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 (MARCH 2022)

PREPARED FOR
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT (CEDD)

Date	Reference No.	Prepared By	Certified By
26 April 2022	TCS00864/16/600/R0539v2	Nicola Hon (Environmental Consultant)	Tam Tak Wing (Environmental Team Leader)

Version	Date	Remarks
1	19 April 2022	First Submission
2	26 April 2022	Amended against IEC's comment

ANEWR

Civil Engineering and Development Department
East Development Office
8/F, South Tower, West Kowloon Government Offices
11 Hoi Ting Road
Yau Ma Tei
Kowloon

Your reference:

Our reference: HKCEDD10/50/107970

Date: 28 April 2022

Attention: Mr Lam Sai Wing, Sam

BY POST

Dear Sirs

Agreement No.: NTE 08/2016
Independent Environmental Checker for Development of
Anderson Road Quarry Site – Site Formation and Associated Infrastructure Works
Monthly Environmental Monitoring and Audit Report (March 2022)

We refer to the emails of 19 and 26 April 2022 from Action-United Environmental Services and Consulting attaching a Monthly Environmental Monitoring and Audit Report (March 2022) for the captioned project.

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

Should you have any queries, please do not hesitate to contact the undersigned or our Mr Frankie Yuen on 2618 2831.

Yours faithfully
ANEWR CONSULTING LIMITED

James Choi
Independent Environmental Checker

CPSJ/LCCR/YCFF/lsmt

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ISO 9001 : 2015
Certificate No.: CC 3988

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 **60th** monthly EM&A report presenting the monitoring results and inspection findings for the period from **1 to 31 March 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**	**90**
	24-hour TSP	**4**	**20**
Construction Noise	$L_{eq(30min)}$ Daytime for Contract NE/2016/01	**7**	**36**
	$L_{eq(30min)}$ Daytime for Contract NE/2017/03	**3**	**18**

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, one environmental complaint was received regarding the water quality for Contract 1.

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 **1, 10, 15, 22 and 29 March 2022** in which IEC joined the site inspection with SSEMC on **10 March 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 **3, 9, 16, 23 and 30 March 2022** in which IEC joined the site inspection on **23 March 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 **4, 11, 18 and 25 March 2022** in which IEC joined the site inspection with SSEMC on **11 March 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 **2, 9, 16, 24 and 30 March 2022** in which IEC joined the site inspection with SSEMC on **24 March 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 **3, 10, 17, 21 and 31 March 2022** in which IEC joined the site inspection with SSEMC on **21 March 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.

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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 **60th** monthly EM&A report presenting the monitoring results and inspection findings for the period from **1 to 31 March 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*

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 4 are 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 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.
- Soil nailing works at Slope A3 complete.
- 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 95% 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 and install ducting pipes and draw pits and installation of k1 kerb completed
- 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
- Installation of detector loop at Po Lam Road in progress

Internal Road L4, RWA18, RWA12, Noise Barrier and Pedestrian Connectivity System A (PC System A):

- Filling grade 200 completed.
- Noise barriers RC and steel structure completed & backfill complete.

- DN300 fresh watermain, NS125 salt watermain and fibre optic cable laying CHC-10 to CHC390 completed. Pressure test and swabbing for CHC-10 to CHC390 complete.
- Laying wearing course of flexible pavement complete.
- Excavation and installation of road lighting ducting and drawpits complete.
- K1 kerb installation at CH130 to CH440 complete.
- Laying subbase layer for footpath at CH180 to CH430 complete.
- Paving works at footpath at CH100 to CH430 complete.
- Construction of mass concrete and u-channel in front of noise barrier complete from Bay 1 to Bay 33.
- Hand railing installation at mass concrete in front of noise barrier completed.
- Replacement of existing downpipes connecting to new as-built catchpit completed
- Kerb installation and road base bituminous laying at Ch495- Ch565 complete.
- Concrete pavement laying work at Ch495- Ch565 in progress.

Retaining Wall RWA18

- Storm drain & manhole M35-4 to S007C, R426 to M35-4 BD and R429 to M35-4BD complete, Gully of S002 to S007B & R426 to R429 complete.
- Construction of DN 450 Sewage Pipe from existing manhole to B223 complete, Manhole B223 to B229a complete
- Laying of wearing course of flexible pavement at CH100 to CH130 complete.
- K1 kerb installation at CH100 to CH130 complete.
- Additional buttress wall complete.
- Installation of steel parapet at RWA18 complete.
- Traffic controller relocation for signalized junction completed.
- Installation of type 2 railing at junction of Road L4 and On Sau Road complete.
- Paving works at junction of Road L4 and On Sau Road complete.
- U-channel construction between SC42a to existing catchpit complete.
- Concrete apron between U-channel and existing slope completed (CH100 to CH395).

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 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 complete.

- 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 complete.
- 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
- Drainage works inside boundary of Pumping Station in progress.

Artificial Flood Attenuation Lake

- East side and west side of concrete lining at Lake bottom complete. Remaining part (near Bay 50-51) completed.
- Laying granular bed at remaining parts (center) of Lake bottom complete.
- Laying HDPE membrane at center of Lake bottom completed.
- Retaining wall base slab complete and stem wall complete.
- Whole Treatment Plant construction complete.
- Drainage work at hill side complete. To continue the remaining part(S114 and drainpipe direct to existing catchpit).
- The footing with guidepost of floating bridge, retaining wall & all landing are complete.
- The additional 150mm thk mass concrete slab under floating bridge is in progress.
- The additional guide post extension in progress.
- The floating bridge installation in progress.

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, 90 % complete. All rock breaking for watermain at L1 west completed.
- Road L1 west lower level and middle level drainage construction in progress lower drainage complete middle drainage 90%, upper level 75% and gully pipe installation in progress.
- Road L1 east lower level and middle level drainage construction in progress lower drainage completed 100% middle drainage 95%, upper level and gully pipe complete.
- Construction of Infiltration Planter in Progress, and 98% completed.
- Kerb laying, asphalt paving in progress.
- Formation of footpath and cycle track in progress.
- Planter construction and soil mix filling in progress.

Box Culvert BC2 at Internal Road L3:

- AMH5 to BC2 pipe laying and manhole construction completed, backfilling complete.
- Drainage at junction L1 and L3 completed, total drainage of L3 road in progress 90% complete
- Watermain trenching and pipe installation at L1 and L3 junction complete.
- UU laying complete.
- Installation of Multi-part cover in progress.
- Cat ladder installation complete.

MEP Works:

i. Submission of designs and materials related to MEP works to continue.
ii. E&M installation works at PTT to continue.
iii. E&M installation works at Underground Stormwater Retention Tank to continue.

iv. E&M installation works at Pedestrian Connectivity System B to continue.
v. Lighting installation works at Pedestrian Connectivity System B completed.
vi. Sump Pump installation works at Pedestrian Connectivity System B completed.
vii. E&M installation works at Underpass to continue.
viii. Cable & Lighting Supporting Frame installation works at Underpass completed.
ix. E&M installation works at Fresh Water Pumping station to continue.
x. Road lighting fitting installation at Underpass complete.
xi. Road lighting fitting installation at Public Transport Terminus complete.
xii. E&M installation works at Pillar Box (East portal) to continue.
xiii. E&M installation works at the cleansing pump room (Fresh Water Pumping Station) to continue.
xiv. E&M installation works at the EMF & valve chamber – VC8 (Fresh Water Pumping Station) to continue.
xv. T&C of Fresh Water Pumping Station to continue.
xvi. E&M installation works at the Service Reservoir to continue.
xvii. E&M installation works at Pillar Box (West portal) to continue.
xviii. E&M installation works at F.S. Kiosk (East portal) 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
- Escalator Installation and 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 is in-progress.
- Preparation works of drainage diversion at Type 4 is in-progress; after that will carry out watermain diversion.
- Backfilling works at Type 6 to 8 is in-progress.
- Mini-pile works at FE1-PC1b is in-progress
- Excavate works and CLP cable diversion works at CT5 are in-progress.
- Drainage works at KS27 (West Side) also is in-progress; Install sheet pile & ELS works at KS27 (East Side) near Lee Hang House at 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 and protection of existing utilities at CT4 roadside are 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.
- ELS works and watermain connection works at Sau Mun Ping Road / Hiu Kwong Street Sitting-out Area for watermain connection is 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
- 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
- Hydroseeding at Portion 3

Contract 5 (ED/2019/02)

Portion 1
- Piling Platform at E5 – PC1
- Retaining Wall breaking at E5 – PC2
- Mobilization of 55T Crawler Crane at E5 – PC1
- Drainage System for E5 Water License

Portion 2
- Welding Test

- Piling Works
- Grouting Works

Portion 3

- Trial Pit for CLP cable slewing

Portion 4

- Preparation for blinding at E10 – F3
- Protection of rock dowel bar at E10 – F1

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-RE0166-22	2 Mar 22	16 Aug 22	Valid
		GW-RE1335-21	26 Jan 22	25 Jul 22	Valid
		GW-RE0035-22	24 Jan 22	22 Apr 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

Item	Description	License/Permit Status			
		Permit no./ account no./ Ref. no.	Valid Period		Status
			From	To	
		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	EPD ref. no. 470496	19 August 2021	NA	Valid

Item	Description	License/Permit Status			
		Permit no./ account no./ Ref. no.	Valid Period		Status
			From	To	
	Pollution Control (Construction Dust) Regulation				
2	Waste Disposal Regulation – Billing Account for Disposal of Construction Waste	Account no. 7041336	6 September 2021	NA	Valid
3	Chemical Waste Producer Registration	Registration no. WPN 5213-296-C1206-12	14 September 21	End of project	Valid
4	Water Pollution Control Ordinance – Discharge License	Case no. 477293	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	16 Nov 21	30 Nov 26	Valid
		WT00040670-2022	28 Mar 22	31 Mar 27	Valid
4	Waste Disposal Regulation – Billing Account for Disposal of Construction Waste	Account no. 7040359	3 May 21	NA	Valid

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 • 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 • 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	B&K 2238, NL-52
Calibrator	Rion NC-74
Portable Wind Speed Indicator	Anemometer AZ Instrument 8908

3.6 MONITORING METHODOLOGY

1-hour TSP

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

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

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

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

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

24-hour TSP

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

(a.) An anodized aluminum shelter;
(b.) A 8"x10" stainless steel filter holder;
(c.) A blower motor assembly;
(d.) A continuous flow/pressure recorder;
(e.) A motor speed-voltage control/elapsed time indicator;
(f.) A 7-day mechanical timer, and
(g.) A power supply of 220v/50 Hz

3.6.4 For HVS for 24-hour TSP monitoring, the HVS is mounted in a metallic cage with a top for protection and also it is sat on the existing ground or the roof of building. The flow rate of the HVS between 0.6m^3/min and 1.7m^3/min will be properly set in accordance with the manufacturer's instruction to within the range recommended in *EPA Code of Federal Regulation, Appendix B to Part 50*. Glass Fiber Filter 8" x 10" of TE-653 will be used for 24-Hour TSP monitoring and would be supplied by laboratory. The general procedures of sampling are described as below:-

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

3.6.5 All the sampled 24-hour TSP filters will be kept in normal air conditioned room conditions, i.e. 70% HR (Relative Humidity) and 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 ***90*** events of 1-hour TSP monitoring and ***20*** events of 24-hours TSP were carried out and the monitoring results are summarized in ***Tables 4-1 to 4-5***. The detailed 24-hour TSP monitoring data are presented in ***Appendix H*** and the relevant graphical plots are shown in ***Appendix I***.

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

Date	24-hour TSP (μg/m³)	1-hour TSP (μg/m³)				
		Date	Start Time	1st reading	2nd reading	3rd reading
3-Mar-22	23	4-Mar-22	13:40	96	101	110
9-Mar-22	18	10-Mar-22	13:51	68	72	70
15-Mar-22	21	16-Mar-22	13:56	86	96	94
21-Mar-22	29	22-Mar-22	13:45	74	85	81
26-Mar-22	24	28-Mar-22	13:25	95	102	92
Average (Range)	**23 (18 – 29)**	Average (Range)		**88 (68 – 110)**		

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**
4-Mar-22	14:06	107	112	116
10-Mar-22	14:15	96	102	112
16-Mar-22	14:20	84	92	90
22-Mar-22	14:08	65	75	84
28-Mar-22	13:47	87	82	81
Average (Range)		**92 (65 – 116)**		

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**
4-Mar-22	14:17	101	110	112
10-Mar-22	14:26	96	102	105
16-Mar-22	14:36	87	95	91
22-Mar-22	14:22	104	111	100
28-Mar-22	15:06	80	84	77
Average (Range)		**97 (77 – 112)**		

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

Date	24-hour TSP ($\mu g/m^3$)	1-hour TSP ($\mu g/m^3$)				
		Date	Start Time	1st reading	2nd reading	3rd reading
3-Mar-22	33	4-Mar-22	9:26	97	112	108
9-Mar-22	39	10-Mar-22	9:21	83	80	85
15-Mar-22	50	16-Mar-22	9:35	94	100	97
21-Mar-22	33	22-Mar-22	9:18	76	85	79
26-Mar-22	23	28-Mar-22	9:09	102	97	92
Average (Range)	**35 (23 – 50)**	Average (Range)		**92 (76 – 112)**		

Table 4-5 Summary of 24-hour and 1-hour TSP Monitoring Results (AMS-6)

Date	24-hour TSP ($\mu g/m^3$)	1-hour TSP ($\mu g/m^3$)				
		Date	Start Time	1st reading	2nd reading	3rd reading
3-Mar-22	31	4-Mar-22	9:14	100	109	105
9-Mar-22	28	10-Mar-22	9:10	103	112	108
15-Mar-22	44	16-Mar-22	9:20	98	92	87
21-Mar-22	28	22-Mar-22	9:03	93	99	104
26-Mar-22	15	28-Mar-22	8:54	86	92	99
Average (Range)	**29 (15 – 44)**	Average (Range)		**99 (86 – 112)**		

Table 4-6 Summary of 24-hour and 1-hour TSP Monitoring Results (AMS-7)

Date	24-hour TSP ($\mu g/m^3$)	1-hour TSP ($\mu g/m^3$)				
		Date	Start Time	1st reading	2nd reading	3rd reading
3-Mar-22	66	4-Mar-22	9:49	96	100	97
9-Mar-22	83	10-Mar-22	9:52	65	75	68
15-Mar-22	61	16-Mar-22	10:00	85	78	84
21-Mar-22	50	22-Mar-22	9:40	77	82	89
26-Mar-22	42	28-Mar-22	9:32	68	75	84
Average (Range)	**61 (42 – 83)**	Average (Range)		**82 (65 – 100)**		

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 **36** 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**
4-Mar-22	65	62	70	67	69	71
10-Mar-22	64	63	69	68	67	69
16-Mar-22	63	62	69	68	67	69
22-Mar-22	62	63	68	69	68	69
28-Mar-22	63	62	69	68	68	69
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**
1-Mar-22	62
12-Mar-22	61
18-Mar-22	67
24-Mar-22	65
26-Mar-22	64
30-Mar-22	64
Limit Level	**75 dB(A)**

5.3.2 For the additional noise monitoring under Contract 3, a total of **18** 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**
1-Mar-22	65	59	61
12-Mar-22	64	63	62

Construction Noise Level ($L_{eq30min}$), dB(A)			
Date	**CN1**	**CN2**	**CN3**
18-Mar-22	65	61	64
24-Mar-22	63	62	61
26-Mar-22	67	63	62
30-Mar-22	65	62	62
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 ('000m^3) (#)	2.226	-	0.02	-	1.351	-	0	-	0.31	-
Hard Rock and Large Broken Concrete ('000m^3)	0	-	0	-	0	-	0	-	0	-
Reused in this Contract (Inert) ('000m^3)	1.128	-	0	-	0.18	-	0	-	0	-
Reused in other Projects (Inert) ('000m^3)	0	*	0	-	0	-	0	-	0	-
Disposal as Public Fill (Inert) ('000m^3)	1.099	TKO 137	0.02	**TKO 137**	1.171	TKO 137	0	-	0.31	-

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	-	0	-	0	-
Recycled Paper / Cardboard Packing ('000kg)	0.791	-	0	-	0	-	0	-	0	-
Recycled Plastic ('000kg)	0	-	0	-	0.434	Licensed collector	0	-	0	-
Chemical Wastes ('000kg)	0	-	0	-	0	-	0	-	0	-
General Refuses ('000m^3)	0.103	SENT	0.01	SENT	0.041	SENT	0.031	SENT	0.01	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 **1, 10, 15, 22 and 29 March 2022** in which IEC joined the site inspection with SSEMC on **10 March 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
1 March 2022	• No adverse environmental issue was observed during site inspection	• NA
10 March 2022	• No adverse environmental issue was observed during site inspection. • The Contractor was reminded to clean u-channel regularly at water reservoir to avoid potential overflow.	• NA • Reminder only
15 March 2022	• No adverse environmental issue was observed during site inspection. • The Contractor was reminded to spray water on site regularly.	• NA • Reminder only
22 March 2022	• The Contractor was advised to cover the exposed work area with tarpaulin sheet. • The Contractor was reminded to spray water on site regularly.	• Exposed work area is covered • Reminder only
29 March 2022	• Free-standing chemical containers were observed at GCE. The Contractor was advised to place it inside drip tray or remove it. • The Contractor was reminded to clean stagnant water at U-channel.	• Chemical container was removed on site. • Reminder only

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 **3, 9, 16, 23 and 30 March 2022** in which IEC joined the site inspection with SSEMC on **23 March 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
3 March 2022	• No adverse environmental issue was observed. • The Contractor was reminded to clean stagnant water regularly at Portion 3	• NA • Reminder only
9 March 2022	• No adverse environmental issue was observed • The Contractor was reminded to maintain	• NA • Reminder only

Date	Findings / Deficiencies	Follow-Up Status
	good housekeeping within site area.	
16 March 2022	• Free standing containers were observed. The Contractor was advised to provide labels and drip tray for containers. • The Contractor was reminded to dispose construction waste regularly within site area.	• `Containers were properly labelled and drip tray has been provided. • Reminder only
23 March 2022	• Oil leakage was observed outside site boundary at Portion 2. The Contractor was advised to clean oil stain immediately.	• Oil stain observed was cleaned.
30 March 2022	• No adverse environmental issue was observed during site inspection.	• NA`

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 **4, 11, 18 and 25 March 2022** in which IEC joined the site inspection with SSEMC on **11 March 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
4 March 2022	• The Contractor was advised to remove the construction waste regularly. • Open cement bag was observed. The Contractor was advised to cover it properly.	• Construction waste has been removed. • Cement bags have been removed.
11 March 2022	• No adverse environmental issue was observed during site inspection. • The Contractor was reminded to implement dust mitigation measures at System A regularly.	• NA • Reminder only
18 March 2022	• Freestanding chemical containers were observed on the ground. The Contractor was advised to put it inside drip tray or remove it.	• Chemical containers were removed on site.
25 March 2022	• No adverse environmental issue was observed. • The Contractor was reminded to clean the U-channel regularly	• NA • Reminder only

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 **2, 9, 16, 24 and 30 March 2022** in which IEC joined the site inspection with SSEMC on **24 March 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
2 March 2022	• Worn NRMM label was observed on generator at Portion 8. The Contractor was advised to replace it with new NRMM label.	• Generator has been removed from site.

Date	Findings / Deficiencies	Follow-Up Status
	• The Contractor was reminded to remove or cover open stockpile at +185mPD.	• Reminder only
9 March 2022	• No adverse environmental issue was observed.	• NA
16 March 2022	• No adverse environmental issue was observed. • The Contractor was reminded to clean U-channel regularly at +185mPD.	• NA • Reminder only
24 March 2022	• No adverse environmental issue was observed. • The Contractor was reminded to clean U-channel regularly.	• NA • Reminder only
30 March 2022	• No adverse environmental issue was observed. • The Contractor was reminded to maintain good housekeeping.	• NA • 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 **3, 10, 17, 21 and 31 March 2022** in which IEC joined the site inspection with SSEMC on **21 March 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
3 March 2022	• Accumulated water was observed inside chemical container at E10. The Contractor was advised to remove it. • Free standing chemical container was observed at E5. The Contractor was advised to put it inside drip tray or remove it.	• Accumulated water has been removed. • Drip tray has been provided.
10 March 2022	• No adverse environmental issue was observed.	• NA
17 March 2022	• Muddy water was observed inside containers at E10 platform. The Contractor was advised to remove it from containers. • Accumulated water was observed inside drip tray at E6. The Contractor was advised to clean it from drip tray.	• Larvicidal oil was sprayed for prevention of mosquito and muddy water will be removed regularly. • Accumulated water inside drip tray was cleaned.
21 March 2022	• Empty cement bags were observed on the ground at E10. The Contractor was advised to remove it. • Free-standing chemical containers were observed at E6. The Contractor was advised to put it inside drip tray or remove it. • The Contractor was advised to clean the oil leakage at E6.	• Empty cement bags were disposed. • Chemical containers were removed on site. • Oil leakage was cleaned.
31 March 2022	• No adverse environmental issue was observed.	• NA

Date	Findings / Deficiencies	Follow-Up Status
	• The Contractor was reminded to place all chemical containers inside drip tray. • The Contractor was reminded to ensure all wastewater/surface runoff are properly treated prior discharge.	• Reminder only • Reminder only

8. ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

8.1 ENVIRONMENTAL COMPLAINT, SUMMONS AND PROSECUTION

8.1.1 In the Reporting Period, one environmental complaint was received regarding to water quality for Contract 1. 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.

Complaint received by ET on 30 March 2022

8.1.2 EPD received complaint from DSD on 28 March 2022 concerning about siltation and discharge of muddy water observed at the public drainage system at catchpit SSH4001400 near Tin Hau Temple and the site discharge points at Po Lam Road on 28 March 2022. The case was then referred from EPD to CEDD on 30 March 2022 to follow up. Handling procedure by Environmental Team (ET) in accordance with the Environmental Monitoring & Audit Manual was triggered to investigate if it is related to the Development of Anderson Road Quarry Site Project.

8.1.3 With reference to weather information from the Hong Kong Observatory (HKO), there was heavy rainstorm on 28 March 2022 with daily total rainfall of 30.3 mm in Hong Kong. Owing to heavy rainfall, large amount of storm runoff were contributed from the surrounding environment and water quality in the catchpit/ channels would be deteriorated

8.1.4 Upon receipt the complaint, on-site checking was immediately conducted by representative of Resident Site Staff (RSS) and the Contractor on 28 March 2022. It is noted that the majority areas of the Anderson Road Quarry Site site have been handover to other contractors for further development. Each interfacing contractors should have been granted a licence for a discharge under the Water Pollution Control Ordinance. The findings during the on-site checking are presented as below:

(a) Silty water was found discharged from Sites R2-3 and RS-1 at manholes S243A and S214A respectively, and such silty water would be discharged at Q2 and reached the catchpit at Tin Hau Temple.

(b) Silty water was found discharged at Q3 (manhole S310) solely from Site R2-9 in the morning of 28 March 2022, and such silty water would be eventually discharged at the stepped channel off Po Lam Road.

(c) Further checking manhole SM13A beneath the sole contributor Site R2-10 on 29 March 2022. Residual silty water was found ponding at the sump inside the manhole. The observation revealed that silty water had been discharged from Site R2-10. The silty water at Q3 and SM13A would eventually be discharged at the stepped channel of Po Lam Road.

8.1.5 Based on the above finings, the silty water found in the concerned catchpit SSH4001400 near Tin Hau Temple and Po Lam Road were likely caused by the interfacing contractors at Sites R2-3, RS-1 and R2-9 & R2-10. The relevant contractors were reminded afterwards to properly treat their waste water before discharge. The above findings were demonstrated to DSD and EPD officers during the site visit on 31 March 2022. The relevant video records were enclosed in the email from SRE to EPD on 1 April 2022 for information. Regular joint site inspection among the RSS, Contractor and ET was carried out on weekly basis to audit the environmental performance. As water quality mitigation measures, the clean water from hillside have been diverted without reaching the site area and wastewater treatment facilities were implemented. No water pollutant problem and silty water discharge were observed during site inspection on 29 March 2022. During site inspection on 7 April 2022, it was observed that the discharge at Q2 and Q3 were visually clear and no muddy discharge was observed.

8.1.6 In our investigation, the Contractor had implemented the water quality mitigation measures to minimise the impact arising from the construction site. Based on the investigation findings, it is considered that the complaint was likely caused by the interfacing contractors under rainy days and not due to the works under the Project.

8.1.7 The complaint log and Investigation Reports issued in the Reporting Period are shown in ***Appendix M.***

8.1.8 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 – 28 Feb 2022	1	0	**52**	**Dust, Noise and light nuisance**
21 Mar 2017 – 28 Feb 2022	2	0	**10**	**Noise**
31 May 2018 – 28 Feb 2022	3	0	**8**	**Waste Management, Noise, Water Quality**
27 Sep 2021- 28 Feb 2022	4	0	**0**	NA
30 Mar 2021 – 28 Feb 2022	5	0	**0**	NA
1 – 31 March 2022	1	1	**53**	Water Quality
	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 – 28 Feb 2022	1	0	0	NA
21 Mar 2017 – 28 Feb 2022	2	0	0	NA
31 May 2018 – 28 Feb 2022	3	0	0	NA
27 Sep 2021- 28 Feb 2022	4	0	0	NA
30 Mar 2021 – 28 Feb 2022	5	0	0	NA
1 – 31 March 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 – 28 Feb 2022	1	0	0	NA
21 Mar 2017 – 28 Feb 2022	2	0	0	NA
31 May 2018 – 28 Feb 2022	3	0	0	NA
27 Sep 2021- 28 Feb 2022	4	0	0	NA
30 Mar 2021 – 28 Feb 2022	5	0	0	NA
1 – 31 March 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. • Replace silt curtain materials if necessary
Air Quality	• Maintain damp / wet surface on access road • Keep slow speed in the sites • All vehicles must use wheel washing facility before off site • All vehicles must use wheel washing facility before off site • 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. • Keep good maintenance of plants • Place noisy plants away from residence or school • Provide noise barriers or hoarding to enclose the noisy plants or works • Shut down the plants when not in used.
Waste and Chemical Management	• On-site sorting prior to disposal • Follow requirements and procedures of the "Trip-ticket System" • Predict required quantity of • concrete accurately • Collect the unused fresh concrete at designated locations in the sites for subsequent disposal
General	• The site was generally kept tidy and clean.

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.

Artificial Flood Attenuation Lake:

- To continue the drainage works (the remaining part: S114 manhole and drainpipe direct to existing catchpit).
- To commence the installation works of Floating Bridge.
- To continue the additional guide post extension for Floating Bridge.

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/C949 and 11NE-D/C948.

Cavern (Portion B5):

- Rock fall fence installation complete.
- Rock breaking of existing slope at Ch200-248 on level +196 - 202mPD complete.
- 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 was completed and rock mapping will be completed in late February 2022.
- UC construction at +230mPD berm to continue.
- Buttress construction and spray concrete at Ch0-150 on +230 to +250 completed.

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
- E&M installation works at Pillar Box (Underground Stormwater Retention Tank) in progress.
- E&M installation works at Pillar Box (East portal) in progress.
- E&M installation works at the cleansing pump room (Fresh Water Pumping Station) in progress.
- E&M installation works at the EMF & valve chamber – VC8 (Fresh Water Pumping Station) in progress.
- Energization of Fresh Water Pumping Station on mid of January 2022.
- T&C of Fresh Water Pumping Station in progress.
- E&M installation works at the Service Reservoir to be commence.
- E&M installation works at Pillar Box (West portal) to be commence.
- E&M installation works at F.S. Kiosk (East portal) to be commence.
- E&M installation works at Pedestrian Connectivity System A to commence.

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 in progress.
- Ducting installation works for street lighting in progress.
- Forming road formation and laying subbase in progress.

PTT

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

Hiking Trail (Portion B5):

- Waiting for AECOM issue new design and new material specification

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
- Form Piling Platform at E5, PC2 and PC3
- Piling Work at E5 PC1

Portion 2
- Piling Works

Portion 3
- Diversion of existing staircase
- Trial Run
- Trail pit at carriageway and install utility settlement marker (USM)

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 **60th** monthly EM&A report presenting the monitoring results and inspection findings for the Reporting Period from **1** to **31 March 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, one environmental complaint was received regarding the water quality for Contract 1.

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.

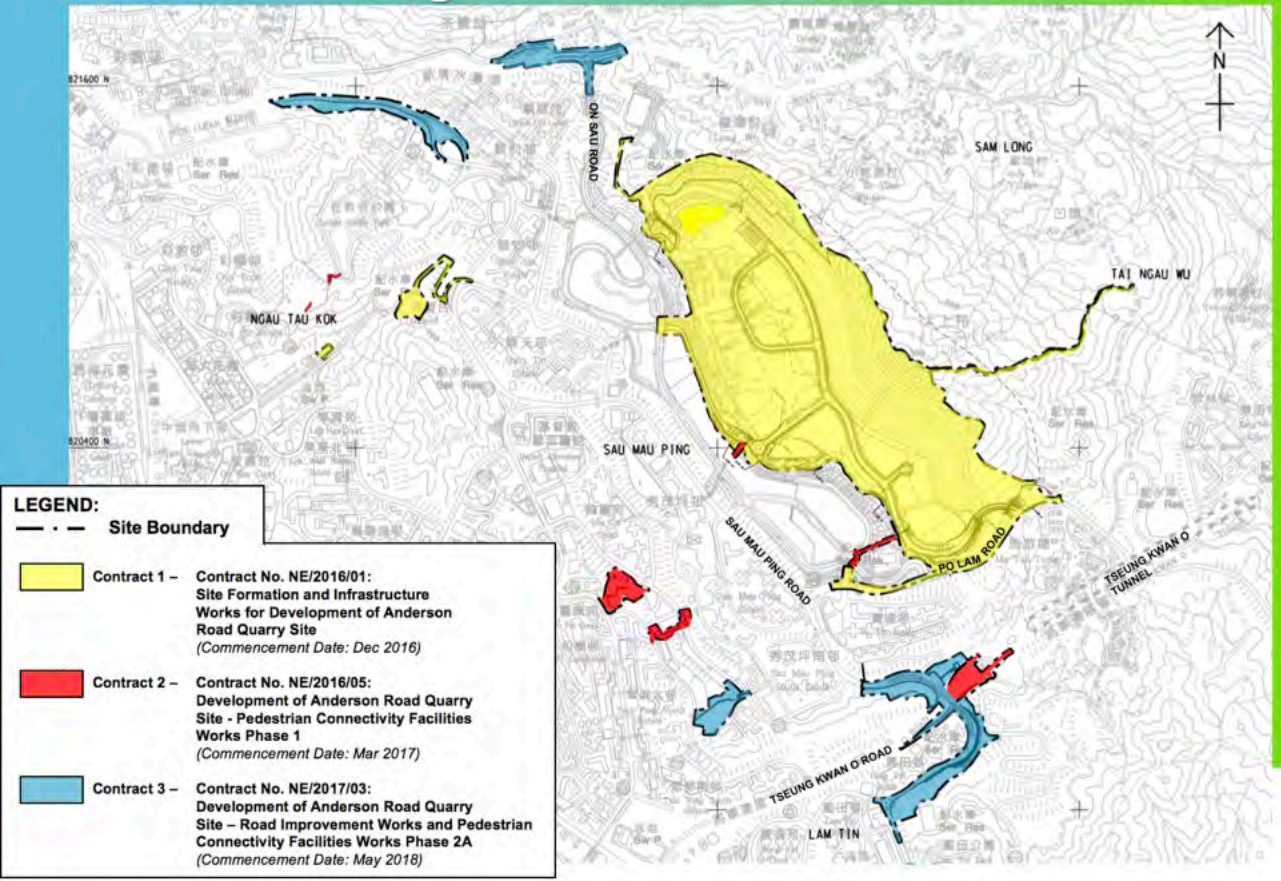
10.2.4 In addition, the Contractors should ensure all effluent discharge shall be fulfilled the Technical Memorandum of Effluent Discharged into Drainage and Sewerage Systems, inland and Coastal Waters criteria or relevant discharge license requirement.

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:

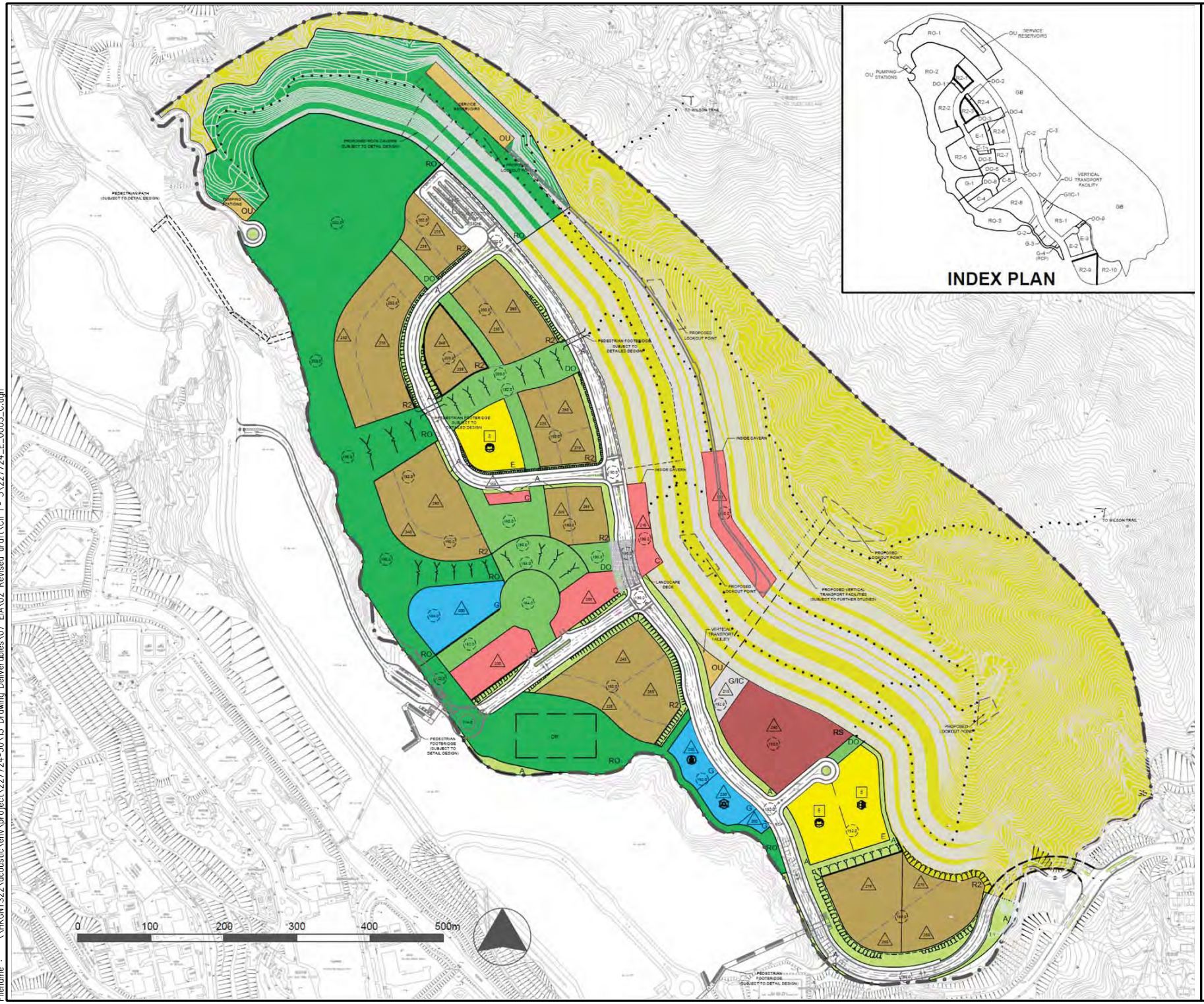
— · — **Site Boundary**

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	

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

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)

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

841700 E
841800 E
841900 E
819900 N
819800 N
819700 N

LEGEND:
SITE BOUNDARY
PORTION 2
PORTION 3
N

曉光街休憩花園 Hiu Kwong Street Rest Garden
曉明閣 Hiu Ming Court
曉光閣 Hiu Kwong Court
平台 Podium
曉華大廈 Hiu Wah Building
畫華閣 Fu Wah Court
翠楊樓 Tsui Yeung House
翠眉樓 Tsui Mei House
翠屏商場 Tsui Ping Shopping Circuit (Car Park under)
秀荔邨(中區)社區中心 Sau Lai Chuen (Central) Community Centre
排球場 Volleyball Court
遊樂場 Playground
秀逸樓 Sau Yat House
秀和樓 Sau Wo House
秀富樓 Sau Fu House
網球場 Tennis Court
籃球場 Basketball Court
曉明街遊樂場 Hiu Ming Street Playground
曉明街 HIU MING STREET
秀明道 SAU MING ROAD
HIU KWONG STREET

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

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PROJECT 項目

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

CONTRACT TITLE
PEDESTRIAN CONNECTIVITY FACILITIES WORKS PHASE 1

CLIENT 業主

土木工程拓展署
Civil Engineering and Development Department

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

STATUS 階段

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DIMENSION UNIT 尺寸單位
METRES

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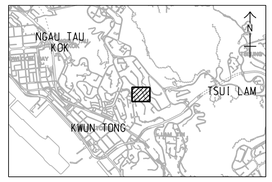
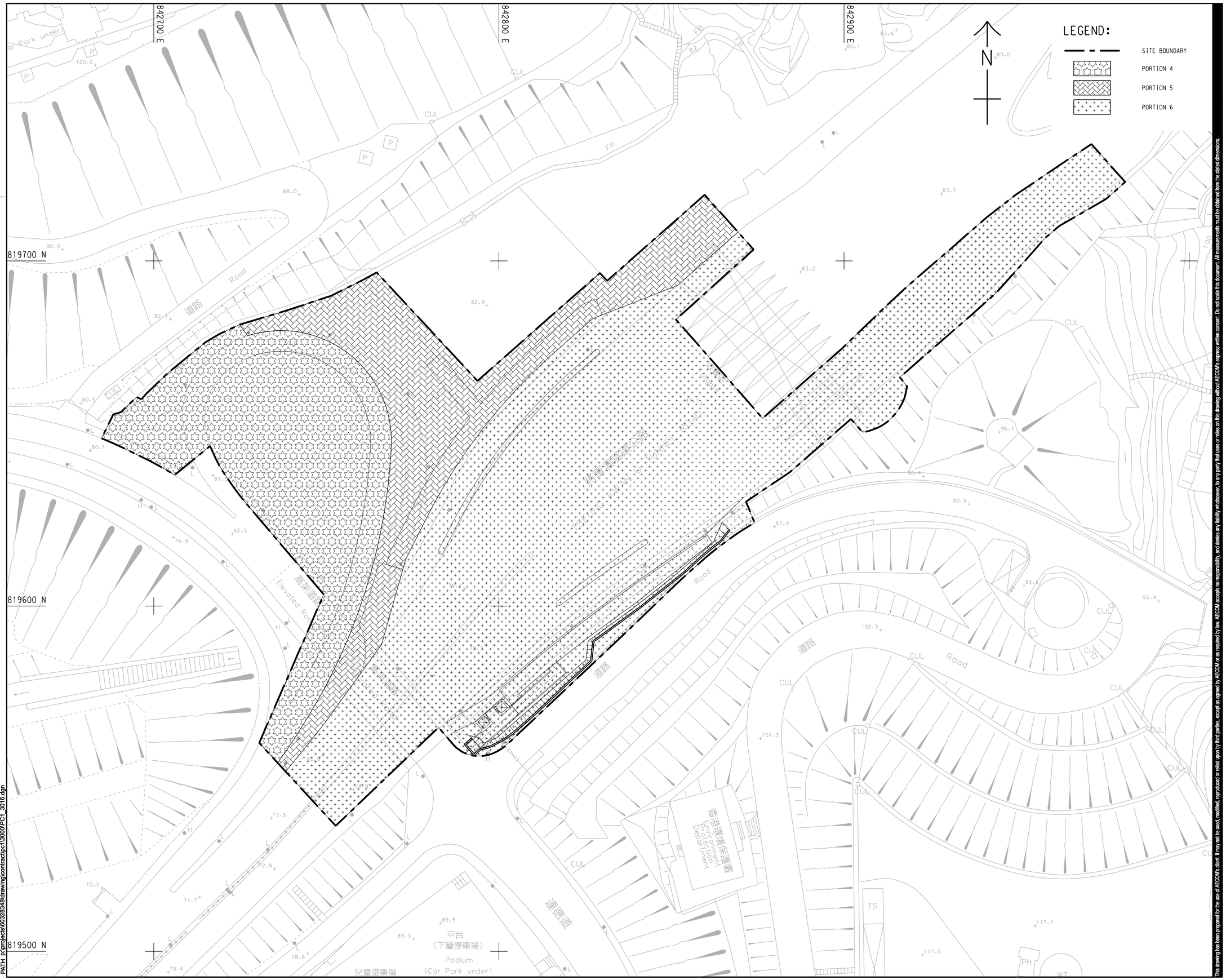


PROJECT NO. 項目編號
60328348

CONTRACT NO. 合約編號
NE/2016/05

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

SHEET NUMBER 圖紙編號
60328348/PC1/2016



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

Plot File by: WANGGLW 2016/10/25
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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

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STATUS
階段

SCALE 比例
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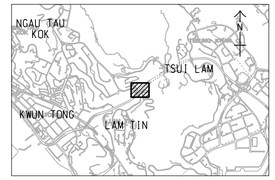
DIMENSION UNIT 尺寸單位
METRES

KEY PLAN 索引圖 A1 1 : 60000



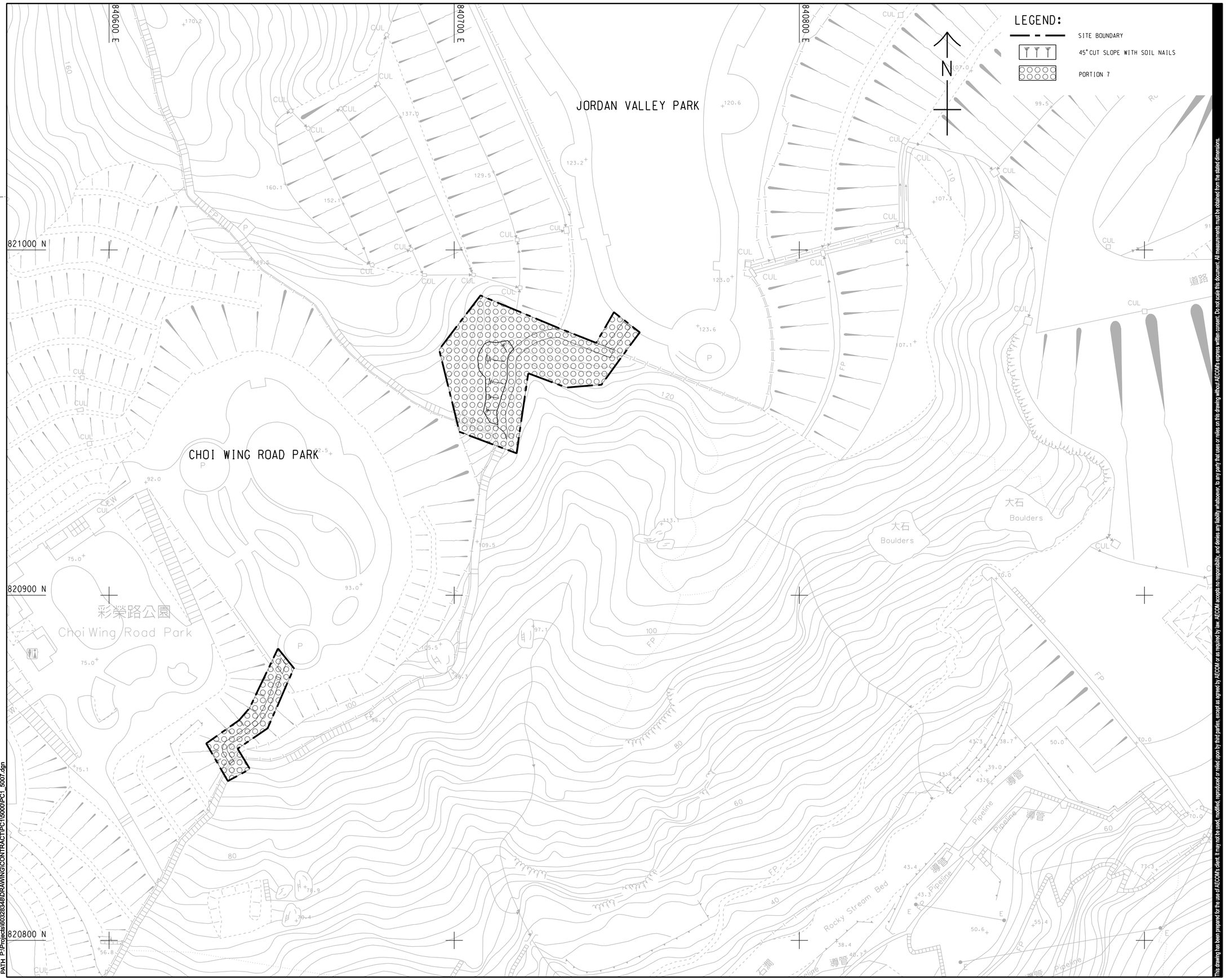
PROJECT NO. 項目編號
60328348

CONTRACT NO. 合約編號
NE/2016/05

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

SHEET NUMBER 圖紙編號
60328348/PC1/3016

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



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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

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-	OCT. 16	TENDER DRAWING	AC

STATUS 階段

SCALE 比例
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DIMENSION UNIT 尺寸單位
METRES

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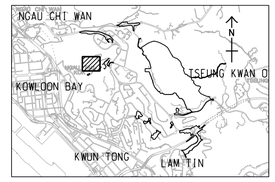


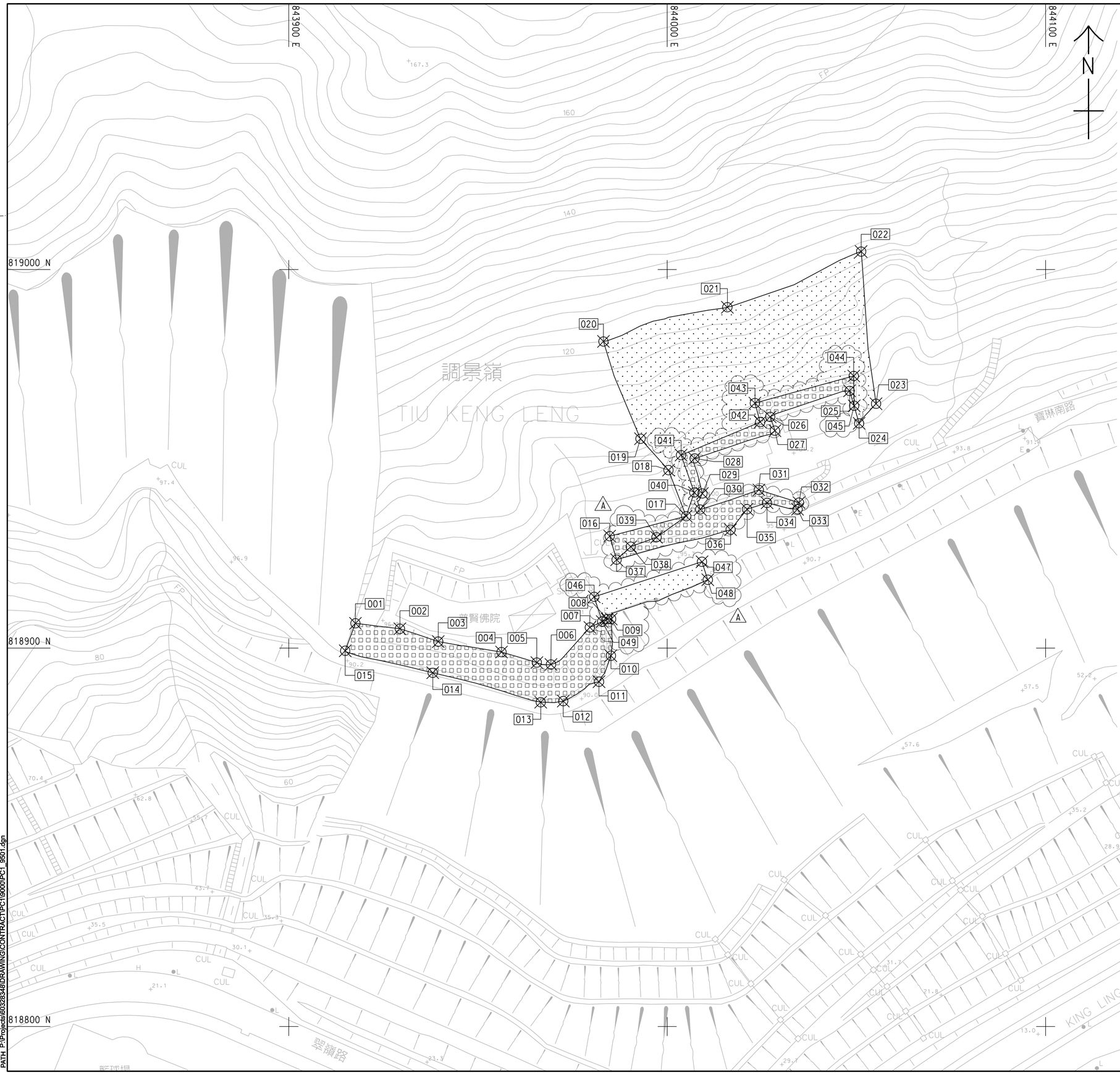
PROJECT NO. 項目編號
60328348

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

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

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

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

CONTRACT TITLE
PEDESTRIAN CONNECTIVITY FACILITIES WORKS PHASE 1

CLIENT 業主

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

STATUS 階段

SCALE 比例
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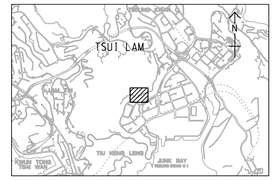
DIMENSION UNIT 尺寸單位
METRES

KEY PLAN 索引圖 A1 1 : 60000



PROJECT NO. 項目編號
60328348

CONTRACT NO. 合約編號
NE/2016/05

SHEET TITLE 圖紙名稱

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

SHEET NUMBER 圖紙編號

60328348/PC1/9501A

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

圖示 A VIEW A

圖示 B VIEW B

圖則名稱 Drawing Title

行人連繫設施(巴士轉乘站、E11及E12) - 平面圖及構思圖

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

項目編號 Item No.
765CL

比例 Scale

圖則編號 Drawing No.
附件五 Appendix 5

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

土木工程拓展署
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

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

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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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

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

STATUS 階段

SCALE 比例
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DIMENSION UNIT 尺寸單位
METRES

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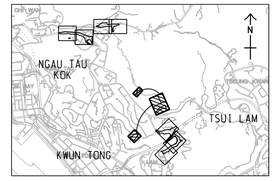

PROJECT NO. 項目編號
60328348

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)

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

840800 E | 842000 E | 843200 E

821600 N

820400 N

819200 N

LEGEND:

SITE BOUNDARY

SHEET 1 OF 5

SHEET 2 OF 5

SHEET 3 OF 5

SHEET 4 OF 5

SHEET 5 OF 5

ROAD L1

ROAD L2

ROAD L3

ROAD L4

ROAD L5

CLEAR WATER BAY ROAD

TSEUNG KWAN O TUNNEL

TSEUNG KWAN O ROAD

KWUN TONG ROAD

KWUN TONG BYPASS

N

WAN

NGAU TAU KOK

NGAU TAU KOK

CROCODILE HILL

JORDAN VALLEY

KWUN TONG

KWUN TONG

TAN SHAN

SAM LONG

TAI NGAU WU

TAI NGAU WU

SAU MAU PING

LAM TIN

LAM TIN

TSUI LAM

觀塘避風塘

Kwun Tong Typhoon Shelter

Plot File by:- YangRO 3/19/2021
PATH F:\PROJECTS\60328348\Drawing\CONTRACT\LS\1000\LS_1000.dgn

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
客戶

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

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I/R 修訂	DATE 日期	DESCRIPTION 內容摘要	CHK. 複核
-	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

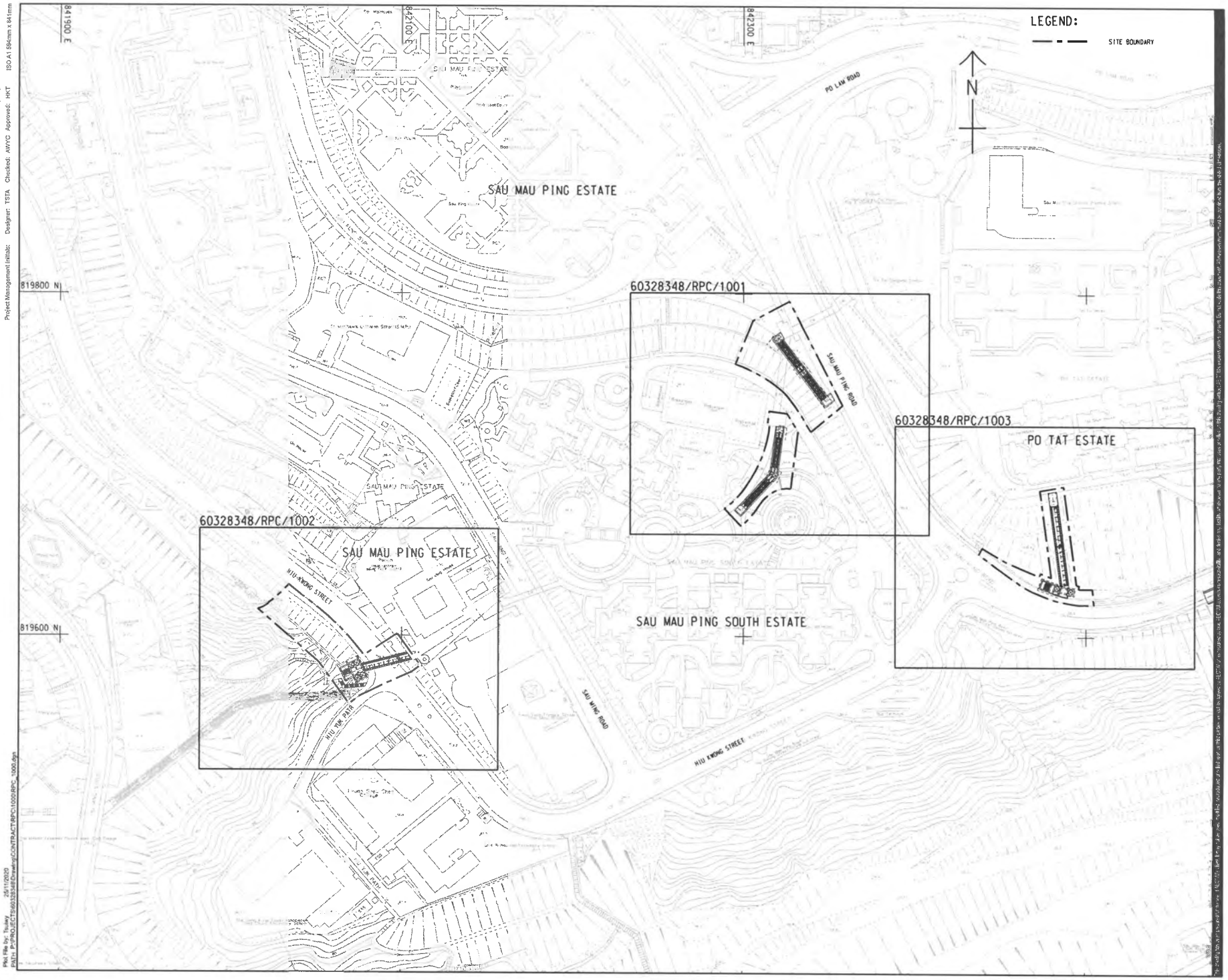
SHEET TITLE
圖紙名稱

KEY PLAN

SHEET NUMBER
圖紙編號

60328348/LS/1000

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



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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

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

CONSULTANT
AECOM Asia Company Ltd.
www.aecom.com

SUB-CONSULTANTS

ISSUE/REVISION

VR	DATE	DESCRIPTION	CHK.
-	NOV. 20	TENDER DRAWING	AWYC

STATUS

SCALE
A1 1 : 1000

DIMENSION UNIT
METRES

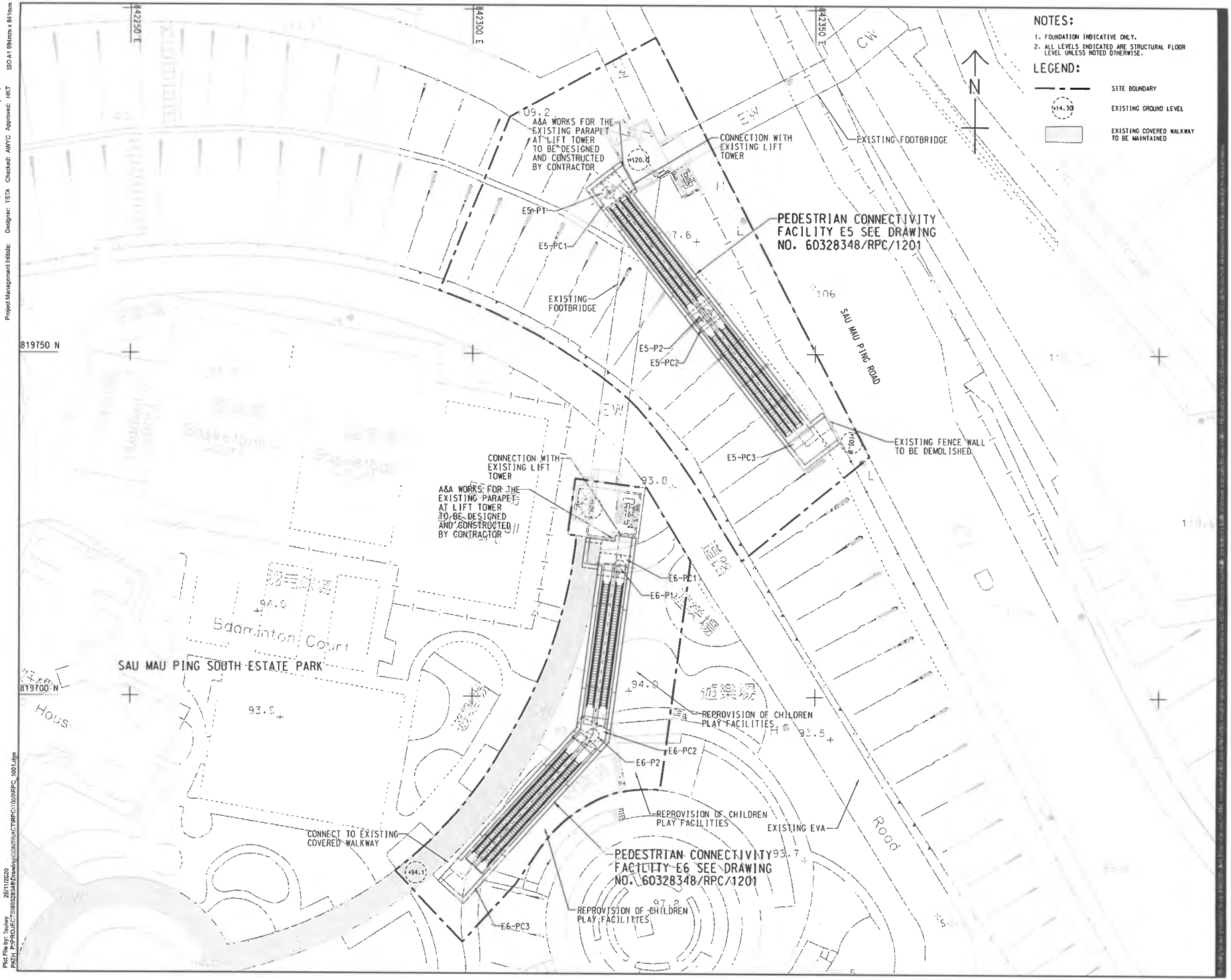
KEY PLAN

PROJECT NO.
60328348

CONTRACT NO.
ED/2019/02

SHEET TITLE
KEY PLAN

SHEET NUMBER
60328348/RPC/1000



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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

CLIENT

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

CONSULTANT

AECOM Asia Company Ltd.
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SUB-CONSULTANTS

ISSUE/REVISION

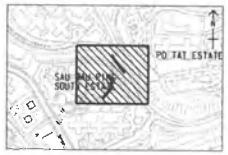
	DATE	DESCRIPTION	CHK.
-	NOV. 20	TENDER DRAWING	AWYC

STATUS

SCALE A1 1 : 250

DIMENSION UNIT METRES

KEY PLAN A1 1 : 5000



PROJECT NO. 60328348

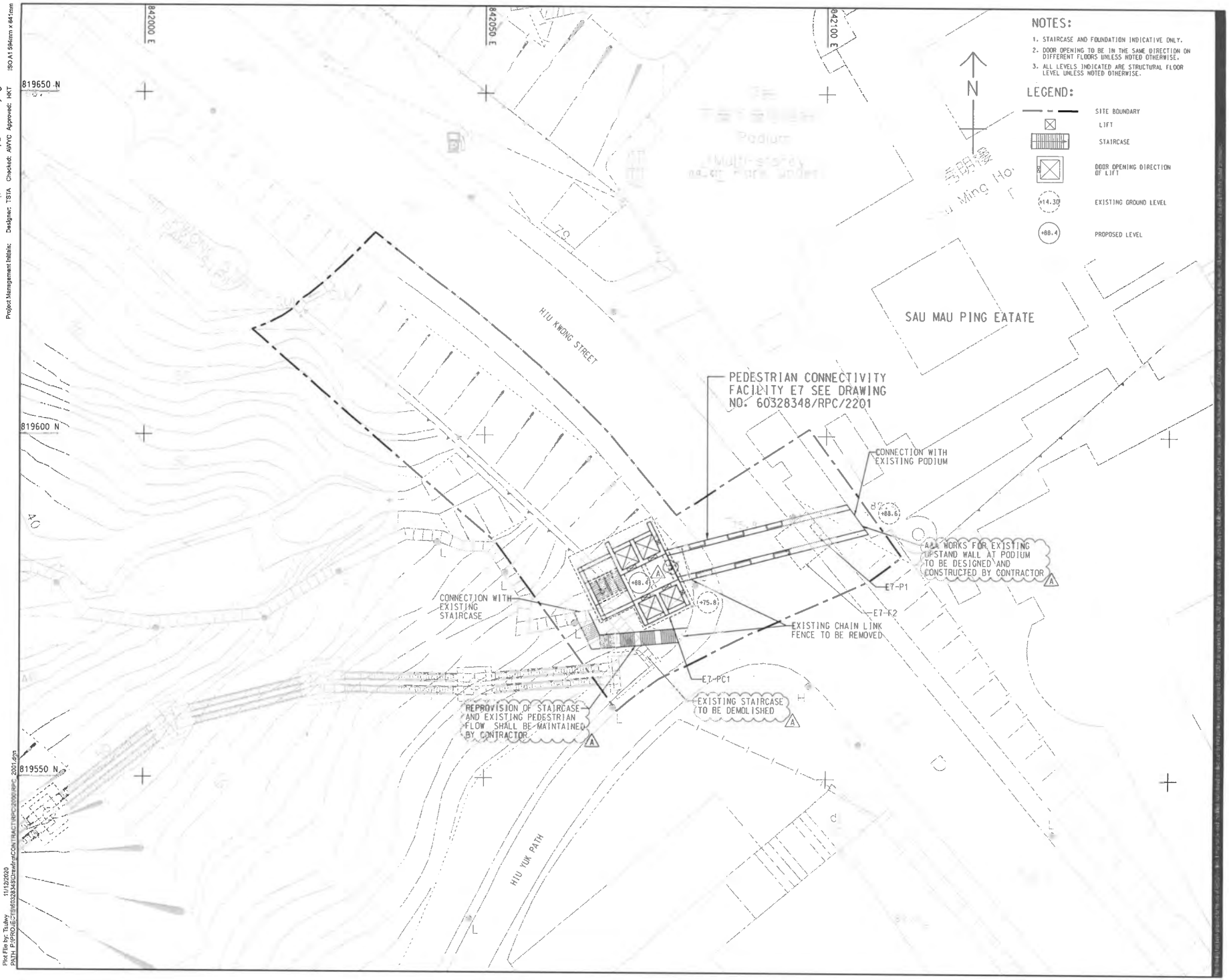
CONTRACT NO. ED/2019/02

SHEET TITLE

GENERAL LAYOUT - E5 & E6

SHEET NUMBER

60328348/RPC/1001



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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

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

CONSULTANT
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ISSUE/REVISION

VR	DATE	DESCRIPTION	CHK
A	DEC. 20	TENDER ADDENDUM NO.1	AWYC
-	NOV. 20	TENDER DRAWING	AWYC

STATUS

SCALE: A1 1 : 250
DIMENSION UNIT: METRES

KEY PLAN A1 1 : 5000

PROJECT NO.: 60328348
CONTRACT NO.: ED/2019/02

SHEET TITLE
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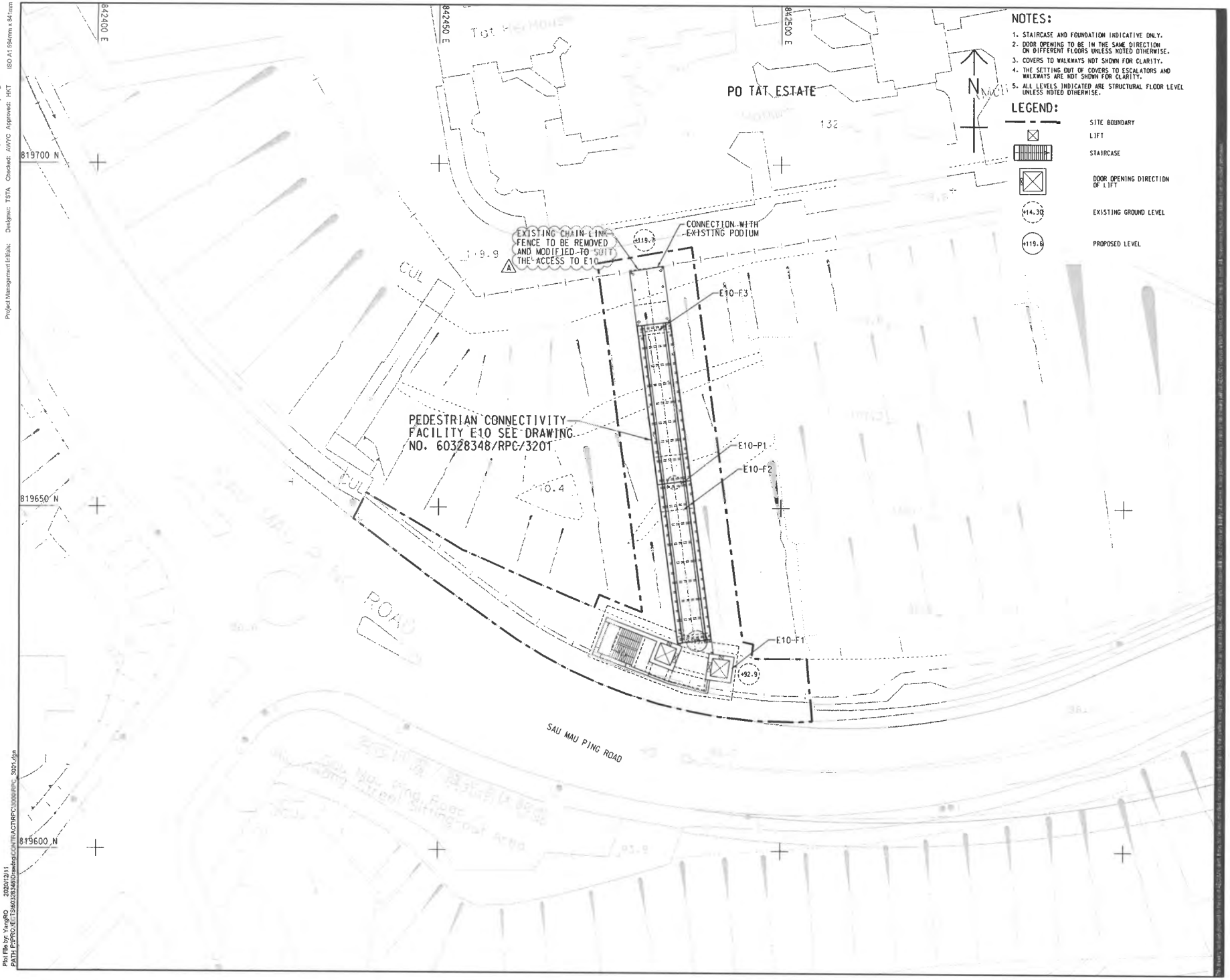
SHEET NUMBER
60328348/RPC/2001A



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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

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

CONSULTANT
AECOM Asia Company Ltd.
www.aecom.com

SUB-CONSULTANTS

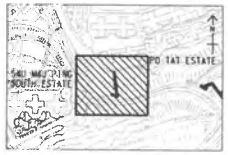
ISSUE/REVISION

IR	DATE	DESCRIPTION	CHK.
A	DEC. 20	TENDER ADDENDUM NO.1	AWYC
-	NOV. 20	TENDER DRAWING	AWYC

STATUS

SCALE: A1 1 : 250
DIMENSION UNIT: METRES

KEY PLAN A1 1 : 5000



PROJECT NO.: 60328348
CONTRACT NO.: ED/2019/02

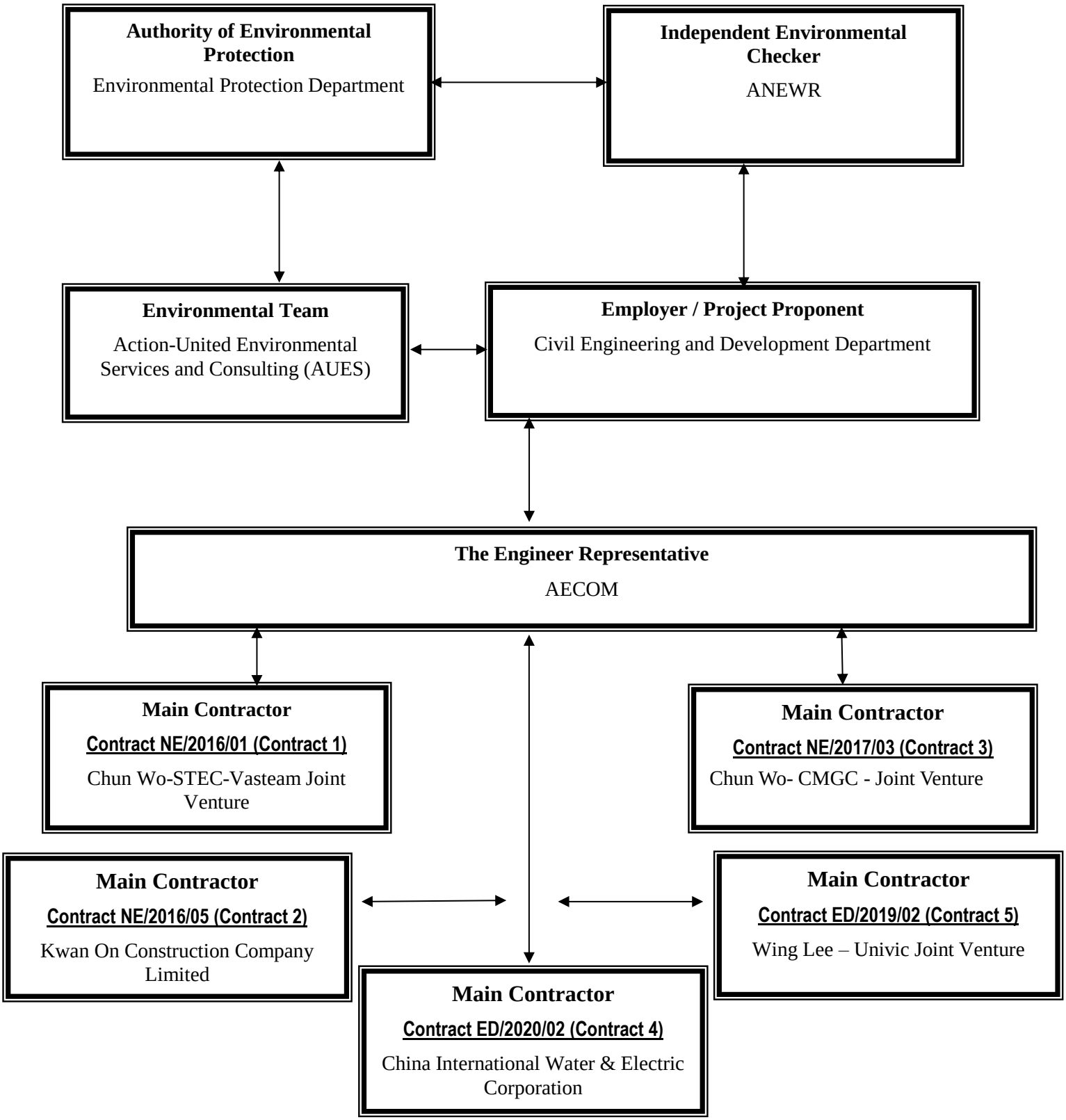
SHEET TITLE
GENERAL LAYOUT - E10

SHEET NUMBER
60328348/RPC/3001A

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 (April 2022 _0) _ccn _220412							
Fresh Water Pumping Station							
Stage 5 -ABWF, Finishing & E&M							
FWP-1310A	(NOC[TBA]) 5th wave COVID19 affected to Pumping Station E&M works	0			40	28-Feb-22 A	19-Apr-22
FWP-1320	Pumping Station E&M works	0			543	29-Jun-20 A	27-Apr-22
FWP-1322	Draw pits and cabling works (Pumping Station)	0			476	16-Sep-20 A	27-Apr-22
Salt Water Reservoir							
ABWF, Finishing & E&M							
SWR-1410A	(NOC[TBA]) 5th wave COVID19 affected to Saltwater Reservior E&M works	0			40	28-Feb-22 A	19-Apr-22
SWR-1420	Saltwater Reservior E&M works	0			568	29-May-20 A	27-Apr-22
SWR-1422	Draw pits and cabling works (Saltwater Reservior)	0			476	16-Sep-20 A	27-Apr-22
Fresh Water Reservoir							
ABWF, Finishing & E&M							
FWR-1980A	(NOC[TBA]) 5th wave COVID19 affected to Freshwater Reservior ABWF & Finishing	0			40	28-Feb-22 A	19-Apr-22
FWR-2000	Freshwater Reservior E&M works	0			456	12-Oct-20 A	27-Apr-22
RWS Access Road & External Works							
FWP-1430	CLP power supply duct	0			476	16-Sep-20 A	27-Apr-22
FWP-1440	Road Works & Fencing	0			143	24-Feb-22 A	17-Aug-22
FWP-1450	Grteen Roof & Paving Area	0			116	16-Feb-22 A	08-Jul-22
Pedestrian Connection System A & B							
PC system B							
PCB-1080A	(NOC[TBA]) 5th wave COVID19 affected to works in PC-System B	0			40	28-Feb-22 A	19-Apr-22
PCB-1090	System B - Backfill south tower	81	19-Aug-19	23-Nov-19	644	16-Feb-20 A	20-Apr-22
PCB-1100	System B - Backfill north tower	81	19-Aug-19	23-Nov-19	644	16-Feb-20 A	20-Apr-22
PCB-1120	System B - E&M	22	23-Sep-19	19-Oct-19	558	05-Jun-20 A	22-Apr-22
PCB-1130	System B - E&M T&C	24	21-Oct-19	16-Nov-19	344	02-Mar-21 A	29-Apr-22
PCB-1140	System B - Lift installation	75	21-Oct-19	18-Jan-20	344	02-Mar-21 A	29-Apr-22
PCB-1150	System B - Lift T&C	27	20-Jan-20	22-Feb-20	27	30-Apr-22	01-Jun-22
PCB-1160	System B - Submission of form 5 & EMSD instaction	18	24-Feb-20	14-Mar-20	18	02-Jun-22	23-Jun-22
PCB-1170	System B - Issurance of Uer Permit	6	16-Mar-20	21-Mar-20	6	24-Jun-22	30-Jun-22
PC system A							
PCA-1050A	(NOC[TBA]) 5th wave COVID19 affected to works in PC-System A	0			40	28-Feb-22 A	19-Apr-22
PCA-1060	B5 - E&M and BS Works	0			249	02-Jul-21 A	04-May-22
PCA-1070	B5 - ABWF Works	0			136	20-Dec-21 A	09-Jun-22
PCA-1080	B5 - Testing & Commissioning	0			90	10-Jun-22	24-Sep-22
PCA-1160	C1a - Back Fill Lift Tower (South) upwards Formation Level	0			154	18-Oct-21 A	26-Apr-22
PCA-1170	C1a - E&M and BS Works	0			138	22-Nov-21 A	13-May-22
PCA-1180	C1a - ABWF Works	0			105	03-Jan-22 A	13-May-22
PCA-1190	C1a - Testing & Commissioning	0			90	14-May-22	29-Aug-22
Artificial Flood Attenuation Lake							
Construction of lake bottom							
ART-1980A	(NOC[TBA]) 5th wave COVID19 affected to works in Art Lake	0			40	28-Feb-22 A	19-Apr-22
ART-1990	Art Lake - water testing for bottom of lake	45	28-Feb-20	24-Apr-20	341	02-Mar-21 A	26-Apr-22
ART-1992	Art Lake - Water infill test	0			8	11-May-22	19-May-22
Construction of Floating Bridge							

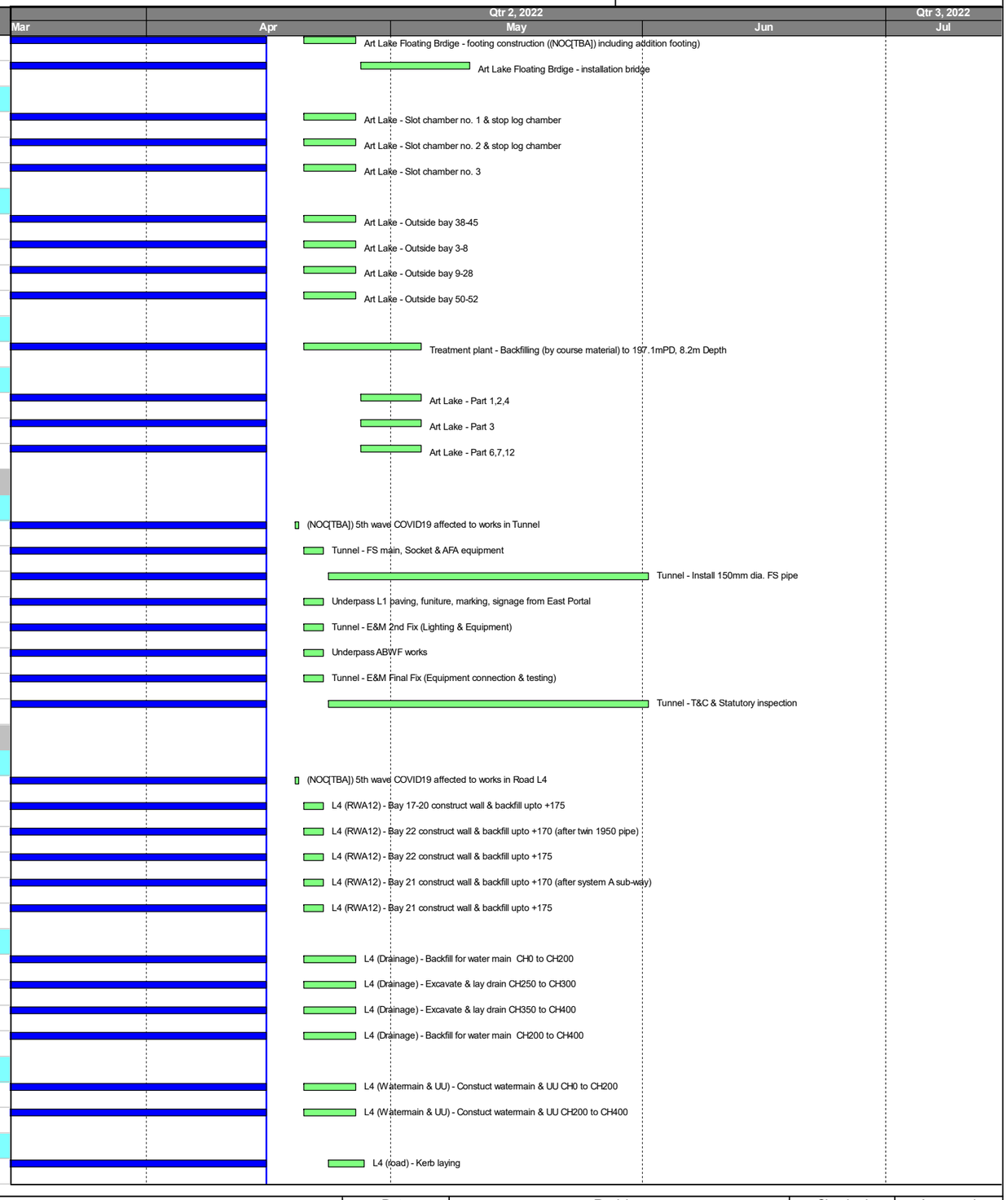
Planned Bar (WP) ◇ Planned Milestone (WP)
Actual Bar ◆ Milestone
Forecast Bar

3-month Rolling Programme
Anderson Rd Sub-programme
15-Apr-22

Date	Revision	Checked	Approved
15-Apr-22	C1-MPU202204		

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-2060	Art Lake Floating Brdige - footing construction ((NOC[TBA]) including addition footing)	30	06-Dec-19	13-Jan-20	381	11-Jan-21 A	26-Apr-22
ART-2070	Art Lake Floating Brdige - installation bridge	30	14-Jan-20	20-Feb-20	49	09-Mar-22 A	10-May-22
Slot Chamber							
ART-2080	Art Lake - Slot chamber no. 1 & stop log chamber	18	09-Dec-19	31-Dec-19	578	16-May-20 A	26-Apr-22
ART-2090	Art Lake - Slot chamber no. 2 & stop log chamber	26	31-Jan-20	29-Feb-20	347	23-Feb-21 A	26-Apr-22
ART-2100	Art Lake - Slot chamber no. 3	33	31-Jan-20	09-Mar-20	347	23-Feb-21 A	26-Apr-22
Drainage							
ART-2110	Art Lake - Outside bay 38-45	63	04-Nov-19	18-Jan-20	637	02-Mar-20 A	26-Apr-22
ART-2120	Art Lake - Outside bay 3-8	28	09-Dec-19	13-Jan-20	578	16-May-20 A	26-Apr-22
ART-2130	Art Lake - Outside bay 9-28	56	21-Nov-19	31-Jan-20	607	07-Apr-20 A	26-Apr-22
ART-2140	Art Lake - Outside bay 50-52	14	31-Jan-20	15-Feb-20	465	28-Sep-20 A	26-Apr-22
Treatment Plant							
ART-1630	Treatment plant - Backfilling (by course material) to 197.1mPD, 8.2m Depth	30	28-Dec-19	05-Feb-20	387	11-Jan-21 A	04-May-22
Bioretention System							
ART-2150	Art Lake - Part 1,2,4	72	01-Feb-20	29-Apr-20	560	13-Jun-20 A	04-May-22
ART-2160	Art Lake - Part 3	32	14-Jan-20	22-Feb-20	516	06-Aug-20 A	04-May-22
ART-2170	Art Lake - Part 6,7,12	16	17-Feb-20	05-Mar-20	514	08-Aug-20 A	04-May-22
Underpass Tunnel							
VE Panels, Road Works, E&M							
TUN-3530A	(NOC[TBA]) 5th wave COVID19 affected to works in Tunnel	0			40	28-Feb-22 A	19-Apr-22
TUN-3540	Tunnel - FS main, Socket & AFA equipment	0			446	19-Oct-20 A	22-Apr-22
TUN-3542	Tunnel - Install 150mm dia. FS pipe	0			63	15-Mar-22 A	01-Jun-22
TUN-3550	Underpass L1 paving, funiture, marking, signage from East Portal	0			446	19-Oct-20 A	22-Apr-22
TUN-3560	Tunnel - E&M 2nd Fix (Lighting & Equipment)	0			446	19-Oct-20 A	22-Apr-22
TUN-3570	Underpass ABWF works	0			429	09-Nov-20 A	22-Apr-22
TUN-3580	Tunnel - E&M Final Fix (Equipment connection & testing)	0			429	09-Nov-20 A	22-Apr-22
TUN-3590	Tunnel - T&C & Statutory inspection	0			63	15-Mar-22 A	01-Jun-22
Road L4 (RWA18, Noise Barrier, RWA12, Utilities & Road Works)							
Retaining Wall RWA12							
L4-3450A	(NOC[TBA]) 5th wave COVID19 affected to works in Road L4	0			40	28-Feb-22 A	19-Apr-22
L4-3460	L4 (RWA12) - Bay 17-20 construct wall & backfill upto +175	0			247	23-Jun-21 A	22-Apr-22
L4-3530	L4 (RWA12) - Bay 22 construct wall & backfill upto +170 (after twin 1950 pipe)	0			202	16-Aug-21 A	22-Apr-22
L4-3540	L4 (RWA12) - Bay 22 construct wall & backfill upto +175	0			139	01-Nov-21 A	22-Apr-22
L4-3630	L4 (RWA12) - Bay 21 construct wall & backfill upto +170 (after system A sub-way)	0			247	23-Jun-21 A	22-Apr-22
L4-3640	L4 (RWA12) - Bay 21 construct wall & backfill upto +175	0			139	01-Nov-21 A	22-Apr-22
Road Works - Drainage							
L4-4260	L4 (Drainage) - Backfill for water main CH0 to CH200	0			341	02-Mar-21 A	26-Apr-22
L4-4280	L4 (Drainage) - Excavate & lay drain CH250 to CH300	0			341	02-Mar-21 A	26-Apr-22
L4-4300	L4 (Drainage) - Excavate & lay drain CH350 to CH400	0			341	02-Mar-21 A	26-Apr-22
L4-4310	L4 (Drainage) - Backfill for water main CH200 to CH400	0			118	29-Nov-21 A	26-Apr-22
Watermain & Utilities							
L4-4320	L4 (Watermain & UU) - Constuct watermain & UU CH0 to CH200	0			104	15-Dec-21 A	26-Apr-22
L4-4330	L4 (Watermain & UU) - Constuct watermain & UU CH200 to CH400	0			104	15-Dec-21 A	26-Apr-22
Road Formation							
L4-4410	L4 (road) - Kerb laying	0			54	19-Feb-22 A	27-Apr-22



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

3-month Rolling Programme

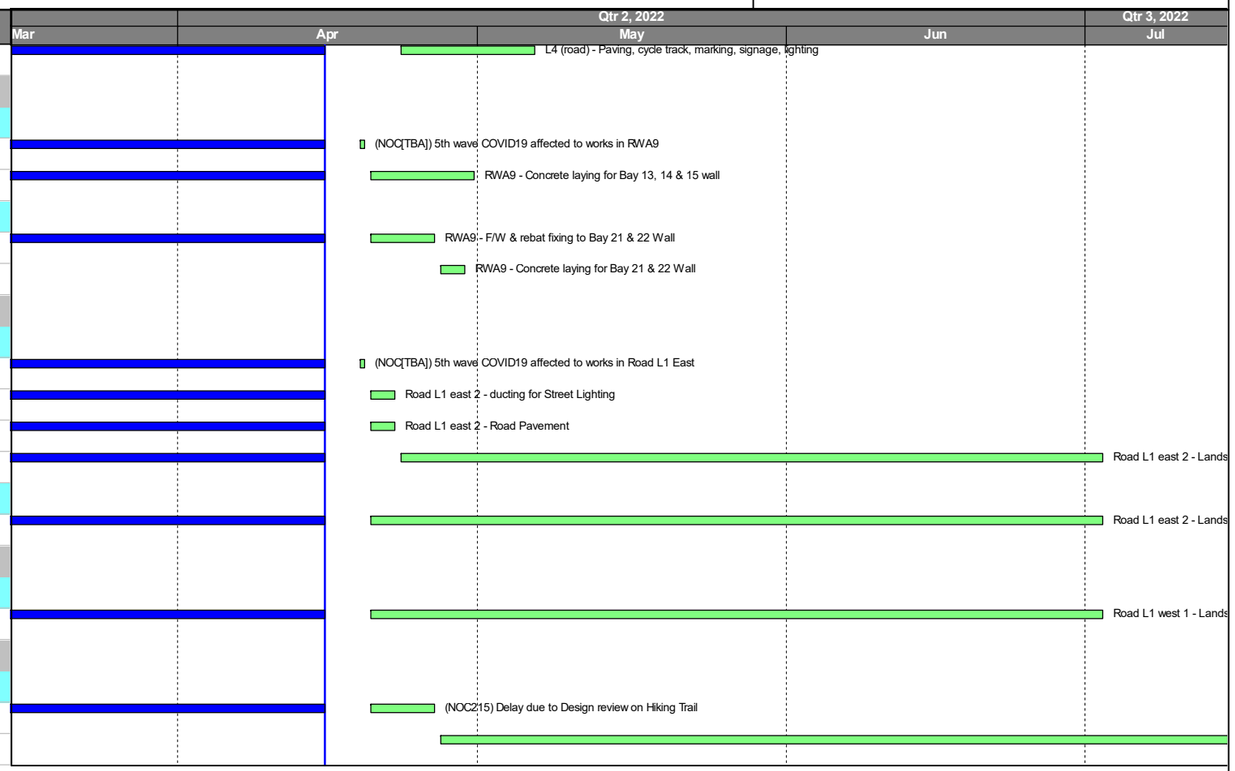
Anderson Rd Sub-programme
15-Apr-22

Date	Revision	Checked	Approved
15-Apr-22	C1-MPU202204		

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
L4-4420	L4 (road) - Paving, cycle track, marking, signage, lighting	0			41	15-Mar-22 A	06-May-22
Retaining Wall RWA9 at Road L3							
RWA9 Bay 13 to Bay 16							
RWA9-1260A	(NOC[TBA]) 5th wave COVID19 affected to works in RWA9	0			40	28-Feb-22 A	19-Apr-22
RWA9-1270	RWA9 - Concrete laying for Bay 13, 14 & 15 wall	0			94	04-Jan-22 A	30-Apr-22
RWA9 Bay 21 & Bay 22							
RWA9-1400	RWA9 - F/W & rebat fixing to Bay 21 & 22 Wall	0			244	30-Jun-21 A	26-Apr-22
RWA9-1410	RWA9 - Concrete laying for Bay 21 & 22 Wall	0			3	27-Apr-22	29-Apr-22
Road Works L5,L1 east (between Junction L3 & L5)							
Road L1 east part 2 (L5 toward PC system B)							
RL1b-1030A	(NOC[TBA]) 5th wave COVID19 affected to works in Road L1 East	0			40	28-Feb-22 A	19-Apr-22
RL1b-1040	Road L1 east 2 - ducting for Street Lighting	0			691	19-Dec-19 A	22-Apr-22
RL1b-1050	Road L1 east 2 - Road Pavement	0			598	17-Apr-20 A	22-Apr-22
RL1b-1060	Road L1 east 2 - Landscape funiture	0			609	13-Jun-20 A	02-Jul-22
Road L1 east part 3 (Junction L3 toward L5)							
RL1c-1060	Road L1 east 2 - Landscape funiture	0			609	13-Jun-20 A	02-Jul-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			307	21-Jun-21 A	02-Jul-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			240	06-Jul-21 A	26-Apr-22
HIK10150	Resume work - Construction of Dwarf Walls for Hiking Trail (SP001 to SP001A)	0			78	27-Apr-22	29-Jul-22



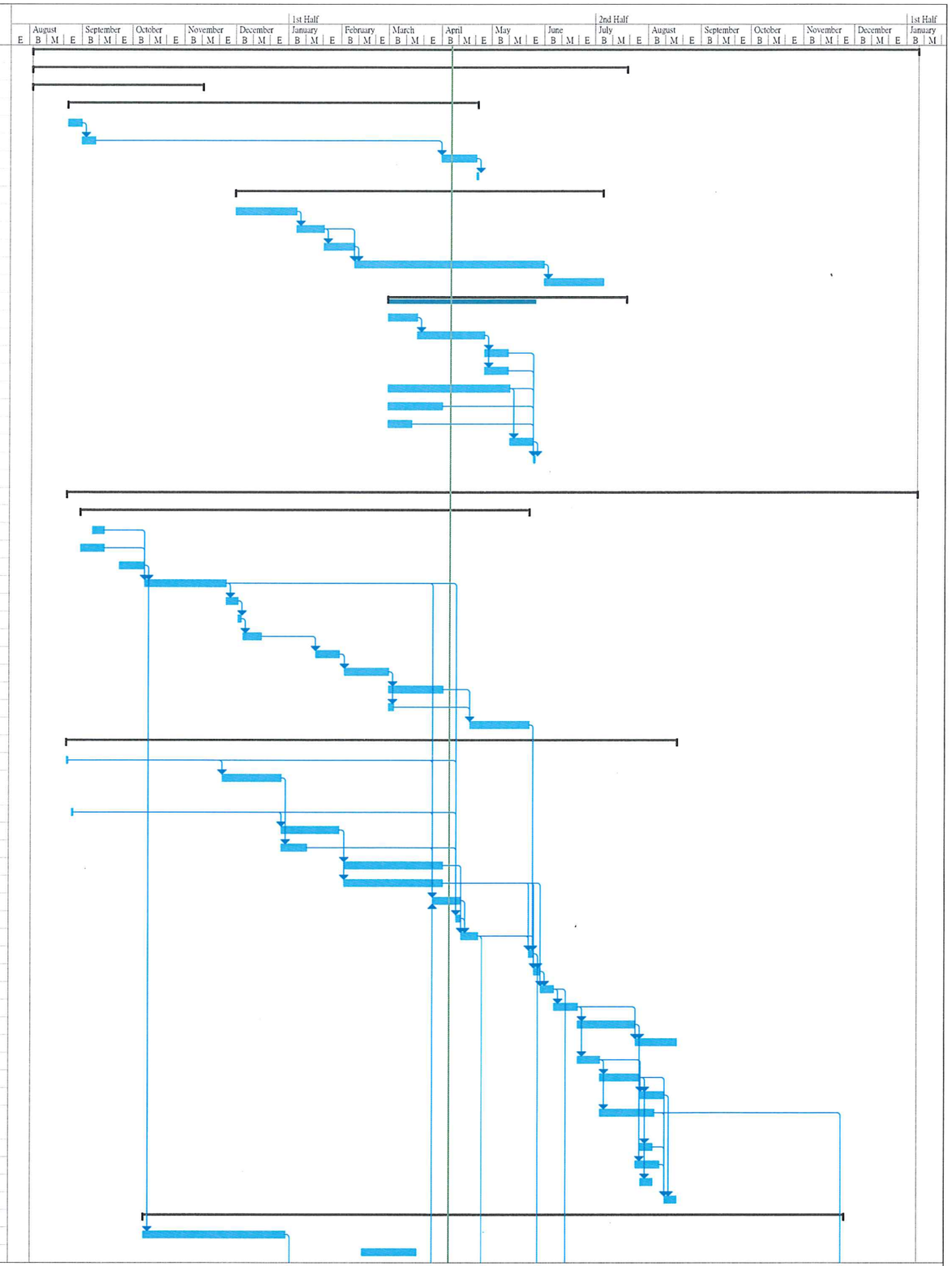
Planned Bar (WP) ◇ Planned Milestone (WP)
Actual Bar ◆ Milestone
Forecast Bar

3-month Rolling Programme
Anderson Rd Sub-programme
15-Apr-22

Date	Revision	Checked	Approved
15-Apr-22	C1-MPU202204		

Contract 2 (NE/2016/05)

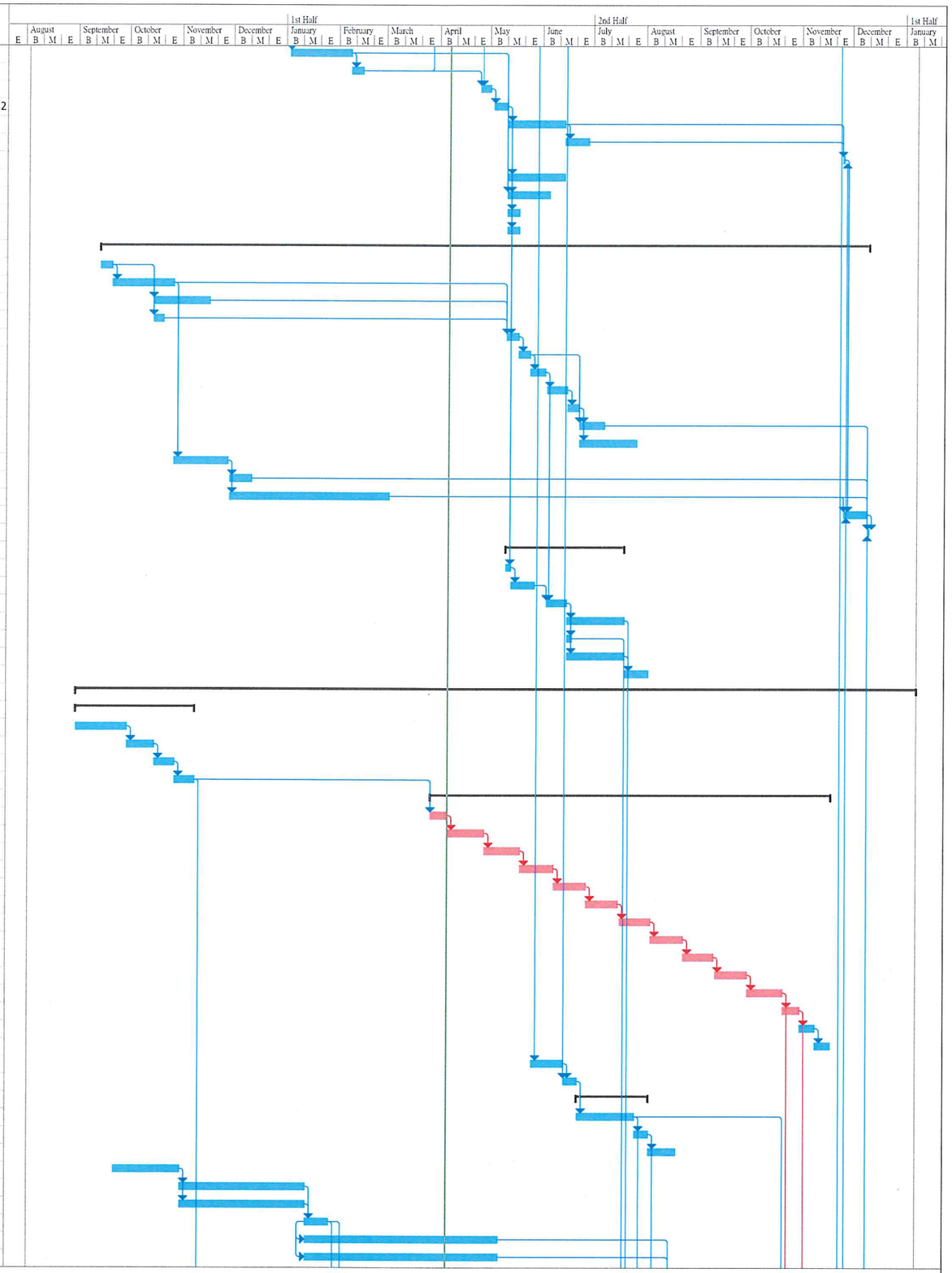
ID	Task Name	Duration	Start	Finish	Predecessors	Successors
1	**NE/2016/05**	**432 days**	**Tue 03-08-21**	**Sat 07-01-23**		
2	**Portion 1**	**284 days**	**Tue 03-08-21**	**Wed 20-07-22**		
3	**E1 Escalator**	**84 days**	**Tue 03-08-21**	**Thu 11-11-21**		
110	**Landscaping on Slope**	**195 days**	**Tue 24-08-21**	**Fri 22-04-22**		
111	U-Channel	7 days	Tue 24-08-21	Tue 31-08-21		112
112	Hydroseeding	7 days	Wed 01-09-21	Wed 08-09-21	111	113
113	Planting	14 days	Fri 01-04-22	Thu 21-04-22	112	114
114	Handover of Slope	1 day	Fri 22-04-22	Fri 22-04-22	113	
115	**Construction of LCSD Rest Garden**	**172 days**	**Wed 01-12-21**	**Tue 05-07-22**		
116	XP & TTA Obtainment	28 days	Wed 01-12-21	Wed 05-01-22		117
117	Remove Ext. Planter Wall	14 days	Thu 06-01-22	Fri 21-01-22	116	118,119
118	Remove Ext. Tree	12 days	Sat 22-01-22	Tue 08-02-22	117	119
119	Construction of Pavement, Railing	90 days	Wed 09-02-22	Tue 31-05-22	118,117	120
120	Construction of Paviion, Bench	28 days	Wed 01-06-22	Tue 05-07-22	119	
121	**Construction of Sau Mau Ping Memorial Park**	**113 days**	**Tue 01-03-22**	**Wed 20-07-22**		
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 Paviion	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		130,129
127	Construction of Irrigation System	28 days	Tue 01-03-22	Fri 01-04-22		130
128	Construction of Railing	12 days	Tue 01-03-22	Mon 14-03-22		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**	**414 days**	**Tue 24-08-21**	**Sat 07-01-23**		
133	**E3-PC2 Pile Cap, Column and Pier**	**212 days**	**Wed 01-09-21**	**Mon 23-05-22**		
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 Blindng 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	Tue 18-01-22	Mon 31-01-22	140	142
142	Construction of Pier Head and Corbal	22 days	Fri 04-02-22	Tue 01-03-22	141	143,144
143	Concrete Curing for Pier Head	28 days	Wed 02-03-22	Sat 02-04-22	142	145
144	Bearing Installation at Corbal	3 days	Wed 02-03-22	Fri 04-03-22	142	145
145	Erect Temp. Steel Support (for 2nd-4th Session, E3-FB1)	28 days	Tue 19-04-22	Mon 23-05-22	144,143	157
146	**E3-FB1 Bridge**	**292 days**	**Tue 24-08-21**	**Thu 18-08-22**		
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 29-12-21	Mon 31-01-22	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	Fri 04-02-22	Sat 02-04-22	150	156
153	Procurement / fabribation for E3-FB1 (2nd-4th Session)	50 days	Fri 04-02-22	Sat 02-04-22	150	157,158,159
154	Erect Temp. Support at E3-Abt (For 1st Session, E3-FB1)	14 days	Mon 28-03-22	Wed 13-04-22	147,149,151,137,175	156
155	Bearing Installation at E3-Abt	3 days	Mon 11-04-22	Wed 13-04-22	147,149,151,137	156
156	Install E3-FB1 - 1st Session (from E3-Abt)	6 days	Thu 14-04-22	Sat 23-04-22	152,154,155	176,157,158
157	Install E3-FB1 - 2nd Session (from E3-PC2)	3 days	Tue 24-05-22	Thu 26-05-22	145,156,153	231,158
158	Install E3-FB1 - 3rd Session (Connect 1st & 2nd Session)	3 days	Fri 27-05-22	Mon 30-05-22	156,157,153	159
159	Install E3-FB1 - 4th Session (E3-LT1 to E3-PC2)	6 days	Tue 31-05-22	Tue 07-06-22	158,153	160,232
160	Concreting Bridge Deck	12 days	Wed 08-06-22	Tue 21-06-22	159	163,161,162
161	Construction of RC Planters	28 days	Wed 22-06-22	Mon 25-07-22	160	168,162
162	Floor Tiling	21 days	Tue 26-07-22	Thu 18-08-22	160,161	
163	Erection of Scaffolding	10 days	Wed 22-06-22	Mon 04-07-22	160	165,166,164
164	Installation of Corrugated Roof Panel & Gutter	21 days	Tue 05-07-22	Thu 28-07-22	163	167,169,170,165
165	Installation of GRP Feature	12 days	Fri 29-07-22	Thu 11-08-22	163,164	170
166	Installation of E&M Works incl. Lighting, Power Cable (From E3 Pillar to E2 Pillar)	28 days	Tue 05-07-22	Fri 05-08-22	163	170,253
167	Installation of Downpipe	6 days	Fri 29-07-22	Thu 04-08-22	164	170
168	Installation of Irrigation System	12 days	Tue 26-07-22	Mon 08-08-22	161	170
169	Fall Arrest System	6 days	Fri 29-07-22	Thu 04-08-22	164	
170	Dismantling of Scaffolding & Temporary Support to E3-FB1	6 days	Fri 12-08-22	Thu 18-08-22	164,165,166,167,168	
171	**Covered Walkway, Sump Pit, E2 Pillar Box**	**339 days**	**Sat 09-10-21**	**Fri 25-11-22**		
172	Excavation of Footing and Sump Pit	69 days	Sat 09-10-21	Fri 31-12-21	136	174
173	Construction of Footing of Covered Walkway	28 days	Tue 15-02-22	Fri 18-03-22		



Project: NE201605_Programme_20

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

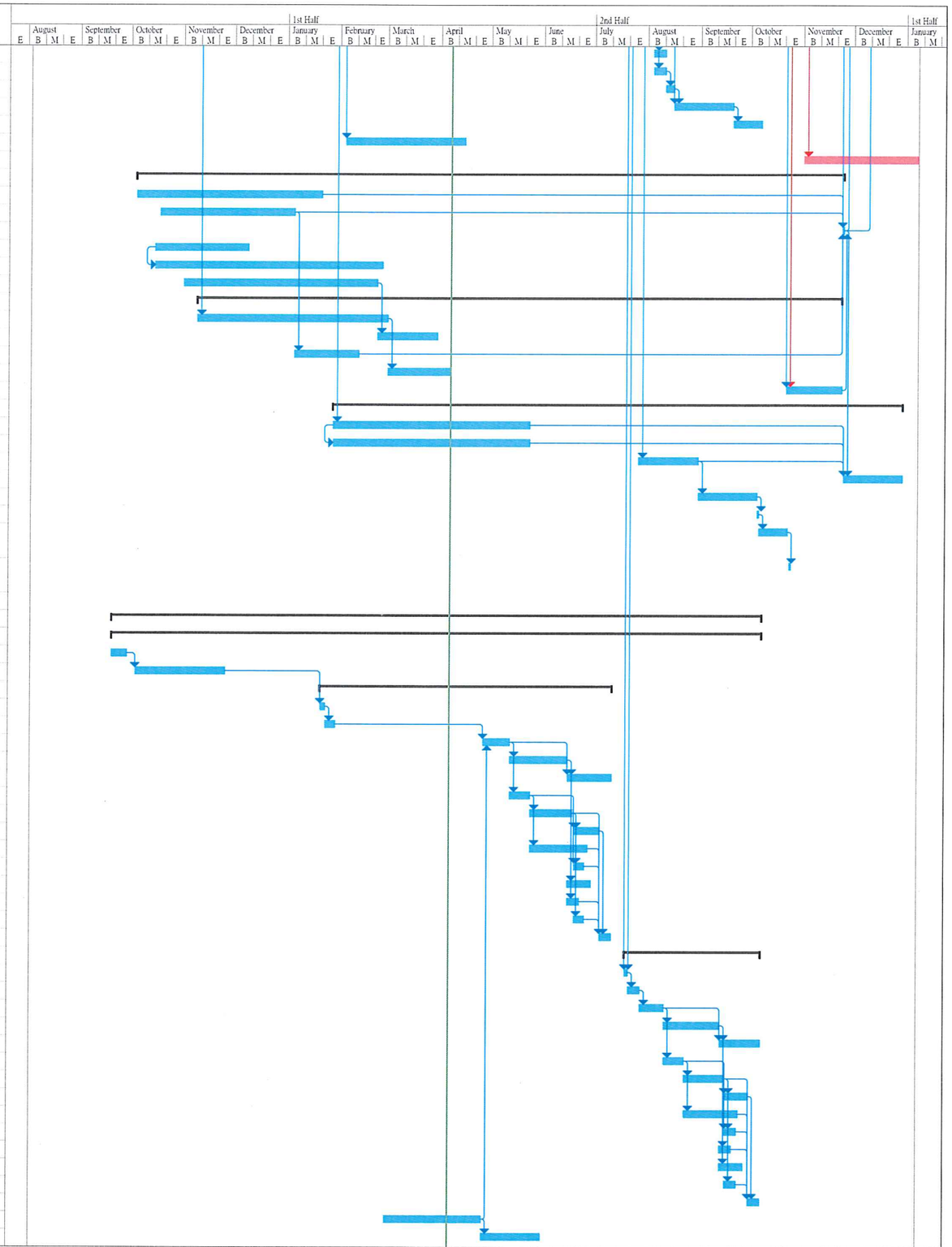
ID	Task Name	Duration	Start	Finish	Predecessors	Successors
174	Construction of Sump Pit	28 days	Mon 03-01-22	Mon 07-02-22	172	175,182
175	Backfilling and Compaction Test	6 days	Tue 08-02-22	Mon 14-02-22	174	176,154
176	Installation of Steel Frame (Covered Walkway)	6 days	Mon 25-04-22	Sat 30-04-22	175,156	177
177	Installation of Roofing (Covered Walkway)	6 days	Tue 03-05-22	Tue 10-05-22	176	181,183,184,190,203,178,182
178	Construction of E2 Pillar Box (Civil)	28 days	Wed 11-05-22	Mon 13-06-22	177	179,180
179	Construction of E2 Pillar Box (E&M)	12 days	Tue 14-06-22	Mon 27-06-22	178	180
180	E2 Pillar Energized from E3 Pillar	1 day	Fri 25-11-22	Fri 25-11-22	253,178,179	200
181	Construction of Pavement	28 days	Wed 11-05-22	Mon 13-06-22	177	
182	Installation of E&M Works (Pump & Lighting)	21 days	Wed 11-05-22	Sat 04-06-22	174,177	
183	Installation of Irrigation Pipe	6 days	Wed 11-05-22	Tue 17-05-22	177	
184	Fall Arrest System	6 days	Wed 11-05-22	Tue 17-05-22	177	
185	**E2 Lift Tower**	**372 days**	**Tue 14-09-21**	**Sat 10-12-22**		
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 11-05-22	Tue 17-05-22	177,187,188,189	191
191	Construction of E2-LT1 Staircase Landing at +62.85mPD	6 days	Wed 18-05-22	Tue 24-05-22	190	192,195
192	Erect Falseworks for E2-LT1 RC Decking at +66.3mPD	8 days	Wed 25-05-22	Thu 02-06-22	191	193,205
193	Construction of E2-LT1 RC Decking at +66.3mPD	10 days	Sat 04-06-22	Wed 15-06-22	192	194
194	Installation of Steel Frame	6 days	Thu 16-06-22	Wed 22-06-22	193	195,196
195	Installation of Railing	12 days	Thu 23-06-22	Thu 07-07-22	194,191	201
196	Tiling Works	28 days	Thu 23-06-22	Tue 26-07-22	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	Sat 26-11-22	Fri 09-12-22	199,253,180	201
201	LE5 Submission to EMSD	1 day	Sat 10-12-22	Sat 10-12-22	199,198,195,253,200	
202	**E2-PC2 Pile Cap**	**58 days**	**Wed 11-05-22**	**Tue 19-07-22**		
203	Excavation for Column Construction	3 days	Wed 11-05-22	Fri 13-05-22	177	204
204	Construction of Column	12 days	Sat 14-05-22	Fri 27-05-22	203	205
205	Construction of Pier Head and Corbal	10 days	Sat 04-06-22	Wed 15-06-22	204,192	207,208,206
206	Concrete Curing for Pier Head and Corbal	28 days	Thu 16-06-22	Tue 19-07-22	205	293
207	Bearing Installation	3 days	Thu 16-06-22	Sat 18-06-22	205	293
208	Drainage	28 days	Thu 16-06-22	Tue 19-07-22	205	209
209	Reinstatment	12 days	Wed 20-07-22	Tue 02-08-22	208	
210	**E3-LT1 Lift TowerPortion 2**	**408 days**	**Tue 31-08-21**	**Sat 07-01-23**		
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)**	**195 days**	**Mon 28-03-22**	**Fri 18-11-22**		
217	1st pour (+25.0 - +28.6mPD)	8 days	Mon 28-03-22	Wed 06-04-22	215	218
218	2nd pour (+28.6 - +32.2mPD)	16 days	Thu 07-04-22	Thu 28-04-22	217	219
219	3rd pour (+32.2 - +35.8mPD)	16 days	Fri 29-04-22	Thu 19-05-22	218	220
220	4th pour (+35.8 - +38.8mPD)	16 days	Fri 20-05-22	Wed 08-06-22	219	221
221	5th pour (+38.8 - +41.8mPD)	16 days	Thu 09-06-22	Mon 27-06-22	220	222
222	6th pour (+41.8 - +45.4mPD)	16 days	Tue 28-06-22	Sat 16-07-22	221	223
223	7th pour (+45.4 - +49.0mPD)	16 days	Mon 18-07-22	Thu 04-08-22	222	224
224	8th pour (+49.0 - +52.6mPD)	16 days	Fri 05-08-22	Tue 23-08-22	223	225
225	9th pour (+52.6 - +56.2mPD)	16 days	Wed 24-08-22	Sat 10-09-22	224	226
226	10th pour (+56.2 - +59.7mPD)	17 days	Mon 12-09-22	Fri 30-09-22	225	227
227	11th pour (+59.7 - +63.3mPD)	18 days	Sat 01-10-22	Fri 21-10-22	226	228,262
228	12th pour (+63.3mPD)	8 days	Sat 22-10-22	Mon 31-10-22	227	229,249
229	13th pour (+66.5mPD)	8 days	Tue 01-11-22	Wed 09-11-22	228	230
230	14th pour (+70.45mPD)	8 days	Thu 10-11-22	Fri 18-11-22	229	
231	Erection of small crane at roof	15 days	Fri 27-05-22	Tue 14-06-22	157	232
232	Removal of tower crane & footing	7 days	Wed 15-06-22	Wed 22-06-22	231,159	234
233	**Reinstatement works for tower crane slab**	**35 days**	**Thu 23-06-22**	**Wed 03-08-22**		
234	Slab Opening Reinstatement	28 days	Thu 23-06-22	Tue 26-07-22	232	235,262,266
235	Parapet Wall (Remaining)	7 days	Wed 27-07-22	Wed 03-08-22	234	243,244,236
236	Removal of small crane	14 days	Thu 04-08-22	Fri 19-08-22	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



Project: NE201605_Programme_20

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 | Critical | Critical Split | Progress | Manual Progress

ID	Task Name	Duration	Start	Finish	Predecessors	Successors
243	Fall Arrest System (Roof)	6 days	Thu 04-08-22	Wed 10-08-22	235	
244	Waterproof (Roof)	6 days	Thu 04-08-22	Wed 10-08-22	235	245
245	Water tightness test for E3-LT1 roof	4 days	Thu 11-08-22	Mon 15-08-22	244	246
246	Dismantle of scaffolding working platform	30 days	Tue 16-08-22	Mon 19-09-22	245,241,242	247
247	Glass canopy at G/F	15 days	Tue 20-09-22	Thu 06-10-22	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	Tue 01-11-22	Sat 07-01-23	228	
250	**E&M works**	**343 days**	**Mon 04-10-21**	**Thu 24-11-22**		
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	Thu 24-11-22	Thu 24-11-22	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**	**312 days**	**Tue 09-11-21**	**Wed 23-11-22**		
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 22-10-22	Wed 23-11-22	234,227	253
263	**Lift installation**	**277 days**	**Fri 28-01-22**	**Thu 29-12-22**		
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	Wed 27-07-22	Tue 30-08-22	234	267,268
267	Self test	30 days	Fri 25-11-22	Thu 29-12-22	266,253,264,265	
268	T&C	30 days	Wed 31-08-22	Tue 04-10-22	266	269
269	Submit LE5 to EMSD	1 day	Wed 05-10-22	Wed 05-10-22	268	270
270	Pre-handing over inspection (E3-LT1 & E3-FB1) by HyD/Structure Maintenance	15 days	Thu 06-10-22	Sat 22-10-22	269	271
271	Ready to open Lift Tower E3-LT1 / Footbridge E3-FB1 to public	1 day	Mon 24-10-22	Mon 24-10-22	270	
272						
273	**Portion 3**	**312 days**	**Mon 20-09-21**	**Fri 07-10-22**		
274	**E2-FB1 Bridge**	**312 days**	**Mon 20-09-21**	**Fri 07-10-22**		
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)**	**136 days**	**Fri 21-01-22**	**Mon 11-07-22**		
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	Wed 27-04-22	Thu 12-05-22	279,307	281,283,282
281	Construction of RC Planter	28 days	Fri 13-05-22	Wed 15-06-22	280	289,288,282
282	Floor Tiling	21 days	Thu 16-06-22	Mon 11-07-22	280,281	
283	Erection of Scaffolding	10 days	Fri 13-05-22	Tue 24-05-22	280	284,285,286,287
284	Installation of Corrugated Roof Panel & Gutter	21 days	Wed 25-05-22	Sat 18-06-22	283	287,290,291,285
285	Installation of GRP Feature	12 days	Mon 20-06-22	Mon 04-07-22	283,284	291
286	Installation of E&M Works incl. Unistruct & Lighting	28 days	Wed 25-05-22	Mon 27-06-22	283	291
287	Installation of Downpipe	6 days	Mon 20-06-22	Sat 25-06-22	284,283	291
288	Installation of Railing	12 days	Thu 16-06-22	Wed 29-06-22	281	
289	Installation of Irrigation System	6 days	Thu 16-06-22	Wed 22-06-22	281	291
290	Fall Arrest System	6 days	Mon 20-06-22	Sat 25-06-22	284	291
291	Dismantling of Scaffolding	6 days	Tue 05-07-22	Mon 11-07-22	285,286,287,289,284,290	
292	**E2-FB1 - 2nd Span (E2-P2 to E2-LT1)**	**69 days**	**Wed 20-07-22**	**Fri 07-10-22**		
293	Bridge Lifting (Only allow on Sat to Sun / Public Holiday)	2 days	Wed 20-07-22	Thu 21-07-22	206,207	294
294	Remaining Steelworks before Bridge Deck Casting	6 days	Fri 22-07-22	Thu 28-07-22	293	295
295	Concreting Bridge Deck	12 days	Fri 29-07-22	Thu 11-08-22	294	296,298,297
296	Construction of RC Planter	28 days	Fri 12-08-22	Tue 13-09-22	295	303,304,297
297	Floor Tiling	21 days	Wed 14-09-22	Fri 07-10-22	295,296	
298	Erection of Scaffolding	10 days	Fri 12-08-22	Tue 23-08-22	295	299,300,301,302
299	Installation of Corrugated Roof Panel & Gutter	21 days	Wed 24-08-22	Fri 16-09-22	298	305,302,300,306
300	Installation of GRP Feature	12 days	Sat 17-09-22	Fri 30-09-22	298,299	306
301	Installation of E&M Works incl. Unistruct & Lighting	28 days	Wed 24-08-22	Sat 24-09-22	298	306
302	Installation of Downpipe	6 days	Sat 17-09-22	Fri 23-09-22	298,299	306
303	Installation of Irrigation System	6 days	Wed 14-09-22	Tue 20-09-22	296	306
304	Installation of Railing	12 days	Wed 14-09-22	Tue 27-09-22	296	
305	Fall Arrest System	6 days	Sat 17-09-22	Fri 23-09-22	299	306
306	Dismantling of Scaffolding	6 days	Sat 01-10-22	Fri 07-10-22	300,301,302,303,305,299	
307	Underground Drainage	45 days	Tue 01-03-22	Tue 26-04-22		308,280
308	Road Surface Reinstatement	28 days	Wed 27-04-22	Tue 31-05-22	307	



Project: NE201605_Programme_20

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 | Critical | Critical Split | Progress | Manual Progress

Contract 3 (NE/2017/03)

Activity ID	Activity Name	Duration	Start	Finish
NE2017/03 - ARQ PHASE 2A - Monthly Programme Update (202201)-0 _220308		1056	29-Aug-20 A	02-Jun-23
Road Improvement Works Location 1 (RIW1)		854	29-Aug-20 A	02-Jun-23
Construction Works		854	29-Aug-20 A	02-Jun-23
CON10728C	Apply CNP for temporary diversion (2 nos. application & 2 nos. extension)	26	29-Aug-20 A	29-Jan-22
CON10650	Construct RW wall (RWC2 type 1a & 1 [Bay 2 to Bay 1])	225	04-Nov-20 A	21-Mar-22
CON12110	Drainage & utilities works (RWC2 type 4, 6, 7, 8)	60	21-Jun-21 A	03-Mar-23
CON12130	Road works (RWC2 type 4, 6, 7, 8)	60	26-Jul-21 A	12-Apr-23
CON12134	Install stone facing for wall (RWC2 type 4, 6, 7, 8)	72	02-Aug-21 A	02-Jun-23
CON11550	Construct piling foundation at FE1 Type 2 (12nos, 2d/no, 1 team)	24	19-Aug-21 A	28-Jan-22
CON12356E	Construct 4nos. sewage manhole & sewage drainage diversion (near KS27 w	138	20-Aug-21 A	14-Mar-22
CON12356F	Construct 4nos. storm manhole & strom drainage diversion (near KS27 west s	138	20-Aug-21 A	14-Mar-22
CON10268	Trial pit excavation (RWC2 type 5)	60	21-Sep-21 A	19-Feb-22
CON10750	Construct socket H-pile works (RWC2 type 3; 400nos, 3d/no, 4 teams)	300	13-Oct-21 A	02-Dec-22
CON12370A	(NCE179) Unforeseen ground condition obstructed sheet-pile installation at KS	30	29-Oct-21 A	27-Jan-22
CON10231C	(CE358) JV prepare & submit; PM review, comment & acceptance watermain	30	20-Nov-21 A	12-Mar-22
CON10231D	(CE358) Prepare & subletting for watermain diversion works; & PM acceptanc	40	20-Nov-21 A	21-Apr-22
CON11328C	(EWN-C-084) (CE[TBA]) Cable diversion works	11	18-Jan-22 A	05-Feb-22
CON12370B	(NCE179) Install sheet-pile works after obstruction removal (KS27 LT1) (id: CC	21	28-Jan-22 A	24-Feb-22
CON10270	ELS to piling foundation pile cap (RWC2 type 5)	54	21-Feb-22	28-Apr-22
CON12372	ELS works (KS27 east side)	60	25-Feb-22	12-May-22
CON11550A	Gas Main Diversion Works	29	15-Mar-22	21-Apr-22
CON10650A	(NCE148) Inclement weather 21/5/2021 to 20/6/2021 RWC2 type 1a, 1 & 2	12	22-Mar-22	04-Apr-22
CON10650B	(NCE153) Inclement weather 21/6/2021 to 20/7/2021 RWC2 type 1a, 1 & 2	12	06-Apr-22	22-Apr-22
CON10231E	(CE358) Watermain diversion due to unforeseen ground condition (by WSD &	14	22-Apr-22	10-May-22
CON11552	Install sheet pile for pile cap construction (FE1-PC1b, 32m, 1m/d)	14	22-Apr-22	10-May-22
CON10650C	(NCE157) Inclement weather 21/7/2021 to 20/8/2021 RWC2 type 1a, 1 & 2	11	23-Apr-22	06-May-22
CON10390	Construct pile cap (RWC2 type 5 [bay 46])	90	29-Apr-22	16-Aug-22
CON10652	Construct RW footing (RWC2 type 2)	60	07-May-22	19-Jul-22
CON11554	ELS works for pile cap construction (FE1-PC1b, 32m, 1m/d)	36	11-May-22	22-Jun-22
CON10240	Existing drainage pipe diversion (lower stream)	14	11-May-22	26-May-22
CON12410	Application for power supply & energization (KS27)	156	13-May-22	16-Nov-22
CON12390	ELS works & construct subway footing (KS27 east side)	90	13-May-22	27-Aug-22
CON10272	Cut slope works (RWC2 Bay 48 to Bay 47)	30	27-May-22	02-Jul-22
CON10274	Cut slope works (RWC2 type 4 Bay 45 to Bay 38)	60	27-May-22	06-Aug-22
CON10654	Construct RW wall (RWC2 type 2)	60	30-May-22	09-Aug-22
Road Improvement Works Location 2 (RIW2)		358	28-Aug-21 A	19-Aug-22
Construction Works in Slope C3 (Portion B)		271	21-Oct-21 A	19-Aug-22
CON20670C	ELS to RW bay 9 to bay 16 formation (due to unforeseen ground condition)	34	21-Oct-21 A	16-Feb-22
CON20930	Construct RW bay 14 to bay 16 wall (L=19m)	48	02-Dec-21 A	14-Feb-22
CON20790	Construct RW bay 9 to bay 13 base (L=30m) (due to unforeseen ground conc	66	10-Jan-22 A	04-May-22
CON20170	Fabrication of NB steel post - along slope side	70	09-Feb-22	19-Apr-22
CON21010	Utilities & drainage works at Portion B (bay 3 to bay 8)	30	15-Feb-22	21-Mar-22
CON20810	Construct RW bay 9 to bay 13 wall (L=30m) (due to unforeseen ground condi	66	10-Mar-22	01-Jun-22
CON20152	Review temporary drainage system before year 2022 rain season (RIW2)	18	12-Mar-22	01-Apr-22
CON21030	Utilities & drainage works at Portion B (bay 1 to bay 2)	30	22-Mar-22	29-Apr-22
CON20774A	Soil nail works at RW3b (remaining area)	30	22-Mar-22	29-Apr-22
CON20990	Utilities & drainage works at Portion B (bay 9 to bay 13)	60	09-Apr-22	24-Jun-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
CON21050	Utilities & drainage works at Portion B (bay 14 to bay 16)	30	30-Apr-22	07-Jun-22
CON20210	Fabrication of NB steel post - central median near junction at on sau road left tu	105	04-May-22	16-Aug-22
CON20770	Fill slope at 11NE-B/F56 (Zone 7)	66	02-Jun-22	19-Aug-22
CON20850A	Remaining works for junction at RWC3 C & B	42	02-Jun-22	22-Jul-22
Construction Noise Semi-Enclosure SE2 (Portion C)		289	28-Aug-21 A	18-Aug-22
CON21656	(CE332) Construct piling fdn of SE2 (Bay4 to Bay8, stage 1 58nos. 1 team)	72	28-Aug-21 A	31-Jan-22
CON21770	Remove piling platform at CT4	18	04-Jan-22 A	24-Jan-22
CON219661	ELS works to +174mPD	24	15-Jan-22 A	15-Feb-22
CON21658	(CE332) Construct piling fdn of SE2 (Bay9 to Bay12, stage 2 38nos. 1 team)	56	12-Feb-22	22-Apr-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
CON21660	(CE332) Excavate trial trench, SLG meeting & UU portection works	30	23-Apr-22	30-May-22
CON219704	Install pipe pile (SE2 Bay19 to Bay21 road side, 32no, 1 team)	16	25-Apr-22	14-May-22
CON219705	ELS works to road level	16	16-May-22	02-Jun-22
CON21670	Install pipe pile wall at SE2 Bay4 to Bay8 (48m 68no. 1 team + setup)	36	31-May-22	13-Jul-22
CON21990	Construct piling fdn SE2 Bay 19 to 21 (21nos, 2d/no. 1 team + setup)	64	04-Jun-22	18-Aug-22
CON21778	Construct NB pile cap (CT4 Bay1 to Bay3; L=30m)	24	08-Jun-22	06-Jul-22
Road Improvement Works Location 3 (RIW3)		444	19-Jul-21 A	09-Feb-23

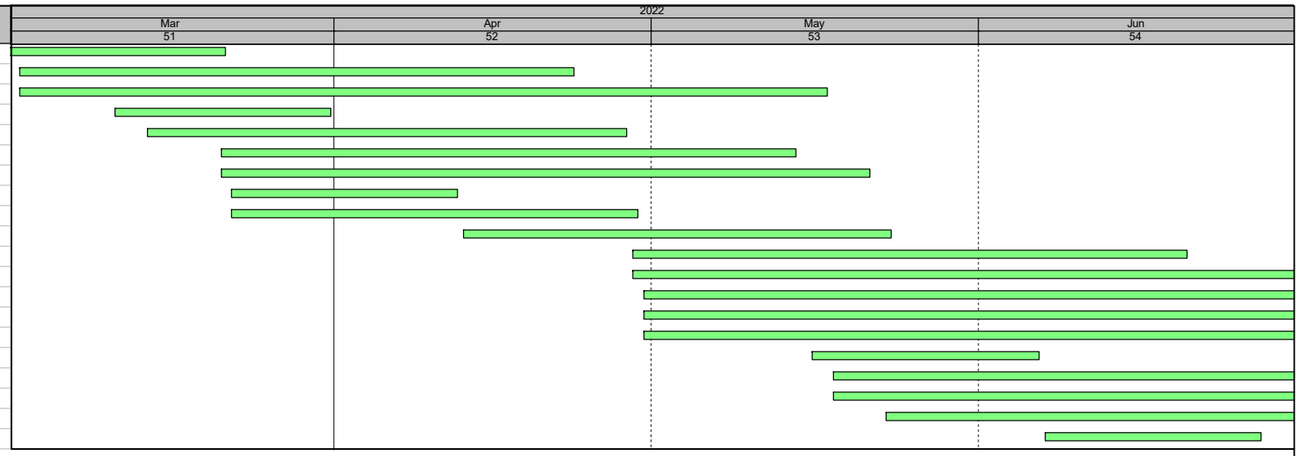
Actual Work
Remaining Work
Milestone

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
Construction Works		444	19-Jul-21 A	09-Feb-23
CON31130	Cut slope works (CH115 to CH275) (L=160m, 24058m3, 65m3/d)	371	19-Jul-21 A	09-Feb-23
CON31150	Construct RWD3 (CH60 to CH152)	150	09-Aug-21 A	21-May-22
CON32410	Construct type 2 NB footing (CH44~CH52, 130m3, team 1)	150	16-Aug-21 A	29-Apr-22
CON30170	Slope works at slope D1 (stage 4, 55% completed)	72	19-Aug-21 A	10-Feb-22
CON30390	Construct RWD1 (bay 8 to bay 13) utilities works & backfill (2 teams)	60	29-Nov-21 A	28-Feb-22
CON30650	Construct Twin Fresh Watermain CH10 to CH50	120	30-Nov-21 A	29-Apr-22
CON30656	Construct Twin Fresh Watermain CH50 to CH100	142	30-Nov-21 A	18-Jun-22
CON30658	Construct Twin Fresh Watermain CH270 to CH320	158	30-Nov-21 A	08-Jul-22
CON30662	Construct Fresh Watermain A CH320 to CH400 (EPD access)	180	30-Nov-21 A	04-Jul-22
CON30490	Drainage & utilities works (bay 8 to bay 14)	60	21-Dec-21 A	07-Mar-22
CON32430	Construct type 2 NB tie beam (CH44~CH52, 130m3, team 1)	150	14-Jan-22 A	20-Jul-22
CON30412B	Install pipe pile wall (around 32nos. 1d/no.+ setup) (Bay 14b to Bay 16)	36	14-Jan-22 A	28-Feb-22
CON30510	Road works (bay 8 to bay 14)	60	17-Jan-22 A	30-Mar-22
CON30190	Slope works at slope D1 (stage 5, 70% completed)	72	11-Feb-22	12-May-22
CON30666	Construct Salt Watermain A near F1-3 (TKO Rd Slip Rd)	60	18-Feb-22	04-May-22
CON30412D	Install UU support (Bay 14b to Bay 16)	6	15-Mar-22	21-Mar-22
CON30412E	Pre-drill & construct mini pile at RWD1 (bay 14b) (10nos, 3.0d/no, 1 team)	30	22-Mar-22	29-Apr-22
CON30330	Construct RWD1 (bay 1 to bay 7) utilities works & backfill (2 teams)	60	31-Mar-22	16-Jun-22
CON30530	Drainage & utilities works (bay 1 to bay 7)	60	31-Mar-22	16-Jun-22
CON30550	Road works (bay 1 to bay 7)	60	28-Apr-22	11-Jul-22
CON30664	Construct Fresh Watermain B CH320 to CH380 (TKO Rd Slip Rd)	96	30-Apr-22	24-Aug-22
CON30668	(CE[TBA]) Fresh Watermain B Connection	120	30-Apr-22	22-Sep-22
CON30670	(CE[TBA]) Fresh Watermain A Connection	120	30-Apr-22	22-Sep-22
CON30430	Construct pile cap (Bay 14b)	12	30-Apr-22	16-May-22
CON30191	Slope works at slope D1 (stage 5a, 80% completed)	72	13-May-22	06-Aug-22
CON30430A	Plate load test (Bay 15 to Bay 16)	12	17-May-22	30-May-22
CON30430B	Construct RC stem wall (Bay 14a to Bay 14b)	24	31-May-22	28-Jun-22
Pedestrian Connectivity Facility (PC-E11)		528	10-Jun-21 A	27-Jun-22
Construction Works		528	10-Jun-21 A	27-Jun-22
CON42302A	(NCE139) Design review on backdrop manhole for M830 near E11-PC1	60	10-Jun-21 A	27-Jan-22
CON42772	ABWF works @LT2 (Other than lift shaft area)	48	04-Aug-21 A	07-Feb-22
CON42912	CLP off site bound cable laying works (by CLP)	155	01-Sep-21 A	08-Apr-22
CON42950	Lifts installation works in E11-LT2	60	02-Nov-21 A	18-May-22
CON42630	Construct covered-walkway between PC-E11 & BBI toilet	102	04-Nov-21 A	09-Mar-22
CON42790	E&M works to PC-E11 @E11-FB2 & E11-FB4	48	25-Nov-21 A	23-Apr-22
CON42810	E&M works to PC-E11 @E11-FB3 & E11-FB5	48	25-Nov-21 A	23-Apr-22
CON42750	ABWF works @E11-FB1	60	21-Dec-21 A	26-Mar-22
CON42650	Install glass & window to lift tower no 1	21	01-Mar-22	24-Mar-22
CON42730	ABWF works @LT1 (inside 2nos lift shaft)	12	25-Mar-22	08-Apr-22
CON42830	E&M works to PC-E11 @LT1 (inside 2nos lift shaft)	12	09-Apr-22	26-Apr-22
CON42850	E&M works to PC-E11 @E11-FB1	48	09-Apr-22	10-Jun-22
CON42732	ABWF works @LT1 (Other than lift shaft area)	48	09-Apr-22	10-Jun-22
CON42610A	Install fall arrest system on roof of footbridge	36	09-Apr-22	26-May-22
CON42930	Lifts installation works in E11-LT1	60	12-Apr-22	27-Jun-22
CON42832	E&M works to PC-E11 @LT1 (Other than lift shaft area)	36	27-Apr-22	10-Jun-22
CON42952	T&C to lift E11-LT2	30	19-May-22	23-Jun-22
Pedestrian Connectivity Facility (PC-E8)		42	21-Dec-21 A	07-Feb-22
Construction Works		42	21-Dec-21 A	07-Feb-22
CON43510	Construct concrete buttress wall Remove piling platform	24	21-Dec-21 A	07-Feb-22
CON40670	Slope replacement works cycle 2 (slope 326)	18	21-Jan-22 A	07-Feb-22
Pedestrian Connectivity Facility System A (SYA)		239	12-Nov-21 A	02-Sep-22
Construction Works		239	12-Nov-21 A	02-Sep-22
CON50330	ABWF works (lift tower & staircase)	120	12-Nov-21 A	07-Apr-22
CON50332	ABWF works (4 nos. lift shaft)	120	12-Nov-21 A	07-Apr-22
CON50312A	Off site fabrication for footbridge steel frame & delivery to site	62	12-Nov-21 A	04-Mar-22
CON50370	Install windows & louvers (SYA 1st & 2nd lift shaft)	60	17-Dec-21 A	03-Mar-22
CON50492	E&M works (SYA 1st & 2nd lift shaft)	42	11-Jan-22 A	03-Mar-22
CON50314	Steel works at SyA-ST1	90	11-Jan-22 A	05-May-22
CON50390	Install windows & louvers (SYA 3rd & 4th lift shaft)	60	25-Jan-22	08-Apr-22
CON50494	E&M works (SYA 3rd & 4th lift shaft)	42	18-Feb-22 A	06-Apr-22
CON50410	Lifts installation works in SYA-LT1A & SYA-LT1B	60	04-Mar-22	19-May-22
CON50496	E&M works (Open area for lift tower & staircase)	120	08-Apr-22	02-Sep-22
CON50430	Lifts installation works in SYA-LT1C & SYA-LT2A	60	09-Apr-22	24-Jun-22
Pedestrian Connectivity Facility System B (SYB)		406	21-Jun-21 A	29-Nov-22
Construction Works		406	21-Jun-21 A	29-Nov-22
CON52170	Construct superstructure SYB-LT1	168	21-Jun-21 A	19-Mar-22
CON51450A	(NCE156) Unforseen gound condition affected install sheet pile at SYB-PC1	130	28-Jul-21 A	07-Feb-22
CON51730	Construct pile cap SYB-PC4 (52m3)	38	21-Dec-21 A	01-Mar-22
CON51690	Construct pile cap SYB-PC6 (120m3)	48	21-Dec-21 A	10-Mar-22

Actual Work
Remaining Work
Milestone

Activity ID	Activity Name	Duration	Start	Finish
CON52230	Erect footbridge steel frame SYB-A1 to PC8 (A1 to P8)	18	01-Mar-22	21-Mar-22
CON52110	Construct pier SYB-P3 (2 pour) & temporary LT1 support	42	02-Mar-22	23-Apr-22
CON52150	Construct pier SYB-P5 (3 pour)	60	02-Mar-22	17-May-22
CON51592	Review temporary drainage system before year 2022 rain season (Sys B)	18	11-Mar-22	31-Mar-22
CON51770	Construct pile cap SYB-PC1 (35m3)	36	14-Mar-22	28-Apr-22
CON51170	Install glass & window @SYB-LT1	42	21-Mar-22	14-May-22
CON52172	Construct R.C. desk P2 to LT1	48	21-Mar-22	21-May-22
CON52250	Erect footbridge steel frame PC8 to PC7 (P8 to P7)	18	22-Mar-22	12-Apr-22
CON52370	Construct deck slab, planter wall and roofing SYB-A1 to PC8 (A1 to P8)	30	22-Mar-22	29-Apr-22
CON52390	Construct deck slab, planter wall and roofing PC8 to PC7 (P8 to P7)	30	13-Apr-22	23-May-22
CON51990	Construct pier SYB-P1 (2 pour)	42	29-Apr-22	20-Jun-22
CON51810	Construct underground drainage pipe	177	29-Apr-22	29-Nov-22
CON52650	ABWF works @ steel frame footbridge A1 to P8	72	30-Apr-22	27-Jul-22
CON53230	Application for power supply & energization (SYB)	156	30-Apr-22	05-Nov-22
CON52990	E&M works @ steel frame footbridge A1 to P8	60	30-Apr-22	13-Jul-22
CON51190	ABWF works @SYB-LT1	18	16-May-22	06-Jun-22
CON51930	Construct pier SYB-P4 (2 pour)	42	18-May-22	07-Jul-22
CON51950	Construct pier SYB-P6 (3 pour)	72	18-May-22	11-Aug-22
CON52210	Install steel roof P2 to LT1	48	23-May-22	19-Jul-22
CON51490	E&M works @SYB-LT1	18	07-Jun-22	27-Jun-22



Actual Work
Remaining Work
Milestone

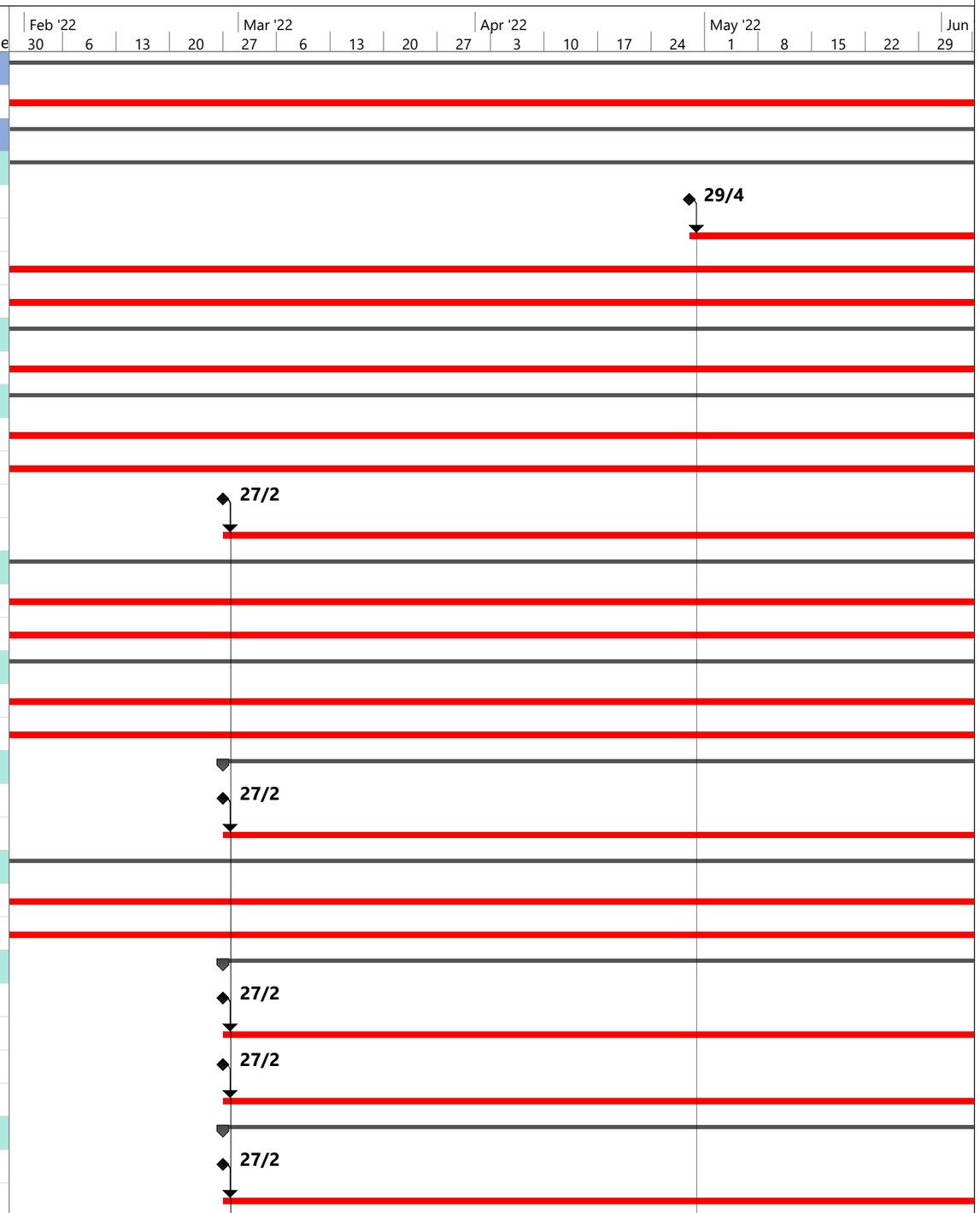
NE/2017/03 Development of Anderson Road Quarry Site - Investigation Design & Construction
Development of Anderson Road Quarry Site Road - Improvement Works & Pedestrian Connectivity Facilities Works Phase 2A
3-Month Rolling Programme

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 : February 2022

ID	Activity Name	Dur	Early Start	Early Finish	Late Start	Late Finish	% Comple
1	**Contract Period**	**1248d**	**Fri 30/7/21**	**Sat 28/12/24**	**Fri 30/7/21**	**Sat 28/12/24**	**14%**
3	Contract Duration	1247d	Sat 31/7/21	Sat 28/12/24	Sat 31/7/21	Sat 28/12/24	14%
5	**Section of Works and Relevant Portions of Work**	**1248d**	**Fri 30/7/21**	**Sat 28/12/24**	**Fri 30/7/21**	**Sat 28/12/24**	**9%**
6	**Section of Works 1 - Portions 1a, 2a & 2b**	**836d**	**Mon 30/8/21**	**Thu 14/12/...**	**Mon 30/8/21**	**Thu 14/12/23**	**9%**
7	Access date for Portion 1a	0d	Fri 29/4/22	Fri 29/4/22	Fri 29/4/22	Fri 29/4/22	0%
8	Construction Duration for Portion 1a	594d	Fri 29/4/22	Wed 13/12/...	Fri 29/4/22	Wed 13/12/23	0%
11	Construction Duration for Portion 2a	836d	Mon 30/8/21	Wed 13/12/...	Mon 30/8/21	Wed 13/12/23	17%
14	Construction Duration for Portion 2b	730d	Tue 14/12/21	Wed 13/12/...	Tue 14/12/21	Wed 13/12/23	5%
20	**Section of Works 2 - Portion 8**	**730d**	**Fri 30/7/21**	**Sat 29/7/23**	**Fri 30/7/21**	**Sat 29/7/23**	**24%**
22	Construction Duration for Portion 8	730d	Fri 30/7/21	Sat 29/7/23	Fri 30/7/21	Sat 29/7/23	24%
28	**Section of Works 3 - Portions 1b, 3, 4, 5**	**731d**	**Fri 30/7/21**	**Sun 30/7/23**	**Fri 30/7/21**	**Sun 30/7/23**	**15%**
34	Construction Duration for Portion 3	609d	Mon 29/11/...	Sun 30/7/23	Mon 29/11/21	Sun 30/7/23	9%
37	Construction Duration for Portion 4	670d	Fri 30/7/21	Tue 30/5/23	Fri 30/7/21	Tue 30/5/23	26%
39	Access date for Portion 5	0d	Sun 27/2/22	Sun 27/2/22	Sun 27/2/22	Sun 27/2/22	0%
40	Construction Duration for Portion 5	458d	Sun 27/2/22	Tue 30/5/23	Sun 27/2/22	Tue 30/5/23	0%
46	**Section of Works 4 - Portions 6, 12**	**684d**	**Fri 30/7/21**	**Tue 13/6/23**	**Fri 30/7/21**	**Tue 13/6/23**	**15%**
48	Construction Duration for Portion 6	501d	Sat 29/1/22	Tue 13/6/23	Sat 29/1/22	Tue 13/6/23	0%
51	Construction Duration for Portion 12	684d	Fri 30/7/21	Tue 13/6/23	Fri 30/7/21	Tue 13/6/23	26%
57	**Section of Works 5A - Portions 9, 10**	**699d**	**Fri 30/7/21**	**Wed 28/6/23**	**Fri 30/7/21**	**Wed 28/6/23**	**22%**
59	Construction Duration for Portion 9	638d	Wed 29/9/21	Wed 28/6/23	Wed 29/9/21	Wed 28/6/23	18%
62	Construction Duration for Portion 10	699d	Fri 30/7/21	Wed 28/6/23	Fri 30/7/21	Wed 28/6/23	25%
68	**Section of Works 5B - Portion 11**	**487d**	**Sun 27/2/22**	**Wed 28/6/23**	**Sun 27/2/22**	**Wed 28/6/23**	**0%**
69	Access date for Portion 11	0d	Sun 27/2/22	Sun 27/2/22	Sun 27/2/22	Sun 27/2/22	0%
70	Construction Duration for Portion 11	487d	Sun 27/2/22	Wed 28/6/23	Sun 27/2/22	Wed 28/6/23	0%
80	**Section of Works 7A - Portions 13a, 14**	**669d**	**Fri 30/7/21**	**Mon 29/5/23**	**Fri 30/7/21**	**Mon 29/5/23**	**15%**
82	Construction Duration for Portion 13a	486d	Sat 29/1/22	Mon 29/5/23	Sat 29/1/22	Mon 29/5/23	0%
85	Construction Duration for Portion 14	669d	Fri 30/7/21	Mon 29/5/23	Fri 30/7/21	Mon 29/5/23	26%
91	**Section of Works 7B - Portions 13b, 15**	**671d**	**Sun 27/2/22**	**Fri 29/12/23**	**Sun 27/2/22**	**Fri 29/12/23**	**0%**
92	Access date for Portion 13b	0d	Sun 27/2/22	Sun 27/2/22	Sun 27/2/22	Sun 27/2/22	0%
93	Construction Duration for Portion 13b	671d	Sun 27/2/22	Fri 29/12/23	Sun 27/2/22	Fri 29/12/23	0%
95	Access date for Portion 15	0d	Sun 27/2/22	Sun 27/2/22	Sun 27/2/22	Sun 27/2/22	0%
96	Construction Duration for Portion 15	671d	Sun 27/2/22	Fri 29/12/23	Sun 27/2/22	Fri 29/12/23	0%
110	**Section of Works 9 - Portion 17**	**671d**	**Sun 27/2/22**	**Fri 29/12/23**	**Sun 27/2/22**	**Fri 29/12/23**	**0%**
111	Access date for Portion 17	0d	Sun 27/2/22	Sun 27/2/22	Sun 27/2/22	Sun 27/2/22	0%
112	Construction Duration for Portion 17	671d	Sun 27/2/22	Fri 29/12/23	Sun 27/2/22	Fri 29/12/23	0%



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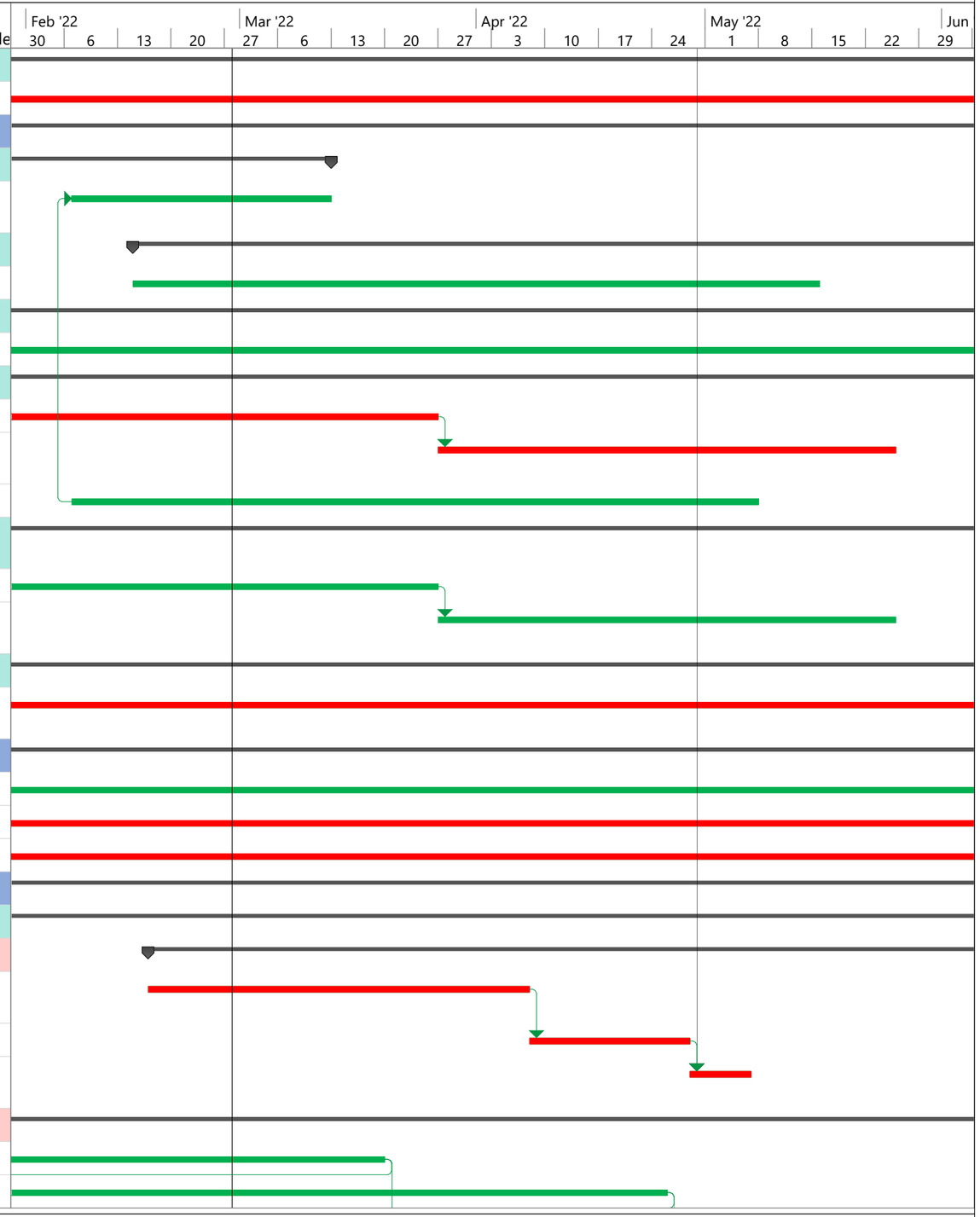
Task — Milestone ◆ — Summary — Critical Task

ID	Activity Name	Dur	Early Start	Early Finish	Late Start	Late Finish	% Comple
118	**Section of Works 10 - All Tree Protection and Preservation Works**	**883d**	**Fri 30/7/21**	**Fri 29/12/23**	**Fri 30/7/21**	**Fri 29/12/23**	**20%**
120	All Tree Protection and Preservation Work Duration for Section 10	883d	Fri 30/7/21	Fri 29/12/23	Fri 30/7/21	Fri 29/12/23	20%
122	**Preliminaries**	**1248d**	**Fri 30/7/21**	**Sat 28/12/24**	**Fri 30/7/21**	**Sat 28/12/24**	**35%**
123	**Establishment of Commercial/Organization**	**226d**	**Fri 30/7/21**	**Sat 12/3/22**	**Fri 30/7/21**	**Sat 4/6/22**	**81%**
158	Nomination of Treatment process specialist, Design Engineer, and Independent Checking Engineer (ICE)	30d	Mon 7/2/22	Sat 12/3/22	Fri 29/4/22	Sat 4/6/22	0%
180	**Procurements of Major Materials**	**430d**	**Tue 15/2/22**	**Thu 20/4/23**	**Sun 20/3/22**	**Tue 7/11/23**	**0%**
187	Procurement of Raise Planter Type A&B	90d	Tue 15/2/22	Sun 15/5/22	Sun 20/3/22	Fri 17/6/22	0%
197	**Programme**	**1239d**	**Fri 30/7/21**	**Thu 19/12/...**	**Fri 30/7/21**	**Sat 28/12/24**	**15%**
203	Implementation of Programme Management and Monthly Reporting	1145d	Mon 1/11/21	Thu 19/12/24	Mon 1/11/21	Sat 28/12/24	7%
224	**Contractor's Design**	**659d**	**Fri 30/7/21**	**Fri 19/5/23**	**Fri 30/7/21**	**Wed 4/10/23**	**13%**
228	Re-submission Contractor's Design - Architectural & Structural	90d	Mon 27/12/...	Sat 26/3/22	Mon 27/12/21	Sat 26/3/22	0%
229	Design Checker Review & Endorsement of Contractor's Design - Architectural	60d	Sun 27/3/22	Wed 25/5/22	Sun 27/3/22	Wed 25/5/22	0%
237	Prepare Contractor's Design - Underground Water Treatment Plant	90d	Mon 7/2/22	Sat 7/5/22	Mon 7/3/22	Sat 4/6/22	0%
246	**Contractor's Design [Enhancement on Architectural Design & Associated Works]**	**450d**	**Fri 30/7/21**	**Sat 22/10/22**	**Fri 30/7/21**	**Thu 27/10/22**	**27%**
250	Vetting of design through public engagement activities	60d	Wed 26/1/22	Sat 26/3/22	Mon 31/1/22	Thu 31/3/22	0%
251	Submission of design to DSD, LCSD and other authorities for vetting and acceptance	60d	Sun 27/3/22	Wed 25/5/22	Fri 1/4/22	Mon 30/5/22	0%
267	**BIM Deliverable**	**1248d**	**Fri 30/7/21**	**Sat 28/12/24**	**Fri 30/7/21**	**Sat 28/12/24**	**17%**
274	Monthly Coordination meeting & Submission of monthly BIM progress reports & Submission of 4D Simulation	1098d	Mon 27/12/21	Sat 28/12/24	Mon 27/12/21	Sat 28/12/24	2%
280	**Work Area**	**1248d**	**Fri 30/7/21**	**Sat 28/12/24**	**Fri 30/7/21**	**Sat 28/12/24**	**11%**
285	CRE Site office Mobilization & Maintenance	1050d	Mon 24/1/22	Sun 8/12/24	Sun 13/2/22	Sat 28/12/24	0%
287	Maintenance Duration for Works Area	1247d	Sat 31/7/21	Sat 28/12/24	Sat 31/7/21	Sat 28/12/24	14%
290	Contractor Site office Maintenance	1050d	Mon 24/1/22	Sun 8/12/24	Mon 24/1/22	Sun 8/12/24	0%
291	**Construction Works**	**1039d**	**Fri 30/7/21**	**Sat 28/12/24**	**Fri 30/7/21**	**Sat 28/12/24**	**6%**
292	**Section of Works 1 - Portions 1a, 1b, 2b**	**697d**	**Mon 30/8/21**	**Wed 13/12/...**	**Mon 30/8/21**	**Wed 13/12/23**	**3%**
293	**Portion 1a**	**556d**	**Thu 17/2/22**	**Wed 13/12/...**	**Thu 17/2/22**	**Wed 13/12/23**	**0%**
294	Preparation & submission of MS, Temp., works, associated plans & docs	42d	Fri 30/7/21	Fri 17/9/21	Thu 17/2/22	Thu 7/4/22	0%
295	Engineer's AIP of MS, Temp., works, plans & associated docs	18d	Fri 8/4/22	Thu 28/4/22	Fri 8/4/22	Thu 28/4/22	0%
296	Provision of site access [273 days after starting date as per Contract]	6d	Fri 29/4/22	Fri 6/5/22	Fri 29/4/22	Fri 6/5/22	0%
316	**Portion 2a**	**697d**	**Mon 30/8/21**	**Wed 13/12/...**	**Mon 30/8/21**	**Wed 13/12/23**	**3%**
321	Excavation and Construction Drainage System	90d	Thu 2/12/21	Sat 19/3/22	Wed 15/12/21	Fri 1/4/22	0%
322	Excavation and Construction of Catchpits + U channel	90d	Sat 8/1/22	Mon 25/4/22	Fri 21/1/22	Mon 9/5/22	0%



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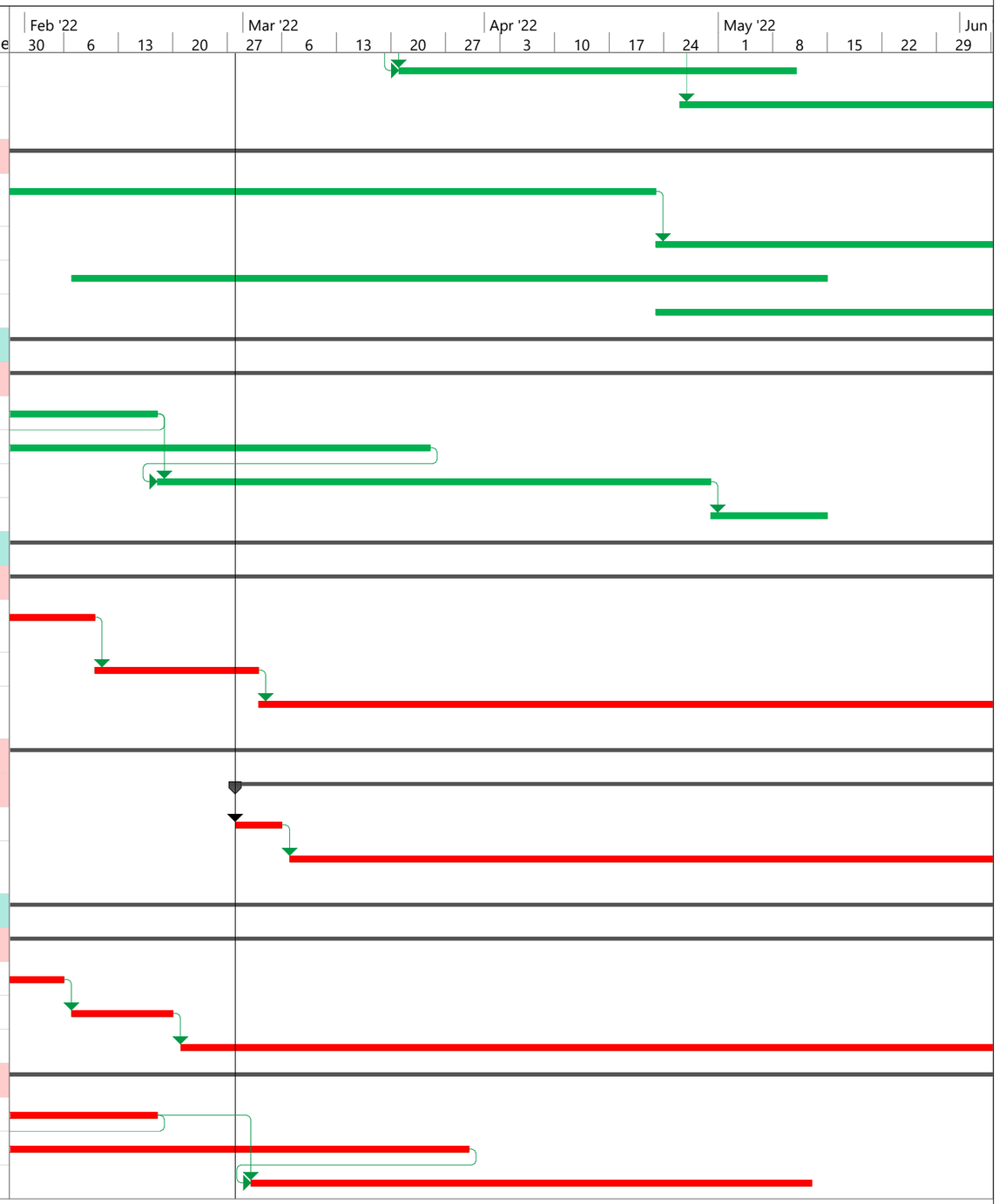
Task — Milestone — Summary — Critical Task

ID	Activity Name	Dur	Early Start	Early Finish	Late Start	Late Finish	% Comple
323	CCTV inspection, testing and commissioning of Drainage Lines	42d	Mon 21/3/22	Tue 10/5/22	Sat 2/4/22	Mon 23/5/22	0%
324	Excavation and Construction of Waterlines for treated water & flushing water, irrigation pipeline and pipe ends with blank flange	90d	Tue 26/4/22	Thu 11/8/22	Thu 21/7/22	Sat 5/11/22	0%
364	**Portion 2b**	**666d**	**Sat 2/10/21**	**Fri 8/12/23**	**Sat 2/10/21**	**Wed 13/12/23**	**7%**
369	Hard landscaping work for Island - placement of boulders, soil placement and planters construction	90d	Thu 6/1/22	Fri 22/4/22	Thu 6/1/22	Wed 27/4/22	5%
370	Soft landscaping works for Island	60d	Sat 23/4/22	Tue 5/7/22	Thu 28/4/22	Sat 9/7/22	0%
371	Construction of artificial lake	82d	Mon 7/2/22	Sat 14/5/22	Fri 1/4/22	Sat 9/7/22	0%
372	Construction of artificial island	60d	Sat 23/4/22	Tue 5/7/22	Thu 28/4/22	Sat 9/7/22	0%
389	**Section of Works 2 - Portion 8**	**596d**	**Fri 30/7/21**	**Mon 17/7/23**	**Fri 30/7/21**	**Sat 29/7/23**	**10%**
390	**Portion 8**	**596d**	**Fri 30/7/21**	**Mon 17/7/23**	**Fri 30/7/21**	**Sat 29/7/23**	**10%**
395	Excavation for Drainage Works	90d	Tue 2/11/21	Thu 17/2/22	Tue 2/11/21	Mon 21/3/22	40%
396	Construction of Drainage Works	90d	Tue 7/12/21	Thu 24/3/22	Tue 7/12/21	Thu 7/4/22	30%
397	CCTV inspection, testing and commissioning of Drainage Works	60d	Fri 18/2/22	Fri 29/4/22	Thu 3/3/22	Fri 13/5/22	0%
398	Time Risk Allowance	12d	Sat 30/4/22	Sat 14/5/22	Sat 14/5/22	Fri 27/5/22	0%
418	**Section of Works 3 - Portions 1b, 3, 4, 5**	**607d**	**Fri 30/7/21**	**Sat 29/7/23**	**Mon 29/11/21**	**Sat 29/7/23**	**3%**
432	**Portion 3**	**506d**	**Mon 29/11/...**	**Sat 29/7/23**	**Mon 29/11/21**	**Sat 29/7/23**	**7%**
435	Preparation & submission of MS, Temp., works, associated plans & docs	42d	Mon 20/12/21	Wed 9/2/22	Mon 20/12/21	Wed 9/2/22	67%
436	Engineer AIP of MS, Temp., works, plans & associated docs	18d	Thu 10/2/22	Wed 2/3/22	Thu 10/2/22	Wed 2/3/22	0%
437	Installation of chain-link fencing + Provision of temporary drainage system	158d	Thu 3/3/22	Wed 7/9/22	Thu 3/3/22	Wed 7/9/22	0%
441	**Portion 4**	**529d**	**Fri 30/7/21**	**Wed 26/4/23**	**Mon 10/10/22**	**Tue 30/5/23**	**0%**
445	**Portion 5**	**381d**	**Mon 28/2/22**	**Tue 30/5/23**	**Mon 28/2/22**	**Tue 30/5/23**	**0%**
446	Provision of site access [212 days after starting date as per Contract]	6d	Mon 28/2/22	Sat 5/3/22	Mon 28/2/22	Sat 5/3/22	0%
447	Installation of chain-link fencing + + Provision of temporary drainage system	135d	Mon 7/3/22	Mon 15/8/22	Mon 7/3/22	Mon 15/8/22	0%
454	**Section of Works 4 - Portions 6, 12**	**568d**	**Fri 30/7/21**	**Tue 13/6/23**	**Fri 30/7/21**	**Tue 13/6/23**	**8%**
455	**Portion 6**	**491d**	**Mon 1/11/21**	**Tue 13/6/23**	**Mon 1/11/21**	**Tue 13/6/23**	**7%**
458	Provision of site access [183 days after starting date as per Contract]	6d	Sat 29/1/22	Sat 5/2/22	Sat 29/1/22	Sat 5/2/22	0%
459	Mobilization & Site Clearance	12d	Mon 7/2/22	Sat 19/2/22	Mon 7/2/22	Sat 19/2/22	0%
460	Excavation and Construction of Drainage Works	90d	Mon 21/2/22	Wed 8/6/22	Mon 21/2/22	Wed 8/6/22	0%
474	**Portion 12**	**568d**	**Fri 30/7/21**	**Tue 13/6/23**	**Fri 30/7/21**	**Tue 13/6/23**	**8%**
479	Excavation for Drainage Works	90d	Tue 2/11/21	Thu 17/2/22	Tue 2/11/21	Thu 17/2/22	5%
480	Construction of Drainage Works	90d	Sat 11/12/21	Tue 29/3/22	Sat 11/12/21	Tue 29/3/22	0%
481	CCTV inspection, testing and commissioning of Drainage Works	60d	Wed 2/3/22	Thu 12/5/22	Wed 2/3/22	Thu 12/5/22	0%



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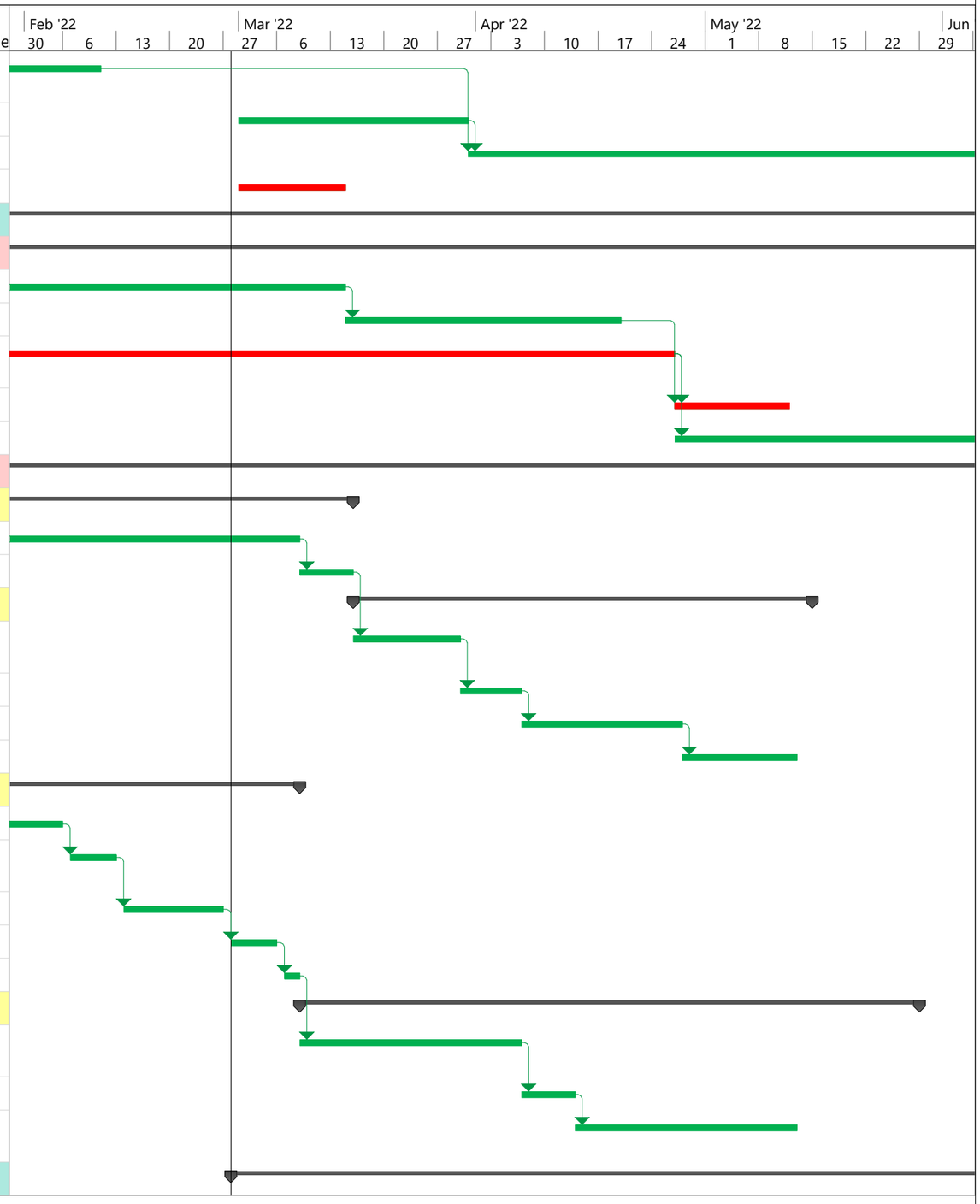
Task — Milestone — Summary — Critical Task

ID	Activity Name	Dur	Early Start	Early Finish	Late Start	Late Finish	% Comple
483	Testing and Commissioning of Waterlines for fresh water and flushing water	24d	Thu 13/1/22	Thu 10/2/22	Thu 28/4/22	Thu 26/5/22	0%
484	Application for Irrigation system (WW0046 Part I & II)	30d	Tue 1/3/22	Thu 31/3/22	Wed 27/4/22	Thu 26/5/22	0%
485	Miscellaneous works (e.g. irrigation system)	60d	Thu 31/3/22	Sat 11/6/22	Fri 27/5/22	Sat 6/8/22	0%
494	PMI 005 : Additional GI at Portion 12	12d	Tue 1/3/22	Tue 15/3/22	Tue 1/3/22	Tue 15/3/22	0%
499	**Section of Works 5A - Portions 9, 10**	**581d**	**Fri 30/7/21**	**Wed 28/6/23**	**Fri 30/7/21**	**Wed 28/6/23**	**16%**
500	**Portion 9 [Sitting Out Area C & R2-1 Footpath]**	**530d**	**Wed 29/9/21**	**Wed 28/6/23**	**Wed 29/9/21**	**Wed 28/6/23**	**10%**
505	Excavation and construction of drainage line and catchpits	60d	Mon 3/1/22	Mon 14/3/22	Mon 10/1/22	Mon 21/3/22	0%
506	CCTV inspection, testing and commissioning of Drainage Lines	30d	Tue 15/3/22	Tue 19/4/22	Tue 22/3/22	Tue 26/4/22	0%
508	Excavation and construction of draw pits and ducting & Irrigation system	90d	Mon 10/1/22	Tue 26/4/22	Mon 10/1/22	Tue 26/4/22	0%
509	Time Risk Allowance	12d	Wed 27/4/22	Wed 11/5/22	Wed 27/4/22	Wed 11/5/22	0%
517	Application for Irrigation system (WW0046: Part IV & V)	60d	Wed 27/4/22	Sat 25/6/22	Sun 30/4/23	Wed 28/6/23	0%
518	**Portion 10**	**581d**	**Fri 30/7/21**	**Wed 28/6/23**	**Fri 30/7/21**	**Wed 28/6/23**	**21%**
525	**Slope Works at Feature No. 11NE-D/C998 (409m)**	**38d**	**Sat 29/1/22**	**Tue 15/3/22**	**Sat 29/1/22**	**Wed 28/6/23**	**42%**
526	Construction of concrete maintenance staircase with hand railings	32d	Sat 29/1/22	Tue 8/3/22	Sat 29/1/22	Wed 21/6/23	50%
527	Installation of display sign for slope registration no. x2	6d	Wed 9/3/22	Tue 15/3/22	Thu 22/6/23	Wed 28/6/23	0%
528	**Slope Works at Feature No. 11NE-D/FR657 (63m)**	**50d**	**Wed 16/3/22**	**Sat 14/5/22**	**Wed 16/3/22**	**Wed 28/6/23**	**24%**
529	Demolition and removal of disused water pipe and sprinkler system	12d	Wed 16/3/22	Tue 29/3/22	Wed 16/3/22	Tue 29/3/22	100%
530	Filling of void with cement soil	6d	Wed 30/3/22	Wed 6/4/22	Mon 15/5/23	Sat 20/5/23	0%
531	Construction of concrete berm	18d	Thu 7/4/22	Wed 27/4/22	Mon 22/5/23	Mon 12/6/23	0%
532	Installation of hand railings	12d	Thu 28/4/22	Thu 12/5/22	Tue 13/6/23	Mon 26/6/23	0%
569	**Slope Works at Feature No. 11NE-D/C979 (45m)**	**32d**	**Sat 29/1/22**	**Tue 8/3/22**	**Wed 2/2/22**	**Thu 10/3/22**	**0%**
570	Time Risk Allowance	6d	Sat 29/1/22	Sat 5/2/22	Wed 2/2/22	Tue 8/2/22	0%
571	Demolition and removal of disused water pipe and sprinkler system	6d	Mon 7/2/22	Sat 12/2/22	Wed 9/2/22	Tue 15/2/22	0%
572	Construction of concrete berm	12d	Mon 14/2/22	Sat 26/2/22	Wed 16/2/22	Tue 1/3/22	0%
573	Installation of hand railings	6d	Mon 28/2/22	Sat 5/3/22	Wed 2/3/22	Tue 8/3/22	0%
574	Installation of display sign for slope registration no. x1	2d	Mon 7/3/22	Tue 8/3/22	Wed 9/3/22	Thu 10/3/22	0%
575	**Slope Works at Feature No. 11NE-D/C947 (420m)**	**68d**	**Wed 9/3/22**	**Sat 28/5/22**	**Fri 11/3/22**	**Tue 31/5/22**	**0%**
576	Demolition and removal of disused water pipe and sprinkler system	24d	Wed 9/3/22	Wed 6/4/22	Fri 11/3/22	Fri 8/4/22	0%
577	Filling of void with cement soil	6d	Thu 7/4/22	Wed 13/4/22	Sat 9/4/22	Fri 15/4/22	0%
578	Removal of damaged wire mesh and construction of new wire mesh	24d	Thu 14/4/22	Thu 12/5/22	Sat 16/4/22	Sat 14/5/22	0%
624	**Section of Works 5B - Portion 11**	**391d**	**Mon 28/2/22**	**Mon 12/6/23**	**Tue 11/4/23**	**Wed 28/6/23**	**0%**



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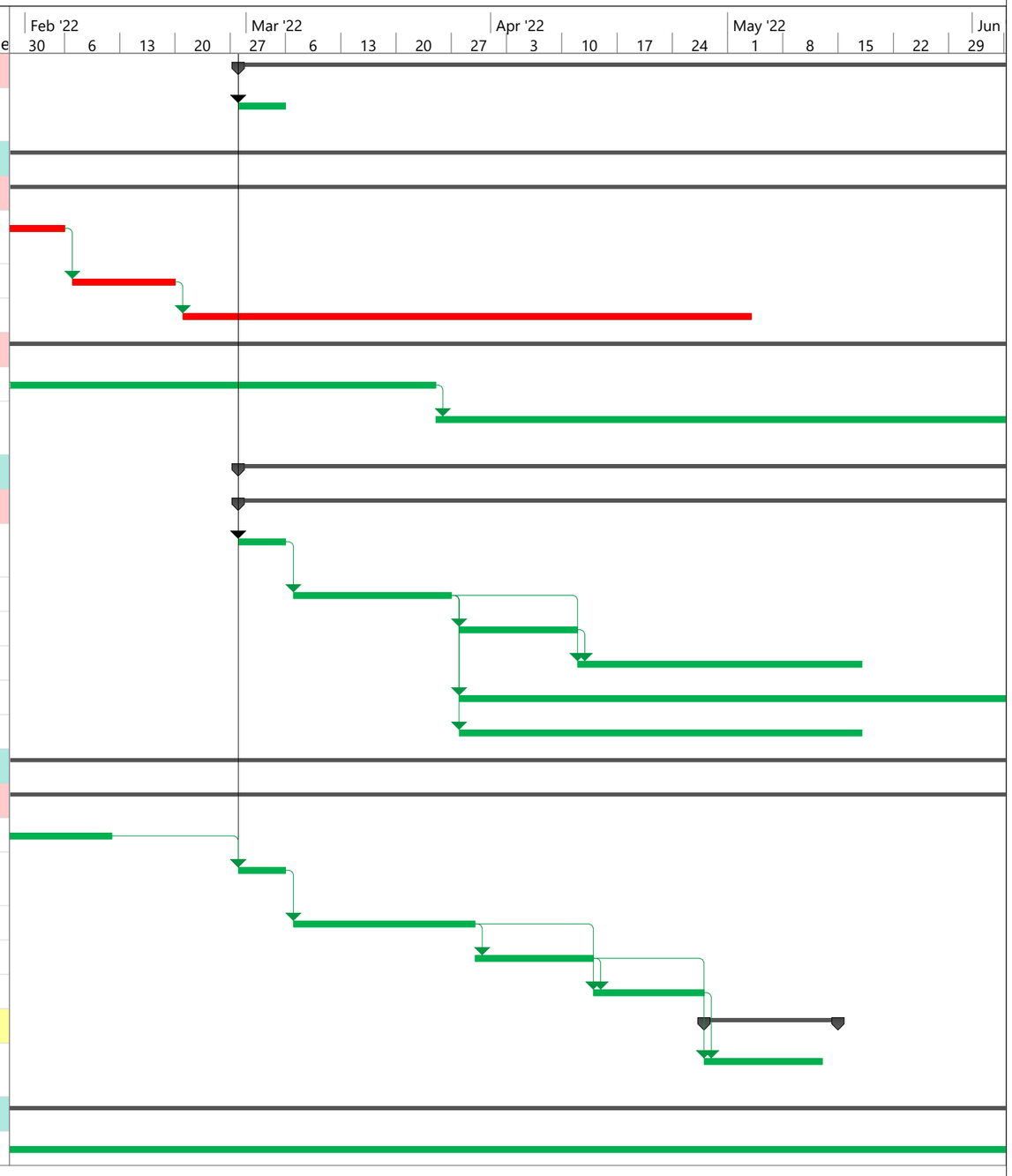
Task ——— Milestone ◆ Summary ——— Critical Task ———

ID	Activity Name	Dur	Early Start	Early Finish	Late Start	Late Finish	% Comple
625	Portion 11	391d	Mon 28/2/22	Mon 12/6/23	Tue 11/4/23	Wed 28/6/23	0%
626	Provision of site access [212 days after starting date as per Contract]	6d	Mon 28/2/22	Sat 5/3/22	Tue 11/4/23	Mon 17/4/23	0%
644	**Section of Works 7A - Portions 13a, 14**	**556d**	**Fri 30/7/21**	**Mon 29/5/23**	**Fri 30/7/21**	**Mon 29/5/23**	**21%**
645	**Portion 13a**	**404d**	**Sat 29/1/22**	**Mon 29/5/23**	**Sat 29/1/22**	**Mon 29/5/23**	**0%**
646	Provision of site access [183 days after starting date as per Contract]	6d	Sat 29/1/22	Sat 5/2/22	Sat 29/1/22	Sat 5/2/22	0%
647	Mobilization & Site Clearance	12d	Mon 7/2/22	Sat 19/2/22	Mon 7/2/22	Sat 19/2/22	0%
648	(G.I Works) Geotechnical Instrumentation Installation	60d	Mon 21/2/22	Tue 3/5/22	Mon 21/2/22	Tue 3/5/22	0%
655	**Portion 14**	**423d**	**Fri 30/7/21**	**Tue 20/12/22**	**Fri 30/7/21**	**Mon 29/5/23**	**36%**
661	Cutting & filling of slopes to formation level {Site G-2}	90d	Tue 7/12/21	Thu 24/3/22	Tue 17/5/22	Wed 31/8/22	0%
662	Excavation and Construction of Waterlines for fresh water & flushing water	60d	Fri 25/3/22	Mon 6/6/22	Thu 1/9/22	Sat 12/11/22	0%
672	**Section of Works 7B - Portions 13b, 15**	**560d**	**Mon 28/2/22**	**Fri 29/12/23**	**Mon 7/3/22**	**Fri 29/12/23**	**4%**
673	Portion 13b & 15	560d	Mon 28/2/22	Fri 29/12/23	Mon 7/3/22	Fri 29/12/23	4%
674	Provision of site access [212 days after starting date as per Contract]	6d	Mon 28/2/22	Sat 5/3/22	Mon 7/3/22	Sat 12/3/22	0%
675	Mobilization & Site Clearance	18d	Mon 7/3/22	Sat 26/3/22	Mon 14/3/22	Sat 2/4/22	0%
676	Time Risk Allowance	12d	Mon 28/3/22	Mon 11/4/22	Sat 21/5/22	Sat 4/6/22	0%
677	Modification of Ext R.W RWA9	30d	Tue 12/4/22	Tue 17/5/22	Mon 6/6/22	Mon 11/7/22	0%
685	Installation of monitoring instruments	60d	Mon 28/3/22	Wed 8/6/22	Fri 8/4/22	Sat 18/6/22	0%
690	Construction of Access Road to Area G2	42d	Mon 28/3/22	Tue 17/5/22	Mon 4/4/22	Tue 24/5/22	0%
716	**Section of Works 9 - Portion 17**	**629d**	**Wed 1/12/21**	**Sat 23/12/23**	**Wed 1/12/21**	**Fri 29/12/23**	**4%**
717	**Portion 17**	**629d**	**Wed 1/12/21**	**Sat 23/12/23**	**Wed 1/12/21**	**Fri 29/12/23**	**4%**
719	Engineer's AIP of MS, Temp., works, plans & associated docs	18d	Fri 21/1/22	Fri 11/2/22	Fri 21/1/22	Thu 3/3/22	11%
720	Provision of site access [212 days after starting date as per Contract]	6d	Mon 28/2/22	Sat 5/3/22	Fri 4/3/22	Thu 10/3/22	0%
721	Slope inspection & assessment work & Tree Survey	20d	Mon 7/3/22	Tue 29/3/22	Fri 11/3/22	Sat 2/4/22	0%
722	Mobilization, access & Site Clearance	12d	Wed 30/3/22	Wed 13/4/22	Mon 4/4/22	Mon 18/4/22	0%
723	Time Risk Allowance	12d	Thu 14/4/22	Wed 27/4/22	Tue 19/4/22	Tue 3/5/22	0%
724	**Slope Works at Feature No. 11NE-D/C982 (235m)**	**14d**	**Thu 28/4/22**	**Sat 14/5/22**	**Wed 4/5/22**	**Thu 19/5/22**	**0%**
725	Demolition and removal of disused water pipe and sprinkler system	12d	Thu 28/4/22	Thu 12/5/22	Wed 4/5/22	Tue 17/5/22	0%
812	**Section of Works 10 - All Tree Protection and Preservation Works**	**736d**	**Fri 30/7/21**	**Fri 29/12/23**	**Fri 30/7/21**	**Fri 29/12/23**	**20%**
814	All Tree Protection and Preservation Work Duration for Section 8	880d	Fri 30/7/21	Tue 26/12/23	Fri 30/7/21	Fri 29/12/23	20%



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Task — Milestone — Summary — Critical Task

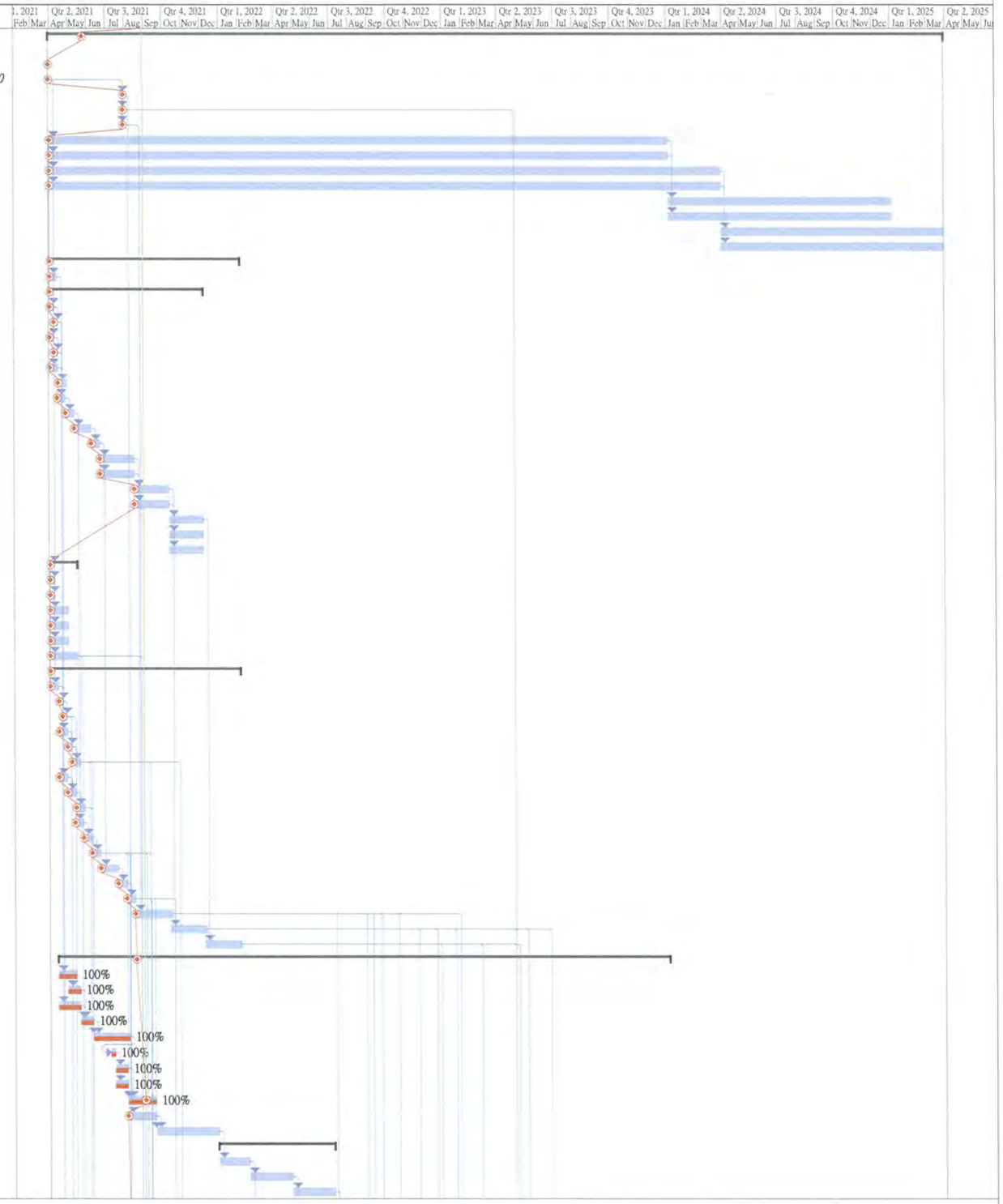
Contract 5 (NE/2019/02)

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



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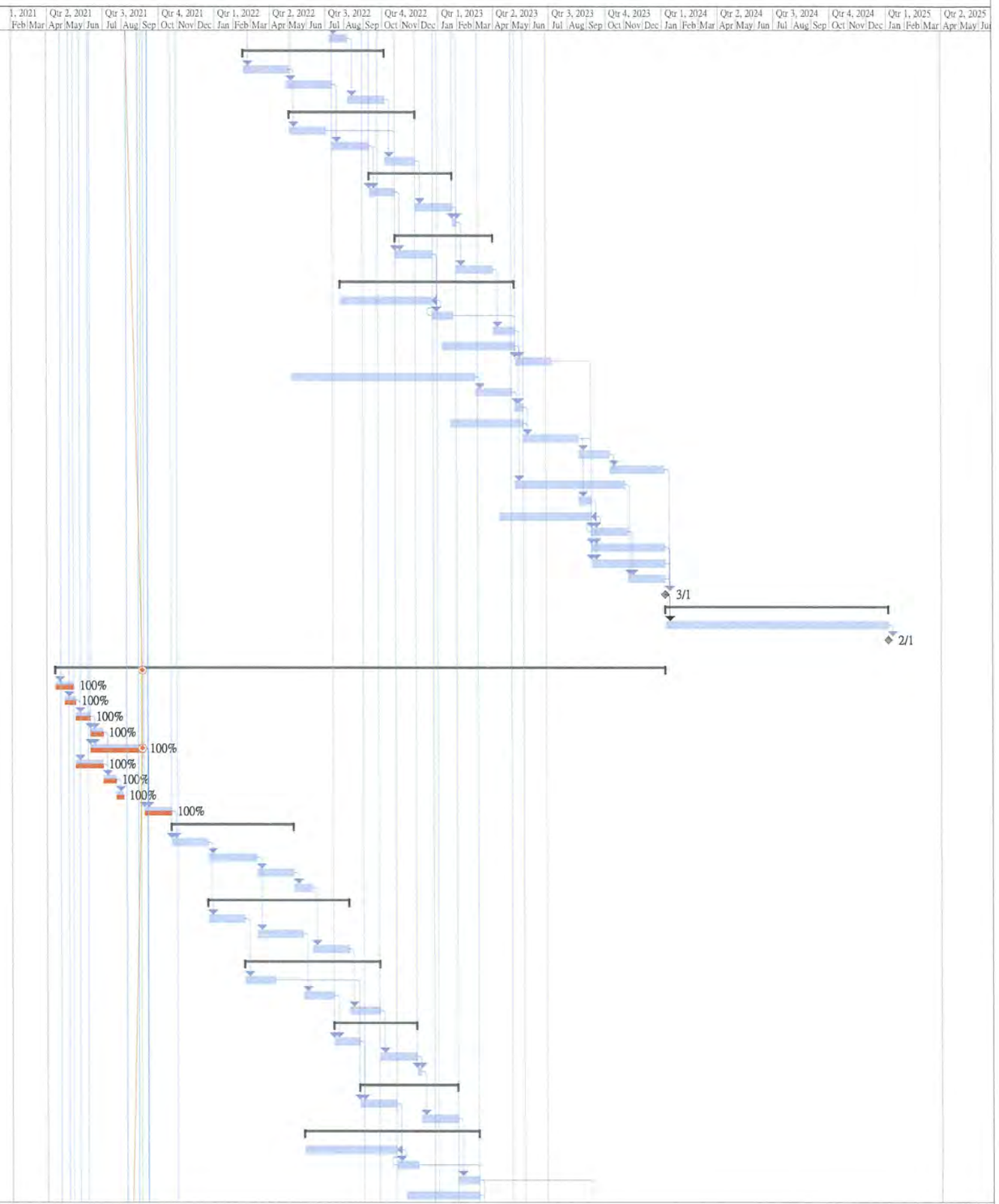
First Programme

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



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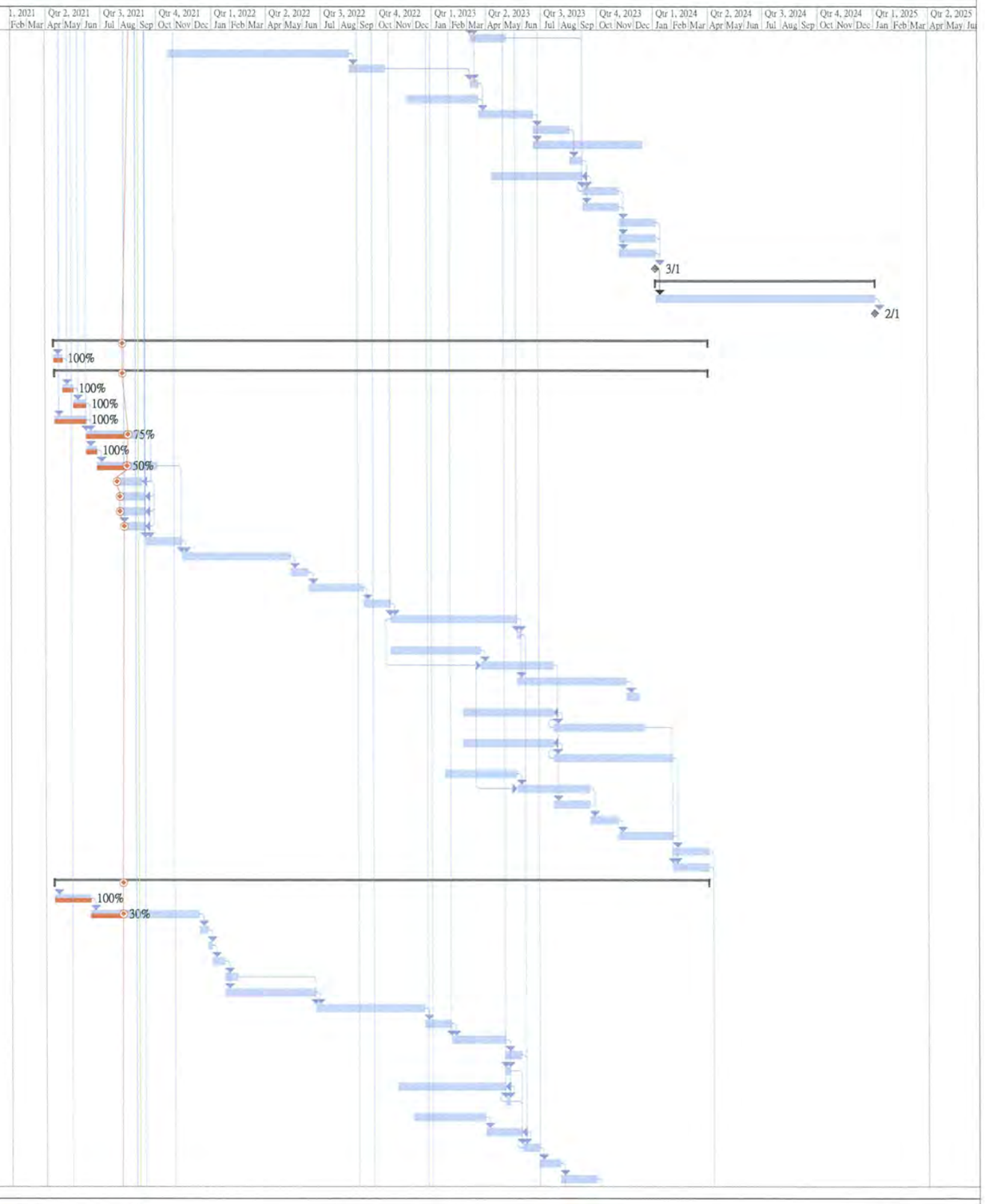
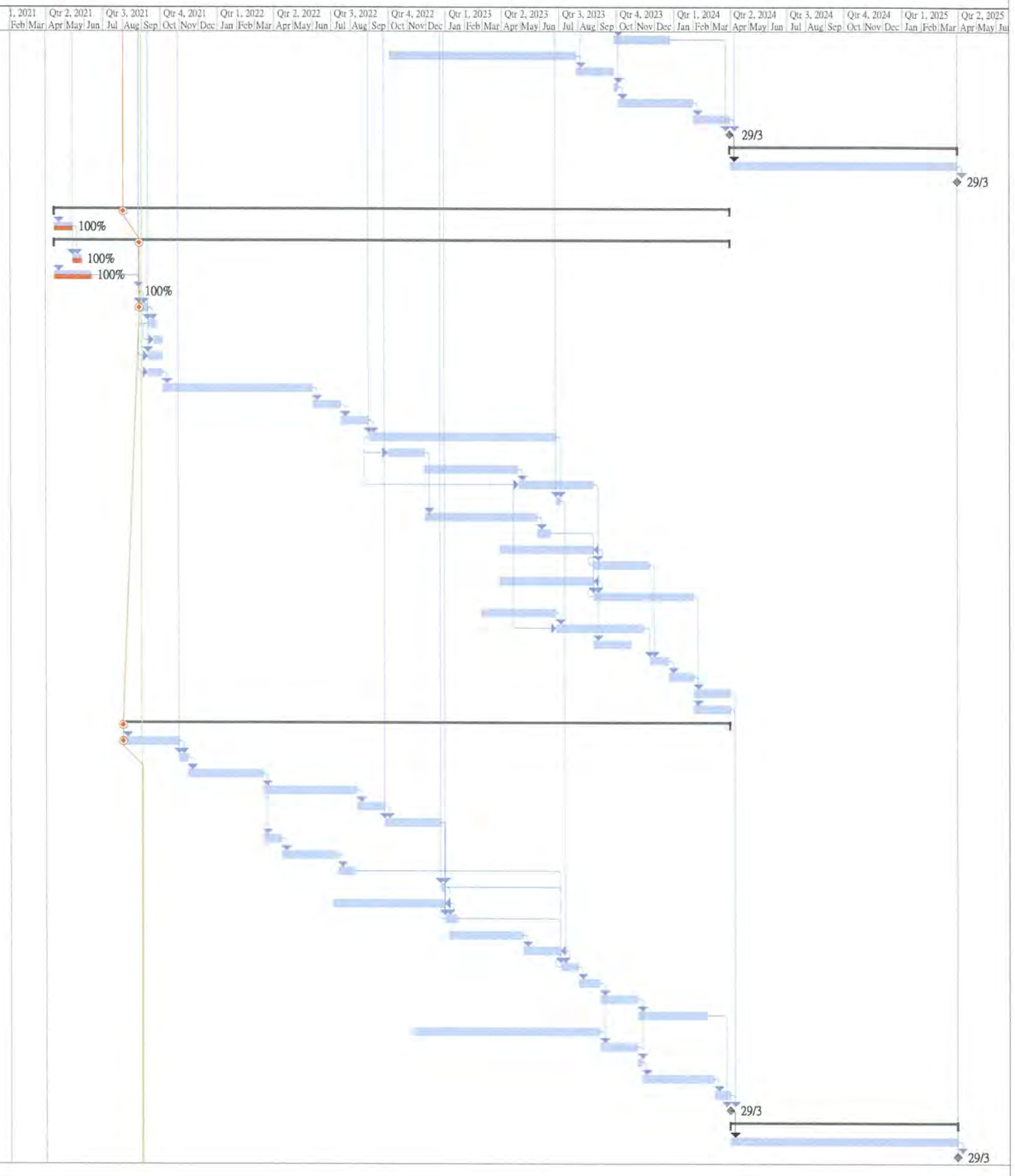
ID	Task Mod	Task Name	Duration	Start	Finish	Predecessors	Successors
153		Erection of Canopy	60 days	Sun 5/3/23	Wed 3/5/23	151,60,150,152	163
154		Design Submission and Approval of A&A Works	300 days	Wed 20/10/21	Mon 15/8/22		155
155		Connection of Existing lift tower	60 days	Tue 16/8/22	Fri 14/10/22	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



First Programme

ID	Task Mode	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*	



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

Appendix D

Monitoring Locations for Impact Monitoring

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

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	

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

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Printed by : 4/8/2014
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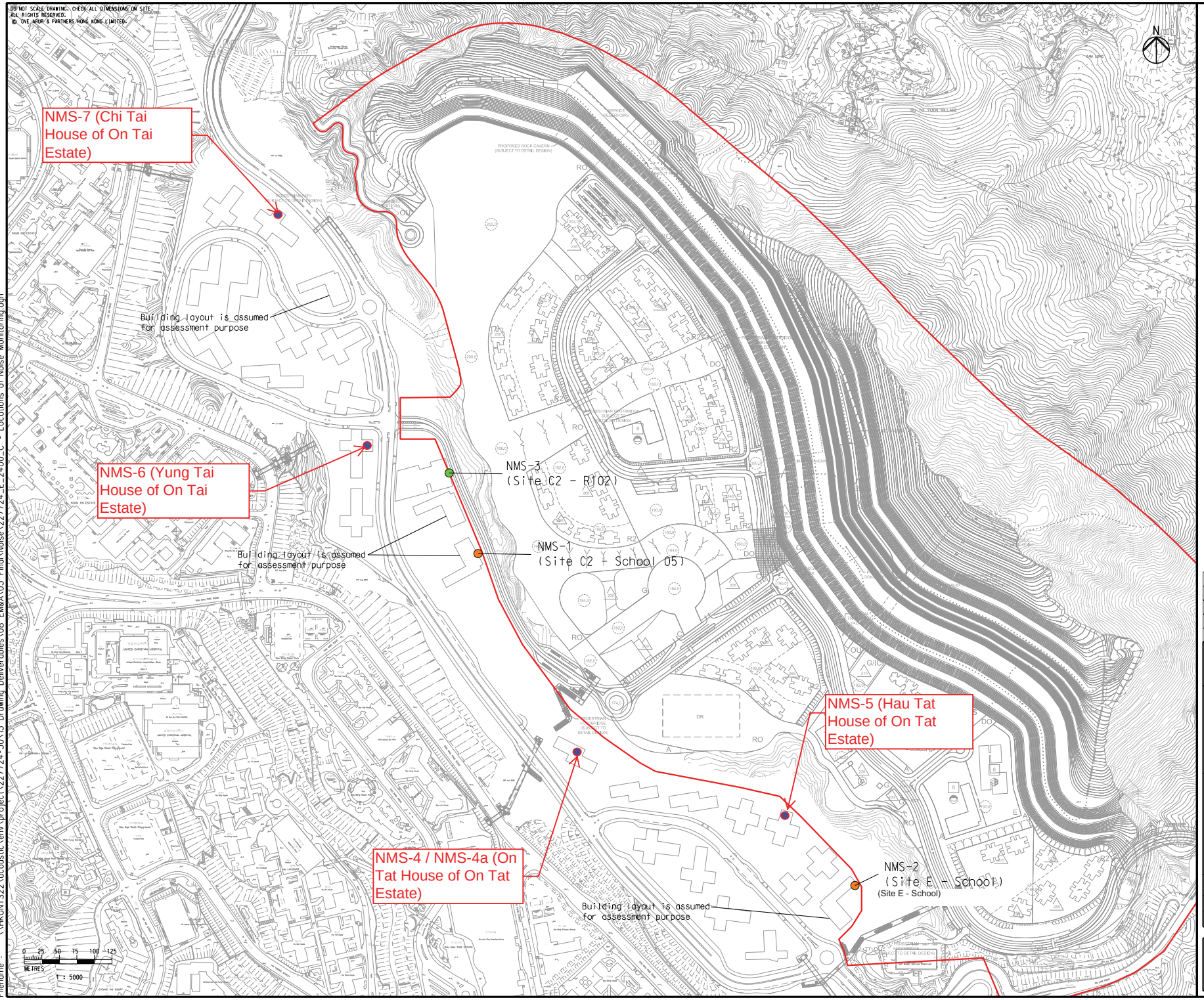

Legend

- 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

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

Printed by : 6/3/2014
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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

Scale: 1:5000 @A3

Status: PRELIMINARY

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

Printed by : 4/8/2014
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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	

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

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Printed by : 4/8/2014
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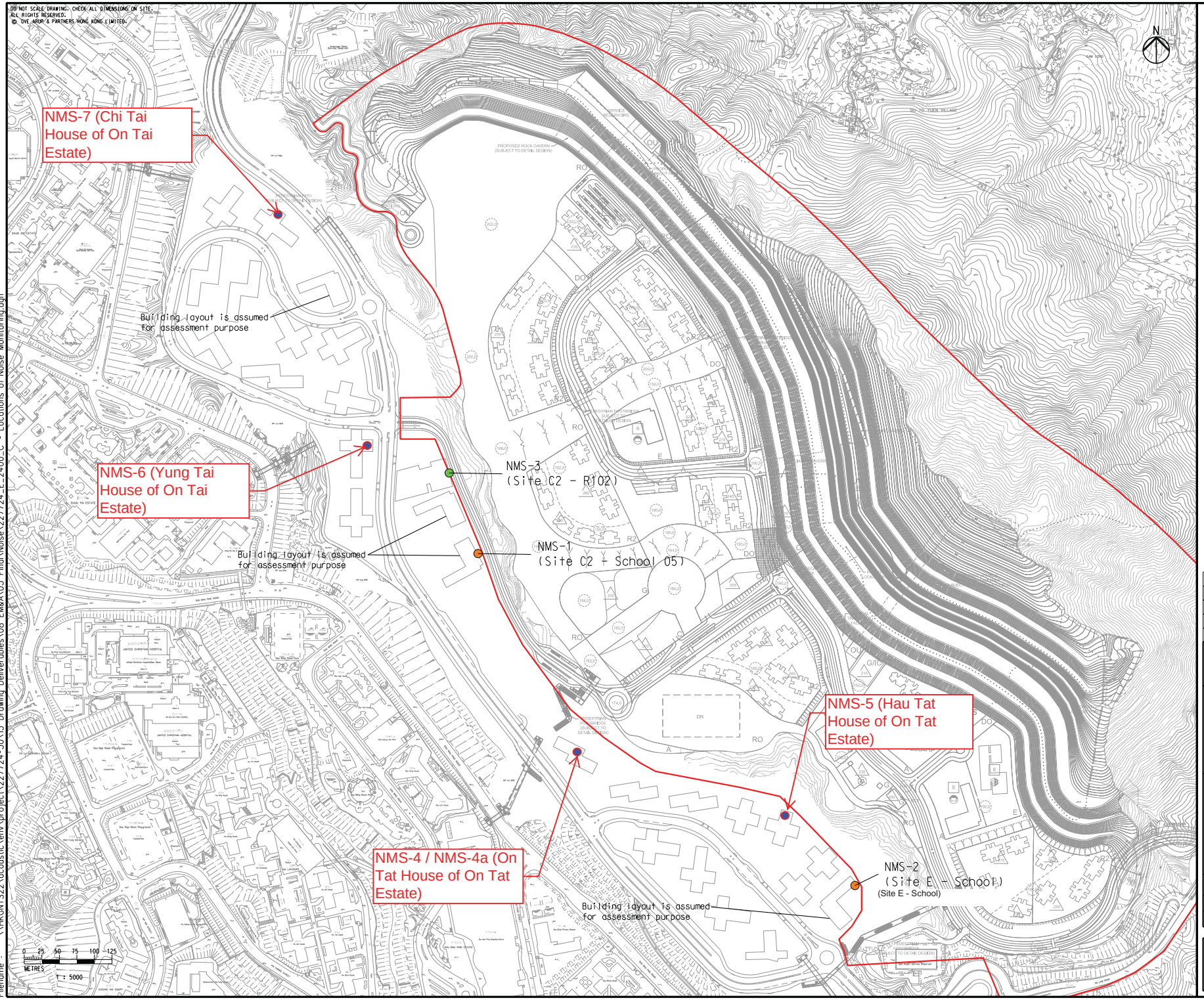

Legend

- 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

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

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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

Scale: 1:5000 @A3

Status: PRELIMINARY

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

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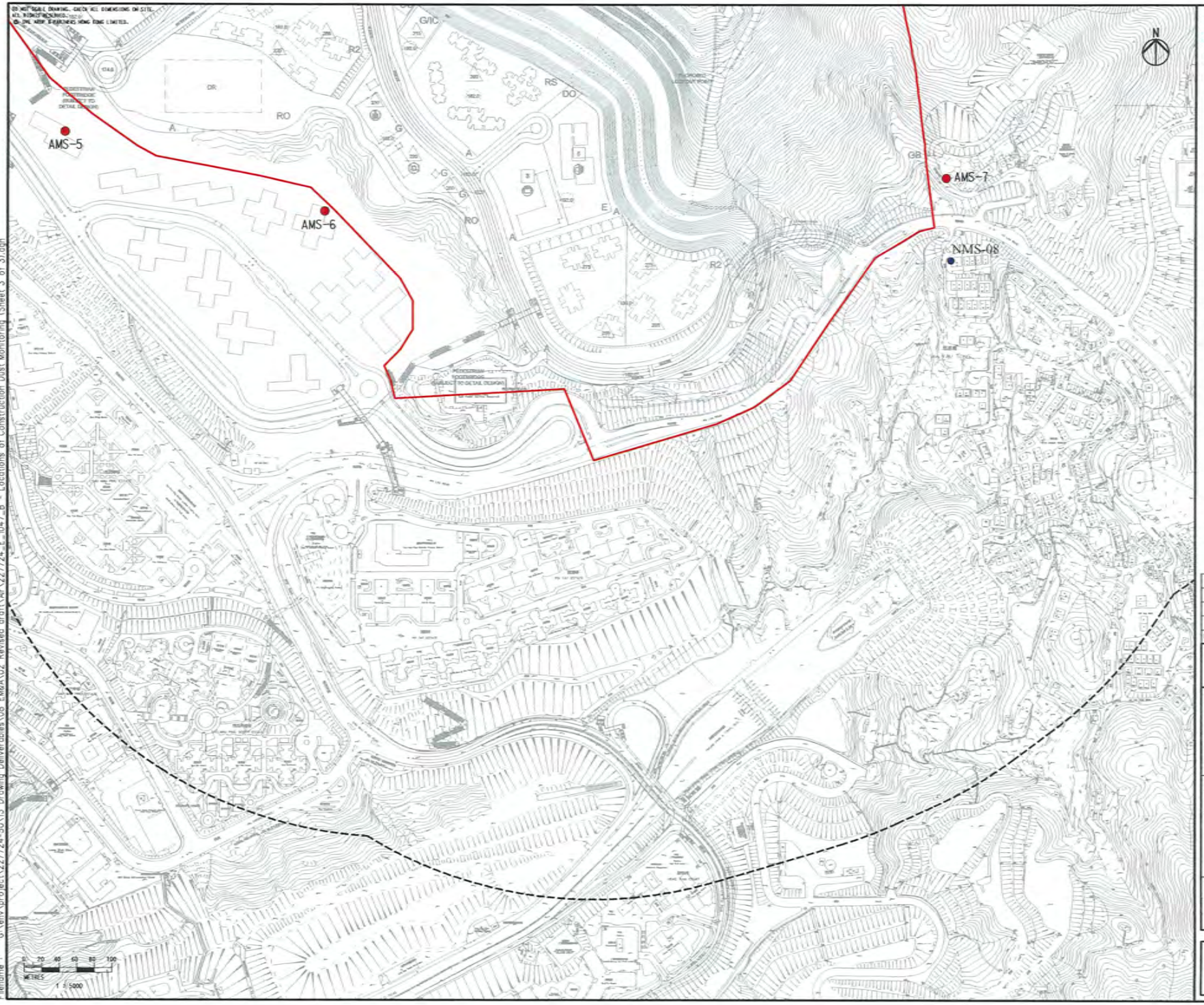

Rev	Description	By	Date
B	SECOND ISSUE	GL	03/14
A	FIRST ISSUE	GL	10/13

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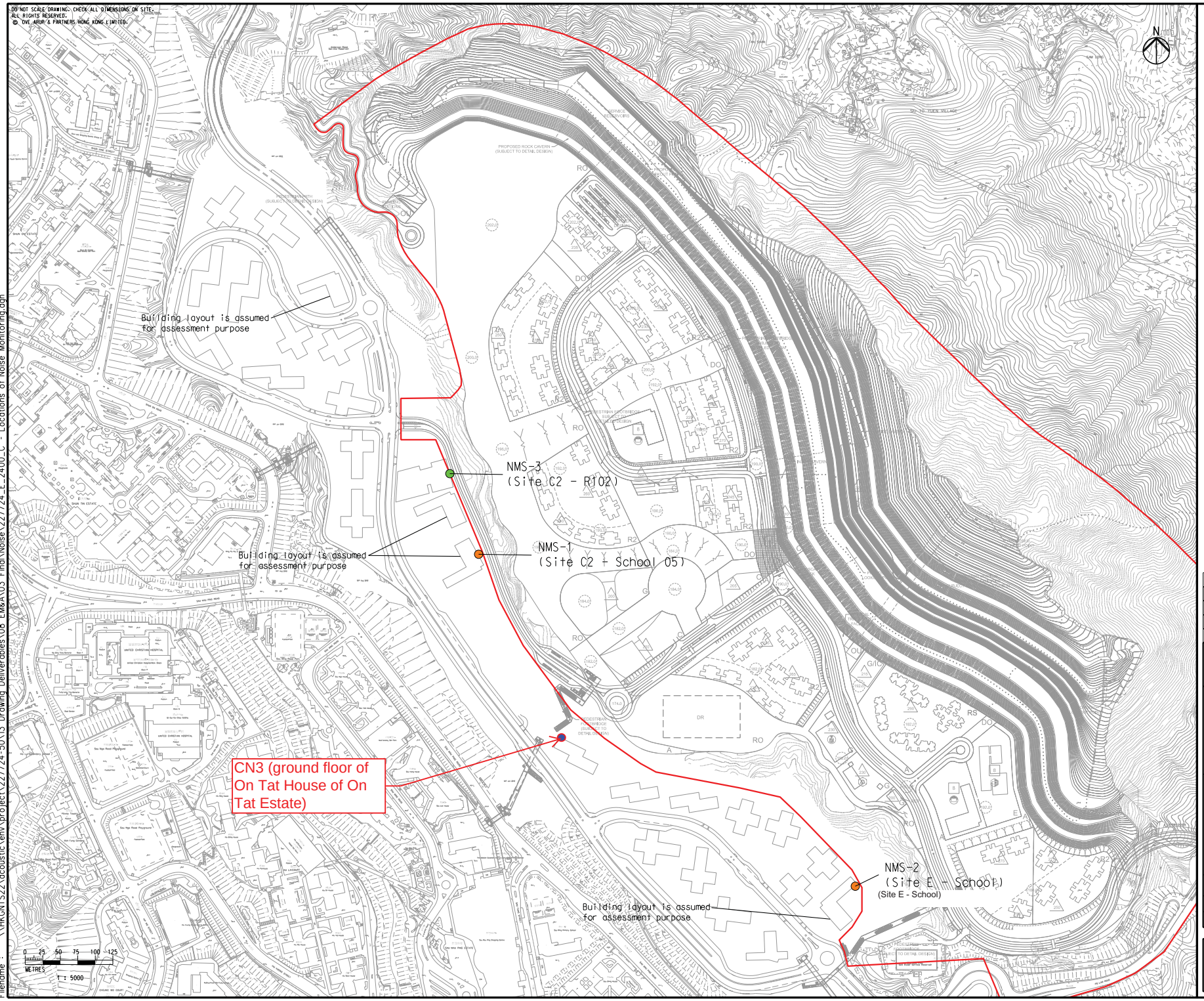
Monitoring Locations for Contract 3 (NE/2017/03)



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

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Status: PRELIMINARY

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

Printed by : 6/3/2014
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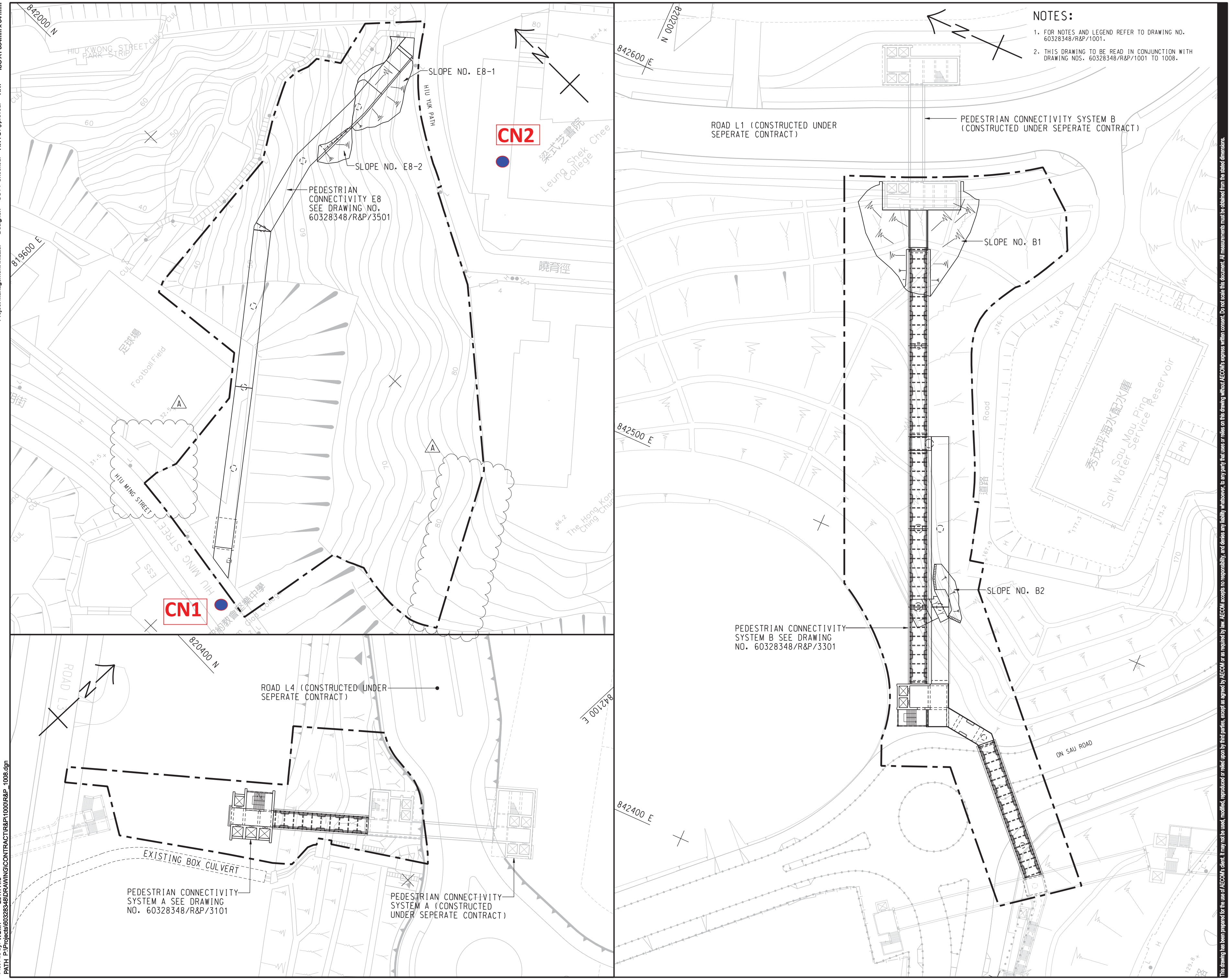


AECOM

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

● noise monitoring location

ISSUE/REVISION

I/R	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

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: 31-Jan-22
Location ID : AMS1a	Next Calibration Date: 31-Mar-22
Model:TISCH High Volume Air Sampler TE-5170	Technician: Mr. Fai So

CONDITIONS

Sea Level Pressure (hPa)	1019.2	Corrected Pressure (mm Hg)	764.4
Temperature (°C)	14.6	Temperature (K)	288

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	1.99838
Model->	TE-5025A	Qstd Intercept ->	-0.00903
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	1.846	52	53.08	Slope = 38.3750
13	5.6	5.6	11.2	1.714	47	47.98	Intercept = -18.3302
10	3.9	3.9	7.8	1.431	35	35.73	Corr. coeff. = 0.9962
7	2.8	2.8	5.6	1.213	26	26.54	
5	1.6	1.6	3.2	0.918	18	18.38	

Calculations :

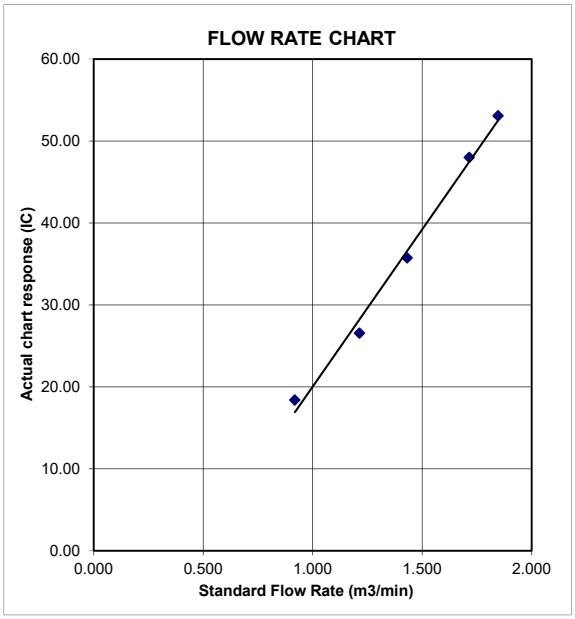
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

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:	31-Jan-22
Location ID :	AMS 5	Next Calibration Date:	31-Mar-22
Model:TISCH High Volume Air Sampler TE-5170		Technician: Mr. Fai So	

CONDITIONS

Sea Level Pressure (hPa)	1019.2	Corrected Pressure (mm Hg)	764.4
Temperature (°C)	14.6	Temperature (K)	288

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	1.99838
Model->	TE-5025A	Qstd Intercept ->	-0.00903
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	1.832	53	54.11	Slope = 37.0824
13	5.3	5.3	10.6	1.668	46	46.96	Intercept = -14.3889
10	4	4	8	1.449	38	38.79	Corr. coeff. = 0.9992
7	2.6	2.6	5.2	1.169	29	29.61	
5	1.4	1.4	2.8	0.859	17	17.35	

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)

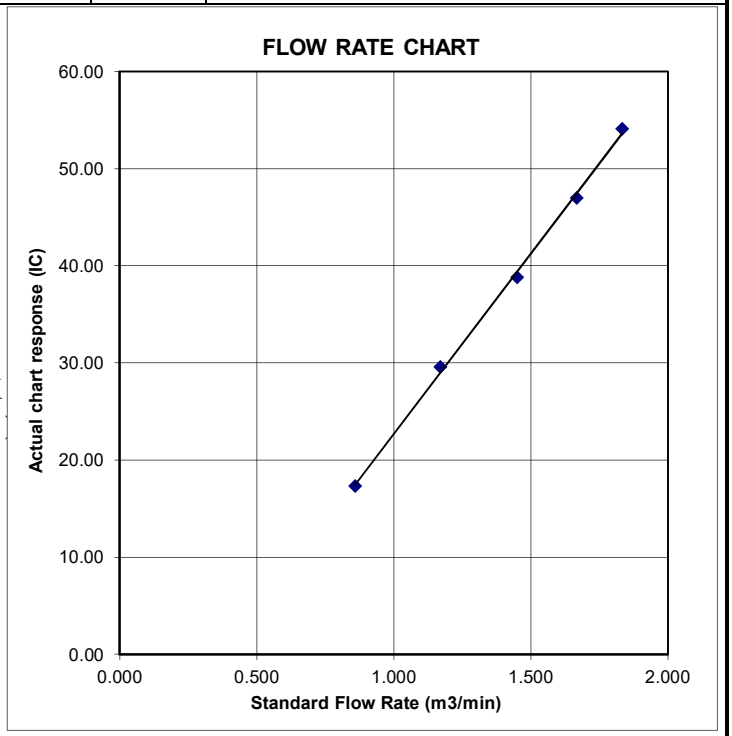
m = sampler slope

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: 31-Jan-22
Location ID : AMS 6	Next Calibration Date: 31-Mar-22
Model:TISCH High Volume Air Sampler TE-5170	Technician: Mr. Fai So

CONDITIONS

Sea Level Pressure (hPa)	1019.2	Corrected Pressure (mm Hg)	764.4
Temperature (°C)	14.6	Temperature (K)	288

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	1.99838
Model->	TE-5025A	Qstd Intercept ->	-0.00903
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	1.803	51	52.06	Slope = 36.5402
13	5.4	5.4	10.8	1.683	46	46.00	Intercept = -14.6237
10	3.7	3.7	7.4	1.394	35	35.73	Corr. coeff. = 0.9980
7	2.4	2.4	4.8	1.124	27	27.56	
5	1.4	1.4	2.8	0.859	16	16.33	

Calculations :

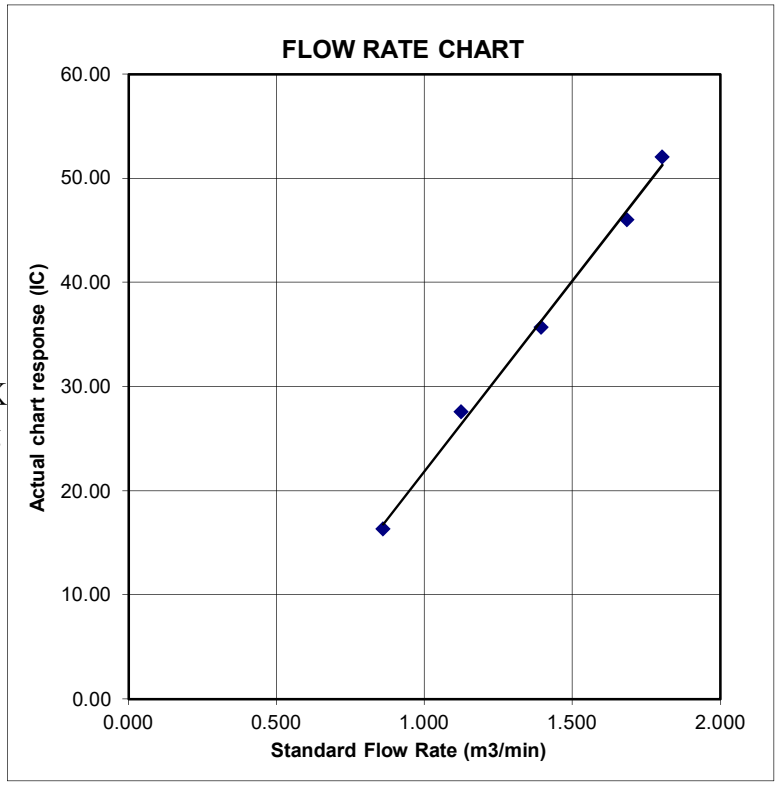
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

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: 31-Jan-22
Next Calibration Date: 31-Mar-22
Technician: Mr. Fai So

CONDITIONS

Sea Level Pressure (hPa)	1019.2	Corrected Pressure (mm Hg)	764.4
Temperature (°C)	14.6	Temperature (K)	288

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	1.99838
Model->	TE-5025A	Qstd Intercept ->	-0.00903
Serial # ->	1612		

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	6.6	6.6	13.2	1.861	53	54.11	Slope = 37.4739
13	5.6	5.6	11.2	1.714	48	49.00	Intercept = -15.4081
10	3.7	3.7	7.4	1.394	37	37.77	Corr. coeff. = 0.9982
7	2.9	2.9	5.8	1.235	29	29.61	
5	1.7	1.7	3.4	0.946	20	20.42	

Calculations :

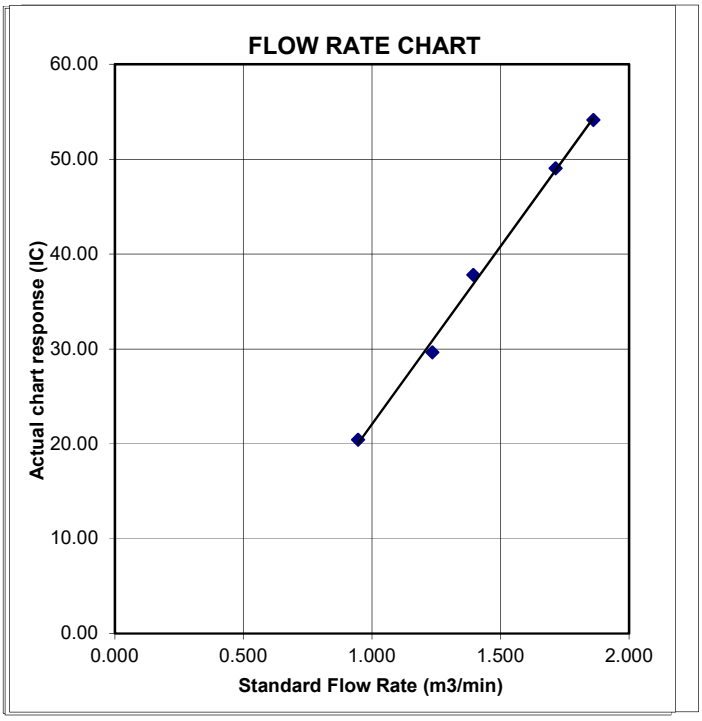
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

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

For subsequent calculation of sampler flow:

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

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



TISCH Environmental

RECALIBRATION DUE DATE:
December 27, 2022

Certificate of Calibration

Calibration Certification Information				
Cal. Date:	December 27, 2021	**Rootsmeter S/N:** 438320	**Ta:** 295	°K
Operator:	Jim Tisch		**Pa:** 740.4	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	1.3890	3.2	2.00
2	3	4	1	0.9760	6.4	4.00
3	5	6	1	0.8740	7.9	5.00
4	7	8	1	0.8320	8.8	5.50
5	9	10	1	0.6870	12.7	8.00

Data Tabulation

Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}$ (y-axis)	Va	Qa (x-axis)	$\sqrt{\Delta H\left(Ta/Pa\right)}$ (y-axis)
0.9799	0.7055	1.4029	0.9957	0.7168	0.8927
0.9756	0.9996	1.9841	0.9914	1.0157	1.2624
0.9736	1.1140	2.2183	0.9893	1.1320	1.4114
0.9724	1.1688	2.3265	0.9881	1.1876	1.4803
0.9673	1.4079	2.8059	0.9828	1.4306	1.7853
QSTD	**m=**	**1.99838**	**QA**	**m=**	**1.25135**
	b=	**-0.00903**		**b=**	**-0.00574**
	r=	**0.99999**		**r=**	**0.99999**

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

For subsequent flow rate calculations:

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

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

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

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

RECALIBRATION

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

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

www.tisch-env.com
TOLL FREE: (877)263-7610
FAX: (513)467-900

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

Certificate of Calibration
校正證書

Certificate No. : C216692
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC21-2303) Date of Receipt / 收件日期 : 9 November 2021

Description / 儀器名稱 : Integrating Sound Level Meter (EQ006)
Manufacturer / 製造商 : Brüel & Kjær
Model No. / 型號 : 2238
Serial No. / 編號 : 2285762
Supplied By / 委託者 : Action-United Environmental Services and Consulting
Unit A, 20/F., Gold King Industrial Building,
35-41 Tai Lin Pai Road, Kwai Chung, N.T.

TEST CONDITIONS / 測試條件

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

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 19 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 : 24 November 2021

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
Tel/電話: (852) 2927 2606 Fax/傳真: (852) 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

Certificate of Calibration
校正證書

Certificate No. : C216692
證書編號

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

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

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

4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C210084
CL281	Multifunction Acoustic Calibrator	AV210017

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

6.1.1.1 Before Self-calibration

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
50 - 130	L_{AFP}	A	F	94.00	1	94.3

6.1.1.2 After Self-calibration

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
50 - 130	L_{AFP}	A	F	94.00	1	94.0	± 0.7

6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
50 - 130	L_{AFP}	A	F	94.00	1	94.0 (Ref.)
				104.00		104.0
				114.00		114.0

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

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
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c/o 香港新界屯門興安里一號四樓
Tel/電話: (852) 2927 2606 Fax/傳真: (852) 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

Certificate of Calibration
校正證書

Certificate No. : C216692
證書編號

6.2 Time Weighting

6.2.1 Continuous Signal

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
50 - 130	L_{AFP}	A	F	94.00	1	94.0	Ref.
	L_{ASP}		S			94.0	± 0.1
	L_{AIP}		I			94.1	± 0.1

6.2.2 Tone Burst Signal (2 kHz)

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

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
50 - 130	L_{AFP}	A	F	94.00	31.5 Hz	55.1	-39.4 ± 1.5
					63 Hz	68.0	-26.2 ± 1.5
					125 Hz	77.9	-16.1 ± 1.0
					250 Hz	85.3	-8.6 ± 1.0
					500 Hz	90.8	-3.2 ± 1.0
					1 kHz	94.0	Ref.
					2 kHz	95.2	+1.2 ± 1.0
					4 kHz	95.0	+1.0 ± 1.0
					8 kHz	92.9	-1.1 (+1.5 ; -3.0)
					12.5 kHz	89.8	-4.3 (+3.0 ; -6.0)

Sun Creation Engineering Limited – Calibration & Testing Laboratory
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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. : C216692
證書編號

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
50 - 130	L_{CFP}	C	F	94.00	31.5 Hz	91.4	-3.0 ± 1.5
					63 Hz	93.3	-0.8 ± 1.5
					125 Hz	93.9	-0.2 ± 1.0
					250 Hz	94.0	0.0 ± 1.0
					500 Hz	94.0	0.0 ± 1.0
					1 kHz	94.0	Ref.
					2 kHz	93.8	-0.2 ± 1.0
					4 kHz	93.2	-0.8 ± 1.0
					8 kHz	91.0	-3.0 (+1.5 ; -3.0)
					12.5 kHz	87.9	-6.2 (+3.0 ; -6.0)

6.4 Time Averaging

UUT Setting				Applied Value					UUT Reading (dB)	IEC 60804 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Integrating Time	Frequency (kHz)	Burst Duration (ms)	Burst Duty Factor	Burst Level (dB)	Equivalent Level (dB)		
30 - 110	L_{Aeq}	A	10 sec.	4	1	1/10	110.0	100	99.9	± 0.5
						$1/10^2$		90	89.5	± 0.5
			60 sec.			$1/10^3$		80	79.1	± 1.0
			5 min.			$1/10^4$		70	69.2	± 1.0

Remarks : - UUT Microphone Model No. : 4188 & S/N : 2250447

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

- Uncertainties of Applied Value :

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

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

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

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

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

Certificate of Calibration
校正證書

Certificate No. : C216480
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 (EQ015)
Manufacturer / 製造商 : Rion
Model No. / 型號 : NL-52
Serial No. / 編號 : 00142581
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

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. (after adjustment)
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

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
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Certificate of Calibration
校正證書

Certificate No. : C216480
證書編號

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

2. Self-calibration using the internal standard (After Adjustment) was performed before the test 6.1.1.2 to 6.3.2.

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

4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C210084
CL281	Multifunction Acoustic Calibrator	AV210017

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

6.1.1.1 Before Adjustment

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	* 96.3	± 1.1

* Out of IEC 61672 Class 1 Spec.

6.1.1.2 After Adjustment

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	94.0	± 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	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.

Certificate of Calibration
校正證書

Certificate No. : C216480
證書編號

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	94.0	Ref.
			Slow			94.0	± 0.3

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 130	L_A	A	Fast	94.00	63 Hz	67.8	-26.2 ± 1.5
					125 Hz	77.8	-16.1 ± 1.5
					250 Hz	85.4	-8.6 ± 1.4
					500 Hz	90.8	-3.2 ± 1.4
					1 kHz	94.0	Ref.
					2 kHz	95.3	+1.2 ± 1.6
					4 kHz	95.1	+1.0 ± 1.6
					8 kHz	93.0	-1.1 (+2.1 ; -3.1)
					16 kHz	86.1	-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	93.2	-0.8 ± 1.5
					125 Hz	93.9	-0.2 ± 1.5
					250 Hz	94.0	0.0 ± 1.4
					500 Hz	94.1	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)
					16 kHz	84.2	-8.5 (+3.5 ; -17.0)

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

Certificate of Calibration
校正證書

Certificate No. : C216480
證書編號

Remarks : - UUT Microphone Model No. : UC-59 & S/N : 20044

- 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.

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

Certificate of Calibration
校正證書

Certificate No. : 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

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
Tel/電話: (852) 2927 2606 Fax/傳真: (852) 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

Certificate of Calibration
校正證書

Certificate No. : 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

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)

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.

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
Tel/電話: (852) 2927 2606 Fax/傳真: (852) 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

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

Certificate of Calibration
校正證書

Certificate No. : C215419
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC21-1345) Date of Receipt / 收件日期 : 26 August 2021

Description / 儀器名稱 : Sound Calibrator (EQ086)
Manufacturer / 製造商 : Rion
Model No. / 型號 : NC-74
Serial No. / 編號 : 34657230
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 : 10 September 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 : 13 September 2021

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
Tel/電話: (852) 2927 2606 Fax/傳真: (852) 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

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

Certificate of Calibration
校正證書

Certificate No. : C215419
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	C213954
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	94.1	± 0.3	± 0.2

5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Spec.	Uncertainty of Measured Value (Hz)
1	1.002	1 kHz ± 1 %	± 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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ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

SUB-CONTRACTING REPORT

CONTACT	: MR BEN TAM	WORK ORDER	:	**HK2212152**
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	:	8-APR-2022
		DATE OF ISSUE	:	14-APR-2022
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	:	HK2212152
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.
HK2212152-001	S/N: 3Y6505	AIR	08-Apr-2022	S/N: 3Y6505

Equipment Verification Report (TSP)

Equipment Calibrated:

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

Standard Equipment:

Standard Equipment:	Higher Volume Sampler (TSP)
Location & Location ID:	AUES office (calibration room)
Equipment Ref:	HVS 018 & HVS 019
Last Calibration Date:	22 February 2022

Equipment Verification Results:

Verification Date: 1 & 7 March 2022

Date	Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in ug/m^3 (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/min)
7-Mar-22	2hr01mins	09:17 ~ 11:18	22.5	1010.6	26.4	783	6.5
7-Mar-22	2hr01mins	11:24 ~ 13:25	22.5	1010.6	34.8	1104	9.1
7-Mar-22	2hr01mins	13:30 ~ 15:31	22.5	1010.6	40.3	2134	17.7
1-Mar-22	30mins	10:03 ~ 10:33	22	1016.9	123.1	1599	53.3
1-Mar-22	31mins	10:39 ~ 11:10	22	1016.9	93.9	1397	45.7

(*) Suspended particle was added into calibration room of HVS019 for high concentration test.

Sensitivity Adjustment Scale Setting (Before Calibration) 591 (CPM)

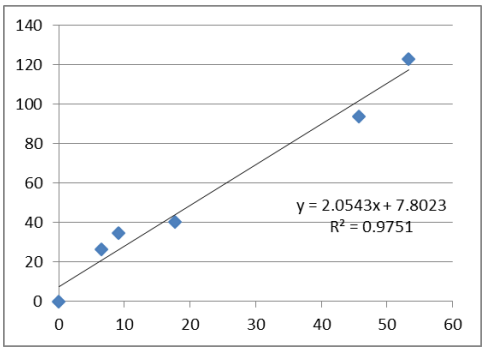
Sensitivity Adjustment Scale Setting (After Calibration) 588 (CPM)

Linear Regression of Y or X

Slope (K-factor): 2.0543 (µg/m^3)/CPM

Correlation Coefficient (R) 0.9875

Date of Issue 26 March 2022



Remarks:

1. **Strong** Correlation (R>0.8)
2. Factor 2.0543 (µg/m^3)/CPM should be apply for TSP monitoring

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

Operator : Fai So Signature : Date : 26 March 2022

QC Reviewer : Ben Tam Signature : Date : 26 March 2022

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location :	Gold King Industrial Building, Kwai Chung	Date of Calibration:	22-Feb-22
Location ID :	Calibration Room	Next Calibration Date:	22-May-22

CONDITIONS

Sea Level Pressure (hPa)	1010.8	Corrected Pressure (mm Hg)	758.1
Temperature (°C)	22.8	Temperature (K)	296

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	1.99838
Model->	5025A	Qstd Intercept ->	-0.00903
Calibration Date->	27-Dec-21	Expiry Date->	27-Dec-22

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	5.8	5.8	11.6	1.713	54	54.13	Slope = 27.3242
13	4.7	4.7	9.4	1.543	49	49.12	Intercept = 7.2177
10	3.6	3.6	7.2	1.351	44	44.11	Corr. coeff. = 0.9997
8	2.3	2.3	4.6	1.080	37	37.09	
5	1.4	1.4	2.8	0.844	30	30.07	

Calculations :

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

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

Qstd = standard flow rate

IC = corrected chart respones

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)

Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

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

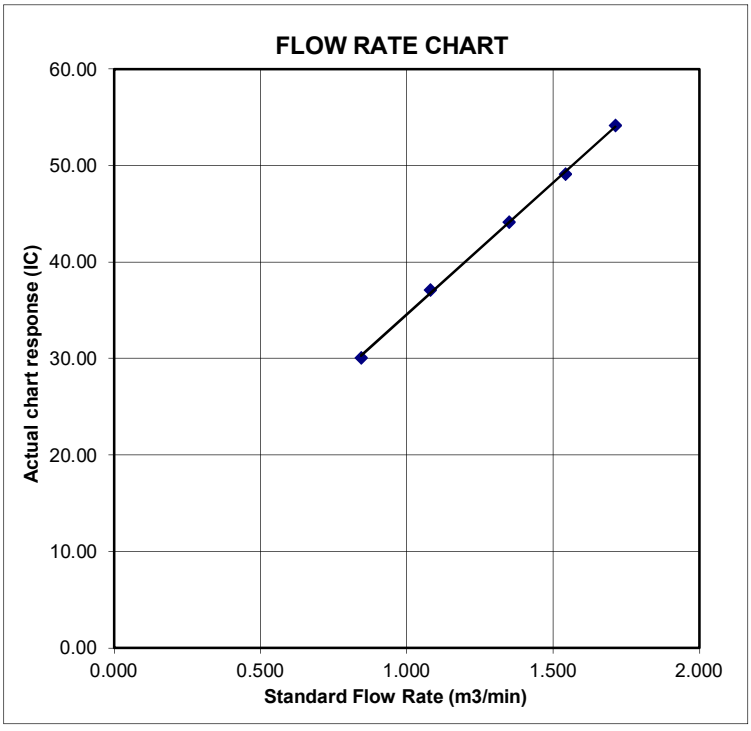
m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure



TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location :	Gold King Industrial Building, Kwai Chung	Date of Calibration:	22-Feb-22
Location ID :	Calibration Room	Next Calibration Date:	22-May-22

CONDITIONS

Sea Level Pressure (hPa)	1010.8	Corrected Pressure (mm Hg)	758.1
Temperature (°C)	22.8	Temperature (K)	296

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	1.99838
Model->	5025A	Qstd Intercept ->	-0.00903
Calibration Date->	27-Dec-21	Expiry Date->	27-Dec-22

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	1.771	52	52.13	Slope = 34.6002
13	4.9	4.9	9.8	1.575	44	44.11	Intercept = -9.1434
10	3.8	3.8	7.6	1.387	40	40.10	Corr. coeff. = 0.9958
8	2.4	2.4	4.8	1.104	30	30.07	
5	1.5	1.5	3.0	0.873	20	20.05	

Calculations :

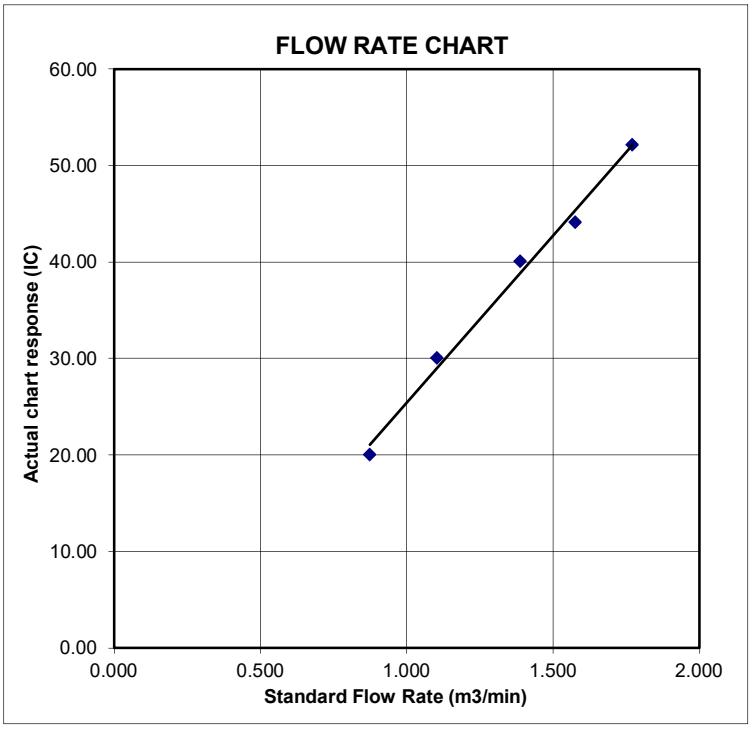
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

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:
December 27, 2022

Certificate of Calibration

Calibration Certification Information				
Cal. Date:	December 27, 2021	**Rootsmeter S/N:** 438320	**Ta:** 295	°K
Operator:	Jim Tisch		**Pa:** 740.4	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	1.3890	3.2	2.00
2	3	4	1	0.9760	6.4	4.00
3	5	6	1	0.8740	7.9	5.00
4	7	8	1	0.8320	8.8	5.50
5	9	10	1	0.6870	12.7	8.00

Data Tabulation					
Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}$ (y-axis)	Va	Qa (x-axis)	$\sqrt{\Delta H\left(Ta/Pa\right)}$ (y-axis)
0.9799	0.7055	1.4029	0.9957	0.7168	0.8927
0.9756	0.9996	1.9841	0.9914	1.0157	1.2624
0.9736	1.1140	2.2183	0.9893	1.1320	1.4114
0.9724	1.1688	2.3265	0.9881	1.1876	1.4803
0.9673	1.4079	2.8059	0.9828	1.4306	1.7853
QSTD	**m=**	**1.99838**	**QA**	**m=**	**1.25135**
	b=	**-0.00903**		**b=**	**-0.00574**
	r=	**0.99999**		**r=**	**0.99999**

Calculations			
Vstd=	ΔVol((Pa-ΔP)/Pstd)(Tstd/Ta)	**Va=**	ΔVol((Pa-ΔP)/Pa)
Qstd=	Vstd/ΔTime	**Qa=**	Va/ΔTime
For subsequent flow rate calculations:			
Qstd= $1/m\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right)-b\right)$		**Qa=** $1/m\left(\left(\sqrt{\Delta H\left(Ta/Pa\right)}\right)-b\right)$	

Standard Conditions	
Tstd:	298.15 °K
Pstd:	760 mm Hg
Key	
ΔH: calibrator manometer reading (in H2O)	
ΔP: rootsmeter manometer reading (mm Hg)	
Ta: actual absolute temperature (°K)	
Pa: actual barometric pressure (mm Hg)	
b: intercept	
m: slope	

RECALIBRATION

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

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

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

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

SUB-CONTRACTING REPORT

CONTACT	:	MR BEN TAM	WORK ORDER	: **HK2212658**
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 DATE RECEIVED DATE OF ISSUE	: 1 : 8-APR-2022 : 14-APR-2022
PROJECT	:	----	NO. OF SAMPLES CLIENT ORDER	: 1 : ----

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	:	HK2212658
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.
HK2212658-001	S/N: 456659	AIR	08-Apr-2022	S/N: 456659

Equipment Verification Report (TSP)

Equipment Calibrated:

Type:	Laser Dust monitor
Manufacturer:	Sibata LD-3B
Serial No.	456659
Equipment Ref:	EQ116

Standard Equipment:

Standard Equipment:	Higher Volume Sampler (TSP)
Location & Location ID:	AUES office (calibration room)
Equipment Ref:	HVS 018 & HVS 019
Last Calibration Date:	22 February 2022

Equipment Verification Results:

Verification Date: 1 & 7 March 2022

Date	Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in ug/m^3 (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/min)
7-Mar-22	2hr01mins	09:17 ~ 11:18	22.5	1010.6	26.4	1742	14.4
7-Mar-22	2hr01mins	11:24 ~ 13:25	22.5	1010.6	34.8	1547	12.8
7-Mar-22	2hr01mins	13:30 ~ 15:31	22.5	1010.6	40.3	1994	16.5
1-Mar-22	30mins	10:03 ~ 10:33	22	1016.9	123.1	1677	55.9
1-Mar-22	31mins	10:39 ~ 11:10	22	1016.9	93.9	1578	51.6

(*) Suspended particle was added into calibration room of HVS019 for high concentration test.

Sensitivity Adjustment Scale Setting (Before Calibration) 726 (CPM)

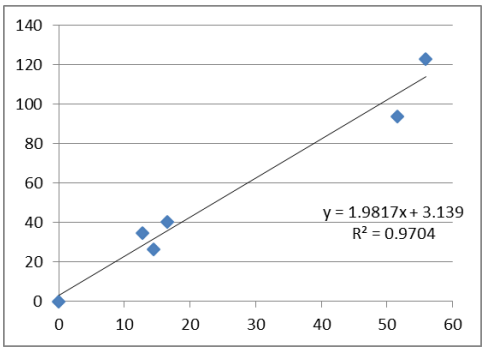
Sensitivity Adjustment Scale Setting (After Calibration) 719 (CPM)

Linear Regression of Y or X

Slope (K-factor): 1.9817 (µg/m^3)/CPM

Correlation Coefficient (R) 0.9851

Date of Issue 26 March 2022



Remarks:

1. **Strong** Correlation (R>0.8)
2. Factor 1.9817 (µg/m^3)/CPM should be apply for TSP monitoring

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

Operator : Fai So Signature : Date : 26 March 2022

QC Reviewer : Ben Tam Signature : Date : 26 March 2022

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location :	Gold King Industrial Building, Kwai Chung	Date of Calibration:	22-Feb-22
Location ID :	Calibration Room	Next Calibration Date:	22-May-22

CONDITIONS

Sea Level Pressure (hPa)	1010.8	Corrected Pressure (mm Hg)	758.1
Temperature (°C)	22.8	Temperature (K)	296

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	1.99838
Model->	5025A	Qstd Intercept ->	-0.00903
Calibration Date->	27-Dec-21	Expiry Date->	27-Dec-22

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	5.8	5.8	11.6	1.713	54	54.13	Slope = 27.3242
13	4.7	4.7	9.4	1.543	49	49.12	Intercept = 7.2177
10	3.6	3.6	7.2	1.351	44	44.11	Corr. coeff. = 0.9997
8	2.3	2.3	4.6	1.080	37	37.09	
5	1.4	1.4	2.8	0.844	30	30.07	

Calculations :

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

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

Qstd = standard flow rate

IC = corrected chart respones

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)

Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

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

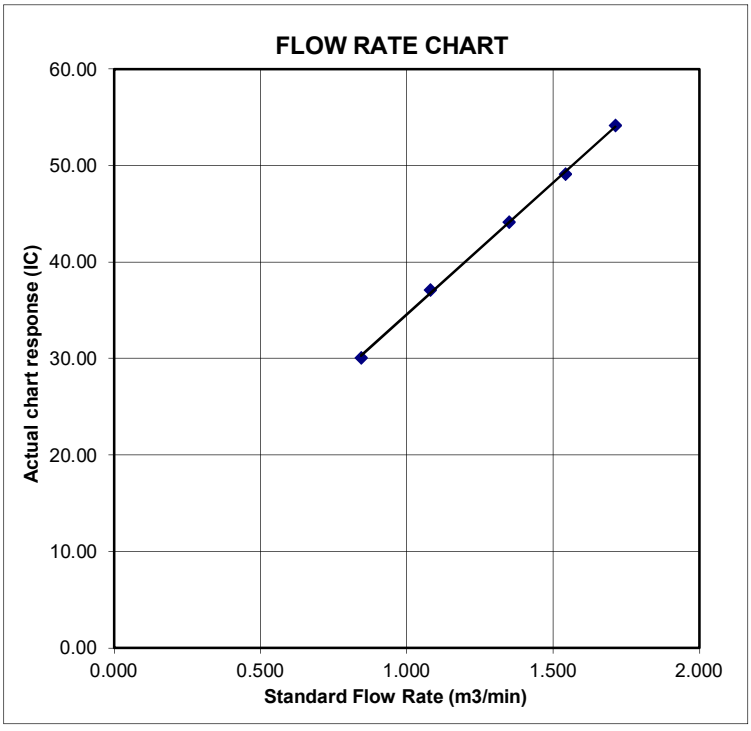
m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure



TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location :	Gold King Industrial Building, Kwai Chung	Date of Calibration:	22-Feb-22
Location ID :	Calibration Room	Next Calibration Date:	22-May-22

CONDITIONS

Sea Level Pressure (hPa)	1010.8	Corrected Pressure (mm Hg)	758.1
Temperature (°C)	22.8	Temperature (K)	296

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	1.99838
Model->	5025A	Qstd Intercept ->	-0.00903
Calibration Date->	27-Dec-21	Expiry Date->	27-Dec-22

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	1.771	52	52.13	Slope = 34.6002
13	4.9	4.9	9.8	1.575	44	44.11	Intercept = -9.1434
10	3.8	3.8	7.6	1.387	40	40.10	Corr. coeff. = 0.9958
8	2.4	2.4	4.8	1.104	30	30.07	
5	1.5	1.5	3.0	0.873	20	20.05	

Calculations :

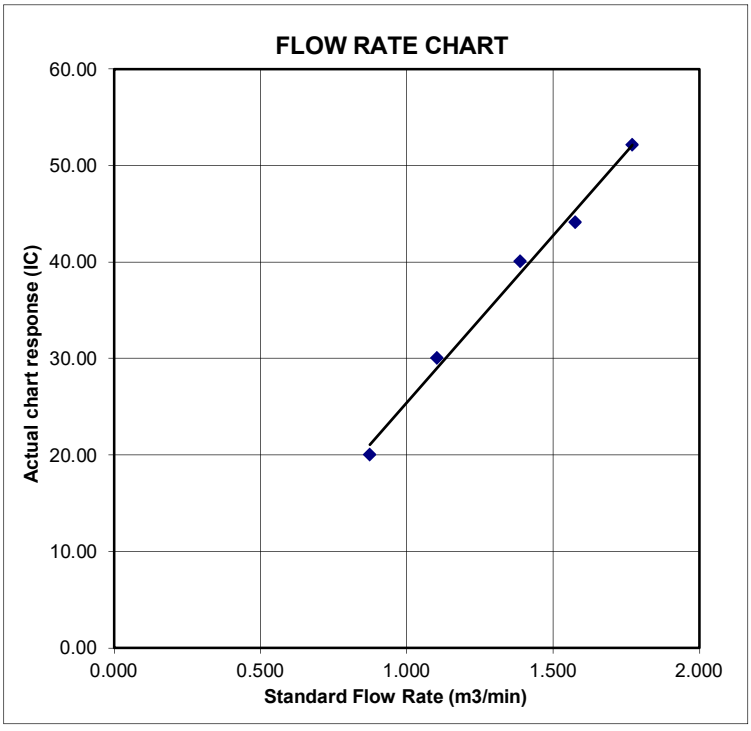
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

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:
December 27, 2022

Certificate of Calibration

Calibration Certification Information				
Cal. Date:	December 27, 2021	**Rootsmeter S/N:** 438320	**Ta:** 295	°K
Operator:	Jim Tisch		**Pa:** 740.4	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	1.3890	3.2	2.00
2	3	4	1	0.9760	6.4	4.00
3	5	6	1	0.8740	7.9	5.00
4	7	8	1	0.8320	8.8	5.50
5	9	10	1	0.6870	12.7	8.00

Data Tabulation					
Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}$ (y-axis)	Va	Qa (x-axis)	$\sqrt{\Delta H\left(Ta/Pa\right)}$ (y-axis)
0.9799	0.7055	1.4029	0.9957	0.7168	0.8927
0.9756	0.9996	1.9841	0.9914	1.0157	1.2624
0.9736	1.1140	2.2183	0.9893	1.1320	1.4114
0.9724	1.1688	2.3265	0.9881	1.1876	1.4803
0.9673	1.4079	2.8059	0.9828	1.4306	1.7853
QSTD	**m=**	**1.99838**	**QA**	**m=**	**1.25135**
	b=	**-0.00903**		**b=**	**-0.00574**
	r=	**0.99999**		**r=**	**0.99999**

Calculations			
Vstd=	ΔVol((Pa-ΔP)/Pstd)(Tstd/Ta)	**Va=**	ΔVol((Pa-ΔP)/Pa)
Qstd=	Vstd/ΔTime	**Qa=**	Va/ΔTime
For subsequent flow rate calculations:			
Qstd= $1/m\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right)-b\right)$		**Qa=** $1/m\left(\left(\sqrt{\Delta H\left(Ta/Pa\right)}\right)-b\right)$	

Standard Conditions	
Tstd:	298.15 °K
Pstd:	760 mm Hg
Key	
ΔH: calibrator manometer reading (in H2O)	
ΔP: rootsmeter manometer reading (mm Hg)	
Ta: actual absolute temperature (°K)	
Pa: actual barometric pressure (mm Hg)	
b: intercept	
m: slope	

RECALIBRATION

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

Tisch Environmental, Inc.
145 South Miami Avenue
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TOLL FREE: (877)263-7610
FAX: (513)467-9009

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

SUB-CONTRACTING REPORT

CONTACT	: MR BEN TAM	WORK ORDER	:	**HK2212657**
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	:	8-APR-2022
		DATE OF ISSUE	:	14-APR-2022
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	:	HK2212657
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.
HK2212657-001	S/N: 456658	AIR	08-Apr-2022	S/N: 456658

Equipment Verification Report (TSP)

Equipment Calibrated:

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

Standard Equipment:

Standard Equipment:	Higher Volume Sampler (TSP)
Location & Location ID:	AUES office (calibration room)
Equipment Ref:	HVS 018 & HVS 019
Last Calibration Date:	22 February 2022

Equipment Verification Results:

Verification Date: 1 & 7 March 2022

Date	Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in ug/m^3 (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/min)
7-Mar-22	2hr01mins	09:17 ~ 11:18	22.5	1010.6	26.4	1004	8.3
7-Mar-22	2hr01mins	11:24 ~ 13:25	22.5	1010.6	34.8	1674	13.8
7-Mar-22	2hr01mins	13:30 ~ 15:31	22.5	1010.6	40.3	1709	14.2
1-Mar-22	30mins	10:03 ~ 10:33	22	1016.9	123.1	1799	60.0
1-Mar-22	31mins	10:39 ~ 11:10	22	1016.9	93.9	1208	39.5

(*) Suspended particle was added into calibration room of HVS019 for high concentration test.

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

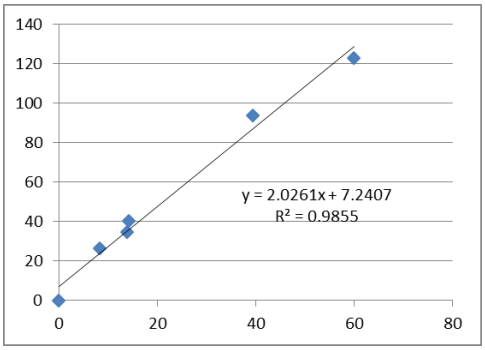
Sensitivity Adjustment Scale Setting (After Calibration) 711 (CPM)

Linear Regression of Y or X

Slope (K-factor): 2.0261 (µg/m^3)/CPM

Correlation Coefficient (R) 0.9927

Date of Issue 26 March 2022



Remarks:

1. **Strong** Correlation (R>0.8)
2. Factor 2.0261 (µg/m^3)/CPM should be apply for TSP monitoring

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

Operator : Fai So Signature : Date : 26 March 2022

QC Reviewer : Ben Tam Signature : Date : 26 March 2022

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location :	Gold King Industrial Building, Kwai Chung	Date of Calibration:	22-Feb-22
Location ID :	Calibration Room	Next Calibration Date:	22-May-22

CONDITIONS

Sea Level Pressure (hPa)	1010.8	Corrected Pressure (mm Hg)	758.1
Temperature (°C)	22.8	Temperature (K)	296

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	1.99838
Model->	5025A	Qstd Intercept ->	-0.00903
Calibration Date->	27-Dec-21	Expiry Date->	27-Dec-22

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	5.8	5.8	11.6	1.713	54	54.13	Slope = 27.3242
13	4.7	4.7	9.4	1.543	49	49.12	Intercept = 7.2177
10	3.6	3.6	7.2	1.351	44	44.11	Corr. coeff. = 0.9997
8	2.3	2.3	4.6	1.080	37	37.09	
5	1.4	1.4	2.8	0.844	30	30.07	

Calculations :

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

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

Qstd = standard flow rate

IC = corrected chart respones

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)

Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

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

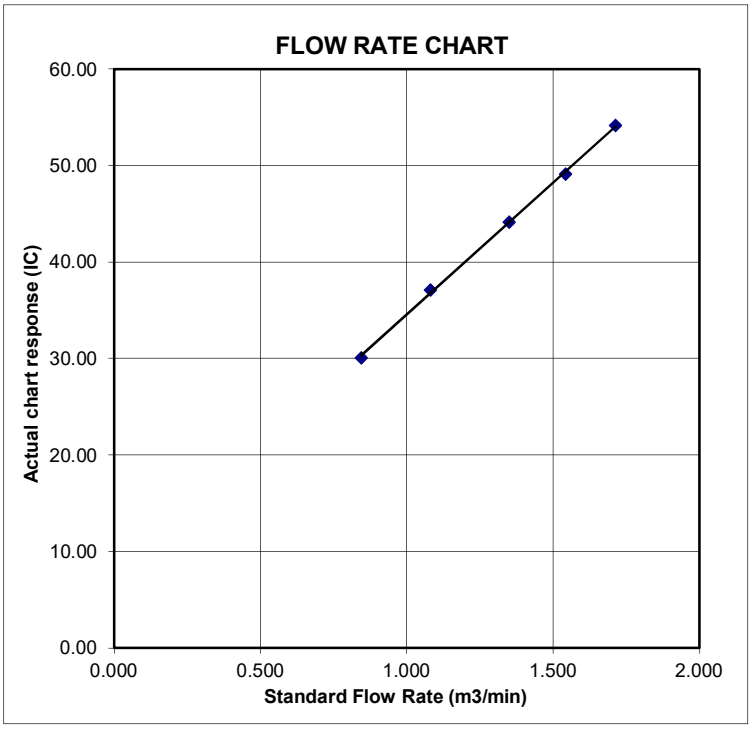
m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure



TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location :	Gold King Industrial Building, Kwai Chung	Date of Calibration:	22-Feb-22
Location ID :	Calibration Room	Next Calibration Date:	22-May-22

CONDITIONS

Sea Level Pressure (hPa)	1010.8	Corrected Pressure (mm Hg)	758.1
Temperature (°C)	22.8	Temperature (K)	296

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	1.99838
Model->	5025A	Qstd Intercept ->	-0.00903
Calibration Date->	27-Dec-21	Expiry Date->	27-Dec-22

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	1.771	52	52.13	Slope = 34.6002
13	4.9	4.9	9.8	1.575	44	44.11	Intercept = -9.1434
10	3.8	3.8	7.6	1.387	40	40.10	Corr. coeff. = 0.9958
8	2.4	2.4	4.8	1.104	30	30.07	
5	1.5	1.5	3.0	0.873	20	20.05	

Calculations :

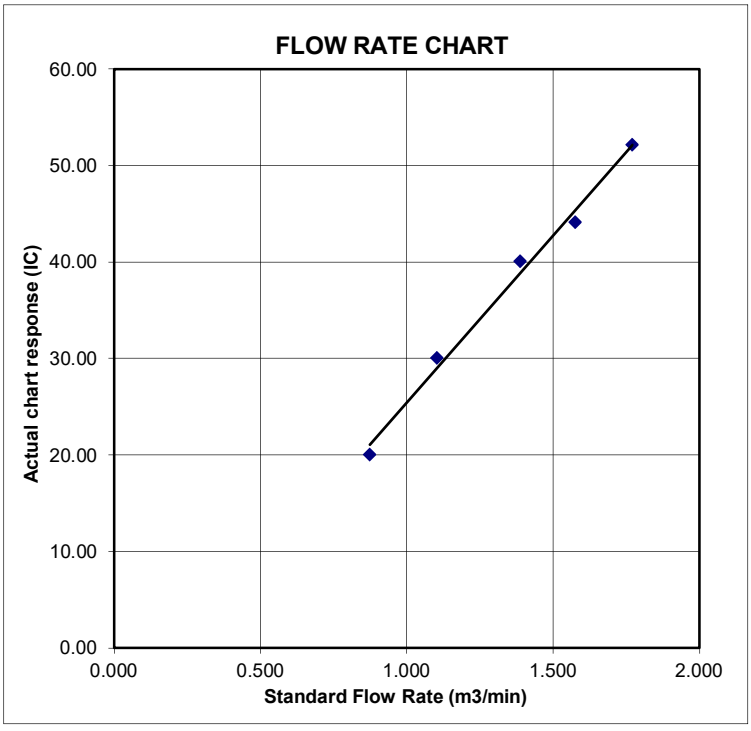
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

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:
December 27, 2022

Certificate of Calibration

Calibration Certification Information				
Cal. Date:	December 27, 2021	**Rootsmeter S/N:** 438320	**Ta:** 295	°K
Operator:	Jim Tisch		**Pa:** 740.4	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	1.3890	3.2	2.00
2	3	4	1	0.9760	6.4	4.00
3	5	6	1	0.8740	7.9	5.00
4	7	8	1	0.8320	8.8	5.50
5	9	10	1	0.6870	12.7	8.00

Data Tabulation					
Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}$ (y-axis)	Va	Qa (x-axis)	$\sqrt{\Delta H\left(Ta/Pa\right)}$ (y-axis)
0.9799	0.7055	1.4029	0.9957	0.7168	0.8927
0.9756	0.9996	1.9841	0.9914	1.0157	1.2624
0.9736	1.1140	2.2183	0.9893	1.1320	1.4114
0.9724	1.1688	2.3265	0.9881	1.1876	1.4803
0.9673	1.4079	2.8059	0.9828	1.4306	1.7853
QSTD	**m=**	**1.99838**	**QA**	**m=**	**1.25135**
	b=	**-0.00903**		**b=**	**-0.00574**
	r=	**0.99999**		**r=**	**0.99999**

Calculations			
Vstd=	ΔVol((Pa-ΔP)/Pstd)(Tstd/Ta)	**Va=**	ΔVol((Pa-ΔP)/Pa)
Qstd=	Vstd/ΔTime	**Qa=**	Va/ΔTime
For subsequent flow rate calculations:			
Qstd= $1/m\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right)-b\right)$		**Qa=** $1/m\left(\left(\sqrt{\Delta H\left(Ta/Pa\right)}\right)-b\right)$	

Standard Conditions	
Tstd:	298.15 °K
Pstd:	760 mm Hg
Key	
ΔH: calibrator manometer reading (in H2O)	
ΔP: rootsmeter manometer reading (mm Hg)	
Ta: actual absolute temperature (°K)	
Pa: actual barometric pressure (mm Hg)	
b: intercept	
m: slope	

RECALIBRATION

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

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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	: **HK2212660**
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 DATE RECEIVED DATE OF ISSUE	: 1 : 8-APR-2022 : 14-APR-2022
PROJECT	: ----	NO. OF SAMPLES CLIENT ORDER	: 1 : ----

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
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Tel. +852 2610 1044 Fax. +852 2610 2021 **www.alsglobal.com**

WORK ORDER	:	HK2212660
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.
HK2212660-001	S/N: 456660	AIR	08-Apr-2022	S/N: 456660

Equipment Verification Report (TSP)

Equipment Calibrated:

Type:	Laser Dust monitor
Manufacturer:	Sibata LD-3B
Serial No.	456660
Equipment Ref:	EQ117

Standard Equipment:

Standard Equipment:	Higher Volume Sampler (TSP)
Location & Location ID:	AUES office (calibration room)
Equipment Ref:	HVS 018 & HVS 019
Last Calibration Date:	22 February 2022

Equipment Verification Results:

Verification Date: 1 & 7 March 2022

Date	Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in ug/m^3 (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/min)
7-Mar-22	2hr01mins	09:17 ~ 11:18	22.5	1010.6	26.4	1220	10.1
7-Mar-22	2hr01mins	11:24 ~ 13:25	22.5	1010.6	34.8	2041	16.8
7-Mar-22	2hr01mins	13:30 ~ 15:31	22.5	1010.6	40.3	2577	21.4
1-Mar-22	30mins	10:03 ~ 10:33	22	1016.9	123.1	1694	56.5
1-Mar-22	31mins	10:39 ~ 11:10	22	1016.9	93.9	1407	46.0

(*) Suspended particle was added into calibration room of HVS019 for high concentration test.

Sensitivity Adjustment Scale Setting (Before Calibration) 615 (CPM)

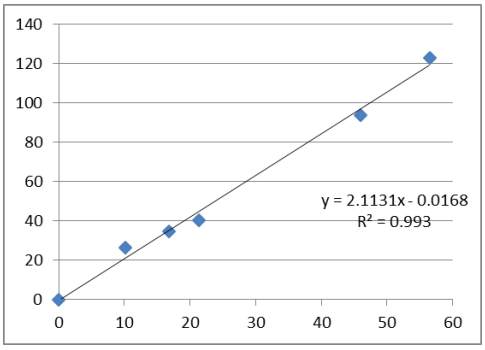
Sensitivity Adjustment Scale Setting (After Calibration) 620 (CPM)

Linear Regression of Y or X

Slope (K-factor): 2.1131 (µg/m^3)/CPM

Correlation Coefficient (R) 0.9965

Date of Issue 26 March 2022



Remarks:

1. **Strong** Correlation (R>0.8)
2. Factor 2.1131 (µg/m^3)/CPM should be apply for TSP monitoring

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

Operator : Fai So Signature : Date : 26 March 2022

QC Reviewer : Ben Tam Signature : Date : 26 March 2022

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location :	Gold King Industrial Building, Kwai Chung	Date of Calibration:	22-Feb-22
Location ID :	Calibration Room	Next Calibration Date:	22-May-22

CONDITIONS

Sea Level Pressure (hPa)	1010.8	Corrected Pressure (mm Hg)	758.1
Temperature (°C)	22.8	Temperature (K)	296

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	1.99838
Model->	5025A	Qstd Intercept ->	-0.00903
Calibration Date->	27-Dec-21	Expiry Date->	27-Dec-22

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	5.8	5.8	11.6	1.713	54	54.13	Slope = 27.3242
13	4.7	4.7	9.4	1.543	49	49.12	Intercept = 7.2177
10	3.6	3.6	7.2	1.351	44	44.11	Corr. coeff. = 0.9997
8	2.3	2.3	4.6	1.080	37	37.09	
5	1.4	1.4	2.8	0.844	30	30.07	

Calculations :

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

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

Qstd = standard flow rate

IC = corrected chart respones

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)

Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

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

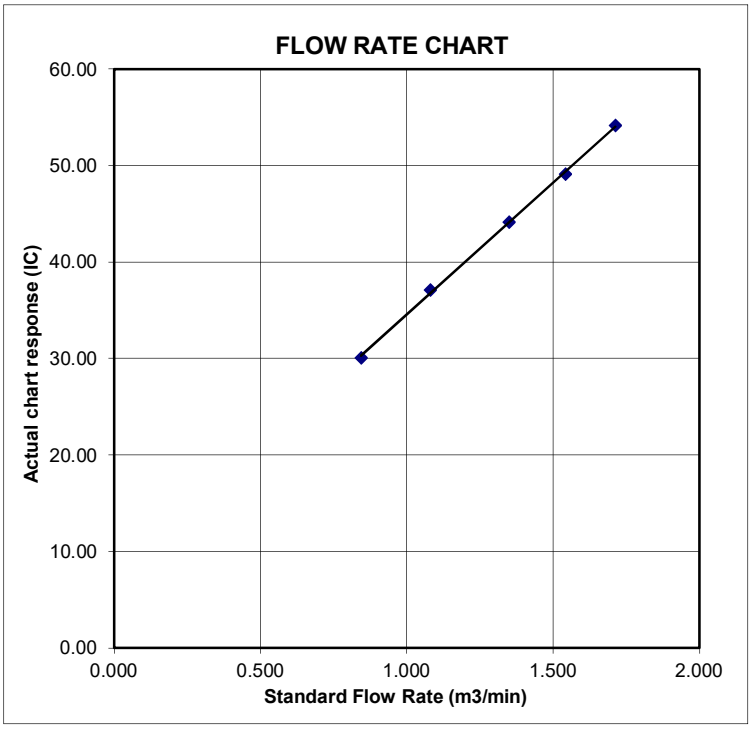
m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure



TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location :	Gold King Industrial Building, Kwai Chung	Date of Calibration:	22-Feb-22
Location ID :	Calibration Room	Next Calibration Date:	22-May-22

CONDITIONS

Sea Level Pressure (hPa)	1010.8	Corrected Pressure (mm Hg)	758.1
Temperature (°C)	22.8	Temperature (K)	296

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	1.99838
Model->	5025A	Qstd Intercept ->	-0.00903
Calibration Date->	27-Dec-21	Expiry Date->	27-Dec-22

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	1.771	52	52.13	Slope = 34.6002
13	4.9	4.9	9.8	1.575	44	44.11	Intercept = -9.1434
10	3.8	3.8	7.6	1.387	40	40.10	Corr. coeff. = 0.9958
8	2.4	2.4	4.8	1.104	30	30.07	
5	1.5	1.5	3.0	0.873	20	20.05	

Calculations :

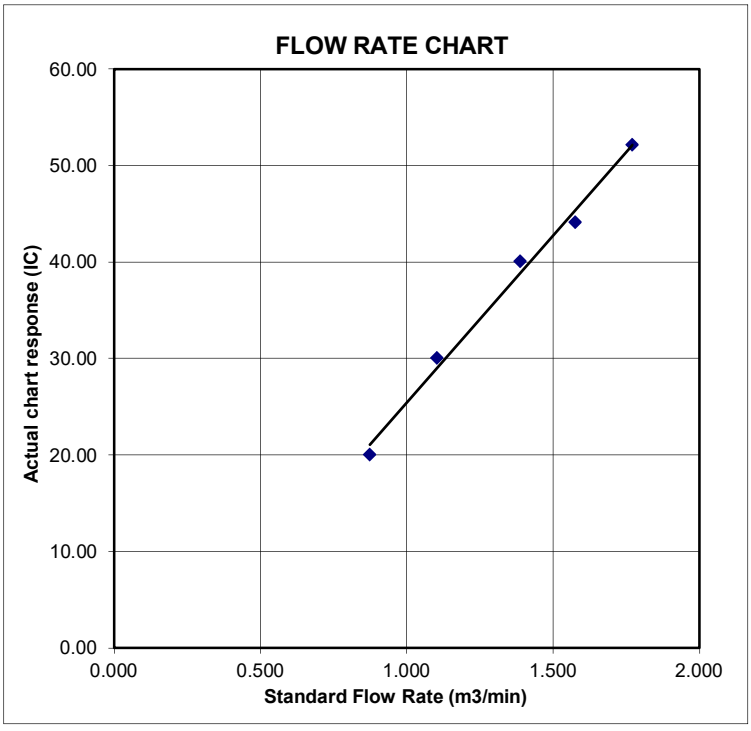
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

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:
December 27, 2022

Certificate of Calibration

Calibration Certification Information				
Cal. Date:	December 27, 2021	**Rootsmeter S/N:** 438320	**Ta:** 295	°K
Operator:	Jim Tisch		**Pa:** 740.4	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	1.3890	3.2	2.00
2	3	4	1	0.9760	6.4	4.00
3	5	6	1	0.8740	7.9	5.00
4	7	8	1	0.8320	8.8	5.50
5	9	10	1	0.6870	12.7	8.00

Data Tabulation					
Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}$ (y-axis)	Va	Qa (x-axis)	$\sqrt{\Delta H\left(Ta/Pa\right)}$ (y-axis)
0.9799	0.7055	1.4029	0.9957	0.7168	0.8927
0.9756	0.9996	1.9841	0.9914	1.0157	1.2624
0.9736	1.1140	2.2183	0.9893	1.1320	1.4114
0.9724	1.1688	2.3265	0.9881	1.1876	1.4803
0.9673	1.4079	2.8059	0.9828	1.4306	1.7853
QSTD	**m=**	**1.99838**	**QA**	**m=**	**1.25135**
	b=	**-0.00903**		**b=**	**-0.00574**
	r=	**0.99999**		**r=**	**0.99999**

Calculations			
Vstd=	ΔVol((Pa-ΔP)/Pstd)(Tstd/Ta)	**Va=**	ΔVol((Pa-ΔP)/Pa)
Qstd=	Vstd/ΔTime	**Qa=**	Va/ΔTime
For subsequent flow rate calculations:			
Qstd= $1/m\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right)-b\right)$		**Qa=** $1/m\left(\left(\sqrt{\Delta H\left(Ta/Pa\right)}\right)-b\right)$	

Standard Conditions	
Tstd:	298.15 °K
Pstd:	760 mm Hg
Key	
ΔH: calibrator manometer reading (in H2O)	
ΔP: rootsmeter manometer reading (mm Hg)	
Ta: actual absolute temperature (°K)	
Pa: actual barometric pressure (mm Hg)	
b: intercept	
m: slope	

RECALIBRATION

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

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

Appendix G

Impact Monitoring Schedule

Impact Monitoring Schedule for the Reporting Period

Date		NOISE MONITORING (0700 – 1900)	AIR QUALITY MONITORING	
			1-HOUR TSP	24-HOUR TSP
Tue	1-Mar-22	CN1, CN2, CN3 and NMS8		
Wed	2-Mar-22			
Thu	3-Mar-22			✓
Fri	4-Mar-22	NMS2, NMS3, NMS-4a, NMS5, NMS6 and NMS7	✓	
Sat	5-Mar-22			
Sun	6-Mar-22			
Mon	7-Mar-22			
Tue	8-Mar-22			
Wed	9-Mar-22			✓
Thu	10-Mar-22	NMS2, NMS3, NMS-4a, NMS5, NMS6 and NMS7	✓	
Fri	11-Mar-22			
Sat	12-Mar-22	CN1, CN2, CN3 and NMS8		
Sun	13-Mar-22			
Mon	14-Mar-22			
Tue	15-Mar-22			✓
Wed	16-Mar-22	NMS2, NMS3, NMS-4a, NMS5, NMS6 and NMS7	✓	
Thu	17-Mar-22			
Fri	18-Mar-22	CN1, CN2, CN3 and NMS8		
Sat	19-Mar-22			
Sun	20-Mar-22			
Mon	21-Mar-22			✓
Tue	22-Mar-22	NMS2, NMS3, NMS-4a, NMS5, NMS6 and NMS7	✓	
Wed	23-Mar-22			
Thu	24-Mar-22	CN1, CN2, CN3 and NMS8		
Fri	25-Mar-22			
Sat	26-Mar-22	CN1, CN2, CN3 and NMS8		✓
Sun	27-Mar-22			
Mon	28-Mar-22	NMS2, NMS3, NMS-4a, NMS5, NMS6 and NMS7	✓	
Tue	29-Mar-22			
Wed	30-Mar-22	CN1, CN2, CN3 and NMS8		
Thu	31-Mar-22			

✓	Monitoring Day
	Sunday or Public Holiday

Impact Monitoring Schedule for next Reporting Period

Date		NOISE MONITORING (0700 – 1900)	AIR QUALITY MONITORING	
			1-HOUR TSP	24-HOUR TSP
Fri	1-Apr-22			✓
Sat	2-Apr-22	NMS2, NMS3, NMS-4a, NMS5, NMS6 and NMS7	✓	
Sun	3-Apr-22			
Mon	4-Apr-22			
Tue	5-Apr-22			
Wed	6-Apr-22	CN1, CN2, CN3 and NMS8		
Thu	7-Apr-22			✓
Fri	8-Apr-22	NMS2, NMS3, NMS-4a, NMS5, NMS6 and NMS7	✓	
Sat	9-Apr-22			
Sun	10-Apr-22			
Mon	11-Apr-22	CN1, CN2, CN3 and NMS8		
Tue	12-Apr-22			
Wed	13-Apr-22			✓
Thu	14-Apr-22	NMS2, NMS3, NMS-4a, NMS5, NMS6 and NMS7	✓	
Fri	15-Apr-22			
Sat	16-Apr-22			
Sun	17-Apr-22			
Mon	18-Apr-22			
Tue	19-Apr-22	NMS2, NMS3, NMS-4a, NMS5, NMS6 and NMS7	✓	✓
Wed	20-Apr-22			
Thu	21-Apr-22	CN1, CN2, CN3 and NMS8		
Fri	22-Apr-22			
Sat	23-Apr-22		✓	
Sun	24-Apr-22			
Mon	25-Apr-22			✓
Tue	26-Apr-22			
Wed	27-Apr-22	CN1, CN2, CN3 and NMS8		
Thu	28-Apr-22			
Fri	29-Apr-22	NMS2, NMS3, NMS-4a, NMS5, NMS6 and NMS7	✓	
Sat	30-Apr-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-Mar-22	27967	24619.77	24643.77	1440	34	35	34.5	18.5	1017	1.39	1999	2.763	2.8096	0.0466	23
9-Mar-22	27987	24643.77	24667.77	1440	34	35	34.5	18.2	1017.2	1.39	2000	2.7428	2.7794	0.0366	18
15-Mar-22	28029	24667.77	24691.77	1440	35	36	35.5	24	1010.8	1.40	2021	2.7134	2.7557	0.0423	21
21-Mar-22	28082	24691.77	24715.77	1440	35	36	35.5	17	1022.1	1.42	2044	2.7142	2.7738	0.0596	29
26-Mar-22	27933	24715.77	24739.77	1440	35	36	35.5	20.3	1016.1	1.41	2032	2.708	2.7643	0.0563	28

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-Mar-22	27963	11832.18	11856.18	1440.00	36	37	36.5	18.5	1017	1.39	1994	2.7618	2.8269	0.0651	33
9-Mar-22	27969	11856.18	11880.18	1440.00	36	37	36.5	18.2	1017.2	1.39	1995	2.7639	2.8408	0.0769	39
15-Mar-22	28030	11880.18	11904.18	1440.00	36	37	36.5	24	1010.8	1.37	1977	2.7185	2.8164	0.0979	50
21-Mar-22	28083	11904.18	11928.18	1440.00	36	37	36.5	17	1022.1	1.39	2002	2.7182	2.7847	0.0665	33
26-Mar-22	28072	11928.18	11952.18	1440.00	36	37	36.5	20.3	1016.1	1.38	1989	2.7024	2.7415	0.0391	20

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-Mar-22	27968	16976.10	17000.10	1440.00	36	37	36.5	18.5	1017	1.41	2033	2.7761	2.8400	0.0639	31
9-Mar-22	27989	17000.10	17024.10	1440.00	36	37	36.5	18.2	1017.2	1.41	2034	2.7360	2.7926	0.0566	28
15-Mar-22	28031	17024.10	17048.10	1440.00	36	37	36.5	24	1010.8	1.40	2015	2.7282	2.8164	0.0882	44
21-Mar-22	28084	17048.10	17072.10	1440.00	36	37	36.5	18	1022.1	1.42	2038	2.7174	2.7744	0.0570	28
26-Mar-22	28071	17072.10	17096.10	1440.00	36	37	36.5	20.2	1016.1	1.41	2028	2.6321	2.7982	0.1661	82

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-Mar-22	27966	12312.27	12336.27	1440.00	34	35	34.5	18.5	1017	1.34	1935	2.7616	2.8893	0.1277	66
9-Mar-22	27970	12336.27	12360.27	1440.00	34	35	34.5	18.2	1017.2	1.34	1936	2.7546	2.9157	0.1611	83
15-Mar-22	28028	12360.27	12384.27	1440.00	34	35	34.5	25	1010.8	1.33	1916	2.7291	2.8452	0.1161	61
21-Mar-22	28085	12384.27	12408.27	1440.00	34	34	34.0	18	1022.1	1.33	1920	2.7130	2.8098	0.0968	50
26-Mar-22	28070	12408.27	12432.27	1440.00	34	35	34.5	20.3	1016.1	1.34	1930	2.7042	2.7905	0.0863	45

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)		
4-Mar-22	11:08	64.8	68.5	61.2	66.8	69.6	61.6	64.7	67.6	59.5	63.5	66.8	60.6	64.6	67.9	59.6	63.6	65	58.6	65	70
10-Mar-22	10:50	63.2	65.4	60.1	65.8	68.1	6102	64.9	69	60.2	64.1	66.4	62.2	65	68.2	62.9	62.3	64.5	60	64	70
16-Mar-22	10:38	61.5	63.4	57.1	63	65.9	61.7	63.2	66.4	60.1	64.2	67.1	61.9	63.1	65.5	59.6	63.7	67	58.3	63	70
22-Mar-22	11:03	60.5	63.1	56.1	59.8	62.5	57.5	61.5	63.4	58.3	62.3	63.4	59	63.8	66	60.5	62.8	64.9	57.4	62	70
28-Mar-22	11:19	62.6	65.4	58.5	62.3	63.1	56.2	63.4	64.1	60.1	62.3	66.3	58.5	65.5	67.5	61.2	62.5	65.4	59.5	63	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)		
4-Mar-22	14:21	61.6	61.1	57.6	60.5	61.5	57.8	60.5	62.1	57.9	63.4	64.9	59.8	62.0	63.7	59.8	61.0	62.4	58.7	62	75
10-Mar-22	13:54	64.5	66.1	60.2	63.2	65.4	60.1	63.1	65.4	59.8	61.2	63.2	57.8	62.0	66.5	55.2	63.4	67.5	58.6	63	75
16-Mar-22	14:08	63.5	66.4	60.2	62.4	65.4	58.4	63.2	65.0	60.8	59.9	62.2	56.9	60.5	63.9	58.4	61.2	63.8	58.4	62	75
22-Mar-22	14:26	64.0	65.4	62.1	63.4	65.8	60.4	59.8	63.1	57.5	64.2	65.1	62.8	61.8	64.3	58.3	62.8	64.9	58.1	63	75
28-Mar-22	14:19	60.9	63.0	57.8	62.3	65.8	59.7	61.5	63.9	58.4	62.0	63.6	58.1	62.8	64.9	59.0	63.1	66.8	57.5	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)		
4-Mar-22	9:34	69.7	71.5	66.7	70.3	72.2	67.4	69.6	71.4	67.3	70.9	72	67.7	69.7	71.7	66.9	69.7	71	66.9	70	75
10-Mar-22	9:12	68.9	70.2	65.5	67.6	71.2	63.5	66.5	68.9	64.2	70.5	73.5	65.8	68.7	71.5	66.7	67.8	69.5	64.9	69	75
16-Mar-22	8:56	65.8	68.6	62.5	68.7	69.6	66.1	70.2	72.2	67.2	69.6	71.2	66.8	68.5	70.2	65.8	67.8	68.7	66.4	69	75
22-Mar-22	9:24	67.8	69.5	65.5	68.9	71.2	66.5	68.4	69.4	66.1	69.8	72.3	65.1	67.8	69.4	64.5	66.8	69	64.1	68	75
28-Mar-22	9:33	71.2	73.4	67.5	69.8	71.2	65.6	68.9	70.2	65.5	68.7	69.3	66.5	68.7	71.2	67.5	67.4	68	65.8	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)		
4-Mar-22	10:19	66.9	68.6	64.8	67.6	69.5	65.2	67.3	68.7	65.4	68.36	69.9	66.1	67.5	68.1	65.5	67	68.4	65	67	75
10-Mar-22	9:54	68.4	69.7	66.5	67.8	69.8	64.5	68.9	70.1	65.5	66.4	69.7	62.5	67.7	69.9	64.4	69	71.2	66.8	68	75
16-Mar-22	9:48	69.7	73.2	66.5	68.9	70.1	67.8	67.9	69.4	66.5	68.8	71.5	67.8	67.2	69.4	65.8	67.8	69.8	66	68	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)		
22-Mar-22	10:12	70.1	7.5	67.8	68.5	70	66.3	67.2	69.2	65.2	68.4	69.9	66.3	70.8	71.2	66.4	68.4	71.8	65.8	69	75
28-Mar-22	10:20	66.4	68.7	65.4	67.8	69.4	64.5	66.8	67.8	62.3	68.8	70.1	65.5	69.7	71.2	65.9	67.7	69.4	62.3	68	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)		
4-Mar-22	15:02	68.8	72.5	64.5	68.4	71.7	63.7	69.4	72.8	64.7	67.5	70	63.5	68.6	72.4	64.9	68.8	71	64.8	69	75
10-Mar-22	14:45	66.5	68.4	63.4	67.8	69.4	63.4	68.4	69.7	67.8	66.7	69.3	62.6	65.4	67.8	63.2	68.8	70.8	64.5	67	75
16-Mar-22	15:03	67.1	71	64.5	68.8	69.4	65.4	67	71.2	63.4	66.4	68.8	63.2	65.8	69.4	64.5	67	69.8	64.5	67	75
22-Mar-22	15:15	69.7	71.2	65.5	68.9	70.2	64.8	68.7	69.4	64.5	66.5	68.7	63.5	67.8	70.9	65.4	68.4	69.7	65.4	68	75
28-Mar-22	15:24	66.4	68.7	63.5	67.8	69.4	63.5	68.7	71	64.8	67	69.8	65.2	70.1	72.2	67.8	69.4	72.3	65.4	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)		
4-Mar-22	15:48	68	71.2	64.8	70.4	72.5	67.1	72.7	76.8	64.1	70.6	74.9	63.9	70.5	74.5	64.4	70.9	74.5	64.8	71	75
10-Mar-22	15:47	65.4	68.7	63.5	68.7	69.4	67.4	71	73.2	66.4	69.7	71.5	68.7	69.2	74.5	62.3	68.7	70.4	66	69	75
16-Mar-22	15:58	67.8	68.7	64.5	69.7	71.5	65.5	68.7	72.2	63.1	67	69.8	65.4	68.7	74.2	63	69.9	71.5	67.8	69	75
22-Mar-22	16:13	70.1	72.3	66.5	68.9	70.5	64.5	67.8	69.5	65.4	68.8	70.4	64.5	67.9	69.7	64.8	68.8	72.3	64.8	69	75
28-Mar-22	16:11	69.9	71.2	67.8	67.6	69.8	66.4	70.4	73.2	66.5	68.9	69.7	65.5	68.7	71.5	64.5	69.9	71.5	64.5	69	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)		
1-Mar-22	14:39	65.6	69.5	56.1	63.5	68.1	56	62.6	62.6	53.8	58.8	61.9	53.8	56.8	58.5	54.6	57.4	59.8	53.3	62	75
12-Mar-22	8:56	64.2	67	59.1	58.7	65	62.1	60.5	59.5	61.4	60.2	58.7	64.1	62.1	63.1	60.8	59.8	63.3	59.4	61	75
18-Mar-22	10:02	65.4	69.4	61.2	64.5	67.8	62.3	66.5	68.8	62.2	68.9	71.2	64	67.8	69.1	63.2	66.4	69.4	60.2	67	75
24-Mar-22	10:54	64.4	67.8	61.2	65.5	68.9	61.2	66.4	68.7	60.2	63.5	65.1	59.5	63.2	65.2	61	66	69.5	60.2	65	75
26-Mar-22	9:42	61.5	65.1	57.5	62.3	63	59.8	65.4	66.8	62.2	63.1	65.5	57.5	63.1	65.4	56	64.5	66.4	61.5	64	75
30-Mar-22	10:00	62.2	64.5	58.4	64.5	67.5	60.2	62.5	64.5	57.8	65.3	67.4	62.2	64.5	65.5	62.2	61.2	63.2	58.4	64	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)		
1-Mar-22	16:16	63.6	65.3	61.4	62.6	63.7	60.7	67.6	68.2	60.2	66.5	65.7	62.3	63.3	64.5	61.5	62.4	63.7	59.8	65	70
12-Mar-22	11:45	64.7	65.9	61	66.7	63.3	59.8	62.4	65.1	66.7	60.5	55.9	67.1	61.4	62.1	69.5	62.8	64.7	59	64	70
18-Mar-22	12:13	65.3	67.4	60.2	67.5	69.4	63.4	63.4	65.4	58.7	63.8	64.5	61.5	64.8	65.3	62.1	63.5	65.5	60.4	65	70
24-Mar-22	13:15	61.2	63.9	55.7	63.1	65.8	60.5	64.2	66.4	60.3	64.9	66.5	62.1	63.1	65.9	60.2	62.4	64.8	60.3	63	70
26-Mar-22	11:56	66.3	69.7	62.3	65.8	68.7	61.2	64.8	66.3	60.1	68.9	69.9	65.1	67.8	69.8	62.3	65.5	68.8	63	67	70
30-Mar-22	12:24	64.4	66.4	59.8	63.4	65.1	60.3	66.8	67.5	62.4	63.2	65.9	59.4	65.9	68.4	63.1	63.8	67.6	60.1	65	70

Noise Measurement Results (dB) of CN2

Date	**Start Time**	**1st Leq (5min)**			**2nd Leq (5min)**			**3rd Leq (5min)**			**4th Leq (5min)**			**5th Leq (5min)**			**6th Leq (5min)**			**Leq30min, dB(A)**	**Limit Level dB(A)**
		Leq, dB(A)	**L10, dB(A)**	**L90, dB(A)**	**Leq, dB(A)**	**L10, dB(A)**	**L90, dB(A)**	**Leq, dB(A)**	**L10, dB(A)**	**L90, dB(A)**	**Leq, dB(A)**	**L10, dB(A)**	**L90, dB(A)**	**Leq, dB(A)**	**L10, dB(A)**	**L90, dB(A)**	**Leq, dB(A)**	**L10, dB(A)**	**L90, dB(A)**		
1-Mar-22	15:28	59.3	60.8	54.7	60.7	61.9	59	57.6	59.3	55.5	59.2	61	55.1	59.5	61.3	55.6	58.2	59.5	55.7	59	70
12-Mar-22	11:03	65.5	66.8	58.2	62.1	64.3	57.5	63.7	66	58.9	61.8	64.5	57.8	64.6	66.2	59.1	61	63.9	57.5	63	70
18-Mar-22	11:32	61.3	63.1	58.9	59.9	62.3	55.4	61.2	63.8	59.7	62.9	65.6	58.1	60.6	63.2	54.8	62.1	64.2	57.4	61	70
24-Mar-22	12:24	63	64.9	60.3	62.4	65.4	58.9	62.4	66.3	57.8	60.2	62.4	58.7	59.8	62.3	57.5	61.8	64.5	56.8	62	70
26-Mar-22	11:15	61.8	63.4	57.8	63.4	65.4	60.2	64.5	66.8	60.5	63.7	65.8	59.8	62.6	65	58.7	62.5	66.3	61.2	63	70
30-Mar-22	11:41	62.5	66	60.1	60.8	63.1	58.4	61.3	64.8	58.3	61.2	63.9	57.8	63.2	65	60.1	61.4	64.2	58.1	62	70

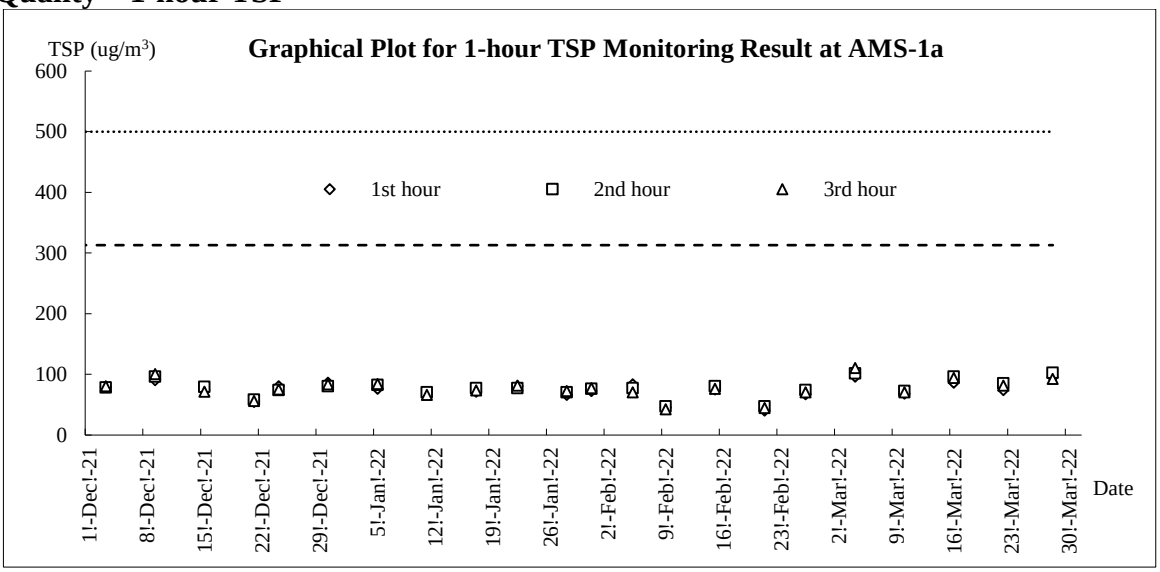
Noise Measurement Results (dB) of CN3

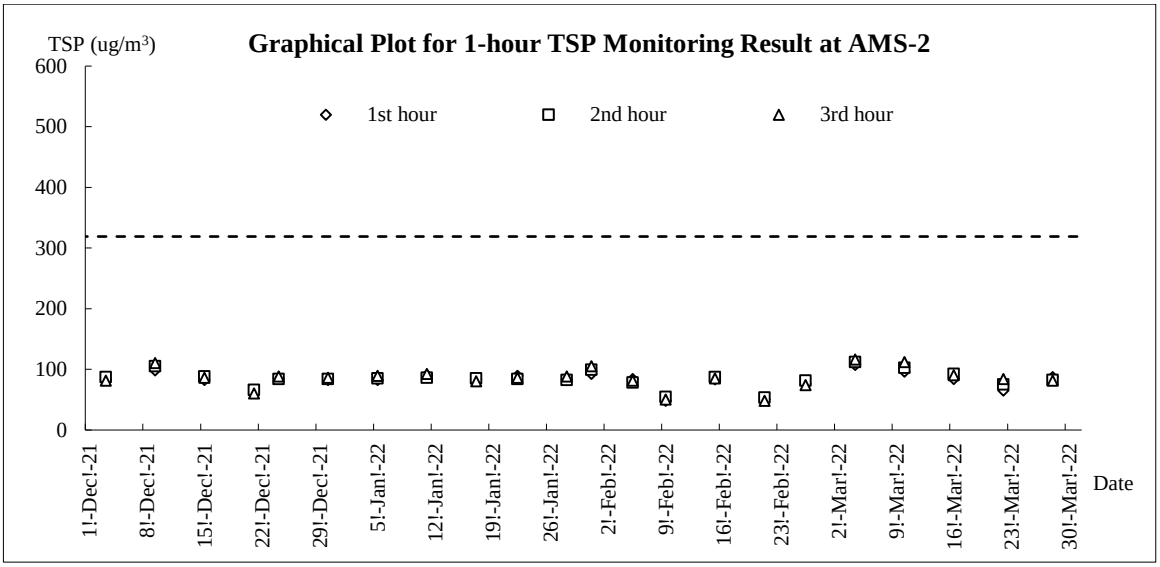
Date	**Start Time**	**1st Leq (5min)**			**2nd Leq (5min)**			**3rd Leq (5min)**			**4th Leq (5min)**			**5th Leq (5min)**			**6th Leq (5min)**			**Leq30min, dB(A)**	**Limit Level dB(A)**
		Leq, dB(A)	**L10, dB(A)**	**L90, dB(A)**	**Leq, dB(A)**	**L10, dB(A)**	**L90, dB(A)**	**Leq, dB(A)**	**L10, dB(A)**	**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)**		
1-Mar-22	13:41	61.5	66	56.4	59.9	62.4	56.4	61.5	64.8	56.3	61.5	65.2	55.7	59.7	62	54.8	58.5	61.5	54.8	61	75
12-Mar-22	10:05	61.2	62.5	59.5	58.5	63.4	61.6	60.9	64.1	63.8	57.1	61	63.4	67.3	59.7	66	59.4	61.4	54.1	62	75
18-Mar-22	10:43	62.1	64.2	58.4	63.2	66.4	60.1	62.3	64.3	58	64.6	66.9	62	65.8	68.9	59.8	66	68.7	63	64	75
24-Mar-22	11:49	59.6	61.2	57.4	61.2	65.4	58.1	62	64.5	59.5	59.4	62.2	56.6	61.2	62.1	58.1	58.7	60.1	53.6	61	75
26-Mar-22	10:31	60.4	63.4	56.4	62.3	65.1	56.5	59.4	62.5	57.1	62.2	64.5	58.8	63.4	67.6	60.1	62	64.9	56.1	62	75
30-Mar-22	10:57	63.4	66.8	59.6	61.5	64.2	57.8	61.5	63.4	56.4	62.8	66.4	57.4	61.4	62.5	57.9	63.5	67.5	58.4	62	75

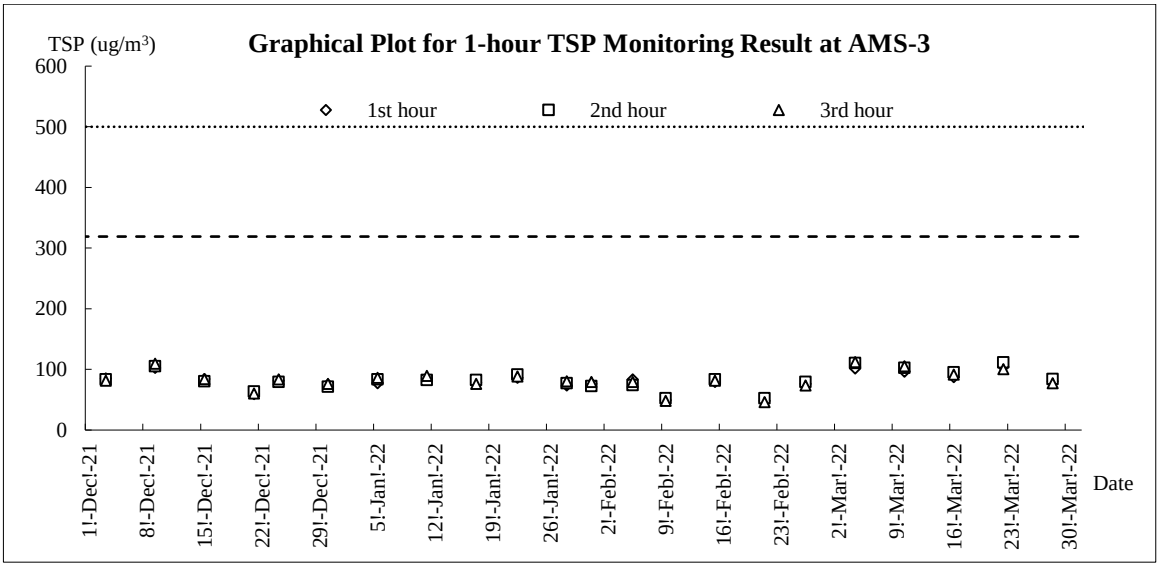
Appendix I

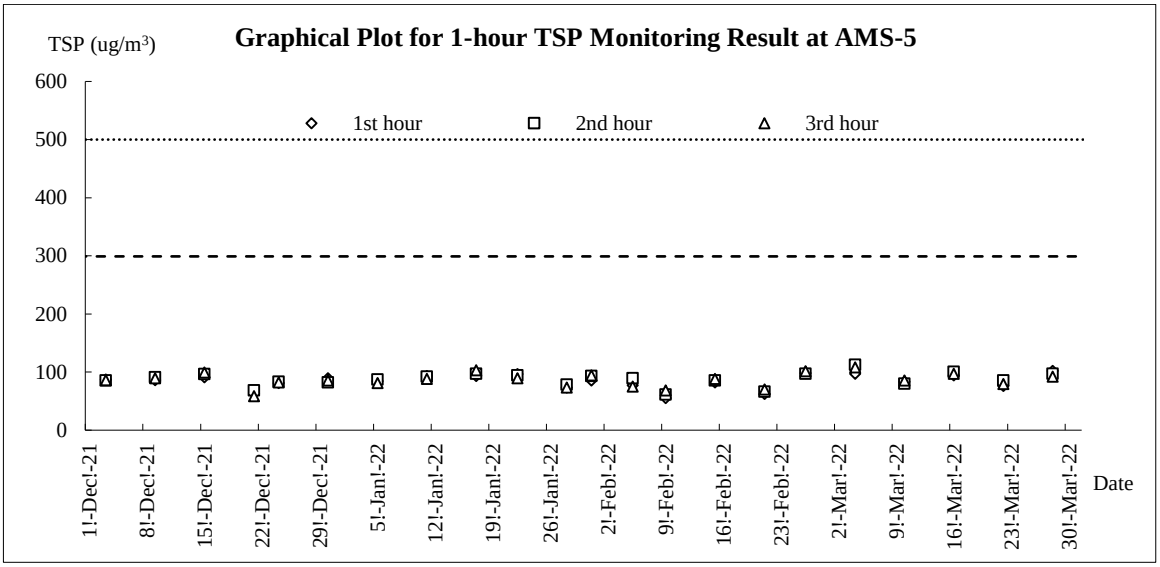
Graphical Plots for Monitoring Result

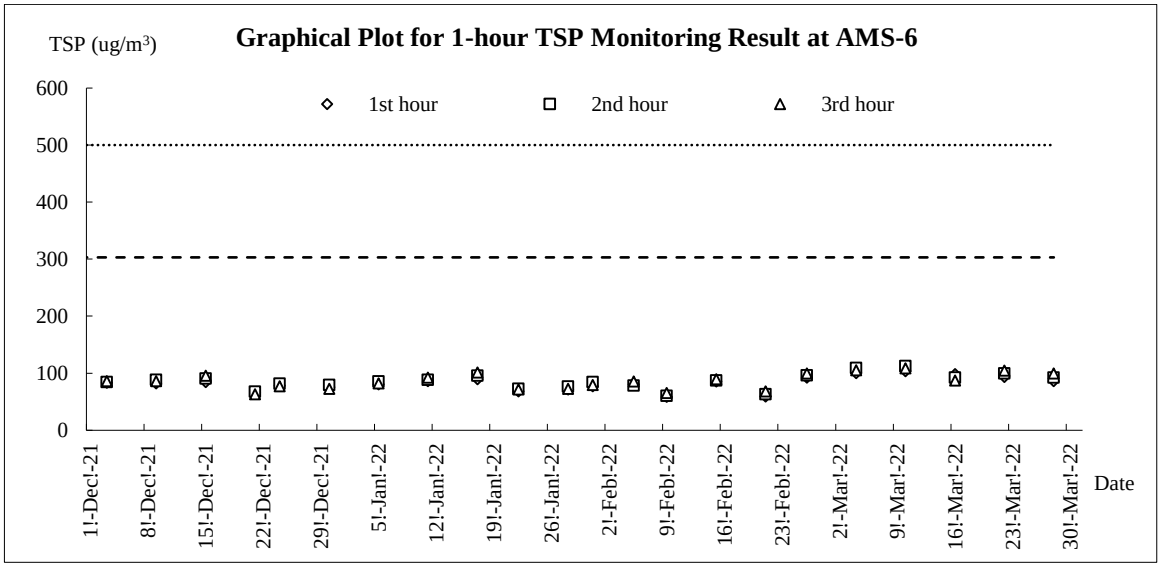
Air Quality – 1-hour TSP

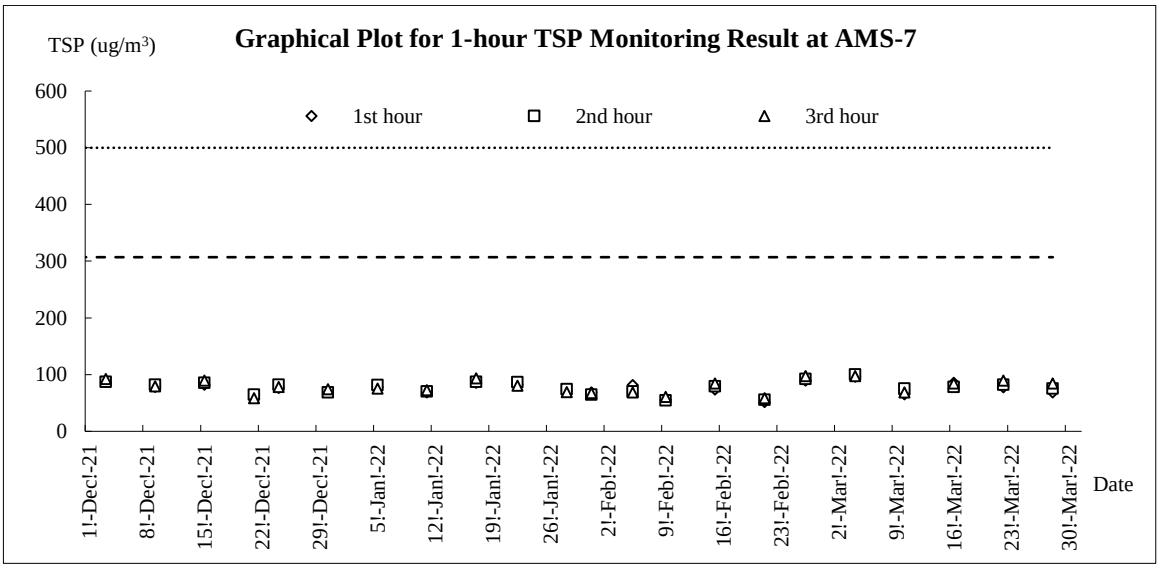




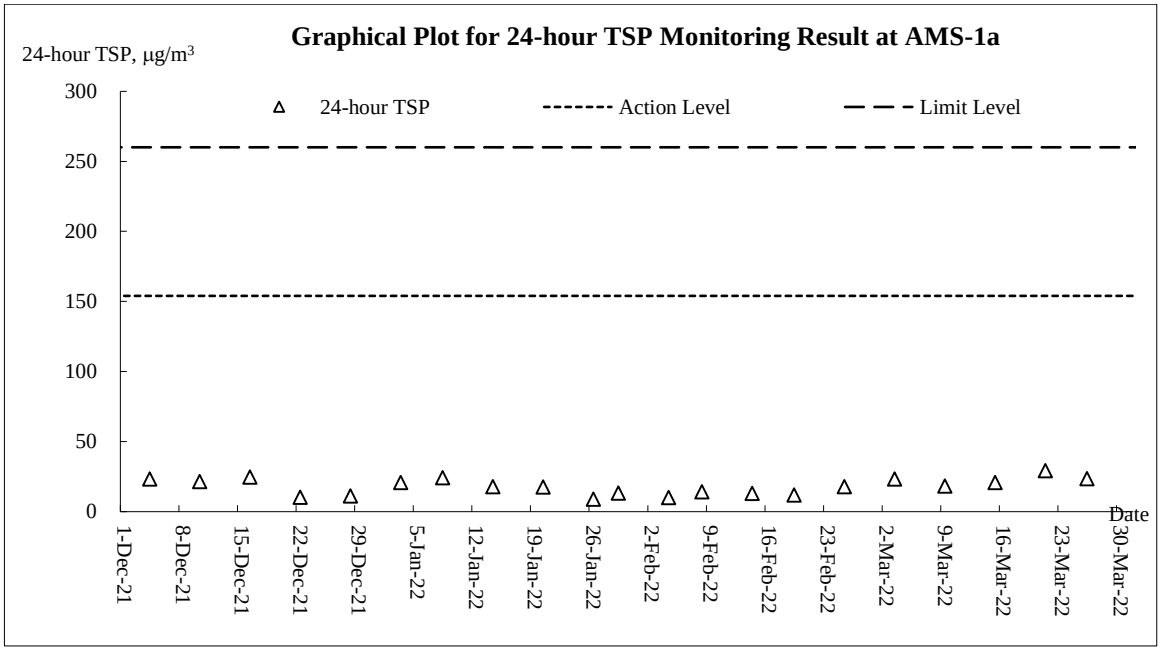


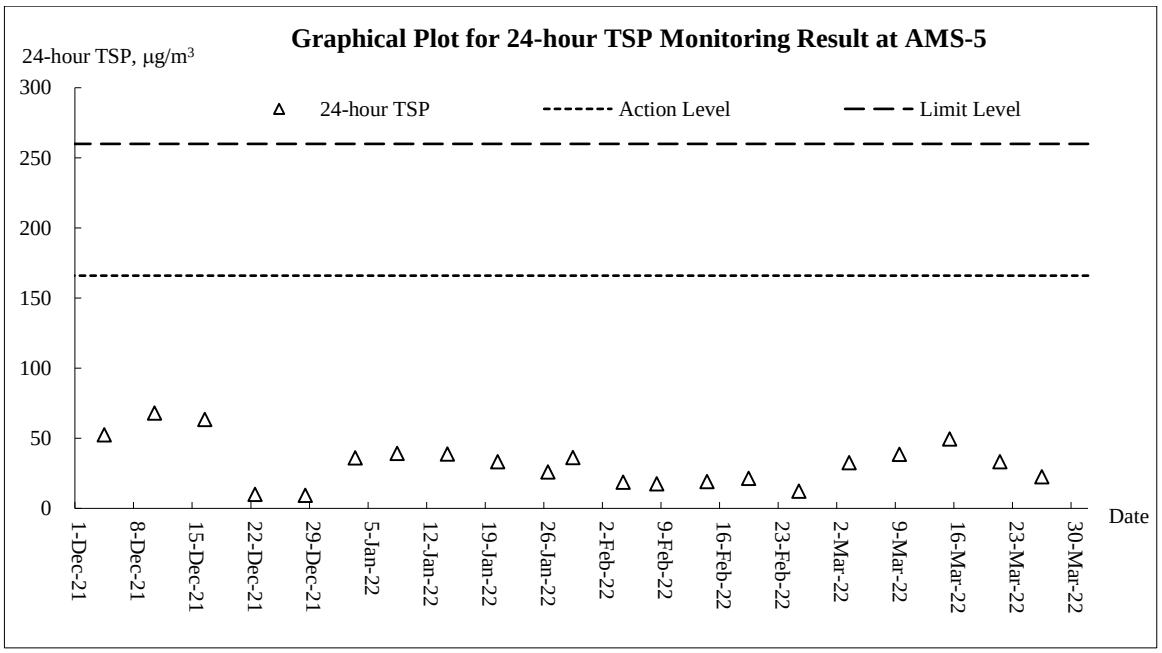

Graphical Plot for 1-hour TSP Monitoring Result at AMS-5
TSP (ug/m3)
1st hour
2nd hour
3rd hour
600
500
400
300
200
100
0
1!-Dec!-21
8!-Dec!-21
15!-Dec!-21
22!-Dec!-21
29!-Dec!-21
5!-Jan!-22
12!-Jan!-22
19!-Jan!-22
26!-Jan!-22
2!-Feb!-22
9!-Feb!-22
16!-Feb!-22
23!-Feb!-22
2!-Mar!-22
9!-Mar!-22
16!-Mar!-22
23!-Mar!-22
30!-Mar!-22
Date

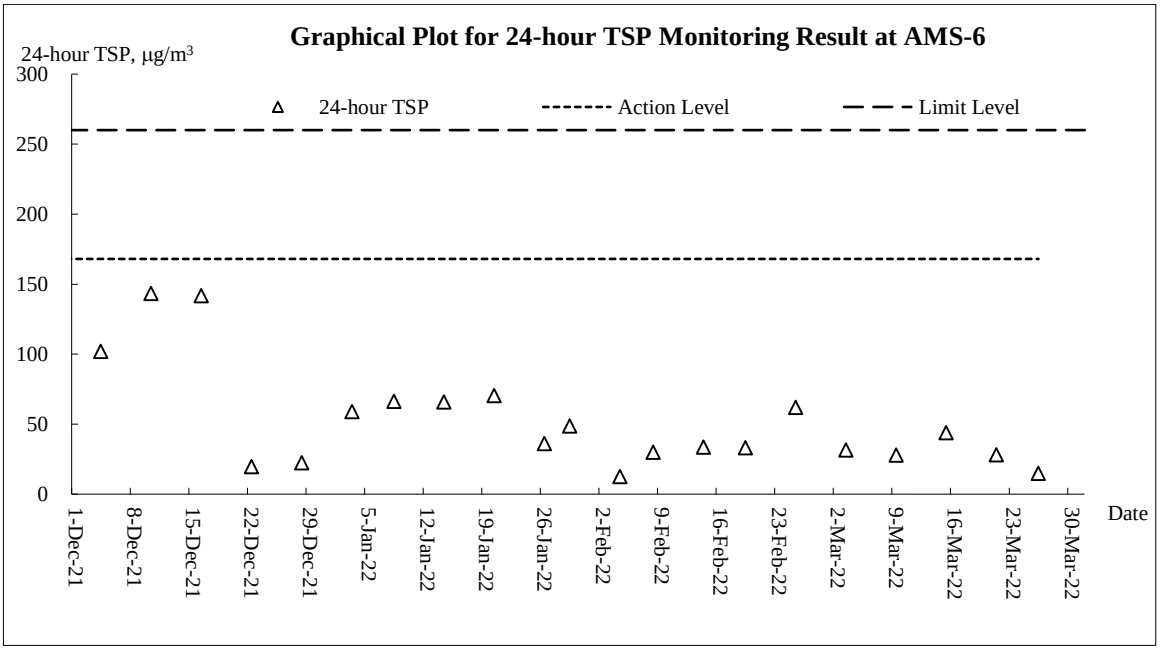

Graphical Plot for 1-hour TSP Monitoring Result at AMS-6
TSP (ug/m3)
1st hour
2nd hour
3rd hour
600
500
400
300
200
100
0
1!-Dec!-21
8!-Dec!-21
15!-Dec!-21
22!-Dec!-21
29!-Dec!-21
5!-Jan!-22
12!-Jan!-22
19!-Jan!-22
26!-Jan!-22
2!-Feb!-22
9!-Feb!-22
16!-Feb!-22
23!-Feb!-22
2!-Mar!-22
9!-Mar!-22
16!-Mar!-22
23!-Mar!-22
30!-Mar!-22
Date

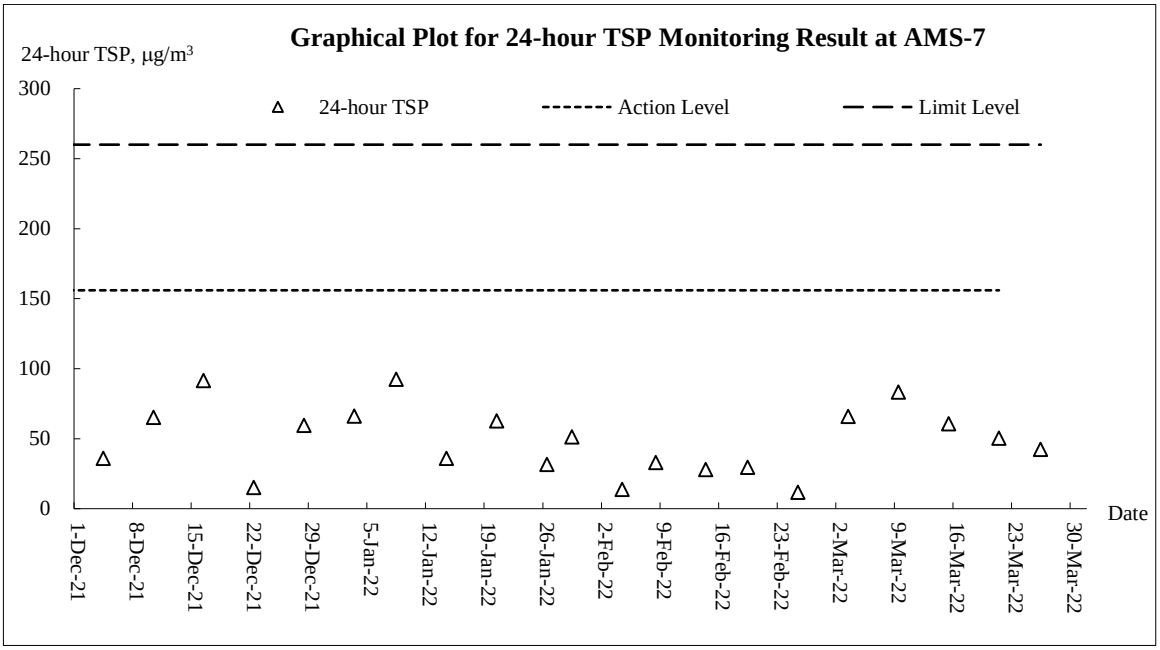

Graphical Plot for 1-hour TSP Monitoring Result at AMS-7
TSP (ug/m3)
1st hour
2nd hour
3rd hour
600
500
400
300
200
100
0
1!-Dec!-21
8!-Dec!-21
15!-Dec!-21
22!-Dec!-21
29!-Dec!-21
5!-Jan!-22
12!-Jan!-22
19!-Jan!-22
26!-Jan!-22
2!-Feb!-22
9!-Feb!-22
16!-Feb!-22
23!-Feb!-22
2!-Mar!-22
9!-Mar!-22
16!-Mar!-22
23!-Mar!-22
30!-Mar!-22
Date

Air Quality – 24-hour TSP

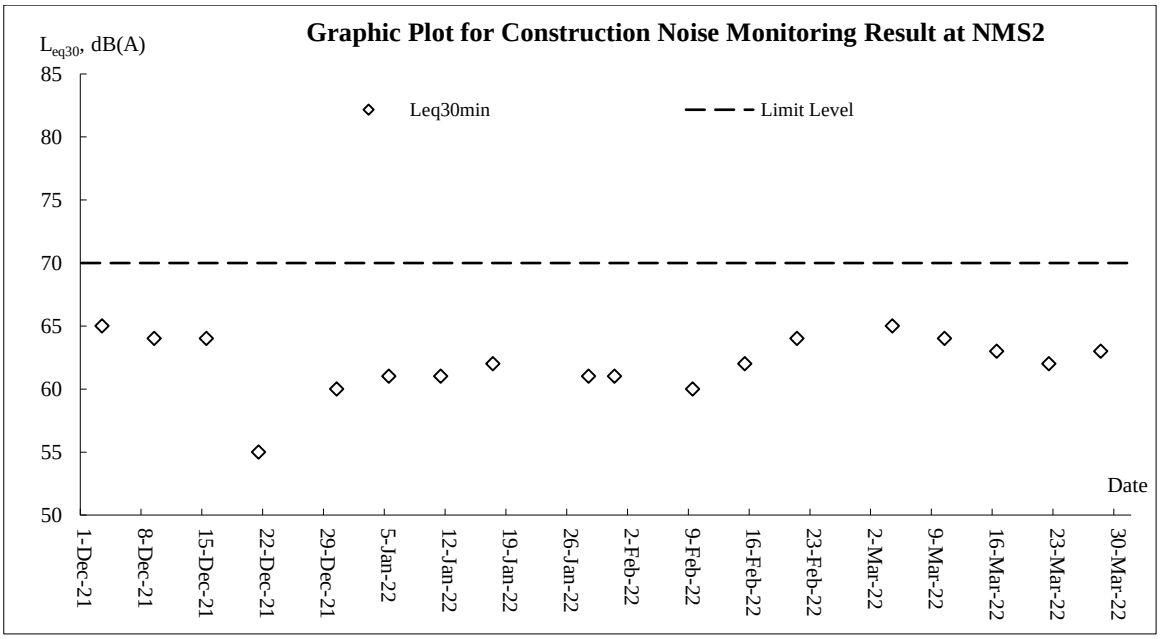


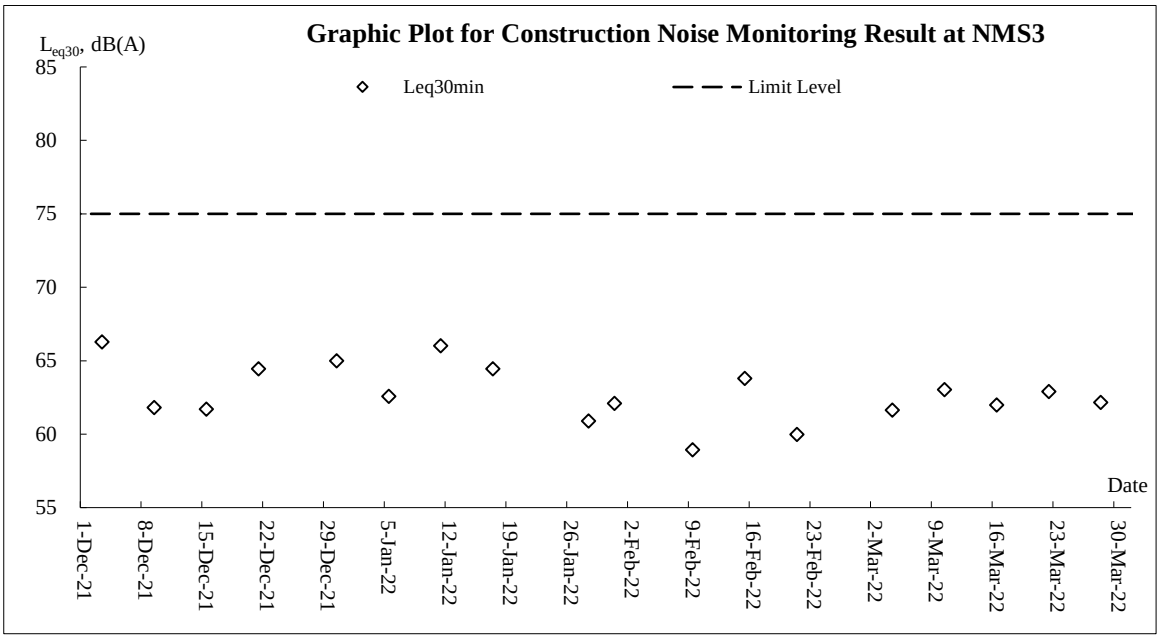


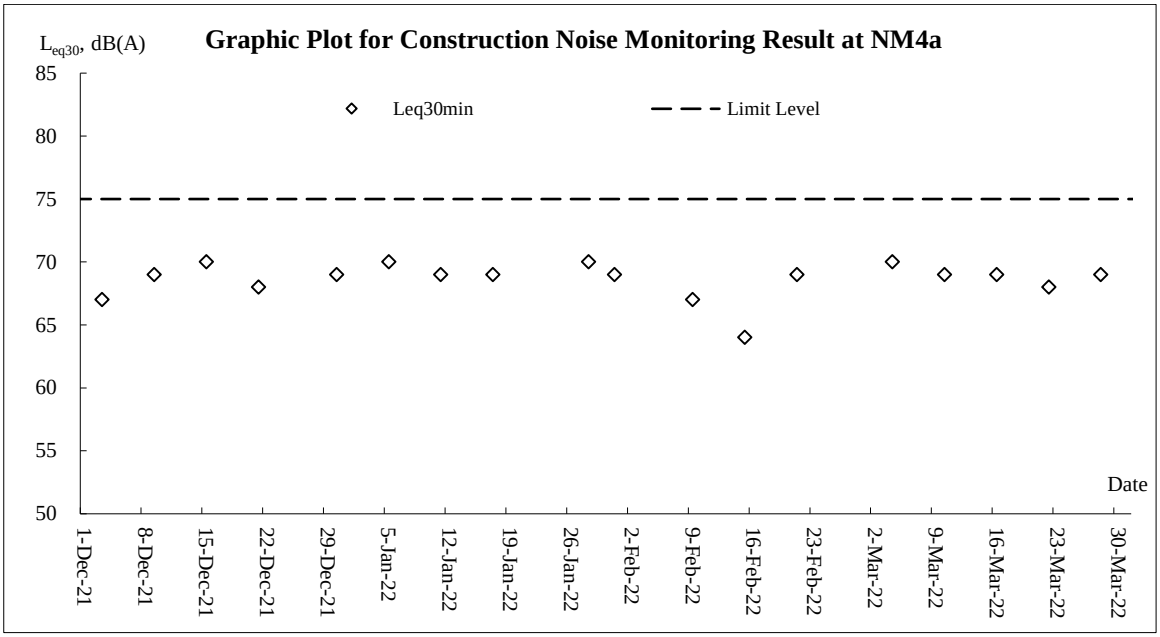

Graphical Plot for 24-hour TSP Monitoring Result at AMS-6
24-hour TSP, μg/m³
24-hour TSP
Action Level
Limit Level
300
250
200
150
100
50
0
1-Dec-21
8-Dec-21
15-Dec-21
22-Dec-21
29-Dec-21
5-Jan-22
12-Jan-22
19-Jan-22
26-Jan-22
2-Feb-22
9-Feb-22
16-Feb-22
23-Feb-22
2-Mar-22
9-Mar-22
16-Mar-22
23-Mar-22
30-Mar-22
Date

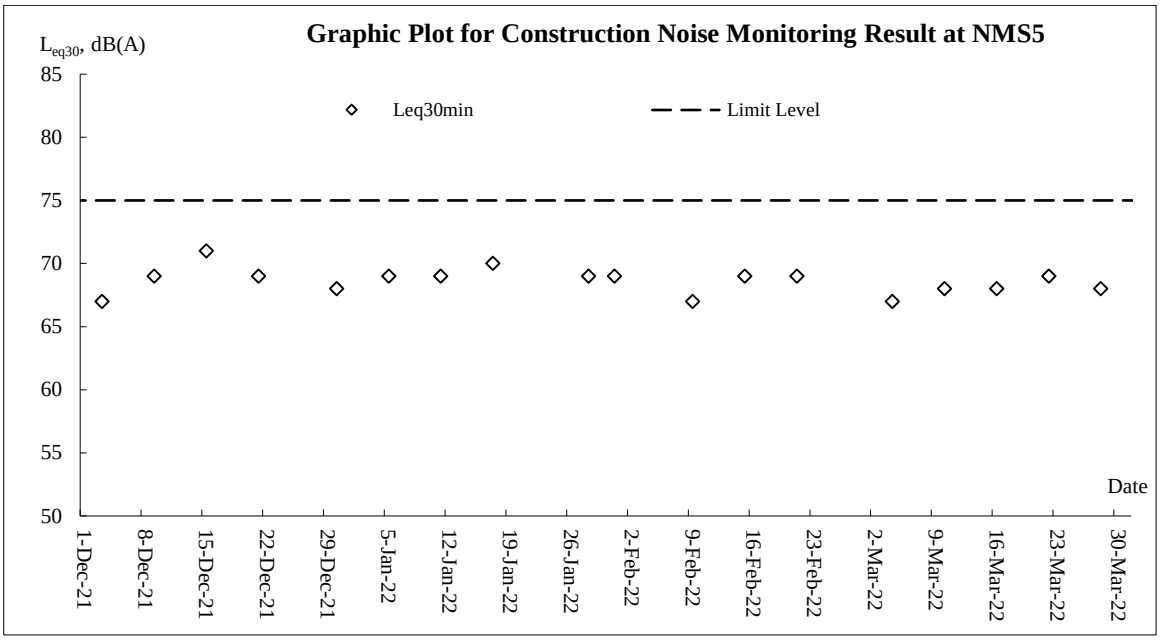

Graphical Plot for 24-hour TSP Monitoring Result at AMS-7
24-hour TSP, μg/m³
24-hour TSP
Action Level
Limit Level
300
250
200
150
100
50
0
1-Dec-21
8-Dec-21
15-Dec-21
22-Dec-21
29-Dec-21
5-Jan-22
12-Jan-22
19-Jan-22
26-Jan-22
2-Feb-22
9-Feb-22
16-Feb-22
23-Feb-22
2-Mar-22
9-Mar-22
16-Mar-22
23-Mar-22
30-Mar-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-Dec-21
8-Dec-21
15-Dec-21
22-Dec-21
29-Dec-21
5-Jan-22
12-Jan-22
19-Jan-22
26-Jan-22
2-Feb-22
9-Feb-22
16-Feb-22
23-Feb-22
2-Mar-22
9-Mar-22
16-Mar-22
23-Mar-22
30-Mar-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-Dec-21
8-Dec-21
15-Dec-21
22-Dec-21
29-Dec-21
5-Jan-22
12-Jan-22
19-Jan-22
26-Jan-22
2-Feb-22
9-Feb-22
16-Feb-22
23-Feb-22
2-Mar-22
9-Mar-22
16-Mar-22
23-Mar-22
30-Mar-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-Dec-21
8-Dec-21
15-Dec-21
22-Dec-21
29-Dec-21
5-Jan-22
12-Jan-22
19-Jan-22
26-Jan-22
2-Feb-22
9-Feb-22
16-Feb-22
23-Feb-22
2-Mar-22
9-Mar-22
16-Mar-22
23-Mar-22
30-Mar-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-Dec-21
8-Dec-21
15-Dec-21
22-Dec-21
29-Dec-21
5-Jan-22
12-Jan-22
19-Jan-22
26-Jan-22
2-Feb-22
9-Feb-22
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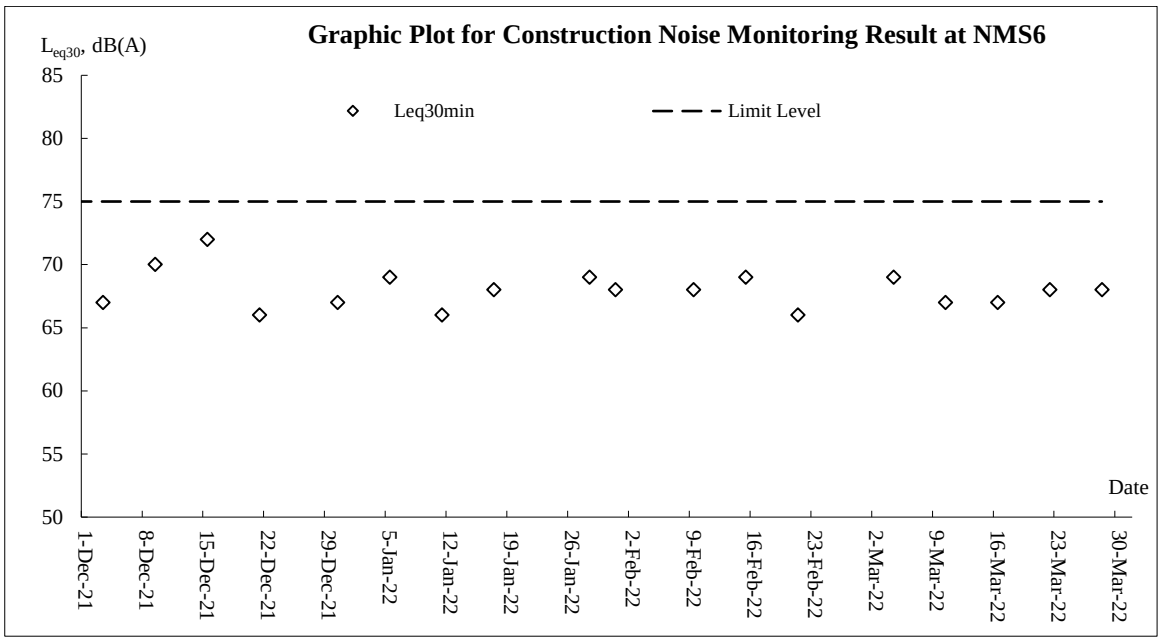
9-Mar-22
16-Mar-22
23-Mar-22
30-Mar-22


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-Dec-21
8-Dec-21
15-Dec-21
22-Dec-21
29-Dec-21
5-Jan-22
12-Jan-22
19-Jan-22
26-Jan-22
2-Feb-22
9-Feb-22
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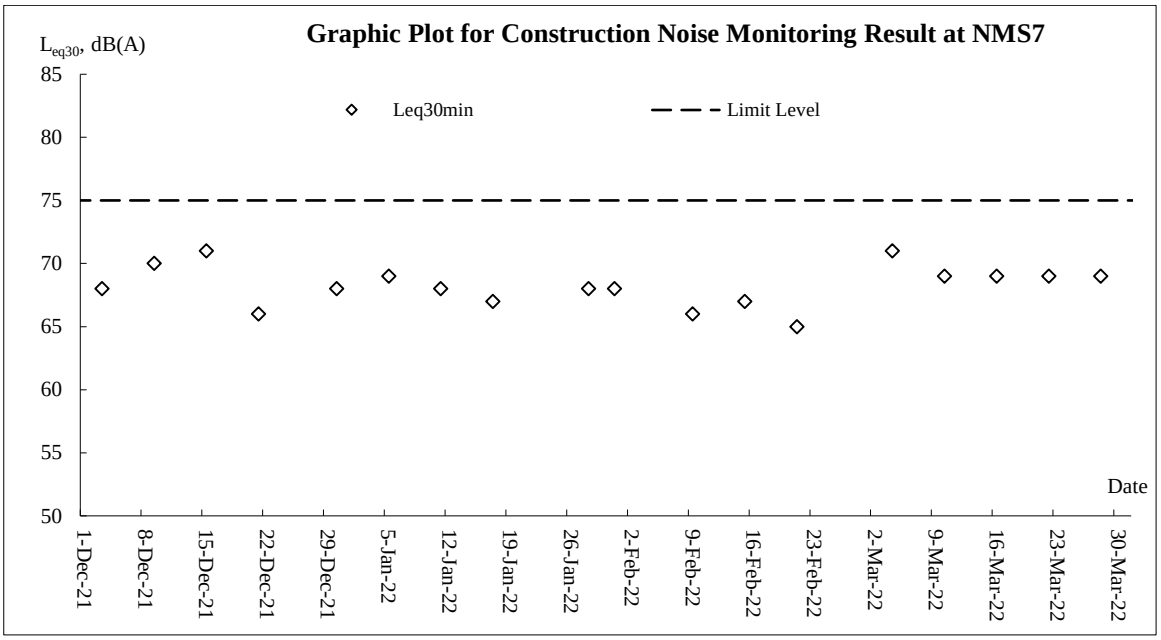
9-Mar-22
16-Mar-22
23-Mar-22
30-Mar-22


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-Dec-21
8-Dec-21
15-Dec-21
22-Dec-21
29-Dec-21
5-Jan-22
12-Jan-22
19-Jan-22
26-Jan-22
2-Feb-22
9-Feb-22
16-Feb-22
23-Feb-22
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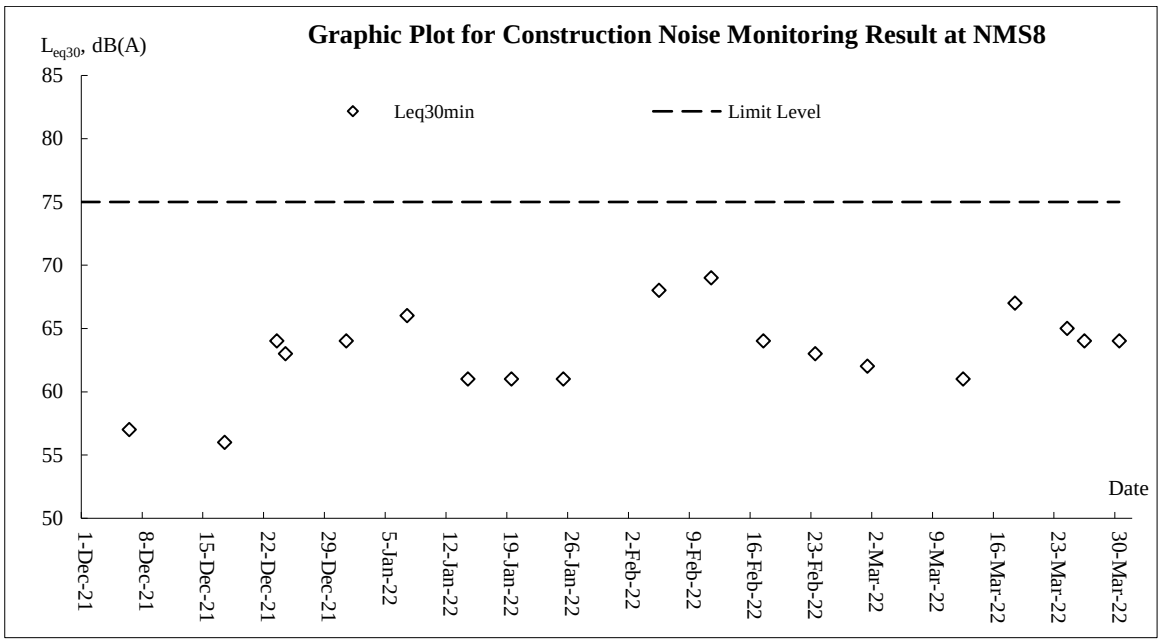
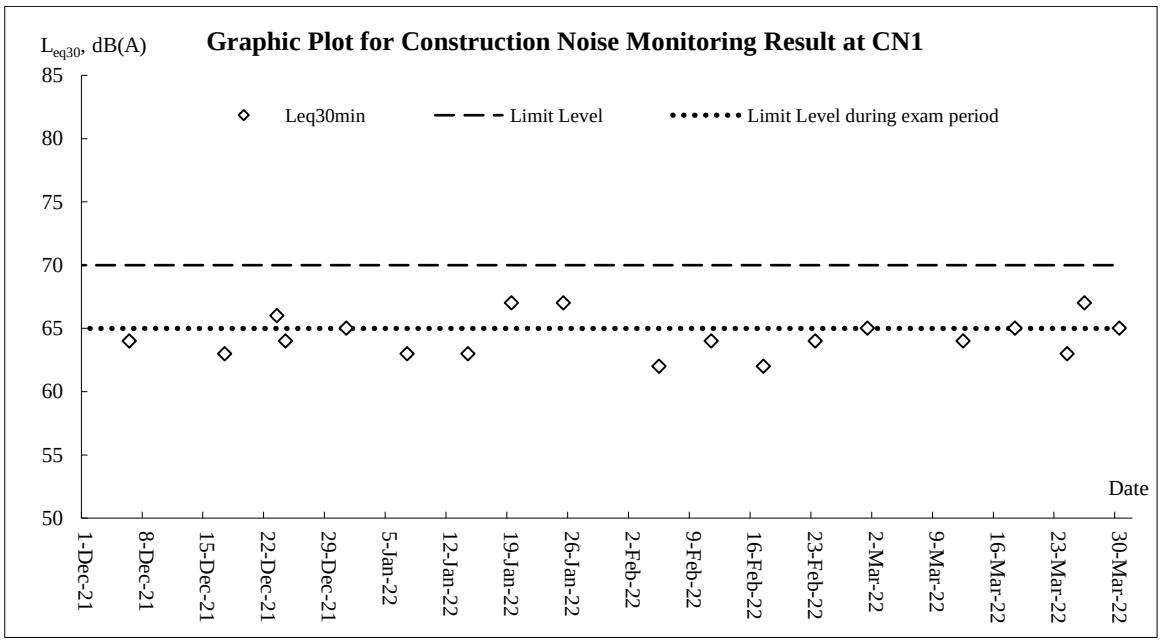
9-Mar-22
16-Mar-22
23-Mar-22
30-Mar-22


Graphic Plot for Construction Noise Monitoring Result at NMS8
L_{eq30}, dB(A)
Leq30min
Limit Level
85
80
75
70
65
60
55
50
Date
1-Dec-21
8-Dec-21
15-Dec-21
22-Dec-21
29-Dec-21
5-Jan-22
12-Jan-22
19-Jan-22
26-Jan-22
2-Feb-22
9-Feb-22
16-Feb-22
23-Feb-22
2-Mar-22
9-Mar-22
16-Mar-22
23-Mar-22
30-Mar-22


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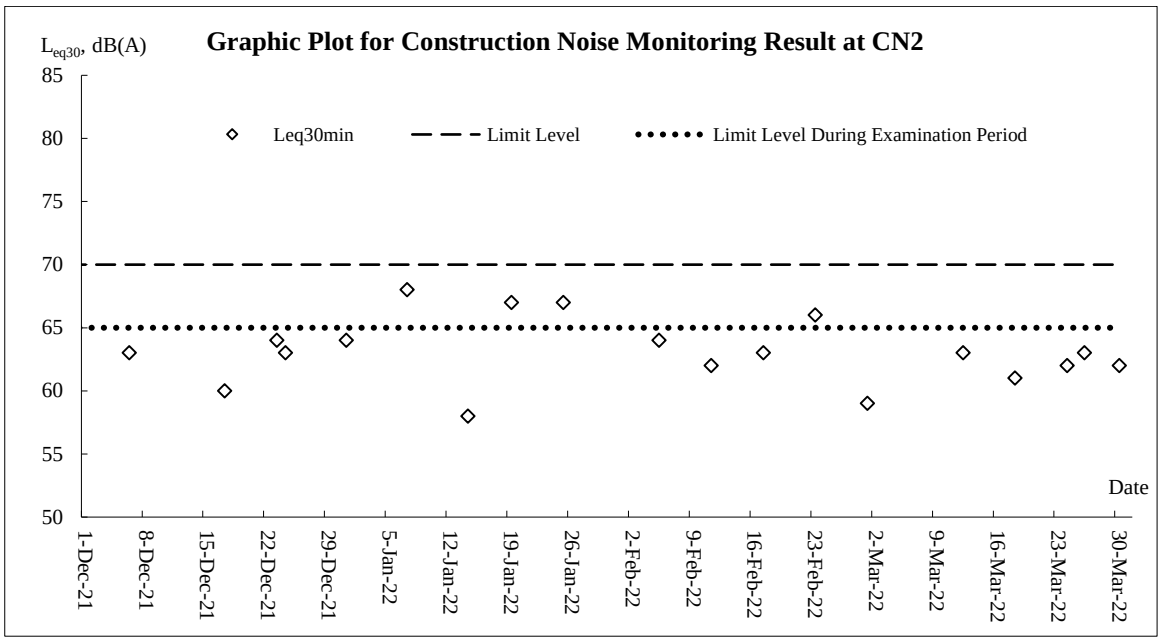
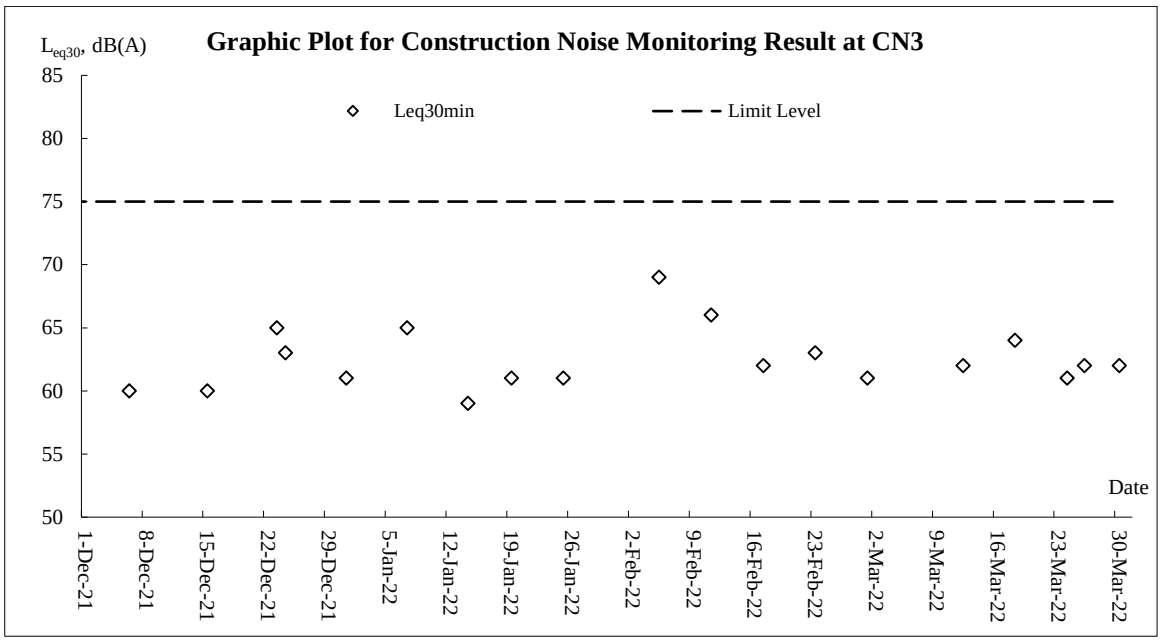
9-Mar-22
16-Mar-22
23-Mar-22
30-Mar-22


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-Dec-21
8-Dec-21
15-Dec-21
22-Dec-21
29-Dec-21
5-Jan-22
12-Jan-22
19-Jan-22
26-Jan-22
2-Feb-22
9-Feb-22
16-Feb-22
23-Feb-22
2-Mar-22
9-Mar-22
16-Mar-22
23-Mar-22
30-Mar-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-Dec-21
8-Dec-21
15-Dec-21
22-Dec-21
29-Dec-21
5-Jan-22
12-Jan-22
19-Jan-22
26-Jan-22
2-Feb-22
9-Feb-22
16-Feb-22
23-Feb-22
2-Mar-22
9-Mar-22
16-Mar-22
23-Mar-22
30-Mar-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-Mar-22	Tue	Fine. Dry in the afternoon.	0	23.3	10.7	E	79.7
2-Mar-22	Wed	Moderate easterly winds.	0	22.4	11.2	E	81
3-Mar-22	Thu	Moderate to fresh easterly winds	0	18.8	12.5	SE	79.5
4-Mar-22	Fri	Fine and dry. Cool tomorrow morning.	0	22.1	11.7	SE	75.2
5-Mar-22	Sat	Fine and dry. Moderate easterly winds.	0	22.4	10.5	SE	81
6-Mar-22	Sun	Occasionally strong offshore at first.	0	18.6	11	SE	79
7-Mar-22	Mon	Moderate to fresh easterly winds	4.8	19.9	12.5	E/SE	69
8-Mar-22	Tue	Fine and dry. Cool tomorrow morning.	0	16.1	9	E/SE	65
9-Mar-22	Wed	Fine and dry. Moderate easterly winds.	0	18.7	13.2	SE	53.2
10-Mar-22	Thu	Moderate easterly winds.	0	20.1	15.2	E	61.5
11-Mar-22	Fri	Fine. Dry in the afternoon.	0	22	11	SE	66.2
12-Mar-22	Sat	Moderate easterly winds.	0	21.1	10.5	SE	71
13-Mar-22	Sun	Fine. Hot in the afternoon.	0.1	23.6	11.2	SE	76.7
14-Mar-22	Mon	Light winds, becoming moderate easterlies tonight.	0	24.5	7.5	SE	75.7
15-Mar-22	Tue	Fine. Hot in the afternoon.	0	24.6	12	SE	75
16-Mar-22	Wed	Mainly cloudy.	Trace	22.3	16	E	76
17-Mar-22	Thu	One or two rain patches tonight.	Trace	25.2	11	SE	83.7
18-Mar-22	Fri	Moderate to fresh easterly winds.	0	25.5	6.2	SW	81.2
19-Mar-22	Sat	Mainly cloudy with coastal fog.	0	22.4	10.2	E/SE	85
20-Mar-22	Sun	Moderate easterly winds, becoming light to moderate southerlies tomorrow.	Trace	20.3	12.5	E/SE	88.5
21-Mar-22	Mon	Mainly cloudy and foggy with a few showers.	Trace	21.6	12	E/SE	88
22-Mar-22	Tue	Light to moderate southeasterly winds.	Trace	22.8	10.5	SE	93
23-Mar-22	Wed	Cloudy to overcast with showers.	54.8	17.8	11.2	E/SE	93
24-Mar-22	Thu	Cloudy with occasional rain.	1.8	16.2	11	E/SE	90.5
25-Mar-22	Fri	Moderate to fresh easterly winds	0.7	21.4	13.5	E/SE	91
26-Mar-22	Sat	Cloudy with a few showers.	0.1	21.1	11.5	E/SE	88
27-Mar-22	Sun	Moderate to fresh southerly winds	Trace	21.1	10	E/SE	82
28-Mar-22	Mon	Cloudy with showers and isolated thunderstorms.	30.3	16.5	11	E/SE	88.2
29-Mar-22	Tue	Moderate to fresh east to northeasterly winds	0.1	18.3	12.5	E/SE	80.7
30-Mar-22	Wed	Becoming cloudy with a few rain patches.	0	21.8	13.7	E/SE	74.7
31-Mar-22	Thu	Moderate to fresh easterly winds	Trace	23.7	15	SE	67.5

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 '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m^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	1.372	0.000	1.187	0.000	0.185	0.000	0.000	0.000	0.000	0.000	0.102
Mar	2.226	0.000	1.128	0.000	1.099	0.000	0.000	0.791	0.000	0.000	0.103
Apr	0.000										
May	0.000										
Jun	0.000										
Sub-total	6.469	0.000	4.832	0.000	1.638	0.000	0.000	0.791	0.015	0.000	0.287
Jul	0.000										
Aug	0.000										
Sep	0.000										
Oct	0.000										
Nov	0.000										
Dec	0.000										
Total	6.469	0.000	4.832	0.000	1.638	0.000	0.000	0.791	0.015	0.000	0.287

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 20th 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	0.01	0	0	0	0.01	0	0	0	0	0	0.05
Mar	0.02	0	0	0	0.02	0	0	0	0	0	0.01
Apr											
May											
June											
Sub-total	0. 05	0	0	0	0.05	0	0	0	0	0	0.11
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 '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m^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	1.239	0.000	0.400	0.000	0.839	0.000	0.000	0.000	1.694	0.000	0.016
Mar	1.351	0.000	0.180	0.000	1.171	0.000	0.000	0.000	0.434	0.000	0.041
Apr											
May											
Jun											
Sub-total	4.618	0.000	1.463	0.000	3.155	0.000	0.003	0.000	2.131	0.000	0.109
Jul											
Aug											
Sep											
Oct											
Nov											
Dec											
Total	4.618	0.000	1.463	0.000	3.155	0.000	0.003	0.000	2.131	0.000	0.109

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	0.015
Mar	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.031
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**	**0.109**

*Remarks: Conversion factor for general refuse, 1 tonne = 2m^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	0.02	0	0	0	0.02	0	0	0	0	0	0
Mar	0.31	0	0	0	0.31	0	0	0	0	0	0.01
Apr	---	---	---	---	---	---	---	---	---	---	---
May	---	---	---	---	---	---	---	---	---	---	---
June	---	---	---	---	---	---	---	---	---	---	---
Sub-total	0.51	0	0	0	0.51	0	0	0	0	0	0.03
July	---	---	---	---	---	---	---	---	---	---	---
Aug	---	---	---	---	---	---	---	---	---	---	---
Sept	---	---	---	---	---	---	---	---	---	---	---
Oct	---	---	---	---	---	---	---	---	---	---	---
Nov	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---
Total	0.51	0	0	0	0.51	0	0	0	0	0	0.03

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: • 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; • Any dusty materials remaining after a stockpile is removed should be wet ted with water and cleared from the surface of roads; • A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones; • 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; • 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; • 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. • 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; • 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; • 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 ; • 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; • Any skip hoist for material transport should be totally enclosed by impervious sheeting; • 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; • 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 • 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: • only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction ion programme; • 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; • plant known to emit noise strongly in one direct ion, where possible, be orientated so that the noise is directed away from nearby NSRs; • silencers or mufflers on construction ion equipment should be properly fit ted and maintained during the construction ion works; • mobile plant should be sited as far away from NSRs as possible and practicable; and • 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 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: • 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. • 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. • 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. • 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. • 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. • 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. • 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. • 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. • 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. • 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. • 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. • 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. • 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> • 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. • 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 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 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. 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. 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> The following good site practices are recommended throughout the construction ion activities: • 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; • training of site personnel in site cleanliness, appropriate waste management procedures and concepts of waste reduction, reuse and recycling; • provision of sufficient waste disposal points and regular collect ion for disposal; • appropriate measures to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; • 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> 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: • segregate and store different types of waste in different containers, skip or stockpiles to enhance reuse or recycling o materials and their proper disposal; • proper storage and site practices to minimize the potential for damage and contamination of construction ion materials; • plan and stock construction ion materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste; • sort out demolition debris and excavated materials from demolition works to recover reusable/recyclable port ions (i.e. soil, broken concrete, metal etc.); • 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> The following recommendation should be implemented to minimize the impacts: • waste such as soil should be handled and stored well to ensure secure containment ; • stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; • different locations should be designated to stockpile each material to enhance reuse;	Minimize waste impacts from storage	Contractor Contractor	All construction sites	V	V	V	V	V
S8.5.6	<u>Collection and Transportation of Waste</u> 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; • employ the trucks with cover or enclosed containers for waste • transportation; • obtain relevant waste disposal permits from the appropriate authorities; and • disposal of waste should be done at licensed waste disposal facilities.								
S8.5.8	<u>Excavated and C&D Material</u> 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: • maintain temporary stockpiles and reuse excavated fill material for backfilling; • carry out on-site sorting; • make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; • implement a recording system for the amount of waste generated, recycled and disposed of for checking; The recommended C&D materials handling should include: • On-site sorting of C&D materials • Reuse of C&D materials • Use of Standard Formwork and Planning of Construction Materials purchasing • 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> 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> • General refuse should be stored in enclosed bins separately from construction and chemical wastes. Recycling bins should also be placed to encourage recycling. • 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. • 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> • The WMP should document the locations and number of portable chemical toilets depending on the number of workers, land availability, site condition and activities. • 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				
					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: • Temporary sewerage and drainage will be designed and installed to collect wastewater and prevent it from entering nearby watercourses; • 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; • 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; • Stockpiling of construction materials, if necessary, will be properly covered and located away from nearby watercourses; • Erection of temporary geotextile silt fences will be carried out around earth-moving works to trap any sediments and prevent them from entering watercourses; • Construction debris and spoil will be covered and/or properly disposed as soon as possible to avoid being washed into nearby watercourses; • 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; • 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; • 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 ; • Proper locations for discharge out lets of wastewater treatment facilities well away from sensitive receivers will be identified and used; • Silt traps will be installed at points where drainage from the site enters local watercourses; • Appropriate sanitary facilities for on-site workers will be provided; • The site boundary will be clearly marked and any works beyond the boundary strictly prohibited, and • 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: • Potential emergency situations; • Chemicals or hazardous materials used on-site (and their location); • Emergency response team; • Emergency response procedures; • List of emergency telephone hot lines; • Locations and types of emergency response equipment , and • 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
February 2022	**0**	0
March 2022	**1**	0
Overall Total	**71**	**0**

Appendix M2 Complaint Log

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

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/000224 79-17)	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

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

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

									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。 2. 隔音布未固定，大風吹過發出極大的聲浪	To ease the concern by the complaint, CWSTVJV has adjusted the lights to the orientation pointing the ground and that to minimise the nuisance. For the maintenance of noise barrier, CWSTVJV has immediately fixed the noise barrier nearest to On Tai Estate and prolonged the cover area of the noise barrier to reduce the noise impact to the public.	no comment by IEC on 24 Nov 2017	TCS00864/16/300/F0104

16	1-Nov-17	14-Nov-17	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掠鐵噪音。	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/F0110
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/F0114

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

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

									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

									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掘石仔噪音滋擾, 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

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

									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

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

				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

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

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

									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

42	21-Feb-19	25-Feb-19	Anderson Road Quarry Site	Undisclosed	noise	EPD	NA	The resident from Sau Hong House complained that the noise from the Anderson Road Quarry construction site has gotten worse. In addition, sometimes even after midnight there are noise coming from the site. With the echo produces from the environment, this is not helping at all. Really a big disturbance to the residence in the area. The complainant suspecting the sound proof measure has lessen as time goes. Follow action is requested.	In our investigation, CWSTVJV has implemented noise mitigation measures to reduce the noise impact to the nearby resident. However, to eliminate the inconvenience caused to the nearby resident, CWSTVJV should properly maintain the noise mitigation measures as appropriate, such as maintain good site practices such as intermittent use of machine and plant and Sequencing operation of construction plant equipment. Since the works were carried out within the non-restricted hours, it is considered that the works under the project did not breach the Noise Control Ordinance.erway by ET.	no comment by IEC on 28 Mar 2019	TCS00864/16/300/F0250
43	21-Feb-19	26-Feb-19	Anderson Road Quarry Site	Undisclosed	noise	received by DEVB and referred to CEDD	NA	A public complaint was received by DEVB and referred to CEDD on 25 February 2019 regarding on the noise generated from the construction works of the Anderson Road Quarry Site affecting a local resident residing at the Anderson Road Squatter Area	Additional acoustic mat has been erected in front of the Squatter Area to minimize the noise impact. Noise mitigation measures such as acoustic barriers erected along the works area and breaker head wrapped with acoustic material were implemented continually. Alterative quiet work method was adopted such as drilling the hard rock before the breaking work to reduce the breaking duration. In our investigation, CWSTVJV had enhanced the noise mitigation measures to ease the complainant's concerns. CWSTVJV will continually implement the noise mitigation measures to reduce to noise impact to the public.	no comment by IEC on 29 Mar 2019	TCS00864/16/300/F0252a

44	1-Mar-19	26-Feb-19	E3 of Contract 2	Undisclosed	noise	CEDD	NA	A complaint is forwarded by CEDD which was received by KTDC member Mr CHENG Keung Fung from the residents of Tsui Yeung House(翠楊樓) about the noise nuisance generated and the working time up to 7:00 pm from the rock excavation of E3 lift tower. Follow up action is requested.	The representative of the engineering team explained to Mr. Cheng about the project's details and concerned site was being constructed for the future pedestrian connection facilities. The related stone drilling process is expected to be completed in mid-April to end of April 2019. Mr. Cheng was satisfied with the rapid response from CEDD and the engineering team. In our investigation, Kwan On has implemented noise mitigation measures to reduce the noise impact to the nearby resident. Since the works were carried out within the non-restricted hours, it is considered that the works under the project did not breach the Noise Control Ordinance.	no comment by IEC on 6 May 2019	TCS00864/16/300/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

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

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

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 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。 On 11 November 2019 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 1.調查地盤有否違規 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

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

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

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

								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

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

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

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/F04041
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/F04054
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/F0458a

			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

								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	

									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	
71	30/Mar/22	12/Apr/22	Anderson Road Quarry Site	DSD	Water Quality	DSD		EPD received complaint from DSD on 28 March 2022 concerning about siltation and discharge of muddy water observed at the public drainage system at catchpit SSH4001400 near Tin Hau Temple and the site discharge points at Po Lam Road on 28 March 2022	In our investigation, the Contractor had implemented the water quality mitigation measures to minimise the impact arising from the construction site. Based on the investigation findings, it is considered that the complaint was likely caused by the interfacing contractors under rainy days and not due to the works under the Project.	No comment by IEC on 19 April 2022	TCS00864/16/300/F05 40

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