



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 (JULY 2019)

PREPARED FOR
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT
(CEDD)

Date	Reference No.	Prepared By	Certified By
19 August 2019	TCS00864/16/600/R0297v3	 Nicola Hon (Environmental Consultant)	 Tam Tak Wing (Environmental Team Leader)

Version	Date	Remarks
1	12 August 2019	First Submission
2	16 August 2019	Amended according to IEC's comments on 13 August 2019
3	19 August 2019	Amended according to IEC's comments on 19 August 2019



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

Your reference:

Our reference: HKCEDD10/50/105984

Date: 20 August 2019

Attention: Mr Leung Siu Kau, Kelvin

BY POST

Dear Sirs

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

We refer to the emails of 12, 16 and 19 August 2019 from Action-United Environmental Services and Consulting attaching a Monthly Environmental Monitoring and Audit Report (July 2019) for the captioned project.

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

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

Yours faithfully
ANewR CONSULTING LIMITED

Adi Lee
Independent Environmental Checker

LYMA/CYYH/lhmh

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EXECUTIVE SUMMARY

- ES01 Action-United Environmental Services & Consulting (AUES) has been awarded the Civil Engineering and Development Department (CEDD) Service Contract No. NTE/07/2016 Environmental Team for Development of Anderson Road Quarry Site – Site Formation and Associated Infrastructure Works (hereinafter called “the Service Contract”) on 15 December 2016. The commencement date of the Service Contract is from December 2016 and the Contract Period is 70 months.
- ES02 The Services under the Service Contract is to provide environmental monitoring and audit (EM&A) services for the Works Contracts pursuant to the requirement of Environmental Team (ET) under the EM&A manual to ensure that the environmental performance of the Works Contracts comply with the requirement specified in the EM&A Manual and EIA Report of Development of Anderson Road Quarry and other relevant statutory requirements.
- ES03 To facilitate the project management and implementation, the Service Contract is divided to three CEDD contracts including Contract 1 (NE/2016/01), Contract 2 (NE/2016/05) and Contract 3 (NE/2017/03). As advised by the Resident Engineer (RE), the date for commencement of Contract 1 was on 21 December 2016 and the major construction works has been commenced on 12 April 2017. The date for commencement of Contract 2 was 31 March 2017 and the major construction activities have been commenced on 2 May 2017. Furthermore, Contract 3 was commenced on 31 May 2018 and the major construction activities works was commenced in November 2018. The EM&A programme under the Project was commenced on 12 April 2017 pursuant to the requirement under the EM&A manual.
- ES04 This is the 28th monthly EM&A report presenting the monitoring results and inspection findings for the reporting period from 1 to 31 July 2019 (hereinafter ‘the Reporting Period’).

ENVIRONMENTAL MONITORING AND AUDIT ACTIVITIES

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

Environmental Aspect	Environmental Monitoring Parameters / Inspection	Reporting Period	
		Number of Active Monitoring Locations	Total Occasions
Air Quality	1-hour TSP	5	75
	24-hour TSP	4	20
Construction Noise	L _{eq(30min)} Daytime	5	25
	L _{eq(30min)} Daytime for Contract NE/2017/03	3	15

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 nor noise complaint (which triggered Action Level) were received in the reporting period. The environmental exceedance, NOE issued and investigation of exceedance are summarized in the following table.

Environmental Aspect	Monitoring Parameters	Action Level	Limit Level	Event & Action		
				NOE Issued	Investigation	Corrective Actions
Air Quality	1-hour TSP	0	0	0	NA	NA
	24-hour TSP	0	0	0	NA	NA
Construction Noise	L _{eq(30min)} Daytime	0	0	0	NA	NA

ENVIRONMENTAL COMPLAINT

- ES07 In the Reporting Period, a public complaint was received by EPD on 12 July 2019 regarding the dust impact to the residents at Po Tat Estate and On Tat Estate due to dust emission at Anderson Road Quarry site. Investigation Report for the complaint has been conducted by ET which revealed that dust mitigation measures were implemented 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. The IR was under reviewed by IEC.

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 A Work Instruction was issued from AECOM to AUES in November 2018 for installing three additional noise monitoring stations under Contract 3. Impact noise monitoring was performed at these three additional noise monitoring locations since December 2018.

SITE INSPECTION

- ES10 In this Reporting Period, joint site inspection to evaluate the site environmental performance for **Contract 1** was carried out by the RE, ET and Contractor on **2nd, 11th, 16th, 23rd and 30th July 2019** in which IEC joined the site inspection with SSEMC on **11th July 2019**. No non-compliance was noted during the site inspection.
- ES11 In this Reporting Period, joint site inspection to evaluate the site environmental performance for **Contract 2** was carried out by the RE, ET and Contractor on **3rd, 10th, 17th, 24th July and 1st August 2019** in which IEC joined the site inspection with SSEMC on **1st August 2019**. No non-compliance was noted during the site inspection.
- ES12 In this Reporting Period, joint site inspection to evaluate the site environmental performance for **Contract 3** was carried out by the RE, ET and Contractor on **5th, 12th, 19th and 26th July 2019** in which IEC joined the site inspection with SSEMC on **12th July 2019**. No non-compliance was noted during the site inspection.

FUTURE KEY ISSUES

- ES13 During wet season, preventive measures for muddy water or other water pollutants from site surface overflow to public area should be properly maintained. The Contractors should paid special attention on water quality mitigation measures and fully implement according ISEMM of the EM&A Manual.
- ES14 Since construction site is highly visible to the resident at nearby estates, the Contractors should fully implement air quality mitigation measures to reduce construction dust emission.
- ES15 Construction noise would be a key environmental issue during construction work of the Project. Noise mitigation measures such as using quiet plants should be implemented in accordance with the EM&A requirement.
- ES16 In addition, all effluent discharge shall be ensure to fulfill Technical Memorandum of Effluent Discharged into Drainage and Sewerage Systems, inland and Coastal Waters criteria or discharge permits stipulation.

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1. INTRODUCTION

1.1 PROJECT BACKGROUND

- 1.1.1 Action-United Environmental Services & Consulting (hereinafter referred as “AUES”) has been awarded the CEDD Service Contract No. NTE/07/2016 Environmental Team for Development of Anderson Road Quarry Site – Site Formation and Associated Infrastructure Works (hereinafter called “the Service Contract”) on 15 December 2016. The commencement date of the Service Contract was December 2016 and the Contract Period is 70 months. The Services under the Service Contract is to provide environmental monitoring and audit (EM&A) services for the Works Contracts pursuant to the requirement of Environmental Team (ET) under the EM&A manual to ensure that the environmental performance of the Works Contracts comply with the requirement specified in the EM&A Manual and EIA Report of Development of Anderson Road Quarry and other relevant statutory requirements.
- 1.1.2 Development of Anderson Road Quarry is to provide land and the associated infrastructures for the proposed land used at the existing Anderson Road Quarry Site at the North-eastern of East Kowloon according to the final Recommended Outline Development Plan (hereinafter named as the Project Works).
- 1.1.3 To facilitate the project management and implementation, the Service Contract is divided to three CEDD contracts including Contract 1 (NE/2016/01), Contract 2 (NE/2016/05) and Contract 3 (NE/2017/03). The date for commencement of Contract 1 was on 21 December 2016 and the major construction works commenced on 12 April 2017. The date for commencement of Contract 2 was 31 March 2017 and the major construction activities commenced on 2 May 2017. Contract 3 was commenced on 31 May 2018 but the major construction activities works have not yet commenced in this reporting period. The EM&A programme under the Project was commenced on 12 April 2017 pursuant to the requirement under the EM&A manual.
- 1.1.4 According to the Approved EM&A Manual, air quality and construction noise are required to be monitored during the construction phase of the Project. As part of the EM&A program, baseline monitoring to determine the ambient environmental conditions is required to be carried out before construction work of the Project commencement. Hence, baseline air quality and background noise monitoring were conducted on **17th January 2017 to 30th January 2017, 16th February 2017 to 2nd March 2017 and 26th March 2017 to 8th April 2017**. Furthermore, Baseline Monitoring Report, which certified by Environmental Team Leader (ETL) and verified by the Independent Environmental Checker (IEC) has been submitted to Environmental Protection Department (EPD) on **9 May 2017** for endorsement.
- 1.1.5 This is the **28th** monthly EM&A report presenting the monitoring results and inspection findings for the reporting period from **1 to 31 July 2019**.

1.2 REPORT STRUCTURE

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

Section 1	<i>Introduction</i>
Section 2	<i>Project Organization and Construction Progress</i>
Section 3	<i>Summary of Impact Monitoring Requirements</i>
Section 4	<i>Air Quality Monitoring</i>
Section 5	<i>Construction Noise Monitoring</i>
Section 6	<i>Waste Management</i>
Section 7	<i>Site Inspections</i>
Section 8	<i>Environmental Complaints and Non-Compliance</i>
Section 9	<i>Implementation Status of Mitigation Measures</i>
Section 10	<i>Conclusions and Recommendations</i>

2. PROJECT ORGANIZATION AND CONSTRUCTION PROGRESS

2.1 CONSTRUCTION CONTRACT PACKAGING

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

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

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

- Formation of about 40 hectares (ha) of land platforms at the ARQ site and the associated geotechnical works;
- Road works including construction of approximately 3-kilometer long vehicular roads, footpaths, cycle tracks, an approximately 130-meter long underpass at the southern end and 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, lift towers with associated staircase and lifts:-
 - (a) Linking Hiu Kwong street with Hiu Ming Street (E1)
 - (b) Linking the proposed “Footbridge Link at Sau Ming Road” with Hiu Ming Street (E2, C1 and E3)
 - (c) Linking the proposed bus-to-bus interchange at Tseung Kwan O Tunnel Toll Plaza with Lin Tak Road (E12)
- (ii) Construction of bus-to-bus interchange (BBI) at Tseung Kwan O Tunnel Toll Plaza;
- (iii) Associated landscape works;
- (iv) Construction of green routes connecting to Jordan Valley Park and Choi Wing Road; and
- (v) Slope improvement works in the vicinity of Po Lam Road South and other associated works.

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

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

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

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

2.2 PROJECT ORGANIZATION

- 2.2.1 The project organization structure for Contracts 1 and 2 is shown in [Appendix B](#).

2.3 CONSTRUCTION PROGRESS

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

Contract 1 (NE/2016/01)

1. Implementation of Temporary Traffic Arrangement at the junction between On Sau Road and Road L4, Po Lam Road near Po Tat Estate and Po Lam Road near Ma Ya u tong Village;
2. Construction of the substructures at South Towers and footing at North Tower of Pedestrian Connectivity System B (PCSB);
3. Construction of Subway of PCSB;
4. Construction of drainage pipe 1800mm dia. from M/H S211 to M/H S211B and drainage pipe 375mm dia. from M/H R725 to T729 in Road L1;
5. Construction of drainage works near the box culvert BC1 and BC2;
6. Laying of cable ducts for underground utilities in Road L5;
7. Construction of Box Culvert BC1 and BC2;
8. Construction of water mains at Roads L2 and L5;
9. Construction of pile cap and strap beams and steel post erection of Public Transport Terminus;
10. Road Improvement Works at Po Lam Road
11. Construction of Water Pumping Station;
12. Backfilling works for Retaining Wall RWA 13, RWA 14 and RWA 18;
13. Base slabs and walls at Salt and Fresh Water Reservoir;
14. Retaining walls of Artificial Flood Attenuation Lake;
15. Construction of Noise Barrier walls and Retaining Walls RWA12 and RWA14
16. Rock Slope Survey and Slope Stabilization at Portion B1 and B5

Contract 2 (NE/2016/05)

1. Portion 1: Excavation and shoring works for E1 – PC2 & E1 –PC6.
Continue Piling works for Pile Cap E1 -PC3.
Haul road construction.
2. Portion 2: Rock breaking for E3-ST1.
3. Portion 4: Rectification of defects
4. Portion 5:
 - Footing construction of the covered walkway footing BBI-NB-F3.
 - Excavation and shoring works of Southern High Mast
 - Footing construction for Northern High Mast
5. Portion 6:
 - Rock breaking for rock cut slope and BBI Footing.
 - Fixing formwork, reinforcement and place concrete for RWE12

Contract 3 (NE/2017/03)

Works in Road Improvement Works 1 (RIW1)

- Piling platform 2 concrete block laying in progress;
- Civil works for gasmain diversion under new Slip Road 2;
- Preparation works for pre-drill work of CT5 are in-progress.

Works in Road Improvement Works 2 (RIW2)

- Formation works and soil nail works for Slope D3 works in progress;
- Relocation of existing highway lighting along Clear Water Bay Road (Portion C) was completed; Modification of existing central median along Clear Water Bay Road (Portion C) is working in-progress;
- Relocation of District Welcome Signboard in progress;

Works in Road Improvement Works 3 (RIW3)

- Form haul-road at slope D1 is in-progress;
- Rock excavation, form haul road and tree felling works at slope D3 are in-progress;
- Modification works to junction of Lin Tak Road and Sau Mau Ping Road for construction of temporary safety fence.
- Construction of temporary safety fence along Lin Tak Road.
- Form the temporary access road to facilitate the rock cutting works at Slope D3;
- Form the haul road to implement the ELS works for Retaining Wall RWD2 at Slope D2;
- Construction of ELS works for construction of Retaining Wall RWD2 at Slope D2;

Pedestrian Connectivity Facility E8 (PC-E8)

- Footing construction works at lower portion are in-progress;
- Preparation works, and temporary staircase construction at upper portion are in-progress;

Pedestrian Connectivity Facility E11 (PC-E11)

- Socketed-H piles construction at PC-E11 are in-progress;

Pedestrian Connectivity Facilities Systems A (PC-SYA)

- Rock excavation for 2nd level and associated rock mapping in-progress;

Pedestrian Connectivity Facilities Systems B (PC-SYB)

- Socketed-H piles construction at PC-SYB are in-progress;
- Form haul road at upper portion is in-progress;

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

- Construction of R.C. works of public toilet;
- Shop-drawing for E&M works under preparation

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

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

Item	Description	License/Permit Status			
		Permit no./ account 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	EPD ref. no. 412730	NA	NA	valid

Item	Description	License/Permit Status			
		Permit no./ account no./ Ref. no.	Valid Period		Status
			From	To	
	Dust) Regulation				
2	Chemical Waste Producer Registration	Registration no. WPN 5213-292-C4115-01	15 Feb 17	End of project	valid
3	Water Pollution Control Ordinance – Discharge License	WT00027252-2017	20 Mar 17	31 Mar 22	valid
4	Waste Disposal Regulation – Billing Account for Disposal of Construction Waste	Account no. 7026925	20 Jan 17	End of project	valid
5	Construction Noise Permit	GW-RE0447-19	14 Jun 19	13 Sep 19	valid

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

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

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

Item	Description	License/Permit Status			
		Permit no./ account no./ Ref. no.	Valid Period		Status
			From	To	
1	Form NA – Notification pursuant to Air Pollution Control (Construction Dust) Regulation	Notification to EPD on 29 May 2018.			
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:	6-Aug-18	End of Project	Valid

Item	Description	License/Permit Status			
		Permit no./ account no./ Ref. no.	Valid Period		Status
			From	To	
		5213-293-C4239-05			
		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 RIW3 (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	Pending approval from EPD		
		For Area E8 WT00033224-2019	21-Mar-19	31-Mar-24	Valid
		For Area E8 WT00033299-2019	5-Mar-19	5-Mar-24	Valid
4	Waste Disposal Regulation – Billing Account for Disposal of Construction Waste	Account no.7031075	20 July 2018	End of project	Valid
5	CNP for Lifting Oscillators of Area RIW1 KS27	-	-	-	Refuse

3. SUMMARY OF IMPACT MONITORING REQUIREMENTS

3.1 GENERAL

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

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

3.2 MONITORING PARAMETERS

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

- Air quality; and
- Construction noise

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

Table 3-1 Summary of EM&A Requirements

Environmental Issue	Parameters
Air Quality	<ul style="list-style-type: none"> • 1-hour TSP by Real-Time Portable Dust Meter; and • 24-hour TSP by High Volume Air Sampler
Noise	<ul style="list-style-type: none"> • 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 L₁₀ and L₉₀ shall also be obtained for reference.

3.3 MONITORING LOCATIONS

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

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

Table 3-2 Impact Monitoring Stations – Air Quality

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

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

Note 1: The ASR is under construction and not yet in operation.

Note 2: The ASR is not yet constructed.

(#) AMS-2 was activated on 26 November 2018 since Fung Tai House became an air sensitive receiver. hour TSP monitoring was commenced on 26 November 2018 while installation of HVS for 24-hour TSP was pending approval from Housing Authority.

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

Construction Noise

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

Table 3-3 Impact Monitoring Stations – Construction Noise

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

Note 1: The NSR is under construction and not yet in operation.

Remark:

(*) Additional noise monitoring location was recommended by RE and agreed by IEC. It was temporary suspended and the monitoring location is relocated to NMS4a with effective on 15 Nov 2017.

(#) Review of noise monitoring locations was proposed by ET and NMS-5 was effective on 15 November 2017.

- (^) 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

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

Table 3-4 Additional Impact Monitoring Stations – Construction Noise

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

3.4 MONITORING FREQUENCY AND PERIOD

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

Air Quality Monitoring

3.4.2 Frequency of impact air quality monitoring is as follows:

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

Noise Monitoring

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

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

3.5 MONITORING EQUIPMENT

Air Quality Monitoring

3.5.1 The 24-hour and 1-hour TSP levels shall be measured by following the standard high volume sampling method as set out in the *Title 40 of the Code of Federal Regulations, Chapter 1 (Part 50), Appendix B*. If the ET proposes to use a direct reading dust meter to measure 1-hour TSP levels, it shall submit sufficient information to the IEC to prove that the instrument is capable of achieving a comparable results to the HVS. The instrument should be calibrated regularly, and the 1-hour sampling shall be determined on yearly basis by the HVS to check the validity and accuracy of the results measured by direct reading method. The filter paper of 24-hour TSP measurement shall be determined by HOKLAS accredited laboratory.

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

Table 3-5 Air Quality Monitoring Equipment

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

Noise Monitoring

- 3.5.3 Sound level meter in compliance with the International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1) specifications shall be used for carrying out the noise monitoring. The sound level meter shall be checked using an acoustic calibrator. The wind speed shall be checked with a portable wind speed meter capable of measuring the wind speed in ms⁻¹.
- 3.5.4 Noise equipment as perform for construction phase monitoring is listed in **Table 3-6**.

Table 3-6 Construction Noise Monitoring Equipment

Equipment	Model
Integrating Sound Level Meter	Rion NL-52, B&K2250
Calibrator	B&K4231
Portable Wind Speed Indicator	Anemometer AZ Instrument 8908

3.6 MONITORING METHODOLOGY

1-hour TSP

- 3.6.1 The 1-hour TSP monitor was a brand named “Sibata LD-3 Laser Dust monitor Particle Mass Profiler & Counter” which is a portable, battery-operated laser photometer. The 1-hour TSP meter provides a real time 1-hour TSP measurement based on 90° 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 0.6m³/min and 1.7m³/min will be properly set in accordance with the

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

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

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

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

Noise Monitoring

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

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

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

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

- 3.6.10 Immediately prior to and following each noise measurement the accuracy of the sound level meter will be checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements will be accepted as valid only if the calibration level from before and after the noise measurement agrees to within 1.0 dB.
- 3.6.11 Noise measurements will not be made in fog, rain, wind with a steady speed exceeding 5m/s or wind with gusts exceeding 10m/s. The wind speed will be checked with a portable wind speed meter capable of measuring the wind speed in m/s.
- 3.6.12 The sound level meter and calibrator are calibrated and certified by a laboratory accredited under HOKLAS or any other international accreditation scheme at yearly basis. The calibration certificates of all monitoring equipment used for the impact monitoring program in the Reporting Period is attached in [Appendix E](#).

Meteorological Information

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

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

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

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

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

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	75 dB(A) ^{Note 1} /
NMS-2		70 dB(A) ^{Note 2} / 65 dB(A) ^{Note 2}
NMS-3		75 dB(A)
NMS-4*		75 dB(A)
NMS-4a#		75 dB(A)

Monitoring Location	Action Level	Limit Level in dB(A)
	Time Period: 0700-1900 hours on normal weekdays	
NMS-5#		75 dB(A)
NMS-6~		75 dB(A)
NMS-7~		75 dB(A)
NMS-8^		75 dB(A)
CN1+		70 dB(A) ^{Note 2} / 65 dB(A) ^{Note 2}
CN2+		70 dB(A) ^{Note 2} / 65 dB(A) ^{Note 2}
CN3+		75 dB(A)

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

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

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

Remark: (*) Additional noise monitoring location was recommended by RE and agreed by IEC. It was temporary suspended and the monitoring location is relocated to NMS4a with effective on 15 Nov 2017.

(#) Review of noise monitoring locations was proposed by ET and NMS-5 was effective on 15 Nov 2017.

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

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

(+) Additional noise monitoring locations as instructed by AECOM which effective in Dec 18.

3.7.2 Should non-compliance of the environmental quality criteria occurs, remedial actions will be triggered according to the Event and Action Plan which presented in [Appendix F](#).

3.8 DATA MANAGEMENT AND DATA QA/QC CONTROL

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

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

4. AIR QUALITY MONITORING**4.1 GENERAL**

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

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

4.2 RESULTS OF AIR QUALITY MONITORING

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

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

Date	24-hour TSP ($\mu\text{g}/\text{m}^3$)	1-hour TSP ($\mu\text{g}/\text{m}^3$)				
		Date	Start Time	1 st reading	2 nd reading	3 rd reading
3-Jul-19	14	5-Jul-19	9:30	44	44	43
9-Jul-19	19	11-Jul-19	13:37	52	49	50
15-Jul-19	22	17-Jul-19	9:23	78	82	95
20-Jul-19	25	23-Jul-19	13:52	58	59	59
26-Jul-19	17	29-Jul-19	9:28	34	40	44
Average (Range)	19 (14 - 25)	Average (Range)		55 (34 - 95)		

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

1-hour TSP ($\mu\text{g}/\text{m}^3$)				
Date	Start Time	1 st reading	2 nd reading	3 rd reading
5-Jul-19	14:15	48	48	47
11-Jul-19	10:28	70	68	64
17-Jul-19	9:46	82	85	92
23-Jul-19	9:10	70	74	68
29-Jul-19	9:52	37	43	45
Average (Range)		63 (37 - 92)		

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

Date	24-hour TSP ($\mu\text{g}/\text{m}^3$)	1-hour TSP ($\mu\text{g}/\text{m}^3$)				
		Date	Start Time	1 st reading	2 nd reading	3 rd reading
3-Jul-19	18	5-Jul-19	9:47	61	64	66
9-Jul-19	36	11-Jul-19	9:11	63	69	65
15-Jul-19	47	17-Jul-19	14:19	113	120	127
20-Jul-19	19	23-Jul-19	9:37	76	70	75
26-Jul-19	16	29-Jul-19	13:43	42	41	45
Average (Range)	27 (16 - 47)	Average (Range)		73 (41 - 127)		

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

Date	24-hour TSP ($\mu\text{g}/\text{m}^3$)	1-hour TSP ($\mu\text{g}/\text{m}^3$)				
		Date	Start Time	1 st reading	2 nd reading	3 rd reading
3-Jul-19	15	5-Jul-19	9:36	58	64	69
9-Jul-19	34	11-Jul-19	9:24	69	68	70
15-Jul-19	44	17-Jul-19	14:31	117	123	134
20-Jul-19	30	23-Jul-19	10:17	76	71	69
26-Jul-19	29	29-Jul-19	13:56	44	46	49
Average (Range)	30 (15 – 44)	Average (Range)		75 (44 – 134)		

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

Date	24-hour TSP ($\mu\text{g}/\text{m}^3$)	1-hour TSP ($\mu\text{g}/\text{m}^3$)				
		Date	Start Time	1 st reading	2 nd reading	3 rd reading
3-Jul-19	22	5-Jul-19	13:22	62	64	67
9-Jul-19	57	11-Jul-19	14:05	70	73	69
15-Jul-19	48	17-Jul-19	12:39	102	105	114
20-Jul-19	32	23-Jul-19	12:41	79	82	83
26-Jul-19	51	29-Jul-19	14:18	47	49	50
Average (Range)	42 (22 – 57)	Average (Range)		74 (47 – 114)		

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

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

5. CONSTRUCTION NOISE MONITORING

5.1 GENERAL

- 5.1.1 In the Reporting Period, noise monitoring was only performed at the additional monitoring locations NMS4a, NMS5, NMS6, NMS7 and NMS8. No monitoring was conducted at the designated monitoring locations NMS1, NMS2 and NMS3 since they are the planned NSR and still under the construction or not yet constructed.
- 5.1.2 In addition, a Work Instruction was issued from AECOM to AUES in November 2018 for installing three additional noise monitoring stations, i.e., CN1, CN2 and CN3 for Contract 3. Impact noise monitoring was performed at the three additional noise monitoring locations since December 2018.
- 5.1.3 The noise monitoring schedule is presented in *Appendix G* and the monitoring results are summarized in the following sub-sections.

5.2 NOISE MONITORING RESULTS IN REPORTING MONTH

- 5.2.1 In the Reporting Period, a total of **25** events noise measurements were carried out at the designated locations under Contract 1. The noise monitoring results at the designated locations are summarized in *Tables 5-1*. The detailed noise monitoring data are presented in *Appendix H* and the relevant graphical plots are shown in *Appendix I*.

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

Construction Noise Level ($L_{eq30min}$), dB(A)					
Date	NMS4a	NMS5	NMS6	NMS7	NMS8
5-Jul-19	64	59	59	57	61
11-Jul-19	65	66	64	60	65
17-Jul-19	65	65	58	64	64
23-Jul-19	68	66	62	60	63
29-Jul-19	62	64	55	58	69
Limit Level	75 dB(A)				

- 5.2.2 For the additional noise monitoring under Contract 3, a total of **15** 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
3-Jul-19	66	64	61
12-Jul-19	65	62	63
18-Jul-19	66	61	66
24-Jul-19	58	68	64
30-Jul-19	62	61	66
Limit Level	70 dB(A)^{Note 1} / 65 dB(A)^{Note 1}	70 dB(A)^{Note 1} / 65 dB(A)^{Note 1}	75 dB(A)

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

- 5.2.3 As shown in *Tables 5-1 and 5-2*, no Limit Level exceedance was recorded in this Reporting Period. However, no noise complaint was received under the Project.

6. WASTE MANAGEMENT

6.1 GENERAL WASTE MANAGEMENT

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

6.2 RECORDS OF WASTE QUANTITIES

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

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

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

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

Type of Waste	Contract 1		Contract 2		Contract 3	
	Quantity	Disposal Location	Quantity	Disposal Location	Quantity	Disposal Location
Total generated Inert C&D Materials ('000m ³)	3.540	-	0.206	-	1.812	-
Hard Rock and Large Broken Concrete ('000m ³)	2.358	-	0	-	0	-
Reused in this Contract (Inert) ('000m ³)	2.422	-	0.04	-	0	-
Reused in other Projects (Inert) ('000m ³)	1.118	-	0	-	0.285	-
Disposal as Public Fill (Inert) ('000m ³)	0	TKO 137	0.166	TKO 137	1.812	TKO 137

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

Type of Waste	Contract 1		Contract 2		Contract 3	
	Quantity	Disposal Location	Quantity	Disposal Location	Quantity	Disposal Location
Recycled Metal ('000kg)	0.005	27 Sheung Yee Rd, Kowloon Bay	0	-	0	-
Recycled Paper / Cardboard Packing ('000kg)	0	License collector	0	-	0	-
Recycled Plastic ('000kg)	0.013	License collector	0	-	0	-
Chemical Wastes ('000kg)	0	-	0	-	0	-
General Refuses ('000m ³)	0.111	SENT	0	SENT	0.125	SENT

7. SITE INSPECTION

7.1 REQUIREMENTS

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

7.2 FINDINGS / DEFICIENCIES DURING THE REPORTING MONTH

Contract 1

7.2.1 In the Reporting Period, joint site inspection for Contract 1 to evaluate site environmental performance was carried out by the RE, ET and the Contractor on **2nd, 11th, 16th, 23rd and 30th July 2019** in which IEC joined the site inspection with SSEMC on **11th July 2019**. No non-compliance was noted. The findings / deficiencies of **Contract 1** that observed during the weekly site inspection are listed in **Table 7-1**.

Table 7-1 Site Observations of Contract 1

Date	Findings / Deficiencies	Follow-Up Status
2 July 2019	<ul style="list-style-type: none"> Earth bund should be provided at the edge of the bypass channel to prevent muddy surface runoff overflow into the bypass drainage. (Road L1) Discharge outlet should be hard paved to prevent treated discharge water re-contaminated by the exposed surface. (Q2) 	<ul style="list-style-type: none"> Reminder only. Reminder only.
11 July 2019	<ul style="list-style-type: none"> Stagnant water cumulated inside the drip tray after rainstorm should be cleaned. (PTT) General refuse and C&D waste scattered near the skip should be cleaned. (USRT) 	<ul style="list-style-type: none"> Stagnant water cumulated inside the drip tray was removed. General refuse and C&D waste scattered near the waste skip was cleared.
16 July 2019	<ul style="list-style-type: none"> No adverse environmental issue was observed. 	<ul style="list-style-type: none"> NA.
23 July 2019	<ul style="list-style-type: none"> General refuse and C&D waste scattered near the skip should be cleaned. (PTT) Drip tray should be provided for chemical storage on-site. (Road L4) Soil and debris cumulated inside the temporary site drainage should be cleaned. (Road L4 & Box Culvert 2) 	<ul style="list-style-type: none"> General refuse and C&D waste scattered near the waste skip was cleared. Chemical container without drip tray was removed. Reminder only.
30 July 2019	<ul style="list-style-type: none"> Turbidity runoff mixed with treated discharged water from TWR3 was observed. Turbidity water should be diverted to proper de-silting facilities prior discharge. (Q2) 	<ul style="list-style-type: none"> Turbidity runoff had been blocked by earth bund and the discharge water at Q2 is visually cleaned.

Contract 2

7.2.2 In the Reporting Period, joint site inspection for Contract 2 to evaluate site environmental performance was carried out by the RE, ET and the Contractor on **3rd, 10th, 17th, 24th July and 1st August 2019** in which IEC joined the site inspection with SSEMC on **1st August 2019**. No non-compliance was noted. The findings / deficiencies of **Contract 2** that observed during the weekly site inspection are listed in **Table 7-2**.

Table 7-2 Site Observations of Contract 2

Date	Findings / Deficiencies	Follow-Up Status
3 July 2019	<ul style="list-style-type: none"> • The Wetsep without function was observed at Portion 1. The Contractor was advised to ensure the WetSep properly function for wastewater treatment. • The Contractor was reminded to clean the dusty materials at public road. • The Contractor was reminded to avoid overflow of surface run-off out of site boundary. • The Contractor was reminded to review the wastewater treatment at Portion 2. 	<ul style="list-style-type: none"> • The Wetsep is under proper function. • Reminder only. • Reminder only. • Reminder only.
10 July 2019	<ul style="list-style-type: none"> • Overflow of muddy surface run-off into public area was observed at Portion 2. The Contractor was advised to provide proper mitigation measure to avoid it and clean the muddy water at public area as soon as possible. • The Wetsep was observed inactive at Portion 2. The Contractor was advised to ensure Wetsep properly function for waste water treatment prior to discharge. 	<ul style="list-style-type: none"> • Muddy water at public area was cleaned. • The WetSep was functioned properly.
17 July 2019	<ul style="list-style-type: none"> • Free standing chemical container was observed at Portion 1. The Contractor was advised to provide proper mitigation measure to prevent land contamination. 	<ul style="list-style-type: none"> • Free standing chemical container was removed.
24 July 2019	<ul style="list-style-type: none"> • The Contractor was reminded to provide proper mitigation measure to prevent dust emission at Portion 2. 	<ul style="list-style-type: none"> • Reminder only.
1 August 2019	<ul style="list-style-type: none"> • Muddy surface run-off was observed at Portion 1 and Portion 2. The Contractor was advised to maintain the wastewater treatment system properly. • Oil drums on the ground was observed at Portion 1 and Portion 2. The Contractor was advised to place oil drums inside drip tray to avoid oil leakage. • Improper tree protection zone was observed at Portion2. The Contractor was advised to provide proper tree protection zone for retained trees. • The Contractor was reminded to clear stagnant water within site area after rain storm. 	<ul style="list-style-type: none"> • Pump device was provided on site and the waste water treatment facility was properly functioned for wastewater treatment. • To be followed. • Proper tree protection was provided for retained trees. • Reminder only.

Contract 3

7.2.3 In the Reporting Period, joint site inspection for Contract 3 to evaluate site environmental performance was carried out by the RE, ET and the Contractor on **5th, 12th, 19st and 26th July 2019** in which IEC joined the site inspection with SSEMC on **12th July 2019**. No non-compliance was noted. The findings / deficiencies of **Contract 3** that observed during the weekly site inspection are listed in **Table 7-3**

Table 7-3 Site Observations of Contract 3

Date	Findings / Deficiencies	Follow-Up Status
5 July 2019	<ul style="list-style-type: none"> The Contractor should remove the uncovered cement bag at E8. 	<ul style="list-style-type: none"> Reminder only.
12 July 2019	<ul style="list-style-type: none"> The Contractor was reminded to provide proper mitigation measure to prevent overflow of muddy water at E11. 	<ul style="list-style-type: none"> Reminder Only.
19 July 2019	<ul style="list-style-type: none"> No adverse environmental problem was observed. 	<ul style="list-style-type: none"> NA.
26 July 2019	<ul style="list-style-type: none"> No adverse environmental problem was observed. 	<ul style="list-style-type: none"> NA.

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

- 8.1.1 In the Reporting Period, one (1) environmental complaint was received with respect to the dust emission arising from Contract 1. Besides, no summons and prosecution under the EM&A Programme was lodged for the project. Investigation for the complaint was undertaken by the ET and presented in following sections.

Complaint received for Contract 1 (last Reporting Period)

EPD received a public complaint on 17 June 2019 regarding the construction noise heard at Yin Tat House of On Tat Estate on Sunday (i.e. 16 June 2019). In our investigation based on the information provided by CWSTVJV, there was no site activities undertaken at the subject site on 16 June 2019 Sunday as concerned by the complainant. The general site activities such as housekeeping and cleaning work carried out on the complaint day were fully compliance with the CNP condition. In response to the complaint, CWSTVJV was reminded to closely monitor the plant use and sequence of work during restricted hour and ensure no violation on the CNP's condition. The IR is under reviewed by IEC.

Complaint received for Contract 1

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.

- 8.1.2 The complaint log is shown in [Appendix M](#).
- 8.1.3 In the Reporting Period, no environmental summons and Prosecution recorded.
- 8.1.4 The statistical summary table of environmental complaint, summons and prosecution is presented in [Tables 8-1, 8-2 and 8-3](#).

Table 8-1 Statistical Summary of Environmental Complaints

Reporting Period	Contract no.	Environmental Complaint Statistics		
		Frequency	Cumulative	Complaint Nature
1 Apr 2017 – 30 Jun 2019	1	0	39	Dust, Noise and light nuisance
21 Mar 2017 – 30 Jun 2019	2	0	4	Noise
31 May 2018 – 30 Jun 2019	3	0	1	Waste Management
1 – 31 July 2019	1	1	40	Dust
	2	0	4	NA
	3	0	1	NA

Table 8-2 Statistical Summary of Environmental Summons

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

1 – 31 July 2019	1	0	0	NA
	2	0	0	NA
	3	0	0	NA

Table 8-3 Statistical Summary of Environmental Prosecution

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

9. IMPLEMENTATION STATUS OF MITIGATION MEASURES

9.1 GENERAL REQUIREMENTS

- 9.1.1 The environmental mitigation measures that recommended in the Implementation Schedule for Environmental Mitigation Measures (ISEMM) in the approved EM&A Manual covered the issues of dust, noise, water and waste and they are summarized presented in [Appendix L](#).
- 9.1.2 All contracts under the Project shall be implementing the required environmental mitigation measures according to the approved EM&A Manual as subject to the site condition. Environmental mitigation measures generally implemented in this Reporting Period are summarized in [Table 9-1](#).

Table 9-1 Environmental Mitigation Measures

Issues	Environmental Mitigation Measures
Water Quality	<ul style="list-style-type: none"> Wastewater to be treated by filtration system; such as, silt curtain or sedimentation tank before discharge. Replace silt curtain materials if necessary
Air Quality	<ul style="list-style-type: none"> Maintain damp / wet surface on access road Keep slow speed in the sites All vehicles must use wheel washing facility before off site All vehicles must use wheel washing facility before off site Sprayed water during breaking works
Noise	<ul style="list-style-type: none"> Restrain operation time of plants from 07:00 to 19:00 on any working day except for Public Holiday and Sunday. Keep good maintenance of plants 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	<ul style="list-style-type: none"> On-site sorting prior to disposal Follow requirements and procedures of the “Trip-ticket System” Predict required quantity of concrete accurately Collect the unused fresh concrete at designated locations in the sites for subsequent disposal
General	<ul style="list-style-type: none"> The site was generally kept tidy and clean.

9.2 TENTATIVE CONSTRUCTION ACTIVITIES IN THE COMING MONTH

- 9.2.1 Construction activities for Contract 1 in the coming month are listed below:
- Implementation of Temporary Traffic Arrangement at the junction between On Sau Road and Road L4, Po Lam Road near Po Tat Estate and Po Lam Road near Ma Yau tong Village;
 - Construction of the substructures at South Towers and footing at North Tower of Pedestrian Connectivity System B (PCSB);
 - Construction of Subway of PCSB;
 - Construction of drainage pipe 1800mm dia. from M/H S211 to M/H S211B and drainage pipe 375mm dia. from M/H R725 to T729 in Road L1;
 - Construction of drainage works near the box culvert BC1 and BC2;
 - Laying of cable ducts for underground utilities in Road L5;
 - Construction of Box Culvert BC1 and BC2;
 - Construction of water mains at Roads L2 and L5;
 - Construction of pile cap and strap beams and steel post erection of Public Transport Terminus;
 - Road Improvement Works at Po Lam Road
 - Construction of Water Pumping Station;
 - Backfilling works for Retaining Wall RWA 13, RWA 14 and RWA 18;

13. Base slabs and walls at Salt and Fresh Water Reservoir;
14. Retaining walls of Artificial Flood Attenuation Lake;
15. Construction of Noise Barrier walls and Retaining Walls RWA12 and RWA14
16. Rock Slope Survey and Slope Stabilization at Portion B1 and B5

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

- Portion 1: Excavation and shoring works for E1 – PC3 & E1 –PC5.
Piling works for Pile Cap E1 – PC3.
Construction of Pier E1-P1
- Portion 2: Continue rock slope excavation for E3-ST1. Rock Excavation for E3-F
1. Existing lighting removal. Installation of rock dowel.
- Portion 3: Relocation of existing pedestrian crossing
- Portion 4: Rectification of defects.
- Portion 5:
 - Excavation and Shoring works for covered walkway footing BBI-NB-F2,F1a,Fb.
 - Footing Construction for Nothern and Southern High Mast.
 - Relocation of High Masts
 - Drainage Works
- Portion 6:
 - Rock breaking for rock cut slope and BBI Footing.
 - Fixing formwork, reinforcement and place concrete for RWE12

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

Road Improvement Works 1 (RIW1)

- Construction works at Slip Road 2;
- Civil provision for gas-main relocation at Slip Road 2;
- Piling Platform 1 & 2 Construction (RIW1);
- No fine concrete construction at Type 8 area (RIW1);
- ELS for Type 1 & 1a construction (RIW1); and
- Site clearance at Substation (RIW1);

Road Improvement Works 2 (RIW2)

- Pull-out test for soil nail construction;
- Soil nail construction commencement;
- Removal of existing central median on Clear Water Bay Road;
- Relocation of for Welcome sign board; and
- Soil excavation to form slope profile for soil nail construction;

Road Improvement Works 3 (RIW3)

- Construct site access at Slope D1, D2 and D3;
- Haul construction for Slope D1 and D3
- Stage 1 rock excavation of Slope D3;
- Pre-drill works of Slope D1

Pedestrian Connectivity Facility E8 (PC-E8)

- Footing construction works at lower portion
- Construct temporary staircase and working platform on upper portion
- Construct haul road on upper portion

Pedestrian Connectivity Facility E11 (PC-E11)

- Construction of socket H piling works at PC-E11

Pedestrian Connectivity Facility System A (PC-SYA)

- Rock excavation and associated rock mapping of footing at System A;

Pedestrian Connectivity Facility System A (PC-SYB)

- Construct run-in & out at On Chui Street for PC-SYB;
- Haul Road Construction at PC-SYB;
- Piling works at PC-SYB;

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

- Lay underground drainage pipe;

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

10. CONCLUSIONS AND RECOMMENDATIONS

10.1 CONCLUSIONS

- 10.1.1 This is **28th** monthly EM&A report presenting the monitoring results and inspection findings for the Reporting Period from **1** to **31 July 2019**.
- 10.1.2 No 24-hour or 1-hour TSP monitoring results that triggered the Action or Limit Levels were recorded. No NOEs or the associated corrective actions were therefore issued.
- 10.1.3 In the Reporting Period, no exceedance was recorded and no Notification of Exceedance was issued. Moreover, no noise complaints (which triggered Action Level) was received for the project
- 10.1.4 In the Reporting Period, a public complaint was received by EPD on 12 July 2019 regarding the dust impact to the residents at Po Tat Estate and On Tat Estate due to dust emission at Anderson Road Quarry site. Investigation Report for the complaint has been conducted by ET which revealed that dust mitigation measures were implemented 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. The IR was under reviewed by IEC.
- 10.1.5 No notification of summons or successful prosecution was received under the Project.
- 10.1.6 During the Reporting Period, weekly joint site inspection by the RE, ET with the relevant Main-contractor was carried out for Contracts 1, 2 and 3 in accordance with the EM&A Manual stipulation whereas IEC performed monthly site inspection for both contracts. No non-compliance observed during the site inspection.

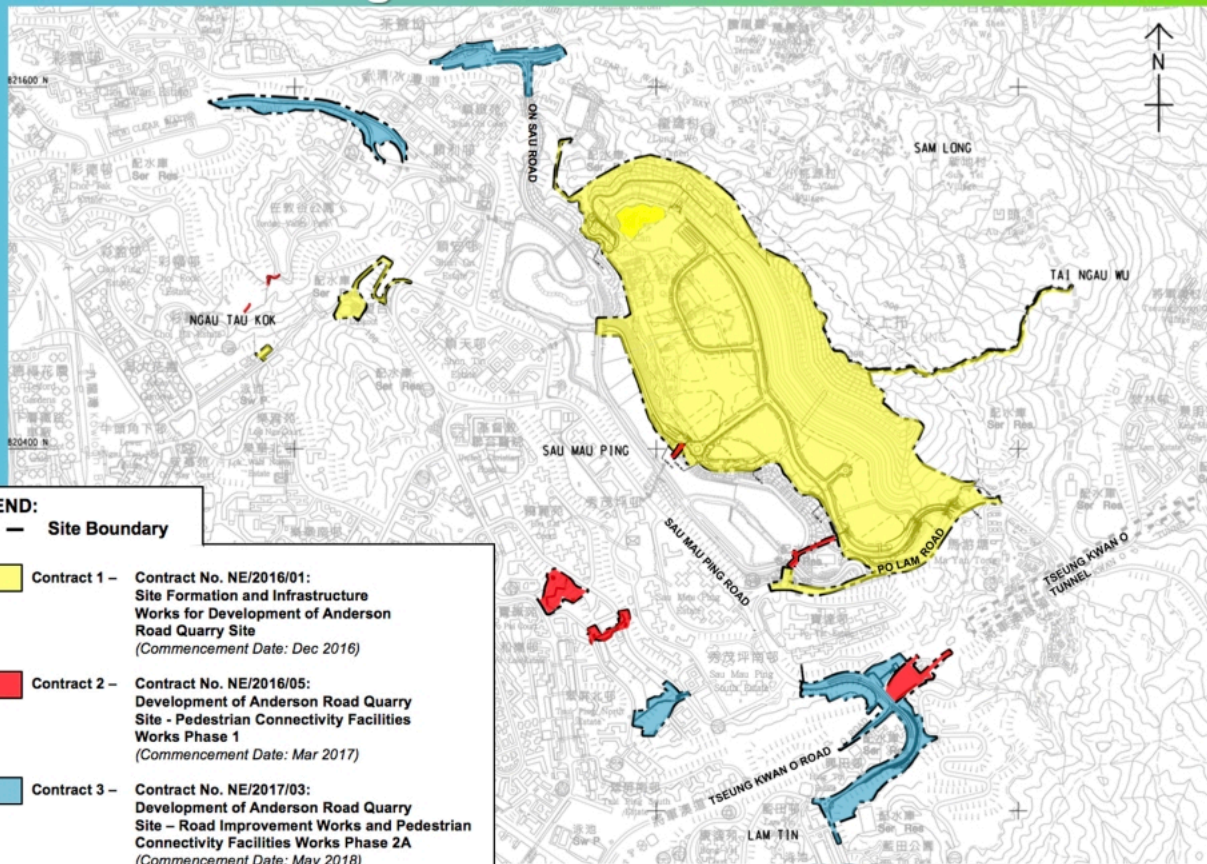
10.2 RECOMMENDATIONS

- 10.2.1 During wet season, preventive measures for muddy water or other water pollutants from site surface overflow to public area should be properly maintained. The Contractors should paid special attention on water quality mitigation measures and fully implement according ISEMM of the EM&A Manual.
- 10.2.2 Since construction site is highly visible to the resident at nearby estates, the Contractors should fully implement air quality mitigation measures to reduce construction dust emission.
- 10.2.3 Construction noise would be a key environmental issue during construction work of the Project. Noise mitigation measures such as using quiet plants should be implemented in accordance with the EM&A requirement.
- 10.2.4 In addition, all effluent discharge shall be ensure to fulfill Technical Memorandum of Effluent Discharged into Drainage and Sewerage Systems, inland and Coastal Waters criteria or discharge permits stipulation.
- 10.2.5 Mosquito control measures should be continued to prevent mosquito breeding on site.

Appendix A

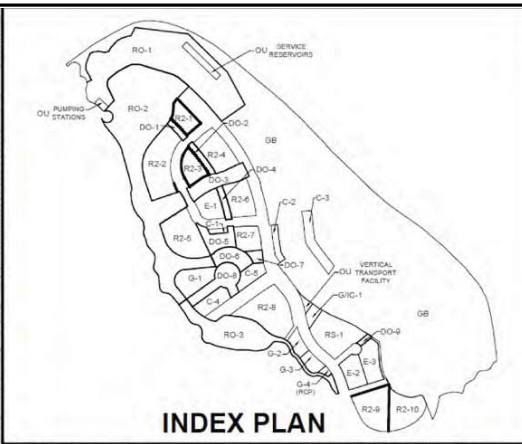
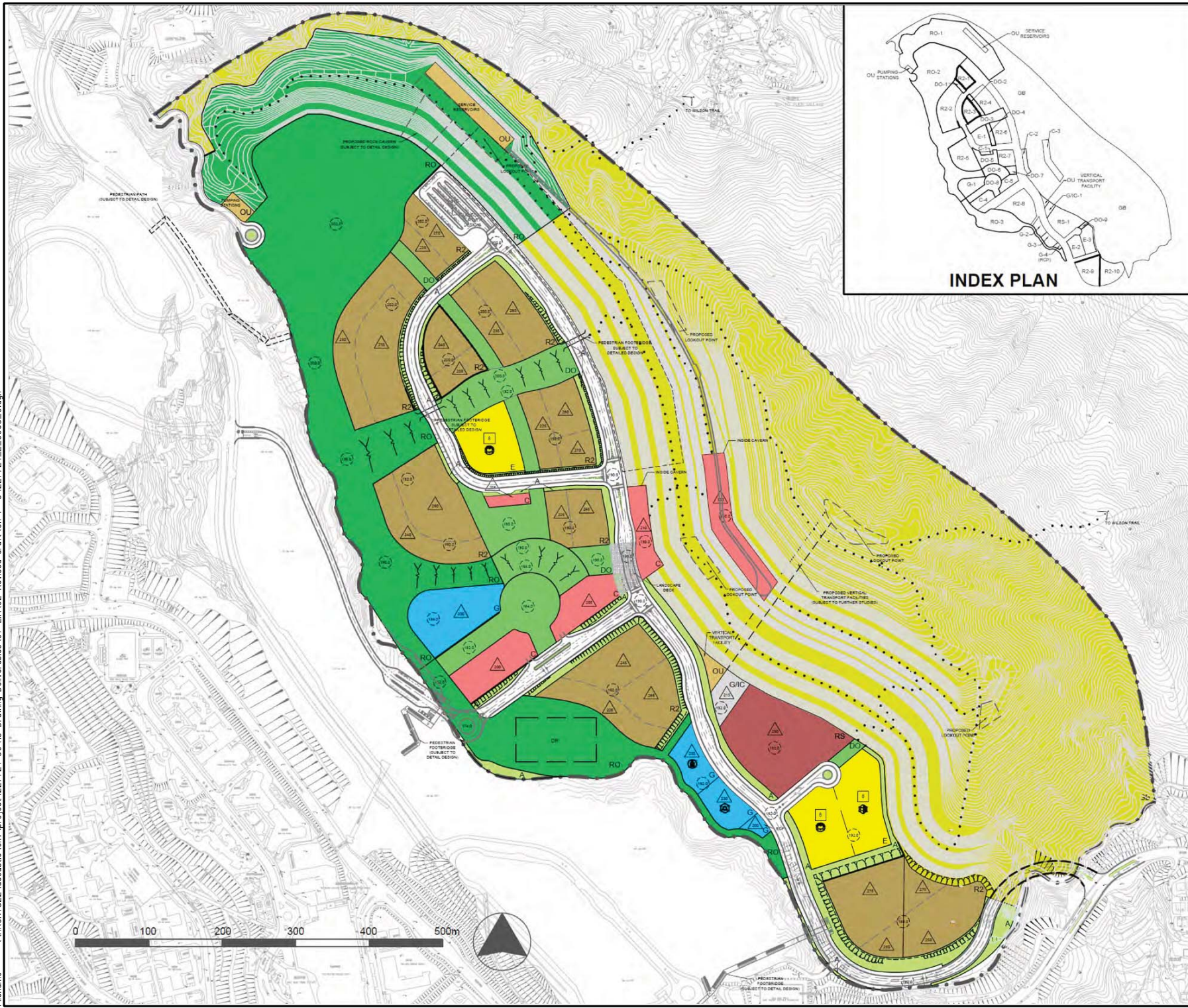
Layout plan of the Project

Contract Packages



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

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- LEGEND**
- POLICE STATION
 - DIVISIONAL FIRE STATION
 - SECONDARY SCHOOL
 - PRIMARY SCHOOL
 - PUBLIC TRANSPORT TERMINUS
 - PLANNING BOUNDARY
 - UNDERPASS
 - PROPOSED PEDESTRIAN TRAIL
 - PEDESTRIAN PRECINCT
 - DRAINAGE RESERVE
 - MAXIMUM BUILDING HEIGHT (in m above PD)
 - MAXIMUM BUILDING HEIGHT (in storeys)
 - PROPOSED SLOPE
 - PROPOSED SLOPE
 - REFUSE COLLECTION POINT
 - FOOTBRIDGE
 - COMMERCIAL
 - SPECIAL RESIDENTIAL
 - RESIDENTIAL ZONE 2
 - GOVERNMENT
 - GOVERNMENT/ INSTITUTION OR COMMUNITY
 - EDUCATION
 - REGIONAL OPEN SPACE
 - DISTRICT OPEN SPACE
 - AMENITY
 - OTHER SPECIFIED USES
 - GREEN BELT
 - ROADS, JUNCTIONS, ETC.
 - AREA WITH POTENTIAL FOR ROCK CAVERN DEVELOPMENT

Rev	Description	By	Date
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B	SECOND ISSUE		GL 01/14
A	FIRST ISSUE		GL 10/13

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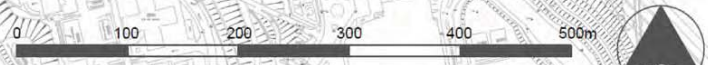
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Development of Anderson Road Quarry - Investigation

Drawing title
Recommended Outline Development Plan

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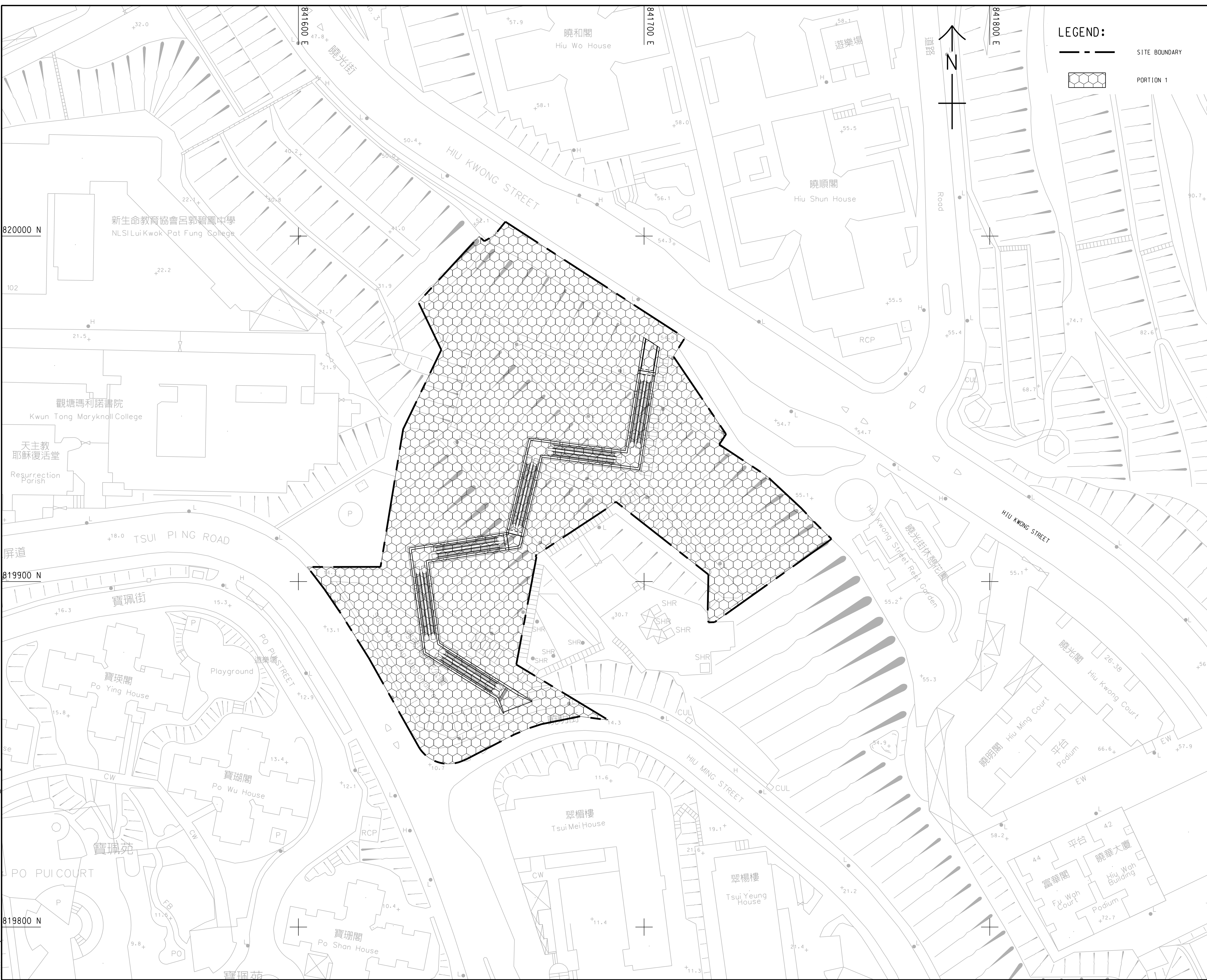
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Layout plan of Contract 2 (NE/2016/05)

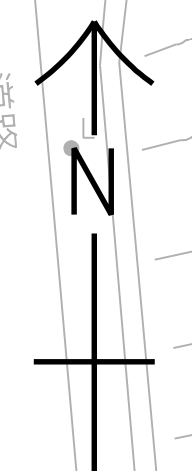
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LEGEND:

--- SITE BOUNDARY

PORTION 1



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

CONTRACT TITLE
 合約名稱
PEDESTRIAN CONNECTIVITY FACILITIES WORKS PHASE 1

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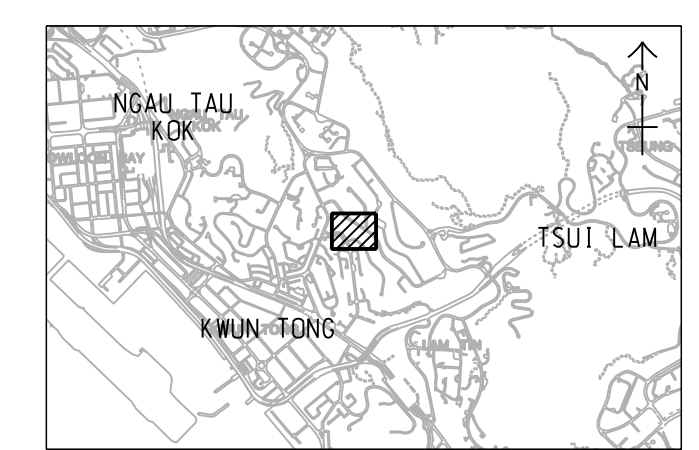
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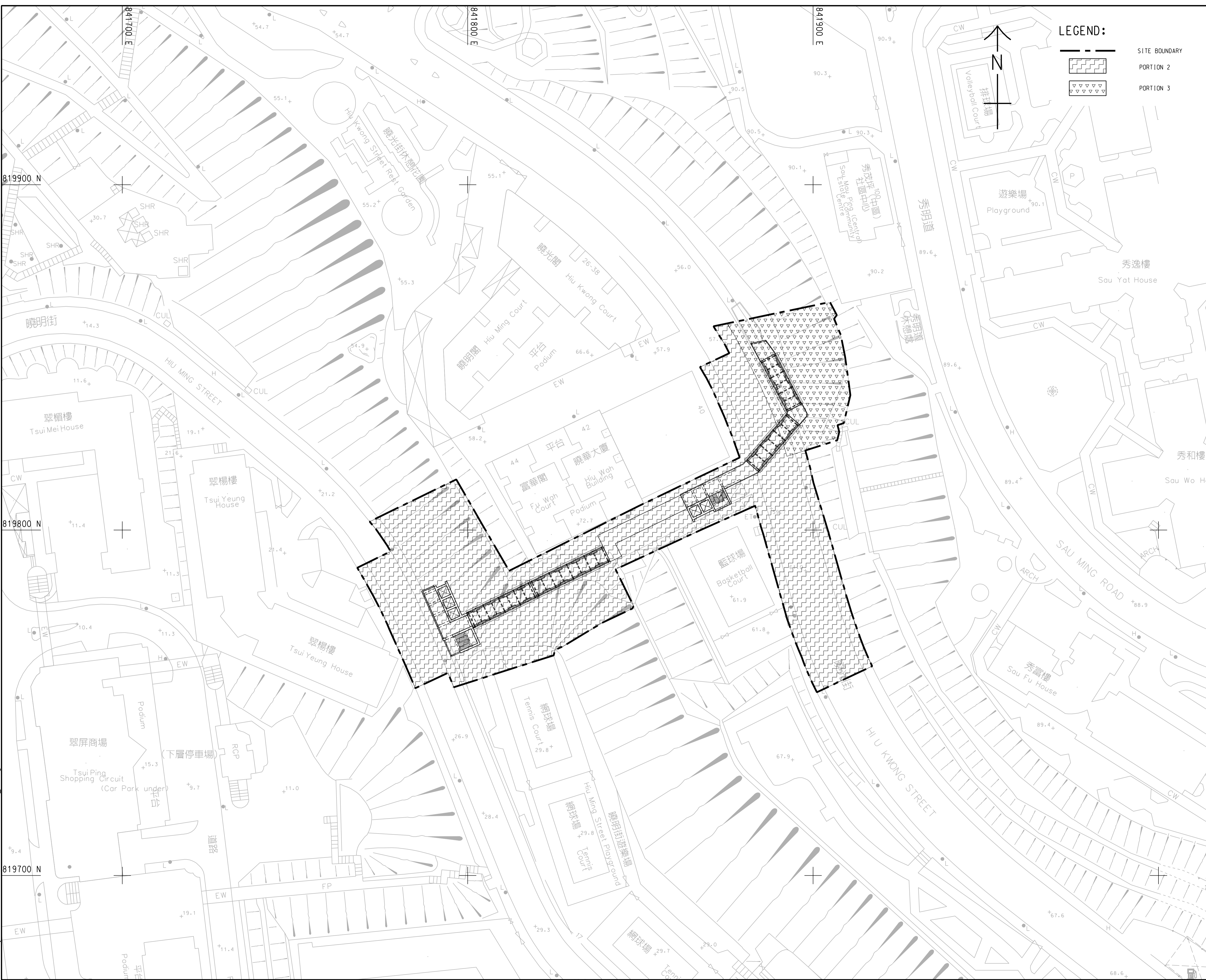
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E1 - PORTION OF SITE

SHEET NUMBER
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LEGEND:

- SITE BOUNDARY
- PORTION 2
- PORTION 3



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

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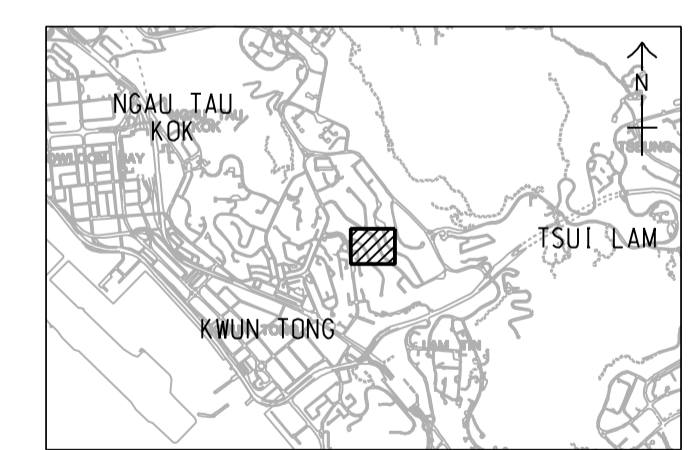
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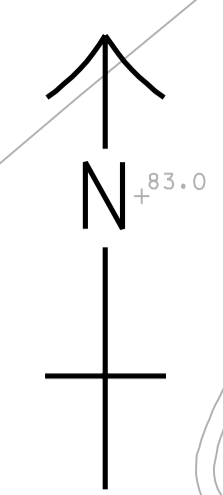
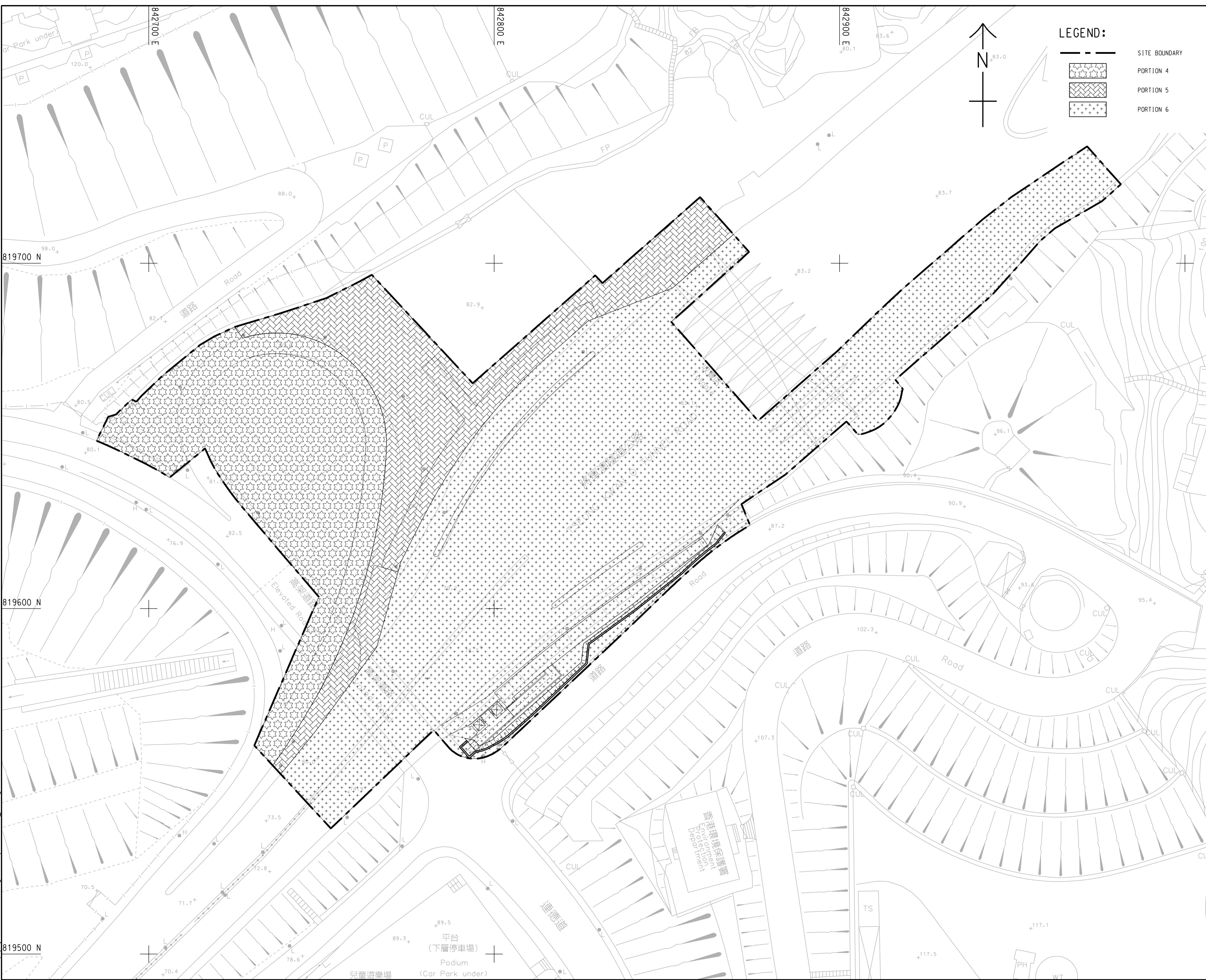
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LEGEND:

	SITE BOUNDARY
	PORTION 4
	PORTION 5
	PORTION 6

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

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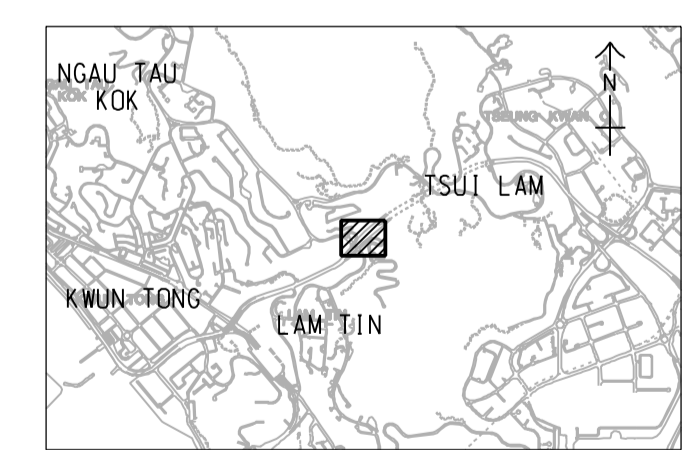
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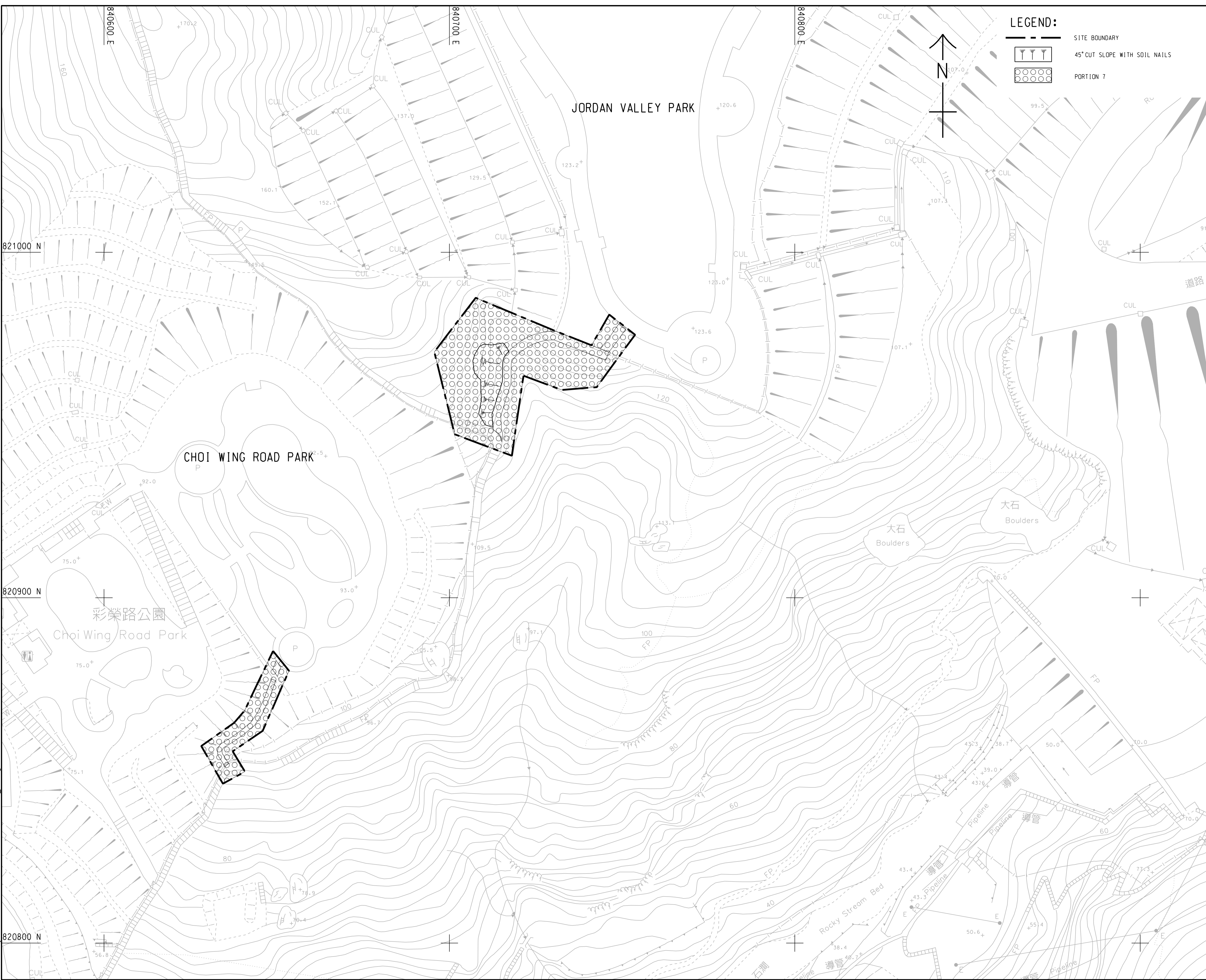
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CEDD 土木工程拓展署
 Civil Engineering and Development Department

CONSULTANT
 工程顧問公司
AECOM Asia Company Ltd.
 www.aecom.com

SUB-CONSULTANTS
 分判工程顧問公司

ISSUE/REVISION
 修訂

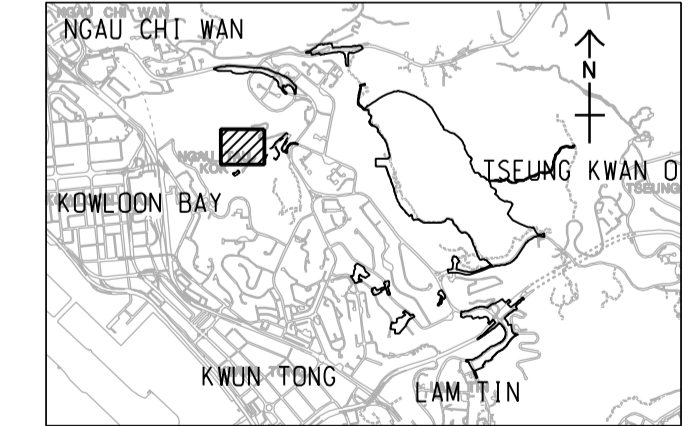
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修訂	日期	內容摘要	核校
-	OCT. 16	TENDER DRAWING	AC

STATUS
 階段

SCALE
 比例
 A1 1 : 500

DIMENSION UNIT
 尺寸單位
 METRES

KEY PLAN A1 1 : 60000
 索引圖



PROJECT NO.
 項目編號
 60328348

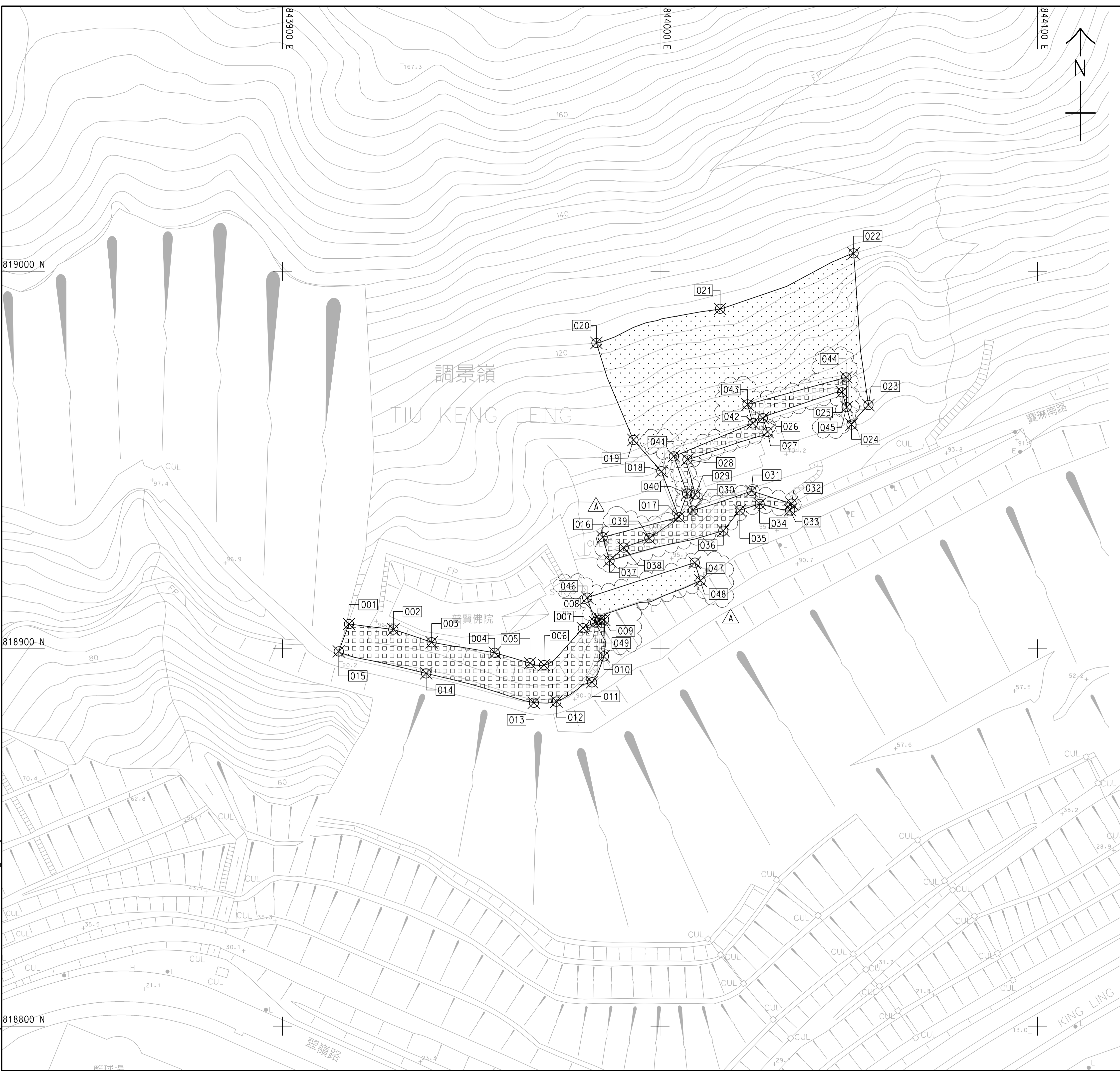
CONTRACT NO.
 合約編號
 NE/2016/05

SHEET TITLE
 圖紙名稱
GREEN ROUTE - PORTION OF SITE

SHEET NUMBER
 圖紙編號
 60328348/PC1/5007

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Project Management Initials: **BU** Designer: **AC** PCTT Checked: **AC** Approved: **AC** BWCW ISO A1 594mm x 841mm
 Pict File by: WANGGLW 2016/11/16 PATH: P:\Projects\60262634\DRAWING\CONTRACT\PC1\9501.dgn



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

AECOM

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

CONTRACT TITLE
 PEDESTRIAN CONNECTIVITY FACILITIES WORKS PHASE 1

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

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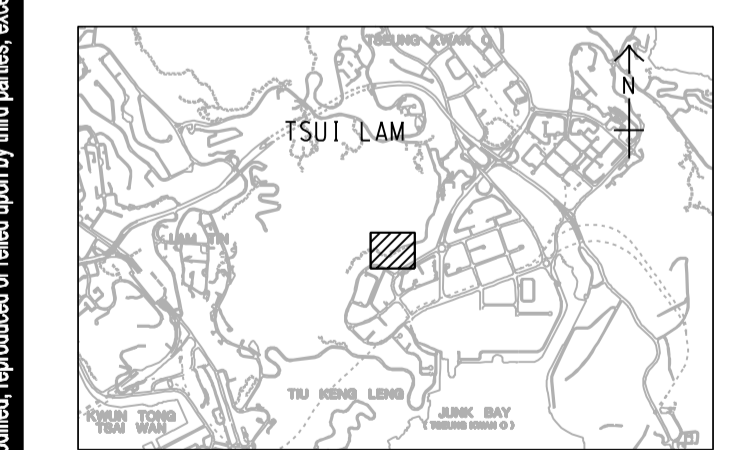
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A	NOV. 16	TENDER ADDENDUM NO. 1	AC
-	OCT. 16	TENDER DRAWING	AC

STATUS
 備版

SCALE
 比例: A1 1:500

DIMENSION UNIT
 尺寸單位: METRES

KEY PLAN A1 1:60000
 索引圖



PROJECT NO.
 項目編號: 60328348

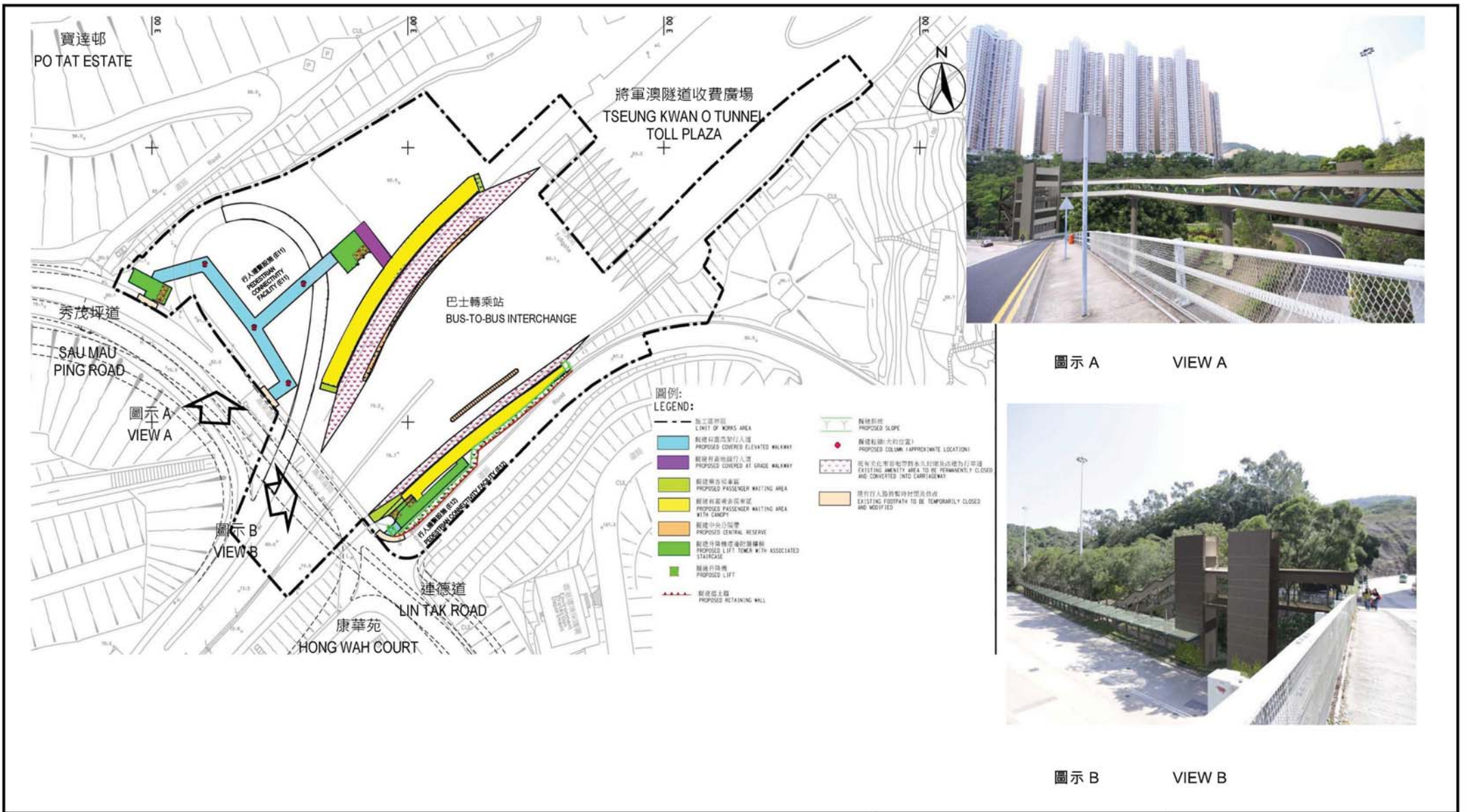
CONTRACT NO.
 合約編號: NE/2016/05

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

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

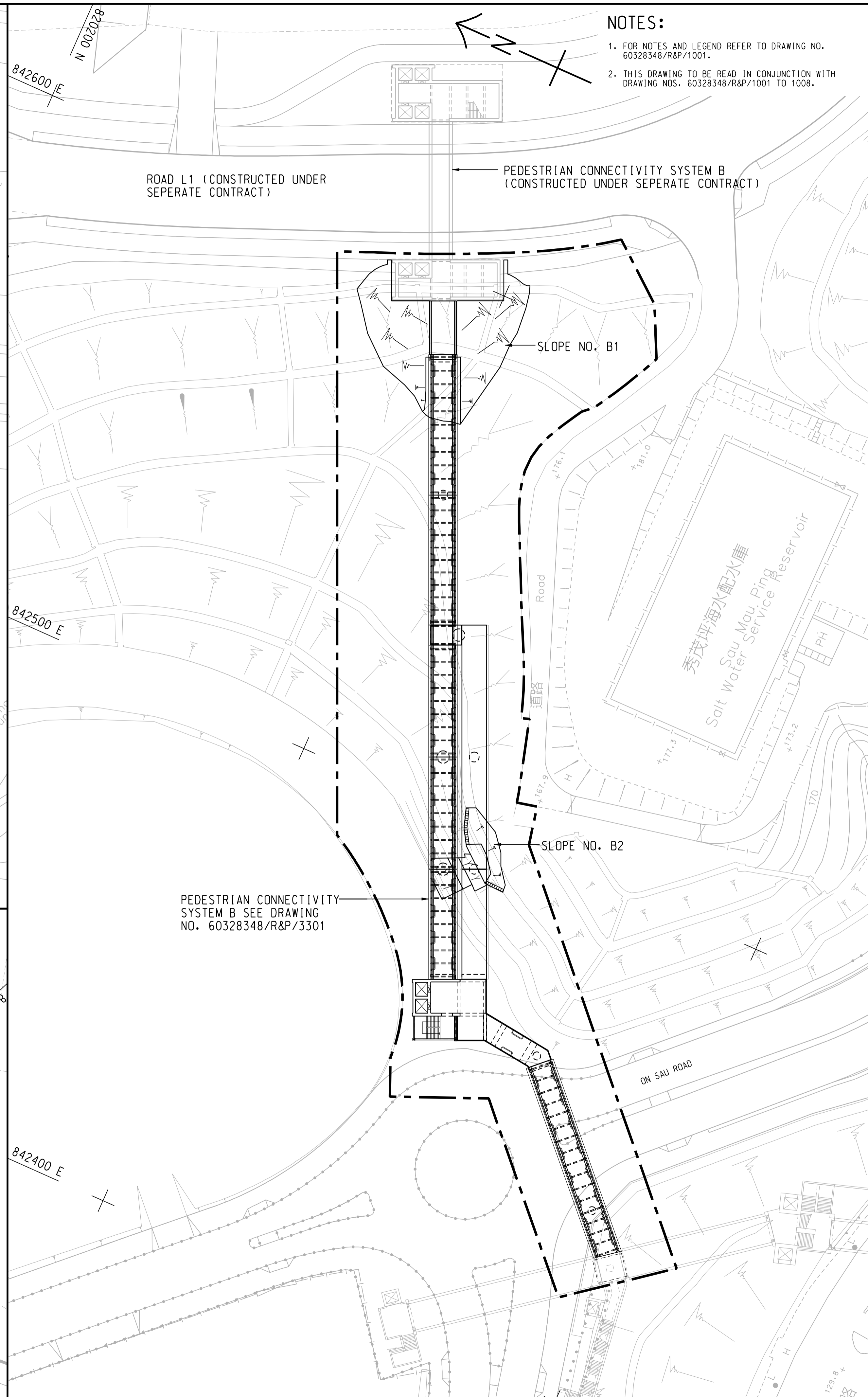
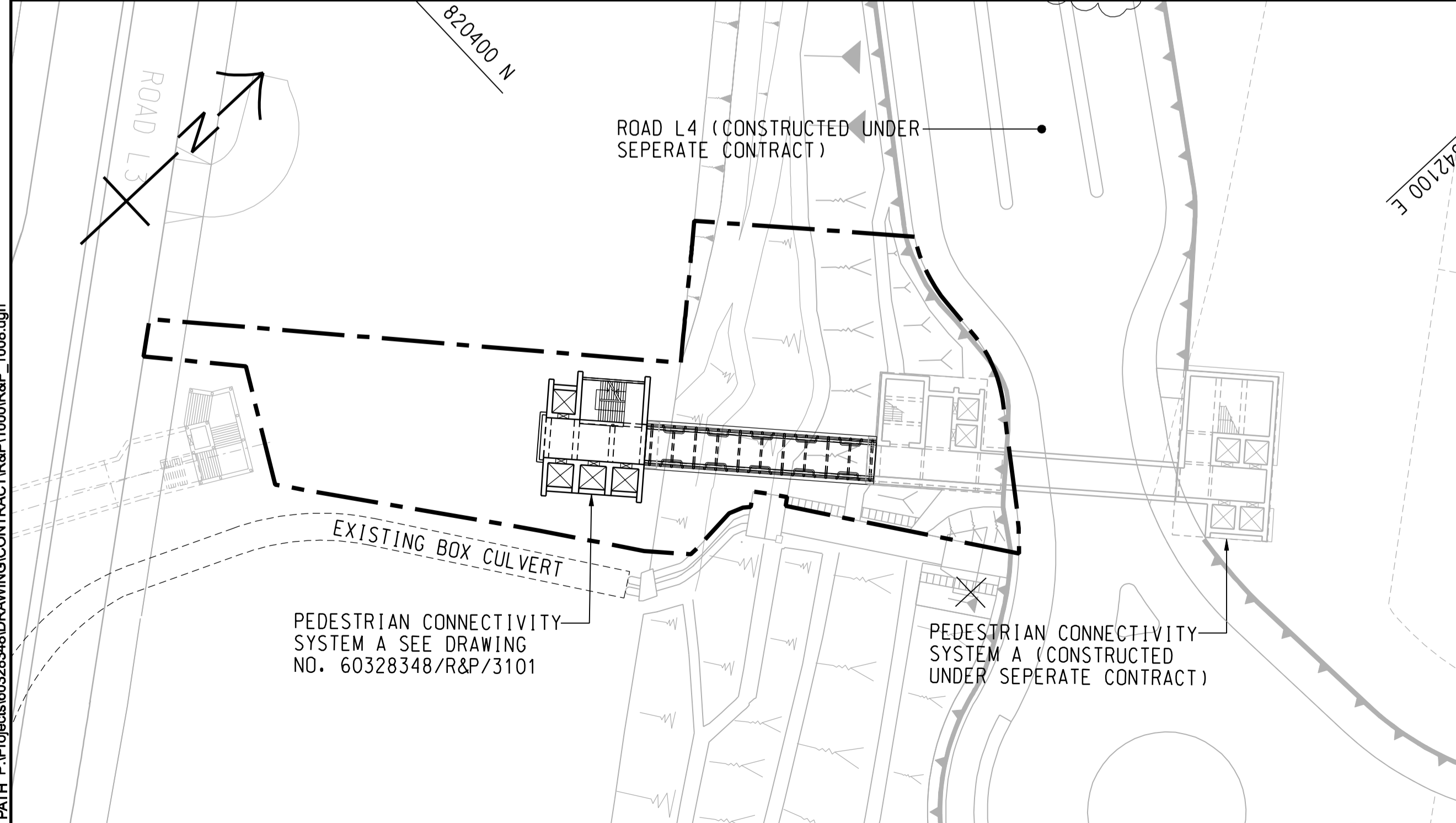
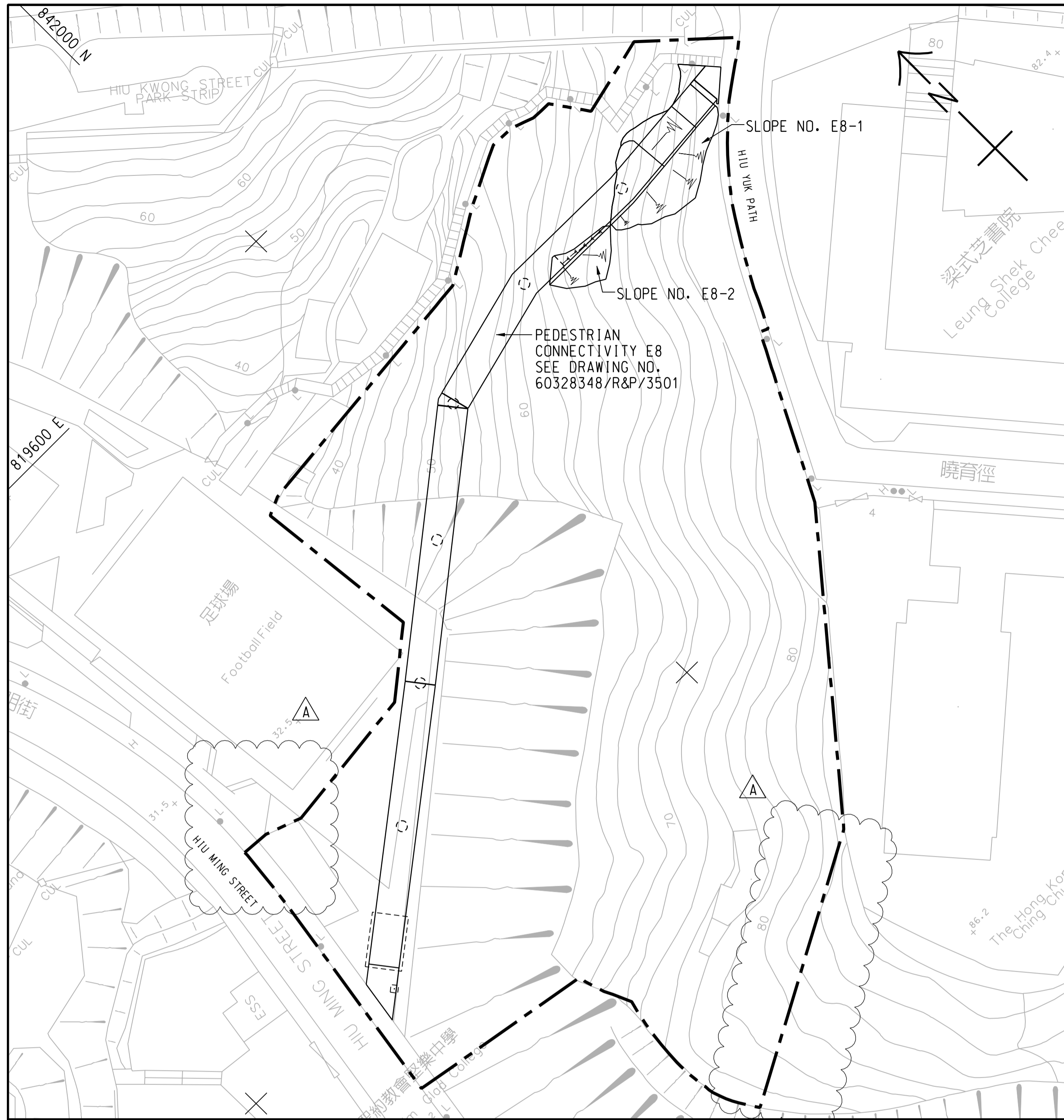


圖示 A VIEW A



圖示 B VIEW B

<p>圖則名稱 Drawing Title</p> <p>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</p>	<p>項目編號 Item No. 765CL</p> <p>比例 Scale</p> <p>圖則編號 Drawing No. 附件五 Appendix 5</p>	<p>辦事處 Office 新界東拓展處 NEW TERRITORIES EAST DEVELOPMENT OFFICE</p> <p>土木工程拓展署 CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT</p> 
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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.



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

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 土木工程拓展署
 Civil Engineering and Development Department

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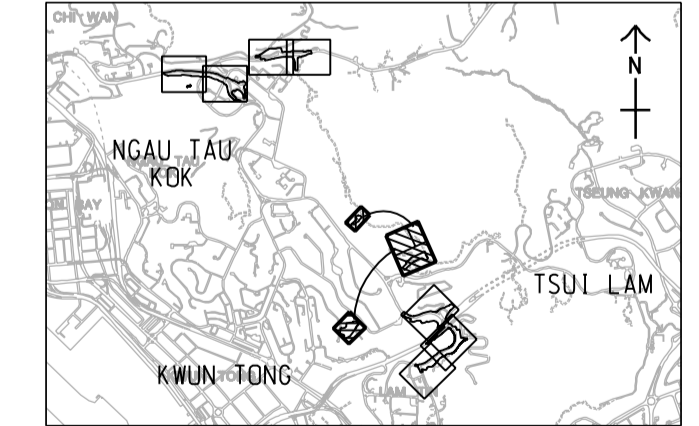
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-	OCT. 17	TENDER DRAWING	AWYC

STATUS
 階段

SCALE
 比例
 A1 1:500

DIMENSION UNIT
 尺寸單位
 METRES

KEY PLAN A1 1:60000
 索引圖



PROJECT NO.
 項目編號
 60328348

CONTRACT NO.
 合約編號
 NE/2017/03

SHEET TITLE
 圖紙名稱
 GENERAL LAYOUT

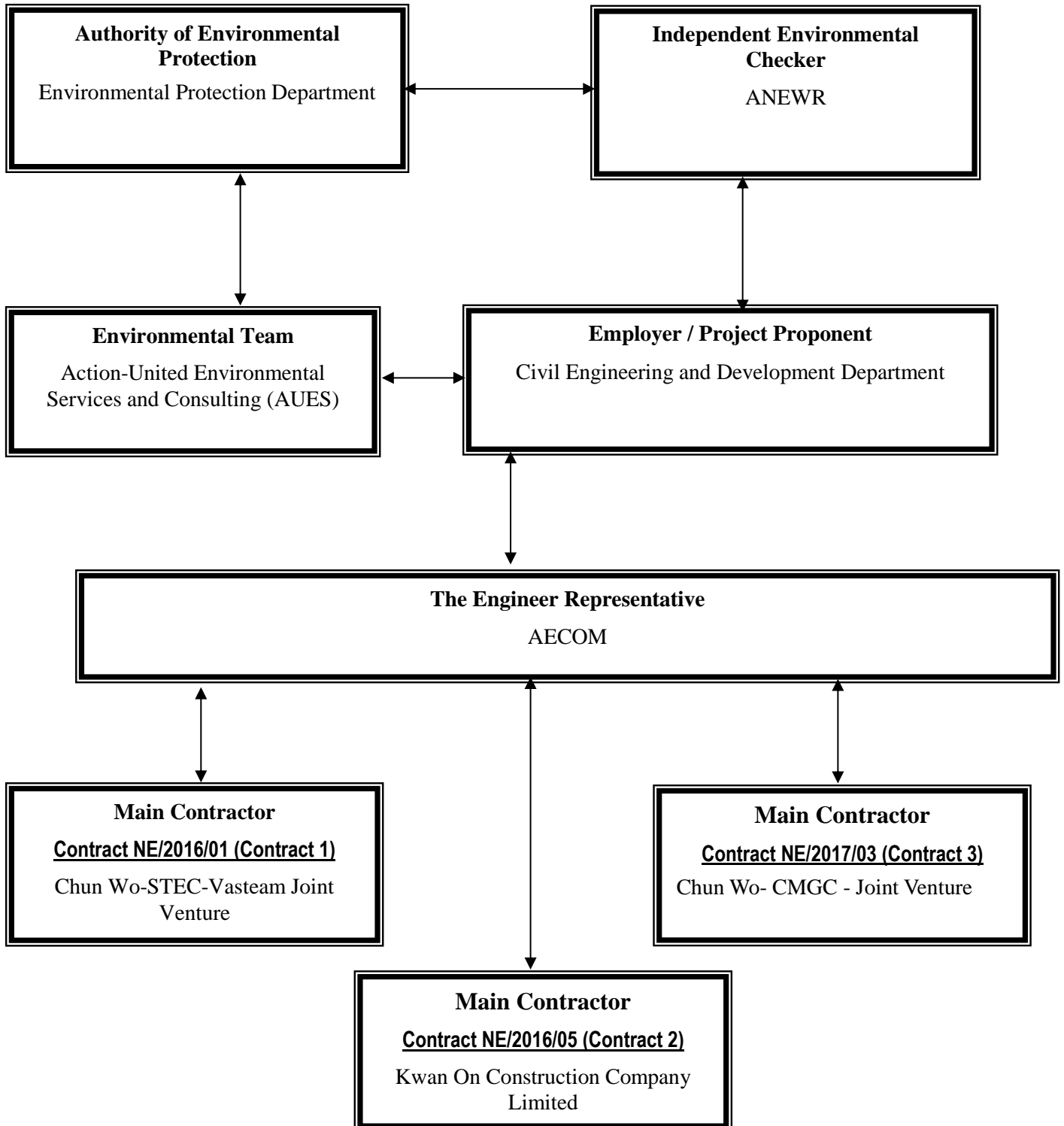
SHEET NUMBER
 圖紙編號
 60328348/R&P/1008A

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Appendix B

Project Organization Structure

Project Organization Structure



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

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

Legend:*CEDD (Employer) – Civil Engineering and Development Department**AECOM (Engineer) – AECOM Asia Co. Ltd.**CSVJV (Main Contractor) – Chun Wo-STECC-Vasteam Joint Venture**ANEWR (IEC) – ANewR Consulting Limited**AUES (ET) – Action-United Environmental Services & Consulting*

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

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

Legend:*CEDD (Employer) – Civil Engineering and Development Department**AECOM (Engineer) – AECOM Asia Co. Ltd.**KOCCL (Main Contractor) – Kwan On Construction Company Limited**ANEWR (IEC) – ANewR Consulting Limited**AUES (ET) – Action-United Environmental Services & Consulting*

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

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

Legend:*CEDD (Employer) – Civil Engineering and Development Department**AECOM (Engineer) – AECOM Asia Co. Ltd.**CW – CMGC - JV (Main Contractor) – Chun Wo- CMGC - Joint Venture**ANEWR (IEC) –ANewR Consulting Limited**AUES (ET) – Action-United Environmental Services & Consulting*

Appendix C

Construction Programme

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

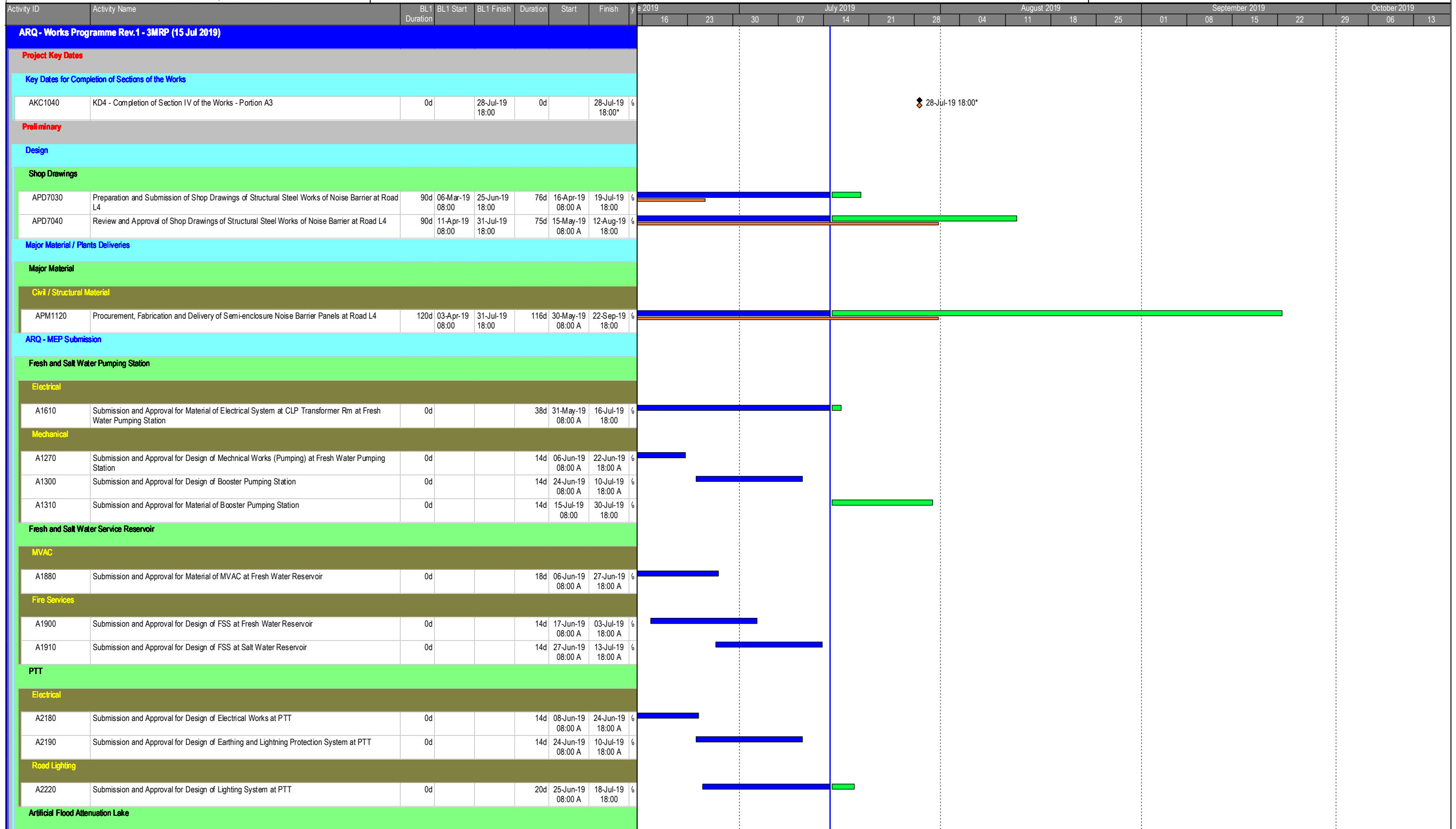
CEDD Contract No. NTE/07/2016

**Environmental Team for Development of Anderson Road Quarry Site – Site Formation
and Associated Infrastructure Works**

Monthly Environmental Monitoring & Audit Report (July 2019)



Contract 1 (NE/2016/01)

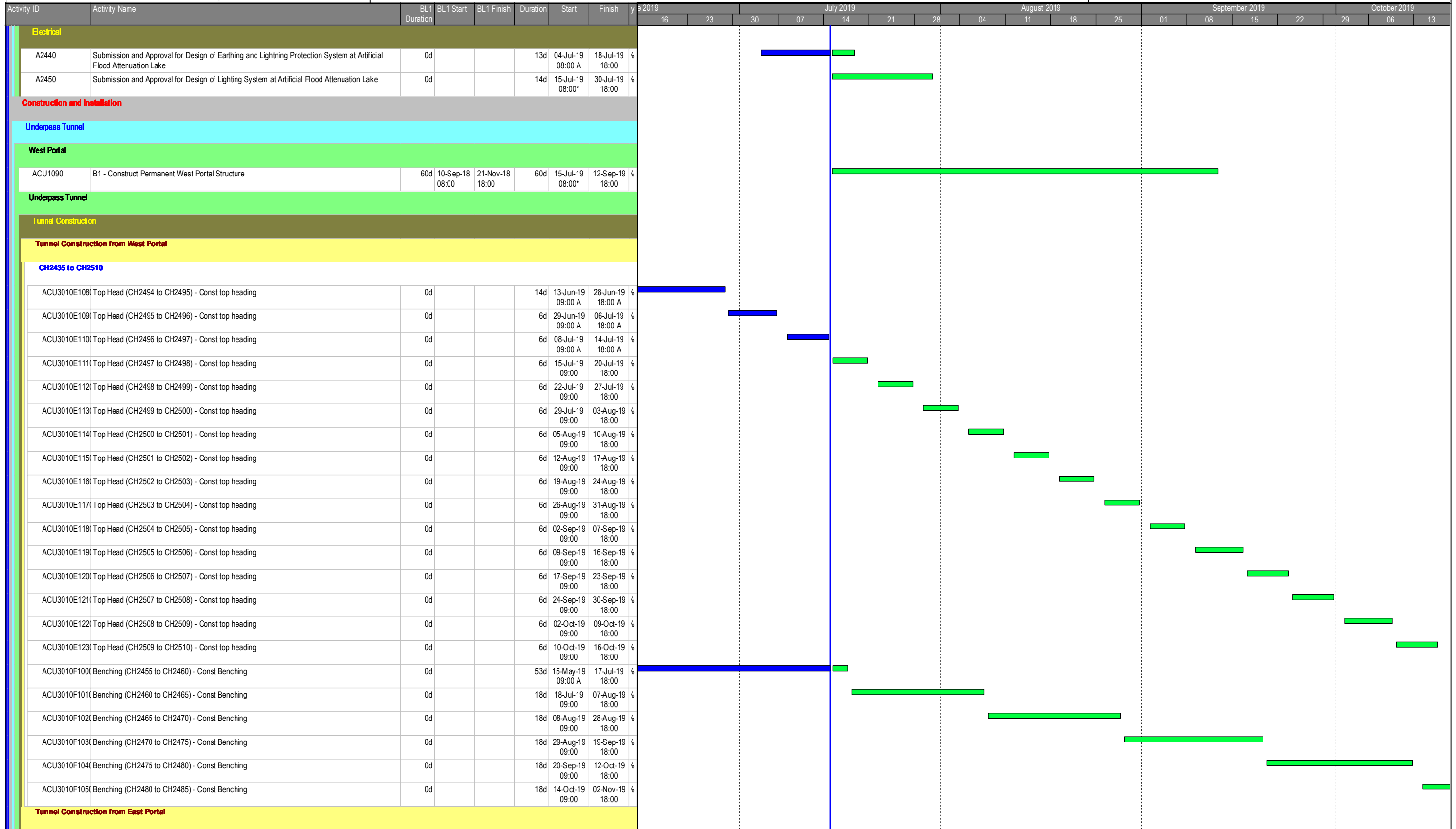


— Primary Baseline — Forecast Work
█ Actual Work
◆ Baseline Milestone
◆ Milestone

3 Month Rolling Programme

ARQ - Works Programme Rev.1 - 3MRP (15 Jul 2019)
19-Jul-19

Date	Revision	Checked	Approved

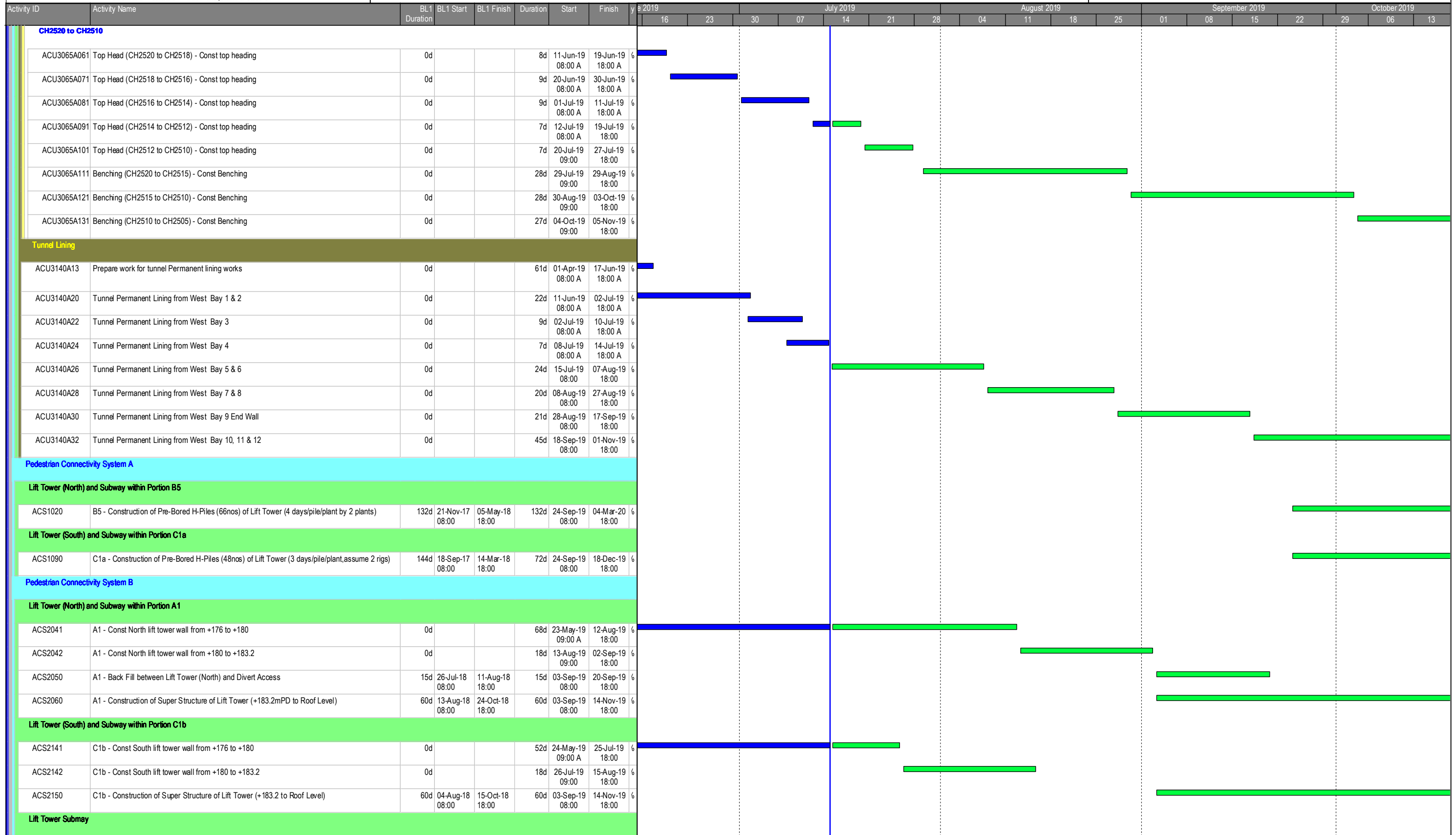


— Primary Baseline — Forecast Work
█ Actual Work
◆ Baseline Milestone
◆ Milestone

3 Month Rolling Programme

ARQ - Works Programme Rev.1 - 3MRP (15 Jul 2019)
19-Jul-19

Date	Revision	Checked	Approved



- █ Primary Baseline
- █ Forecast Work
- █ Actual Work
- ◆ Baseline Milestone
- ◆ Milestone

3 Month Rolling Programme

ARQ - Works Programme Rev.1 - 3MRP (15 Jul 2019)
19-Jul-19

Date	Revision	Checked	Approved

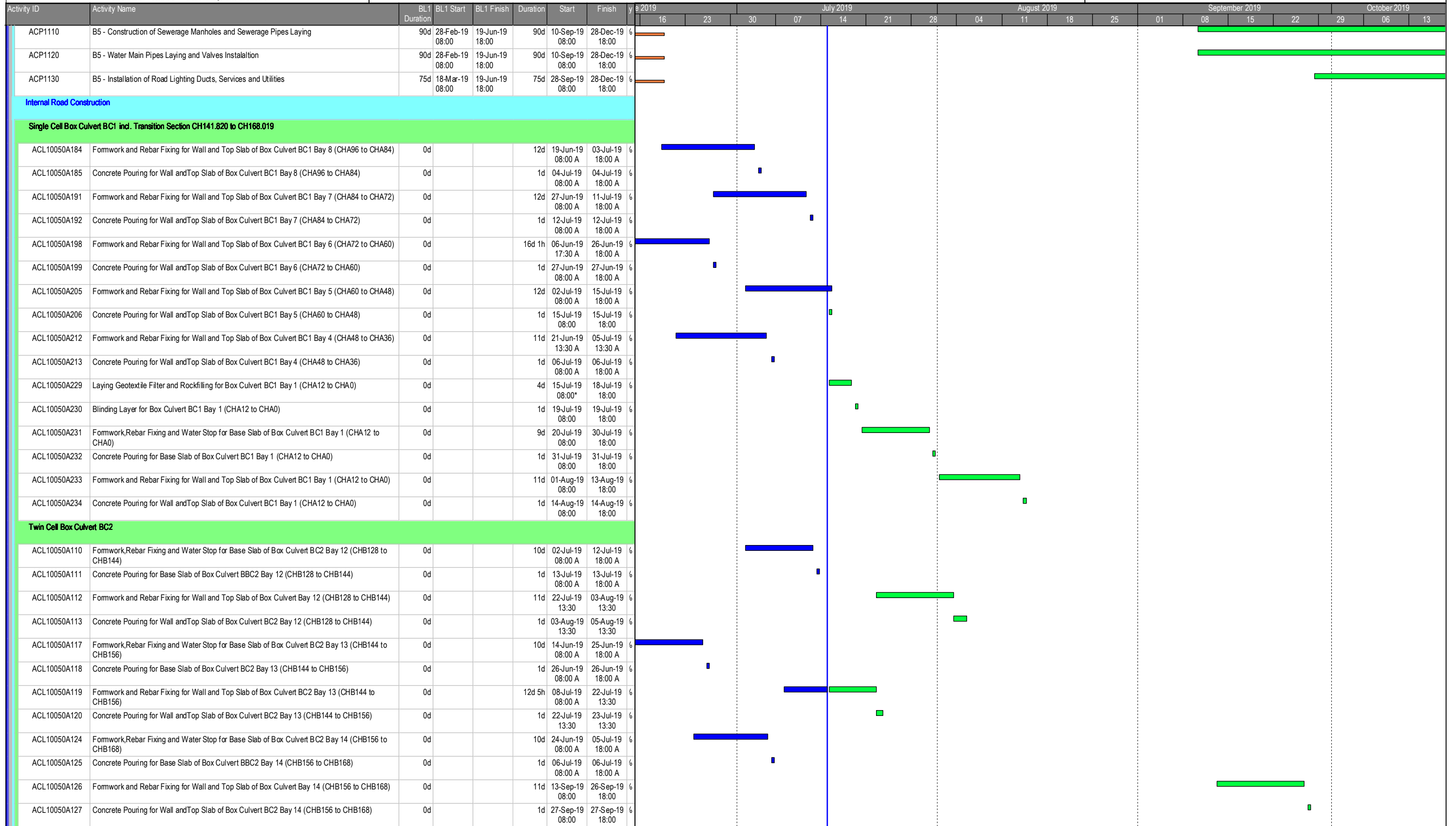
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ACS2162	C1b - Const Subway base slab between South & North Tower	0d			61d	24-May-19 09:00 A	05-Aug-19 18:00	%																				
ACS2172	C1b - Const Subway top slab & wall between South & North Tower	0d			21d	06-Aug-19 09:00	29-Aug-19 18:00	%																				
ACS2182	C1b - Install W/P membrane & backfill Subway	0d			60d	30-Aug-19 09:00	11-Nov-19 18:00	%																				
Underground Stormwater Retention Tank (Portion A1)																												
ACN1020A135	A1 - Const Zone B Wall Structure 2nd Lift	0d			41d	15-May-19 09:00 A	03-Jul-19 18:00 A	%																				
ACN1020A136	A1 - Const Zone B Wall Structure 3rd Lift	0d			48d 4h	04-Jul-19 14:00 A	29-Aug-19 18:00	%																				
ACN1020A145	A1 - Const Zone C Wall Structure 2nd Lift	0d			39d	15-May-19 09:00 A	01-Jul-19 18:00 A	%																				
ACN1020A146	A1 - Const Zone C Wall Structure 3rd Lift	0d			54d	02-Jul-19 08:00 A	02-Sep-19 18:00	%																				
ACN1020A155	A1 - Const Zone A Wall Structure 2nd Lift	0d			72d	24-May-19 09:00 A	17-Aug-19 18:00	%																				
ACN1020A156	A1 - Const Zone A Wall Structure 3rd Lift	0d			45d	19-Aug-19 09:00	12-Oct-19 18:00	%																				
ACN1020A195	A1 - Const Zone B Top Slab	0d			74d	22-May-19 09:00 A	17-Aug-19 18:00	%																				
ACN1020A205	A1 - Const Zone C Top Slab	0d			68d	04-Jun-19 09:00 A	23-Aug-19 18:00	%																				
ACN1020A215	A1 - Const Zone A Top Slab	0d			59d	04-Jul-19 09:00 A	10-Sep-19 18:00	%																				
Artificial Flood Attenuation Lake/ Underground Water Treatment Plant (Portion B4)																												
ACF1017a09	B4 - Excavation for retaining wall base slab bay 9 to 12	0d			39d	30-May-19 09:00 A	16-Jul-19 18:00	%																				
ACF1017a10	B4 - Bay 9 to 12 construction of retaining wall base slab	0d			12d	17-Jul-19 09:00	30-Jul-19 18:00	%																				
ACF1017a11	B4 - Bay 9 to 12 construction of retaining wall wall structure	0d			12d	24-Jul-19 09:00	06-Aug-19 18:00	%																				
ACF1017a13	B4 - Excavation for retaining wall base slab bay 22 to 24	0d			12d	17-Jul-19 09:00	30-Jul-19 18:00	%																				
ACF1017a14	B4 - Bay 22 to 24 construction of retaining wall base slab	0d			12d	31-Jul-19 09:00	13-Aug-19 18:00	%																				
ACF1017a15	B4 - Bay 22 to 24 construction of retaining wall wall structure	0d			12d	07-Aug-19 09:00	20-Aug-19 18:00	%																				
ACF1017a23	B4 - Bay 38 to 41 construction of retaining wall wall structure	0d			37d	12-Jun-19 09:00 A	25-Jul-19 18:00	%																				
ACF1017a33	B4 - Excavation for retaining wall base slab bay 46 to 49	0d			12d	15-Jul-19 09:00	27-Jul-19 18:00	%																				
ACF1017a43	B4 - Bay 46 to 49 construction of retaining wall base slab	0d			12d	29-Jul-19 09:00	10-Aug-19 18:00	%																				
ACF1017a53	B4 - Bay 46 to 49 construction of retaining wall wall structure	0d			12d	05-Aug-19 09:00	17-Aug-19 18:00	%																				
ACF1017a63	B4 - Excavation for retaining wall base slab bay 50 to 52	0d			12d	12-Aug-19 09:00	24-Aug-19 18:00	%																				
ACF1017a73	B4 - Bay 50 to 52 construction of retaining wall base slab	0d			12d	26-Aug-19 09:00	07-Sep-19 18:00	%																				
ACF1017a83	B4 - Bay 50 to 52 construction of retaining wall wall structure	0d			12d	09-Sep-19 09:00	23-Sep-19 18:00	%																				
ACF1040	B4 - Excavation for Underground Water Treatment Plant	60d	12-Dec-18 08:00	26-Feb-19 18:00	60d	24-Sep-19 08:00	04-Dec-19 18:00	%																				
Public Transportation Terminus (Portion B5)																												
ACP1049A005	B5 - Construct Pile Caps (PC2a) and Tie Beams (TB3b) at GL.B-D/1-9 (Stage 5)	0d			124d	16-Feb-19 08:00 A	18-Jul-19 18:00	%																				
ACP1080A001	B5 - Excavation for Construction of Footing of Noise Barrier Walls at GL.C-D/9 (Stage 6)	0d			9d	19-Jul-19 08:00	29-Jul-19 18:00	%																				
ACP1080A002	B5 - Construct Footing of Noise Barrier Walls at GL.C-D/9 (Stage 6)	0d			24d	30-Jul-19 08:00	26-Aug-19 18:00	%																				
ACP1080A003	B5 - Backfill Footing of Noise Barrier Walls at GL.B-D/9 & GL.C-D/9 (Stage 5 & 6)	0d			12d	27-Aug-19 08:00	09-Sep-19 18:00	%																				
ACP1100	B5 - Construction of Catchpit (SC1), Drainage Manholes and Drainage Pipes Laying	90d	28-Feb-19 08:00	19-Jun-19 18:00	90d	10-Sep-19 08:00	28-Dec-19 18:00	%																				

- Primary Baseline
- Forecast Work
- Actual Work
- Baseline Milestone
- Milestone

3 Month Rolling Programme

ARQ - Works Programme Rev.1 - 3MRP (15 Jul 2019)
19-Jul-19

Date	Revision	Checked	Approved

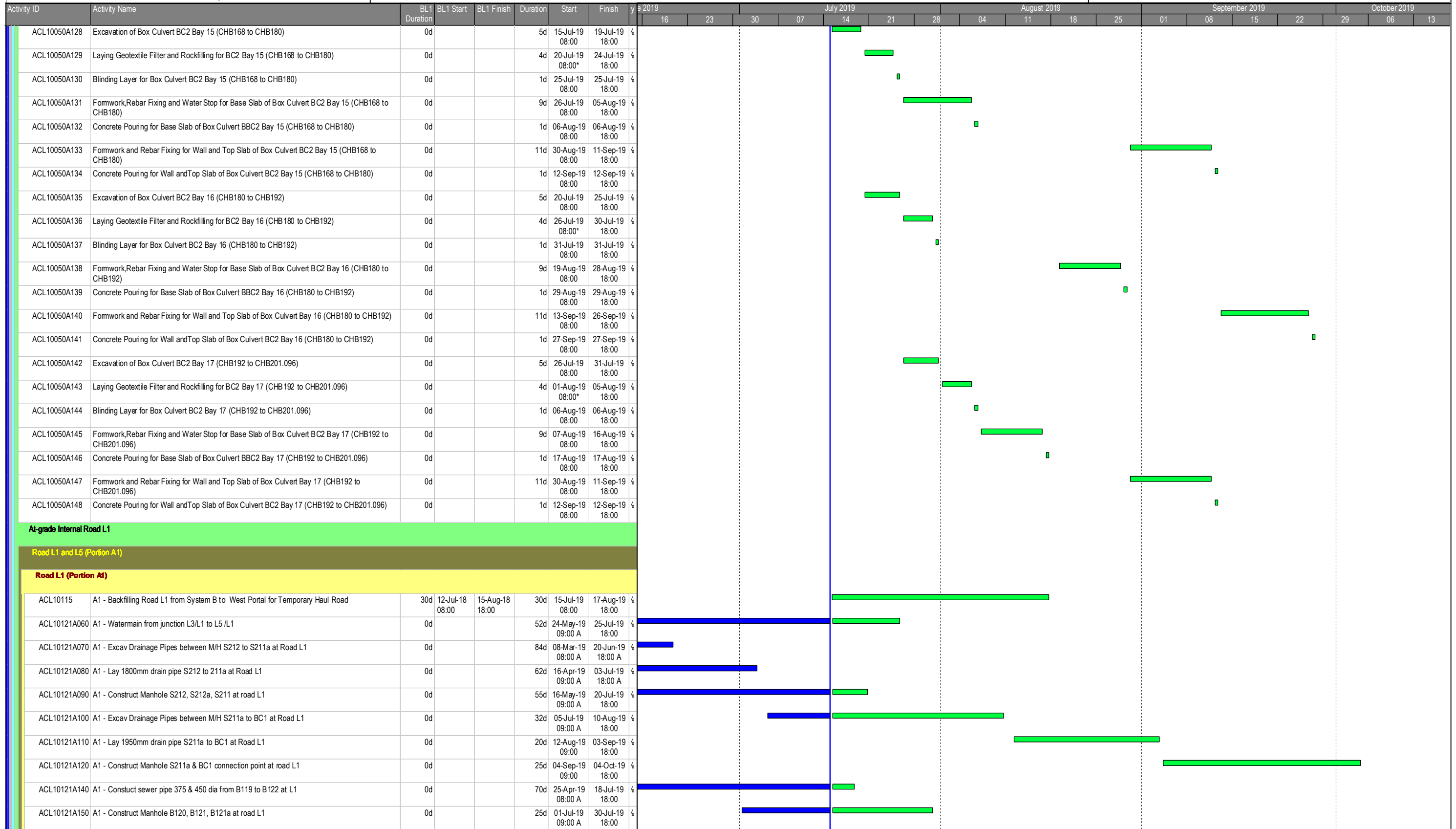


— Primary Baseline — Forecast Work
— Actual Work
◆ Baseline Milestone
◆ Milestone

3 Month Rolling Programme

ARQ - Works Programme Rev.1 - 3MRP (15 Jul 2019)
19-Jul-19

Date	Revision	Checked	Approved

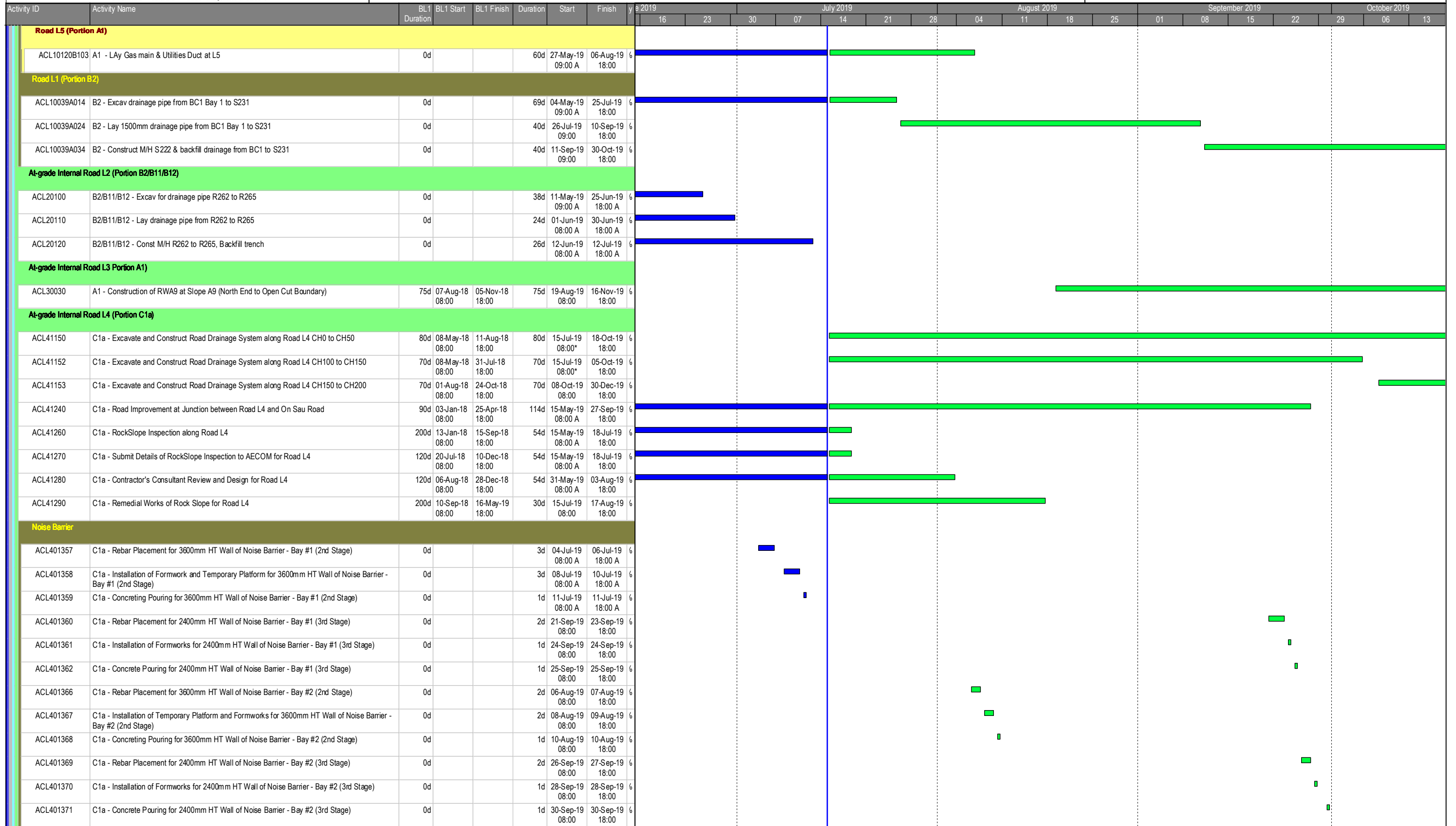


- █ Primary Baseline
- █ Forecast Work
- █ Actual Work
- ◆ Baseline Milestone
- ◆ Milestone

3 Month Rolling Programme

ARQ - Works Programme Rev.1 - 3MRP (15 Jul 2019)
19-Jul-19

Date	Revision	Checked	Approved



█ Primary Baseline █ Forecast Work
█ Actual Work
◆ Baseline Milestone
◆ Milestone

3 Month Rolling Programme

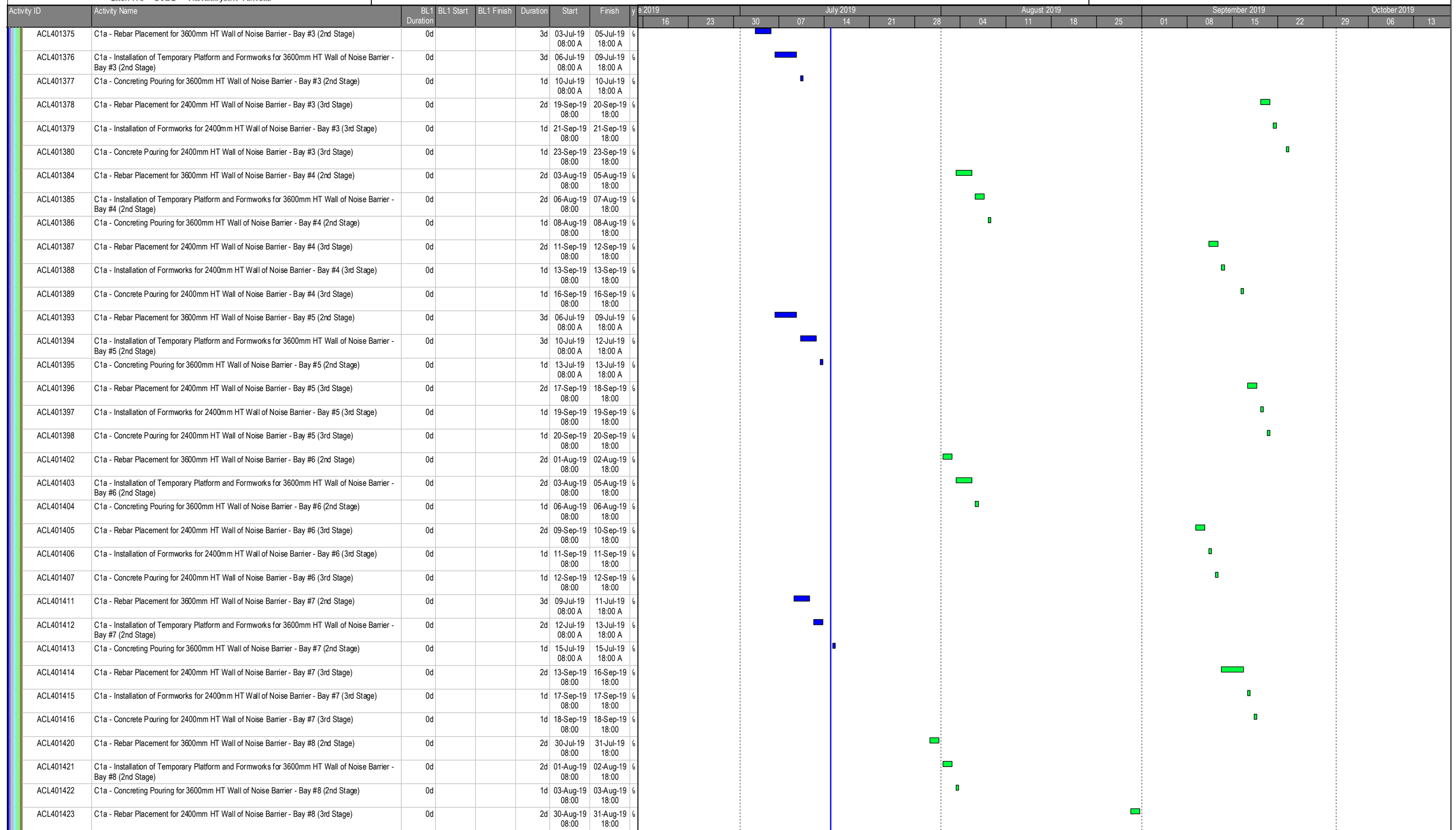
ARQ - Works Programme Rev.1 - 3MRP (15 Jul 2019)
19-Jul-19

Date	Revision	Checked	Approved



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

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

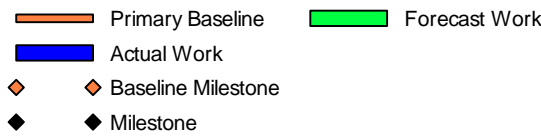
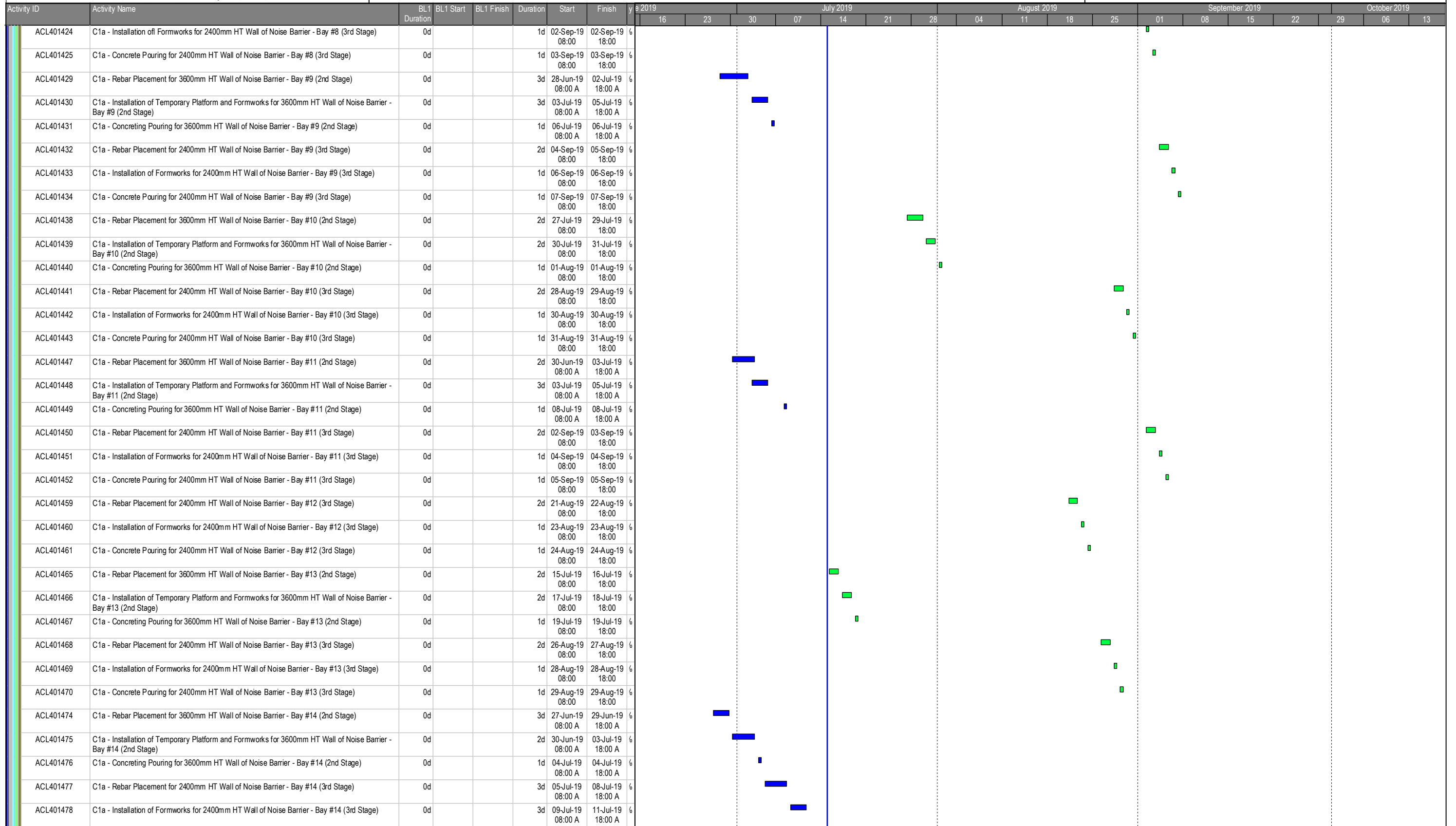


- Primary Baseline
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- ◆ Baseline Milestone
- ◆ Milestone

3 Month Rolling Programme

ARQ - Works Programme Rev.1 - 3MRP (15 Jul 2019)
19-Jul-19

Date	Revision	Checked	Approved



3 Month Rolling Programme
ARQ - Works Programme Rev.1 - 3MRP (15 Jul 2019)
19-Jul-19

Date	Revision	Checked	Approved

Activity ID	Activity Name	BL1 Duration	BL1 Start	BL1 Finish	Duration	Start	Finish	y	July 2019				August 2019				September 2019				October 2019		
									16	23	30	07	14	21	28	04	11	18	25	01	08	15	22
ACL401479	C1a - Concrete Pouring for 2400mm HT Wall of Noise Barrier - Bay #14 (3rd Stage)	0d			1d	12-Jul-19 08:00 A	12-Jul-19 18:00 A	6															
ACL401486	C1a - Rebar Placement for 2400mm HT Wall of Noise Barrier - Bay #15 (3rd Stage)	0d			2d	23-Aug-19 08:00	24-Aug-19 18:00	6															
ACL401487	C1a - Installation of Formworks for 2400mm HT Wall of Noise Barrier - Bay #15 (3rd Stage)	0d			1d	26-Aug-19 08:00	26-Aug-19 18:00	6															
ACL401488	C1a - Concrete Pouring for 2400mm HT Wall of Noise Barrier - Bay #15 (3rd Stage)	0d			1d	27-Aug-19 08:00	27-Aug-19 18:00	6															
ACL401492	C1a - Rebar Placement for 3600mm HT Wall of Noise Barrier - Bay #16 (2nd Stage)	0d			3d	28-Jun-19 08:00 A	02-Jul-19 18:00 A	6															
ACL401493	C1a - Installation of Temporary Platform and Formworks for 3600mm HT Wall of Noise Barrier - Bay #16 (2nd Stage)	0d			3d	03-Jul-19 08:00 A	05-Jul-19 18:00 A	6															
ACL401494	C1a - Concreting Pouring for 3600mm HT Wall of Noise Barrier - Bay #16 (2nd Stage)	0d			1d	06-Jul-19 08:00 A	06-Jul-19 18:00 A	6															
ACL401495	C1a - Rebar Placement for 2400mm HT Wall of Noise Barrier - Bay #16 (3rd Stage)	0d			3d	08-Jul-19 08:00 A	10-Jul-19 18:00 A	6															
ACL401496	C1a - Installation of Formworks for 2400mm HT Wall of Noise Barrier - Bay #16 (3rd Stage)	0d			2d	11-Jul-19 08:00 A	12-Jul-19 18:00 A	6															
ACL401497	C1a - Concrete Pouring for 2400mm HT Wall of Noise Barrier - Bay #16 (3rd Stage)	0d			1d	13-Jul-19 08:00 A	13-Jul-19 18:00 A	6															
ACL401504	C1a - Rebar Placement for 2400mm HT Wall of Noise Barrier - Bay #17 (3rd Stage)	0d			2d	16-Aug-19 08:00	17-Aug-19 18:00	6															
ACL401505	C1a - Installation of Formworks for 2400mm HT Wall of Noise Barrier - Bay #17 (3rd Stage)	0d			1d	19-Aug-19 08:00	19-Aug-19 18:00	6															
ACL401506	C1a - Concrete Pouring for 2400mm HT Wall of Noise Barrier - Bay #17 (3rd Stage)	0d			1d	20-Aug-19 08:00	20-Aug-19 18:00	6															
ACL401513	C1a - Rebar Placement for 2400mm HT Wall of Noise Barrier - Bay #18 (3rd Stage)	0d			2d	02-Jul-19 08:00 A	03-Jul-19 18:00 A	6															
ACL401514	C1a - Installation of Formworks for 2400mm HT Wall of Noise Barrier - Bay #18 (3rd Stage)	0d			2d	04-Jul-19 08:00 A	05-Jul-19 18:00 A	6															
ACL401515	C1a - Concrete Pouring for 2400mm HT Wall of Noise Barrier - Bay #18 (3rd Stage)	0d			1d	06-Jul-19 08:00 A	06-Jul-19 18:00 A	6															
ACL401522	C1a - Rebar Placement for 2400mm HT Wall of Noise Barrier - Bay #19 (3rd Stage)	0d			2d	14-Aug-19 08:00	15-Aug-19 18:00	6															
ACL401523	C1a - Installation of Formworks for 2400mm HT Wall of Noise Barrier - Bay #19 (3rd Stage)	0d			1d	16-Aug-19 08:00	16-Aug-19 18:00	6															
ACL401524	C1a - Concrete Pouring for 2400mm HT Wall of Noise Barrier - Bay #19 (3rd Stage)	0d			1d	17-Aug-19 08:00	17-Aug-19 18:00	6															
ACL401531	C1a - Rebar Placement for 2400mm HT Wall of Noise Barrier - Bay #20 (3rd Stage)	0d			2d	02-Jul-19 08:00 A	03-Jul-19 18:00 A	6															
ACL401532	C1a - Installation of Formworks for 2400mm HT Wall of Noise Barrier - Bay #20 (3rd Stage)	0d			2d	04-Jul-19 08:00 A	05-Jul-19 18:00 A	6															
ACL401533	C1a - Concrete Pouring for 2400mm HT Wall of Noise Barrier - Bay #20 (3rd Stage)	0d			1d	06-Jul-19 08:00 A	06-Jul-19 18:00 A	6															
ACL401540	C1a - Rebar Placement for 2400mm HT Wall of Noise Barrier - Bay #21 (3rd Stage)	0d			2d	08-Jul-19 08:00 A	09-Jul-19 18:00 A	6															
ACL401541	C1a - Installation of Formworks for 2400mm HT Wall of Noise Barrier - Bay #21 (3rd Stage)	0d			2d	10-Jul-19 08:00 A	11-Jul-19 18:00 A	6															
ACL401542	C1a - Concrete Pouring for 2400mm HT Wall of Noise Barrier - Bay #21 (3rd Stage)	0d			1d	12-Jul-19 08:00 A	12-Jul-19 18:00 A	6															
ACL401546	C1a - Rebar Placement for 3600mm HT Wall of Noise Barrier - Bay #22 (2nd Stage)	0d			3d	25-Jun-19 08:00 A	27-Jun-19 18:00 A	6															
ACL401547	C1a - Installation of Temporary Platform and Formworks for 3600mm HT Wall of Noise Barrier - Bay #22 (2nd Stage)	0d			2d	28-Jun-19 08:00 A	30-Jun-19 18:00 A	6															
ACL401548	C1a - Concreting Pouring for 3600mm HT Wall of Noise Barrier - Bay #22 (2nd Stage)	0d			2d	02-Jul-19 08:00 A	03-Jul-19 18:00 A	6															
ACL401549	C1a - Rebar Placement for 2400mm HT Wall of Noise Barrier - Bay #22 (3rd Stage)	0d			2d	04-Jul-19 08:00 A	05-Jul-19 18:00 A	6															
ACL401550	C1a - Installation of Formworks for 2400mm HT Wall of Noise Barrier - Bay #22 (3rd Stage)	0d			2d	06-Jul-19 08:00 A	08-Jul-19 18:00 A	6															
ACL401551	C1a - Concrete Pouring for 2400mm HT Wall of Noise Barrier - Bay #22 (3rd Stage)	0d			1d	09-Jul-19 08:00 A	09-Jul-19 18:00 A	6															
ACL401558	C1a - Rebar Placement for 2400mm HT Wall of Noise Barrier - Bay #23 (3rd Stage)	0d			2d	12-Aug-19 08:00	13-Aug-19 18:00	6															
ACL401559	C1a - Installation of Formworks for 2400mm HT Wall of Noise Barrier - Bay #23 (3rd Stage)	0d			1d	14-Aug-19 08:00	14-Aug-19 18:00	6															
ACL401560	C1a - Concrete Pouring for 2400mm HT Wall of Noise Barrier - Bay #23 (3rd Stage)	0d			1d	15-Aug-19 08:00	15-Aug-19 18:00	6															

- █ Primary Baseline
- █ Forecast Work
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- ◆ Milestone

3 Month Rolling Programme

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19-Jul-19

Date	Revision	Checked	Approved

Activity ID	Activity Name	BL1 Duration	BL1 Start	BL1 Finish	Duration	Start	Finish	y	2019		July 2019				August 2019				September 2019				October 2019					
									16	23	30	07	14	21	28	04	11	18	25	01	08	15	22	29	06	13		
ACL40120A002	C1a - Back Fill RWA12 - Bay #21 and 22 upward +163mPD (15 layers @ 4 layers/day)	0d			25d	24-Aug-19 08:00	23-Sep-19 18:00	%																				
ACL40120B031	C1a - Construction of RWA 12 - Bay 16 & 15 upto +161mPD	0d			30d	26-Jul-19 09:00	29-Aug-19 18:00	%																				
ACL40120B032	C1a - Backfill RWA12 - Bay 16 & 15 upto +161mPD	0d			25d	30-Aug-19 09:00	28-Sep-19 18:00	%																				
ACL40120B033	C1a - Construction of RWA 12 - Bay 16 & 15 upto +165mPD	0d			30d	30-Sep-19 09:00	05-Nov-19 18:00	%																				
ACL40120B040	C1a - Excavate RWA12 - Bay 8 & Bay 12	0d			25d	29-May-19 08:00 A	27-Jun-19 18:00 A	%																				
ACL40120B050	C1a - Construction of RWA12 - Bay 11 & 12 Base Slab	0d			27d	24-Jun-19 08:00 A	25-Jul-19 18:00	%																				
ACL40120B060	C1a - Construction of RWA12 - Bay 8a & 9a Base Slab	0d			21d	14-Jun-19 08:00 A	09-Jul-19 18:00 A	%																				
ACL40120B070	C1a - Excavate RWA12 - Bay 13 & Bay 14	0d			14d	26-Jul-19 09:00	10-Aug-19 18:00	%																				
ACL40120B080	C1a - Construction of RWA12 - Bay 13 & 14 Base Slab	0d			22d	12-Aug-19 09:00	05-Sep-19 18:00	%																				
ACL40120B090	C1a - Construction of RWA12 - Bay 11 & 12 Wall structure	0d			26d	26-Jul-19 09:00	24-Aug-19 18:00	%																				
ACL40120B100	C1a - Construction of RWA12 - Bay 8a & 9a Wall structure	0d			26d	16-Aug-19 09:00	16-Sep-19 18:00	%																				
ACL40120B110	C1a - Construction of RWA12 - Bay 13 & 14 Wall structure	0d			26d	06-Sep-19 09:00	09-Oct-19 18:00	%																				
ACL40955	C1a - Excavate RWA12 - Bay #1 to 8	78d	26-Jul-17 08:00	26-Oct-17 18:00	60d	10-Oct-19 08:00	18-Dec-19 18:00	%																				
Retaining Wall RWA18																												
ACL40275	C1a - Back Filling Retaining Wall RWA18 (5 bays)	45d	10-Mar-18 08:00	07-May-18 18:00	43d	15-May-19 08:00 A	05-Jul-19 18:00 A	%																				
WSD Access Road (Portion B5)																												
ACL60010	B5 - Site Clearance and Tree Felling	46d	19-Dec-17 08:00	13-Feb-18 18:00	46d	15-Jul-19 08:00	05-Sep-19 18:00	%																				
ACL60020	B5 - Drainage, Sewerage, Water mains and Underground Utilities laying (approx 600m) along WSD Access Road	120d	14-Feb-18 08:00	16-Jul-18 18:00	120d	06-Sep-19 08:00	03-Feb-20 18:00	%																				
Portion A1																												
Site Formation																												
ACA10075	A1 - Site Clearance in Portion A1 (R2-8)	27d	21-Jun-18 08:00	23-Jul-18 18:00	27d	15-Jul-19 08:00*	14-Aug-19 18:00	%																				
ACA10080	A1 - Site Clearance in Portion A1 (OU, G/I C-1 and RS-1)	45d	02-Oct-18 08:00	23-Nov-18 18:00	45d	15-Jul-19 08:00*	04-Sep-19 18:00	%																				
ACA10090	A1 - Site Clearance in Portion A1 (G-3 and G-4)	18d	24-Jul-18 08:00	13-Aug-18 18:00	18d	15-Aug-19 08:00	04-Sep-19 18:00	%																				
ACA10100	A1 - Site Clearance in Portion A1 (E-2)	24d	08-Nov-18 08:00	05-Dec-18 18:00	24d	15-Jul-19 08:00*	10-Aug-19 18:00	%																				
Portion B1																												
Site Formation																												
ACB100037A002	B1 - Installation of Wire Mesh for Slope 11NE-D/C978	0d			56d	15-Apr-19 08:00 A	24-Jun-19 18:00 A	%																				
ACB10130	B1 - JV Prepare and Submit Rock Slope Mapping Report for Slope 11NE-D/C947 (2000 sqm) (Provisional Work)	6d	22-Mar-19 08:00	28-Mar-19 18:00	13d	10-Jun-19 08:00 A	24-Jun-19 18:00 A	%																				
ACB10140	B1 - RE Review and Approve Rock Slope Mapping Report for Slope 11NE-D/C947 (2000 sqm) (Provisional Work)	6d	29-Mar-19 08:00	04-Apr-19 18:00	11d	02-Jul-19 08:00 A	13-Jul-19 18:00 A	%																				
ACB10150	B1 - Rock Slope Stabilization Measures (Instructed by RE) for Slope 11NE-D/C947 (2000 sqm)	48d	11-May-19 08:00	08-Jul-19 18:00	48d	15-Jul-19 08:00	07-Sep-19 18:00	%																				
ACB10180	B1 - Erection of Scaffold for Slope 11NE-D/C949 (1600 sqm) - 150sqm/d	11d	20-Jul-18 08:00	01-Aug-18 18:00	16d	06-Jun-19 08:00 A	25-Jun-19 18:00 A	%																				
ACB10190	B1 - Rock Slope Mapping (Instructed by RE) for Slope 11NE-D/C949 (1600 sqm) - 80sqm/d (Provisional Work)	20d	02-Aug-18 08:00	24-Aug-18 18:00	20d	29-Jun-19 08:00 A	23-Jul-19 18:00	%																				
ACB10200	B1 - JV Prepare and Submit Rock Slope Mapping Report for Slope 11NE-D/C949 (1600 sqm) (Provisional Work)	6d	25-Aug-18 08:00	31-Aug-18 18:00	6d	24-Jul-19 08:00	30-Jul-19 18:00	%																				
ACB10210	B1 - RE Review and Approve Rock Slope Mapping Report for Slope 11NE-D/C949 (1600 sqm) (Provisional Work)	6d	01-Sep-18 08:00	07-Sep-18 18:00	6d	31-Jul-19 08:00	06-Aug-19 18:00	%																				

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Activity ID	Activity Name	BL1 Duration	BL1 Start	BL1 Finish	Duration	Start	Finish	2019																					
								June 2019			July 2019			August 2019			September 2019			October 2019									
								16	23	30	07	14	21	28	04	11	18	25	01	08	15	22	29	06	13				
ACB10220	B1 - Rock Slope Stabilization Measures (Instructed by RE) for Slope 11NE-D/C949 (1600 sqm) (Provisional Work)	48d	13-Sep-18 08:00	10-Nov-18 18:00	48d	10-Aug-19 08:00	08-Oct-19 18:00	[Gantt bar: 10-Aug-19 to 08-Oct-19]																					
ACB10290	B1 - Rock Slope Stabilization Measures (Instructed by RE) for Slope 11NE-D/C981 (500 sqm) (Provisional Work)	48d	19-Jul-18 08:00	12-Sep-18 18:00	49d	15-May-19 08:00 A	12-Jul-19 18:00 A	[Gantt bar: 15-May-19 to 12-Jul-19]																					
ACB10480	B1 - RE Review and Approve Rock Slope Mapping Report for Slope 11NE-D/C976 (800 sqm) (Provisional Work)	6d	23-Oct-18 08:00	29-Oct-18 18:00	30d	14-Jun-19 08:00 A	19-Jul-19 18:00	[Gantt bar: 14-Jun-19 to 19-Jul-19]																					
ACB10630	B1 - Rock Slope Stabilization Measures (Instructed by RE) for Slope 11NE-D/C986 (800 sqm) (Provisional Work)	48d	10-Jan-19 08:00	09-Mar-19 18:00	57d	16-May-19 08:00 A	23-Jul-19 18:00	[Gantt bar: 16-May-19 to 23-Jul-19]																					
ACB10750	B1 - Rock Slope Stabilization Measures (Instructed by RE) for Slope 11NE-D/C999 (600 sqm)	48d	30-Dec-17 08:00	28-Feb-18 18:00	52d	29-May-19 08:00 A	30-Jul-19 18:00	[Gantt bar: 29-May-19 to 30-Jul-19]																					
Portion B5																													
Portion B5 North & East Side adjacent to Portion B2 and Pumping Station and Reservoirs																													
Site Formation																													
ACB50180	B5 - RE Review and Approve Detailed Design of RSSM for Slope 11NE-D/C1000 (200 sqm) (Provisional Work)	6d	03-May-19 08:00	09-May-19 18:00	9d	12-Jun-19 08:00 A	21-Jun-19 18:00 A	[Gantt bar: 12-Jun-19 to 21-Jun-19]																					
ACB50190	B5 - Rock Slope Stabilization Measures for Slope 11NE-D/C1000 (200 sqm) (Provisional Work)	48d	10-May-19 08:00	06-Jul-19 18:00	46d	22-Jun-19 08:00 A	15-Aug-19 18:00	[Gantt bar: 22-Jun-19 to 15-Aug-19]																					
ACB50200	B5 - Anchorage Installation of Scaffold for Slope 11NE-D/C982 (1600 sqm)	12d	25-Apr-19 08:00	09-May-19 18:00	14d	04-Jun-19 08:00 A	20-Jun-19 18:00 A	[Gantt bar: 04-Jun-19 to 20-Jun-19]																					
ACB50210	B5 - Erection of Scaffold for Slope 11NE-D/C982 (1600 sqm) - 150sqm/d	11d	10-May-19 08:00	22-May-19 18:00	12d	21-Jun-19 08:00 A	05-Jul-19 18:00 A	[Gantt bar: 21-Jun-19 to 05-Jul-19]																					
ACB50220	B5 - Rock Slope Mapping (Instructed by RE) for Slope 11NE-D/C982 (1600 sqm) - 80sqm/d (Provisional Work)	20d	23-May-19 08:00	15-Jun-19 18:00	17d	06-Jul-19 08:00 A	25-Jul-19 18:00	[Gantt bar: 06-Jul-19 to 25-Jul-19]																					
ACB50230	B5 - JV Prepare and Submit Detailed Design of RSSM for Slope 11NE-D/C982 (1600 sqm) (Provisional Work)	6d	17-Jun-19 08:00	22-Jun-19 18:00	6d	26-Jul-19 08:00	01-Aug-19 18:00	[Gantt bar: 26-Jul-19 to 01-Aug-19]																					
ACB50240	B5 - RE Review and Approve Detailed Design of RSSM for Slope 11NE-D/C982 (1600 sqm) (Provisional Work)	6d	24-Jun-19 08:00	29-Jun-19 18:00	6d	02-Aug-19 08:00	08-Aug-19 18:00	[Gantt bar: 02-Aug-19 to 08-Aug-19]																					
ACB50250	B5 - Rock Slope Stabilization Measures for Slope 11NE-D/C982 (1600 sqm) (Provisional Work)	48d	08-Jul-19 08:00	31-Aug-19 18:00	48d	16-Aug-19 08:00	14-Oct-19 18:00	[Gantt bar: 16-Aug-19 to 14-Oct-19]																					
ACB50300	B5 - RE Review and Approve Detailed Design of RSSM for Slope 11NE-D/C983 (800 sqm) (Provisional Work)	6d	27-Jul-19 08:00	02-Aug-19 18:00	30d	11-Jun-19 08:00 A	16-Jul-19 18:00	[Gantt bar: 11-Jun-19 to 16-Jul-19]																					
ACB50320	B5 - Anchorage Installation of Scaffold for Slope 11NE-B/C1014 (300 sqm)	12d	20-Jul-19 08:00	02-Aug-19 18:00	15d	03-Jun-19 08:00 A	20-Jun-19 18:00 A	[Gantt bar: 03-Jun-19 to 20-Jun-19]																					
ACB50330	B5 - Erection of Scaffold for Slope 11NE-B/C1014 (300 sqm) - 150sqm/d	2d	03-Aug-19 08:00	05-Aug-19 18:00	5d	21-Jun-19 08:00 A	26-Jun-19 18:00 A	[Gantt bar: 21-Jun-19 to 26-Jun-19]																					
ACB50340	B5 - Rock Slope Mapping (Instructed by RE) for Slope 11NE-B/C1014 (300 sqm) - 80sqm/d (Provisional Work)	4d	06-Aug-19 08:00	09-Aug-19 18:00	5d	28-Jun-19 08:00 A	04-Jul-19 18:00 A	[Gantt bar: 28-Jun-19 to 04-Jul-19]																					
ACB50350	B5 - JV Prepare and Submit Detailed Design of RSSM for Slope 11NE-B/C1014 (300 sqm) (Provisional Work)	6d	10-Aug-19 08:00	16-Aug-19 18:00	6d	15-Jul-19 08:00	20-Jul-19 18:00	[Gantt bar: 15-Jul-19 to 20-Jul-19]																					
ACB50360	B5 - RE Review and Approve Detailed Design of RSSM for Slope 11NE-B/C1014 (300 sqm) (Provisional Work)	6d	17-Aug-19 08:00	23-Aug-19 18:00	6d	22-Jul-19 08:00	27-Jul-19 18:00	[Gantt bar: 22-Jul-19 to 27-Jul-19]																					
ACB50390	B5 - Erection of Scaffold for Slope 11NE-B/C902 (1200 sqm) - 150sqm/d	10d	24-Aug-19 08:00	04-Sep-19 18:00	14d	04-Jun-19 08:00 A	20-Jun-19 18:00 A	[Gantt bar: 04-Jun-19 to 20-Jun-19]																					
ACB50400	B5 - Rock Slope Mapping (Instructed by RE) for Slope 11NE-B/C902 (1200 sqm) - 80sqm/d (Provisional Work)	15d	05-Sep-19 08:00	23-Sep-19 18:00	9d	24-Jun-19 08:00 A	04-Jul-19 18:00 A	[Gantt bar: 24-Jun-19 to 04-Jul-19]																					
ACB50410	B5 - JV Prepare and Submit Detailed Design of RSSM for Slope 11NE-B/C902 (1200 sqm) (Provisional Work)	6d	24-Sep-19 08:00	30-Sep-19 18:00	7d	08-Jul-19 08:00 A	15-Jul-19 18:00	[Gantt bar: 08-Jul-19 to 15-Jul-19]																					
ACB50420	B5 - RE Review and Approve Detailed Design of RSSM for Slope 11NE-B/C902 (1200 sqm) (Provisional Work)	6d	02-Oct-19 08:00	09-Oct-19 18:00	6d	16-Jul-19 08:00	22-Jul-19 18:00	[Gantt bar: 16-Jul-19 to 22-Jul-19]																					
ACB50440	B5 - Anchorage Installation of Scaffold for Slope 11NE-D/C949 (1800 sqm)	12d	24-Sep-19 08:00	09-Oct-19 18:00	12d	15-Jul-19 08:00	27-Jul-19 18:00	[Gantt bar: 15-Jul-19 to 27-Jul-19]																					
ACB50450	B5 - Erection of Scaffold for Slope 11NE-D/C949 (1800 sqm) - 150sqm/d	6d	10-Oct-19 08:00	16-Oct-19 18:00	6d	29-Jul-19 08:00	03-Aug-19 18:00	[Gantt bar: 29-Jul-19 to 03-Aug-19]																					
ACB50460	B5 - Rock Slope Mapping (Instructed by RE) for Slope 11NE-D/C949 (1800 sqm) - 80sqm/d (Provisional Work)	23d	17-Oct-19 08:00	12-Nov-19 18:00	23d	05-Aug-19 08:00	30-Aug-19 18:00	[Gantt bar: 05-Aug-19 to 30-Aug-19]																					
ACB50470	B5 - JV Prepare and Submit Detailed Design of RSSM for Slope 11NE-D/C949 (1800 sqm) (Provisional Work)	6d	13-Nov-19 08:00	19-Nov-19 18:00	6d	31-Aug-19 08:00	06-Sep-19 18:00	[Gantt bar: 31-Aug-19 to 06-Sep-19]																					
ACB50480	B5 - RE Review and Approve Detailed Design of RSSM for Slope 11NE-D/C949 (1800 sqm) (Provisional Work)	6d	20-Nov-19 08:00	26-Nov-19 18:00	6d	07-Sep-19 08:00	13-Sep-19 18:00	[Gantt bar: 07-Sep-19 to 13-Sep-19]																					
ACB50500	B5 - Material and Equipment Mobilization up Hill for Slope 11NE-D/C948 (1400 sqm)	7d	13-Nov-19 08:00	20-Nov-19 18:00	7d	31-Aug-19 08:00	07-Sep-19 18:00	[Gantt bar: 31-Aug-19 to 07-Sep-19]																					
ACB50510	B5 - Anchorage Installation of Scaffold for Slope 11NE-D/C948 (1400 sqm)	12d	21-Nov-19 08:00	04-Dec-19 18:00	12d	09-Sep-19 08:00	23-Sep-19 18:00	[Gantt bar: 09-Sep-19 to 23-Sep-19]																					
ACB50520	B5 - Erection of Scaffold for Slope 11NE-D/C948 (1400 sqm) - 150sqm/d	10d	05-Dec-19 08:00	16-Dec-19 18:00	10d	24-Sep-19 08:00	05-Oct-19 18:00	[Gantt bar: 24-Sep-19 to 05-Oct-19]																					

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19-Jul-19

Date	Revision	Checked	Approved

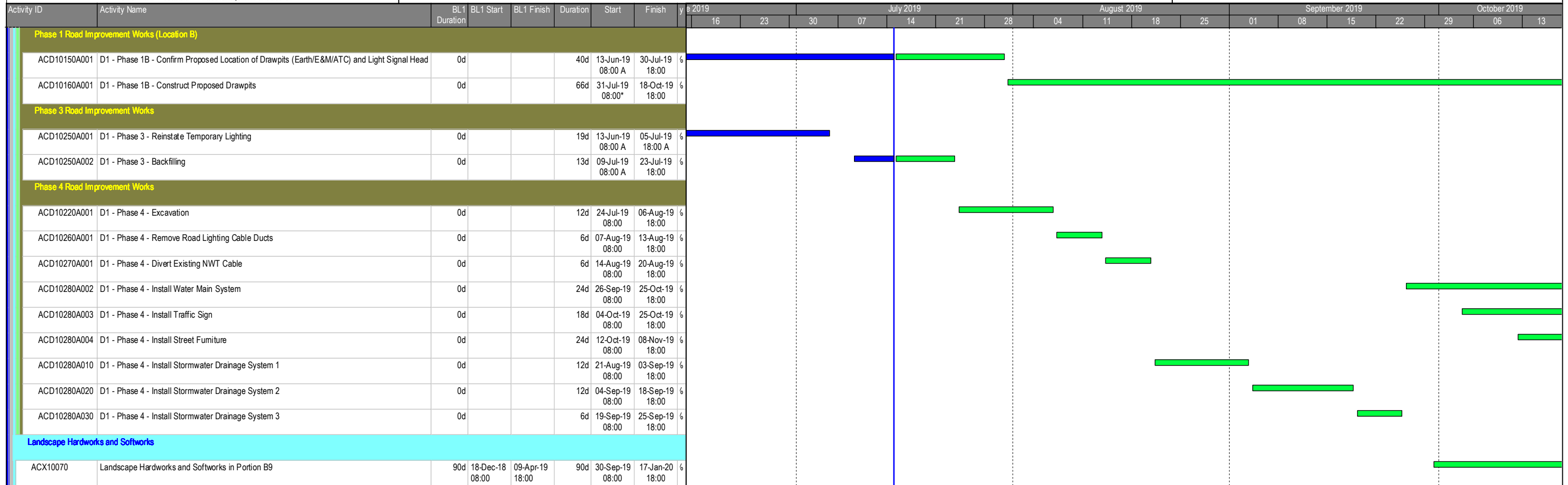
Activity ID	Activity Name	BL1 Duration	BL1 Start	BL1 Finish	Duration	Start	Finish	y	June 2019				July 2019				August 2019				September 2019				October 2019	
									16	23	30	07	14	21	28	04	11	18	25	01	08	15	22	29	06	13
ACB50530	B5 - Rock Slope Mapping (Instructed by RE) for Slope 11NE-D/C948 (1400 sqm) - 80sqm/d (Provisional Work)	18d	17-Dec-19 08:00	09-Jan-20 18:00	18d	08-Oct-19 08:00	28-Oct-19 18:00	%																		
ACB50630	B5 - Rock Slope Stabilization Measures for Slope 11NE-B/C1013 (700 sqm) (Provisional Work)	48d	26-Jun-20 08:00	21-Aug-20 18:00	52d	15-May-19 08:00 A	16-Jul-19 18:00	%																		
Portion B9																										
Site Formation																										
ACB90010	B9 - Site Clearance in Portion B9	18d	28-Aug-18 08:00	17-Sep-18 18:00	40d	15-May-19 08:00 A	02-Jul-19 18:00 A	%																		
ACB90020	B9 - Site Formation in Portion B9	45d	18-Sep-18 08:00	12-Nov-18 18:00	40d	09-Jul-19 08:00 A	23-Aug-19 18:00	%																		
ACB90030	B9 - Construct New U-Channel (225U,525U and 675U; approx 70m) and Catchpits (4nos)	30d	13-Nov-18 08:00	17-Dec-18 18:00	30d	24-Aug-19 08:00	28-Sep-19 18:00	%																		
Portion B13																										
Site Formation																										
ACB13010	B13 - Site Clearance in Portion B13	40d	11-May-18 08:00	28-Jun-18 18:00	40d	15-Jul-19 08:00*	29-Aug-19 18:00	%																		
ACB13020	B13 - Site Formation for Portion B13	90d	29-Jun-18 08:00	15-Oct-18 18:00	90d	31-Jul-19 08:00	15-Nov-19 18:00	%																		
Portion C1b																										
Site Formation																										
ACC100110	C1b - Construct Surface Drainage, Catch Pits and Stairway at Slope A5 1	0d			12d	15-Jul-19 08:00	27-Jul-19 18:00	%																		
ACC100120	C1b - Construct Surface Drainage, Catch Pits and Stairway at Slope A5 2	0d			12d	29-Jul-19 08:00	10-Aug-19 18:00	%																		
ACC100130	C1b - Construct Surface Drainage, Catch Pits and Stairway at Slope A5 3	0d			12d	12-Aug-19 08:00	24-Aug-19 18:00	%																		
ACC100140	C1b - Construct Surface Drainage, Catch Pits and Stairway at Slope A5 1	0d			12d	26-Aug-19 08:00	07-Sep-19 18:00	%																		
ACC100150	C1b - Construct Surface Drainage, Catch Pits and Stairway at Slope A5 1	0d			12d	09-Sep-19 08:00	23-Sep-19 18:00	%																		
ACC100160	C1b - Construct Surface Drainage, Catch Pits and Stairway at Slope A5 1	0d			5d	24-Sep-19 08:00	28-Sep-19 18:00	%																		
ACC100210	C1b - Construct Manholes (5nos) and associated Sewerage Pipes 1	0d			12d	15-Jul-19 08:00	27-Jul-19 18:00	%																		
ACC100220	C1b - Construct Manholes (5nos) and associated Sewerage Pipes 2	0d			12d	29-Jul-19 08:00	10-Aug-19 18:00	%																		
ACC100230	C1b - Construct Manholes (5nos) and associated Sewerage Pipes 3	0d			12d	12-Aug-19 08:00	24-Aug-19 18:00	%																		
ACC100240	C1b - Construct Manholes (5nos) and associated Sewerage Pipes 4	0d			12d	26-Aug-19 08:00	07-Sep-19 18:00	%																		
ACC100250	C1b - Construct Manholes (5nos) and associated Sewerage Pipes 5	0d			12d	16-Sep-19 08:00	28-Sep-19 18:00	%																		
ACC10030	C1b - Upgrading Existing 225 to 450mm dia. and Re-construct Existing Manholes (5nos)	60d	08-Dec-18 08:00	22-Feb-19 18:00	60d	30-Aug-19 08:00	11-Nov-19 18:00	%																		
Portion C1c																										
Site Formation																										
ACC20010	C1c - Site Clearance in Portion C1c (Tentatively dependent on XP approval)	30d	14-Apr-18 08:00	19-May-18 18:00	30d	15-Jul-19 08:00*	17-Aug-19 18:00	%																		
ACC20020	C1c - Excavation of Supports of 400 dia. Exposed Pipeline and Concreting for Supports in Portion C1c	30d	21-May-18 08:00	26-Jun-18 18:00	30d	19-Aug-19 08:00	23-Sep-19 18:00	%																		
ACC20021	C1c - Install 400 dia. MS Exposed Pipe on Existing Soil Slope Surface and Cast Thrust Blocks alongside Pipeline	60d	09-Jun-18 08:00	20-Aug-18 18:00	60d	06-Sep-19 08:00	18-Nov-19 18:00	%																		
Portion D1																										
Road Improvement at Po Lam Road																										
Phase 1 Road Improvement Works (Location A)																										
ACD10120A001	D1 - Phase 1A - Re-align Kerb and Reinstate Footpath	0d			28d	29-May-19 08:00 A	02-Jul-19 18:00 A	%																		

- ▬ Primary Baseline
- ▬ Forecast Work
- ▬ Actual Work
- ◆ Baseline Milestone
- ◆ Milestone

3 Month Rolling Programme

ARQ - Works Programme Rev.1 - 3MRP (15 Jul 2019)
19-Jul-19

Date	Revision	Checked	Approved



- Primary Baseline
- Forecast Work
- Actual Work
- Baseline Milestone
- Milestone

3 Month Rolling Programme

ARQ - Works Programme Rev.1 - 3MRP (15 Jul 2019)
19-Jul-19

Date	Revision	Checked	Approved

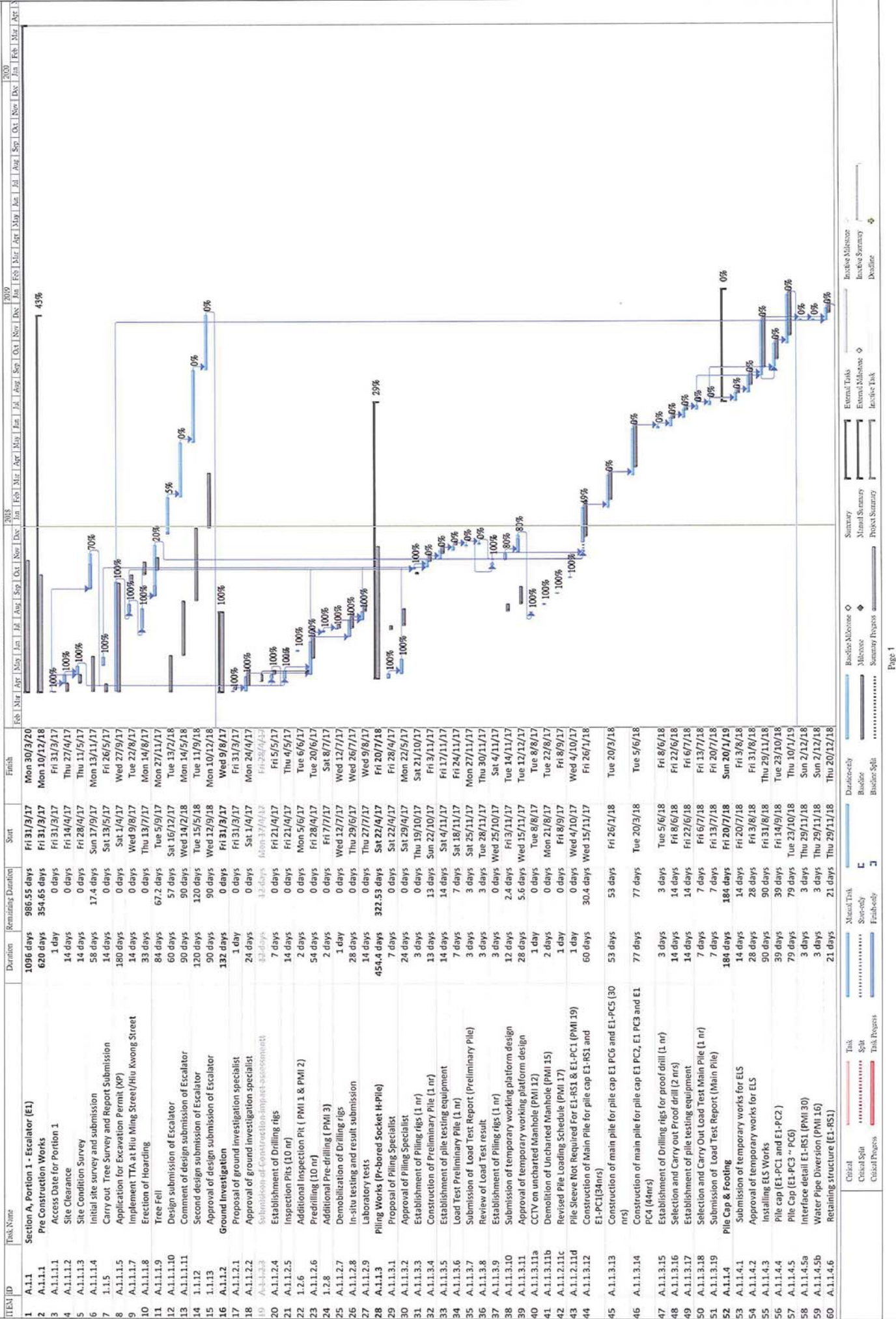
CEDD Contract No. NTE/07/2016

**Environmental Team for Development of Anderson Road Quarry Site – Site Formation
and Associated Infrastructure Works**

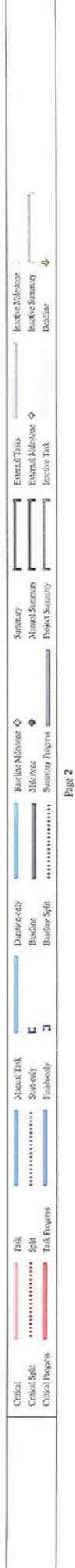
Monthly Environmental Monitoring & Audit Report (July 2019)

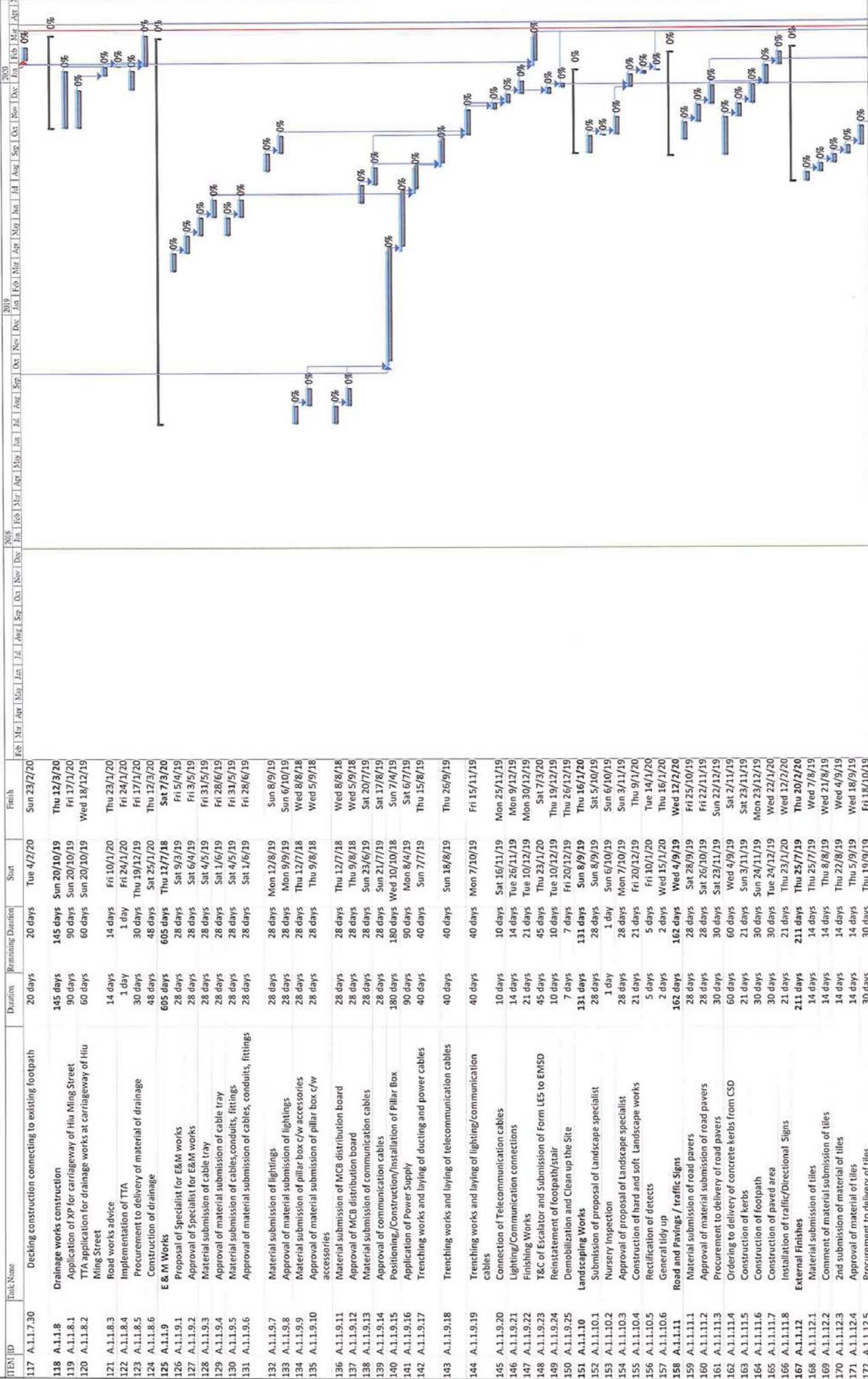


Contract 2 (NE/2016/05)



ITEM ID	Task Name	Duration	Remaining/Duration	Start	Finish
61	A.1.1.4.7	28 days	28 days	Thu 2/8/18	Wed 29/8/18
62	A.1.1.4.8	28 days	28 days	Thu 30/8/18	Thu 26/9/18
63	A.1.1.4.9	30 days	30 days	Thu 27/9/18	Fri 26/10/18
64	A.1.1.4.10	14 days	14 days	Thu 20/12/18	Thu 3/1/19
65	A.1.1.4.11	10 days	10 days	Thu 10/1/19	Sun 20/1/19
66	A.1.1.5	199 days	199 days	Sun 20/1/19	Wed 7/8/19
67	A.1.1.5.1	10 days	10 days	Sun 20/1/19	Wed 30/1/19
68	A.1.1.5.2	28 days	28 days	Wed 30/1/19	Wed 27/2/19
69	A.1.1.5.3	34 days	34 days	Wed 27/2/19	Tue 2/4/19
70	A.1.1.5.4	20 days	20 days	Tue 2/4/19	Mon 22/4/19
71	A.1.1.5.5	27 days	27 days	Tue 2/4/19	Mon 29/4/19
72	A.1.1.5.6	100 days	100 days	Mon 29/4/19	Wed 7/8/19
73	A.1.1.6	333.4 days	333.4 days	Sat 6/10/18	Wed 4/9/19
74	A.1.1.6.1	45 days	45 days	Sat 6/10/18	Mon 19/11/18
75	A.1.1.6.2	28 days	28 days	Tue 20/11/18	Mon 17/12/18
76	A.1.1.6.3	45 days	45 days	Tue 20/11/18	Mon 19/11/18
77	A.1.1.6.4	28 days	28 days	Tue 20/11/18	Mon 17/12/18
78	A.1.1.6.5	28 days	28 days	Tue 23/10/18	Mon 19/11/18
79	A.1.1.6.6	28 days	28 days	Tue 20/11/18	Mon 17/12/18
80	A.1.1.6.7	14 days	14 days	Tue 18/12/18	Mon 31/12/18
81	A.1.1.6.8	90 days	90 days	Tue 1/1/19	Sun 31/3/19
82	A.1.1.6.9	40 days	40 days	Tue 2/4/19	Sun 12/5/19
83	A.1.1.6.10	28 days	28 days	Sat 23/2/19	Fri 22/3/19
84	A.1.1.6.11	28 days	28 days	Sat 23/2/19	Fri 22/3/19
85	A.1.1.6.12	60 days	60 days	Sat 20/4/19	Wed 4/9/19
86	A.1.1.6.13	28 days	28 days	Wed 7/8/19	Wed 4/9/19
87	A.1.1.7	592 days	592 days	Thu 2/8/18	Sun 15/9/20
88	A.1.1.7.1	28 days	28 days	Thu 2/8/18	Wed 29/8/18
89	A.1.1.7.2	28 days	28 days	Thu 30/8/18	Wed 26/9/18
90	A.1.1.7.3	60 days	60 days	Thu 27/9/18	Sun 25/11/18
91	A.1.1.7.4	28 days	28 days	Mon 26/11/18	Sun 23/12/18
92	A.1.1.7.5	28 days	28 days	Sat 27/10/18	Fri 23/11/18
93	A.1.1.7.6	30 days	30 days	Sat 24/11/18	Sun 23/12/18
94	A.1.1.7.7	260 days	260 days	Mon 24/12/18	Mon 9/9/19
95	A.1.1.7.8	28 days	28 days	Mon 27/5/19	Sun 23/6/19
96	A.1.1.7.9	28 days	28 days	Mon 24/6/19	Sun 21/7/19
97	A.1.1.7.10	45 days	45 days	Tue 10/9/19	Thu 24/10/19
98	A.1.1.7.11	45 days	45 days	Fri 25/10/19	Sun 8/12/19
99	A.1.1.7.12	45 days	45 days	Mon 9/12/19	Wed 22/1/20
100	A.1.1.7.13	259 days	259 days	Mon 1/7/19	Sun 15/9/20
101	A.1.1.7.14	28 days	28 days	Mon 1/7/19	Sun 28/7/19
102	A.1.1.7.15	28 days	28 days	Mon 29/7/19	Sun 25/8/19
103	A.1.1.7.16	60 days	60 days	Mon 26/8/19	Thu 24/10/19
104	A.1.1.7.17	70 days	70 days	Sat 9/11/19	Fri 17/1/20
105	A.1.1.7.18	28 days	28 days	Fri 30/8/19	Thu 26/9/19
106	A.1.1.7.19	28 days	28 days	Fri 27/9/19	Thu 24/10/19
107	A.1.1.7.20	45 days	45 days	Fri 25/10/19	Sun 8/12/19
108	A.1.1.7.21	28 days	28 days	Sun 22/9/19	Sat 19/10/19
109	A.1.1.7.22	30 days	30 days	Sun 17/11/19	Mon 16/12/19
110	A.1.1.7.23	30 days	30 days	Sun 17/11/19	Mon 16/12/19
111	A.1.1.7.24	44 days	44 days	Mon 30/9/19	Tue 12/11/19
112	A.1.1.7.25	28 days	28 days	Wed 13/11/19	Tue 10/12/19
113	A.1.1.7.26	28 days	28 days	Tue 13/8/19	Mon 9/9/19
114	A.1.1.7.27	28 days	28 days	Tue 10/9/19	Mon 7/10/19
115	A.1.1.7.28	60 days	60 days	Fri 18/10/19	Mon 16/12/19
116	A.1.1.7.29	90 days	90 days	Tue 17/12/19	Sun 15/3/20





2019 Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec 2020 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

External Tasks: External Milestone, External Summary, Inactive Task

Summary: Manual Summary, Project Summary

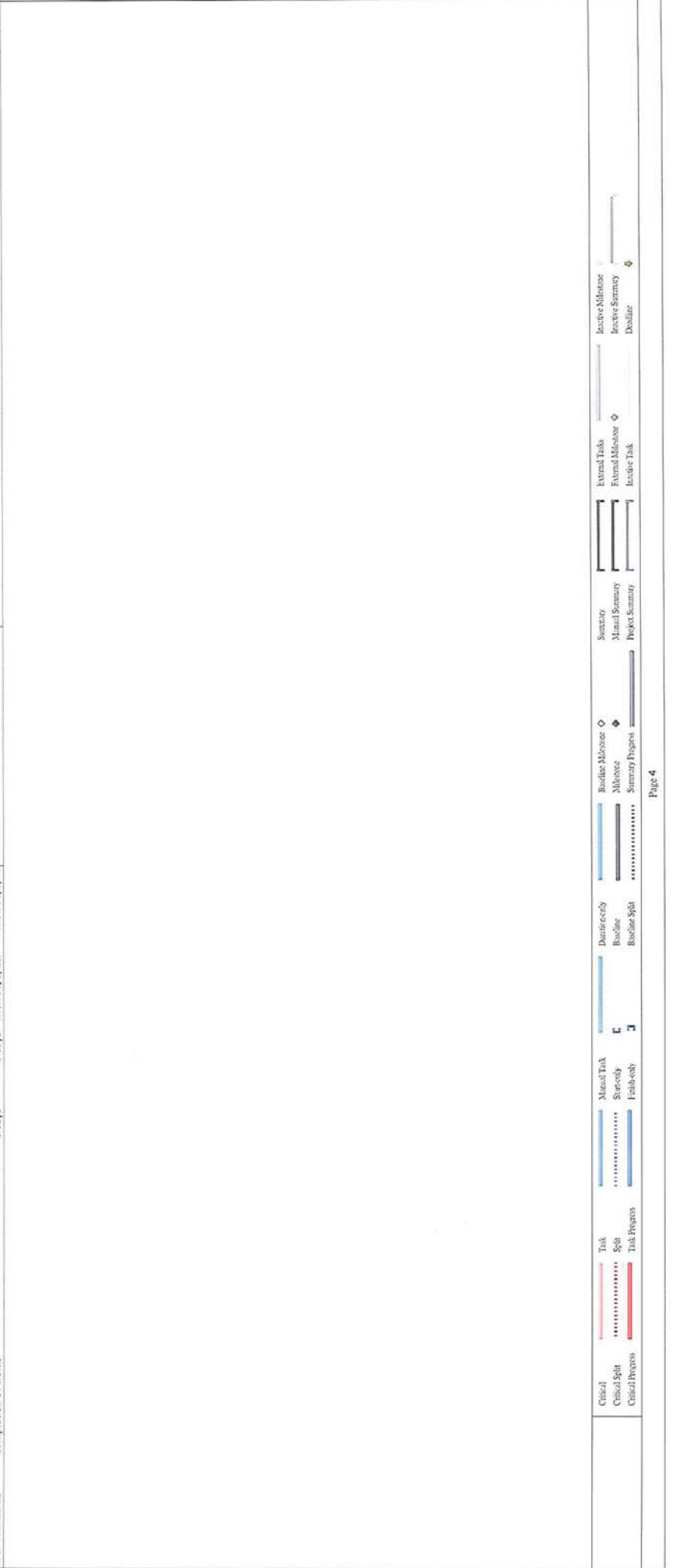
Baseline Milestone: Baseline Milestone, Milestone, Summary Progress

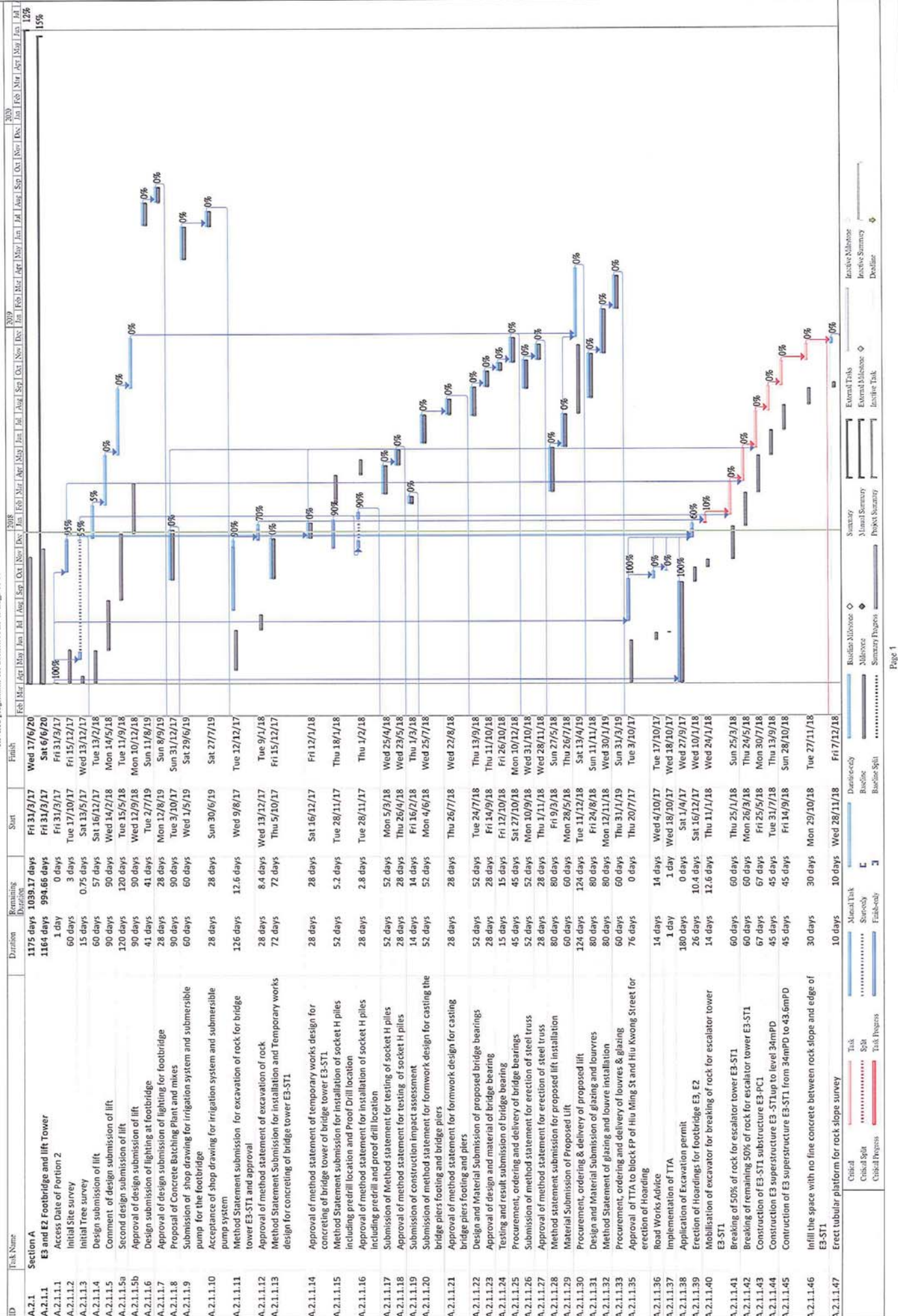
Task Legend: Critical (Red), Critical Split (Blue), Task Progress (Blue), Task (Red), Split (Blue), Task Progress (Blue)

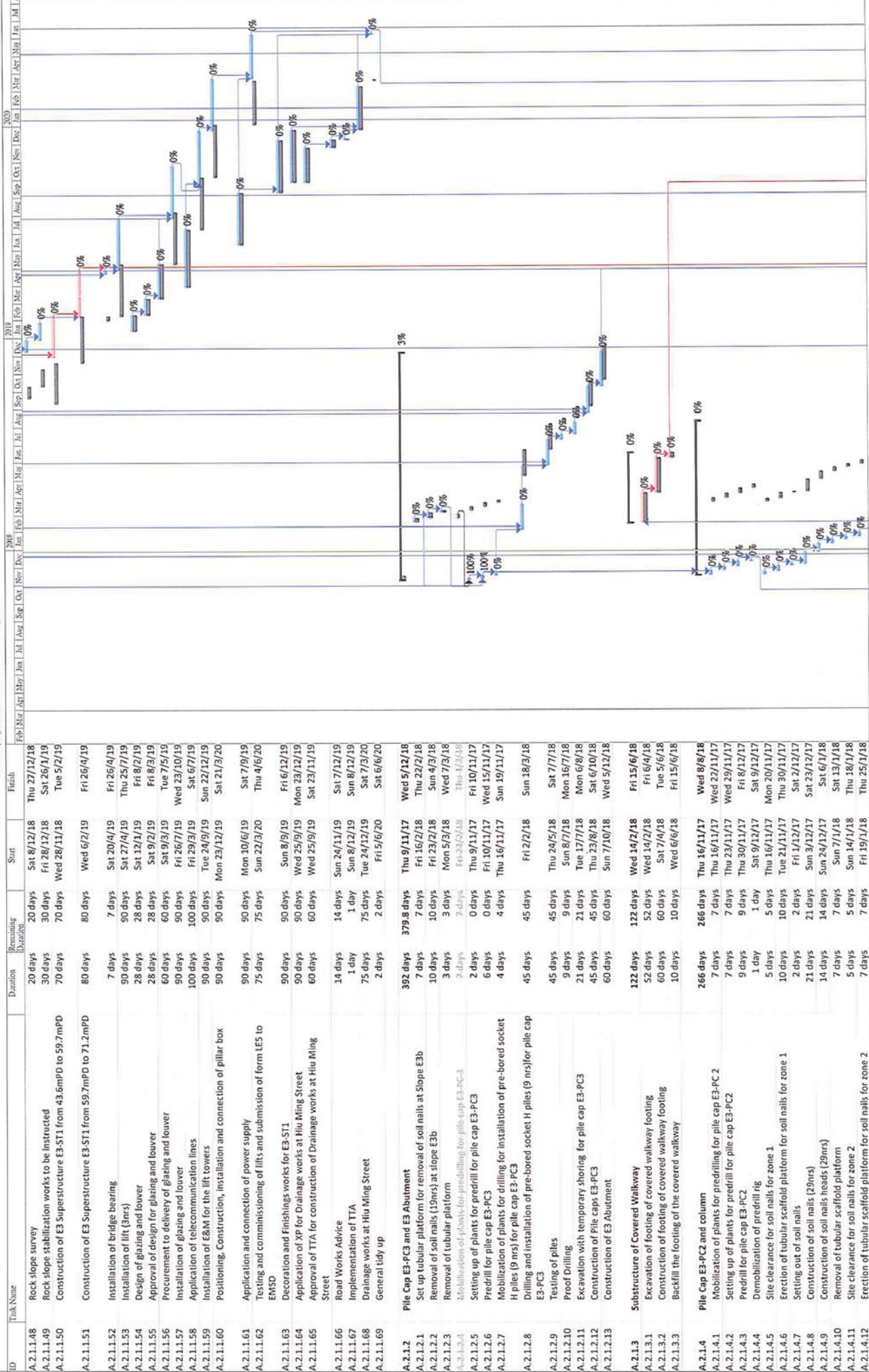
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Revised programme for Section A-EI_Doc 17

U/E#	ID	Task Name	Duration	Remaining Duration	Start	Finish	2019	2020															
							Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	
173	A.1.1.12.6	Material submission of paint	14 days	14 days	Sun 8/9/19	Sat 21/9/19																	
174	A.1.1.12.7	Comment of material submission of paint	14 days	14 days	Sun 22/9/19	Sat 5/10/19																	
175	A.1.1.12.8	2nd submission of paints	14 days	14 days	Sun 6/10/19	Sat 19/10/19																	
176	A.1.1.12.9	Approval of material submission of paints	14 days	14 days	Sun 20/10/19	Sat 2/11/19																	
177	A.1.1.12.10	Procurement to delivery of paints	30 days	30 days	Sun 3/11/19	Mon 2/12/19																	
178	A.1.1.12.11	Construction of Tactile/Ceramic/Concrete Tiles	30 days	30 days	Sat 19/10/19	Sun 17/11/19																	
179	A.1.1.12.12	Texture Spray/Fungus Resistant Paint	80 days	80 days	Tue 3/12/19	Thu 20/2/20																	
180	A.1.1.13	Construction of Sau Mau Ping Memorial Park	152 days	152 days	Wed 2/10/19	Sun 1/3/20																	
181	A.1.1.13.1	Slope improvement work (LINE-D/CR222)	21 days	21 days	Tue 10/12/19	Mon 30/12/19																	
182	A.1.1.13.2	Material submission of Pavillion	28 days	28 days	Wed 2/10/19	Tue 29/10/19																	
183	A.1.1.13.3	Approval of material submission of Pavillion	28 days	28 days	Wed 30/10/19	Tue 26/11/19																	
184	A.1.1.13.4	Procurement to delivery of Pavillion	45 days	45 days	Wed 27/11/19	Fri 10/1/20																	
185	A.1.1.13.5	Material submission of Bench	28 days	28 days	Wed 2/10/19	Tue 29/10/19																	
186	A.1.1.13.6	Approval to material submission of Bench	28 days	28 days	Wed 30/10/19	Tue 26/11/19																	
187	A.1.1.13.7	Procurement to delivery of Bench	30 days	30 days	Wed 27/11/19	Thu 26/12/19																	
188	A.1.1.13.8	Material submission of Pole Light	28 days	28 days	Wed 2/10/19	Tue 29/10/19																	
189	A.1.1.13.9	Approval of material submission of Pole Light	28 days	28 days	Wed 30/10/19	Tue 26/11/19																	
190	A.1.1.13.10	Procurement to delivery of Pole light	45 days	45 days	Wed 27/11/19	Fri 10/1/20																	
191	A.1.1.13.11	Construction of Pavillion/Bench/Pole Light with ducting	21 days	21 days	Sat 11/1/20	Fri 31/1/20																	
192	A.1.1.13.12	Construction of Pavers	30 days	30 days	Sat 1/2/20	Sun 1/3/20																	
193	A.1.1.14	General Inspection and Tidy up of Portion 1	25 days	25 days	Fri 6/3/20	Mon 30/3/20																	
194	A.1.1.14.1	General Inspection and tidy up of Portion 1	5 days	5 days	Mon 16/3/20	Fri 20/3/20																	
195	A.1.1.14.2	Allowable Terminal float	10 days	10 days	Sat 21/3/20	Mon 30/3/20																	
196	A.1.1.14.3	Completion of works	0 days	0 days	Mon 30/3/20	Mon 30/3/20																	

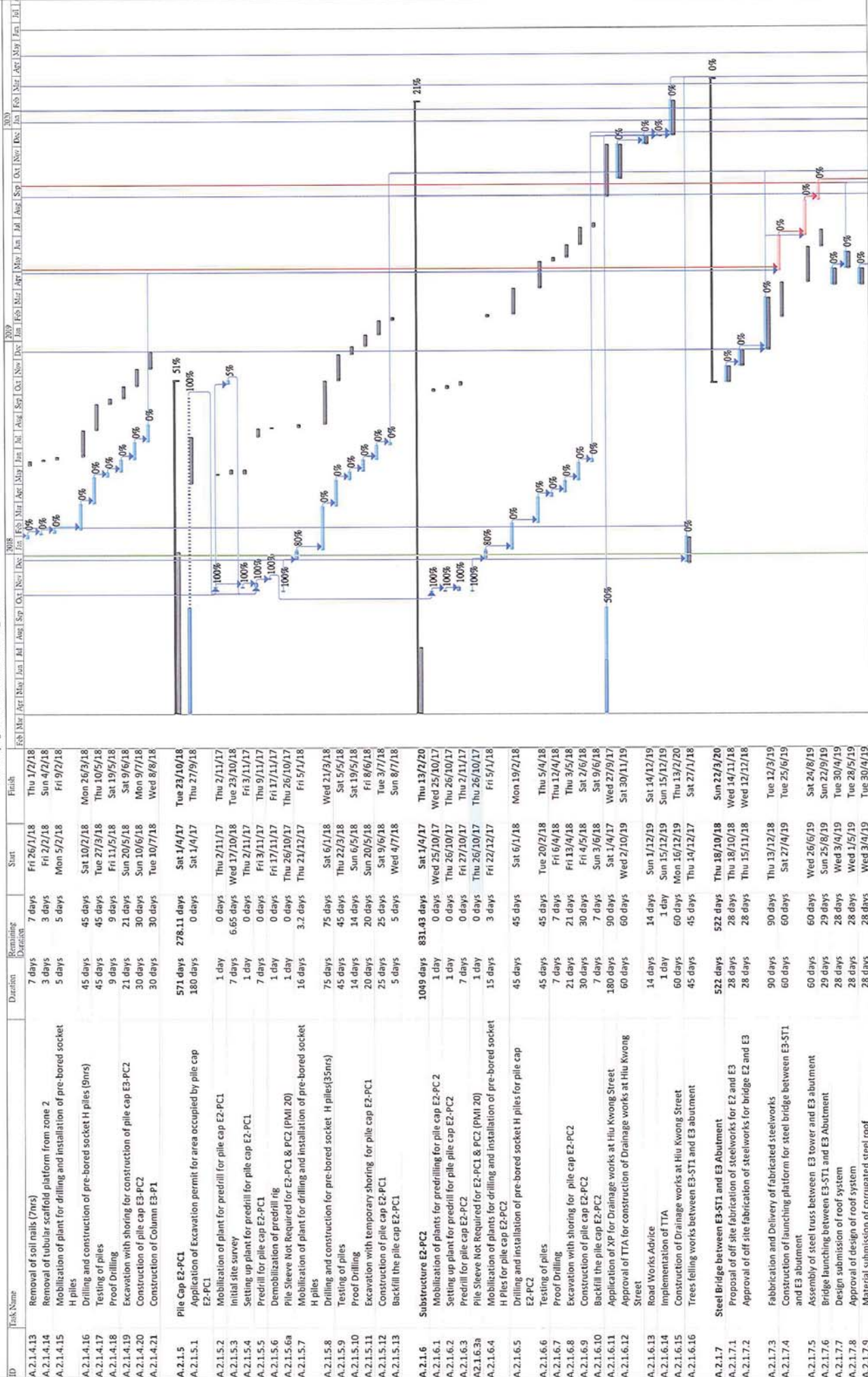






Summary: Baseline Milestone, Estimate Milestone, Inactive Milestone, Critical Path, Task Progress, Summary Proposal, Summary, Mixed Summary, Project Summary, Estimate Task, Estimate Milestone, Inactive Task, Inactive Milestone, Doublet

Revised programme for Section A E3 to E2_Dns 17



Critical Path
 Critical Split
 Critical Progress

Task
 Split
 Task Progress

Material Takeoff
 Start-only
 Finish-only

Duration-only
 Baseline
 Baseline Split

Summary
 Manual Summary
 Project Summary

External Tasks
 External Milestone
 Inactive Task

Baseline Milestone
 Milestone
 Summary Progress

Inactive Milestone
 Inactive Summary
 Inactive Task

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Revised programme for Section A E3 to E2_Doc 17

ID	Task Name	Duration	Remaining Duration	Start	Finish
A.2.1.7.10	Approval of corrugated steel roof	30 days	30 days	Wed 1/5/19	Thu 30/5/19
A.2.1.7.11	Procurement to delivery of corrugated steel roof	28 days	28 days	Fri 31/5/19	Thu 27/6/19
A.2.1.7.12	Material submission of fall arrest system	28 days	28 days	Tue 30/4/19	Tue 30/4/19
A.2.1.7.13	Approval of fall arrest system	28 days	28 days	Wed 1/5/19	Tue 28/5/19
A.2.1.7.14	Procurement to delivery of fall arrest system	30 days	30 days	Wed 29/5/19	Thu 27/6/19
A.2.1.7.15	Roof construction of the steel truss E3 S11 to E3 abutment	50 days	50 days	Mon 11/11/19	Mon 11/11/19
A.2.1.7.16	Construction of screeding and paving blocks	40 days	40 days	Tue 12/11/19	Sat 21/12/19
A.2.1.7.17	Installation of parapets and planters	40 days	40 days	Sun 22/12/19	Thu 30/1/20
A.2.1.7.18	Installation of lightings to steel truss between E3 tower and E3 abutment	45 days	45 days	Fri 31/1/20	Sun 15/3/20
A.2.1.7.19	Installation of irrigation pipe and water point	7 days	7 days	Mon 16/3/20	Sun 22/3/20
A.2.1.8	Superstructure of Covered Walkway	162 days	162 days	Mon 23/9/19	Mon 2/3/20
A.2.1.8.1	Expose the substructure of the Covered Walkway	20 days	20 days	Mon 23/9/19	Sat 12/10/19
A.2.1.8.2	Construction of columns and beams for covered walkway	60 days	60 days	Sun 13/10/19	Wed 11/12/19
A.2.1.8.3	Installation of steel sheet roof for the covered walkway	30 days	30 days	Thu 12/12/19	Fri 10/1/20
A.2.1.8.4	Installation of lighting to covered walkway	45 days	45 days	Sat 11/1/20	Mon 24/2/20
A.2.1.8.5	Installation of irrigation pipe	7 days	7 days	Tue 25/2/20	Mon 2/3/20
A.2.1.9	Superstructure of E2-LT1 and Lift	287 days	287 days	Wed 4/9/19	Tue 16/6/20
A.2.1.9.1	Excavation to expose footing E2-PCL1	7 days	7 days	Sun 13/10/19	Sat 19/10/19
A.2.1.9.2	Construction of superstructure of lift tower E2-LT1	62 days	62 days	Sun 20/10/19	Fri 20/12/19
A.2.1.9.3	Installation of lift (2mrs)	60 days	60 days	Sat 21/12/19	Tue 18/2/20
A.2.1.9.4	Installation of E&M for the lift towers and Pillar Box	50 days	50 days	Wed 19/2/20	Wed 8/4/20
A.2.1.9.5	Testing and commissioning of lifts and submission of form L&ES to EMSD	60 days	60 days	Thu 9/4/20	Sun 7/6/20
A.2.1.9.6	Installation of lower and finishing works	20 days	20 days	Thu 28/5/20	Tue 16/6/20
A.2.1.9.7	Application for connection to existing water mains	90 days	90 days	Wed 4/9/19	Mon 2/12/19
A.2.1.9.8	Trenching works for connection of existing water connection point	28 days	28 days	Tue 3/12/19	Mon 30/12/19
A.2.1.9.9	Installation of water meter box	7 days	7 days	Thu 9/4/20	Wed 15/4/20
A.2.1.9.10	Planting works on bridge	7 days	7 days	Thu 16/4/20	Wed 22/4/20
A.2.1.10	Superstructure of E2-P1	48 days	48 days	Sat 21/12/19	Thu 6/2/20
A.2.1.10.1	Excavation to expose Pile Cap E2-P2 for column E2-P1	3 days	3 days	Mon 23/12/19	Mon 23/12/19
A.2.1.10.2	Construction of column for E2-P1	42 days	42 days	Mon 3/2/20	Mon 3/2/20
A.2.1.10.3	General tidy up	3 days	3 days	Tue 4/2/20	Thu 6/2/20
A.3.1.11	Bridge between E2-P1 to E2-P3	545 days	545 days	Fri 21/12/18	Wed 17/6/20
A.3.1.11.1	Access date of E2 between Pier E2-P2 to E2-P3 (Portion 3)	1 day	1 day	Fri 21/12/18	Fri 21/12/18
A.3.1.11.2	Initial site survey	15 days	15 days	Sat 22/12/18	Sat 5/1/19
A.3.1.11.3	Erection of Hoarding at South bound footpath of Hin Kwong St	8 days	8 days	Sat 22/12/18	Sat 29/12/18
A.3.1.11.4	Excavation of inspection pits to locate utilities	20 days	20 days	Sun 6/1/19	Fri 25/1/19
A.3.1.11.5	Diversion of utilities by UU	90 days	90 days	Sat 26/1/19	Thu 25/4/19
A.3.1.11.6	Excavation with shoring for construction of E2-F3	30 days	30 days	Fri 26/4/19	Sat 25/5/19
A.3.1.11.7	Construction of pad footing of E2-F3	30 days	30 days	Sun 26/5/19	Mon 24/6/19
A.3.1.11.8	Construction of column for E2-P2	30 days	30 days	Tue 25/6/19	Wed 24/7/19
A.3.1.11.9	Excavation with shoring for construction of E2-F4	30 days	30 days	Thu 25/7/19	Fri 23/8/19
A.3.1.11.10	Construction of pad footing of E2-F4	30 days	30 days	Sat 24/8/19	Sun 22/9/19
A.3.1.11.11	Construction of column for E2-P3 and the bridge deck	35 days	35 days	Mon 23/9/19	Sun 27/10/19
A.3.1.11.12	Off site Fabrication of Steel deck truss between E2-LT1 to E2-P1, E2-P1 to E2-P2	90 days	90 days	Fri 26/4/19	Wed 24/7/19
A.3.1.11.13	Off site Fabrication of Steel deck truss between E2-P2 to E2-P3 and E2-P3 to bridge constructed by others	90 days	90 days	Thu 25/7/19	Tue 22/10/19
A.3.1.11.14	Lifting of steel truss between E2-LT1 to E2-P1	7 days	7 days	Tue 4/2/20	Mon 10/2/20
A.3.1.11.15	Lifting of steel truss between E2-P1 to E2-P2	7 days	7 days	Tue 11/2/20	Mon 17/2/20
A.3.1.11.16	Lifting of Truss between E2-P2 to E2-P3	7 days	7 days	Tue 18/2/20	Mon 24/2/20
A.3.1.11.17	Lifting of truss for E2-P3 to connect to bridge constructed by others	7 days	7 days	Tue 25/2/20	Mon 2/3/20
A.3.1.11.18	Roof installation of the bridge from E2-LT1 to E2-P3	60 days	60 days	Tue 3/3/20	Fri 1/5/20
A.3.1.11.19	Screeding and paving blocks for the bridge from E2-LT1 to E2-P3	42 days	42 days	Sun 12/4/20	Sat 23/5/20

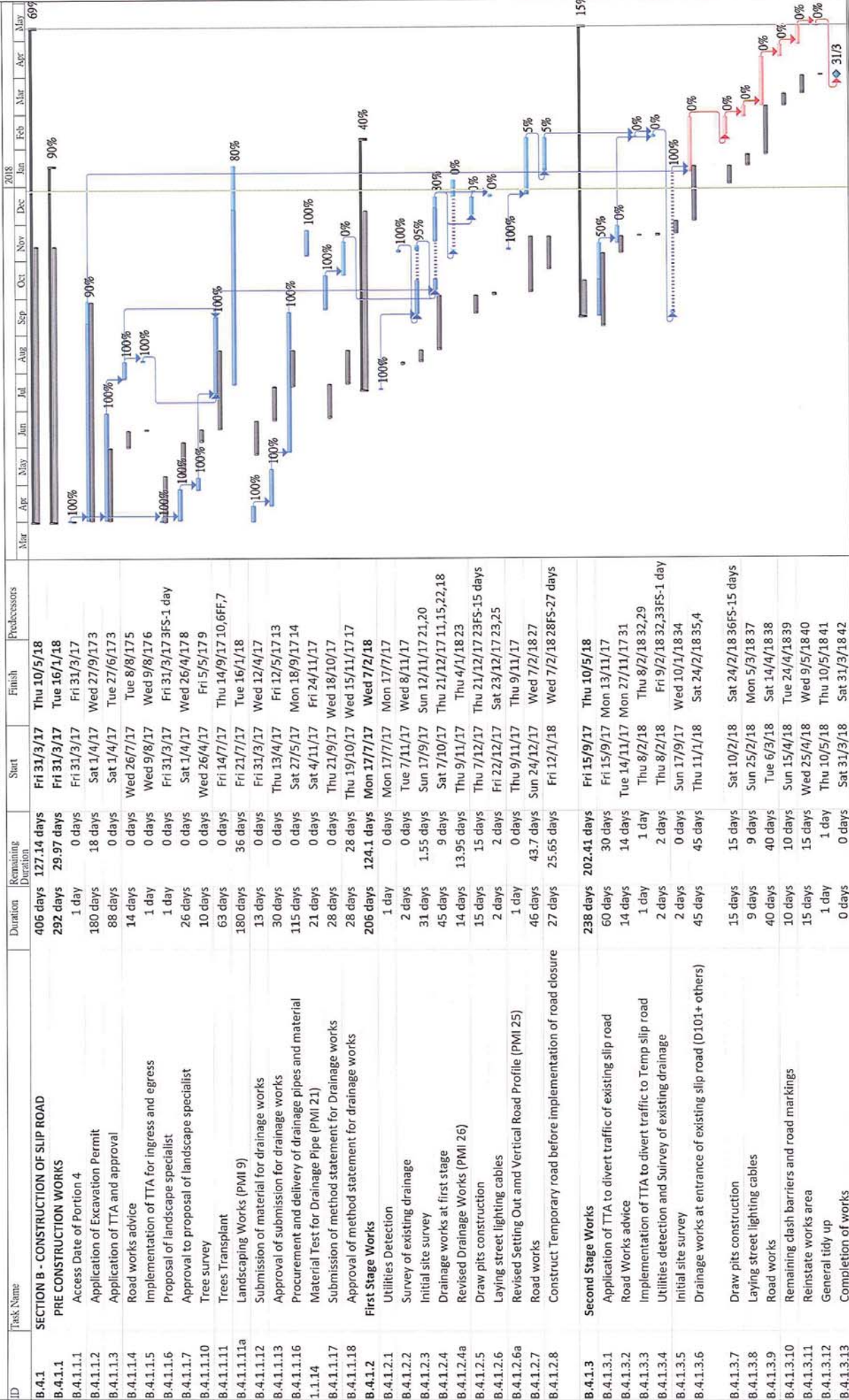
Summary: Manual Summary, Project Summary, Inactive Milestone, Inactive Summary, Inactive Task, Inactive Milestone, Inactive Summary, Inactive Task, Deadline

Revised programme for Section A E3 to E2 Dec 17

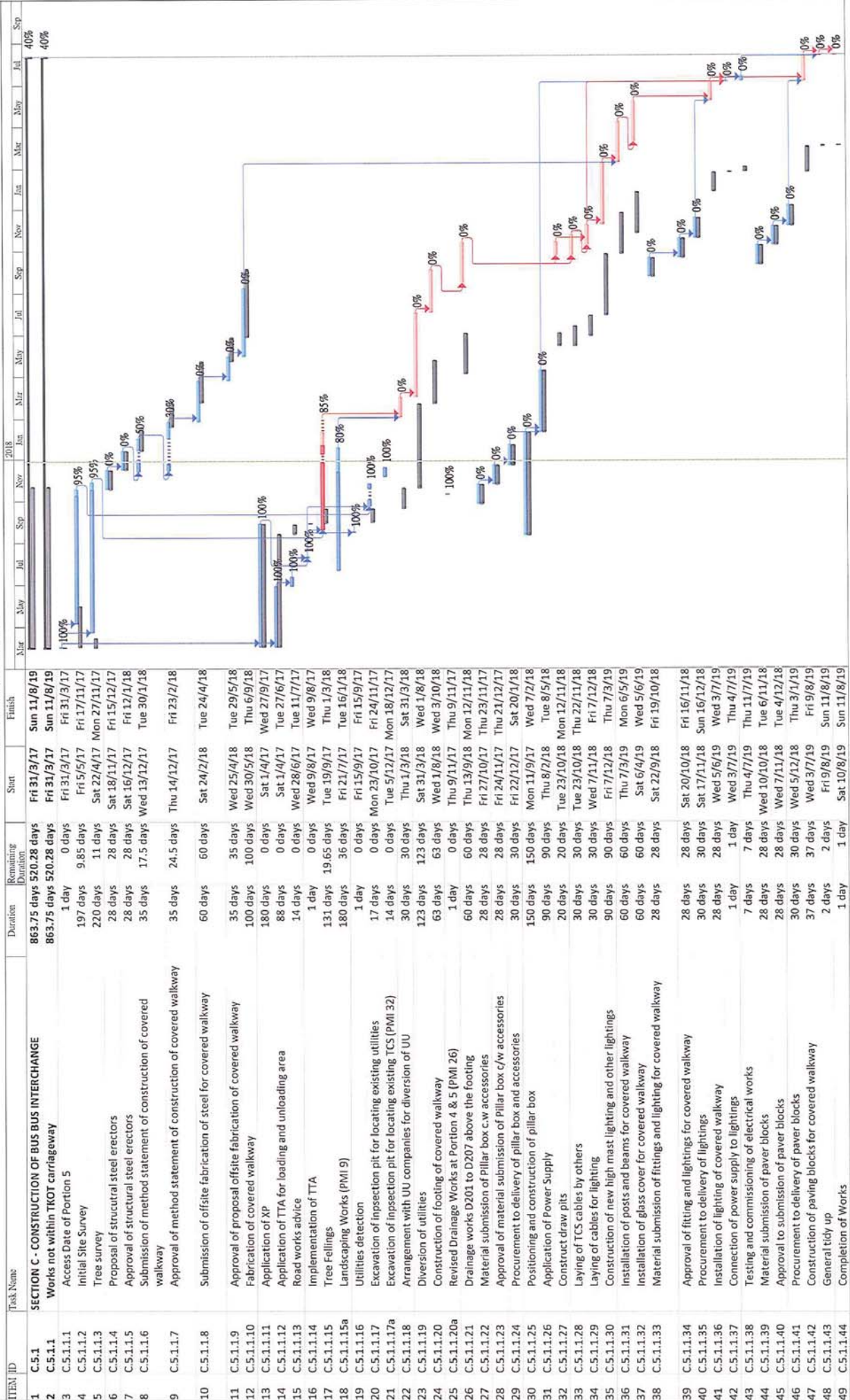
ID	Task Name	Duration	Remaining Duration	Start	Finish	2019																			
						Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
A.3.1.11.20	Electrical installation and lighting works for bridge from E2-LT1 to E2-P3	42 days	42 days	Mon 4/5/20	Sun 14/6/20																				
A.3.1.11.21	Tubular handrail and planter on bridge from E2-LT1 to E2-P3	20 days	20 days	Tue 26/5/20	Sun 14/6/20																				
A.3.1.11.22	Trenching works for connection of existing water connection point	25 days	25 days	Sat 2/5/20	Tue 26/5/20																				
A.3.1.11.23	Water meter box and water point construction	5 days	5 days	Wed 27/5/20	Sun 31/5/20																				
A.3.1.11.24	Planting works on bridge	2 days	2 days	Mon 15/6/20	Tue 16/6/20																				
A.3.1.11.25	General tidy up for Portion 3	1 day	1 day	Wed 17/6/20	Wed 17/6/20																				
A.3.1.11.26	Overall landscape works	150 days	150 days	Mon 2/9/19	Wed 29/1/20																				
A.3.1.11.27	Completion of works	0 days	0 days	Mon 30/3/20	Mon 30/3/20																				



Revised programme for Section B_Dec 17



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



Summary Milestone Summary Project Summary

Baseline Milestone Milestone Summary Progress

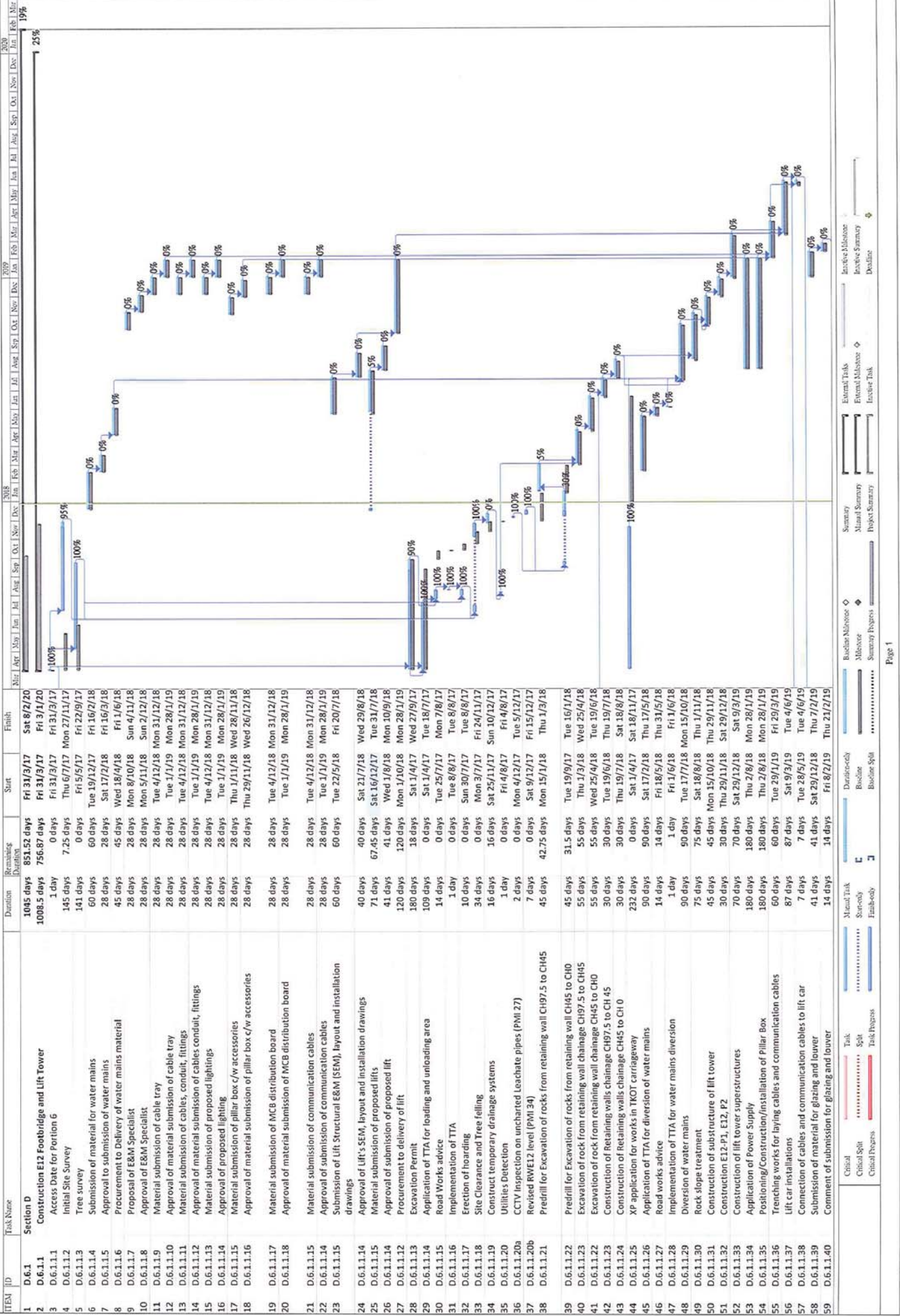
Task Split Task Progress

Maint Task Start-only Finish-only

Duration-only Baseline Baseline-Split

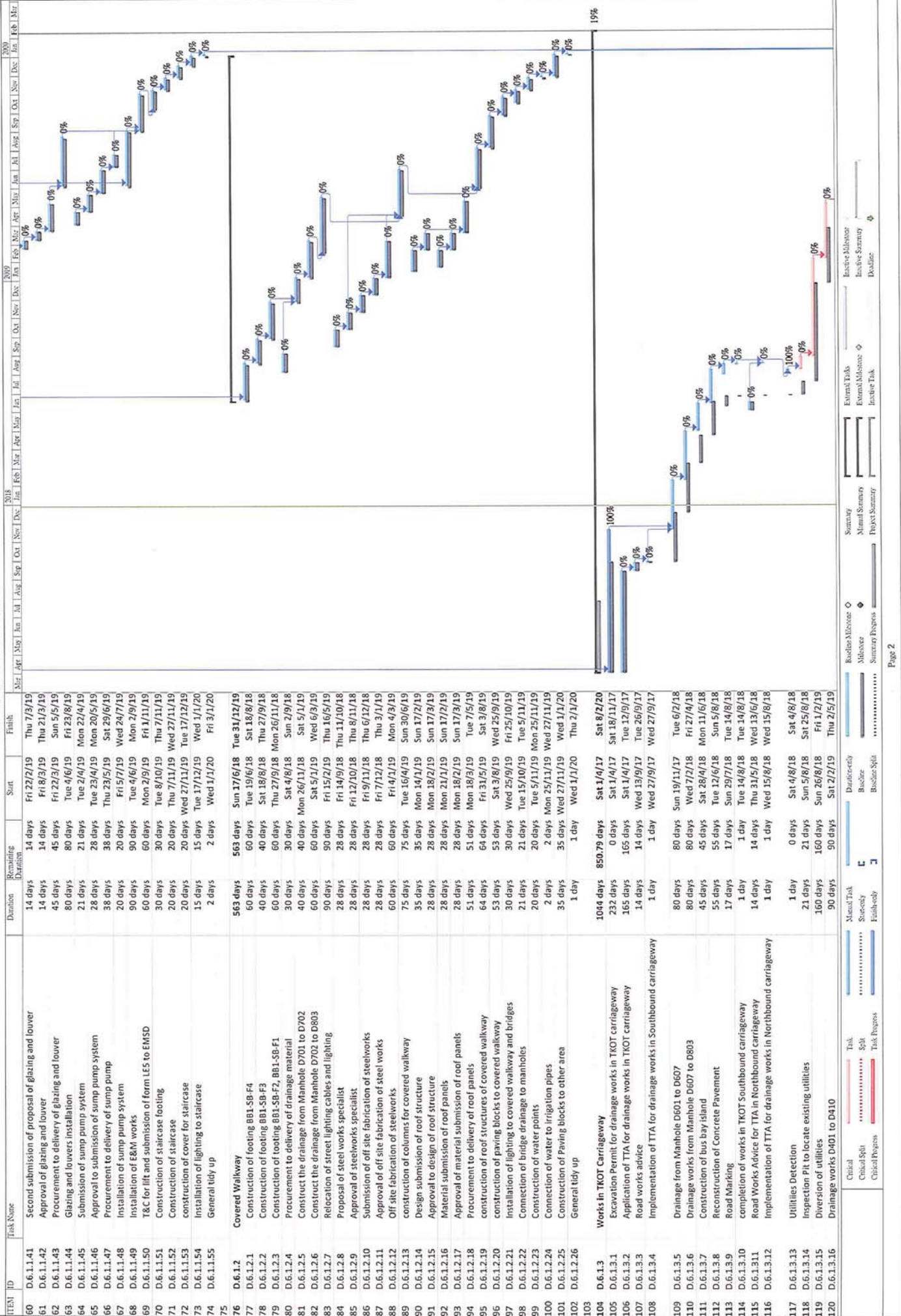
External Tasks External Milestone Inactive Task

Inactive Milestone Inactive Summary Deadline

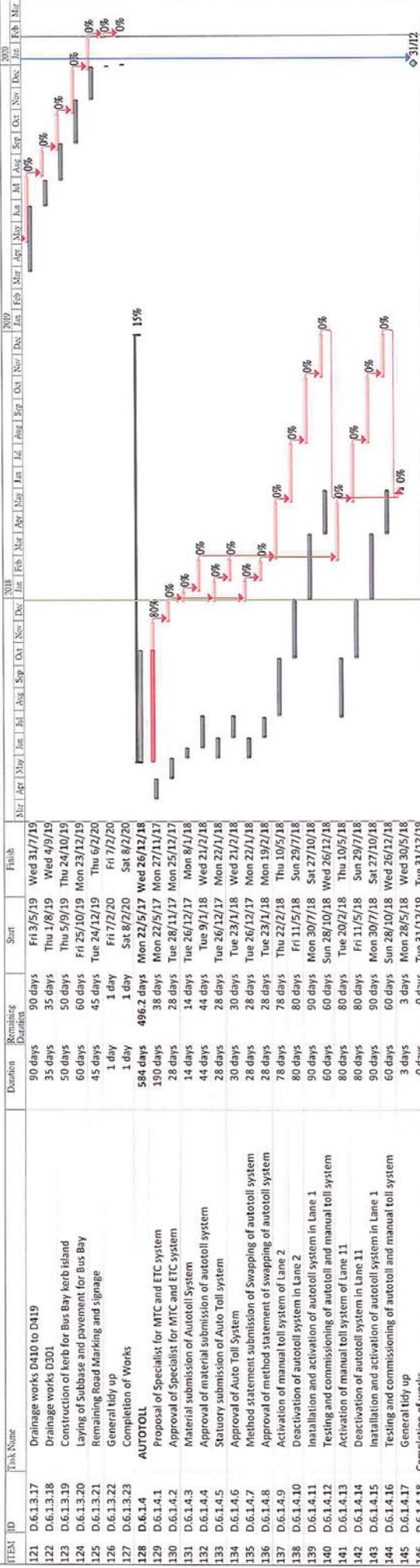


ITEM ID	Task Name	Duration	Remaining	Start	Finish
1	D.6.1	1005 days	831.52 days	Fri 31/3/17	Sat 8/2/20
2	D.6.1.1	1008.5 days	756.87 days	Fri 31/3/17	Fri 31/3/17
3	D.6.1.1.1	1 day	0 days	Fri 31/3/17	Fri 31/3/17
4	D.6.1.1.2	145 days	7.25 days	Thu 6/7/17	Mon 27/11/17
5	D.6.1.1.3	141 days	0 days	Fri 5/5/17	Fri 22/9/17
6	D.6.1.1.4	60 days	28 days	Tue 19/12/17	Fri 16/2/18
7	D.6.1.1.5	28 days	28 days	Sat 17/2/18	Fri 16/3/18
8	D.6.1.1.6	45 days	45 days	Wed 18/4/18	Fri 1/6/18
9	D.6.1.1.7	28 days	28 days	Mon 8/10/18	Sun 4/11/18
10	D.6.1.1.8	28 days	28 days	Mon 5/11/18	Sun 2/12/18
11	D.6.1.1.9	28 days	28 days	Tue 4/12/18	Mon 31/12/18
12	D.6.1.1.10	28 days	28 days	Tue 1/1/19	Mon 28/1/19
13	D.6.1.1.11	28 days	28 days	Tue 4/12/18	Mon 31/12/18
14	D.6.1.1.12	28 days	28 days	Tue 1/1/19	Mon 28/1/19
15	D.6.1.1.13	28 days	28 days	Tue 4/12/18	Mon 31/12/18
16	D.6.1.1.14	28 days	28 days	Tue 1/1/19	Mon 28/1/19
17	D.6.1.1.15	28 days	28 days	Thu 1/11/18	Wed 28/11/18
18	D.6.1.1.16	28 days	28 days	Thu 29/11/18	Wed 26/12/18
19	D.6.1.1.17	28 days	28 days	Tue 4/12/18	Mon 31/12/18
20	D.6.1.1.18	28 days	28 days	Tue 1/1/19	Mon 28/1/19
21	D.6.1.1.15	28 days	28 days	Tue 4/12/18	Mon 31/12/18
22	D.6.1.1.14	28 days	28 days	Tue 1/1/19	Mon 28/1/19
23	D.6.1.1.15	60 days	60 days	Tue 22/5/18	Fri 20/7/18
24	D.6.1.1.14	40 days	40 days	Sat 21/7/18	Wed 29/8/18
25	D.6.1.1.15	71 days	67.45 days	Sat 16/12/17	Tue 31/7/18
26	D.6.1.1.14	41 days	41 days	Wed 1/8/18	Mon 10/9/18
27	D.6.1.1.12	120 days	120 days	Mon 1/10/18	Mon 28/1/19
28	D.6.1.1.13	180 days	18 days	Sat 1/4/17	Wed 27/9/17
29	D.6.1.1.14	109 days	0 days	Sat 1/4/17	Tue 18/7/17
30	D.6.1.1.15	14 days	0 days	Tue 25/7/17	Mon 7/8/17
31	D.6.1.1.16	1 day	0 days	Tue 8/8/17	Tue 8/8/17
32	D.6.1.1.17	10 days	0 days	Sun 30/7/17	Tue 8/8/17
33	D.6.1.1.18	34 days	0 days	Mon 3/7/17	Fri 24/11/17
34	D.6.1.1.19	16 days	16 days	Sat 25/11/17	Sun 10/12/17
35	D.6.1.1.20	1 day	0 days	Fri 4/8/17	Fri 4/8/17
36	D.6.1.1.20a	2 days	0 days	Mon 4/12/17	Tue 5/12/17
37	D.6.1.1.20b	7 days	0 days	Sat 9/12/17	Fri 15/12/17
38	D.6.1.1.21	45 days	42.75 days	Mon 15/1/18	Thu 1/3/18
39	D.6.1.1.22	45 days	31.5 days	Tue 19/9/17	Tue 16/1/18
40	D.6.1.1.23	55 days	55 days	Thu 1/3/18	Wed 25/4/18
41	D.6.1.1.22	55 days	55 days	Wed 25/4/18	Tue 19/6/18
42	D.6.1.1.23	30 days	30 days	Tue 19/6/18	Thu 19/7/18
43	D.6.1.1.24	30 days	30 days	Thu 19/7/18	Sat 18/8/18
44	D.6.1.1.25	232 days	0 days	Sat 1/4/17	Sat 18/11/17
45	D.6.1.1.26	90 days	90 days	Sat 17/2/18	Thu 17/5/18
46	D.6.1.1.27	14 days	14 days	Fri 18/5/18	Thu 31/5/18
47	D.6.1.1.28	1 day	0 days	Fri 1/6/18	Fri 1/6/18
48	D.6.1.1.29	90 days	90 days	Tue 17/7/18	Mon 15/10/18
49	D.6.1.1.30	75 days	75 days	Sat 18/8/18	Thu 1/11/18
50	D.6.1.1.31	45 days	45 days	Mon 15/10/18	Thu 29/11/18
51	D.6.1.1.32	30 days	30 days	Thu 29/11/18	Sat 29/12/18
52	D.6.1.1.33	70 days	70 days	Sat 29/12/18	Sat 9/3/19
53	D.6.1.1.34	180 days	180 days	Thu 2/8/18	Mon 28/1/19
54	D.6.1.1.35	180 days	180 days	Thu 2/8/18	Mon 28/1/19
55	D.6.1.1.36	60 days	60 days	Tue 29/1/19	Fri 29/3/19
56	D.6.1.1.37	87 days	87 days	Sat 9/3/19	Tue 4/6/19
57	D.6.1.1.38	7 days	7 days	Tue 28/5/19	Tue 4/6/19
58	D.6.1.1.39	41 days	41 days	Sat 29/12/18	Thu 7/2/19
59	D.6.1.1.40	14 days	14 days	Fri 8/2/19	Thu 21/2/19

Critical
 Critical Split
 Critical Progress
 Task
 Split
 Task Progress
 Mental Task
 Non-only
 Embodiment
 Derelictly
 Baseline
 Baseline Split
 Budgeted
 Budgeted Milestone
 Milestone
 Summary Progress
 Summary
 Minimal Summary
 Project Summary
 External Milestone
 External Summary
 Inactive Task
 Inactive Milestone
 Inactive Summary
 Deadline



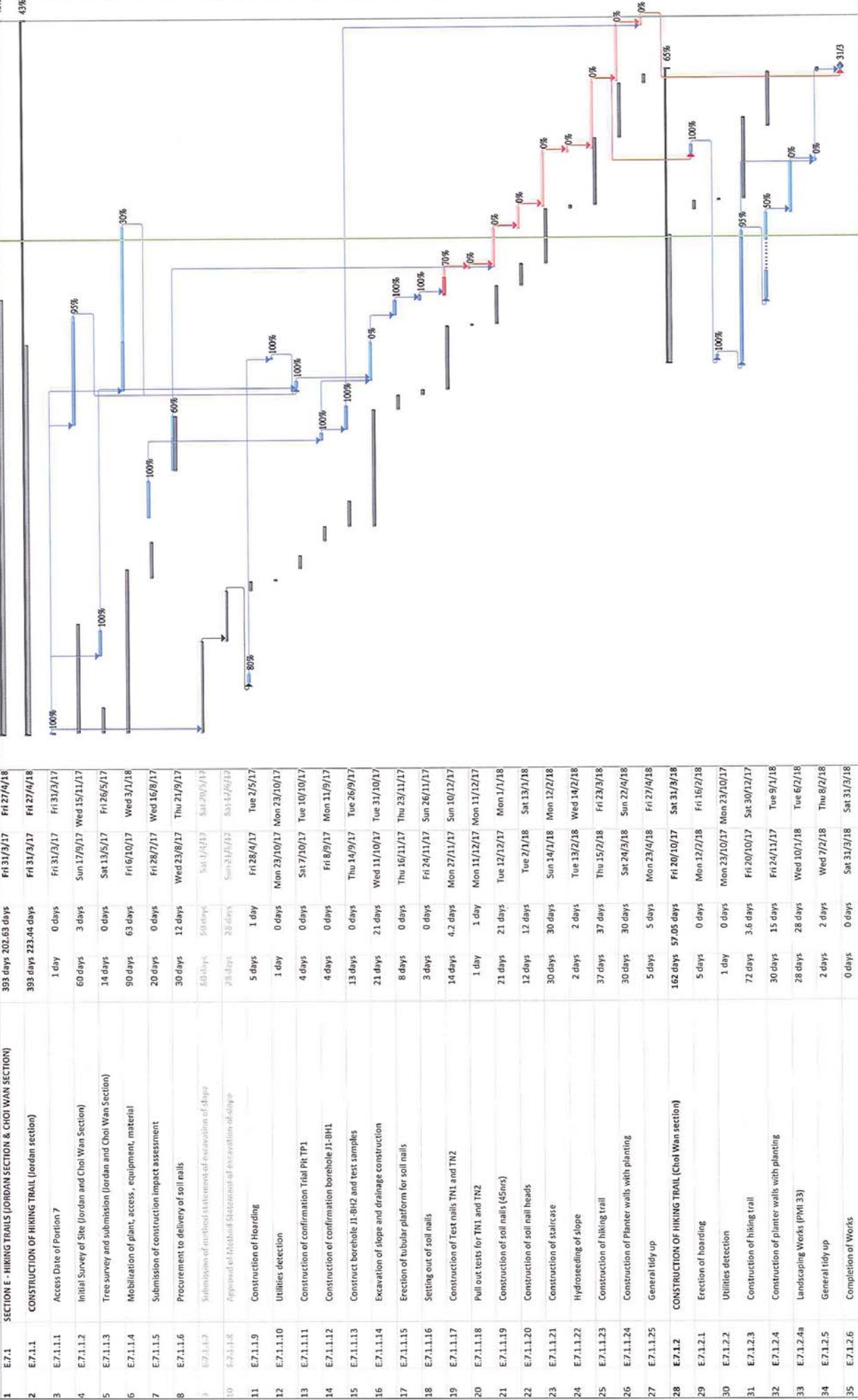
Revised programme for Section D_Doc 17



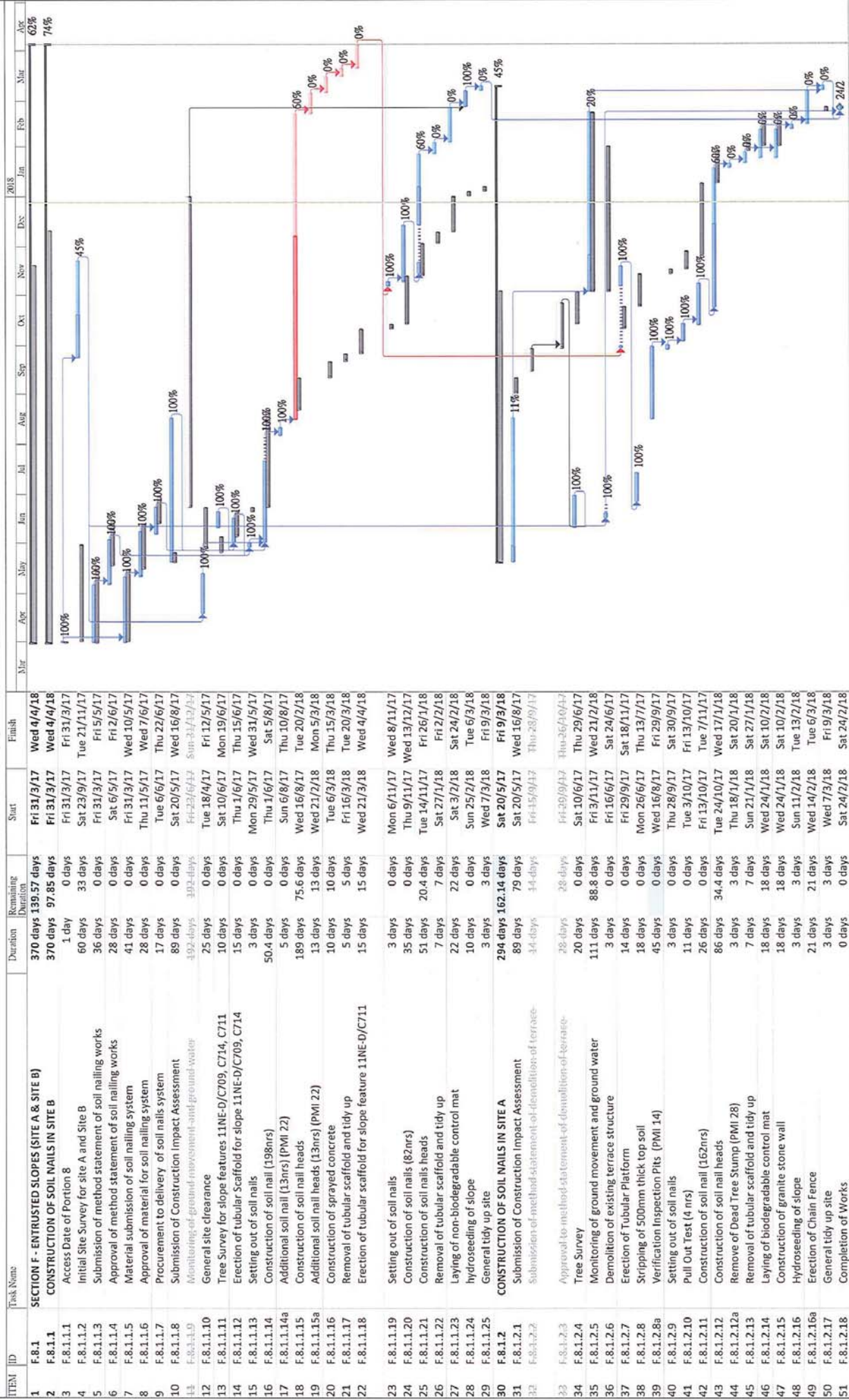
Navigation and Summary Tools:

- Timeline: 2018 (Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec), 2019 (Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec), 2020 (Jan, Feb, Mar)
- Task Legend:
 - Critical Path (Red)
 - Critical Split (Red)
 - Critical Progress (Red)
 - Task (Blue)
 - Task Progress (Blue)
 - Task Split (Blue)
 - Manual Task (Blue)
 - Manual Task Progress (Blue)
 - Manual Task Split (Blue)
 - Directly (Blue)
 - Baseline (Blue)
 - Baseline Split (Blue)
 - Baseline Moveover (Blue)
 - Moveover (Blue)
 - Summary Progress (Blue)
 - Summary (Blue)
 - Manual Summary (Blue)
 - Project Summary (Blue)
 - External Task (Blue)
 - External Milestone (Blue)
 - External Task (Blue)
 - Exclude Milestone (Blue)
 - Exclude Summary (Blue)
 - Exclude Task (Blue)
 - Exclude Milestone (Blue)
 - Exclude Summary (Blue)
 - Exclude Task (Blue)

ITEM ID	Task Name	Duration	Remaining Duration	Start	Finish
1	SECTION E - HIKING TRAILS (JORDAN SECTION & CHOI WAN SECTION)	393 days	202.63 days	Fri 13/1/17	Fri 27/4/18
2	CONSTRUCTION OF HIKING TRAIL (Jordan section)	393 days	233.44 days	Fri 13/1/17	Fri 27/4/18
3	Access Date of Portion 7	1 day	0 days	Fri 31/3/17	Fri 31/3/17
4	Initial Survey of Site (Jordan and Choi Wan Section)	60 days	3 days	Sun 17/9/17	Wed 15/11/17
5	Tree survey and submission (Jordan and Choi Wan Section)	14 days	0 days	Sat 13/5/17	Fri 26/5/17
6	Mobilization of plant, access, equipment, material	90 days	63 days	Fri 6/10/17	Wed 3/1/18
7	Submission of construction impact assessment	20 days	0 days	Fri 28/7/17	Wed 16/8/17
8	Procurement to delivery of soil nails	30 days	12 days	Wed 23/8/17	Thu 21/9/17
9	Submission of method statement of excavation of slope	50 days	50 days	Sat 1/1/17	Sat 20/5/17
10	Approved Method Statement of excavation of slope	28 days	28 days	Sun 24/1/17	Sat 4/2/17
11	Construction of Hoarding	5 days	1 day	Fri 28/4/17	Tue 2/5/17
12	Utilities detection	1 day	0 days	Mon 23/10/17	Mon 23/10/17
13	Construction of confirmation Trial PH TP1	4 days	0 days	Sat 7/10/17	Tue 10/10/17
14	Construction of confirmation borehole J1-BH1	4 days	0 days	Fri 8/9/17	Mon 11/9/17
15	Construct borehole J1-BH2 and test samples	13 days	0 days	Thu 14/9/17	Tue 26/9/17
16	Excavation of slope and drainage construction	21 days	21 days	Wed 11/10/17	Tue 31/10/17
17	Erection of tubular platform for soil nails	8 days	0 days	Thu 16/11/17	Thu 23/11/17
18	Setting out of soil nails	3 days	0 days	Fri 24/11/17	Sun 26/11/17
19	Construction of Test nails TN1 and TN2	14 days	4.2 days	Mon 27/11/17	Sun 10/12/17
20	Pull out tests for TN1 and TN2	1 day	1 day	Mon 11/12/17	Mon 11/12/17
21	Construction of soil nails (45mcs)	21 days	21 days	Tue 12/12/17	Mon 1/1/18
22	Construction of soil nail heads	12 days	12 days	Tue 2/1/18	Sat 13/1/18
23	Construction of staircase	30 days	30 days	Sun 14/1/18	Mon 12/2/18
24	Hydroseeding of slope	2 days	2 days	Tue 13/2/18	Wed 14/2/18
25	Construction of hiking trail	37 days	37 days	Thu 15/2/18	Fri 23/3/18
26	Construction of Planter walls with planting	30 days	30 days	Sat 24/3/18	Sun 22/4/18
27	General tidy up	5 days	5 days	Mon 23/4/18	Fri 27/4/18
28	CONSTRUCTION OF HIKING TRAIL (Choi Wan section)	162 days	57.05 days	Fri 20/10/17	Sat 31/3/18
29	Erection of hoarding	5 days	0 days	Mon 12/2/18	Fri 16/2/18
30	Utilities detection	1 day	0 days	Mon 23/10/17	Mon 23/10/17
31	Construction of hiking trail	72 days	3.6 days	Fri 20/10/17	Sat 30/12/17
32	Construction of planter walls with planting	30 days	15 days	Fri 24/11/17	Tue 9/1/18
33	Landscaping Works (PM1 33)	28 days	28 days	Wed 10/1/18	Tue 6/2/18
34	General tidy up	2 days	2 days	Wed 7/2/18	Thu 8/2/18
35	Completion of Works	0 days	0 days	Sat 31/3/18	Sat 31/3/18



Official	Task	Duration	Start	Finish	Summary	External Milestone	External Milestone	External Milestone
Critical Path	Set	Duration	Start	Finish	Summary	External Milestone	External Milestone	External Milestone
Official Issues	Task Issues	Duration	Start	Finish	Summary	External Milestone	External Milestone	External Milestone



Summary: Summary, Manual Summary, Project Summary

External Tasks: External Milestone, External Summary

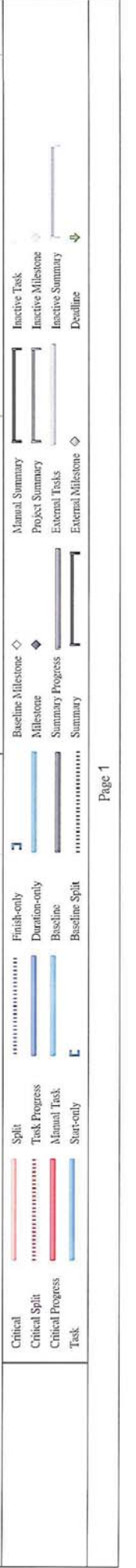
Inactive Milestone: Inactive Milestone, Inactive Summary

Task Legend:

- Task: Red bar
- Critical: Red bar with black outline
- Critical Split: Red bar with black outline and split
- Critical Progress: Red bar with black outline and progress
- Manual Task: Blue bar
- Start-only: Blue bar with start cap
- Finish-only: Blue bar with finish cap
- Start-only Finish-only: Blue bar with both caps
- Baseline: Dotted line
- Baseline Split: Dotted line with split
- Baseline Progress: Dotted line with progress
- Deadline: Blue arrow

Revised programme for Section F1_Dec 17

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



CEDD Contract No. NTE/07/2016

**Environmental Team for Development of Anderson Road Quarry Site – Site Formation
and Associated Infrastructure Works**

Monthly Environmental Monitoring & Audit Report (July 2019)



Contract 3 (NE/2017/03)

Activity ID	Activity Name	Duration	Start	Finish	2019				
					Jul 19	Aug 20	Sep 21	Oct 22	
NE2017/03 - ARQ PHASE 2A - Monthly Programme Update (201907)-1_190803									
Road Improvement Works Location 1 (RIW1)									
Construction Works									
Preliminary Works									
CON110610	Preparation works & erect working platform for non-destructive test for the Lee	60	17-May-19 A	12-Jul-19 A					
CON10240	Trees transplant at portion A	48	21-May-19 A	20-Jul-19 A					
CON11080	Non-destructive test for the Lee On Road Flyover	37	28-Jun-19 A	10-Aug-19					
Slope Works and Retaining Wall RWC2 Works									
Workfront 1 (RWC2 CH452 to CH270) (RW Type 4, 5, 6, 7 & 8)									
CON10120	Form haul road (RWC2 CH452 to CH270)	60	29-Apr-19 A	11-Jul-19 A					
Foundation Works (RWC2 CH452 to CH270) (RW Type 4, 5, 6, 7 & 8)									
CON10230	Cut slope works (RWC2 CH452 to CH270)	78	18-Jul-19 A	09-Nov-19					
CON11070	upgrading works at Feature No. 11NEA/F60 (by pip-by-pit method)	120	18-Jul-19 A	07-Dec-19					
Structure Works (RWC2 CH452 to CH270) (RW Type 4, 5, 6, 7 & 8)									
CON10260	Construct RW footing (RWC2 CH452 to CH270)	78	20-Sep-19	21-Dec-19					
Workfront 2 (RWC2 CH88 to CH-9) (RW Type 1a, 1 & 2)									
CON10100	Form haul road (RWC2 CH98 to CH-9)	48	08-Jul-19 A	31-Aug-19					
Foundation Works (RWC2 CH98 to CH-9) (RW Type 1a, 1 & 2)									
CON10310	Install sheet pile (RWC2 CH98 to CH-9)	60	15-Jul-19 A	06-Nov-19					
CON103110	boulders were found and need addition time for process	30	22-Jul-19	24-Aug-19					
Workfront 3 (RWC2 CH270 to CH98) (RW Type 3 & 3a)									
CON10080	Form haul road (RWC2 CH270 to CH98)	48	17-May-19 A	11-Sep-20					
Foundation Works (RWC2 CH270 to CH98) (RW Type 3 & 3a)									
CON10160	Install sheet pile (RWC2 CH270 to CH98; 5m/d)	24	26-Aug-19	23-Sep-19					
CON10170	Mobilisation works for socket H-pile works (RWC2 CH270 to CH98)	12	26-Aug-19	07-Sep-19					
CON10200	Pre-drill & construct socket H-pile works (RWC2 CH270 to CH98; 400nos, 3d/	300	09-Sep-19	11-Sep-20					
Structure Works (RWC2 CH270 to CH98) (RW Type 3 & 3a)									
CON10220	Construct RW footing (RWC2 CH270 to CH98)	96	24-Sep-19	18-Jan-20					
Noise Barrier Works									
Works in Slip Road 2									
CON101320	Reviewing road design on slip road 2	145	14-Dec-18 A	10-Mar-20					
CON10130	duration summary of slip road 2	357	14-Dec-18 A	10-Mar-20					
DUR1010	Working duration of before lay the gasmain	73	29-Apr-19 A	26-Jul-19					
CON101340	New town-gas-main planning works (by town-gas company, 8wk request by tc	48	21-May-19 A	26-Jul-19					
CON101940	Formation works for slip road 2 _stage 1	18	27-May-19 A	22-Jun-19 A					
CON101950	Utilities works, drainage works for slip road 2 _stage 1	18	03-Jun-19 A	10-Jul-19 A					
CON101960	Road works for slip road 2 _stage 1	18	21-Jun-19 A	12-Jul-19 A					
CON101970	Formation works for slip road 2 _stage 2	18	28-Jun-19 A	19-Jul-19 A					
CON101980	ELS works for trench for new town-gas-main on slip road 2 _stage 2	18	06-Jul-19 A	26-Jul-19					
CON101990	Lay new town-gas-main on new slip road 2 _stage 3 (by town-gas contractor,	48	27-Jul-19	21-Sep-19					
CON102010	Utilities works, drainage works for slip road 2 _stage 3	60	23-Sep-19	03-Dec-19					
DUR1020	Working duration of after lay the gasmain	138	23-Sep-19	10-Mar-20					
CON102020	Road works for slip road 2 _stage 3	60	16-Oct-19	24-Dec-19					
NBW (CT5-PC1 ~ CT5-PC3)									
CON105610	EWN #17_ Awaiting LCSD on planting arrangement issue confirmation	60	06-Apr-19 A	13-Aug-19					
CON10570	Site formation works & form haul road (CT5)	60	21-May-19 A	16-Sep-19					
CON10590	Pre-drill & construct socket H-pile works (CT5-PC1 ~ CT5-PC3) (12nos, 6d/no	72	23-May-19 A	11-Dec-19					
Works in Subway KS27									
CON101910	Site clearance at KS27	90	15-Apr-19 A	05-Aug-19					
CON102000	Tree transplant at KS27	96	06-Aug-19	28-Nov-19					
Road Improvement Works Location 2 (RIW2)									
Construction Works in Slope C3 (Portion B)									
Preliminary Works									
Site Set-up Works									
CON20044	PMI #23 & EWN #30 Transplant Aquilaria Sinensis at portion B	72	15-Apr-19 A	15-Jul-19 A					
Slope Works at Portion B									
Earth Works									
Haul Road & Soil Nail Works									
CON201510	Form haul road from Zone 3 to Zone 4	36	10-May-19 A	25-Jun-19 A					
CON20180	Mobilization & setup for soil nails works Zone 1	12	19-Jun-19 A	03-Jul-19 A					
CON20200	Drill & install soil nails (Zone 1, 55nos 8m dp, 3d/no, 3 team)	66	04-Jul-19 A	19-Sep-19					
CON201520	Form haul road from Zone 4 to Zone 5	36	16-Jul-19 A	26-Aug-19					
CON202010	Additional duration due to gasmain on Fei Ha Road obstruct the soil nail works	67	20-Sep-19	09-Dec-19					

- Actual Work
- Remaining Work
- Milestone

Activity ID	Activity Name	Duration	Start	Finish	2019			
					Jul 19	Aug 20	Sep 21	Oct 22
Cut Slope & Fill Slope Works								
CON205010	Gasmain diversion along Clean Water Bay Road	90	15-Jun-19 A	23-Oct-19				
CON20510	Install sheet pile to RW bay 9 to bay 13	18	02-Oct-19	23-Oct-19				
Construction Noise Semi-Enclosure SE2 (Portion C)								
Preliminary Works								
Site Set-up Works								
CON20051	Trees preservation duration works period at portion C	1012	06-Mar-19 A	28-Oct-22				
Construction Works								
Road Works								
CON201150	Remove existing central median - stage 2	90	11-Mar-19 A	05-Sep-19				
CON201170	Remove existing central median - stage 3	35	11-Mar-19 A	05-Jul-19 A				
CON200310	Preparation works and TTA procedure for relocation	25	25-Mar-19 A	27-Jul-19				
CON200310	Preparation works and TTA procedure for relocation	18	16-May-19 A	27-Jun-19 A				
CON20100	Site clearance for new location of District Welcome Signboard	36	20-Jun-19 A	01-Aug-19				
CON201010	Construct footing of District Welcome Signboard at new location	14	12-Jul-19 A	08-Aug-19				
CON20120	Construct haul road near junction at clear water bay road	12	02-Aug-19	15-Aug-19				
CON201020	District Welcome Signboard relocation	12	09-Aug-19	22-Aug-19				
CON201030	Make good works for District Welcome Signboard relocation	12	23-Aug-19	05-Sep-19				
Noise Semi-Enclosure Sub-structure Works								
Phase 1 (CT4, SE2 Bay4 to Bay12)								
CON20130	Traffic diversion for phase 1 (CT4, SE2 Bay4 to Bay12)	145	16-Aug-19	11-Feb-20				
CON20140	Site formation works (CT4, SE2 Bay4 to Bay12; L=110m)	0	16-Aug-19	28-Sep-19				
CON20160	Pre-drill & construct piling fdn (CT4, SE2 Bay4 to Bay12)	37	16-Aug-19	28-Sep-19				
CON20160	Pre-drill & construct piling fdn (CT4, SE2 Bay4 to Bay12)	108	30-Sep-19	11-Feb-20				
Road Improvement Works Location 3 (RIW3)								
Construction Works								
Works in Slope D1								
Preparation Works								
CON30012	Install monitoring & instrumentation (Slope D1)	60	23-Apr-19 A	03-Sep-19				
CON30011	Form haul road (Slope D1 Access road A)	60	23-Apr-19 A	03-Sep-19				
CON30011	Form haul road (Slope D1 Access road A)	54	25-Apr-19 A	31-Jul-19				
Slope Works (Slope D1)								
CON30060	Slope works at slope D1 (stage 1)	360	30-May-19 A	13-Aug-20				
CON30160	Form haul road B	72	16-Sep-19	10-Dec-19				
Construction of Retaining Wall RWD1								
Foundation Works (RWD1)								
CON30190	Pre-drill & construct socket H-pile works at RWD1 (144nos, 6d/no, 5 teams)	173	20-Aug-19	18-Mar-20				
CON30200	Pre-drill & construct bored pile (CH94-CH130, 5nos, 16d/no, team 1)	173	20-Aug-19	18-Mar-20				
CON30200	Pre-drill & construct bored pile (CH94-CH130, 5nos, 16d/no, team 1)	80	18-Sep-19	21-Dec-19				
Road Works (Slope D1)								
CON30930	Watermain works on Sau Man Ping Road toward Lam Tim (Section 1)	90	28-Aug-19	13-Dec-19				
Works in Slope D2								
Construction of Retaining Wall RWD2								
CON30022	Install monitoring & instrumentation (Slope D2)	120	22-Jul-19	11-Dec-19				
CON30080	Install sheet pile, support & slope works at slope D2 (L=75m)	60	22-Jul-19	30-Sep-19				
CON30080	Install sheet pile, support & slope works at slope D2 (L=75m)	90	26-Aug-19	11-Dec-19				
Works in Slope D3								
Slope Works (Slope D3)								
CON30029	Install monitoring & instrumentation (Slope D3)	331	07-May-19 A	27-Jul-20				
CON30029	Install monitoring & instrumentation (Slope D3)	60	07-May-19 A	18-Jul-19 A				
CON30120	Cut slope works (CH0 to CH115) (L=115m, 14000m3, 44m3/d)	318	23-May-19 A	27-Jul-20				
CON301210	Construct RWD3 (CH0 to CH60)	150	07-Sep-19	10-Mar-20				
Pedestrian Connectivity Facility (PC-E8)								
Construction Works								
Preparation Works								
Trees Works								
CON400810	Trees preservation duration works period at portion G	347	01-Apr-19 A	17-Jul-20				
CON400810	Trees preservation duration works period at portion G	347	01-Apr-19 A	17-Jul-20				
Hoarding Works & Site Set-up								
CON401530	Relocate existing street lighting (AA6955) at Hiu Yuk Path (by CLPE's contract)	106	21-Feb-19 A	01-Aug-19				
CON40150	Form haul road (from Hiu Yuk Path site access to PC E8-F4)	30	06-May-19 A	01-Aug-19				
CON40090	Erect temporary staircase along E8-ABT & diversion	60	17-Jun-19 A	17-Jul-19 A				
Earth Works								
CON40190	ELS to E8-F3 (approx 200m3, @80m3/d + 2wk for ELS)	158	04-Jun-19 A	10-Dec-19				
CON40190	ELS to E8-F3 (approx 200m3, @80m3/d + 2wk for ELS)	15	04-Jun-19 A	03-Aug-19				
CON40170	ELS to E8-F4 (approx 1783m3, @25m3/d)	72	02-Aug-19	28-Oct-19				
CON401310	Construct working platform for soldier pile wall construction	12	02-Aug-19	15-Aug-19				
CON401320	Mobilization soldier pile rig	6	16-Aug-19	22-Aug-19				
CON40140	Construct soldier pile wall to E8-ABT (6d/no, 4nos)	24	23-Aug-19	20-Sep-19				
CON40290	ELS to E8-F6 (approx 1960m3, @25m3/d)	79	06-Sep-19	10-Dec-19				
CON40200	ELS to E8-F7 (approx 1378m3, @25m3/d)	55	21-Sep-19	26-Nov-19				

◆ Traffic diversion for phase 1 (CT4, SE2 Bay4 to Bay12)

- Actual Work
- Remaining Work
- ◆ Milestone

Activity ID	Activity Name	Duration	Start	Finish	2019			
					Jul 19	Aug 20	Sep 21	Oct 22
Footing Construction								
CON40220	Construct footing E8-F2 (38m3) & backfilling	31	29-May-19 A	31-Aug-19				
CON40230	Construct footing E8-F3 (65m3) & backfilling	24	05-Aug-19	31-Aug-19				
Pier Construction								
CON40240	Construct pier E8-P1 (2 pour)	42	05-Aug-19	23-Sep-19				
CON40250	Construct pier E8-P2 (3 pour)	72	02-Sep-19	27-Nov-19				
Escalator Pit Construction								
CON40260	Construct escalator pit F1>P1	60	24-Sep-19	04-Dec-19				
E&M Works								
CON41250	Application for power supply & energization (PC-E8)	156	25-Mar-19 A	03-Oct-19				
Pedestrian Connectivity Facility (PC-E11)								
Construction Works								
Preliminary Works								
CON40731	Trees preservation duration works period at portion E	856	08-Jan-19 A	27-Nov-21				
Foundation Works								
CON40750	Pre-drill & construct socket H-pile works for E11-PC1 to E11-PC5 (89nos, 6d/n)	317	15-Nov-18 A	13-Dec-19				
CON40770	Tree felling & pre-drill works in Portion Fil	30	17-May-19 A	21-Jun-19 A				
CON40900	Mobilization to Portion Fil	3	28-Sep-19	02-Oct-19				
CON40930	Pre-drill & construct socket H-pile works for E11-PC6 (49nos, 6d/no, 2 teams)	87	03-Oct-19	16-Jan-20				
Sub-structure Works								
CON40870	ELS & construct sub-structure for E11-PC4	30	14-Aug-19	18-Sep-19				
CON40880	ELS & construct sub-structure for E11-PC3	54	19-Sep-19	22-Nov-19				
Super-structure Works / Erect Bridge Steel Frame								
RC Works								
CON40910	Construct pier E11-P3	48	08-Oct-19	02-Dec-19				
Pedestrian Connectivity Facility System A (SYA)								
Construction Works								
Sub-structure Works								
CON500420	Excavate & install support at SYA-F1 (+144 to +130.5mPD, 2321m3, 40m3/d +	154	24-Jan-19 A	31-Aug-19				
CON500430	Addition duration due to quality poor than prelim estimate & addition slope stat	70	23-May-19 A	17-Aug-19				
CON500510	Construct footing SYA-F1 (+130.5 ~ +134mPD)	42	02-Sep-19	23-Oct-19				
CON500520	Construct footing SYA-F1 (+134 ~ +144mPD)	66	17-Oct-19	04-Jan-20				
Pedestrian Connectivity Facility System B (SYB)								
Construction Works								
Preliminary Works								
CON50220	Form haul road (at upper portion: PC-A1 to PC8)	54	20-May-19 A	24-Aug-19				
CON51110	Erect hoarding at portion L (near existing footbridge side)	24	09-Aug-19	05-Sep-19				
CON50210	Form haul road (till to near PC7)	77	26-Aug-19	26-Nov-19				
CON511110	Site clearance at portion L	48	06-Sep-19	04-Nov-19				
Foundation Works								
CON50270	Pre-drill & construct socket H-pile works at SYB-PC3 (63nos, 6d/no, 2 teams)	189	26-Mar-19 A	20-Nov-19				
CON50320	Mobilisation of socketted H pile plant to SYS-A1	12	26-Aug-19	07-Sep-19				
CON50350	Mobilisation of socketted H pile plant to SYS-PC8	12	26-Aug-19	07-Sep-19				
CON50330	Pre-drill & construct socket H-pile works at SYB-A1 under Portion K (18nos, 6c	108	09-Sep-19	18-Jan-20				
CON50360	Pre-drill & construct socket H-pile works at SYB-PC8 (20nos, 6d/no, 1 team)	120	09-Sep-19	05-Feb-20				
Earth Works								
CON50510	Install sheet pile at SYB-PC4 (27m L, 3m/d, 1 team)	12	31-Aug-19	13-Sep-19				
CON50450	Install sheet pile at SYB-PC1 (24m L, 4m/d, 1 team)	6	06-Sep-19	12-Sep-19				
CON50460	Excavate & install support at SYB-PC1 (108m3, 25m3/d, 1 team + 6d)	12	13-Sep-19	27-Sep-19				
CON50520	Excavate & install support at SYB-PC4 (270m3, 20m3/d, 1 team + 18d)	32	16-Sep-19	24-Oct-19				
CON50470	Install sheet pile at SYB-PC2 (24m L, 4m/d, 1 team)	6	28-Sep-19	05-Oct-19				
CON50480	Excavate & install support at SYB-PC2 (100m3, 25m3/d, 1 team + 6d)	12	08-Oct-19	21-Oct-19				
Bus-Bus Interchange Public Toilet (BBI Toilet)								
Construction Works								
Bus-Bus Interchange Public Toilet								
CON40740	Construct Public Toilet	188	29-Dec-18 A	24-Sep-19				
CON41270	Application for power supply & energization (BBI Toilet)	90	29-Jan-19 A	24-Aug-19				
CON40810	E&M Installation and Associated Landscape Works	90	25-Sep-19	13-Jan-20				
CON408110	ABWF Works (BBI Toilet)	84	25-Sep-19	06-Jan-20				

- Actual Work
- Remaining Work
- Milestone

Appendix D

Monitoring Locations for Impact Monitoring

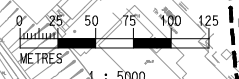
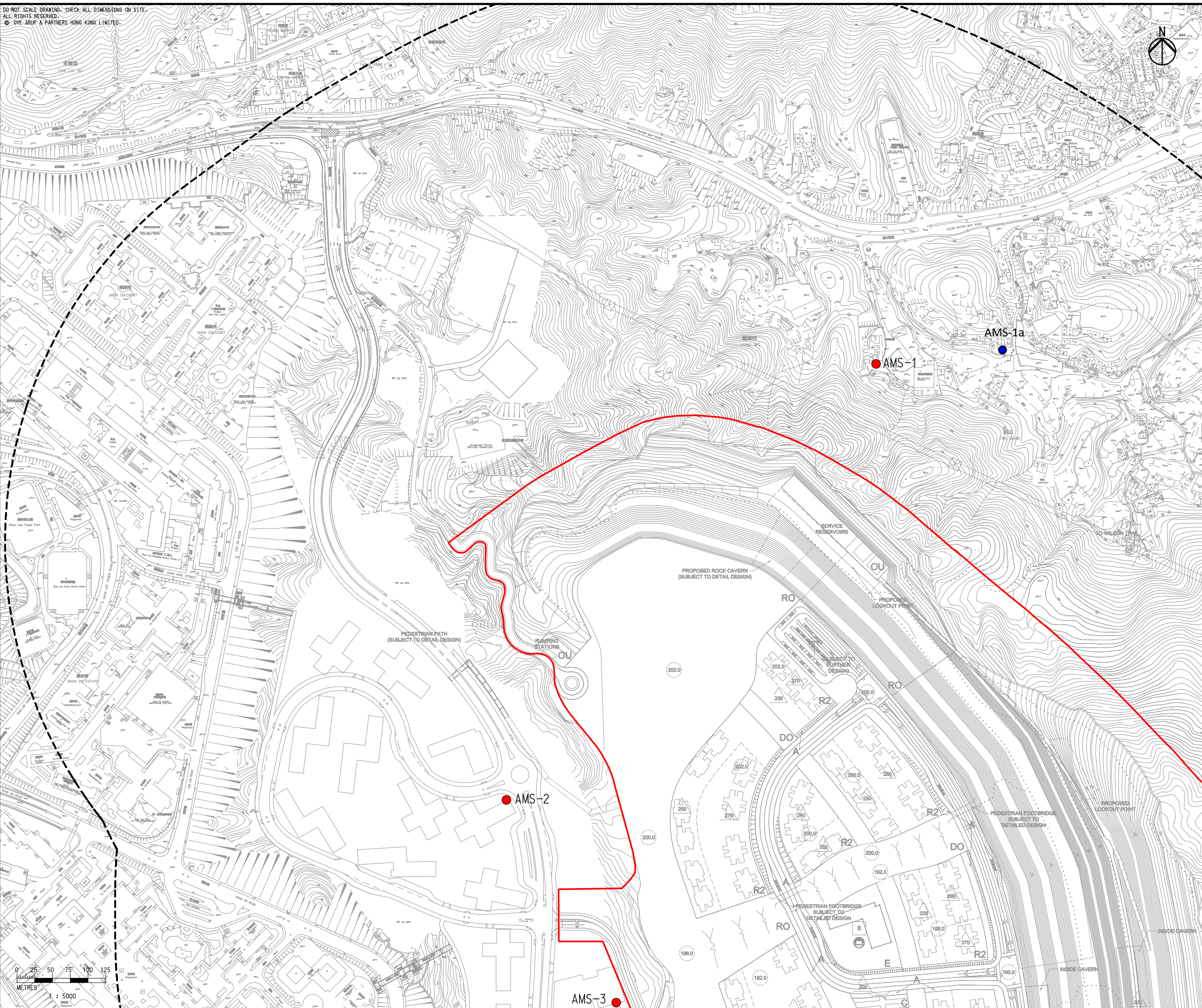
**Monitoring Locations
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- Legend
- Study Area
 - 500m Assessment Area
 - Dust Monitoring Locations
 - Alternate Dust Monitoring Location

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

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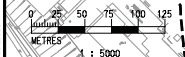
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HVS in AMS-1 for 24-Hour TSP



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

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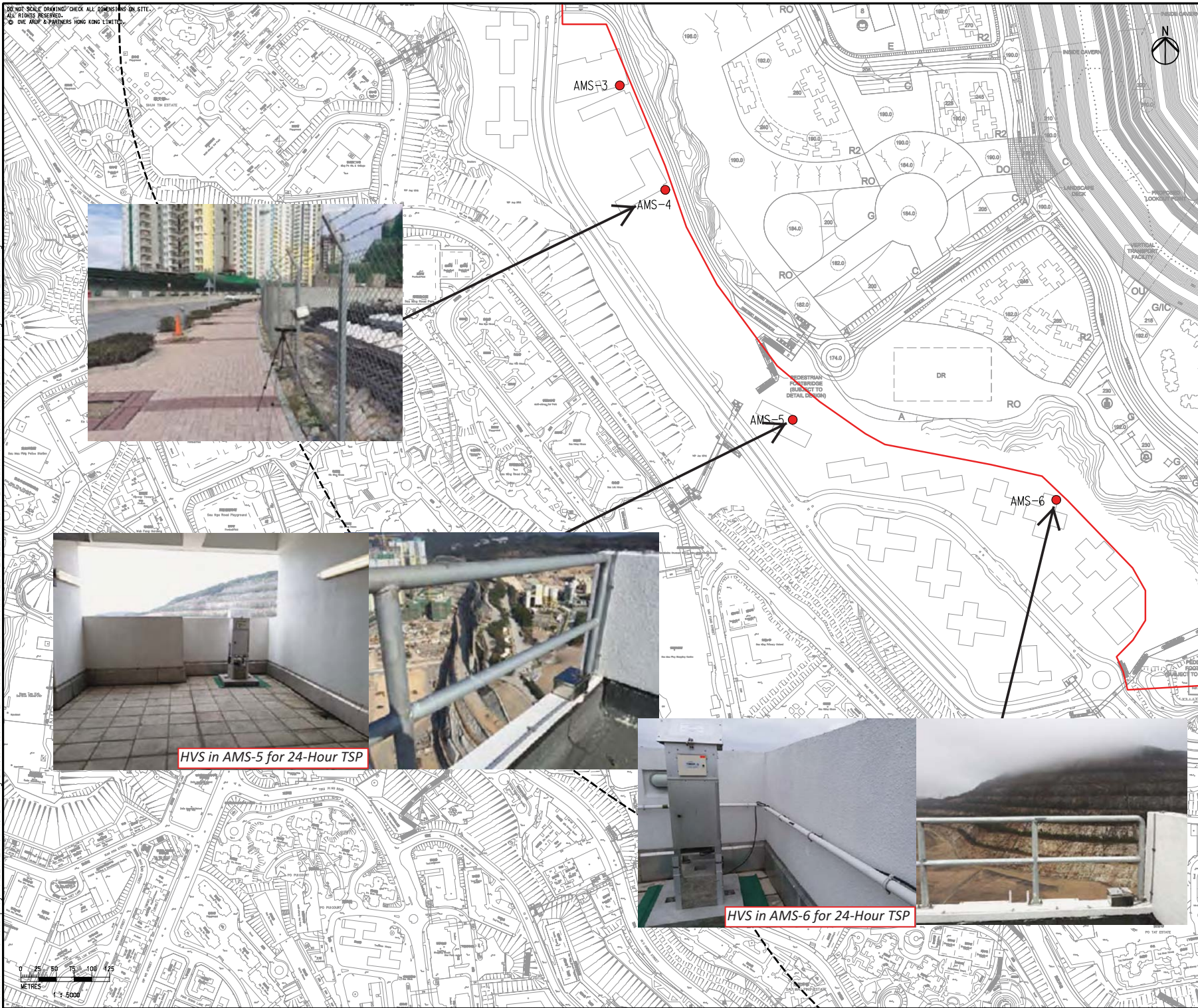
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- Legend
- Study Area
 - 500m Assessment Area
 - Dust Monitoring Locations



HVS in AMS-5 for 24-Hour TSP



HVS in AMS-6 for 24-Hour TSP

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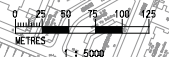
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Locations of Construction
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- Legend
- Study Area
 - 500m Assessment Area
 - Dust Monitoring Locations



HVS in AMS-7 for 24-Hour TSP

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 Locations of Construction
 Dust Monitoring
 (Sheet 3 of 3)

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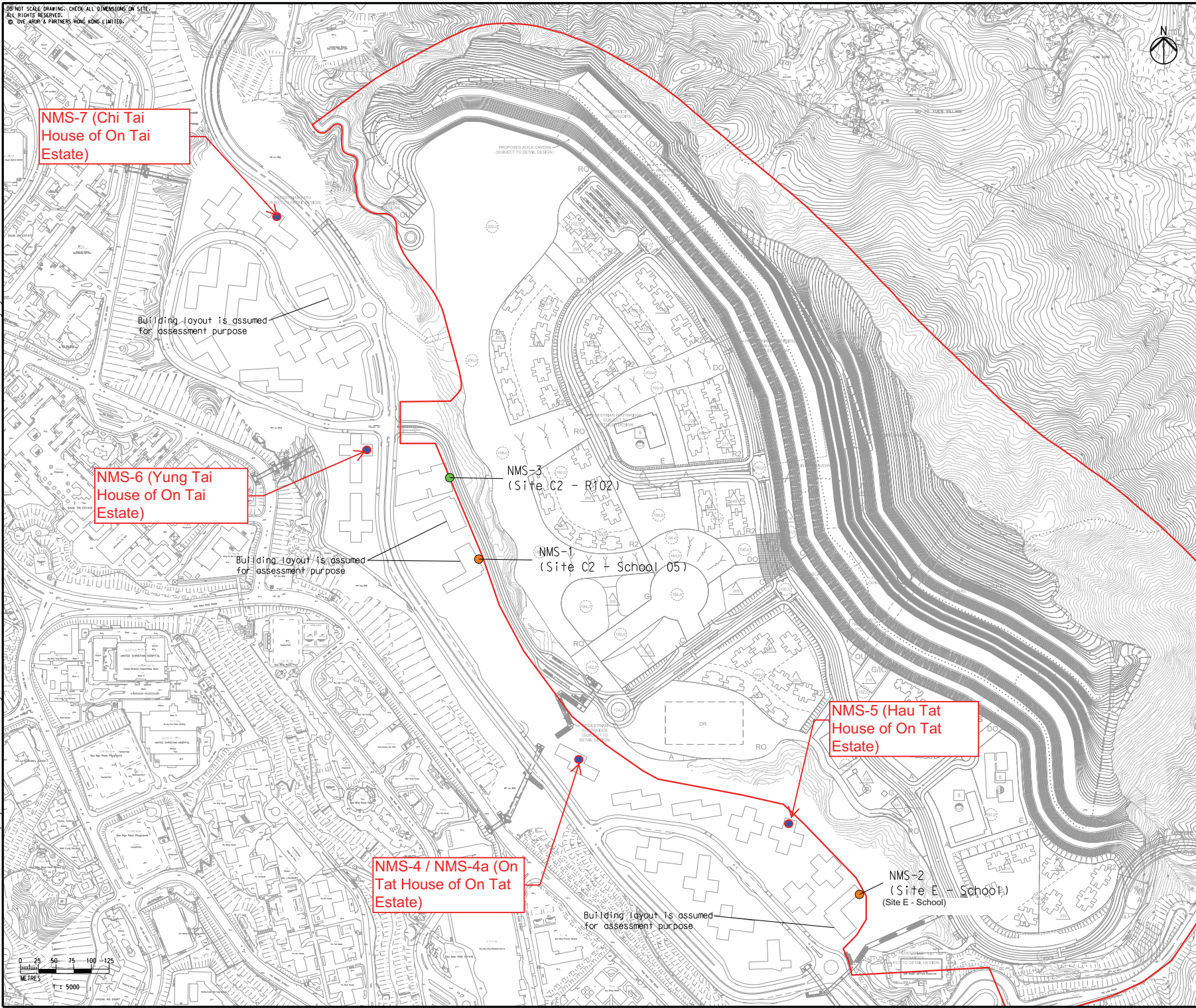
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- Legend
- Study Area
 - Construction Noise Monitoring Location
 - Construction and Operational Road Traffic Noise Monitoring Location
 - Review Noise monitoring Location

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

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**Locations of Noise
 Monitoring**

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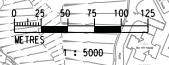
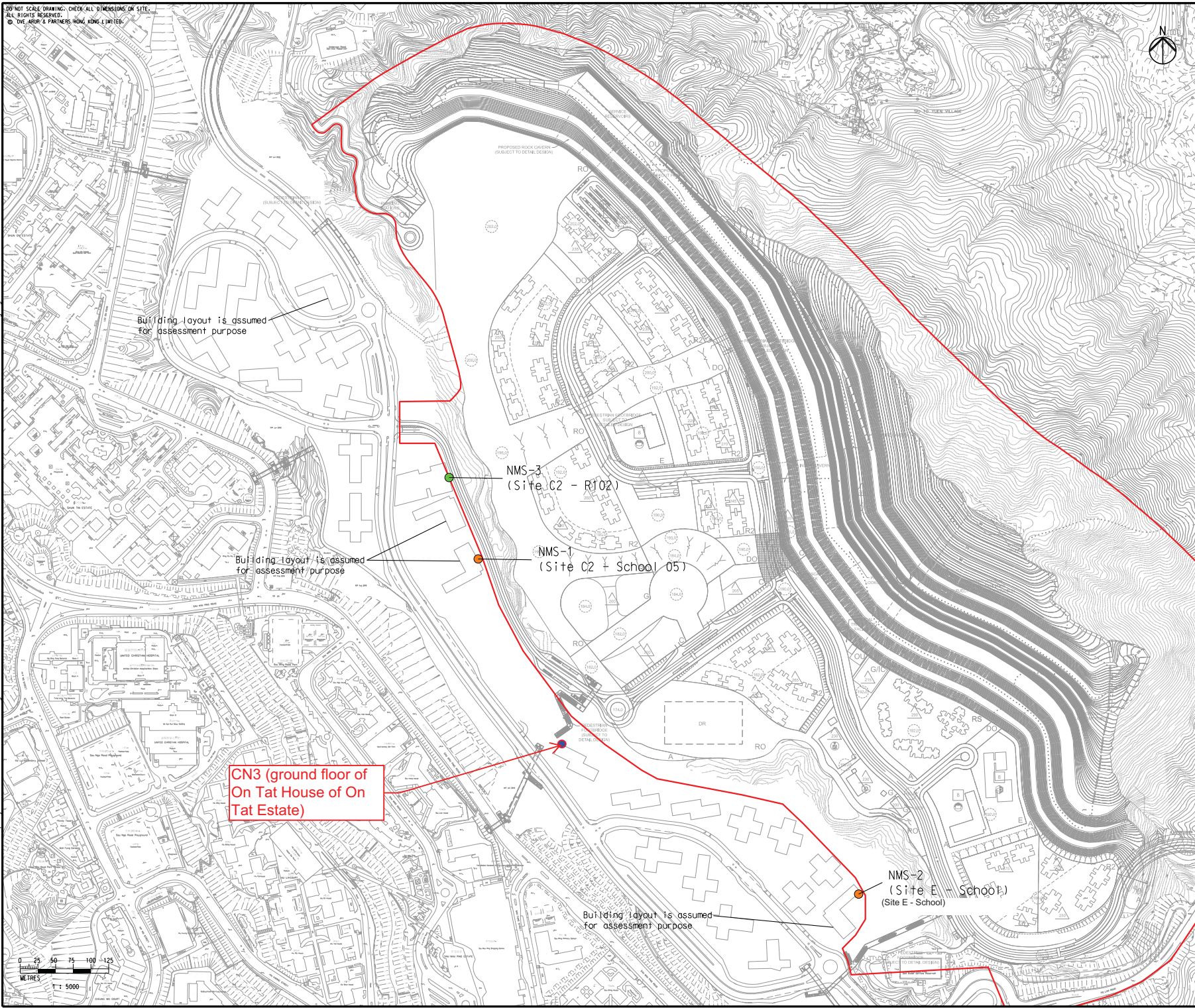
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- Legend
- Study Area
 - Construction Noise Monitoring Location
 - Construction and Operational Road Traffic Noise Monitoring Location
 - Noise monitoring Location

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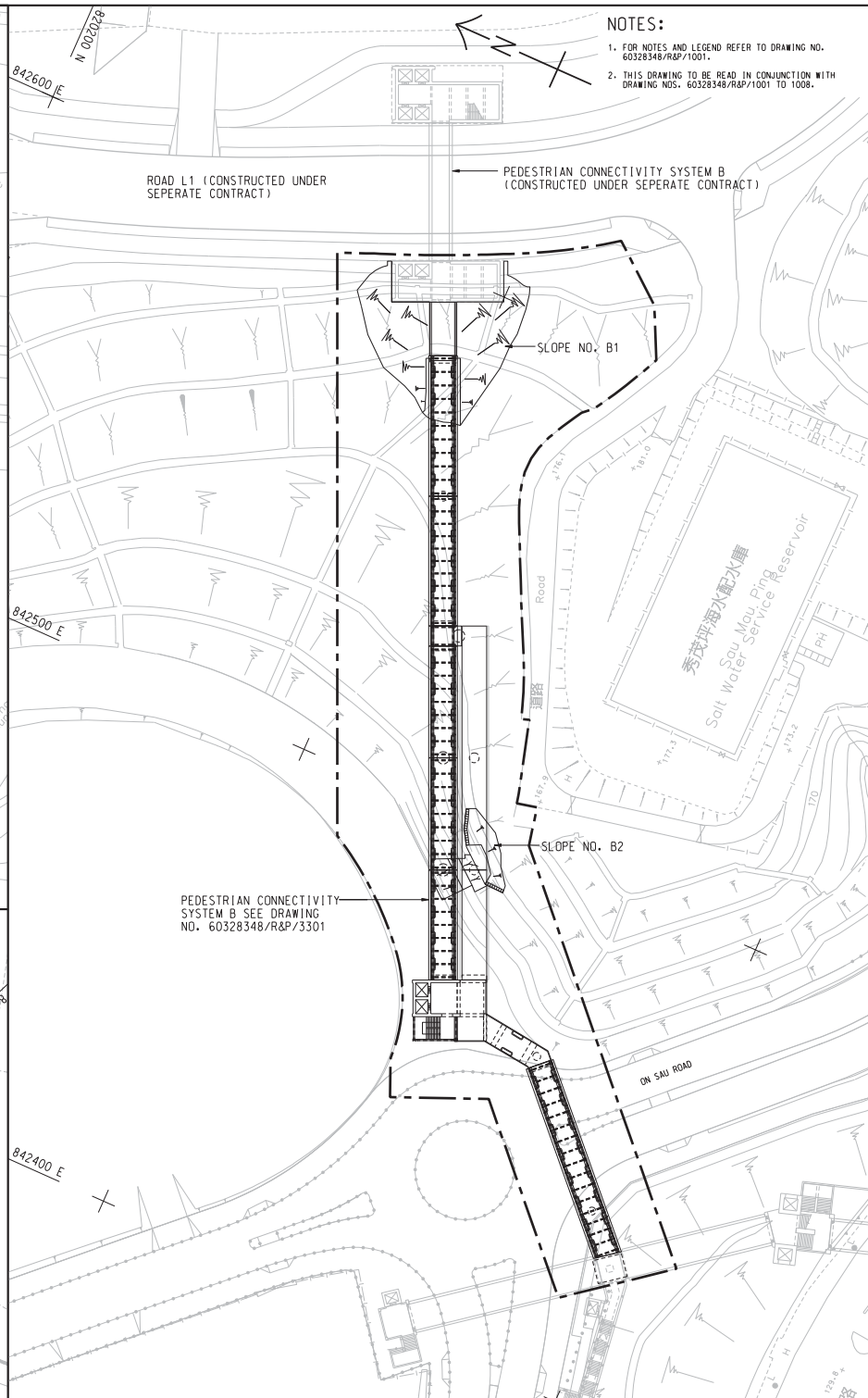
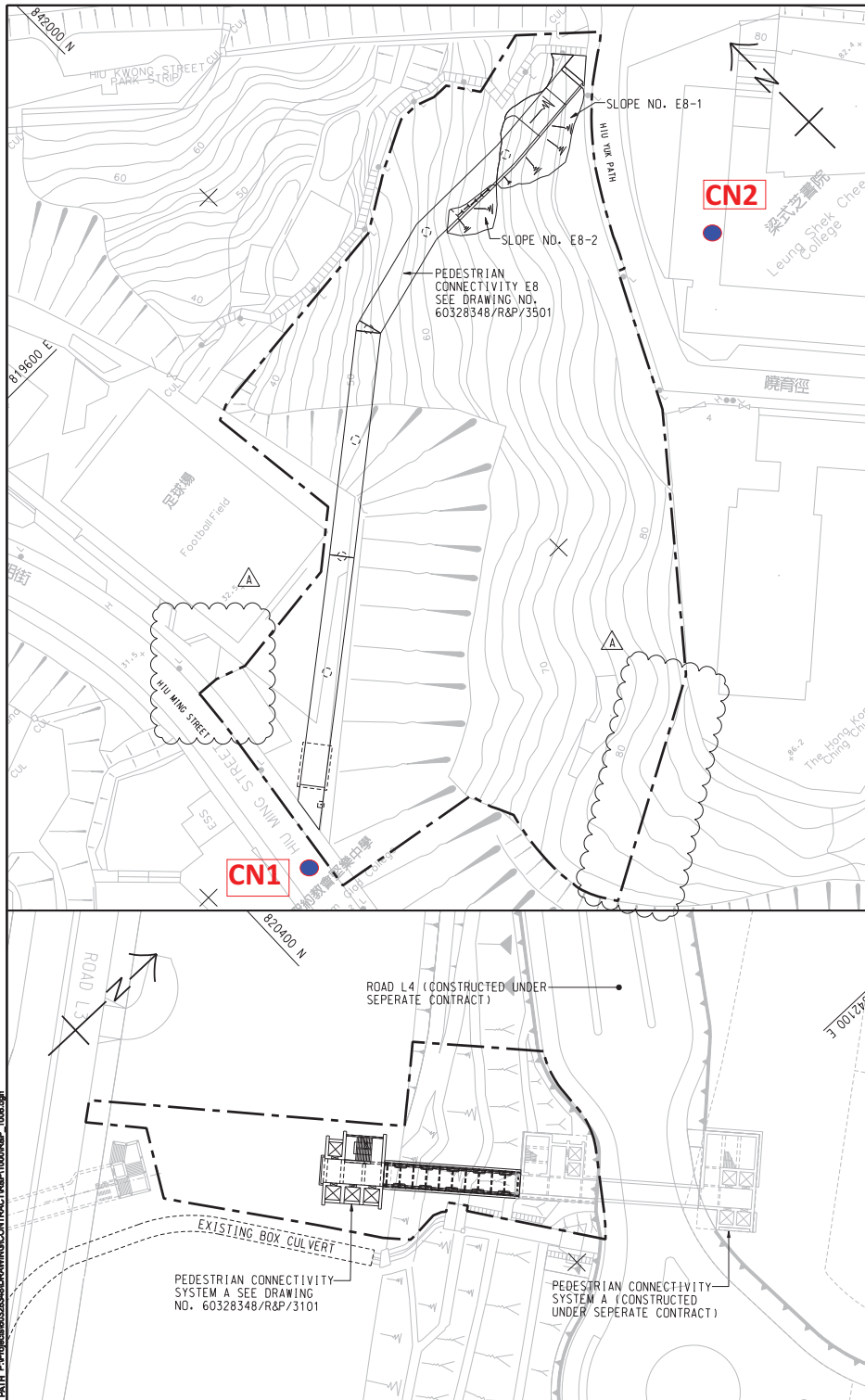
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Drawing title
 Locations of Noise Monitoring

Drawn	Date	Checked	Approved
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 Development Department



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.

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
 AECOM

ISSUE/REVISION

NO.	DATE	DESCRIPTION	CHK.
A	NOV. 17	TENDER ADDENDUM NO. 1	Y/C
-	OCT. 17	TENDER DRAWING	AWYC

STATUS

SCALE
 A1 : 500 METRES

DIMENSION UNIT
 公尺

KEY PLAN
 A1 : 60000

PROJECT NO.
 60328348

CONTRACT NO.
 NE/2017/03

SHEET TITLE
 GENERAL LAYOUT

SHEET NUMBER
 60328348/R&P/1008A

SHEET 6 OF 8

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Appendix E

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

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Chi Yum Ching She	Date of Calibration: 14-Jun-19
Location ID : AMS1	Next Calibration Date: 14-Aug-19
Model:TISCH High Volume Air Sampler TE-5170	Technician: Mr. Fai So

CONDITIONS			
Sea Level Pressure (hPa)	1002.4	Corrected Pressure (mm Hg)	751.8
Temperature (°C)	28.4	Temperature (K)	301

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

CALIBRATION							LINEAR REGRESSION
Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (in)	Qstd (m3/min)	I (chart)	IC corrected	
18	4	4	8	1.334	64	63.29	Slope = 29.3864 Intercept = 23.2843 Corr. coeff. = 0.9919
13	3.3	3.3	6.6	1.212	58	57.36	
10	2.6	2.6	5.2	1.076	56	55.38	
7	1.7	1.7	3.4	0.870	50	49.45	
5	1.1	1.1	2.2	0.700	44	43.51	

Calculations :

$$Qstd = 1/m[\text{Sqrt}(H2O(Pa/Pstd)(Tstd/Ta))-b]$$

$$IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$$

Qstd = standard flow rate

IC = corrected chart responses

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:

$$1/m((I)[\text{Sqrt}(298/Tav)(Pav/760)]-b)$$

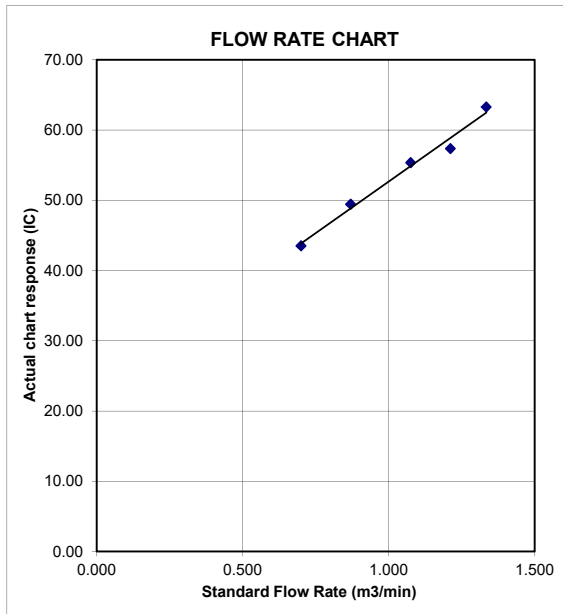
m = sampler slope

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: 27-May-19
Location ID : AMS 5	Next Calibration Date: 27-Jul-19
Model: TISCH High Volume Air Sampler TE-5170	Technician: Mr. Fai So

CONDITIONS

Sea Level Pressure (hPa)	1008.1	Corrected Pressure (mm Hg)	756.075
Temperature (°C)	26.5	Temperature (K)	300

CALIBRATION ORIFICE

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

CALIBRATION

Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION		
							Slope =	Intercept =	Corr. coeff. =
18	6.1	6	12.1	1.651	53	52.73	Slope = 34.9475 Intercept = -5.3398 Corr. coeff. = 0.9983		
13	4.8	4.7	9.5	1.463	45	44.77			
10	3.5	3.5	7	1.256	39	38.80			
7	2.4	2.4	4.8	1.040	32	31.84			
5	1.2	1.2	2.4	0.735	20	19.90			

Calculations :

$$Qstd = 1/m[\text{Sqrt}(H2O(Pa/Pstd)(Tstd/Ta))-b]$$

$$IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$$

Qstd = standard flow rate

IC = corrected chart responses

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:

$$1/m((I)[\text{Sqrt}(298/Tav)(Pav/760)]-b)$$

m = sampler slope

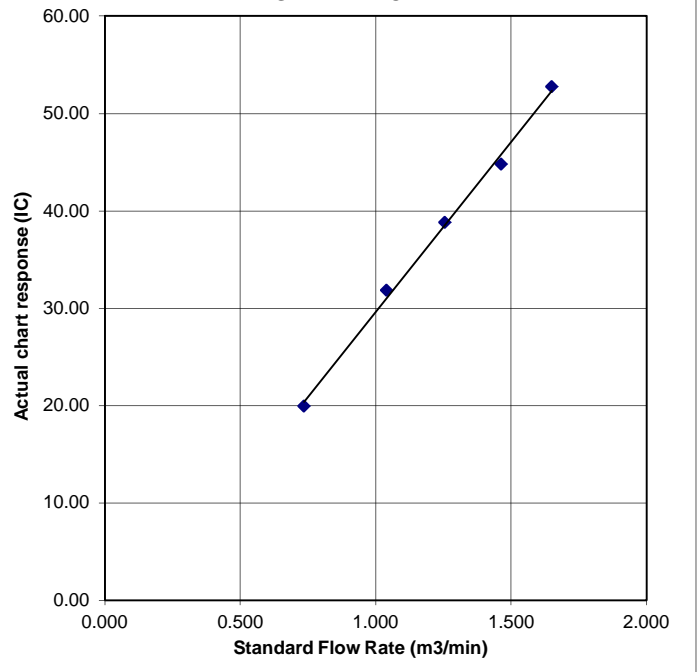
b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure

FLOW RATE CHART



TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Hau Tat House	Date of Calibration: 27-May-19
Location ID : AMS 6	Next Calibration Date: 27-Jul-19
Model: TISCH High Volume Air Sampler TE-5170	Technician: Mr. Fai So

CONDITIONS

Sea Level Pressure (hPa)	1008.1	Corrected Pressure (mm Hg)	756.075
Temperature (°C)	26.5	Temperature (K)	300

CALIBRATION ORIFICE

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

CALIBRATION

Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	6.2	6.2	12.4	1.671	56	55.72	Slope = 36.0595 Intercept = -4.8786 Corr. coeff. = 0.9986
13	4.5	4.5	9	1.424	47	46.76	
10	3.6	3.6	7.2	1.274	40	39.80	
7	2.1	2.1	4.2	0.973	31	30.84	
5	1.1	1.0	2.1	0.688	20	19.90	

Calculations :

$$Qstd = 1/m[\text{Sqrt}(H2O(Pa/Pstd)(Tstd/Ta))-b]$$

$$IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$$

Qstd = standard flow rate

IC = corrected chart responses

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:

$$1/m((I)[\text{Sqrt}(298/Tav)(Pav/760)]-b)$$

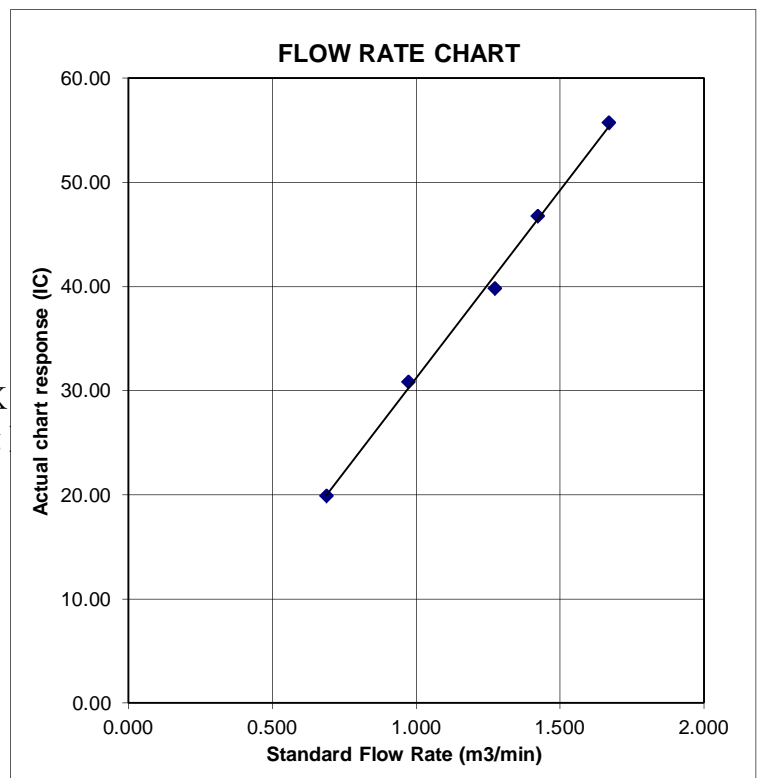
m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure



TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Ma Yau Tong Village	Date of Calibration: 27-May-19
Location ID : AMS 7	Next Calibration Date: 27-Jul-19
Model: TISCH High Volume Air Sampler TE-5170	Technician: Mr. Fai So

CONDITIONS

Sea Level Pressure (hPa)	1008.1	Corrected Pressure (mm Hg)	756.075
Temperature (°C)	26.5	Temperature (K)	300

CALIBRATION ORIFICE

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

CALIBRATION

Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	6.0	6.0	12	1.644	45	44.77	Slope = 28.8003 Intercept = -3.5008 Corr. coeff. = 0.9980
13	5.2	5.1	10.3	1.523	40	39.80	
10	3.7	3.7	7.4	1.291	33	32.83	
7	2.1	2.1	4.2	0.973	25	24.87	
5	1.1	1.1	2.2	0.704	17	16.91	

Calculations :

$$Qstd = 1/m[\text{Sqrt}(H2O(Pa/Pstd)(Tstd/Ta))-b]$$

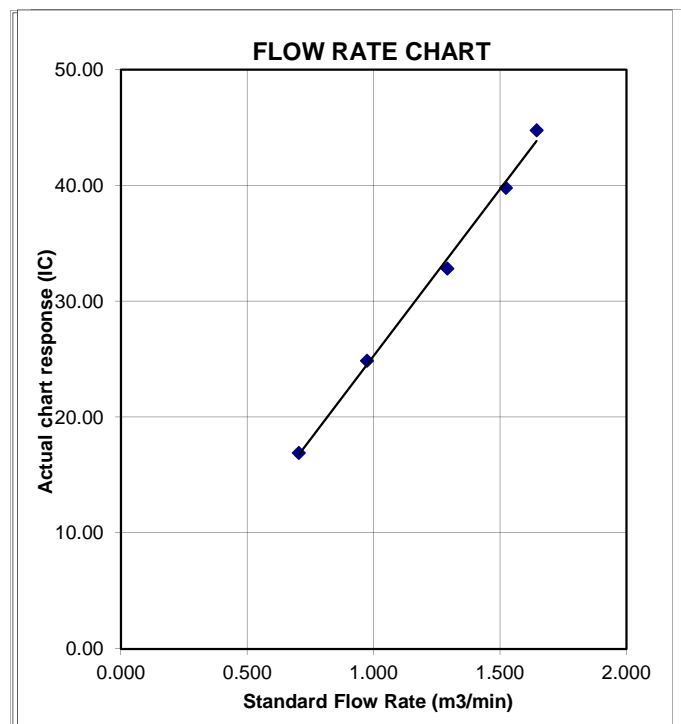
$$IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$$

Qstd = standard flow rate
 IC = corrected chart responses
 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:

$$1/m((I)[\text{Sqrt}(298/Tav)(Pav/760)]-b)$$

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



Certificate of Calibration

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

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

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

Calculations			
Vstd=	$\Delta Vol \left(\frac{Pa - \Delta P}{Pstd} \right) \left(\frac{Tstd}{Ta} \right)$	Va=	$\Delta Vol \left(\frac{Pa - \Delta P}{Pa} \right)$
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=	$1/m \left(\left(\sqrt{\Delta H \left(\frac{Ta}{Pa} \right)} \right) - b \right)$

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



ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

SUB-CONTRACTING REPORT

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

General Comments

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

Signatories

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

Signatories

Position

Richard Fung

General Manager

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

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

ALS Technichem (HK) Pty Ltd
Part of the **ALS Laboratory Group**

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

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



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

Equipment Verification Report (TSP)

Equipment Calibrated:

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

Standard Equipment:

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

Equipment Verification Results:

Testing Date: 7 January 2019

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

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

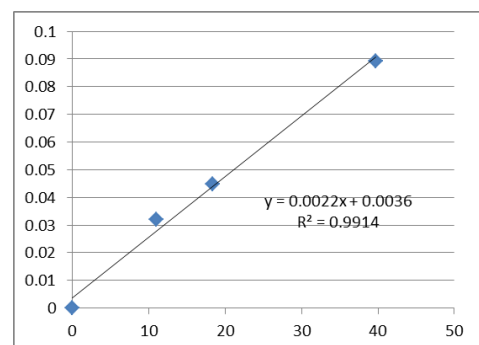
Sensitivity Adjustment Scale Setting (After Calibration) 602 (CPM)

Linear Regression of Y or X

Slope (K-factor): 0.0022

Correlation Coefficient 0.9957

Date of Issue 14 January 2019



Remarks:

- Strong** Correlation ($R > 0.8$)
- Factor 0.0022 should be apply for TSP monitoring

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

Operator : Martin Li Signature : [Signature] Date : 14 January 2019

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

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

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

CONDITIONS

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

CALIBRATION ORIFICE

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

CALIBRATION

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

Calculations :

$$Q_{std} = 1/m[\sqrt{H_2O(P_a/P_{std})(T_{std}/T_a)}] - b$$

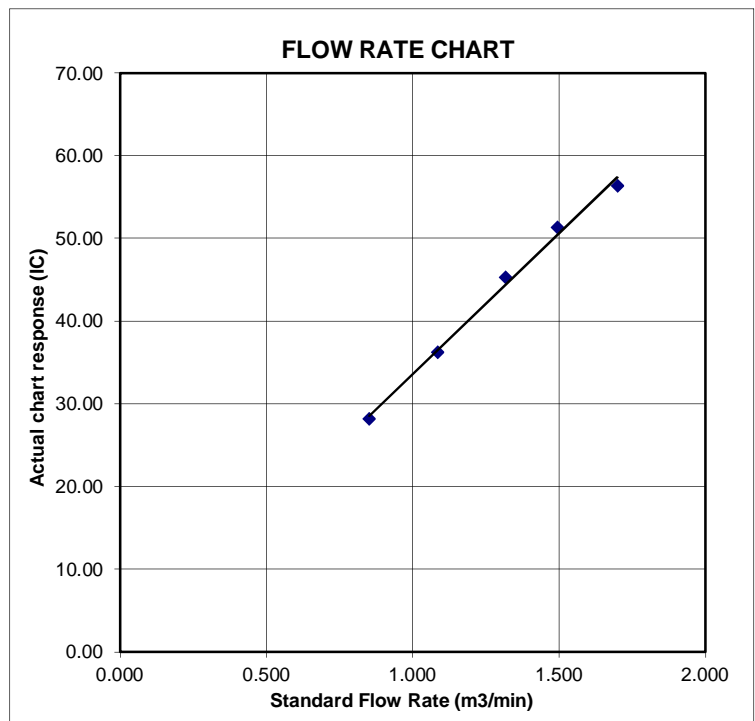
$$IC = I[\sqrt{P_a/P_{std}}(T_{std}/T_a)]$$

Qstd = standard flow rate
 IC = corrected chart responses
 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:

$$1/m((I)[\sqrt{298/T_{av}}(P_{av}/760)] - b)$$

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



Certificate of Calibration

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

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

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

Calculations	
Vstd= $\Delta Vol \left(\frac{Pa - \Delta P}{Pstd} \right) \left(\frac{Tstd}{Ta} \right)$	Va= $\Delta Vol \left(\frac{Pa - \Delta P}{Pa} \right)$
Qstd= $Vstd / \Delta Time$	Qa= $Va / \Delta Time$
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= $1/m \left(\left(\sqrt{\Delta H \left(\frac{Ta}{Pa} \right)} \right) - b \right)$

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



ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

SUB-CONTRACTING REPORT

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

General Comments

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

Signatories

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

Signatories

Position

Richard Fung

General Manager

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

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

ALS Technichem (HK) Pty Ltd
Part of the **ALS Laboratory Group**

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



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

Equipment Verification Report (TSP)

Equipment Calibrated:

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

Standard Equipment:

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

Equipment Verification Results:

Calibration Date: 11 March 2019

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

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

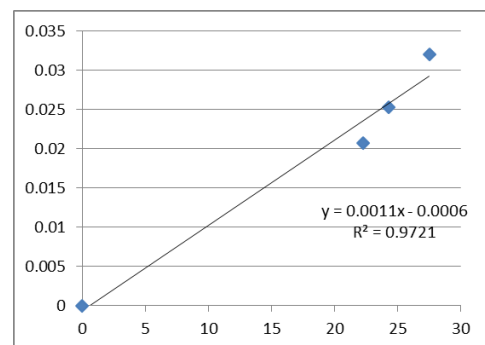
Sensitivity Adjustment Scale Setting (After Calibration) 573 (CPM)

Linear Regression of Y or X

Slope (K-factor): 0.0011

Correlation Coefficient (R) 0.9860

Date of Issue 15 March 2019



Remarks:

1. **Strong** Correlation ($R > 0.8$)
 2. Factor 0.0011 should be apply for TSP monitoring
- *If $R < 0.5$, repair or re-verification is required for the equipment

Operator : Fai So Signature :  Date : 15 March 2019

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

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

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

CONDITIONS

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

CALIBRATION ORIFICE

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

CALIBRATION

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

Calculations :

$$Qstd = 1/m[\text{Sqrt}(H2O(Pa/Pstd)(Tstd/Ta))-b]$$

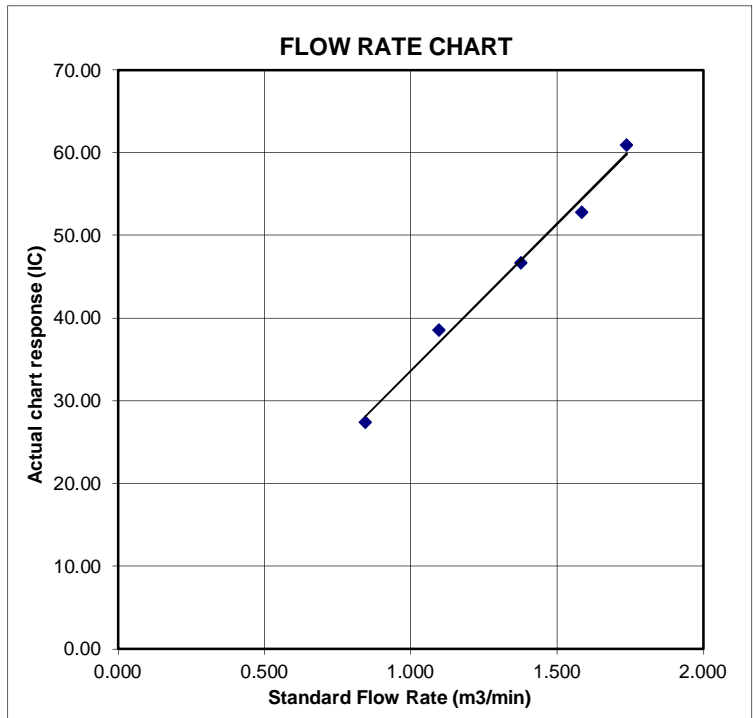
$$IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$$

Qstd = standard flow rate
 IC = corrected chart responses
 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:

$$1/m((I)[\text{Sqrt}(298/Tav)(Pav/760)]-b)$$

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



Certificate of Calibration

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

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

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

Calculations	
Vstd= $\Delta Vol \left(\frac{Pa - \Delta P}{Pstd} \right) \left(\frac{Tstd}{Ta} \right)$	Va= $\Delta Vol \left(\frac{Pa - \Delta P}{Pa} \right)$
Qstd= $Vstd / \Delta Time$	Qa= $Va / \Delta Time$
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= $1/m \left(\left(\sqrt{\Delta H \left(\frac{Ta}{Pa} \right)} \right) - b \right)$

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



ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

SUB-CONTRACTING REPORT

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

General Comments

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

Signatories

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

Signatories

Position

Richard Fung

General Manager

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

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

ALS Technichem (HK) Pty Ltd
Part of the **ALS Laboratory Group**

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



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

Equipment Verification Report (TSP)

Equipment Calibrated:

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

Standard Equipment:

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

Equipment Verification Results:

Testing Date: 7 January 2019

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

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

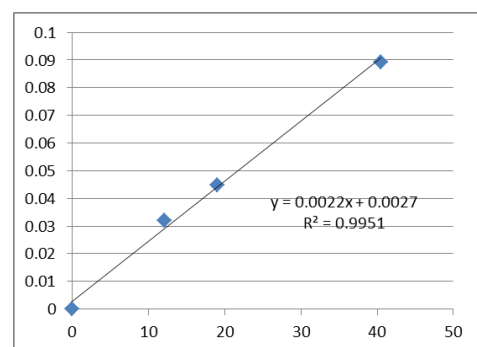
Sensitivity Adjustment Scale Setting (After Calibration) 655 (CPM)

Linear Regression of Y or X

Slope (K-factor): 0.0022

Correlation Coefficient 0.9975

Date of Issue 14 January 2019



Remarks:

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

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

Operator : Martin Li Signature : [Signature] Date : 14 January 2019

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

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

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

CONDITIONS

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

CALIBRATION ORIFICE

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

CALIBRATION

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

Calculations :

$$Qstd = 1/m[\text{Sqrt}(H2O(Pa/Pstd)(Tstd/Ta))-b]$$

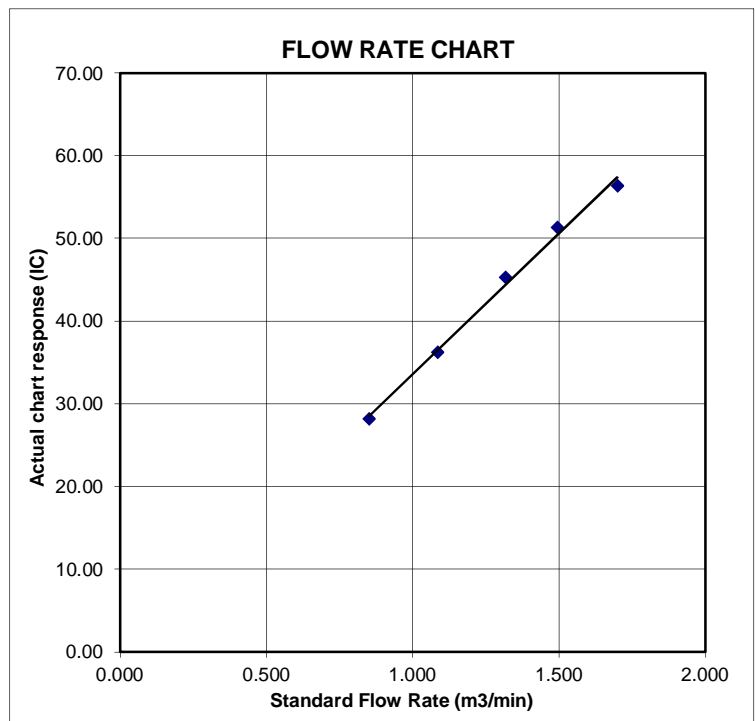
$$IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$$

Qstd = standard flow rate
 IC = corrected chart responses
 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:

$$1/m((I)[\text{Sqrt}(298/Tav)(Pav/760)]-b)$$

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



Certificate of Calibration

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

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

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

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

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



ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

SUB-CONTRACTING REPORT

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

General Comments

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

Signatories

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

Signatories

Position

Richard Fung

General Manager

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

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

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Part of the **ALS Laboratory Group**

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

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



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

Equipment Verification Report (TSP)

Equipment Calibrated:

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

Standard Equipment:

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

Equipment Verification Results:

Testing Date: 7 January 2019

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

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

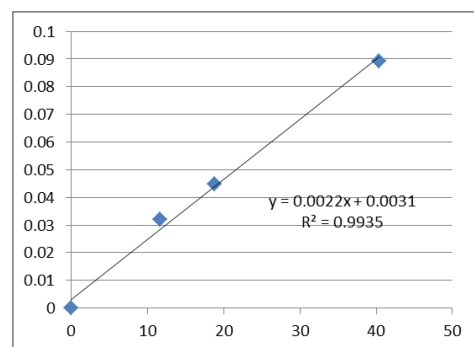
Sensitivity Adjustment Scale Setting (After Calibration) 674 (CPM)

Linear Regression of Y or X

Slope (K-factor): 0.0022

Correlation Coefficient 0.9967

Date of Issue 14 January 2019



Remarks:

- Strong** Correlation ($R > 0.8$)
 - Factor 0.0022 should be apply for TSP monitoring
- *If $R < 0.5$, repair or re-verification is required for the equipment

Operator : Martin Li Signature : [Signature] Date : 14 January 2019

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

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

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

CONDITIONS

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

CALIBRATION ORIFICE

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

CALIBRATION

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

Calculations :

$$Q_{std} = 1/m[\sqrt{H_2O(P_a/P_{std})(T_{std}/T_a)}] - b$$

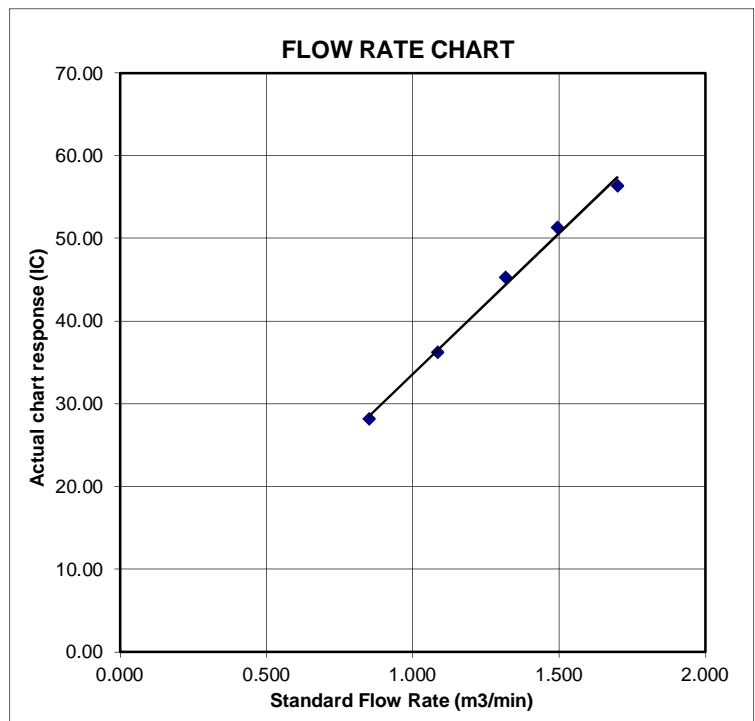
$$IC = I[\sqrt{P_a/P_{std}}(T_{std}/T_a)]$$

Qstd = standard flow rate
 IC = corrected chart responses
 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:

$$1/m((I)[\sqrt{298/T_{av}}(P_{av}/760)] - b)$$

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





Certificate of Calibration 校正證書

Certificate No. : C193171
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC19-1098) Date of Receipt / 收件日期 : 14 June 2019
Description / 儀器名稱 : Integrating Sound Level Meter (EQ010)
Manufacturer / 製造商 : Brüel & Kjær
Model No. / 型號 : 2238
Serial No. / 編號 : 2285721
Supplied By / 委託者 : Action-United Environmental Services and Consulting
Unit A, 20/F., Gold King Industrial Building,
35-41 Tai Lin Pai Road, Kwai Chung, N.T.

TEST CONDITIONS / 測試條件

Temperature / 溫度 : $(23 \pm 2)^{\circ}\text{C}$ Relative Humidity / 相對濕度 : $(50 \pm 25)\%$
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check


DATE OF TEST / 測試日期 : 19 June 2019

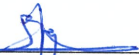
TEST RESULTS / 測試結果

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

The test equipment used for calibration are traceable to National Standards via :

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- The Bruel & Kjaer Calibration Laboratory, Denmark
- Agilent Technologies / Keysight Technologies
- Fluke Everett Service Center, USA

Tested By : 
測試 : _____
K P Cheuk
Assistant Engineer

Certified By : 
核證 : _____
K C Lee
Engineer

Date of Issue : 20 June 2019
簽發日期

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

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

Certificate of Calibration

校正證書

Certificate No. : C193171
證書編號

- 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.
- Self-calibration using laboratory acoustic calibrator was performed before the test from 6.1.1.2 to 6.4.
- The results presented are the mean of 3 measurements at each calibration point.
- Test equipment :

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

- Test procedure : MA101N.

- Results :

- 6.1 Sound Pressure Level

- 6.1.1 Reference Sound Pressure Level

- 6.1.1.1 Before Self-calibration

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

- 6.1.1.2 After Self-calibration

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

- 6.1.2 Linearity

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

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

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

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗室所書面批准。

Certificate of Calibration

校正證書

Certificate No. : C193171

證書編號

6.2 Time Weighting

6.2.1 Continuous Signal

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

6.2.2 Tone Burst Signal (2 kHz)

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

6.3 Frequency Weighting

6.3.1 A-Weighting

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

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

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗室書面批准。

Certificate of Calibration

校正證書

Certificate No. : C193171
證書編號

6.3.2 C-Weighting

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

6.4 Time Averaging

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

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

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

- Uncertainties of Applied Value :

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

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

Note :

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

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

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輝創工程有限公司

Sun Creation Engineering Limited

Calibration & Testing Laboratory

Certificate of Calibration

校正證書

Certificate No. : C193189

證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC19-1098)

Date of Receipt / 收件日期 : 18 June 2019

Description / 儀器名稱 : Sound Level Meter (EQ016)

Manufacturer / 製造商 : Rion

Model No. / 型號 : NL-52

Serial No. / 編號 : 00464681

Supplied By / 委託者 : Action-United Environmental Services and Consulting
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 : $(23 \pm 2)^{\circ}\text{C}$

Relative Humidity / 相對濕度 : $(50 \pm 25)\%$

Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 20 June 2019

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.

The results do not exceed manufacturer's specification.

The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- The Bruel & Kjaer Calibration Laboratory, Denmark
- Agilent Technologies / Keysight Technologies
- Fluke Everett Service Center, USA

Tested By

測試

:

Cheuk

K P Cheuk
Assistant Engineer

Certified By

核證

:

K C Lee

K C Lee
Engineer

Date of Issue

簽發日期

:

20 June 2019

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

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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 — 校正及檢測實驗室

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Tel/電話: (852) 2927 2606

Fax/傳真: (852) 2744 8986

E-mail/電郵: callab@suncreation.com

Website/網址: www.suncreation.com

Certificate of Calibration

校正證書

Certificate No. : C193189
證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.
2. Self-calibration was performed before the test.
3. The results presented are the mean of 3 measurements at each calibration point.
4. Test equipment :

<u>Equipment ID</u>	<u>Description</u>	<u>Certificate No.</u>
CL280	40 MHz Arbitrary Waveform Generator	C190176
CL281	Multifunction Acoustic Calibrator	CDK1806821

5. Test procedure : MA101N.

6. Results :

- 6.1 Sound Pressure Level

- 6.1.1 Reference Sound Pressure Level

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

- 6.1.2 Linearity

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

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

- 6.2 Time Weighting

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

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Certificate of Calibration

校正證書

Certificate No. : C193189
證書編號

6.3 Frequency Weighting

6.3.1 A-Weighting

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

6.3.2 C-Weighting

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

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

- Mfr's Spec. : IEC 61672 Class 1

- Uncertainties of Applied Value :

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

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

Note :

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輝創工程有限公司

Sun Creation Engineering Limited

Calibration & Testing Laboratory

Certificate of Calibration

校正證書

Certificate No. : C192957

證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC19-1098)

Date of Receipt / 收件日期 : 30 May 2019

Description / 儀器名稱 : Sound Level Meter (EQ017)

Manufacturer / 製造商 : Brüel & Kjær

Model No. / 型號 : 2250

Serial No. / 編號 : 3012330

Supplied By / 委託者 : Action-United Environmental Services and Consulting
Unit A, 20/F., Gold King Industrial Building,
35-41 Tai Lin Pai Road, Kwai Chung, N.T.

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C

Relative Humidity / 相對濕度 : (50 ± 25)%

Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 7 June 2019

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.

The results do not exceed manufacturer's specification.

The results are detailed in the subsequent page(s).


The test equipment used for calibration are traceable to National Standards via :

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- The Bruel & Kjaer Calibration Laboratory, Denmark
- Agilent Technologies / Keysight Technologies
- Fluke Everett Service Center, USA

Tested By

測試


:


H T Wong
Technical Officer

Certified By

核證

:


K C Lee
Engineer

Date of Issue

簽發日期

:

12 June 2019

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

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E-mail/電郵: callab@suncreation.com

Website/網址: www.suncreation.com

Certificate of Calibration

校正證書

Certificate No. : C192957

證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.
2. Self-calibration using laboratory acoustic calibrator was performed before the test 6.1.1.2 to 6.3.2.
3. The results presented are the mean of 3 measurements at each calibration point.
4. Test equipment :

<u>Equipment ID</u>	<u>Description</u>	<u>Certificate No.</u>
CL280	40 MHz Arbitrary Waveform Generator	C190176
CL281	Multifunction Acoustic Calibrator	CDK1806821

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

6.1.1.1 Before Self-calibration

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

6.1.1.2 After Self-calibration

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

6.1.2 Linearity

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

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

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

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Certificate of Calibration

校正證書

Certificate No. : C192957

證書編號

6.2 Time Weighting

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

6.3 Frequency Weighting

6.3.1 A-Weighting

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

6.3.2 C-Weighting

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

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Calibration & Testing Laboratory

Certificate of Calibration

校正證書

Certificate No. : C192957

證書編號

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

- Mfr's Spec. : IEC 61672 Class 1

- Uncertainties of Applied Value : 94 dB

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

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

Note :

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Calibration & Testing Laboratory

Certificate of Calibration

校正證書

Certificate No. : C192956

證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC19-1098)

Date of Receipt / 收件日期 : 30 May 2019

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

TEST CONDITIONS / 測試條件

Temperature / 溫度 : $(23 \pm 2)^{\circ}\text{C}$
Line Voltage / 電壓 : ---

Relative Humidity / 相對濕度 : $(50 \pm 25)\%$

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 7 June 2019

TEST RESULTS / 測試結果

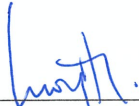
The results apply to the particular unit-under-test only.
The results do not exceed manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- The Bruel & Kjaer Calibration Laboratory, Denmark
- Agilent Technologies / Keysight Technologies
- Fluke Everett Service Center, USA


Tested By
測試

:


H T Wong
Technical Officer

Certified By
核證

:


K C Lee
Engineer

Date of Issue
簽發日期

:

12 June 2019

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

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Website/網址: www.suncreation.com

Certificate of Calibration

校正證書

Certificate No. : C192956

證書編號

- The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours before the commencement of the test.
- The results presented are the mean of 3 measurements at each calibration point.
- Test equipment :

<u>Equipment ID</u>	<u>Description</u>	<u>Certificate No.</u>
CL130	Universal Counter	C183775
CL281	Multifunction Acoustic Calibrator	CDK1806821
TST150A	Measuring Amplifier	C181288

- Test procedure : MA100N.

- Results :

5.1 Sound Level Accuracy

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

5.2 Frequency Accuracy

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

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

Note :

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Fax/傳真: (852) 2744 8986

E-mail/電郵: callab@suncreation.com

Website/網址: www.suncreation.com

Certificate of Calibration

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

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

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

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

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



Hong Kong Accreditation Service
香港認可處

Certificate of Accreditation
認可證書

This is to certify that
特此證明

ALS TECHNICHEM (HK) PTY LIMITED

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

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

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

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

Environmental Testing
環境測試

This laboratory is accredited in accordance with the recognised International Standard ISO / IEC 17025 : 2005.
本實驗所乃根據公認的國際標準 ISO / IEC 17025 : 2005 獲得認可。

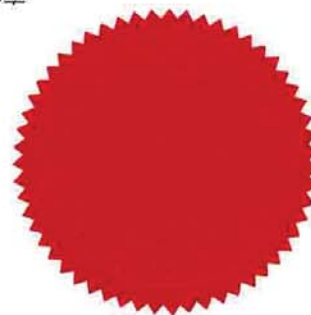
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory
這項認可資格演示在指定範疇所需的技術能力及實驗所質量管理體系的運作
quality management system (see joint IAF-ILAC-ISO Communiqué).
(見國際認可論壇、國際實驗所認可合作組織及國際標準化組織的聯合公報)。

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

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

Registration Number : **HOKLAS** 066
註冊號碼：

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



Appendix F

Event and Action Plan

Event / Action Plan for construction dust

Event	Action			
	ET	IEC	ER	Contractor
Action Level exceedance for one sample	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 1. Notify Contractor. 	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; and 3. Supervise and ensure remedial measures properly implemented. 	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; and 3. Supervise and ensure remedial measures properly implemented. 	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 1. Submit noise mitigation proposals to IEC and ER; and 2. Implement noise mitigation proposals.
Limit Level Exceedance	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 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
Mon	1-Jul-19			
Tue	2-Jul-19			
Wed	3-Jul-19	CN1, CN2, CN3		✓
Thu	4-Jul-19			
Fri	5-Jul-19	NMS-4a, NMS5, NMS6, NMS7, NMS8	✓	
Sat	6-Jul-19			
Sun	7-Jul-19			
Mon	8-Jul-19			
Tue	9-Jul-19			✓
Wed	10-Jul-19			
Thu	11-Jul-19	NMS-4a, NMS5, NMS6, NMS7, NMS8	✓	
Fri	12-Jul-19	CN1, CN2, CN3		
Sat	13-Jul-19			
Sun	14-Jul-19			
Mon	15-Jul-19			✓
Tue	16-Jul-19			
Wed	17-Jul-19	NMS-4a, NMS5, NMS6, NMS7, NMS8	✓	
Thu	18-Jul-19	CN1, CN2, CN3		
Fri	19-Jul-19			
Sat	20-Jul-19			✓
Sun	21-Jul-19			
Mon	22-Jul-19			
Tue	23-Jul-19	NMS-4a, NMS5, NMS6, NMS7, NMS8	✓	
Wed	24-Jul-19	CN1, CN2, CN3		
Thu	25-Jul-19			
Fri	26-Jul-19			✓
Sat	27-Jul-19			
Sun	28-Jul-19			
Mon	29-Jul-19	NMS-4a, NMS5, NMS6, NMS7, NMS8	✓	
Tue	30-Jul-19	CN1, CN2, CN3		
Wed	31-Jul-19			

✓	Monitoring Day
	Sunday or Public Holiday

Impact Monitoring Schedule for next Reporting Period

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

✓	Monitoring Day
	Sunday or Public Holiday

Appendix H

Database of Monitoring Result

24-HOUR TSP MONITORING RESULT DATABASE

24-hour TSP Monitoring Data for AMS1a

DATE	SAMPLE NUMBER	ELAPSED TIME			CHART READING			AVG TEMP (°C)	AVG AIR PRESS (hPa)	STANDARD FLOW RATE (m ³ /min)	AIR VOLUME (std m ³)	FILTER WEIGHT (g)		DUST WEIGHT COLLECTED (g)	24-hr TSP (µg/m ³)
		INITIAL	FINAL	(min)	MIN	MAX	AVG					INITIAL	FINAL		
3-Jul-19	24482	21141.68	21165.68	1440.0	38	38	38	28.8	1006.8	0.49	703	2.6985	2.7084	0.0099	14
9-Jul-19	24400	21165.68	21189.68	1440.0	36	38	37	30	1003.4	0.45	648	2.6219	2.6342	0.0123	19
15-Jul-19	24416	21189.68	21213.69	1440.6	37	38	37.5	28.9	1006.1	0.47	678	2.6913	2.7061	0.0148	22
20-Jul-19	24310	21213.69	21237.69	1440.0	34	38	36	28.6	1005.2	0.42	605	2.633	2.6483	0.0153	25
26-Jul-19	24426	21237.69	21261.71	1441.2	35	36	35.5	28.7	1005	0.40	581	2.709	2.7188	0.0098	17

24-hour TSP Monitoring Data for AMS-5

DATE	SAMPLE NUMBER	ELAPSED TIME			CHART READING			AVG TEMP (°C)	AVG AIR PRESS (hPa)	STANDARD FLOW RATE (m ³ /min)	AIR VOLUME (std m ³)	FILTER WEIGHT (g)		DUST WEIGHT COLLECTED (g)	24-hr TSP (µg/m ³)
		INITIAL	FINAL	(min)	MIN	MAX	AVG					INITIAL	FINAL		
3-Jul-19	24483	7735.34	7759.10	1425.60	31	32	31.5	28.8	1006.5	1.05	1490	2.7043	2.7310	0.0267	18
9-Jul-19	24368	7759.10	7782.60	1410.00	36	38	37.0	30	1003.4	1.20	1689	2.6178	2.6790	0.0612	36
15-Jul-19	24418	7782.60	7806.25	1419.00	32	33	32.5	28.9	1006.1	1.07	1523	2.7019	2.7737	0.0718	47
20-Jul-19	24411	7806.25	7830.00	1425.00	36	38	37.0	28.6	1005.2	1.20	1711	2.6864	2.7197	0.0333	19
26-Jul-19	24427	7830.00	7853.65	1419.00	37	38	37.5	28.7	1005	1.21	1724	2.7024	2.7306	0.0282	16

24-hour TSP Monitoring Data for AMS-6

DATE	SAMPLE NUMBER	ELAPSED TIME			CHART READING			AVG TEMP (°C)	AVG AIR PRESS (hPa)	STANDARD FLOW RATE (m ³ /min)	AIR VOLUME (std m ³)	FILTER WEIGHT (g)		DUST WEIGHT COLLECTED (g)	24-hr TSP (µg/m ³)
		INITIAL	FINAL	(min)	MIN	MAX	AVG					INITIAL	FINAL		
3-Jul-19	24484	12954.31	12978.31	1440.00	26	26	26.0	28.8	1006.5	0.85	1223	2.6696	2.6881	0.0185	15
9-Jul-19	24399	12978.31	13002.67	1461.60	28	30	29.0	30	1003.4	0.93	1358	2.6303	2.6763	0.0460	34
15-Jul-19	24417	13002.67	13026.67	1440.00	30	31	30.5	28.9	1006.1	0.97	1401	2.6868	2.7482	0.0614	44
20-Jul-19	24412	13026.67	13050.67	1440.00	30	32	31.0	28.6	1005.2	0.99	1420	2.6794	2.7214	0.0420	30
26-Jul-19	24530	13050.67	13074.70	1441.80	30	31	30.5	28.7	1005	0.97	1402	2.6711	2.7115	0.0404	29

24-hour TSP Monitoring Data for AMS-7

DATE	SAMPLE NUMBER	ELAPSED TIME			CHART READING			AVG TEMP (°C)	AVG AIR PRESS (hPa)	STANDARD FLOW RATE (m ³ /min)	AIR VOLUME (std m ³)	FILTER WEIGHT (g)		DUST WEIGHT COLLECTED (g)	24-hr TSP (µg/m ³)
		INITIAL	FINAL	(min)	MIN	MAX	AVG					INITIAL	FINAL		
3-Jul-19	24309	8326.67	8350.42	1425.00	33	34	33.5	28.8	1006.5	1.27	1815	2.6321	2.6717	0.0396	22
9-Jul-19	24352	8350.42	8374.58	1449.60	38	40	39.0	30	1003.4	1.46	2113	2.6287	2.7482	0.1195	57
15-Jul-19	24419	8374.58	8398.40	1429.20	32	33	32.5	28.9	1006.1	1.24	1770	2.6885	2.7743	0.0858	48
20-Jul-19	24406	8388.40	8412.70	1458.00	40	42	41.0	28.6	1005.2	1.53	2232	2.7060	2.7780	0.0720	32
26-Jul-19	24531	8412.70	8436.83	1447.80	38	39	38.5	28.7	1005	1.44	2092	2.6929	2.8005	0.1076	51

NOISE MONITORING RESULT DATABASE

Noise Measurement Results (dB) of NMS4a																					
Date	Start Time	1st Leq (5min)			2nd Leq (5min)			3rd Leq (5min)			4th Leq (5min)			5th Leq (5min)			6th Leq (5min)			Leq30min, dB(A)	Limit Level dB(A)
		Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)		
5-Jul-19	9:44	64	65.4	59.6	62.7	63.6	59.5	61.2	62.9	59.1	64.9	65.8	60.3	62	63.1	60.8	65.6	66	60.1	64	75.0
11-Jul-19	9:16	64.5	66.8	61.5	63.8	65.7	61.7	64.2	66.1	61.9	64.3	66.1	62.2	65.3	66.9	63.6	65.1	66.4	62.8	65	75.0
17-Jul-19	15:21	65.2	66.7	63.3	64.5	65.7	62.7	64.6	65.8	63.3	63.4	64.1	61.2	64.8	65.8	62.9	65.3	66.1	63	65	75.0
23-Jul-19	13:07	66.3	67.7	64.5	67.2	68.7	65.5	69.7	69.3	65.4	67.2	68.3	65.5	68	70.7	65.9	66.8	68.8	63.8	68	75.0
29-Jul-19	16:03	63.3	65.1	60	62.8	65.8	59	60.1	62.7	56.9	59	60.5	57.2	60.7	62.9	58.2	62.5	64.9	59	62	75.0

Noise Measurement Results (dB) of NMS5																					
Date	Start Time	1st Leq (5min)			2nd Leq (5min)			3rd Leq (5min)			4th Leq (5min)			5th Leq (5min)			6th Leq (5min)			Leq30min, dB(A)	Limit Level dB(A)
		Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)		
5-Jul-19	10:24	59.8	62	56.9	58.2	61.6	55.2	58.6	61.2	55.5	60.3	64.7	56.1	59.5	62	56.7	58.3	62.8	55.4	59	75
11-Jul-19	9:59	66.2	68.9	62.3	64.8	67	61.6	64.8	67.3	61.1	65.4	68.1	61.7	66.6	68.3	60.5	65.8	68.4	61.5	66	75
17-Jul-19	14:38	64.4	65.9	62.5	64.2	65.9	61.4	65.9	67.3	64	65.7	66.9	64.2	64.2	65.9	62.5	65.8	65	62.7	65	75
23-Jul-19	14:07	64.7	66.2	62.7	65	66.2	63.1	66.3	67.4	64.7	66.2	67.3	64.7	65.7	67.1	63.7	65.6	66.7	64.2	66	75
29-Jul-19	15:18	56.5	58.1	54	63.1	66.8	56.6	64.4	66.7	60.7	65.1	67.4	62.1	64.5	66.9	61.3	65.2	67.1	61.6	64	75

Noise Measurement Results (dB) of NMS6																					
Date	Start Time	1st Leq (5min)			2nd Leq (5min)			3rd Leq (5min)			4th Leq (5min)			5th Leq (5min)			6th Leq (5min)			Leq30min, dB(A)	Limit Level dB(A)
		Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)		
5-Jul-19	10:58	60.7	63	57.5	60	62.5	56.5	58.7	61	55.5	58.6	61.5	55	58.5	61	54.5	58.5	61.5	54	59	75
11-Jul-19	11:04	63.6	64.4	62.7	63.9	64.6	63.1	63.8	65.7	61.9	65.3	67.7	63.3	64.6	66.1	63	63.5	64.7	62.6	64	75
17-Jul-19	10:39	57.6	59.2	54.6	58.8	61.1	55.5	58.4	60.6	54.3	55.8	57.9	53.5	56.9	58.1	54.1	57.2	59.1	54	58	75
23-Jul-19	11:00	63.6	66	59.4	62.5	64	60.1	60.5	61.7	58.8	62.1	63.6	60.3	61.9	63.2	60.1	60.7	61.9	59	62	75
29-Jul-19	10:48	54.4	56.2	52.6	54.7	56.9	52.3	55	57.2	52.8	56.7	58.8	53.2	55.2	57.6	52.3	54.5	56.6	52.9	55	75

Noise Measurement Results (dB) of NMS7																					
Date	Start Time	1st Leq (5min)			2nd Leq (5min)			3rd Leq (5min)			4th Leq (5min)			5th Leq (5min)			6th Leq (5min)			Leq30min, dB(A)	Limit Level dB(A)
		Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)		
5-Jul-19	9:24	54.9	57.5	49.5	55.9	58	52.5	57.4	60	53.5	56.6	58.5	53.5	57.1	59.5	53	57.6	60	54	57	75

11-Jul-19	13:11	59.8	60.6	58.9	59.2	59.8	58.6	60.7	61.6	59.5	61.1	61.9	60.2	61	62.6	59.7	60.4	62.1	59.3	60	75
17-Jul-19	9:58	65	68	58	63.6	67.2	55.5	64.4	67.3	59.2	64.2	66.8	58.1	63.1	65	58.3	64	66.8	58.3	64	75
23-Jul-19	10:17	60.1	61.3	58.2	59.6	61.2	56.6	58.8	59.8	56.9	59.3	61.3	57.4	59.4	60.9	57.8	60.5	61.5	57.1	60	75
29-Jul-19	10:06	56.3	58.9	52	57.5	60.9	52.3	57.6	60.6	53.1	58	60.8	53.3	57.4	59.1	52.6	58.9	60.5	53.7	58	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)		
5-Jul-19	13:38	60.5	63.2	52.3	59.6	62	51.5	60.9	63.3	53.1	63.5	68	51.6	57.1	61.2	49.9	59.7	63.5	52.3	61	75
11-Jul-19	15:32	64.7	66.8	61.2	61.6	63.4	58.8	66.3	68.7	60.9	67.3	70.1	61.6	62.1	63.7	59.9	63.5	64.6	61.6	65	75
17-Jul-19	16:23	62.4	64.3	57.3	61.6	63.9	58.5	64	66.3	59.2	64.3	66.9	59.7	63.8	65.9	58.5	64.6	66.2	59	64	75
23-Jul-19	15:17	64.2	66.1	60.2	64	67	60.3	62.8	66.7	58.6	63.8	67.7	58.9	62.8	63.5	57.9	61.5	65.9	56.4	63	75
29-Jul-19	14:24	67.9	70.8	62.8	68.2	71.1	63.5	69	72.5	62.5	68.6	71.6	62.7	69.4	72.6	63.4	68.7	71.9	63.1	69	75

Noise Measurement Results (dB) of CN1

Date	Start Time	1st Leq (5min)			2nd Leq (5min)			3rd Leq (5min)			4th Leq (5min)			5th Leq (5min)			6th Leq (5min)			Leq30min, dB(A)	Limit Level dB(A)
		Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)		
3-Jul-19	14:09	65.3	67.6	61.9	65.2	67.1	62.2	65.5	67.0	63.8	66.7	68.1	64.4	65.5	67.0	63.7	66.8	65.9	63.2	66	70
12-Jul-19	9:41	64.1	66.9	60.3	62.0	66.1	59.2	67.3	69.8	63.3	65.0	68.7	60.9	62.4	64.9	58.9	66.1	69.6	61.1	65	70
18-Jul-19	15:00	64.1	65.5	61.2	65.4	66.5	64.1	64.8	66.1	63.6	66.7	68.8	63.8	67.4	69.3	64.6	67.5	69.0	65.4	66	70
24-Jul-19	16:17	56.7	58.1	55.3	56.2	57.6	54.4	56.7	58.0	54.3	60.6	62.4	54.9	57.8	58.0	54.1	56.2	57.2	54.7	58	70
30-Jul-19	15:12	61.6	62.8	58.4	60.4	61.5	58.8	60.3	61.5	59.1	62.0	63.5	60.5	63.5	64.5	61.8	62.1	63.3	59.2	62	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)		
3-Jul-19	15:44	63.6	65.5	60.7	62.4	64.4	60.1	65.9	69.4	59.7	64.6	66.6	59.3	64	65.5	61.2	65.1	67.2	62	64	70
12-Jul-19	10:31	61.7	65.5	56.8	60.4	60.8	58.3	65.9	64.5	58.2	59.9	61.3	58	59.4	60.4	57.5	60	61.6	57.9	62	70
18-Jul-19	14:20	61.1	62.2	59.8	61.1	62.7	60	60.8	61.6	59.7	62	62.6	61.1	61.3	62.4	60.3	61.3	62.3	60.2	61	70
24-Jul-19	16:53	68.2	71	63.3	67.3	70.3	62.2	68.7	70.5	63.8	68.5	71.3	64.6	68.3	71.6	64.6	67.4	70	63.8	68	70
30-Jul-19	14:32	64.1	64.1	56	59.4	60.5	57.6	60.4	62.8	58.2	60.1	61.7	57.7	59.3	60.8	56.9	58.2	59.9	56.8	61	70

Noise Measurement Results (dB) of CN3

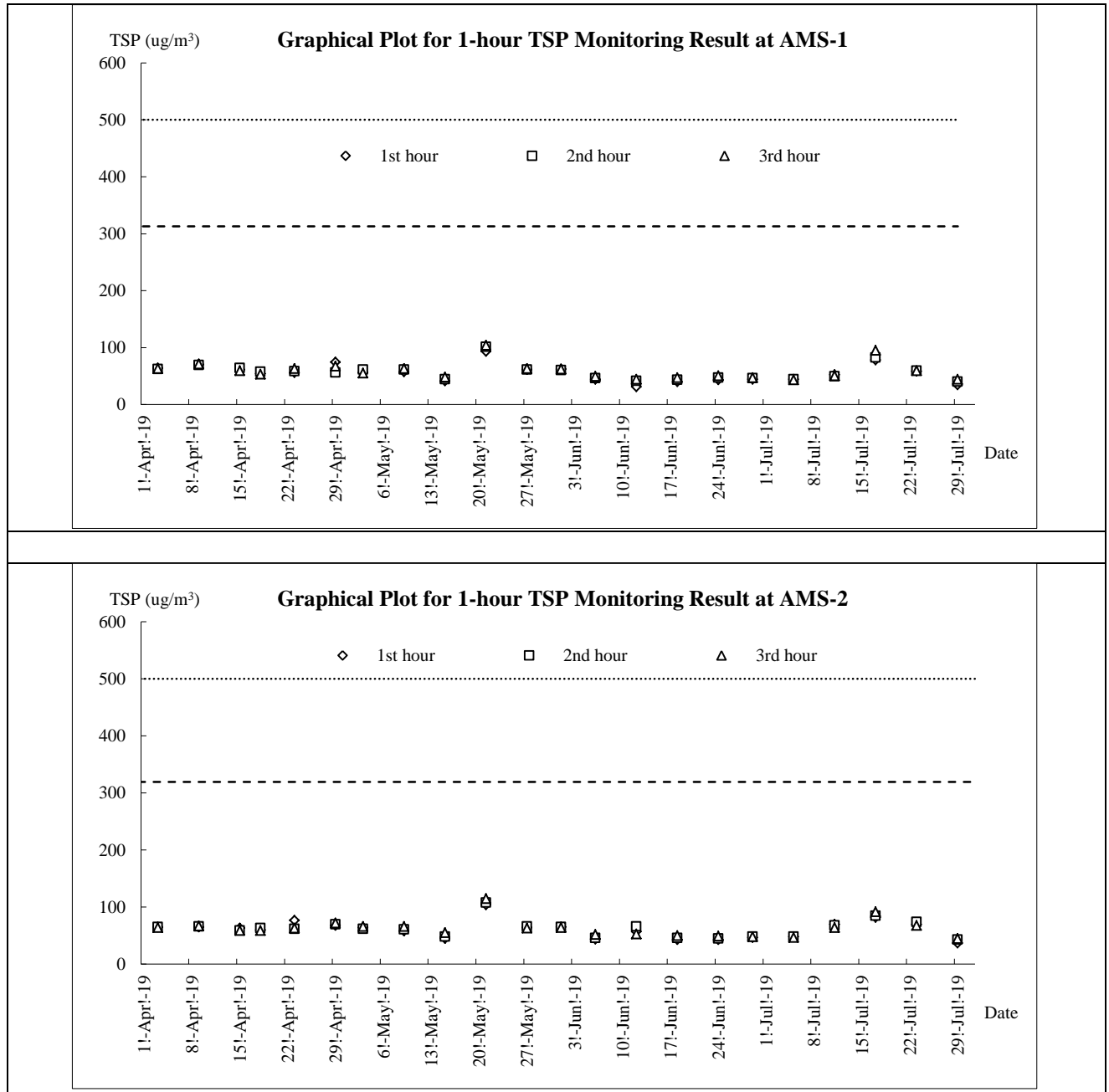
Date	Start	1st Leq (5min)			2nd Leq (5min)			3rd Leq (5min)			4th Leq (5min)			5th Leq (5min)			6th Leq (5min)			Leq30min,	Limit
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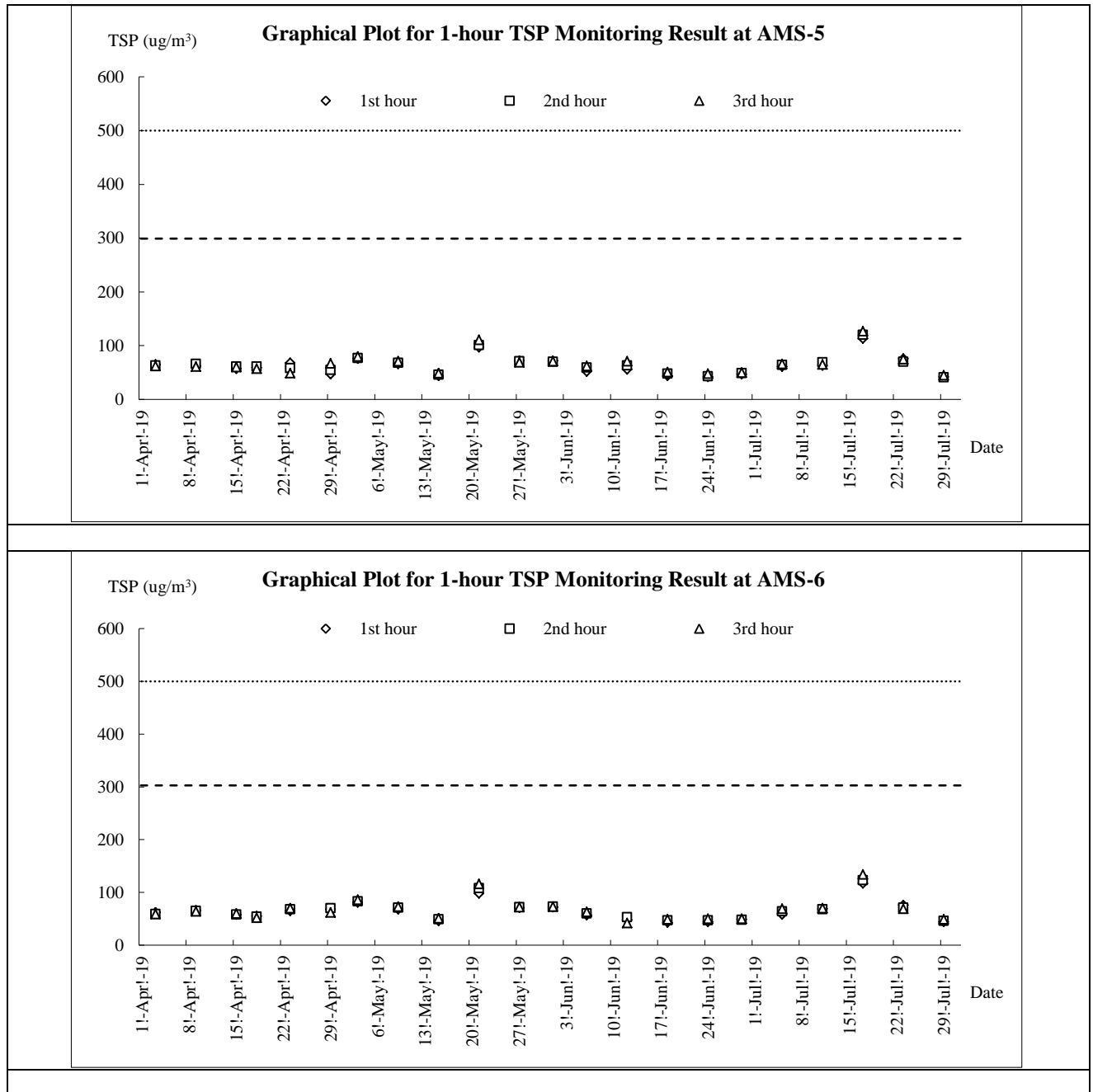
	Time	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	dB(A)	Level dB(A)
3-Jul-19	15:03	61.2	61.9	60.3	62.3	63.2	60.9	60.7	61.5	59.7	60.9	61.7	60.1	60.3	63.2	58	60	60.6	59.1	61	75
12-Jul-19	11:14	66.7	70	62.2	60.2	62.4	55.7	60.4	62.9	56.8	60	61.9	57	60.5	62.9	57.3	63	65.1	56.9	63	75
18-Jul-19	13:24	65.4	67.2	63.3	65.8	68.4	62.9	66.5	67.7	65.4	65.8	67.2	64.1	67.9	70.2	64.7	66.6	68.8	64.2	66	75
24-Jul-19	15:22	66.2	69.2	59.3	62.5	63.4	58.1	62.5	64.7	57	63.8	66	57.2	63.2	65.3	57	65.5	69.5	57.5	64	75
30-Jul-19	13:30	66.6	67.9	62.1	66.5	69	61.4	66.4	68.2	64.2	66.4	68.9	63.5	65.7	67.4	63.3	66.4	69.2	63.3	66	75

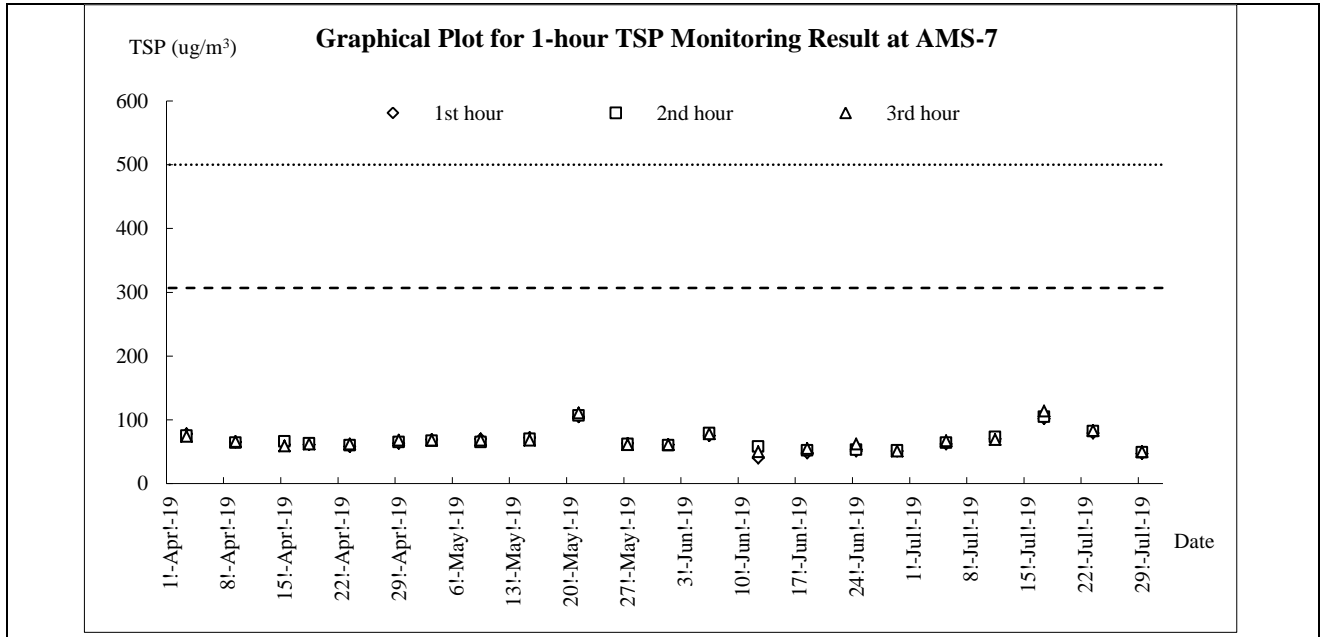
Appendix I

Graphical Plots for Monitoring Result

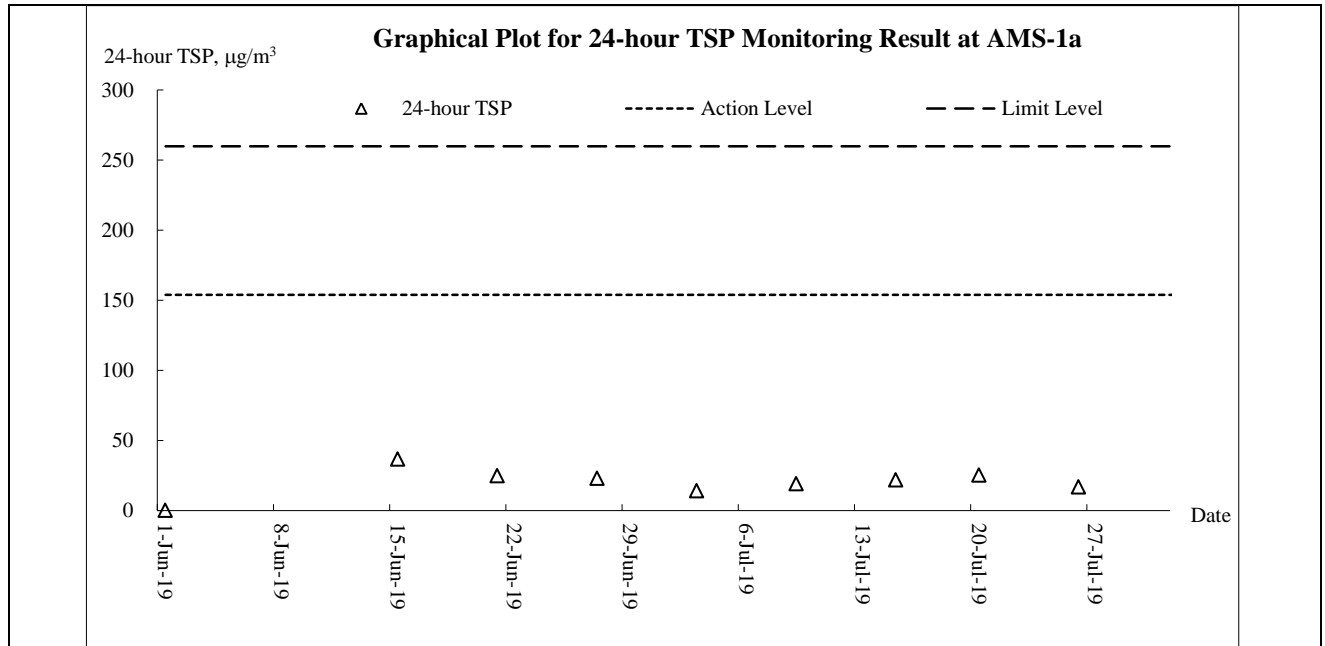
Air Quality – 1-hour TSP



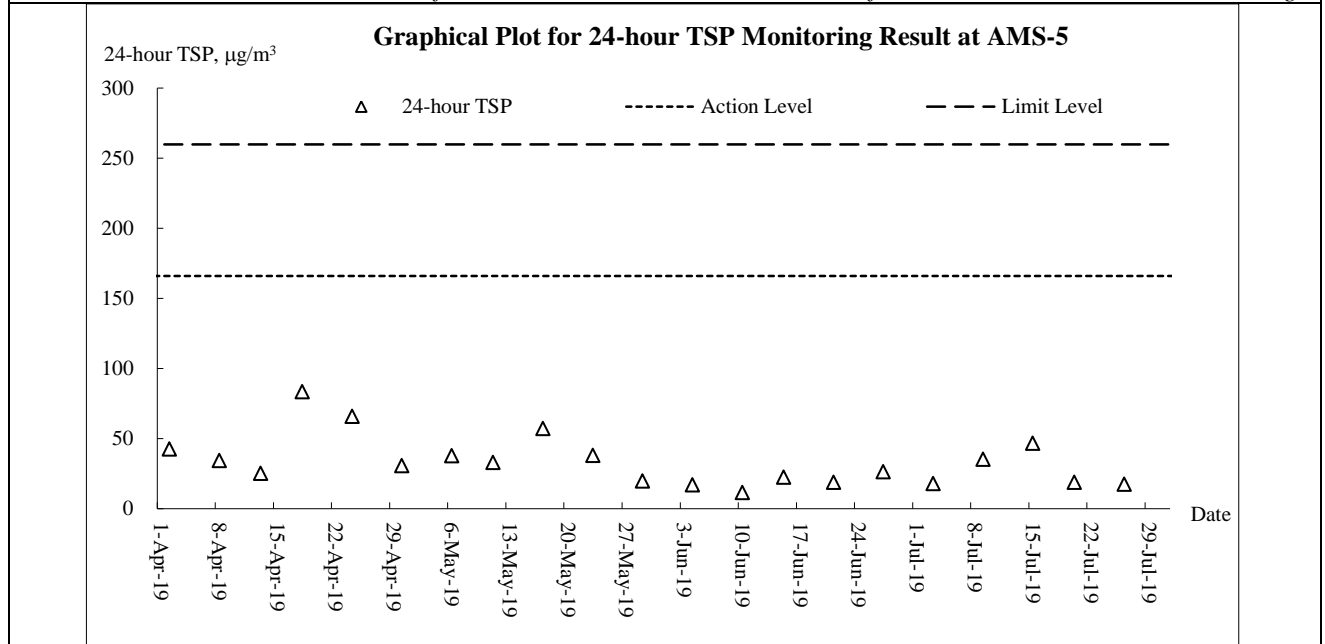


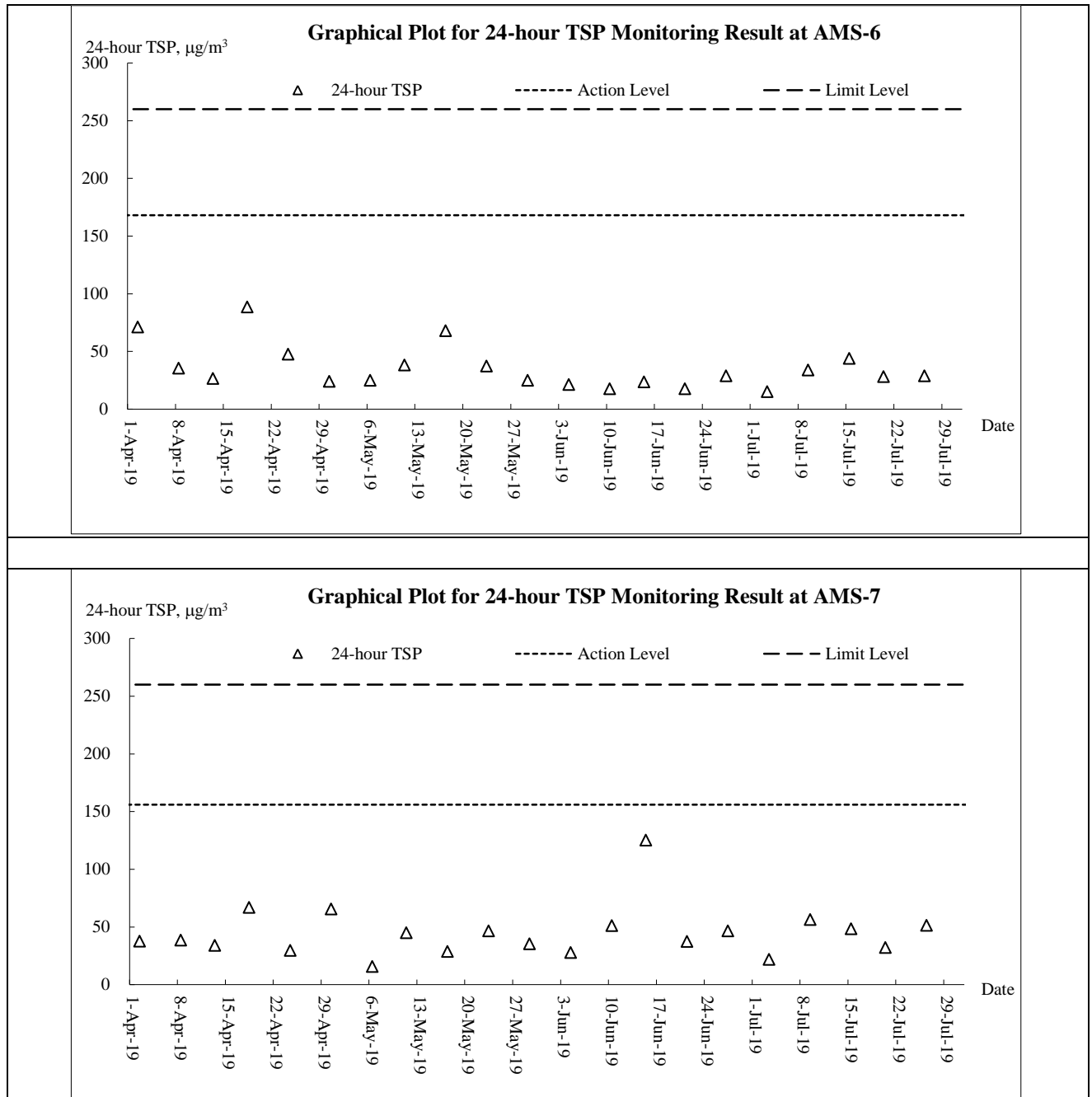


Air Quality – 24-hour TSP

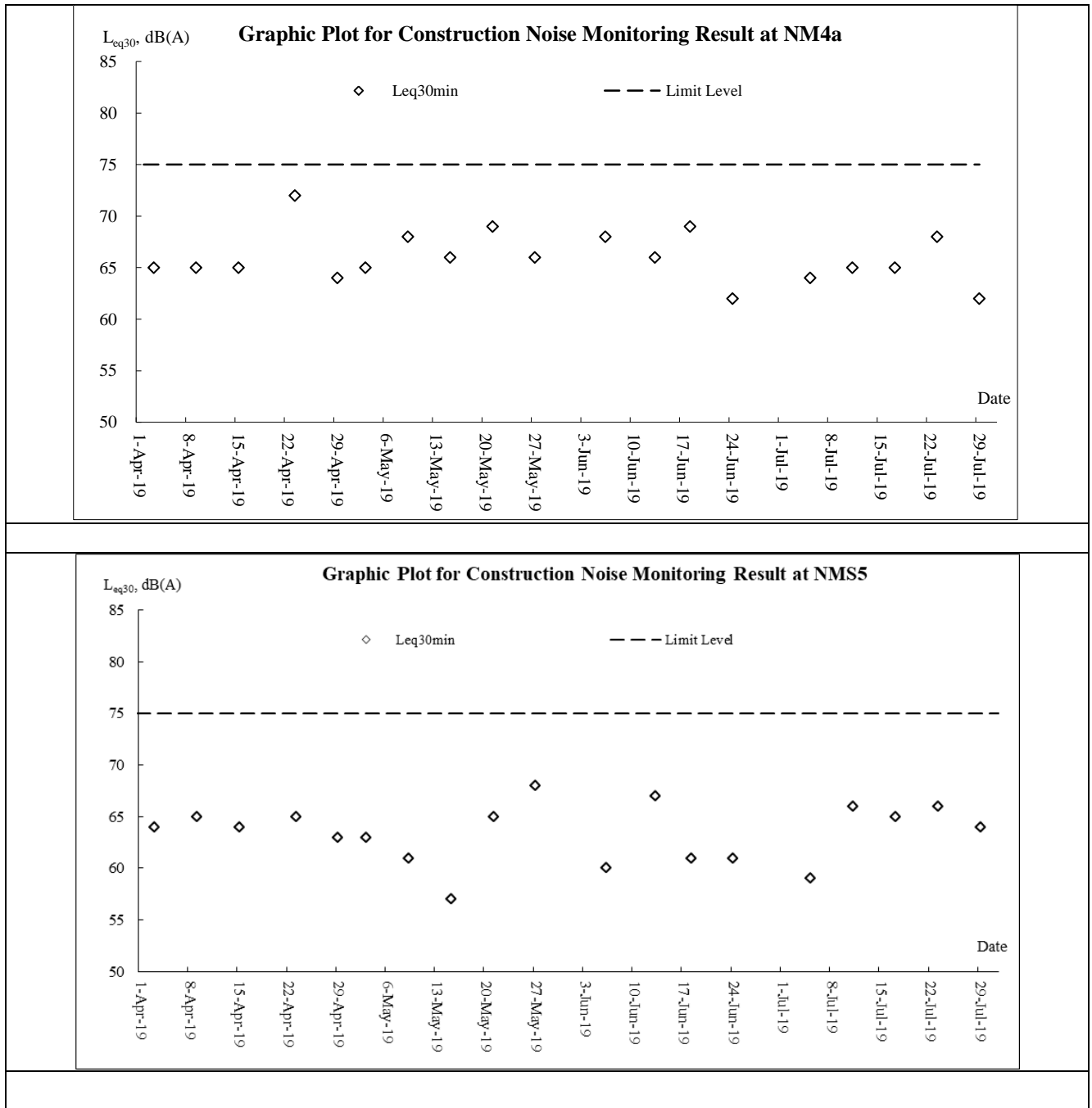


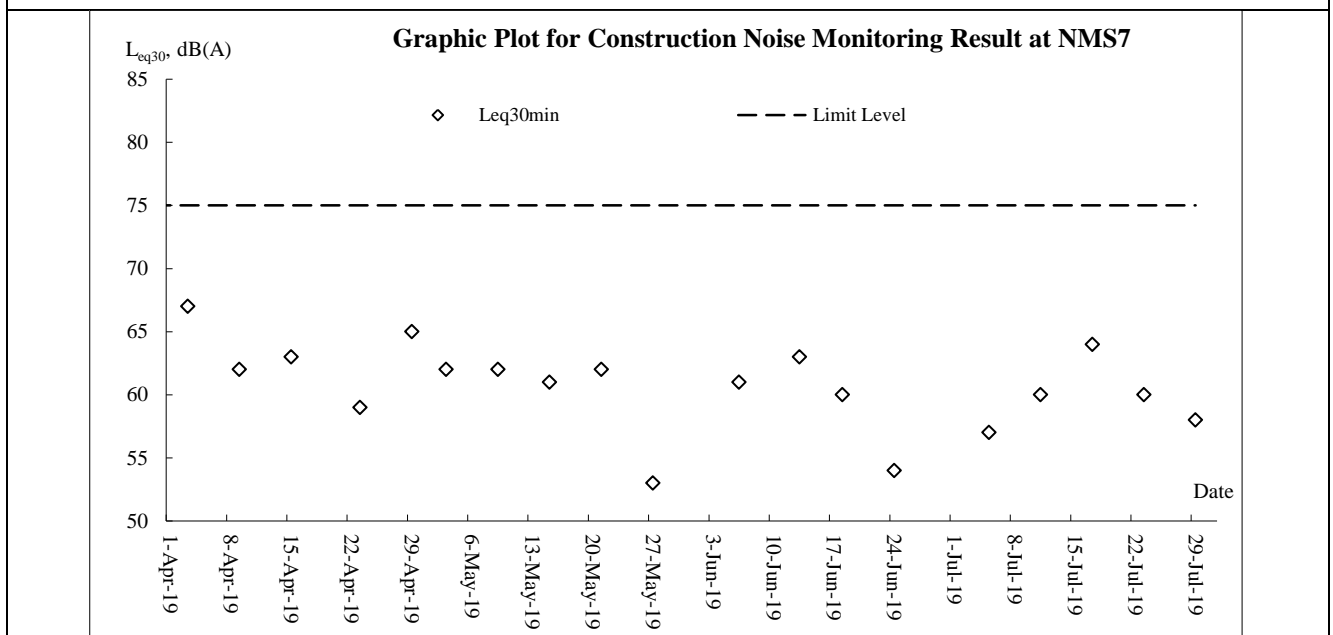
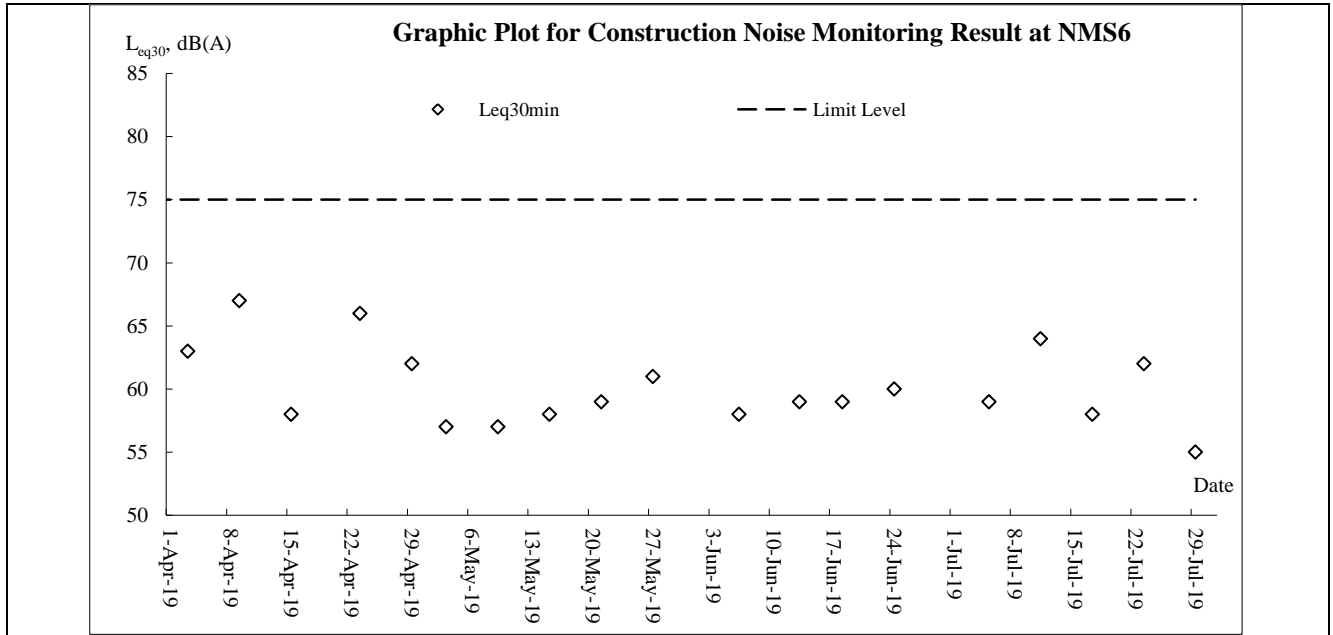
(#) 24-hour TSP monitoring at AMS1 was abandoned since May 2019 due to lack of power supply and the landlord was unreachable. The alternation location of AMS1a was activated on 15 June 2019 for 1-hour and 24-hour TSP monitoring.

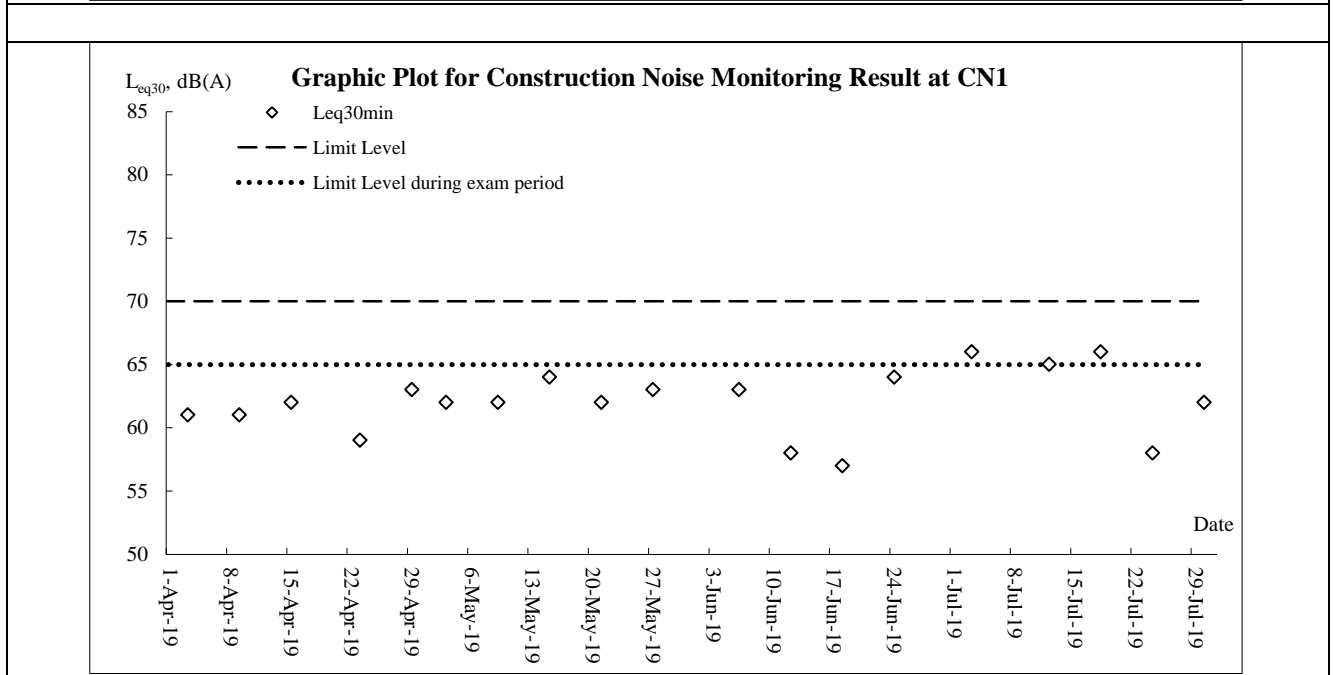
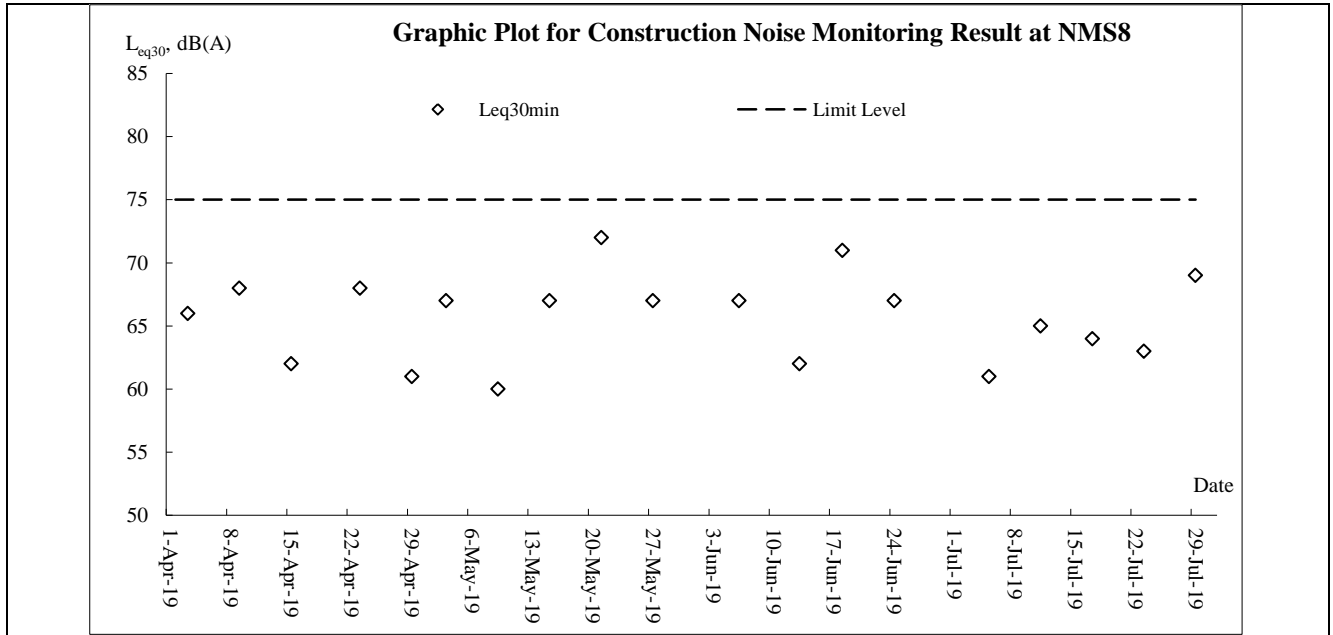


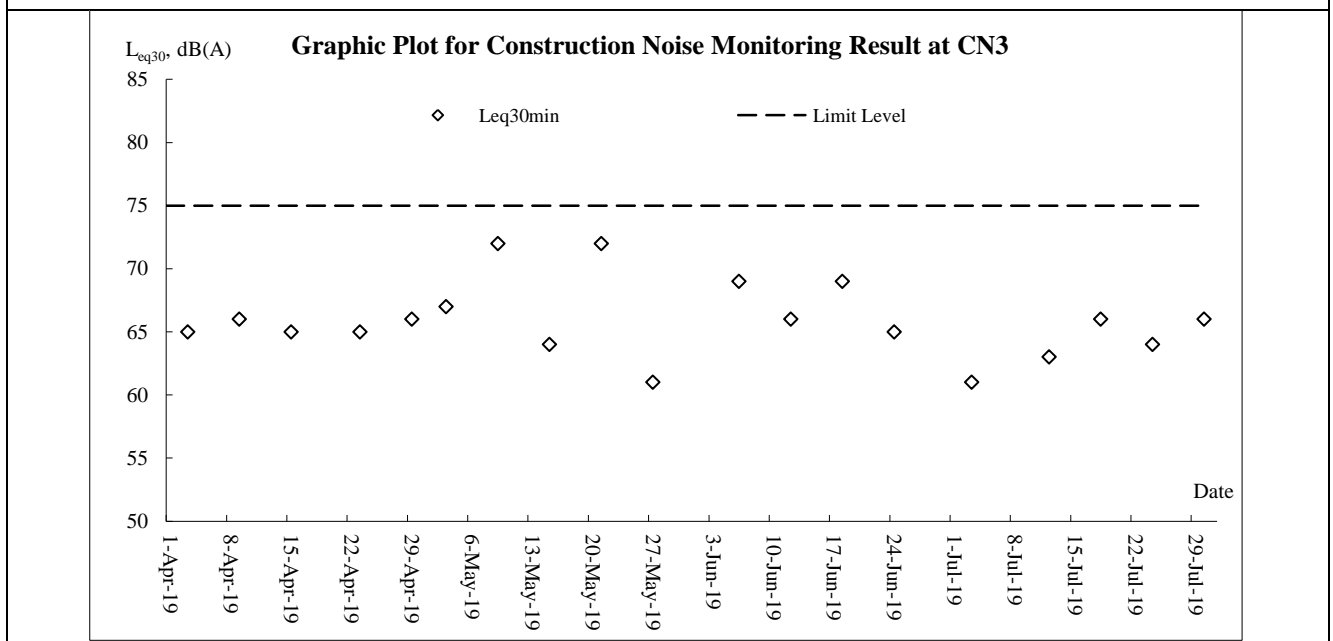
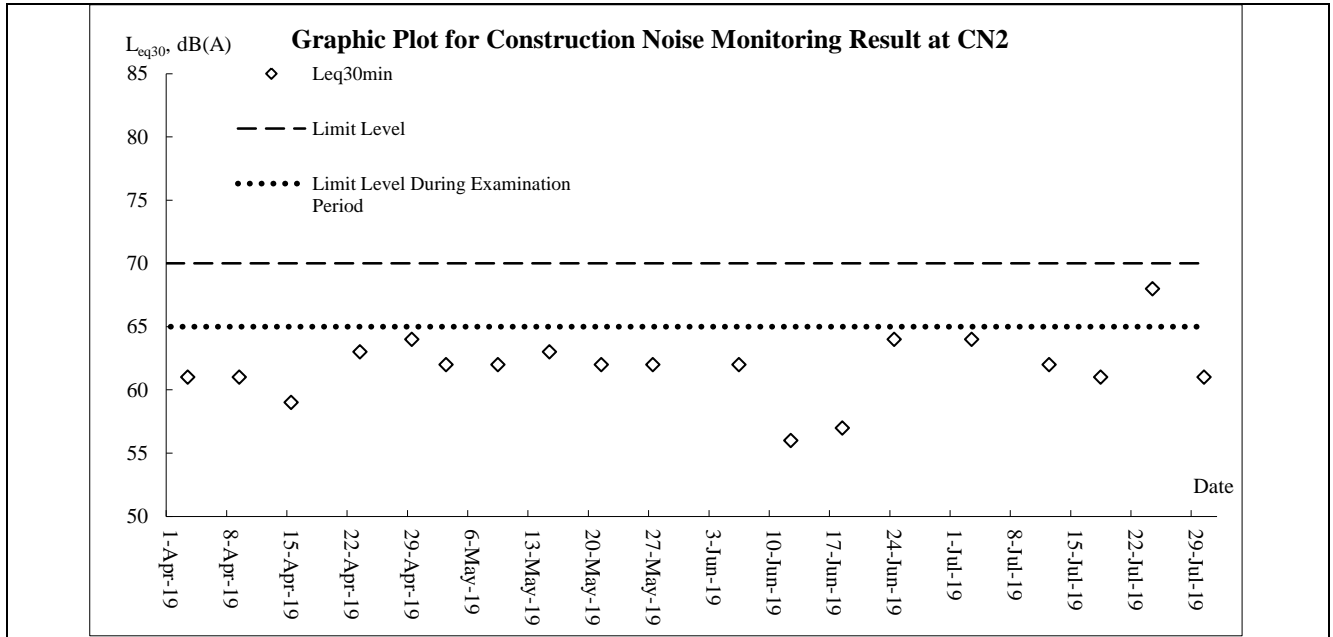


Noise









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-Jul-19	Mon	Hot with sunny periods and a few showers.	15.3	29.2	14.7	E	73.7
2-Jul-19	Tue	Hot with sunny periods and one or two showers	19.1	28.3	22.4	E	83
3-Jul-19	Wed	Cloudy with occasional heavy squally showers and thunderstorms.	79.1	26.9	10.9	E/SE	92.5
4-Jul-19	Thu	Hot with sunny periods and a few showers.	13	29.3	13.4	S/SE	82
5-Jul-19	Fri	Mainly cloudy tonight. Moderate southwesterly winds, fresh offshore.	1.3	28.7	11.2	W/SW	79.5
6-Jul-19	Sat	Moderate south to southwesterly winds, occasionally fresh offshore.	1.5	28.8	9.8	S/SE	80
7-Jul-19	Sun	Hot with sunny periods and one or two showers	4.3	29.1	9.5	S	79.5
8-Jul-19	Mon	Hot with sunny intervals in the afternoon.	0.1	29.8	9.7	S	79
9-Jul-19	Tue	Mainly cloudy with a few showers.	6	29.4	16	SW	80.7
10-Jul-19	Wed	Mainly cloudy with a few showers.	14.3	28.3	13.4	W/SW	85.7
11-Jul-19	Thu	Isolated thunderstorms in the afternoon.	6	28.8	6.5	S/SW	86
12-Jul-19	Fri	Mainly fine. Very hot in the afternoon.	2.6	30.2	12	S	78
13-Jul-19	Sat	Isolated thunderstorms in the afternoon.	Trace	29.9	10.5	SW	79
14-Jul-19	Sun	Hot with sunny periods and one or two showers	Trace	29.7	10.1	SW	78
15-Jul-19	Mon	Mainly fine. Very hot in the afternoon. Light to moderate southerly winds.	0	30.8	5.2	S	76.7
16-Jul-19	Tue	Fine and very hot. Light to moderate southerly winds.	0	30.9	6.9	SE	74.5
17-Jul-19	Wed	Mainly fine and very hot apart from some haze. Light winds.	0	30.9	9.7	SW	77.2
18-Jul-19	Thu	Moderate west to southwesterly winds.	Trace	31.6	10.5	SE	76.7
19-Jul-19	Fri	Mainly cloudy with showers and a few thunderstorms.	22.6	29.7	10.4	W/SW	83.5
20-Jul-19	Sat	Territories with isolated thunderstorms.	6.4	29.5	8.7	W/SW	79.5
21-Jul-19	Sun	Hot with sunny intervals in the afternoon	0.1	29.2	7	W/SW	81.2
22-Jul-19	Mon	Mainly cloudy with a few showers.	0.4	29.3	9.1	SE	82.2
23-Jul-19	Tue	Hot with sunny periods and a few showers.	Trace	29.5	8.2	SE	78.5
24-Jul-19	Wed	Isolated thunderstorms in the morning. Moderate southeasterly winds.	Trace	29.6	10.6	SE	85
25-Jul-19	Thu	Very hot in the afternoon.	1	30.5	9	E/SE	77
26-Jul-19	Fri	Mainly fine apart from isolated showers	Trace	30.6	9.1	SW	75.5
27-Jul-19	Sat	Mainly fine and very hot with isolated showers.	0	31.1	9.5	SW	68.7
28-Jul-19	Sun	Mainly fine and very hot with isolated showers	0.5	30.7	8.9	E/SE	79
29-Jul-19	Mon	Hot with sunny intervals and a few showers.	1	28.3	13	E/SE	82
30-Jul-19	Tue	Hot with sunny intervals in the afternoon.	12.8	28.5	18.7	E	82.2
31-Jul-19	Wed	Cloudy with occasional squally showers and thunderstorms	121.1	25.9	18.4	E/NE	87

Appendix K

Waste Flow Table

Contract No.: NE/2016/01

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

Monthly Summary Waste Flow Table for 2019 (year)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract (see Note 6)	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemical Waste (see Note 5)	Others, e.g. general refuse
	(in '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	18.566	8.485	4.795	3.042	10.729	0.000	0.000	0.354	0.000	0.000	0.111
Feb	85.275	13.273	60.959	3.989	20.327	0.000	0.000	0.000	0.000	0.000	0.034
Mar	22.574	1.582	1.433	2.512	18.629	0.000	0.000	0.499	0.000	0.000	0.048
Apr	22.327	2.964	3.340	6.422	12.565	0.000	0.000	0.010	0.010	0.065	0.052
May	15.082	4.220	2.034	2.269	10.779	0.000	0.000	0.503	1.600	0.000	0.047
Jun	9.893	4.357	2.976	2.217	4.700	0.000	0.002	0.446	0.012	0.000	0.084
Sub-total	173.716	34.881	75.537	20.451	77.728	0.000	0.002	1.812	1.622	0.065	0.376
Jul	3.540	2.358	2.422	1.118	0.000	0.000	0.005	0.000	0.013	0.000	0.111
Aug											
Sep											
Oct											
Nov											
Dec											
Total	177.256	37.239	77.959	21.569	77.728	0.000	0.007	1.812	1.635	0.065	0.487

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/m³) and inert C&D materials (2 t/m³).
- (5) Use the conversion factor for chemical waste (0.88kg/L).
- (6) Assume a dump truck delivers 7.5 m³ material in 1 trip.
- (7) The cut-off date of this summary is 20th of each month.

Name of Department: CEDDContract No. : NE/2016/05**Monthly Summary Waste Flow Table for 2019** (year)**[PS Clause 1.129]**

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock & Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemicals Waste	Others, e.g. general refuse
	(in '000 m ³)	(in '000 m ³)	(in '000 m ³)	(in '000 m ³)	(in '000 m ³)	(in '000 m ³)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 m ³)
Jan	1.2577	0	0.063	0	1.1947	0	0	0	0	0	0.0008
Feb	0.401	0	0.078	0	0.323	0	0	0	0	0	0
Mar	0.48	0	0.089	0	0.391	0	0	0	0	0	0.0025
Apr	0.439	0	0.045	0	0.394	0	0	0	0	0	0.0005
May	1.196	0	0.025	0	1.171	0	0	0	0	0	0.0045
June	0.504	0	0.085	0	0.419	0	0	0	0	0	0.0005
Sub-total	4.2777	0	0.385	0	3.8927	0	0	0	0	0	0.0088
July	0.206	0	0.04	0	0.166	0	0	0	0	0	0
Aug											
Sept											
Oct											
Nov											
Dec											
Total	4.4837	0	0.425	0	4.0587	0	0	0	0	0	0.0088

- 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 m³.

Contract No.: NE/2017/03

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

Monthly Summary Waste Flow Table for 2019(year)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '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	0.514	0.000	0.000	0.000	0.514	0.000	0.000	0.000	0.000	0.000	0.005
Feb	0.419	0.000	0.000	0.000	0.419	0.000	0.010	0.103	0.020	0.000	0.004
Mar	0.672	0.000	0.000	0.000	0.672	0.000	0.001	0.084	0.002	0.000	0.005
Apr	1.505	0.000	0.000	0.000	1.505	0.000	0.000	0.000	0.000	0.000	0.000
May	1.309	0.000	0.000	0.563	1.309	0.000	0.003	0.179	0.006	0.000	0.009
Jun	0.695	0.000	0.000	0.488	0.695	0.000	0.000	0.000	0.000	0.000	0.018
Sub-total	5.115	0.000	0.000	1.050	5.115	0.000	0.014	0.366	0.028	0.000	0.041
Jul	1.812	0.000	0.000	0.285	1.812	0.000	0.000	0.000	0.000	0.000	0.125
Aug											
Sep											
Oct											
Nov											
Dec											
Total	6.927	0.000	0.000	1.335	6.927	0.000	0.014	0.366	0.028	0.000	0.165

Contract No.: NE/2017/03

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

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

- Notes:
- (1) The performance targets are given in PS Clause 6.14.
 - (2) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
 - (3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material and waste will be collected by recycler for recycling
 - (4) Use the conversion factor, density of general refuse (1 t/m³) and inert C&D materials (2 t/m³).
 - (5) Use the conversion factor for chemical waste (0.88kg/L)

Appendix L

Implementation Schedule for Environmental Mitigation Measures

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	Implementation Status		
					Contract 1	Contract 2	Contract 3
Dust Impact (Contraction Phase)							
S4.7.2 to S4.7.5	Mitigation measures in form of regular watering under a good site practice should be adopted. Watering once per hour on exposed worksites and haul road is proposed to achieve dust removal efficiency of 91.7%. While the above watering frequencies are to be followed, the extent of watering may vary depending on actual site conditions but should be sufficient to maintain an equivalent intensity of no less than 1.75 L/m ² to achieve the respective dust removal efficiencies.	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	V	V	V
S4.7.6	The Contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction ion Dust) Regulation.	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	V	V	V
S4.7.6	Following dust suppression measures should also be incorporated by the Contractor to control the dust nuisance throughout the construction phase: <ul style="list-style-type: none"> 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 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 	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	V	V	@

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	Implementation Status		
					Contract 1	Contract 2	Contract 3
	after the activities so as to maintain the entire surface wet ; <ul style="list-style-type: none"> 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, 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	N/A
Noise Impact (Contraction Phase)							
S5.6.9	Implement the following good site management practices: <ul style="list-style-type: none"> 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 airborne noise	Contractor	All construction sites where practicable	V	V	V
S5.6.11 to	Use of “ Quiet ” Plant and Working Methods.	Reduce the noise	Contractor	All	V	N/A	N/A

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	Implementation Status		
					Contract 1	Contract 2	Contract 3
S5.6.13		levels of plant items		construction sites where practicable			
S5.6.14	Install temporary site hoarding (approx 2.5m high) located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period.	Reduce the construction ion noise levels at low-level zone of NSRs through partial screening.	Contractor	All construction sites where practicable	V	V	V
S5.6.15 to S5.6.18	Install movable noise barriers, full enclosure and acoustic mat, screen the noisy plants including air compressor and generator.	Screen the noisy plant items to be used at all construction sites	Contractor	All construction ion sites where practicable	V	V	N/A
S5.6.19	Sequencing operation of construction plants equipment.	Operate sequentially within the same work site to reduce the construction airborne noise	Contractor	All construction ion sites where practicable	V	V	N/A
S5.6.34	Implement temporary noise barrier along Road L4.	Further reduce the construction ion airborne noise	Contractor	Road L4 of ARQ	N/A	N/A	N/A
S5.6.35	Implement a noise monitoring under EM&A programme.	Monitor the construction noise levels at the selected representative locations	Contractor	Selected Representative Noise monitoring stations	V	N/A	N/A
Water Quality Impact (Contraction Phase)							
S6.6.3	<p><u>Construction Runoff</u></p> <p>In accordance with the Practice Note for Professional Persons on Construction ion Site Drainage, Environmental Protection Department , 1994 (ProPECC PN 1/94), best management practices should be implemented as far as practicable as below:</p> <ul style="list-style-type: none"> 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 	Control construction runoff	Contractor	All construction sites	@	@	@

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	Implementation Status		
					Contract 1	Contract 2	Contract 3
	<p>minimize polluted runoff. Sediment at ion tanks with sufficient capacity, constructed from preformed individual cells of approximately 6 to 8 m³ 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.</p> <ul style="list-style-type: none"> • 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 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 						

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
	<p>be taken during or after rainstorms are summarized in Appendix A2 of <i>ProPECC PN 1/94</i>. Particular attention should be paid to the control of silty surface runoff during storm events.</p> <ul style="list-style-type: none"> 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. 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	<p><u>Sewage from Workforce</u></p> <ul style="list-style-type: none"> Portable chemical toilets should be provided for handling the construction sewage generated by the workforce. Assume that the capacity of the chemical toilets would be 0.4m3 and suck up twice a day under normal practices, around 45 chemical toilets would be required for the whole site at peak hour. And it should be noted that under normal construction periods, less chemical toilets would be needed. In addition, the total number of the chemical toilets would be subject to later detailed design, the capacity of the chemical toilets, and contractor’s site practices. Nevertheless, a licensed contractor should be employed to provide appropriate and adequate portable toilets to cater around 37.5 m3/day sewage and be responsible for appropriate disposal and maintenance. Since portable chemical toilets will be provided, no adverse water quality impact from the workforce sewage is anticipated. 	Handling of site sewage	Contractor	All construction sites	V	V	V

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	Implementation Status		
					Contract 1	Contract 2	Contract 3
	<ul style="list-style-type: none"> Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment during the construction ion phase of the Project . Regular environmental audit on the construction ion site should be conducted in order to provide an effective control of any malpractices and achieve continual improvement of environmental performance on site. It is anticipated that sewage generation during the construction phase of the Project would not cause water quality impact after undertaking all required measure 						
S6.6.8 and 6.6.9	<p><u>Accidental Spillage</u> 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 and 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.</p>	Prevention of accidental spillage	Contractor	All construction sites	V	@	V
S6.6.11- S6.6.14	<p><u>Groundwater from Contaminated Area</u> 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.</p> <p>If wastewater treatment is deployed, the wastewater treatment unit shall deploy suitable treatment process (e.g. oil interceptor / activated carbon) to reduce the pollution level to an acceptable standard and remove any prohibited substances (e.g. Petroleum Carbon Ranges (PCRs)). All treated effluent from wastewater treatment plant shall meet the requirements as stated in TM-DSS and should be discharged into the foul sewers.</p> <p>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 Section 2.3 of TM-DSS. The baseline groundwater quality shall be determined prior to the select</p>	Minimize contaminated groundwater impacts	Contractor	All construction sites	NA	NA	NA

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	Implementation Status		
					Contract 1	Contract 2	Contract 3
	ion of the recharge wells, and submit a working plan (including the laboratory analytical results showing the quality of groundwater at the proposed recharge location(s) as well as the pollutant levels of groundwater to be recharged) to EPD for agreement . Pollution levels of groundwater to be recharged shall not be higher than pollutant levels of ambient groundwater at the recharge well. Prior to recharge, any prohibited substances such as PCRs should be removed as necessary by installing the petrol interceptor.						
Waste Management (Contraction Phase)							
S8.5.2	<p><u>Good Site Practice</u></p> <p>The following good site practices are recommended throughout the construction ion activities:</p> <ul style="list-style-type: none"> • 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 (WMP) as part of the Environmental Management Plan (EMP) in accordance with the <i>ETWB TC(W) No. 19/2005</i> for construction ion phase. The EMP should be submit ted to the Engineer for approval. Mitigation measures proposed in the EIA Report and the EM&A Manual should be adopted.	Minimize waste generation during construction	Contractor	All construction sites	V	V	V
S8.5.3	<p><u>Waste Reduction Measures</u></p> <p>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:</p> <ul style="list-style-type: none"> • 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 	Reduce waste generation	Contractor	All construction sites where practicable	V	V	V

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	Implementation Status		
					Contract 1	Contract 2	Contract 3
	recover reusable/recyclable portions (i.e. soil, broken concrete, metal etc.); <ul style="list-style-type: none"> provide training to workers on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling. 						
S8.5.5	<u>Storage of Waste</u> The following recommendation should be implemented to minimize the impacts: <ul style="list-style-type: none"> 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
S8.5.6	<u>Collection and Transportation of Waste</u> The following recommendation should be implemented to minimize the impacts: <ul style="list-style-type: none"> 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. 	Minimize waste impacts from storage	Contractor	All construction sites	@	V	V
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: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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
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	Remediate contaminated soil	Contractor	All construction sites where applicable	V	V	N/A

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	Implementation Status		
					Contract 1	Contract 2	Contract 3
	the potential environmental implications arising from the handling of contaminated materials refer to Land Contamination Section.						
S8.5.17	<u>Chemical Waste</u> <ul style="list-style-type: none"> 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 Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation. 	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	@	V	V
S8.5.18	<u>General Waste</u> <ul style="list-style-type: none"> 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 collection 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
S8.5.19	<u>Sewage</u> <ul style="list-style-type: none"> 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 collection by licensed collectors should be arranged to minimize potential environmental impacts. 	Minimize production of sewage impacts	Contractor	All construction sites	V	V	V
Ecology (Contraction Phase)							
S. 10.7.2 to 10.7.6	Re-provision of Wooded Area for ecological function at the future Quarry Park.	Compensate for the loss of three woodland patches of a total area of about 1.13ha.	Contractor/ Detailed Design Consultant (qualified botanist / horticulturist / Certified Arborist to supervise the planting).	Northern part of the proposed Quarry Park.	N/A	N/A	N/A
10.7.10	Construction phase in situ mitigation measures to minimize impacts on	Minimize impacts on	Contractor	All	V	N/A	V

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	Implementation Status		
					Contract 1	Contract 2	Contract 3
	<p>hydrological condition and water quality of hillside watercourses include:</p> <ul style="list-style-type: none"> • 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 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. 	Hydrological condition and water quality of hillside watercourses.		construction sites			
S.10.7.11	<p>Implement an emergency contingency plan during the construction phase and the plan will include, but not be limited to, the following:</p> <ul style="list-style-type: none"> • Potential emergency situations; • Chemicals or hazardous materials used on-site (and their location); 	Minimize impacts on Hydrological condition and water quality of hillside	Contractor	All construction sites	N/A	N/A	N/A

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	Implementation Status		
					Contract 1	Contract 2	Contract 3
	<ul style="list-style-type: none"> 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. 	watercourses.					
Landscape and visual (Contraction Phase)							
S11.14.23 , Table 11.9, CM1 [4]	All existing trees to be retained shall be carefully protected during construction.	Avoid disturbance and protection of the existing trees	Detailed Design Consultant /	The whole project area where applicable	V	V	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 submitted to relevant government departments for approval in accordance with <u>LAO GN No. 7/2007, ETWB TCW No. 29/2004 and 10/2013</u> . Final locations of transplanted trees shall be agreed prior to commencement of the work.	Minimize landscape impact and retention of landscape resources	Detailed Design Consultant /	Onsite where possible. Otherwise consider offsite locations	*	N/A	V
S11.14.23 , Table 11.9, CM3 [4]	Control of operation night -time glare with well-planned lighting operation system to minimize potential glare impact to adjacent VSRs	Minimize glare impact to adjacent VSRs	Contractor/ CEDD	The whole project area where applicable	V	V	V
S11.14.23 , Table 11.9, CM [4]	Erection of decorative screen hoarding.	Minimize visual impact	Contractor/ CEDD	The whole project area where applicable	N/A	N/A	N/A
S11.14.23 , Table 11.9, CM5 [2]	Minimise disturbance and limitation of run-off – temporary structures and construction works should be planned with care to minimize disturbance to adjacent landscape, vegetation, natural stream habitats.	Minimize visual impact	Contractor/ CEDD	The whole project area where applicable	V	V	V

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

Appendix M

**Complaint Log
And
Investigation Report for Complaint**

Appendix M1 Cumulative Complaint and Summons/ prosecution

Reporting Month	Number of Complaints in Reporting Month	Number of Summons/ Prosecution in Reporting Month
March 2017	1	0
April 2017	0	0
May 2017	0	0
June 2017	2	0
July 2017	3	0
August 2017	3	0
September 2017	4	0
October 2017	2	0
November 2017	3	0
December 2017	3	0
January 2018	1	0
February 2018	4	0
March 2018	0	0
April 2018	1	0
May 2018	1	0
June 2018	1	0
July 2018	0	0
August 2018	1	0
September 2018	1	0
October 2018	1	0
November 2018	3	0
December 2018	2	0
January 2019	2	0
February 2019	3	0
March 2019	1	0
April 2019	0	0
May 2019	0	0
June 2019	1	0
July 2019	1	0
Overall Total	45	0

Appendix M2 Complaint Log

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

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

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14	6-Nov-17	7-Nov-17	Anderson Road Quarry site	Resident of On Tat Estate	Noise	EPD	NA	安達邨後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 採石的 噪音 (幾乎 每日 在 08:00-19:00 進行 工程) , 已 持續 一 年 , 他 全 家 人 受 到 滋 擾 。	Ad-hoc noise measurement was conducted by ET at rooftop of Chun Tat House in the morning of 20 November 2017 and measurement result was below the Limit Level under the EM&A Programme. CWSTVJV has implemented noise mitigation measures to reduce the noise impact to the nearby resident. Since the works were carried out within the non-restricted hours, it is considered that the works under the project did not breach the Noise Control Ordinance.	no comment by IEC on 30 Nov 2017	TCS00864/16/300/F0109
15	13-Nov-17	14-Nov-17	Anderson Road Quarry site	Mr. Lam Wai	light pollution and noise	SPRO hotline	NA	1. 智泰樓面向安達巨地盤方向, 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	Anderson Road Quarry site	Resident of Po Tat Estate	Noise	EPD	NA	居住於安達邨誠達樓高層的投訴人投訴由早上八時半至下午六時聽到採鐵噪音。	CWSTVJV had already deployed the acoustic mat as noise barrier at the site boundary near Shing Tat House. To enhance the noise mitigation measures, CWSTVJV deployed an acoustic mat as noise barrier for the breaking work in order to reduce construction noise affecting the upper floor of On Tat Estate.	no comment by IEC on 13 Dec 2017	TCS00864/16/300/F0110
17	25-Aug-17	26-Oct-17	Anderson Road Quarry site	Resident of Sau Mau Ping Estate	Construction Noise	EPD	EPD (ref.N08/RE/00027738-17)	Night time construction noise of hammering (around 12AM)	It is confirmed by CWSTVJV and checked against the site diary that no construction activities were carried out after 19:00 at the subject site. Therefore, the complaint about noise nuisance during night time should not be related to the Project.	no comment by IEC on 14 Dec 2017	TCS00864/16/300/F0114
18	12-Sep-17	26-Oct-17	Anderson Road Quarry site	Resident of On Tat Estate	Construction Noise	EPD	EPD (ref. N08/RE/00029489-17)	Day time construction noise of breakers (8AM to 5PM)	Noise mitigation measures were implemented to reduce the noise impact to the nearby resident. According to the impact noise monitoring result in September 2017, there were no breaches of EM&A requirement. Since the works were carried out within the non-restricted hours, it is considered that the works under the project did not breach the Noise Control Ordinance.	no comment by IEC on 10 Jan 2018	TCS00864/16/300/F0117
19	15-Dec-17	21-Dec-17	Anderson Road Quarry site	Resident of Sau Mau Ping Estate	Construction Noise	EPD	NA	Resident of Sau Yee House complained suspected construction noise from Anderson Construction Site at restricted hour (7pm to 7am).	It is confirmed by CWSTVJV and checked against the site diary that no construction activities were carried out after 19:00 at the subject site. Therefore, the complaint about noise nuisance during night time should not be related to the Project.	no comment by IEC on 10 Jan 2018	TCS00864/16/300/F0118
20	20-Dec-17	21-Dec-17	Anderson Road Quarry site	Resident of On Tat Estate	Dust	EPD	NA	投訴安達臣道信和地盤水車已經壞了十多天, 一直無灑水, 四周非常大塵。投訴人住於安達邨, 投訴安達臣道石礦場有大地盤, 地盤大車工作時間不停出入揚起沙塵, 吹到安達邨, 影響空氣環境, 要求部門到場視察。	CWSTVJV has implemented dust mitigation measures to eliminate the inconvenience caused to the nearby resident. It is considered that the complaint was an isolated case due to malfunction of water tanker and CWSTVJV has promptly rectified the deficiency. As advised by CWSTVJV, another water tanker will be deployed in mid-January 2018 to enhance the dust suppression measures throughout the construction site.	no comment by IEC on 25 Jan 2018	TCS00864/16/300/F0121
21	28-Dec-17	10-Jan-18	Anderson Road Quarry site	Resident of Sau Mau Ping Estate	Construction Noise	CE's office	NA	日間及凌晨均聽到轟隆聲的噪音及震動, 懷疑是由附近工程引起	ET has conducted an ad-hoc noise measurement for Leq (30min) in the complainant's flat in the monitoring of 17 January 2018. It was noted that the complainant's flat is not in direct line of sight to the Anderson Road Quarry Site. The measurement noise	no comment by IEC on 8 Feb 2018	TCS00864/16/300/F0129

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

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

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

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

Log ref.	Date of Complaint	Date of Received by ET	Complaint Location	Complainant	Complaint nature	Channel	Ref. no.	Complaint details	Follow up action	Status	Investigation Report Ref.
41	15-Feb-19	25-Feb-19	Anderson Road Quarry Site	Undisclosed	noise	1823	2-4948074127	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 alternative 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. Alternative quiet work method was adopted such as drilling the hard rock before the breaking work to reduce the breaking duration. In our investigation, CWSTVJV had enhanced the noise mitigation measures to ease the complainant's concerns. CWSTVJV will continually implement the noise mitigation measures to reduce to noise impact to the public.	no comment by IEC on 29 Mar 2019	TCS00864/16/300/F0252a
44	1-Mar-19	26-Feb-19	E3 of Contract 2	Undisclosed	noise	CEDD	NA	A complaint is forwarded by CEDD which was received by KTDC member Mr CHENG Keung Fung from the residents of Tsui Yeung House(翠楊樓) about the noise nuisance generated and the working time up to 7:00 pm from the rock excavation of E3 lift tower. Follow up action is requested.	The representative of the engineering team explained to Mr. Cheng about the project's details and concerned site was being constructed for the future pedestrian connection facilities. The related stone drilling process is expected to be completed in mid-April to end of April 2019. Mr. Cheng was satisfied with the rapid response from CEDD and the engineering team. In our investigation, Kwan On has implemented noise mitigation measures to reduce the noise impact to the nearby resident. Since the works were carried out within the non-restricted hours, it is considered that the works under the project did not breach the Noise Control Ordinance.	no comment by IEC on 6 May 2019	TCS00864/16/300/F0264

Log ref.	Date of Complaint	Date of Received by ET	Complaint Location	Complainant	Complaint nature	Channel	Ref. no.	Complaint details	Follow up action	Status	Investigation Report Ref.
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 under reviewed by IEC.	--	--
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.		

Appendix N

Implementation Status for Water Quality Mitigation Measures

Water Quality Mitigation Measure



Perimeter channel to collect site surface



Exposed surface was covered by cement mortar



Q1: Temporary Water Reservoir 1



Q2: Temporary Water Reservoir 3



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



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



Q6: Wastewater treatment facility 24 cu. m.



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