**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 (JANUARY 2022)

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

| Date | Reference No. | Prepared By | Certified By |
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| Version | Date | Remarks |
|---|---|---|
| 1 | 22 February 2022 | First Submission |
| | | |
| | | |

## 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 has been divided to three CEDD contracts including Contract NE/2016/01 (Contract 1), Contract NE/2016/05 (Contract 2) and Contract NE/2017/03 (Contract 3). As advised by the Resident Engineer (RE), the commencement date of Contract 1 was 21 December 2016 and the major construction works has been commenced on 12 April 2017. The commencement date 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. In addition, variation order for extend service scope to E5, E6, E7 and C10 under Contract ED/2019/02 (Contract 5) was issued by AECOM. The commencement date of Contract 5 was on 30 March 2021. Moreover, variation order for extend service under Contract ED/2020/02 (Contract 4) was issued by AECOM. The commencement date of Contract 4 was on 27 September 2021.

ES04 This is the **58th** monthly EM&A report presenting the monitoring results and inspection findings for the period from **1 to 31 January 2022** (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 | **6** | **108** |
| | 24-hour TSP | **4** | **24** |
| Construction Noise | $L_{eq(30min)}$ Daytime for Contract NE/2016/01 | **7** | **34** |
| | $L_{eq(30min)}$ 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 and no 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 |

| Environmental Aspect | Monitoring Parameters | Action Level | Limit Level | Event & Action | | |
|---|---|---|---|---|---|---|
| | | | | NOE Issued | Investigation | Corrective Actions |
| Construction Noise | $L_{eq(30min)}$ Daytime | 0 | 0 | 0 | NA | NA |

**ENVIRONMENTAL COMPLAINT**

ES07 In the reporting period, no environmental complaint was received.

**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 There is no reporting change in the Reporting Period.

**SITE INSPECTION**

ES10 In this Reporting Period, joint site inspections to evaluate the site environmental performance for ***Contract 1*** were carried out by the RE, ET and Contractor on **6, 11, 18, 25 and 31 January 2022** in which IEC joined the site inspection with SSEMC on **6 January 2022**. No non-compliance was noted during the site inspection.

ES11 In this Reporting Period, joint site inspections to evaluate the site environmental performance for ***Contract 2*** were carried out by the RE, ET and Contractor on **5, 12, 19 and 26 January 2022** in which IEC joined the site inspection on **26 January 2022**. No non-compliance was noted during the site inspection.

ES12 In this Reporting Period, joint site inspections to evaluate the site environmental performance for ***Contract 3*** were carried out by the RE, ET and Contractor on **7, 14, 18 and 28 January 2022** in which IEC joined the site inspection with SSEMC on **18 January 2022.** No non-compliance was noted during the site inspection.

ES13 In this Reporting Period, joint site inspections to evaluate the site environmental performance for ***Contract 4*** were carried out by the RE, ET and Contractor on **5, 12, 19 and 26 January 2022** in which IEC joined the site inspection with SSEMC on **19 January 2022.** No non-compliance was noted during the site inspection.

ES14 In this Reporting Period, joint site inspections to evaluate the site environmental performance for ***Contract 5*** were carried out by the RE, ET and Contractor on **6, 13, 20 and 28 January 2022** in which IEC joined the site inspection with SSEMC on **28 January 2022.** No non-compliance was noted during the site inspection.

**FUTURE KEY ISSUES**

ES15 During 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.

ES16 Since construction site is highly visible to the resident at nearby estates, the Contractors should pay special attention on potential environmental impact generated by the site activities and adhere implement adequate air quality and noise mitigation measures as far as practicable to reduce the impact to the public.

ES17 Construction noise is one of the key environmental issues during construction work of the Project. Noise mitigation measures such as using quiet plants and noise barriers shall be implemented where practicable according to the EM&A manual.

ES18 In addition, the Contractors should ensure all effluent discharge shall be fulfilled the Technical Memorandum of Effluent Discharged into Drainage and Sewerage Systems, inland and Coastal Waters criteria or relevant discharge license requirement.

# Table of Contents

**1. INTRODUCTION 1**
1.1 PROJECT BACKGROUND 1
1.2 REPORT STRUCTURE 1

**2. PROJECT ORGANIZATION AND CONSTRUCTION PROGRESS 3**
2.1 CONSTRUCTION CONTRACT PACKAGING 3
2.2 PROJECT ORGANIZATION 4
2.3 CONSTRUCTION PROGRESS 4

**3. SUMMARY OF IMPACT MONITORING REQUIREMENTS 13**
3.1 GENERAL 13
3.2 MONITORING PARAMETERS 13
3.3 MONITORING LOCATIONS 13
3.4 MONITORING FREQUENCY AND PERIOD 15
3.5 MONITORING EQUIPMENT 16
3.6 MONITORING METHODOLOGY 16
3.7 DERIVATION OF ACTION/LIMIT (A/L) LEVELS 18
3.8 DATA MANAGEMENT AND DATA QA/QC CONTROL 19

**4. AIR QUALITY MONITORING 21**
4.1 GENERAL 21
4.2 RESULTS OF AIR QUALITY MONITORING 21

**5. CONSTRUCTION NOISE MONITORING 23**
5.1 GENERAL 23
5.2 NOISE MONITORING RESULTS IN REPORTING MONTH 23

**6. WASTE MANAGEMENT 25**
6.1 GENERAL WASTE MANAGEMENT 25
6.2 RECORDS OF WASTE QUANTITIES 25

**7. SITE INSPECTION 27**
7.1 REQUIREMENTS 27
7.2 FINDINGS / DEFICIENCIES DURING THE REPORTING MONTH 27

**8. ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE 30**
8.1 ENVIRONMENTAL COMPLAINT, SUMMONS AND PROSECUTION 30

**9. IMPLEMENTATION STATUS OF MITIGATION MEASURES 32**
9.1 GENERAL REQUIREMENTS 32
9.2 TENTATIVE CONSTRUCTION ACTIVITIES IN THE COMING MONTH 32
9.3 KEY ISSUES FOR THE COMING MONTH 35

**10. CONCLUSIONS AND RECOMMENDATIONS 37**
10.1 CONCLUSIONS 37
10.2 RECOMMENDATIONS 37

## LIST OF TABLES

TABLE 2-1 STATUS OF ENVIRONMENTAL LICENSES AND PERMITS OF THE CONTRACT 1
TABLE 2-2 STATUS OF ENVIRONMENTAL LICENSES AND PERMITS OF THE CONTRACT 2
TABLE 2-3 STATUS OF ENVIRONMENTAL LICENSES AND PERMITS OF THE CONTRACT 3
TABLE 2-4 STATUS OF ENVIRONMENTAL LICENSES AND PERMITS OF THE CONTRACT 4
TABLE 2-5 STATUS OF ENVIRONMENTAL LICENSES AND PERMITS OF THE CONTRACT 5
TABLE 3-1 SUMMARY OF EM&A REQUIREMENTS
TABLE 3-2 IMPACT MONITORING STATIONS - AIR QUALITY
TABLE 3-3 IMPACT MONITORING STATIONS - CONSTRUCTION NOISE
TABLE 3-4 ADDITIONAL IMPACT MONITORING STATIONS – CONSTRUCTION NOISE
TABLE 3-5 AIR QUALITY MONITORING EQUIPMENT
TABLE 3-6 CONSTRUCTION NOISE MONITORING EQUIPMENT
TABLE 3-7 ACTION AND LIMIT LEVELS FOR AIR QUALITY MONITORING
TABLE 3-8 ACTION AND LIMIT LEVELS FOR CONSTRUCTION NOISE
TABLE 4-1 SUMMARY OF 24-HOUR AND 1-HOUR TSP MONITORING RESULTS (AMS-1)
TABLE 4-2 SUMMARY OF 24-HOUR AND 1-HOUR TSP MONITORING RESULTS (AMS-2)
TABLE 4-3 SUMMARY OF 24-HOUR AND 1-HOUR TSP MONITORING RESULTS (AMS-3)
TABLE 4-4 SUMMARY OF 24-HOUR AND 1-HOUR TSP MONITORING RESULTS (AMS-5)
TABLE 4-5 SUMMARY OF 24-HOUR AND 1-HOUR TSP MONITORING RESULTS (AMS-6)
TABLE 4-6 SUMMARY OF 24-HOUR AND 1-HOUR TSP MONITORING RESULTS (AMS-7)
TABLE 5-1 SUMMARY OF CONSTRUCTION NOISE MONITORING RESULTS
TABLE 5-1a SUMMARY OF CONSTRUCTION NOISE MONITORING RESULTS
TABLE 5-2 SUMMARY OF CONSTRUCTION NOISE MONITORING RESULTS
TABLE 6-1 SUMMARY OF QUANTITIES OF INERT C&D MATERIALS
TABLE 6-2 SUMMARY OF QUANTITIES OF C&D WASTES
TABLE 7-1 SITE OBSERVATIONS OF CONTRACT 1
TABLE 7-2 SITE OBSERVATIONS OF CONTRACT 2
TABLE 7-3 SITE OBSERVATIONS OF CONTRACT 3
TABLE 7-4 SITE OBSERVATIONS OF CONTRACT 4
TABLE 7-5 SITE OBSERVATIONS OF CONTRACT 5
TABLE 8-1 STATISTICAL SUMMARY OF ENVIRONMENTAL COMPLAINTS
TABLE 8-2 STATISTICAL SUMMARY OF ENVIRONMENTAL SUMMONS
TABLE 8-3 STATISTICAL SUMMARY OF ENVIRONMENTAL PROSECUTION
TABLE 9-1 ENVIRONMENTAL MITIGATION MEASURES

## LIST OF APPENDICES

APPENDIX A LAYOUT PLAN OF THE PROJECT
APPENDIX B PROJECT ORGANIZATION STRUCTURE
APPENDIX C THREE-MONTHS ROLLING CONSTRUCTION PROGRAMME
APPENDIX D MONITORING LOCATIONS FOR IMPACT MONITORING
APPENDIX E CALIBRATION CERTIFICATE OF MONITORING EQUIPMENT AND HOKLAS-ACCREDITATION CERTIFICATE OF THE TESTING LABORATORY
APPENDIX F EVENT AND ACTION PLAN
APPENDIX G IMPACT MONITORING SCHEDULE
APPENDIX H DATABASE OF MONITORING RESULT
APPENDIX I GRAPHICAL PLOTS FOR MONITORING RESULT

APPENDIX J METEOROLOGICAL DATA
APPENDIX K WASTE FLOW TABLE
APPENDIX L IMPLEMENTATION SCHEDULE FOR ENVIRONMENTAL MITIGATION MEASURES
APPENDIX M COMPLAINT LOG
APPENDIX N IMPLEMENTATION STATUS FOR WATER QUALITY MITIGATION MEASURES

# 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.

1.1.2 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 Environmental Impact Assessment (EIA) Report of Development of Anderson Road Quarry and other relevant statutory requirements.

1.1.3 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).

1.1.4 To facilitate the project management and implementation, the Service Contract has been divided to three CEDD contracts including Contract NE/2016/01 (Contract 1), Contract NE/2016/05 (Contract 2) and Contract NE/2017/03 (Contract 3). As advised by the Resident Engineer (RE), the commencement date of Contract 1 was 21 December 2016 and the major construction works has been commenced on 12 April 2017. The commencement date 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. In addition, variation order for extend service scope to E5, E6, E7 and C10 under Contract ED/2019/02 (Contract 5) was issued by AECOM. The commencement date of Contract 5 was on 30 March 2021. Moreover, variation order for extend service under Contract ED/2020/02 (Contract 4) was issued by AECOM. The commencement date of Contract 4 was on 27 September 2021.

1.1.5 According to the Approved EM&A Manual, air quality and noise monitoring are required to be monitored during the construction phase of the Project. As part of the EM&A program, baseline monitoring is required to determine the ambient environmental conditions. Baseline monitoring including air quality and noise conducted between ***January*** and ***April 2019*** at all designated monitoring locations were before construction work commencement. Furthermore, the Baseline Monitoring Report which verified by the Independent Environmental Checker (hereinafter referred as "the IEC") has been submitted to Environmental Protection Department **(**EPD) on ***9 May 2017*** for endorsement.

1.1.6 This is the **58th** monthly EM&A report presenting the monitoring results and inspection findings for the period from **1 to 31 January 2022 (**hereinafter referred as "Reporting Period").

## 1.2 1.2 REPORT STRUCTURE

1.2.1 The monthly 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 5 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.

*Contract 4 (Contract No. ED/2020/02)*

2.1.5 The commencement date of Contract 4 is on 27 September 2021 and the major Scope of Work of the Contract 4 is listed below:

- Construction of hard landscaping and other ancillary works (e.g. paver footpath, planter walls, benches, lighting etc.);
- Construction of soft landscaping works;
- Lighting, irrigation, electrical and mechanical engineering works within the landscaping area;
- Construction of landscape deck; and
- Electrical and mechanical works for underground water treatment facilities and pumping system for Regional Open Space and Artificial Flood Attenuation Lake.

*Contract 5 (Contract No. ED/2019/02)*

2.1.6 The commencement date of Contract 5 is on 30 March 2021 and the major Scope of Work of the Contract 5 is listed below:

- Construction of two-way escalator link between Sau Mau Ping Road and the existing footbridge to Po Tat Estate;
- Construction of two-way escalator link between Sau Mau Ping South Estate and the existing footbridge to Sau Mau Ping Road;
- Construction of footbridge, 3m, clear width, with and about 20m high lift tower between Hiu Kwong Street and the podium of Sau Ming House, Sau Mau Ping Estate;
- Construction of footbridge, 3m clear width, with an about 40m high lift tower between Sau Mau Ping Road and the podium of Po Tat Estate; and
- Ancillary works including associated civil, geotechnical, structural, electrical and mechanical engineering and landscaping works.

## 2.2 PROJECT ORGANIZATION

2.2.1 The project organization and contact details for Contracts 1, 2, 3, 4 and 5 are shown in ***Appendix B***.

## 2.3 CONSTRUCTION PROGRESS

2.3.1 The 3-month rolling construction programme for Contracts 1, 2, 3, 4 and 5 are shown in ***Appendix C***. The major construction activities conducted in the Reporting Period are summarized in below.

*Contract 1 (NE/2016/01)*

East Portal Area:

- RWA1C Bay 2 & 3 base slab completed and Bay 2 stem wall complete and formwork and rebar for bay 3 in progress.
- Buttress wall (left and right) construction works completed from 164mPD to 172mPD (LHS) and 164mPD to 170mPD (RHS).
- Construction of RWA1B Retaining Wall completed
- Rock cut slope A1

- Rock dowel at slope A1 164mPD to 169mPD level, drilling holes for rock dowel in progress 48/48nos completed.
- Installation of the cross-ducting pipes complete.
- Laying the WSD 150PE pipe at east portal carriageway and pressure test complete.
- Laying the 2nd road base bitumen complete.
- Bay 4 RWA1c drilling vertical dowel bar completed and L-shaped dowel bar for RWA1c Type 1 buttress wall total 21nos complete.
- Cast concrete of Pillar Box and Kiosk complete and install stone pitch completed
- Formworks for construction 900sc, catchpit and 1000mm downpipe at Slope A1 and 185mPD platform in progress

West Portal Area:

- Buttress wall (left) from 178.5mPD to 186.5mPD complete.
- Buttress wall (right) from 170 to 178mPD in progress at Slope A3 near West Portal.
- Slope A3, Construction of 200mPD, 186mPd and 178mPD berm in progress.

Underpass Tunnel:

- Tunnel Concrete Lining construction works (Total 25 Bays) included B1 with West portal structure and Bay 25 with East Portal structure, and progress upto Bay 24 (124m), Bay 25 and East Portal structure (excluding headwall) completed west portal structure completed and construction of headwall completed, construction of headwall at East Portal completed.
- Excavation for Box Culvert BC3 completed and structure works completed.
- Erection and installation of the VE Panel sub-frame in progress and 90% complete.
- Construction of mass concrete wall in underpass completed 260m/260m.
- Painting the 1st, 2nd & 3rd layer on lining structure completed.
- Installation of the profile barrier inside underpass (LHS and RHS) completed 260m/260m.
- Rock excavation of Manhole A4 and 900mm stormwater drainage pipe completed at East Portal and construction of manhole A4 with backdrop completed and laying of 900mm pipe completed.
- Excavation works for manhole R618 to R623 completed and installation of manholes R618 to R623 completed.
- Laying of 300mm thick drainage layer, 225mm thick subbase and geotextile complete.
- Laying road base bituminous insider underpass complete

Po Lam Road

- Excavation work in progress to install ducting pipes and draw pits and installation of k1 kerb in progress
- Removal the existing concrete pavement completed for installation of ducting crossing pipes.
- Reinstatement of the concrete carriageway at Po Lam road at stage 3 in progress.
- Re-build the modification catch pit at Po Lam road and Slope A1 complete.
- 900sc excavation work completed
- Structure works for traffic sign board footing DS01 and polar mount footing complete.
- Installation of the beam barrier at Po Lam Road Layby complete
- Installation of 2 of 3 no of lighting complete at Po Lam Road
- Stage 2 TTA at Po Lam Road implemented and completed
- Installation of 3nos manholes and gully complete
- Construction double island and concrete carriageway completed at stage 3
- reinstatement works of temporary footpath are completed

Retaining Wall RWA12

- RWA12 Bay 1 to Bay 27 base slab construction completed.
- RWA 12 Bay 1 to Bay 14, Bays 22 to Bay 27 wall construction complete.

- RWA 12 Bay 17 to Bay 21 wall stem (up to +165) complete. Wall stem construction to +170mPD in progress.
- RWA 12 Bay 23 to Bay 26 backfilled to +170.7 complete for setting up of mobile crane for System A construction.
- RWA 12 Bay 15 and Bay 16 temporary concrete block wall construction complete.
- RWA 12 Bay 17 to Bay 20 temporary cantilever platform construction complete.
- RWA12 Bay 15 and Bay 16 wall stem construction (Stage 1) complete.
- Cascade and CP17.1 structure complete. S201A manhole structure complete. Type II railing on CP-17-1 complete. DN600 pipe from manhole R343 to CP17-1 complete.
- RWA 12 Bay 17&20 wall stem construction (Stage 3) and Bay 21 wall stem construction (Stage 2) complete.
- RWA 12 wall construction complete.
- Backfilling G200 rock behind bays 7-21 complete.
- Sewerage manhole construction and pipe installation from B221 to B223 complete. Drainage manhole construction and pipe installation from S008 to S007c complete Road drainage manhole construction and pipe installation from R403a to R412 and R406 to R412 completed.
- Drainage special manhole R343 construction completed, backdrop for R343 in progress.
- UU installation in progress.
- Watermain laying completed form CHC390 to CHC424 completed and excavation from CHC424 to CHC474 in progress.

Water Reservoir:

- The water tightness test for Salt Water Reservoir complete and passed and Fresh Water Reservoir water tightness test complete and pass, defect rectification works completed.
- Rock excavation work to formation level outside water reservoir completed and soil excavation work (to formation level) completed. Rock excavation for drainage works completed. Manhole construction and Drainage Pipe laying are completed, Backfilling works completed. The excavation works of VC chambers (Watermain) and additional dia.600mm drainage pipe with manhole completed. The construction of recorder houses complete. The construction of valve chamber completed and watermain laying almost completed.
- Rock trench excavation for watermain and utilities along WSD access road completed.
- Pipe laying along WSD access road in progress, 90% complete.
- Concreting of pipe plinths and staircase for downpipe from reservoir to PTT was completed. Downpipe installation from ~210mPD to 230mPD complete.
- Downpipe installation from PTT to Reservoir completed.
- Water pressure test for DN250 Downpipe completed.

Water Pumping Station, Retaining Wall RWA13 and RWA14:

- Backfill retaining wall RWA13 and RWA14 Bay 9-14 complete.
- Rock excavation for Watermain works completed. The chambers (VC8, VC9, EFM & DN450 valve) construction works pipe laying complete.
- Metal Works and ABWF Work are completed. E&M Works at Water Pumping Station in progress.
- Mapping works and excavation of A13 Slope completed. Mass concrete fill works (VO/238) complete.
- Pipe laying of watermain behind retaining wall RWA13 was completed.
- Excavation and construction work of drawpit and ducting works in progress.
- Excavation work and construction work of Boundary Fence Footing in progress.
- Rock breaking to road formation level completed. Rock breaking to bedding level of watermain from pumping station to RWA13 complete.
- All watermains from pumping station to RWA13 have been laid.
- Stone Block Facing Works for RWA13 in progress.
- Pipe laying along WSD access road completed.
- Water pressure test and swabbing for CHE0 to CHE516 completed

Cavern at Portion B5:

- Rock fall fence installation complete.
- Rock breaking of existing rock slope at Ch210-Ch225 on level +200mPD - 206mPD complete.
- Rock breaking of existing rock slope at Ch0-Ch248 slope toe complete.
- Mapping of sub area SA1 to SA13 complete.
- Rock dowel construction from CH5 – CH200 +201mPD to +210mPD complete
- Erection of Inspection scaffold completed from CH0 to CH255.367 on 230m PD.
- UC construction at CH248 +205mPD berm complete.
- UC construction at CH0 to CH248 +230mPD berm in progress.
- Rock breaking of existing rock slope at Ch180-Ch248 on level +196mPD - 200mPD in progress.
- Rock dowel construction at Ch0-248 on +230 to +250 completed.
- Rock dowel construction at Ch200-240 on +201 to +210.5 in progress.
- Construction of Inspection scaffold on Temporary Triangle bracket completed.
- Mapping & Scaling of Rock Slope from CH5-CH170 +210mPD to +230mPD complete.

Pedestrian Connectivity System B (PC System B):

- PC System B structure complete, South Tower structure Rock fill completed.
- 1050mm dia. pipe from M/H S311 to S312 installation completed.
- Internal ABWF works in System B in progress

Construction of Internal Road L1:

- Road breaking and drainage works for road L1 west in progress.
- Drainage works for road L1 east cycle track in progress.
- Watermain construction in progress, 80 % complete. Rock breaking for watermain at L1 west in progress.
- Road L1 west lower level and middle level drainage construction in progress lower drainage complete middle drainage 70%, upper level 10% and gully pipe rock breaking in progress.
- Road L1 east lower level and middle level drainage construction in progress lower drainage completed 100% middle drainage 90%, upper level and gully pipe rock breaking in progress.
- Construction of Infiltration Planter in Progress, and 70% completed.
- Kerb laying, asphalt paving in progress.
- Formation of footpath and cycle track in progress.

PTT:

- Completed backfilling to sub-base level for concrete pavement works at Row A – B, B – C, C – D, D - E.
- Steel work erection for PTT cover structure in progress (90% complete).
- PMMA Panel Installation work in progress (80% complete).
- Drainage work at Row A-B (100% complete) Row B-C (100% complete), C-D (100% complete), D-E (100 % complete), Downpipe catchpit pipe laying and construction (100% complete).
- Concrete pavement construction in progress. (25% complete)
- Noise Barrier in progress

MEP Works:

- Submission of designs and materials related to MEP works to continue.
- E&M installation works at PTT to continue.
- E&M installation works at Underground Stormwater Retention Tank to continue.
- E&M installation works at Pedestrian Connectivity System B to continue.
- Lighting installation works at Pedestrian Connectivity System B completed.
- Sump Pump installation works at Pedestrian Connectivity System B completed.
- E&M installation works at Underpass to continue.

- Cable & Lighting Supporting Frame installation works at Underpass completed.
- E&M installation works at Fresh Water Pumping station to continue.
- Road lighting fitting installation at Underpass complete.
- Road lighting fitting installation at Public Transport Terminus complete.
- E&M installation works at Pillar Box (East portal) to continue.
- E&M installation works at the cleansing pump room (Fresh Water Pumping Station) to continue.
- E&M installation works at the EMF & valve chamber – VC8 (Fresh Water Pumping Station) to continue.
- T&C of Fresh Water Pumping Station to continue.

Existing Anderson Road:

- Temporary slope protection works for pipe trough excavation completed.
- Pipe trough construction completed.
- Watermain laying from CHD0~424 completed.
- Water pressure test and swabbing for CHD0~424 completed.
- Trial pits at watermain connection point were excavated to identify existing water pipes. Water connection to be carried out by WSD in late-Jan.

Hiking Trail

- Site Clearance in progress from CH470 to 1000.
- Construction of footpath and staircase in progress from CH1000 to 1910.
- Site clearance is in progressing at B5 due to adverse weather
- Hydroseeding of Hiking Trial completed.

*Contract 2 (NE/2016/05)*

- Temporary Traffic Arrangement (TTA)
- Soil Nail Construction
- Mass Concrete construction
- Formwork and Falsework installation and dismantling
- Lifting Tower Construction
- Rebar fixing

*Contract 3 (NE/2017/03)*

Works in Road Improvement Works 1 (RIW1)

- Construct RC works & backfilling at Type 2 are in-progress.
- Construct socketed H pile at RWC2 Type 3 for piling construction are in-progress; Rock excavation at RWC2 Type 3 are in-progress.
- Preparation works of drainage diversion at Type 4 is in-progress.
- Backfilling works at Type 6 to 8 is in-progress.
- Mini-pile works at FE1-PC1b is in-progress.
- Excavate trial pit works at CT5 is in-progress.
- Drainage works at KS27 (West Side) also is in-progress; Install sheet pile & ELS works at KS27 (East Side) near Shun Lee Estate.

Works in Road Improvement Works 2 (RIW2)

- Construct RC works at RWC3b; Rock excavation & ELS works at RWC3b are in-progress.
- Install pipe pile wall at CT4 roadside is in-progress.
- Construct mini-pile works at SE2 (hill side toward Sai Keung direction) is in-progress; Excavate for expose utilities and utilities protection / diversion are in-progress.

Works in Road Improvement Works 3 (RIW3)

- Excavate trial pits at Sau Mui Ping Road / Lin Tak Road for watermain alignment

confirmation in-progress.
- Concreting and backfilling works at RWD1 Bay 1 – 10.
- ELS works at RWD1 Bay 11 – 14 is in-progress.
- Rock excavate at Slope D1 lower portion is in-progress.
- Road works and backfilling works at Slope D2 are in-progress.
- Rock excavation using drill & split method, drainage works and road works at Slope D3 / Lin Tak Road are in-progress.

Pedestrian Connectivity Facility E8 (PC-E8)
- Touch-up outstanding works are in progress.

Pedestrian Connectivity Facility E11 (PC-E11)
- ABWF works and E&M works at LT2 & ST2 are in-progress.
- ABWF works and E&M works at LT1 & ST1 are in-progress.
- ABWF work and E&M works inside the footbridge steel frame are in-progress.

Pedestrian Connectivity Facilities Systems A (PC-SYA)
- ABWF works and E&M works at LT1, LT2 & ST1 are in-progress.
- Erect steel works inside RC structure is in-progress.

Pedestrian Connectivity Facilities Systems B (PC-SYB)
- RC works at SyB-LT1 & ST1 is in-progress.
- Construct pile cap at PC4 & PC6 are in-progress.
- Install sheet-pile and excavation works at PC1 are in-progress.

Tseung Kwan O Bus-Bus Interchange New Public Toilet (BBI-Toilet)
- The completed toilet was handed over to Food and Environmental Hygiene Department on 30 September 2020; Additional works under an instruction is in-progress.

*Contract 4 (ED/2020/02)*
- Completion of CRE Office & Chainlink Fence
- Completion of GI works at Portion 14 and Commence GI works at Portion 3
- Complete Modification of RWA10 Footing
- Site Drainage work at Portion 2a, 8 and 12
- Site Formation work at Portion 8
- Hard Landscaping at Portion 2b (Gabion, rockfill, stone facing)
- Construction of Staircase, U-channel repairing work, Railing Installation at Portion 10

*Contract 5 (ED/2019/02)*

Portion 1
- Tube Channel for soil transport
- Forming PC2 Piling Platform
- Reinstatement of E5-BH1(P)

Portion 2
- Welding Test
- Magnetic Particle Inspection
- Bending Test
- Piling Works
- Grouting Works

Portion 3
- Staircase Diversion Works
- Internal Trial Run

Portion 4
- Exposing Rock Surface at E10-F3
- Excavation at E10-F1

- Rock Fall Fence Construction

2.3.3 Summary of the relevant permits, licenses, and/or notifications on environmental protection for the Project of contracts 1, 2, 3, 4 and 5 are presented in ***Tables 2-1, 2-2, 2-3, 2-4 and 2-5***.

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

| 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) 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 | WT00028050-2017 | 29 May 17 | 31 May 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-RE0005-22 | 25 Jan 22 | 24 July 22 | Valid |
| | | GW-RE1335-21 | 26 Jan 22 | 25 July 22 | Valid |
| | | GW-RE0035-22 | 24 Jan 22 | 22 April 22 | 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 | 7 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) Regulation | EPD ref. no. 434186 | 31-May-18 | NA | Valid |
| 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-Jun-18 | End of project | Valid |

**Table 2-4 Status of Environmental Licenses and Permits of the Contract 4**

| 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) Regulation | EPD ref. no. 470496 | 19 August 2021 | NA | Valid |
| 2 | Waste Disposal Regulation – Billing Account for Disposal of Construction Waste | Account no. 7041336 | 6 September 2021 | NA | Valid |
| 3 | Chemical Waste Producer | Registration no. WPN 5213-296-C1206-12 | 14 September | End of project | Valid |

| Item | Description | License/Permit Status | | | |
|---|---|---|---|---|---|
| | | Permit no./ account no./ Ref. no. | Valid Period | | Status |
| | | | From | To | |
| | Registration | | 21 | | |
| 4 | Water Pollution Control Ordinance – Discharge License | Working in Progress | | | |

**Table 2-5 Status of Environmental Licenses and Permits of the Contract 5**

| 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) Regulation | EPD ref. no. 466255 | NA | NA | Valid |
| 2 | Chemical Waste Producer Registration | Registration no. WPN 5298-293-W3611-01 | 12 May 21 | End of project | Valid |
| 3 | Water Pollution Control Ordinance – Discharge License | WT00039694-2021 | | | Valid |
| 4 | Waste Disposal Regulation – Billing Account for Disposal of Construction Waste | Working in Progress | | | |

# 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

**THE EM&A PROGRAM OF CONSTRUCTION PHASE MONITORING SHALL COVER THE FOLLOWING ENVIRONMENTAL ISSUES:**

- Air quality; and
- Construction noise

3.2.1 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. 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 | Ground of Planned Clinic and Community Centre facing Anderson Road (Ancillary Facilities Building) | Active |
| AMS-4 | DARC-26 | Planned School, Site C2 Note 1 | 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 | Active |

| ID | ASR ID in EIA | Location in the EM&A Manual | Identified Location during Site Visit | Status |
|---|---|---|---|---|
| | | | project site | |
| AMS-6 | DARE-17 | Block 9, Site E | Main roof of Hau Tat House of On Tat Estate facing the project site | Active |
| 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.*

*(#) AMS-2 was activated on 26 November 2018 since Fung Tai House became an air sensitive receiver. 1-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.*

*(:) AMS-3 was effective on 3 December 2019.*

**Construction Noise**

3.3.2 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 | Rooftop of S.K.H. St. John's Tsang Shiu Tim Primary School, where 1m from the exterior of the building facing the project site | Active |
| NMS-3(: ) | Site C2 – R102 | Ground of Ancillary Facilities Building facing the project site | Active |
| 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 | Suspended |
| 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 |

| ID | NSR ID in EIA | Location | Status |
|---|---|---|---|
| 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: Construction of the NSR is not yet commenced.*

*(*) 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.*

*(@) NMS-2 was effective on 15 November 2019.*

*(:) NMS-3 was effective on 3 December 2019*

*(#) Review of noise monitoring locations was proposed by ET and NMS-5 was effective on 15 November 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.*

*Addition Construction Noise Monitoring Location*

3.3.3 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 |
|---|---|---|
| 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-31, NL-52 |
| Calibrator | Rion NC-73, NC-75 |
| 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 0.6$m^3$/min and 1.7$m^3$/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 25ºC, 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 d 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 /m³) | | Limit Level (μg/m³) | |
|---|---|---|---|---|
| | 1-hour TSP | 24-hour TSP | 1-hour TSP | 24-hour TSP |
| **AMS-1** | 313 | 154 | 500 | 260 |

| 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-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 complaints are received | ***70*** dB(A)[Note 1]/ ***65*** dB(A)[Note 1] |
| **NMS-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 1]/ ***65*** dB(A)[Note 1] |
| **CN2+** | | ***70*** dB(A)[Note 1]/ ***65*** dB(A)[Note 1] |
| **CN3+** | | ***75*** dB(A) |

Note 1: 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.

*(@) NMS-2 was effective on 15 November 2019.*

*(:) NMS-3 was effective on 3 December 2019*

(#) 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

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

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

## 4.3 RESULTS OF AIR QUALITY MONITORING

4.3.1 In the Reporting Period, a total of ***108*** events of 1-hour TSP monitoring and ***24*** 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/m³) | 1-hour TSP (μg/m³) | | | | |
|---|---|---|---|---|---|---|
| | | Date | Start Time | 1st reading | 2nd reading | 3rd reading |
| 3-Jan-22 | 21 | 5-Jan-22 | 13:41 | 76 | 82 | 84 |
| 8-Jan-22 | 24 | 11-Jan-22 | 13:56 | 68 | 70 | 66 |
| 14-Jan-22 | 18 | 17-Jan-22 | 8:54 | 71 | 77 | 73 |
| 20-Jan-22 | 18 | 22-Jan-22 | 9:03 | 80 | 77 | 81 |
| 26-Jan-22 | 9 | 28-Jan-22 | 13:22 | 66 | 70 | 72 |
| 29-Jan-22 | 13 | 31-Jan-22 | 14:02 | 72 | 76 | 77 |
| Average (Range) | **17 (9 – 24)** | Average (Range) | | **74 (66 – 84)** | | |

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

| 1-hour TSP (μg/m³) | | | | |
|---|---|---|---|---|
| **Date** | **Start Time** | **1st reading** | **2nd reading** | **3rd reading** |
| 5-Jan-22 | 14:06 | 82 | 85 | 89 |
| 11-Jan-22 | 13:51 | 90 | 86 | 92 |
| 17-Jan-22 | 9:20 | 83 | 85 | 80 |
| 22-Jan-22 | 9:14 | 89 | 84 | 86 |
| 28-Jan-22 | 13:48 | 84 | 82 | 88 |
| 31-Jan-22 | 14:26 | 92 | 99 | 105 |
| Average (Range) | | **88 (80 – 105)** | | |

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

| 1-hour TSP (μg/m³) | | | | |
|---|---|---|---|---|
| **Date** | **Start Time** | **1st reading** | **2nd reading** | **3rd reading** |
| 5-Jan-22 | 14:17 | 77 | 83 | 86 |
| 11-Jan-22 | 14:28 | 85 | 82 | 89 |
| 17-Jan-22 | 9:29 | 78 | 82 | 76 |
| 22-Jan-22 | 9:31 | 86 | 91 | 88 |
| 28-Jan-22 | 14:01 | 73 | 77 | 80 |
| 31-Jan-22 | 14:38 | 76 | 72 | 79 |
| Average | | **81** | | |

| 1-hour TSP (μg/m³) | | | | |
|---|---|---|---|---|
| **Date** | **Start Time** | **1st reading** | **2nd reading** | **3rd reading** |
| (Range) | | **(72 – 91)** | | |

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

| **Date** | **24-hour TSP (μg/m³)** | **1-hour TSP (μg/m³)** | | | | |
|---|---|---|---|---|---|---|
| | | **Date** | **Start Time** | **1st reading** | **2nd reading** | **3rd reading** |
| 3-Jan-22 | 36 | 5-Jan-22 | 9:31 | 84 | 87 | 81 |
| 8-Jan-22 | 39 | 11-Jan-22 | 9:18 | 93 | 92 | 88 |
| 14-Jan-22 | 39 | 17-Jan-22 | 14:11 | 93 | 97 | 103 |
| 20-Jan-22 | 33 | 22-Jan-22 | 13:54 | 96 | 94 | 89 |
| 26-Jan-22 | 26 | 28-Jan-22 | 9:14 | 73 | 78 | 73 |
| 29-Jan-22 | 36 | 31-Jan-22 | 8:57 | 85 | 93 | 94 |
| Average (Range) | **35 (26 – 39)** | Average (Range) | | **89 (73 – 103)** | | |

**Table 4-5 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-Jan-22 | 59 | 5-Jan-22 | 9:12 | 80 | 85 | 82 |
| 8-Jan-22 | 66 | 11-Jan-22 | 9:05 | 86 | 88 | 92 |
| 14-Jan-22 | 66 | 17-Jan-22 | 13:57 | 89 | 95 | 101 |
| 20-Jan-22 | 70 | 22-Jan-22 | 13:37 | 68 | 72 | 71 |
| 26-Jan-22 | 36 | 28-Jan-22 | 9:02 | 71 | 76 | 72 |
| 29-Jan-22 | 49 | 31-Jan-22 | 8:46 | 77 | 84 | 79 |
| Average (Range) | **58 (36 – 70)** | Average (Range) | | **82 (68 – 101)** | | |

**Table 4-6 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-Jan-22 | 66 | 5-Jan-22 | 8:48 | 78 | 81 | 75 |
| 8-Jan-22 | 92 | 11-Jan-22 | 9:09 | 68 | 70 | 72 |
| 14-Jan-22 | 36 | 17-Jan-22 | 13:35 | 85 | 87 | 93 |
| 20-Jan-22 | 63 | 22-Jan-22 | 13:16 | 82 | 86 | 80 |
| 26-Jan-22 | 32 | 28-Jan-22 | 8:36 | 71 | 74 | 69 |
| 29-Jan-22 | 51 | 31-Jan-22 | 9:18 | 68 | 64 | 67 |
| Average (Range) | **57 (32 – 92)** | Average (Range) | | **76 (64 – 93)** | | |

4.3.2 As shown in ***Tables 4-1 to 4-6***, 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.

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

# 5. CONSTRUCTION NOISE MONITORING

## 5.1 GENERAL

5.2.1 In the Reporting Period, noise monitoring was performed at designated monitoring locations NMS2 and NMS3 and the additional monitoring locations NMS4a, NMS5, NMS6, NMS7 and NMS8. No monitoring was conducted at the designated monitoring locations NMS1 since they are the planned NSR and still under the construction.

5.2.2 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.

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

## 5.3 NOISE MONITORING RESULTS IN REPORTING MONTH

5.3.1 In the Reporting Period, a total of **34** 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** | **NMS2** | **NMS3** | **NMS4a** | **NMS5** | **NMS6** | **NMS7** |
| 5-Jan-22 | 61 | 63 | 70 | 69 | 69 | 69 |
| 11-Jan-22 | 61 | 66 | 69 | 69 | 66 | 68 |
| 17-Jan-22 | 62 | 64 | 69 | 70 | 68 | 67 |
| 28-Jan-22 | 61 | 61 | 70 | 69 | 69 | 68 |
| 31-Jan-22 | 61 | 62 | 69 | 69 | 68 | 68 |
| **Limit Level** | ***70*** dB(A) / ***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;*

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

| Construction Noise Level ($L_{eq30min}$), dB(A) | |
|---|---|
| **Date** | **NMS8** |
| 7-Jan-22 | 66 |
| 14-Jan-22 | 61 |
| 19-Jan-22 | 61 |
| 25-Jan-22 | 61 |
| **Limit Level** | **75 dB(A)** |

5.3.2 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** |
| 7-Jan-22 | 63 | 68 | 65 |
| 14-Jan-22 | 63 | 58 | 59 |
| 19-Jan-22 | 67 | 67 | 61 |
| 25-Jan-22 | 67 | 67 | 61 |

| Construction Noise Level ($L_{eq30min}$), dB(A) | | | |
|---|---|---|---|
| **Date** | **CN1** | **CN2** | **CN3** |
| **Limit Level** | ***70*** dB(A) / ***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.*

5.3.3 As shown in ***Tables 5-1 and 5-2,*** no Limit Level exceedance was recorded in this Reporting Period. No noise complaint (which triggered Action level exceedance) was received under the Project.

# 6. WASTE MANAGEMENT

## 6.1 GENERAL WASTE MANAGEMENT

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

## 6.3 RECORDS OF WASTE QUANTITIES

6.3.1 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.

6.3.2 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 | | Contract 4 | | Contract 5 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Quantity | Disposal Location | Quantity | Disposal Location | Quantity | Disposal Location | Quantity | Disposal Location | Quantity | Disposal Location |
| Total generated Inert C&D Materials ('000$m^3$) (#) | 2.871 | - | 0.02 | - | 2.028 | - | 25.019 | - | 0.18 | - |
| Hard Rock and Large Broken Concrete ('000$m^3$) | 0 | - | 0 | - | 0 | - | 11.495 | - | 0 | - |
| Reused in this Contract (Inert) ('000$m^3$) | 2.517 | - | 0 | - | 0.882 | - | 0 | - | 0 | - |
| Reused in other Projects (Inert) ('000$m^3$) | 0 | * | 0 | - | 0 | - | 0 | - | 0 | - |
| Disposal as Public Fill (Inert) ('000$m^3$) | 0.354 | TKO 137 | 0.02 | **TKO 137** | 1.146 | TKO 137 | 13.524 | - | 0.18 | - |

*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 | | Contract 4 | | Contract 5 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Quantity | Disposal Location | Quantity | Disposal Location | Quantity | Disposal Location | Quantity | Disposal Location | Quantity | Disposal Location |
| Recycled Metal ('000kg) | 0 | - | 0 | - | 0.003 | - | 0 | - | 0 | - |
| Recycled Paper / Cardboard Packing ('000kg) | 0 | - | 0 | - | 0 | - | 0 | - | 0 | - |
| Recycled Plastic ('000kg) | 0.015 | - | 0 | - | 0.003 | Licensed collector | 0 | - | 0 | - |
| Chemical Wastes ('000kg) | 0 | - | 0 | - | 0 | - | 0 | - | 0 | - |
| General Refuses ('000$m^3$) | 0.082 | SENT | 0.05 | SENT | 0.052 | SENT | 0.019 | SENT | 0.02 | 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 inspections for Contract 1 to evaluate site environmental performance were carried out by the RE, ET and the Contractor on **6, 11, 18, 25 and 31 January 2022** in which IEC joined the site inspection with SSEMC on **6 January 2022**. 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 |
|---|---|---|
| 6 January 2022 | • No adverse environmental issue was observed during site inspection<br>• Dust mitigation measures should be provided for the exposed area and haul road during dry season to reduce dust impact. (General) | • NA<br>• Reminder only |
| 11 January 2022 | • No adverse environmental issue was observed during site inspection<br>• The Contractor was reminded to spray water on site regularly. | • NA<br>• Reminder only |
| 18 January 2022 | • The Contractor was advised to put chemical container inside drip tray at Cavern | • Chemical containers were removed from site area. |
| 25 January 2022 | • Accumulation of waste was observed at entrance of site office. The Contractor was advised to dispose it regularly. | • Accumulation of waste was disposed |
| 31 January 2022 | • Free standing chemical containers were observed at reservoir. The Contractor was advised to put it inside drip tray or remove it.<br>• Empty chemical container was observed at Cavern. The Contractor was advised to dispose it properly | • Chemical containers were removed on site.<br>• Empty chemical container was removed. |

***Contract 2***

7.2.2 In the Reporting Period, joint site inspections for Contract 2 to evaluate site environmental performance were carried out by the RE, ET and the Contractor on **5, 12, 19 and 26 January 2022** in which IEC joined the site inspection with SSEMC on **26 January 2022**. 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 |
|---|---|---|
| 5 January 2022 | • No adverse environmental issue was observed.<br>• The Contractor was reminded to enhance housekeeping at PC6 | • NA<br>• Reminder only |
| 12 January | • No adverse environmental issue was | • NA |

| Date | Findings / Deficiencies | Follow-Up Status |
|---|---|---|
| 2022 | observed.<br>• The Contractor was reminded to put chemical container inside drip tray.<br>• The Contractor was reminded to dispose general refuse and construction waste regularly at PC1 | <br>• Reminder only<br>• Reminder only |
| 19 January 2022 | • No adverse environmental issue was observed.<br>• The Contractor was reminded to maintain good housekeeping. | • NA<br>• Reminder only |
| 26 January 2022 | • The Contractor was advised to dispose empty cement bags at portion 2 and E3.<br>• Free standing chemical container was observed at Portion 2. The Contractor was advised to put it inside drip tray.<br>• The Contractor was reminded to maintain good housekeeping. | • Empty cement bags have been removed from site area.<br>• Chemical container has been removed.<br>• Reminder only |

***Contract 3***

7.2.3 In the Reporting Period, joint site inspections for Contract 3 to evaluate site environmental performance were carried out by the RE, ET and the Contractor on **7, 14, 18 and 28 January 2022** in which IEC joined the site inspection with SSEMC on **18 January 2022**. 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 |
|---|---|---|
| 7 January 2022 | • No adverse environmental issue was observed. | • NA |
| 14 January 2022 | • The Contractor was advised to dispose the construction waste regularly.<br>• The Contractor was reminded to maintain good housekeeping. | • The Construction waste was removed.<br>• Reminder only |
| 18 January 2022 | • No adverse environmental issue was observed.<br>• The Contractor was reminded to maintain good housekeeping at System B. | • NA<br>• Reminder only |
| 28 January 2022 | • The Contractor was advised to cover the cement bags at System A. | • The cement bags were covered on site. |

***Contract 4***

7.2.4 In the Reporting Period, joint site inspections for Contract 4 to evaluate site environmental performance were carried out by the RE, ET and the Contractor on **5, 12, 19 and 26 January 2022** in which IEC joined the site inspection with SSEMC on **19 January 2022**. No non-compliance was noted. The findings / deficiencies of ***Contract 4*** that observed during the weekly site inspection are listed in ***Table 7-4***

**Table 7-4 Site Observations of Contract 4**

| Date | Findings / Deficiencies | Follow-Up Status |
|---|---|---|
| 5 January 2022 | • Non-road machine without NRMM label was observed at Portion 8. The Contractor was | • NRMM label has been provided. |

| Date | Findings / Deficiencies | Follow-Up Status |
|---|---|---|
| | advised to provide NRMM label.<br>• The Contractor was reminded to provide dust mitigation measures at Portion 8. | • Reminder only |
| 12 January 2022 | • No adverse environmental issue was observed during site inspection.<br>• The Contractor was reminded to maintain good housekeeping. | • NA<br>• Reminder only |
| 19 January 2022 | • No adverse environmental issue was observed.<br>• The Contractor was reminded to implement dust mitigation measures at Portion 8 | • NA<br>• Reminder only |
| 26 January 2022 | • No adverse environmental issue was observed.<br>• The Contractor was reminded to spray water regularly at exposed work area | • NA<br>• Reminder only |

***Contract 5***

7.2.5 In the Reporting Period, joint site inspections for Contract 5 to evaluate site environmental performance were carried out by the RE, ET and the Contractor on **6, 13, 20 and 28 January 2022** in which IEC joined the site inspection with SSEMC on **28 January 2022**. No non-compliance was noted. The findings / deficiencies of ***Contract 5*** that observed during the weekly site inspection are listed in ***Table 7-5***

**Table 7-5 Site Observations of Contract 5**

| Date | Findings / Deficiencies | Follow-Up Status |
|---|---|---|
| 6 January 2022 | • No adverse environmental issue was observed during site inspection.<br>• The Contractor was reminded to provide drip tray or removed the chemical containers at E6. | • NA<br>• Reminder only |
| 13 January 2022 | • Hole was observed at drip tray under generator (E6). The Contractor was advised plug the hole and removes the stagnant water regularly. | • The stagnant water under generator at drip tray was removed |
| 20 January 2022 | • No adverse environmental issue was observed.<br>• The Contractor was reminded to maintain good housekeeping on site. | • NA<br>• Reminder only |
| 28 January 2022 | • The Contractor was advised to put chemical container inside drip tray or remove it at E6.<br>• The Contractor was reminded to pump away stagnant water produced from drilling regularly at E6.<br>• The Contractor was reminded to clean oil stain on the ground at E5. | • Drip tray is provided for chemical container at E6.<br>• 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, no environmental complaint was received for the project. Besides, no summons and prosecution under the EM&A Programme was lodged for the project. Investigation for the complaint was undertaken and presented in following sections.

8.1.2 The complaint log and Investigation Reports issued in the Reporting Period are 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 – 31 Dec 2021 | 1 | 0 | **52** | **Dust, Noise and light nuisance** |
| 21 Mar 2017 – 31 Dec 2021 | 2 | 0 | **10** | **Noise** |
| 31 May 2018 – 31 Dec 2021 | 3 | 0 | **8** | **Waste Management, Noise, Water Quality** |
| 27 Sep 2021- 31 Dec 2021 | 4 | 0 | **0** | NA |
| 30 Mar 2021 – 31 Dec 2021 | 5 | 0 | **0** | NA |
| 1 – 31 January 2022 | 1 | 0 | **52** | NA |
| | 2 | 0 | **10** | NA |
| | 3 | 0 | **8** | NA |
| | 4 | 0 | **0** | NA |
| | 5 | 0 | **0** | NA |

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

| Reporting Period | Contract no. | Environmental Summons Statistics | | |
|---|---|---|---|---|
| | | Frequency | Cumulative | Summons Nature |
| 1 Apr 2017 – 31 Dec 2021 | 1 | 0 | 0 | NA |
| 21 Mar 2017 – 31 Dec 2021 | 2 | 0 | 0 | NA |
| 31 May 2018 – 31 Dec 2021 | 3 | 0 | 0 | NA |
| 27 Sep 2021- 31 Dec 2021 | 4 | 0 | 0 | NA |
| 30 Mar 2021 – 31 Dec 2021 | 5 | 0 | 0 | NA |
| 1 – 31 January 2022 | 1 | 0 | 0 | NA |
| | 2 | 0 | 0 | NA |
| | 3 | 0 | 0 | NA |
| | 4 | 0 | 0 | NA |
| | 5 | 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 – 31 Dec 2021 | 1 | 0 | 0 | NA |
| 21 Mar 2017 – 31 Dec 2021 | 2 | 0 | 0 | NA |
| 31 May 2018 – 31 Dec 2021 | 3 | 0 | 0 | NA |
| 27 Sep 2021- 31 Dec 2021 | 4 | 0 | 0 | NA |

| Reporting Period | Contract no. | Environmental Prosecution Statistics | | |
|---|---|---|---|---|
| | | Frequency | Cumulative | Prosecution Nature |
| 30 Mar 2021 – 31 Dec 2021 | 5 | 0 | 0 | NA |
| 1 – 31 January 2022 | 1 | 0 | 0 | NA |
| | 2 | 0 | 0 | NA |
| | 3 | 0 | 0 | NA |
| | 4 | 0 | 0 | NA |
| | 5 | 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:

Temporary Traffic Arrangement (TTA) at On Sau Road:
- Implementation of TTA at the junction between On Sau Road and Road L4 for road improvement works to continue.

Pedestrian Connectivity System B:
- Bamboo Scaffold Erection for external ABWF works

Box Culvert BC1 at Internal Road L1:
- Defect rectification work to continue
- Slurry removal to continue
- Cat ladder installation complete
- Material of Multi-part cover will arrive in early December 2021.

Construction of Internal Road L1:
- Excavation and laying of watermain to continue.
- Road work, footpath and cycle track at L1 east to continue.

- Gullies and upper drainage construction for road L1 west to continue.

Water Reservoir:
- To continue construct valve chamber.
- To continue the construction works of WSD Access.
- To continue the laying and construct the additional dia.600 pipe and manhole.

Artificial Flood Attenuation Lake:
- To continue the drainage works (the remaining part: near S114).
- To continue laying 10mm aggregate (400mm thk).

Slope Stabilization at Portion B5:
- Continue to erect inspection scaffolds from 2nd to 5th berm.
- Continue to carry out stabilization works at Feature No. 11NE-D/C948 & 11NE-B/C902
- Perform rocking mapping and stabilization measure at 11NE-B/C900
- Perform scaffolding alternation to suit stabilization work required at 11NE-B/C1013 & 1014

Site Formation Work at Portion B13:
- Land Parcel R2-4 & R2-6 Excavation to formation level in progress.
- UC construction at Land Parcel R2-4 & R2-6 in progress.

Cavern (Portion B5):
- Rock fall fence installation complete.
- Rock breaking of existing slope at Ch200-248 on level +196 - 202mPD to continue.
- Rock dowel construction to continue.
- Drilling of Portal to continue.
- Planter wall construction to continue.
- UC construction at CH248 +198.5mPD berm in progress.
- Construction of Inspection scaffold on temporary triangle bracket in progress.

MEP Works:
- Submission of designs and materials related to MEP works in progress.
- E&M installation works at PTT in progress to continue.
- E&M installation works at Pump Hall of Fresh Water Pumping Station in progress.
- E&M installation works at Pedestrian Connectivity System B in progress.
- E&M installation works at Underground Stormwater Retention Tank in progress.
- E&M installation works at Underpass in progress
- Commencement of E&M installation works at Pillar Box (Underground Stormwater Retention Tank).

Road Improvement Works at Po Lam Road:
- Construction of permanent footpath and surface drainage system complete
- Excavation works to facilitate installation of the E&M/ACT/Earth pit and construction of permanent footpath and surface drainage system complete
- Construct concrete carriageway and footpath completed
- Install beam barrier complete
- Construct Island in progress
- Implement stage 3 TTA

Internal Road L4, Pedestrian Connectivity System A, Noise Barrier, RWA12 and RWA18:
- Backfilling G200 rock at RWA12 to continue
- Drainage, sewerage construction in progress
- UU installation in progress
- Watermain laying to be commenced

PTT
- Lighting system and PMMA panel installation to continue, concrete pavement construction, kerb laying and noise barrier works would continue.

Retaining Wall RWA9 at Road L3
- Backfilling and SRT of RWA9 Bays 1- Bay10 complete.
- Lower level drainage in progress.
- Watermain laying in progress.
- UU laying complete.
- Ducting installation works for street lighting to commence.

Hiking Trail (Portion B5):
- Perform material submission due to revised detail of hiking trail.

Existing Anderson Road
- Pipe trough construction to continue.

9.2.2 Construction activities for Contract 2 in the coming month are listed below:
- Temporary Traffic Arrangement (TTA)
- Soil Nail Construction
- Mass Concrete construction
- Formwork and Falsework installation and dismantling
- Lifting Tower Construction
- Rebar fixing

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

Works in Road Improvement Works 1 (RIW1)
- Construct RC works & backfilling at Type 2 are in-progress.
- Construct socketed H pile at RWC2 Type 3 for piling construction are in-progress; Rock excavation at RWC2 Type 3 are in-progress.
- Preparation works of drainage diversion at Type 4 is in-progress.
- Backfilling works at Type 6 to 8 is in-progress.
- Mini-pile works at FE1-PC1b is in-progress.
- Excavate trial pit works at CT5 is in-progress.
- Drainage works at KS27 (West Side) also is in-progress; Install sheet pile & ELS works at KS27 (East Side) near Shun Lee Estate.

Works in Road Improvement Works 2 (RIW2)
- Construct RC works at RWC3b; Rock excavation & ELS works at RWC3b are in-progress.
- Install pipe pile wall at CT4 roadside is in-progress.
- Construct mini-pile works at SE2 (hill side toward Sai Keung direction) is in-progress; Excavate for expose utilities and utilities protection / diversion are in-progress.

Works in Road Improvement Works 3 (RIW3)
- Excavate trial pits at Sau Mui Ping Road / Lin Tak Road for watermain alignment confirmation in-progress.
- Concreting and backfilling works at RWD1 Bay 1 – 10.
- ELS works at RWD1 Bay 11 – 14 is in-progress.
- Rock excavate at Slope D1 lower portion is in-progress.
- Road works and backfilling works at Slope D2 are in-progress.
- Rock excavation using drill & split method, drainage works and road works at Slope D3 / Lin Tak Road are in-progress.

Pedestrian Connectivity Facility E8 (PC-E8)

- Touch-up outstanding works are in progress.

Pedestrian Connectivity Facility E11 (PC-E11)
- ABWF works and E&M works at LT2 & ST2 are in-progress.
- ABWF works and E&M works at LT1 & ST1 are in-progress.
- ABWF work and E&M works inside the footbridge steel frame are in-progress.

Pedestrian Connectivity Facilities Systems A (PC-SYA)
- ABWF works and E&M works at LT1, LT2 & ST1 are in-progress.
- Erect steel works inside RC structure is in-progress.

Pedestrian Connectivity Facilities Systems B (PC-SYB)
- RC works at SyB-LT1 & ST1 is in-progress.
- Construct pile cap at PC4 & PC6 are in-progress.
- Install sheet-pile and excavation works at PC1 are in-progress.

Tseung Kwan O Bus-Bus Interchange New Public Toilet (BBI-Toilet)
- The completed toilet was handed over to Food and Environmental Hygiene Department on 30 September 2020; Additional works under an instruction is in-progress.

9.2.4 Construction activities for Contract 4 in the coming month are listed below:

- Completion of CRE Office & Chainlink Fence
- Construction of access road leading to CRE's office (Depends on CWSTVJV)
- GI works at G-2, Portion 3
- Modification of RWA10 Footing
- Site Drainage work at Portion 2a, 8 and 12
- Hard Landscaping at Portion 2b
- Construction of Staircase, U-channel repairing work, Railing Installation at Portion 1 0
- Erection of Project Signboard at +175mPD

9.2.5 Construction activities for Contract 5 in the coming month are listed below:

Portion 1
- Tube Channel for Soil Transport
- Forming PC2 Piling Platform
- Reinstatement of E5-BH1(P)

Portion 2
- Piling Work

Portion 3
- Diversion of existing staircase

Portion 4
- Excavation of E10-F3
- Excavation of E10-F1

## 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 During dry season, the Contractor 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 Contractor 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 **58th** monthly EM&A report presenting the monitoring results and inspection findings for the Reporting Period from **1** to **31 January 2022**.

10.1.2 No 24-hour or 1-hour TSP monitoring and noise 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 exceedance was recorded and no Notification of Exceedance was issued. Moreover, no noise complaints (which triggered Action Level) were received for the Project.

10.1.4 In the Reporting Period, no environmental complaint was received from the Project.

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, 3, 4 and 5 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 During dry season, the Contractors are reminded to 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 pay special attention on potential environmental impact generated by the site activities and adhere implement adequate air quality and noise mitigation measures as far as practicable to reduce the impact to the public.

10.2.3 Construction noise is one of the key environmental issues during construction work of the Project. Noise mitigation measures such as using quiet plants and noise barriers shall be implemented where practicable according to the EM&A manual.

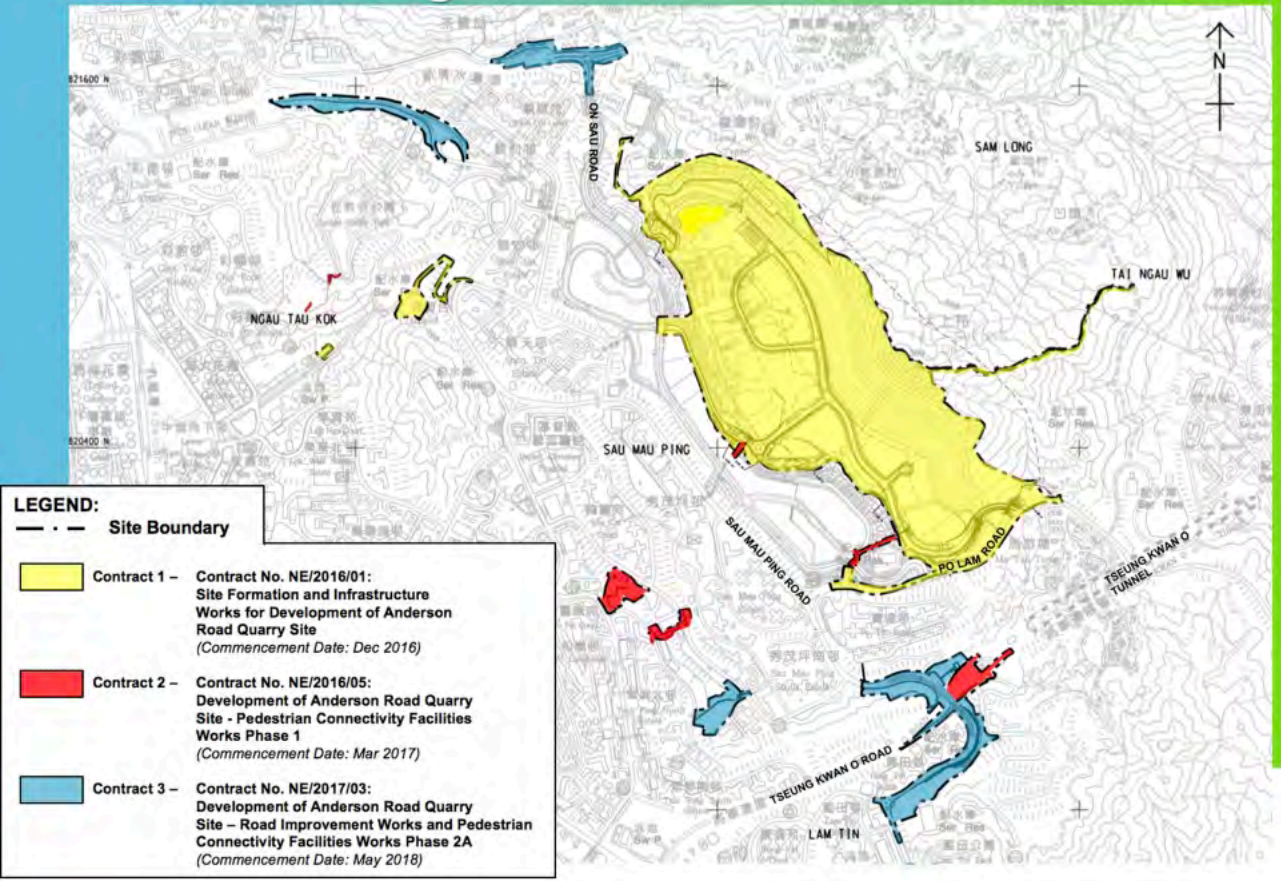
10.2.4 In addition, the Contractors should ensure all effluent discharge shall be fulfilled the Technical Memorandum of Effluent Discharged into Drainage and Sewerage Systems, inland and Coastal Waters criteria or relevant discharge license requirement.

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

# Appendix A

# Layout plan of the Project

# Contract Packages




**LEGEND:**

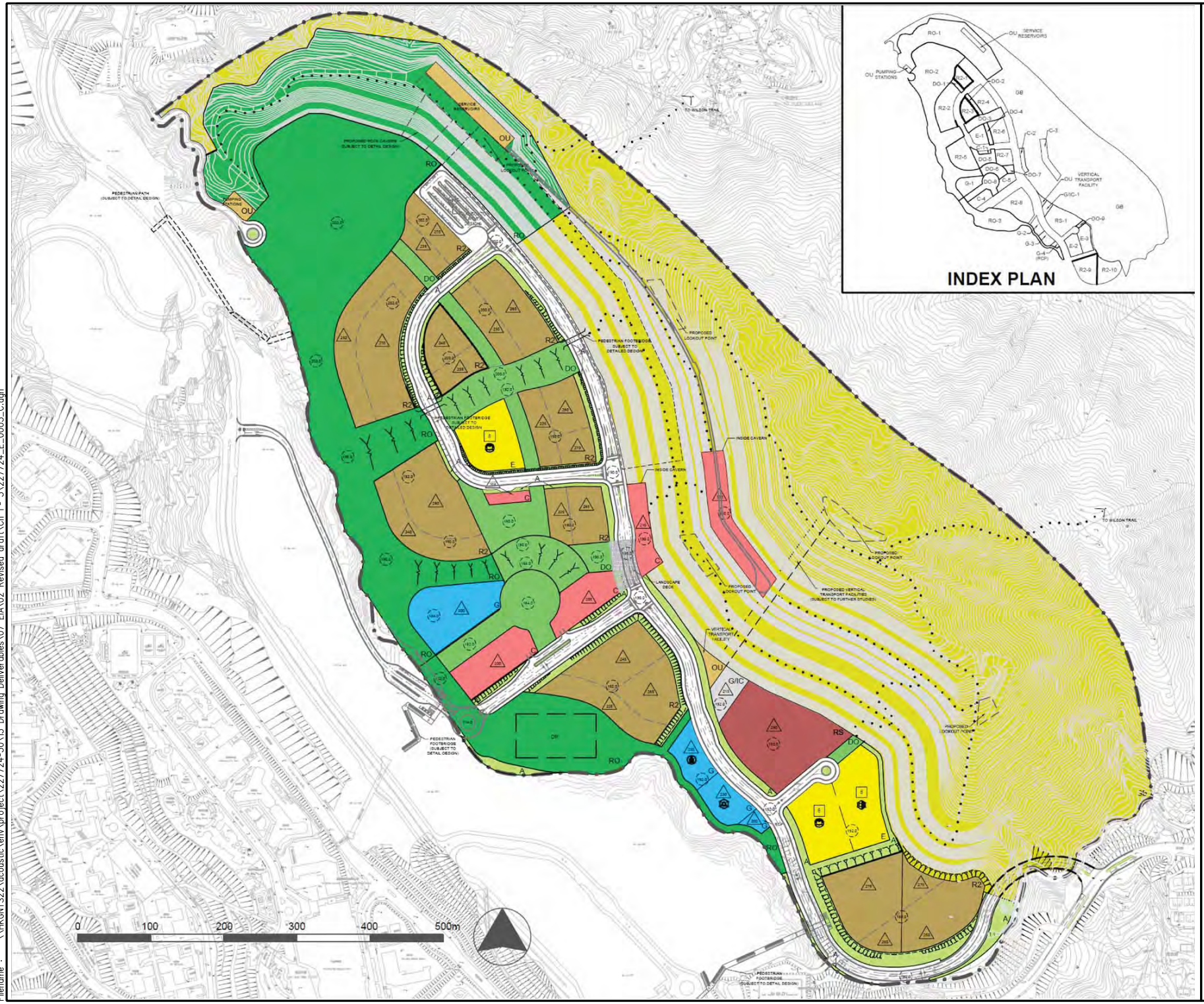
— · — **Site Boundary**

**Contract 1 –** **Contract No. NE/2016/01:**
**Site Formation and Infrastructure Works for Development of Anderson Road Quarry Site**
*(Commencement Date: Dec 2016)*

**Contract 2 –** **Contract No. NE/2016/05:**
**Development of Anderson Road Quarry Site - Pedestrian Connectivity Facilities Works Phase 1**
*(Commencement Date: Mar 2017)*

**Contract 3 –** **Contract No. NE/2017/03:**
**Development of Anderson Road Quarry Site – Road Improvement Works and Pedestrian Connectivity Facilities Works Phase 2A**
*(Commencement Date: May 2018)*

# Layout plan of Contract 1 (N/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: GL | Date: 03/14 | Checked: TC / Approved: ST |
| Scale: AS SHOWN | Status: PRELIMINARY | |

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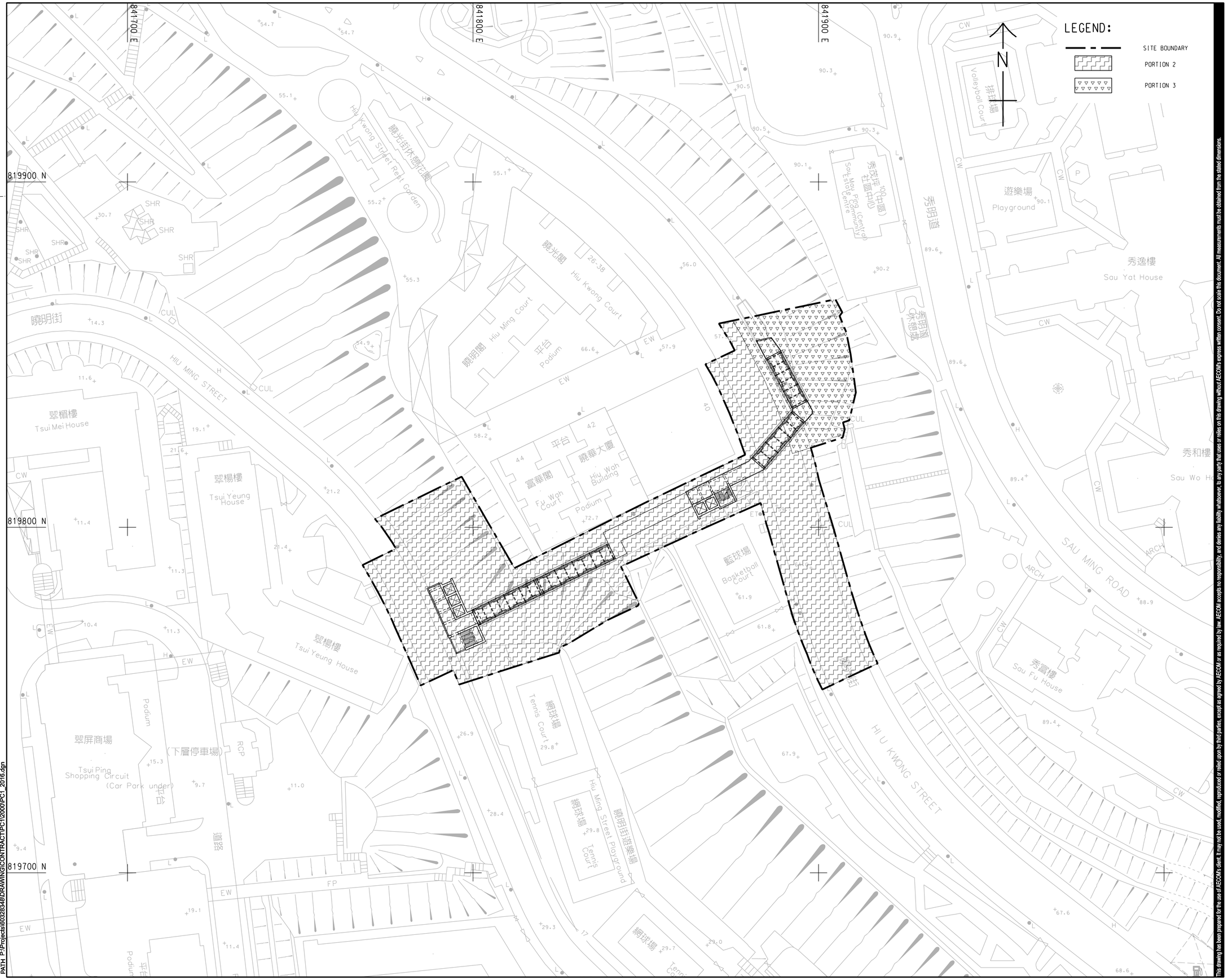
Printed by : 3/31/2014
Filename : \\HKGNTS22\acoustic\env\project\227724-50\13 Drawing Deliverables\07 EIA\02 Revised draft\Ch 1 - 3\227724_E_0003_C.dgn

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

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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

CEDD 土木工程拓展署 Civil Engineering and Development Department

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

**STATUS** 階段

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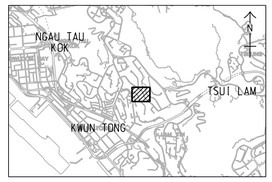
**KEY PLAN** 索引圖 A1 1 : 60000




**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

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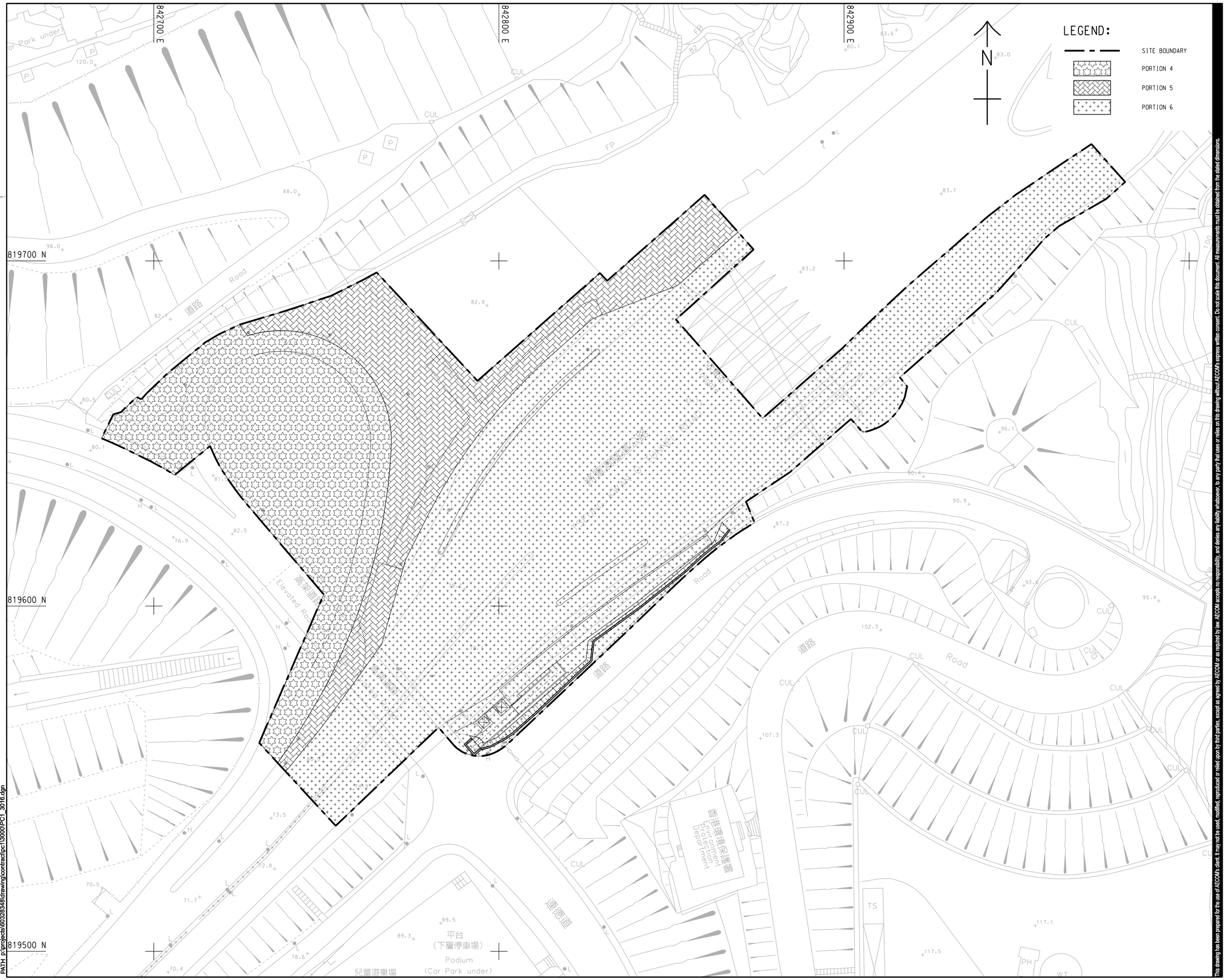


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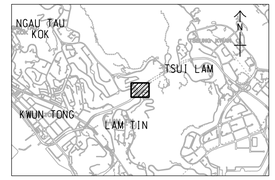


**PROJECT NO.** 項目編號: 60328348

**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

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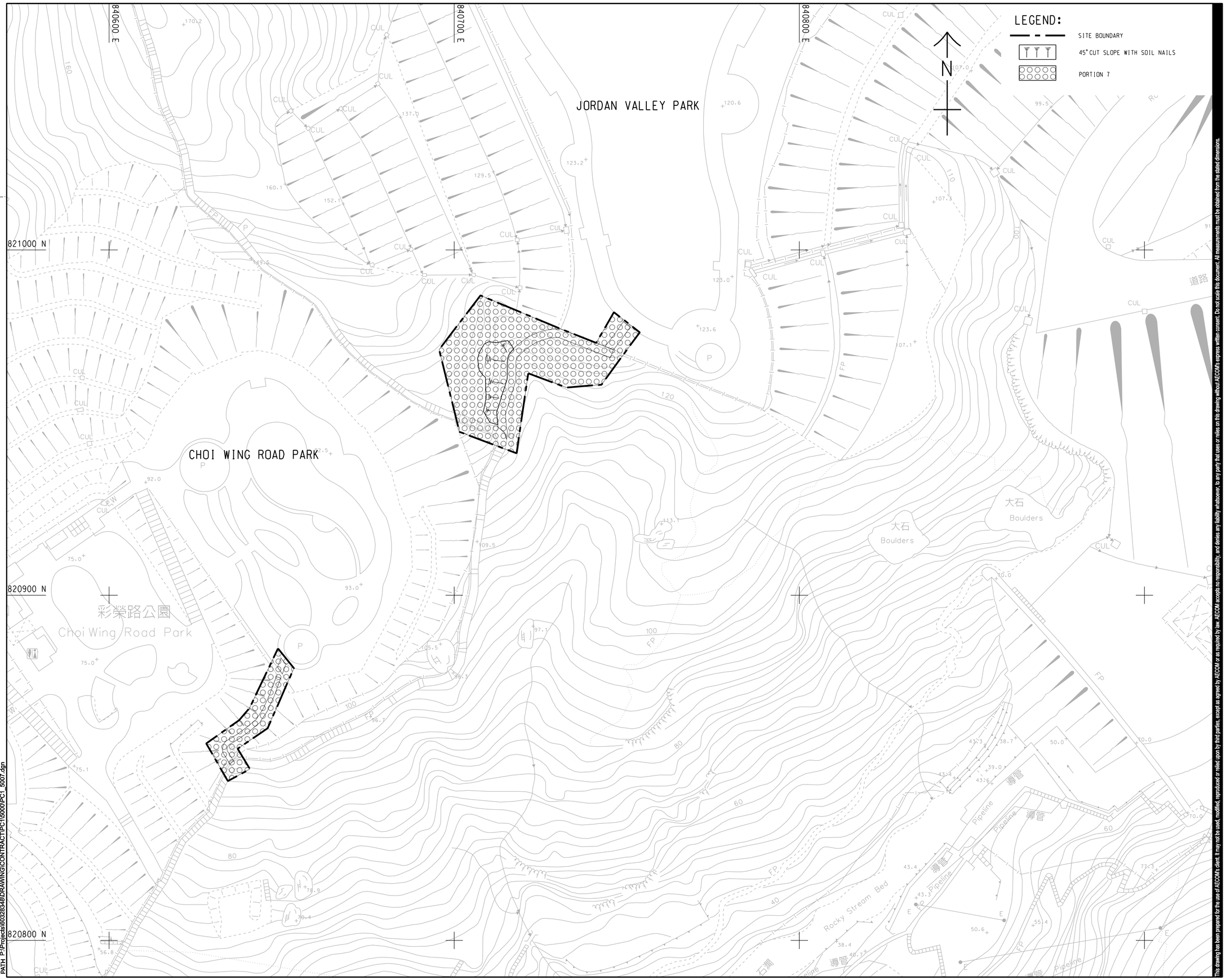


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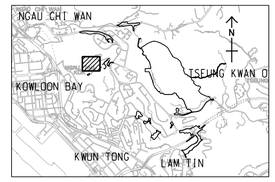


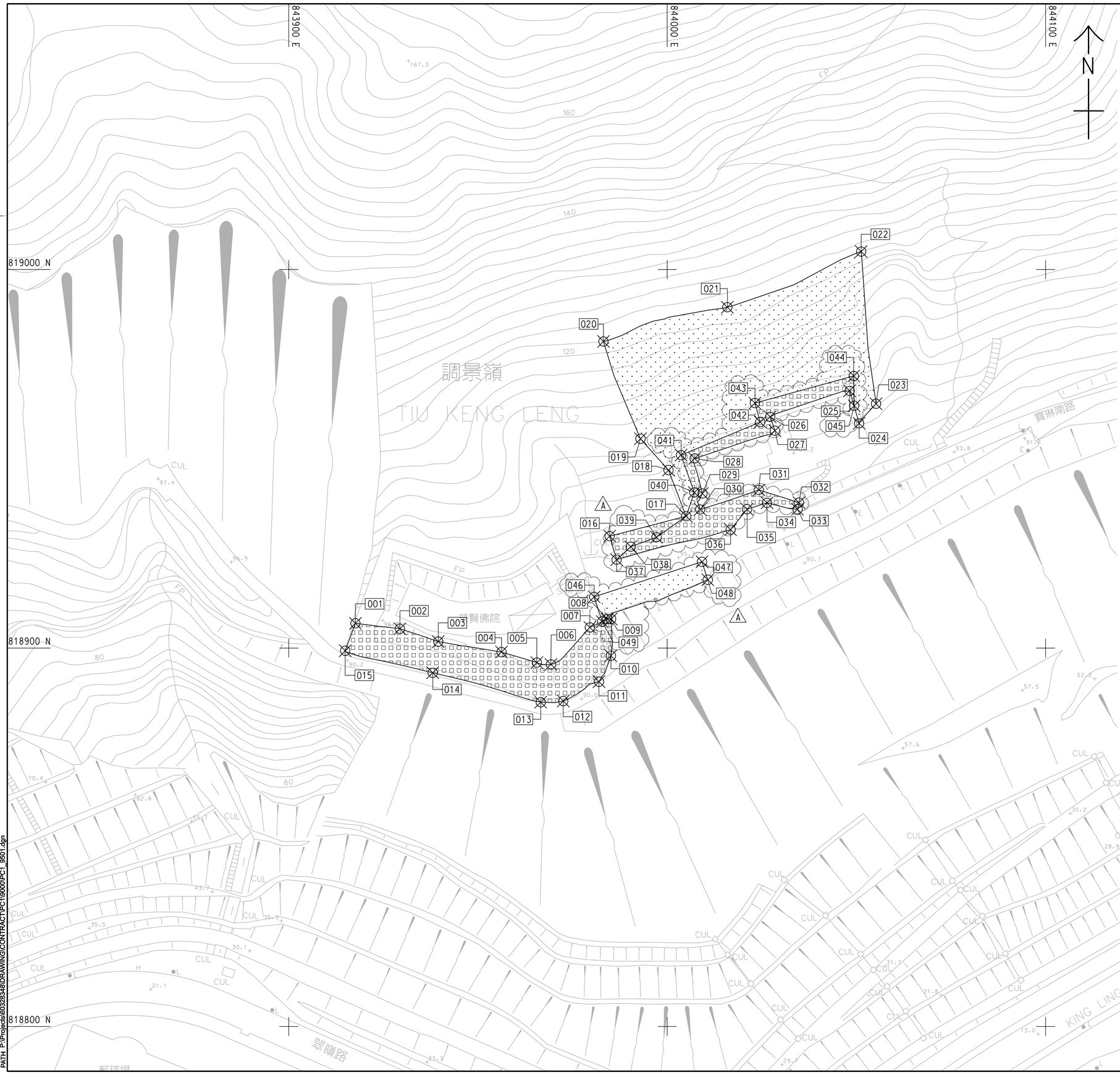

**PROJECT NO.** 項目編號
60328348

**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




## LEGEND:

PORTION 8

PORTION 9

## SETTING OUT POINTS

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

CONTRACT TITLE
PEDESTRIAN CONNECTIVITY FACILITIES WORKS PHASE 1

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

**STATUS** 階段

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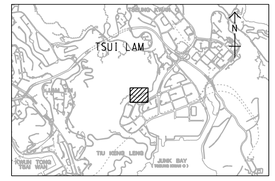


**PROJECT NO.** 項目編號
60328348

**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

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.

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

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

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AECOM

**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

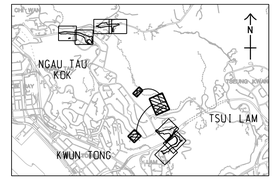
| I/R 修訂 | DATE 日期 | DESCRIPTION 內容摘要 | CHK. 核核 |
|---|---|---|---|
| | | | yc |
| A | NOV. 17 | TENDER ADDENDUM NO. 1 | AWYC |
| - | OCT. 17 | TENDER DRAWING | AWYC |

**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

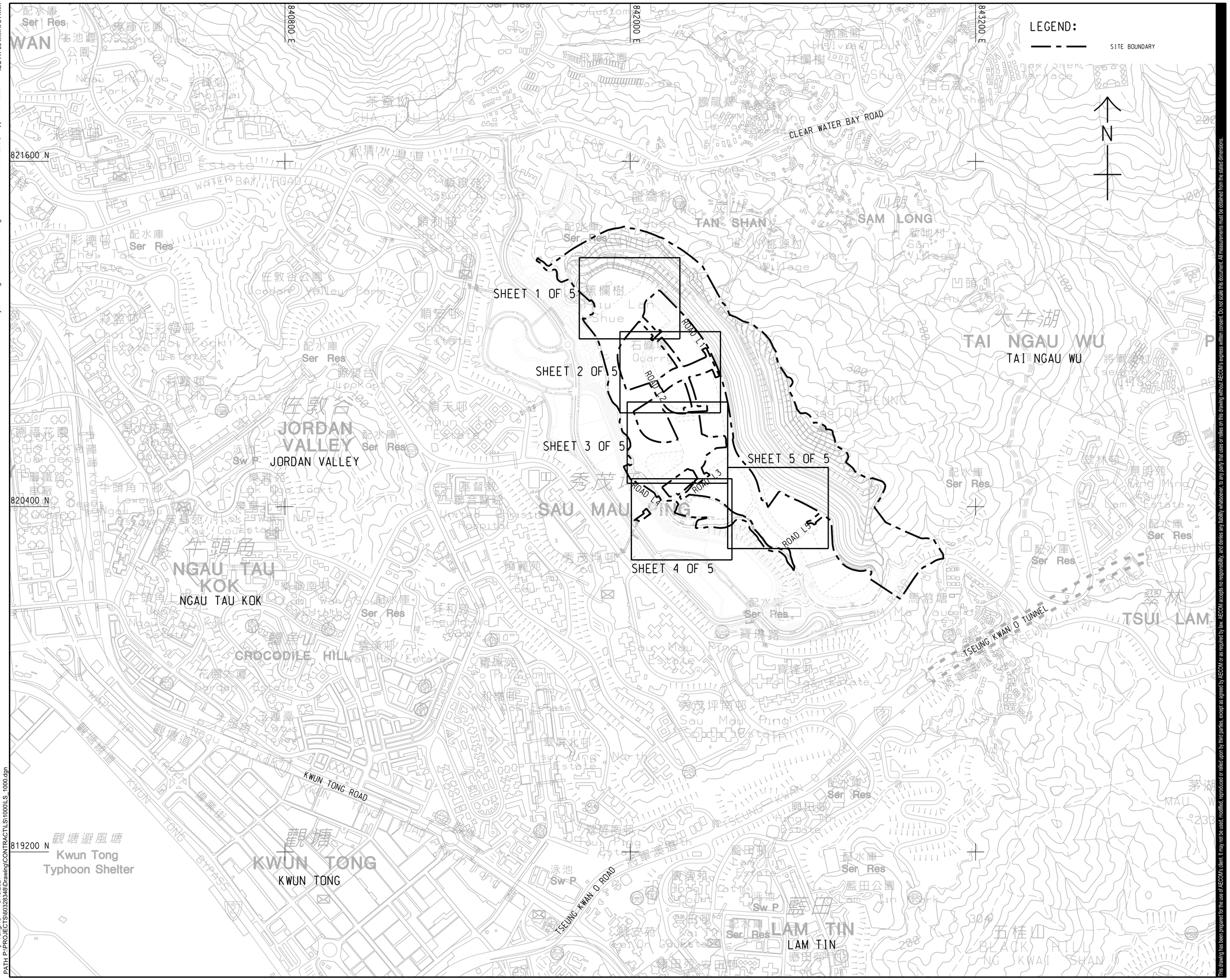
**CONTRACT NO.** 合約編號
NE/2017/03

**SHEET TITLE** 圖紙名稱
GENERAL LAYOUT

SHEET 8 OF 8

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

# Layout plan of Contract 4 (ED/2020/02)




AECOM

**PROJECT**
項目

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

CONTRACT TITLE
DEVELOPMENT OF ANDERSON ROAD QUARRY SITE - INFRASTRUCTURE, GREENING AND LANDSCAPE WORKS

**CLIENT**
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|---|---|---|---|
| - | MAR. 21 | TENDER DRAWING | AWYC |

**STATUS**
階段

**SCALE** 比例: A1 1 : 6000

**DIMENSION UNIT** 尺寸單位: METRES

**KEY PLAN**
索引圖

**PROJECT NO.** 項目編號: 60328348

**CONTRACT NO.** 合約編號: ED/2020/02

**SHEET TITLE**
圖紙名稱

KEY PLAN

**SHEET NUMBER**
圖紙編號

60328348/LS/1000

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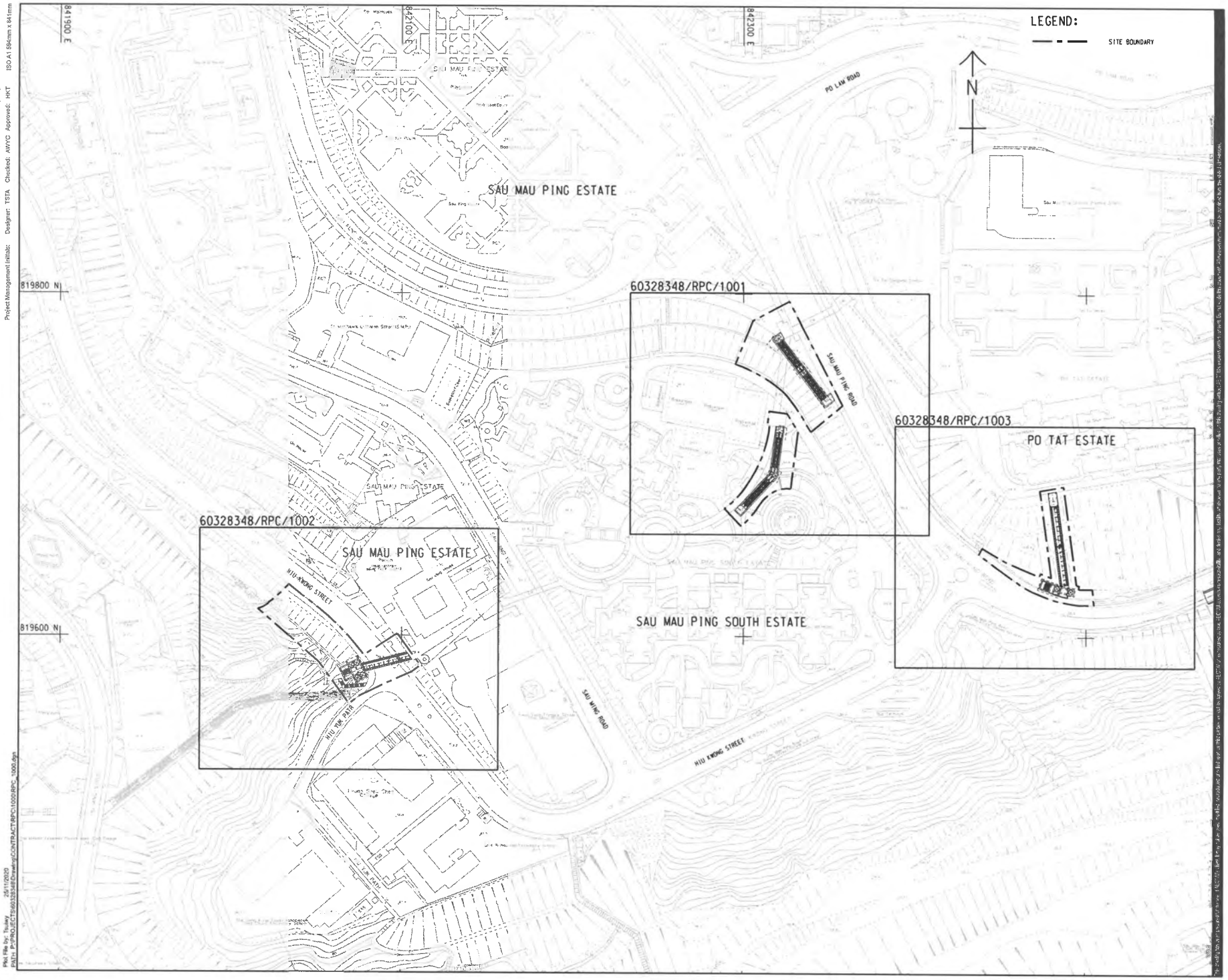
ISO A1 594mm x 841mm
Project Management Initials: Designer: DKMW Checked: AWYC Approved: HKT
Plot File by: YangRO 3/19/2021
PATH P:\PROJECTS\60328348\Drawing\CONTRACT\LS\1000\LS_1000.dgn

# Layout plan of Contract 5 (ED/2019/02)




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

Plot File by: Tauwy 25/11/2020
File: P:\PROJECTS\60328348\Drawing\CONTRACT\RPC\1000\RPC_1000.dgn

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

CONTRACT TITLE
DEVELOPMENT OF ANDERSON ROAD QUARRY SITE - REMAINING PEDESTRIAN CONNECTIVITY FACILITIES WORKS

CLIENT
CEDD 土木工程拓展署 Civil Engineering and Development Department

CONSULTANT
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|---|---|---|---|
| - | NOV. 20 | TENDER DRAWING | AWYC |

STATUS

SCALE
A1 1 : 1000

DIMENSION UNIT
METRES

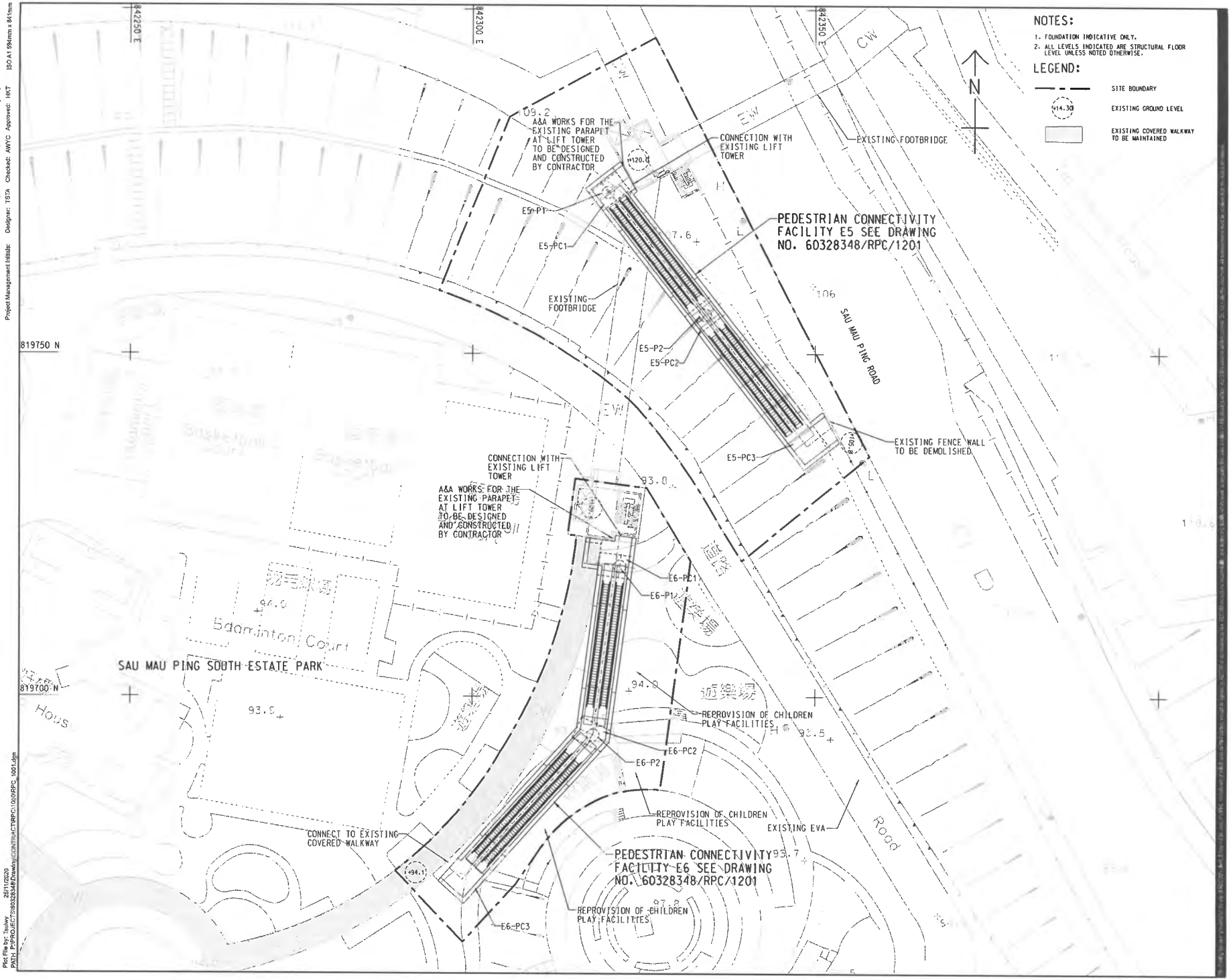
KEY PLAN

PROJECT NO.
60328348

CONTRACT NO.
ED/2019/02

SHEET TITLE
KEY PLAN

SHEET NUMBER
60328348/RPC/1000




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

Plot File by: Suiwy 25/11/2020
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**PROJECT**

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

CONTRACT TITLE
DEVELOPMENT OF ANDERSON ROAD QUARRY SITE - REMAINING PEDESTRIAN CONNECTIVITY FACILITIES WORKS

**CLIENT**

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**CONSULTANT**

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|---|---|---|---|
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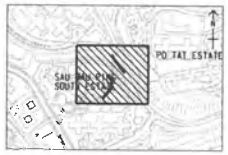
**STATUS**

**SCALE** A1 1 : 250

**DIMENSION UNIT** METRES

**KEY PLAN** A1 1 : 5000




**PROJECT NO.** 60328348

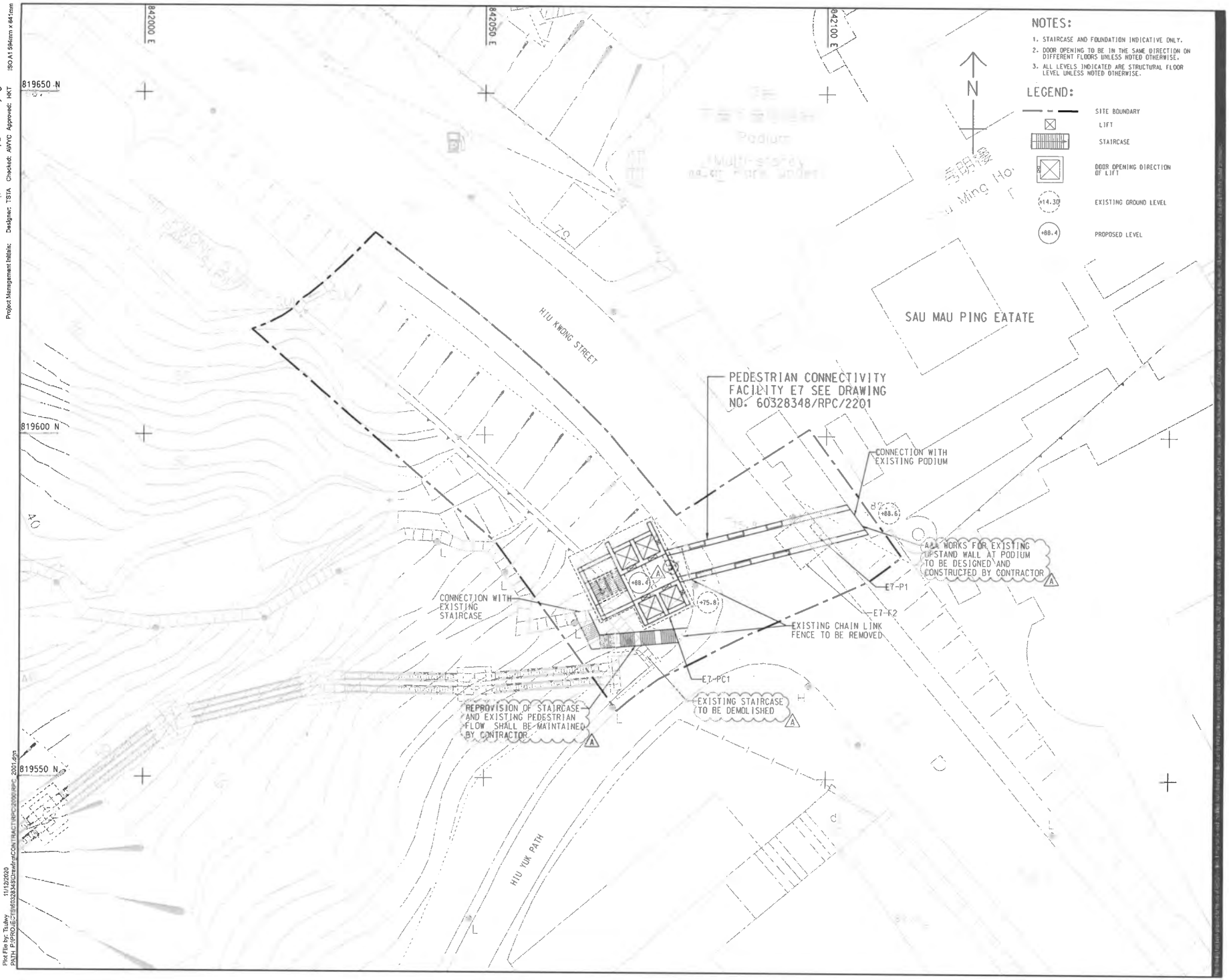
**CONTRACT NO.** ED/2019/02

**SHEET TITLE**

GENERAL LAYOUT - E5 & E6

**SHEET NUMBER**

60328348/RPC/1001




## NOTES:

1. STAIRCASE AND FOUNDATION INDICATIVE ONLY.
2. DOOR OPENING TO BE IN THE SAME DIRECTION ON DIFFERENT FLOORS UNLESS NOTED OTHERWISE.
3. ALL LEVELS INDICATED ARE STRUCTURAL FLOOR LEVEL UNLESS NOTED OTHERWISE.

## LEGEND:

- SITE BOUNDARY
- LIFT
- STAIRCASE
- DOOR OPENING DIRECTION OF LIFT
- +14.30 EXISTING GROUND LEVEL
- +88.4 PROPOSED LEVEL

AECOM

**PROJECT**

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

CONTRACT TITLE
DEVELOPMENT OF ANDERSON ROAD QUARRY SITE - REMAINING PEDESTRIAN CONNECTIVITY FACILITIES WORKS

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| - | NOV. 20 | TENDER DRAWING | AWYC |
| R | DATE | DESCRIPTION | CHK. |

**STATUS**

**SCALE** A1 1 : 250

**DIMENSION UNIT** METRES

**KEY PLAN** A1 1 : 5000




**PROJECT NO.** 60328348

**CONTRACT NO.** ED/2019/02

**SHEET TITLE**

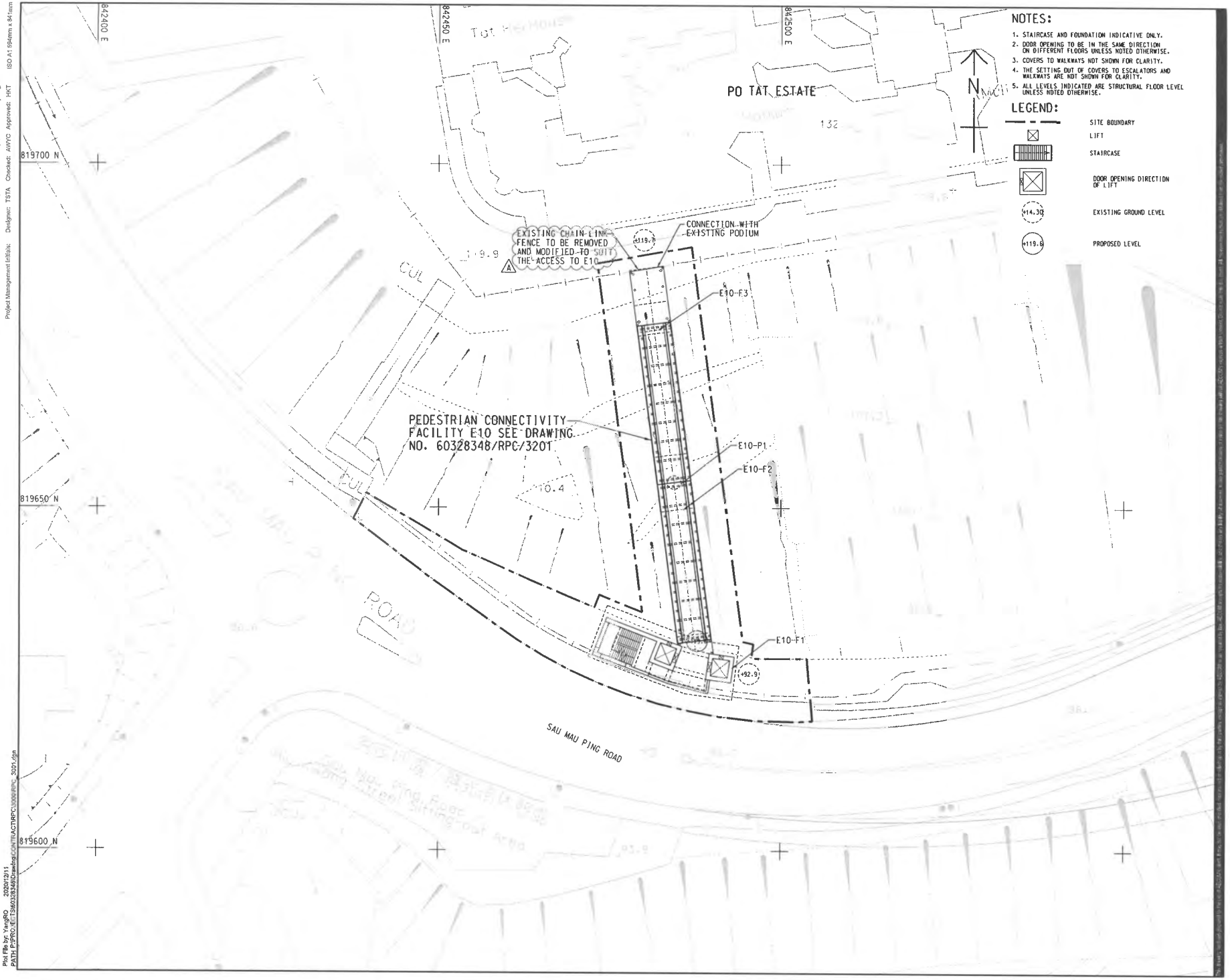
GENERAL LAYOUT - E7

**SHEET NUMBER**

60328348/RPC/2001A

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

Plot File by: Taulwy 11/12/2020
PATH: P:\PROJECTS\60328348\Drawing\CONTRACT\RPC\2000\RPC_2001.dgn




## NOTES:

1. STAIRCASE AND FOUNDATION INDICATIVE ONLY.
2. DOOR OPENING TO BE IN THE SAME DIRECTION ON DIFFERENT FLOORS UNLESS NOTED OTHERWISE.
3. COVERS TO WALKWAYS NOT SHOWN FOR CLARITY.
4. THE SETTING OUT OF COVERS TO ESCALATORS AND WALKWAYS ARE NOT SHOWN FOR CLARITY.
5. ALL LEVELS INDICATED ARE STRUCTURAL FLOOR LEVEL UNLESS NOTED OTHERWISE.

## LEGEND:

- SITE BOUNDARY
- LIFT
- STAIRCASE
- DOOR OPENING DIRECTION OF LIFT
- +14.30 EXISTING GROUND LEVEL
- +119.6 PROPOSED LEVEL

AECOM

**PROJECT**

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

CONTRACT TITLE
DEVELOPMENT OF ANDERSON ROAD QUARRY SITE - REMAINING PEDESTRIAN CONNECTIVITY FACILITIES WORKS

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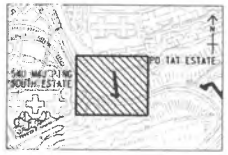
| A | DEC. 20 | TENDER ADDENDUM NO.1 | AWYC |
| - | NOV. 20 | TENDER DRAWING | AWYC |
| I/R | DATE | DESCRIPTION | CHK. |

**STATUS**

**SCALE** A1 1 : 250

**DIMENSION UNIT** METRES

**KEY PLAN** A1 1 : 5000




**PROJECT NO.** 60328348

**CONTRACT NO.** ED/2019/02

**SHEET TITLE**

GENERAL LAYOUT - E10

**SHEET NUMBER**

60328348/RPC/3001A

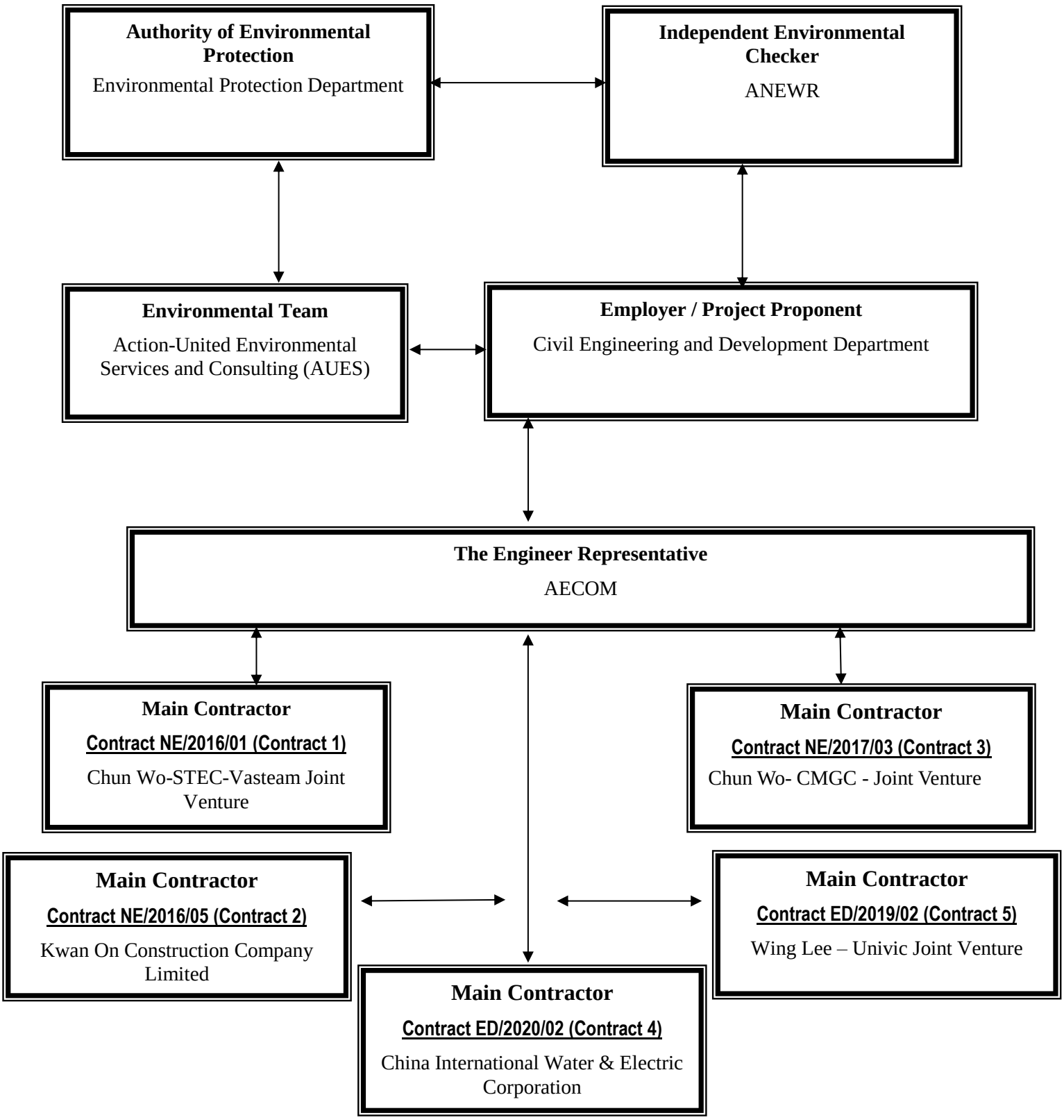
Project Management Initials: Designer: TSTA Checked: AWYC Approved: HKT ISO A1 594mm x 841mm

Plot File by: YangRO 2020/12/11
PATH P:\PROJECTS\60328348\Drawing\CONTRACT\RPC\3000\RPC_3001.dgn

# 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 | S W Lam, Sam | 3842 7087 | 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 | James Choi | 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 | Jimmy Cheng | 2638 7181 | 2744 6937 |
| CSVJV | Environmental Officer | Ken Chu | 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 | S W Lam, Sam | 3842 7087 | 2739 0076 |
| AECOM | Chief Resident Engineer | Lee, Yu Ching Paul | 5723 6880 | 2473 3221 |
| AECOM | Senior Resident Engineer | Bill Hon | 5599 1466 | 2473 3221 |
| ANEWR | Independent Environmental Checker | James Choi | 2618 2836 | 3007 8648 |
| KOCCL | Project Director | Ambrose Kwong | 2889 2675 | 2558 6900 |
| KOCCL | Site Agent | Mr. Albert PK Ng | 9150 1523 | 2558 6900 |
| KOCCL | Safety and Environmental Manager | Joly C K Kwong | 6111 5711 | 2558 6900 |
| KOCCL | Environmental Officer | Ken Tam | 9555 9958 | 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 | S W Lam, Sam | 3842 7087 | 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 | James Choi | 2618 2836 | 3007 8648 |
| CW – CMGC - JV | Construction Manager | William Leung | 9464 1392 | 3965 9900 |
| CW – CMGC - JV | Site Agent | Yu, Chi Kuen Paul | 9456 9819 | 3965 9900 |
| CW – CMGC - JV | Environmental Officer | King Lam | 9570 6187 | 3965 9900 |
| CW – CMGC - JV | Environmental Supervisor | Anna Tsang | 9333 8499 | 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*

## Contact Details of Key Personnel for Contract 4 –ED/2020/02

| Organization | Project Role | Name of Key Staff | Tel No. | Fax No. |
|---|---|---|---|---|
| CEDD | Engineer | S W Lam, Sam | 3842 7087 | 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 | James Choi | 2618 2836 | 3007 8648 |
| CIWEC | Project Director | Leung, Siu Ming Wilson | 5135 6590 | 2508 0987 |
| CIWEC | Site Agent | Tam. Wing San Wilson | 9031 5600 | 2508 0987 |
| CIWEC | Environmental Officer | Claudia Chiang | 9851 7932 | 2508 0987 |
| 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.*

*CIWEC (Main Contractor) –China International Water & Electric Corporation*

*ANEWR (IEC) –ANewR Consulting Limited*

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

## Contact Details of Key Personnel for Contract 5 –ED/2019/02

| Organization | Project Role | Name of Key Staff | Tel No. | Fax No. |
|---|---|---|---|---|
| CEDD | Engineer | S W Lam, Sam | 3842 7087 | 2739 0076 |
| AECOM | Chief Resident Engineer | Lee, Yu Ching Paul | 9824 7016 | 2473 3221 |
| AECOM | Senior Resident Engineer | Bill Hon | 5599 1486 | 2473 3221 |
| ANEWR | Independent Environmental Checker | James Choi | 2618 2836 | 3007 8648 |
| WL-UJV | Construction Manager | PH Ho | 9464 1392 | 2983 6640 |
| WL-UJV | Site Agent | Lee Chi Wai | 9255 7014 | 2983 6640 |
| WL-UJV | Environmental Officer | Guo Liming | 5723 9883 | 2983 6640 |
| 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.*

*WL –UJV (Main Contractor) – Wing Lee – Univic 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)
- (d) Contract 4 (ED/2020/02)
- (e) Contract 5 (ED/2019/02)

# Contract 1 (NE/2016/01)

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

# CONTRACT NO.NE/2016/01 SITE FORMATION AND INFRASTRUCTURE WORKS FOR DEVELOPMENT OF ANDERSON ROAD QUARRY SITE
## 3-MONTH ROLLING PROGRAMME



| Activity ID | Activity Name | BL Project Duration | BL Project Start | BL Project Finish | At Completion Duration | Start | Finish |
|---|---|---|---|---|---|---|---|
| **Anderson Rd Sub-programme (January 2022) _ccn _220117** | | | | | | | |
| Fresh Water Pumping Station | | | | | | | |
| Stage 5 - ABWF, Finishing & E&M | | | | | | | |
| FWP-1320 | Pumping Station E&M works | 0 | | | 457 | 29-Jun-20 A | 08-Jan-22 A |
| Salt Water Reservoir | | | | | | | |
| ABWF, Finishing & E&M | | | | | | | |
| SWR-1420 | Saltwater Reservior E&M works | 0 | | | 464 | 29-May-20 A | 15-Dec-21 A |
| Fresh Water Reservoir | | | | | | | |
| ABWF, Finishing & E&M | | | | | | | |
| FWR-2000 | Freshwater Reservior E&M works | 0 | | | 406 | 12-Oct-20 A | 23-Feb-22 |
| RWS Access Road & External Works | | | | | | | |
| FWP-1410 | Watermain (DN600 & DN450) & Irrigation System along WSA access road | 0 | | | 529 | 16-May-20 A | 23-Feb-22 |
| FWP-1420 | Drainage (sewerage & surface) along WSA access road | 0 | | | 467 | 30-Jul-20 A | 23-Feb-22 |
| FWP-1430 | CLP power supply duct | 0 | | | 426 | 16-Sep-20 A | 23-Feb-22 |
| FWP-1440 | Road Works & Fencing | 0 | | | 120 | 24-Feb-22 | 21-Jul-22 |
| FWP-1450 | Grteen Roof & Paving Area | 0 | | | 100 | 17-Jan-22 | 21-May-22 |
| Pedestrian Connection System A & B | | | | | | | |
| PC system B | | | | | | | |
| PCB-1090 | System B - Backfill south tower | 81 | 19-Aug-19 | 23-Nov-19 | 571 | 16-Feb-20 A | 17-Jan-22 |
| PCB-1100 | System B - Backfill north tower | 81 | 19-Aug-19 | 23-Nov-19 | 571 | 16-Feb-20 A | 17-Jan-22 |
| PCB-1120 | System B - E&M | 22 | 23-Sep-19 | 19-Oct-19 | 488 | 05-Jun-20 A | 22-Jan-22 |
| PCB-1130 | System B - E&M T&C | 24 | 21-Oct-19 | 16-Nov-19 | 274 | 02-Mar-21 A | 29-Jan-22 |
| PCB-1140 | System B - Lift installation | 75 | 21-Oct-19 | 18-Jan-20 | 288 | 02-Mar-21 A | 18-Feb-22 |
| PCB-1150 | System B - Lift T&C | 27 | 20-Jan-20 | 22-Feb-20 | 27 | 19-Feb-22 | 22-Mar-22 |
| PCB-1160 | System B - Submission of form 5 & EMSD instaction | 18 | 24-Feb-20 | 14-Mar-20 | 18 | 23-Mar-22 | 13-Apr-22 |
| PCB-1170 | System B - Issurance of Uer Permit | 6 | 16-Mar-20 | 21-Mar-20 | 6 | 14-Apr-22 | 23-Apr-22 |
| PC system A | | | | | | | |
| PCA-1050 | B5 - Back Fill Lift Tower (North) upwards Formation Level | 0 | | | 160 | 02-Jul-21 A | 11-Jan-22 A |
| PCA-1060 | B5 - E&M and BS Works | 0 | | | 184 | 02-Jul-21 A | 11-Feb-22 |
| PCA-1070 | B5 - ABWF Works | 0 | | | 131 | 20-Dec-21 A | 02-Jun-22 |
| PCA-1160 | C1a - Back Fill Lift Tower (South) upwards Formation Level | 0 | | | 87 | 18-Oct-21 A | 29-Jan-22 |
| PCA-1170 | C1a - E&M and BS Works | 0 | | | 119 | 22-Nov-21 A | 20-Apr-22 |
| PCA-1180 | C1a - ABWF Works | 0 | | | 116 | 03-Jan-22 A | 26-May-22 |
| Artificial Flood Attenuation Lake | | | | | | | |
| Construction of lake bottom | | | | | | | |
| ART-1990 | Art Lake - water testing for bottom of lake | 45 | 28-Feb-20 | 24-Apr-20 | 292 | 02-Mar-21 A | 23-Feb-22 |
| Construction of Floating Bridge | | | | | | | |
| ART-2060 | Art Lake Floating Brdige - footing construction | 30 | 06-Dec-19 | 13-Jan-20 | 314 | 11-Jan-21 A | 29-Jan-22 |
| ART-2070 | Art Lake Floating Brdige - installation bridge | 30 | 14-Jan-20 | 20-Feb-20 | 54 | 31-Jan-22 | 07-Apr-22 |
| Slot Chamber | | | | | | | |
| ART-2080 | Art Lake - Slot chamber no. 1 & stop log chamber | 18 | 09-Dec-19 | 31-Dec-19 | 505 | 16-May-20 A | 22-Jan-22 |
| ART-2090 | Art Lake - Slot chamber no. 2 & stop log chamber | 26 | 31-Jan-20 | 29-Feb-20 | 286 | 23-Feb-21 A | 09-Feb-22 |
| ART-2100 | Art Lake - Slot chamber no. 3 | 33 | 31-Jan-20 | 09-Mar-20 | 286 | 23-Feb-21 A | 09-Feb-22 |
| Drainage | | | | | | | |
| ART-2110 | Art Lake - Outside bay 38-45 | 63 | 04-Nov-19 | 18-Jan-20 | 570 | 02-Mar-20 A | 29-Jan-22 |




Planned Bar (WP) ◇ Planned Milestone (WP)
Actual Bar ◆ Milestone
Forecast Bar

**3-month Rolling Programme**
Anderson Rd Sub-programme
15-Jan-22

| Date | Revision | Checked | Approved |
|---|---|---|---|
| 15-Dec-21 | C1-MPU202112 | | |

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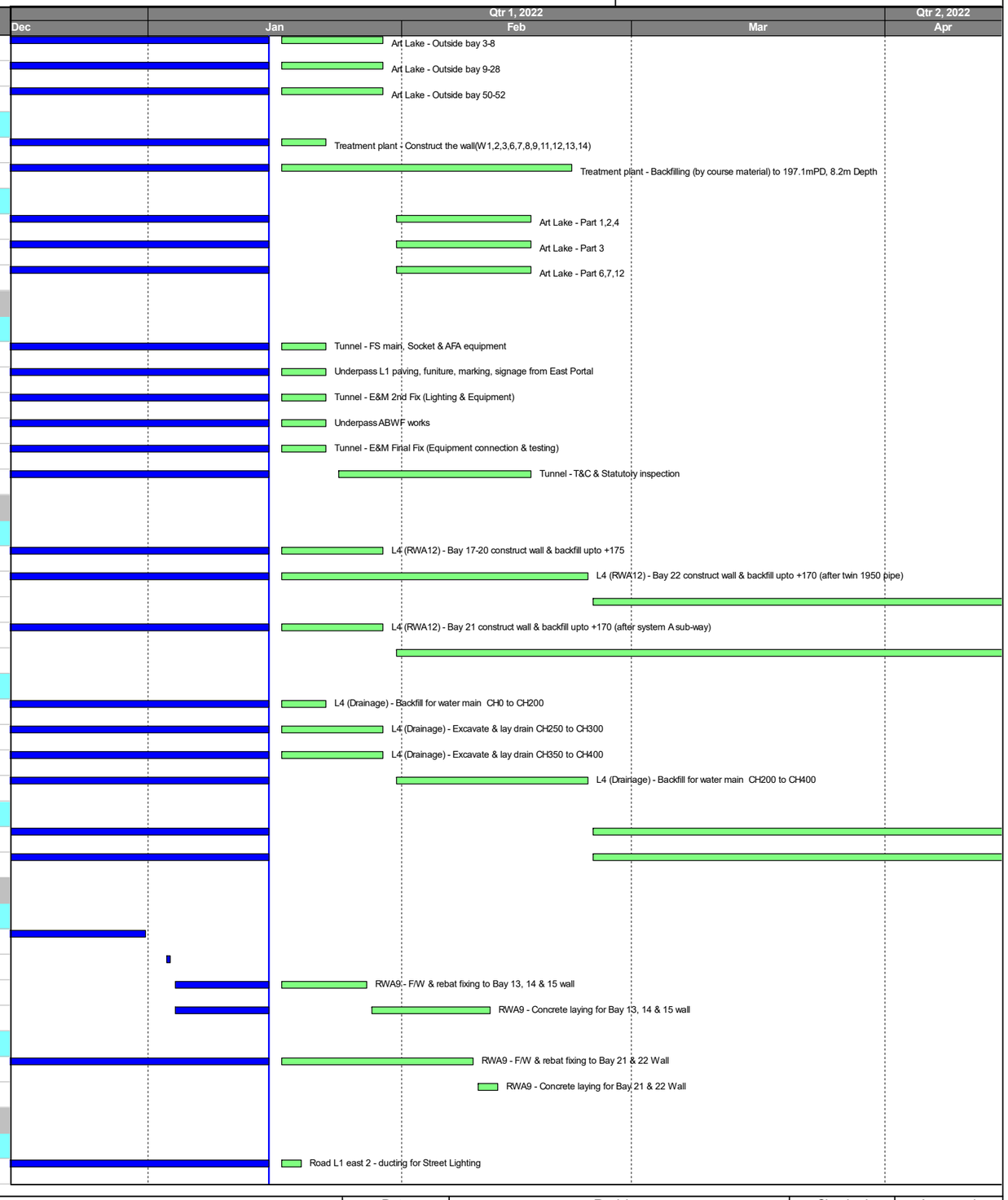
CHUN WO – STEC – VASTEAM JOINT VENTURE

# CONTRACT NO.NE/2016/01 SITE FORMATION AND INFRASTRUCTURE WORKS FOR DEVELOPMENT OF ANDERSON ROAD QUARRY SITE
## 3-MONTH ROLLING PROGRAMME



| Activity ID | Activity Name | BL Project Duration | BL Project Start | BL Project Finish | At Completion Duration | Start | Finish |
|---|---|---|---|---|---|---|---|
| ART-2120 | Art Lake - Outside bay 3-8 | 28 | 09-Dec-19 | 13-Jan-20 | 511 | 16-May-20 A | 29-Jan-22 |
| ART-2130 | Art Lake - Outside bay 9-28 | 56 | 21-Nov-19 | 31-Jan-20 | 540 | 07-Apr-20 A | 29-Jan-22 |
| ART-2140 | Art Lake - Outside bay 50-52 | 14 | 31-Jan-20 | 15-Feb-20 | 398 | 28-Sep-20 A | 29-Jan-22 |
| **Treatment Plant** | | | | | | | |
| ART-1620 | Treatment plant - Construct the wall(W1,2,3,6,7,8,9,11,12,13,14) | 14 | 10-Dec-19 | 27-Dec-19 | 483 | 11-Jun-20 A | 22-Jan-22 |
| ART-1630 | Treatment plant - Backfilling (by course material) to 197.1mPD, 8.2m Depth | 30 | 28-Dec-19 | 05-Feb-20 | 330 | 11-Jan-21 A | 21-Feb-22 |
| **Bioretention System** | | | | | | | |
| ART-2150 | Art Lake - Part 1,2,4 | 72 | 01-Feb-20 | 29-Apr-20 | 499 | 13-Jun-20 A | 16-Feb-22 |
| ART-2160 | Art Lake - Part 3 | 32 | 14-Jan-20 | 22-Feb-20 | 455 | 06-Aug-20 A | 16-Feb-22 |
| ART-2170 | Art Lake - Part 6,7,12 | 16 | 17-Feb-20 | 05-Mar-20 | 453 | 08-Aug-20 A | 16-Feb-22 |
| **Underpass Tunnel** | | | | | | | |
| **VE Panels, Road Works, E&M** | | | | | | | |
| TUN-3540 | Tunnel - FS main, Socket & AFA equipment | 0 | | | 376 | 19-Oct-20 A | 22-Jan-22 |
| TUN-3550 | Underpass L1 paving, funiture, marking, signage from East Portal | 0 | | | 376 | 19-Oct-20 A | 22-Jan-22 |
| TUN-3560 | Tunnel - E&M 2nd Fix (Lighting & Equipment) | 0 | | | 376 | 19-Oct-20 A | 22-Jan-22 |
| TUN-3570 | Underpass ABWF works | 0 | | | 359 | 09-Nov-20 A | 22-Jan-22 |
| TUN-3580 | Tunnel - E&M Final Fix (Equipment connection & testing) | 0 | | | 359 | 09-Nov-20 A | 22-Jan-22 |
| TUN-3590 | Tunnel - T&C & Statutory inspection | 0 | | | 189 | 30-Jun-21 A | 16-Feb-22 |
| **Road L4 (RWA18, Noise Barrier, RWA12, Utilities & Road Works)** | | | | | | | |
| **Retaining Wall RWA12** | | | | | | | |
| L4-3460 | L4 (RWA12) - Bay 17-20 construct wall & backfill upto +175 | 0 | | | 183 | 23-Jun-21 A | 29-Jan-22 |
| L4-3530 | L4 (RWA12) - Bay 22 construct wall & backfill upto +170 (after twin 1950 pipe) | 0 | | | 156 | 16-Aug-21 A | 23-Feb-22 |
| L4-3540 | L4 (RWA12) - Bay 22 construct wall & backfill upto +175 | 0 | | | 85 | 24-Feb-22 | 09-Jun-22 |
| L4-3630 | L4 (RWA12) - Bay 21 construct wall & backfill upto +170 (after system A sub-way) | 0 | | | 183 | 23-Jun-21 A | 29-Jan-22 |
| L4-3640 | L4 (RWA12) - Bay 21 construct wall & backfill upto +175 | 0 | | | 85 | 31-Jan-22 | 18-May-22 |
| **Road Works - Drainage** | | | | | | | |
| L4-4260 | L4 (Drainage) - Backfill for water main CH0 to CH200 | 0 | | | 268 | 02-Mar-21 A | 22-Jan-22 |
| L4-4280 | L4 (Drainage) - Excavate & lay drain CH250 to CH300 | 0 | | | 274 | 02-Mar-21 A | 29-Jan-22 |
| L4-4300 | L4 (Drainage) - Excavate & lay drain CH350 to CH400 | 0 | | | 274 | 02-Mar-21 A | 29-Jan-22 |
| L4-4310 | L4 (Drainage) - Backfill for water main CH200 to CH400 | 0 | | | 69 | 29-Nov-21 A | 23-Feb-22 |
| **Watermain & Utilities** | | | | | | | |
| L4-4320 | L4 (Watermain & UU) - Constuct watermain & UU CH0 to CH200 | 0 | | | 109 | 15-Dec-21 A | 03-May-22 |
| L4-4330 | L4 (Watermain & UU) - Constuct watermain & UU CH200 to CH400 | 0 | | | 109 | 15-Dec-21 A | 03-May-22 |
| **Retaining Wall RWA9 at Road L3** | | | | | | | |
| **RWA9 Bay 13 to Bay 16** | | | | | | | |
| RWA9-1240 | RWA9 - F/W & rebat fixing to Bay 16 wall | 0 | | | 159 | 23-Jun-21 A | 31-Dec-21 A |
| RWA9-1250 | RWA9 - Concrete laying for Bay 16 wall | 0 | | | 1 | 03-Jan-22 A | 03-Jan-22 A |
| RWA9-1260 | RWA9 - F/W & rebat fixing to Bay 13, 14 & 15 wall | 0 | | | 21 | 04-Jan-22 A | 27-Jan-22 |
| RWA9-1270 | RWA9 - Concrete laying for Bay 13, 14 & 15 wall | 0 | | | 31 | 04-Jan-22 A | 11-Feb-22 |
| **RWA9 Bay 21 & Bay 22** | | | | | | | |
| RWA9-1400 | RWA9 - F/W & rebat fixing to Bay 21 & 22 Wall | 0 | | | 183 | 30-Jun-21 A | 09-Feb-22 |
| RWA9-1410 | RWA9 - Concrete laying for Bay 21 & 22 Wall | 0 | | | 3 | 10-Feb-22 | 12-Feb-22 |
| **Road Works L5,L1 east (between Junction L3 & L5)** | | | | | | | |
| **Road L1 east part 2 (L5 toward PC system B)** | | | | | | | |
| RL1b-1040 | Road L1 east 2 - ducting for Street Lighting | 0 | | | 618 | 19-Dec-19 A | 19-Jan-22 |




Planned Bar (WP) ◇ Planned Milestone (WP)
Actual Bar ◆ Milestone
Forecast Bar

**3-month Rolling Programme**
Anderson Rd Sub-programme
15-Jan-22

| Date | Revision | Checked | Approved |
|---|---|---|---|
| 15-Dec-21 | C1-MPU202112 | | |

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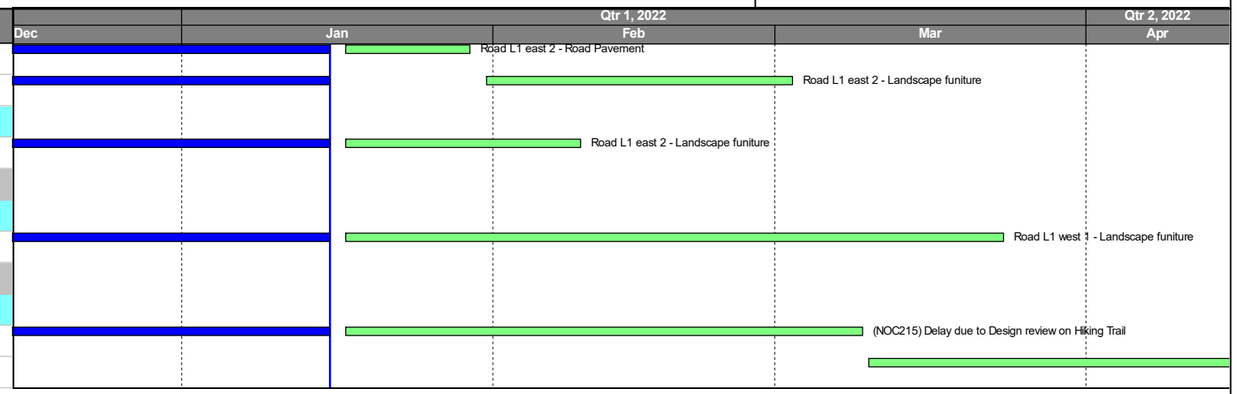
CHUN WO – STEC – VASTEAM JOINT VENTURE

# CONTRACT NO.NE/2016/01 SITE FORMATION AND INFRASTRUCTURE WORKS FOR DEVELOPMENT OF ANDERSON ROAD QUARRY SITE
## 3-MONTH ROLLING PROGRAMME



| Activity ID | Activity Name | BL Project Duration | BL Project Start | BL Project Finish | At Completion Duration | Start | Finish |
|---|---|---|---|---|---|---|---|
| RL1b-1050 | Road L1 east 2 - Road Pavement | 0 | | | 534 | 17-Apr-20 A | 29-Jan-22 |
| RL1b-1060 | Road L1 east 2 - Landscape funiture | 0 | | | 511 | 13-Jun-20 A | 02-Mar-22 |
| **Road L1 east part 3 (Junction L3 toward L5)** | | | | | | | |
| RL1c-1060 | Road L1 east 2 - Landscape funiture | 0 | | | 493 | 13-Jun-20 A | 09-Feb-22 |
| **Road Works PTT, L1 west (between Junction L3 & PTT)** | | | | | | | |
| **Road L1 west part 1 (Box culvert BC1)** | | | | | | | |
| RL1c-1140 | Road L1 west 1 - Landscape funiture | 0 | | | 227 | 21-Jun-21 A | 23-Mar-22 |
| **Hiking Trail Connecting to Wison Trail (Portion B5)** | | | | | | | |
| **Construction works at Hiking Trail** | | | | | | | |
| HIK10130 | (NOC215) Delay due to Design review on Hiking Trail | 0 | | | 203 | 06-Jul-21 A | 09-Mar-22 |
| HIK10150 | Resume work - Construction of Dwarf Walls for Hiking Trail (SP001 to SP001A) | 0 | | | 75 | 10-Mar-22 | 11-Jun-22 |



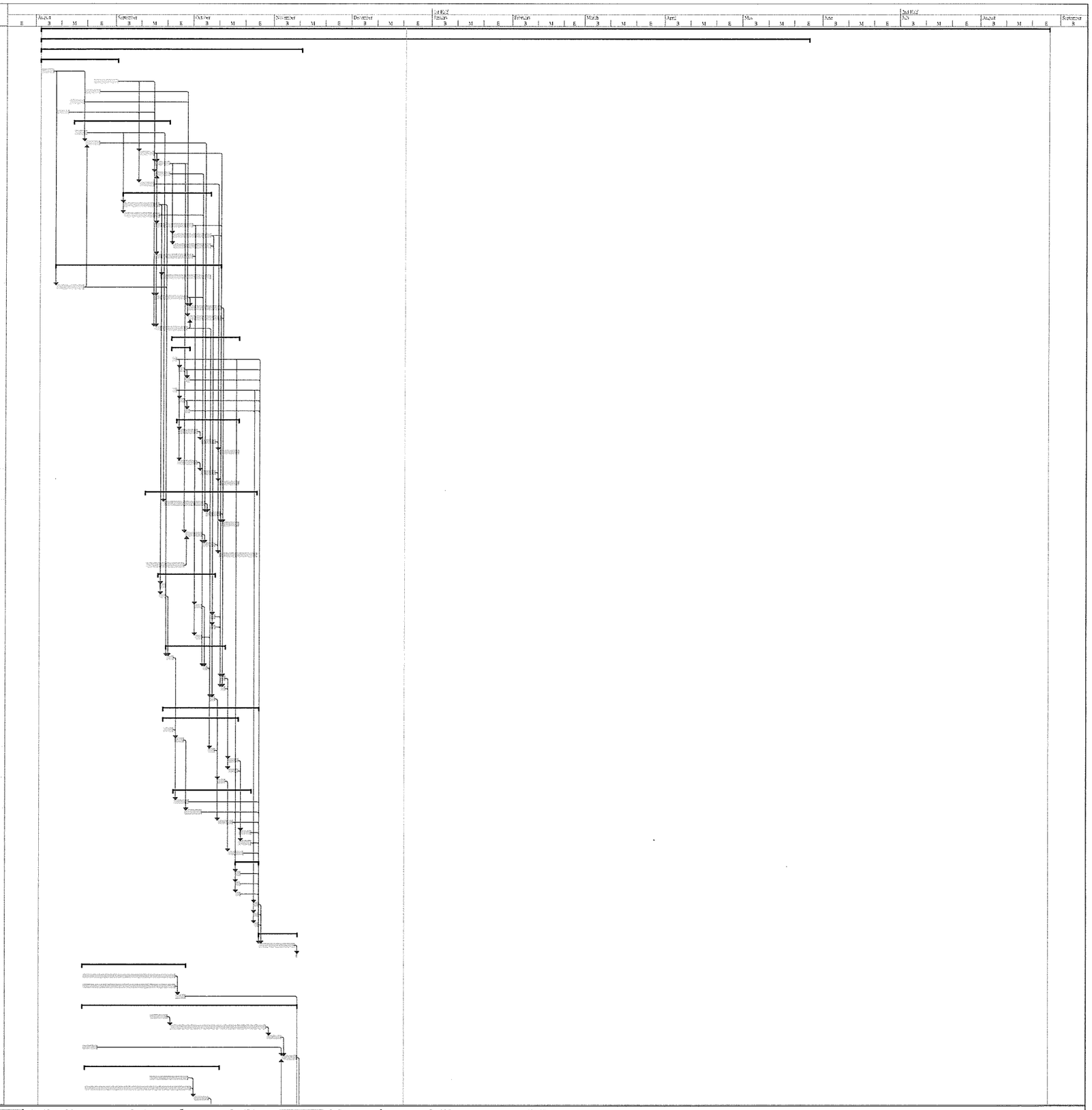

Planned Bar (WP) ◇ Planned Milestone (WP)
Actual Bar ◆ Milestone
Forecast Bar

**3-month Rolling Programme**
Anderson Rd Sub-programme
15-Jan-22

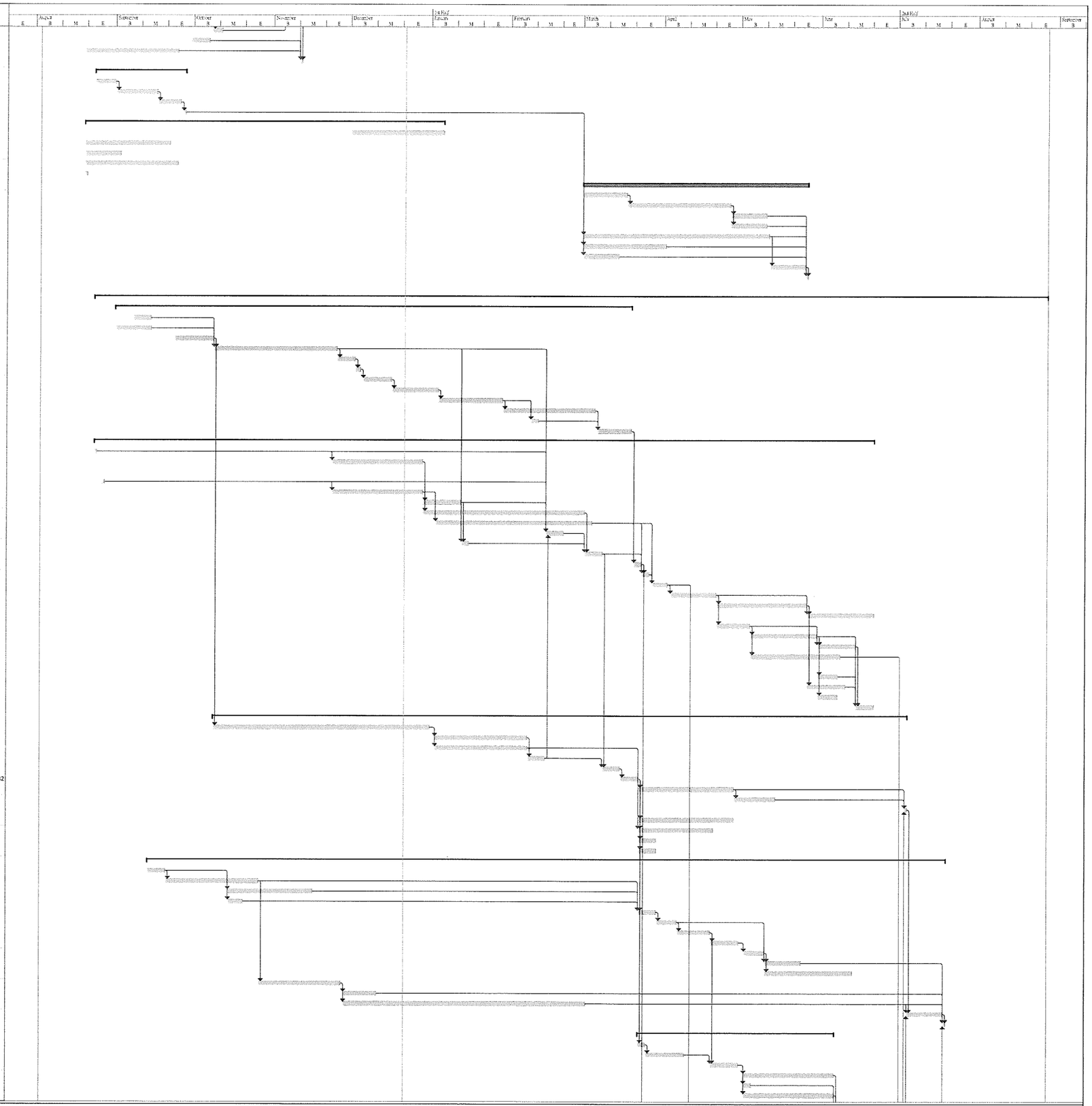
| Date | Revision | Checked | Approved |
|---|---|---|---|
| 15-Dec-21 | C1-MPU202112 | | |

# Contract 2 (NE/2016/05)

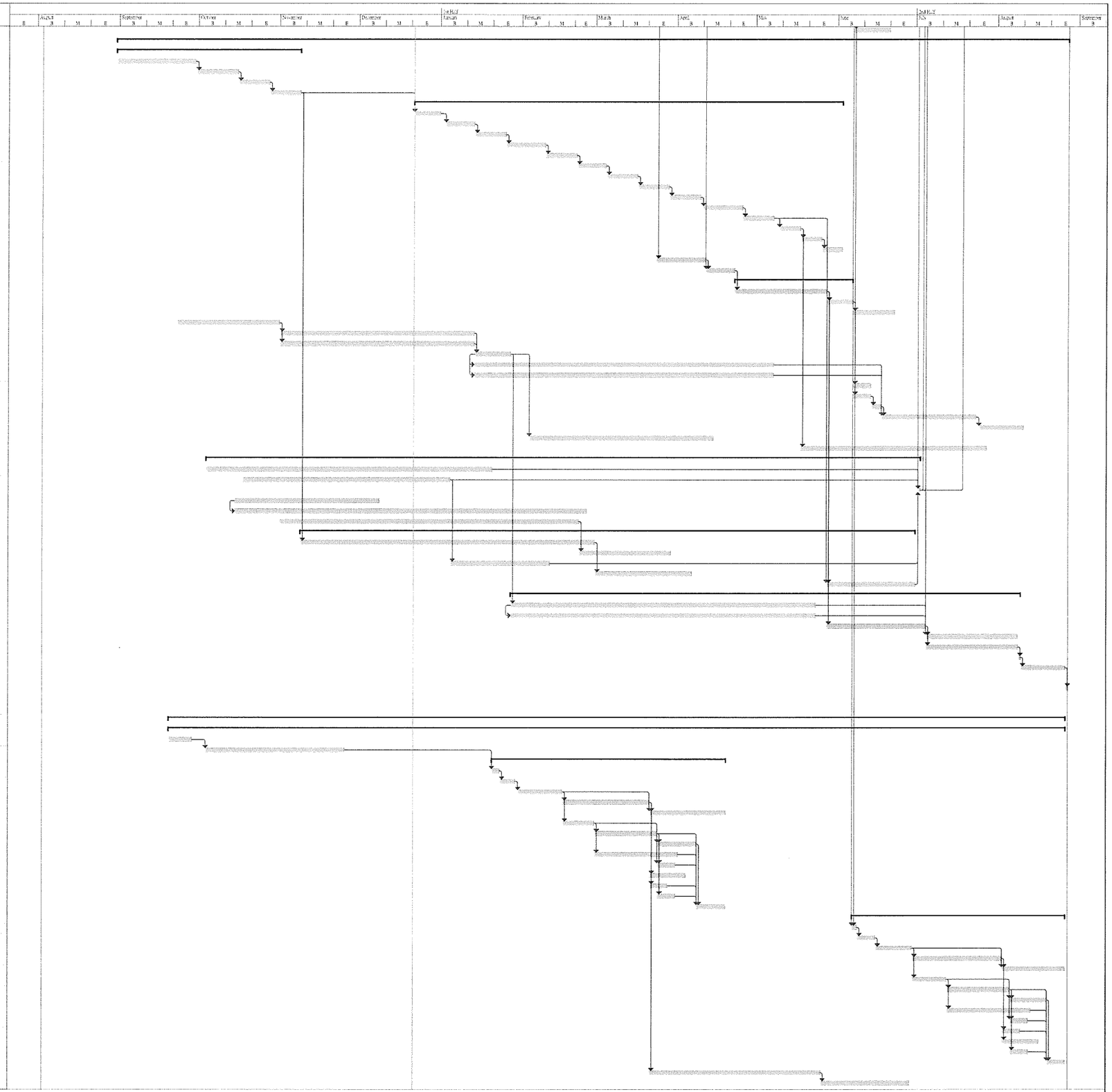
| ID | Task Name | Duration | Start | Finish | Predecessors | Successors |
|---|---|---|---|---|---|---|
| 1 | **NE/2016/05** | **318 days?** | **Tue 03-08-21** | **Sat 27-08-22** | | |
| 2 | **Portion 1** | **240 days?** | **Tue 03-08-21** | **Thu 26-05-22** | | |
| 3 | **E1 Escalator** | **84 days** | **Tue 03-08-21** | **Thu 11-11-21** | | |
| 4 | **Bamboo Scaffolding Erection** | **26 days** | **Tue 03-08-21** | **Wed 01-09-21** | | |
| 5 | PC1 to PC2 | 5 days | Tue 03-08-21 | Sat 07-08-21 | | 12,26 |
| 6 | PC2 to PC3 | 9 days | Mon 23-08-21 | Wed 01-09-21 | | 13,27 |
| 7 | PC3 to PC4 | 5 days | Fri 20-08-21 | Wed 25-08-21 | | 14,28 |
| 8 | PC4 to PC5 | 5 days | Sat 14-08-21 | Thu 19-08-21 | | 15,29 |
| 9 | PC5 to PC6 | 5 days | Mon 09-08-21 | Fri 13-08-21 | | 16,30 |
| 10 | **Steel Frame Adjustment & Corrugated Sheet Roofing Installa** | **32 days** | **Mon 16-08-21** | **Tue 21-09-21** | | |
| 11 | RS1 to PC1 | 5 days | Mon 16-08-21 | Fri 20-08-21 | | 18,47 |
| 12 | PC1 to PC2 | 5 days | Fri 20-08-21 | Wed 25-08-21 | 5,26 | 19,48 |
| 13 | PC2 to PC3 | 5 days | Fri 10-09-21 | Wed 15-09-21 | 6 | 20,27,14,49 |
| 14 | PC3 to PC4 | 5 days | Thu 16-09-21 | Tue 21-09-21 | 7,13 | 21,28,50 |
| 15 | PC4 to PC5 | 5 days | Thu 16-09-21 | Tue 21-09-21 | 8,16 | 22,29,51 |
| 16 | PC5 to PC6 | 5 days | Fri 10-09-21 | Wed 15-09-21 | 9 | 23,30,15,52 |
| 17 | **Cladding Features & Gutter Installation** | **27 days** | **Sat 04-09-21** | **Thu 07-10-21** | | |
| 18 | RS1 to PC1 | 12 days | Sat 04-09-21 | Fri 17-09-21 | 11 | 25,55,62 |
| 19 | PC1 to PC2 | 12 days | Sat 04-09-21 | Fri 17-09-21 | 12 | 56,63 |
| 20 | PC2 to PC3 | 12 days | Thu 16-09-21 | Thu 30-09-21 | 13 | 57,64 |
| 21 | PC3 to PC4 | 12 days | Thu 23-09-21 | Thu 07-10-21 | 14 | 58,65 |
| 22 | PC4 to PC5 | 12 days | Thu 23-09-21 | Thu 07-10-21 | 15 | 59,66 |
| 23 | PC5 to PC6 | 12 days | Thu 16-09-21 | Thu 30-09-21 | 16 | 60 |
| 24 | **Lighting & Unistrut & Lightning Protection** | **53 days** | **Mon 09-08-21** | **Mon 11-10-21** | | |
| 25 | RS1 to PC1 | 15 days | Sat 18-09-21 | Thu 07-10-21 | 18 | |
| 26 | PC1 to PC2 | 10 days | Mon 09-08-21 | Thu 19-08-21 | 5 | 12,62 |
| 27 | PC2 to PC3 | 10 days | Thu 16-09-21 | Tue 28-09-21 | 6,13 | 28,63 |
| 28 | PC3 to PC4 | 10 days | Wed 29-09-21 | Mon 11-10-21 | 7,14,27 | 64 |
| 29 | PC4 to PC5 | 10 days | Wed 29-09-21 | Mon 11-10-21 | 8,15,30 | 65 |
| 30 | PC5 to PC6 | 10 days | Thu 16-09-21 | Tue 28-09-21 | 9,16 | 29,66 |
| 31 | **Flashing Installation** | **20 days** | **Thu 23-09-21** | **Mon 18-10-21** | | |
| 32 | **Landing** | **6 days** | **Thu 23-09-21** | **Wed 29-09-21** | | |
| 33 | RS1 to PC1 | 2 days | Thu 23-09-21 | Fri 24-09-21 | | 40,34,90,83 |
| 34 | PC1 to PC2 | 2 days | Sat 25-09-21 | Mon 27-09-21 | 33 | 35,90,84 |
| 35 | PC2 to PC3 | 2 days | Tue 28-09-21 | Wed 29-09-21 | 34 | 90,85 |
| 36 | PC3 to PC4 | 2 days | Thu 23-09-21 | Fri 24-09-21 | | 43,37,90,86 |
| 37 | PC4 to PC5 | 2 days | Sat 25-09-21 | Mon 27-09-21 | 36 | 38,90,87 |
| 38 | PC5 to PC6 | 2 days | Tue 28-09-21 | Wed 29-09-21 | 37 | 90,88 |
| 39 | **Gap along Escalators** | **18 days** | **Sat 25-09-21** | **Mon 18-10-21** | | |
| 40 | RS1 to PC1 | 6 days | Sat 25-09-21 | Sat 02-10-21 | 33 | 41 |
| 41 | PC1 to PC2 | 6 days | Mon 04-10-21 | Sat 09-10-21 | 40 | 42 |
| 42 | PC2 to PC3 | 6 days | Mon 11-10-21 | Mon 18-10-21 | 41 | |
| 43 | PC3 to PC4 | 6 days | Sat 25-09-21 | Sat 02-10-21 | 36 | 44 |
| 44 | PC4 to PC5 | 6 days | Mon 04-10-21 | Sat 09-10-21 | 43 | 45 |
| 45 | PC5 to PC6 | 6 days | Mon 11-10-21 | Mon 18-10-21 | 44 | |
| 46 | **Tiling (Wall / Floors)** | **34 days** | **Mon 13-09-21** | **Mon 25-10-21** | | |
| 47 | RS1 to PC1 (Entrance & Landing) | 12 days | Mon 20-09-21 | Tue 05-10-21 | 11 | 48 |
| 48 | PC1 to PC2 (Landing) | 5 days | Wed 06-10-21 | Mon 11-10-21 | 47,12 | 49 |
| 49 | PC2 to PC3 (Landing) | 5 days | Tue 12-10-21 | Mon 18-10-21 | 48,13 | |
| 50 | PC3 to PC4 (Landing) | 5 days | Tue 28-09-21 | Mon 04-10-21 | 53,14 | 51 |
| 51 | PC4 to PC5 (Landing) | 5 days | Tue 05-10-21 | Sat 09-10-21 | 50,15 | 52 |
| 52 | PC5 to PC6 (Entrance & Landing) | 12 days | Mon 11-10-21 | Mon 25-10-21 | 51,16 | |
| 53 | Staircase | 12 days | Mon 13-09-21 | Mon 27-09-21 | | 50 |
| 54 | **Downpipe** | **17 days** | **Sat 18-09-21** | **Sat 09-10-21** | | |
| 55 | RS1 to PC1 | 2 days | Sat 18-09-21 | Mon 20-09-21 | 18 | |
| 56 | PC1 to PC2 | 2 days | Sat 18-09-21 | Mon 20-09-21 | 19 | 62 |
| 57 | PC2 to PC3 | 2 days | Sat 02-10-21 | Mon 04-10-21 | 20 | 63 |
| 58 | PC3 to PC4 | 2 days | Fri 08-10-21 | Sat 09-10-21 | 21 | 64 |
| 59 | PC4 to PC5 | 2 days | Fri 08-10-21 | Sat 09-10-21 | 22 | 65 |
| 60 | PC5 to PC6 | 2 days | Sat 02-10-21 | Mon 04-10-21 | 23 | 66 |
| 61 | **Dismantling of Bamboo Scaffolding** | **18 days** | **Tue 21-09-21** | **Wed 13-10-21** | | |
| 62 | PC1 to PC2 | 2 days | Tue 21-09-21 | Thu 23-09-21 | 56,26,18 | 70 |
| 63 | PC2 to PC3 | 2 days | Tue 05-10-21 | Wed 06-10-21 | 57,27,19 | 71 |
| 64 | PC3 to PC4 | 2 days | Tue 12-10-21 | Wed 13-10-21 | 58,28,20 | 72 |
| 65 | PC4 to PC5 | 2 days | Tue 12-10-21 | Wed 13-10-21 | 59,29,21 | 73 |
| 66 | PC5 to PC6 | 2 days | Fri 08-10-21 | Sat 09-10-21 | 60,30,22 | 74 |
| 67 | **GMS Railing with PMMA** | **29 days** | **Mon 20-09-21** | **Tue 26-10-21** | | |
| 68 | **Pole Installation** | **22 days** | **Mon 20-09-21** | **Mon 18-10-21** | | |
| 69 | RS1 to PC1 | 3 days | Mon 20-09-21 | Thu 23-09-21 | | 76,70 |
| 70 | PC1 to PC2 | 3 days | Fri 24-09-21 | Mon 27-09-21 | 62,69 | 77 |
| 71 | PC2 to PC3 | 3 days | Thu 07-10-21 | Sat 09-10-21 | 63 | 78 |
| 72 | PC3 to PC4 | 3 days | Fri 15-10-21 | Mon 18-10-21 | 64 | 79 |
| 73 | PC4 to PC5 | 3 days | Fri 15-10-21 | Mon 18-10-21 | 65 | 80 |
| 74 | PC5 to PC6 | 3 days | Mon 11-10-21 | Wed 13-10-21 | 66 | 81 |
| 75 | **PMMA sheet Installation** | **24 days** | **Fri 24-09-21** | **Sat 23-10-21** | | |
| 76 | RS1 to PC1 | 5 days | Fri 24-09-21 | Wed 29-09-21 | 69 | 90,83,84,85 |
| 77 | PC1 to PC2 | 5 days | Tue 28-09-21 | Mon 04-10-21 | 70 | 90,84,83,85 |
| 78 | PC2 to PC3 | 5 days | Mon 11-10-21 | Sat 16-10-21 | 71 | 90,85,83,84 |
| 79 | PC3 to PC4 | 5 days | Tue 19-10-21 | Sat 23-10-21 | 72 | 90,86,87,88 |
| 80 | PC4 to PC5 | 5 days | Tue 19-10-21 | Sat 23-10-21 | 73 | 90,87,86,88 |
| 81 | PC5 to PC6 | 5 days | Fri 15-10-21 | Wed 20-10-21 | 74 | 90,88,86,87 |
| 82 | **Escalators Barriers Installation** | **8 days** | **Mon 18-10-21** | **Tue 26-10-21** | | |
| 83 | RS1 to PC1 | 2 days | Mon 18-10-21 | Tue 19-10-21 | 76,77,78,33 | 90 |
| 84 | PC1 to PC2 | 2 days | Mon 18-10-21 | Tue 19-10-21 | 77,76,78,34 | 90 |
| 85 | PC2 to PC3 | 2 days | Mon 18-10-21 | Tue 19-10-21 | 78,76,77,35 | 90 |
| 86 | PC3 to PC4 | 2 days | Mon 25-10-21 | Tue 26-10-21 | 79,80,81,36 | 90 |
| 87 | PC4 to PC5 | 2 days | Mon 25-10-21 | Tue 26-10-21 | 80,79,81,37 | 90 |
| 88 | PC5 to PC6 | 2 days | Mon 25-10-21 | Tue 26-10-21 | 81,79,80,38 | 90 |
| 89 | **Submission for LE5** | **13 days** | **Wed 27-10-21** | **Wed 10-11-21** | | |
| 90 | AP Inspection, Testing & Submission Preparation | 12 days | Wed 27-10-21 | Tue 09-11-21 | 79,80,36,81,37,38,76,77,78,33,34,35,83,84,85,86,87,88 | 91 |
| 91 | Submission | 1 day | Wed 10-11-21 | Wed 10-11-21 | 90 | |
| 92 | **Drainage System to Escalator** | **33 days** | **Fri 20-08-21** | **Tue 28-09-21** | | |
| 93 | Manhole | 30 days | Fri 20-08-21 | Fri 24-09-21 | | 95 |
| 94 | Drain Pipe Installation | 30 days | Fri 20-08-21 | Fri 24-09-21 | | 95 |
| 95 | Testing | 3 days | Sat 25-09-21 | Tue 28-09-21 | 93,94 | 109 |
| 96 | **Telemetry System to Escalator** | **68 days** | **Fri 20-08-21** | **Wed 10-11-21** | | |
| 97 | XP / TTA | 6 days | Wed 15-09-21 | Tue 21-09-21 | | 98 |
| 98 | Civil Works | 30 days | Thu 23-09-21 | Fri 29-10-21 | 97 | 99 |
| 99 | Cabling Works outside Site Boundary | 5 days | Sat 30-10-21 | Thu 04-11-21 | 98 | 101 |
| 100 | Cabling Works at Escalators | 5 days | Fri 20-08-21 | Wed 25-08-21 | | 101 |
| 101 | Testing | 5 days | Fri 05-11-21 | Wed 10-11-21 | 99,100,106 | 109 |
| 102 | **Traffic Light Box** | **42 days** | **Sat 21-08-21** | **Mon 11-10-21** | | |
| 103 | Mounting Installation | 12 days | Wed 15-09-21 | Wed 29-09-21 | | 105 |
| 104 | Procurement of Traffic Box | 34 days | Sat 21-08-21 | Thu 30-09-21 | | 105 |
| 105 | Box Installation and Cabling | 5 days | Sat 02-10-21 | Thu 07-10-21 | 103,104 | 106 |



| ID | Task Name | Duration | Start | Finish | Predecessors | Successors |
|---|---|---|---|---|---|---|
| 106 | Testing | 3 days | Fri 08-10-21 | Mon 11-10-21 | 105 | 101 |
| 107 | Fall Arrest System Installation | 5 days | Thu 30-09-21 | Wed 06-10-21 | | 109 |
| 108 | Painting | 30 days | Fri 20-08-21 | Fri 24-09-21 | | 109 |
| 109 | Handover of Escalators | 1 day | Thu 11-11-21 | Thu 11-11-21 | 101,95,108,107 | |
| 110 | **Landscaping on Slope** | **29 days** | **Tue 24-08-21** | **Mon 27-09-21** | | |
| 111 | U-Channel | 7 days | Tue 24-08-21 | Tue 31-08-21 | | 112 |
| 112 | Planting | 14 days | Wed 01-09-21 | Thu 16-09-21 | 111 | 113 |
| 113 | Hydroseeding | 7 days | Fri 17-09-21 | Sat 25-09-21 | 112 | 114 |
| 114 | Handover of Slope | 1 day | Mon 27-09-21 | Mon 27-09-21 | 113 | 126,128,127 |
| 115 | **Construction of LCSD Rest Garden** | **113 days?** | **Fri 20-08-21** | **Wed 05-01-22** | | |
| 116 | XP & TTA Obtainment | 28 days | Wed 01-12-21 | Wed 05-01-22 | | |
| 117 | Remove Ext. Planter Wall | 28 days | Fri 20-08-21 | Tue 21-09-21 | | |
| 118 | Remove Ext. Tree | 12 days | Fri 20-08-21 | Thu 02-09-21 | | |
| 119 | Construction of Pavement | 30 days | Fri 20-08-21 | Fri 24-09-21 | | |
| 120 | Construction of Pavilon, Bench | 1 day? | Fri 20-08-21 | Fri 20-08-21 | | |
| 121 | **Construction of Sau Mau Ping Memorial Park** | **69 days** | **Tue 01-03-22** | **Thu 26-05-22** | | |
| 122 | Submission for Pole Light, Pavilion, Bench | 15 days | Tue 01-03-22 | Thu 17-03-22 | | 123 |
| 123 | Procurement of Pole Light, Pavilion, Bench | 30 days | Fri 18-03-22 | Tue 26-04-22 | 122 | 124,125 |
| 124 | Construction of Pavilon | 10 days | Wed 27-04-22 | Tue 10-05-22 | 123 | 130 |
| 125 | Construction of Pole Light with Cabling | 10 days | Wed 27-04-22 | Tue 10-05-22 | 123 | 130 |
| 126 | Construction of Pavement | 56 days | Tue 01-03-22 | Wed 11-05-22 | 114 | 130,129 |
| 127 | Construction of Irrigation System | 28 days | Tue 01-03-22 | Fri 01-04-22 | 114 | 130 |
| 128 | Construction of Railing | 12 days | Tue 01-03-22 | Mon 14-03-22 | 114 | 130 |
| 129 | Planting | 12 days | Thu 12-05-22 | Wed 25-05-22 | 126 | 130 |
| 130 | Handover to LCSD | 1 day | Thu 26-05-22 | Thu 26-05-22 | 124,125,126,128,129,127 | |
| 131 | | | | | | |
| 132 | **Portion 2** | **300 days** | **Tue 24-08-21** | **Sat 27-08-22** | | |
| 133 | **E3-PC2 Pile Cap, Column and Pier** | **163 days** | **Wed 01-09-21** | **Sat 19-03-22** | | |
| 134 | Concrete Capping Works | 6 days | Wed 08-09-21 | Tue 14-09-21 | | 137 |
| 135 | Temporary Working Platform for Piling | 12 days | Wed 01-09-21 | Tue 14-09-21 | | 137 |
| 136 | Risk Assessment for Existing RC Canopy at Fu Wah Court | 12 days | Fri 24-09-21 | Fri 08-10-21 | | 137,172 |
| 137 | Piling Works | 40 days | Sat 09-10-21 | Thu 25-11-21 | 135,134,136 | 138,154,155 |
| 138 | Anchor Plate for Pile Heads incl. Testing | 6 days | Fri 26-11-21 | Thu 02-12-21 | 137 | 139 |
| 139 | Construction of Blinding Layer | 2 days | Fri 03-12-21 | Sat 04-12-21 | 138 | 140 |
| 140 | Constructiono of Pile Cap | 10 days | Mon 06-12-21 | Thu 16-12-21 | 139 | 141 |
| 141 | Construction of Column | 12 days | Fri 17-12-21 | Mon 03-01-22 | 140 | 142 |
| 142 | Construction of Pier Head and Corbal | 22 days | Tue 04-01-22 | Fri 28-01-22 | 141 | 143,144 |
| 143 | Concrete Curing for Pier Head | 28 days | Sat 29-01-22 | Sat 05-03-22 | 142 | 145 |
| 144 | Bearing Installation at Corbal | 3 days | Wed 09-02-22 | Fri 11-02-22 | 142 | 145 |
| 145 | Erect Temp. Steel Support (for 2nd Session, E3-FB1) | 12 days | Mon 07-03-22 | Sat 19-03-22 | 144,143 | 157 |
| 146 | **E3-FB1 Bridge** | **243 days** | **Tue 24-08-21** | **Tue 21-06-22** | | |
| 147 | Design Submission of Temporary Support at E3-Abt | 1 day | Tue 24-08-21 | Tue 24-08-21 | | 154,148,155 |
| 148 | Design Submission Approval of Temporary Support at E3-Abt | 28 days | Wed 24-11-21 | Tue 28-12-21 | 147 | 151 |
| 149 | Shop Drawing Submission of E3-FB1 | 1 day | Fri 27-08-21 | Fri 27-08-21 | | 154,150,155 |
| 150 | Shop Drawing Approval of E3-FB1 | 28 days | Wed 24-11-21 | Tue 28-12-21 | 149 | 152,153 |
| 151 | Procurement of Material for Temp. Support | 12 days | Wed 29-12-21 | Wed 12-01-22 | 148 | 154,155 |
| 152 | Procurement / fabribation for E3-FB1 (1st Session) | 50 days | Wed 29-12-21 | Tue 01-03-22 | 150 | 156 |
| 153 | Procurement / fabribation for E3-FB1 (2nd-4th Session) | 50 days | Mon 03-01-22 | Fri 04-03-22 | 150 | 157,158,159 |
| 154 | Erect Temp. Support at E3-Abt (For 1st Session, E3-FB1) | 6 days | Tue 15-02-22 | Mon 21-02-22 | 147,149,151,137,175 | 156 |
| 155 | Bearing Installation at E3-Abt | 3 days | Thu 13-01-22 | Sat 15-01-22 | 147,149,151,137 | 156 |
| 156 | Install E3-FB1 - 1st Session (from E3-Abt) | 6 days | Wed 02-03-22 | Tue 08-03-22 | 152,154,155 | 176,157,158 |
| 157 | Install E3-FB1 - 2nd Session (from E3-PC2) | 3 days | Mon 21-03-22 | Wed 23-03-22 | 145,156,153 | 231,158 |
| 158 | Install E3-FB1 - 3rd Session (Connect 1st & 2nd Session) | 3 days | Thu 24-03-22 | Sat 26-03-22 | 156,157,153 | 159 |
| 159 | Install E3-FB1 - 4th Session (E3-LT1 to E3-PC2) | 6 days | Mon 28-03-22 | Sat 02-04-22 | 158,153 | 160,232 |
| 160 | Concreting Bridge Deck | 12 days | Mon 04-04-22 | Thu 21-04-22 | 159 | 163,161,162 |
| 161 | Construction of RC Planters | 28 days | Fri 22-04-22 | Thu 26-05-22 | 160 | 168,162 |
| 162 | Floor Tiling | 21 days | Fri 27-05-22 | Tue 21-06-22 | 160,161 | |
| 163 | Erection of Scaffolding | 10 days | Fri 22-04-22 | Wed 04-05-22 | 160 | 165,166,164 |
| 164 | Installation of Corrugated Roof Panel & Gutter | 21 days | Thu 05-05-22 | Mon 30-05-22 | 163 | 167,169,170,165 |
| 165 | Installation of GRP Feature | 12 days | Tue 31-05-22 | Tue 14-06-22 | 163,164 | 170 |
| 166 | Installation of E&M Works incl. Lighting, Power Cable (From E3 Pillar to E2 Pillar) | 28 days | Thu 05-05-22 | Wed 08-06-22 | 163 | 170,253 |
| 167 | Installation of Downpipe | 6 days | Tue 31-05-22 | Tue 07-06-22 | 164 | 170 |
| 168 | Installation of Irrigation System | 12 days | Fri 27-05-22 | Fri 10-06-22 | 161 | 170 |
| 169 | Fall Arrest System | 6 days | Tue 31-05-22 | Tue 07-06-22 | 164 | |
| 170 | Dismantling of Scaffolding & Temporary Support to E3-FB1 | 6 days | Wed 15-06-22 | Tue 21-06-22 | 164,165,166,167,168 | |
| 171 | **Covered Walkway, Sump Pit, E2 Pillar Box** | **215 days** | **Sat 09-10-21** | **Mon 04-07-22** | | |
| 172 | Excavation of Footing and Sump Pit | 69 days | Sat 09-10-21 | Fri 31-12-21 | 136 | 173,174 |
| 173 | Construction of Footing of Covered Walkway | 28 days | Mon 03-01-22 | Mon 07-02-22 | 172 | 175 |
| 174 | Construction of Sump Pit | 28 days | Mon 03-01-22 | Mon 07-02-22 | 172 | 175,182 |
| 175 | Backfilling and Compaction Test | 6 days | Tue 08-02-22 | Mon 14-02-22 | 173,174 | 176,154 |
| 176 | Installation of Steel Frame (Covered Walkway) | 6 days | Wed 09-03-22 | Tue 15-03-22 | 175,156 | 177 |
| 177 | Installation of Roofing (Covered Walkway) | 6 days | Wed 16-03-22 | Tue 22-03-22 | 176 | 181,183,184,190,203,178,182 |
| 178 | Construction of E2 Pillar Box (Civil) | 28 days | Wed 23-03-22 | Thu 28-04-22 | 177 | 179,180 |
| 179 | Construction of E2 Pillar Box (E&M) | 12 days | Fri 29-04-22 | Sat 14-05-22 | 178 | 180 |
| 180 | E2 Pillar Energized from E3 Pillar | 1 day | Mon 04-07-22 | Mon 04-07-22 | 253,178,179 | 200 |
| 181 | Construction of Pavement | 28 days | Wed 23-03-22 | Thu 28-04-22 | 177 | |
| 182 | Installation of E&M Works (Pump & Lighting) | 21 days | Wed 23-03-22 | Wed 20-04-22 | 174,177 | |
| 183 | Installation of Irrigation Pipe | 6 days | Wed 23-03-22 | Tue 29-03-22 | 177 | |
| 184 | Fall Arrest System | 6 days | Wed 23-03-22 | Tue 29-03-22 | 177 | |
| 185 | **E2 Lift Tower** | **248 days** | **Tue 14-09-21** | **Tue 19-07-22** | | |
| 186 | Scaffolding Modification | 6 days | Tue 14-09-21 | Mon 20-09-21 | | 187,188,189 |
| 187 | Window and Louvre Installation | 28 days | Tue 21-09-21 | Tue 26-10-21 | 186 | 190,197 |
| 188 | Tiling Works on Wall | 28 days | Fri 15-10-21 | Tue 16-11-21 | 186 | 190 |
| 189 | Waterproofing Works | 5 days | Fri 15-10-21 | Wed 20-10-21 | 186 | 190 |
| 190 | Erect Falseworks for E2-LT1 Staircase Landing at +62.85mPD | 6 days | Wed 23-03-22 | Tue 29-03-22 | 177,187,188,189 | 191 |
| 191 | Construction of E2-LT1 Staircase Landing at +62.85mPD | 6 days | Wed 30-03-22 | Wed 06-04-22 | 190 | 192,195 |
| 192 | Erect Falseworks for E2-LT1 RC Decking at +66.3mPD | 8 days | Thu 07-04-22 | Tue 19-04-22 | 191 | 193,205 |
| 193 | Construction of E2-LT1 RC Decking at +66.3mPD | 10 days | Wed 20-04-22 | Sat 30-04-22 | 192 | 194 |
| 194 | Installation of Steel Frame | 6 days | Tue 03-05-22 | Tue 10-05-22 | 193 | 195,196 |
| 195 | Installation of Railing | 12 days | Wed 11-05-22 | Tue 24-05-22 | 194,191 | 201 |
| 196 | Tiling Works | 28 days | Wed 11-05-22 | Mon 13-06-22 | 194 | |
| 197 | E&M Works | 28 days | Wed 27-10-21 | Sat 27-11-21 | 187 | 198,199 |
| 198 | Cabling for Permanent Power | 12 days | Mon 29-11-21 | Sat 11-12-21 | 197 | 201 |
| 199 | Lift Installation | 75 days | Mon 29-11-21 | Wed 02-03-22 | 197 | 201,200 |
| 200 | Lift Testing | 12 days | Tue 05-07-22 | Mon 18-07-22 | 199,253,180 | 201 |
| 201 | LE5 Submission to EMSD | 1 day | Tue 19-07-22 | Tue 19-07-22 | 199,198,195,253,200 | |
| 202 | **E2-PC2 Pile Cap** | **58 days** | **Wed 23-03-22** | **Mon 06-06-22** | | |
| 203 | Excavation for Column Construction | 3 days | Wed 23-03-22 | Fri 25-03-22 | 177 | 204 |
| 204 | Construction of Column | 12 days | Sat 26-03-22 | Sat 09-04-22 | 203 | 205 |
| 205 | Construction of Pier Head and Corbal | 10 days | Wed 20-04-22 | Sat 30-04-22 | 204,192 | 207,208,206 |
| 206 | Concrete Curing for Pier Head and Corbal | 28 days | Tue 03-05-22 | Mon 06-06-22 | 205 | 293 |
| 207 | Bearing Installation | 3 days | Tue 03-05-22 | Thu 05-05-22 | 205 | 293 |
| 208 | Drainage | 28 days | Tue 03-05-22 | Mon 06-06-22 | 205 | 209 |



| ID | Task Name | Duration | Start | Finish | Predecessors | Successors |
|---|---|---|---|---|---|---|
| 209 | Reinstatment | 12 days | Tue 07-06-22 | Mon 20-06-22 | 208 | |
| 210 | **E3-LT1 Lift TowerPortion 2** | **294 days** | **Tue 31-08-21** | **Sat 27-08-22** | | |
| 211 | **E3-LT1 Lift tower structure** | **57 days** | **Tue 31-08-21** | **Mon 08-11-21** | | |
| 212 | 15th pour (+59.7 - +63.3mPD) | 25 days | Tue 31-08-21 | Wed 29-09-21 | | 213 |
| 213 | 16th pour (+63.3 - +66.5mPD) | 12 days | Thu 30-09-21 | Fri 15-10-21 | 212 | 214 |
| 214 | 17th pour (+66.5 - +70.45mPD) | 10 days | Sat 16-10-21 | Wed 27-10-21 | 213 | 215 |
| 215 | 18th pour (+70.45 - +71.35mPD & Partial Parapet wall) | 10 days | Thu 28-10-21 | Mon 08-11-21 | 214 | 217,258 |
| 216 | **E3-ST1 Staircase (landing & stairs)** | **128 days** | **Wed 22-12-21** | **Thu 02-06-22** | | |
| 217 | 1st pour (+25.0 - +28.6mPD) | 7 days | Wed 22-12-21 | Fri 31-12-21 | 215 | 218 |
| 218 | 2nd pour (+28.6 - +32.2mPD) | 10 days | Mon 03-01-22 | Thu 13-01-22 | 217 | 219 |
| 219 | 3rd pour (+32.2 - +35.8mPD) | 10 days | Fri 14-01-22 | Tue 25-01-22 | 218 | 220 |
| 220 | 4th pour (+35.8 - +38.8mPD) | 10 days | Wed 26-01-22 | Wed 09-02-22 | 219 | 221 |
| 221 | 5th pour (+38.8 - +41.8mPD) | 10 days | Thu 10-02-22 | Mon 21-02-22 | 220 | 222 |
| 222 | 6th pour (+41.8 - +45.4mPD) | 10 days | Tue 22-02-22 | Fri 04-03-22 | 221 | 223 |
| 223 | 7th pour (+45.4 - +49.0mPD) | 10 days | Sat 05-03-22 | Wed 16-03-22 | 222 | 224 |
| 224 | 8th pour (+49.0 - +52.6mPD) | 10 days | Thu 17-03-22 | Mon 28-03-22 | 223 | 225 |
| 225 | 9th pour (+52.6 - +56.2mPD) | 10 days | Tue 29-03-22 | Sat 09-04-22 | 224 | 226 |
| 226 | 10th pour (+56.2 - +59.7mPD) | 10 days | Mon 11-04-22 | Mon 25-04-22 | 225 | 227 |
| 227 | 11th pour (+59.7 - +63.3mPD) | 10 days | Tue 26-04-22 | Sat 07-05-22 | 226 | 228,262 |
| 228 | 12th pour ( +63.3mPD) | 7 days | Tue 10-05-22 | Tue 17-05-22 | 227 | 229,249 |
| 229 | 13th pour (+66.5mPD) | 7 days | Wed 18-05-22 | Wed 25-05-22 | 228 | 230 |
| 230 | 14th pour (+70.45mPD) | 7 days | Thu 26-05-22 | Thu 02-06-22 | 229 | |
| 231 | Erection of small crane at roof | 15 days | Thu 24-03-22 | Mon 11-04-22 | 157 | 232 |
| 232 | Removal of tower crane & footing | 7 days | Tue 12-04-22 | Fri 22-04-22 | 231,159 | 234 |
| 233 | **Reinstatement works for tower crane slab** | **35 days** | **Sat 23-04-22** | **Mon 06-06-22** | | |
| 234 | Slab Opening Reinstatement | 28 days | Sat 23-04-22 | Fri 27-05-22 | 232 | 235,262,266 |
| 235 | Parapet Wall (Remaining) | 7 days | Sat 28-05-22 | Mon 06-06-22 | 234 | 243,244,236 |
| 236 | Removal of small crane | 14 days | Tue 07-06-22 | Wed 22-06-22 | 235 | |
| 237 | Steel truss - welding works & welding test | 31 days | Thu 23-09-21 | Sun 31-10-21 | | 238,239 |
| 238 | Window installation | 61 days | Mon 01-11-21 | Thu 13-01-22 | 237 | 240 |
| 239 | Louvre installation | 61 days | Mon 01-11-21 | Thu 13-01-22 | 237 | 240 |
| 240 | Water tightness test for E3-LT1 louvre / windows | 12 days | Fri 14-01-22 | Thu 27-01-22 | 238,239 | 241SS,242SS,248,264 |
| 241 | Tiles (Wall/Staircase/Floor) | 90 days | Fri 14-01-22 | Sat 07-05-22 | 240SS | 246 |
| 242 | Paint | 90 days | Fri 14-01-22 | Sat 07-05-22 | 240SS | 246 |
| 243 | Fall Arrest System (Roof) | 6 days | Tue 07-06-22 | Mon 13-06-22 | 235 | |
| 244 | Waterproof (Roof) | 6 days | Tue 07-06-22 | Mon 13-06-22 | 235 | 245 |
| 245 | Water tightness test for E3-LT1 roof | 4 days | Tue 14-06-22 | Fri 17-06-22 | 244 | 246 |
| 246 | Dismantle of scaffolding working platform | 30 days | Sat 18-06-22 | Sat 23-07-22 | 245,241,242 | 247 |
| 247 | Glass canopy at G/F | 15 days | Mon 25-07-22 | Wed 10-08-22 | 246 | |
| 248 | Install inclined plate at the recess of Windows & Louvres | 59 days | Fri 04-02-22 | Thu 14-04-22 | 240 | |
| 249 | Railing (GMS) on staircase | 59 days | Wed 18-05-22 | Wed 27-07-22 | 228 | |
| 250 | **E&M works** | **219 days** | **Mon 04-10-21** | **Sat 02-07-22** | | |
| 251 | Incoming Cable by CLP | 90 days | Mon 04-10-21 | Thu 20-01-22 | | 253 |
| 252 | E3 Pillar Box (Civil) | 65 days | Mon 18-10-21 | Tue 04-01-22 | | 253,260 |
| 253 | E3 Pillar Energized by CLP | 1 day | Sat 02-07-22 | Sat 02-07-22 | 251,252,166,262,260 | 267,201,200,180 |
| 254 | Telemetry Duct | 47 days | Fri 15-10-21 | Wed 08-12-21 | | 255SS |
| 255 | Drainage Manhole | 109 days | Fri 15-10-21 | Fri 25-02-22 | 254SS | |
| 256 | Sump pit (Civil) | 92 days | Mon 01-11-21 | Tue 22-02-22 | | 259 |
| 257 | **Electrical installation** | **188 days** | **Tue 09-11-21** | **Thu 30-06-22** | | |
| 258 | Lift Shafts | 90 days | Tue 09-11-21 | Mon 28-02-22 | 215 | 261 |
| 259 | Sump Pit (E&M) | 30 days | Wed 23-02-22 | Tue 29-03-22 | 256 | |
| 260 | Pillar Box (E&M) | 30 days | Wed 05-01-22 | Fri 11-02-22 | 252 | 253 |
| 261 | Lighting | 31 days | Tue 01-03-22 | Wed 06-04-22 | 258 | |
| 262 | Machine room | 28 days | Sat 28-05-22 | Thu 30-06-22 | 234,227 | 253 |
| 263 | **Lift installation** | **155 days** | **Fri 28-01-22** | **Tue 09-08-22** | | |
| 264 | Lift Car Installation | 90 days | Fri 28-01-22 | Mon 23-05-22 | 240 | 265SS,267 |
| 265 | Door frames / Misc. | 90 days | Fri 28-01-22 | Mon 23-05-22 | 264SS | 267 |
| 266 | Machine room installation | 30 days | Sat 28-05-22 | Mon 04-07-22 | 234 | 267,268 |
| 267 | Self test | 30 days | Tue 05-07-22 | Mon 08-08-22 | 266,253,264,265 | |
| 268 | T&C | 30 days | Tue 05-07-22 | Mon 08-08-22 | 266 | 269 |
| 269 | Submit LES to EMSD | 1 day | Tue 09-08-22 | Tue 09-08-22 | 268 | 270 |
| 270 | Pre-handing over inspection (E3-LT1 & E3-FB1) by HyD/Structure Maintenance | 15 days | Wed 10-08-22 | Fri 26-08-22 | 269 | 271 |
| 271 | Ready to open Lift Tower E3-LT1 / Footbridge E3-FB1 to public | 1 day | Sat 27-08-22 | Sat 27-08-22 | 270 | |
| 272 | | | | | | |
| 273 | **Portion 3** | **276 days** | **Mon 20-09-21** | **Fri 26-08-22** | | |
| 274 | **E2-FB1 Bridge** | **276 days** | **Mon 20-09-21** | **Fri 26-08-22** | | |
| 275 | Shop Drawing Approval of E3-FB1 | 7 days | Mon 20-09-21 | Tue 28-09-21 | | 276 |
| 276 | Procurement of Material for E3-FB1 | 45 days | Mon 04-10-21 | Thu 25-11-21 | 275 | 278 |
| 277 | **E2-FB1 - 1st Span (Housing Lift Tower to E2-P2)** | **69 days** | **Fri 21-01-22** | **Tue 19-04-22** | | |
| 278 | Bridge Erection (Only allow on Sat to Sun / Public Holiday) | 2 days | Fri 21-01-22 | Sun 23-01-22 | 276 | 279 |
| 279 | Remaining Steelworks before Bridge Deck Casting | 6 days | Mon 24-01-22 | Sat 29-01-22 | 278 | 280 |
| 280 | Concreting Bridge Deck | 12 days | Mon 31-01-22 | Wed 16-02-22 | 279 | 281,283,282 |
| 281 | Construction of RC Planter | 28 days | Thu 17-02-22 | Mon 21-03-22 | 280 | 289,288,307,282 |
| 282 | Floor Tiling | 21 days | Tue 22-03-22 | Tue 19-04-22 | 280,281 | |
| 283 | Erection of Scaffolding | 10 days | Thu 17-02-22 | Mon 28-02-22 | 280 | 284,285,286,287 |
| 284 | Installation of Corrugated Roof Panel & Gutter | 21 days | Tue 01-03-22 | Thu 24-03-22 | 283 | 287,290,291,285 |
| 285 | Installation of GRP Feature | 12 days | Fri 25-03-22 | Fri 08-04-22 | 283,284 | 291 |
| 286 | Installation of E&M Works incl. Unistruct & Lighting | 28 days | Tue 01-03-22 | Fri 01-04-22 | 283 | 291 |
| 287 | Installation of Downpipe | 6 days | Fri 25-03-22 | Thu 31-03-22 | 284,283 | 291 |
| 288 | Installation of Railing | 12 days | Tue 22-03-22 | Mon 04-04-22 | 281 | |
| 289 | Installation of Irrigation System | 6 days | Tue 22-03-22 | Mon 28-03-22 | 281 | 291 |
| 290 | Fall Arrest System | 6 days | Fri 25-03-22 | Thu 31-03-22 | 284 | 291 |
| 291 | Dismantling of Scaffolding | 6 days | Sat 09-04-22 | Tue 19-04-22 | 285,286,287,289,284,290 | |
| 292 | **E2-FB1 - 2nd Span (E2-P2 to E2-LT1)** | **69 days** | **Tue 07-06-22** | **Fri 26-08-22** | | |
| 293 | Bridge Lifting (Only allow on Sat to Sun / Public Holiday) | 2 days | Tue 07-06-22 | Wed 08-06-22 | 206,207 | 294 |
| 294 | Remaining Steelworks before Bridge Deck Casting | 6 days | Thu 09-06-22 | Wed 15-06-22 | 293 | 295 |
| 295 | Concreting Bridge Deck | 12 days | Thu 16-06-22 | Wed 29-06-22 | 294 | 296,298,297 |
| 296 | Construction of RC Planter | 28 days | Thu 30-06-22 | Tue 02-08-22 | 295 | 303,304,297 |
| 297 | Floor Tiling | 21 days | Wed 03-08-22 | Fri 26-08-22 | 295,296 | |
| 298 | Erection of Scaffolding | 10 days | Thu 30-06-22 | Tue 12-07-22 | 295 | 299,300,301,302 |
| 299 | Installation of Corrugated Roof Panel & Gutter | 21 days | Wed 13-07-22 | Fri 05-08-22 | 298 | 305,302,300,306 |
| 300 | Installation of GRP Feature | 12 days | Sat 06-08-22 | Fri 19-08-22 | 298,299 | 306 |
| 301 | Installation of E&M Works incl. Unistruct & Lighting | 28 days | Wed 13-07-22 | Sat 13-08-22 | 298 | 306 |
| 302 | Installation of Downpipe | 6 days | Sat 06-08-22 | Fri 12-08-22 | 298,299 | 306 |
| 303 | Installation of Irrigation System | 6 days | Wed 03-08-22 | Tue 09-08-22 | 296 | 306 |
| 304 | Installation of Railing | 12 days | Wed 03-08-22 | Tue 16-08-22 | 296 | |
| 305 | Fall Arrest System | 6 days | Sat 06-08-22 | Fri 12-08-22 | 299 | 306 |
| 306 | Dismantling of Scaffolding | 6 days | Sat 20-08-22 | Fri 26-08-22 | 300,301,302,303,305,299 | |
| 307 | Underground Drainage | 50 days | Tue 22-03-22 | Wed 25-05-22 | 281 | 308 |
| 308 | Road Surface Reinstatement | 28 days | Thu 26-05-22 | Tue 28-06-22 | 307 | |



# Contract 3 (NE/2017/03)

| Activity ID | Activity Name | Duration | Start | Finish |
|---|---|---|---|---|
| **NE2017/03 - ARQ PHASE 2A - Monthly Programme Update (202112)-0 _220125** | | 1064 | 29-Aug-20 A | 17-Apr-23 |
| **Road Improvement Works Location 1 (RIW1)** | | 854 | 29-Aug-20 A | 17-Apr-23 |
| **Construction Works** | | 854 | 29-Aug-20 A | 17-Apr-23 |
| CON10728C | Apply CNP for temporary diversion (2 nos. application & 2 nos. extension) | 26 | 29-Aug-20 A | 04-Dec-21 |
| CON10650 | Construct RW wall (RWC2 type 1a & 1 [Bay 2 to Bay 1]) | 225 | 04-Nov-20 A | 19-Jan-22 |
| CON12110 | Drainage & utilities works (RWC2 type 4, 6, 7, 8) | 60 | 21-Jun-21 A | 06-Jan-23 |
| CON10748 | ELS works at RWC2 type 3 (7500 m3, 100 m3/d, 2 teams) | 38 | 05-Jul-21 A | 22-Nov-21 |
| CON12130 | Road works (RWC2 type 4, 6, 7, 8) | 60 | 26-Jul-21 A | 21-Feb-23 |
| CON12134 | Install stone facing for wall (RWC2 type 4, 6, 7, 8) | 72 | 02-Aug-21 A | 17-Apr-23 |
| CON11550 | Construct piling foundation at FE1 Type 2 (12nos, 2d/no, 1 team) | 24 | 19-Aug-21 A | 29-Nov-21 |
| CON12356E | Construct 4nos. sewage manhole & sewage drainage diversion (near KS27 w | 138 | 20-Aug-21 A | 15-Feb-22 |
| CON12356F | Construct 4nos. storm manhole & strom drainage diversion (near KS27 west s | 138 | 20-Aug-21 A | 15-Feb-22 |
| CON10748C | (NCE144) Unforeseen rock boulders found at RWC2 type 3, near bay 21 to b | 12 | 13-Sep-21 A | 31-Dec-21 |
| CON10268 | Trial pit excavation (RWC2 type 5) | 60 | 21-Sep-21 A | 02-Dec-21 |
| CON10750 | Construct socket H-pile works (RWC2 type 3; 400nos, 3d/no, 4 teams) | 300 | 13-Oct-21 A | 02-Dec-22 |
| CON11328A | (CE[TBA]) Cable duct alignlemt identify on CT5 & SLG meeting | 42 | 26-Oct-21 A | 13-Dec-21 |
| CON12370A | (NCE179) Unforeseen ground condition obstructed sheet-pile installation at KS | 30 | 29-Oct-21 A | 30-Dec-21 |
| CON10231B | (CE358) Prepare & subletting for watermain diversion design works; & PM acc | 40 | 04-Nov-21 A | 20-Dec-21 |
| CON10270 | ELS to piling foundation pile cap (RWC2 type 5) | 54 | 03-Dec-21 | 10-Feb-22 |
| CON10231C | (CE358) JV prepare & submit; PM review, comment & acceptance watermain | 30 | 21-Dec-21 | 27-Jan-22 |
| CON12370B | (NCE179) Install sheet-pile works after obstruction removal (KS27 LT1) (id: CC | 21 | 31-Dec-21 | 25-Jan-22 |
| CON10650A | (NCE148) Inclement weather 21/5/2021 to 20/6/2021 RWC2 type 1a, 1 & 2 | 12 | 20-Jan-22 | 05-Feb-22 |
| CON12372 | ELS works (KS27 east side) | 60 | 26-Jan-22 | 09-Apr-22 |
| CON10231D | (CE358) Prepare & subletting for watermain diversion works; & PM acceptanc | 40 | 28-Jan-22 | 18-Mar-22 |
| CON10650B | (NCE153) Inclement weather 21/6/2021 to 20/7/2021 RWC2 type 1a, 1 & 2 | 12 | 07-Feb-22 | 19-Feb-22 |
| CON10390 | Construct pile cap (RWC2 type 5 [bay 46]) | 90 | 11-Feb-22 | 02-Jun-22 |
| CON11550A | Gas Main Diversion Works | 29 | 16-Feb-22 | 21-Mar-22 |
| CON10650C | (NCE157) Inclement weather 21/7/2021 to 20/8/2021 RWC2 type 1a, 1 & 2 | 11 | 21-Feb-22 | 04-Mar-22 |
| CON10750B | Review temporary drainage system before year 2022 rain season (RIW1) | 18 | 28-Feb-22 | 19-Mar-22 |
| CON10231E | (CE358) Watermain diversion due to unforeseen ground condition (by WSD & | 14 | 19-Mar-22 | 04-Apr-22 |
| CON10652 | Construct RW footing (RWC2 type 2) | 60 | 21-Mar-22 | 06-Jun-22 |
| CON11552 | Install sheet pile for pile cap construction (FE1-PC1b, 32m, 1m/d) | 14 | 22-Mar-22 | 07-Apr-22 |
| CON10240 | Existing drainage pipe diversion (lower stream) | 14 | 06-Apr-22 | 25-Apr-22 |
| CON11554 | ELS works for pile cap construction (FE1-PC1b, 32m, 1m/d) | 36 | 08-Apr-22 | 25-May-22 |
| CON12410 | Application for power supply & energization (KS27) | 156 | 11-Apr-22 | 20-Oct-22 |
| CON12390 | ELS works & construct subway footing (KS27 east side) | 90 | 11-Apr-22 | 01-Aug-22 |
| CON10654 | Construct RW wall (RWC2 type 2) | 60 | 12-Apr-22 | 27-Jun-22 |
| **Road Improvement Works Location 2 (RIW2)** | | 313 | 28-Aug-21 A | 05-Jul-22 |
| **Construction Works in Slope C3 (Portion B)** | | 250 | 21-Oct-21 A | 28-Jun-22 |
| CON20670C | ELS to RW bay 9 to bay 16 formation (due to unforeseen ground condition) | 34 | 21-Oct-21 A | 03-Jan-22 |
| CON20910 | Construct RW bay 14 to bay 16 base (L=19m) | 48 | 22-Oct-21 A | 16-Dec-21 |
| CON20930 | Construct RW bay 14 to bay 16 wall (L=19m) | 48 | 02-Dec-21 | 29-Jan-22 |
| CON20790 | Construct RW bay 9 to bay 13 base (L=30m) (due to unforeseen ground conc | 66 | 31-Jan-22 | 25-Apr-22 |
| CON21010 | Utilities & drainage works at Portion B (bay 3 to bay 8) | 30 | 31-Jan-22 | 09-Mar-22 |
| CON20170 | Fabrication of NB steel post - along slope side | 70 | 09-Feb-22 | 19-Apr-22 |
| CON20152 | Review temporary drainage system before year 2022 rain season (RIW2) | 18 | 28-Feb-22 | 19-Mar-22 |
| CON20810 | Construct RW bay 9 to bay 13 wall (L=30m) (due to unforeseen ground condi | 66 | 08-Mar-22 | 30-May-22 |
| CON21030 | Utilities & drainage works at Portion B (bay 1 to bay 2) | 30 | 10-Mar-22 | 14-Apr-22 |
| CON20774A | Soil nail works at RW3b (remaining area) | 30 | 10-Mar-22 | 14-Apr-22 |
| CON20990 | Utilities & drainage works at Portion B (bay 9 to bay 13) | 60 | 07-Apr-22 | 22-Jun-22 |
| CON21050 | Utilities & drainage works at Portion B (bay 14 to bay 16) | 30 | 19-Apr-22 | 25-May-22 |
| CON20190 | Steel post along slope side delivery | 14 | 20-Apr-22 | 03-May-22 |
| CON20290 | Fabrication of NB acoustic panels - along slope side | 70 | 20-Apr-22 | 28-Jun-22 |
| **Construction Noise Semi-Enclosure SE2 (Portion C)** | | 251 | 28-Aug-21 A | 05-Jul-22 |
| CON21656 | (CE332) Construct piling fdn of SE2 (Bay9 to Bay12, stage 1 58nos. 1 team) | 72 | 28-Aug-21 A | 31-Jan-22 |
| CON21962D | Utilities potection works (SE2 Bay 13 to 18) | 16 | 17-Nov-21 A | 04-Dec-21 |
| CON21770 | Remove piling platform at CT4 | 18 | 04-Jan-22 | 24-Jan-22 |
| CON219661 | ELS works to +174mPD | 24 | 15-Jan-22 | 15-Feb-22 |
| CON21772 | Excavate trial trench, SLG meeting & UU portection works | 30 | 25-Jan-22 | 03-Mar-22 |
| CON21656A | (NCE170) Inclement weather 21/9/2021 to 20/10/2021 at SE2 (Bay4 to Bay13 | 7 | 04-Feb-22 | 11-Feb-22 |
| CON219701 | TMLG Meeting on 11/2/2022 and TTA Drawing Approval | 7 | 11-Feb-22* | 18-Feb-22 |
| CON21658 | (CE332) Construct piling fdn of SE2 (Bay9 to Bay12, stage 2 38nos. 1 team) | 56 | 12-Feb-22 | 22-Apr-22 |
| CON219662 | Excavate trial trench, SLG meeting & UU protection works (SE2 Bay13 to Bay | 28 | 16-Feb-22 | 19-Mar-22 |
| CON219702 | ELS works to (Bay19 to Bay21) | 51 | 19-Feb-22 | 23-Apr-22 |
| CON219703 | Excavate trial trench, SLG meeting & UU protection works | 45 | 26-Feb-22 | 23-Apr-22 |
| CON21774 | Install pipe pile wall at CT4 road side (46nos, 2no/d 1 team + setup) | 27 | 04-Mar-22 | 04-Apr-22 |
| CON21968 | Construct piling fdn SE2 Bay13 to Bay18 (74nos, 2d/no. 2 teams + setup + uu | 84 | 21-Mar-22 | 05-Jul-22 |
| CON21776 | ELS works at CT4 (12nos. strut, 0.25no/d, 1 team + setup) | 48 | 06-Apr-22 | 07-Jun-22 |
| **Road Improvement Works Location 3 (RIW3)** | | 738 | 19-Jul-21 A | 07-Dec-22 |
| **Construction Works** | | 738 | 19-Jul-21 A | 07-Dec-22 |




Actual Work
Remaining Work
Milestone

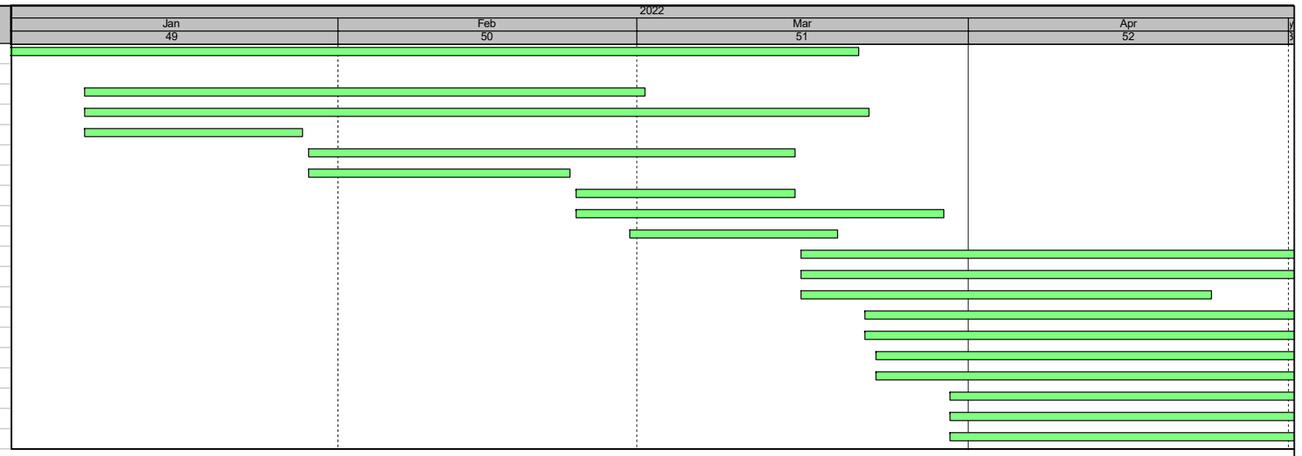
**NE/2017/03 Development of Anderson Road Quarry Site - Investigation Design & Construction**
**Development of Anderson Road Quarry Site Road - Improvement Works & Pedestrian Connectivity Facilities Works Phase 2A**
3-Month Rolling Programme

| Activity ID | Activity Name | Duration | Start | Finish |
|---|---|---|---|---|
| CON31130 | Cut slope works (CH115 to CH275) (L=160m, 24058m3, 65m3/d) | 371 | 19-Jul-21 A | 07-Dec-22 |
| CON31150 | Construct RWD3 (CH60 to CH152) | 150 | 09-Aug-21 A | 18-Mar-22 |
| CON32410 | Construct type 2 NB footing (CH44~CH52, 130m3, team 1) | 150 | 16-Aug-21 A | 05-Jul-22 |
| CON30170 | Slope works at slope D1 (stage 4, 55% completed) | 72 | 19-Aug-21 A | 08-Dec-21 |
| CON30410F | JV prepare pipe pile wall design; ICE review & approval; PM review, comment | 92 | 24-Aug-21 A | 13-Jan-22 |
| CON30410E | (NCE096) Awaiting an instruction for treat the unforeseen pipe | 12 | 02-Sep-21 A | 27-Nov-21 |
| CON30490 | Drainage & utilities works (bay 8 to bay 14) | 60 | 29-Nov-21 | 12-Feb-22 |
| CON30390 | Construct RWD1 (bay 8 to bay 13) utilities works & backfill (2 teams) | 60 | 29-Nov-21 | 12-Feb-22 |
| CON30190 | Slope works at slope D1 (stage 5, 70% completed) | 72 | 09-Dec-21 | 09-Mar-22 |
| CON30510 | Road works (bay 8 to bay 14) | 60 | 22-Dec-21 | 08-Mar-22 |
| CON30412B | Install pipe pile wall (around 32nos. 1d/no.+ setup) (Bay 14b to Bay 16) | 36 | 14-Jan-22 | 28-Feb-22 |
| CON31710 | Construct footing, pier & pier head F1-4 | 144 | 26-Jan-22 | 25-Jul-22 |
| CON30660 | Construct Twin Fresh Watermain CH100 to CH190 | 174 | 18-Feb-22 | 19-Sep-22 |
| CON30666 | Construct Salt Watermain A near F1-3 (TKO Rd Slip Rd) | 60 | 18-Feb-22 | 04-May-22 |
| CON30092 | Review temporary drainage system before year 2022 rain season (RIW3) | 18 | 28-Feb-22 | 19-Mar-22 |
| CON30412C | ELS works and shotcrete (Bay 14b to Bay 16) | 12 | 01-Mar-22 | 14-Mar-22 |
| CON30330 | Construct RWD1 (bay 1 to bay 7) utilities works & backfill (2 teams) | 60 | 09-Mar-22 | 24-May-22 |
| CON30530 | Drainage & utilities works (bay 1 to bay 7) | 60 | 09-Mar-22 | 24-May-22 |
| CON30191 | Slope works at slope D1 (stage 5a, 80% completed) | 72 | 10-Mar-22 | 09-Jun-22 |
| CON30412D | Install UU support (Bay 14b to Bay 16) | 6 | 15-Mar-22 | 21-Mar-22 |
| CON32430 | Construct type 2 NB tie beam (CH44~CH52, 130m3, team 1) | 150 | 21-Mar-22 | 21-Sep-22 |
| CON30412E | Pre-drill & construct mini pile at RWD1 (bay 14b) (10nos, 3.0d/no, 1 team) | 30 | 22-Mar-22 | 29-Apr-22 |
| CON30550 | Road works (bay 1 to bay 7) | 60 | 01-Apr-22 | 17-Jun-22 |
| **Pedestrian Connectivity Facility (PC-E11)** | | 284 | 24-May-21 A | 07-May-22 |
| **Construction Works** | | 284 | 24-May-21 A | 07-May-22 |
| CON42690 | ABWF works @E11-FB2 & E11-FB4 | 107 | 24-May-21 A | 24-Nov-21 |
| CON42710 | ABWF works @E11-FB3 & E11-FB5 | 107 | 24-May-21 A | 24-Nov-21 |
| CON42772 | ABWF works @LT2 (Other than lift shaft area) | 48 | 04-Aug-21 A | 29-Nov-21 |
| CON42872 | E&M works to PC-E11 @LT2 (Other than lift shaft area) | 36 | 01-Sep-21 A | 24-Nov-21 |
| CON42470 | Erect steel frame E11-FB1, construct floor slab & side planter | 48 | 13-Oct-21 A | 08-Dec-21 |
| CON42950 | Lifts installation works in E11-LT2 | 60 | 02-Nov-21 A | 17-Jan-22 |
| CON42630 | Construct covered-walkway between PC-E11 & BBI toilet | 102 | 04-Nov-21 A | 09-Mar-22 |
| CON42650 | Install glass & window to lift tower no 1 | 21 | 10-Nov-21 A | 03-Dec-21 |
| CON42570 | Erect roof steel frame, gutter & corrugated metal sheet E11-FB1 | 42 | 18-Nov-21 A | 08-Jan-22 |
| CON42790 | E&M works to PC-E11 @E11-FB2 & E11-FB4 | 48 | 25-Nov-21 | 22-Jan-22 |
| CON42810 | E&M works to PC-E11 @E11-FB3 & E11-FB5 | 48 | 25-Nov-21 | 22-Jan-22 |
| CON42732 | ABWF works @LT1 (Other than lift shaft area) | 48 | 18-Dec-21 | 18-Feb-22 |
| CON42930 | Lifts installation works in E11-LT1 | 60 | 21-Dec-21 | 07-Mar-22 |
| CON42750 | ABWF works @E11-FB1 | 60 | 22-Dec-21 | 08-Mar-22 |
| CON42850 | E&M works to PC-E11 @E11-FB1 | 48 | 05-Jan-22 | 04-Mar-22 |
| CON42832 | E&M works to PC-E11 @LT1 (Other than lift shaft area) | 36 | 05-Jan-22 | 18-Feb-22 |
| CON42610A | Install fall arrest system on roof of footbridge | 36 | 10-Jan-22 | 23-Feb-22 |
| CON42952 | T&C to lift E11-LT2 | 30 | 18-Jan-22 | 24-Feb-22 |
| CON42774 | Review temporary drainage system before year 2022 rain season (PC-E11) | 18 | 28-Feb-22 | 19-Mar-22 |
| CON42970 | T&C to lift E11-LT1 | 30 | 08-Mar-22 | 12-Apr-22 |
| CON42890 | T&C and Statutory Inspection _PC-E11 | 24 | 06-Apr-22 | 07-May-22 |
| **Pedestrian Connectivity Facility (PC-E8)** | | 527 | 26-Jul-21 A | 29-Jan-23 |
| **Construction Works** | | 133 | 26-Jul-21 A | 29-Jan-22 |
| CON40628A | Slope 326 drawing reviewing | 36 | 26-Jul-21 A | 06-Dec-21 |
| CON40650 | Slope replacement works cycle 1 (slope 326) | 18 | 13-Sep-21 A | 18-Dec-21 |
| CON40710 | Slope replacement works cycle 4 (slope 326) | 15 | 13-Jan-22 | 29-Jan-22 |
| **Works Under Section 7A** | | 365 | 30-Jan-22 | 29-Jan-23 |
| CON41970 | Establishment Works for Landscape Softworks in Section 7 (Portion G) | 365 | 30-Jan-22 | 29-Jan-23 |
| **Pedestrian Connectivity Facility System A (SYA)** | | 240 | 12-Nov-21 A | 03-Sep-22 |
| **Construction Works** | | 240 | 12-Nov-21 A | 03-Sep-22 |
| CON50330 | ABWF works (lift tower & staircase) | 120 | 12-Nov-21 A | 08-Apr-22 |
| CON50332 | ABWF works (4 nos. lift shaft) | 120 | 12-Nov-21 A | 08-Apr-22 |
| CON50312A | Off site fabrication for footbridge steel frame & delivery to site | 62 | 12-Nov-21 A | 26-Jan-22 |
| CON50370 | Install windows & louvers (SYA 1st & 2nd lift shaft) | 60 | 17-Dec-21 | 03-Mar-22 |
| CON50492 | E&M works (SYA 1st & 2nd lift shaft) | 42 | 11-Jan-22 | 03-Mar-22 |
| CON50390 | Install windows & louvers (SYA 3rd & 4th lift shaft) | 60 | 25-Jan-22 | 08-Apr-22 |
| CON50270 | Erect bridge steel frame for SYA | 42 | 27-Jan-22 | 19-Mar-22 |
| CON50494 | E&M works (SYA 3rd & 4th lift shaft) | 42 | 18-Feb-22 | 08-Apr-22 |
| CON50272 | Review temporary drainage system before year 2022 rain season (Sys A) | 18 | 28-Feb-22 | 19-Mar-22 |
| CON50410 | Lifts installation works in SYA-LT1A & SYA-LT1B | 60 | 04-Mar-22 | 19-May-22 |
| CON50310 | Construct deck slab, planter wall and roofing for SYA | 78 | 21-Mar-22 | 27-Jun-22 |
| CON50430 | Lifts installation works in SYA-LT1C & SYA-LT2A | 60 | 09-Apr-22 | 24-Jun-22 |
| CON50496 | E&M works (Open area for lift tower & staircase) | 120 | 09-Apr-22 | 03-Sep-22 |
| **Pedestrian Connectivity Facility System B (SYB)** | | 372 | 21-Jun-21 A | 20-Oct-22 |
| **Construction Works** | | 372 | 21-Jun-21 A | 20-Oct-22 |




Actual Work
Remaining Work
Milestone

| Activity ID | Activity Name | Duration | Start | Finish |
|---|---|---|---|---|
| CON52170 | Construct superstructure SYB-LT1 | 168 | 21-Jun-21 A | 21-Mar-22 |
| CON51450A | (NCE156) Unforseen gound condition affected install sheet pile at SYB-PC1 | 130 | 28-Jul-21 A | 22-Dec-21 |
| CON52110 | Construct pier SYB-P3 (2 pour) & temporary LT1 support | 42 | 08-Jan-22 | 01-Mar-22 |
| CON52150 | Construct pier SYB-P5 (3 pour) | 60 | 08-Jan-22 | 22-Mar-22 |
| CON51470 | Excavate & install support at SYB-PC1 (108m3, 25m3/d, 1 team + 12d) | 18 | 08-Jan-22 | 28-Jan-22 |
| CON51770 | Construct pile cap SYB-PC1 (35m3) | 36 | 29-Jan-22 | 15-Mar-22 |
| CON52230 | Erect footbridge steel frame SYB-A1 to PC8 (A1 to P8) | 18 | 29-Jan-22 | 22-Feb-22 |
| CON52250 | Erect footbridge steel frame PC8 to PC7 (P8 to P7) | 18 | 23-Feb-22 | 15-Mar-22 |
| CON52370 | Construct deck slab, planter wall and roofing SYB-A1 to PC8 (A1 to P8) | 30 | 23-Feb-22 | 29-Mar-22 |
| CON51592 | Review temporary drainage system before year 2022 rain season (Sys B) | 18 | 28-Feb-22 | 19-Mar-22 |
| CON51990 | Construct pier SYB-P1 (2 pour) | 42 | 16-Mar-22 | 10-May-22 |
| CON51810 | Construct underground drainage pipe | 177 | 16-Mar-22 | 20-Oct-22 |
| CON52390 | Construct deck slab, planter wall and roofing PC8 to PC7 (P8 to P7) | 30 | 16-Mar-22 | 23-Apr-22 |
| CON51170 | Install glass & window @SYB-LT1 | 42 | 22-Mar-22 | 16-May-22 |
| CON52172 | Construct R.C. desk P2 to LT1 | 48 | 22-Mar-22 | 23-May-22 |
| CON51930 | Construct pier SYB-P4 (2 pour) | 42 | 23-Mar-22 | 17-May-22 |
| CON51950 | Construct pier SYB-P6 (3 pour) | 72 | 23-Mar-22 | 22-Jun-22 |
| CON52650 | ABWF works @ steel frame footbridge A1 to P8 | 72 | 30-Mar-22 | 29-Jun-22 |
| CON53230 | Application for power supply & energization (SYB) | 156 | 30-Mar-22 | 10-Oct-22 |
| CON52990 | E&M works @ steel frame footbridge A1 to P8 | 60 | 30-Mar-22 | 15-Jun-22 |




Actual Work
Remaining Work
Milestone

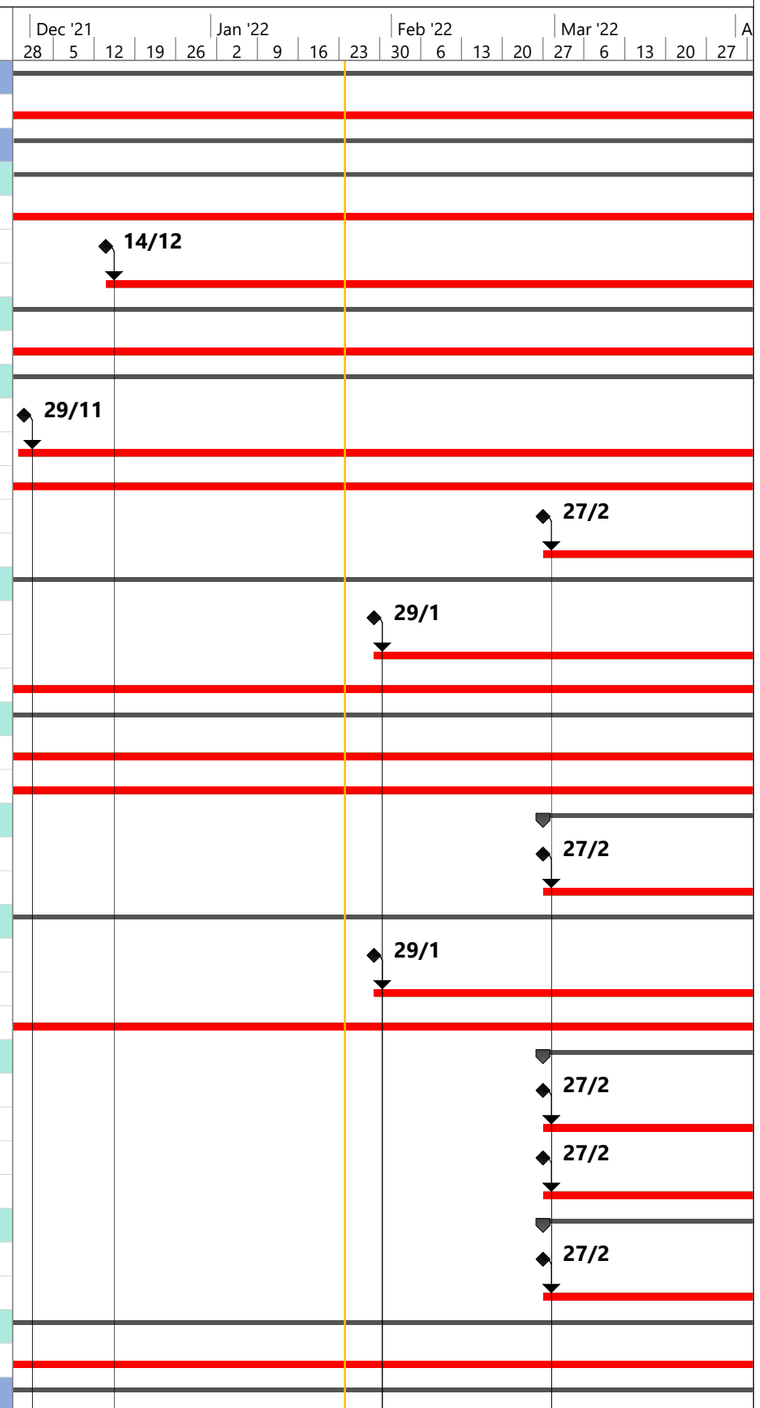
**NE/2017/03 Development of Anderson Road Quarry Site - Investigation Design & Construction**
**Development of Anderson Road Quarry Site Road - Improvement Works & Pedestrian Connectivity Facilities Works Phase 2A**
3-Month Rolling Programme

# Contract 4 (ED/2020/02)

中国水利电力对外有限公司
China International Water & Electric Corp.

**CEDD Contract No. ED/2020/02**
**Development of Anderson Road Quarry Site – Infrastructure, Greening and Landscape Works**
**Revised Works Programme : January 2022**

| ID | Activity Code | Activity Name | Dur | Early Start | Early Finish | Late Start | Late Finish | % Comple | Total Float | Predecesso | Successors |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **ED202.1** | **Contract Period** | **1248d** | **30/7/21** | **28/12/24** | **30/7/21** | **28/12/24** | **14%** | **0d** | | |
| 3 | ED202.1.02 | Contract Duration | 1247d | 31/7/21 | 28/12/24 | 31/7/21 | 28/12/24 | 14% | 0d | 2FS+1d | 4 |
| 5 | **ED202.2** | **Section of Works and Relevant Portions of Work** | **1248d** | **30/7/21** | **28/12/24** | **30/7/21** | **28/12/24** | **9%** | **0d** | | |
| 6 | **ED202.2.01** | **Section of Works 1 - Portions 1a, 2a & 2b** | **836d** | **30/8/21** | **14/12/23** | **30/8/21** | **14/12/23** | **9%** | **0d** | | |
| 11 | ED202.2.01.005 | Construction Duration for Portion 2a | 836d | 30/8/21 | 13/12/23 | 30/8/21 | 13/12/23 | 17% | 0d | 10 | 12 |
| 13 | ED202.2.01.007 | Access date for Portion 2b | 0d | 14/12/21 | 14/12/21 | 14/12... | 14/12/21 | 100% | 0d | 2 | 14,367 |
| 14 | ED202.2.01.008 | Construction Duration for Portion 2b | 730d | 14/12/21 | 13/12/23 | 14/12... | 13/12/23 | 5% | 0d | 13 | 15 |
| 20 | **ED202.2.03** | **Section of Works 2 - Portion 8** | **730d** | **30/7/21** | **29/7/23** | **30/7/21** | **29/7/23** | **24%** | **0d** | | |
| 22 | ED202.2.03.002 | Construction Duration for Portion 8 | 730d | 30/7/21 | 29/7/23 | 30/7/21 | 29/7/23 | 24% | 0d | 21 | 23 |
| 28 | **ED202.2.05** | **Section of Works 3 - Portions 1b, 3, 4, 5** | **731d** | **30/7/21** | **30/7/23** | **30/7/21** | **30/7/23** | **15%** | **0d** | | |
| 33 | ED202.2.05.013 | PMI 003 & 004 issued | 62d | 29/9/21 | 29/11/21 | 29/9/21 | 29/11/21 | 100% | 0d | 32 | 34FS-1d,433FS-1d |
| 34 | ED202.2.05.005 | Construction Duration for Portion 3 | 609d | 29/11/21 | 30/7/23 | 29/11... | 30/7/23 | 9% | 0d | 33FS-1d | 35 |
| 37 | ED202.2.05.008 | Construction Duration for Portion 4 | 670d | 30/7/21 | 30/5/23 | 30/7/21 | 30/5/23 | 26% | 0d | 36 | 38 |
| 39 | ED202.2.05.010 | Access date for Portion 5 | 0d | 27/2/22 | 27/2/22 | 27/2/22 | 27/2/22 | 0% | 0d | 2 | 40,446 |
| 40 | ED202.2.05.011 | Construction Duration for Portion 5 | 458d | 27/2/22 | 30/5/23 | 27/2/22 | 30/5/23 | 0% | 0d | 39 | 41 |
| 46 | **ED202.2.07** | **Section of Works 4 - Portions 6, 12** | **684d** | **30/7/21** | **13/6/23** | **30/7/21** | **13/6/23** | **15%** | **0d** | | |
| 47 | ED202.2.07.001 | Access date for Portion 6 | 0d | 29/1/22 | 29/1/22 | 29/1/22 | 29/1/22 | 0% | 0d | 2 | 48,458 |
| 48 | ED202.2.07.002 | Construction Duration for Portion 6 | 501d | 29/1/22 | 13/6/23 | 29/1/22 | 13/6/23 | 0% | 0d | 47 | 49 |
| 51 | ED202.2.07.005 | Construction Duration for Portion 12 | 684d | 30/7/21 | 13/6/23 | 30/7/21 | 13/6/23 | 26% | 0d | 50 | 52 |
| 57 | **ED202.2.09** | **Section of Works 5A - Portions 9, 10** | **699d** | **30/7/21** | **28/6/23** | **30/7/21** | **28/6/23** | **22%** | **0d** | | |
| 59 | ED202.2.09.002 | Construction Duration for Portion 9 | 638d | 29/9/21 | 28/6/23 | 29/9/21 | 28/6/23 | 18% | 0d | 58 | 60 |
| 62 | ED202.2.09.005 | Construction Duration for Portion 10 | 699d | 30/7/21 | 28/6/23 | 30/7/21 | 28/6/23 | 25% | 0d | 61 | 63 |
| 68 | **ED202.2.11** | **Section of Works 5B - Portion 11** | **487d** | **27/2/22** | **28/6/23** | **27/2/22** | **28/6/23** | **0%** | **0d** | | |
| 69 | ED202.2.11.001 | Access date for Portion 11 | 0d | 27/2/22 | 27/2/22 | 27/2/22 | 27/2/22 | 0% | 0d | 2 | 70,626 |
| 70 | ED202.2.11.002 | Construction Duration for Portion 11 | 487d | 27/2/22 | 28/6/23 | 27/2/22 | 28/6/23 | 0% | 0d | 69 | 71 |
| 80 | **ED202.2.14** | **Section of Works 7A - Portions 13a, 14** | **669d** | **30/7/21** | **29/5/23** | **30/7/21** | **29/5/23** | **15%** | **0d** | | |
| 81 | ED202.2.14.001 | Access date for Portion 13a | 0d | 29/1/22 | 29/1/22 | 29/1/22 | 29/1/22 | 0% | 0d | 2 | 82,646 |
| 82 | ED202.2.14.002 | Construction Duration for Portion 13a | 486d | 29/1/22 | 29/5/23 | 29/1/22 | 29/5/23 | 0% | 0d | 81 | 83 |
| 85 | ED202.2.14.005 | Construction Duration for Portion 14 | 669d | 30/7/21 | 29/5/23 | 30/7/21 | 29/5/23 | 26% | 0d | 84 | 86 |
| 91 | **ED202.2.16** | **Section of Works 7B - Portions 13b, 15** | **671d** | **27/2/22** | **29/12/23** | **27/2/22** | **29/12/23** | **0%** | **0d** | | |
| 92 | ED202.2.16.001 | Access date for Portion 13b | 0d | 27/2/22 | 27/2/22 | 27/2/22 | 27/2/22 | 0% | 0d | 2 | 93,674 |
| 93 | ED202.2.16.002 | Construction Duration for Portion 13b | 671d | 27/2/22 | 29/12/23 | 27/2/22 | 29/12/23 | 0% | 0d | 92 | 94 |
| 95 | ED202.2.16.004 | Access date for Portion 15 | 0d | 27/2/22 | 27/2/22 | 27/2/22 | 27/2/22 | 0% | 0d | 2 | 96 |
| 96 | ED202.2.16.005 | Construction Duration for Portion 15 | 671d | 27/2/22 | 29/12/23 | 27/2/22 | 29/12/23 | 0% | 0d | 95 | 97 |
| 110 | **ED202.2.20** | **Section of Works 9 - Portion 17** | **671d** | **27/2/22** | **29/12/23** | **27/2/22** | **29/12/23** | **0%** | **0d** | | |
| 111 | ED202.2.20.001 | Access date for Portion 17 | 0d | 27/2/22 | 27/2/22 | 27/2/22 | 27/2/22 | 0% | 0d | 2 | 112,720 |
| 112 | ED202.2.20.002 | Construction Duration for Portion 17 | 671d | 27/2/22 | 29/12/23 | 27/2/22 | 29/12/23 | 0% | 0d | 111 | 113 |
| 118 | **ED202.2.22** | **Section of Works 10 - All Tree Protection and Preservation Works** | **883d** | **30/7/21** | **29/12/23** | **30/7/21** | **29/12/23** | **20%** | **0d** | | |
| 120 | ED202.2.22.002 | All Tree Protection and Preservation Work Duration for Section 10 | 883d | 30/7/21 | 29/12/23 | 30/7/21 | 29/12/23 | 20% | 0d | 119 | 121 |
| 122 | **ED202.3** | **Preliminaries** | **1248d** | **30/7/21** | **28/12/24** | **30/7/21** | **28/12/24** | **35%** | **0d** | | |



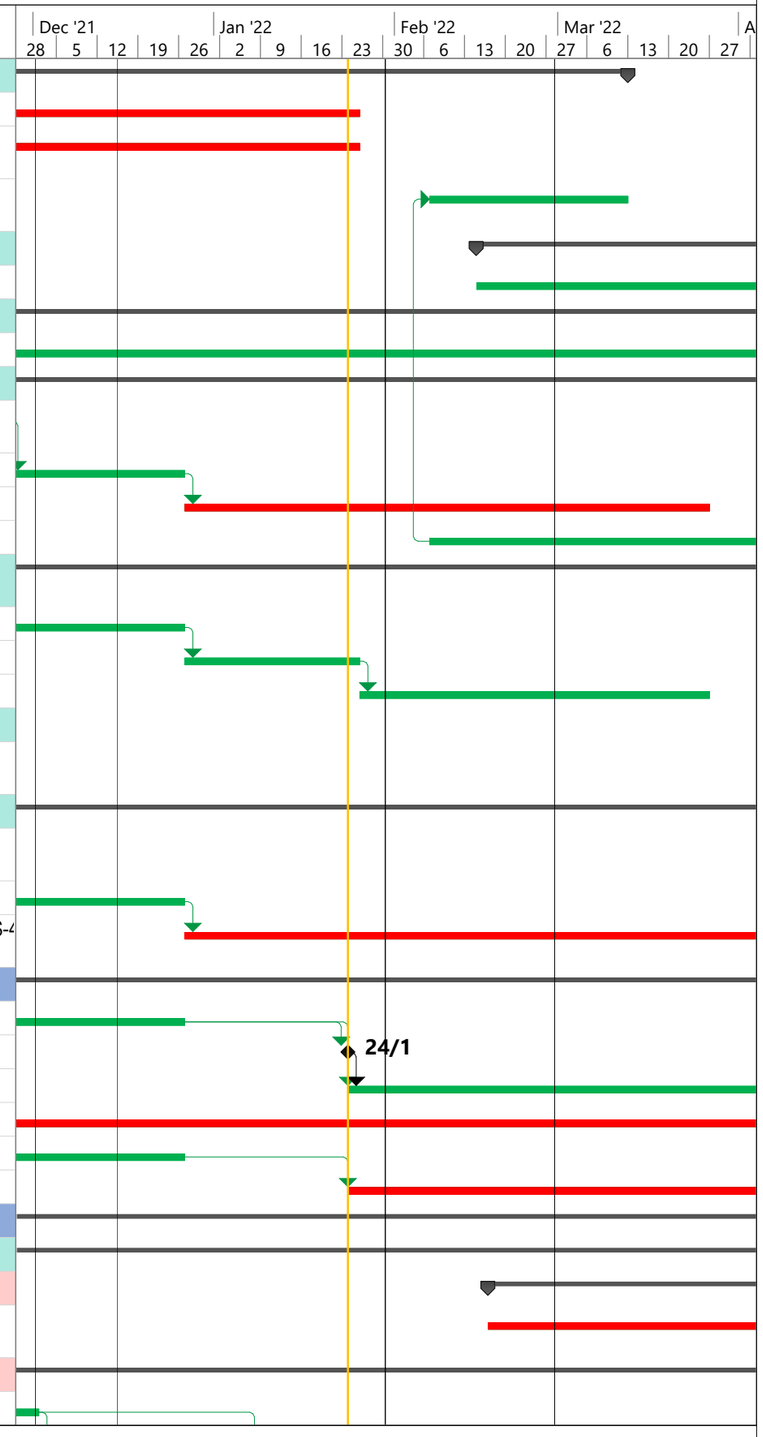

Project Start Date: 30 July 2021
Data Date: 30 July 2021

Task — Milestone ◆ — Summary — Critical Task

中国水利电力对外有限公司
China International Water & Electric Corp.

**CEDD Contract No. ED/2020/02**
**Development of Anderson Road Quarry Site – Infrastructure, Greening and Landscape Works**
**Revised Works Programme : January 2022**

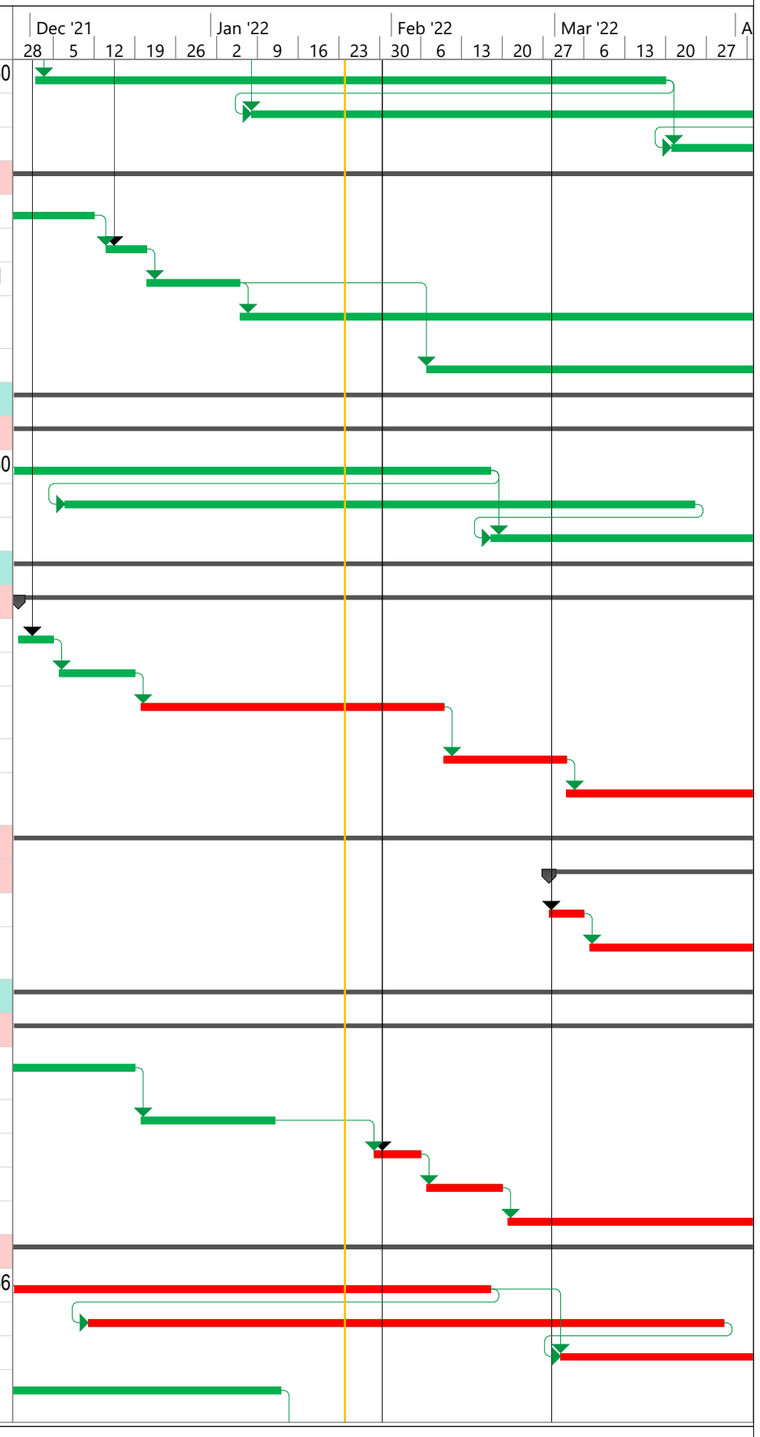
| ID | Activity Code | Activity Name | Dur | Early Start | Early Finish | Late Start | Late Finish | % Comple | Total Float | Predecesso | Successors |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 123 | **ED202.3.01** | **Establishment of Commercial/Organization** | **226d** | **30/7/21** | **12/3/22** | **30/7/21** | **4/6/22** | **81%** | **84d** | | |
| 156 | ED202.3.01.033 | Video script for Project Video Film | 180d | 30/7/21 | 25/1/22 | 30/7/21 | 25/1/22 | 64% | 0d | 2 | |
| 157 | ED202.3.01.034 | Employment of Construction Industry Council's Graduates (min. 4 graduates) | 180d | 30/7/21 | 25/1/22 | 30/7/21 | 25/1/22 | 64% | 0d | 2 | |
| 158 | ED202.3.01.035 | Nomination of Treatment process specialist, Design Engineer, and Independent Checking Engineer (ICE) | 30d | 7/2/22 | 12/3/22 | 29/4/22 | 4/6/22 | 0% | 69d | 237SS | 238 |
| 180 | **ED202.3.03** | **Procurements of Major Materials** | **430d** | **15/2/22** | **20/4/23** | **20/3/22** | **7/11/23** | **0%** | **33d** | | |
| 187 | ED202.3.03.007 | Procurement of Raise Planter Type A&B | 90d | 15/2/22 | 15/5/22 | 20/3/22 | 17/6/22 | 0% | 33d | 2SS+200d | 188 |
| 197 | **ED202.3.04** | **Programme** | **1239d** | **30/7/21** | **19/12/24** | **30/7/21** | **28/12/24** | **15%** | **9d** | | |
| 203 | ED202.3.04.006 | Implementation of Programme Management and Monthly Reporting | 1145d | 1/11/21 | 19/12/24 | 1/11/21 | 28/12/24 | 7% | 9d | 202 | 4 |
| 224 | **ED202.3.06** | **Contractor's Design** | **659d** | **30/7/21** | **19/5/23** | **30/7/21** | **4/10/23** | **13%** | **138d** | | |
| 226 | ED202.3.06.002 | Internal Review & Submission Contractor's Design - Architectural & Structural | 30d | 28/10/21 | 26/11/21 | 28/10... | 26/11/21 | 100% | 0d | 225 | 227 |
| 227 | ED202.3.06.003 | PM Review & AIP Contractor's Design - Architectural | 30d | 27/11/21 | 26/12/21 | 27/11... | 26/12/21 | 100% | 0d | 225,226 | 228 |
| 228 | ED202.3.06.004 | Re-submission Contractor's Design - Architectural & Structural | 90d | 27/12/21 | 26/3/22 | 27/12... | 26/3/22 | 0% | 0d | 227 | 229 |
| 237 | ED202.3.06.013 | Prepare Contractor's Design - Underground Water Treatment Plant | 90d | 7/2/22 | 7/5/22 | 7/3/22 | 4/6/22 | 0% | 28d | 2SS+192d | 239,238,158SS |
| 246 | **ED202.3.07** | **Contractor's Design [Enhancement on Architectural Design & Associated Works]** | **450d** | **30/7/21** | **22/10/22** | **30/7/21** | **27/10/22** | **27%** | **5d** | | |
| 248 | ED202.3.07.002 | Prepare & Submission Preliminary Arch., Design | 90d | 28/9/21 | 26/12/21 | 28/9/21 | 31/12/21 | 70% | 5d | 247 | 249 |
| 249 | ED202.3.07.003 | PM Review & AIP Preliminary Architectural Design | 30d | 27/12/21 | 25/1/22 | 1/1/22 | 30/1/22 | 0% | 5d | 248 | 250 |
| 250 | ED202.3.07.004 | Vetting of design through public engagement activities | 60d | 26/1/22 | 26/3/22 | 31/1/22 | 31/3/22 | 0% | 5d | 249 | 251 |
| 255 | **ED202.3.08** | **Method Statements & Temporary Works** | **120d** | **30/7/21** | **26/11/21** | **30/7/21** | **1/9/22** | **58%** | **279d** | | |
| 262 | ED202.3.08.007 | Preparation & submission of generic method statement of elevated walkway construciton | 120d | 30/7/21 | 26/11/21 | 5/5/22 | 1/9/22 | 0% | 279d | 2 | 679 |
| 267 | **ED202.3.09** | **BIM Deliverable** | **1248d** | **30/7/21** | **28/12/24** | **30/7/21** | **28/12/24** | **17%** | **0d** | | |
| 272 | ED202.3.09.005 | Nomination of staff or subcontractor to attend BIM skill training courses under the pre approved list of the CITF managed by the CIC | 120d | 30/7/21 | 26/11/21 | 31/8/24 | 28/12/24 | 0% | 1128d | 2 | |
| 273 | ED202.3.09.006 | Collaboration and Model Sharing | 60d | 28/10/21 | 26/12/21 | 28/10... | 22/1/22 | 50% | 27d | 269FS+30d | 274 |
| 274 | ED202.3.09.007 | Monthly Coordination meeting & Submission of monthly BIM progress reports & Submission of 4D Simulation | 1098d | 27/12/21 | 28/12/24 | 27/12... | 28/12/24 | 2% | 0d | 273 | 275FS-60d,4,276FS-4 |
| 280 | **ED202.4** | **Work Area** | **1248d** | **30/7/21** | **28/12/24** | **30/7/21** | **28/12/24** | **11%** | **0d** | | |
| 283 | ED202.4.03 | CRE Site office Construction Works | 90d | 28/9/21 | 26/12/21 | 28/9/21 | 23/1/22 | 90% | 28d | 282 | 285,284 |
| 284 | ED202.4.04 | Completion of CRE Site office Construction Works | 0d | 24/1/22 | 24/1/22 | 24/1/22 | 24/1/22 | 0% | 0d | 283 | 285 |
| 285 | ED202.4.05 | CRE Site office Mobilization & Maintenance | 1050d | 24/1/22 | 8/12/24 | 13/2/22 | 28/12/24 | 0% | 20d | 283,284 | 4,288 |
| 287 | ED202.4.07 | Maintenance Duration for Works Area | 1247d | 31/7/21 | 28/12/24 | 31/7/21 | 28/12/24 | 14% | 0d | 286FS+1d | 288 |
| 289 | ED202.4.09 | Setting up Contractor's Project office | 90d | 28/9/21 | 26/12/21 | 28/9/21 | 26/12/21 | 100% | 0d | 2 | 290 |
| 290 | ED202.4.10 | Contractor Site office Maintenance | 1050d | 24/1/22 | 8/12/24 | 24/1/22 | 8/12/24 | 0% | 0d | 289 | 4,288 |
| 291 | **ED202.5** | **Construction Works** | **1039d** | **30/7/21** | **28/12/24** | **30/7/21** | **28/12/24** | **6%** | **0d** | | |
| 292 | **ED202.5.01** | **Section of Works 1 - Portions 1a, 1b, 2b** | **697d** | **30/8/21** | **13/12/23** | **30/8/21** | **13/12/23** | **3%** | **0d** | | |
| 293 | **ED202.5.01.001** | **Portion 1a** | **556d** | **17/2/22** | **13/12/23** | **17/2/22** | **13/12/23** | **0%** | **0d** | | |
| 294 | ED202.5.01.001.001 | Preparation & submission of MS, Temp., works, associated plans & docs | 42d | 30/7/21 | 17/9/21 | 17/2/22 | 7/4/22 | 0% | 0d | 2 | 295 |
| 316 | **ED202.5.01.002** | **Portion 2a** | **697d** | **30/8/21** | **13/12/23** | **30/8/21** | **13/12/23** | **3%** | **0d** | | |
| 320 | ED202.5.01.002.004 | Engineer's AIP of MS, Temp., works, plans & associated docs | 18d | 11/11/21 | 1/12/21 | 11/11... | 1/12/21 | 100% | 0d | 319 | 321,324,322 |




Project Start Date: 30 July 2021
Data Date: 30 July 2021

Task ▬ Milestone ◆ Summary ▬ Critical Task ▬

| ID | Activity Code | Activity Name | Dur | Early Start | Early Finish | Late Start | Late Finish | % Comple | Total Float | Predecesso | Successors |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 321 | ED202.5.01.002.005 | Excavation and Construction Drainage System | 90d | 2/12/21 | 19/3/22 | 15/12... | 1/4/22 | 0% | 11d | 318,320,260 | 323FS-30d,322FS-60 |
| 322 | ED202.5.01.002.006 | Excavation and Construction of Catchpits + U channel | 90d | 8/1/22 | 25/4/22 | 21/1/22 | 9/5/22 | 0% | 11d | 318,320,260 | 323FS-30d,324 |
| 323 | ED202.5.01.002.007 | CCTV inspection, testing and commissioning of Drainage Lines | 42d | 21/3/22 | 10/5/22 | 2/4/22 | 23/5/22 | 0% | 11d | 321FS-30d, | 327 |
| 364 | **ED202.5.01.003** | **Portion 2b** | **666d** | **2/10/21** | **8/12/23** | **2/10/21** | **13/12/23** | **7%** | **4d** | | |
| 366 | ED202.5.01.003.002 | Engineer's AIP of MS, Temp., works, plans & associated docs | 18d | 22/11/21 | 11/12/21 | 22/11... | 11/12/21 | 100% | 0d | 365 | 367 |
| 367 | ED202.5.01.003.003 | Provision of site access [137 days after starting date as per Contract] | 6d | 14/12/21 | 20/12/21 | 14/12... | 20/12/21 | 100% | 0d | 13,366 | 368 |
| 368 | ED202.5.01.003.004 | Mobilization & Site Clearance | 12d | 21/12/21 | 5/1/22 | 21/12... | 5/1/22 | 100% | 0d | 367 | 369,372,371FS+26d |
| 369 | ED202.5.01.003.005 | Hard landscaping work for Island - placement of boulders, soil placement and planters construction | 90d | 6/1/22 | 22/4/22 | 6/1/22 | 27/4/22 | 5% | 4d | 368 | 370 |
| 371 | ED202.5.01.003.007 | Construction of artificial lake | 82d | 7/2/22 | 14/5/22 | 1/4/22 | 9/7/22 | 0% | 46d | 368FS+26d | 373,378 |
| 389 | **ED202.5.03** | **Section of Works 2 - Portion 8** | **596d** | **30/7/21** | **17/7/23** | **30/7/21** | **29/7/23** | **10%** | **11d** | | |
| 390 | **ED202.5.03.001** | **Portion 8** | **596d** | **30/7/21** | **17/7/23** | **30/7/21** | **29/7/23** | **10%** | **11d** | | |
| 395 | ED202.5.03.001.005 | Excavation for Drainage Works | 90d | 2/11/21 | 17/2/22 | 2/11/21 | 21/3/22 | 40% | 27d | 392,394 | 397FS-30d,396FS-60 |
| 396 | ED202.5.03.001.006 | Construction of Drainage Works | 90d | 7/12/21 | 24/3/22 | 7/12/21 | 7/4/22 | 30% | 11d | 392,394,395 | 397FS-30d |
| 397 | ED202.5.03.001.007 | CCTV inspection, testing and commissioning of Drainage Works | 60d | 18/2/22 | 29/4/22 | 3/3/22 | 13/5/22 | 0% | 11d | 395FS-30d, | 399,398 |
| 418 | **ED202.5.05** | **Section of Works 3 - Portions 1b, 3, 4, 5** | **607d** | **30/7/21** | **29/7/23** | **29/11...** | **29/7/23** | **3%** | **0d** | | |
| 432 | **ED202.5.05.002** | **Portion 3** | **506d** | **29/11/21** | **29/7/23** | **29/11...** | **29/7/23** | **7%** | **0d** | | |
| 433 | ED202.5.05.002.001 | Provision of site access | 6d | 29/11/21 | 4/12/21 | 29/11... | 4/12/21 | 100% | 0d | 33FS-1d | 434 |
| 434 | ED202.5.05.002.002 | Mobilization & Site Clearance | 12d | 6/12/21 | 18/12/21 | 6/12/21 | 18/12/21 | 100% | 0d | 433 | 435 |
| 435 | ED202.5.05.002.003 | Preparation & submission of MS, Temp., works, associated plans & docs | 42d | 20/12/21 | 9/2/22 | 20/12... | 9/2/22 | 67% | 0d | 434 | 436 |
| 436 | ED202.5.05.002.004 | Engineer AIP of MS, Temp., works, plans & associated docs | 18d | 10/2/22 | 2/3/22 | 10/2/22 | 2/3/22 | 0% | 0d | 435 | 437 |
| 437 | ED202.5.05.002.005 | Installation of chain-link fencing + Provision of temporary drainage system | 158d | 3/3/22 | 7/9/22 | 3/3/22 | 7/9/22 | 0% | 0d | 436 | 438,443FS+2d |
| 441 | **ED202.5.05.003** | **Portion 4** | **529d** | **30/7/21** | **26/4/23** | **10/10...** | **30/5/23** | **0%** | **28d** | | |
| 445 | **ED202.5.05.004** | **Portion 5** | **381d** | **28/2/22** | **30/5/23** | **28/2/22** | **30/5/23** | **0%** | **0d** | | |
| 446 | ED202.5.05.004.001 | Provision of site access [212 days after starting date as per Contract] | 6d | 28/2/22 | 5/3/22 | 28/2/22 | 5/3/22 | 0% | 0d | 39 | 447,448 |
| 447 | ED202.5.05.004.002 | Installation of chain-link fencing + + Provision of temporary drainage system | 135d | 7/3/22 | 15/8/22 | 7/3/22 | 15/8/22 | 0% | 0d | 446 | 449,448FS-30d |
| 454 | **ED202.5.07** | **Section of Works 4 - Portions 6, 12** | **568d** | **30/7/21** | **13/6/23** | **30/7/21** | **13/6/23** | **8%** | **0d** | | |
| 455 | **ED202.5.07.001** | **Portion 6** | **491d** | **1/11/21** | **13/6/23** | **1/11/21** | **13/6/23** | **7%** | **0d** | | |
| 456 | ED202.5.07.001.001 | Preparation & submission of MS, Temp., works, associated plans & docs | 42d | 1/11/21 | 18/12/21 | 1/11/21 | 18/12/21 | 100% | 0d | 2 | 457 |
| 457 | ED202.5.07.001.002 | Engineer's AIP of MS, Temp., works, plans & associated docs | 18d | 20/12/21 | 11/1/22 | 20/12... | 11/1/22 | 100% | 0d | 456 | 458 |
| 458 | ED202.5.07.001.003 | Provision of site access [183 days after starting date as per Contract] | 6d | 29/1/22 | 5/2/22 | 29/1/22 | 5/2/22 | 0% | 0d | 47,457 | 459 |
| 459 | ED202.5.07.001.004 | Mobilization & Site Clearance | 12d | 7/2/22 | 19/2/22 | 7/2/22 | 19/2/22 | 0% | 0d | 458 | 460 |
| 460 | ED202.5.07.001.005 | Excavation and Construction of Drainage Works | 90d | 21/2/22 | 8/6/22 | 21/2/22 | 8/6/22 | 0% | 0d | 459 | 461FS-30d |
| 474 | **ED202.5.07.002** | **Portion 12** | **568d** | **30/7/21** | **13/6/23** | **30/7/21** | **13/6/23** | **8%** | **0d** | | |
| 479 | ED202.5.07.002.005 | Excavation for Drainage Works | 90d | 2/11/21 | 17/2/22 | 2/11/21 | 17/2/22 | 5% | 0d | 476,478 | 481FS-24d,480FS-56 |
| 480 | ED202.5.07.002.006 | Construction of Drainage Works | 90d | 11/12/21 | 29/3/22 | 11/12... | 29/3/22 | 0% | 0d | 476,478,479 | 481FS-24d |
| 481 | ED202.5.07.002.007 | CCTV inspection, testing and commissioning of Drainage Works | 60d | 2/3/22 | 12/5/22 | 2/3/22 | 12/5/22 | 0% | 0d | 479FS-24d, | 488,487 |
| 482 | ED202.5.07.002.008 | Excavation and Construction of Waterlines for fresh water & flushing water and connection to existing tee-off | 60d | 2/11/21 | 12/1/22 | 16/2/22 | 27/4/22 | 0% | 88d | 476,478 | 483 |




Project Start Date: 30 July 2021
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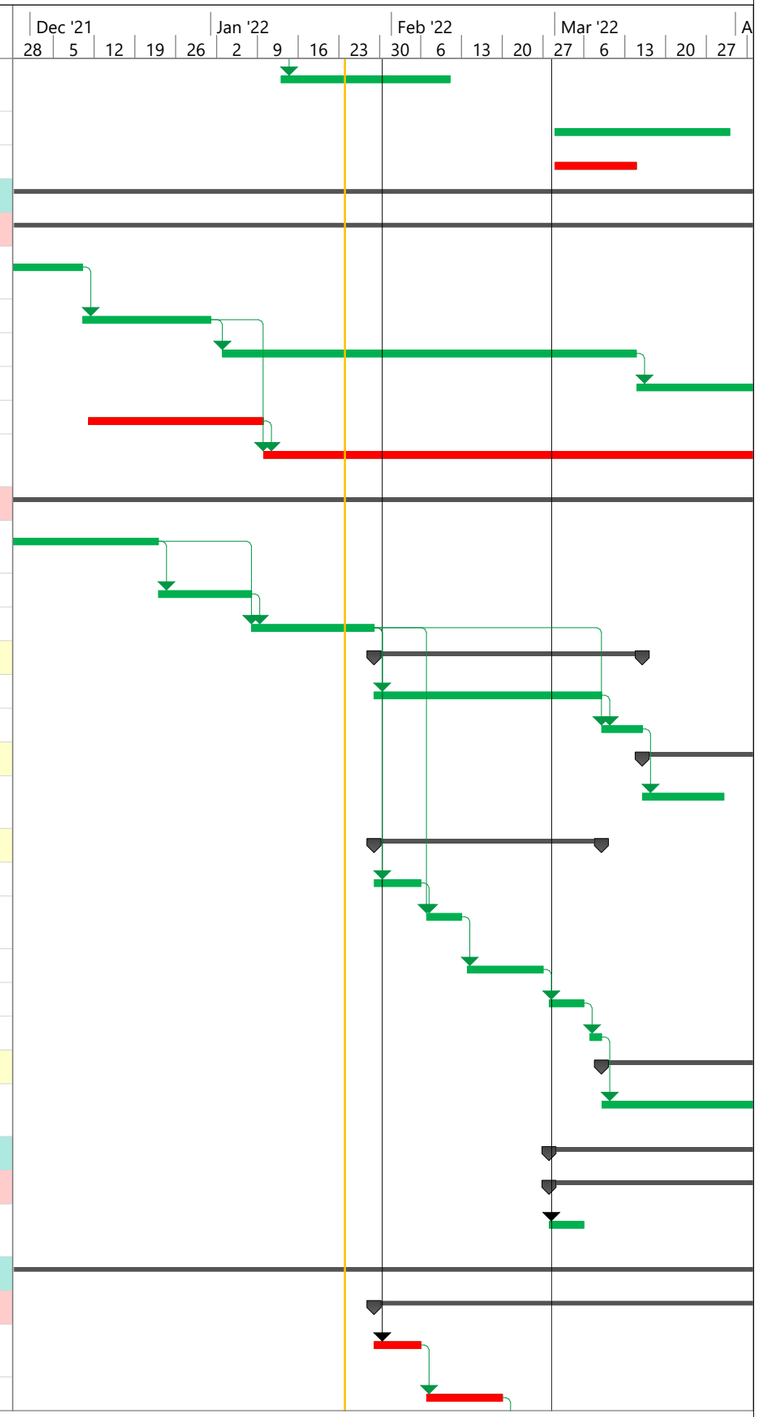
Task — Milestone ◆ — Summary — Critical Task

中国水利电力对外有限公司
China International Water & Electric Corp.

**CEDD Contract No. ED/2020/02**
**Development of Anderson Road Quarry Site – Infrastructure, Greening and Landscape Works**
**Revised Works Programme : January 2022**

| ID | Activity Code | Activity Name | Dur | Early Start | Early Finish | Late Start | Late Finish | % Comple | Total Float | Predecesso | Successors |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 483 | ED202.5.07.002.009 | Testing and Commissioning of Waterlines for fresh water and flushing water | 24d | 13/1/22 | 10/2/22 | 28/4/22 | 26/5/22 | 0% | 88d | 482 | 485 |
| 484 | ED202.5.07.002.020 | Application for Irrigation system (WW0046 Part I & II) | 30d | 1/3/22 | 31/3/22 | 27/4/22 | 26/5/22 | 0% | 57d | | 485 |
| 494 | ED202.5.07.002.019 | PMI 005 : Additional GI at Portion 12 | 12d | 1/3/22 | 15/3/22 | 1/3/22 | 15/3/22 | 0% | 0d | | |
| 499 | **ED202.5.09** | **Section of Works 5A - Portions 9, 10** | **581d** | **30/7/21** | **28/6/23** | **30/7/21** | **28/12/24** | **16%** | **458d** | | |
| 500 | **ED202.5.09.001** | **Portion 9 [Sitting Out Area C & R2-1 Footpath]** | **530d** | **29/9/21** | **28/6/23** | **29/9/21** | **28/6/23** | **10%** | **0d** | | |
| 503 | ED202.5.09.001.003 | Preparation & submission of MS, Temp., works, associated plans & docs | 42d | 22/10/21 | 9/12/21 | 22/10... | 9/12/21 | 100% | 0d | 502 | 504 |
| 504 | ED202.5.09.001.004 | Engineer AIP of MS, Temp., works, plans & associated docs | 18d | 10/12/21 | 31/12/21 | 10/12... | 31/12/21 | 100% | 0d | 503 | 505,508 |
| 505 | ED202.5.09.001.005 | Excavation and construction of drainage line and catchpits | 60d | 3/1/22 | 14/3/22 | 10/1/22 | 21/3/22 | 0% | 6d | 502,504 | 506 |
| 506 | ED202.5.09.001.006 | CCTV inspection, testing and commissioning of Drainage Lines | 30d | 15/3/22 | 19/4/22 | 22/3/22 | 26/4/22 | 0% | 6d | 505 | 510,509 |
| 507 | ED202.5.09.001.017 | Application for Irrigation system (WW0046: Part I & II) | 30d | 11/12/21 | 10/1/22 | 11/12... | 10/1/22 | 0% | 0d | | 508 |
| 508 | ED202.5.09.001.007 | Excavation and construction of draw pits and ducting & Irrigation system | 90d | 10/1/22 | 26/4/22 | 10/1/22 | 26/4/22 | 0% | 0d | 502,504,507 | 510,509,517 |
| 518 | **ED202.5.09.002** | **Portion 10** | **581d** | **30/7/21** | **28/6/23** | **30/7/21** | **28/12/24** | **21%** | **458d** | | |
| 522 | ED202.5.09.002.004 | Preparation & submission of MS, Temp., works, associated plans & docs | 32d | 16/11/21 | 22/12/21 | 16/11... | 22/1/22 | 50% | 25d | 521 | 524,523 |
| 523 | ED202.5.09.002.005 | Time Risk Allowance | 12d | 23/12/21 | 7/1/22 | 23/12... | 7/1/22 | 100% | 0d | 522 | 524 |
| 524 | ED202.5.09.002.006 | Engineer's AIP of MS, Temp., works, plans & associated docs | 18d | 8/1/22 | 28/1/22 | 8/1/22 | 31/1/22 | 72% | 2d | 522,523 | 571,570,526,527 |
| 525 | **ED202.5.09.002.009** | **Slope Works at Feature No. 11NE-D/C998 (409m)** | **38d** | **29/1/22** | **15/3/22** | **29/1/22** | **28/12/24** | **42%** | **849d** | | |
| 526 | ED202.5.09.002.009.01 | Construction of concrete maintenance staircase with hand railings | 32d | 29/1/22 | 8/3/22 | 29/1/22 | 20/12/24 | 50% | 849d | 521,524 | 527 |
| 527 | ED202.5.09.002.009.02 | Installation of display sign for slope registration no. x2 | 6d | 9/3/22 | 15/3/22 | 21/12... | 28/12/24 | 0% | 849d | 526,524,520 | 529 |
| 528 | **ED202.5.09.002.012** | **Slope Works at Feature No. 11NE-D/FR657 (63m)** | **50d** | **16/3/22** | **14/5/22** | **16/3/22** | **28/12/24** | **24%** | **799d** | | |
| 529 | ED202.5.09.002.012.01 | Demolition and removal of disused water pipe and sprinkler system | 12d | 16/3/22 | 29/3/22 | 16/3/22 | 29/3/22 | 100% | 0d | 527 | 530 |
| 569 | **ED202.5.09.002.017** | **Slope Works at Feature No. 11NE-D/C979 (45m)** | **32d** | **29/1/22** | **8/3/22** | **2/2/22** | **10/3/22** | **0%** | **2d** | | |
| 570 | ED202.5.09.002.017.01 | Time Risk Allowance | 6d | 29/1/22 | 5/2/22 | 2/2/22 | 8/2/22 | 0% | 2d | 521,524 | 571 |
| 571 | ED202.5.09.002.017.02 | Demolition and removal of disused water pipe and sprinkler system | 6d | 7/2/22 | 12/2/22 | 9/2/22 | 15/2/22 | 0% | 2d | 521,524,570 | 572 |
| 572 | ED202.5.09.002.017.03 | Construction of concrete berm | 12d | 14/2/22 | 26/2/22 | 16/2/22 | 1/3/22 | 0% | 2d | 571 | 573 |
| 573 | ED202.5.09.002.017.04 | Installation of hand railings | 6d | 28/2/22 | 5/3/22 | 2/3/22 | 8/3/22 | 0% | 2d | 572 | 574 |
| 574 | ED202.5.09.002.017.05 | Installation of display sign for slope registration no. x1 | 2d | 7/3/22 | 8/3/22 | 9/3/22 | 10/3/22 | 0% | 2d | 573 | 576 |
| 575 | **ED202.5.09.002.018** | **Slope Works at Feature No. 11NE-D/C947 (420m)** | **68d** | **9/3/22** | **28/5/22** | **11/3/22** | **31/5/22** | **0%** | **2d** | | |
| 576 | ED202.5.09.002.018.01 | Demolition and removal of disused water pipe and sprinkler system | 24d | 9/3/22 | 6/4/22 | 11/3/22 | 8/4/22 | 0% | 2d | 574 | 577 |
| 624 | **ED202.5.11** | **Section of Works 5B - Portion 11** | **391d** | **28/2/22** | **12/6/23** | **11/4/23** | **28/6/23** | **0%** | **14d** | | |
| 625 | ED202.5.11.001 | Portion 11 | 391d | 28/2/22 | 12/6/23 | 11/4/23 | 28/6/23 | 0% | 14d | | |
| 626 | ED202.5.11.001.001 | Provision of site access [212 days after starting date as per Contract] | 6d | 28/2/22 | 5/3/22 | 11/4/23 | 17/4/23 | 0% | 339d | 69 | 627 |
| 644 | **ED202.5.14** | **Section of Works 7A - Portions 13a, 14** | **556d** | **30/7/21** | **29/5/23** | **30/7/21** | **29/5/23** | **21%** | **0d** | | |
| 645 | **ED202.5.14.001** | **Portion 13a** | **404d** | **29/1/22** | **29/5/23** | **29/1/22** | **29/5/23** | **0%** | **0d** | | |
| 646 | ED202.5.14.001.001 | Provision of site access [183 days after starting date as per Contract] | 6d | 29/1/22 | 5/2/22 | 29/1/22 | 5/2/22 | 0% | 0d | 81,259 | 647 |
| 647 | ED202.5.14.001.002 | Mobilization & Site Clearance | 12d | 7/2/22 | 19/2/22 | 7/2/22 | 19/2/22 | 0% | 0d | 646 | 648 |



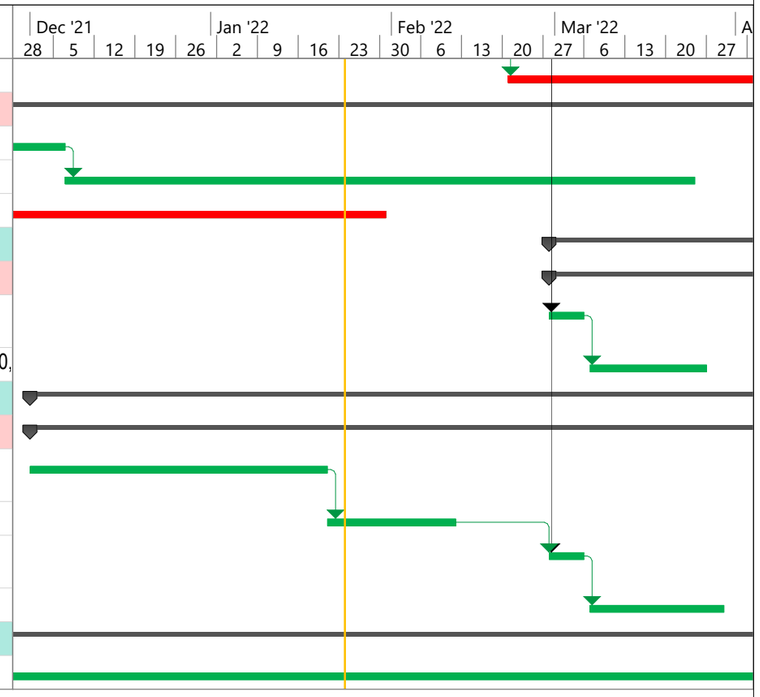

Project Start Date: 30 July 2021
Data Date: 30 July 2021

Task — Milestone ◆ — Summary — Critical Task

中国水利电力对外有限公司
China International Water & Electric Corp.

**CEDD Contract No. ED/2020/02**
**Development of Anderson Road Quarry Site – Infrastructure, Greening and Landscape Works**
**Revised Works Programme : January 2022**

| ID | Activity Code | Activity Name | Dur | Early Start | Early Finish | Late Start | Late Finish | % Comple | Total Float | Predecesso | Successors |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 648 | ED202.5.14.001.003 | (G.I Works) Geotechnical Instrumentation Installation | 60d | 21/2/22 | 3/5/22 | 21/2/22 | 3/5/22 | 0% | 0d | 657,647,659 | 651,649,650 |
| 655 | **ED202.5.14.002** | **Portion 14** | **423d** | **30/7/21** | **20/12/22** | **30/7/21** | **29/5/23** | **36%** | **133d** | | |
| 660 | ED202.5.14.002.006 | Time Risk Allowance | 30d | 2/11/21 | 6/12/21 | 2/11/21 | 6/12/21 | 100% | 0d | 659 | 661 |
| 661 | ED202.5.14.002.007 | Cutting & filling of slopes to formation level {Site G-2} | 90d | 7/12/21 | 24/3/22 | 17/5/22 | 31/8/22 | 0% | 133d | 256,257,660 | 662 |
| 667 | ED202.5.14.002.013 | PMI 001 : Additional GI at Portion 14 | 90d | 15/10/21 | 31/1/22 | 15/10... | 31/1/22 | 93% | 0d | | |
| 672 | **ED202.5.16** | **Section of Works 7B - Portions 13b, 15** | **560d** | **28/2/22** | **29/12/23** | **7/3/22** | **29/12/23** | **4%** | **0d** | | |
| 673 | ED202.5.16.001 | Portion 13b & 15 | 560d | 28/2/22 | 29/12/23 | 7/3/22 | 29/12/23 | 4% | 0d | | |
| 674 | ED202.5.16.001.001 | Provision of site access [212 days after starting date as per Contract] | 6d | 28/2/22 | 5/3/22 | 7/3/22 | 12/3/22 | 0% | 6d | 92 | 675 |
| 675 | ED202.5.16.001.002 | Mobilization & Site Clearance | 18d | 7/3/22 | 26/3/22 | 14/3/22 | 2/4/22 | 0% | 6d | 674 | 677,689,685,697,690, |
| 716 | **ED202.5.20** | **Section of Works 9 - Portion 17** | **629d** | **1/12/21** | **23/12/23** | **1/12/21** | **29/12/23** | **4%** | **4d** | | |
| 717 | **ED202.5.20.001** | **Portion 17** | **629d** | **1/12/21** | **23/12/23** | **1/12/21** | **29/12/23** | **4%** | **4d** | | |
| 718 | ED202.5.20.001.001 | Preparation & submission of MS, Temp., works, associated plans & docs | 42d | 1/12/21 | 20/1/22 | 1/12/21 | 20/1/22 | 100% | 0d | 2 | 719 |
| 719 | ED202.5.20.001.002 | Engineer's AIP of MS, Temp., works, plans & associated docs | 18d | 21/1/22 | 11/2/22 | 21/1/22 | 3/3/22 | 11% | 17d | 718 | 720 |
| 720 | ED202.5.20.001.003 | Provision of site access [212 days after starting date as per Contract] | 6d | 28/2/22 | 5/3/22 | 4/3/22 | 10/3/22 | 0% | 4d | 111,719 | 721 |
| 721 | ED202.5.20.001.004 | Slope inspection & assessment work & Tree Survey | 20d | 7/3/22 | 29/3/22 | 11/3/22 | 2/4/22 | 0% | 4d | 720 | 723,722 |
| 812 | **ED202.5.22** | **Section of Works 10 - All Tree Protection and Preservation Works** | **736d** | **30/7/21** | **29/12/23** | **30/7/21** | **29/12/23** | **20%** | **0d** | | |
| 814 | ED202.5.22.002 | All Tree Protection and Preservation Work Duration for Section 8 | 880d | 30/7/21 | 26/12/23 | 30/7/21 | 29/12/23 | 20% | 3d | 813 | 815 |




Project Start Date: 30 July 2021
Data Date: 30 July 2021

Task Milestone Summary Critical Task

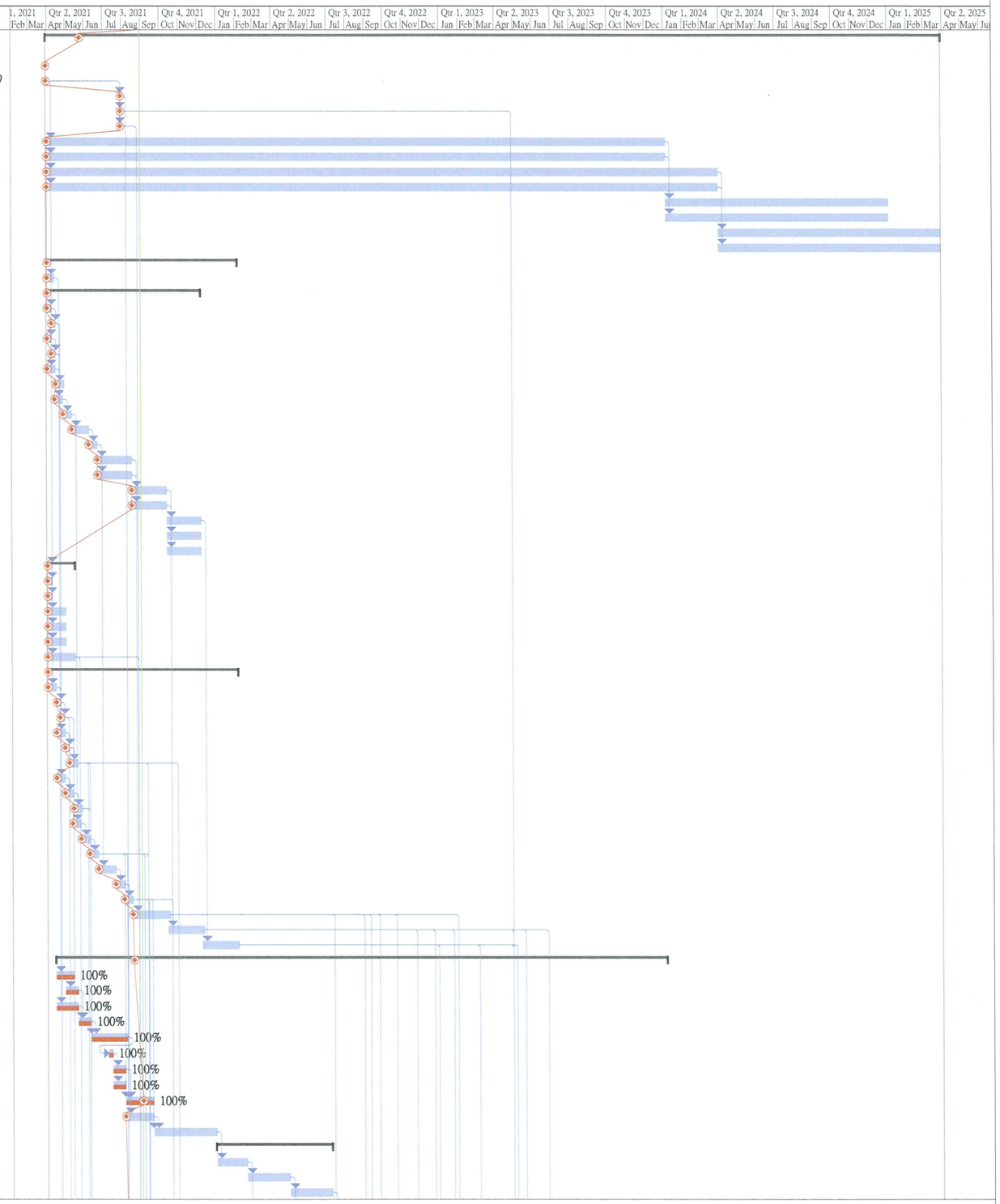
# Contract 5 (NE/2019/02)

Contract No. ED/2019/02
Development of Anderson Road Quarry Site -
Remaining Pedestrian Connectivity Facilities Works

# First Programme

Wing Lee - Univic Joint Venture

| ID | Task Mod | Task Name | Duration | Start | Finish | Predecessors | Successors |
|---|---|---|---|---|---|---|---|
| 1 | | **Development of Anderson Road Quarry Site - Remaining Pedestrian Connectivity Facilities Works** | **1461 days** | **Tue 30/3/21** | **Sat 29/3/25** | | |
| 2 | | *Contract Starting Date* | *1 day* | *Tue 30/3/21* | *Tue 30/3/21* | | |
| 3 | | *Possession of Site (Portion 1a, 2, 3a & 4b)* | *1 day* | *Tue 30/3/21* | *Tue 30/3/21* | | *16,35,18,20,22,43,4,36,37,38,39,40,41,5,6,7,8,9,10* |
| 4 | | *Possession of Site (Portion 1b)* | *1 day* | *Fri 30/7/21* | *Fri 30/7/21* | *3* | *70,272* |
| 5 | | *Possession of Site (Portion 3b)* | *1 day* | *Fri 30/7/21* | *Fri 30/7/21* | *3* | *222* |
| 6 | | *Possession of Site (Portion 4a)* | *1 day* | *Fri 30/7/21* | *Fri 30/7/21* | *3* | *244* |
| 7 | | Construction Period of Section 1 | 1009 days | Wed 31/3/21 | Wed 3/1/24 | 3 | 11 |
| 8 | | Construction Period of Section 2 | 1009 days | Wed 31/3/21 | Wed 3/1/24 | 3 | 12 |
| 9 | | Construction Period of Section 3 | 1095 days | Wed 31/3/21 | Fri 29/3/24 | 3 | 13 |
| 10 | | Construction Period of Section 4 | 1095 days | Wed 31/3/21 | Fri 29/3/24 | 3 | 14 |
| 11 | | Construction Period of Section 1A | 365 days | Thu 4/1/24 | Thu 2/1/25 | 7 | |
| 12 | | Construction Period of Section 2A | 365 days | Thu 4/1/24 | Thu 2/1/25 | 8 | |
| 13 | | Construction Pperiod of Section 3A | 365 days | Sat 30/3/24 | Sat 29/3/25 | 9 | |
| 14 | | Construction Period of Section 4A | 365 days | Sat 30/3/24 | Sat 29/3/25 | 10 | |
| 15 | | Preliminary Work | 310 days | Wed 31/3/21 | Thu 3/2/22 | | |
| 16 | | Mobilization of Site Accommodation | 12 days | Wed 31/3/21 | Sun 11/4/21 | 3 | 62,119,174,209,240,243,24,64 |
| 17 | | Major Sub-contractor Submission | 250 days | Wed 31/3/21 | Sun 5/12/21 | | |
| 18 | | Submit Proposed Landscaping Sub-contractor | 7 days | Wed 31/3/21 | Tue 6/4/21 | 3 | 19 |
| 19 | | Accept Proposed Landscaping Sub-contractor | 7 days | Wed 7/4/21 | Tue 13/4/21 | 18 | 46,49 |
| 20 | | Submit Proposed Traffic Consultant | 7 days | Wed 31/3/21 | Tue 6/4/21 | 3 | 21 |
| 21 | | Accept Proposed Traffic Consultant | 7 days | Wed 7/4/21 | Tue 13/4/21 | 20 | 178 |
| 22 | | Submit Proposed Independent Checking Engineer | 14 days | Wed 31/3/21 | Tue 13/4/21 | 3 | 23 |
| 23 | | Accept Proposed Independent Checking Engineer | 14 days | Wed 14/4/21 | Tue 27/4/21 | 22 | |
| 24 | | Submit Proposed Ground Investigation Sub-contractor | 14 days | Mon 12/4/21 | Sun 25/4/21 | 16 | 25 |
| 25 | | Accept Proposed Ground Investigation Sub-contractor | 14 days | Mon 26/4/21 | Sun 9/5/21 | 24 | 26,52 |
| 26 | | Submit Proposed Piling Sub-contractor | 28 days | Mon 10/5/21 | Sun 6/6/21 | 25 | 27 |
| 27 | | Accept Proposed Piling Sub-contractor | 14 days | Mon 7/6/21 | Sun 20/6/21 | 26 | 55,28,29 |
| 28 | | Submit & Accept Proposed E&M Sub-contractor | 56 days | Mon 21/6/21 | Sun 15/8/21 | 27 | 58 |
| 29 | | Submit & Accept Proposed Lift/Escalator Sub-contractor | 56 days | Mon 21/6/21 | Sun 15/8/21 | 27 | 30,31,58 |
| 30 | | Submit & Accept Bearing Sub-contractor | 56 days | Mon 16/8/21 | Sun 10/10/21 | 29 | 59 |
| 31 | | Submit & Accept Proposed Movement Joint Sub-contractor | 56 days | Mon 16/8/21 | Sun 10/10/21 | 29 | 32,33,34,59 |
| 32 | | Submit & Accept Proposed Steelwork Sub-contractor | 56 days | Mon 11/10/21 | Sun 5/12/21 | 31 | 60 |
| 33 | | Submit & Accept Proposed Waterproofing Sub-contractor | 56 days | Mon 11/10/21 | Sun 5/12/21 | 31 | |
| 34 | | Submit & Accept Proposed Road Marking Sub-contractor | 56 days | Mon 11/10/21 | Sun 5/12/21 | 31 | |
| 35 | | Contractural Submission | 45 days | Wed 31/3/21 | Fri 14/5/21 | 3 | |
| 36 | | Initial Photo Record | 7 days | Wed 31/3/21 | Tue 6/4/21 | 3 | |
| 37 | | Noise Mitigation Plan | 7 days | Wed 31/3/21 | Tue 6/4/21 | 3 | |
| 38 | | Safety Management Plan | 30 days | Wed 31/3/21 | Thu 29/4/21 | 3 | |
| 39 | | Environmental Managenet Plan | 30 days | Wed 31/3/21 | Thu 29/4/21 | 3 | |
| 40 | | Waste Management Plan | 30 days | Wed 31/3/21 | Thu 29/4/21 | 3 | |
| 41 | | Initial Condition Survey | 45 days | Wed 31/3/21 | Fri 14/5/21 | 3 | 65,121,177,245 |
| 42 | | Technical Submission | 310 days | Wed 31/3/21 | Thu 3/2/22 | | |
| 43 | | Prepare Method Statement of Initial Survey | 14 days | Wed 31/3/21 | Tue 13/4/21 | 3 | 44 |
| 44 | | Review & Resubmit MS of Initial Survey | 6 days | Wed 14/4/21 | Mon 19/4/21 | 43 | 45 |
| 45 | | Acceptance of MS of Iniial Survey | 7 days | Tue 20/4/21 | Mon 26/4/21 | 44 | 63,120,176,242 |
| 46 | | Prepare Method Statement of Tree Felling | 14 days | Wed 14/4/21 | Tue 27/4/21 | 19 | 47 |
| 47 | | Review & Resubmit MS of Tree Felling | 7 days | Wed 28/4/21 | Tue 4/5/21 | 46 | 48 |
| 48 | | Acceptance of MS of Tree Felling | 14 days | Wed 5/5/21 | Tue 18/5/21 | 47 | 66,122,179,246,273 |
| 49 | | Prepare Method Statement of Tree Transplanting | 14 days | Wed 14/4/21 | Tue 27/4/21 | 19 | 50 |
| 50 | | Review & Resubmit MS of Tree Transplanting | 14 days | Wed 28/4/21 | Tue 11/5/21 | 49 | 51 |
| 51 | | Acceptance of MS of Tree Transplanting | 14 days | Wed 12/5/21 | Tue 25/5/21 | 50 | 123 |
| 52 | | Prepare Method Statement of Ground Investigation | 14 days | Mon 10/5/21 | Sun 23/5/21 | 25 | 53 |
| 53 | | Review & Resubmit MS of Ground Investigation | 14 days | Mon 24/5/21 | Sun 6/6/21 | 52 | 54 |
| 54 | | Acceptance of MS of Ground Investigation | 14 days | Mon 7/6/21 | Sun 20/6/21 | 53 | 70,127,185,248 |
| 55 | | Prepare Method Statement of Piling Works | 28 days | Mon 21/6/21 | Sun 18/7/21 | 27 | 56 |
| 56 | | Review & Resubmit MS of Piling Works | 14 days | Mon 19/7/21 | Sun 1/8/21 | 55 | 57 |
| 57 | | Acceptance of MS of Piling Works | 14 days | Mon 2/8/21 | Sun 15/8/21 | 56 | 129,186,72 |
| 58 | | Submit & Accept of Lift & E&M Submission | 60 days | Mon 16/8/21 | Thu 14/10/21 | 28,29 | 87,142,191,218,253,277 |
| 59 | | Submit & Accept bearing & MJ Submission | 60 days | Mon 11/10/21 | Thu 9/12/21 | 30,31 | 89,144,192,220,257,281 |
| 60 | | Submit & Accept Steelwork submission | 60 days | Mon 6/12/21 | Thu 3/2/22 | 32 | 98,153,222,283 |
| 61 | | Section 1 - E5 Escalator (Portion 1a & 1b) | 997 days | Mon 12/4/21 | Wed 3/1/24 | | |
| 62 | | Site Clearance | 30 days | Mon 12/4/21 | Tue 11/5/21 | 16 | |
| 63 | | Initial Survey | 21 days | Tue 27/4/21 | Mon 17/5/21 | 45 | 65 |
| 64 | | Coordination with Housing Authority for Access | 36 days | Mon 12/4/21 | Mon 17/5/21 | 16 | 65 |
| 65 | | Erection of Site Hoarding | 21 days | Tue 18/5/21 | Mon 7/6/21 | 63,41,64 | 66 |
| 66 | | Tree Felling | 59 days | Tue 8/6/21 | Thu 5/8/21 | 65,48 | 67 |
| 67 | | Trial Pit Excavation | 7 days | Tue 6/7/21 | Mon 12/7/21 | 66 | 68,69 |
| 68 | | Utilities Diversion | 21 days | Tue 13/7/21 | Mon 2/8/21 | 67 | 70,71 |
| 69 | | Installation of Monitoring & Instrumentation Point | 21 days | Tue 13/7/21 | Mon 2/8/21 | 67 | |
| 70 | | Ground Investigation & install piezometer | 45 days | Tue 3/8/21 | Thu 16/9/21 | 68,54,4 | |
| 71 | | Fell Additional Trees (EWN001) | 45 days | Tue 3/8/21 | Thu 16/9/21 | 68 | 72 |
| 72 | | Form piling platform on Existing slope | 102 days | Fri 17/9/21 | Mon 27/12/21 | 71,57 | 74 |
| 73 | | Piling Works | 190 days | Tue 28/12/21 | Tue 5/7/22 | | |
| 74 | | At Pile Cap E5-PC3 (12 nrs of 610mm PSH Piles) | 50 days | Tue 28/12/21 | Tue 15/2/22 | 72 | 75,79 |
| 75 | | At Pile Cap E5-PC2 (16 nrs of 610mm PSH Piles) | 70 days | Wed 16/2/22 | Tue 26/4/22 | 74 | 76,80 |
| 76 | | At Pile Cap E5-PC1 (16 nrs of 610mm PSH Piles) | 70 days | Wed 27/4/22 | Tue 5/7/22 | 75 | 77 |



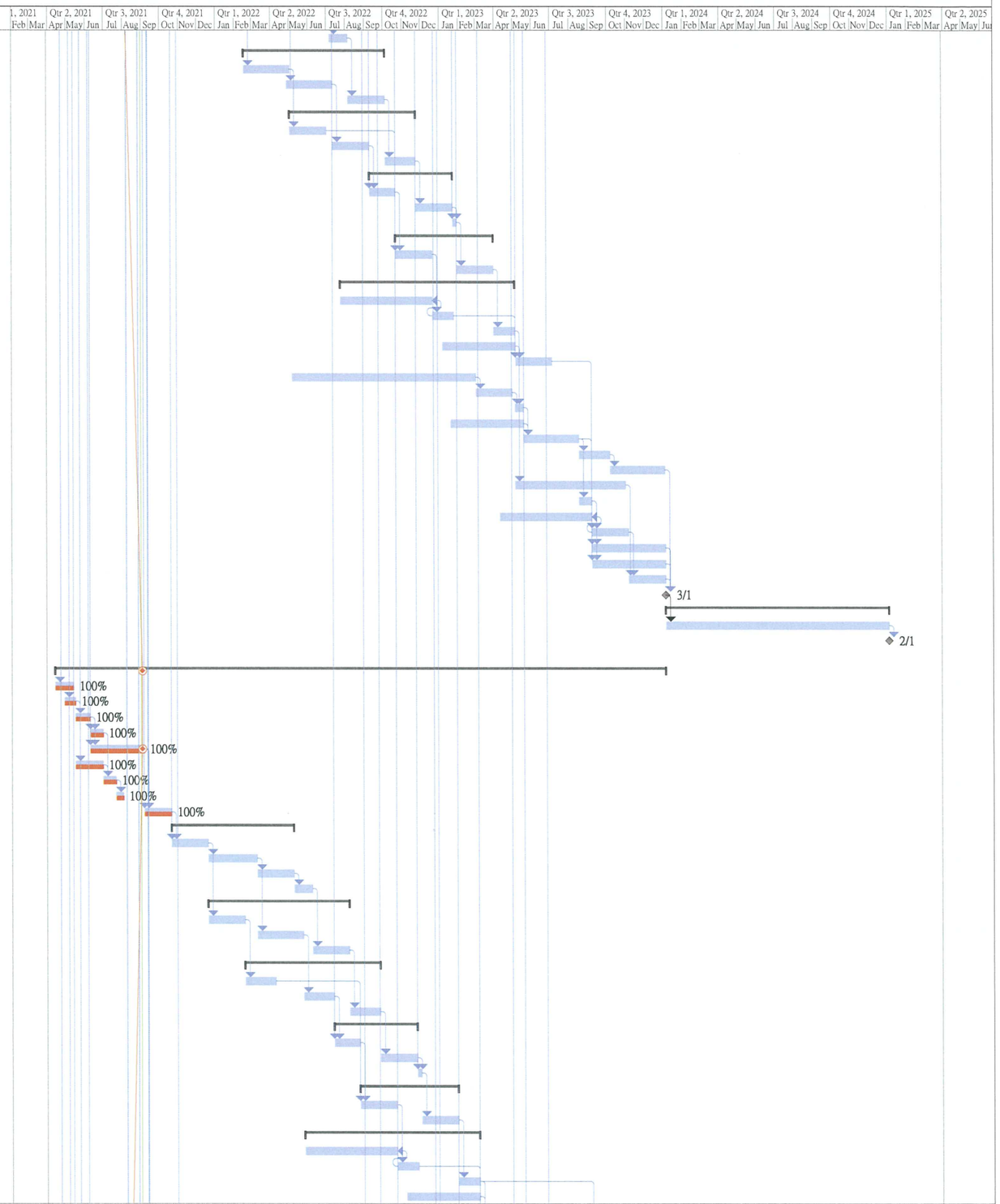

Project: Contract No. ED/2019/02
Date: Tue 31/8/21

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

# First Programme



| ID | Task Mod | Task Name | Duration | Start | Finish | Predecessors | Successors |
|---|---|---|---|---|---|---|---|
| 77 | | Loading Test of Piling | 30 days | Wed 6/7/22 | Thu 4/8/22 | 76 | 81 |
| 78 | | Excavation | 230 days | Wed 16/2/22 | Mon 3/10/22 | | |
| 79 | | For Pile Cap E5-PC3 | 75 days | Wed 16/2/22 | Sun 1/5/22 | 74 | 83 |
| 80 | | For Pile Cap E5-PC2 | 75 days | Wed 27/4/22 | Sun 10/7/22 | 75 | 84 |
| 81 | | For Pile Cap E5-PC1 | 60 days | Fri 5/8/22 | Mon 3/10/22 | 77 | 85 |
| 82 | | Pile Cap Construction | 205 days | Mon 2/5/22 | Tue 22/11/22 | | |
| 83 | | For Pile Cap E5-PC3 | 60 days | Mon 2/5/22 | Thu 30/6/22 | 79 | 91 |
| 84 | | For Pile Cap E5-PC2 | 60 days | Mon 11/7/22 | Thu 8/9/22 | 80 | 87 |
| 85 | | For Pile Cap E5-PC1 | 50 days | Tue 4/10/22 | Tue 22/11/22 | 81 | 88 |
| 86 | | Construction of Piers | 135 days | Fri 9/9/22 | Sat 21/1/23 | | |
| 87 | | For Pier E5-P2 | 42 days | Fri 9/9/22 | Thu 20/10/22 | 84,58 | 91 |
| 88 | | For Pier E5-P1 | 60 days | Wed 23/11/22 | Sat 21/1/23 | 85 | 89 |
| 89 | | Installation of Bearing | 7 days | Sun 22/1/23 | Sat 28/1/23 | 88,59 | 92 |
| 90 | | Construction of Escalator Trough | 160 days | Fri 21/10/22 | Wed 29/3/23 | | |
| 91 | | From PC3 - PC2 | 60 days | Fri 21/10/22 | Mon 19/12/22 | 87,83 | 95 |
| 92 | | From PC2 - PC1 | 60 days | Sun 29/1/23 | Wed 29/3/23 | 89 | 96 |
| 93 | | Installation of Escalator | 285 days | Sat 23/7/22 | Wed 3/5/23 | | |
| 94 | | Procument & Delivery of Escalator Material | 150 days | Sat 23/7/22 | Tue 20/12/22 | 95SF | |
| 95 | | From PC3 - PC2 | 35 days | Tue 20/12/22 | Mon 23/1/23 | 91 | 98,94SF |
| 96 | | From PC2 - PC1 | 35 days | Thu 30/3/23 | Wed 3/5/23 | 92 | 98,106,101 |
| 97 | | Ordering of steel frame, roofing panels & fall arrest system | 120 days | Thu 5/1/23 | Thu 4/5/23 | | 98 |
| 98 | | Erection of Canopy | 60 days | Fri 5/5/23 | Mon 3/7/23 | 96,95,60,97 | 109 |
| 99 | | Design Submission and Approval of A&A Works | 300 days | Thu 5/5/22 | Tue 28/2/23 | | 100 |
| 100 | | Connection of Existing lift tower | 60 days | Wed 1/3/23 | Sat 29/4/23 | 99 | 101 |
| 101 | | Installation of Movement Joint | 14 days | Thu 4/5/23 | Wed 17/5/23 | 96,100 | 103 |
| 102 | | Ordering of balustrades, barriers & architectural features | 120 days | Wed 18/1/23 | Wed 17/5/23 | | 103 |
| 103 | | Finishing Work | 90 days | Thu 18/5/23 | Tue 15/8/23 | 101,102 | 107,110,111,104 |
| 104 | | Remove existing soil nail | 50 days | Wed 16/8/23 | Wed 4/10/23 | 103 | 105 |
| 105 | | Backfill pile caps & Reinstate existing Slope & Retaining wall | 90 days | Thu 5/10/23 | Tue 2/1/24 | 104 | 113 |
| 106 | | Telemetry & Power Supply System | 180 days | Thu 4/5/23 | Mon 30/10/23 | 96 | 112 |
| 107 | | Construction of Pillar Box | 21 days | Wed 16/8/23 | Tue 5/9/23 | 103 | 109,110,111 |
| 108 | | Procument & Delivery of E&M Material | 150 days | Sun 9/4/23 | Wed 6/9/23 | 109SF | |
| 109 | | E & M Installation & Lighting Installation | 60 days | Wed 6/9/23 | Sat 4/11/23 | 98,107 | 112,108SF |
| 110 | | Drainage & Misc. Road Works | 120 days | Wed 6/9/23 | Wed 3/1/24 | 107,103 | 113 |
| 111 | | Landscaping Works | 120 days | Wed 6/9/23 | Wed 3/1/24 | 107,103 | 113 |
| 112 | | Testing & Commissioning | 60 days | Sun 5/11/23 | Wed 3/1/24 | 109,106 | 113 |
| 113 | | *Section 1 Completion* | *0 days* | *Wed 3/1/24* | *Wed 3/1/24* | *112,110,105,111* | *115* |
| 114 | | **Section 1A - Establishment Works (Portion 1a & 1b)** | **365 days** | **Thu 4/1/24** | **Thu 2/1/25** | | |
| 115 | | Establishment Works | 365 days | Thu 4/1/24 | Thu 2/1/25 | 113 | 116 |
| 116 | | *Section 1A Completion* | *0 days* | *Thu 2/1/25* | *Thu 2/1/25* | *115* | |
| 117 | | | | | | | |
| 118 | | **Section 2 - E6 Escalator (Portion 2)** | **997 days** | **Mon 12/4/21** | **Wed 3/1/24** | | |
| 119 | | Site Clearance | 30 days | Mon 12/4/21 | Tue 11/5/21 | 16 | |
| 120 | | Initial Survey | 18 days | Tue 27/4/21 | Fri 14/5/21 | 45 | 121,124 |
| 121 | | Erection of Site Hoarding | 24 days | Sat 15/5/21 | Mon 7/6/21 | 120,41 | 122,123 |
| 122 | | Tree Felling | 21 days | Tue 8/6/21 | Mon 28/6/21 | 121,48 | 125 |
| 123 | | Tree Transplanting | 88 days | Tue 8/6/21 | Fri 3/9/21 | 121,51 | 127 |
| 124 | | Coordination with HD for access & facilities relocation | 45 days | Sat 15/5/21 | Mon 28/6/21 | 120 | 125 |
| 125 | | Take up park facilities & Furniture | 21 days | Tue 29/6/21 | Mon 19/7/21 | 122,124 | 126 |
| 126 | | Installation of Monitoring & Instrumentation Point | 12 days | Tue 20/7/21 | Sat 31/7/21 | 125 | |
| 127 | | Ground Investigation | 45 days | Sat 4/9/21 | Mon 18/10/21 | 123,54 | 129 |
| 128 | | **Piling Works** | **200 days** | **Tue 19/10/21** | **Fri 6/5/22** | | |
| 129 | | At Pile Cap E6-PC3 (12 nrs of 610mm PSH Piles) | 60 days | Tue 19/10/21 | Fri 17/12/21 | 127,57 | 130,134 |
| 130 | | At Pile Cap E6-PC2 (16 nrs of 610mm PSH Piles) | 80 days | Sat 18/12/21 | Mon 7/3/22 | 129 | 131,135 |
| 131 | | At Pile Cap E6-PC1 (16 nrs of 610mm PSH Piles) | 60 days | Tue 8/3/22 | Fri 6/5/22 | 130 | 132 |
| 132 | | Loading Test of Piling | 30 days | Sat 7/5/22 | Sun 5/6/22 | 131 | 136 |
| 133 | | **Excavation** | **230 days** | **Sat 18/12/21** | **Thu 4/8/22** | | |
| 134 | | For Pile Cap E6-PC3 | 60 days | Sat 18/12/21 | Tue 15/2/22 | 129 | 138 |
| 135 | | For Pile Cap E6-PC2 | 75 days | Tue 8/3/22 | Sat 21/5/22 | 130 | 139 |
| 136 | | For Pile Cap E6-PC1 | 60 days | Mon 6/6/22 | Thu 4/8/22 | 132 | 140 |
| 137 | | **Pile Cap Construction** | **220 days** | **Wed 16/2/22** | **Fri 23/9/22** | | |
| 138 | | For Pile Cap E5-PC3 | 50 days | Wed 16/2/22 | Wed 6/4/22 | 134 | 146 |
| 139 | | For Pile Cap E5-PC2 | 50 days | Sun 22/5/22 | Sun 10/7/22 | 135 | 142 |
| 140 | | For Pile Cap E5-PC1 | 50 days | Fri 5/8/22 | Fri 23/9/22 | 136 | 143 |
| 141 | | **Construction of Piers** | **135 days** | **Mon 11/7/22** | **Tue 22/11/22** | | |
| 142 | | For Pier E5-P2 | 42 days | Mon 11/7/22 | Sun 21/8/22 | 139,58 | 146 |
| 143 | | For Pier E5-P1 | 60 days | Sat 24/9/22 | Tue 22/11/22 | 140 | 144 |
| 144 | | Installation of Bearing | 7 days | Wed 23/11/22 | Tue 29/11/22 | 143,59 | 147 |
| 145 | | **Construction of Escalator Trough** | **160 days** | **Mon 22/8/22** | **Sat 28/1/23** | | |
| 146 | | From PC3 - PC2 | 60 days | Mon 22/8/22 | Thu 20/10/22 | 142,138 | 150 |
| 147 | | From PC2 - PC1 | 60 days | Wed 30/11/22 | Sat 28/1/23 | 144 | 151 |
| 148 | | **Installation of Escalator** | **285 days** | **Tue 24/5/22** | **Sat 4/3/23** | | |
| 149 | | Procument & Delivery of Escalator Material | 150 days | Tue 24/5/22 | Fri 21/10/22 | 150SF | |
| 150 | | From PC3 - PC2 | 35 days | Fri 21/10/22 | Thu 24/11/22 | 146 | 153,149SF |
| 151 | | From PC2 - PC1 | 35 days | Sun 29/1/23 | Sat 4/3/23 | 147 | 153,156,163 |
| 152 | | Ordering of steel frame, roofing panels & fall arrest system | 120 days | Sat 5/11/22 | Sat 4/3/23 | | 153 |



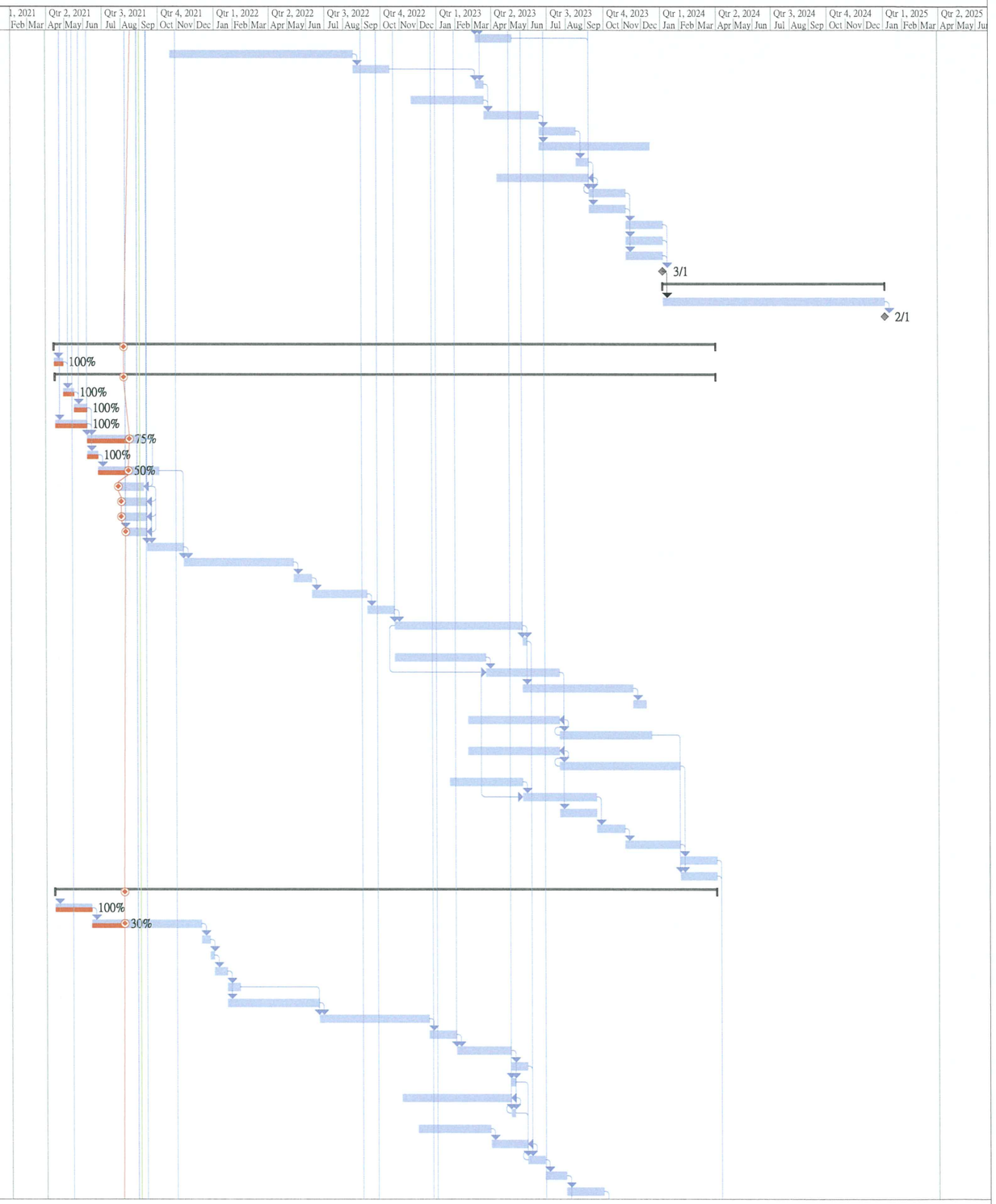

Project: Contract No. ED/2019/02
Date: Tue 31/8/21

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

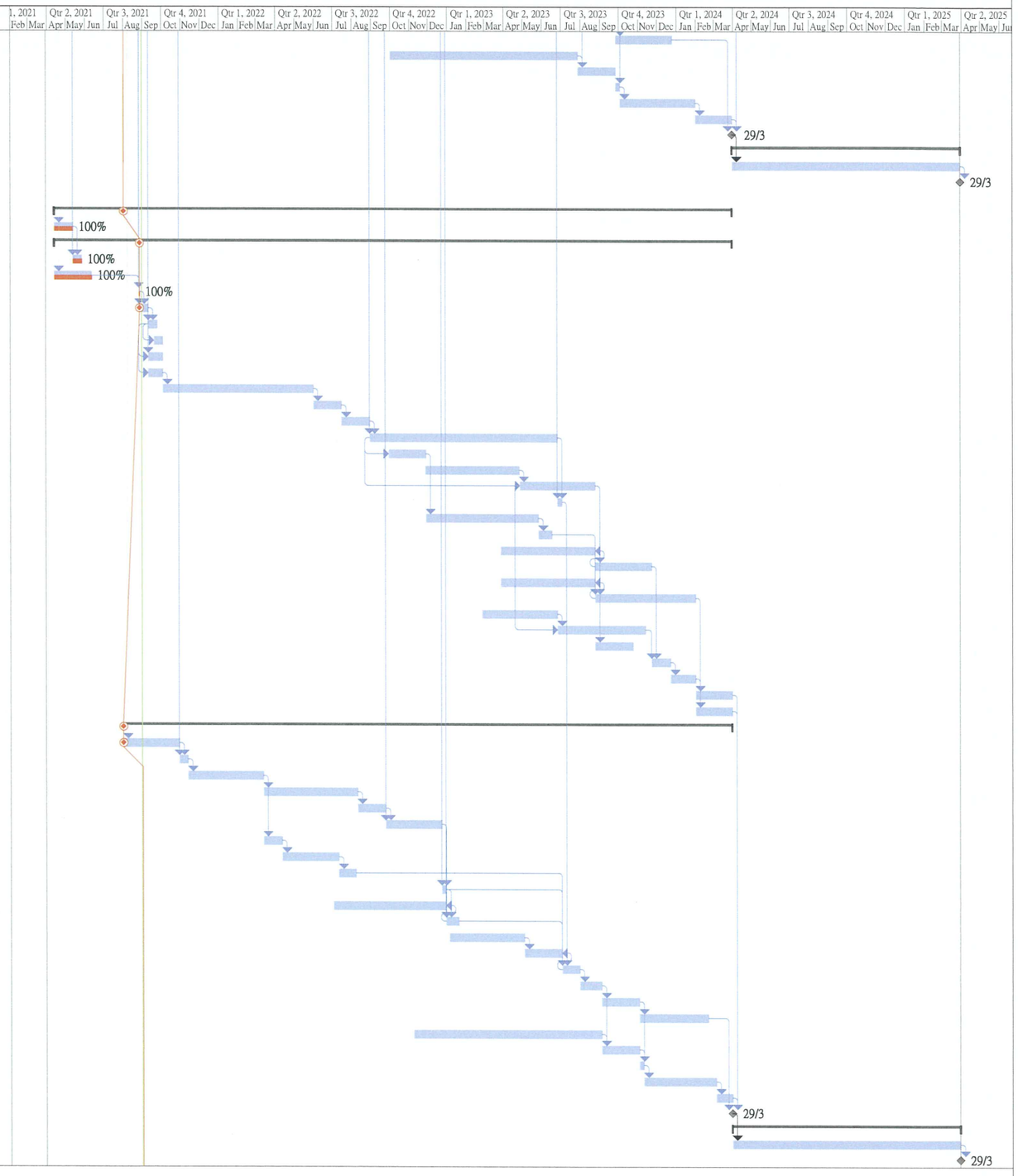
# First Programme



| ID | Task Mod | Task Name | Duration | Start | Finish | Predecessors | Successors |
|---|---|---|---|---|---|---|---|
| 153 | | Erection of Canopy | 60 days | Sun 5/3/23 | Wed 3/5/23 | 151,60,150,152 | 163 |
| 154 | | Design Submission and Approval of A&A Works | 300 days | Wed 20/10/21 | Mon 15/8/22 | | 155 |
| 155 | | Connection of Existing lift tower | 60 days | Tue 16/8/22 | Fri 14/10/22 | 154 | 156 |
| 156 | | Installation of Movement Joint | 14 days | Sun 5/3/23 | Sat 18/3/23 | 151,155 | 158 |
| 157 | | Ordering of balustrades, barriers & architectural features | 120 days | Sat 19/11/22 | Sat 18/3/23 | | 158 |
| 158 | | Finishing Work | 90 days | Sun 19/3/23 | Fri 16/6/23 | 156,157 | 159,160 |
| 159 | | Backfill pile caps | 60 days | Sat 17/6/23 | Tue 15/8/23 | 158 | 161 |
| 160 | | Telemetry & Power Supply System | 180 days | Sat 17/6/23 | Wed 13/12/23 | 158 | |
| 161 | | Construction of Pillar Box | 21 days | Wed 16/8/23 | Tue 5/9/23 | 159 | 163,164 |
| 162 | | Procument & Delivery of E&M Material | 150 days | Sun 9/4/23 | Wed 6/9/23 | 163SF | |
| 163 | | E & M Installation & Lighting Installation | 60 days | Wed 6/9/23 | Sat 4/11/23 | 151,161,153 | 167,162SF |
| 164 | | Drainage & Misc. Road Works | 60 days | Wed 6/9/23 | Sat 4/11/23 | 161 | 165,166 |
| 165 | | Reinstatement of park facilities | 60 days | Sun 5/11/23 | Wed 3/1/24 | 164 | 168 |
| 166 | | Landscaping Works | 60 days | Sun 5/11/23 | Wed 3/1/24 | 164 | 168 |
| 167 | | Testing & Commissioning | 60 days | Sun 5/11/23 | Wed 3/1/24 | 163 | 168 |
| 168 | | *Section 2 Completion* | *0 days* | *Wed 3/1/24* | *Wed 3/1/24* | *165,167,166* | *170* |
| 169 | | **Section 2A - Establishment Work (Portion 2)** | **365 days** | **Thu 4/1/24** | **Thu 2/1/25** | | |
| 170 | | Establishment Works | 365 days | Thu 4/1/24 | Thu 2/1/25 | 168 | 171 |
| 171 | | *Section 2A Completion* | *0 days* | *Thu 2/1/25* | *Thu 2/1/25* | *170* | |
| 172 | | | | | | | |
| 173 | | **Section 3 - E7 Bridge (Portion 3a & 3b)** | **1083 days** | **Mon 12/4/21** | **Fri 29/3/24** | | |
| 174 | | Site Clearance | 15 days | Mon 12/4/21 | Mon 26/4/21 | 16 | 176 |
| 175 | | **E7 Lift Tower** | **1081 days** | **Wed 14/4/21** | **Fri 29/3/24** | | |
| 176 | | Initial Survey | 18 days | Tue 27/4/21 | Fri 14/5/21 | 174,45 | 177 |
| 177 | | Erection of Site Hoarding | 21 days | Sat 15/5/21 | Fri 4/6/21 | 176,41 | 179,180 |
| 178 | | TTA for Site Entrance & Bus Stop Relocation | 52 days | Wed 14/4/21 | Fri 4/6/21 | 21 | 179 |
| 179 | | Tree Felling | 93 days | Sat 5/6/21 | Sun 5/9/21 | 177,48,178 | 182FF |
| 180 | | Trial Pit Excavation | 18 days | Sat 5/6/21 | Tue 22/6/21 | 177 | 181 |
| 181 | | Installation of Monitoring & Instrumentation Point | 100 days | Wed 23/6/21 | Thu 30/9/21 | 180 | 187 |
| 182 | | Fell Additional Trees ( P-T00260; PMI No.8 ) | 42 days | Mon 26/7/21 | Sun 5/9/21 | 179FF | 185FF+5 days,183FF+5 days,184FF+5 days |
| 183 | | Street Light Relocation | 42 days | Sat 31/7/21 | Fri 10/9/21 | 182FF+5 days | 186 |
| 184 | | Diversion of existing staircase | 42 days | Sat 31/7/21 | Fri 10/9/21 | 182FF+5 days | |
| 185 | | Installation Piezometer & Ground Investigation | 35 days | Sat 7/8/21 | Fri 10/9/21 | 54,182FF+5 days | 186 |
| 186 | | Form piling platform on Existing slope | 60 days | Sat 11/9/21 | Tue 9/11/21 | 57,183,185 | 187 |
| 187 | | Piling Work (68 nrs of 323mm Mini-piles) | 180 days | Wed 10/11/21 | Sun 8/5/22 | 186,181 | 188 |
| 188 | | Loading Test | 30 days | Mon 9/5/22 | Tue 7/6/22 | 187 | 189 |
| 189 | | Excavation of pile cap | 90 days | Wed 8/6/22 | Mon 5/9/22 | 188 | 190 |
| 190 | | Pile Cap Construction | 45 days | Tue 6/9/22 | Thu 20/10/22 | 189 | 191 |
| 191 | | Construction of Lift Tower (9 Pours) | 210 days | Fri 21/10/22 | Thu 18/5/23 | 190,58 | 192,194SS+150 days,195 |
| 192 | | Installation of Bearing | 7 days | Fri 19/5/23 | Thu 25/5/23 | 191,59 | 225 |
| 193 | | Fabrication of Lourves & Glazing | 150 days | Fri 21/10/22 | Sun 19/3/23 | | 194 |
| 194 | | Installation of Lourves & Glazing | 120 days | Mon 20/3/23 | Mon 17/7/23 | 191SS+150 days,193 | 198,202SS+60 days,200,203 |
| 195 | | Telemetry & Power Supply System | 180 days | Fri 19/5/23 | Tue 14/11/23 | 191 | 196 |
| 196 | | Construction of Pillar Box | 21 days | Wed 15/11/23 | Tue 5/12/23 | 195 | |
| 197 | | Procument & Delivery of Lift Material | 150 days | Sat 18/2/23 | Tue 18/7/23 | 198SF | |
| 198 | | Lift Installation | 150 days | Tue 18/7/23 | Thu 14/12/23 | 194 | 207,197SF |
| 199 | | Procument & Delivery of E&M Material | 150 days | Sat 18/2/23 | Tue 18/7/23 | 200SF | |
| 200 | | E & M Installation & Lighting Installation | 196 days | Tue 18/7/23 | Mon 29/1/24 | 194 | 207,199SF |
| 201 | | Ordering of balustrades, barriers & architectural features | 120 days | Thu 19/1/23 | Thu 18/5/23 | | 202 |
| 202 | | Finishing Work of Lift Tower | 120 days | Fri 19/5/23 | Fri 15/9/23 | 194SS+60 days,201 | 204 |
| 203 | | Waterpoofing & Installation of Fall Arrest System | 60 days | Tue 18/7/23 | Fri 15/9/23 | 194 | |
| 204 | | Removal of scaffolding | 46 days | Sat 16/9/23 | Tue 31/10/23 | 202 | 205 |
| 205 | | Backfill and Reinstate existing slope | 90 days | Wed 1/11/23 | Mon 29/1/24 | 204 | 206 |
| 206 | | Underground drainage & water main works | 60 days | Tue 30/1/24 | Fri 29/3/24 | 205 | 234 |
| 207 | | Testing & Commissioning | 60 days | Tue 30/1/24 | Fri 29/3/24 | 200,198 | 234 |
| 208 | | E7 Pier | 1083 days | Mon 12/4/21 | Fri 29/3/24 | | |
| 209 | | Prepare & Endorse TTA scheme by TMLG | 60 days | Mon 12/4/21 | Thu 10/6/21 | 16 | 210 |
| 210 | | Application of Excavation Permit | 180 days | Fri 11/6/21 | Tue 7/12/21 | 209 | 211 |
| 211 | | Implementation of TTA at carriageway | 14 days | Wed 8/12/21 | Tue 21/12/21 | 210 | 212 |
| 212 | | Installation of Monitoring & Instrumentation Point | 7 days | Wed 22/12/21 | Tue 28/12/21 | 211 | 213 |
| 213 | | Trial Pit Excavation | 21 days | Wed 29/12/21 | Tue 18/1/22 | 212 | 214,215 |
| 214 | | Relocation of street light post | 21 days | Wed 19/1/22 | Tue 8/2/22 | 213 | 216 |
| 215 | | Utilities Diversion | 150 days | Wed 19/1/22 | Fri 17/6/22 | 213 | 216 |
| 216 | | Excavation of footing | 180 days | Sat 18/6/22 | Wed 14/12/22 | 215,214 | 217 |
| 217 | | Construction of Footing E7-F2 | 45 days | Thu 15/12/22 | Sat 28/1/23 | 216 | 218 |
| 218 | | Construction of Pier E7-P1 (4 Poues) | 90 days | Sun 29/1/23 | Fri 28/4/23 | 217,58 | 220,222,219 |
| 219 | | Allowable for achievement of concrete strength | 27 days | Sat 29/4/23 | Thu 25/5/23 | 218 | 225 |
| 220 | | Installation of Bearing | 7 days | Sat 29/4/23 | Fri 5/5/23 | 218,59 | 225 |
| 221 | | Submit & obtain BD's approval for A&A Works at Carpark | 180 days | Mon 31/10/22 | Sat 29/4/23 | 222SF | |
| 222 | | Forming support for steel bridge at Carpark | 7 days | Sat 29/4/23 | Fri 5/5/23 | 218,60,5 | 225,221SF |
| 223 | | Ordering of steel frame, roofing panels & fall arrest system | 120 days | Sat 26/11/22 | Sat 25/3/23 | | 224 |
| 224 | | Fabrication of Steel Bridge | 60 days | Mon 27/3/23 | Fri 26/5/23 | 225SF,223 | |
| 225 | | Erection of Steel Bridge | 28 days | Fri 26/5/23 | Thu 22/6/23 | 220,222,219,192 | 226,224SF |
| 226 | | Construction of Concrete slab | 35 days | Fri 23/6/23 | Thu 27/7/23 | 225 | 227,230 |
| 227 | | Construction of Roofing System | 60 days | Fri 28/7/23 | Mon 25/9/23 | 226 | 228,231 |



| ID | Task Mod | Task Name | Duration | Start | Finish | Predecessors | Successors |
|---|---|---|---|---|---|---|---|
| 228 | | E & M Installation & Lighting Installation | 90 days | Tue 26/9/23 | Sun 24/12/23 | 227 | 234 |
| 229 | | Design Submission and Approval of A&A Works | 300 days | Sat 1/10/22 | Thu 27/7/23 | | 230 |
| 230 | | Connection of Existing car park | 60 days | Fri 28/7/23 | Mon 25/9/23 | 226,229 | |
| 231 | | Installation of Movement Joint | 7 days | Tue 26/9/23 | Mon 2/10/23 | 227 | 232 |
| 232 | | Finishing work of bridge deck | 120 days | Tue 3/10/23 | Tue 30/1/24 | 231 | 233 |
| 233 | | Landscaping Works | 59 days | Wed 31/1/24 | Fri 29/3/24 | 232 | 234 |
| 234 | | *Section 3 Completion* | *0 days* | *Fri 29/3/24* | *Fri 29/3/24* | *206,207,228,233* | *236* |
| 235 | | **Section 3A - Establishment Works (Portion 3a & 3b)** | **365 days** | **Sat 30/3/24** | **Sat 29/3/25** | | |
| 236 | | Establishment Works | 365 days | Sat 30/3/24 | Sat 29/3/25 | 234 | 237 |
| 237 | | *Section 3A Completion* | *0 days* | *Sat 29/3/25* | *Sat 29/3/25* | *236* | |
| 238 | | | | | | | |
| 239 | | **Section 4 - E10 Bridge (Portion 4a & 4b)** | **1083 days** | **Mon 12/4/21** | **Fri 29/3/24** | | |
| 240 | | Site Clearance | 30 days | Mon 12/4/21 | Tue 11/5/21 | 16 | 242 |
| 241 | | E10 Lift Tower | 1083 days | Mon 12/4/21 | Fri 29/3/24 | | |
| 242 | | Initial Survey | 14 days | Wed 12/5/21 | Tue 25/5/21 | 240,45 | |
| 243 | | Prepare & Endorse TTA scheme by TMLG | 60 days | Mon 12/4/21 | Thu 10/6/21 | 16 | 244 |
| 244 | | Implement TTA to form site entrance | 1 day | Thu 26/8/21 | Thu 26/8/21 | 243,6 | 245 |
| 245 | | Erection of Site Hoarding | 14 days | Fri 27/8/21 | Thu 9/9/21 | 244,41 | 246 |
| 246 | | Tree Felling | 14 days | Fri 10/9/21 | Thu 23/9/21 | 245,48 | 249SS,247SS+9 days,248SS |
| 247 | | Installation of Monitoring & Instrumentation Point | 14 days | Sun 19/9/21 | Sat 2/10/21 | 246SS+9 days | |
| 248 | | Installation Piezometer & Ground Investigation | 23 days | Fri 10/9/21 | Sat 2/10/21 | 246SS,54 | |
| 249 | | Fell Additional Trees (EWN001) | 23 days | Fri 10/9/21 | Sat 2/10/21 | 246SS | 250 |
| 250 | | Excavation of Footing E10-FT1 | 240 days | Sun 3/10/21 | Mon 30/5/22 | 249 | 251 |
| 251 | | Construction of Footing | 45 days | Tue 31/5/22 | Thu 14/7/22 | 250 | 252 |
| 252 | | Erection of Tower Crane | 45 days | Fri 15/7/22 | Sun 28/8/22 | 251 | 253 |
| 253 | | Construction of Lift Tower (12 pours) | 300 days | Mon 29/8/22 | Sat 24/6/23 | 252,58 | 254SS+30 days,256SS+240 days,257 |
| 254 | | Backfill of E10-PT1 | 60 days | Wed 28/9/22 | Sat 26/11/22 | 253SS+30 days | 258 |
| 255 | | Fabrication of Lourves & Glazing | 150 days | Sat 26/11/22 | Mon 24/4/23 | | 256 |
| 256 | | Installation of Lourves & Glazing | 120 days | Wed 26/4/23 | Wed 23/8/23 | 253SS+240 days,255 | 261,265SS+60 days,263,266 |
| 257 | | Installation of Bearing | 7 days | Sun 25/6/23 | Sat 1/7/23 | 253,59 | 286 |
| 258 | | Telemetry & Power Supply System | 180 days | Sun 27/11/22 | Thu 25/5/23 | 254 | 259 |
| 259 | | Construction of Pillar Box | 21 days | Fri 26/5/23 | Thu 15/6/23 | 258 | 263 |
| 260 | | Procument & Delivery of Lift Material | 150 days | Mon 27/3/23 | Thu 24/8/23 | 261SF | |
| 261 | | Lift Installation | 90 days | Thu 24/8/23 | Tue 21/11/23 | 256 | 267,260SF |
| 262 | | Procument & Delivery of E&M Material | 150 days | Mon 27/3/23 | Thu 24/8/23 | 263SF | |
| 263 | | E & M Installation & Lighting Installation | 160 days | Thu 24/8/23 | Tue 30/1/24 | 256,259 | 270,262SF |
| 264 | | Ordering of balustrades, barriers & architectural features | 120 days | Sat 25/2/23 | Sat 24/6/23 | | 265 |
| 265 | | Finishing Work of Lift Tower | 140 days | Sun 25/6/23 | Sat 11/11/23 | 256SS+60 days,264 | 267 |
| 266 | | Waterpoofing & Installation of Fall Arrest System | 60 days | Thu 24/8/23 | Sun 22/10/23 | 256 | |
| 267 | | Removal of scaffolding | 30 days | Wed 22/11/23 | Thu 21/12/23 | 265,261 | 268 |
| 268 | | Ground Level Drainage & water main laying | 40 days | Fri 22/12/23 | Tue 30/1/24 | 267 | 269 |
| 269 | | Reinstatement and Misc. Roadwork | 59 days | Wed 31/1/24 | Fri 29/3/24 | 268 | 295 |
| 270 | | Testing & Commisioning | 59 days | Wed 31/1/24 | Fri 29/3/24 | 263 | 295 |
| 271 | | Pier & Abutment | 973 days | Sat 31/7/21 | Fri 29/3/24 | | |
| 272 | | Form Haul Road | 90 days | Sat 31/7/21 | Thu 28/10/21 | 4 | 273 |
| 273 | | Tree Felling | 14 days | Fri 29/10/21 | Thu 11/11/21 | 272,48 | 274 |
| 274 | | Excavation of Footing E10-FT2 | 120 days | Fri 12/11/21 | Fri 11/3/22 | 273 | 278,275 |
| 275 | | Excavation of Footing E10-FT3 | 150 days | Sat 12/3/22 | Mon 8/8/22 | 274 | 276 |
| 276 | | Construction of Footing E10_FT3 | 45 days | Tue 9/8/22 | Thu 22/9/22 | 275 | 277 |
| 277 | | Construction of Abutment on FT3 | 90 days | Fri 23/9/22 | Wed 21/12/22 | 276,58 | 281,283 |
| 278 | | Construction of Footing E10-FT2 | 30 days | Sat 12/3/22 | Sun 10/4/22 | 274 | 279 |
| 279 | | Construction of Pier E10-P1 (4 pours) | 90 days | Mon 11/4/22 | Sat 9/7/22 | 278 | 280 |
| 280 | | Allowable for achievement of concrete strength | 27 days | Sun 10/7/22 | Fri 5/8/22 | 279 | 286 |
| 281 | | Installation of Bearing | 7 days | Thu 22/12/22 | Wed 28/12/22 | 277,59 | 286,283 |
| 282 | | Submit & obtain BD's approval for A&A Works at Carpark | 180 days | Sat 2/7/22 | Thu 29/12/22 | 283SF | |
| 283 | | Forming support for steel bridge at Podium | 20 days | Thu 29/12/22 | Tue 17/1/23 | 281,60,277 | 286,282SF |
| 284 | | Ordering of steel frame, roofing panels & fall arrest system | 120 days | Tue 3/1/23 | Tue 2/5/23 | | 285 |
| 285 | | Fabrication of Steel Bridge | 60 days | Wed 3/5/23 | Sun 2/7/23 | 286SF,284 | |
| 286 | | Erection of Steel Bridge | 28 days | Sun 2/7/23 | Sat 29/7/23 | 280,281,283,257 | 287,285SF |
| 287 | | Construction of Concrete slab | 35 days | Sun 30/7/23 | Sat 2/9/23 | 286 | 288,291 |
| 288 | | Construction of Roofing System | 60 days | Sun 3/9/23 | Wed 1/11/23 | 287 | 289,292 |
| 289 | | E & M Installation & Lighting Installation | 110 days | Thu 2/11/23 | Mon 19/2/24 | 288 | 295 |
| 290 | | Design Submission and Approval of A&A Works | 300 days | Mon 7/11/22 | Sat 2/9/23 | | 291 |
| 291 | | Connection of Existing Estate Prodium | 60 days | Sun 3/9/23 | Wed 1/11/23 | 287,290 | 292 |
| 292 | | Installation of Movement Joint | 7 days | Thu 2/11/23 | Wed 8/11/23 | 288,291 | 293 |
| 293 | | Finishing work of bridge deck | 116 days | Thu 9/11/23 | Sun 3/3/24 | 292 | 294 |
| 294 | | Landscaping Works | 26 days | Mon 4/3/24 | Fri 29/3/24 | 293 | 295 |
| 295 | | *Section 4 Completion* | *0 days* | *Fri 29/3/24* | *Fri 29/3/24* | *269,270,289,294* | *297* |
| 296 | | **Section 4A - Establishment Works (Portion 4a & 4b)** | **365 days** | **Sat 30/3/24** | **Sat 29/3/25** | | |
| 297 | | Establishment Works | 365 days | Sat 30/3/24 | Sat 29/3/25 | 295 | 298 |
| 298 | | *Section 4A Completion* | *0 days* | *Sat 29/3/25* | *Sat 29/3/25* | *297* | |



# Appendix D

# Monitoring Locations for Impact Monitoring

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

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HVS in AMS-1 for 24-Hour TSP







AMS-1

AMS-1a

AMS-2

AMS-3

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 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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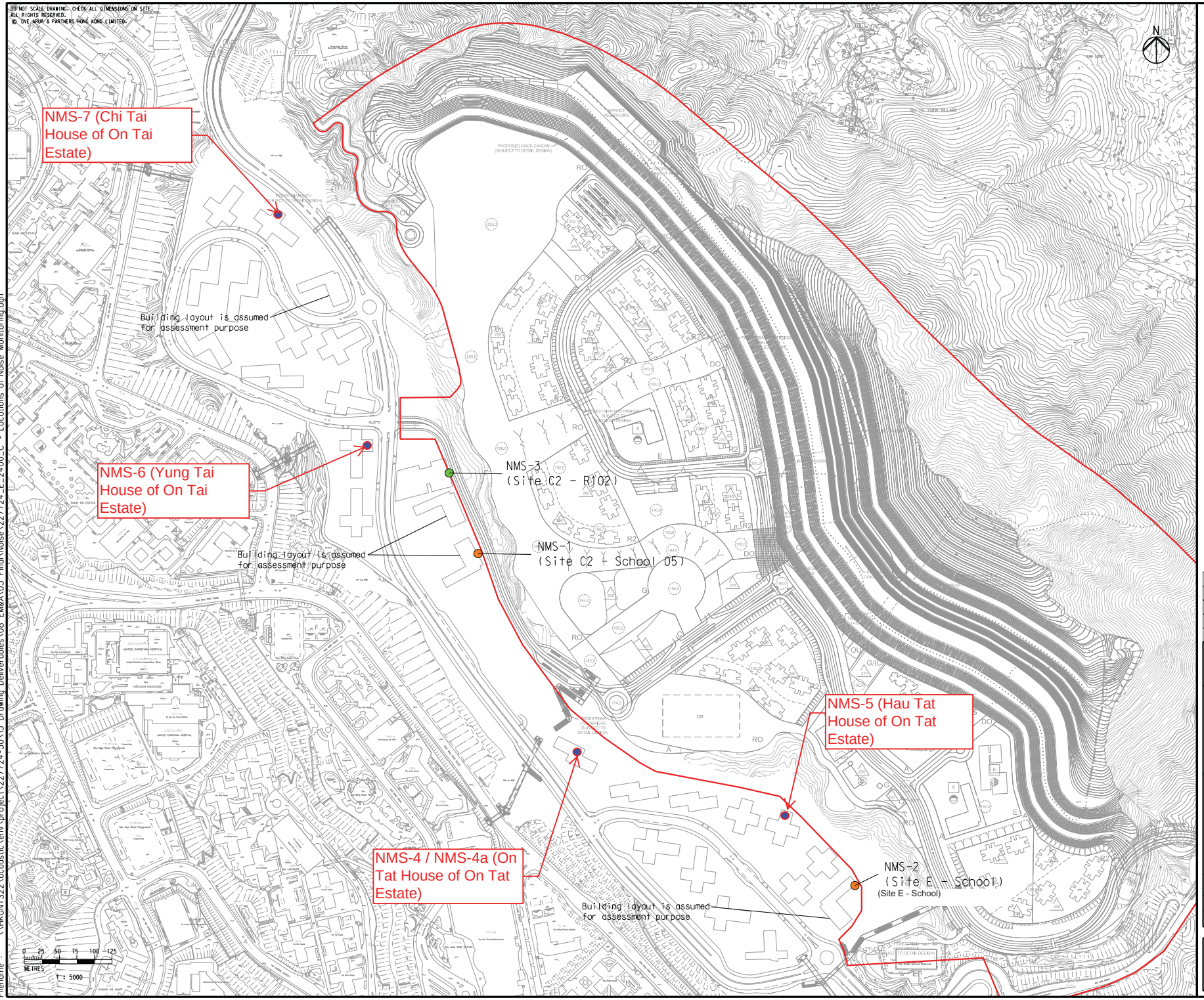


Legend

- 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 |

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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 |
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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

N

0 25 50 75 100 125
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| 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 2 of 3)

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

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

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HVS in AMS-1 for 24-Hour TSP







AMS-1

AMS-1a

AMS-2

AMS-3

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 |
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| Scale: 1:5000 @A3 | Status: PRELIMINARY | |

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0 25 50 75 100 125
METRES
1 : 5000

Printed by : 4/8/2014
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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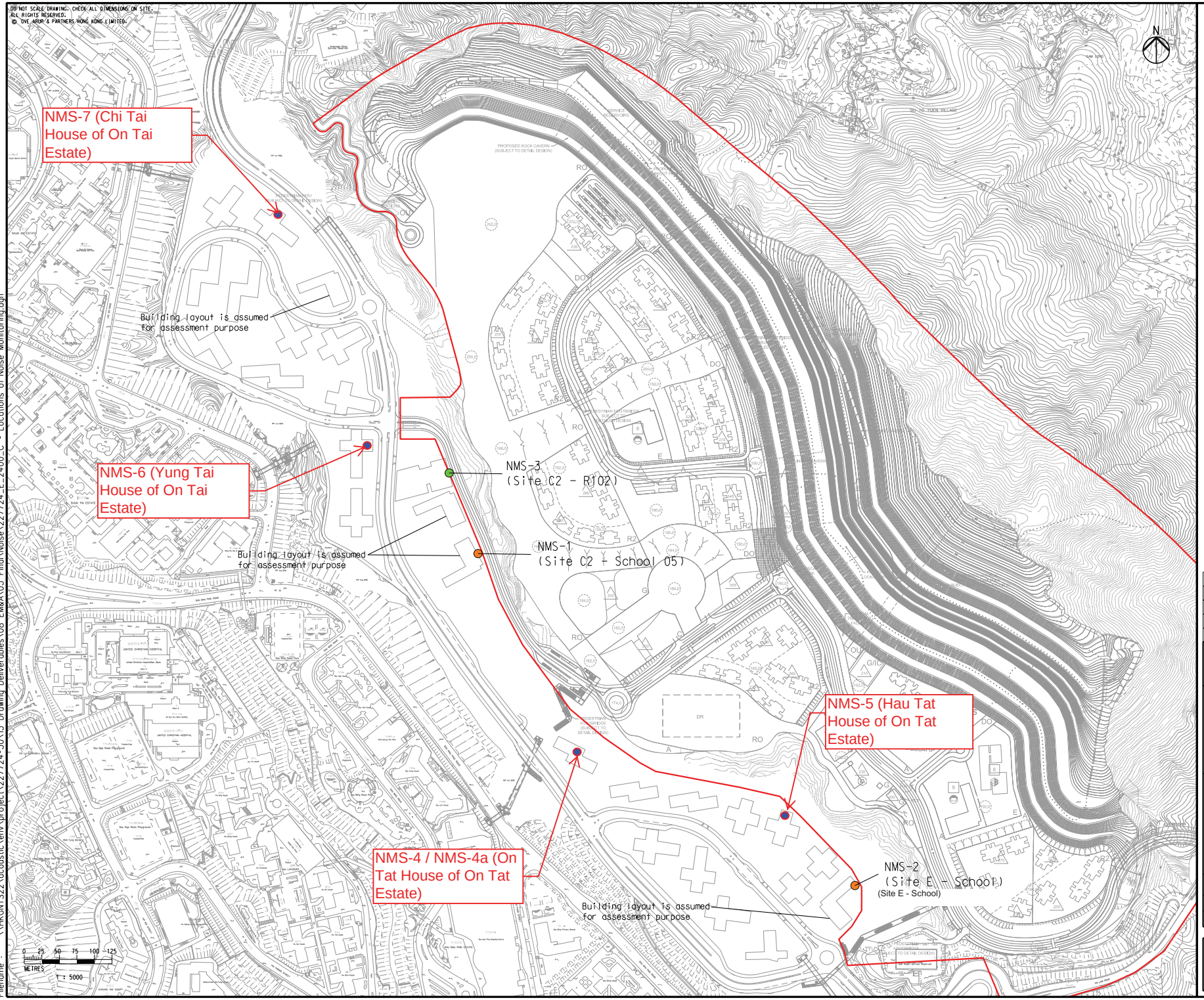


Legend

- 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 |

Scale: 1:5000 @A3

Status: PRELIMINARY

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Printed by : 6/3/2014
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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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

N

0 25 50 75 100 125
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 2 of 3)

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

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

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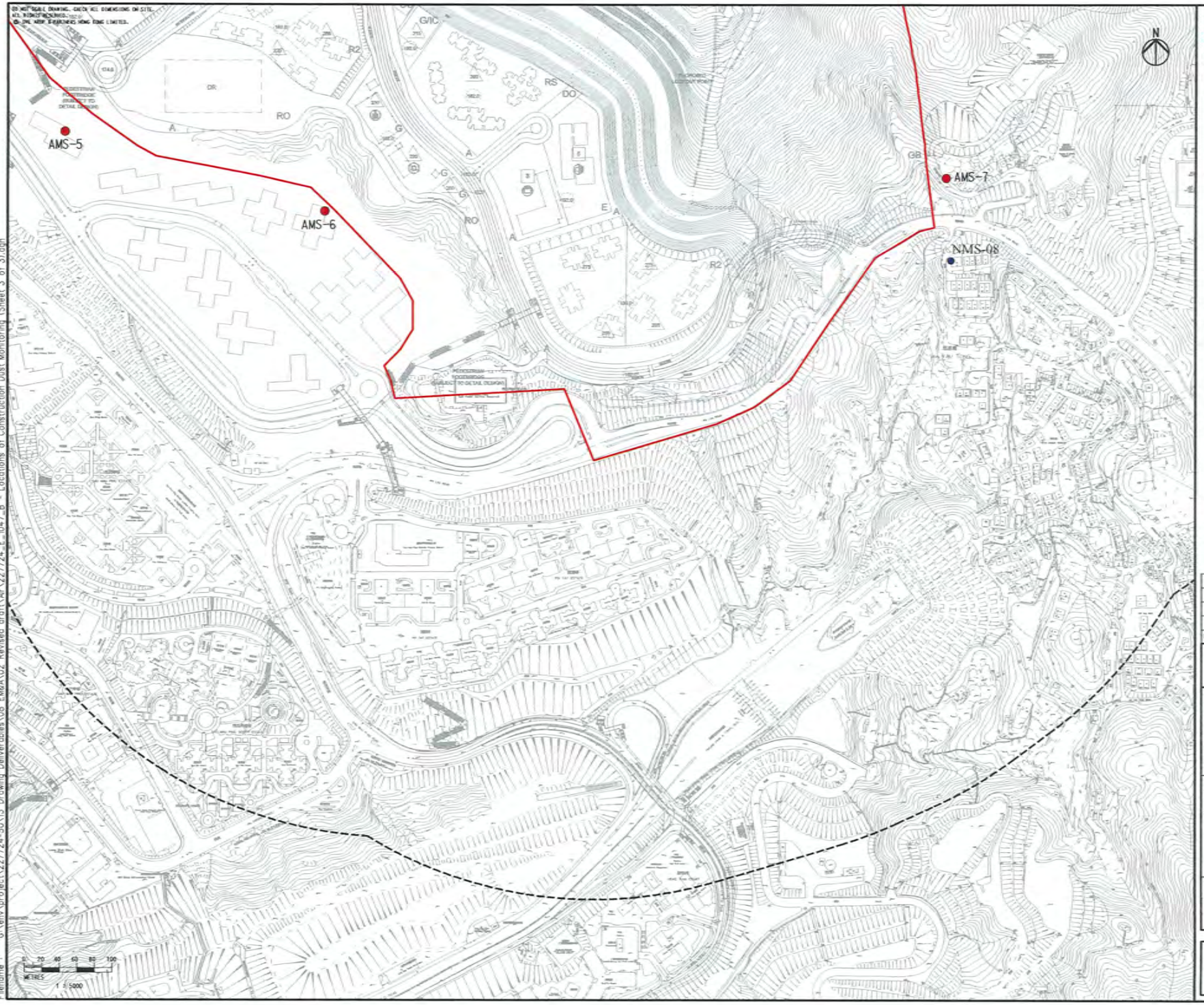


| Rev | Description | By | Date |
|---|---|---|---|
| B | SECOND ISSUE | GL | 03/14 |
| A | FIRST ISSUE | GL | 10/13 |

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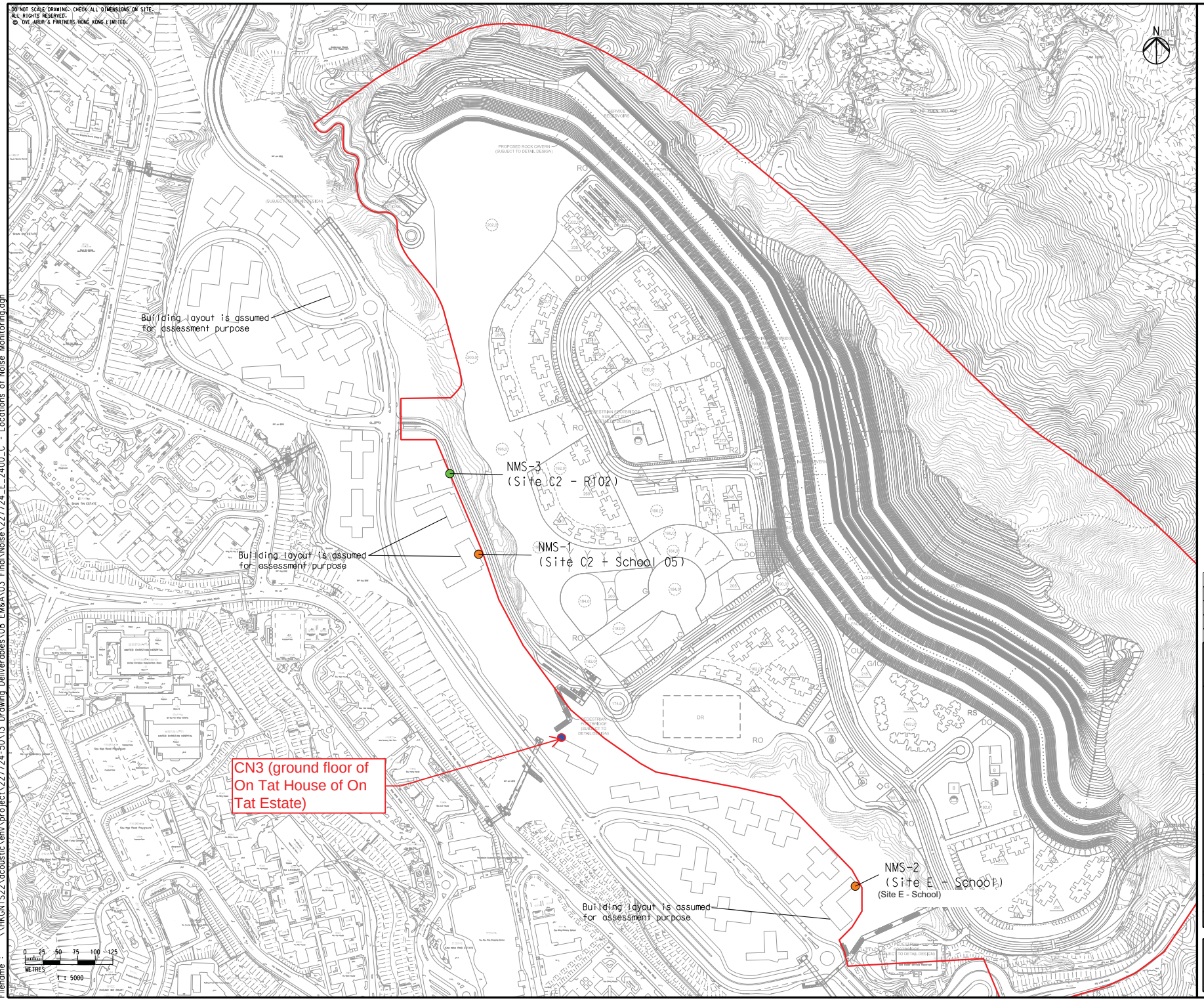
# Monitoring Locations for Contract 3 (NE/2017/03)




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 |

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 |

Scale: 1:5000 @A3

Status: PRELIMINARY

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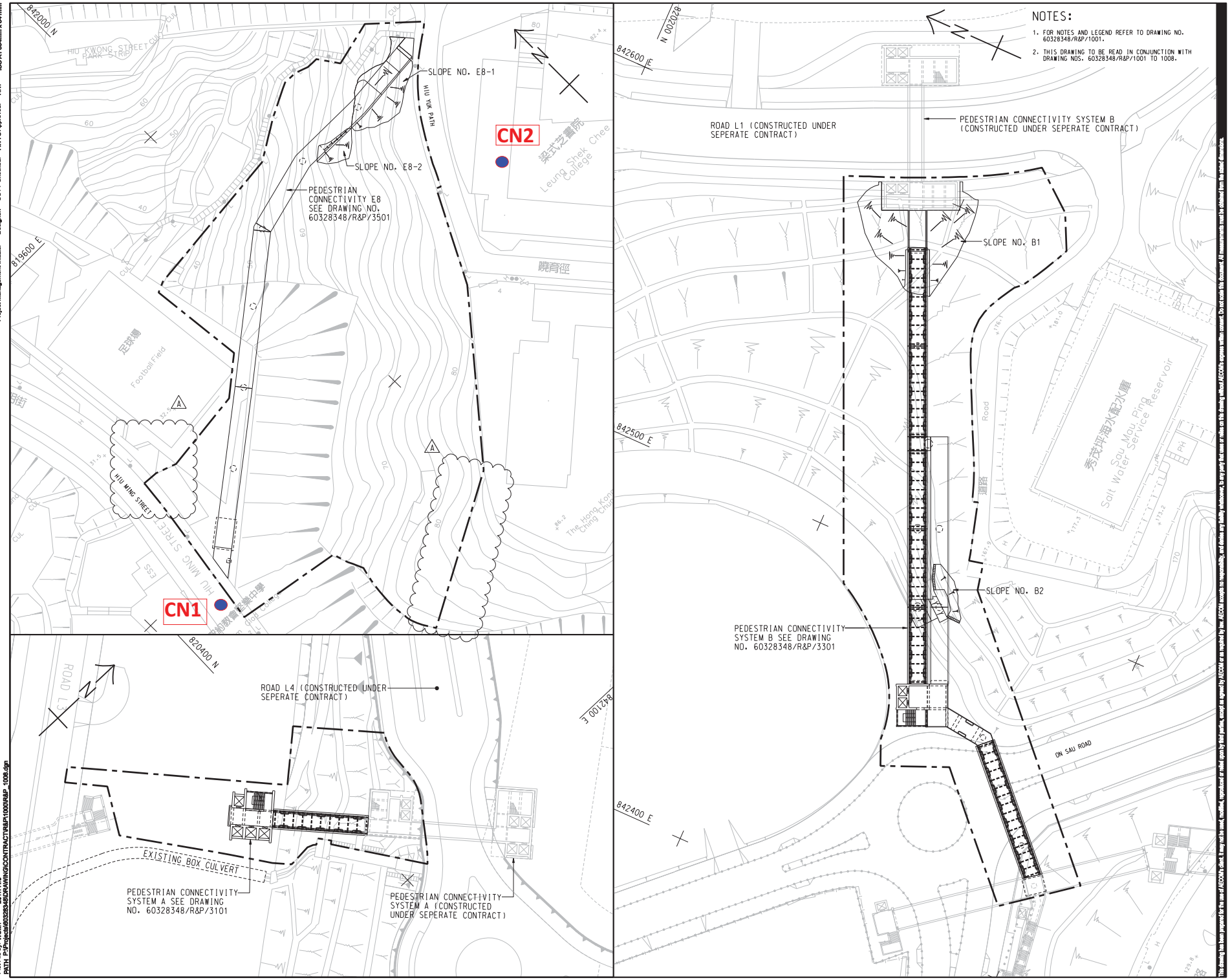
Filename : \\HKGNTS22\acoustic\env\project\227724-50\13 Drawing Deliverables\08 EM&A\03 Final Noise\227724_E_2400_C - Locations of Noise Monitoring.dgn




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**

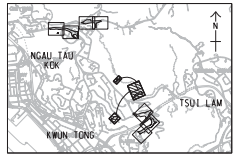
| MR | DATE | DESCRIPTION | CHK |
|---|---|---|---|
| A | NOV. 17 | TENDER ADDENDUM NO. 1 | AWYC |
| - | OCT. 17 | TENDER DRAWING | AWYC |

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

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

# Appendix E

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

## TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

| | |
|---|---|
| Location : Tan Shan Village No. 5 - 6 | Date of Calibration: 30-Nov-21 |
| Location ID : AMS1a | Next Calibration Date: 30-Jan-22 |
| Model:TISCH High Volume Air Sampler TE-5170 | Technician: Mr. Fai So |

**CONDITIONS**

| | | | |
|---|---|---|---|
| Sea Level Pressure (hPa) | 1018.4 | Corrected Pressure (mm Hg) | 763.8 |
| Temperature (°C) | 21.3 | Temperature (K) | 294 |

**CALIBRATION ORIFICE**

| | | | |
|---|---|---|---|
| Make-> | TISCH | Qstd Slope -> | 2.10574 |
| Model-> | TE-5025A | Qstd Intercept -> | -0.00985 |
| Serial # -> | 1941 | | |

**CALIBRATION**

| Plate No. | H20 (L) (in) | H2O (R) (in) | H20 (in) | Qstd (m3/min) | I (chart) | IC corrected | LINEAR REGRESSION |
|---|---|---|---|---|---|---|---|
| 18 | 6.4 | 6.4 | 12.8 | 1.719 | 52 | 52.46 | Slope = 40.8499 |
| 13 | 5.6 | 5.6 | 11.2 | 1.608 | 47 | 47.41 | Intercept = -18.5743 |
| 10 | 3.9 | 3.9 | 7.8 | 1.343 | 35 | 35.31 | Corr. coeff. = 0.9957 |
| 7 | 2.8 | 2.8 | 5.6 | 1.138 | 26 | 26.23 | |
| 5 | 1.6 | 1.6 | 3.2 | 0.862 | 18 | 18.16 | |

***Calculations :***

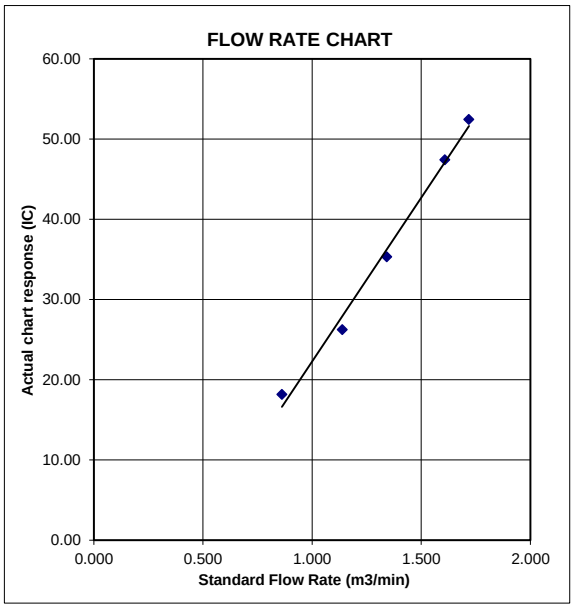
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

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



# TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

| | | | |
|---|---|---|---|
| Location : | Oi Tat House | Date of Calibration: | 30-Nov-21 |
| Location ID : | AMS 5 | Next Calibration Date: | 30-Jan-22 |
| Model:TISCH High Volume Air Sampler TE-5170 | | Technician: | Mr. Fai So |

## CONDITIONS

| | | | |
|---|---|---|---|
| Sea Level Pressure (hPa) | 1018.4 | Corrected Pressure (mm Hg) | 763.8 |
| Temperature (ºC) | 21.3 | Temperature (K) | 294 |

## CALIBRATION ORIFICE

| | | | |
|---|---|---|---|
| Make-> | TISCH | Qstd Slope -> | 2.10574 |
| Model-> | TE-5025A | Qstd Intercept -> | -0.00985 |
| Serial # -> | 1941 | | |

## CALIBRATION

| Plate No. | H20 (L) (in) | H2O (R) (in) | H20 (in) | Qstd (m3/min) | I (chart) | IC corrected | LINEAR REGRESSION |
|---|---|---|---|---|---|---|---|
| 18 | 6.3 | 6.3 | 12.6 | 1.705 | 53 | 53.47 | Slope = 39.5348 |
| 13 | 5.3 | 5.3 | 10.6 | 1.564 | 46 | 46.40 | Intercept = -14.5973 |
| 10 | 3.9 | 3.9 | 7.8 | 1.343 | 38 | 38.33 | Corr. coeff. = 0.9991 |
| 7 | 2.6 | 2.6 | 5.2 | 1.097 | 29 | 29.25 | |
| 5 | 1.4 | 1.4 | 2.8 | 0.806 | 17 | 17.15 | |

***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)

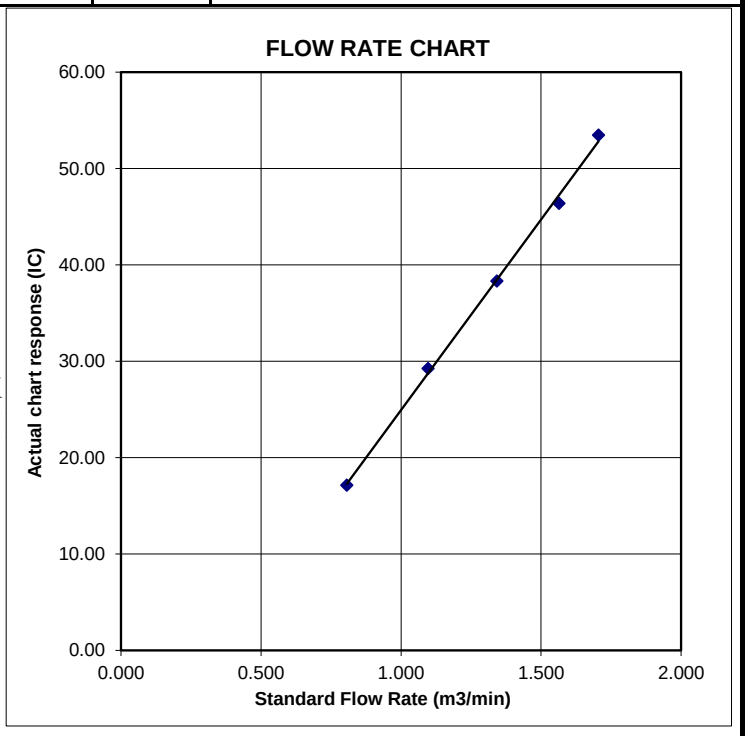
m = sampler slope

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: 30-Nov-21 |
| Location ID : AMS 6 | Next Calibration Date: 30-Jan-22 |
| Model:TISCH High Volume Air Sampler TE-5170 | Technician: Mr. Fai So |

## CONDITIONS

| | | | |
|---|---|---|---|
| Sea Level Pressure (hPa) | 1018.4 | Corrected Pressure (mm Hg) | 763.8 |
| Temperature (°C) | 21.3 | Temperature (K) | 294 |

## CALIBRATION ORIFICE

| | | | |
|---|---|---|---|
| Make-> | TISCH | Qstd Slope -> | 2.10574 |
| Model-> | TE-5025A | Qstd Intercept -> | -0.00985 |
| 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 | 1.692 | 51 | 51.45 | Slope = 39.5090 |
| 13 | 5.3 | 5.3 | 10.6 | 1.564 | 46 | 46.00 | Intercept = -15.7091 |
| 10 | 3.7 | 3.7 | 7.4 | 1.308 | 35 | 35.31 | Corr. coeff. = 0.9995 |
| 7 | 2.5 | 2.5 | 5 | 1.076 | 27 | 27.24 | |
| 5 | 1.4 | 1.4 | 2.8 | 0.806 | 16 | 16.14 | |

***Calculations :***

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

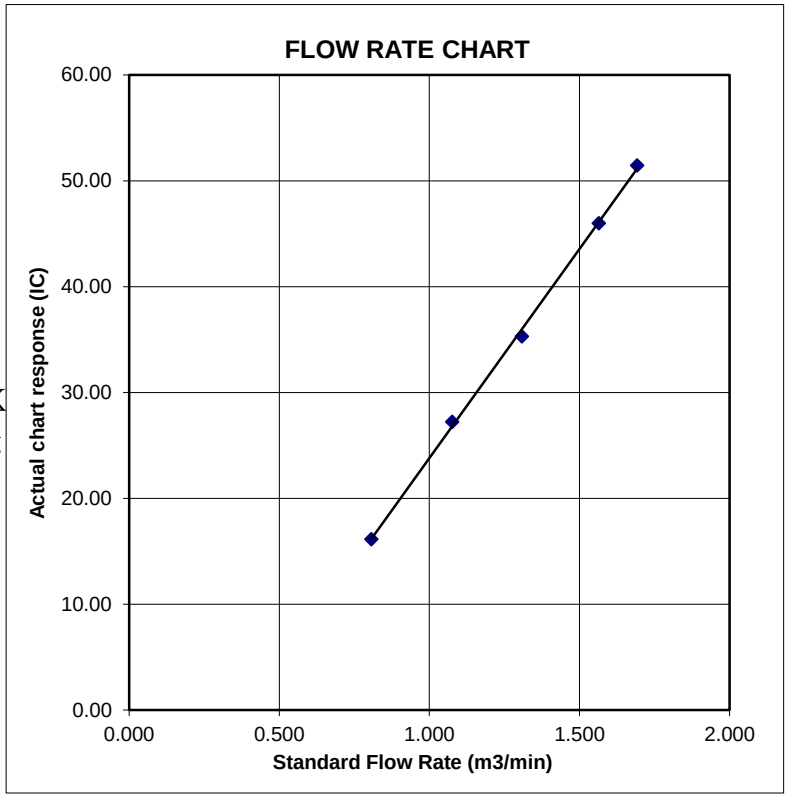
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

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
Location ID : AMS 7
Model:TISCH High Volume Air Sampler TE-5170

Date of Calibration: 30-Nov-21
Next Calibration Date: 30-Jan-22
Technician: Mr. Fai So

## CONDITIONS

| | | | |
|---|---|---|---|
| Sea Level Pressure (hPa) | 1018.4 | Corrected Pressure (mm Hg) | 763.8 |
| Temperature (°C) | 21.3 | Temperature (K) | 294 |

## CALIBRATION ORIFICE

| | | | |
|---|---|---|---|
| Make-> | TISCH | Qstd Slope -> | 2.10574 |
| Model-> | TE-5025A | Qstd Intercept -> | -0.00985 |
| Serial # -> | 1941 | | |

## CALIBRATION

| Plate No. | H20 (L) (in) | H2O (R) (in) | H20 (in) | Qstd (m3/min) | I (chart) | IC corrected | LINEAR REGRESSION |
|---|---|---|---|---|---|---|---|
| 18 | 6.5 | 6.5 | 13 | 1.732 | 53 | 53.47 | Slope = 39.9932 |
| 13 | 5.6 | 5.6 | 11.2 | 1.608 | 48 | 48.42 | Intercept = -15.9560 |
| 10 | 3.8 | 3.8 | 7.6 | 1.325 | 37 | 37.32 | Corr. coeff. = 0.9988 |
| 7 | 2.9 | 2.9 | 5.8 | 1.158 | 29 | 29.25 | |
| 5 | 1.7 | 1.7 | 3.4 | 0.888 | 20 | 20.18 | |

***Calculations :***

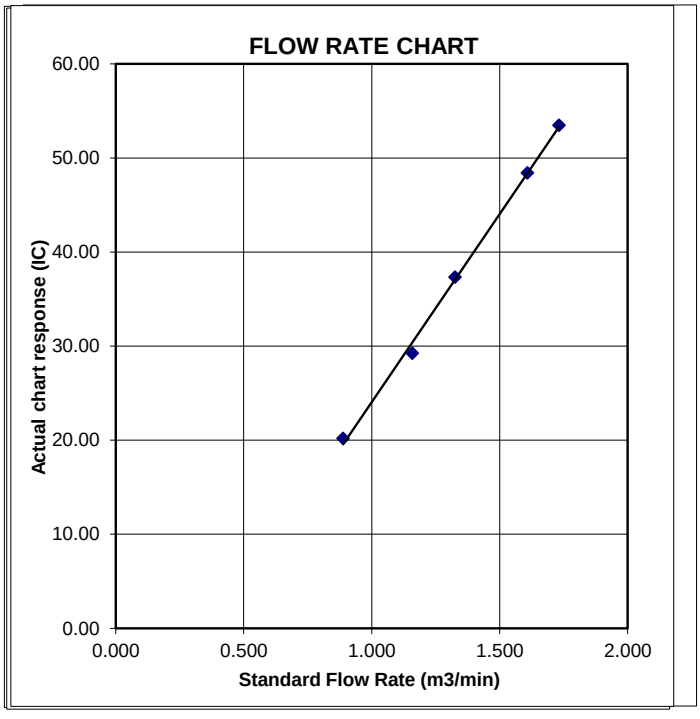
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

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



# ALS Technichem (HK) Pty Ltd

## ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

## SUB-CONTRACTING REPORT

| | | | | |
|---|---|---|---|---|
| CONTACT | : | MR BEN TAM | WORK ORDER | : **HK2152712** |
| CLIENT | : | **ACTION-UNITED ENVIRONMENTAL SERVICES & CONSULTING** | | |
| ADDRESS | : | RM A 20/F., GOLD KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T. | SUB-BATCH | : 1 |
| | | | DATE RECEIVED | : 20-DEC-2021 |
| | | | DATE OF ISSUE | : 24-DEC-2021 |
| PROJECT | : | | NO. OF SAMPLES | : 1 |
| | | | CLIENT ORDER | :--- |

### *General Comments*

- **Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in ambient condition. The result(s) related only to the item(s) tested.**
- **Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.**

### *Signatories*

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

| *Signatories* | *Position* |
|---|---|
| Richard Fung | Managing Director |

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

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 | : | HK2152712 |
| SUB-BATCH | : | 1 |
| CLIENT | : | ACTION-UNITED ENVIRONMENTAL SERVICES & CONSULTING |
| PROJECT | : | |

| ALS Lab ID | Client's Sample ID | Sample Type | Sample Date | External Lab Report No. |
|---|---|---|---|---|
| HK2152712-001 | S/N: 11008017 | AIR | 20-Dec-2021 | S/N: 11008017 |

# Equipment Verification Report (RSP)

**Equipment Calibrated:**

| | |
|---|---|
| Type: | Laser Dust monitor |
| Manufacturer: | TSI AM510 |
| Serial No. | 11008017 |
| Equipment Ref: | EQ102 |
| Work Order: | HK2152712 |

**Standard Equipment:**

| | |
|---|---|
| Standard Equipment: | Higher Volume Sampler (RSP) |
| Location & Location ID: | Calibration Room |
| Equipment Ref: | HVS 021 |
| Last Calibration Date: | 23 August 2021 |

## Equipment Verification Results:

Verification Date: 6 December 2021

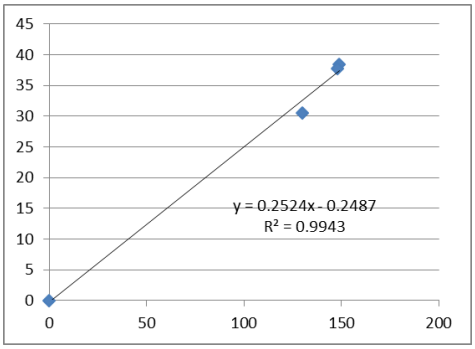
| Hour | Time | Mean Temp °C | Mean Pressure (hPa) | Concentration in ug/m$^3$ (Standard Equipment) | Concentration in ug/m$^3$ (Calibrated Equipment) | Tolerance (ug/m$^3$) |
|---|---|---|---|---|---|---|
| 2hr01min | 09:20 ~ 11:21 | 29.6 | 1007.7 | 38.5 | 149.0 | +110.5 |
| 2hr01min | 11:24 ~ 13:25 | 29.6 | 1007.7 | 37.7 | 148.0 | +110.3 |
| 2hr01min | 13:30 ~ 15:31 | 29.6 | 1007.7 | 30.6 | 130.0 | +99.4 |

**Linear Regression of Y or X**

Slope (factor): 0.2524 (µg/m$^3$)

Correlation Coefficient (R) 0.9971

Date of Issue 13 December 2021




Remarks:

1. **Strong** Correlation (R>0.8)
2. Factor 0.2524 (µg/m$^3$) should be apply for TSP monitoring

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

Operator : Fai So Signature : Date : 13 December 2021

QC Reviewer : Ben Tam Signature : Date : 13 December 2021

# RSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

| | | | |
|---|---|---|---|
| Location : | Gold King Industrial Building, Kwai Chung | Date of Calibration: | 6-Dec-21 |
| Location ID : | Calibration Room | Next Calibration Date: | 6-Mar-22 |

## CONDITIONS

| | | | |
|---|---|---|---|
| Sea Level Pressure (hPa) | 1020.3 | Corrected Pressure (mm Hg) | 765.225 |
| Temperature (°C) | 19.2 | Temperature (K) | 292 |

## CALIBRATION ORIFICE

| | | | |
|---|---|---|---|
| Make-> | TISCH | Qa Slope -> | 1.31858 |
| Model-> | 5025A | Qa Intercept -> | -0.00612 |
| Calibration Date-> | 19-Jan-21 | Expiry Date-> | 19-Jan-22 |

## CALIBRATION

| Plate No. | H20 (L) (in) | H2O (R) (in) | H20 (in) | Qa (m3/min) | I (chart) | IC corrected | LINEAR REGRESSION |
|---|---|---|---|---|---|---|---|
| 18 | 6.9 | 6.9 | 13.8 | 1.746 | 51 | 31.51 | Slope = 25.1094 |
| 13 | 5.4 | 5.4 | 10.8 | 1.545 | 45 | 27.81 | Intercept = -11.8499 |
| 10 | 4.4 | 4.4 | 8.8 | 1.395 | 36 | 22.25 | Corr. coeff. = 0.9943 |
| 7 | 2.8 | 2.8 | 5.6 | 1.114 | 28 | 17.30 | |
| 5 | 1.6 | 1.6 | 3.2 | 0.843 | 14 | 8.65 | |

***Calculations :***

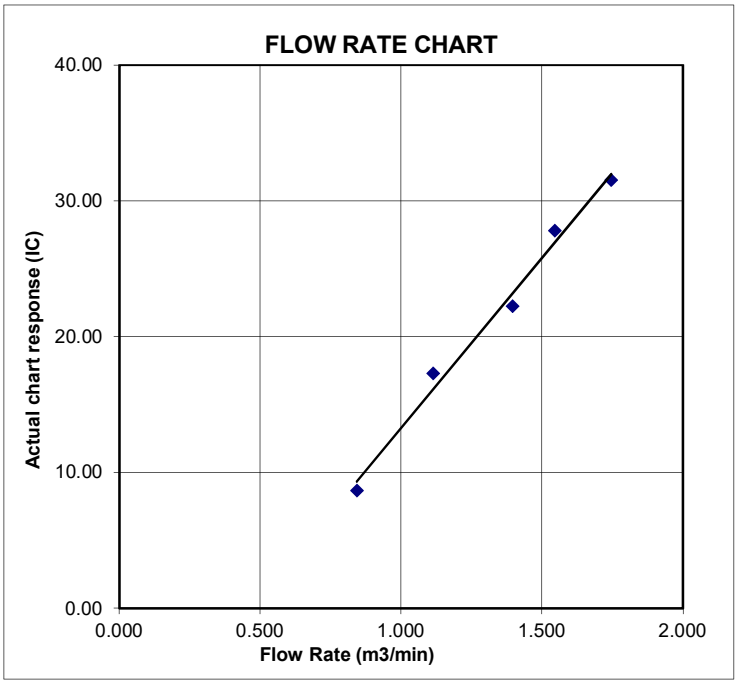
Qa = 1/m[Sqrt(H20(Ta/Pa))-b]
IC = I[Sqrt(Ta/Pa)]

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

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

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

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



TISCH Environmental

| RECALIBRATION DUE DATE: |
|---|
| January 19, 2022 |

# Certificate of Calibration

| Calibration Certification Information | | | | |
|---|---|---|---|---|
| **Cal. Date:** | January 19, 2021 | **Rootsmeter S/N:** 438320 | **Ta:** 294 | °K |
| **Operator:** | Jim Tisch | | **Pa:** 755.1 | 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 | 1.0420 | 6.4 | 4.00 |
| 3 | 5 | 6 | 1 | 0.9290 | 8.0 | 5.00 |
| 4 | 7 | 8 | 1 | 0.8840 | 8.8 | 5.50 |
| 5 | 9 | 10 | 1 | 0.7340 | 12.9 | 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) |
|---|---|---|---|---|---|
| 1.0029 | 0.6762 | 1.4192 | 0.9958 | 0.6715 | 0.8824 |
| 0.9986 | 0.9583 | 2.0071 | 0.9915 | 0.9516 | 1.2479 |
| 0.9965 | 1.0726 | 2.2440 | 0.9894 | 1.0650 | 1.3952 |
| 0.9954 | 1.1260 | 2.3535 | 0.9883 | 1.1180 | 1.4633 |
| 0.9899 | 1.3487 | 2.8385 | 0.9829 | 1.3391 | 1.7648 |
| **QSTD** | **m=** | **2.10574** | **QA** | **m=** | **1.31858** |
| | **b=** | **-0.00985** | | **b=** | **-0.00612** |
| | **r=** | **0.99992** | | **r=** | **0.99992** |

**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.
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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 | : | **HK2135786** |
| 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 | : | 2-SEP-2021 |
| | | DATE OF ISSUE | : | 10-SEP-2021 |
| PROJECT | : | NO. OF SAMPLES | : | 1 |
| | | CLIENT ORDER | : | --- |

### *General Comments*

- **Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in ambient condition. The result(s) related only to the item(s) tested.**
- **Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.**
- **Calibration was subcontracted to and analysed by Action United Environmental Services & Consulting.**

### *Signatories*

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

| *Signatories* | *Position* |
|---|---|
| Richard Fung | Managing Director |

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

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 : HK2135786
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. |
|---|---|---|---|---|
| HK2135786-001 | S/N: 11008018 | AIR | 09-Aug-2021 | S/N: 11008018 |

# Equipment Verification Report (TSP)

**Equipment Calibrated:**

| | |
|---|---|
| Type: | Laser Dust monitor |
| Manufacturer: | TSI AM510 |
| Serial No. | 11008018 |
| Equipment Ref: | EQ103 |
| Work Order: | HK2135786 |

**Standard Equipment:**

| | |
|---|---|
| Standard Equipment: | Higher Volume Sampler (TSP) |
| Location & Location ID: | Calibration Room |
| Equipment Ref: | HVS 018 |
| Last Calibration Date: | 2 August 2021 |

## Equipment Verification Results:

Verification Date: 9 August 2021

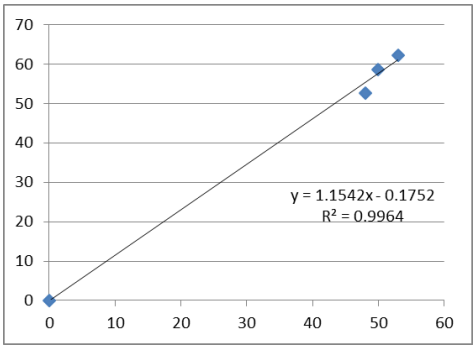
| Hour | Time | Mean Temp °C | Mean Pressure (hPa) | Concentration in ug/m$^3$ (Standard Equipment) | Concentration in ug/m$^3$ (Calibrated Equipment) | Tolerance (ug/m$^3$) |
|---|---|---|---|---|---|---|
| 2hr | 09:13 ~ 11:13 | 29.1 | 1005.4 | 58.6 | 50.0 | -8.6 |
| 2hr03min | 11:16 ~ 13:19 | 29.1 | 1005.4 | 62.2 | 53.0 | -9.2 |
| 2hr01min | 13:22 ~ 15:23 | 29.1 | 1005.4 | 52.7 | 48.0 | -4.7 |

**Linear Regression of Y or X**

Slope (factor): 1.1542 (µg/m$^3$)

Correlation Coefficient (R) 0.9982

Date of Issue 13 August 2021




Remarks:

1. **Strong** Correlation (R>0.8)
2. Factor 1.1542 (µg/m$^3$) should be apply for TSP monitoring

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

Operator : Fai So Signature : Date : 13 August 2021

QC Reviewer : Ben Tam Signature : Date : 13 August 2021

# TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

| | | | |
|---|---|---|---|
| Location : | Gold King Industrial Building, Kwai Chung | Date of Calibration: | 2-Aug-21 |
| Location ID : | Calibration Room | Next Calibration Date: | 2-Nov-21 |

## CONDITIONS

| | | | |
|---|---|---|---|
| Sea Level Pressure (hPa) | 998.3 | Corrected Pressure (mm Hg) | 748.725 |
| Temperature (°C) | 30.0 | Temperature (K) | 303 |

## CALIBRATION ORIFICE

| | | | |
|---|---|---|---|
| Make-> | TISCH | Qstd Slope -> | 2.10574 |
| Model-> | 5025A | Qstd Intercept -> | -0.00985 |
| Calibration Date-> | 19-Jan-21 | Expiry Date-> | 18-Jan-22 |

## CALIBRATION

| Plate No. | H20 (L) (in) | H2O (R) (in) | H20 (in) | Qstd (m3/min) | I (chart) | IC corrected | LINEAR REGRESSION |
|---|---|---|---|---|---|---|---|
| 18 | 6.4 | 6.4 | 12.8 | 1.677 | 50 | 49.22 | Slope = 30.5541 |
| 13 | 5.3 | 5.3 | 10.6 | 1.527 | 48 | 47.25 | Intercept = -0.5839 |
| 10 | 4.4 | 4.4 | 8.8 | 1.391 | 44 | 43.31 | Corr. coeff. = 0.9906 |
| 8 | 2.6 | 2.6 | 5.2 | 1.071 | 31 | 30.51 | |
| 5 | 1.6 | 1.6 | 3.2 | 0.841 | 26 | 25.59 | |

***Calculations :***

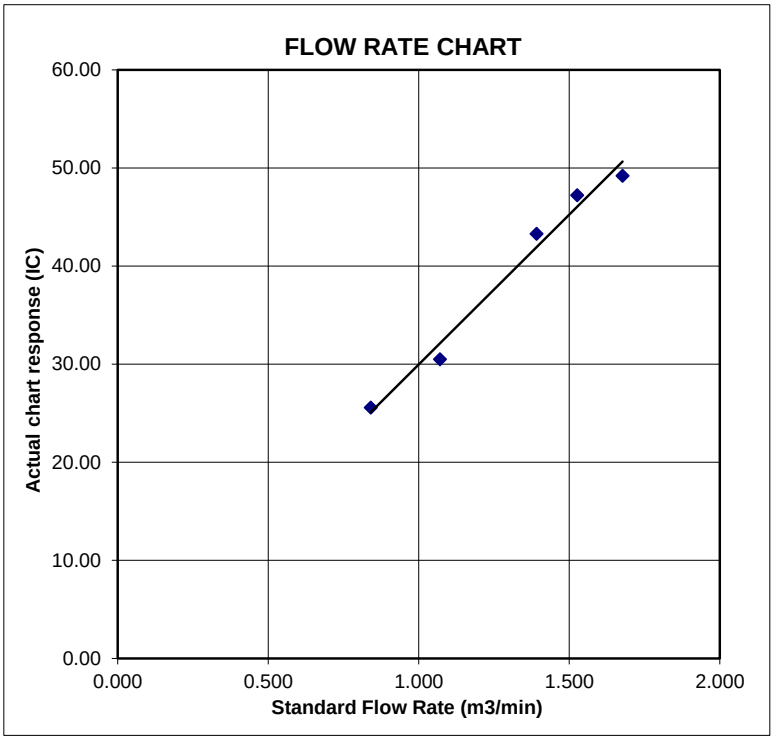
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

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: |
|---|
| January 19, 2022 |

# Certificate of Calibration

| Calibration Certification Information | | | | |
|---|---|---|---|---|
| **Cal. Date:** | January 19, 2021 | **Rootsmeter S/N:** 438320 | **Ta:** 294 | °K |
| **Operator:** | Jim Tisch | | **Pa:** 755.1 | 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 | 1.0420 | 6.4 | 4.00 |
| 3 | 5 | 6 | 1 | 0.9290 | 8.0 | 5.00 |
| 4 | 7 | 8 | 1 | 0.8840 | 8.8 | 5.50 |
| 5 | 9 | 10 | 1 | 0.7340 | 12.9 | 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) |
|---|---|---|---|---|---|
| 1.0029 | 0.6762 | 1.4192 | 0.9958 | 0.6715 | 0.8824 |
| 0.9986 | 0.9583 | 2.0071 | 0.9915 | 0.9516 | 1.2479 |
| 0.9965 | 1.0726 | 2.2440 | 0.9894 | 1.0650 | 1.3952 |
| 0.9954 | 1.1260 | 2.3535 | 0.9883 | 1.1180 | 1.4633 |
| 0.9899 | 1.3487 | 2.8385 | 0.9829 | 1.3391 | 1.7648 |
| **QSTD** | **m=** | **2.10574** | **QA** | **m=** | **1.31858** |
| | **b=** | **-0.00985** | | **b=** | **-0.00612** |
| | **r=** | **0.99992** | | **r=** | **0.99992** |

**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)467-9009

# ALS Technichem (HK) Pty Ltd

## ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

## SUB-CONTRACTING REPORT

| | | | | |
|---|---|---|---|---|
| CONTACT | : MR BEN TAM | WORK ORDER | : | **HK2111342** |
| 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 | : | 17-MAR-2021 |
| | | DATE OF ISSUE | : | 16-APR-2021 |
| PROJECT | : | NO. OF SAMPLES | : | 1 |
| | | CLIENT ORDER | : | --- |

### *General Comments*

- **Samples(s) was/ were submitted by client. Sample(s) arrived laboratory in ambient condition. The result(s) related only to the item(s) tested.**
- **Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.**
- **Calibration was subcontracted to and analysed by Action United Environmental Services & Consulting.**

### *Signatories*

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

| *Signatories* | *Position* |
|---|---|
| Richard Fung | Managing Director |

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

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 | : | HK2111342 |
| 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. |
|---|---|---|---|---|
| HK2111342-001 | S/N: 456658 | AIR | 17-Mar-2021 | S/N: 456658 |

# Equipment Verification Report (TSP)

**Equipment Calibrated:**

| | |
|---|---|
| Type: | Laser Dust monitor |
| Manufacturer: | Sibata LD-3B |
| Serial No. | 456658 |
| Equipment Ref: | EQ115 |
| Job Order | HK2111342 |

**Standard Equipment:**

| | |
|---|---|
| Standard Equipment: | Higher Volume Sampler |
| Location & Location ID: | AUES office (calibration room) |
| Equipment Ref: | HVS 018 |
| Last Calibration Date: | 13 January 2021 |

**Equipment Verification Results:**

Verification Date: 12 March 2021

| Hour | Time | Mean Temp °C | Mean Pressure (hPa) | Concentration in mg/m$^3$ (Standard Equipment) | Total Count (Calibrated Equipment) | Count/Minute (Total Count/60min) |
|---|---|---|---|---|---|---|
| 2hr01min | 09:30 ~ 11:31 | 22.0 | 1018.6 | 0.023 | 1711 | 14.1 |
| 2hr01min | 11:35 ~ 11:36 | 22.0 | 1018.6 | 0.044 | 2311 | 19.1 |
| 2hr | 11:40 ~ 13:40 | 22.0 | 1018.6 | 0.039 | 2001 | 16.7 |

Sensitivity Adjustment Scale Setting (Before Calibration) 702 (CPM)

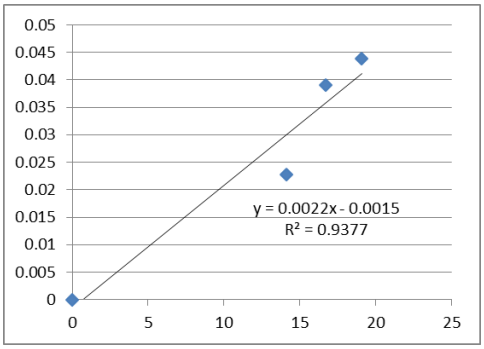
Sensitivity Adjustment Scale Setting (After Calibration) 698 (CPM)

**Linear Regression of Y or X**

Slope (K-factor): 0.0022

Correlation Coefficient (R) 0.9683

Date of Issue 15 March 2021




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 : Fai So Signature : Date : 15 March 2021

QC Reviewer : Ben Tam Signature : Date : 15 March 2021

# TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

| | | | |
|---|---|---|---|
| Location : | Gold King Industrial Building, Kwai Chung | Date of Calibration: | 13-Jan-21 |
| Location ID : | Calibration Room | Next Calibration Date: | 13-Apr-21 |

## CONDITIONS

| | | | |
|---|---|---|---|
| Sea Level Pressure (hPa) | 1019.8 | Corrected Pressure (mm Hg) | 764.85 |
| Temperature (°C) | 13.4 | Temperature (K) | 286 |

## CALIBRATION ORIFICE

| | | | |
|---|---|---|---|
| Make-> | TISCH | Qstd Slope -> | 2.03014 |
| Model-> | 5025A | Qstd Intercept -> | -0.04616 |
| Calibration Date-> | 7-Feb-20 | Expiry Date-> | 7-Feb-21 |

## CALIBRATION

| Plate No. | H20 (L) (in) | H2O (R) (in) | H20 (in) | Qstd (m3/min) | I (chart) | IC corrected | LINEAR REGRESSION |
|---|---|---|---|---|---|---|---|
| 18 | 6.3 | 6.3 | 12.6 | 1.812 | 55 | 56.28 | Slope = 39.9777 |
| 13 | 5.1 | 5.1 | 10.2 | 1.633 | 49 | 50.14 | Intercept = -15.3902 |
| 10 | 4 | 4 | 8.0 | 1.448 | 42 | 42.98 | Corr. coeff. = 0.9972 |
| 8 | 2.6 | 2.6 | 5.2 | 1.172 | 32 | 32.75 | |
| 5 | 1.8 | 1.8 | 3.6 | 0.979 | 22 | 22.51 | |

***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)

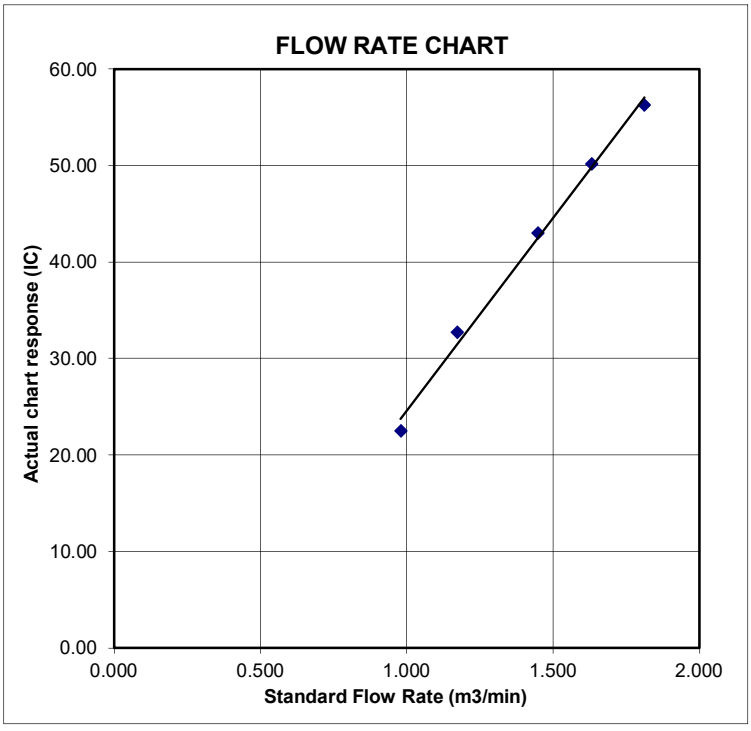
m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure



TISCH Environmental

| RECALIBRATION DUE DATE: |
|---|
| February 7, 2021 |

# Certificate of Calibration

| Calibration Certification Information | | | | |
|---|---|---|---|---|
| **Cal. Date:** | February 7, 2020 | **Rootsmeter S/N:** 438320 | **Ta:** 295 | °K |
| **Operator:** | Jim Tisch | | **Pa:** 745.5 | 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 | 1.3730 | 3.2 | 2.00 |
| 2 | 3 | 4 | 1 | 0.9820 | 6.4 | 4.00 |
| 3 | 5 | 6 | 1 | 0.8780 | 8.0 | 5.00 |
| 4 | 7 | 8 | 1 | 0.8340 | 8.8 | 5.50 |
| 5 | 9 | 10 | 1 | 0.6900 | 12.8 | 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) |
|---|---|---|---|---|---|
| 0.9866 | 0.7186 | 1.4078 | 0.9957 | 0.7252 | 0.8896 |
| 0.9824 | 1.0004 | 1.9909 | 0.9914 | 1.0096 | 1.2581 |
| 0.9802 | 1.1165 | 2.2259 | 0.9893 | 1.1267 | 1.4066 |
| 0.9792 | 1.1741 | 2.3345 | 0.9882 | 1.1849 | 1.4753 |
| 0.9739 | 1.4114 | 2.8155 | 0.9828 | 1.4244 | 1.7792 |
| **QSTD** | **m=** | **2.03014** | **QA** | **m=** | **1.27124** |
| | **b=** | **-0.04616** | | **b=** | **-0.02917** |
| | **r=** | **0.99995** | | **r=** | **0.99995** |

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

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

# Certificate of Calibration
# 校正證書

Certificate No. : C216479
證書編號

**ITEM TESTED / 送檢項目** ( Job No. / 序引編號 : IC21-2189 ) Date of Receipt / 收件日期 : 25 October 2021

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
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** : 9 November 2021

**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
- Agilent Technologies / Keysight Technologies
- Fluke Everett Service Center, USA

Tested By 測試 : Cheuk
K P Cheuk
Project Engineer

Certified By 核證 :
K C Lee
Engineer

Date of Issue 簽發日期 : 10 November 2021

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.
本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
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
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# Certificate of Calibration
# 校正證書

Certificate No. : C216479
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 | C210084 |
| CL281 | Multifunction Acoustic Calibrator | AV210017 |

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 | 93.6 | ± 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 | 93.6 (Ref.) |
| | | | | 104.00 | | 103.6 |
| | | | | 114.00 | | 113.6 |

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 | 93.6 | Ref. |
| | | | Slow | | | 93.6 | ± 0.3 |

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.
本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

# Certificate of Calibration
# 校正證書

Certificate No. : C216479
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 | 84.9 | -8.6 ± 1.4 |
| | | | | | 500 Hz | 90.4 | -3.2 ± 1.4 |
| | | | | | 1 kHz | 93.6 | Ref. |
| | | | | | 2 kHz | 94.8 | +1.2 ± 1.6 |
| | | | | | 4 kHz | 94.6 | +1.0 ± 1.6 |
| | | | | | 8 kHz | 92.6 | -1.1 (+2.1 ; -3.1) |
| | | | | | 16 kHz | 85.7 | -6.6 (+3.5 ; -17.0) |

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 | 93.6 | 0.0 ± 1.4 |
| | | | | | 500 Hz | 93.6 | 0.0 ± 1.4 |
| | | | | | 1 kHz | 93.6 | Ref. |
| | | | | | 2 kHz | 93.5 | -0.2 ± 1.6 |
| | | | | | 4 kHz | 92.8 | -0.8 ± 1.6 |
| | | | | | 8 kHz | 90.7 | -3.0 (+2.1 ; -3.1) |
| | | | | | 16 kHz | 83.7 | -8.5 (+3.5 ; -17.0) |

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# Certificate of Calibration
# 校正證書

Certificate No. : C216479
證書編號

Remarks : - UUT Microphone Model No. : UC-59 & S/N : 17434

- 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 |
| | 16 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.

The test equipment used for calibration is traceable to the National 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
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Calibration & Testing Laboratory

# Certificate of Calibration
# 校正證書

Certificate No. : C210403
證書編號

**ITEM TESTED / 送檢項目** ( Job No. / 序引編號 : IC20-1324 ) Date of Receipt / 收件日期 : 19 January 2021

Description / 儀器名稱 : Sound Level Meter (EQ067)
Manufacturer / 製造商 : Rion
Model No. / 型號 : NL-31
Serial No. / 編號 : 00410221
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** : 21 January 2021

**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 : K P Cheuk
Assistant Engineer

Certified By 核證 : K C Lee
Engineer

Date of Issue 簽發日期 : 21 January 2021

The test equipment used for calibration is traceable to the National 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. : C210403
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 | C210084 |
| 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) | Mode | Frequency Weighting | Time Weighting | Level (dB) | Freq. (kHz) | | |
| 30 - 120 | $L_A$ | A | Fast | 94.00 | 1 | 94.0 | ± 1.1 |

6.1.2 Linearity

| UUT Setting | | | | Applied Value | | UUT Reading (dB) |
|---|---|---|---|---|---|---|
| Range (dB) | Mode | Frequency Weighting | Time Weighting | Level (dB) | Freq. (kHz) | |
| 30 - 120 | $L_A$ | A | Fast | 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.

6.2 Time Weighting

| UUT Setting | | | | Applied Value | | UUT Reading (dB) | IEC 61672 Class 1 Spec. (dB) |
|---|---|---|---|---|---|---|---|
| Range (dB) | Mode | Frequency Weighting | Time Weighting | Level (dB) | Freq. (kHz) | | |
| 30 - 120 | $L_A$ | A | Fast | 94.00 | 1 | 94.0 | Ref. |
| | | | Slow | | | 93.9 | ± 0.3 |

The test equipment used for calibration is traceable to the National 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. : C210403
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) | Mode | Frequency Weighting | Time Weighting | Level (dB) | Freq. | | |
| 30 - 120 | $L_A$ | A | Fast | 94.00 | 63 Hz | 67.7 | -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 | 95.1 | +1.0 ± 1.6 |
| | | | | | 8 kHz | 93.0 | -1.1 (+2.1 ; -3.1) |
| | | | | | 12.5 kHz | 90.1 | -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) | Mode | Frequency Weighting | Time Weighting | Level (dB) | Freq. | | |
| 30 - 120 | $L_C$ | C | Fast | 94.00 | 63 Hz | 93.1 | -0.8 ± 1.5 |
| | | | | | 125 Hz | 93.8 | -0.2 ± 1.5 |
| | | | | | 250 Hz | 93.9 | 0.0 ± 1.4 |
| | | | | | 500 Hz | 94.0 | 0.0 ± 1.4 |
| | | | | | 1 kHz | 94.0 | Ref. |
| | | | | | 2 kHz | 93.9 | -0.2 ± 1.6 |
| | | | | | 4 kHz | 93.3 | -0.8 ± 1.6 |
| | | | | | 8 kHz | 91.1 | -3.0 (+2.1 ; -3.1) |
| | | | | | 12.5 kHz | 88.3 | -6.2 (+3.0 ; -6.0) |

The test equipment used for calibration is traceable to the National 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. : C210403
證書編號

Remarks : - UUT Microphone Model No. : UC-53A & S/N : 322551

- 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. : C212414
證書編號

**ITEM TESTED / 送檢項目** ( Job No. / 序引編號 : IC21-0728 ) Date of Receipt / 收件日期 : 13 April 2021

Description / 儀器名稱 : Sound Level Calibrator (EQ085)
Manufacturer / 製造商 : Rion
Model No. / 型號 : NC-73
Serial No. / 編號 : 10655561
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** : 25 April 2021

**TEST RESULTS / 測試結果**

The results apply to the particular unit-under-test only.
The results do not exceed manufacturer's specification & user's specified acceptance criteria.
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
- Agilent Technologies / Keysight Technologies
- Fluke Everett Service Center, USA

Tested By 測試 : H T Wong, Assistant Engineer

Certified By 核證 : K C Lee, Engineer

Date of Issue 簽發日期 : 26 April 2021

The test equipment used for calibration is traceable to the National 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
Sun Creation Engineering Limited
Calibration & Testing Laboratory

# Certificate of Calibration
# 校正證書

Certificate No. : C212414
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 | C203952 |
| CL281 | Multifunction Acoustic Calibrator | AV210017 |
| TST150A | Measuring Amplifier | C201309 |

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 | ± 0.5 | ± 0.2 |

5.2 Frequency Accuracy

| UUT Nominal Value (kHz) | Measured Value (kHz) | User's Spec. | Uncertainty of Measured Value (Hz) |
|---|---|---|---|
| 1 | 0.955 | 1 kHz ± 6 % | ± 1 |

Remarks : - The user's specified acceptance criteria (user's spec.) is a customer pre-defined operating tolerance of the UUT, suitable for one's own intended use.

- 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. : C210388
證書編號

**ITEM TESTED / 送檢項目** ( Job No. / 序引編號 : IC21-0122 ) Date of Receipt / 收件日期 : 19 January 2021

| | | |
|---|---|---|
| Description / 儀器名稱 | : | Sound Calibrator (EQ089) |
| Manufacturer / 製造商 | : | Rion |
| Model No. / 型號 | : | NC-75 |
| Serial No. / 編號 | : | 34680623 |
| 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 January 2021

**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 January 2021

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.
本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

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輝創工程有限公司 - 校正及檢測實驗所
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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. : C210388
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 | C203952 |
| CL281 | Multifunction Acoustic Calibrator | CDK1806821 |
| TST150A | Measuring Amplifier | C201309 |

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 | ± 0.25 | ± 0.2 |

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 :
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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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

*is accredited by the Hong Kong Accreditation Service (HKAS) to ISO/IEC 17025:2017*
*for performing specific laboratory activities as listed in the scope of accreditation within the test category of*
*獲香港認可處根據ISO/IEC 17025:2017認可*
*進行載於認可範圍內下述測試類別中的指定實驗所活動*

## Environmental Testing
環境測試

*This accreditation to ISO/IEC 17025:2017 demonstrates technical competence for a defined scope and the implementation of a management system relevant to laboratory operation (see joint IAF-ILAC-ISO Communiqué).*
*此項 ISO/IEC 17025:2017 的認可資格證明此實驗所具備指定範疇內所須的技術能力並實施一套與實驗所運作相關的管理體系(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 HKAS is affixed hereto by the authority of the HKAS Executive*
*現經香港認可處執行機關授權在此蓋上香港認可處的印章*

SHUM Wai-leung, Executive Administrator
執行幹事 沈偉良
Issue Date : 28 February 2020
簽發日期：二零二零年二月二十八日

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*

L001934

# 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 |
| Sat | 1-Jan-22 | | | |
| Sun | 2-Jan-22 | | | |
| Mon | 3-Jan-22 | | | ✓ |
| Tue | 4-Jan-22 | | | |
| Wed | 5-Jan-22 | NMS2, NMS3, NMS-4a, NMS5, NMS6 and NMS7 | ✓ | |
| Thu | 6-Jan-22 | | | |
| Fri | 7-Jan-22 | CN1, CN2, CN3 and NMS8 | | |
| Sat | 8-Jan-22 | | | ✓ |
| Sun | 9-Jan-22 | | | |
| Mon | 10-Jan-22 | | | |
| Tue | 11-Jan-22 | NMS2, NMS3, NMS-4a, NMS5, NMS6 and NMS7 | ✓ | |
| Wed | 12-Jan-22 | | | |
| Thu | 13-Jan-22 | CN1, CN2, CN3 and NMS8 | | |
| Fri | 14-Jan-22 | | | ✓ |
| Sat | 15-Jan-22 | | | |
| Sun | 16-Jan-22 | | | |
| Mon | 17-Jan-22 | NMS2, NMS3, NMS-4a, NMS5, NMS6 and NMS7 | ✓ | |
| Tue | 18-Jan-22 | | | |
| Wed | 19-Jan-22 | CN1, CN2, CN3 and NMS8 | | |
| Thu | 20-Jan-22 | | | ✓ |
| Fri | 21-Jan-22 | | | |
| Sat | 22-Jan-22 | | ✓ | |
| Sun | 23-Jan-22 | | | |
| Mon | 24-Jan-22 | | | |
| Tue | 25-Jan-22 | CN1, CN2, CN3 and NMS8 | | |
| Wed | 26-Jan-22 | | | ✓ |
| Thu | 27-Jan-22 | | | |
| Fri | 28-Jan-22 | NMS2, NMS3, NMS-4a, NMS5, NMS6 and NMS7 | ✓ | |
| Sat | 29-Jan-22 | | | ✓ |
| Sun | 30-Jan-22 | | | |
| Mon | 31-Jan-22 | NMS2, NMS3, NMS-4a, NMS5, NMS6 and NMS7 | ✓ | |

| | |
|---|---|
| ✓ | 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 |
| Tue | 1-Feb-22 | | | |
| Wed | 2-Feb-22 | | | |
| Thu | 3-Feb-22 | | | |
| Fri | 4-Feb-22 | | | ✓ |
| Sat | 5-Feb-22 | CN1, CN2, CN3 and NMS8 | ✓ | |
| Sun | 6-Feb-22 | | | |
| Mon | 7-Feb-22 | | | |
| Tue | 8-Feb-22 | | | ✓ |
| Wed | 9-Feb-22 | NMS2, NMS3, NMS-4a, NMS5, NMS6 and NMS7 | ✓ | |
| Thu | 10-Feb-22 | | | |
| Fri | 11-Feb-22 | CN1, CN2, CN3 and NMS8 | | |
| Sat | 12-Feb-22 | | | |
| Sun | 13-Feb-22 | | | |
| Mon | 14-Feb-22 | | | ✓ |
| Tue | 15-Feb-22 | NMS2, NMS3, NMS-4a, NMS5, NMS6 and NMS7 | ✓ | |
| Wed | 16-Feb-22 | | | |
| Thu | 17-Feb-22 | CN1, CN2, CN3 and NMS8 | | |
| Fri | 18-Feb-22 | | | |
| Sat | 19-Feb-22 | | | ✓ |
| Sun | 20-Feb-22 | | | |
| Mon | 21-Feb-22 | NMS2, NMS3, NMS-4a, NMS5, NMS6 and NMS7 | ✓ | |
| Tue | 22-Feb-22 | | | |
| Wed | 23-Feb-22 | CN1, CN2, CN3 and NMS8 | | |
| Thu | 24-Feb-22 | | | |
| Fri | 25-Feb-22 | | | ✓ |
| Sat | 26-Feb-22 | | ✓ | |
| Sun | 27-Feb-22 | | | |
| Mon | 28-Feb-22 | | | |

| | |
|---|---|
| ✓ | 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-Jan-22 | 62429 | 24355.76 | 24379.76 | 1440 | 34 | 35 | 34.5 | 17.4 | 1020.3 | 1.31 | 1891 | 2.7056 | 2.7449 | 0.0393 | 21 |
| 8-Jan-22 | 27790 | 24379.76 | 24403.76 | 1440 | 35 | 35 | 35 | 17.8 | 1020.5 | 1.33 | 1908 | 2.708 | 2.7543 | 0.0463 | 24 |
| 14-Jan-22 | 27822 | 24403.76 | 24427.76 | 1440 | 34 | 35 | 34.5 | 16.3 | 1019.9 | 1.31 | 1893 | 2.7008 | 2.7344 | 0.0336 | 18 |
| 20-Jan-22 | 27794 | 24427.76 | 24451.76 | 1440 | 34 | 35 | 34.5 | 16.6 | 1019.8 | 1.31 | 1892 | 2.7551 | 2.7884 | 0.0333 | 18 |
| 26-Jan-22 | 27830 | 24451.76 | 24475.76 | 1440 | 34 | 35 | 34.5 | 15.4 | 1020.3 | 1.32 | 1895 | 2.7193 | 2.7362 | 0.0169 | 9 |
| 29-Jan-22 | 27901 | 24475.76 | 24499.76 | 1440 | 34 | 35 | 34.5 | 15.8 | 1020.5 | 1.32 | 1895 | 2.7769 | 2.8019 | 0.025 | 13 |

**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-Jan-22 | 62428 | 11568.15 | 11592.16 | 1440.60 | 36 | 37 | 36.5 | 17.4 | 1020.3 | 1.31 | 1884 | 2.6880 | 2.7557 | 0.0677 | 36 |
| 8-Jan-22 | 27791 | 11592.16 | 11616.16 | 1440.00 | 36 | 37 | 36.5 | 17 | 1020.3 | 1.31 | 1884 | 2.7047 | 2.7786 | 0.0739 | 39 |
| 14-Jan-22 | 27797 | 11616.16 | 11640.16 | 1440.00 | 36 | 37 | 36.5 | 16.3 | 1019.9 | 1.31 | 1885 | 2.7616 | 2.8349 | 0.0733 | 39 |
| 20-Jan-22 | 27799 | 11640.16 | 11664.16 | 1440.00 | 36 | 37 | 36.5 | 16.6 | 1019.8 | 1.31 | 1885 | 2.7654 | 2.8283 | 0.0629 | 33 |
| 26-Jan-22 | 27829 | 11664.16 | 11688.17 | 1440.60 | 36 | 37 | 36.5 | 15.4 | 1020.3 | 1.31 | 1889 | 2.7285 | 2.7775 | 0.0490 | 26 |
| 29-Jan-22 | 27836 | 11688.17 | 11712.17 | 1440.00 | 36 | 37 | 36.5 | 15.8 | 1020.5 | 1.31 | 1887 | 2.7054 | 2.7739 | 0.0685 | 36 |

**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-Jan-22 | 62430 | 16712.07 | 16736.08 | 1440.60 | 36 | 37 | 36.5 | 17.4 | 1020.3 | 1.34 | 1926 | 2.6925 | 2.8058 | 0.1133 | 59 |
| 8-Jan-22 | 27792 | 16736.08 | 16760.08 | 1440.00 | 36 | 37 | 36.5 | 17 | 1020.3 | 1.34 | 1926 | 2.7118 | 2.8394 | 0.1276 | 66 |
| 14-Jan-22 | 27796 | 16760.08 | 16784.08 | 1440.00 | 36 | 37 | 36.5 | 16.3 | 1019.9 | 1.34 | 1927 | 2.7586 | 2.8855 | 0.1269 | 66 |
| 20-Jan-22 | 27798 | 16784.08 | 16808.08 | 1440.00 | 36 | 37 | 36.5 | 16.6 | 1019.8 | 1.34 | 1926 | 2.7586 | 2.8942 | 0.1356 | 70 |
| 26-Jan-22 | 27800 | 16808.08 | 16832.09 | 1440.60 | 36 | 37 | 36.5 | 15.4 | 1020.3 | 1.34 | 1930 | 2.7755 | 2.8449 | 0.0694 | 36 |
| 29-Jan-22 | 27835 | 16832.09 | 16856.09 | 1440.00 | 36 | 37 | 36.5 | 15.8 | 1020.5 | 1.34 | 1929 | 2.7183 | 2.8120 | 0.0937 | 49 |

**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-Jan-22 | 27760 | 12048.26 | 12072.26 | 1440.00 | 34 | 35 | 34.5 | 17.4 | 1020.3 | 1.28 | 1837 | 2.6858 | 2.8072 | 0.1214 | 66 |
| 8-Jan-22 | 27793 | 12072.26 | 12096.26 | 1440.00 | 35 | 35 | 35.0 | 17.8 | 1020.5 | 1.29 | 1855 | 2.7554 | 2.9269 | 0.1715 | 92 |
| 14-Jan-22 | 27823 | 12096.26 | 12120.26 | 1440.00 | 34 | 35 | 34.5 | 16.3 | 1019.9 | 1.28 | 1839 | 2.7024 | 2.7686 | 0.0662 | 36 |
| 20-Jan-22 | 27795 | 12120.26 | 12144.26 | 1440.00 | 34 | 35 | 34.5 | 16.6 | 1019.8 | 1.28 | 1839 | 2.7542 | 2.8694 | 0.1152 | 63 |
| 26-Jan-22 | 27831 | 12144.26 | 12168.26 | 1440.00 | 34 | 35 | 34.5 | 15.4 | 1020.3 | 1.28 | 1842 | 2.7151 | 2.7733 | 0.0582 | 32 |
| 29-Jan-22 | 27900 | 12168.26 | 12192.26 | 1440.00 | 34 | 35 | 34.5 | 15.8 | 1020.5 | 1.28 | 1841 | 2.6789 | 2.7735 | 0.0946 | 51 |

## NOISE MONITORING RESULT DATABASE FOR CONTRACT 1

**Noise Measurement Results (dB) of NMS2**

| 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-Jan-22 | 10:57 | 60.6 | 61.6 | 58 | 60.4 | 62.8 | 58.4 | 61.2 | 62.7 | 59.6 | 60.2 | 61.8 | 58.6 | 61.3 | 62.9 | 59.9 | 61.4 | 62.8 | 59.8 | 61 | 70 |
| 11-Jan-22 | 10:35 | 62.4 | 63.8 | 60.9 | 58.9 | 62.4 | 56.1 | 61.2 | 63.5 | 59.7 | 63.5 | 66.4 | 61 | 61.9 | 63.4 | 57.4 | 58.7 | 62.4 | 55.8 | 61 | 70 |
| 17-Jan-22 | 10:44 | 61.8 | 63.7 | 57.7 | 64.4 | 66.1 | 60.5 | 62.3 | 65.4 | 61 | 58.9 | 61.5 | 57.1 | 60.5 | 62.8 | 55.8 | 57.9 | 60.2 | 52.1 | 62 | 70 |
| 28-Jan-22 | 10:43 | 60.4 | 62.3 | 58.5 | 61.5 | 63.5 | 59.6 | 61.6 | 62.5 | 59.8 | 60.5 | 61.8 | 58.7 | 61.8 | 62.7 | 59.9 | 62.7 | 63.9 | 60.8 | 61 | 70 |
| 31-Jan-22 | 10:50 | 59.8 | 61.6 | 54.456.6 | 59.4 | 53.1 | 61.5 | 63.4 | 65.4 | 61.2 | 63.4 | 65.8 | 60.1 | 60.5 | 62.8 | 55.4 | 59.1 | 62.3 | 56.3 | 61 | 70 |

**Noise Measurement Results (dB) of NMS3**

| 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-Jan-22 | 14:17 | 62.7 | 65.2 | 59.4 | 64.7 | 67.1 | 59.5 | 62.5 | 66.0 | 59.4 | 60.2 | 64.0 | 58.4 | 62.7 | 66.5 | 59.4 | 61.3 | 65.0 | 58.7 | 63 | 75 |
| 11-Jan-22 | 14:26 | 65.4 | 67.8 | 61.2 | 64.2 | 66.5 | 60.2 | 68.4 | 70.1 | 62.3 | 63.0 | 65.4 | 60.1 | 68.4 | 69.0 | 65.3 | 63.2 | 65.8 | 60.6 | 66 | 75 |
| 17-Jan-22 | 13:59 | 64.5 | 66.3 | 60.2 | 63.5 | 64.1 | 61.9 | 67.8 | 69.9 | 63.4 | 61.2 | 63.6 | 57.0 | 63.8 | 65.9 | 61.0 | 62.8 | 65.4 | 54.5 | 64 | 75 |
| 28-Jan-22 | 14:05 | 60.7 | 61.6 | 58.3 | 60.0 | 62.9 | 58.2 | 60.7 | 62.8 | 58.3 | 61.6 | 62.9 | 59.6 | 61.5 | 62.8 | 59.9 | 60.6 | 61.7 | 58.8 | 61 | 75 |
| 31-Jan-22 | 14:19 | 59.6 | 63.4 | 54.5 | 62.5 | 64.5 | 59.4 | 63.4 | 65.4 | 59.4 | 62.5 | 65.2 | 58.7 | 60.8 | 63.1 | 56.5 | 62.7 | 65.4 | 57.1 | 62 | 75 |

**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) | | |
| 5-Jan-22 | 9:28 | 68.8 | 70.4 | 66.7 | 69.8 | 70.7 | 66.3 | 70.5 | 72.8 | 67.1 | 69.6 | 71.7 | 66.9 | 69.8 | 71.6 | 67.3 | 68.7 | 70.1 | 66.8 | 70 | 75 |
| 11-Jan-22 | 9:12 | 67.8 | 71.2 | 63.4 | 68.4 | 70.5 | 65.4 | 71.2 | 74.2 | 67 | 68 | 70.5 | 65.6 | 66.5 | 68.4 | 63.4 | 67.8 | 69.8 | 63.5 | 69 | 75 |
| 17-Jan-22 | 8:57 | 70.6 | 74.2 | 65.5 | 67.5 | 69.8 | 63.2 | 69.8 | 72.3 | 65.5 | 67.8 | 69.8 | 64.5 | 67.9 | 70.2 | 63.2 | 66 | 68.4 | 63.3 | 69 | 75 |
| 28-Jan-22 | 9:17 | 71.7 | 73.6 | 68.5 | 70.5 | 72.3 | 67.6 | 69.7 | 71.6 | 67.5 | 68.5 | 70.8 | 66.8 | 69.6 | 71.9 | 67.9 | 70.9 | 72 | 68.2 | 70 | 75 |
| 31-Jan-22 | 9:20 | 69.8 | 71.2 | 65.4 | 68.9 | 70.5 | 67.4 | 67.5 | 70.6 | 65.2 | 69.9 | 72.3 | 66.4 | 67.5 | 69.4 | 64.7 | 67 | 69.5 | 63.7 | 69 | 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) | | |
| 5-Jan-22 | 10:10 | 68.6 | 70 | 66.4 | 69.5 | 71.6 | 66.6 | 68.6 | 70.7 | 67.5 | 68.9 | 69 | 66.5 | 68.7 | 70 | 66.5 | 69.7 | 70.5 | 67.7 | 69 | 75 |
| 11-Jan-22 | 10:16 | 69.8 | 72.3 | 65.6 | 68.7 | 71.6 | 66.8 | 68.9 | 71.2 | 64.5 | 69.7 | 73.2 | 65.4 | 67.8 | 69.9 | 65.6 | 68.4 | 70.4 | 64.5 | 69 | 75 |
| 17-Jan-22 | 9:54 | 71.2 | 74.6 | 66.5 | 69.8 | 73.2 | 64.5 | 68.4 | 70.5 | 66.4 | 69.1 | 71.6 | 65.8 | 68.3 | 69.8 | 66 | 71.5 | 73.6 | 67.2 | 70 | 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) | | |
| 28-Jan-22 | 10:01 | 68.9 | 70 | 66.6 | 69.4 | 71.4 | 66.8 | 69.5 | 72.2 | 67.9 | 69 | 71 | 67.7 | 68.5 | 70 | 66.8 | 69 | 71.6 | 67.9 | 69 | 75 |
| 31-Jan-22 | 10:16 | 66.4 | 68.9 | 63.3 | 67.4 | 69.8 | 65.5 | 68.6 | 70.4 | 65.4 | 69.8 | 72.3 | 67.4 | 67.7 | 69.7 | 65.4 | 71.2 | 74.5 | 66.3 | 69 | 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) | | |
| 5-Jan-22 | 14:58 | 68.8 | 71.6 | 65.5 | 69.8 | 72.3 | 66 | 68.9 | 71.6 | 65 | 68.8 | 71.9 | 65.7 | 69.5 | 72.6 | 66.8 | 70.6 | 73.6 | 67.8 | 69 | 75 |
| 11-Jan-22 | 15:46 | 67.8 | 69.4 | 64.5 | 66.3 | 67.4 | 62.1 | 65.5 | 67.8 | 63.2 | 65.4 | 67.1 | 62.2 | 64.5 | 66.5 | 61 | 67.8 | 68.9 | 64.5 | 66 | 75 |
| 17-Jan-22 | 15:25 | 67.2 | 68.6 | 65.4 | 68.3 | 70.1 | 65.4 | 68.4 | 71.2 | 64.5 | 67.8 | 69.8 | 62.3 | 68 | 69.9 | 66.3 | 67.6 | 70.4 | 63 | 68 | 75 |
| 28-Jan-22 | 14:47 | 68.6 | 71.6 | 67.5 | 68.4 | 71.9 | 67 | 68.5 | 71.8 | 67.5 | 69 | 72.7 | 68.4 | 70.4 | 72.7 | 68 | 69.3 | 71.5 | 67.7 | 69 | 75 |
| 31-Jan-22 | 14:58 | 66.7 | 68.9 | 63.4 | 68.7 | 70.5 | 64.5 | 67.4 | 69.8 | 62 | 69.4 | 71.2 | 66.4 | 67.7 | 69.4 | 65.1 | 68.7 | 72.3 | 63.4 | 68 | 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) | | |
| 5-Jan-22 | 15:45 | 68.3 | 70.5 | 65.6 | 69.4 | 71.1 | 66.8 | 68.3 | 70.2 | 66.6 | 69.5 | 71.7 | 67.6 | 69.7 | 72.6 | 67.9 | 68 | 71.7 | 66.7 | 69 | 75 |
| 11-Jan-22 | 15:24 | 66.5 | 69.3 | 64 | 68.1 | 70.2 | 65.6 | 69.8 | 71.3 | 66.5 | 67.8 | 68.4 | 66.2 | 68.1 | 69.8 | 66.1 | 67.4 | 68.6 | 65.2 | 68 | 75 |
| 17-Jan-22 | 16:23 | 68.2 | 69.9 | 66.2 | 67.4 | 69.2 | 64.6 | 68.4 | 69.4 | 66.9 | 68.1 | 69.1 | 65.5 | 66.3 | 67.5 | 62.4 | 64.8 | 66.3 | 61.3 | 67 | 75 |
| 28-Jan-22 | 15:31 | 67.6 | 67.6 | 64.5 | 68.4 | 68.9 | 65 | 68.5 | 68.8 | 65.5 | 68 | 68.7 | 65.4 | 68.4 | 68.7 | 65 | 69.3 | 69.5 | 66.7 | 68 | 75 |
| 31-Jan-22 | 15:12 | 66.4 | 68.5 | 62.2 | 67.4 | 68.9 | 65.6 | 69.8 | 70.2 | 67.5 | 68.4 | 69.8 | 66.4 | 66.3 | 68.6 | 62.1 | 67.4 | 69.2 | 63.7 | 68 | 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) | | |
| 7-Jan-22 | 15:03 | 59.8 | 62 | 57 | 66.4 | 67.5 | 60.5 | 66.7 | 69.5 | 57.5 | 68.5 | 71.5 | 57 | 65.9 | 69 | 56.5 | 65.8 | 68 | 58.5 | 66 | 75 |
| 14-Jan-22 | 10:31 | 61.9 | 62.7 | 54.9 | 59.4 | 62.1 | 54.7 | 60.4 | 64.4 | 56.8 | 60.4 | 63.3 | 55.9 | 61.5 | 64.6 | 56.7 | 60.3 | 63.6 | 55.9 | 61 | 75 |
| 19-Jan-22 | 15:46 | 60.5 | 62 | 58 | 60.9 | 62 | 58 | 61 | 62.5 | 58.5 | 60.8 | 62 | 58.5 | 60.2 | 62 | 58 | 60.4 | 62.5 | 58 | 61 | 75 |
| 25-Jan-22 | 15:48 | 61 | 62.5 | 58 | 60.2 | 62 | 58 | 60.5 | 62 | 58.5 | 60.6 | 62 | 58 | 60.8 | 62.5 | 57.5 | 59.8 | 62 | 57 | 61 | 75 |

## NOISE MONITORING RESULT DATABASE FOR CONTRACT 3

**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) | | |
| 7-Jan-22 | 16:39 | 62.4 | 62 | 59.5 | 62.8 | 63 | 58.5 | 63 | 66 | 60 | 62.1 | 62.5 | 59.5 | 63.5 | 65 | 58.5 | 61.7 | 61.5 | 59 | 63 | 70 |
| 14-Jan-22 | 11:54 | 64.5 | 65.9 | 60 | 60.4 | 61.6 | 59.4 | 60.5 | 60.3 | 59 | 63.6 | 63.5 | 58 | 64.5 | 64.3 | 59.4 | 62.5 | 63.3 | 58.5 | 63 | 70 |
| 19-Jan-22 | 17:23 | 68 | 73.5 | 65.5 | 66.7 | 72.5 | 61.5 | 68.3 | 75 | 62.5 | 66.2 | 72 | 60.5 | 65.1 | 71 | 59.5 | 65.6 | 71.5 | 58.5 | 67 | 70 |
| 25-Jan-22 | 17;05 | 68.1 | 71 | 60 | 67.8 | 70.5 | 59.5 | 65.6 | 69.5 | 60 | 66.2 | 69.5 | 60.5 | 66.8 | 69.5 | 60.5 | 67.3 | 71.5 | 61 | 67 | 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)** | | |
| 7-Jan-22 | 16:31 | 58.7 | 60 | 56.5 | 59.1 | 60.5 | 57 | 67.2 | 69 | 57 | 60.1 | 60.5 | 56 | 58 | 59 | 55.5 | 75 | 80.5 | 57 | 68 | 70 |
| 14-Jan-22 | 11:18 | 57.7 | 58.4 | 53.8 | 57.5 | 59.6 | 54.8 | 58.6 | 60.5 | 55.7 | 58.6 | 59.4 | 55.7 | 58.7 | 59 | 55.5 | 59 | 60 | 55 | 58 | 70 |
| 19-Jan-22 | 16:43 | 64.5 | 65.5 | 60 | 66.2 | 69.5 | 59.5 | 67.7 | 70.5 | 63.5 | 67 | 69.5 | 62.5 | 67.6 | 70.5 | 62 | 69.8 | 71 | 68.5 | 67 | 70 |
| 25-Jan-22 | 16:28 | 66.8 | 69.5 | 60 | 67.5 | 70 | 62.5 | 66.5 | 70 | 61 | 67.9 | 71 | 62.5 | 67.2 | 70 | 61.5 | 67.1 | 70 | 61.5 | 67 | 70 |

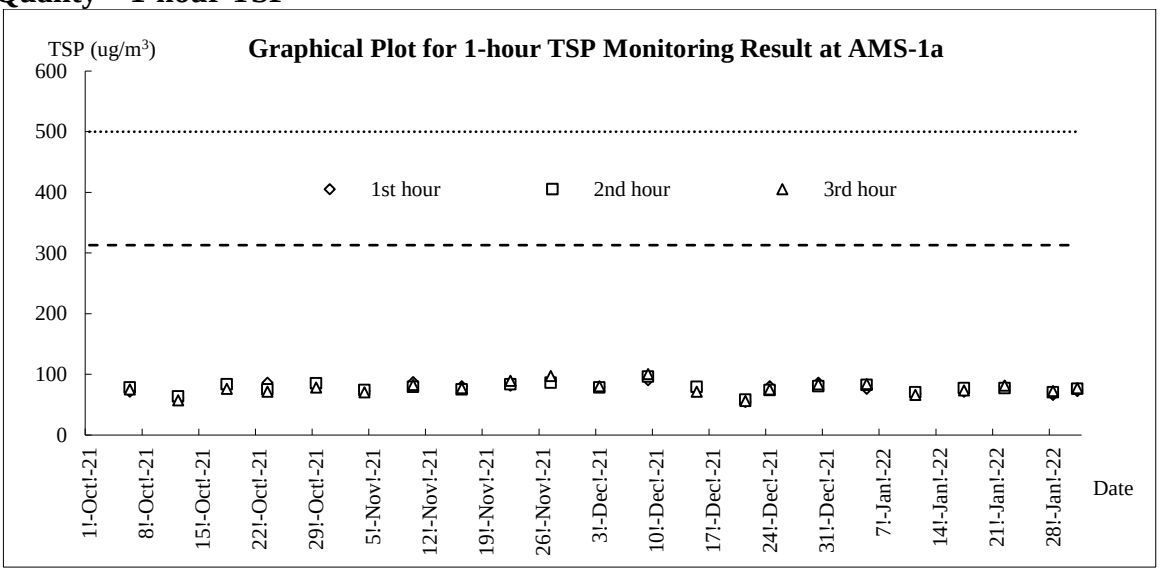
**Noise Measurement Results (dB) of CN3**

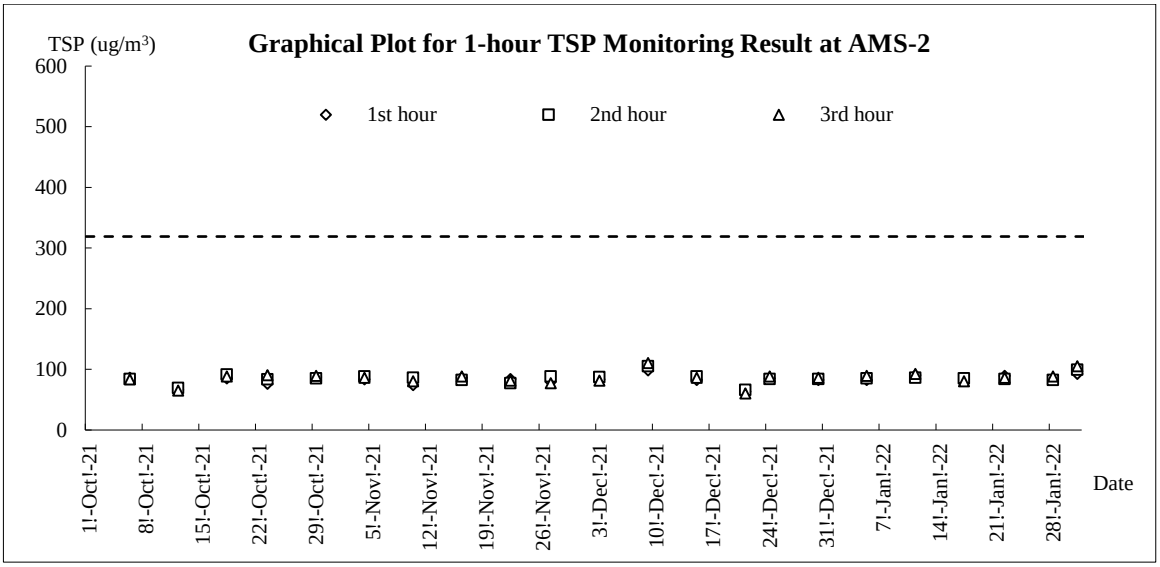
| **Date** | **Start Time** | **1st Leq (5min)** | | | **2nd Leq (5min)** | | | **3rd Leq (5min)** | | | **4th Leq (5min)** | | | **5th Leq (5min)** | | | **6th Leq (5min)** | | | **Leq30min, dB(A)** | **Limit Level dB(A)** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **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)** | | |
| 7-Jan-22 | 14:05 | 66.9 | 69 | 59.5 | 64.6 | 68.5 | 58 | 66.1 | 69 | 61 | 64.7 | 67.5 | 61 | 65 | 68 | 61 | 64.7 | 66 | 62.5 | 65 | 75 |
| 14-Jan-22 | 9:41 | 59.7 | 62.5 | 54.3 | 58.5 | 61.6 | 53.8 | 59.5 | 62.9 | 54.7 | 59.9 | 62.8 | 54.6 | 58.4 | 61.1 | 53.3 | 59.7 | 62.3 | 54.1 | 59 | 75 |
| 19-Jan-22 | 14:31 | 61.2 | 63.5 | 55.5 | 61.5 | 64 | 57 | 61.2 | 63.5 | 57 | 61.1 | 63.5 | 56.5 | 60.8 | 64 | 55.5 | 61.6 | 64.5 | 57 | 61 | 75 |
| 25-Jan-22 | 14:33 | 60.1 | 63 | 55 | 60.9 | 64 | 55.5 | 60.7 | 63.5 | 56.5 | 62 | 64.5 | 56.5 | 62.3 | 64.5 | 57 | 60.5 | 63 | 56.5 | 61 | 75 |

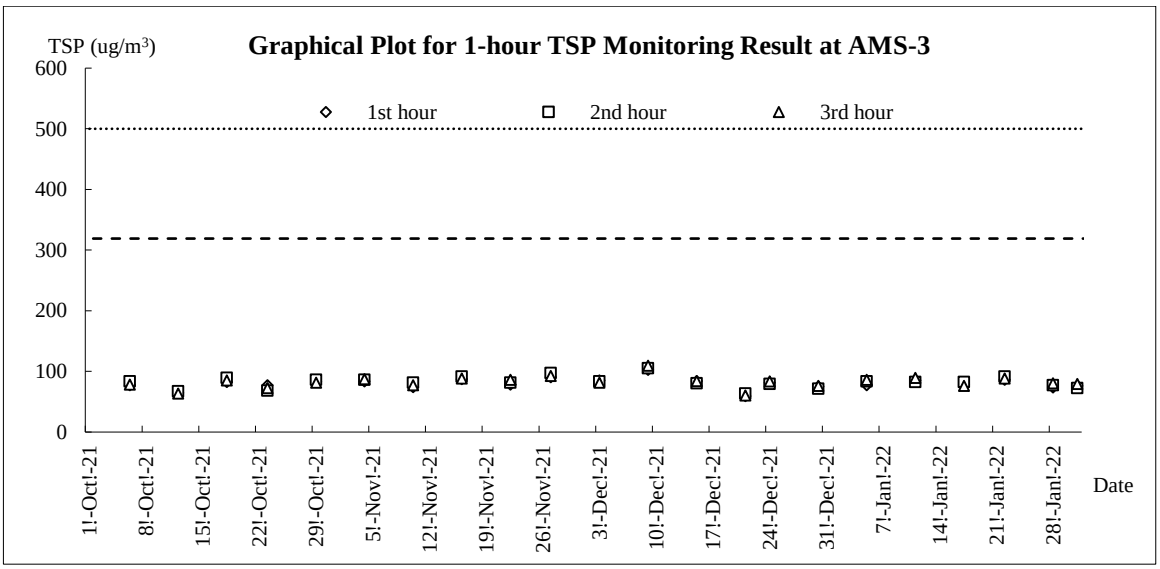
# Appendix I

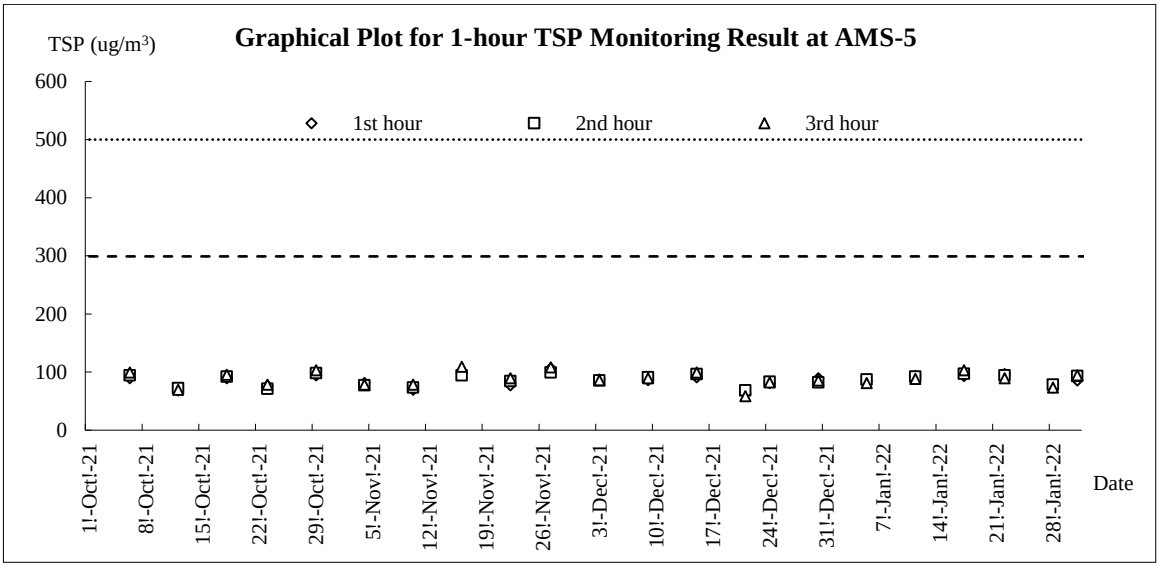
# Graphical Plots for Monitoring Result

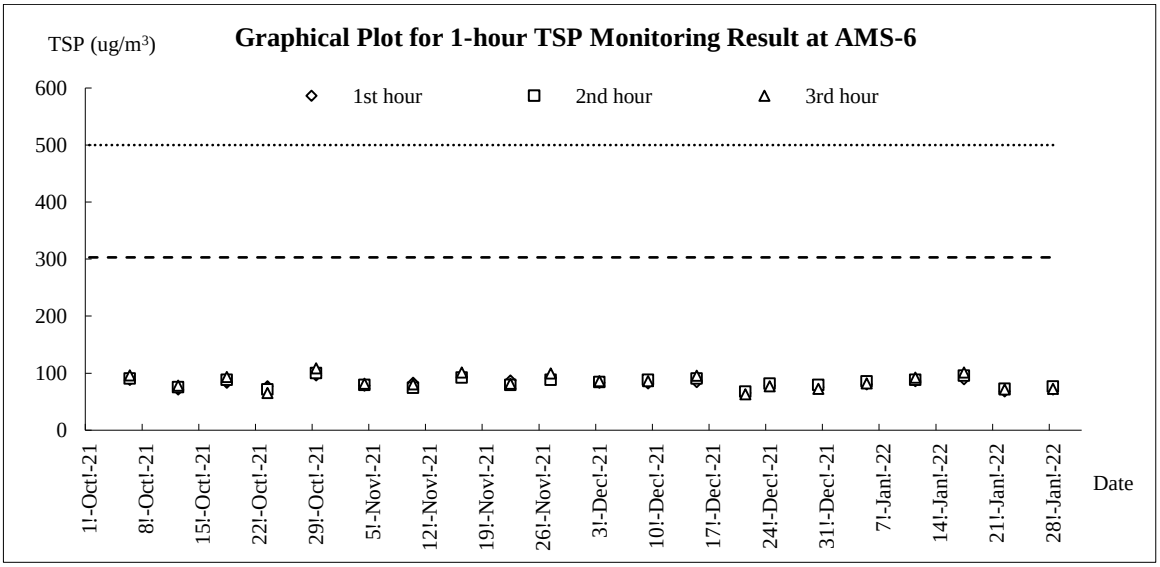
## Air Quality – 1-hour TSP

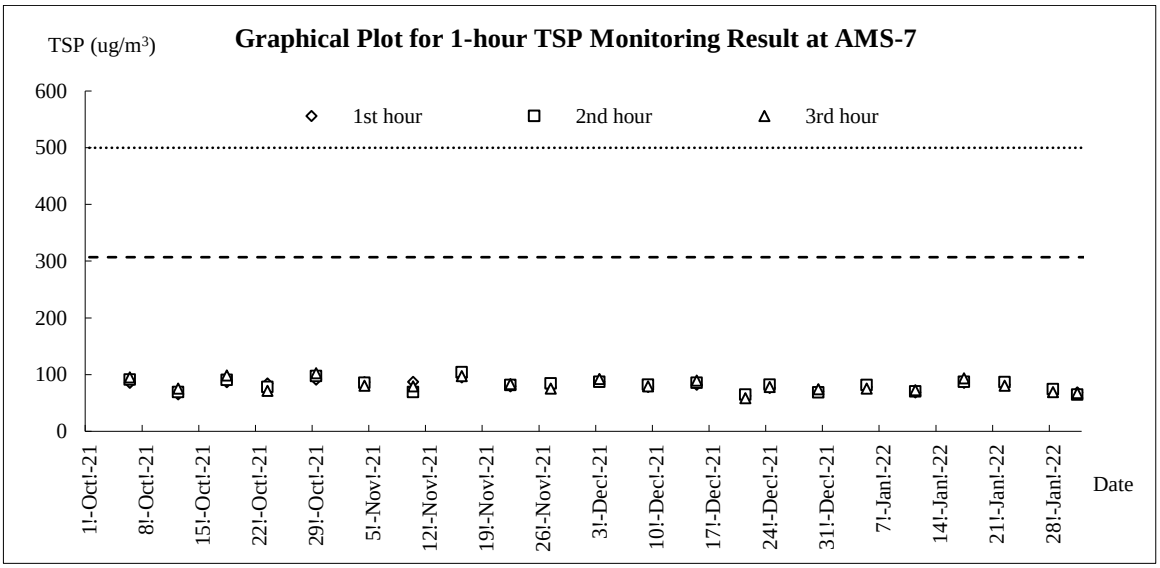


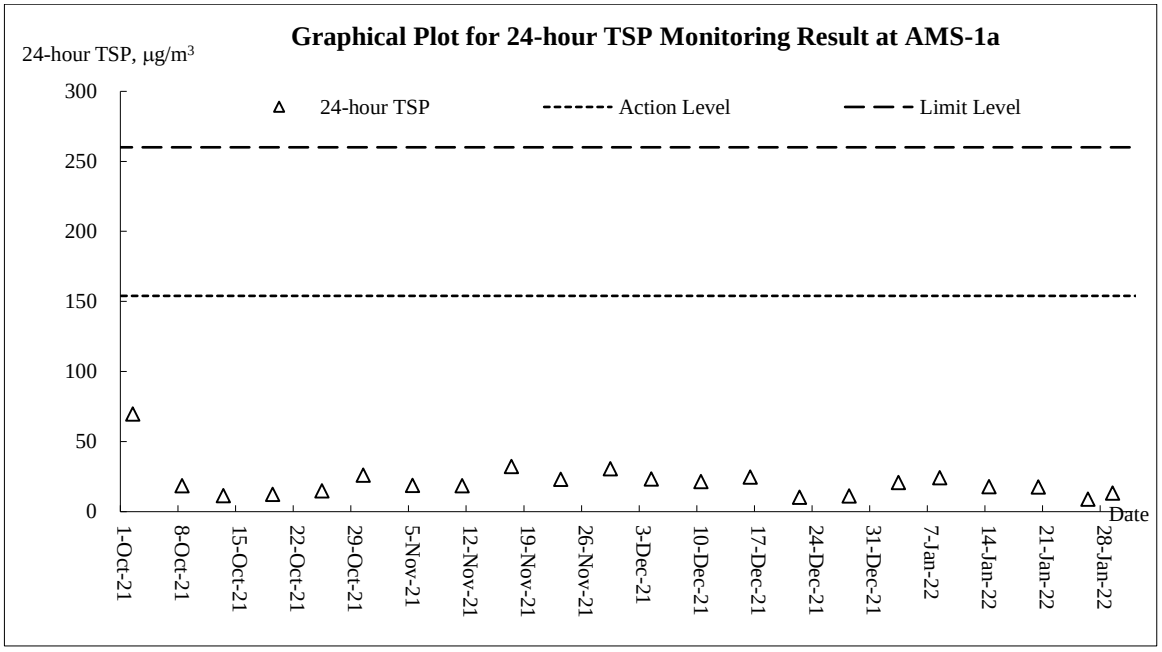



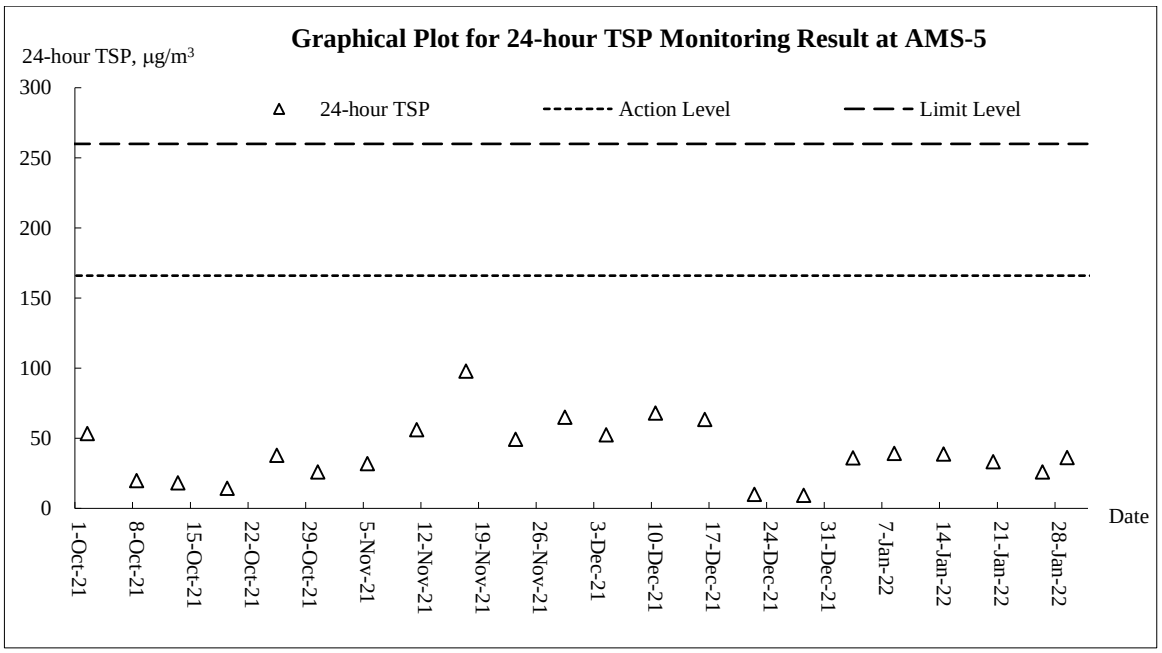

Graphical Plot for 1-hour TSP Monitoring Result at AMS-5
TSP (ug/m3)
1st hour
2nd hour
3rd hour
600
500
400
300
200
100
0
1!-Oct!-21
8!-Oct!-21
15!-Oct!-21
22!-Oct!-21
29!-Oct!-21
5!-Nov!-21
12!-Nov!-21
19!-Nov!-21
26!-Nov!-21
3!-Dec!-21
10!-Dec!-21
17!-Dec!-21
24!-Dec!-21
31!-Dec!-21
7!-Jan!-22
14!-Jan!-22
21!-Jan!-22
28!-Jan!-22
Date

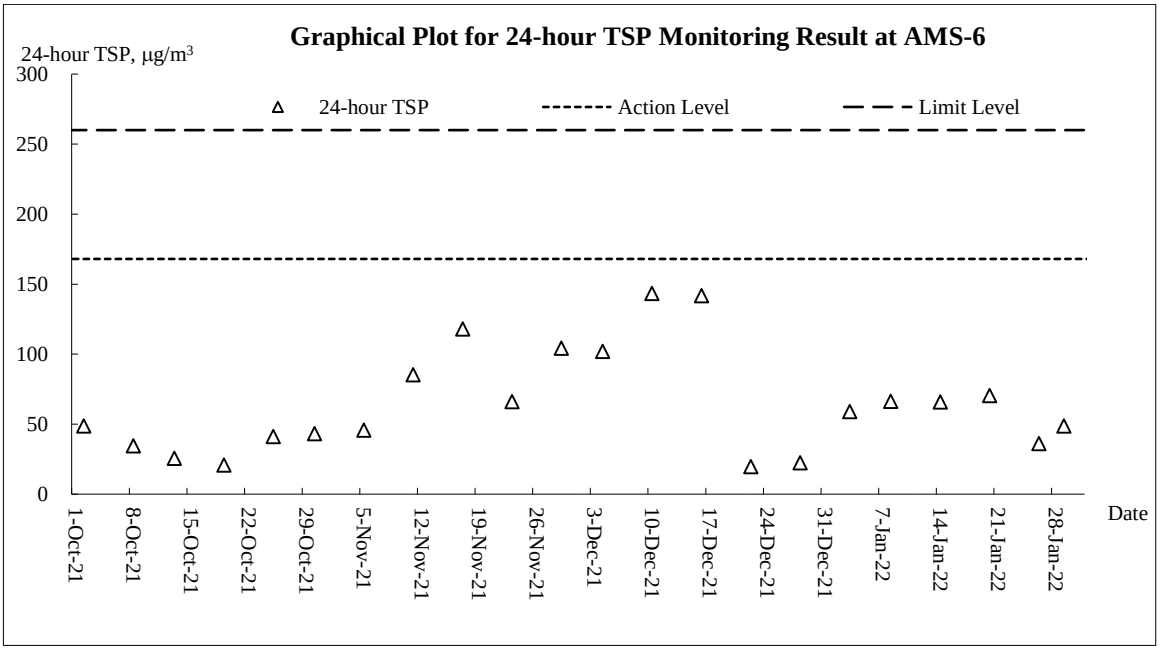

Graphical Plot for 1-hour TSP Monitoring Result at AMS-6
TSP (ug/m3)
1st hour
2nd hour
3rd hour
600
500
400
300
200
100
0
1!-Oct!-21
8!-Oct!-21
15!-Oct!-21
22!-Oct!-21
29!-Oct!-21
5!-Nov!-21
12!-Nov!-21
19!-Nov!-21
26!-Nov!-21
3!-Dec!-21
10!-Dec!-21
17!-Dec!-21
24!-Dec!-21
31!-Dec!-21
7!-Jan!-22
14!-Jan!-22
21!-Jan!-22
28!-Jan!-22
Date

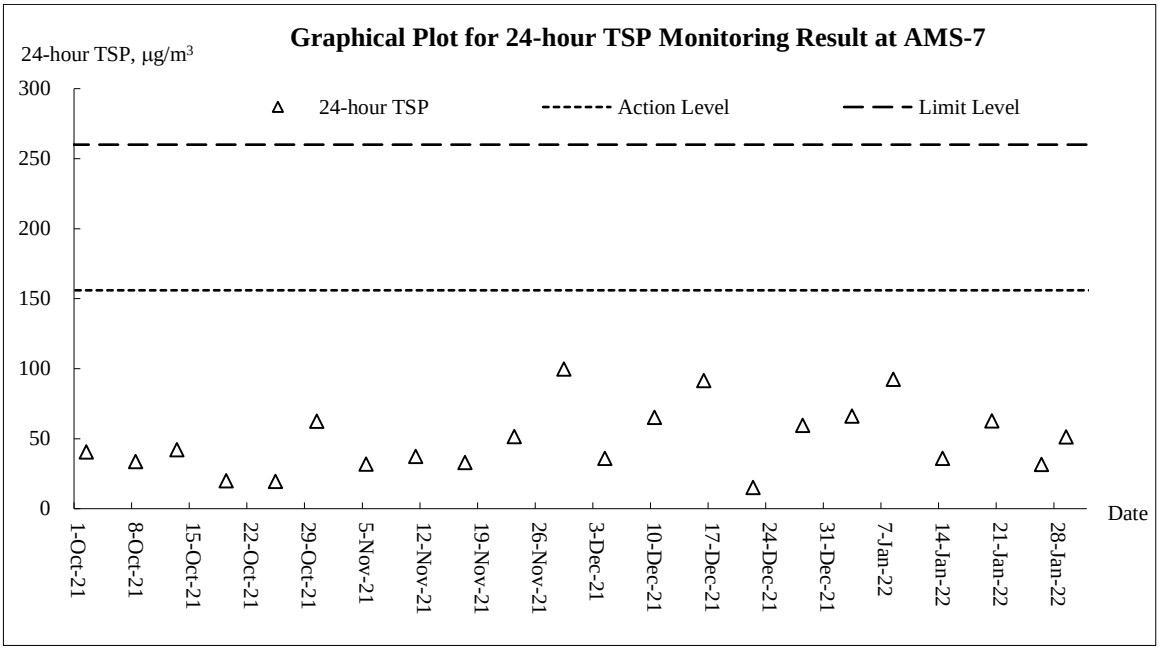

Graphical Plot for 1-hour TSP Monitoring Result at AMS-7
TSP (ug/m3)
1st hour
2nd hour
3rd hour
600
500
400
300
200
100
0
1!-Oct!-21
8!-Oct!-21
15!-Oct!-21
22!-Oct!-21
29!-Oct!-21
5!-Nov!-21
12!-Nov!-21
19!-Nov!-21
26!-Nov!-21
3!-Dec!-21
10!-Dec!-21
17!-Dec!-21
24!-Dec!-21
31!-Dec!-21
7!-Jan!-22
14!-Jan!-22
21!-Jan!-22
28!-Jan!-22
Date

## Air Quality – 24-hour TSP

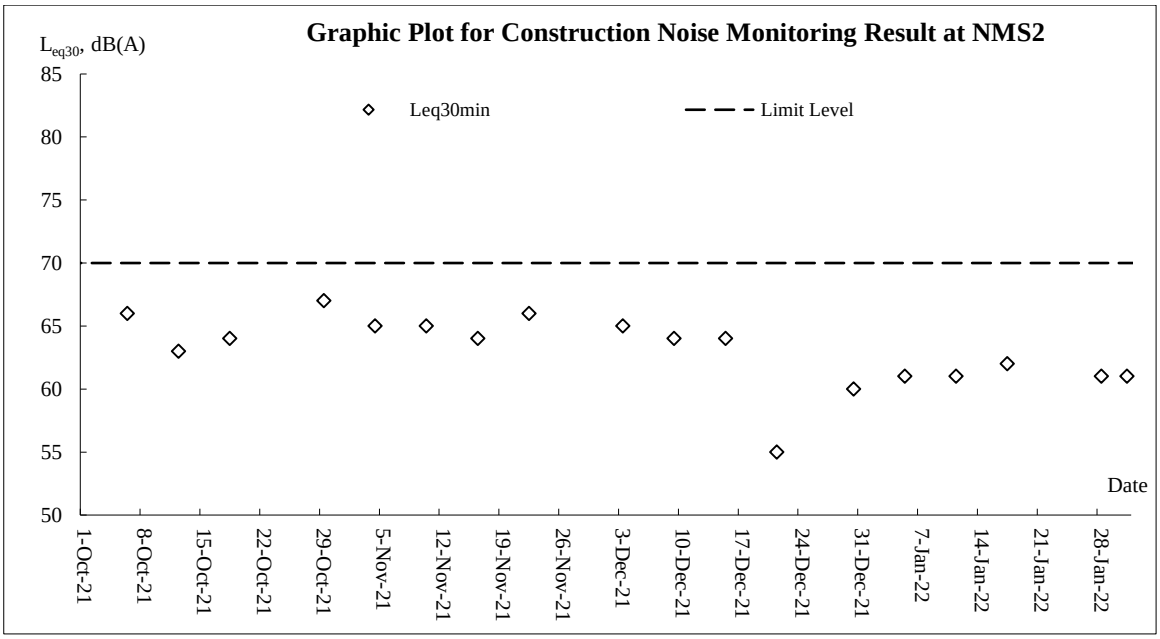



Graphical Plot for 24-hour TSP Monitoring Result at AMS-6
24-hour TSP, μg/m³
24-hour TSP
Action Level
Limit Level
300
250
200
150
100
50
0
1-Oct-21
8-Oct-21
15-Oct-21
22-Oct-21
29-Oct-21
5-Nov-21
12-Nov-21
19-Nov-21
26-Nov-21
3-Dec-21
10-Dec-21
17-Dec-21
24-Dec-21
31-Dec-21
7-Jan-22
14-Jan-22
21-Jan-22
28-Jan-22
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-Oct-21
8-Oct-21
15-Oct-21
22-Oct-21
29-Oct-21
5-Nov-21
12-Nov-21
19-Nov-21
26-Nov-21
3-Dec-21
10-Dec-21
17-Dec-21
24-Dec-21
31-Dec-21
7-Jan-22
14-Jan-22
21-Jan-22
28-Jan-22
Date

## Noise


Graphic Plot for Construction Noise Monitoring Result at NMS2
$L_{eq30}$, dB(A)
Leq30min
Limit Level
85
80
75
70
65
60
55
50
Date
1-Oct-21
8-Oct-21
15-Oct-21
22-Oct-21
29-Oct-21
5-Nov-21
12-Nov-21
19-Nov-21
26-Nov-21
3-Dec-21
10-Dec-21
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24-Dec-21
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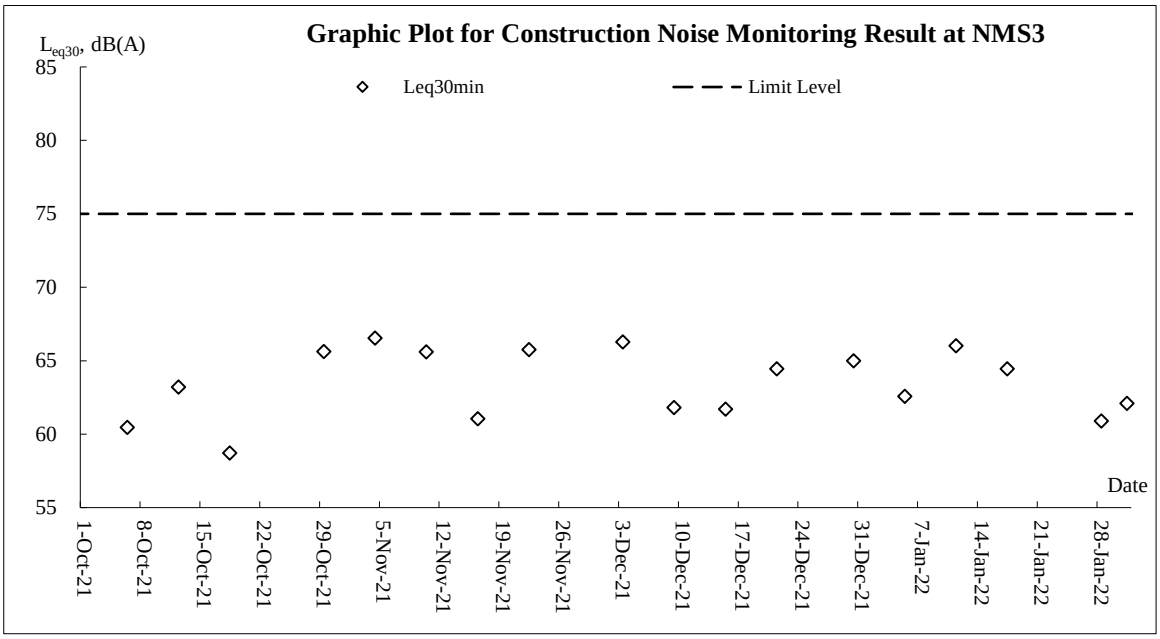
14-Jan-22
21-Jan-22
28-Jan-22


Graphic Plot for Construction Noise Monitoring Result at NMS3
$L_{eq30}$, dB(A)
Leq30min
Limit Level
85
80
75
70
65
60
55
Date
1-Oct-21
8-Oct-21
15-Oct-21
22-Oct-21
29-Oct-21
5-Nov-21
12-Nov-21
19-Nov-21
26-Nov-21
3-Dec-21
10-Dec-21
17-Dec-21
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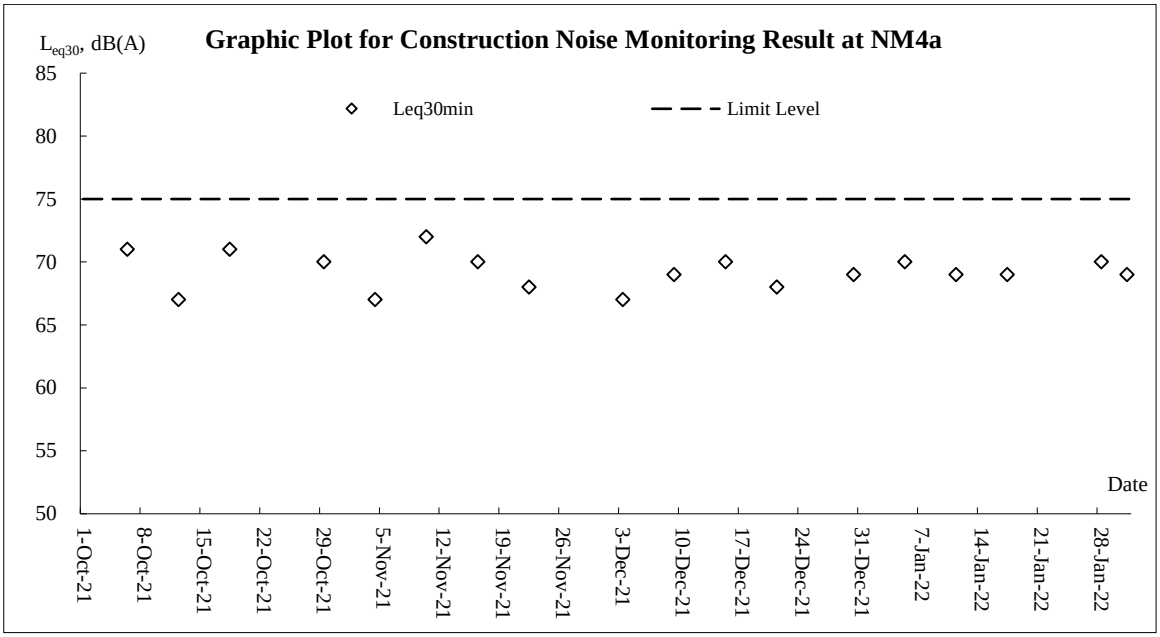
21-Jan-22
28-Jan-22


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-Oct-21
8-Oct-21
15-Oct-21
22-Oct-21
29-Oct-21
5-Nov-21
12-Nov-21
19-Nov-21
26-Nov-21
3-Dec-21
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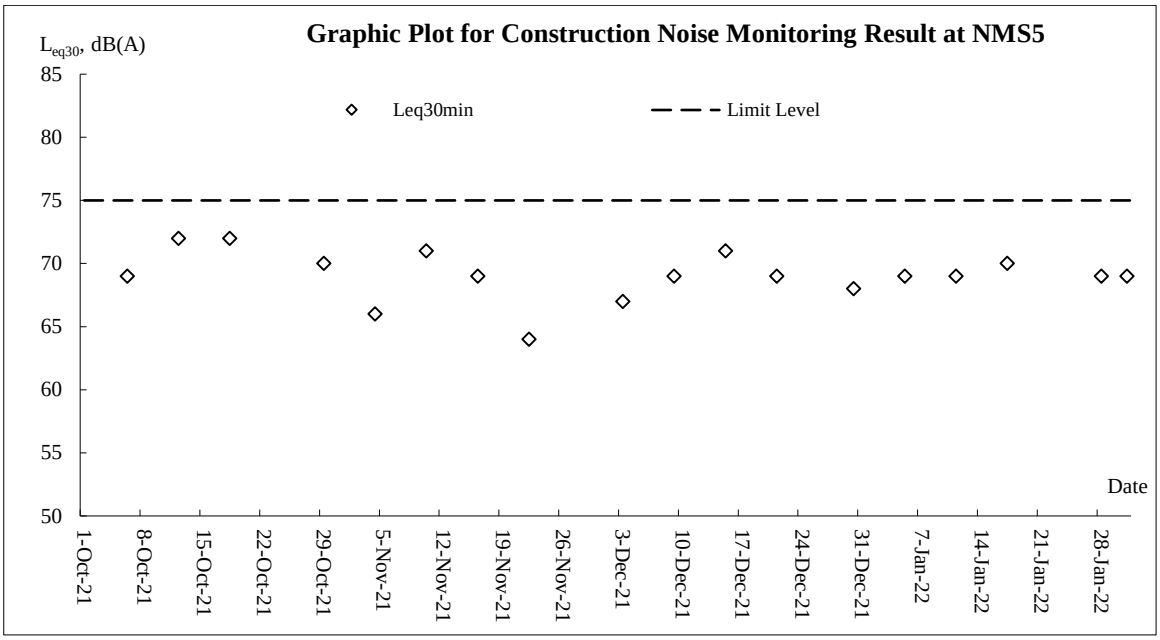
21-Jan-22
28-Jan-22


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-Oct-21
8-Oct-21
15-Oct-21
22-Oct-21
29-Oct-21
5-Nov-21
12-Nov-21
19-Nov-21
26-Nov-21
3-Dec-21
10-Dec-21
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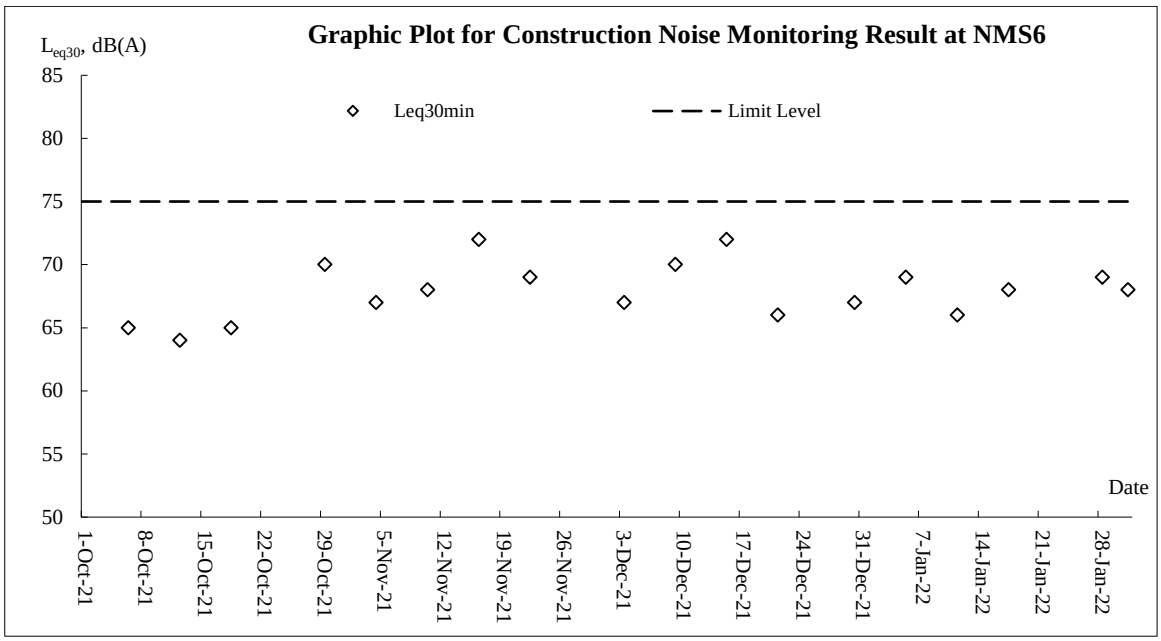
21-Jan-22
28-Jan-22


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-Oct-21
8-Oct-21
15-Oct-21
22-Oct-21
29-Oct-21
5-Nov-21
12-Nov-21
19-Nov-21
26-Nov-21
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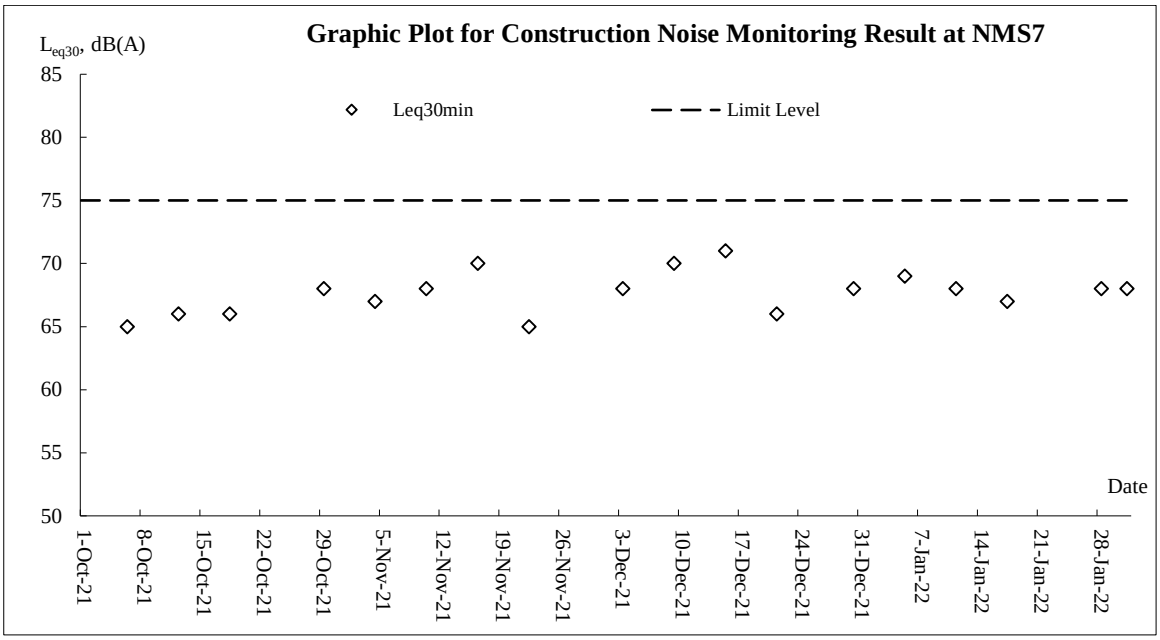
14-Jan-22
21-Jan-22
28-Jan-22


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-Oct-21
8-Oct-21
15-Oct-21
22-Oct-21
29-Oct-21
5-Nov-21
12-Nov-21
19-Nov-21
26-Nov-21
3-Dec-21
10-Dec-21
17-Dec-21
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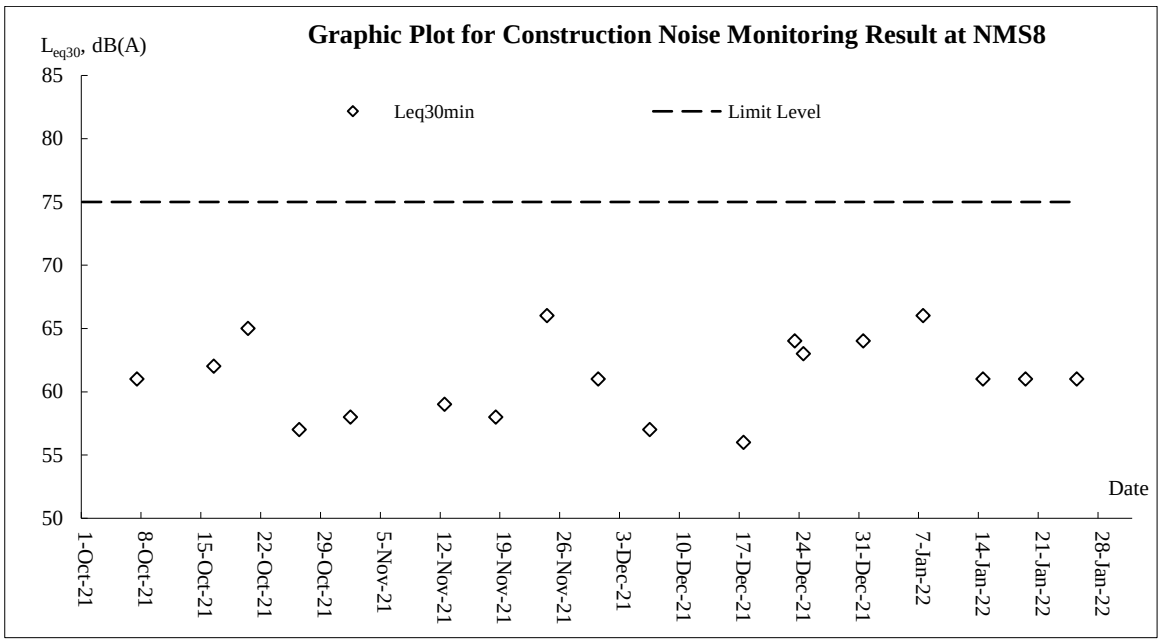
14-Jan-22
21-Jan-22
28-Jan-22


Graphic Plot for Construction Noise Monitoring Result at NMS8
Leq30, dB(A)
Leq30min
Limit Level
85
80
75
70
65
60
55
50
Date
1-Oct-21
8-Oct-21
15-Oct-21
22-Oct-21
29-Oct-21
5-Nov-21
12-Nov-21
19-Nov-21
26-Nov-21
3-Dec-21
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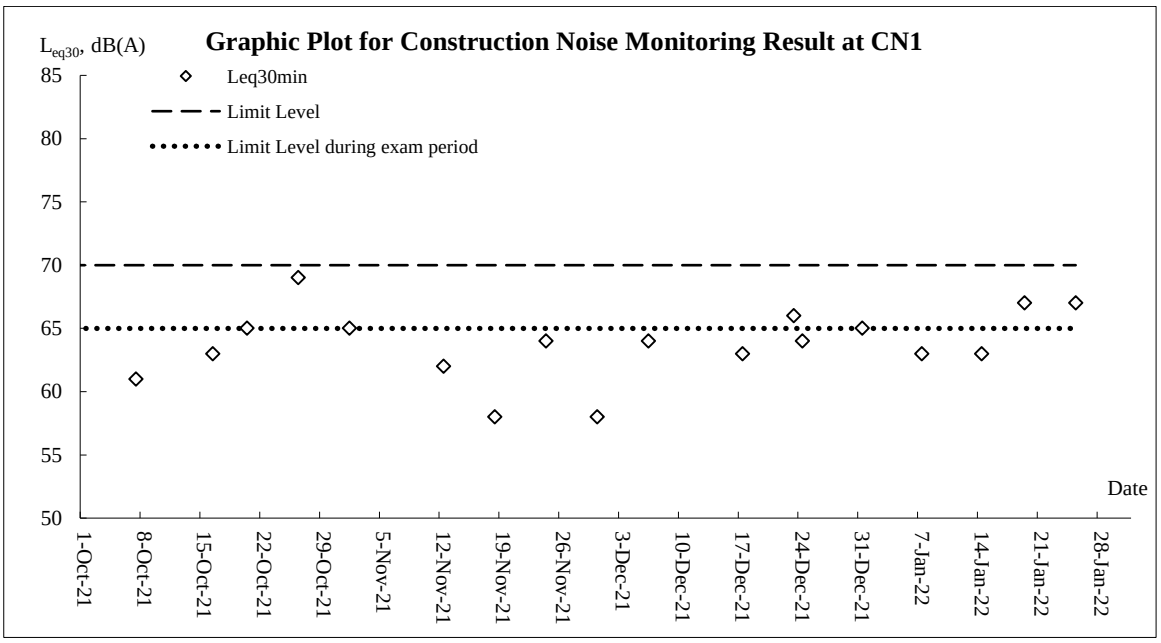
14-Jan-22
21-Jan-22
28-Jan-22


Graphic Plot for Construction Noise Monitoring Result at CN1
Leq30, dB(A)
Leq30min
Limit Level
Limit Level during exam period
85
80
75
70
65
60
55
50
Date
1-Oct-21
8-Oct-21
15-Oct-21
22-Oct-21
29-Oct-21
5-Nov-21
12-Nov-21
19-Nov-21
26-Nov-21
3-Dec-21
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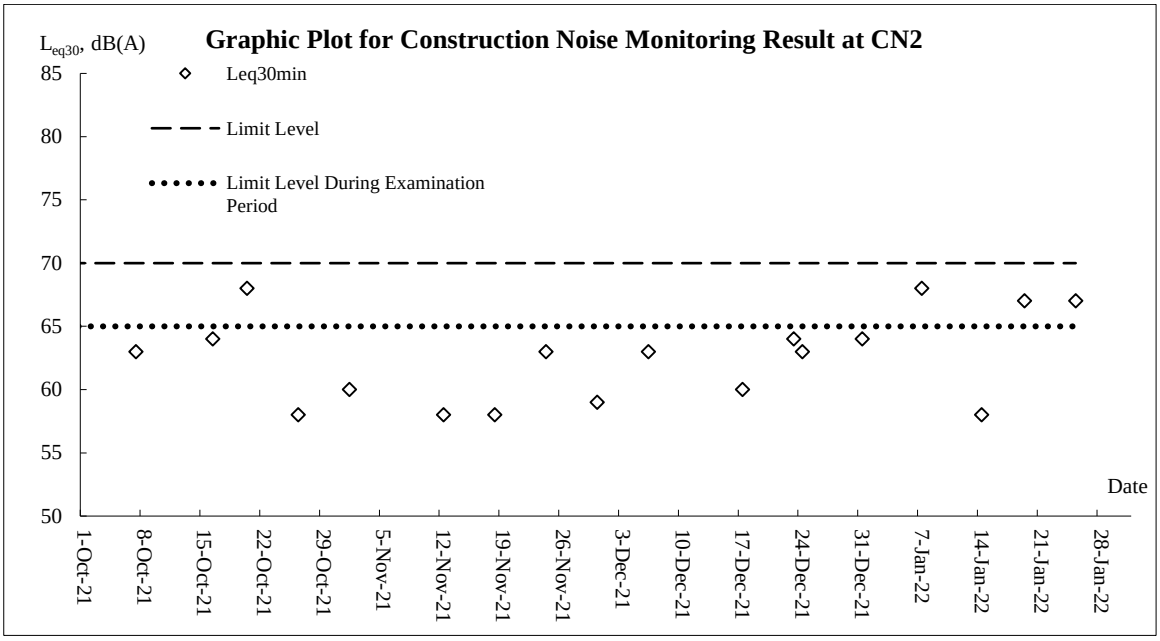
14-Jan-22
21-Jan-22
28-Jan-22


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-Oct-21
8-Oct-21
15-Oct-21
22-Oct-21
29-Oct-21
5-Nov-21
12-Nov-21
19-Nov-21
26-Nov-21
3-Dec-21
10-Dec-21
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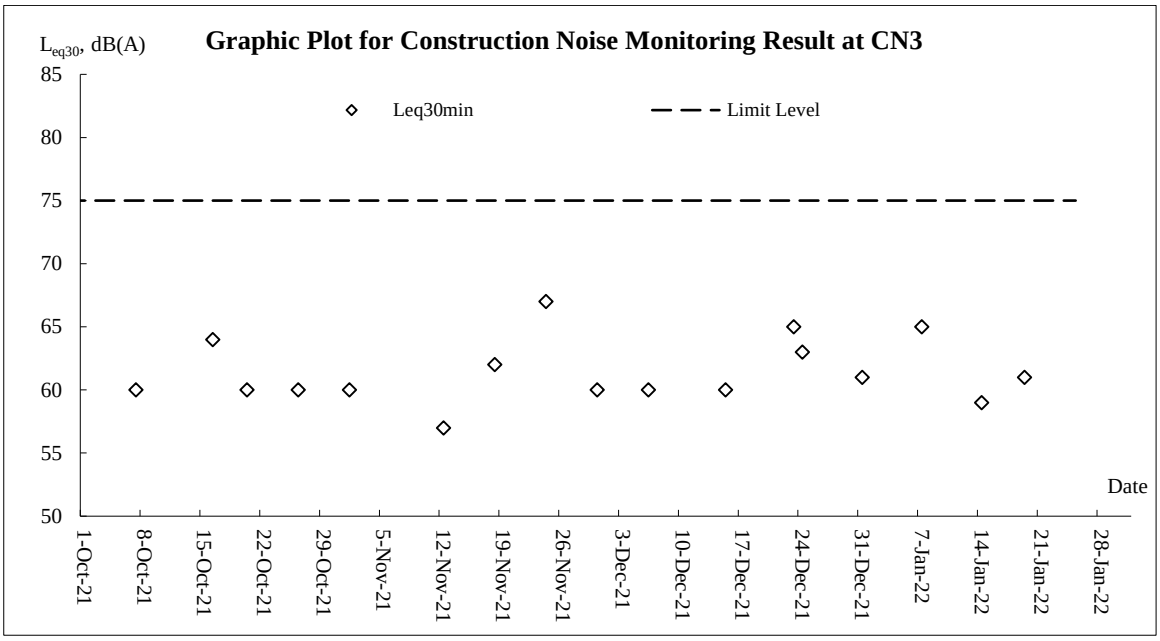
24-Dec-21
31-Dec-21
7-Jan-22
14-Jan-22
21-Jan-22
28-Jan-22


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-Oct-21
8-Oct-21
15-Oct-21
22-Oct-21
29-Oct-21
5-Nov-21
12-Nov-21
19-Nov-21
26-Nov-21
3-Dec-21
10-Dec-21
17-Dec-21
24-Dec-21
31-Dec-21
7-Jan-22
14-Jan-22
21-Jan-22
28-Jan-22

# 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-Jan-22 | Sat | Sunny periods in the afternoon. | 0 | 16.9 | 10.5 | E/SE | 71 |
| 2-Jan-22 | Sun | Moderate to fresh easterly winds | 0 | 18.6 | 9.5 | E/SE | 69 |
| 3-Jan-22 | Mon | Becoming cloudy tonight. | 0 | 18.1 | 12.2 | E | 72.2 |
| 4-Jan-22 | Tue | Mainly fine and dry in the afternoon. | 0 | 18.7 | 12.5 | E/SE | 67.5 |
| 5-Jan-22 | Wed | Mainly cloudy tonight. | Trace | 20.9 | 9.2 | E/SE | 72.5 |
| 6-Jan-22 | Thu | Moderate to fresh east to northeasterly winds. | 0 | 20.1 | 12 | E/SE | 72.5 |
| 7-Jan-22 | Fri | Mainly cloudy. | Trace | 18.1 | 13 | E/SE | 74.2 |
| 8-Jan-22 | Sat | Sunny intervals in the afternoon. | 0 | 17.1 | 10.5 | E/SE | 75 |
| 9-Jan-22 | Sun | Moderate east to northeasterly winds. | 0 | 18 | 7.5 | SE | 74.2 |
| 10-Jan-22 | Mon | Cool in the morning. | 0 | 17.9 | 10 | E/SE | 71 |
| 11-Jan-22 | Tue | Fine and dry. Moderate to fresh northerly winds | 1.2 | 15.4 | 9 | N/NW | 67.5 |
| 12-Jan-22 | Wed | Mainly cloudy and cool in the morning | 0 | 14.7 | 21.7 | E/SE | 64.7 |
| 13-Jan-22 | Thu | Becoming fine and dry in the afternoon. | Trace | 16.7 | 7 | N/NE | 60 |
| 14-Jan-22 | Fri | Mainly cloudy. | 0 | 15 | 11.7 | E | 63 |
| 15-Jan-22 | Sat | Moderate north to northeasterly winds. | 0 | 17.3 | 10.5 | E/SE | 71 |
| 16-Jan-22 | Sun | Sunny periods during the day. | 0 | 19.1 | 9.2 | E/SE | 72.5 |
| 17-Jan-22 | Mon | Moderate to fresh northeasterly winds | 0 | 16.6 | 13.7 | E/SE | 84 |
| 18-Jan-22 | Tue | Cool with one or two rain patches tonight. | 0.2 | 16.2 | 6 | E/SE | 83.7 |
| 19-Jan-22 | Wed | Mainly Fine. Moderate northeasterly winds. | 0 | 17.6 | 7 | SE | 64.5 |
| 20-Jan-22 | Thu | Cloudy with a few rain patches. | 0 | 17.1 | 11.2 | E/SE | 66 |
| 21-Jan-22 | Fri | Moderate to fresh easterly winds | 0 | 17.2 | 11.2 | W/NW | 86.7 |
| 22-Jan-22 | Sat | Moderate to fresh east to northeasterly winds | 0 | 17.2 | 10.5 | SE | 79.5 |
| 23-Jan-22 | Sun | Becoming cloudy. Sunny intervals tomorrow. | 0.1 | 19.4 | 8 | SE | 80.5 |
| 24-Jan-22 | Mon | Sunny periods during the day. | 1 | 19.5 | Maintenance | Maintenance | 86.2 |
| 25-Jan-22 | Tue | Moderate to fresh northeasterly winds | 0 | 18.5 | 13.5 | E/SE | 78 |
| 26-Jan-22 | Wed | Moderate to fresh easterly winds | Trace | 18.8 | 12.5 | E/SE | 80 |
| 27-Jan-22 | Thu | Becoming cloudy tonight. | Trace | 20 | 14.2 | SE | 82.5 |
| 28-Jan-22 | Fri | Mainly fine and dry in the afternoon. | Trace | 17.5 | 11.7 | E | 87.2 |
| 29-Jan-22 | Sat | Moderate to fresh easterly winds | 0.6 | 17.9 | 10.5 | N/NE | 79 |
| 30-Jan-22 | Sun | Sunny periods in the afternoon. | 0 | 15.5 | 8.7 | N/NE | 52.5 |
| 31-Jan-22 | Mon | Moderate to fresh easterly winds | Trace | 12.8 | 10.7 | N/NE | 66.7 |

# Appendix K

# Waste Flow Table

# Monthly Summary Waste Flow Table for 2022 (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 (see Note 8) | Disposed as Public Fill | Imported Fill | Metals (see Note 9) | 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 | 2.871 | 0.000 | 2.517 | 0.000 | 0.354 | 0.000 | 0.000 | 0.000 | 0.015 | 0.000 | 0.082 |
| Feb | 0.000 | | | | | | | | | | |
| Mar | 0.000 | | | | | | | | | | |
| Apr | 0.000 | | | | | | | | | | |
| May | 0.000 | | | | | | | | | | |
| Jun | 0.000 | | | | | | | | | | |
| Sub-total | 2.871 | 0.000 | 2.517 | 0.000 | 0.354 | 0.000 | 0.000 | 0.000 | 0.015 | 0.000 | 0.082 |
| Jul | 0.000 | | | | | | | | | | |
| Aug | 0.000 | | | | | | | | | | |
| Sep | 0.000 | | | | | | | | | | |
| Oct | 0.000 | | | | | | | | | | |
| Nov | 0.000 | | | | | | | | | | |
| Dec | 0.000 | | | | | | | | | | |
| Total | 2.871 | 0.000 | 2.517 | 0.000 | 0.354 | 0.000 | 0.000 | 0.000 | 0.015 | 0.000 | 0.082 |

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.

(8) The Inert C&D materials of reused in other Projects including glass materials.

(9) The C&D waste generation of metal including rechargable battery recycling.

Remarks: refer to Rock and AHM Record (Z:\04 SUPPORT WORK FOLDERS\F. ENVIRONMENTAL\4 - Implementation and Operation\4.4 - Documentation and its Control\11 - WFT, ULSD & Timber\Waste Flow Table\2017-07)

Name of Department : CEDD

Contract No. : NE/2016/05

## Monthly Summary Waste Flow Table for 2022 (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 | 0.02 | 0 | 0 | 0 | 0.02 | 0 | 0 | 0 | 0 | 0 | 0.05 |
| Feb | | | | | | | | | | | |
| Mar | | | | | | | | | | | |
| Apr | | | | | | | | | | | |
| May | | | | | | | | | | | |
| June | | | | | | | | | | | |
| Sub-total | 0.02 | 0 | 0 | 0 | 0.02 | 0 | 0 | 0 | 0 | 0 | 0.05 |
| July | | | | | | | | | | | |
| Aug | | | | | | | | | | | |
| Sept | | | | | | | | | | | |
| Oct | | | | | | | | | | | |
| Nov | | | | | | | | | | | |
| Dec | | | | | | | | | | | |
| Total | | | | | | | | | | | |

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 $m^3$.

# Monthly Summary Waste Flow Table for 2022 (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 (see Note 6) | 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 | 2.028 | 0.000 | 0.882 | 0.000 | 1.146 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.052 |
| Feb | | | | | | | | | | | |
| Mar | | | | | | | | | | | |
| Apr | | | | | | | | | | | |
| May | | | | | | | | | | | |
| Jun | | | | | | | | | | | |
| Sub-total | 2.028 | 0.000 | 0.882 | 0.000 | 1.146 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.052 |
| Jul | | | | | | | | | | | |
| Aug | | | | | | | | | | | |
| Sep | | | | | | | | | | | |
| Oct | | | | | | | | | | | |
| Nov | | | | | | | | | | | |
| Dec | | | | | | | | | | | |
| Total | 2.028 | 0.000 | 0.882 | 0.000 | 1.146 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.052 |

Notes:

(1) The performance targets are given in PS Clause 1.129 (4).

(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.

Contract No.: ED/2020/02

## Monthly Summary Waste Flow Table

| Month | Actual Quantities of Inert C&D Materials Generated Monthly | | | | | | Actual Quantities of C&D Wastes Generated Monthly | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total Quantity of Materials 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) | 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 '000 kg) | (in '000 kg) | (in '000 kg) | (in '000 $m^3$)* |
| **2021 Total** | **608.254** | **394.831** | **0.000** | **0.000** | **213.423** | **0.000** | **0.000** | **0.000** | **0.000** | **0.000** | **0.044** |
| **2022** | | | | | | | | | | | |
| Jan | 25.019 | 11.495 | 0.000 | 0.000 | 13.524 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.019 |
| Feb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Mar | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Apr | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| May | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| June | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| July | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Aug | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Sep | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Oct | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Nov | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Dec | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| **Accumulated Total (2021-2022)** | **633.273** | **406.326** | **0.000** | **0.000** | **226.947** | **0.000** | **0.000** | **0.000** | **0.000** | **0.000** | **0.063** |

*Remarks: Conversion factor for general refuse, 1 tonne = 2$m^3$

Name of Department : CEDD Contract No. : ED/2019/02

## Monthly Summary Waste Flow Table for 2022 (year)

| Month | Annual Quantities of Inert C&D Materials Generated Monthly | | | | | | Annual Quantities of C&D Materials 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 2) | 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 | 0.18 | 0 | 0 | 0 | 0.18 | 0 | 0 | 0 | 0 | 0 | 0.02 |
| Feb | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Mar | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Apr | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| May | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| June | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sub-total | 0.18 | 0 | 0 | 0 | 0.18 | 0 | 0 | 0 | 0 | 0 | 0.02 |
| July | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aug | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sept | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Oct | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Nov | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dec | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Total | 0.18 | 0 | 0 | 0 | 0.18 | 0 | 0 | 0 | 0 | 0 | 0.02 |

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

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

# 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 | Contract 4 | Contract 5 |
| **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 | 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 | 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 | Minimize dust impact at the nearby sensitive receivers | 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 | Contract 4 | Contract 5 |
| | 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 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, | | | | | | | | |

| 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 | Contract 4 | Contract 5 |
| | 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 Representative dust monitoring station | All construction sites where practicable | V | N/A | 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 airborne noise | Contractor | All construction sites where practicable | @ | V | V | @ | @ |
| S5.6.11 to S5.6.13 | Use of " Quiet " Plant and Working Methods. | Reduce the noise levels of plant items | Contractor | All construction sites where practicable | V | N/A | N/A | N/A | N/A |
| 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 | 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 | V | N/A |
| S5.6.19 | Sequencing operation of construction plants equipment. | Operate sequentially | Contractor | All construction | V | V | 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 | Contract 4 | Contract 5 |
| | | within the same work site to reduce the construction airborne noise | | ion sites where practicable | | | | | |
| 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 | 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 | V | N/A | N/A |
| **B** | **Water Quality Impact (Contraction Phase)** | | | | | | | | |
| S6.6.3 | Construction Runoff<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 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. | Control construction runoff | Contractor | All construction sites | @ | @ | @ | @ | 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 | Contract 4 | Contract 5 |
| | • 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 | | | | | | | | |

| 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 | Contract 4 | Contract 5 |
| | 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 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. | | | | | | | | |

| 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 | Contract 4 | Contract 5 |
| | • 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.<br><br>• 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 | Handling of site sewage | Contractor | All construction sites | V | V | 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 | Contract 4 | Contract 5 |
| | water quality impact after undertaking all required measure | | | | | | | | |
| S6.6.8 and 6.6.9 | Accidental Spillage<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 | V | V | V |
| S6.6.11-S6.6.14 | Groundwater from Contaminated Area<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 | Minimize contaminated groundwater impacts | Contractor | All construction sites | N/A | N/A | 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 | Contract 4 | Contract 5 |
| | 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 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 | <u>Good Site Practice</u><br>The following good site practices are recommended throughout the<br>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 | Minimize waste | Contractor | All construction | V | V | V | 女 | 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 | Contract 4 | Contract 5 |
| | (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. | generation during construction | | sites | | | | | |
| S8.5.3 | <u>Waste Reduction Measures</u><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 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. | Reduce waste generation | Contractor | All construction sites where practicable | V | V | V | V | V |
| S8.5.5 | <u>Storage of Waste</u><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 | V | V |
| S8.5.6 | <u>Collection and Transportation of Waste</u><br>The following recommendation should be implemented to minimize the impacts: | Minimize waste impacts from storage | 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 | Contract 4 | Contract 5 |
| | • 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. | | | | | | | | |
| S8.5.8 | <u>Excavated and C&D Material</u><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 | V | V |
| S8.5.15 | <u>Contaminated Soil</u><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 the potential environmental implications arising from the handling of contaminated materials refer to Land Contamination Section. | Remediate contaminated soil | Contractor | All construction sites where applicable | V | V | N/A | N/A | N/A |
| S8.5.17 | <u>Chemical Waste</u> | Control the chemical | Contractor | All construction | V | V | 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 | Contract 4 | Contract 5 |
| | • 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. | waste and ensure proper storage, handling and disposal. | | sites | | | | | |
| S8.5.18 | <u>General Waste</u><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 | V | @ |
| S8.5.19 | <u>Sewage</u><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 | 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 | 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 | | | | |
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| | | | | | Contract 1 | Contract 2 | Contract 3 | Contract 4 | Contract 5 |
| .10.7.10 | Construction phase in situ mitigation measures to minimize impacts on 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 | Minimize impacts on Hydrological condition and water quality of hillside watercourses. | Contractor | All construction sites | V | N/A | 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 | Contract 4 | Contract 5 |
| | 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. | | | | | | | | |
| 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);<br>• 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. | Minimize impacts on Hydrological condition and water quality of hillside watercourses. | Contractor | All construction sites | N/A | N/A | N/A | N/A | N/A |
| **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 | @ | 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 | N/A | 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 | Contract 4 | Contract 5 |
| 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 | N/A |
| 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 | 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 | V | N/A |

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** | **2** | 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 |
| **November 2019** | **4** | 0 |
| **December 2019** | 0 | 0 |
| **January 2020** | 0 | 0 |
| **February 2020** | 0 | 0 |
| **March 2020** | **4** | 0 |
| **April 2020** | **1** | 0 |
| **May 2020** | **1** | 0 |
| **June 2020** | **1** | 0 |
| **July 2020** | 0 | 0 |
| **August 2020** | 0 | 0 |
| **September 2020** | 0 | 0 |
| **October 2020** | 0 | 0 |
| **November 2020** | **1** | 0 |
| **December 2020** | **2** | 0 |
| **January 2021** | **1** | 0 |
| **February 2021** | 0 | 0 |
| **March 2021** | **2** | 0 |

| | | |
|---|---|---|
| **April 2021** | **1** | 0 |
| **May 2021** | 0 | 0 |
| **June 2021** | **1** | 0 |
| **July 2021** | **1** | 0 |
| **August 2021** | 0 | 0 |
| **September 2021** | **2** | 0 |
| **October 2021** | **0** | 0 |
| **November 2021** | **0** | 0 |
| **December 2021** | **0** | 0 |
| **January 2022** | **0** | 0 |
| **Overall Total** | **70** | **0** |

**Appendix M2 Complaint Log**

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|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 23-Mar-17 | 8-Jun-17 | On Tat Estate | 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 | 38/F of Yin Tat House (賢達樓), On Tat Estate | 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 (AUES) 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 | Shing Tat House 24/F | Resident of On Tat Estate | Construction noise | SPRO hotline | NA | Mr. Hsu Yau Wai (Tel no.9519 5663) 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 (AUES) 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 | Tat Yan House, Po Tat Estate | Resident of Po Tat Estate | Construction noise | EPD | EPD (ref.N08/RE/000193 73-17) | day time construciton noise of breakers (8am to 6pm) | Since these two complaints were forwarded by CEDD to ET on 31 August 2017 which way after the complaint dates. Investigation would be conducted based on the site | no comment by IEC on 3 Nov 2017 | TCS00864/16/300/F0093 |

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| 5 | 22-Jun-17 | 29-Aug-17 | Tat Yan House, Po Tat Estate | 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 | information by the Contractor of Contract 1 - NE/2016/01 (CWSTVJV) 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. | | TCS00864/16/300/F0093 |
| 6 | 15-Jul-17 | 29-Aug-17 | Tat Yi House, Po Tat Estate | Resident of Po Tat Estate | Construction noise | EPD | EPD (ref.N08/RE/000022479-17) | 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 | unknown | Dust | EPD | EPD (ref.N08/RE/000239 86-17) | 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 |

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| 8 | 2-Aug-17 | 29-Aug-17 | Chun Tat House, On Tat Estate | Resident of On Tat Estate | Construction noise | EPD | EPD (ref.N08/RE/000245 57-17) | 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 | Sau Mau Ping Estate Sau Nga House | Resident of Sau Mau Ping Estate | Construction noise | SPRO hotline | NA | The complainant is living at Sau Mau Ping Estate Sau Nga House (秀雅樓) 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. (Photo 1 & 2) 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 |

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| 10 | 21-Sep-17 | 13-Oct-17 | Sau Mau Ping Estate Sau Nga House and Sau Yee House | Resident of Sau Mau Ping Estate | Construction noise | EPD | EPD (ref.N08/RE/000310 74-17) | 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. | 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. (Photo 1 & 2) 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. | | TCS00864/16/300/F0088 |
| 11 | 27-Sep-17 | 13-Oct-17 | Chun Tat House, On Tat Estate | Resident of On Tat Estate | Construction noise | EPD | EPD (ref.N08/RE/000294 89-17) | The complainant questioned why there were 6 to 7 breakers operating in the monring 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. | | TCS00864/16/300/F0106 |
| 12 | 3-Oct-17 | 13-Oct-17 | Chun Tat House, On Tat Estate | Resident of On Tat Estate | Construction noise | EPD | EPD (ref. N08/RE/0003 2407-17) | 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 | | no comment by IEC on 30 Nov 2017 | TCS00864/16/300/F0106 |
| 13 | 25-Oct-17 | 26-Oct-17 | Tat Kwai House, Po Tat Estate | 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 | no comment by IEC on 15 Nov 2017 | TCS00864/16/300/F0100 |

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| | | | | | | | | | advised to enhance the dust mitigation measures particularly during dry season. | | |
| 14 | 6-Nov-17 | 7-Nov-17 | Chun Tat House, On Tat Estate | 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 開始傳出機器不停搽石的噪音(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 | Chi Tai House, On Tai Estate | 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 |

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| 16 | 1-Nov-17 | 14-Nov-17 | Shing Tat House, On Tat Estate | 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掘鐵噪音。 | As advised by the Contractor, the works that most likely induced the iron hammering noise to Shing Tat House shall be the rock breaking works to the hard rock of the Southeastern side of the Underground Stormwater Retention Tank. 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 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 13 Dec 2017 | TCS00864/16/300/F01110 |
| 17 | 25-Aug-17 | 26-Oct-17 | Sau Yee House, Sau Mau Ping Estate | Resident of Sau Mau Ping Estate | Construction Noise | EPD | EPD (ref.N08/RE/000277 38-17) | Night time construction noise of hammering (around 12AM) | As advised by CWSTVJV, there was a CNP (GW-RE0763-17) in force for the subject site for operation of generator and electric submersible water pump for the wastewater treatment plant and it is considered that abovementioned PMEs should not generate significant noise. Moreover, 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/F01114 |

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| 18 | 12-Sep-17 | 26-Oct-17 | Chun Tat House, On Tat Estate | 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/F01117 |
| 19 | 15-Dec-17 | 21-Dec-17 | Sau Yee House | 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/F01118 |
| 20 | 20-Dec-17 | 21-Dec-17 | On Tat Estate | Resident of On Tat Estate | Dust | EPD | NA | Resident of On Tat Estate complained that the traffic of construction vehicles generated dust problem and arouse air pollution to On Tat Estate. 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/F01121 |

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| 21 | 28-Dec-17 | 10-Jan-18 | Sau Yee House | 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* Thomas 先生表示居於秀茂坪邨秀義樓，指附近的安達臣道一個由土木工程拓展署管轄的石礦場不時於非允許時段(即晚上七時後至翌日早上)發出疑似打地基的轟轟聲巨響，最近一次就是今早(28/12)凌晨五時多再次聽到石礦場傳來聲響，將 Thomas 先生吵醒，懷疑有人刻意在無人監管下施工，更表示曾向環保署及土木工程署作出投訴，但環保署表示巡查後無發現在非允許時段有工程進行，而土木工程署則表示晚上七時後不會再進行工程。Thomas 指石礦場經常在晚上八至十二時，或凌晨時份發出巨響，對附近居民已造成很大的滋擾，要求相關部門儘快作出跟進及回覆。 | 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 result was below the Limit Level under the EM&A Programme. Moroever, 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. | no comment by IEC on 8 Feb 2018 | TCS00864/16/300/F0129 |
| 22 | 15-Jan-18 | 15-Jan-18 | Chun Tat House | 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 | no comment by IEC on 8 Feb 2018 | TCS00864/16/300/F0130 |

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| | | | | | | | | | project did not breach the Noise Control Ordinance. | | |
| 23 | 1-Feb-18 | 2-Feb-18 | Chi Tai House of On Tai Estate | 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 | Shing Tat House of On Tat Estate | 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 | no comment by IEC on 28 Feb 2018 | TCS00864/16/300/F0140 |

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| | | | | | | | | | 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. | | |
| 25 | 28-Feb-18 | 28-Feb-18 | Shing Tat House of On Tat Estate | 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掠石仔噪音滋擾, 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 |

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| 26 | 11-Apr-18 | 12-Apr-18 | Him Tat House of On Tat Estate | Resident of Him Tat House | Construction Noise | SPRO mobile | 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. | | | |
| 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 | no comment by IEC on 30 July 2018 | TCS00864/16/300/F0174b |

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| | | | | | | | | | 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. | | |
| 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 | 吳先生於 2018 年 8 月 22 日致電 1823 熱線投訴，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。 *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 |

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| 31 | 28-Aug-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/F01 97a |
| 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/F02 01 |
| 33 | 24-Oct-18 | 25-Oct-18 | E3 | Kwun Tong DC member Ms. So Lai-ch | 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 | no comment by IEC on 23 Nov 2018 | TCS00864/16/300/F02 09a |

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| | | | | un | | | | | 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. | | |
| 34 | 12-Nov-18 | 13-Nov-18 | Anderson Road Quarry Site | Resident of Ching Tat 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 |

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| 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 |
| 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 |

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| 37 | 9-Dec-18 | 12-Dec-18 | Anderson Road Quarry Site | Undisclosed | Construction noise | 1823 | 2-492790730 5 | 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 | 2-494807412 7 | 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 | waste water | 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 | no comment by IEC on 29 Mar 2019 | TCS00864/16/300/F0248a |

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| | | | | | | | | | 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. | | |
| 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 |
| 41 | 15-Feb-19 | 25-Feb-19 | Anderson Road Quarry Site | Undisclosed | noise | 1823 | 2-494807412 7 | 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 |

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| 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 |

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| 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/F02 64 |
| 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. The Investigation report is underway by ET. | no comment by IEC on 21 August 2019 | TCS00864/16/300/F03 01a |

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| 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. The IR is under reviewed by IEC. | 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 |

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| 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. | no comment by IEC on 13 Nov 2019 | TCS00864/16/300/F0326a |
| 49 | 5-Nov-19 | 11-Nov-19 | Work Area Portion 2&3 (lift tower construction work at Hiu Kwong Street) | NA | Noise | EPD | NA | A public complaint was received by EPD relating to the noise generated from breaking work of lift tower construction work at Hiu Kwong Street (Portion 2&3). | 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. | no comment by IEC on 27 Dec 2019 | TCS00864/16/300/F0332a |

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| 50 | 7-Nov-19 | 11-Nov-19 | Work Area Portion 6 | Mr. Cheng | Noise | EPD | NA | 寶達邨居民鄭先生，表示將軍澳隧道出口工程，日間噪音嚴重，8:30-17:00，幾部幾同時開動，而且無防音欄，之前是有，現要求環保署向對方反映改善 | 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. | no comment by IEC on 27 Dec 2019 | TCS00864/16/300/F0333a |
| 51 | 10-Nov-19 | 12-Nov-19 | Underpass | Undisclosed | Noise | EPD | NA | On 10 November 2019<br>投訴人為馬游塘村居民，自本年初寶林路開展掘隧道工程，每天噪音不斷，由 8 至 6，由於欠缺遮擋，聲音直向 4 至 22 號村屋，將來通車，相信噪音不只 8-6，現懇請環保署為本村居民正式評估，並向政府提出村民困擾，考慮盡快設置隔音屏。<br><br>On 11 November 2019<br>寶琳路近馬游塘村開掘隧道的工程地盤每日 8am-6pm 發出噪音，欠缺遮擋，聲音影響馬游塘村 4-22 號村屋。希望政府部門<br>1.調查地盤有否違規<br>2.實施減音措施以減低對附近居民的滋擾 | In our investigation, CWSTVJV had implemented the noise mitigation measures to reduce to noise impact to the public. Since the works were conducted within approved normal hours with implementation of noise mitigation measures, there were no violation of legislative requirement. For the complainant's concern on the operation noise after commencement of the project, it is out of the scope of the EM&A programme and the relevant department will follow up the concern. | no comment by IEC on 30 Dec 2019 | TCS00864/16/300/F0337 |

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| 52 | 11-Nov-19 | 20-Nov-19 | Construction site near on Tai Estate Ancillary Facilities Building on On Sau Road | Mr. Wong (resident of Yung Tai House of On Tai Estate) | Noise | 1823 | ref. 2-597630318 3 | 黃先生投訴安秀道安泰邨服務設施大樓附近掘路工程已持續數年還未完成，並投訴其經常發出噪音滋擾，要求部門跟進。 On 22 November 2019, the project hotline received a call from the same complainant reported on the noise nuisance near On Sau Road and On Yan Street. He suggested to speed up the noise making works by intensely concentrate the excavation works during day time. No intermittence is suggested in order to speed up the works and to avoid waste of manpower. | In our investigation, CWSTVJV had implemented the noise mitigation measures to reduce to noise impact to the public. However, in response to the complaint, the Contractor was advised to enhance the performance of the temporary noise barriers such as increase the coverage of the noise barrier. Since the works were conducted within normal working hours with implementation of noise mitigation measures, there were no breaches of legislative requirement. | no comment by IEC on 27 Dec 2019 | TCS00864/16/300/F0338a |
| 53 | 5-Mar-20 | 6-Mar-20 | Tunnel work of Anderson Road Quarry Site (the Underpass) | Resident of On Tat Estate | Noise | EPD | NA | 本人是安達邨居民，隧道工程在安達臣的工程，施工至今嘈音間中改善，最近又有嘈音出現，仲係重低音，希望能加裝隔音設備，工程不知何時將嘈音減至最低 。1. A public complaint was received by EPD on 5 March 2020 regarding the construction noise generated from the tunnel work of the subject site. The complainant mentioned that the noise from construction was improved before but it became serious recently. | In our investigation, CWSTVJV had implemented the noise mitigation measures to reduce to noise impact to the public. In response to the complaint, CWSTVJV had immediately installed a layer of acoustic mat at boundary of System A. Since the works were conducted within approved normal hours with implementation of noise mitigation measures, there were no violation of legislative requirement. | no comment by IEC on 1 Apr 2020 | TCS00864/16/300/F0357a |

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| 54 | 4-Mar-20 | 17-Mar-20 | Near Hiu Ming Street Playground (E8) | Undisclosed | Noise | 1823 | ref. 3-628323717 1 | 投訴人投訴有關秀茂坪邨秀安樓附近有兩個地盤 ， 地盤由星期一至五，每天早上約 9AM-5PM 持續不斷發出強烈的嘈音，投訴人表示地盤是在曉明街藍球場旁邊的位置(投訴人未能告知確實街號) ，因此要求部門盡快回覆及告知有關情況。 A public complaint was received by 1823 on 4 March 2020 regarding the construction noise. The complainant mentioned that there were two construction sites near Hiu Ming Street Playground generated construction noise continuously during 9AM to 5PM on weekdays. | In our investigation, CW-CMGCJV had implemented the noise mitigation measures for the works at upper section of E8 near Hiu Yuk Path and no noise impact was observed and anticipated in Hiu Ming Street based on the site activities and our inspection record. It is considered that the complaint is likely related to another construction site located near Hiu Ming Street Playground and not caused by the works under the Project. Since the works were conducted within approved normal hours with implementation of noise mitigation measures, there were no violation of legislative requirement. | no comment by IEC on 15 Apr 2020 | TCS00864/16/300/F0359a |
| 55 | 23-Mar-20 | 23-Mar-20 | Near Lin Tak Road (E11) | Undisclosed | Water Quality | Project hotline | NA | 藍田居民梁先生反映在將軍澳道往連德道天橋的大彎位，其中有一個車輛出入口每日早上八時左右不時有泥水從地盤流出路面，估計泥水是清洗工程車輛所致，令梁先生的車輛每次駛經時被濺濕及弄污，請問有何措施改善問題？ A public complaint was received by project hotline on 23 March 2020 regarding overflow of muddy water from the construction site. The complainant mentioned that muddy water came out from site entrance, which spotted on his car, at 8am every morning. | In our investigation, the wheel washing facilities at site exit of E11 is one of the dust quality mitigation measures conducted by CW-CMGCJV and corresponding measure was implemented to prevent overflow of wastewater out of the site. In our recent site inspection, no outflow of muddy water from the site was observed and the condition of concerned Lin Tak Road was satisfactory. It is considered that the complaint was unlikely due to the project. | no comment by IEC on 15 Apr 2020 | TCS00864/16/300/F0360a |

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| 56 | 17-Mar-20 | 19-Mar-20 | Anderson Road Quarry Site | Resident of Yan Tat House | Noise | Project hotline | NA | 許有為區議員接獲安達邨仁達樓 2613 室居民反映，安達臣道石礦場發展用地工程噪音持續兩年，要求工程團隊下周派員到有關單位視察，並採取可行的噪音緩解措施。許有為區議員要求陪同視察。 A public complaint was received by hotline on 17 March 2020 regarding the construction noise generated from the Anderson Road Quarry Site. The complainant mentioned that the construction noise generated from the Anderson Road Quarry Site had been continued for two years. | In our investigation, CW-CMGCJV has implemented noise mitigation measures to reduce the noise impact and nuisance to the public. However, to eliminate the inconvenience caused to the nearby residents, CW-CMGCJV was advised to further adopt good practices on mitigating construction noise to reduce the noise impact to the nearby residents. 5. Since 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. Nevertheless, as the construction site is close to the residential area, CW-CMGCJV was reminded to implement the mitigation measures as far as practicable as recommended in the EM&A Programme. | no comment by IEC on 11 May 2020 | TCS00864/16/300/F0361a |
| 57 | 1-Apr-20 | 20-Apr-20 | Work Area Portion 2 | Undisclosed | Noise | 1823 | NA | 觀塘秀茂坪紀念公園傍及曉明街的地盤，共兩個地盤，是地政總署管轄的。投訴人表示已被工程噪音滋擾了兩年多; 另外投訴人得知完工時間要到 2021 年, 投訴人不明白為何工程頭尾要 3 年多時間. 要求地政總署直接以電郵回覆工程長的原因及有沒有措施解決地盤發出的噪音。 A public complaint was received by 1823 on 1 April 2020 and subsequently transmitted to Environmental Team (ET) on 20 April 2020, regarding the noise nuisance generated from the | 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. However, 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 | no comment by IEC on 7 May 2020 | TCS00864/16/300/F0366a |

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| | | | | | | | | construction site in Hui Ming Street. The complainant concerned about the slow progress and implementation of noise mitigation measures to alleviate the noise impact arising from the construction work. | as far as practicable as recommended in the EM&A Programme. | | |
| 58 | 11-May-20 | 12-May-20 | Work Area Portion 2 | Undisclosed | Noise | Project hotline | NA | 陳先生住於翠楊樓 17 樓，投訴對面鑽石工程產生噪音對母親健康構成影響，現查詢完工日期、噪音監控標準及措施。 A public complaint was received by Project Hotline on 11 May 2020 regarding the noise generated from rock breaking work from a construction site opposite to Tsui Yeung House, which affecting his mother ' s health. The complainant enquired about the completion date of construction work, construction noise level standard and implementation of noise mitigation measures on site. | In our investigation, Kwan On has enhanced the noise mitigation measures to reduce the noise impact to the nearby resident. Based on the noise measurement result, the construction noise was reduced to acceptable level after the additional noise mitigation measures in place. Nevertheless, Kwan On was reminded to continually implement the noise mitigation measures as far as practicable in the remaining work. The performance of noise mitigation measures will keep in view by ET in subsequent site inspection | no comment by IEC on 28 May 2020 | TCS00864/16/300/F0370a |

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| 59 | 18-Jun-20 | 23-Jun-20 | Anderson Road Quarry Site, System B | Undisclosed | Noise | EPD | NA | A public complaint was received by EPD on 18 June 2020 regarding the noise generated from rock breaking by machinery before 7pm from construction site near Hau Tat House. The complainant understood that the Contractor could carry out construction works, other than percussive piling, before 7pm under the CNP and hoped that the Contractor could arrange the noisy construction works to be carried out before 6pm. According to the information provided by the complainant, it is suspected complaint location would be Anderson Road Quarry Site, System B. | In our investigation, the Contractor has implemented noise mitigation measures to reduce the noise impact and nuisance to the public. Since 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. Nevertheless, as the construction site is close to the residential area, the Contractor was reminded to implement the mitigation measures as far as practicable as recommended in the EM&A Programme | no comment by IEC on 17 July 2020 | TCS00864/16/300/F0391a |
| 59# | 23-Jul-20 | 24-Jul-20 | Anderson Road Quarry Site near On Tat Estate | Undisclosed | Noise | EPD | NA | A public complaint was received by EPD on 23 July 2020 regarding the construction noise generated from the use of PME at Anderson Road Quarry Site near On Tat Estate at 6:30am (restricted hours). He/ she requested relevant department to follow up. | In our investigation, CWSTVJV had restricted the use of PME before 7am. There was no construction work and use of PME during the restricted hours. Since the works were conducted within approved normal hours with implementation of noise mitigation measures, there were no violation of legislative requirement. Nevertheless, as the construction site is close to the residential area, CWSTVJV was reminded to implement the mitigation measures as far as practicable as recommended in the EM&A Programme | no comment by IEC on 25 August 2020 | TCS00864/16/300/F0401 |

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| 60 | 14-Nov-20 | 18-Nov-20 | Near Hiu Ming Street Playground (E8) | Undisclosed | Noise | 1823 | NA | A public complaint was received by 1823 on 14 November 2020 regarding the construction noise. The complainant mentioned that there was piling works at Hiu Ming Street Playground, generating huge noise during 9AM to 10AM on 14 November 2020. He/she requested relevant department to follow up | In our investigation, there was no noise impact was observed and anticipated in Hiu Ming Street based on the site activities and our inspection record. Since the works were conducted within approved normal hours with implementation of noise mitigation measures, there were no violation of legislative requirement | no comment by IEC on 4 January 2021 | TCS00864/16/300/F0424 |
| 61 | 4-Dec-20 | 7-Dec-20 | Opposite to On Tai Estate – lower portion of Road L4 | Undisclosed | Dust | EPD | NA | A public complaint was received by EPD on 4 December 2020 regarding the dust impact. The complainant mentioned that the construction site opposite to On Tai Estate had dust emission problem due to lack of water spraying. He/she requested relevant department to follow up | In our investigation, CWSTVJV has implemented dust mitigation measures to eliminate the inconvenience caused to the nearby resident. In view of the potential traffic dust impact and implementation of dust mitigation measures, it is considered that the complaint was not valid to the Project | no comment by IEC on 4 January 2021 | TCS00864/16/300/F0434 |
| 62 | 3-Dec-20 | 7-Dec-20 | Ma Yau Tong Village (East Portal) | Undisclosed | Noise and dust | 1823 & EPD | 3-657414101 7 | A public complaint was received by 1823 and EPD on 14 November 2020 regarding the construction dust and noise impact arising from the project. There were acoustic mats erected on the slope of East Portal, however, the complainant enquired about effectiveness of the noise barriers with dozens of 15 cm "X"-shaped cuts. Moreover, there was lack of water sprinkling on the site and fugitive dust was blowing to the village | In our investigation, CWSTVJV had provided the dust and noise mitigation measures to minimize the dust and noise impact to the resident nearby. To response the concern from the complainant, as enhancement noise measure, the Contractor extended the noise barrier to encircle noisy activity. 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 4 January 2021 | TCS00864/16/300/F0435 |

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| 63 | 7-Jan-21 | 7-Jan-21 | System B | Resident of Yan Tat House | Noise | Project hotline | NA | A public complaint was referred by district Councillor Mr. HSU Yau-wai and received by project hotline on 7 January 2021 regarding the construction noise. The complainant mentioned that the construction site next to SKH St. John's Tsang Shiu Tim Primary School generated noise problem and she requested relevant department to follow up. | In our investigation, the Contractor has implemented noise mitigation measures to reduce the noise impact and nuisance to the public.6. Since 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. Nevertheless, as the construction site is close to the residential area, the Contractor was reminded to implement the mitigation measures as far as practicable as recommended in the EM&A Programme. | no comment by IEC on 19 July 2021 | TCS00864/16/300/F04 41 |
| 64 | 18-Mar-21 | 18-Mar-21 | Anderson Road Quarry Site (between On Tat Estate and On Tai Estate) | Undisclosed | Noise | 1823 & EPD | NA | A public complaint was received by 1823 and referred by EPD on 18 March 2021 regarding the construction noise generated from construction works at Anderson Road Quarry Site between On Tat Estate and On Tai Estate. The complainant expressed that construction works of the site started from 6:45am everyday which causing noise disturbance to the nearby resident and he/ she requested relevant department to follow up | In our investigation, CWSTVJV had restricted the use of PME before 7am. There was no construction work and use of PME during the restricted hours and there should not be any non-compliance of Noise Control Ordinance. Nevertheless, as the construction site is close to the residential area, CWSTVJV was reminded to implement the mitigation measures as far as practicable as recommended in the EM&A Programme | no comment by IEC on 1 April 2021 | TCS00864/16/300/F04 54 |
| 65 | 1-Apr-21 | 1-Apr-21 | Construction site near SKH St. John's Tsang Shiu Tim Primary | Undisclosed | Noise | EPD | NA | A complaint was received by EPD and referred to CEDD on 1 April 2021 regarding the construction noise. The complainant mentioned that piling work was conducted at construction site near SKH St. John's Tsang Shiu Tim Primary School in recent week which generated noise problem. | In our investigation, the Contractor has implemented noise mitigation measures to reduce the noise impact and nuisance to the public. Since 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. Moreover, the | no comment by IEC on 19 July 2021 | TCS00864/16/300/F04 58a |

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| | | | School (System B under Contract 3) | | | | | Moreover, there were no noise mitigation measures provided in the construction site | Contractor has adopted noise mitigation measures to minimise noise impact to the public. Since the construction site is close to the residential area, the Contractor was reminded to implement the mitigation measures as far as practicable as recommended in the EM&A Programme | | |
| 66 | 28-Mar-21 | 30-Mar-21 | Anderson Road Quarry Site (between On Tat Estate and On Tai Estate) | Resident of Tai Fung House of On Tai Estate | Noise | EPD | K13/RE/0000 7086-21 | A public complaint was received by EPD on 28 March 2021 regarding the construction noise generated from construction works at Anderson Road Quarry Site until 9pm on Monday to Saturday. Moreover, the complaint concerned about the construction noise heard on 28 March 2021 which was a Sunday. | In our investigation, CWSTVJV had followed that CNP for work during restricted hour and there should not be any non-compliance of Noise Control Ordinance. Nevertheless, some site areas had been handed over to other contract and construction noise generated from others is not controlled by the project. As a reminder, CWSTVJV should implement the mitigation measures as far as practicable as recommended in the EM&A Programme. | no comment by IEC on 22 April 2021 | TCS00864/ 16/300/F04 59 |
| 67 | 11-Jun-21 | 11-Jun-21 | Anderson Road Quarry Site | Resident of Chi Tat House, On Tai Estate | Noise | EPD | EPD Ref.: 13208-21 | A public complaint was received by EPD on 11 June 2021 and complained about noise nuisance from multiple construction sites on Anderson Road Quarry Site. The complainant stated that there were noise nuisances from different construction sites from 0800 am to 1800 pm from Monday to Saturday without adequate noise mitigation measures. On 17 June 2021, the complainant added that the noise was generated from rock breaking works in front of Chi Tai House (not from the housing sites near | 6. In our investigation, CWSTVJV had implemented the noise mitigation measures to reduce to noise impact to the public. In response to the complaint, CWSTVJV had immediately installed a layer of acoustic barrier at boundary of concern works area. Since the works were conducted within approved normal hours with implementation of noise mitigation measures, there were no violation of legislative requirement. | no comment by IEC on 19 July 2021 | TCS00864/ 16/300/F04 78a |

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| | | | | | | | | the Tai Sheung Tok slope) and no mitigation measure was implemented for the rock breaking works. | | | |
| 68 | 20&21/June/21 | 23-Jul-21 | Anderson Road Quarry Site | DSD | Water Quality | EPD | EPD Ref.: 13208-21 | EPD received complaints from DSD on 20 and 21 July 2021 concerning about discharge of muddy water as found on Po Lam Road and at the drainage facility near Tin Hau temple. | In our investigation, CWSTVJV had implemented the water quality mitigation measures to minimise the impact arising from the construction site. In view of the site condition and inclement weather condition on the complaint days, it is considered that the complaints raised by DSD were unlikely due to the C1 Project. Nevertheless, CWSTVJV was advised to closely monitor the discharge quality to avoid non-compliance of water quality happened in the construction site. Moreover, to cope with the adverse weather condition in wet season, CWSTVJV should regularly review the drainage plan as needed. | no comment by IEC on 6 August 2021 | TCS00864/16/300/F0485b |
| 69 | 14&16/Sep/21 | 15-Sep-21 | Anderson Road Quarry Site | DSD | Water Quality | EPD | NA | EPD received complaints from DSD on 14 Sep 2021 and 16 Sep 2021 concerning about discharge of muddy water as found at the catchpit SCH4003250 near Po Lam Road and catchpit SSH4001400 near Po Tat Tin Hau Temple. | In our investigation, CWSTVJV had implemented the water quality mitigation measures to minimise the impact arising from the construction site. However, there were incidents of seepage of silty water at Q2 and Q3 and rectified actions were undertaken immediately. Having investigated, the incidents were considered very short term and would not generate large amount of muddy water. In view of the inclement weather condition and there were other major sources, it is considered that the complaints raised by DSD were not fully contributed byC1 Project. | no comment by IEC on 6 October 2021 | |

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| | | | | | | | | | Nevertheless, CWSTVJV was advised to closely monitor the discharge quality to avoid non-compliance of water quality happened in the construction site. Moreover, to cope with the adverse weather condition in wet season, CWSTVJV should regularly review the drainage plan as needed. | | |
| 70 | 23/Sep/21 | 29-Sep-21 | Anderson Road Quarry Site | CEDD & EPD | Noise | CEDD &EPD | | A public complaint was referred by 1823 to both CEDD and EPD on 23 September2021. The complainant stated that the construction works at Anderson Road Quarry Site started before 7am, which generated construction noise and affecting the upper floor resident of On Tat Estate. EPD have contacted the complainant and clarify that the concerned about construction dust and daytime construction noise after 7am. | Our investigation revealed that there was no construction works under the Project undertaken during the concerned period by the complainant, and there were other concurrent contracts on Anderson Road Quarry Site and the contribution noise may be related to others. Therefore, it is considered that the noise complaint was unlikely to be related to the works under the Project. Nevertheless, CWSTVJV was reminded to properly maintain the noise mitigation measures as far as practicable considering the construction site is relatively close to residential area. | No comment by IEC on 15 November 2021 | |

# Appendix N

# Implementation Status for Water Quality Mitigation Measures

**Water Quality Mitigation Measure**



Paving for exposed slope to reduce dust dispersion & mitigate the silty runoff generation at Q1.



Impermeable cover for slope at System A.



Q1. Wastewater treatment facility 30 cu.m Sedimentation Tank + AquaSed of 15 cu.m per hour + WETSEP



Q4. Wastewater treatment facility Temporary Water Reservoir 150 cu.m + AquaSed of 60 cu.m per hour



Q6: Wastewater treatment facility 24 cu. m.




Q7. Wastewater treatment facility 30 cu.m Sedimentation Tank + AquaSed of 60 cu.m per hour



Q9. Two nos. of 30 cu.m Sedimentation Tank + AquaSed of 60 cu.m per hour