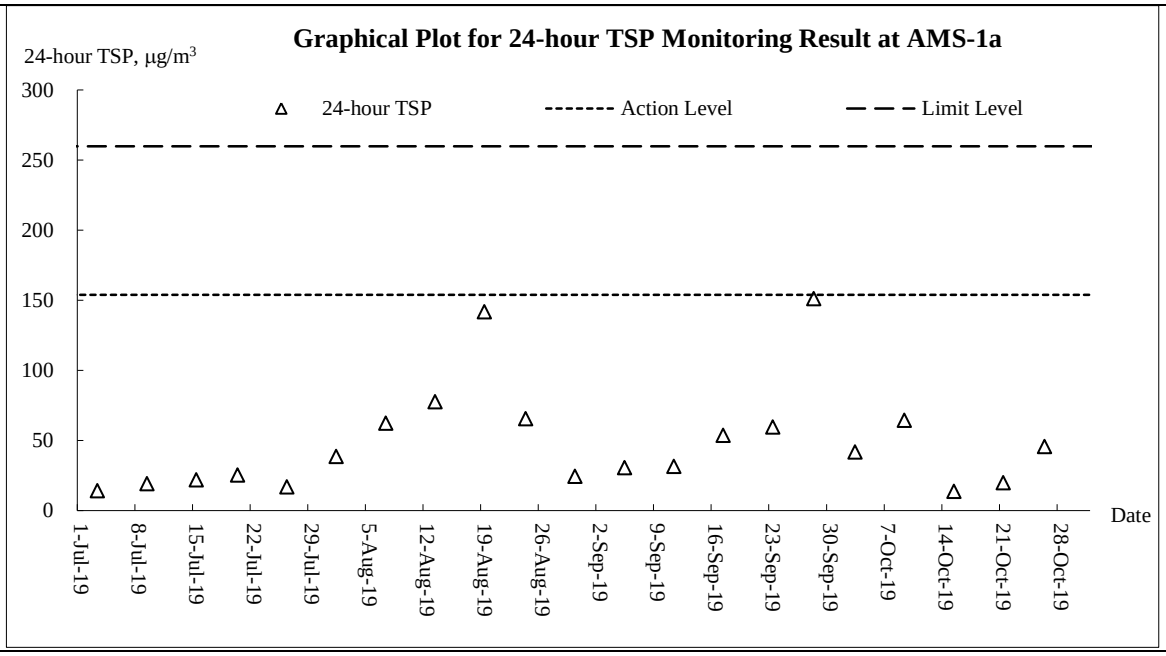



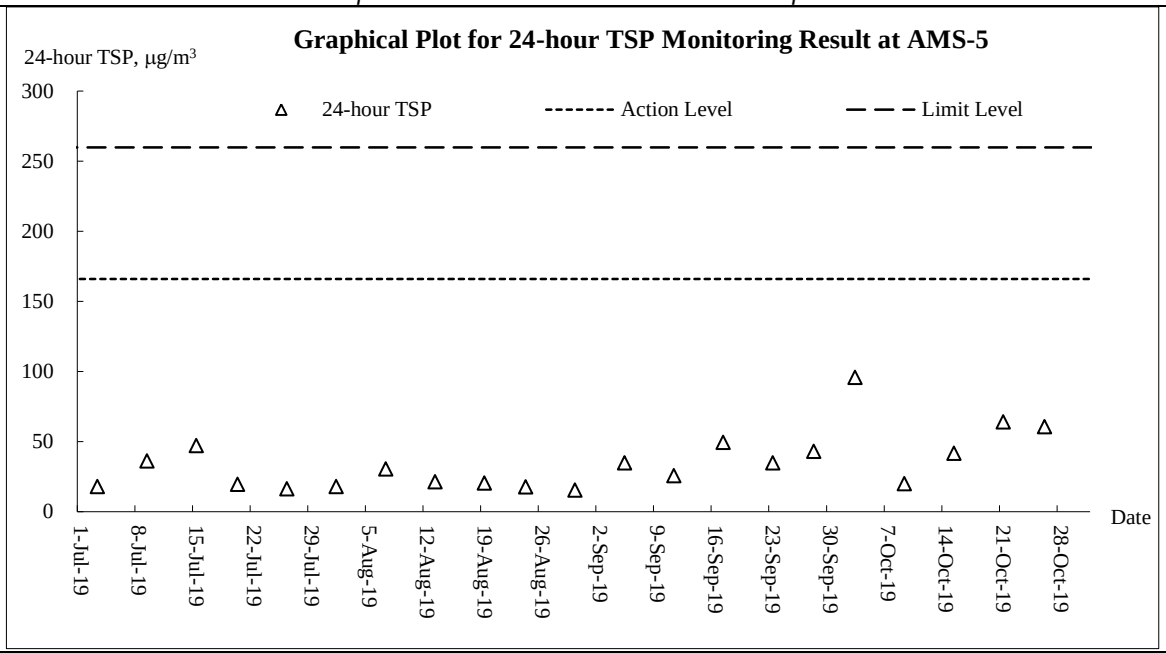

Graphical Plot for 1-hour TSP Monitoring Result at AMS-6
TSP (ug/m3)
1st hour
2nd hour
3rd hour
600
500
400
300
200
100
0
1-Jul-19
8-Jul-19
15-Jul-19
22-Jul-19
29-Jul-19
5-Aug-19
12-Aug-19
19-Aug-19
26-Aug-19
2-Sep-19
9-Sep-19
16-Sep-19
23-Sep-19
30-Sep-19
7-Oct-19
14-Oct-19
21-Oct-19
28-Oct-19
Date

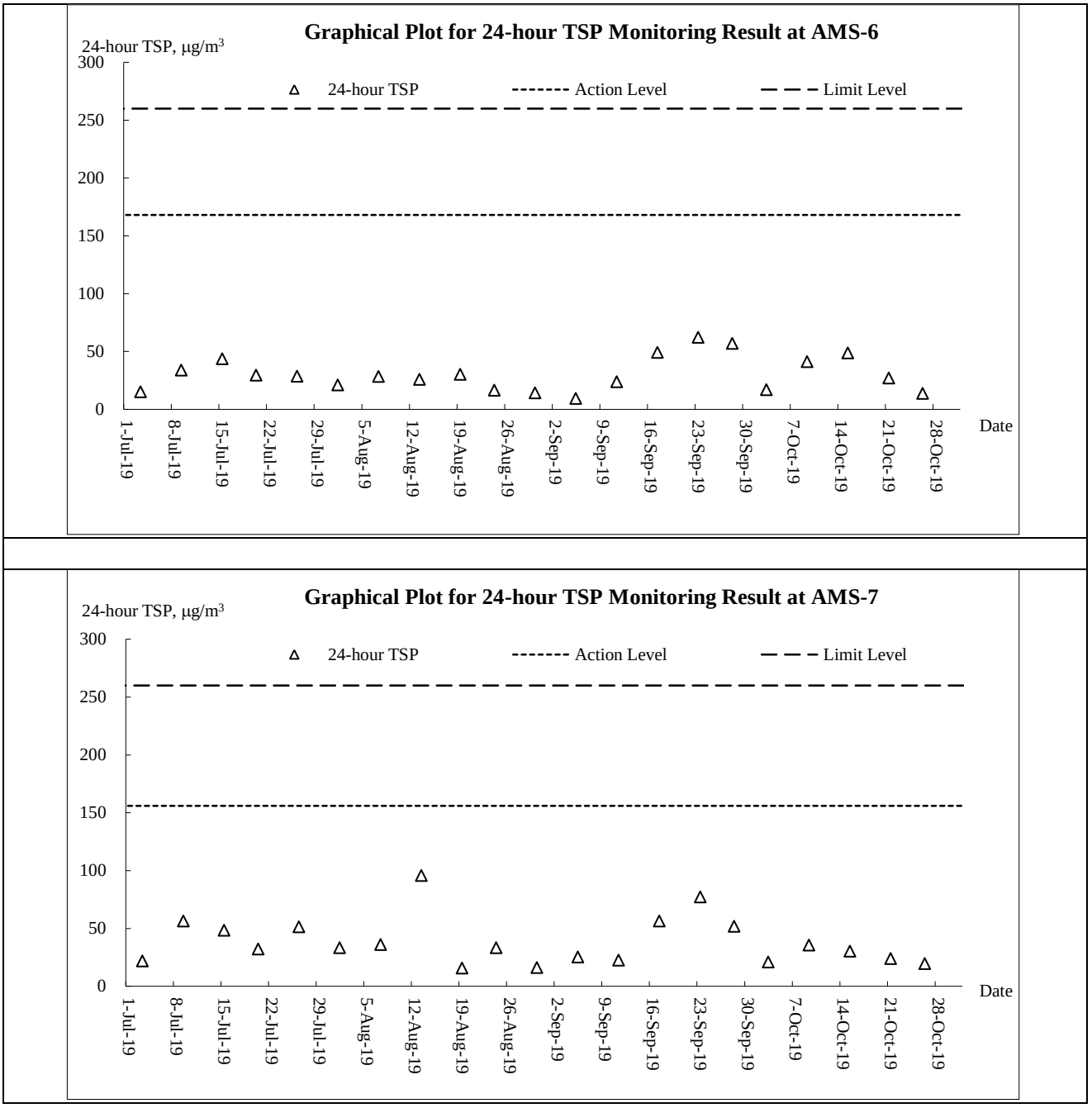

Graphical Plot for 1-hour TSP Monitoring Result at AMS-7
TSP (ug/m3)
1st hour
2nd hour
3rd hour
600
500
400
300
200
100
0
1-Jul-19
8-Jul-19
15-Jul-19
22-Jul-19
29-Jul-19
5-Aug-19
12-Aug-19
19-Aug-19
26-Aug-19
2-Sep-19
9-Sep-19
16-Sep-19
23-Sep-19
30-Sep-19
7-Oct-19
14-Oct-19
21-Oct-19
28-Oct-19
Date

## Air Quality – 24-hour TSP

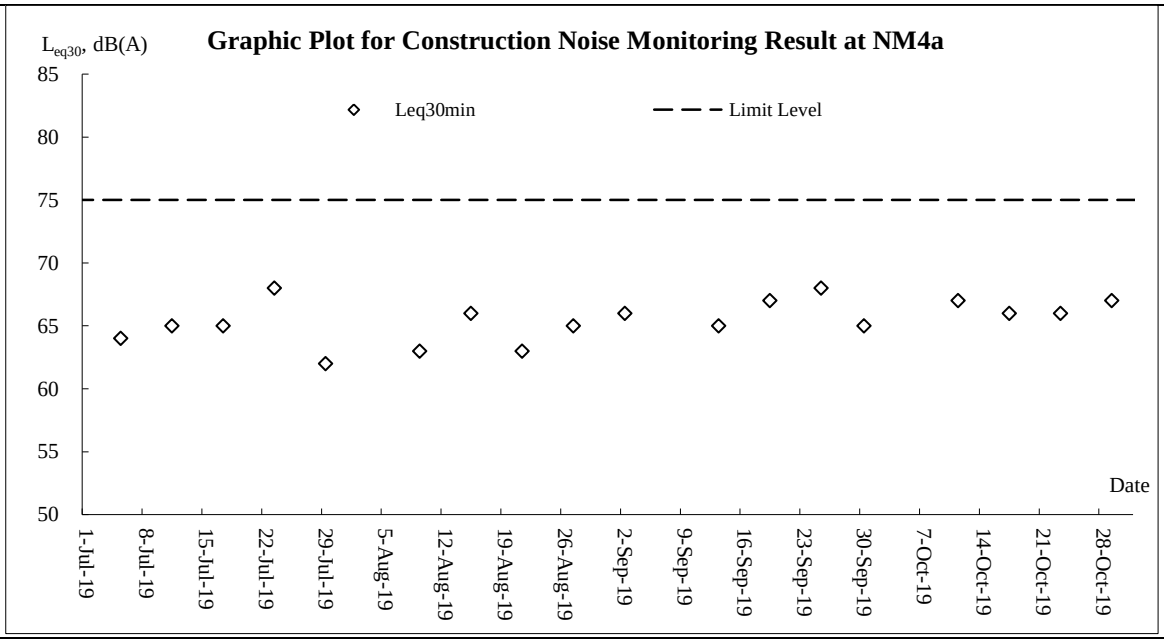


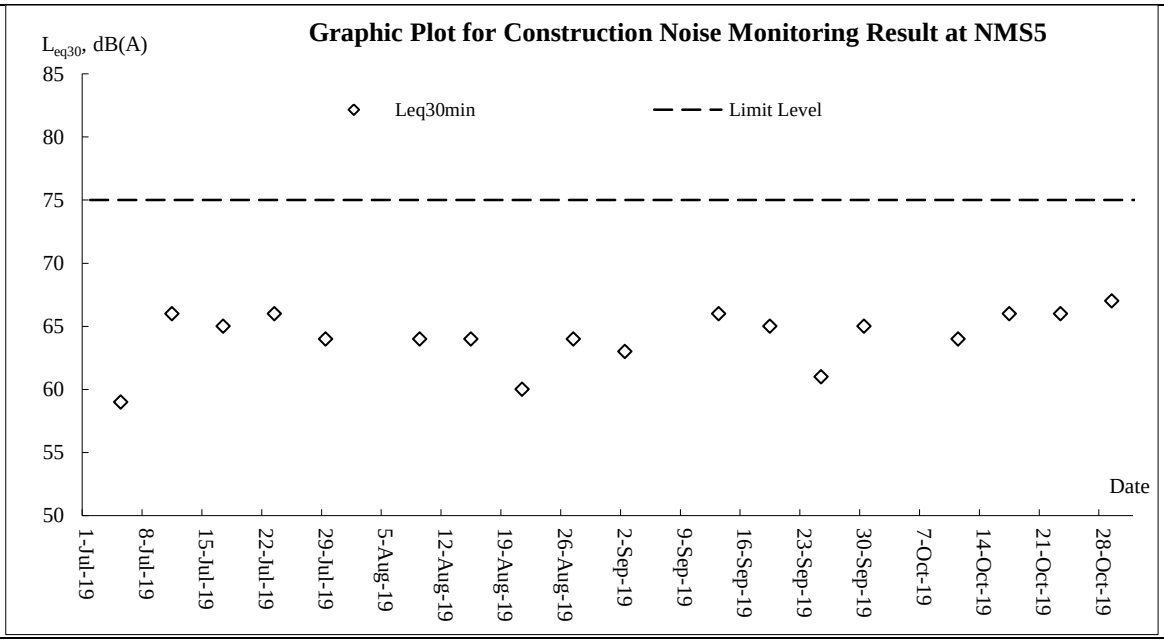

*(#) 24-hour TSP monitoring at AMS1 was abandoned since May 2019 due to lack of power supply and the landlord was unreachable. The alternation location of AMS1a was activated on 15 June 2019 for 1-hour and 24-hour TSP monitoring.*

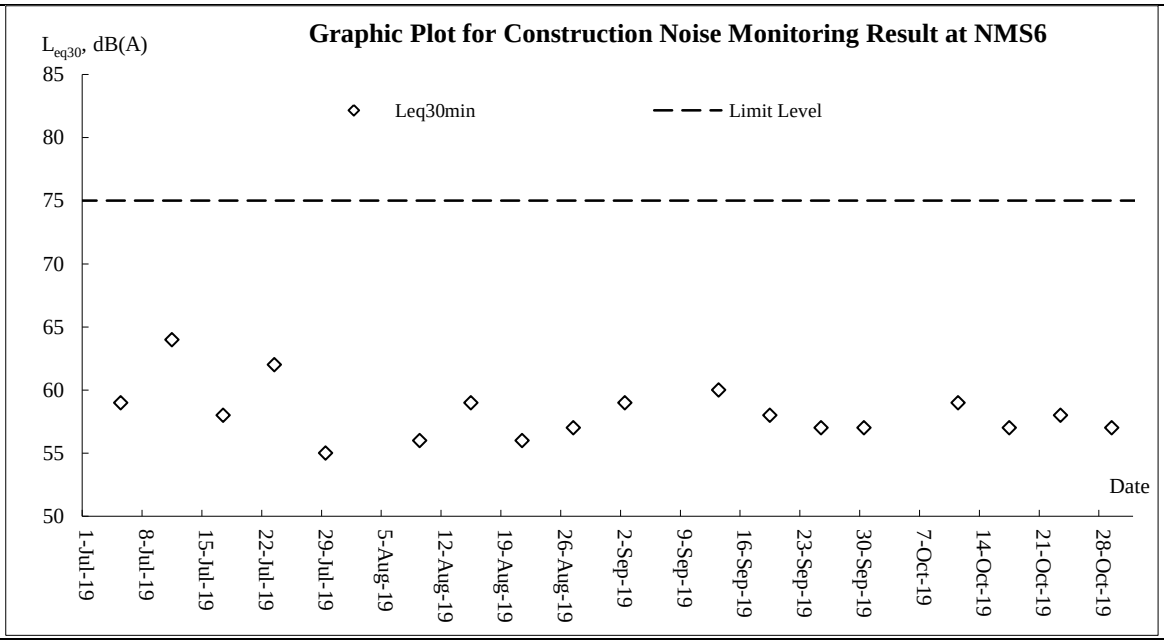


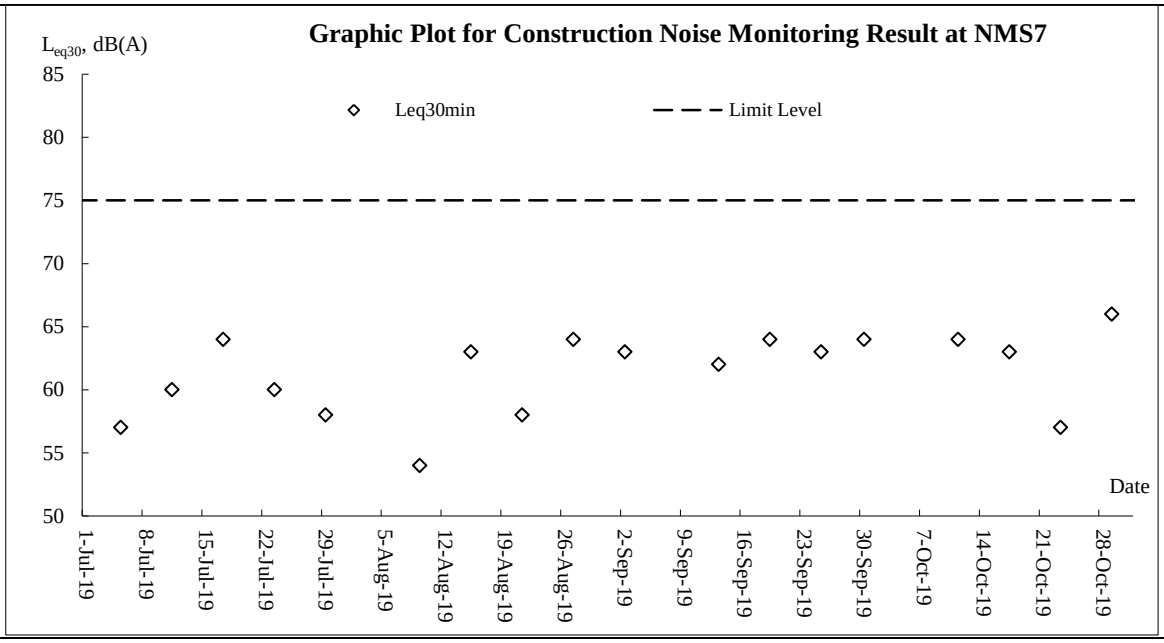

Graphical Plot for 24-hour TSP Monitoring Result at AMS-6
24-hour TSP, µg/m³
24-hour TSP
Action Level
Limit Level
300
250
200
150
100
50
0
1-Jul-19
8-Jul-19
15-Jul-19
22-Jul-19
29-Jul-19
5-Aug-19
12-Aug-19
19-Aug-19
26-Aug-19
2-Sep-19
9-Sep-19
16-Sep-19
23-Sep-19
30-Sep-19
7-Oct-19
14-Oct-19
21-Oct-19
28-Oct-19
Date
Graphical Plot for 24-hour TSP Monitoring Result at AMS-7
24-hour TSP, µg/m³
24-hour TSP
Action Level
Limit Level
300
250
200
150
100
50
0
1-Jul-19
8-Jul-19
15-Jul-19
22-Jul-19
29-Jul-19
5-Aug-19
12-Aug-19
19-Aug-19
26-Aug-19
2-Sep-19
9-Sep-19
16-Sep-19
23-Sep-19
30-Sep-19
7-Oct-19
14-Oct-19
21-Oct-19
28-Oct-19
Date

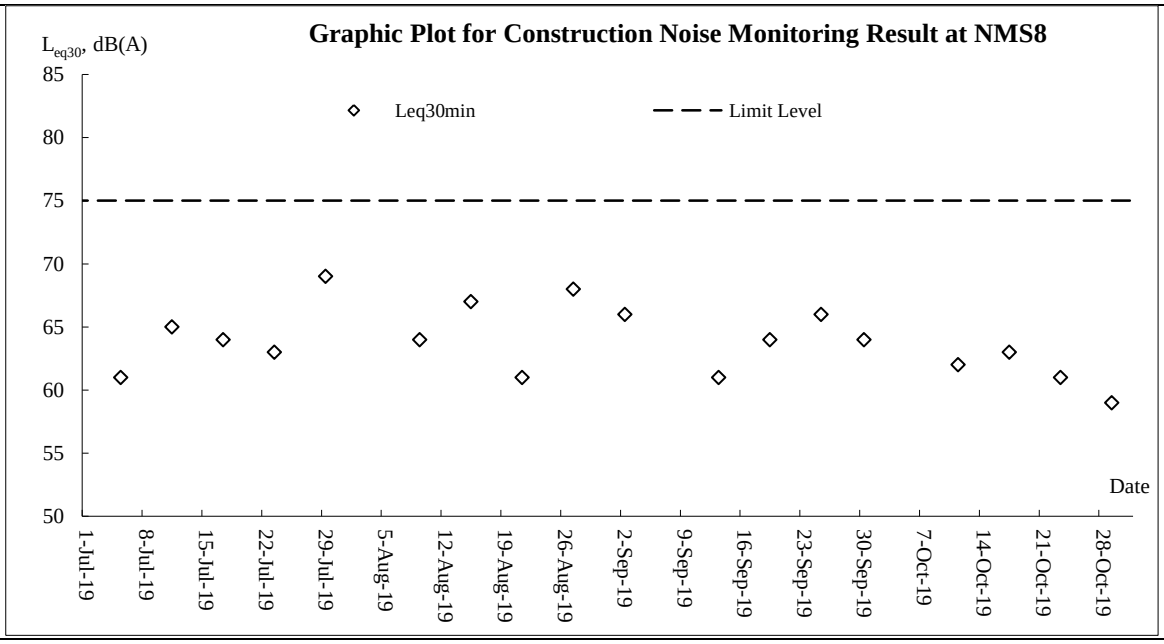
## Noise

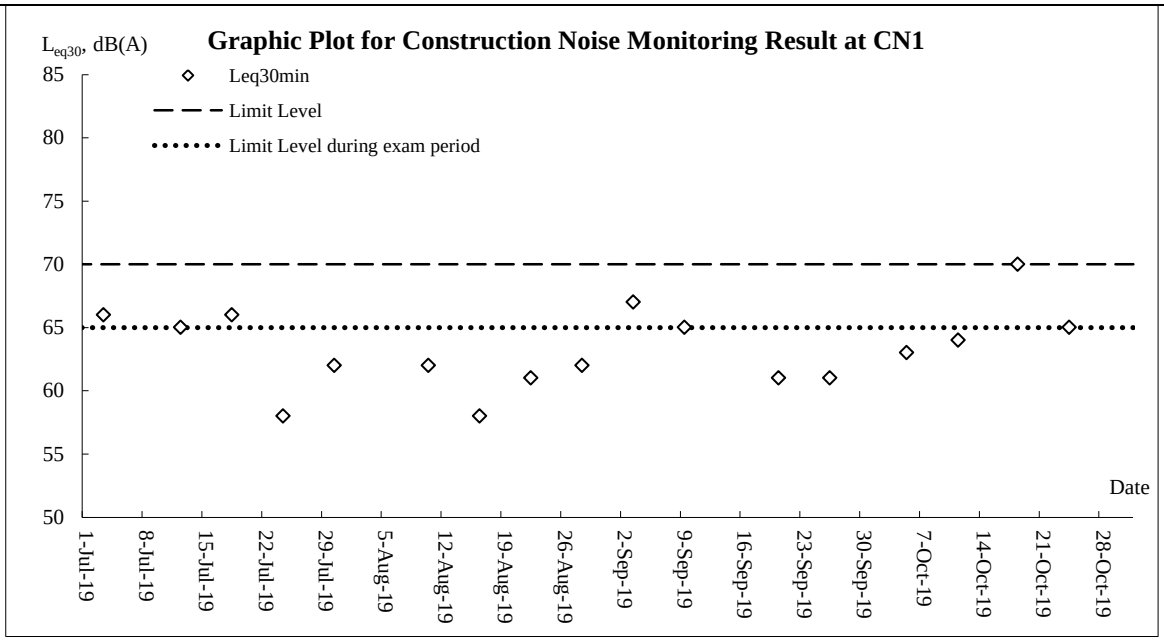

Graphic Plot for Construction Noise Monitoring Result at NM4a
$L_{eq30}$, dB(A)
Leq30min
Limit Level
85
80
75
70
65
60
55
50
Date
1-Jul-19
8-Jul-19
15-Jul-19
22-Jul-19
29-Jul-19
5-Aug-19
12-Aug-19
19-Aug-19
26-Aug-19
2-Sep-19
9-Sep-19
16-Sep-19
23-Sep-19
30-Sep-19
7-Oct-19
14-Oct-19
21-Oct-19
28-Oct-19

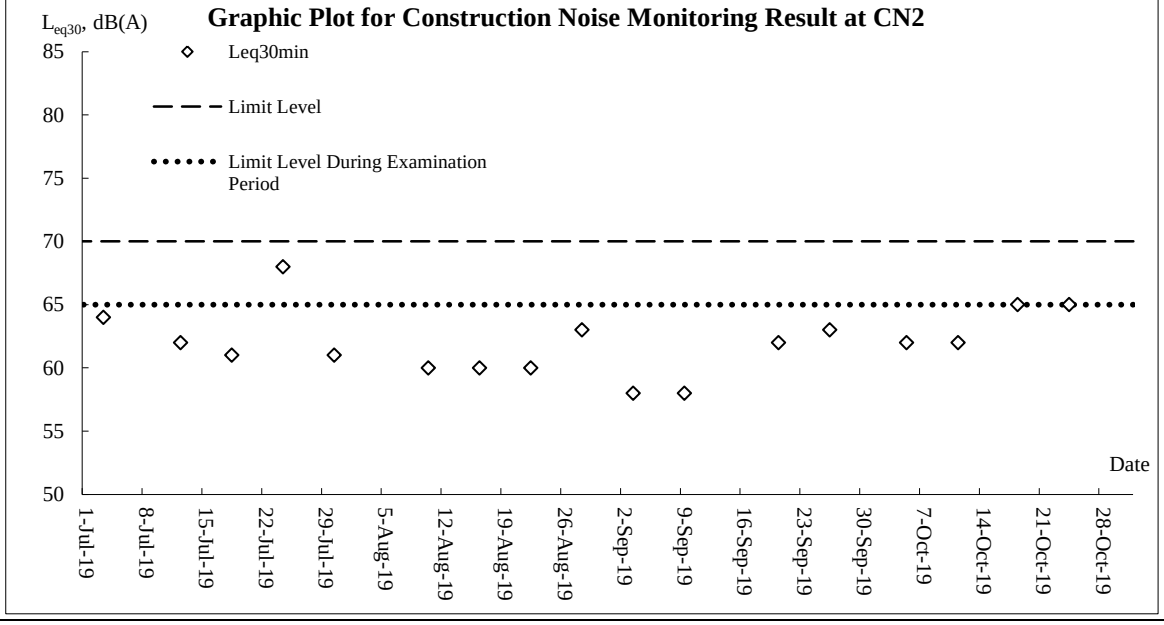

Graphic Plot for Construction Noise Monitoring Result at NMS5
$L_{eq30}$, dB(A)
Leq30min
Limit Level
85
80
75
70
65
60
55
50
Date
1-Jul-19
8-Jul-19
15-Jul-19
22-Jul-19
29-Jul-19
5-Aug-19
12-Aug-19
19-Aug-19
26-Aug-19
2-Sep-19
9-Sep-19
16-Sep-19
23-Sep-19
30-Sep-19
7-Oct-19
14-Oct-19
21-Oct-19
28-Oct-19

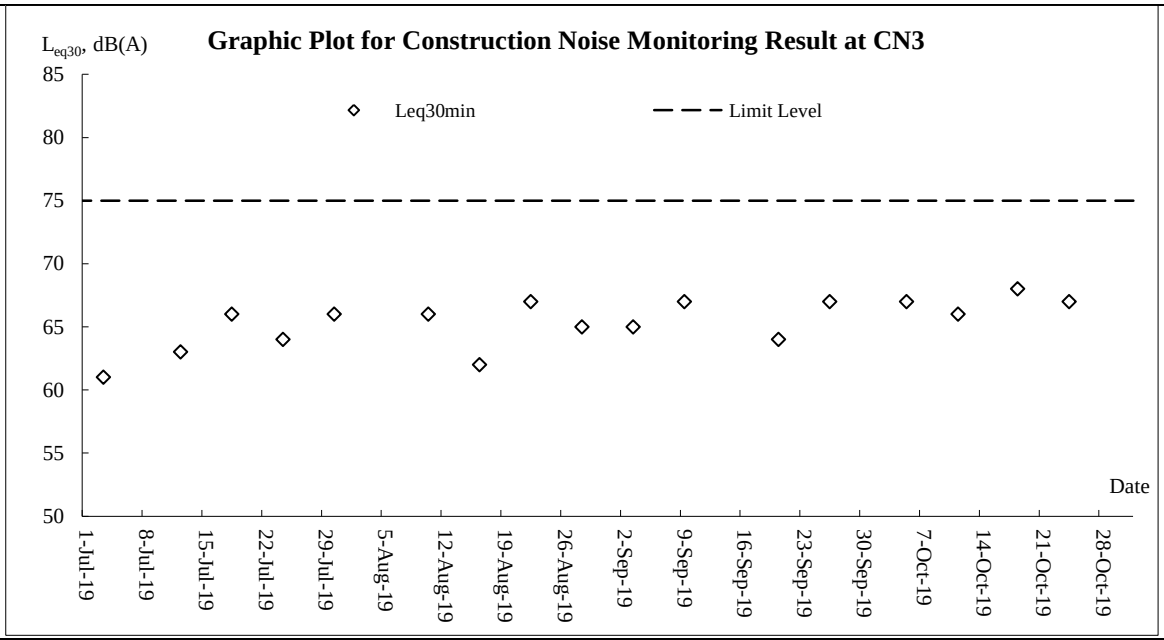

Graphic Plot for Construction Noise Monitoring Result at NMS6
$L_{eq30}$, dB(A)
Leq30min
Limit Level
85
80
75
70
65
60
55
50
Date
1-Jul-19
8-Jul-19
15-Jul-19
22-Jul-19
29-Jul-19
5-Aug-19
12-Aug-19
19-Aug-19
26-Aug-19
2-Sep-19
9-Sep-19
16-Sep-19
23-Sep-19
30-Sep-19
7-Oct-19
14-Oct-19
21-Oct-19
28-Oct-19


Graphic Plot for Construction Noise Monitoring Result at NMS7
$L_{eq30}$, dB(A)
Leq30min
Limit Level
85
80
75
70
65
60
55
50
Date
1-Jul-19
8-Jul-19
15-Jul-19
22-Jul-19
29-Jul-19
5-Aug-19
12-Aug-19
19-Aug-19
26-Aug-19
2-Sep-19
9-Sep-19
16-Sep-19
23-Sep-19
30-Sep-19
7-Oct-19
14-Oct-19
21-Oct-19
28-Oct-19


Graphic Plot for Construction Noise Monitoring Result at NMS8
$L_{eq30}$, dB(A)
Leq30min
Limit Level
85
80
75
70
65
60
55
50
Date
1-Jul-19
8-Jul-19
15-Jul-19
22-Jul-19
29-Jul-19
5-Aug-19
12-Aug-19
19-Aug-19
26-Aug-19
2-Sep-19
9-Sep-19
16-Sep-19
23-Sep-19
30-Sep-19
7-Oct-19
14-Oct-19
21-Oct-19
28-Oct-19


Graphic Plot for Construction Noise Monitoring Result at CN1
$L_{eq30}$, dB(A)
Leq30min
Limit Level
Limit Level during exam period
85
80
75
70
65
60
55
50
Date
1-Jul-19
8-Jul-19
15-Jul-19
22-Jul-19
29-Jul-19
5-Aug-19
12-Aug-19
19-Aug-19
26-Aug-19
2-Sep-19
9-Sep-19
16-Sep-19
23-Sep-19
30-Sep-19
7-Oct-19
14-Oct-19
21-Oct-19
28-Oct-19


Graphic Plot for Construction Noise Monitoring Result at CN2
$L_{eq30}$, dB(A)
Leq30min
Limit Level
Limit Level During Examination Period
85
80
75
70
65
60
55
50
Date
1-Jul-19
8-Jul-19
15-Jul-19
22-Jul-19
29-Jul-19
5-Aug-19
12-Aug-19
19-Aug-19
26-Aug-19
2-Sep-19
9-Sep-19
16-Sep-19
23-Sep-19
30-Sep-19
7-Oct-19
14-Oct-19
21-Oct-19
28-Oct-19


Graphic Plot for Construction Noise Monitoring Result at CN3
$L_{eq30}$, dB(A)
Leq30min
Limit Level
85
80
75
70
65
60
55
50
Date
1-Jul-19
8-Jul-19
15-Jul-19
22-Jul-19
29-Jul-19
5-Aug-19
12-Aug-19
19-Aug-19
26-Aug-19
2-Sep-19
9-Sep-19
16-Sep-19
23-Sep-19
30-Sep-19
7-Oct-19
14-Oct-19
21-Oct-19
28-Oct-19

# Appendix J

# Meteorological Data

| Date | | Weather | Total Rainfall (mm) | Kwun Tong Station | Kai Tak Station | | King's Park Station |
|---|---|---|---|---|---|---|---|
| | | | | Mean Air Temp. (°C) | Wind Speed (km/h) | Wind Direction | Mean Relative Humidity (%) |
| 1-Oct-19 | Tue | Sunny periods. Isolated showers in the morning. | 0 | 31.6 | 9.3 | SW | 61.2 |
| 2-Oct-19 | Wed | Moderate easterly winds, fresh offshore later. | 0 | 30.4 | 10.1 | SW | 72.2 |
| 3-Oct-19 | Thu | Sunny periods. Isolated showers in the morning. | 0 | 30.1 | 7.7 | SW | 65.5 |
| 4-Oct-19 | Fri | Sunny periods. Isolated showers in the morning. | 0 | 29.2 | 8.2 | E/SE | 65.7 |
| 5-Oct-19 | Sat | Mainly fine. Hot in the afternoon. | 0 | 30 | 9.5 | E/SE | 71 |
| 6-Oct-19 | Sun | Mainly fine. Hot in the afternoon. | 46.8 | 25.4 | 10.2 | E | 75.2 |
| 7-Oct-19 | Mon | Isolated showers later. Light winds. | 17.9 | 25.8 | 11.6 | E | 80.5 |
| 8-Oct-19 | Tue | Moderate easterly winds, fresh offshore later. | 4.9 | 27.9 | 12.6 | E | 72.2 |
| 9-Oct-19 | Wed | Isolated showers later. Light winds. | Trace | 27.9 | 16.2 | E | 71.5 |
| 10-Oct-19 | Thu | Isolated showers later. Light winds. | 0 | 28.1 | 13.1 | E/SE | 71.5 |
| 11-Oct-19 | Fri | Mainly fine. Hot in the afternoon. | 0 | 29 | 6.4 | SW | 71.2 |
| 12-Oct-19 | Sat | Fine. Dry in the afternoon. | 0.3 | 29.2 | 11.2 | E/SE | 79.2 |
| 13-Oct-19 | Sun | Mainly fine and dry. Moderate easterly winds. | 13.6 | 26.5 | 10.4 | E/SE | 82.5 |
| 14-Oct-19 | Mon | Isolated showers later. Light winds. | 52.1 | 26.1 | 12 | E/SE | 81 |
| 15-Oct-19 | Tue | Fresh east to northeasterly winds, strong offshore. | 10.4 | 25.7 | 18.6 | E | 69 |
| 16-Oct-19 | Wed | Mainly fine. Hot in the afternoon. | 0 | 25.7 | 19 | E/SE | 67.5 |
| 17-Oct-19 | Thu | Isolated showers later. Light winds. | 0 | 26 | 8.6 | N/NE | 62.2 |
| 18-Oct-19 | Fri | Moderate easterly winds, fresh offshore later. | Trace | 26.6 | 9.5 | E/SE | 63 |
| 19-Oct-19 | Sat | Isolated showers later. Light winds. | 0 | 25.8 | 10.7 | E/SE | 65.2 |
| 20-Oct-19 | Sun | Fresh east to northeasterly winds, strong offshore. | 3.5 | 25 | 13.7 | E/SE | 66.5 |
| 21-Oct-19 | Mon | Mainly fine and dry. Moderate easterly winds. | 0 | 25.1 | 10.6 | E/SE | 69.7 |
| 22-Oct-19 | Tue | Mainly fine and dry. Moderate easterly winds. | 0 | 24.3 | 10.4 | E/SE | 66.7 |
| 23-Oct-19 | Wed | Moderate northeasterly winds, occasionally fresh offshore. | 0 | 24.7 | 11.3 | E/SE | 68.7 |
| 24-Oct-19 | Thu | Mainly fine. Cloudy periods tonight. | 0 | 26 | 10.7 | E/SE | 62.7 |
| 25-Oct-19 | Fri | Mainly fine and dry. Moderate easterly winds. | 0 | 25.6 | 14.1 | E | 71.5 |
| 26-Oct-19 | Sat | Mainly fine and dry. Moderate easterly winds. | Trace | 25.4 | 12.2 | E/SE | 69.5 |
| 27-Oct-19 | Sun | Moderate northeasterly winds, occasionally fresh offshore. | Trace | 25.5 | 10 | E/SE | 71.5 |
| 28-Oct-19 | Mon | Mainly fine. Cloudy periods tonight. | Trace | 24.6 | 10.8 | N/NW | 69 |
| 29-Oct-19 | Tue | Sunny periods. Moderate to fresh easterly winds | 0 | 21.9 | 8.5 | N/NW | 60 |
| 30-Oct-19 | Wed | Dry with bright periods. Moderate to fresh east to northeasterly winds | 0 | 23.1 | 9.7 | N/NE | 56.2 |
| 31-Oct-19 | Thu | Sunny periods. Moderate to fresh easterly winds | 0 | 24.4 | 10 | N/NE | 61.2 |

# Appendix K

# Waste Flow Table

**Contract No.: NE/2016/01**

Site Formation and Infrastructure Works for Development of Anderson Road Quarry Site

# Monthly Summary Waste Flow Table for 2019 (year)

| Month | Actual Quantities of Inert C&D Materials Generated Monthly | | | | | | Actual Quantities of C&D Wastes Generated Monthly | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total Quantity Generated | Hard Rock and Large Broken Concrete | Reused in the Contract (see Note 6) | Reused in other Projects | Disposed as Public Fill | Imported Fill | Metals | Paper/ cardboard packaging | Plastics (see Note 3) | Chemical Waste (see Note 5) | Others, e.g. general refuse |
| | (in '000$m^3$) | (in '000$m^3$) | (in '000$m^3$) | (in '000$m^3$) | (in '000$m^3$) | (in '000$m^3$) | (in '000 kg) | (in '000kg) | (in '000kg) | (in '000kg) | (in '000$m^3$) |
| Jan | 18.566 | 8.485 | 4.795 | 3.042 | 10.729 | 0.000 | 0.000 | 0.354 | 0.000 | 0.000 | 0.111 |
| Feb | 85.275 | 13.273 | 60.959 | 3.989 | 20.327 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.034 |
| Mar | 22.574 | 1.582 | 1.433 | 2.512 | 18.629 | 0.000 | 0.000 | 0.499 | 0.000 | 0.000 | 0.048 |
| Apr | 22.327 | 2.964 | 3.340 | 6.422 | 12.565 | 0.000 | 0.000 | 0.010 | 0.010 | 0.065 | 0.052 |
| May | 15.082 | 4.220 | 2.034 | 2.269 | 10.779 | 0.000 | 0.000 | 0.503 | 1.600 | 0.000 | 0.047 |
| Jun | 9.893 | 4.357 | 2.976 | 2.217 | 4.700 | 0.000 | 0.002 | 0.446 | 0.012 | 0.000 | 0.084 |
| Sub-total | 173.716 | 34.881 | 75.537 | 20.451 | 77.728 | 0.000 | 0.002 | 1.812 | 1.622 | 0.065 | 0.376 |
| Jul | 3.540 | 2.358 | 2.422 | 1.118 | 0.000 | 0.000 | 0.005 | 0.000 | 0.013 | 0.000 | 0.111 |
| Aug | 7.044 | 5.027 | 6.750 | 0.271 | 0.023 | 0.000 | 0.013 | 0.000 | 0.010 | 0.000 | 0.147 |
| Sep | 17.429 | 1.119 | 17.142 | 0.287 | 0.000 | 0.000 | 0.011 | 0.549 | 0.008 | 0.000 | 0.147 |
| Oct | 45.740 | 3.614 | 45.461 | 0.279 | 0.000 | 0.450 | 0.018 | 0.000 | 0.013 | 0.000 | 0.127 |
| Nov | | | | | | | | | | | |
| Dec | | | | | | | | | | | |
| Total | 247.469 | 46.999 | 147.312 | 22.406 | 77.751 | 0.450 | 0.049 | 2.361 | 1.666 | 0.065 | 0.908 |

Notes:

(1) The performance targets are given in PS Clause 1.119 (14).

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

(3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material and waste will be collected by recycler for recycling.

(4) Use the conversion factor, density of general refuse (1 t/$m^3$) and inert C&D materials (2 t/$m^3$).

(5) Use the conversion factor for chemical waste (0.88kg/L).

(6) Assume a dump truck delivers 7.5 $m^3$ material in 1 trip.

(7) The cut-off date of this summary is 20$^{th}$ of each month.

Appendix (ii)

Name of Department: CEDD Contract No. : NE/2016/05

# Monthly Summary Waste Flow Table for 2019 (year)

**[PS Clause 1.129]**

| Month | Actual Quantities of Inert C&D Materials Generated Monthly | | | | | | Actual Quantities of C&D Wastes Generated Monthly | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total Quantity Generated | Hard Rock & Large Broken Concrete | Reused in the Contract | Reused in other Projects | Disposed as Public Fill | Imported Fill | Metals | Paper/ cardboard packaging | Plastics (see Note 3) | Chemicals Waste | Others, e.g. general refuse |
| | (in '000 $m^3$) | (in '000 $m^3$) | (in '000 $m^3$) | (in '000 $m^3$) | (in '000 $m^3$) | (in '000 $m^3$) | (in '000 kg) | (in '000 kg) | (in '000 kg) | (in '000 kg) | (in '000 $m^3$) |
| Jan | 1.2577 | 0 | 0.063 | 0 | 1.1947 | 0 | 0 | 0 | 0 | 0 | 0.0008 |
| Feb | 0.401 | 0 | 0.078 | 0 | 0.323 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mar | 0.48 | 0 | 0.089 | 0 | 0.391 | 0 | 0 | 0 | 0 | 0 | 0.0025 |
| Apr | 0.439 | 0 | 0.045 | 0 | 0.394 | 0 | 0 | 0 | 0 | 0 | 0.0005 |
| May | 1.196 | 0 | 0.025 | 0 | 1.171 | 0 | 0 | 0 | 0 | 0 | 0.0045 |
| June | 0.504 | 0 | 0.085 | 0 | 0.419 | 0 | 0 | 0 | 0 | 0 | 0.0005 |
| Sub-total | 4.2777 | 0 | 0.385 | 0 | 3.8927 | 0 | 0 | 0 | 0 | 0 | 0.0088 |
| July | 0.206 | 0 | 0.04 | 0 | 0.166 | 0 | 0 | 0 | 0 | 0 | 0 |
| Aug | 0.395 | 0 | 0.05 | 0 | 0.345 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sept | 0.23 | 0 | 0.071 | 0 | 0.11 | 0 | 0 | 0 | 0 | 0 | 0.051 |
| Oct | 0.6487 | 0 | 0.098 | 0 | 0.469 | 0 | 0 | 0 | 0 | 0 | 0.082 |
| Nov | 0 | | | | | | | | | | |
| Dec | 0 | | | | | | | | | | |
| Total | 5.7594 | 0 | 0.644 | 0 | 4.9827 | 0 | 0 | 0 | 0 | 0 | 0.1415 |

Notes: (1) The performance targets are given in PS Clause 6.14

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

(3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.

(4) The Contractor shall also submit the latest forecast of the total amount of C&D materials expected to be generated from the Works. Together with a breakdown of the nature where the total amount of C&D materials expected to be generated from the Works is equal to or exceeding 50,000 $m^3$.

## Contract No.: NE/2017/03

Development of Anderson Road Quarry Site – Road Improvement Works and Pedestrian Connectivity Facilities Works Phase 2A

# Monthly Summary Waste Flow Table for 2019(year)

| Month | Actual Quantities of Inert C&D Materials Generated Monthly | | | | | | Actual Quantities of C&D Wastes Generated Monthly | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total Quantity Generated | Hard Rock and Large Broken Concrete | Reused in the Contract | Reused in other Projects | Disposed as Public Fill | Imported Fill | Metals | Paper/ cardboard packaging | Plastics (see Note 3) | Chemical Waste | Others, e.g. general refuse |
| | (in '000$m^3$) | (in '000$m^3$) | (in '000$m^3$) | (in '000$m^3$) | (in '000$m^3$) | (in '000$m^3$) | (in '000 kg) | (in '000kg) | (in '000kg) | (in '000kg) | (in '000$m^3$) |
| Jan | 0.514 | 0.000 | 0.000 | 0.000 | 0.514 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.005 |
| Feb | 0.419 | 0.000 | 0.000 | 0.000 | 0.419 | 0.000 | 0.010 | 0.103 | 0.020 | 0.000 | 0.004 |
| Mar | 0.672 | 0.000 | 0.000 | 0.000 | 0.672 | 0.000 | 0.001 | 0.084 | 0.002 | 0.000 | 0.005 |
| Apr | 1.505 | 0.000 | 0.000 | 0.000 | 1.505 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| May | 1.309 | 0.000 | 0.000 | 0.563 | 1.309 | 0.000 | 0.003 | 0.179 | 0.006 | 0.000 | 0.009 |
| Jun | 0.695 | 0.000 | 0.000 | 0.488 | 0.695 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.018 |
| Sub-total | 5.115 | 0.000 | 0.000 | 1.050 | 5.115 | 0.000 | 0.014 | 0.366 | 0.028 | 0.000 | 0.041 |
| Jul | 1.812 | 0.000 | 0.000 | 0.285 | 1.812 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.125 |
| Aug | 3.010 | 0.000 | 0.000 | 0.945 | 3.010 | 0.000 | 0.003 | 0.074 | 0.007 | 0.000 | 0.098 |
| Sep | 1.946 | 0.000 | 0.473 | 1.583 | 1.474 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.054 |
| Oct | 3.763 | 0.000 | 0.098 | 1.508 | 3.666 | 0.000 | 0.003 | 0.011 | 0.006 | 0.000 | 0.019 |
| Nov | | | | | | | | | | | |
| Dec | | | | | | | | | | | |
| Total | 15.647 | 0.000 | 0.570 | 5.370 | 15.077 | 0.000 | 0.020 | 0.451 | 0.041 | 0.000 | 0.337 |

# Contract No.: NE/2017/03

Development of Anderson Road Quarry Site – Road Improvement Works and Pedestrian Connectivity Facilities Works Phase 2A

| Forecast of Total Quantities of C&D Materials to be Generated from the Contract* | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Total Quantity Generated | Hard Rock and Large Broken Concrete | Reused in the Contract | Reused in other Projects | Disposed as Public Fill | Imported Fill | Metals | Paper/ cardboard packaging | Plastics (see Note 3) | Chemical Waste | Others, e.g. general refuse |
| (in '000$m^3$) | (in '000$m^3$) | (in '000$m^3$) | (in '000$m^3$) | (in '000$m^3$) | (in '000$m^3$) | (in '000 kg) | (in '000kg) | (in '000kg) | (in '000kg) | (in '000$m^3$) |
| 7.000 | 0 | 0 | 0 | 7.000 | 0 | 100.000 | 2.000 | 0.300 | 1.000 | 3.500 |

Notes:

(1) The performance targets are given in PS Clause 6.14.

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

(3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material and waste will be collected by recycler for recycling

(4) Use the conversion factor, density of general refuse (1 t/$m^3$) and inert C&D materials (2 t/$m^3$).

(5) Use the conversion factor for chemical waste (0.88kg/L)

# Appendix L

# Implementation Schedule for Environmental Mitigation Measures

| EM&A Ref. | Recommended Mitigation Measures | Objectives of the Recommended Measures & Main Concern to Address | Who to implement the measures? | Location of the measure | Implementation Status | | |
|---|---|---|---|---|---|---|---|
| | | | | | Contract 1 | Contract 2 | Contract 3 |
| **Dust Impact (Contraction Phase)** | | | | | | | |
| S4.7.2 to S4.7.5 | Mitigation measures in form of regular watering under a good site practice should be adopted. Watering once per hour on exposed worksites and haul road is proposed to achieve dust removal efficiency of 91.7%. While the above watering frequencies are to be followed, the extent of watering may vary depending on actual site conditions but should be sufficient to maintain an equivalent intensity of no less than 1.75 L/$m^2$ to achieve the respective dust removal efficiencies. | Minimize dust impact at the nearby sensitive receivers | Contractor | All construction sites | V | V | V |
| S4.7.6 | The Contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction ion Dust ) Regulation. | Minimize dust impact at the nearby sensitive receivers | Contractor | All construction sites | V | V | V |
| S4.7.6 | Following dust suppression measures should also be incorporated by the Contractor to control the dust nuisance throughout the construction phase:<br>• Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading;<br>• Any dusty materials remaining after a stockpile is removed should be wet ted with water and cleared from the surface of roads;<br>• A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones;<br>• The load of dusty materials on a vehicle leaving a construction ion site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle;<br>• Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road sect ion between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores;<br>• When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction ion period.<br>• The port ion of any road leading only to construction ion site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials;<br>• Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously;<br>• Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately | Minimize dust impact at the nearby sensitive receivers | Contractor | All construction sites | @ | V | V |

| EM&A Ref. | Recommended Mitigation Measures | Objectives of the Recommended Measures & Main Concern to Address | Who to implement the measures? | Location of the measure | Implementation Status | | |
|---|---|---|---|---|---|---|---|
| | | | | | Contract 1 | Contract 2 | Contract 3 |
| | after the activities so as to maintain the entire surface wet ;<br>• Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding;<br>• Any skip hoist for material transport should be totally enclosed by impervious sheeting;<br>• Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides;<br>• Cement or dry PFA delivered in bulk should be stored in a closed silo fit ted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed; and<br>• Exposed earth should be properly treated by compact ion, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shortcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies. | | | | | | |
| S4.7.7 | Implement regular dust monitoring under EM&A programme during the Construction phase. | Control construction airborne noise | Selected Representati ve dust monitoring station | All construction sites where practicable | V | N/A | N/A |
| **Noise Impact (Contraction Phase)** | | | | | | | |
| S5.6.9 | Implement the following good site management practices:<br>• only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction ion programme;<br>• machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum;<br>• plant known to emit noise strongly in one direct ion, where possible, be orientated so that the noise is directed away from nearby NSRs;<br>• silencers or mufflers on construction ion equipment should be properly fit ted and maintained during the construction ion works;<br>• mobile plant should be sited as far away from NSRs as possible and practicable; and<br>• material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities. | Control construction ion<br>airborne noise | Contractor | All construction sites where practicable | V | @ | V |
| S5.6.11 to | Use of " Quiet " Plant and Working Methods. | Reduce the noise | Contractor | All | V | N/A | N/A |

| EM&A Ref. | Recommended Mitigation Measures | Objectives of the Recommended Measures & Main Concern to Address | Who to implement the measures? | Location of the measure | Implementation Status | | |
|---|---|---|---|---|---|---|---|
| | | | | | Contract 1 | Contract 2 | Contract 3 |
| S5.6.13 | | levels of plant items | | construction sites where practicable | | | |
| S5.6.14 | Install temporary site hoarding (approx 2.5m high) located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period. | Reduce the construction ion noise levels at low-level zone of NSRs through partial screening. | Contractor | All construction sites where practicable | V | V | V |
| S5.6.15 to S5.6.18 | Install movable noise barriers, full enclosure and acoustic mat, screen the noisy plants including air compressor and generator. | Screen the noisy plant items to be used at all construction sites | Contractor | All construction ion sites where practicable | V | V | N/A |
| S5.6.19 | Sequencing operation of construction plants equipment. | Operate sequentially within the same work site to reduce the construction airborne noise | Contractor | All construction ion sites where practicable | V | V | N/A |
| S5.6.34 | Implement temporary noise barrier along Road L4. | Further reduce the construction ion airborne noise | Contractor | Road L4 of ARQ | N/A | N/A | N/A |
| S5.6.35 | Implement a noise monitoring under EM&A programme. | Monitor the construction noise levels at the selected representative locations | Contractor | Selected Representative Noise monitoring stations | V | N/A | N/A |
| **Water Quality Impact (Contraction Phase)** | | | | | | | |
| S6.6.3 | <u>Construction Runoff</u><br>In accordance with the Practice Note for Professional Persons on Construction ion Site Drainage, Environmental Protect ion Department , 1994 (ProPECC PN 1/94), best management practices should be implemented as far as practicable as below:<br>• At the start of site establishment , perimeter cut -off drains to direct off-site water around the site should be constructed with internal drainage works. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities.<br>• Diversion of natural stormwater should be provided as far as possible. The design of temporary on-site drainage should prevent runoff going through site surface, construction machinery and equipment in order to avoid or | Control construction runoff | Contractor | All construction sites | @ | @ | @ |

| EM&A Ref. | Recommended Mitigation Measures | Objectives of the Recommended Measures & Main Concern to Address | Who to implement the measures? | Location of the measure | Implementation Status | | |
|---|---|---|---|---|---|---|---|
| | | | | | Contract 1 | Contract 2 | Contract 3 |
| | minimize polluted runoff. Sediment at ion tanks with sufficient capacity, constructed from preformed individual cells of approximately 6 to 8 $m^3$ capacities, are recommended as a general mitigation measure which can be used for set t ling surface runoff prior to disposal. The system capacity shall be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped.<br>• The dikes or embankments for flood protect ion should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a silt /sediment t rap. The silt /sediment t raps should be incorporated in the permanent drainage channels to enhance deposit ion rates.<br>• The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94. The detailed design of the sand/silt traps should be undertaken by the contractor prior to the commencement of construction ion.<br>• Construction works should be programmed to minimize surface excavation works during the rainy seasons (April to September). All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means.<br>• All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas.<br>• Measures should be taken to minimise the ingress of site drainage into excavations. If the excavation of trenches in wet periods is necessary, it should be dug and backfilled in short sect ions wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities.<br>• All open stockpiles of construction ion materials (for example, aggregates, sand and fill material) of should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction ion materials, soil, silt or debris into any drainage system.<br>• Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction ion materials or debris being washed into the drainage system and storm runoff being directed into foul sewers.<br>• Precautions to be taken at any time of year when rainstorms are likely, act ions to be taken when a rainstorm is imminent or forecasted, and act ions to | | | | | | |

| EM&A Ref. | Recommended Mitigation Measures | Objectives of the Recommended Measures & Main Concern to Address | Who to implement the measures? | Location of the measure | Implementation Status | | |
|---|---|---|---|---|---|---|---|
| | | | | | Contract 1 | Contract 2 | Contract 3 |
| | be taken during or after rainstorms are summarized in Appendix A2 of ***ProPECC PN 1/94***. Particular attention should be paid to the control of silty surface runoff during storm events.<br>• All vehicles and plant should be cleaned before leaving a construction ion site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities should be provided at every construction ion site exit where practicable. Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The sect ion of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient back all toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and rains.<br>• Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain.<br>• Construction ion solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts.<br>• All fuel tanks and storage areas should be provided with locks and sited on sealed areas, within bun ds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby.<br>• Regular environmental audit on the construction site should be carried out in order to prevent any malpractices. Not ices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the rivers. | | | | | | |
| S6.6.6 and 6.6.7 | <u>Sewage from Workforce</u><br>• Portable chemical toilets should be provided for handling the construction sewage generated by the workforce. Assume that the capacity of the chemical toilets would be 0.4m3 and suck up twice a day under normal practices, around 45 chemical toilets would be required for the whole site at peak hour. And it should be noted that under normal construction periods, less chemical toilets would be needed. In addition, the total number of the chemical toilets would be subject to later detailed design, the capacity of the chemical toilets, and contractor's site practices. Nevertheless, a licensed contractor should be employed to provide appropriate and adequate portable toilets to cater around 37.5 m3/day sewage and be responsible for appropriate disposal and maintenance. Since portable chemical toilets will be provided, no adverse water quality impact from the workforce sewage is anticipated. | Handling of site sewage | Contractor | All construction sites | V | V | V |

| EM&A Ref. | Recommended Mitigation Measures | Objectives of the Recommended Measures & Main Concern to Address | Who to implement the measures? | Location of the measure | Implementation Status | | |
|---|---|---|---|---|---|---|---|
| | | | | | Contract 1 | Contract 2 | Contract 3 |
| | • Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment during the construction ion phase of the Project . Regular environmental audit on the construction ion site should be conducted in order to provide an effective control of any malpractices and achieve continual improvement of environmental performance on site. It is anticipated that sewage generation during the construction phase of the Project would not cause water quality impact after undertaking all required measure | | | | | | |
| S6.6.8 and 6.6.9 | <u>Accidental Spillage</u><br>To prevent accidental spillage of chemicals, proper storage and handling facilities should be provided. All the tanks, containers and storage area should be bunded and the locations should be locked as far as possible from the sensitive watercourse and storm drains. The Contractor is required to register as a chemical waste producer if chemical wastes would be generated from the construction ion activities. Storage of chemical waste arising from the construction ion activities should be well managed with suitable labels an d warnings while disposal of those chemical wastes should be comply with the requirement states in Waste Disposal Ordinance (Cap 354) as well as Waste Disposal (Chemical Waste) (General) Regulations. | Prevention of accidental spillage | Contractor | All construction sites | @ | @ | V |
| S6.6.11-S6.6.14 | <u>Groundwater from Contaminated Area</u><br>The Contractor should apply for a discharge licence under the WPCO through the Regional Office of EPD for groundwater discharge. Prior to the excavation works within these potentially contaminated areas, the groundwater quality should be reviewed during the process of discharge license application. The compliancy to the TM-DSS and the existence of prohibited substance should be confirmed after further SI. If the review results indicated that the groundwater to be generated from the excavation works would be contaminated, the contaminated groundwater should be either properly treated in compliance with TMDSS or properly recharged into the ground.<br><br>If wastewater treatment is deployed, the wastewater treatment unit shall deploy suitable treatment process (e.g. oil interceptor / activated carbon) to reduce the pollution level to an acceptable standard and remove any prohibited substances (e.g. Petroleum Carbon Ranges (PCRs)). All treated effluent from wastewater treatment plant shall meet the requirements as stated in TM-DSS and should be discharged into the foul sewers.<br><br>If groundwater recharging wells are deployed, recharging wells should be installed as appropriate for recharging the contaminated groundwater back into the ground. The recharging wells should be selected at places where the groundwater quality will not be affected by the recharge operation as indicated in the Sect ion 2.3 of TM-DSS. The baseline groundwater quality shall be determined prior to the select | Minimize contaminated groundwater impacts | Contractor | All construction sites | NA | NA | NA |

| EM&A Ref. | Recommended Mitigation Measures | Objectives of the Recommended Measures & Main Concern to Address | Who to implement the measures? | Location of the measure | Implementation Status | | |
|---|---|---|---|---|---|---|---|
| | | | | | Contract 1 | Contract 2 | Contract 3 |
| | ion of the recharge wells, and submit a working plan (including the laboratory analytical results showing the quality of groundwater at the proposed recharge location(s) as well as the pollutant levels of groundwater to be recharged) to EPD for agreement . Pollution levels of groundwater to be recharged shall not be higher than pollutant levels of ambient groundwater at the recharge well. Prior to recharge, any prohibited substances such as PCRs should be removed as necessary by installing the petrol interceptor. | | | | | | |
| **Waste Management (Contraction Phase)** | | | | | | | |
| S8.5.2 | Good Site Practice<br>The following good site practices are recommended throughout the construction ion activities:<br>• nomination of an approved personnel, such as a site manager, to be responsible for the implementation of good site practices, arrangements for collect ion and effective disposal to an appropriate facility, of all wastes generated at the site;<br>• training of site personnel in site cleanliness, appropriate waste management procedures and concepts of waste reduction, reuse and recycling;<br>• provision of sufficient waste disposal points and regular collect ion for disposal;<br>• appropriate measures to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers;<br>• regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; | Minimize waste generation during construction | Contractor | All construction sites | V | V | V |
| S8.5.2 (6) | The contractor should submit a Waste Management Plan (WMP) as part of the Environmental Management Plan (EMP) in accordance with the ***ETWB TC(W) No. 19/2005*** for construction ion phase. The EMP should be submit ted to the Engineer for approval. Mitigation measures proposed in the EIA Report and the EM&A Manual should be adopted. | Minimize waste generation during construction | Contractor | All construction sites | V | V | V |
| S8.5.3 | Waste Reduction Measures<br>Waste reduction is best achieved at the planning and design phase, as well as by ensuring the implementation of good site practices. The following recommendations are proposed to achieve reduction:<br>• segregate and store different types of waste in different containers, skip or stockpiles to enhance reuse or recycling o materials and their proper disposal;<br>• proper storage and site practices to minimize the potential for damage and contamination of construction ion materials;<br>• plan and stock construction ion materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste;<br>• sort out demolition debris and excavated materials from demolition works to | Reduce waste generation | Contractor | All construction sites where practicable | V | V | V |

| EM&A Ref. | Recommended Mitigation Measures | Objectives of the Recommended Measures & Main Concern to Address | Who to implement the measures? | Location of the measure | Implementation Status | | |
|---|---|---|---|---|---|---|---|
| | | | | | Contract 1 | Contract 2 | Contract 3 |
| | recover reusable/recyclable port ions (i.e. soil, broken concrete, metal etc.);<br>• provide training to workers on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling. | | | | | | |
| S8.5.5 | Storage of Waste<br>The following recommendation should be implemented to minimize the impacts:<br>• waste such as soil should be handled and stored well to ensure secure containment ;<br>• stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away;<br>• different locations should be designated to stockpile each material to enhance reuse; | Minimize waste impacts from storage | Contractor<br>Contractor | All construction sites | V | V | V |
| S8.5.6 | Collection and Transportation of Waste<br>The following recommendation should be implemented to minimize the impacts:<br>• remove waste in timely manner;<br>• employ the trucks with cover or enclosed containers for waste<br>• transportation;<br>• obtain relevant waste disposal permits from the appropriate authorities; and<br>• disposal of waste should be done at licensed waste disposal facilities. | Minimize waste impacts from storage | Contractor | All construction sites | V | V | @ |
| S8.5.8 | Excavated and C&D Material<br>Wherever practicable, C&D materials should be segregated from other wastes to avoid contamination and ensure acceptability at public filling areas or reclamation sites. The following mitigation measures should be implemented in handling the excavated and C&D materials:<br>• maintain temporary stockpiles and reuse excavated fill material for backfilling;<br>• carry out on-site sorting;<br>• make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate;<br>• implement a recording system for the amount of waste generated, recycled and disposed of for checking;<br><br>The recommended C&D materials handling should include:<br>• On-site sorting of C&D materials<br>• Reuse of C&D materials<br>• Use of Standard Formwork and Planning of Construction Materials purchasing<br>• Provision of wheel wash facilities | Minimize waste impacts from excavated and C&D materials | Contractor | All construction sites | V | V | V |
| S8.5.15 | Contaminated Soil<br>As a precaution, it is recommended that standard good site practice should be implemented during the construction phase to minimize any potential exposure to contaminated soils or groundwater. The details of mitigation measures to minimize | Remediate contaminated soil | Contractor | All construction sites where applicable | V | V | N/A |

| EM&A Ref. | Recommended Mitigation Measures | Objectives of the Recommended Measures & Main Concern to Address | Who to implement the measures? | Location of the measure | Implementation Status | | |
|---|---|---|---|---|---|---|---|
| | | | | | Contract 1 | Contract 2 | Contract 3 |
| | the potential environmental implications arising from the handling of contaminated materials refer to Land Contamination Section. | | | | | | |
| S8.5.17 | Chemical Waste<br>• If chemical wastes are produced at the construction ion site, the Contractors should register with EPD as chemical waste producer. Chemical wastes should be stored in appropriate containers and collected by a licensed chemical waste Contractor. Chemical wastes (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while the chemical waste that cannot be recycled should be disposed of at either the Chemical Waste Treatment Cent re, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation. | Control the chemical waste and ensure proper storage, handling and disposal. | Contractor | All construction sites | V | V | V |
| S8.5.18 | General Waste<br>• General refuse should be stored in enclosed bins separately from construction and chemical wastes. Recycling bins should also be placed to encourage recycling.<br>• Preferably enclosed and covered areas should be provided for general refuse collect ion and routine cleaning for these areas should also be implemented to keep areas clean.<br>• A reputable waste collector should be employed to remove general refuse on a daily basis. | Minimize production of the general refuse and avoid odour, pest and litter impacts | Contractor | All construction sites | V | @ | V |
| S8.5.19 | Sewage<br>• The WMP should document the locations and number of portable chemical toilets depending on the number of workers, land availability, site condition and activities.<br>• Regularly collect ion by licensed collectors should be arranged to minimize potential environmental impacts. | Minimize production of sewage impacts | Contractor | All construction sites | V | V | V |
| **Ecology (Contraction Phase)** | | | | | | | |
| S. 10.7.2 to 10.7.6 | Re-provision of Wooded Area for ecological function at the future Quarry Park. | Compensate for the loss of three woodland patches of a total area of about 1.13ha. | Contractor/ Detailed Design Consultant (qualified botanist / horticulturist / Certified Arborist to supervise the planting). | Northern part of the proposed Quarry Park. | N/A | N/A | N/A |
| .10.7.10 | Construction phase in situ mitigation measures to minimize impacts on | Minimize impacts on | Contractor | All | V | N/A | V |

| EM&A Ref. | Recommended Mitigation Measures | Objectives of the Recommended Measures & Main Concern to Address | Who to implement the measures? | Location of the measure | Implementation Status | | |
|---|---|---|---|---|---|---|---|
| | | | | | Contract 1 | Contract 2 | Contract 3 |
| | hydrological condition and water quality of hillside watercourses include:<br>• Temporary sewerage and drainage will be designed and installed to collect wastewater and prevent it from entering nearby watercourses;<br>• Proper locations well away from nearby watercourses will be used for temporary storage of materials (i.e. equipment , fill materials, chemicals and fuel) and temporary stockpile of construction debris and spoil, and these will be identified before commencement of works;<br>• To prevent muddy water entering nearby watercourses, work sites close to nearby watercourses will be isolated, using such items as sandbags or silt curtains with lead edge at bot tom and properly supported props. Other protective measures will also be taken to ensure that no pollution or siltation occurs to the water gathering grounds of the works site;<br>• Stockpiling of construction materials, if necessary, will be properly covered and located away from nearby watercourses;<br>• Erection of temporary geotextile silt fences will be carried out around earth-moving works to trap any sediments and prevent them from entering watercourses;<br>• Construction debris and spoil will be covered and/or properly disposed as soon as possible to avoid being washed into nearby watercourses;<br>• Exposed soil will be covered as quickly as possible following format ion works, followed, where appropriate, by covering with biodegradable geotextile blanket for erosion control purposes;<br>• Where appropriate, earth-bunding will be carried out of areas where soils have been disturbed or where vegetation has been cleared, to ensure that surface runoff will not move soils off-site;<br>• Construction ion effluent, site run-off and sewage will be probably collected and/or treated. Wastewater from any construction ion site will be minimised via the following in descending order: reuse, recycling and treatment ;<br>• Proper locations for discharge out lets of wastewater treatment facilities well away from sensitive receivers will be identified and used;<br>• Silt traps will be installed at points where drainage from the site enters local watercourses;<br>• Appropriate sanitary facilities for on-site workers will be provided;<br>• The site boundary will be clearly marked and any works beyond the boundary strictly prohibited, and<br>• Regular water monitoring and site audit will be carried out at suitable points. If the monitoring and audit results show that pollution occurs, adequate measures including temporary cessation of works will be considered. | Hydrological condition and water quality of hillside watercourses. | | construction sites | | | |
| S.10.7.11 | Implement an emergency contingency plan during the construction phase and the plan will include, but not be limited to, the following:<br>• Potential emergency situations;<br>• Chemicals or hazardous materials used on-site (and their location); | Minimize impacts on Hydrological condition and water quality of hillside | Contractor | All construction sites | N/A | N/A | N/A |

| EM&A Ref. | Recommended Mitigation Measures | Objectives of the Recommended Measures & Main Concern to Address | Who to implement the measures? | Location of the measure | Implementation Status | | |
|---|---|---|---|---|---|---|---|
| | | | | | Contract 1 | Contract 2 | Contract 3 |
| | • Emergency response team;<br>• Emergency response procedures;<br>• List of emergency telephone hot lines;<br>• Locations and types of emergency response equipment , and<br>• Training plan and testing for effectiveness. | watercourses. | | | | | |
| **Landscape and visual (Contraction Phase)** | | | | | | | |
| S11.14.23 , Table 11.9, CM1 [4] | All existing trees to be retained shall be carefully protected during construction. | Avoid disturbance and protection of the existing trees | Detailed Design Consultant / | The whole project area where applicable | V | @ | V |
| S11.14.23 , Table 11.9, CM2 [3] | Tree Transplantation - Should removal of trees be unavoidable due to construction impacts, trees will be transplanted or felled. Detailed transplanting proposal will be submit ted to relevant government departments for approval in accordance with **LAO GN No. 7/2007**, ***ETWB TCW No. 29/2004*** and ***10/2013***. Final locations of transplanted trees shall be agreed prior to commencement of the work. | Minimize landscape impact and retention of landscape resources | Detailed Design Consultant / | Onsite where possible. Otherwise consider offsite locations | * | N/A | V |
| S11.14.23 , Table 11.9, CM3 [4] | Control of operation night -time glare with well-planned lighting operation system to minimize potential glare impact to adjacent VSRs | Minimize glare impact to adjacent VSRs | Contractor/ CEDD | The whole project area where applicable | V | V | V |
| S11.14.23 , Table 11.9, CM [4] | Erection of decorative screen hoarding. | Minimize visual impact | Contractor/ CEDD | The whole project area where applicable | N/A | N/A | N/A |
| S11.14.23 , Table 11.9, CM5 [2] | Minimise disturbance and limitation of run-off – temporary structures and construction works should be planned with care to minimize disturbance to adjacent landscape, vegetation, natural stream habitats. | Minimize visual impact | Contractor/ CEDD | The whole project area where applicable | V | V | V |

Legend: V = implemented; x = not implemented; @ = partially implemented; * = pending to be implemented; N/A = not applicable

# Appendix M

# Complaint Log

## Appendix M1 Cumulative Complaint and Summons/ prosecution

| Reporting Month | Number of Complaints in Reporting Month | Number of Summons/ Prosecution in Reporting Month |
|---|---|---|
| **March 2017** | **1** | 0 |
| **April 2017** | 0 | 0 |
| **May 2017** | 0 | 0 |
| **June 2017** | **2** | 0 |
| **July 2017** | **3** | 0 |
| **August 2017** | **3** | 0 |
| **September 2017** | **4** | 0 |
| **October 2017** | **2** | 0 |
| **November 2017** | **3** | 0 |
| **December 2017** | **3** | 0 |
| **January 2018** | **1** | 0 |
| **February 2018** | **4** | 0 |
| **March 2018** | 0 | 0 |
| **April 2018** | **1** | 0 |
| **May 2018** | **1** | 0 |
| **June 2018** | **1** | 0 |
| **July 2018** | 0 | 0 |
| **August 2018** | **1** | 0 |
| **September 2018** | **1** | 0 |
| **October 2018** | **1** | 0 |
| **November 2018** | **3** | 0 |
| **December 2018** | **2** | 0 |
| **January 2019** | **2** | 0 |
| **February 2019** | **3** | 0 |
| **March 2019** | **1** | 0 |
| **April 2019** | 0 | 0 |
| **May 2019** | 0 | 0 |
| **June 2019** | **1** | 0 |
| **July 2019** | **1** | 0 |
| **August 2019** | **1** | 0 |
| **September 2019** | 0 | 0 |
| **October 2019** | **1** | 0 |
| **Overall Total** | **47** | **0** |

## Appendix M2 Complaint Log

| Log ref. | Date of Complaint | Date of Received by ET | Complaint Location | Complainant | Complaint nature | Channel | Ref. no. | Complaint details | Follow up action | Status | Investigation Report Ref. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 23-Mar-17 | NA | Anderson Road Quarry site | Resident of On Tat Estate | Construction noise | SPRO hotline | NA | A resident living in On Tat House reported that some night works with noise and flashing caused nuisance to nearby resident after 11:00 pm on 23 March 2017. | According the incident report conducted by the CWSTVJV, demobilization of crawler crane was undertaken on 23 March 2017 11pm and it is TD requirement to carry out demobilization of heavy machine at nighttime. It is considered this complaint was a single incident and would not be happened again in future. | no comment by IEC on 11 Oct 2017 | TCS00864/16/300/F0087 |
| 2 | 28-Jul-17 | 28-Jul-17 | Anderson Road Quarry site | Resident of On Tat Estate | Construction noise | SPRO hotline | NA | Mr. Hsu received a complaint from a resident living in the flat on 38/F of Yin Tat House (賢達樓), On Tat Estate. The resident complained about the noise level of our works during daytime. | Noise monitoring by Contractor was conducted in Yin Tat House, On Tat Estate, at around 2 pm on 28-Jul-2017. Another noise monitoring was carried out by ET and representatives of AECOM and JV in the presence of the complainant in her flat at 10 am on 1-Aug-2017 and was witnessed by Mr. Hsu. No exceedance of noise was recorded. The complainant was satisfied about the monitoring results. | no comment by IEC on 9 Aug 2017 | TCS00864/16/300/F0060 |
| 3 | 29-Aug-17 | 29-Aug-17 | Anderson Road Quarry site | Resident of On Tat Estate | Construction noise | SPRO hotline | NA | Mr. Hsu Yau Wai reported that he received complaint from a resident (Ms Cheng) living at Shing Tat House 24/F Room 22 about the noise generated from our site this week. The noise heard was mainly rock breaking noise from our site. | Noise monitoring was carried out by ET and representatives of AECOM and JV in the presence of the complainant in her flat at 3pm on 30-Aug-2017. No exceedance of noise was recorded. The complainant was satisfied about the monitoring results. | no comment by IEC on 8 Sep 2017 | TCS00864/16/300/F0081 |
| 4 | 21-Jun-17 | 29-Aug-17 | Anderson Road Quarry site | Resident of Po Tat Estate | Construction noise | EPD | EPD (ref.N08/RE/00019373-17) | day time construction noise of breakers (8am to 6pm) | These two complaints were forwarded by CEDD to ET on 31 August 2017 which after the complaint dates. Investigation was conducted based on the site information by the Contractor of Contract 1 as well as the observation during weekly site inspection carried out ET during June 2017. In our investigation, CWSTVJV has implemented noise mitigation measures to reduce the noise impact to the nearby resident and the working hour 08:00 to 18:00 did not breach any legal requirement. To eliminate the inconvenience caused to the nearby resident CWSTVJV was advised to further enhance the noise mitigation measures as appropriately. | no comment by IEC on 3 Nov 2017 | TCS00864/16/300/F0093 |
| 5 | 22-Jun-17 | 29-Aug-17 | Anderson Road Quarry site | Resident of Po Tat Estate | Dust & Construction noise | EPD | EPD (ref. N08/RE/00019428-17) | Day time construction noise of breakers (8AM to 6PM). Requested to delay the operating hour of breakers to 10AM or 11AM | | | TCS00864/16/300/F0093 |
| 6 | 15-Jul-17 | 29-Aug-17 | Anderson Road Quarry site | Resident of Po Tat Estate | Construction noise | EPD | EPD (ref.N08/RE/00022479-17) | Construction noise | CWSTVJV has implemented noise mitigation measures to reduce the noise impact to the nearby resident and the working hour 08:00 to 18:00 did not breach any legal requirement. To eliminate the inconvenience caused to the nearby resident, CWSTVJV was advised to further enhance the noise mitigation measures as appropriately. | no comment by IEC on 3 Nov 2017 | TCS00864/16/300/F0094 |
| 7 | 28-Jul-17 | 29-Aug-17 | Anderson Road Quarry site | unknown | Dust | EPD | EPD (ref.N08/RE/00023986-17) | Poor control on dust emission at Anderson Road Construction Site | CWSTVJV has implemented dust mitigation measures to eliminate the inconvenience caused to the nearby resident and status of the implementation of dust mitigation measures was considered effective based on the site observation. | no comment by IEC on 15 Nov 2017 | TCS00864/16/300/F0097 |

| Log ref. | Date of Complaint | Date of Received by ET | Complaint Location | Complainant | Complaint nature | Channel | Ref. no. | Complaint details | Follow up action | Status | Investigation Report Ref. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 8 | 2-Aug-17 | 29-Aug-17 | Anderson Road Quarry site | Resident of On Tat Estate | Construction noise | EPD | EPD (ref.N08/RE/00024557-17) | Day time construction noise of breakers (8AM to 6PM) | CWSTVJV has implemented noise mitigation measures to reduce the noise impact to the nearby resident. According to the impact noise monitoring result obtained in August 2017, there were no breaches of EM&A requirement. However, to eliminate the inconvenience caused to the nearby resident, CWSTVJV should further enhance the noise mitigation measures as appropriately. Since the works were carried out within the non-restricted hours, it is considered that the works under the project did not breach the Noise Control Ordinance. | no comment by IEC on 15 Nov 2017 | TCS00864/16/300/F0098 |
| 9 | 19-Sep-17 | 19-Sep-17 | Anderson Road Quarry site | Resident of Sau Mau Ping Estate | Construction noise | SPRO hotline | NA | The complainant is living at Sau Mau Ping Estate Sau Nga House 38/F. He complained about the noise nuisance recently from August to September especially during night time after 12:00 am, even in Saturdays and Sundays. The noise nuisance caused a great disturbance to him. He made a request to conduct investigation about the source of the noise during night time. | ET has conducted an ad-hoc noise measurement for Leq (30min) on the rooftop of 秀雅樓 and 秀義樓 in the afternoon of 22 September 2017. During the course of noise measurement, construction activities such as excavation and breaking were conducted in the Quarry Site. The measurement results taken at both 秀雅樓 and 秀義樓 were 63dB(A) which below the Limit Level under the EM&A Programme. | no comment by IEC on 18 Oct 2017 | TCS00864/16/300/F0088 |
| 10 | 21-Sep-17 | 13-Oct-17 | Anderson Road Quarry site | Resident of Sau Mau Ping Estate | Construction noise | EPD | EPD (ref.N08/RE/00031074-17) | On 21 September 2017, the same complaint further reported that the noise can be heard at both Sau Yee House and Sau Nga House even in daytime and he strongly requested the Contractor to follow up the case immediately. | | | TCS00864/16/300/F0088 |
| 11 | 27-Sep-17 | 13-Oct-17 | Anderson Road Quarry site | Resident of On Tat Estate | Construction noise | EPD | EPD (ref.N08/RE/00029489-17) | The complainant questioned why there were 6 to 7 breakers operating in the morning but only 1 operating in the afternoon. He requested to shift the operation of the breakers to afternoon. | CWSTVJV has implemented noise mitigation measures to reduce the noise impact to the nearby resident. According to the impact noise monitoring result obtained in September and October 2017, there were no breaches of EM&A requirement. However, to eliminate the inconvenience caused to the nearby resident, CWSTVJV should properly maintain the noise mitigation measures as appropriate. Since the works were carried out within the non-restricted hours, it is considered that the works under the project did not breach the Noise Control Ordinance. | no comment by IEC on 30 Nov 2017 | TCS00864/16/300/F0106 |
| 12 | 3-Oct-17 | 13-Oct-17 | Anderson Road Quarry site | Resident of On Tat Estate | Construction noise | EPD | EPD (ref. N08/RE/00032407-17) | Day time construction noise, the complainant requested using less breaker at one time, erecting taller noise barrier to cover the equipment. In addition, the complainant would like to know the construction schedule whether there will be more breaking activities in near future | | | TCS00864/16/300/F0106 |
| 13 | 25-Oct-17 | 26-Oct-17 | Anderson Road Quarry site | Resident of Po Tat Estate | Dust | EPD | NA | 投訴安達臣道地盤的泥車落泥，令他達貴樓的住所受到大塵影響，要求跟進及回覆 | Investigation revealed that CWSTVJV has implemented dust mitigation measures to eliminate the inconvenience caused to the nearby resident. Nevertheless, based on the observation during site inspection on 31 October 2017, CWSTVJV was advised to enhance the dust mitigation measures particularly during dry season. | no comment by IEC on 15 Nov 2017 | TCS00864/16/300/F0100 |

| Log ref. | Date of Complaint | Date of Received by ET | Complaint Location | Complainant | Complaint nature | Channel | Ref. no. | Complaint details | Follow up action | Status | Investigation Report Ref. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 14 | 6-Nov-17 | 7-Nov-17 | Anderson Road Quarry site | Resident of On Tat Estate | Noise | EPD | NA | 安達邨俊達樓居民投訴石礦場地盤又再於早上 07:45 開始傳出機器不停 掻 石 的 噪 音 ( 幾 乎 每 日 在 08:00-19:00 進行工程)，已持續一年，他全家人受到滋擾。 | Ad-hoc noise measurement was conducted by ET at rooftop of Chun Tat House in the morning of 20 November 2017 and measurement result was below the Limit Level under the EM&A Programme. CWSTVJV has implemented noise mitigation measures to reduce the noise impact to the nearby resident. Since the works were carried out within the non-restricted hours, it is considered that the works under the project did not breach the Noise Control Ordinance. | no comment by IEC on 30 Nov 2017 | TCS00864/16/300/F0109 |
| 15 | 13-Nov-17 | 14-Nov-17 | Anderson Road Quarry site | Mr. Lam Wai | light pollution and noise | SPRO hotline | NA | 1. 智泰樓面向安達臣地盤方向，有照射燈深夜時分仍然常開，影響居民正常睡眠質素，照成一定的精神壓力。<br>2. 隔音布未固定，大風吹過發出極大的聲浪 | To ease the concern by the complaint, CWSTVJV has adjusted the lights to the orientation pointing the ground and that to minimise the nuisance. For the maintenance of noise barrier, CWSTVJV has immediately fixed the noise barrier nearest to On Tai Estate and prolonged the cover area of the noise barrier to reduce the noise impact to the public. | no comment by IEC on 24 Nov 2017 | TCS00864/16/300/F0104 |
| 16 | 1-Nov-17 | 14-Nov-17 | Anderson Road Quarry site | Resident of Po Tat Estate | Noise | EPD | NA | 居住於安達邨誠達樓高層的投訴人投訴由早上八時半至下午六時聽到掻鐵噪音。 | CWSTVJV had already deployed the acoustic mat as noise barrier at the site boundary near Shing Tat House. To enhance the noise mitigation measures, CWSTVJV deployed an acoustic mat as noise barrier for the breaking work in order to reduce construction noise affecting the upper floor of On Tat Estate. | no comment by IEC on 13 Dec 2017 | TCS00864/16/300/F0110 |
| 17 | 25-Aug-17 | 26-Oct-17 | Anderson Road Quarry site | Resident of Sau Mau Ping Estate | Construction Noise | EPD | EPD (ref.N08/RE/00027738-17) | Night time construction noise of hammering (around 12AM) | It is confirmed by CWSTVJV and checked against the site diary that no construction activities were carried out after 19:00 at the subject site. Therefore, the complaint about noise nuisance during night time should not be related to the Project. | no comment by IEC on 14 Dec 2017 | TCS00864/16/300/F0114 |
| 18 | 12-Sep-17 | 26-Oct-17 | Anderson Road Quarry site | Resident of On Tat Estate | Construction Noise | EPD | EPD (ref. N08/RE/00029489-17) | Day time construction noise of breakers (8AM to 5PM) | Noise mitigation measures were implemented to reduce the noise impact to the nearby resident. According to the impact noise monitoring result in September 2017, there were no breaches of EM&A requirement. Since the works were carried out within the non-restricted hours, it is considered that the works under the project did not breach the Noise Control Ordinance. | no comment by IEC on 10 Jan 2018 | TCS00864/16/300/F0117 |
| 19 | 15-Dec-17 | 21-Dec-17 | Anderson Road Quarry site | Resident of Sau Mau Ping Estate | Construction Noise | EPD | NA | Resident of Sau Yee House complained suspected construction noise from Anderson Construction Site at restricted hour (7pm to 7am). | It is confirmed by CWSTVJV and checked against the site diary that no construction activities were carried out after 19:00 at the subject site. Therefore, the complaint about noise nuisance during night time should not be related to the Project. | no comment by IEC on 10 Jan 2018 | TCS00864/16/300/F0118 |
| 20 | 20-Dec-17 | 21-Dec-17 | Anderson Road Quarry site | Resident of On Tat Estate | Dust | EPD | NA | 投訴安達臣道信和地盤水車已經壞了十多天， 一直無灑水，四周非常大塵。 投訴人住於安達邨，投訴安達臣道石礦場有大地盤，地盤大車工作時間不停出入揚起沙塵，吹到安達邨，影響空氣環境，要求部門到場視察。 | CWSTVJV has implemented dust mitigation measures to eliminate the inconvenience caused to the nearby resident. It is considered that the complaint was an isolated case due to malfunction of water tanker and CWSTVJV has promptly rectified the deficiency. As advised by CWSTVJV, another water tanker will be deployed in mid-January 2018 to enhance the dust suppression measures throughout the construction site. | no comment by IEC on 25 Jan 2018 | TCS00864/16/300/F0121 |
| 21 | 28-Dec-17 | 10-Jan-18 | Anderson Road Quarry site | Resident of Sau Mau Ping Estate | Construction Noise | CE's office | NA | 日間及凌晨均聽到轟隆聲的噪音及震動，懷疑是由附近工程引起 | ET has conducted an ad-hoc noise measurement for Leq (30min) in the complainant's flat in the monitoring of 17 January 2018.It was noted that the complainant's flat is not in direct line of sight to the Anderson Road Quarry Site. The measurement noise | no comment by IEC on 8 Feb 2018 | TCS00864/16/300/F0129 |

| Log ref. | Date of Complaint | Date of Received by ET | Complaint Location | Complainant | Complaint nature | Channel | Ref. no. | Complaint details | Follow up action | Status | Investigation Report Ref. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | result was below the Limit Level under the EM&A Programme. Moreover, it is confirmed by CWSTVJV and checked against the site diary that no construction activities were carried out during restricted hour at the subject site. Therefore, the complaint about noise nuisance during restricted hour should not be related to the Project. | | |
| 22 | 15-Jan-18 | 15-Jan-18 | Anderson Road Quarry site | Resident of Chun Tat House of On Tat Estate, 40/F | Construction Noise | SPRO mobile | NA | She is irritated by the construction noise of breaking rock for a long time and strongly requested to know exactly when will be the completion date of the breaking rock part of works opposite to Chun Tat House. She said we should do more on the mitigation measures because our site is very close to the residents nearby. | CWSTVJV has implemented noise mitigation measures to reduce the noise impact to the nearby resident. According to the impact noise monitoring result obtained in January 2018, there were no breaches of EM&A requirement. However, to eliminate the inconvenience caused to the nearby resident, CWSTVJV should properly maintain the noise mitigation measures as appropriate. Since the works were carried out within the non-restricted hours, it is considered that the works under the project did not breach the Noise Control Ordinance. | no comment by IEC on 8 Feb 2018 | TCS00864/16/300/F0130 |
| 23 | 1-Feb-18 | 2-Feb-18 | Anderson Road Quarry site | Resident of On Tai Estate (referred by Mr. Lam Wai) | Construction Noise | SPRO hotline | NA | "智泰對出，白天噪音過大，可否加裝隔音板?高層受影響" | The Environmental Team has conducted an ad-hoc noise measurement for Leq(30min) at the corridor of 22/F of Chi Tai House on 2 February 2018 facing the construction site. The measurement noise result was 65dB(A) which below the Limit Level under the EM&A Programme. In our investigation, CWSTVJV has implemented noise mitigation measures to reduce the noise impact to the nearby resident. According to the impact noise monitoring result obtained in January 2018, there were no breaches of EM&A requirement. | no comment by IEC on 22 Feb 2018 | TCS00864/16/300/F0137 |
| 24 | 1-Feb-18 | 2-Feb-18 | Anderson Road Quarry site | Resident of Shing Tat House (referred by Mr. Hsu Yau Wai) | Construction Noise | SPRO hotline | NA | Mr. Hsu reported that some disturbing noise was heard after 6:00 pm from the site near Shing Tat House of On Tat Estate. | AECOM has liaised with Mr. Hsu on 2 February 2018 for the complaint matter and he reported to AECOM that the noise was generated until 7:00 pm on 1 February 2018. 3. As advised by Contractor of Contract 1, breaking works at USRT area which opposite to Shing Tat House was only carried out from 8:00 to 18:00. However, rock breaking at System A was extended to 19:00 on 1 February 2018. As noise mitigation measures, noise barriers were erected for the works area. Further to the complaint case, CWSTVJV would seek for other quiet work method such as using drilling machine to reduce noise level and speed up the rock breaking process, so that to reduce the noise intensity level and the duration of exposure. | no comment by IEC on 28 Feb 2018 | TCS00864/16/300/F0140 |
| 25 | 28-Feb-18 | 28-Feb-18 | Anderson Road Quarry site | Resident of Shing Tat House | Construction Noise | EPD | NA | 安達邨誠達樓居民, 投訴人是返夜班, 一年半以來長期受對出地盤日間掻石仔噪音滋擾, 由於單位與地盤太近, 堅持環保署跟進及回覆如何處理及減低噪音, 他亦要求知道何日完工. | Breaking works at Underground Stormwater Retention Tank area which opposite to Shing Tat House was carried out from 8:00 to 18:00. The Contractor has implemented noise mitigation measures to reduce the noise impact to the nearby resident. It was advised that the rock breaking works shall tentatively be completed by end of April and it is believe that the noise impact should be minimized. Since the works were carried out within the non-restricted hours and noise monitoring noise were within acceptable level, it is considered that the works under the project did not breach the Noise Control Ordinance. | no comment by IEC on 19 Mar 2018 | TCS00864/16/300/F0143 |

| Log ref. | Date of Complaint | Date of Received by ET | Complaint Location | Complainant | Complaint nature | Channel | Ref. no. | Complaint details | Follow up action | Status | Investigation Report Ref. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 26 | 11-Apr-18 | 12-Apr-18 | Anderson Road Quarry site | Resident of HimTat House | Construction Noise | SPRO Hotline | NA | Mr. Hui Yau Wai reported that the noise irritation was becoming more severe recently and asked about the completion date of the works close to Him Tat House. The resident suspected that the noise comes from piling works nearby. | In our investigation, since construction noise was generating from other construction site next to Him Tat House, it is considered that the complaint is due to cumulative noise generated by both construction sites. However, CWSTVJV should properly provide the noise mitigation measures at works area in System B to minimize the noise impact to the resident nearby. As advised by CWSTVJV on 20 April 2018, noise barrier was being erected at works area in System B as noise mitigation measures. According to the site photo, it is considered that the coverage of noise barrier is not sufficient and CWSTVJV should enhance the measure as far as practicable. The implementation of noise mitigation measures will be kept in view in subsequent site inspection. | no comment by IEC on 7 May 2018 | TCS00864/16/300/F0160b |
| 27 | 25-Apr-18 | 7-May-18 | Junction of Hiu Kwong Street and Hiu Ming Street | A school but name of school not disclosed | Construction Noise | EPD | NA | This case is considered as an enquiry and no investigation is required under the EM&A Programme. | | NA | NA |
| 28 | 18-May-18 | 24-May-18 | Anderson Road Quarry Site | Undisclosed | Construction Noise | EPD | NA | 投訴人指安達臣道石礦場地盤(NE/2016/01)在入夜 19:00 後仍見到有長臂喉工程車在運作，及持續產生大噪音及閃燈，非常擾民。 | As advised by CWSTVJV and confirmed by RE/AECOM, there were no construction activities carried out after 19:00 and concreting was completed before 19:00. It is concluded that the retracting process is not a general construction work using Powered Mechanical Equipment and complaint was an isolated case due to misunderstanding of the site operation. To prevent similar incidents in future, CWSTVJV has recommended several mitigation measures. | no comment by IEC on 30 July 2018 | TCS00864/16/300/F0174b |
| 29 | 25-Jun-18 | 19-Jul-18 | Pedestrian Connectively E8 under Contract 3 | Kwun Tong DC member Ms. So Lai-chun | Waste Management | CEDD | NA | A public complaint was referred from CEDD on 4 July 2018 regarding accumulation of dead leaves and branches found at slope (GLA-TNK 2458) near Hiu Yuk Path on 25 June 2018. The complainant requested the relevant department to clear the leaves and branch asap | CW-CMGC-JV has immediately clear the dead leaves and maintain the site cleanliness. Since the construction work has not yet commenced and the dead leaves and overgrown branches were not related project works, it is considered that the complaint is not valid the project. | no comment by IEC on 24 Sep 2018 | TCS00864/16/300/F0189b |
| 30 | 22-Aug-18 | 29-Aug-18 | Hong Wah Court | Resident of Hong Wah Court | Construction Noise | 1823 Hotline | NA | 投訴人指馬游塘區堆填區往將軍澳方向行車入口因配合項目需要而進行移除山坡工程，但其鑽地鑿石的噪音嚴重影響藍田康雅苑*居民，要求有關部門跟進。<br>*註:投訴人於 2018 年 8 月 27 日更正指受影響屋苑應為藍田康華苑。 | to reduce the inconvenience caused to the nearby resident, Kwan On should properly maintain the noise mitigation measures as appropriate, such as maintain good site practice including intermittent use of machine and plant and Sequencing operation of construction plant equipment. Since the works were carried out within the non-restricted hours, it is considered that the works under the project did not breach the Noise Control Ordinance. | no comment by IEC on 7 Sep 2018 | TCS00864/16/300/F0196a |

| Log ref. | Date of Complaint | Date of Received by ET | Complaint Location | Complainant | Complaint nature | Channel | Ref. no. | Complaint details | Follow up action | Status | Investigation Report Ref. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 31 | 26-Feb-18 | 31-Jul-18 | Anderson Road Quarry Site | Undisclosed | Construction Noise | EPD | NA | 安達邨誠達樓後面地盤，2 月 26 日晚，晚上 7 時後，還在落石屎，相片拍攝時間大概晚上 9 時半，一直至晚上十一時五十分還有工程車在地盤行駛。影響居民休息。 | According to the site diary which countersigned by RE, there was no concreting work carried out after 18:00 and the construction activities conducted during restricted hours with valid CNP were completed at 23:00. It is considered that the complaint was not valid to the Project. Nevertheless, CWSTVJV was reminded that in case of any work activities need to be carried out during restricted hours, CWSTVJV should strictly follow the requirements specified in the valid CNP. | no comment by IEC on 10 Oct 2018 | TCS00864/16/300/F0197a |
| 32 | 6-Sep-18 | 7-Sep-18 | Tsui Yeung House | Resident of Tsui Yeung House | Construction Noise | Verbal | NA | Mr. CHENG Keung-fung complained that the contractor has conducted the noisy works such as rock excavation beyond the normal hours. | Kwan On has implemented noise mitigation measures to reduce the noise impact to the nearby resident. As advised by Kwan On, the rock breaking works shall tentatively be completed by end of December 2018 and the mitigation measures will implemented continuously during slope construction work and the slope construction will be carried out within the working hours at Portion 2. Since the works were carried out within the non-restricted hours, it is considered that the works under the project did not breach the Noise Control Ordinance. | no comment by IEC on 22 Oct 2018 | TCS00864/16/300/F0201 |
| 33 | 24-Oct-18 | 25-Oct-18 | E3 | Kwun Tong DC member Ms. So Lai-chun | Construction Noise | Whatsapp Message | NA | KTDC member, Ms. Ann So, complaining the noise of the breaker at E3 | As advised by the Contractor, the acoustic material wrapped on the breaker was worn-out on 24 October 2018 and replacement of new acoustic materials has been installed on the breaker immediately on 25 October 2018. The rock breaking works shall tentatively be completed to the road level in the middle of November 2018 and the mitigation measures will implemented continuously during slope construction work and the slope construction will be carried out within the working hours at Portion 2. It is considered the complaint was an isolate case. | no comment by IEC on 23 Nov 2018 | TCS00864/16/300/F0209a |
| 34 | 12-Nov-18 | 13-Nov-18 | Anderson Road Quarry Site | Resident of ChingTat House(referredby Mr. Hui Yau Wai) | Construction Noise | SPRO Hotline | NA | Mr. Hui reported that he received complaint from a resident living in Ching Tat House about noise nuisance recently. Mr. Hui asked if project team can arrange some noise monitoring to check the noise level at the concerned flat or the same level at Ching Tat House. | The SPRO contacted Mr. Hiu and explained to him about the purpose and benefits of the tunnel to the residents nearby and the expected date of completion of the tunnel will be earlier than 2020. Moreover, the noise mitigation measures had implemented to reduce the noise level effectively and the work progress will be closely updated to nearby stakeholders to enhance communication. Mr. Hiu satisfied with the reply from SPRO and he agreed that the proposed noise monitoring in Ching Tat House was not needed. Since the works were conducted within approved normal hours with implementation of noise mitigation measures, there were no breaches of legislative requirement. | no comment by IEC on 12 Dec 2018 | TCS00864/16/300/F0222a |
| 35 | 14-Nov-18 | 14-Nov-18 | Anderson Road Quarry Site | Undisclosed | Light and Noise | EPD | NA | 凌晨 1 時，地盤仍有大光燈正射民居和機器移動聲音，影響附近居民睡眠及違反環保條例。 | CWSTVJV immediately adjusted the angle and brightness of the lighting to minimize the nuisance to the resident nearby. In response to the complaint, CWSTVJV immediate carried out remedial action to minimize the nuisance to the public. It was considered that complaint for noise generated by machine moving was an isolated case. CWSTVJV was reminded to closely monitor the plant use and sequence of night work and do not to violate CNP conditions. | no comment by IEC on 3 Jan 2019 | TCS00864/16/300/F0223a |

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| 36 | 13-Nov-18 | 14-Nov-18 | Anderson Road Quarry Site | Undisclosed | Noise and dust | 1823 | NA | Complainant requested to postpone the starting time of construction work at project site and also to solve the problem of construction noise and dust. | In our investigation, acoustic barrier and site hoarding were in place along the works area. No noticeable noise and dust impact was observed during the site inspection. As advised by CWSTVJV, the normal working hour of the construction site is 8am to 6pm and there were no violation of the relevant regulations. The senior public relation officer contacted the complainant Ms. Ma on 26 November 2018 to explain the site situation and she was satisfied with the reply. Investigation Report has been completed by ET without comment from IEC. | no comment by IEC on 18 Feb 2019 | TCS00864/16/300/F0224 |
| 37 | 9-Dec-18 | 12-Dec-18 | Anderson Road Quarry Site | Undisclosed | Construction noise | 1823 | 2-4927907305 | 1823 has referred a case to CEDD on 10 December 2018, which the complainant complained that construction noise was generated from project site on Sunday and was affecting the resident at Hau Tat House, On Tat Estate. The complainant requested follow up action from related department as soon as possible. | In our investigation based on the information provided by CWSTVJV, there was no site activities undertaken at site access road as concerned by the complainant. The construction work carried out on Sunday was fully compliance with the CNP requirement. In response to the complaint, CWSTVJV was reminded to closely monitor the plant use and sequence of night work and do not to violate CNP conditions. | no comment by IEC on 10 Jan 2019 | TCS00864/16/300/F0230a |
| 38 | 19-Dec-18 | 27-Dec-18 | Anderson Road Quarry Site | Undisclosed | Construction noise | 1823 | 2-4948074127 | 1823 has referred a case to CEDD on 27 December 2018, which the complainant complained that noise barriers near the round-about at On Sau Road were not enough, and construction noise generated from the project site was affecting the resident at Ming Tai House, On Tai Estate. The complainant requested follow up actions from related department as soon as possible. | Joint site inspection was carried out on 3 January 2019 the status of implemented mitigation measures provided by CWSTVJV was inspected. It was observed that noise mitigation measures including temporary noise barrier, acoustic mat and wrapped by acoustic materials are implemented on site. However, CWSTVJV was advised to extend the coverage of noise barrier as far as practicable and fully enclose the concerned works area which has been completed on 15 January 2019. Since the works were carried out within the non-restricted hours, it is considered that the works under the project did not breach the Noise Control Ordinance. | no comment by IEC on 31 Jan 2019 | TCS00864/16/300/F0237a |
| 39 | 24-Jan-19 | 29-Jan-19 | Anderson Road Quarry Site | Undisclosed | wastewater | Referred from DSD | NA | DSD has referred a case to CEDD on 24 January 2019 regarding suspended illegal discharge of cementitious slurry from construction site of Development of ARQ Site to nearby Public Stormwater Drainage System. | In our investigation, the concerned catchpit and U-channel mainly received the runoff from Po Lam Road as well as the discharge from the Anderson Road Quarry Site. It is suspected that the mud and silt found on the downstream has been accumulated over time particularly by rainstorm as well as routine discharge from construction site. As remedial action, CWSTVJV immediately clean the affected area where accessible. Nevertheless, in order to protection the watercourse at downstream of the construction site, CWSTVJV has some enhancement measures. | no comment by IEC on 29 Mar 2019 | TCS00864/16/300/F0248a |
| 40 | 30-Jan-19 | 30-Jan-19 | Anderson Road Quarry Site | Undisclosed | noise | SPRO hotline | NA | A public complaint was received by SPRO hotline on 30 January 2019 regarding the construction noise near Ma Yau Tong Village and requested to add noise barrier as soon as possible. | In our investigation, CWSTVJV had provided the noise mitigation measures to minimize the noise impact to the resident nearby. The impact monitoring result obtained at Ma Yau Tong Village revealed that the construction noise were within acceptable level. Since the works were conducted within approved normal hours with implementation of noise and dust mitigation measures, there were no breaches of legislative requirement. | no comment by IEC on 15 Mar 2019 | TCS00864/16/300/F0249a |

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| 41 | 15-Feb-19 | 25-Feb-19 | Anderson Road Quarry Site | Undisclosed | noise | 1823 | 2-494807 4127 | 1823 has referred a case to CEDD on 15 February 2019, which the complainant complained about the construction noise generated from the CEDD site near 法源寺 (Ma Yau Tong Village). The complainant requested for the details of works and the completion date, the complainant also requested CEDD to use other construction methods in order to re | In response to the complainant, CWSTVJV has proposed alterative quiet work method to alleviate the noise impact to the public. They will schedule the noisy activities to be carried out after 10am as far as practicable to minimize the impact to resident nearby, given that not affecting the site progress. Moreover, the coverage of acoustic barriers will be extended in view of the works programme. | no comment by IEC on 29 Mar 2019 | TCS00864/16/300/F0251a |
| 42 | 21-Feb-19 | 25-Feb-19 | Anderson Road Quarry Site | Undisclosed | noise | EPD | NA | The resident from Sau Hong House complained that the noise from the Anderson Road Quarry construction site has gotten worse. In addition, sometimes even after midnight there are noise coming from the site. With the echo produces from the environment, this is not helping at all. Really a big disturbance to the residence in the area. The complainant suspecting the sound proof measure has lessen as time goes. Follow action is requested. | In our investigation, CWSTVJV has implemented noise mitigation measures to reduce the noise impact to the nearby resident. However, to eliminate the inconvenience caused to the nearby resident, CWSTVJV should properly maintain the noise mitigation measures as appropriate, such as maintain good site practices such as intermittent use of machine and plant and Sequencing operation of construction plant equipment. Since the works were carried out within the non-restricted hours, it is considered that the works under the project did not breach the Noise Control Ordinance.erway by ET. | no comment by IEC on 28 Mar 2019 | TCS00864/16/300/F0250 |
| 43 | 21-Feb-19 | 26-Feb-19 | Anderson Road Quarry Site | Undisclosed | noise | received by DEVB and referred to CEDD | NA | A public complaint was received by DEVB and referred to CEDD on 25 February 2019 regarding on the noise generated from the construction works of the Anderson Road Quarry Site affecting a local resident residing at the Anderson Road Squatter Area | Additional acoustic mat has been erected in front of the Squatter Area to minimize the noise impact. Noise mitigation measures such as acoustic barriers erected along the works area and breaker head wrapped with acoustic material were implemented continually. Alterative quiet work method was adopted such as drilling the hard rock before the breaking work to reduce the breaking duration. In our investigation, CWSTVJV had enhanced the noise mitigation measures to ease the complainant's concerns. CWSTVJV will continually implement the noise mitigation measures to reduce to noise impact to the public. | no comment by IEC on 29 Mar 2019 | TCS00864/16/300/F0252a |
| 44 | 1-Mar-19 | 26-Feb-19 | E3 of Contract 2 | Undisclosed | noise | CEDD | NA | A complaint is forwarded by CEDD which was received by KTDC member Mr CHENG Keung Fung from the residents of Tsui Yeung House( 翠楊樓 ) about the noise nuisance generated and the working time up to 7:00 pm from the rock excavation of E3 lift tower. Follow up action is requested. | The representative of the engineering team explained to Mr. Cheng about the project's details and concerned site was being constructed for the future pedestrian connection facilities. The related stone drilling process is expected to be completed in mid-April to end of April 2019. Mr. Cheng was satisfied with the rapid response from CEDD and the engineering team. In our investigation, Kwan On has implemented noise mitigation measures to reduce the noise impact to the nearby resident. Since the works were carried out within the non-restricted hours, it is considered that the works under the project did not breach the Noise Control Ordinance. | no comment by IEC on 6 May 2019 | TCS00864/16/300/F0264 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| 45 | 16-Jun-19 | 18-Jun-19 | Anderson Road Quarry Site | Undisclosed | noise | EPD | NA | EPD referred a case to CEDD on 17 June 2019 regarding the construction noise heard at On Tat Estate on Sunday. | The Contractor explained that general cleaning by water jet was carried out in the construction site on the concerned day. Since the work did not involve the use of Powered Mechanical Equipment (PME), it would not violate the noise control ordinance. | no comment by IEC on 21 August 2019 | TCS00864/16/300/F0301a |
| 46 | 12-Jul-19 | 15-Jul-19 | Anderson Road Quarry Site | Undisclosed | dust | EPD | NA | On 12 July 2019, a complaint was received by EPD regarding the dust impact to the residents at Po Tat Estate and On Tat Estate due to the dust emission at Anderson Road Quarry site. | In our investigation, CWSTVJV has implemented dust mitigation measures to eliminate the inconvenience caused to the nearby resident and status of implementation of dust mitigation measures was considered effective based on the site observation. Moreover, there was mostly rainy day throughout June and July 2019 in typical rainy season in Hong Kong and the dust impact was considered not significant in addition to the dust mitigation measures implemented provided by the Contractor. Nevertheless, the ET will closely monitor the environmental performance and dust mitigation measures in subsequent site inspection. | no comment by IEC on 12 August 2019 | TCS00864/16/300/F0292b |
| 47 | 6-Aug-19 | 14-Aug-19 | Work Area Portion 2 E3 (Slope of Hiu Ming Street opposite of Tsui Yeung House) | 翠屏 (北)邨物業服務辦事處 | Noise | 1823 | NA | A public complaint was received by 1823 on 6 August 2019 relating to the noise generated from construction work at the lift tower site (Slope E3) at Hui Ming Street from the residents of Tsui Yeung House. The complainant expressed that the construction works has been undertaken for 2 years and generated construction noise from 8am every day, which causing serious nuisance to the nearby residents. | In our investigation, Kwan On has implemented noise mitigation measures to reduce the noise impact to the nearby resident. Nevertheless, since the construction site is close to the residential area, adequate noise mitigation measures shall be provided to reduce to noise nuisance to the public. It is concluded that the complaint was valid to the contract. As the works were carried out within the non-restricted hours, it is considered that the works under the contract did not breach the Noise Control Ordinance. | no comment by IEC on 16 Sep 2019 | TCS00864/16/300/F0310a |
| 48 | 15-Oct-19 | 18-Oct-19 | Work Area Portion 6 (Tseung Kwan O Tunnel Bus-Bus Interchange Pedestrian Connectivity Facilities E12) | Mr. Ng | Noise | 1823 | NA | A public complaint was received by 1823 on 15 October 2019 relating to the noise generated from construction work at Tseung Kwan O Tunnel Bus to Bus Interchange Pedestrian Connectivity Facilities E12. The complainant expressed that the construction noise was generated from breaking work at 8:20 am without noise mitigation measure, which causing nuisance to the nearby residents. | In our investigation, Kwan On has implemented noise mitigation measures to reduce the noise impact to the nearby resident. Nevertheless, since the construction site is close to the residential area, adequate noise mitigation measures shall be provided to reduce to noise nuisance to the public. As the works were carried out within the non-restricted hours, it is considered that the works under the contract did not breach the Noise Control Ordinance. Kwan On was reminded to implement the mitigation measures as far as practicable as recommended in the EM&A Programme. The Investigation report is under reviewed by IEC. | -- | TCS00864/16/300/F0326a |

# Appendix N

# Implementation Status for Water Quality Mitigation Measures

## Water Quality Mitigation Measure



Perimeter channel to collect site surface



Exposed surface was covered by cement motar



Q1: Temporary Water Reservoir 1



Q2: Temporary Water Reservoir 3



Q3: Wastewater treatment facility 110 cu. m. + AquaSed of 60 cu. m. per hour



Q5: Wastewater treatment facility 11 cu. m. + AquaSed of 60 cu. m. per hour



Q6: Wastewater treatment facility 24 cu. m.



Q7: Wastewater treatment facility AquaSed of 60 cu. m. per hour