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 (JUNE 2017)

PREPARED FOR
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT (CEDD)

Date	Reference No.	Prepared By	Certified By
13 July 2017	TCS00864/16/600/R0054v2	Nicola Hon (Environmental Consultant)	Tam Tak Wing (Environmental Team Leader)

Version	Date	Remarks
1	11 July 2017	First Submission
2	13 July 2017	Amended according to the IEC's comments on 13 July 2017

ANEWR

Civil Engineering and Development Department
New Territories East Development Office
Suite 1213 Chinachem Golden Plaza
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Tsim Sha Tsui East
Kowloon

Your reference:

Our reference: HKCEDD10/50/104442

Date: 14 July 2017

Attention: Mr Stephen T S Li

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 (June 2017)

We refer to the emails of 11 and 13 July 2017 from Action-United Environmental Services and Consulting attaching a Monthly Environmental Monitoring and Audit Report (June 2017) for the captioned project.

We have no further comment and hereby verify the Monthly Environmental Monitoring and Audit Report (June 2017).

Should you have any queries, please do not hesitate to contact the undersigned or our Mr Nic Lam on 2618 2836.

Yours faithfully
ANEWR CONSULTING LIMITED

Adi Lee
Independent Environmental Checker

LYMA/LHHN/WCKJ/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. As advised by the 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. The EM&A programme under the Project was therefore commenced on 12 April 2017 pursuant to the requirement under the EM&A manual.

ES04 This is the **3rd** monthly EM&A report presenting the monitoring results and inspection findings for the reporting period from **1 to 30 June 2017** (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	**4**	**60**
	24-hour TSP	**4**	**24**
Construction Noise	$L_{eq(30min)}$ Daytime	**2**	**8**

BREACH OF ACTION AND LIMIT (A/L) LEVELS

ES06 No exceedances of air quality and construction noise registered in the Reporting Period. Furthermore, no noise complaints (i.e. Action Level) were received. No Notifications of Exceedances (NOEs) was issued to the RE, IEC and the Main Contractor. The statistics of 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	0	0
	24-hour TSP	0	0	0	0	0
Construction Noise	$L_{eq(30min)}$ Daytime	0	0	0	0	0

ENVIRONMENTAL COMPLAINT

ES07 No environmental complaints for the Project were received in the Reporting Period.

NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

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

REPORTING CHANGE

ES09 No reporting changes were made in the Reporting Period.

SITE INSPECTION

ES10 In this Reporting Period, joint site inspection to evaluate the site environmental performance for ***Contract 1*** was carried out by the RE, ET and Contractor on **8, 13, 20 and 27 June 2017** in which IEC joined the site inspection on **8 June 2017**. 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 **7, 14, 21 and 28 June 2017** in which IEC joined the site inspection on **28 June 2017**. No non-compliance was noted during the site inspection.

FUTURE KEY ISSUES

ES12 Special attention should be paid on the potential construction dust impact since most of the construction sites are adjacent to resident. The Contractor should fully implement the construction dust mitigation measures properly.

ES13 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.

ES14 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 is in December 2016 and the Contract Period is 70 months.

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

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

1.1.4 To facilitate the project management and implementation, the Service Contract is divided to three CEDD contracts including Contract 1 (NE/2016/01), Contract 2 (NE/2016/05) and Contract 3. As advised by the 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. The EM&A programme under the Project was therefore commenced on 12 April 2017 pursuant to the requirement under the EM&A manual.

1.1.5 According to the Approved EM&A Manual, air quality and noise monitoring are required to be monitored during the construction phase of the Project. As part of the EM&A program, baseline monitoring is required to determine the ambient environmental conditions. Baseline monitoring including air quality and noise 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*** at all designated monitoring locations before construction work commencement.

1.1.6 The Baseline Monitoring Report which verified by the Independent Environmental Checker (hereinafter referred as "the IEC") has been submitted to Environmental Protection Department **(**EPD) on ***9 May 2017*** for endorsement.

1.1.7 This is the **3rd** monthly EM&A report presenting the monitoring results and inspection findings for the reporting period from **1 to 30 June 2017**.

1.2 REPORT STRUCTURE

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

Section 1	*Introduction*
Section 2	*Project Organization and Construction Progress*
Section 3	*Summary of Impact Monitoring Requirements*
Section 4	*Air Quality Monitoring*
Section 5	*Construction Noise Monitoring*
Section 6	*Water Quality Monitoring*
Section 7	*Waste Management*
Section 8	*Site Inspections*
Section 9	*Environmental Complaints and Non-Compliance*
Section 10	*Implementation Status of Mitigation Measures*
Section 11	*Conclusions and Recommendations*

2. PROJECT ORGANIZATION AND CONSTRUCTION PROGRESS

2.1 CONSTRUCTION CONTRACT PACKAGING

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

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

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

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

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

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

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

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

(iii) Associated landscape works.

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

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

Contract 3 (Contract number to be assigned)

2.1.4 The commencement date of Contract 3 is to be confirmed.

(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 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***. As provided by the Contractors of Contracts 1 and 2, the major construction activities conducted in the Reporting Period are summarized in below.

Contract 1 (NE/2016/01)

1. Completed installation of safety hoarding from Point 73 to 85;
2. Completed 85% of laying concrete blocks and welding steel members from Point 17 to 22 and the corrugated sheets has been installed from Point 17 to 19;
3. Completed CRE Site Office and the CRE team moved into the Site Office;
4. Completed JV Site Office and the Chun Wo-STEC-Vasteam JV moved into the Site Office;
5. Continue bored pile construction of RW9-P1;
6. Continue bored pile construction of RW9-P2;
7. Land Contamination Ground Investigation completed 18 out of 29 holes;
8. Completed all 5 holes (100% completed) at the West Portal and the underpass tunnel;
9. Completed remaining 18 holes and all 42 holes of ground investigation at PTT have been completed (100% completion);
10. In Portion A4, soil excavation completed 85%, rock excavation completed 17% and backfilling completed 22%;
11. Commenced construction of U-channel in Portion B6 (4% excavation competed);
12. Continued trimming slope at West Portal at top-down direction and in progress (6,020 cu.m of soil and 1,960 cu.m. of rock completed);
13. Completed installation of temporary drainage system in East Portal Area (1050 dia. Steel pipes);
14. Submitted TMDP for construction of temporary drainage system for diversion at the road L4/L3 junction and under reviewing by the Engineer;
15. Continued pavement breaking of the existing access road along road L4 (30% completed);
16. The method statement of removing RE wall had been submitted for approval. The excavation was commenced and the 1st layer out of 3 has been excavated;
17. Commenced stripping soil to expose rock head level for Underground Stormwater Tank and the progress of excavation is 4,545 cu.m. of soil excavation and 230 cu.m. of rock excavation;
18. Trees felling at the water pumping station area has been completed;
19. Commenced excavation at the north lift tower and in progress (approx. 300 cu.m. of soil and 259 cu.m. of rock completed);

Contract 2 (NE/2016/05)

1. Set up hoarding at Portion 1, 6
2. Site Clearance at Portion 1,2,4,5,6,7,8,9
3. Tree Survey at Portion 7-9
4. Set up site office at Portion 4
5. Scaffolding on Portion 8
6. Soil Nailing works on Portion 8 (Site B)
7. Pre-drill work at Portion 1
8. Water Barrier erection at Portion 4
9. Pruning of tree roots at Portion 4

10. Fell Tree at Portion 1, 6

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

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

Item	Description	License/Permit Status			
		Permit no./ account no./ Ref. no.	Valid Period		Status
			From	To	
1	Form NA - Notification pursuant to Air pollution Control (Construction Dust) Regulation	EPD ref. no. 411762	NA	NA	valid
	Form NB - Notification pursuant to Air pollution Control (Construction Dust) Regulation	EPD ref. no. 412730	NA	NA	valid
2	Chemical Waste Producer Registration	Registration no. WPN 5213-292-C411 5-01	15 Feb 2017	End of project	valid
3	Water Pollution Control Ordinance - Discharge License	WT00027252-2 017	20 Mar 2017	31 Mar 2022	valid
4	Waste Disposal Regulation - Billing Account for Disposal of Construction Waste	Account no. 7026925	20 Jan 2017	End of project	valid
5	Construction Noise Permit	GW-RE0177-17	15 Mar 2017	14 Sep 2017	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	Application in progress			
3	Water Pollution Control Ordinance - Discharge License	Application in progress			
4	Waste Disposal Regulation - Billing Account for Disposal of Construction Waste	Account no.7027548	12 Apr 2017	End of project	valid

3. SUMMARY OF IMPACT MONITORING REQUIREMENTS

3.1 GENERAL

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

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

3.2 MONITORING PARAMETERS

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

- Air quality; and
- Construction noise

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

Table 3-1 Summary of EM&A Requirements

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

3.3 MONITORING LOCATIONS

3.3.1 According to the EM&A Manual Section 4.6, seven (7) most representative and affected air sensitive receivers (ASR) were selected as air monitoring stations (AQM). The 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
AMS-1	ACYC-01	Chi Yum Ching She	Ground of Chi Yum Ching facing the project site
AMS-2	DARB-13	Block 8, Site B Note 1	Ground of Block 8, Site B facing On Sau Road
AMS-3	DARC-16	Planned Clinic and Community Centre, Site C2 Note 1	Ground of Planned Clinic and Community Centre facing Anderson Road
AMS-4	DARC-26	Planned School, Site C2 Note 2	Ground of Planned School facing Anderson Road
AMS-5	DARE-06	Block 5, DAR Site E	Main roof of Oi Tat House of On Tat Estate facing the project site
AMS-6	DARE-17	Block 9, Site E	Main roof of Hau Tat House of On Tat Estate facing the project site
AMS-7	AMYT-04	Ma Yau Tong Village	Balcony at 2nd floor of Village House Anderson Road No. 1 facing the project site

Note 1: The ASR is under construction and not yet in operation.
Note 2: The ASR is not yet constructed.

3.3.2 In our recent site visit at the subject site, 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 changes for the baseline monitoring programme was submitted and agreed by EPD before the baseline monitoring.

3.3.3 In our baseline monitoring proposal, baseline 1-hour TSP monitoring will be conducted at all AQM location AMS-1 to AMS-7. However, baseline 24-hour TSP monitoring will be conducted at existing ASR AMS-1, AMS-5, AMS-6 and AMS-7 only with our justifications present below:

(a) AQM Locations AMS-2, AMS-3 & AMS-4 are planned ASRs which are still under construction/ has not yet constructed. During recent site visit, there were no suitable locations for setting up the HVS and electricity supply at these AQM locations.

(b) Alternative locations were considered in accordance with EM&A Manual Section 4.7.3. However, there were no suitable location found and our justifications are provided in below:

(i) Alternative locations Sau Mau Ping Estate and Shun Tin Estate were located at downhill of the subject site which separated by the active construction site (i.e., AMS-2, AMS-3 & AMS-4) and Sau Mau Ping Road. In view of the level deviation, the baseline data obtained in these alternative locations could not represent the baseline condition of the designated location AMS-2, AMS-3 & AMS-4. Moreover, when the planned ASR AMS-2, AMS-3 & AMS-4 activate sooner or later, impact monitoring should be carried out at these designated locations instead of the alternative locations.

(ii) Alternative location such as site boundary of the site subject was considered, however, there were no provisions of power supply to sustain the HVS continuously after consultation with the Contractor.

(c) According to EM&A Manual Section 4.7.4, as an exceptional cases, it is proposed to adopt the Action Level established at AMS-5 to AMS-2, AMS-3 & AMS-4 for impact monitoring as AMS-5 with our justification below.

(i) AMS-5 is the closest ASR to AMS-2, AMS-3 & AMS-4 under same direction of prevailing wind.

(ii) In view of the baseline 1-hour TSP data, the measured results at AMS-5 were lower than those collected at AMS-2, AMS-3 & AMS-4. As a conservation approach, adopting Action Level at AMS-5 for Location AMS-2, AMS-3 & AMS-4 is more stringent for the project.

(iii) The Action level for AMS-2, AMS-3 & AMS-4 will be subject to review in accordance with EM&A Manual Section 4.7.5

Construction Noise

3.3.4 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. The details of noise monitoring location are listed in ***Table 2-3*** and illustrated in ***Appendix D***.

Table 3-3 Impact Monitoring Stations - Construction Noise

ID	NSR ID in EIA	Location
NMS-1	Site C2 – School 05 Note 1	Ground of planned school at DAR facing the project site
NMS-2	Site E – School	Ground area between the planned school and Him Tat House facing the project site
NMS-3	Site C2 – R102 Note 1	Ground of Ancillary Facilities Building facing the project site

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

Note 1: The NSR is under construction and not yet in operation.
Remark: (*) Additional noise monitoring location is recommended by RE and agreed by IEC

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 3-4***.

Table 3-4 Air Quality Monitoring Equipment

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

Noise Monitoring

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

3.5.4 Noise equipment as perform for baseline monitoring is listed in ***Table 3-5.***

Table 3-5 Construction Noise Monitoring Equipment

Equipment	Model
Integrating Sound Level Meter	B&K Type 2238
Calibrator	B&K Type 4231
Portable Wind Speed Indicator	Anemometer AZ Instrument 8908

3.6 MONITORING METHODOLOGY

1-hour TSP

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

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

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

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

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

24-hour TSP

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

(a.) An anodized aluminum shelter;

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

(c.) A blower motor assembly;

(d.) A continuous flow/pressure recorder;

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

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

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

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

- A horizontal platform with appropriate support to secure the samples against gusty wind should be provided;
- No two samplers should be placed less than 2 meters apart;
- The distance between the sampler and an obstacle, such as building, must be at least twice the height that the obstacle protrudes above the sample;
- A minimum of 2 meters of separation from any supporting structure, measured horizontally is required;
- Before placing any filter media at the HVS, the power supply will be checked to ensure the sampler work properly;
- The filter paper will be set to align on the screen of HVS to ensure that the gasket formed an air tight seal on the outer edges of the filter. Then filter holder frame will be tightened to the

filter hold with swing bolts. The holding pressure should be sufficient to avoid air leakage at the edge.

- The mechanical timer will be set for a sampling period of 24 hours (00:00 mid-night to 00:00 mid-night next day). Information will be recorded on the field data sheet, which would be included the sampling data, starting time, the weather condition at current and the filter paper ID with the initial weight;
- After sampling, the filter paper will be collected and transfer from the filter holder of the HVS to a sealed envelope and sent to a local HOKLAS accredited laboratory for quantifying.

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

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

Noise Monitoring

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

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

3.6.9 The sound level meter will be mounted on a tripod at a height of 1.2 m and placed at the assessment point and oriented such that the microphone is pointed to the site with the microphone facing perpendicular to the line of sight. The windshield will be fitted for all measurements. Where a measurement is to be carried out at a building, the assessment point would normally be at a position 1 m from the exterior of the building façade. Where a measurement is to be made for noise being received at a place other than a building, the assessment point would be at a position 1.2 m above the ground in a free-field situation, i.e. at least 3.5 m away from reflective surfaces such as adjacent buildings or walls.

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

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

3.6.12 The sound level meter and calibrator are calibrated and certified by a laboratory accredited under HOKLAS or any other international accreditation scheme at yearly basis. The calibration

certificates of all monitoring equipment used for the impact monitoring program in the Reporting Period is attached in ***Appendix E***.

Meteorological Information

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

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

3.7.1 The baseline results form the basis for determining the environmental acceptance criteria for the impact monitoring. According to the approved Environmental Monitoring and Audit Manual, the air quality, construction noise were set up, namely Action and Limit levels are listed in ***Tables 3-6 and 3-7***.

Table 3-6 Action and Limit Levels for Air Quality Monitoring

Monitoring Station	Action Level (μg /m^3)		Limit Level (μg/m^3)	
	1-hour TSP	24-hour TSP	1-hour TSP	24-hour TSP
AMS-1	313	154	500	260
AMS-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 3-7 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] / ***70*** dB(A) [Note 2] / ***65*** dB(A) [Note 2]
NMS-2		
NMS-3		***75*** dB(A)
NMS-4*		***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 is recommended by RE and agreed by IEC

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-5, AMS-6 and AMS-7. No monitoring was conducted at AMS-2, 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 ***60*** events of 1-hour TSP and ***24*** events 24-hours TSP monitoring were carried out and the monitoring results are summarized in ***Tables 4-1 to 4-4***. 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-1)

Date	24-hour TSP ($\mu g/m^3$)	1-hour TSP ($\mu g/m^3$)				
		Date	Start Time	1st reading	2nd reading	3rd reading
2-Jun-17	25	3-Jun-17	13:29	76	73	75
8-Jun-17	19	9-Jun-17	13:07	57	59	63
14-Jun-17	9	15-Jun-17	9:24	77	77	73
20-Jun-17	15	21-Jun-17	13:03	72	73	76
26-Jun-17	28	27-Jun-17	13:40	60	61	63
30-Jun-17	20					
Average (Range)	**19 (9 – 28)**	Average (Range)		**69 (57 – 77)**		

Table 4-2 Summary of 24-hour and 1-hour TSP Monitoring Results (AMS-5)

Date	24-hour TSP ($\mu g/m^3$)	1-hour TSP ($\mu g/m^3$)				
		Date	Start Time	1st reading	2nd reading	3rd reading
2-Jun-17	32	3-Jun-17	9:11	78	76	75
8-Jun-17	24	9-Jun-17	9:27	51	54	55
14-Jun-17	20	15-Jun-17	12:49	70	67	70
20-Jun-17	14	21-Jun-17	9:27	67	69	70
26-Jun-17	22	27-Jun-17	9:37	55	55	56
30-Jun-17	12					
Average (Range)	**21 (12 – 32)**	Average (Range)		**65 (51 – 78)**		

Table 4-3 Summary of 24-hour and 1-hour TSP Monitoring Results (AMS-6)

Date	24-hour TSP ($\mu g/m^3$)	1-hour TSP ($\mu g/m^3$)				
		Date	Start Time	1st reading	2nd reading	3rd reading
2-Jun-17	43	3-Jun-17	9:24	72	75	77
8-Jun-17	12	9-Jun-17	9:32	49	47	58
14-Jun-17	32	15-Jun-17	13:00	65	67	64
20-Jun-17	19	21-Jun-17	9:22	66	70	68

26-Jun-17	16	27-Jun-17	9:23	56	55	56
30-Jun-17	15					
Average (Range)	**23 (12 – 43)**	Average (Range)		**63 (47 – 77)**		

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

Date	**24-hour TSP (μg/m³)**	**1-hour TSP (μg/m³)**				
		Date	**Start Time**	**1st reading**	**2nd reading**	**3rd reading**
2-Jun-17	61	3-Jun-17	12:56	76	73	74
8-Jun-17	19	9-Jun-17	13:12	64	67	65
14-Jun-17	25	15-Jun-17	9:59	73	75	73
20-Jun-17	24	21-Jun-17	13:16	68	72	73
26-Jun-17	41	27-Jun-17	13:02	66	67	64
30-Jun-17	15					
Average (Range)	**31 (15 – 61)**	Average (Range)		**70 (64 – 76)**		

4.2.2 As shown in ***Tables 4-1 to 4-4***, all the 1-hour TSP and 24-hour TSP monitoring results were below the Action/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 performed at the active designated monitoring locations NMS2 and NMS4. No monitoring was conducted at NMS1 and NMS3 since they are planned NSR which are still under construction/ not yet constructed.

5.1.2 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 **8** events noise measurements were carried out at the designated locations. Free-field status were performed at NMS2 and façade correction (+3 dB(A)) has added according to the requirement in this month. 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

Construction Noise Level ($L_{eq30min}$), dB(A)		
Date	**NMS2(*)**	**NMS4**
9-Jun-17	63	60
15-Jun-17	59	56
21-Jun-17	59	57
27-Jun-17	65	57
Limit Level	**75 dB(A)**	

Remarks

(*) *façade correction (+3 dB(A)) is added according to acoustical principles and EPD guidelines*

5.2.2 As shown in ***Tables 5-1,*** the noise level measured at all designated monitoring locations were below 75dB(A). Moreover, no valid noise complaint (which triggered Action Level exceedance) was recorded in the Reporting Period.

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	
	Quantity	Disposal Location	Quantity	Disposal Location
Total generated Insert C&D Materials ('000m^3)	1.395	-	0.615	-
Hard Road and Large Broken Concrete	0.195	-	-	-
Reused in this Contract (Inert) ('000m^3)	1.200	-	0.002	-
Reused in other Projects (Inert) ('000m^3)	0	-	0	-
Disposal as Public Fill (Inert) ('000m^3)	0	-	0.613	TKO 137

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

Type of Waste	Contract 1		Contract 2	
	Quantity	Disposal Location	Quantity	Disposal Location
Recycled Metal ('000kg)	0	-	0	-
Recycled Paper / Cardboard Packing ('000kg)	0	-	0	-
Recycled Plastic ('000kg)	0	-	0	-
Chemical Wastes ('000kg)	1.808	Licensed collector	0	-
General Refuses ('000m^3)	0.111	SENT	0	-

7. SITE INSPECTION

7.1 REQUIREMENTS

7.1.1 According to the approved EM&A Manual, the environmental site inspection shall be formulation by ET Leader. Weekly environmental site inspections should carry 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 **8, 13, 20 and 27 June 2017** in which IEC joined the site inspection with SSEMC on **8 June 2017**. No non-compliance was noted.

7.2.2 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
29 May 2017 (last Reporting Month)	• Waste oil spillage on ground should be cleaned ASAP to prevent contaminate. • NRMM without NRMM label using on site was observed. NRMM label should be displayed properly for all NRMM using on-site. • As a reminder, NRMM label should be displayed properly before NRMM using on-site.	• Waste oil spillage on ground was removed and the waste oil cumulated on site has been collected by license collector. • NRMM label was displayed properly. • Not required for reminder.
8 June 2017	• No adverse environmental impact was observed.	• N/A
13 June 2017	• Housekeeping should be improved. General refuse scattered on site should be cleaned. (Po Lam Road) • As a reminder, Ponding water cumulated on site after rainstorm should be drained ASAP. Also, all discharge water from site should fully comply with discharge license requirement.	• C&D and general refuse scattered on site was removed. (Po Lam Road) • Not required for reminder.
20 June 2017	• Debris and dead leaves cumulated inside the u-channel was observed. Proper maintenance for the drainage system should be provided. (Po Lam Road) • As a reminder, earth bund should be provided to divert the surface run-off to the de-silting facilities. (General)	• The debris and dead leaves cumulated inside the u-channel was removed. • Not required for reminder.
27 June 2017	• Water spraying for breaking and drilling activities should be provided all breakers to reduce dust generation. (Gate 3)	• Water spraying was provided for dusty activities.

Contract 2

7.2.3 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 **7, 14, 21 and 28 June 2017** in which IEC joined the site inspection with SSEMC on **28 June 2017**. No non-compliance was noted.

7.2.4 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
7 June 2017	• Stagnant water was observed at drip tray underneath generator at work area of portion 8 & 9. The contractor was advised to clean the stagnant water and dispose as chemical waste. • As a reminder, the contractor was reminded to perform house-keeping throughout construction period.	• Stagnant water at drip tray was removed. • Not required for reminders.
14 June 2017	• Construction wastes were observed at work area of portion 1. The contractor was advised to dispose construction wastes regularly. • Oil leakage from oil drum was observed at portion 8&9. The contractor was advised to clean the leakage and dispose as chemical waste.	• Construction wastes had been removed. • The leaked oil was cleaned.
21 June 2017	• Stagnant water cumulated inside the drip tray after rainstorm should be cleaned. The contractor was advised to clean the stagnant water (portion 8&9) • As a reminder, EP should be displayed at all site entrance/exit.	• No stagnant water was observed in the drip tray. • Not required for reminders.
28 June 2017	• Free-standing chemical container without drip tray was observed at Portion 8. The Contractor should provide drip tray for the container to prevent land contamination. • Scattered general refuse was observed at Portion 6. The Contractor should remove the general refuse and maintain good housekeeping on site. • The Contractor was reminded to provide mitigation measures on the exposed slope at Portion 8 to prevent muddy runoff generated.	• Chemical container has been removed. • General refuse had been removed. • Not required for reminders.

Other Contracts

7.2.5 Since Contract 3 has not yet commenced, no site inspection was performed in the Reporting Period.

8. ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

8.1 ENVIRONMENTAL COMPLAINT, SUMMONS AND PROSECUTION

8.1.1 In the Reporting Period, no environmental complaint, summons and prosecution under the EM&A Programme was lodged for the project. The statistical summary table of environmental complaint 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 April – 31 May 2017	1	0	0	NA
1 April – 31 May 2017	2	0	0	NA
1 – 30 June 2017	1	0	0	NA
1 – 30 June 2017	2	0	0	NA

Table 8-2 Statistical Summary of Environmental Summons

Reporting Period	Contract no.	Environmental Summons Statistics		
		Frequency	Cumulative	Summons Nature
1 April – 31 May 2017	1	0	0	NA
1 April – 31 May 2017	2	0	0	NA
1 – 30 June 2017	1	0	0	NA
1 – 30 June 2017	2	0	0	NA

Table 8-3 Statistical Summary of Environmental Prosecution

Reporting Period	Contract no.	Environmental Prosecution Statistics		
			Cumulative	Prosecution Nature
1 April – 31 May 2017	1	0	0	NA
1 April – 31 May 2017	2	0	0	NA
1 – 30 June 2017	1	0	0	NA
1 – 30 June 2017	2	0	0	NA

The Other Contracts

8.1.2 Since Contract 3 has not yet commenced, no environmental complaint, summons and prosecution are received in the Reporting Period.

9. IMPLEMENTATION STATUS OF MITIGATION MEASURES

9.1 GENERAL REQUIREMENTS

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

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

Table 9-1 Environmental Mitigation Measures

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

9.2 TENTATIVE CONSTRUCTION ACTIVITIES IN THE COMING MONTH

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

1. Continue excavation at the north lift tower of Pedestrian Connectivity System B;
2. Continue construction of bored pile RW9-P1;
3. Continue construction of bored pile RW9-P2;
4. Remove existing 1000 dia. and 1050 dia. down pipe system at East Portal;
5. Continue slope cut at West Portal;
6. Commence construction of soil nails at top part of West Portal;
7. Continue construction of safety hoarding;
8. Continue site formation in Portion A4;
9. Continue of excavation of U-Channel in Portion B6;
10. Continue excavation at Pedestrian Connectivity System B (North Lift Tower);
11. Commence excavation at PTT;
12. Planning works in Portion E1 and E2;
13. Continue open-cut excavation for the underground stormwater tank;
14. Continue breaking of the existing access road along Road L4;
15. Continue excavation and commence demolishment of existing reinforced earth walls at the

Road L4
16. Excavation of cascade diversion;
17. Continue discussion about the rock slope survey at Road L4.

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

1. Set up hoarding at Portion 1, 2, 6
2. Site Clearance at Portion 1,2,4,5,6,7,8,9
3. Tree Survey at Portion 7-9
4. Set up site office at Portion 4
5. Scaffolding on Portion 7, 8
6. New Pre-drill work at Portion 1
7. Fell Tree at Portion 1, 5, 6
8. Soil Nail Work at Portion 8 (Site A & B)
9. Survey Setting-out at Portion 6 &7
10. TTA Implement at Portion 1,2,4,5,6

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

10. CONCLUSIONS AND RECOMMENDATIONS

10.1 CONCLUSIONS

10.1.1 This is **3rd** monthly EM&A report presenting the monitoring results and inspection findings for the Reporting Period from **1** to **30 June 2017**.

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 No noise complaint (which is an Action Level exceedance) was received and no construction noise measurement results that exceeded the Limit Level were recorded in the Reporting Period. No NOEs or the associated corrective actions were therefore issued.

10.1.4 No documented complaint, notification of summons or successful prosecution was received under the Project.

10.1.5 During the Reporting Period, weekly joint site inspection by the RE, ET with the relevant Main-contractor was carried out for Contracts 1 and 2 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 rainy season, muddy water and other water quality pollutants via site surface water runoff get into public areas should be avoided. Mitigation measures for water quality should be properly implemented.

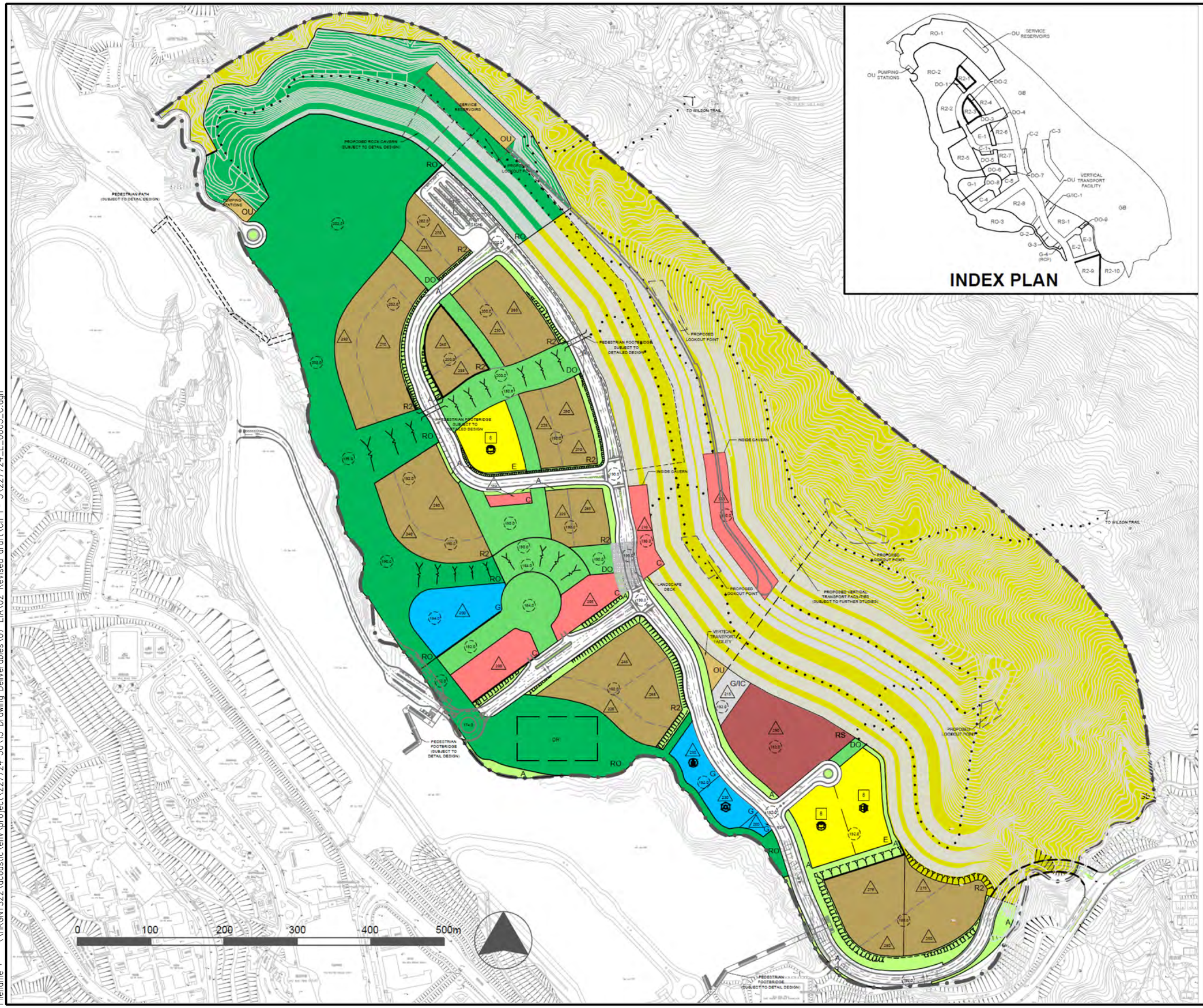
10.2.2 Construction noise should be a key environmental impact during the works. The noise mitigation measures such as use of quiet plants or temporary noise barrier installation at the construction noise predominate area should be implemented as accordance with the EM&A requirement.

10.2.3 Moreover, special attention should be paid on the potential construction dust impact since most of the construction sites are adjacent to resident. The Contractor should fully implement the construction dust mitigation measures properly.

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

Appendix A

Layout plan of the Project



INDEX PLAN

LEGEND

- POLICE STATION
- DIVISIONAL FIRE STATION
- SECONDARY SCHOOL
- PRIMARY SCHOOL
- PTT — PUBLIC TRANSPORT TERMINUS
- PLANNING BOUNDARY
- UNDERPASS
- PROPOSED PEDESTRIAN TRAIL
- PEDESTRIAN PRECINCT
- DR — DRAINAGE RESERVE
- 255 — MAXIMUM BUILDING HEIGHT (in m above PD)
- 8 — MAXIMUM BUILDING HEIGHT (in storeys)
- 200.0 — PROPOSED LEVEL (in m above PD)
- PROPOSED SLOPE
- RCP — REFUSE COLLECTION POINT
- FOOTBRIDGE
- C — COMMERCIAL
- RS — SPECIAL RESIDENTIAL
- R2 — RESIDENTIAL ZONE-2
- G — GOVERNMENT
- G/IC — GOVERNMENT/ INSTITUTION OR COMMUNITY
- E — EDUCATION
- RO — REGIONAL OPEN SPACE
- DO — DISTRICT OPEN SPACE
- A — AMENITY
- OU — OTHER SPECIFIED USES
- GB — GREEN BELT
- ROADS, JUNCTIONS, ETC.
- AREA WITH POTENTIAL FOR ROCK CAVERN DEVELOPMENT

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

Consultant

ARUP

Contract No. and Title

Agreement No. CE 18/2012(CE)

Development of Anderson Road Quarry - Investigation

Drawing title

Recommended Outline Development Plan

Drawing no.			Rev.
227724/E/0003			C
Drawn: GL	Date: 03/14	Checked: TC	Approved: ST
Scale: AS SHOWN		Status: PRELIMINARY	

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

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

圖例
LEGEND :

地盤平整及基礎建設工程
SITE FORMATION AND INFRASTRUCTURE WORKS

道路改善工程
ROAD IMPROVEMENT WORKS

行人連繫設施
PEDESTRIAN CONNECTIVITY FACILITIES

N

安達臣道
ANDERSON ROAD

寶琳路
PO LAM ROAD

佐敦谷
JORDAN VALLEY

觀塘市中心
KWUN TONG TOWN CENTRE

秀茂坪
SAU MAU PING

寶達邨
PO TAT ESTATE

康華苑
HONG WAH COURT

藍田
LAM TIN

圖則名稱 drawing title	繪圖 drawn	簽署 initial	日期 date
安達臣道石礦場發展工程位置圖 DEVELOPMENT OF ANDERSON ROAD QUARRY SITE PROJECT LOCATION PLAN	H K TSANG		23.3.16
	核對 checked	簽署 initial	日期 date
	L M CHAN		23.3.16
	核准 approved	簽署 initial	日期 date
	T S LI		23.3.16

項目編號 item no.	
比例 scale	1:10 000 @ A3
圖則編號 drawing no.	CDEARQZ0003

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

土木工程拓展署
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

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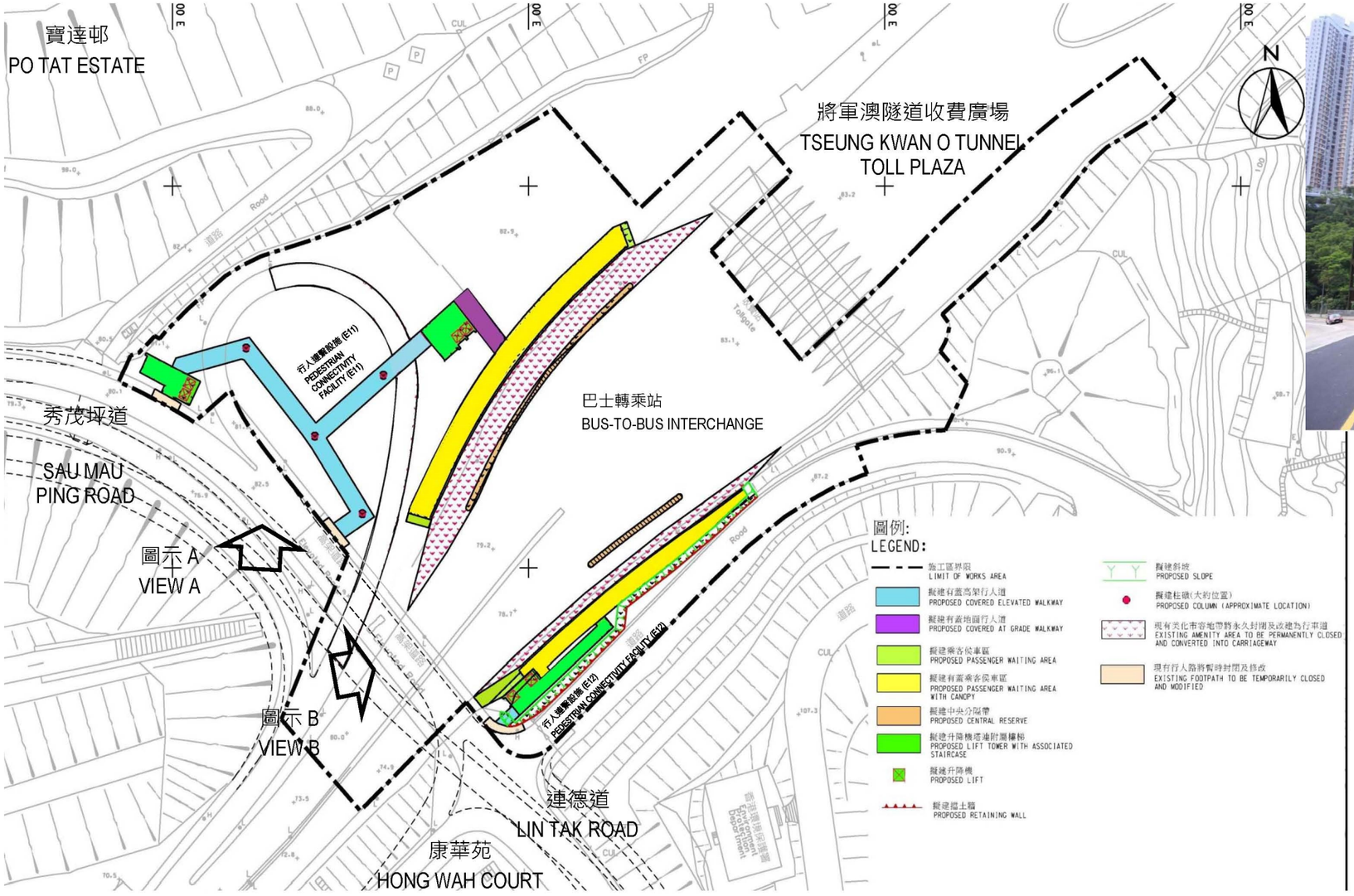
A3 297MM X 420MM



圖示 A VIEW A

圖示 B VIEW B

圖則名稱 Drawing Title

行人連繫設施(巴士轉乘站、E11及E12) - 平面圖及構思圖

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

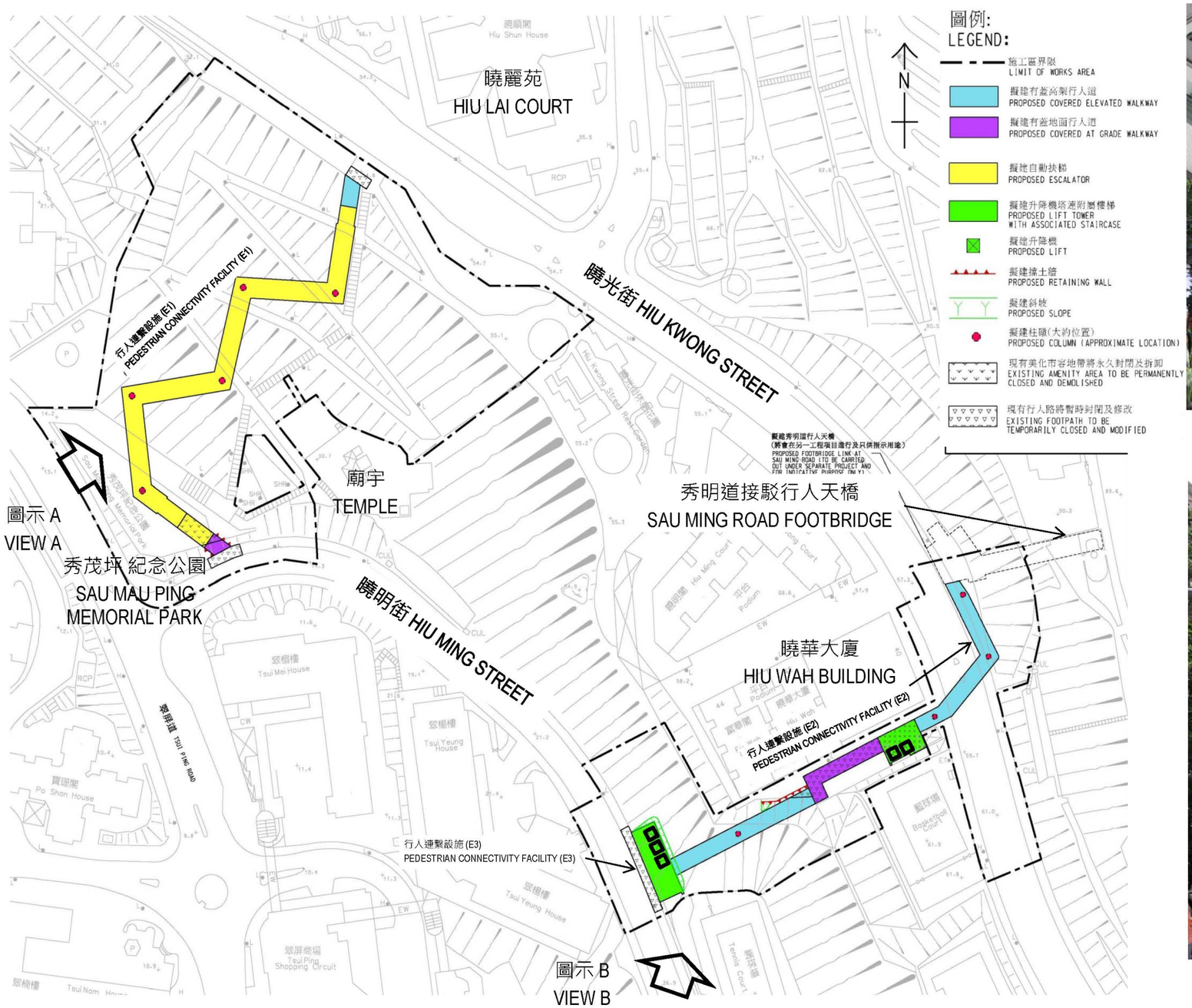
項目編號 Item No.
765CL

比例 Scale

圖則編號 Drawing No.
附件五 Appendix 5

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

土木工程拓展署
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT



圖示 A VIEW A

圖示 B VIEW B

圖則名稱 Drawing Title

行人連繫設施(E1、E2及E3) - 平面圖及構思圖

Pedestrian Connectivity Facilities (E1, E2 and E3) - Layout Plan and Artist's Impression

項目編號 Item No.
765CL

比例 Scale

圖則編號 Drawing No.
附件二 Appendix 2

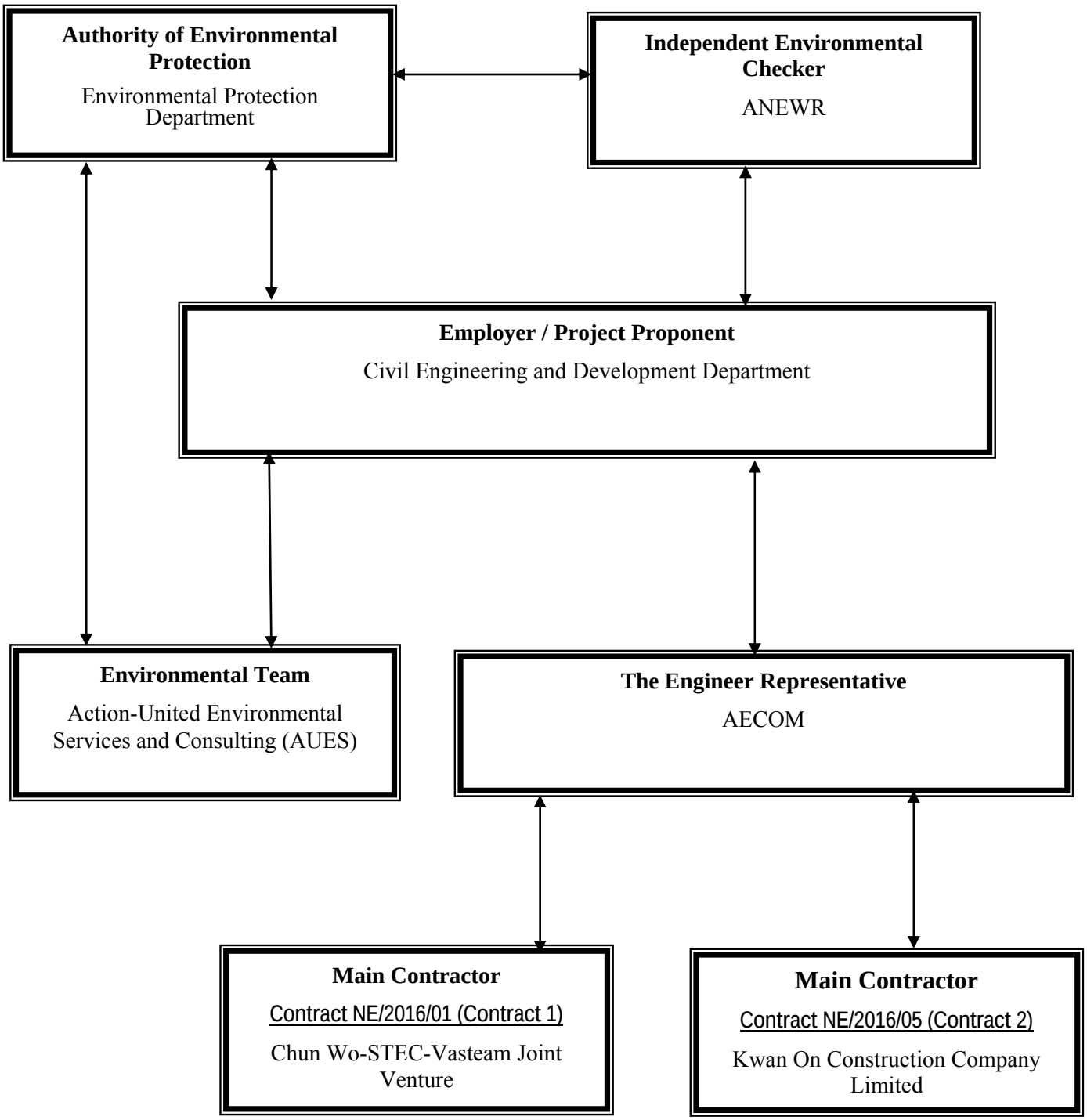
辦事處 Office
新界東拓展處
NEW TERRITORIES EAST DEVELOPMENT OFFICE

土木工程拓展署
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

Appendix B

Organization Chart

Project Organization Structure for



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

Organization	Project Role	Name of Key Staff	Tel No.	Fax No.
CEDD	Engineer	Stephen Li	2301 1383	2739 0076
AECOM	Chief Resident Engineer	Dennis Leung	2967 6608	2473 3221
AECOM	Senior Resident Engineer	Simon Leung	2967 6608	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	Kiwi Chan	2638 7181	2744 6937
AUES	Environmental Team Leader	T. W. Tam	2959 6059	2959 6079
AUES	Environmental Consultant	Nicola Hon	2959 6059	2959 6079
AUES	Environmental Consultant	Ben Tam	2959 6059	2959 6079

Legend:

CEDD (Employer) – Civil Engineering and Development Department

AECOM (Engineer) – AECOM Asia Co. Ltd.

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

ANEWR (IEC) –ANewR Consulting Limited

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

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

Organization	Project Role	Name of Key Staff	Tel No.	Fax No.
CEDD	Engineer	Stephen Li	2301 1383	2739 0076
AECOM	Chief Resident Engineer	Dennis Leung	2967 6608	2473 3221
AECOM	Senior Resident Engineer	Simon Leung	2967 6608	2473 3221
ANEWR	Independent Environmental Checker	Adi Lee	2618 2836	3007 8648
KOCCL	Project Director	Ambrose Kwong	2889 2675	2558 6900
KOCCL	Site Agent	Antony Kwok	2898 8510	2558 6900
KOCCL	Safety and Environmental Manager	Joly C K Kwong	6111 5711	2558 6900
KOCCL	Environmental Officer	Fung Hiu Lam, Purvi	6395 3685	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

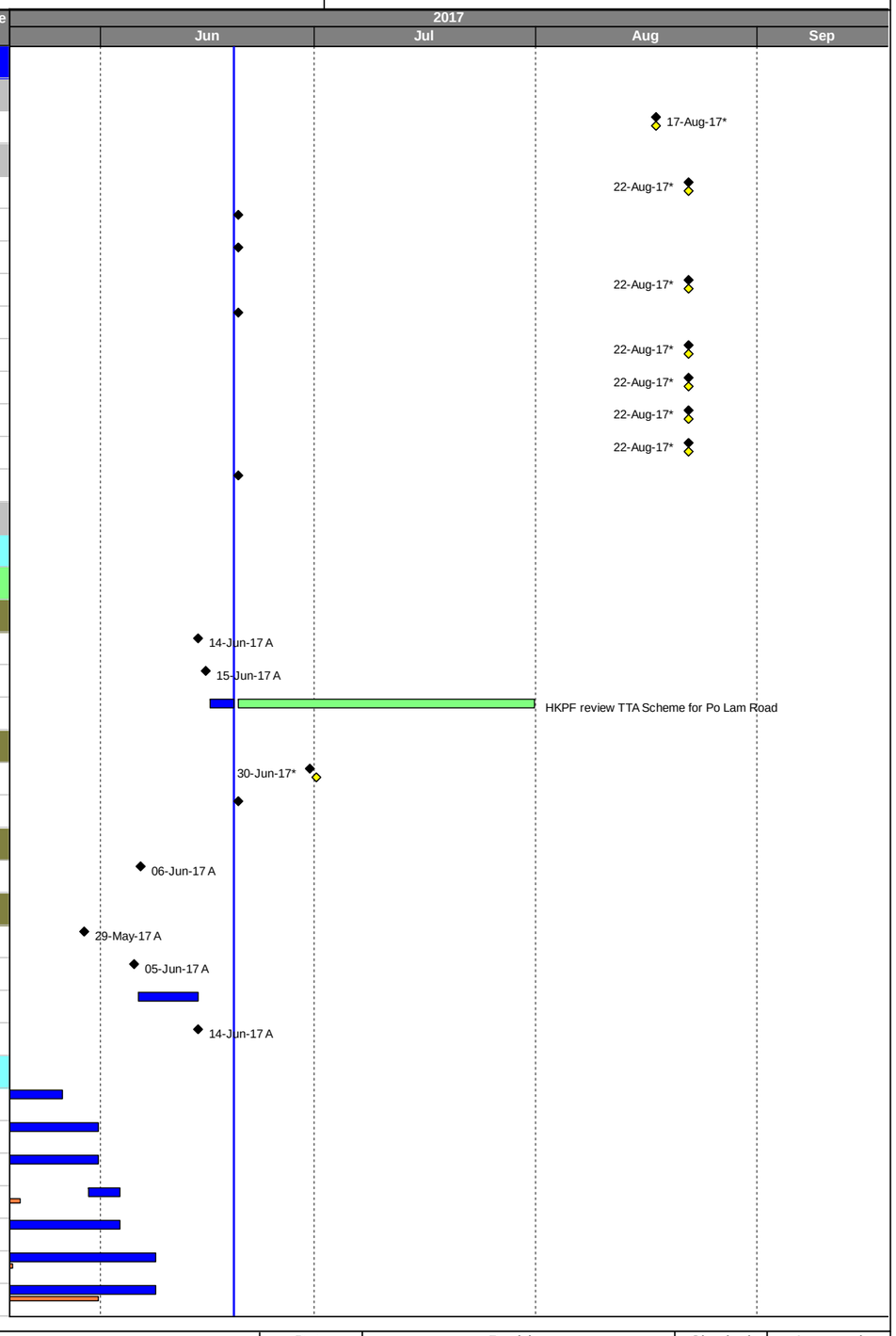
ANEWR (IEC) –ANewR Consulting Limited

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

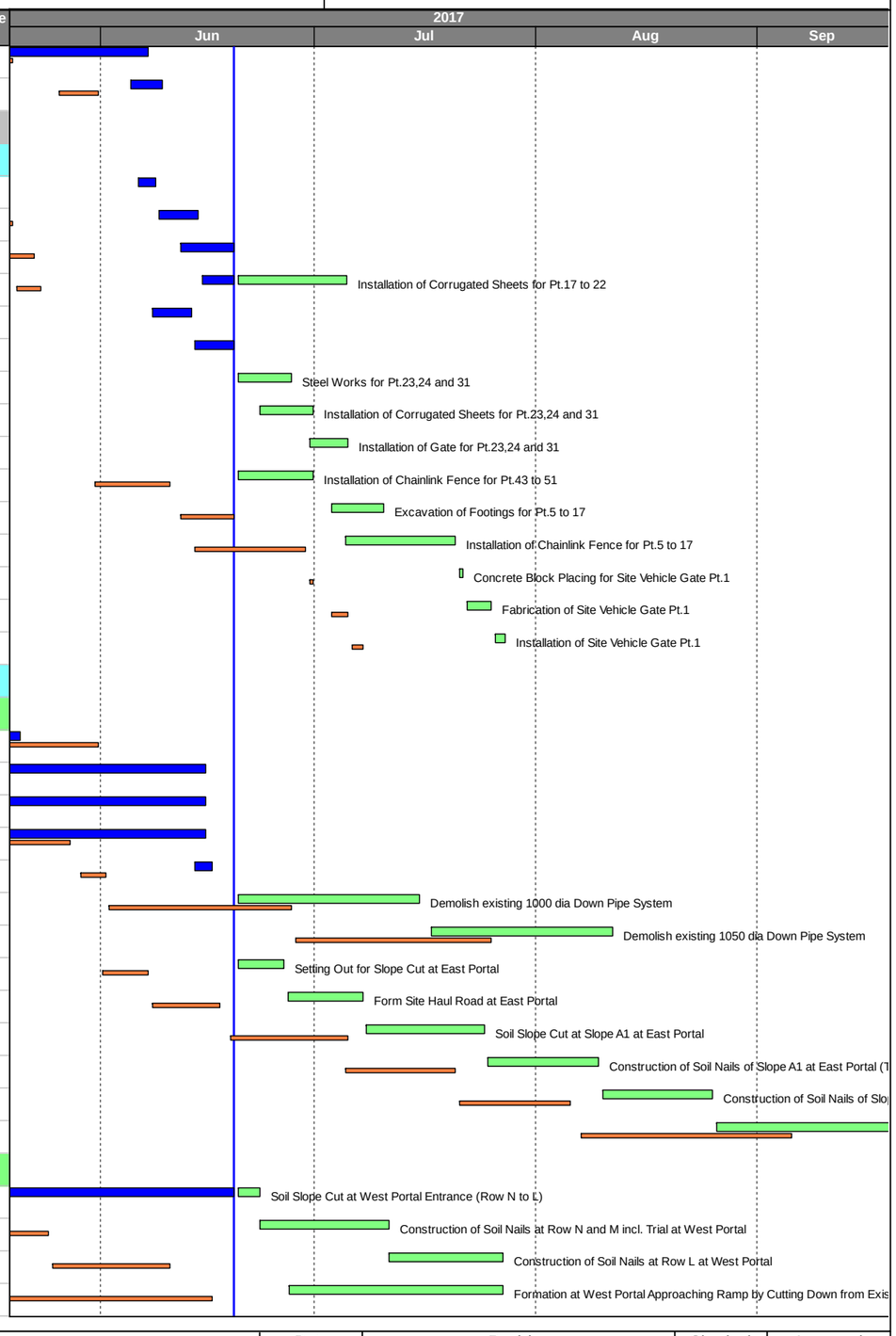
Appendix C

Construction Programme
(a) Contract 1 (NE/2016/01)
(b) Contract 2 (NE/2016/05)

Activity ID	Activity Name	Planned Duration	At Completion Duration	Planned (WP) Start	Planned (WP) Finish	Actual/Forecast Start	Actual/Forecast Finish	% Complete
Anderson Road Project - 3MRP (20 Jun 2017)								
Key Dates for Completion of Sections of the Works								
KD1480	KD18 - Completion of Section XIII of the Works (Entrusted Works at Shui Chuen O & Kau To in Portion B2)	0	0		17-Aug-17		17-Aug-17*	0%
Possession Periods								
KD1120	Date for Possession of the Portion B7	0	0	22-Aug-17		22-Aug-17*		0%
KD1130	Date for Possession of the Portion B8	0	0	24-Apr-17		20-Jun-17*		0%
KD1140	Date for Possession of the Portion B9	0	0	24-Apr-17		20-Jun-17*		0%
KD1150	Date for Possession of the Portion B10	0	0	22-Aug-17		22-Aug-17*		0%
KD1160	Date for Possession of the Portion B11	0	0	24-Apr-17		20-Jun-17*		0%
KD1170	Date for Possession of the Portion B12	0	0	22-Aug-17		22-Aug-17*		0%
KD1180	Date for Possession of the Portion B13	0	0	22-Aug-17		22-Aug-17*		0%
KD1190	Date for Possession of the Portion B14	0	0	22-Aug-17		22-Aug-17*		0%
KD1200	Date for Possession of the Portion B15	0	0	22-Aug-17		22-Aug-17*		0%
KD1280	Date for Possession of the Portion E1	0	0	25-Dec-16		20-Jun-17*		0%
Preliminary								
Permit / Consent Application & Approval								
Temporary Traffic Arrangement and Control								
Po Lam Road								
PL1000RP04	Submit Case Coordination of TTA Scheme for Po Lam Road to AECOM	0	0		30-Jan-17		14-Jun-17 A	100%
PL1000RP05	Submit TTA Scheme for Po Lam Road to HKPF	0	0		31-Jan-17		15-Jun-17 A	100%
PL1000RP06	HKPF review TTA Scheme for Po Lam Road	60	46	31-Jan-17	31-Mar-17	16-Jun-17 A	31-Jul-17	30%
On Sau Road								
PL1020RP04	4th TMLG Meeting	0	0	01-Jul-17		30-Jun-17*		0%
PL1020RP06	Implementation of TTA for Closure at Junction between Road L4 and On Sau Road (Under process of XP Application)	0	0	02-May-17		20-Jun-17		0%
Anderson Road								
PL1079RP02	Approval of STLA at Anderson Road	0	0		13-Dec-16		06-Jun-17 A	100%
Shui Chuen O								
PL1000RP94	Submit TTA Scheme for Shui Chuen O to AECOM for lodging into XPMS	0	0		26-Jan-17		29-May-17 A	100%
PL1000RP95	Submit TTA Scheme for Shui Chuen O to HKPF	0	0		15-Feb-17		05-Jun-17 A	100%
PL1000RP96	HKPF review TTA Scheme for Shui Chuen O	70	9	16-Feb-17	26-Apr-17	06-Jun-17 A	14-Jun-17 A	100%
PL1000RP97	HKPF Approves TTA Scheme for Shui Chuen O	0	0		26-Apr-17		14-Jun-17 A	100%
Site Accommodation								
PL1050RP05	E&M works for CRE's Site Accommodation	14	39	10-Apr-17	23-Apr-17	18-Apr-17 A	26-May-17 A	100%
PL1050RP06	BS Works for CRE's Site Accommodation	14	44	24-Apr-17	07-May-17	18-Apr-17 A	31-May-17 A	100%
PL1050RP07	ABWF Works for CRE's Site Accommodation	14	44	05-May-17	18-May-17	18-Apr-17 A	31-May-17 A	100%
PL1050RP071	Mobilize Office Furnitures into the CRE's Site Accommodation	6	5	15-May-17	20-May-17	30-May-17 A	03-Jun-17 A	100%
PL1050RP09	E&M works for JV's Site Accommodation	14	43	29-Apr-17	12-May-17	22-Apr-17 A	03-Jun-17 A	100%
PL1050RP10	BS Works for JV's Site Accommodation	14	48	06-May-17	19-May-17	22-Apr-17 A	08-Jun-17 A	100%
PL1050RP11	ABWF Works for JV's Site Accommodation	14	48	18-May-17	31-May-17	22-Apr-17 A	08-Jun-17 A	100%



Activity ID	Activity Name	Planned Duration	At Completion Duration	Planned (WP) Start	Planned (WP) Finish	Actual/Forecast Start	Actual/Forecast Finish	% Complete
PL1050RP13	Construction of Access to Site Accommodation	14	35	06-May-17	19-May-17	04-May-17 A	07-Jun-17 A	100%
PL1050RP14	Mobilize Office Furnitures into the JV's Site Accommodation	6	5	26-May-17	31-May-17	05-Jun-17 A	09-Jun-17 A	100%
Construction and Installation								
Safety Hoarding								
PL1100RP13	Placing Concrete Blocks for Pt.17 to 22	13	3	04-May-17	18-May-17	06-Jun-17 A	08-Jun-17 A	100%
PL1100RP14	Bolt Fixing and Installation of Base Plates for Pt.17 to 22	10	5	09-May-17	19-May-17	09-Jun-17 A	14-Jun-17 A	100%
PL1100RP15	Steel Works for Pt.17 to 22	10	7	11-May-17	22-May-17	12-Jun-17 A	19-Jun-17 A	100%
PL1100RP16	Installation of Corrugated Sheets for Pt.17 to 22	3	17	20-May-17	23-May-17	15-Jun-17 A	05-Jul-17	10%
PL1100RP17	Placing Concrete Blocks for Pt.23,24 and 31	1	5	23-Mar-17	23-Mar-17	08-Jun-17 A	13-Jun-17 A	100%
PL1100RP18	Bolt Fixing and Installation of Base Plates for Pt.23,24 and 31	2	5	04-May-17	05-May-17	14-Jun-17 A	19-Jun-17 A	100%
PL1100RP19	Steel Works for Pt.23,24 and 31	2	7	05-May-17	06-May-17	20-Jun-17	27-Jun-17	0%
PL1100RP20	Installation of Corrugated Sheets for Pt.23,24 and 31	1	7	08-May-17	08-May-17	23-Jun-17	30-Jun-17	0%
PL1100RP21	Installation of Gate for Pt.23,24 and 31	13	4	04-May-17	18-May-17	30-Jun-17	05-Jul-17	0%
PL1100RP51	Installation of Chainlink Fence for Pt.43 to 51	10	10	31-May-17	10-Jun-17	20-Jun-17	30-Jun-17	0%
PL1100RP61	Excavation of Footings for Pt.5 to 17	7	7	12-Jun-17	19-Jun-17	03-Jul-17	10-Jul-17	0%
PL1100RP71	Installation of Chainlink Fence for Pt.5 to 17	14	14	14-Jun-17	29-Jun-17	05-Jul-17	20-Jul-17	0%
PL1100RP91	Concrete Block Placing for Site Vehicle Gate Pt.1	1	1	30-Jun-17	30-Jun-17	21-Jul-17	21-Jul-17	0%
PL1100RP92	Fabrication of Site Vehicle Gate Pt.1	3	3	03-Jul-17	05-Jul-17	22-Jul-17	25-Jul-17	0%
PL1100RP93	Installation of Site Vehicle Gate Pt.1	2	2	06-Jul-17	07-Jul-17	26-Jul-17	27-Jul-17	0%
Underpass Tunnel								
East Portal								
CN1070RP03	Tree Felling	28	20	26-Apr-17	31-May-17	26-Apr-17 A	20-May-17 A	100%
CN1070RP04	Modify Existing Manhole in Portion C1d/D1	14	25	10-Apr-17	28-Apr-17	17-May-17 A	15-Jun-17 A	100%
CN1070RP05	Construct new 1050 dia Drainage Pipe System at Location No.1 and 4	14	25	24-Apr-17	11-May-17	17-May-17 A	15-Jun-17 A	100%
CN1070RP11	Construct new 1050 dia Drainage Pipe System at Location No.5 and 8	14	25	12-May-17	27-May-17	17-May-17 A	15-Jun-17 A	100%
CN1070RP12	Connect new Drainage Pipe System to Modified Manhole in Portion C1d /D1	3	3	29-May-17	01-Jun-17	14-Jun-17 A	16-Jun-17 A	100%
CN1070RP13	Demolish existing 1000 dia Down Pipe System	22	22	02-Jun-17	27-Jun-17	20-Jun-17	15-Jul-17	0%
CN1070RP14	Demolish existing 1050 dia Down Pipe System	23	23	28-Jun-17	25-Jul-17	17-Jul-17	11-Aug-17	0%
CN1070RP18	Setting Out for Slope Cut at East Portal	6	6	01-Jun-17	07-Jun-17	20-Jun-17	26-Jun-17	0%
CN1070RP19	Form Site Haul Road at East Portal	9	9	08-Jun-17	17-Jun-17	27-Jun-17	07-Jul-17	0%
CN1070RP20	Soil Slope Cut at Slope A1 at East Portal	14	14	19-Jun-17	05-Jul-17	08-Jul-17	24-Jul-17	0%
CN1070RP21	Construction of Soil Nails of Slope A1 at East Portal (Top Part)	14	14	05-Jul-17	20-Jul-17	25-Jul-17	09-Aug-17	0%
CN1070RP31	Construction of Soil Nails of Slope A1 at East Portal (Bottom Part)	14	14	21-Jul-17	05-Aug-17	10-Aug-17	25-Aug-17	0%
CN1070RP41	Formation at East Portal for Tunnelling Works	26	26	07-Aug-17	05-Sep-17	26-Aug-17	25-Sep-17	0%
West Portal								
CN1110RP08	Soil Slope Cut at West Portal Entrance (Row N to L)	3	31	05-May-17	08-May-17	17-May-17 A	23-Jun-17	45%
CN1110RP09	Construction of Soil Nails at Row N and M incl. Trial at West Portal	14	14	09-May-17	24-May-17	23-Jun-17	11-Jul-17	0%
CN1110RP10	Construction of Soil Nails at Row L at West Portal	14	14	25-May-17	10-Jun-17	11-Jul-17	27-Jul-17	0%
CN1110RP11	Formation at West Portal Approaching Ramp by Cutting Down from Existing Ground Level to Formation Level	25	25	18-May-17	16-Jun-17	27-Jun-17	27-Jul-17	0%



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

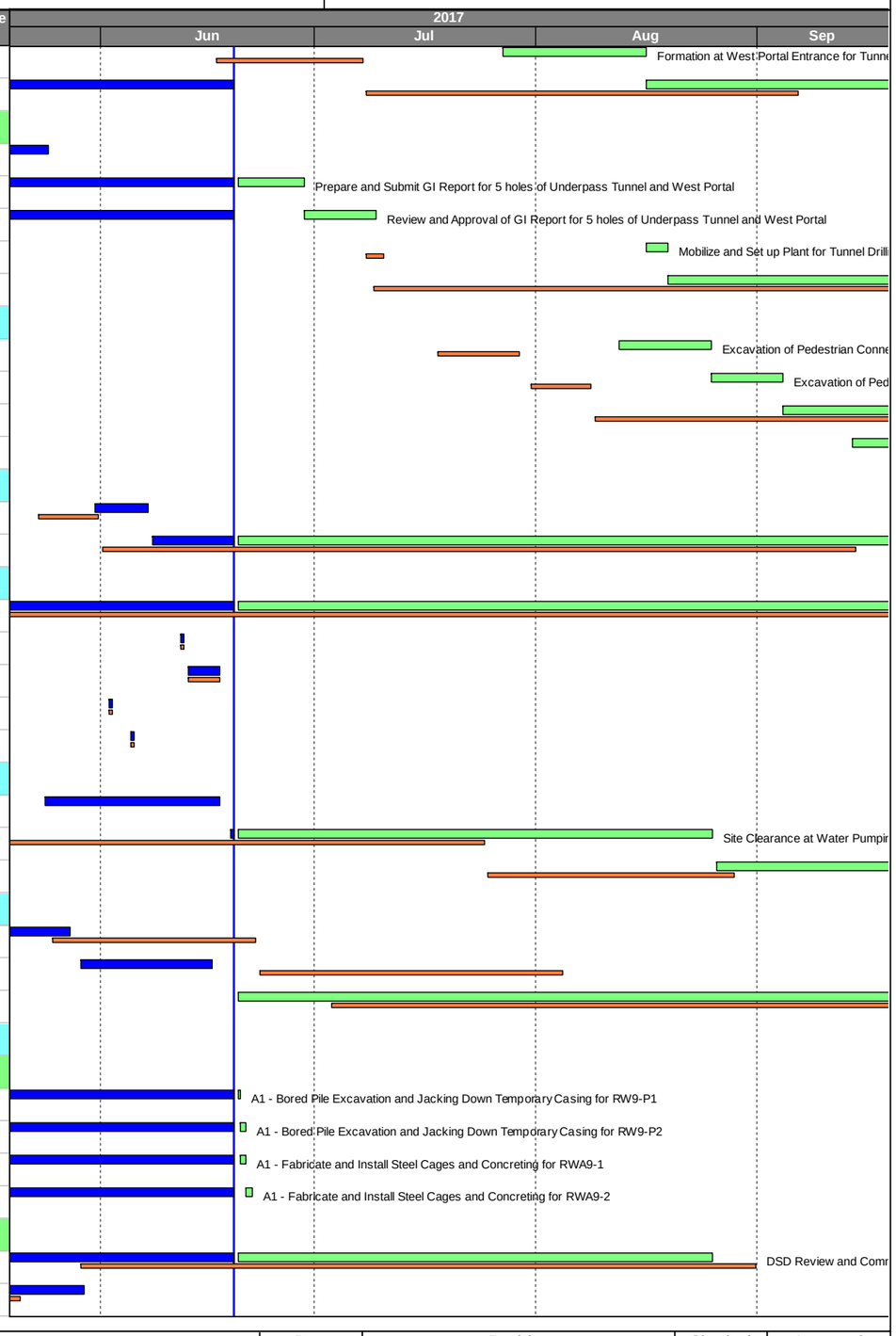
CONTRACT NO. NE/2016/01 SITE FORMATION AND INFRASTRUCTURE WORKS FOR DEVELOPMENT OF ANDERSON ROAD QUARRY SITE

3 - MONTH ROLLING PROGRAMME

(20 JUN TO 20 SEP 2017)

Cut-Off Data Date: 20-Jun-17

Activity ID	Activity Name	Planned Duration	At Completion Duration	Planned (WP) Start	Planned (WP) Finish	Actual/Forecast Start	Actual/Forecast Finish	% Complete
CN1110RP12	Formation at West Portal Entrance for Tunnelling Works	17	17	17-Jun-17	07-Jul-17	27-Jul-17	16-Aug-17	0%
CN1110RP13	Slope Cut and Soil Nail Installation at Slope A3 beside West Portal Entrance	52	141	08-Jul-17	06-Sep-17	24-Apr-17 A	12-Oct-17	10%
Underpass Tunnel (approx. 130m long)								
CN1080RP02	GI at Underpass Tunnel (AD BH2)	5	14	09-Apr-17	13-Apr-17	11-May-17 A	24-May-17 A	100%
CN1080RP04	Prepare and Submit GI Report for 5 holes of Underpass Tunnel and West Portal	14	70	12-Apr-17	25-Apr-17	21-Apr-17 A	29-Jun-17	30%
CN1080RP05	Review and Approval of GI Report for 5 holes of Underpass Tunnel and West Portal	14	77	26-Apr-17	09-May-17	24-Apr-17 A	09-Jul-17	30%
CN1080RP06	Mobilize and Set up Plant for Tunnel Drilling from West Portal to Mid of Tunnel	3	3	08-Jul-17	10-Jul-17	16-Aug-17	19-Aug-17	0%
CN1080RP07	Excavate and construct Heading of Tunnel from West Portal CH2389.5 to CH2422 (32.5m)	82	82	09-Jul-17	28-Sep-17	19-Aug-17	09-Nov-17	0%
Pedestrian Connectivity System A (Portion B5/C1a)								
CN1210RP01	Excavation of Pedestrian Connectivity System A (South) Upper Pile Cap (+162mPD) incl. RWA12 Bay #17 to 20	11	11	18-Jul-17	29-Jul-17	12-Aug-17	25-Aug-17	0%
CN1210RP02	Excavation of Pedestrian Connectivity System A (South) Lower Pile Cap (+160mPD)	8	8	31-Jul-17	08-Aug-17	25-Aug-17	04-Sep-17	0%
CN1210RP03	Construction of Pre-bored Piles (48nos) for Lift Lift Tower (South)	144	144	09-Aug-17	30-Jan-18	04-Sep-17	01-Mar-18	0%
CN1211RP01	Excavation of Pedestrian Connectivity System A (North) to Level +164mPD	14	14	04-Nov-17	20-Nov-17	14-Sep-17	29-Sep-17	0%
Pedestrian Connectivity System B (Portion A1/C1b)								
CN1840RP08	Mobilize Plants to Pedestrian Connectivity System B and Divert Access	7	7	23-May-17	31-May-17	31-May-17 A	07-Jun-17 A	100%
CN1840RP09	Excavation of Pedestrian Connectivity System B (North)	90	96	01-Jun-17	14-Sep-17	08-Jun-17 A	28-Sep-17	5%
Underground Stormwater Tank (Portion A1)								
CN1040RP06	Site Clearance and Excavation (Open Cut) of Underground Stormwater Retention Tank	201	259	02-May-17	30-Dec-17	10-May-17 A	28-Mar-18	2%
CN1040RP07	Typhoon No.8 Impact caused Suspension of Excavation	1	1	12-Jun-17	12-Jun-17	12-Jun-17 A	12-Jun-17 A	100%
CN1040RP08	Dewatering out of Underground Stormwater Retention Tank due to Typhoon	5	5	13-Jun-17	17-Jun-17	13-Jun-17 A	17-Jun-17 A	100%
CN1040RP09	1st Joint Survey with AECOM to record Rock Head Level	1	1	02-Jun-17	02-Jun-17	02-Jun-17 A	02-Jun-17 A	100%
CN1040RP9	2nd Joint Survey with AECOM to record Rock Head Level	1	1	05-Jun-17	05-Jun-17	05-Jun-17 A	05-Jun-17 A	100%
Salt / Fresh Water Pumping Station & Salt Water Break Tank (Portion B5)								
CN1550RP01	Trees Felling	10	21	29-Apr-17	12-May-17	24-May-17 A	17-Jun-17 A	100%
CN1550RP02	Site Clearance at Water Pumping Station Area and nearby	60	58	13-May-17	24-Jul-17	19-Jun-17 A	25-Aug-17	5%
CN1550RP03	Cut Slope and Erect Platform at Slope A13	30	30	25-Jul-17	28-Aug-17	26-Aug-17	29-Sep-17	0%
Public Transportation Terminus (Portion B5)								
CN1550RP14	Drilling Works for Ground Investigation at PTT (Stage #2 - 8 holes)	24	11	25-May-17	22-Jun-17	16-May-17 A	27-May-17 A	100%
CN1550RP15	Drilling Works for Ground Investigation at PTT (Stage #3 - 18 holes)	36	16	23-Jun-17	04-Aug-17	29-May-17 A	16-Jun-17 A	100%
CN1550RP30	Soil Excavation of PTT to Formation Level	90	90	03-Jul-17	17-Oct-17	20-Jun-17	04-Oct-17	0%
Civil Road Work								
Road L3 (Portion A1)								
CN1780RP02	A1 - Bored Pile Excavation and Jacking Down Temporary Casing for RW9-P1	14	87	04-Mar-17	20-Mar-17	03-Mar-17 A	20-Jun-17	95%
CN1780RP03	A1 - Bored Pile Excavation and Jacking Down Temporary Casing for RW9-P2	14	68	21-Mar-17	06-Apr-17	25-Mar-17 A	21-Jun-17	95%
CN1780RP04	A1 - Fabricate and Install Steel Cages and Concreting for RWA9-1	14	47	21-Mar-17	06-Apr-17	24-Apr-17 A	21-Jun-17	95%
CN1780RP05	A1 - Fabricate and Install Steel Cages and Concreting for RWA9-2	14	32	07-Apr-17	26-Apr-17	15-May-17 A	22-Jun-17	95%
Road L4 (Portion C1a)								
CN1200RP03	DSD Review and Comments for TMDP for Temporary Drainage System connecting between TWR#3 and Existing Cascade	95	85	29-May-17	31-Aug-17	17-May-17 A	25-Aug-17	40%
CN1200RP05	Submission and Approval of Method Statement for Removing existing RE Wall (6 bays)	10	10	10-May-17	20-May-17	18-May-17 A	29-May-17 A	100%



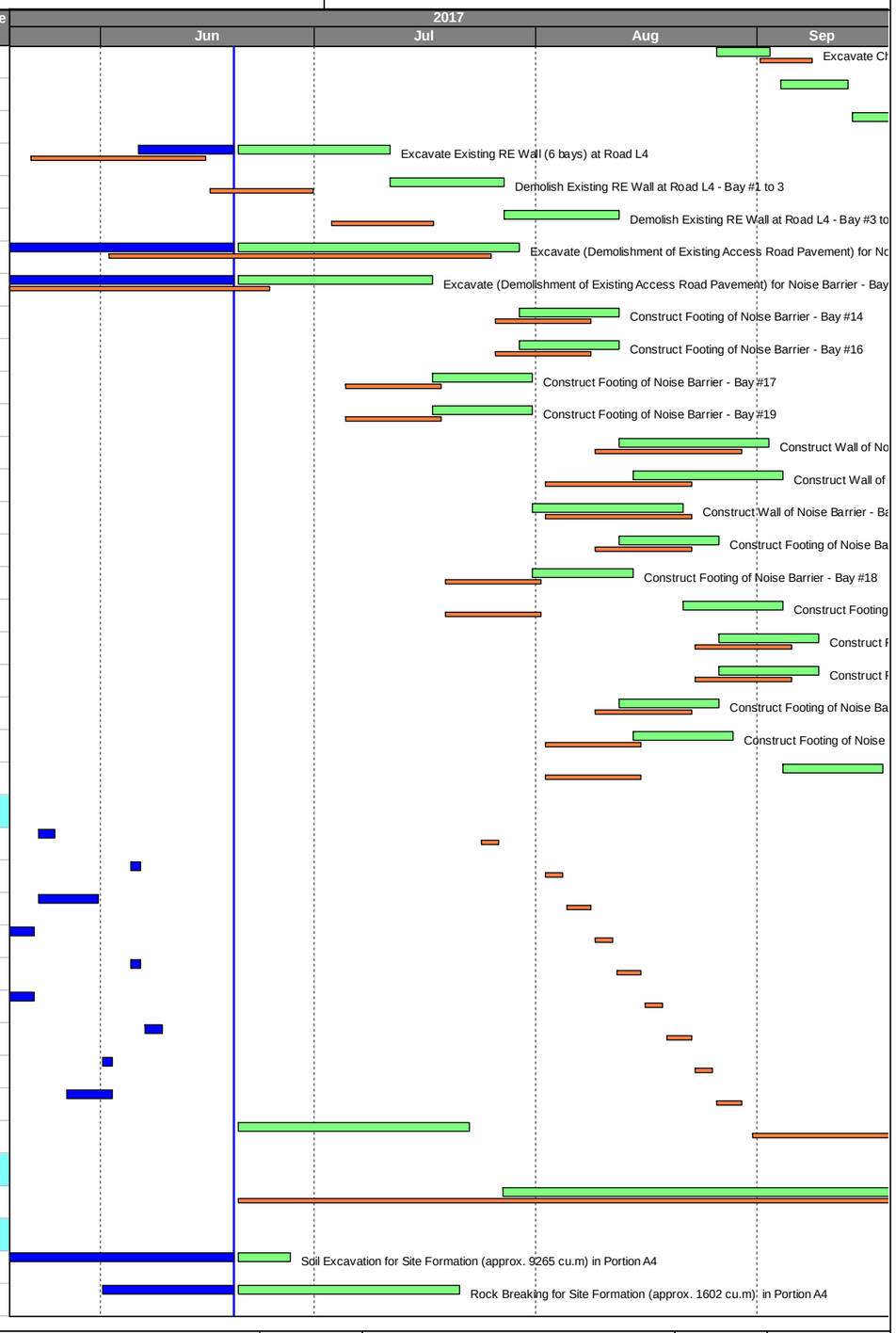
俊和－上隧－浩隆聯營
CHUN WO – STEC – VASTEAM JOINT VENTURE

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

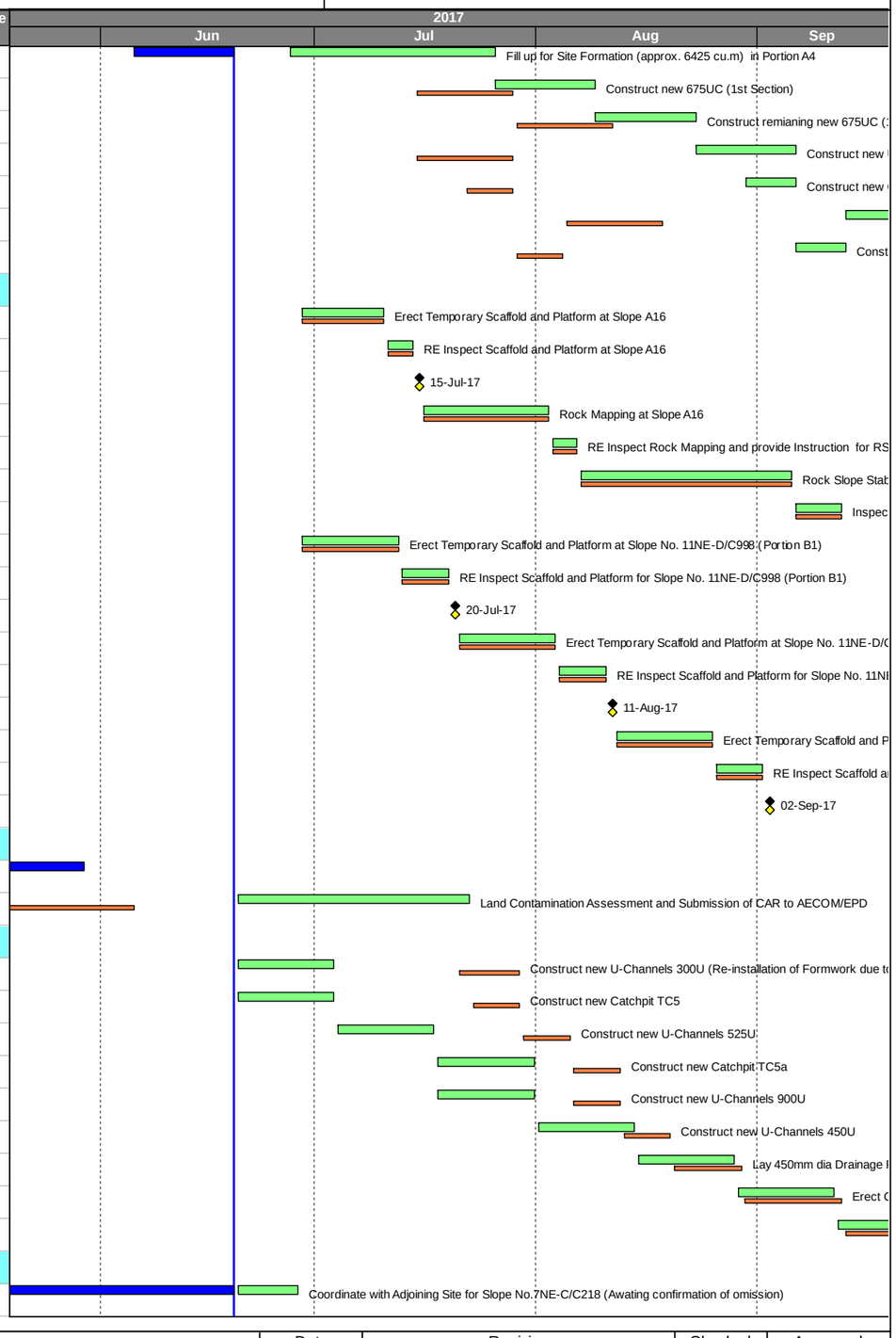
3 - MONTH ROLLING PROGRAMME
(Planned Activities according to WP Rev.0)

Date	Revision	Checked	Approved
20-Jun-17	3MRP Rev.0		

Activity ID	Activity Name	Planned Duration	At Completion Duration	Planned (WP) Start	Planned (WP) Finish	Actual/Forecast Start	Actual/Forecast Finish	% Complete
CN1200RP09	Excavate Channel connecting between TWR#3 and Existing Cascade	7	7	01-Sep-17	08-Sep-17	26-Aug-17	02-Sep-17	0%
CN1200RP10	Excavate to expose Existing Twin 1950 dia Drainage Pipe at Road L3/L4 Junction	6	9	10-Oct-17	16-Oct-17	04-Sep-17	13-Sep-17	0%
CN1200RP11	Demolish Existing Twin 1950 dia Drainage Pipe at Road L3/L4 Junction	17	14	16-Oct-17	04-Nov-17	14-Sep-17	29-Sep-17	0%
CN1830RP01	Excavate Existing RE Wall (6 bays) at Road L4	21	30	22-May-17	15-Jun-17	06-Jun-17 A	11-Jul-17	16%
CN1830RP02	Demolish Existing RE Wall at Road L4 - Bay #1 to 3	13	14	16-Jun-17	30-Jun-17	11-Jul-17	27-Jul-17	0%
CN1830RP03	Demolish Existing RE Wall at Road L4 - Bay #3 to 6	13	14	03-Jul-17	17-Jul-17	27-Jul-17	12-Aug-17	0%
CN1830RP05	Excavate (Demolishment of Existing Access Road Pavement) for Noise Barrier - Bay #1 to 16	45	78	02-Jun-17	25-Jul-17	26-Apr-17 A	29-Jul-17	25%
CN1830RP06	Excavate (Demolishment of Existing Access Road Pavement) for Noise Barrier - Bay #17 to 33	45	67	02-May-17	24-Jun-17	26-Apr-17 A	17-Jul-17	50%
CN1830RP08	Construct Footing of Noise Barrier - Bay #14	12	12	26-Jul-17	08-Aug-17	29-Jul-17	12-Aug-17	0%
CN1830RP09	Construct Footing of Noise Barrier - Bay #16	12	12	26-Jul-17	08-Aug-17	29-Jul-17	12-Aug-17	0%
CN1830RP10	Construct Footing of Noise Barrier - Bay #17	12	12	05-Jul-17	18-Jul-17	17-Jul-17	31-Jul-17	0%
CN1830RP11	Construct Footing of Noise Barrier - Bay #19	12	12	05-Jul-17	18-Jul-17	17-Jul-17	31-Jul-17	0%
CN1830RP12	Construct Wall of Noise Barrier - Bay #14	18	18	09-Aug-17	29-Aug-17	12-Aug-17	02-Sep-17	0%
CN1830RP13	Construct Wall of Noise Barrier - Bay #17	18	18	02-Aug-17	22-Aug-17	14-Aug-17	04-Sep-17	0%
CN1830RP14	Construct Wall of Noise Barrier - Bay #19	18	18	02-Aug-17	22-Aug-17	31-Jul-17	21-Aug-17	0%
CN1830RP15	Construct Footing of Noise Barrier - Bay #15	12	12	09-Aug-17	22-Aug-17	12-Aug-17	26-Aug-17	0%
CN1830RP16	Construct Footing of Noise Barrier - Bay #18	12	12	19-Jul-17	01-Aug-17	31-Jul-17	14-Aug-17	0%
CN1830RP17	Construct Footing of Noise Barrier - Bay #20	12	12	19-Jul-17	01-Aug-17	21-Aug-17	04-Sep-17	0%
CN1830RP18	Construct Footing of Noise Barrier - Bay #10	12	12	23-Aug-17	05-Sep-17	26-Aug-17	09-Sep-17	0%
CN1830RP19	Construct Footing of Noise Barrier - Bay #12	12	12	23-Aug-17	05-Sep-17	26-Aug-17	09-Sep-17	0%
CN1830RP20	Construct Footing of Noise Barrier - Bay #13	12	12	09-Aug-17	22-Aug-17	12-Aug-17	26-Aug-17	0%
CN1830RP21	Construct Footing of Noise Barrier - Bay #21	12	12	02-Aug-17	15-Aug-17	14-Aug-17	28-Aug-17	0%
CN1830RP22	Construct Footing of Noise Barrier - Bay #23	12	12	02-Aug-17	15-Aug-17	04-Sep-17	18-Sep-17	0%
Portion A1								
CN1320RP154	Drilling Works for Land Contamination Ground Investigation for BH19	3	3	24-Jul-17	26-Jul-17	23-May-17 A	25-May-17 A	100%
CN1320RP184	Drilling Works for Land Contamination Ground Investigation for BH22	3	2	02-Aug-17	04-Aug-17	05-Jun-17 A	06-Jun-17 A	100%
CN1320RP194	Drilling Works for Land Contamination Ground Investigation for BH23	3	7	05-Aug-17	08-Aug-17	23-May-17 A	31-May-17 A	100%
CN1320RP204	Drilling Works for Land Contamination Ground Investigation for BH24	3	3	09-Aug-17	11-Aug-17	19-May-17 A	22-May-17 A	100%
CN1320RP214	Drilling Works for Land Contamination Ground Investigation for BH25	3	2	12-Aug-17	15-Aug-17	05-Jun-17 A	06-Jun-17 A	100%
CN1320RP224	Drilling Works for Land Contamination Ground Investigation for BH26	3	3	16-Aug-17	18-Aug-17	19-May-17 A	22-May-17 A	100%
CN1320RP234	Drilling Works for Land Contamination Ground Investigation for BH27	3	3	19-Aug-17	22-Aug-17	07-Jun-17 A	09-Jun-17 A	100%
CN1320RP244	Drilling Works for Land Contamination Ground Investigation for BH28	3	2	23-Aug-17	25-Aug-17	01-Jun-17 A	02-Jun-17 A	100%
CN1320RP254	Drilling Works for Land Contamination Ground Investigation for BH29	3	5	26-Aug-17	29-Aug-17	27-May-17 A	02-Jun-17 A	100%
CN1320RP255	Land Contamination Assessment and Submission of CAR to AECOM/EPD	28	28	31-Aug-17	03-Oct-17	20-Jun-17	22-Jul-17	0%
Portion A3								
CN1320RP265	Soil and Rock Excavation for Site Formation for Portion A3	306	306	20-Jun-17	30-Jun-18	27-Jul-17*	08-Aug-18	0%
Portion A4								
CN1320RP03	Soil Excavation for Site Formation (approx. 9265 cu.m) in Portion A4	18	89	19-Mar-17	05-Apr-17	31-Mar-17 A	27-Jun-17	45%
CN1320RP04	Rock Breaking for Site Formation (approx. 1602 cu.m) in Portion A4	35	50	02-Apr-17	06-May-17	01-Jun-17 A	21-Jul-17	31%



Activity ID	Activity Name	Planned Duration	At Completion Duration	Planned (WP) Start	Planned (WP) Finish	Actual/Forecast Start	Actual/Forecast Finish	% Complete
CN1320RP05	Fill up for Site Formation (approx. 6425 cu.m) in Portion A4	45	50	20-Mar-17	03-May-17	05-Jun-17 A	26-Jul-17	37%
CN1320RP08	Construct new 675UC (1st Section)	14	14	15-Jul-17	28-Jul-17	26-Jul-17	09-Aug-17	0%
CN1320RP09	Construct remianing new 675UC (1st Section) and Connect to Existing Catchpit near Slope	14	14	29-Jul-17	11-Aug-17	09-Aug-17	23-Aug-17	0%
CN1320RP10	Construct new U-channel 750U	14	14	15-Jul-17	28-Jul-17	23-Aug-17	06-Sep-17	0%
CN1320RP11	Construct new Catchpit TC21	7	7	22-Jul-17	28-Jul-17	30-Aug-17	06-Sep-17	0%
CN1320RP42	Construct new U-channel 300U	14	14	05-Aug-17	18-Aug-17	13-Sep-17	27-Sep-17	0%
CN1320RP53	Construct new Catchpit TC21b	7	7	29-Jul-17	04-Aug-17	06-Sep-17	13-Sep-17	0%
Portion B1								
CN1222RP100	Erect Temporary Scaffold and Platform at Slope A16	12	12	29-Jun-17	10-Jul-17	29-Jun-17*	10-Jul-17	0%
CN1222RP110	RE Inspect Scaffold and Platform at Slope A16	4	4	11-Jul-17	14-Jul-17	11-Jul-17	14-Jul-17	0%
CN1222RP120	Obtain Instruction from Engineer at Slope A16	0	0		15-Jul-17		15-Jul-17	0%
CN1222RP130	Rock Mapping at Slope A16	18	18	16-Jul-17	02-Aug-17	16-Jul-17	02-Aug-17	0%
CN1222RP140	RE Inspect Rock Mapping and provide Instruction for RSS at Slope A16	4	4	03-Aug-17	06-Aug-17	03-Aug-17	06-Aug-17	0%
CN1222RP150	Rock Slope Stabilization Measure at Slope A16	30	30	07-Aug-17	05-Sep-17	07-Aug-17	05-Sep-17	0%
CN1222RP160	Inspection of Rock Slope Stabilization Measure at Slope A16	7	7	06-Sep-17	12-Sep-17	06-Sep-17	12-Sep-17	0%
CN1232RP100	Erect Temporary Scaffold and Platform at Slope No. 11NE-D/C998 (Portion B1)	14	14	29-Jun-17	12-Jul-17	29-Jun-17*	12-Jul-17	0%
CN1232RP110	RE Inspect Scaffold and Platform for Slope No. 11NE-D/C998 (Portion B1)	7	7	13-Jul-17	19-Jul-17	13-Jul-17	19-Jul-17	0%
CN1232RP120	Obtain Instruction for Slope No. 11NE-D/C998 (Portion B1)	0	0		20-Jul-17		20-Jul-17	0%
CN1232RP130	Erect Temporary Scaffold and Platform at Slope No. 11NE-D/C1003 (Portion B1)	14	14	21-Jul-17	03-Aug-17	21-Jul-17	03-Aug-17	0%
CN1232RP140	RE Inspect Scaffold and Platform for Slope No. 11NE-D/C1003 (Portion B1)	7	7	04-Aug-17	10-Aug-17	04-Aug-17	10-Aug-17	0%
CN1232RP150	Obtain Instruction for Slope No. 11NE-D/C1003 (Portion B1)	0	0		11-Aug-17		11-Aug-17	0%
CN1232RP160	Erect Temporary Scaffold and Platform at Slope No. 11NE-D/C999 (Portion B1)	14	14	12-Aug-17	25-Aug-17	12-Aug-17	25-Aug-17	0%
CN1232RP170	RE Inspect Scaffold and Platform for Slope No. 11NE-D/C999 (Portion B1)	7	7	26-Aug-17	01-Sep-17	26-Aug-17	01-Sep-17	0%
CN1232RP180	Obtain Instruction for Slope No. 11NE-D/C999 (Portion B1)	0	0		02-Sep-17		02-Sep-17	0%
Portion B5								
CN1320RP105	Drilling Works for Land Contamination Ground Investigation for BH15	3	12	27-Apr-17	29-Apr-17	16-May-17 A	29-May-17 A	100%
CN1320RP106	Land Contamination Assessment and Submission of CAR to AECOM/EPD	28	28	02-May-17	05-Jun-17	20-Jun-17	22-Jul-17	0%
Portion B6								
CN1320RP14	Construct new U-Channels 300U (Re-installation of Formwork due to Typhoon No.8)	9	14	21-Jul-17	29-Jul-17	20-Jun-17	03-Jul-17	0%
CN1320RP15	Construct new Catchpit TC5	7	14	23-Jul-17	29-Jul-17	20-Jun-17	03-Jul-17	0%
CN1320RP16	Construct new U-Channels 525U	7	14	30-Jul-17	05-Aug-17	04-Jul-17	17-Jul-17	0%
CN1320RP17	Construct new Catchpit TC5a	7	14	06-Aug-17	12-Aug-17	18-Jul-17	31-Jul-17	0%
CN1320RP18	Construct new U-Channels 900U	7	14	06-Aug-17	12-Aug-17	18-Jul-17	31-Jul-17	0%
CN1320RP19	Construct new U-Channels 450U	7	14	13-Aug-17	19-Aug-17	01-Aug-17	14-Aug-17	0%
CN1320RP20	Lay 450mm dia Drainage Pipe connecting to TC5	10	14	20-Aug-17	29-Aug-17	15-Aug-17	28-Aug-17	0%
CN1320RP21	Erect Chainlink Fences	14	14	30-Aug-17	12-Sep-17	29-Aug-17	11-Sep-17	0%
CN1320RP22	Erect remianing Chainlink Fences and Gate	14	14	13-Sep-17	26-Sep-17	12-Sep-17	25-Sep-17	0%
Shui Chuen O and Kau To (Portion B2)								
CN1180RP07	Coordinate with Adjoining Site for Slope No.7NE-C/C218 (Awating confirmation of omission)	80	34	26-Jan-17	09-May-17	19-May-17 A	28-Jun-17	90%



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

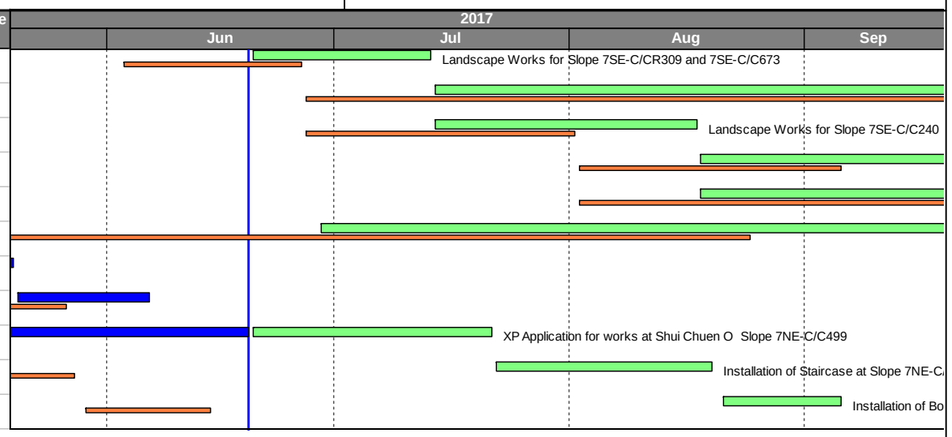
CONTRACT NO. NE/2016/01 SITE FORMATION AND INFRASTRUCTURE WORKS FOR DEVELOPMENT OF ANDERSON ROAD QUARRY SITE

3 - MONTH ROLLING PROGRAMME

(20 JUN TO 20 SEP 2017)

Cut-Off Data Date: 20-Jun-17

Activity ID	Activity Name	Planned Duration	At Completion Duration	Planned (WP) Start	Planned (WP) Finish	Actual/Forecast Start	Actual/Forecast Finish	% Complete
CN1180RP08	Landscape Works for Slope 7SE-C/CR309 and 7SE-C/C673	20	20	03-Jun-17	26-Jun-17	20-Jun-17	13-Jul-17	0%
CN1180RP09	Establishment Works for Slope 7SE-C/CR309 and 7SE-C/C673	365	365	27-Jun-17	26-Jun-18	14-Jul-17	13-Jul-18	0%
CN1180RP10	Landscape Works for Slope 7SE-C/C240	30	30	27-Jun-17	01-Aug-17	14-Jul-17	17-Aug-17	0%
CN1180RP11	Landscape Works for Slope 7SE-A/C604 and 7SE-A/C605	30	30	02-Aug-17	05-Sep-17	18-Aug-17	21-Sep-17	0%
CN1180RP12	Establishment Works for Slope 7SE-C/C240	365	365	02-Aug-17	01-Aug-18	18-Aug-17	17-Aug-18	0%
CN1180RP13	Landscape Works and Installation Wire Mesh on SLope Surface 7Ne-C/C218 (Awating confirmation of omission)	90	90	10-May-17	24-Aug-17	29-Jun-17	14-Oct-17	0%
CN1180RP45	Handover Inspection for Slope 7NE-C/C207, 7NE-C/R117 and 7NE-C/R145	2	1	09-May-17	10-May-17	19-May-17 A	19-May-17 A	100%
CN1180RP55	Rectification and Verification for Slope Slope No.7NE-C/R117 and 7NE-C/R145	14	14	11-May-17	26-May-17	20-May-17 A	06-Jun-17 A	100%
CN1180RP66	XP Application for works at Shui Chuen O Slope 7NE-C/C499	70	122	27-Jan-17	26-Apr-17	21-Feb-17 A	21-Jul-17	85%
CN1180RP75	Installation of Staircase at Slope 7NE-C/C499	25	25	27-Apr-17	27-May-17	22-Jul-17	19-Aug-17	0%
CN1180RP85	Installation of Bollards at Slope 7NE-C/C499	14	14	29-May-17	14-Jun-17	21-Aug-17	05-Sep-17	0%



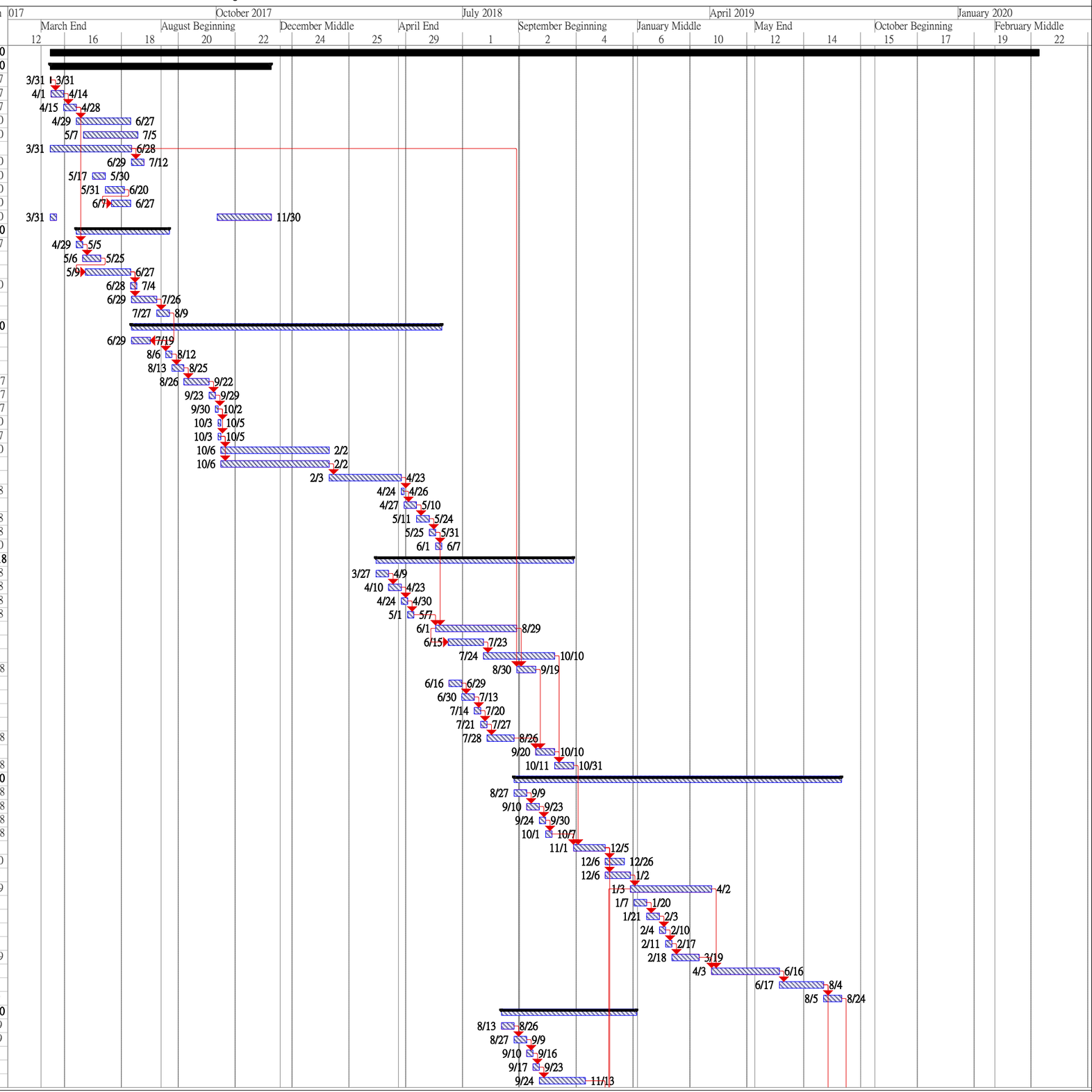
Planned Bar (WP)
Actual Bar
Forecast Bar
Planned Milestone (WP)
Milestone

3 - MONTH ROLLING PROGRAMME
(Planned Activities according to WP Rev.0)

Date	Revision	Checked	Approved
20-Jun-17	3MRP Rev.0		

Section A -E1 First Programme

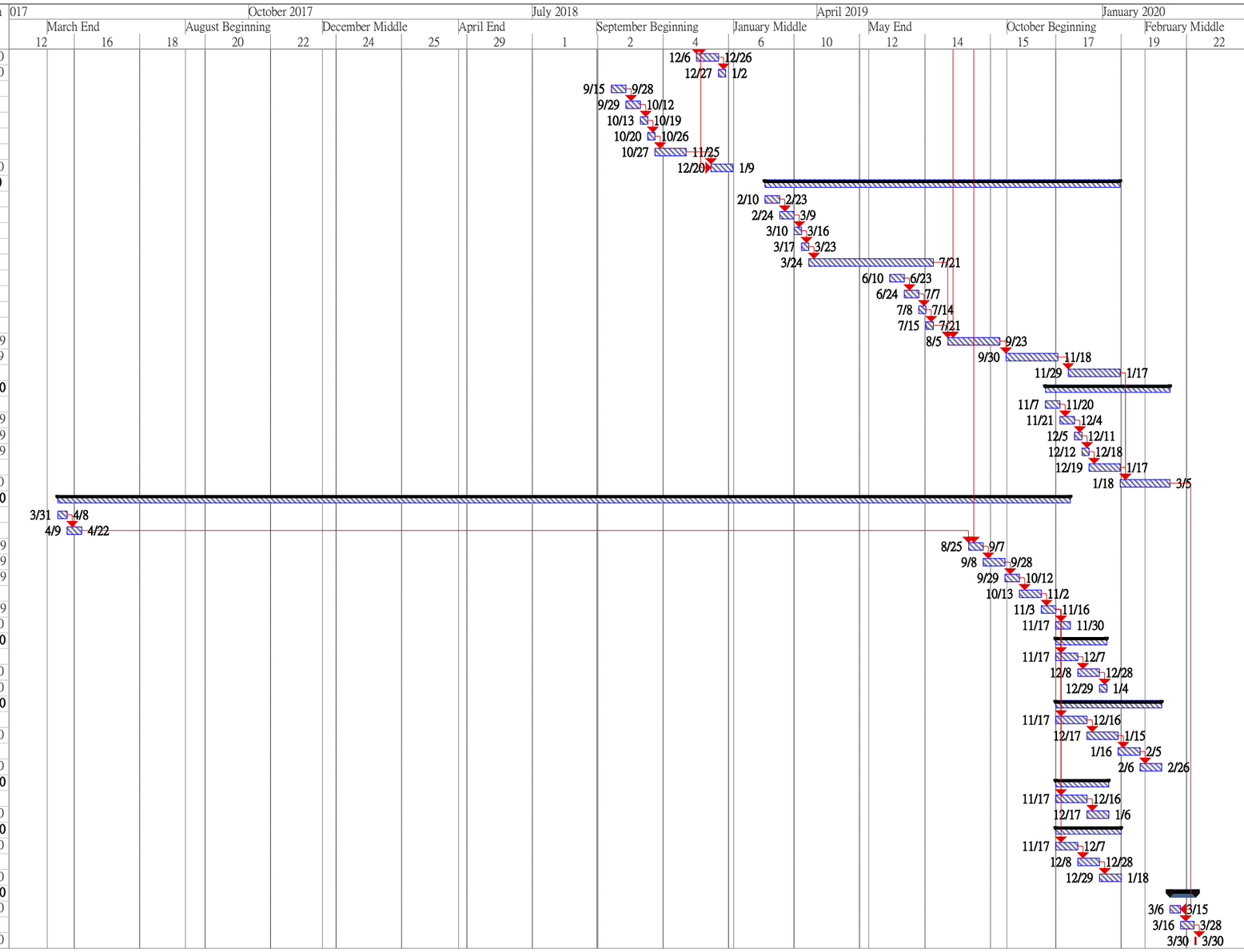
ITEM	ID	Task Name	Duration	Early Start	Early Finish	Late Start	Late Finish
1	**A.1.1**	**Section A, Portion 1 - Escalator (E1)**	**1096 days**	**Fri 3/31/17**	**Mon 3/30/20**	**Mon 5/15/17**	**Mon 3/30/20**
2	**A.1.1.1**	**Pre Construction Works**	**245 days**	**Fri 3/31/17**	**Thu 11/30/...**	**Mon 5/15/17**	**Mon 3/30/20**
3	A.1.1.1.1	Access Date for Portion 1	1 day	Fri 3/31/17	Fri 3/31/17	Mon 5/15/17	Mon 5/15/17
4	A.1.1.1.2	Site Clearance	14 days	Sat 4/1/17	Fri 4/14/17	Tue 5/16/17	Mon 5/29/17
5	A.1.1.1.3	Site Condition Survey	14 days	Sat 4/15/17	Fri 4/28/17	Tue 5/30/17	Mon 6/12/17
6	A.1.1.1.4	Submission of initial site survey report	60 days	Sat 4/29/17	Tue 6/27/17	Fri 1/31/20	Mon 3/30/20
7	A.1.1.1.5	Carry out Tree Survey and Report Submission	60 days	Sun 5/7/17	Wed 7/5/17	Fri 1/31/20	Mon 3/30/20
8	A.1.1.1.6	Application for Excavation Permit (XP)	90 days	Fri 3/31/17	Wed 6/28/17	Thu 6/28/18	Tue 9/25/18
9	A.1.1.1.7	Implement TTA at Hiu Ming Street/Hiu Kwong Street	14 days	Thu 6/29/17	Wed 7/12/17	Tue 3/17/20	Mon 3/30/20
10	A.1.1.1.8	Inspection Pit	14 days	Wed 5/17/17	Tue 5/30/17	Tue 3/17/20	Mon 3/30/20
11	A.1.1.1.9	Erection of Hoarding	21 days	Wed 5/31/17	Tue 6/20/17	Tue 3/3/20	Mon 3/23/20
12	A.1.1.1.10	Tree Fell	21 days	Wed 6/7/17	Tue 6/27/17	Tue 3/10/20	Mon 3/30/20
13	A.1.1.1.11	UU Diversion and Start of Design Review Period	67 days	Fri 3/31/17	Thu 11/30/17	Tue 7/30/19	Mon 3/30/20
14	**A.1.1.2**	**Ground Investigation**	**103 days**	**Sat 4/29/17**	**Wed 8/9/17**	**Tue 6/13/17**	**Mon 3/30/20**
15	A.1.1.2.1	Establishment of Drilling rigs	7 days	Sat 4/29/17	Fri 5/5/17	Tue 6/13/17	Mon 6/19/17
16	A.1.1.2.2	Inspection Pits (10 nr)	20 days	Sat 5/6/17	Thu 5/25/17	Tue 6/20/17	Sun 7/9/17
17	A.1.1.2.3	Predrilling (10 nr)	50 days	Tue 5/9/17	Tue 6/27/17	Fri 6/23/17	Fri 8/11/17
18	A.1.1.2.4	Demobilization of Drilling rigs	7 days	Wed 6/28/17	Tue 7/4/17	Tue 3/24/20	Mon 3/30/20
19	A.1.1.2.5	In-situ testing and result submission	28 days	Thu 6/29/17	Wed 7/26/17	Sat 8/12/17	Fri 9/8/17
20	A.1.1.2.6	Laboratory tests	14 days	Thu 7/27/17	Wed 8/9/17	Sat 9/9/17	Fri 9/22/17
21	**A.1.1.3**	**Piling Works (Pr-bored Socket H-Pile)**	**344 days**	**Thu 6/29/17**	**Thu 6/7/18**	**Sat 8/12/17**	**Mon 3/30/20**
22	A.1.1.3.1	Submission of Method Statement for piling Works and Approval	21 days	Thu 6/29/17	Wed 7/19/17	Sat 8/12/17	Fri 9/1/17
23	A.1.1.3.2	Establishment of Piling rigs (1 nr)	7 days	Sun 8/6/17	Sat 8/12/17	Sat 9/2/17	Fri 9/8/17
24	A.1.1.3.3	Construction of Preliminary Pile (1 nr)	13 days	Sun 8/13/17	Fri 8/25/17	Sat 9/9/17	Thu 9/21/17
25	A.1.1.3.4	Establishment of pile testing equipment	28 days	Sat 8/26/17	Fri 9/22/17	Fri 9/22/17	Thu 10/19/17
26	A.1.1.3.5	Load Test Preliminary Pile (1 nr)	7 days	Sat 9/23/17	Fri 9/29/17	Fri 10/20/17	Thu 10/26/17
27	A.1.1.3.6	Submission of Load Test Report (Preliminary Pile)	3 days	Sat 9/30/17	Mon 10/2/17	Fri 10/27/17	Sun 10/29/17
28	A.1.1.3.7	Review of Load Test result	3 days	Tue 10/3/17	Thu 10/5/17	Sat 3/28/20	Mon 3/30/20
29	A.1.1.3.8	Establishment of Piling rigs (2 nr)	3 days	Tue 10/3/17	Thu 10/5/17	Mon 10/30/...	Wed 11/1/17
30	A.1.1.3.9	Construction of Main Pile for pile cap E1-RS1 and E1-PC1(34nrs)	120 days	Fri 10/6/17	Fri 2/2/18	Mon 12/2/19	Mon 3/30/20
31	A.1.1.3.10	Construction of main pile for pile cap E1 PC6 and E1-PC5 (30 nrs)	120 days	Fri 10/6/17	Fri 2/2/18	Thu 11/2/17	Thu 3/1/18
32	A.1.1.3.11	Construction of main pile for pile cap E1 PC2, E1 PC3 and E1 PC4 (44nrs)	80 days	Sat 2/3/18	Mon 4/23/18	Fri 3/2/18	Sun 5/20/18
33	A.1.1.3.12	Establishment of Drilling rigs for proof drill (1 nr)	3 days	Tue 4/24/18	Thu 4/26/18	Mon 5/21/18	Wed 5/23/18
34	A.1.1.3.13	Selection and Carry out Proof drill (2 nrs)	14 days	Fri 4/27/18	Thu 5/10/18	Thu 5/24/18	Wed 6/6/18
35	A.1.1.3.14	Establishment of pile testing equipment	14 days	Fri 5/11/18	Thu 5/24/18	Thu 6/7/18	Wed 6/20/18
36	A.1.1.3.15	Selection and Carry Out Load Test Main Pile (1 nr)	7 days	Fri 5/25/18	Thu 5/31/18	Thu 6/21/18	Wed 6/27/18
37	A.1.1.3.16	Submission of Load Test Report (Main Pile)	7 days	Fri 6/1/18	Thu 6/7/18	Tue 3/24/20	Mon 3/30/20
38	**A.1.1.4**	**Pile Cap & Footing**	**219 days**	**Tue 3/27/18**	**Wed 10/31...**	**Thu 5/17/18**	**Tue 11/27/18**
39	A.1.1.4.1	Submission of temporary works for ELS	14 days	Tue 3/27/18	Mon 4/9/18	Thu 5/17/18	Wed 5/30/18
40	A.1.1.4.2	Comment to submission of temporary works for ELS	14 days	Tue 4/10/18	Mon 4/23/18	Thu 5/31/18	Wed 6/13/18
41	A.1.1.4.3	Second submission of temporary works for ELS	7 days	Tue 4/24/18	Mon 4/30/18	Thu 6/14/18	Wed 6/20/18
42	A.1.1.4.4	Approval of submission of temporary works for ELS	7 days	Tue 5/1/18	Mon 5/7/18	Thu 6/21/18	Wed 6/27/18
43	A.1.1.4.5	Installing ELS Works	90 days	Fri 6/1/18	Wed 8/29/18	Thu 6/28/18	Tue 9/25/18
44	A.1.1.4.6	Pile cap (E1-PC1 and E1-PC2)	39 days	Fri 6/15/18	Mon 7/23/18	Thu 7/12/18	Sun 8/19/18
45	A.1.1.4.7	Pile Cap (E1-PC3 ~ PC6)	79 days	Tue 7/24/18	Wed 10/10/...	Mon 8/20/18	Tue 11/6/18
46	A.1.1.4.8	Retaining structure (E1-RS1)	21 days	Thu 8/30/18	Wed 9/19/18	Wed 9/26/18	Tue 10/16/18
47	A.1.1.4.9	Material submission of water proofing works	14 days	Sat 6/16/18	Fri 6/29/18	Mon 8/6/18	Sun 8/19/18
48	A.1.1.4.10	Comment to material submission of water proofing works	14 days	Sat 6/30/18	Fri 7/13/18	Mon 8/20/18	Sun 9/2/18
49	A.1.1.4.11	Second submission of material for water proofing works	7 days	Sat 7/14/18	Fri 7/20/18	Mon 9/3/18	Sun 9/9/18
50	A.1.1.4.12	Approval of material for water proofing works	7 days	Sat 7/21/18	Fri 7/27/18	Mon 9/10/18	Sun 9/16/18
51	A.1.1.4.13	Procurement to delivery of water proofing material	30 days	Sat 7/28/18	Sun 8/26/18	Mon 9/17/18	Tue 10/16/18
52	A.1.1.4.14	Waterproofing Works	21 days	Thu 9/20/18	Wed 10/10/...	Wed 10/17/...	Tue 11/6/18
53	A.1.1.4.15	Backfilling	21 days	Thu 10/11/18	Wed 10/31/...	Wed 11/7/18	Tue 11/27/18
54	**A.1.1.5**	**Superstructures**	**363 days**	**Mon 8/27/18**	**Sat 8/24/19**	**Wed 10/17...**	**Mon 3/30/20**
55	A.1.1.5.1	Submission of temporary work design and method for piers construction	14 days	Mon 8/27/18	Sun 9/9/18	Wed 10/17/...	Tue 10/30/18
56	A.1.1.5.2	Comment to temporary works design and method for piers construction	14 days	Mon 9/10/18	Sun 9/23/18	Wed 10/31/...	Tue 11/13/18
57	A.1.1.5.3	Re-submission of temporary works design and method for piers construction	7 days	Mon 9/24/18	Sun 9/30/18	Wed 11/14/...	Tue 11/20/18
58	A.1.1.5.4	Approval of temporary works design and method for piers construction	7 days	Mon 10/1/18	Sun 10/7/18	Wed 11/21/...	Tue 11/27/18
59	A.1.1.5.5	Construction of piers (E1-P1 ~ P5)	35 days	Thu 11/1/18	Wed 12/5/18	Wed 11/28/...	Tue 1/1/19
60	A.1.1.5.6	Conatruction of Ramp Structures	21 days	Thu 12/6/18	Wed 12/26/...	Tue 3/10/20	Mon 3/30/20
61	A.1.1.5.7	Construction of Abutment (E1-PC6)	28 days	Thu 12/6/18	Wed 1/2/19	Wed 1/2/19	Tue 1/29/19
62	A.1.1.5.8	Construction of deck slab	90 days	Thu 1/3/19	Tue 4/2/19	Wed 1/30/19	Mon 4/29/19
63	A.1.1.5.9	Material submission of flexiglass	14 days	Mon 1/7/19	Sun 1/20/19	Sun 2/17/19	Sat 3/2/19
64	A.1.1.5.10	Comment to material submission of flexiglass	14 days	Mon 1/21/19	Sun 2/3/19	Sun 3/3/19	Sat 3/16/19
65	A.1.1.5.11	Second submission of flexiglass	7 days	Mon 2/4/19	Sun 2/10/19	Sun 3/17/19	Sat 3/23/19
66	A.1.1.5.12	Approval of material for flexiglass	7 days	Mon 2/11/19	Sun 2/17/19	Sun 3/24/19	Sat 3/30/19
67	A.1.1.5.13	Procurement to delivery of flexiglass	30 days	Mon 2/18/19	Tue 3/19/19	Sun 3/31/19	Mon 4/29/19
68	A.1.1.5.14	Construction of pedestrian flexiglass parapet	75 days	Wed 4/3/19	Sun 6/16/19	Tue 4/30/19	Sat 7/13/19
69	A.1.1.5.15	Erect Canopy and roofing system	49 days	Mon 6/17/19	Sun 8/4/19	Sun 7/14/19	Sat 8/31/19
70	A.1.1.5.16	Decking construction connecting to existing footpath	20 days	Mon 8/5/19	Sat 8/24/19	Sat 9/7/19	Thu 9/26/19
71	**A.1.1.6**	**Construction of Bearings and Movement Joints**	**150 days**	**Mon 8/13/18**	**Wed 1/9/19**	**Sun 12/1/19**	**Mon 3/30/20**
72	A.1.1.6.1	Material submission of Bridge Bearing	14 days	Mon 8/13/18	Sun 8/26/18	Sun 12/1/19	Sat 12/14/19
73	A.1.1.6.2	Comment to material submission to Bridge Bearing	14 days	Mon 8/27/18	Sun 9/9/18	Sun 12/15/19	Sat 12/28/19
74	A.1.1.6.3	Second submission of Bridge Bearing	7 days	Mon 9/10/18	Sun 9/16/18	Sun 12/29/19	Sat 1/4/20
75	A.1.1.6.4	Approval of Submission of Bridge Bearing	7 days	Mon 9/17/18	Sun 9/23/18	Sun 1/5/20	Sat 1/11/20
76	A.1.1.6.5	Procurement to delivery of Bridge Bearing	51 days	Mon 9/24/18	Tue 11/13/18	Sun 1/12/20	Mon 3/2/20



Critical Split — Working days — Manual Task — Manual Summary — External Tasks
Critical tasks — Inactive Milestone — Duration-only — Start-only — External Milestone
Non-critical Tasks — Inactive Summary — Manual Summary Rollup — Finish-only — Critical

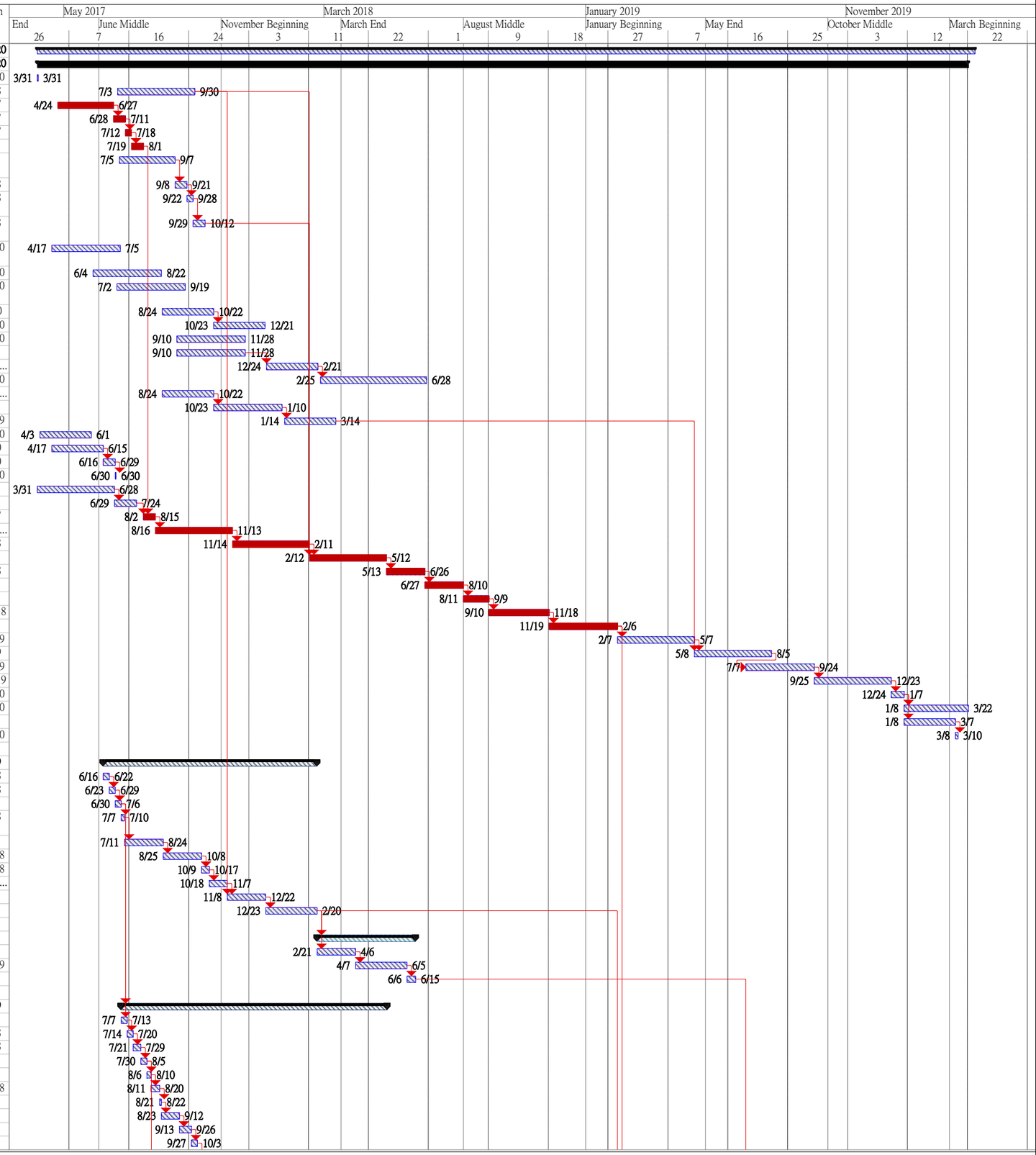
Section A -E1 First Programme

ITEM	ID	Task Name	Duration	Early Start	Early Finish	Late Start	Late Finish
77	A.1.1.6.6	Installation of Bearings (6 nr)	21 days	Thu 12/6/18	Wed 12/26/...	Tue 3/3/20	Mon 3/23/20
78	A.1.1.6.7	Testing Bearing (2 nr)	7 days	Thu 12/27/18	Wed 1/2/19	Tue 3/24/20	Mon 3/30/20
79	A.1.1.6.8	Material submission of movement joints	14 days	Sat 9/15/18	Fri 9/28/18	Sun 12/29/19	Sat 1/11/20
80	A.1.1.6.9	Comment to material submission of movement joints	14 days	Sat 9/29/18	Fri 10/12/18	Sun 1/12/20	Sat 1/25/20
81	A.1.1.6.10	Second submission of material for movement joints	7 days	Sat 10/13/18	Fri 10/19/18	Sun 1/26/20	Sat 2/1/20
82	A.1.1.6.11	Approval of material for movement joints	7 days	Sat 10/20/18	Fri 10/26/18	Sun 2/2/20	Sat 2/8/20
83	A.1.1.6.12	Procurement to delivery of movement joints	30 days	Sat 10/27/18	Sun 11/25/18	Sun 2/9/20	Mon 3/9/20
84	A.1.1.6.13	Construction of MJ (3 nr)	21 days	Thu 12/20/18	Wed 1/9/19	Tue 3/10/20	Mon 3/30/20
85	**A.1.1.7**	**Installation of Escalators (E1-ES01 to ES-12)**	**342 days**	**Sun 2/10/19**	**Fri 1/17/20**	**Sat 3/23/19**	**Tue 1/28/20**
86	A.1.1.7.1	Material submission of escalator	14 days	Sun 2/10/19	Sat 2/23/19	Sat 3/23/19	Fri 4/5/19
87	A.1.1.7.2	Comment to material submission of escalator	14 days	Sun 2/24/19	Sat 3/9/19	Sat 4/6/19	Fri 4/19/19
88	A.1.1.7.3	Second material submission of escalator	7 days	Sun 3/10/19	Sat 3/16/19	Sat 4/20/19	Fri 4/26/19
89	A.1.1.7.4	Approval of material submission of escalator	7 days	Sun 3/17/19	Sat 3/23/19	Sat 4/27/19	Fri 5/3/19
90	A.1.1.7.5	Procurement to delivery of escalator	120 days	Sun 3/24/19	Sun 7/21/19	Sat 5/4/19	Sat 8/31/19
91	A.1.1.7.6	Submission of method statement for installation of escalator	14 days	Mon 6/10/19	Sun 6/23/19	Sun 7/21/19	Sat 8/3/19
92	A.1.1.7.7	Comment to method statement for installation of escalator	14 days	Mon 6/24/19	Sun 7/7/19	Sun 8/4/19	Sat 8/17/19
93	A.1.1.7.8	Second submission of method statement for installation of escalator	7 days	Mon 7/8/19	Sun 7/14/19	Sun 8/18/19	Sat 8/24/19
94	A.1.1.7.9	Approval of method statement of installation of escalator	7 days	Mon 7/15/19	Sun 7/21/19	Sun 8/25/19	Sat 8/31/19
95	A.1.1.7.10	Installation of escalators and associate works (E1-RS1 to E1-P2)	50 days	Mon 8/5/19	Mon 9/23/19	Sun 9/1/19	Sun 10/20/19
96	A.1.1.7.11	Installation of escalator and associate works (E1-P2 to E1 P4)	50 days	Mon 9/30/19	Mon 11/18/...	Mon 10/21/...	Mon 12/9/19
97	A.1.1.7.12	Escalator Installation and associate works (E1-P4 to E1-ABT)	50 days	Fri 11/29/19	Fri 1/17/20	Tue 12/10/19	Tue 1/28/20
98	**A.1.1.8**	**Drainage works construction**	**120 days**	**Thu 11/7/19**	**Thu 3/5/20**	**Mon 11/18...**	**Mon 3/16/20**
99	A.1.1.8.1	Material submission of drainage material	14 days	Thu 11/7/19	Wed 11/20/...	Mon 11/18/...	Sun 12/1/19
100	A.1.1.8.2	Comment to material submission of drainage material	14 days	Thu 11/21/19	Wed 12/4/19	Mon 12/2/19	Sun 12/15/19
101	A.1.1.8.3	Second submission of drainage material	7 days	Thu 12/5/19	Wed 12/11/...	Mon 12/16/...	Sun 12/22/19
102	A.1.1.8.4	Approval of drainage material	7 days	Thu 12/12/19	Wed 12/18/...	Mon 12/23/...	Sun 12/29/19
103	A.1.1.8.5	Procurement to delivery of material	30 days	Thu 12/19/19	Fri 1/17/20	Mon 12/30/...	Tue 1/28/20
104	A.1.1.8.6	Construction of drainage	48 days	Sat 1/18/20	Thu 3/5/20	Wed 1/29/20	Mon 3/16/20
105	**A.1.1.9**	**E & M Works**	**975 days**	**Fri 3/31/17**	**Sat 11/30/19**	**Wed 9/4/19**	**Mon 3/30/20**
106	A.1.1.9.1	Construction/Installation of Pillar Box	9 days	Fri 3/31/17	Sat 4/8/17	Wed 9/4/19	Thu 9/12/19
107	A.1.1.9.2	Application/Connection of Power Supply	14 days	Sun 4/9/17	Sat 4/22/17	Fri 9/13/19	Thu 9/26/19
108	A.1.1.9.3	Telecommunication cables	14 days	Sun 8/25/19	Sat 9/7/19	Fri 9/27/19	Thu 10/10/19
109	A.1.1.9.4	Lighting/Communication connections	21 days	Sun 9/8/19	Sat 9/28/19	Fri 10/11/19	Thu 10/31/19
110	A.1.1.9.5	Finishing Works	14 days	Sun 9/29/19	Sat 10/12/19	Fri 11/1/19	Thu 11/14/19
111	A.1.1.9.6	T&C of Escalator and Submission of Form LE5 to EMSD	21 days	Sun 10/13/19	Sat 11/2/19	Fri 11/15/19	Thu 12/5/19
112	A.1.1.9.7	Reinstatement of footpath/stair	14 days	Sun 11/3/19	Sat 11/16/19	Fri 12/6/19	Thu 12/19/19
113	A.1.1.9.8	Demobilization and Clean up the Site	14 days	Sun 11/17/19	Sat 11/30/19	Tue 3/17/20	Mon 3/30/20
114	**A.1.1.10**	**Landscaping Works**	**49 days**	**Sun 11/17/19**	**Sat 1/4/20**	**Tue 2/11/20**	**Mon 3/30/20**
115	A.1.1.10.1	Construction of hard and soft Landscape works	21 days	Sun 11/17/19	Sat 12/7/19	Tue 2/11/20	Mon 3/2/20
116	A.1.1.10.2	Rectification of detects	21 days	Sun 12/8/19	Sat 12/28/19	Tue 3/3/20	Mon 3/23/20
117	A.1.1.10.3	General tidy up	7 days	Sun 12/29/19	Sat 1/4/20	Tue 3/24/20	Mon 3/30/20
118	**A.1.1.11**	**Road and Pavings / traffic Signs**	**102 days**	**Sun 11/17/19**	**Wed 2/26/20**	**Fri 12/20/19**	**Mon 3/30/20**
119	A.1.1.11.1	Construction of Footpath	30 days	Sun 11/17/19	Mon 12/16/...	Fri 12/20/19	Sat 1/18/20
120	A.1.1.11.2	Construction of paved area	30 days	Tue 12/17/19	Wed 1/15/20	Sun 1/19/20	Mon 2/17/20
121	A.1.1.11.3	Construction of Kerbs	21 days	Thu 1/16/20	Wed 2/5/20	Tue 2/18/20	Mon 3/9/20
122	A.1.1.11.4	Installation of traffic/Directional Signs	21 days	Thu 2/6/20	Wed 2/26/20	Tue 3/10/20	Mon 3/30/20
123	**A.1.1.12**	**External Finishes**	**51 days**	**Sun 11/17/19**	**Mon 1/6/20**	**Sun 2/9/20**	**Mon 3/30/20**
124	A.1.1.12.1	Construction of Tactile/Cermaric/Concrete Tiles	30 days	Sun 11/17/19	Mon 12/16/...	Sun 2/9/20	Mon 3/9/20
125	A.1.1.12.2	Texture Spray/Fungus Resistant Paint	21 days	Tue 12/17/19	Mon 1/6/20	Tue 3/10/20	Mon 3/30/20
126	**A.1.1.13**	**Construction of Sau Mau Ping Memorial Park**	**63 days**	**Sun 11/17/19**	**Sat 1/18/20**	**Tue 1/28/20**	**Mon 3/30/20**
127	A.1.1.13.1	Slope improvement work (11NE-D/CR222)	21 days	Sun 11/17/19	Sat 12/7/19	Tue 1/28/20	Mon 2/17/20
128	A.1.1.13.2	Construction of Pavillon/Bench/Pole Light	21 days	Sun 12/8/19	Sat 12/28/19	Tue 2/18/20	Mon 3/9/20
129	A.1.1.13.3	Construction of Pavers	21 days	Sun 12/29/19	Sat 1/18/20	Tue 3/10/20	Mon 3/30/20
130	**A.1.1.14**	**General Inspection and Tidy up of Portion 1**	**25 days**	**Fri 3/6/20**	**Mon 3/30/20**	**Sat 3/7/20**	**Mon 3/30/20**
131	A.1.1.14.1	General Inspection and tidy up of Portion 1	10 days	Fri 3/6/20	Sun 3/15/20	Sat 3/7/20	Mon 3/16/20
132	1.14.2	Allowabale Terminal Float	13 days	Mon 3/16/20	Sat 3/28/20	Tue 3/17/20	Sun 3/29/20
133	A.1.1.14.2	Completion of works	1 day	Mon 3/30/20	Mon 3/30/20	Mon 3/30/20	Mon 3/30/20



Critical Split	Working days	Manual Task	Manual Summary	External Tasks
Critical tasks	Inactive Milestone	Duration-only	Start-only	External Milestone
Non-critical Tasks	Inactive Summary	Manual Summary Rollup	Finish-only	Critical

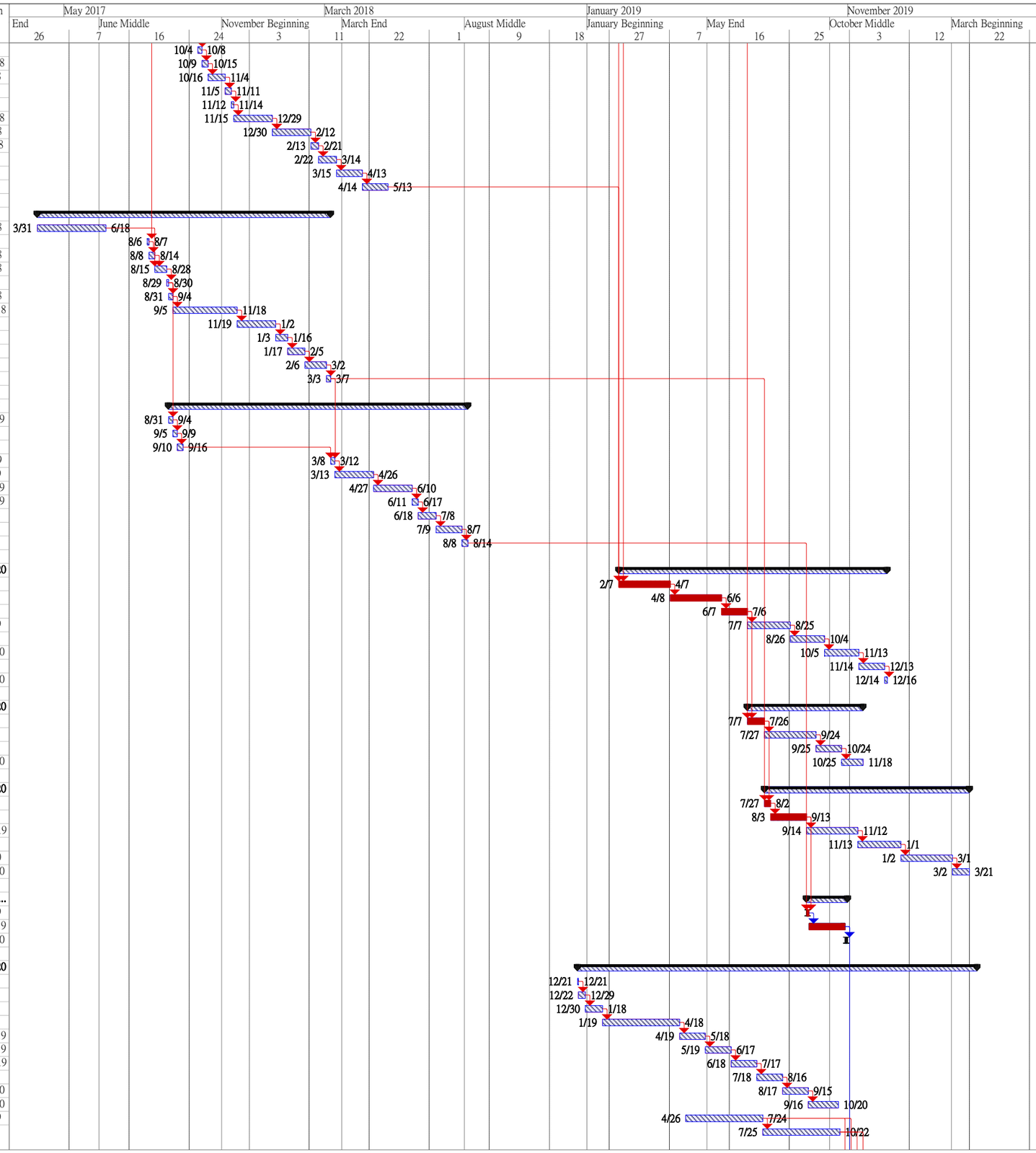
ITEM	ID	TASK NAME	Duration	Early Start	Early Finish	Late Start	Late Finish
1	A.2.1	**Section A**	1096 days	Fri 3/31/17	Mon 3/30/20	Sat 4/8/17	Mon 3/30/20
2	A.2.1.1	**E3 and E2 Footbridge and lift Tower**	1088 days	Fri 3/31/17	Sun 3/22/20	Sat 4/8/17	Mon 3/30/20
3	A.2.1.1.1	Access Date of Portion 2	1 day	Fri 3/31/17	Fri 3/31/17	Mon 3/30/20	Mon 3/30/20
4	A.2.1.1.2	Proposal of Concrete Batching Plant and mixes	90 days	Mon 7/3/17	Sat 9/30/17	Tue 11/14/17	Sun 2/11/18
5	A.2.1.1.3	Method Statement submission for excavation of rock for bridge tower E3-ST1 and approval	65 days	Mon 4/24/17	Tue 6/27/17	Mon 4/24/17	Tue 6/27/17
6	A.2.1.1.4	Comment to method statement of excavation of rock	14 days	Wed 6/28/17	Tue 7/11/17	Wed 6/28/17	Tue 7/11/17
7	A.2.1.1.5	Second submission of method statement of excavation of rock	7 days	Wed 7/12/17	Tue 7/18/17	Wed 7/12/17	Tue 7/18/17
8	A.2.1.1.6	Approval of method statement of excavation of rock	14 days	Wed 7/19/17	Tue 8/1/17	Wed 7/19/17	Tue 8/1/17
9	A.2.1.1.7	Method Statement Submission for installation and Temporary works design for concreting of bridge tower E3-ST1	65 days	Wed 7/5/17	Thu 9/7/17	Sat 11/4/17	Sun 1/7/18
10	A.2.1.1.8	Comment to mtehod statement of temporary work design for concreting of bridge tower E3-ST1	14 days	Fri 9/8/17	Thu 9/21/17	Mon 1/8/18	Sun 1/21/18
11	A.2.1.1.9	Second submission of method statement of temporary works design for concreting of bridge tower E3-ST1	7 days	Fri 9/22/17	Thu 9/28/17	Mon 1/22/18	Sun 1/28/18
12	A.2.1.1.10	Approval of method statement of temporary works design for concreting of bridge tower of bridge tower E3-ST1	14 days	Fri 9/29/17	Thu 10/12/17	Mon 1/29/18	Sun 2/11/18
13	A.2.1.1.11	Method Statement submission for installation of H piles including predrill location and Proof Drill location	80 days	Mon 4/17/17	Wed 7/5/17	Sat 1/11/20	Mon 3/30/20
14	A.2.1.1.12	Submission of Method statement for testing of H piles	80 days	Sun 6/4/17	Tue 8/22/17	Sat 1/11/20	Mon 3/30/20
15	A.2.1.1.13	Submission of method statement for formwork design for casting the bridge piers footing and bridge piers	80 days	Sun 7/2/17	Tue 9/19/17	Sat 1/11/20	Mon 3/30/20
16	A.2.1.1.14	Material Submission of proposed bridge bearings	60 days	Thu 8/24/17	Sun 10/22/17	Mon 12/2/19	Thu 1/30/20
17	A.2.1.1.15	Procurement, ordering and delivery of bridge bearings	60 days	Mon 10/23/...	Thu 12/21/17	Fri 1/31/20	Mon 3/30/20
18	A.2.1.1.16	Submission of method statement for erection of steel truss	80 days	Sun 9/10/17	Tue 11/28/17	Sat 1/11/20	Mon 3/30/20
19	A.2.1.1.17	Method statement submission for proposed lift installation	80 days	Sun 9/10/17	Tue 11/28/17	Thu 7/11/19	Sat 9/28/19
20	A.2.1.1.18	Material Submission of Proposed Lift	60 days	Sun 12/24/17	Wed 2/21/18	Sun 9/29/19	Wed 11/27/...
21	A.2.1.1.19	Procurement, ordering & delivery of proposed lift	124 days	Sun 2/25/18	Thu 6/28/18	Thu 11/28/19	Mon 3/30/20
22	A.2.1.1.20	Material Submission of glazing and louvres	60 days	Thu 8/24/17	Sun 10/22/17	Sun 10/28/18	Wed 12/26/...
23	A.2.1.1.21	Method Statement of glazing and louvre installation	80 days	Mon 10/23/...	Wed 1/10/18	Thu 12/27/18	Sat 3/16/19
24	A.2.1.1.22	Procurement, ordering and delivery of louvres & glazing	60 days	Sun 1/14/18	Wed 3/14/18	Sun 3/17/19	Wed 5/15/19
25	A.2.1.1.23	Initial Tree survey	60 days	Mon 4/3/17	Thu 6/1/17	Fri 1/31/20	Mon 3/30/20
26	A.2.1.1.24	Approval of TTA to block FP of Hiu Ming St and Hiu Kwong Street for erection of Hoarding	60 days	Mon 4/17/17	Thu 6/15/17	Thu 1/16/20	Sun 3/15/20
27	A.2.1.1.25	Road Works Advice	14 days	Fri 6/16/17	Thu 6/29/17	Mon 3/16/20	Sun 3/29/20
28	A.2.1.1.26	Implementation of TTA	1 day	Fri 6/30/17	Fri 6/30/17	Mon 3/30/20	Mon 3/30/20
29	A.2.1.1.27	Application of Excavation permit	90 days	Fri 3/31/17	Wed 6/28/17	Sat 4/8/17	Thu 7/6/17
30	A.2.1.1.28	Erection of Hoardings for footbridge E3, E2	26 days	Thu 6/29/17	Mon 7/24/17	Fri 7/7/17	Tue 8/1/17
31	A.2.1.1.29	Mobilisation of excavator for breaking of rock for escalator tower E3-ST1	14 days	Wed 8/2/17	Tue 8/15/17	Wed 8/2/17	Tue 8/15/17
32	A.2.1.1.30	Breaking of 50% of rock for escalator tower E3-ST1	90 days	Wed 8/16/17	Mon 11/13/...	Wed 8/16/17	Mon 11/13/...
33	A.2.1.1.31	Breaking of remaining 50% of rock for escalator tower E3-ST1	90 days	Tue 11/14/17	Sun 2/11/18	Tue 11/14/17	Sun 2/11/18
34	A.2.1.1.32	Construction of E3-ST1 substructure E3-PC1	90 days	Mon 2/12/18	Sat 5/12/18	Mon 2/12/18	Sat 5/12/18
35	A.2.1.1.33	Construction E3 superstructure E3 -ST1up to level 34mPD	45 days	Sun 5/13/18	Tue 6/26/18	Sun 5/13/18	Tue 6/26/18
36	A.2.1.1.34	Contruction of E3 superstructure E3-ST1 from 34mPD to 43.6mPD	45 days	Wed 6/27/18	Fri 8/10/18	Wed 6/27/18	Fri 8/10/18
37	A.2.1.1.35	Infill the space with no fine concrete between rock slope and edge of E3-ST1	30 days	Sat 8/11/18	Sun 9/9/18	Sat 8/11/18	Sun 9/9/18
38	A.2.1.1.36	Construction of E3 Superstructure E3-ST1 from 43.6mPD to 59.7mPD	70 days	Mon 9/10/18	Sun 11/18/18	Mon 9/10/18	Sun 11/18/18
39	A.2.1.1.37	Construction of E3 Superstructure E3-ST1 from 59.7mPD to 71.2mPD	80 days	Mon 11/19/...	Wed 2/6/19	Mon 11/19/...	Wed 2/6/19
40	A.2.1.1.38	Installation of lift (3nrs)	90 days	Thu 2/7/19	Tue 5/7/19	Fri 2/15/19	Wed 5/15/19
41	A.2.1.1.39	Installation of glazing and louver	90 days	Wed 5/8/19	Mon 8/5/19	Thu 5/16/19	Tue 8/13/19
42	A.2.1.1.40	Installation of E&M for the lift towers	80 days	Sun 7/7/19	Tue 9/24/19	Mon 7/15/19	Wed 10/2/19
43	A.2.1.1.41	Construction, installation and connection of pillar box	90 days	Wed 9/25/19	Mon 12/23/...	Thu 10/3/19	Tue 12/31/19
44	A.2.1.1.42	Application and connection of power supply	15 days	Tue 12/24/19	Tue 1/7/20	Wed 1/1/20	Wed 1/15/20
45	A.2.1.1.43	Testing and commimissioning of lifts	75 days	Wed 1/8/20	Sun 3/22/20	Thu 1/16/20	Mon 3/30/20
46	A.2.1.1.44	Decoration and Finishings works for E3-ST1	60 days	Wed 1/8/20	Sat 3/7/20	Tue 1/28/20	Fri 3/27/20
47	A.2.1.1.45	General tidy up	3 days	Sun 3/8/20	Tue 3/10/20	Sat 3/28/20	Mon 3/30/20
48							
49	A.2.1.2	**Pile Cap E3-PC3 and E3 Abutment**	250 days	Fri 6/16/17	Tue 2/20/18	Mon 3/12/18	Wed 2/6/19
50	A.2.1.2.1	Mobilization of plants for predrilling for pile cap E3-PC 3	7 days	Fri 6/16/17	Thu 6/22/17	Mon 3/12/18	Sun 3/18/18
51	A.2.1.2.2	Setting up of plants for predrill for pile cap E3-PC3	7 days	Fri 6/23/17	Thu 6/29/17	Mon 3/19/18	Sun 3/25/18
52	A.2.1.2.3	Predrill for pile cap E3-PC3	7 days	Fri 6/30/17	Thu 7/6/17	Mon 3/26/18	Sun 4/1/18
53	A.2.1.2.4	Mobilization of plants for drilling for installation of pre-bored socket H piles (9 nrs) for pile cap E3-PC3	4 days	Fri 7/7/17	Mon 7/10/17	Sat 6/23/18	Tue 6/26/18
54	A.2.1.2.5	Drilling and installation of pre-bored socket H piles (9 nrs)for pile cap E3-PC3	45 days	Tue 7/11/17	Thu 8/24/17	Wed 6/27/18	Fri 8/10/18
55	A.2.1.2.6	Testing of piles	45 days	Fri 8/25/17	Sun 10/8/17	Sat 8/11/18	Mon 9/24/18
56	A.2.1.2.7	Proof Drilling	9 days	Mon 10/9/17	Tue 10/17/17	Tue 9/25/18	Wed 10/3/18
57	A.2.1.2.8	Excavation with temporary shoring for pile cap E3-PC3	21 days	Wed 10/18/...	Tue 11/7/17	Thu 10/4/18	Wed 10/24/...
58	A.2.1.2.9	Construction of Pile caps E3-PC3	45 days	Wed 11/8/17	Fri 12/22/17	Thu 10/25/18	Sat 12/8/18
59	A.2.1.2.10	Construction of E3 Abutment	60 days	Sat 12/23/17	Tue 2/20/18	Sun 12/9/18	Wed 2/6/19
60							
61	A.2.1.3	**Substructure of Covered Walkway**	115 days	Wed 2/21/18	Fri 6/15/18	Thu 3/14/19	Sat 7/6/19
62	A.2.1.3.1	Excavation of footing of covered walkway footing	45 days	Wed 2/21/18	Fri 4/6/18	Thu 3/14/19	Sat 4/27/19
63	A.2.1.3.2	Construction of footing of covered walkway footing	60 days	Sat 4/7/18	Tue 6/5/18	Sun 4/28/19	Wed 6/26/19
64	A.2.1.3.3	Backfill the footing of the covered walkway	10 days	Wed 6/6/18	Fri 6/15/18	Thu 6/27/19	Sat 7/6/19
65							
66	A.2.1.4	**Pile Cap E3-PC2 and column**	311 days	Fri 7/7/17	Sun 5/13/18	Mon 4/2/18	Wed 2/6/19
67	A.2.1.4.1	Mobilization of plants for predrilling for pile cap E3-PC 2	7 days	Fri 7/7/17	Thu 7/13/17	Mon 4/2/18	Sun 4/8/18
68	A.2.1.4.2	Setting up of plants for predrill for pile cap E3-PC2	7 days	Fri 7/14/17	Thu 7/20/17	Mon 4/9/18	Sun 4/15/18
69	A.2.1.4.3	Predrill for pile cap E3-PC2	9 days	Fri 7/21/17	Sat 7/29/17	Mon 4/16/18	Tue 4/24/18
70	A.2.1.4.4	Demobilization of predrill rig	7 days	Sun 7/30/17	Sat 8/5/17	Wed 4/25/18	Tue 5/1/18
71	A.2.1.4.5	Site clearance for soil nails for zone 1	5 days	Sun 8/6/17	Thu 8/10/17	Wed 5/2/18	Sun 5/6/18
72	A.2.1.4.6	Erection of tubular scaffold platform for soil nails for zone 1	10 days	Fri 8/11/17	Sun 8/20/17	Mon 5/7/18	Wed 5/16/18
73	A.2.1.4.7	Setting out of soil nails	2 days	Mon 8/21/17	Tue 8/22/17	Thu 5/17/18	Fri 5/18/18
74	A.2.1.4.8	Construction of soil nails (29nrs)	21 days	Wed 8/23/17	Tue 9/12/17	Sat 5/19/18	Fri 6/8/18
75	A.2.1.4.9	Construction of soil nails heads (29nrs)	14 days	Wed 9/13/17	Tue 9/26/17	Sat 6/9/18	Fri 6/22/18
76	A.2.1.4.10	Removal of tubular scaffold platform	7 days	Wed 9/27/17	Tue 10/3/17	Sat 6/23/18	Fri 6/29/18



Critical Split · Non-critical Tasks · Inactive Milestone · Manual Task · Manual Summary Rollup · Start-only · External Tasks · Critical
Critical tasks · Working days · Inactive Summary · Duration-only · Manual Summary · Finish-only · External Milestone

Section A Bridge E2-E3 First Programme

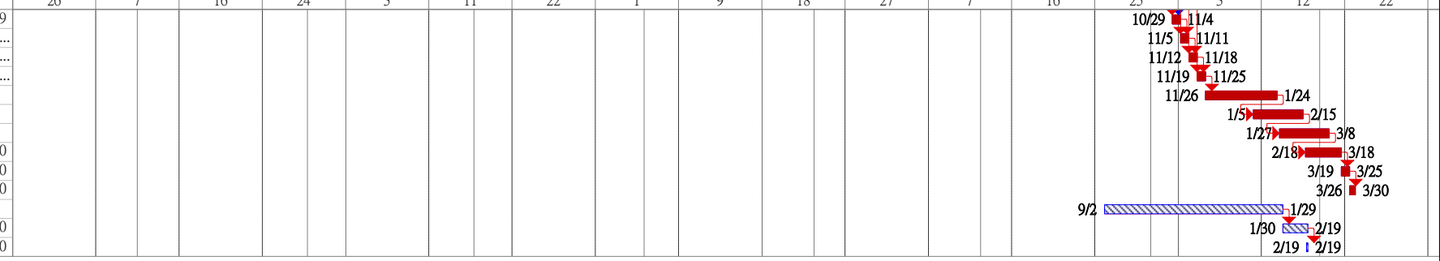
ITEM	ID	TASK NAME	Duration	Early Start	Early Finish	Late Start	Late Finish
77	A.2.1.4.11	Site clearance for soil nails for zone 2	5 days	Wed 10/4/17	Sun 10/8/17	Sat 6/30/18	Wed 7/4/18
78	A.2.1.4.12	Erection of tubular scaffold platform for soil nails for zone 2	7 days	Mon 10/9/17	Sun 10/15/17	Thu 7/5/18	Wed 7/11/18
79	A.2.1.4.13	Removal of soil nails (19nrs)	20 days	Mon 10/16/...	Sat 11/4/17	Thu 7/12/18	Tue 7/31/18
80	A.2.1.4.14	Removal of tubular scaffold platform from zone 2	7 days	Sun 11/5/17	Sat 11/11/17	Wed 8/1/18	Tue 8/7/18
81	A.2.1.4.15	Mobilization of plant for drilling and installation of pre-bored socket H piles	3 days	Sun 11/12/17	Tue 11/14/17	Wed 8/8/18	Fri 8/10/18
82	A.2.1.4.16	Drilling and construction of pre-bored socket H piles (9nrs)	45 days	Wed 11/15/...	Fri 12/29/17	Sat 8/11/18	Mon 9/24/18
83	A.2.1.4.17	Testing of piles	45 days	Sat 12/30/17	Mon 2/12/18	Tue 9/25/18	Thu 11/8/18
84	A.2.1.4.18	Proof Drilling	9 days	Tue 2/13/18	Wed 2/21/18	Fri 11/9/18	Sat 11/17/18
85	A.2.1.4.19	Excavation with shoring for construction of pile cap E3-PC2	21 days	Thu 2/22/18	Wed 3/14/18	Sun 11/18/18	Sat 12/8/18
86	A.2.1.4.20	Construction of pile cap E3-PC2	30 days	Thu 3/15/18	Fri 4/13/18	Sun 12/9/18	Mon 1/7/19
87	A.2.1.4.21	Construction of Column E3-P1	30 days	Sat 4/14/18	Sun 5/13/18	Tue 1/8/19	Wed 2/6/19
88							
89	**A.2.1.5**	**Pile Cap E2-PC1**	**342 days**	**Fri 3/31/17**	**Wed 3/7/18**	**Tue 6/26/18**	**Sat 4/6/19**
90	A.2.1.5.1	Application of Excavation permit for area occupied by pile cap E2-PC1	80 days	Fri 3/31/17	Sun 6/18/17	Tue 6/26/18	Thu 9/13/18
91	A.2.1.5.2	Mobilization of plant for predrill for pile cap E2-PC1	2 days	Sun 8/6/17	Mon 8/7/17	Wed 9/5/18	Thu 9/6/18
92	A.2.1.5.3	Setting up plant for predrill for pile cap E2-PC1	7 days	Tue 8/8/17	Mon 8/14/17	Fri 9/7/18	Thu 9/13/18
93	A.2.1.5.4	Predrill for pile cap E2-PC1	14 days	Tue 8/15/17	Mon 8/28/17	Fri 9/14/18	Thu 9/27/18
94	A.2.1.5.5	Demobilization of predrill rig	2 days	Tue 8/29/17	Wed 8/30/17	Fri 9/28/18	Sat 9/29/18
95	A.2.1.5.6	Mobilization of plant for drilling and installation of pre-bored socket H piles	5 days	Thu 8/31/17	Mon 9/4/17	Sun 9/30/18	Thu 10/4/18
96	A.2.1.5.7	Drilling and construction for pre-bored socket H piles(35nrs)	75 days	Tue 9/5/17	Sat 11/18/17	Fri 10/5/18	Tue 12/18/18
97	A.2.1.5.8	Testing of piles	45 days	Sun 11/19/17	Tue 1/2/18	Wed 12/19/...	Fri 2/1/19
98	A.2.1.5.9	Proof Drilling	14 days	Wed 1/3/18	Tue 1/16/18	Sat 2/2/19	Fri 2/15/19
99	A.2.1.5.10	Excavation with temporary shoring for pile cap E2-PC1	20 days	Wed 1/17/18	Mon 2/5/18	Sat 2/16/19	Thu 3/7/19
100	A.2.1.5.11	Construction of pile cap E2-PC1	25 days	Tue 2/6/18	Fri 3/2/18	Fri 3/8/19	Mon 4/1/19
101	A.2.1.5.12	Backfill the pile cap E2-PC1	5 days	Sat 3/3/18	Wed 3/7/18	Tue 4/2/19	Sat 4/6/19
102							
103	**A.2.1.6**	**Substructure E2-PC2**	**349 days**	**Thu 8/31/17**	**Tue 8/14/18**	**Thu 3/21/19**	**Fri 9/13/19**
104	A.2.1.6.1	Mobilization of plants for predrilling for pile cap E2-PC 2	5 days	Thu 8/31/17	Mon 9/4/17	Thu 3/21/19	Mon 3/25/19
105	A.2.1.6.2	Setting up plant for predrill for pile pile cap E2-PC2	5 days	Tue 9/5/17	Sat 9/9/17	Tue 3/26/19	Sat 3/30/19
106	A.2.1.6.3	Predrill for pile cap E2-PC2	7 days	Sun 9/10/17	Sat 9/16/17	Sun 3/31/19	Sat 4/6/19
107	A.2.1.6.4	Mobilization of plants for drilling and installation of pre-bored socket H Ples for pile cap E2-PC2	5 days	Thu 3/8/18	Mon 3/12/18	Sun 4/7/19	Thu 4/11/19
108	A.2.1.6.5	Drilling and installation of pre-bored socket H piles for pile cap E2-PC2	45 days	Tue 3/13/18	Thu 4/26/18	Fri 4/12/19	Sun 5/26/19
109	A.2.1.6.6	Testing of piles	45 days	Fri 4/27/18	Sun 6/10/18	Mon 5/27/19	Wed 7/10/19
110	A.2.1.6.7	Proof Drilling	7 days	Mon 6/11/18	Sun 6/17/18	Thu 7/11/19	Wed 7/17/19
111	A.2.1.6.8	Excavation with shoring for pile cap E2-PC2	21 days	Mon 6/18/18	Sun 7/8/18	Thu 7/18/19	Wed 8/7/19
112	A.2.1.6.9	Construction of pile cap E2-PC2	30 days	Mon 7/9/18	Tue 8/7/18	Thu 8/8/19	Fri 9/6/19
113	A.2.1.6.10	Backfill the pile cap E2-PC2	7 days	Wed 8/8/18	Tue 8/14/18	Sat 9/7/19	Fri 9/13/19
114							
115	**A.2.1.7**	**Steel Bridge between E3-ST1 and E3 Abutment**	**313 days**	**Thu 2/7/19**	**Mon 12/16...**	**Thu 2/7/19**	**Mon 3/30/20**
116	A.2.1.7.1	Construction of launching platform for steel bridge between E3-ST1 and E3 abutment	60 days	Thu 2/7/19	Sun 4/7/19	Thu 2/7/19	Sun 4/7/19
117	A.2.1.7.2	Assembly of steel truss between E3 tower and E3 abutment	60 days	Mon 4/8/19	Thu 6/6/19	Mon 4/8/19	Thu 6/6/19
118	A.2.1.7.3	Bridge launching between E3-ST1 and E3 Abutment	30 days	Fri 6/7/19	Sat 7/6/19	Fri 6/7/19	Sat 7/6/19
119	A.2.1.7.4	Roof construction of the steel truss E3-ST1 to E3 abutment	50 days	Sun 7/7/19	Sun 8/25/19	Sun 10/20/19	Sun 12/8/19
120	A.2.1.7.5	Construction of screeding and paving blocks	40 days	Mon 8/26/19	Fri 10/4/19	Mon 12/9/19	Fri 1/17/20
121	A.2.1.7.6	Installation of parapets and planters	40 days	Sat 10/5/19	Wed 11/13/...	Sat 1/18/20	Wed 2/26/20
122	A.2.1.7.7	Installation of lightings to steel truss between E3 tower and E3 abutment	30 days	Thu 11/14/19	Fri 12/13/19	Thu 2/27/20	Fri 3/27/20
123	A.2.1.7.8	Planting works on bridge	3 days	Sat 12/14/19	Mon 12/16/...	Sat 3/28/20	Mon 3/30/20
124							
125	**A.2.1.8**	**Superstructure of Covered Walkway**	**135 days**	**Sun 7/7/19**	**Mon 11/18...**	**Sun 7/7/19**	**Mon 3/30/20**
126	A.2.1.8.1	Expose the substructure of the Covered Walkway	20 days	Sun 7/7/19	Fri 7/26/19	Sun 7/7/19	Fri 7/26/19
127	A.2.1.8.2	Construction of columns and beams for covered walkway	60 days	Sat 7/27/19	Tue 9/24/19	Sat 12/7/19	Tue 2/4/20
128	A.2.1.8.3	Installation of steel sheet roof for the covered walkway	30 days	Wed 9/25/19	Thu 10/24/19	Wed 2/5/20	Thu 3/5/20
129	A.2.1.8.4	Installation of Lighting to covered walkway	25 days	Fri 10/25/19	Mon 11/18/...	Fri 3/6/20	Mon 3/30/20
130							
131	**A.2.1.9**	**Superstructure of E2-LT1 and Lift**	**239 days**	**Sat 7/27/19**	**Sat 3/21/20**	**Sat 7/27/19**	**Mon 3/30/20**
132	A.2.1.9.1	Excavation to expose footing E2-PC1	7 days	Sat 7/27/19	Fri 8/2/19	Sat 7/27/19	Fri 8/2/19
133	A.2.1.9.2	Construction of superstructure of lift tower E2-LT1	42 days	Sat 8/3/19	Fri 9/13/19	Sat 8/3/19	Fri 9/13/19
134	A.2.1.9.3	Installation of lift (2nrs)	60 days	Sat 9/14/19	Tue 11/12/19	Mon 9/23/19	Thu 11/21/19
135	A.2.1.9.4	Installation of E&M for the lift towers and Pillar Box	50 days	Wed 11/13/...	Wed 1/1/20	Fri 11/22/19	Fri 1/10/20
136	A.2.1.9.5	Testing and commiinissioning of lifts	60 days	Thu 1/2/20	Sun 3/1/20	Sat 1/11/20	Tue 3/10/20
137	A.2.1.9.6	Installation of louver and finishing works	20 days	Mon 3/2/20	Sat 3/21/20	Wed 3/11/20	Mon 3/30/20
138							
139	**A.2.1.10**	**Superstructure of E2-P1**	**48 days**	**Sat 9/14/19**	**Thu 10/31/...**	**Sat 9/14/19**	**Thu 10/31/...**
140	A.2.1.10.1	Excavation to expose Pile cap E2-PC2 for column E2-P1	3 days	Sat 9/14/19	Mon 9/16/19	Sat 9/14/19	Tue 9/17/19
141	A.2.1.10.2	Construction of column for E2-P1	42 days	Tue 9/17/19	Mon 10/28/...	Tue 9/17/19	Tue 10/29/19
142	A.2.1.10.3	General tidy up	3 days	Tue 10/29/19	Thu 10/31/19	Sat 3/28/20	Mon 3/30/20
143							
144	**A.3.1.11**	**Bridge between E2-P1 to E2-P3**	**466 days**	**Fri 12/21/18**	**Mon 3/30/20**	**Thu 5/16/19**	**Mon 3/30/20**
145	A.3.1.11.1	Access date of E2 between Pier E2-P2 to E2-P3 (Portion 3)	1 day	Fri 12/21/18	Fri 12/21/18	Sat 6/1/19	Sat 6/1/19
146	A.2.1.11.3	Erection of Hoarding at South bound footpath of Hiu Kwong St	8 days	Sat 12/22/18	Sat 12/29/18	Sun 6/2/19	Sun 6/9/19
147	A.3.1.11.3	Excavation of inspection pits to locate utilities	20 days	Sun 12/30/18	Fri 1/18/19	Mon 6/10/19	Sat 6/29/19
148	A.3.1.11.4	Diversion of utilities by UU	90 days	Sat 1/19/19	Thu 4/18/19	Sun 6/30/19	Fri 9/27/19
149	A.3.1.11.5	Excavation with shoring for construction of E2-PC3	30 days	Fri 4/19/19	Sat 5/18/19	Sat 9/28/19	Sun 10/27/19
150	A.3.1.11.6	Construction of pad footing of E2-PC3	30 days	Sun 5/19/19	Mon 6/17/19	Mon 10/28/...	Tue 11/26/19
151	A.3.1.11.7	Construction of column for E2-P2	30 days	Tue 6/18/19	Wed 7/17/19	Wed 11/27/...	Thu 12/26/19
152	A.3.1.11.8	Excavation with shoring for construction of E2-PC4	30 days	Thu 7/18/19	Fri 8/16/19	Fri 12/27/19	Sat 1/25/20
153	A.3.1.11.9	Construction of pad footing of E2-PC4	30 days	Sat 8/17/19	Sun 9/15/19	Sun 1/26/20	Mon 2/24/20
154	A.3.1.11.10	Construction of column for E2-P3 and the bridge deck	35 days	Mon 9/16/19	Sun 10/20/19	Tue 2/25/20	Mon 3/30/20
155	A.3.1.11.11	Off site Fabrication of Steel deck truss between E2-LT1 to E2-P1, E2-P1 to E2-P2	90 days	Fri 4/26/19	Wed 7/24/19	Thu 5/16/19	Tue 8/13/19
156	A.3.1.11.12	Off site Fabrication of Steel deck truss between E2-P2 to E2-P3 and E2-P3 to bridge constructed by others	90 days	Thu 7/25/19	Tue 10/22/19	Wed 8/14/19	Mon 11/11/19



Critical Split | Non-critical Tasks | Inactive Milestone | Manual Task | Manual Summary Rollup | Start-only | External Tasks | Critical
Critical tasks | Working days | Inactive Summary | Duration-only | Manual Summary | Finish-only | External Milestone

Section A Bridge E2-E3 First Programme

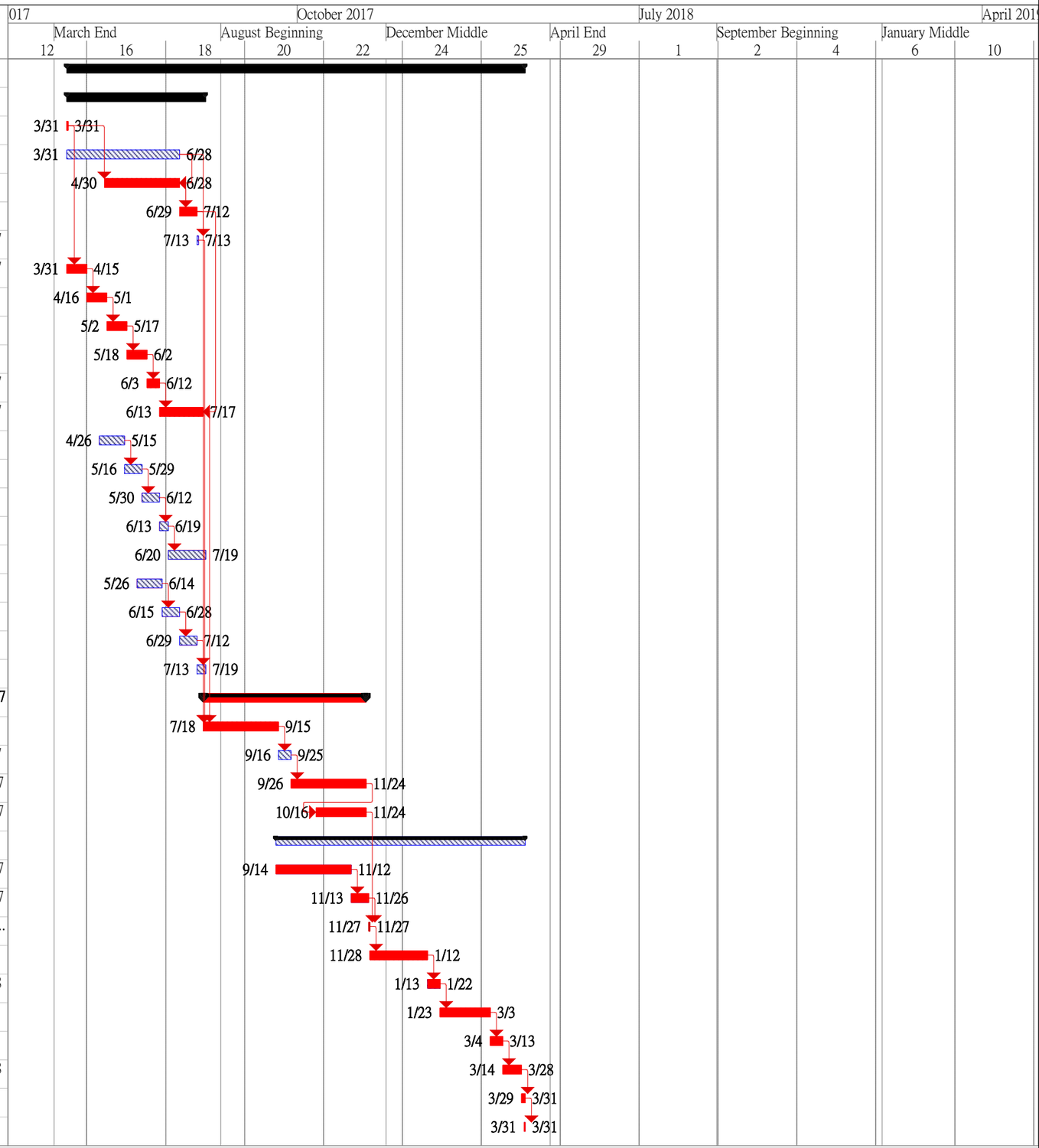
ITEM	ID	TASK NAME	Duration	Early Start	Early Finish	Late Start	Late Finish
157	A.3.1.11.13	Lifting of steel truss between E2-LT1 to E2-P1	7 days	Tue 10/29/19	Mon 11/4/19	Tue 10/29/19	Mon 11/4/19
158	A.3.1.11.14	Lifting of steel truss between E2-P1 to E2-P2	7 days	Tue 11/5/19	Mon 11/11/...	Tue 11/5/19	Mon 11/11/...
159	A.3.1.11.15	Lifting of Truss between E2-P2 to E2-P3	7 days	Tue 11/12/19	Mon 11/18/...	Tue 11/12/19	Mon 11/18/...
160	A.3.1.11.16	Lifting of truss for E2-P3 to connect to bridge constructed by others	7 days	Tue 11/19/19	Mon 11/25/...	Tue 11/19/19	Mon 11/25/...
161	A.3.1.11.17	Roof installation of the bridge from E2-LT1 to E2-P3	60 days	Tue 11/26/19	Fri 1/24/20	Tue 11/26/19	Fri 1/24/20
162	A.3.1.11.18	Screeding and paving blocks for the bridge from E2-LT1 to E2-P3	42 days	Sun 1/5/20	Sat 2/15/20	Sun 1/5/20	Sat 2/15/20
163	A.3.1.11.19	Electrical installation and lighting works for bridge from E2-LT1 to E2-P3	42 days	Mon 1/27/20	Sun 3/8/20	Mon 1/27/20	Sun 3/8/20
164	A.3.1.11.20	Tubular handrail and planter on bridge from E2-LT1 to E2-P3	30 days	Tue 2/18/20	Wed 3/18/20	Tue 2/18/20	Wed 3/18/20
165	A.3.1.11.21	Planting works on bridge	7 days	Thu 3/19/20	Wed 3/25/20	Thu 3/19/20	Wed 3/25/20
166	A.3.1.11.22	General tidy up for Portion 3	5 days	Thu 3/26/20	Mon 3/30/20	Thu 3/26/20	Mon 3/30/20
167	A.3.1.11.23	Overall landscape works	150 days	Mon 9/2/19	Wed 1/29/20	Sat 10/12/19	Mon 3/9/20
168	A.3.1.11.24	General tidy up	21 days	Thu 1/30/20	Wed 2/19/20	Tue 3/10/20	Mon 3/30/20
169	A.3.1.11.25	Completion of works	1 day	Wed 2/19/20	Wed 2/19/20	Mon 3/30/20	Mon 3/30/20



Critical Split
Critical tasks
Non-critical Tasks
Working days
Inactive Milestone
Inactive Summary
Manual Task
Duration-only
Manual Summary Rollup
Manual Summary
Start-only
Finish-only
External Tasks
External Milestone
Critical

Section B First Programme

ITEM	ID	TASK NAME	Duration	Early Start	Early Finish	Late Start	Late Finish
1	**B.4.1**	**SECTION B - CONSTRUCTION OF SLIP ROAD**	**366 days**	**Fri 3/31/17**	**Sat 3/31/18**	**Sun 4/2/17**	**Sat 3/31/18**
2	**B.4.1.1**	**PRE CONSTRUCTION WORKS**	**111 days**	**Fri 3/31/17**	**Wed 7/19/17**	**Sun 4/2/17**	**Sat 3/31/18**
3	B.4.1.1.1	Access Date of Portion 4	1 day	Fri 3/31/17	Fri 3/31/17	Sun 4/2/17	Sun 4/2/17
4	B.4.1.1.2	Application of Excavation Permit	90 days	Fri 3/31/17	Wed 6/28/17	Thu 4/6/17	Tue 7/4/17
5	B.4.1.1.3	Application of TTA and approval	60 days	Sun 4/30/17	Wed 6/28/17	Sat 5/6/17	Tue 7/4/17
6	B.4.1.1.4	Road works advice	14 days	Thu 6/29/17	Wed 7/12/17	Wed 7/5/17	Tue 7/18/17
7	B.4.1.1.5	Implementation of TTA for ingress and egress	1 day	Thu 7/13/17	Thu 7/13/17	Wed 7/19/17	Wed 7/19/17
8	B.4.1.1.6	First submission of proposal of landscape specialist	16 days	Fri 3/31/17	Sat 4/15/17	Sun 4/2/17	Mon 4/17/17
9	B.4.1.1.7	Comment to proposal of landscape specialist	16 days	Sun 4/16/17	Mon 5/1/17	Tue 4/18/17	Wed 5/3/17
10	B.4.1.1.8	Second submission of proposal of landscape specialist	16 days	Tue 5/2/17	Wed 5/17/17	Thu 5/4/17	Fri 5/19/17
11	B.4.1.1.9	Approval of landscape specialist	16 days	Thu 5/18/17	Fri 6/2/17	Sat 5/20/17	Sun 6/4/17
12	B.4.1.1.10	Tree survey	10 days	Sat 6/3/17	Mon 6/12/17	Mon 6/5/17	Wed 6/14/17
13	B.4.1.1.11	Trees Transplant	35 days	Tue 6/13/17	Mon 7/17/17	Thu 6/15/17	Wed 7/19/17
14	B.4.1.1.12	First submission of material for drainage works	20 days	Wed 4/26/17	Mon 5/15/17	Sat 1/6/18	Thu 1/25/18
15	B.4.1.1.13	Comment of first submission for drainage works	14 days	Tue 5/16/17	Mon 5/29/17	Fri 1/26/18	Thu 2/8/18
16	B.4.1.1.14	Second submission of material for drainage works	14 days	Tue 5/30/17	Mon 6/12/17	Fri 2/9/18	Thu 2/22/18
17	B.4.1.1.15	Approval of material for drainage works	7 days	Tue 6/13/17	Mon 6/19/17	Fri 2/23/18	Thu 3/1/18
18	B.4.1.1.16	Procurement and delivery of drainage pipes and material	30 days	Tue 6/20/17	Wed 7/19/17	Fri 3/2/18	Sat 3/31/18
19	B.4.1.1.17	First submission of method statement for Drainage works	20 days	Fri 5/26/17	Wed 6/14/17	Mon 2/5/18	Sat 2/24/18
20	B.4.1.1.18	Comment of method statement for drainage works	14 days	Thu 6/15/17	Wed 6/28/17	Sun 2/25/18	Sat 3/10/18
21	B.4.1.1.19	Second submission of method statement of drainage works	14 days	Thu 6/29/17	Wed 7/12/17	Sun 3/11/18	Sat 3/24/18
22	B.4.1.1.20	Approval of method statement of drainage works	7 days	Thu 7/13/17	Wed 7/19/17	Sun 3/25/18	Sat 3/31/18
23	**B.4.1.2**	**First Stage Works**	**130 days**	**Tue 7/18/17**	**Fri 11/24/17**	**Thu 7/20/17**	**Sun 11/26/17**
24	B.4.1.2.1	Drainage works at first stage	60 days	Tue 7/18/17	Fri 9/15/17	Thu 7/20/17	Sun 9/17/17
25	B.4.1.2.2	Laying street lighting cables	10 days	Sat 9/16/17	Mon 9/25/17	Mon 9/18/17	Wed 9/27/17
26	B.4.1.2.3	Road works	60 days	Tue 9/26/17	Fri 11/24/17	Thu 9/28/17	Sun 11/26/17
27	B.4.1.2.4	Construct Temporary road before implementation of road closure	40 days	Mon 10/16/...	Fri 11/24/17	Wed 10/18/...	Sun 11/26/17
28	**B.4.1.3**	**Second Stage Works**	**199 days**	**Thu 9/14/17**	**Sat 3/31/18**	**Thu 9/14/17**	**Sat 3/31/18**
29	B.4.1.3.1	Application of TTA to divert traffic of existing slip road	60 days	Thu 9/14/17	Sun 11/12/17	Thu 9/14/17	Sun 11/12/17
30	B.4.1.3.2	Road Works advice	14 days	Mon 11/13/...	Sun 11/26/17	Mon 11/13/...	Sun 11/26/17
31	B.4.1.3.3	Implementation of TTA to divert traffic to Temp slip road	1 day	Mon 11/27/...	Mon 11/27/...	Mon 11/27/...	Mon 11/27/...
32	B.4.1.3.4	Drainage works at entrance of existing slip road (D101+ others)	46 days	Tue 11/28/17	Fri 1/12/18	Tue 11/28/17	Fri 1/12/18
33	B.4.1.3.5	Laying street lighting cables	10 days	Sat 1/13/18	Mon 1/22/18	Sat 1/13/18	Mon 1/22/18
34	B.4.1.3.6	Road works	40 days	Tue 1/23/18	Sat 3/3/18	Tue 1/23/18	Sat 3/3/18
35	B.4.1.3.7	Remaining clash barriers and road markings	10 days	Sun 3/4/18	Tue 3/13/18	Sun 3/4/18	Tue 3/13/18
36	B.4.1.3.8	Reinstate works area	15 days	Wed 3/14/18	Wed 3/28/18	Wed 3/14/18	Wed 3/28/18
37	B.4.1.3.9	General tidy up	3 days	Thu 3/29/18	Sat 3/31/18	Thu 3/29/18	Sat 3/31/18
38	B.4.1.3.10	Completion of works	1 day	Sat 3/31/18	Sat 3/31/18	Sat 3/31/18	Sat 3/31/18



Critical Split — Working days — Manual Task — Manual Summary — External Tasks
Critical tasks — Inactive Milestone — Duration-only — Start-only — External Milestone
Non-critical Tasks — Inactive Summary — Manual Summary Rollup — Finish-only — Critical

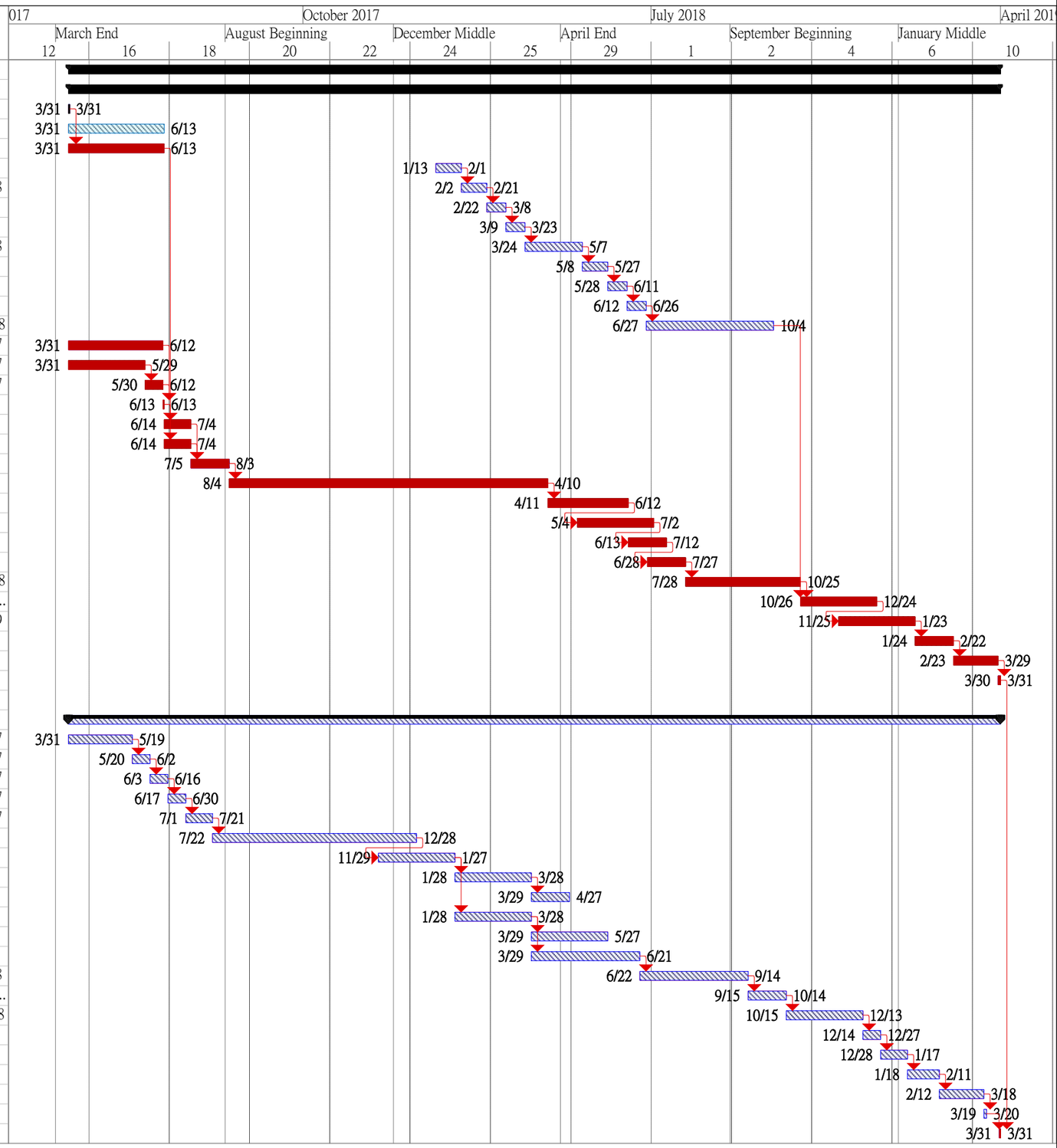
Kwan On Construction Co. Ltd.

NE/2016/05
Development of Anderson Road Quarry Site
Pedestrian Connectiveity Facilities Works Phase 1

Section C First Programme

Rev . 1

ITEM	ID	TASK NAME	Duration	Early Start	Early Finish	Late Start	Late Finish
1	**C.5.1**	**SECTION C - CONSTRUCTION OF BUS BUS INTERCHANGE**	**731 days**	**Fri 3/31/17**	**Sun 3/31/19**	**Fri 3/31/17**	**Sun 3/31/19**
2	**C.5.1.1**	**Works not within TKOT carriageway**	**731 days**	**Fri 3/31/17**	**Sun 3/31/19**	**Fri 3/31/17**	**Sun 3/31/19**
3	C.5.1.1.1	Access Date of Portion 5	1 day	Fri 3/31/17	Fri 3/31/17	Fri 3/31/17	Fri 3/31/17
4	C.5.1.1.2	Excavation permit	75 days	Fri 3/31/17	Tue 6/13/17	Wed 1/16/19	Sun 3/31/19
5	C.5.1.1.3	Tree survey	75 days	Fri 3/31/17	Tue 6/13/17	Fri 3/31/17	Tue 6/13/17
6	C.5.1.1.4	Submission of method statement of construction of covered walkway	20 days	Sat 1/13/18	Thu 2/1/18	Sat 2/3/18	Thu 2/22/18
7	C.5.1.1.5	Comment of method statement of construction of covered walkway	20 days	Fri 2/2/18	Wed 2/21/18	Fri 2/23/18	Wed 3/14/18
8	C.5.1.1.6	Second Submission of method statement of covered walkway	15 days	Thu 2/22/18	Thu 3/8/18	Thu 3/15/18	Thu 3/29/18
9	C.5.1.1.7	Approval of method statement of of covered walkway	15 days	Fri 3/9/18	Fri 3/23/18	Fri 3/30/18	Fri 4/13/18
10	C.5.1.1.8	Submission of proposal of offsite fabrication of covered walkway	45 days	Sat 3/24/18	Mon 5/7/18	Sat 4/14/18	Mon 5/28/18
11	C.5.1.1.9	SRs comment of proposal offsite fabrication of covered walkway	20 days	Tue 5/8/18	Sun 5/27/18	Tue 5/29/18	Sun 6/17/18
12	C.5.1.1.10	Resubmission of proposal of offsite fabrication of covered walkway	15 days	Mon 5/28/18	Mon 6/11/18	Mon 6/18/18	Mon 7/2/18
13	C.5.1.1.11	Approval of offsite fabrication of covered walkway	15 days	Tue 6/12/18	Tue 6/26/18	Tue 7/3/18	Tue 7/17/18
14	C.5.1.1.12	Fabrication of covered walkway	100 days	Wed 6/27/18	Thu 10/4/18	Wed 7/18/18	Thu 10/25/18
15	C.5.1.1.13	Application to Works in TKOT Area	74 days	Fri 3/31/17	Mon 6/12/17	Fri 3/31/17	Mon 6/12/17
16	C.5.1.1.14	Application of TTA for loading and unloading area	60 days	Fri 3/31/17	Mon 5/29/17	Fri 3/31/17	Mon 5/29/17
17	C.5.1.1.15	Road works advice	14 days	Tue 5/30/17	Mon 6/12/17	Tue 5/30/17	Mon 6/12/17
18	C.5.1.1.16	Implementation of TTA	1 day	Tue 6/13/17	Tue 6/13/17	Tue 6/13/17	Tue 6/13/17
19	C.5.1.1.17	Tree Fellings	21 days	Wed 6/14/17	Tue 7/4/17	Wed 6/14/17	Tue 7/4/17
20	C.5.1.1.18	Excavation of inpsection pit for locating existing utilities	21 days	Wed 6/14/17	Tue 7/4/17	Wed 6/14/17	Tue 7/4/17
21	C.5.1.1.19	Arrangement with UU companies for diversion of UU	30 days	Wed 7/5/17	Thu 8/3/17	Wed 7/5/17	Thu 8/3/17
22	C.5.1.1.20	Diversion of utilities	250 days	Fri 8/4/17	Tue 4/10/18	Fri 8/4/17	Tue 4/10/18
23	C.5.1.1.21	Construction of footing of covered walkway	63 days	Wed 4/11/18	Tue 6/12/18	Wed 4/11/18	Tue 6/12/18
24	C.5.1.1.22	Drainage works D201 to D207 above the footing	60 days	Fri 5/4/18	Mon 7/2/18	Fri 5/4/18	Mon 7/2/18
25	C.5.1.1.23	Laying of TCS cables	30 days	Wed 6/13/18	Thu 7/12/18	Wed 6/13/18	Thu 7/12/18
26	C.5.1.1.24	Laying of cables for road lighting	30 days	Thu 6/28/18	Fri 7/27/18	Thu 6/28/18	Fri 7/27/18
27	C.5.1.1.25	Construction of new high mast lighting and other lightings	90 days	Sat 7/28/18	Thu 10/25/18	Sat 7/28/18	Thu 10/25/18
28	C.5.1.1.26	Installation of posts and beams for covered walkway	60 days	Fri 10/26/18	Mon 12/24/...	Fri 10/26/18	Mon 12/24/...
29	C.5.1.1.27	Installation of glass cover for covered walkway	60 days	Sun 11/25/18	Wed 1/23/19	Sun 11/25/18	Wed 1/23/19
30	C.5.1.1.28	Installation of lighting of covered walkway	30 days	Thu 1/24/19	Fri 2/22/19	Thu 1/24/19	Fri 2/22/19
31	C.5.1.1.29	Construction of paving blocks for covered walkway	35 days	Sat 2/23/19	Fri 3/29/19	Sat 2/23/19	Fri 3/29/19
32	C.5.1.1.30	General tidy up	2 days	Sat 3/30/19	Sun 3/31/19	Sat 3/30/19	Sun 3/31/19
33							
34	**C.5.1.2**	**Works in Existing TKOT carriageway**	**731 days**	**Fri 3/31/17**	**Sun 3/31/19**	**Mon 4/10/17**	**Sun 3/31/19**
35	C.5.1.2.1	Submission of material for drainage works	50 days	Fri 3/31/17	Fri 5/19/17	Mon 4/10/17	Mon 5/29/17
36	C.5.1.2.2	Comment of material for drainage works	14 days	Sat 5/20/17	Fri 6/2/17	Tue 5/30/17	Mon 6/12/17
37	C.5.1.2.3	Second submission of material for drainage works	14 days	Sat 6/3/17	Fri 6/16/17	Tue 6/13/17	Mon 6/26/17
38	C.5.1.2.4	Approval of material for drainage works	14 days	Sat 6/17/17	Fri 6/30/17	Tue 6/27/17	Mon 7/10/17
39	C.5.1.2.5	Inspection pits to locate existing utilities	21 days	Sat 7/1/17	Fri 7/21/17	Tue 7/11/17	Mon 7/31/17
40	C.5.1.2.6	Diversion of utilities	160 days	Sat 7/22/17	Thu 12/28/17	Tue 8/1/17	Sun 1/7/18
41	C.5.1.2.7	Gullies construction in road	60 days	Wed 11/29/...	Sat 1/27/18	Sat 12/9/17	Tue 2/6/18
42	C.5.1.2.8	Road works	60 days	Sun 1/28/18	Wed 3/28/18	Tue 1/1/19	Fri 3/1/19
43	C.5.1.2.9	Road marking and signage	30 days	Thu 3/29/18	Fri 4/27/18	Sat 3/2/19	Sun 3/31/19
44	C.5.1.2.10	Swapping of Auto toll	60 days	Sun 1/28/18	Wed 3/28/18	Wed 2/7/18	Sat 4/7/18
45	C.5.1.2.11	Testing and commissioniong of Auto toll	60 days	Thu 3/29/18	Sun 5/27/18	Thu 1/31/19	Sun 3/31/19
46	C.5.1.2.12	Drainage works D401 to D410	85 days	Thu 3/29/18	Thu 6/21/18	Sun 4/8/18	Sun 7/1/18
47	C.5.1.2.13	Drainage works D410 to D419	85 days	Fri 6/22/18	Fri 9/14/18	Mon 7/2/18	Mon 9/24/18
48	C.5.1.2.14	Drainage works D301	30 days	Sat 9/15/18	Sun 10/14/18	Tue 9/25/18	Wed 10/24/...
49	C.5.1.2.15	Gully drains of kerb island for Bus Bay	60 days	Mon 10/15/...	Thu 12/13/18	Thu 10/25/18	Sun 12/23/18
50	C.5.1.2.16	Backfill of the Gully drains	14 days	Fri 12/14/18	Thu 12/27/18	Mon 12/24/...	Sun 1/6/19
51	C.5.1.2.17	Construction of kerb for Bus Bay kerb island	21 days	Fri 12/28/18	Thu 1/17/19	Mon 1/7/19	Sun 1/27/19
52	C.5.1.2.18	Laying of Subbase and pavement for Bus Bay	25 days	Fri 1/18/19	Mon 2/11/19	Mon 1/28/19	Thu 2/21/19
53	C.5.1.2.19	Remaining Road Marking and signage	35 days	Tue 2/12/19	Mon 3/18/19	Fri 2/22/19	Thu 3/28/19
54	C.5.1.2.20	General tidy up	2 days	Tue 3/19/19	Wed 3/20/19	Fri 3/29/19	Sat 3/30/19
55	C.5.1.2.21	Completion of Works	1 day	Sun 3/31/19	Sun 3/31/19	Sun 3/31/19	Sun 3/31/19

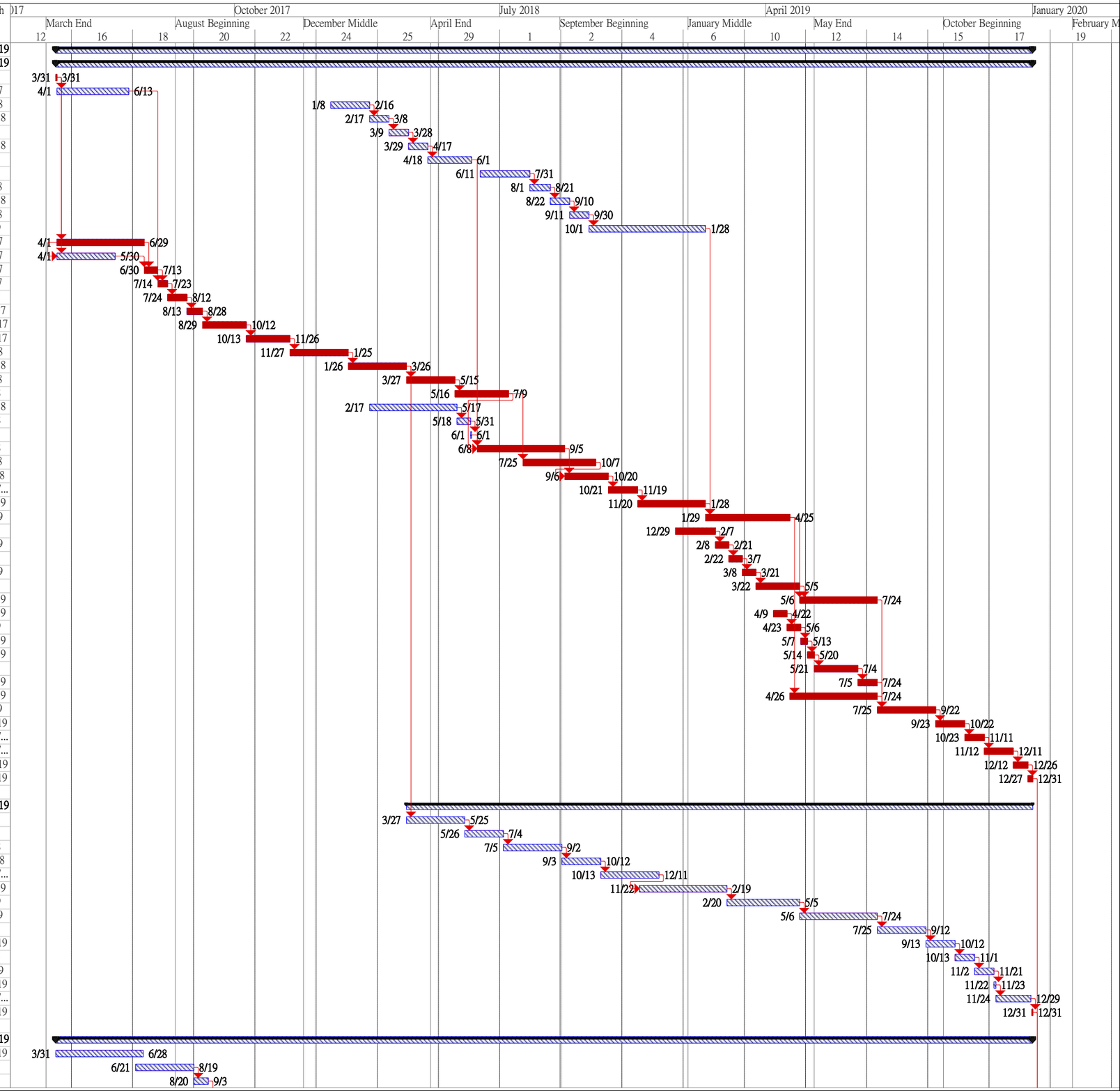


Critical Split
Critical tasks
Non-critical Tasks
Working days
Inactive Milestone
Inactive Summary
Manual Task
Duration-only
Manual Summary Rollup
Manual Summary
Start-only
Finish-only
External Tasks
External Milestone
Critical

Mon 6/19/17

Section D First Programme

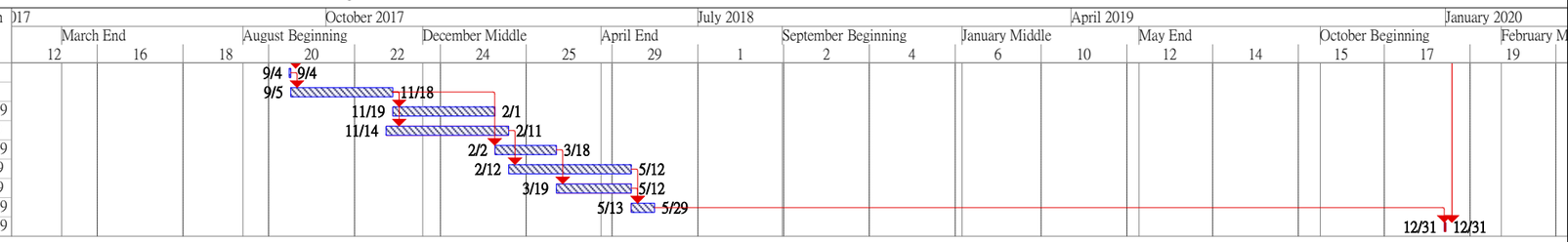
ITEM	ID	TASK NAME	Duration	Early Start	Early Finish	Late Start	Late Finish
1	**D.6.1**	**Section D**	**1006 days**	**Fri 3/31/17**	**Tue 12/31/19**	**Fri 3/31/17**	**Tue 12/31/19**
2	**D.6.1.1**	**Construction E12 Footbridge and Lift Tower**	**1006 days**	**Fri 3/31/17**	**Tue 12/31/19**	**Fri 3/31/17**	**Tue 12/31/19**
3	D.6.1.1.1	Access Date for Portion 6	1 day	Fri 3/31/17	Fri 3/31/17	Fri 3/31/17	Fri 3/31/17
4	D.6.1.1.2	Tree survey	74 days	Sat 4/1/17	Tue 6/13/17	Mon 5/1/17	Thu 7/13/17
5	D.6.1.1.3	Submission of material for water mains	40 days	Mon 1/8/18	Fri 2/16/18	Sun 1/14/18	Thu 2/22/18
6	D.6.1.1.4	Comment to submission of water mains	20 days	Sat 2/17/18	Thu 3/8/18	Fri 2/23/18	Wed 3/14/18
7	D.6.1.1.5	Second submission of material for water mains	20 days	Fri 3/9/18	Wed 3/28/18	Thu 3/15/18	Tue 4/3/18
8	D.6.1.1.6	Approval of material for water mains	20 days	Thu 3/29/18	Tue 4/17/18	Wed 4/4/18	Mon 4/23/18
9	D.6.1.1.7	Procurement to Delivery of water mains material	45 days	Wed 4/18/18	Fri 6/1/18	Tue 4/24/18	Thu 6/7/18
10	D.6.1.1.8	Material submission of proposed lifts	51 days	Mon 6/11/18	Tue 7/31/18	Mon 6/18/18	Tue 8/7/18
11	D.6.1.1.9	Comment of submission of proposed lift	21 days	Wed 8/1/18	Tue 8/21/18	Wed 8/8/18	Tue 8/28/18
12	D.6.1.1.10	Second submission of proposed lift	20 days	Wed 8/22/18	Mon 9/10/18	Wed 8/29/18	Mon 9/17/18
13	D.6.1.1.11	Approval of proposed lift	20 days	Tue 9/11/18	Sun 9/30/18	Tue 9/18/18	Sun 10/7/18
14	D.6.1.1.12	Procurement to delivery of lift	120 days	Mon 10/1/18	Mon 1/28/19	Mon 10/8/18	Mon 2/4/19
15	D.6.1.1.13	Excavation Permit	90 days	Sat 4/1/17	Thu 6/29/17	Sat 4/1/17	Thu 6/29/17
16	D.6.1.1.14	Application of TTA for loading and unloading area	60 days	Sat 4/1/17	Tue 5/30/17	Mon 5/1/17	Thu 6/29/17
17	D.6.1.1.15	Road Works advice	14 days	Fri 6/30/17	Thu 7/13/17	Fri 6/30/17	Thu 7/13/17
18	D.6.1.1.14	Erection of hoarding	10 days	Fri 7/14/17	Sun 7/23/17	Fri 7/14/17	Sun 7/23/17
19	D.6.1.1.15	Site Clearance and Tree felling	20 days	Mon 7/24/17	Sat 8/12/17	Mon 7/24/17	Sat 8/12/17
20	D.6.1.1.16	Construct temporary drainage systems	16 days	Sun 8/13/17	Mon 8/28/17	Sun 8/13/17	Mon 8/28/17
21	D.6.1.1.17	Predrill for Excavation of rocks from retaining wall CH97.5 to CH45	45 days	Tue 8/29/17	Thu 10/12/17	Tue 8/29/17	Thu 10/12/17
22	D.6.1.1.18	Predrill for Excavation of rocks from retaining wall CH45 to CH0	45 days	Fri 10/13/17	Sun 11/26/17	Fri 10/13/17	Sun 11/26/17
23	D.6.1.1.19	Excavation of rock from retaining wall chainage CH97.5 to CH45	60 days	Mon 11/27/...	Thu 1/25/18	Mon 11/27/...	Thu 1/25/18
24	D.6.1.1.20	Excavation of rock from retaining wall chainage CH45 to CH0	60 days	Fri 1/26/18	Mon 3/26/18	Fri 1/26/18	Mon 3/26/18
25	D.6.1.1.21	Construction of Retaining walls chainage CH97.5 to CH 45	50 days	Tue 3/27/18	Tue 5/15/18	Tue 3/27/18	Tue 5/15/18
26	D.6.1.1.22	Construction of Retaining walls chainage CH45 to CH 0	55 days	Wed 5/16/18	Mon 7/9/18	Wed 5/16/18	Mon 7/9/18
27	D.6.1.1.23	Application of TTA for diversion of water mains	90 days	Sat 2/17/18	Thu 5/17/18	Fri 2/23/18	Wed 5/23/18
28	D.6.1.1.24	Road works advice	14 days	Fri 5/18/18	Thu 5/31/18	Thu 5/24/18	Wed 6/6/18
29	D.6.1.1.25	Implementation of TTA for water mains diversion	1 day	Fri 6/1/18	Fri 6/1/18	Thu 6/7/18	Thu 6/7/18
30	D.6.1.1.26	Diversion of water mains	90 days	Fri 6/8/18	Wed 9/5/18	Fri 6/8/18	Wed 9/5/18
31	D.6.1.1.27	Rock slope treatment	75 days	Wed 7/25/18	Sun 10/7/18	Wed 7/25/18	Sun 10/7/18
32	D.6.1.1.28	Construction of substructure of lift tower	45 days	Thu 9/6/18	Sat 10/20/18	Thu 9/6/18	Sat 10/20/18
33	D.6.1.1.29	Construction E12-P1, E12, P2	30 days	Sun 10/21/18	Mon 11/19/...	Sun 10/21/18	Mon 11/19/...
34	D.6.1.1.30	Construction of lift tower superstructures	70 days	Tue 11/20/18	Mon 1/28/19	Tue 11/20/18	Mon 1/28/19
35	D.6.1.1.31	Lift car installations	87 days	Tue 1/29/19	Thu 4/25/19	Tue 1/29/19	Thu 4/25/19
36	D.6.1.1.32	Submission of material for glazing and louver	41 days	Sat 12/29/18	Thu 2/7/19	Sat 12/29/18	Thu 2/7/19
37	D.6.1.1.33	Comment of submission for glazing and louver	14 days	Fri 2/8/19	Thu 2/21/19	Fri 2/8/19	Thu 2/21/19
38	D.6.1.1.34	Second submission of proposal of glazing and louver	14 days	Fri 2/22/19	Thu 3/7/19	Fri 2/22/19	Thu 3/7/19
39	D.6.1.1.35	Approval of glazing and louver	14 days	Fri 3/8/19	Thu 3/21/19	Fri 3/8/19	Thu 3/21/19
40	D.6.1.1.36	Procurement to delivery of glazing and louver	45 days	Fri 3/22/19	Sun 5/5/19	Fri 3/22/19	Sun 5/5/19
41	D.6.1.1.37	Glazing and louvers installation	80 days	Mon 5/6/19	Wed 7/24/19	Mon 5/6/19	Wed 7/24/19
42	D.6.1.1.38	Submission of sump pump system	14 days	Tue 4/9/19	Mon 4/22/19	Tue 4/9/19	Mon 4/22/19
43	D.6.1.1.39	comment to submission of sump pump system	14 days	Tue 4/23/19	Mon 5/6/19	Tue 4/23/19	Mon 5/6/19
44	D.6.1.1.40	Second submission of sump pump system	7 days	Tue 5/7/19	Mon 5/13/19	Tue 5/7/19	Mon 5/13/19
45	D.6.1.1.41	Approval of sump pump system	7 days	Tue 5/14/19	Mon 5/20/19	Tue 5/14/19	Mon 5/20/19
46	D.6.1.1.42	Procurement to delivery of sump pump	45 days	Tue 5/21/19	Thu 7/4/19	Tue 5/21/19	Thu 7/4/19
47	D.6.1.1.43	Installation of sump pump system	20 days	Fri 7/5/19	Wed 7/24/19	Fri 7/5/19	Wed 7/24/19
48	D.6.1.1.44	Installation of E&M works for the lifts	90 days	Fri 4/26/19	Wed 7/24/19	Fri 4/26/19	Wed 7/24/19
49	D.6.1.1.45	Testing and commissioning of Lift	60 days	Thu 7/25/19	Sun 9/22/19	Thu 7/25/19	Sun 9/22/19
50	D.6.1.1.46	Construction of staircase footing	30 days	Mon 9/23/19	Tue 10/22/19	Mon 9/23/19	Tue 10/22/19
51	D.6.1.1.47	Construction of staircase	20 days	Wed 10/23/...	Mon 11/11/...	Wed 10/23/...	Mon 11/11/...
52	D.6.1.1.48	construction of cover for staircase	30 days	Tue 11/12/19	Wed 12/11/...	Tue 11/12/19	Wed 12/11/...
53	D.6.1.1.49	Installation of lighting to staircase	15 days	Thu 12/12/19	Thu 12/26/19	Thu 12/12/19	Thu 12/26/19
54	D.6.1.1.50	General tidy up	5 days	Fri 12/27/19	Tue 12/31/19	Fri 12/27/19	Tue 12/31/19
55							
56	**D.6.1.2**	**Covered Walkway**	**645 days**	**Tue 3/27/18**	**Tue 12/31/19**	**Wed 3/28/18**	**Tue 12/31/19**
57	D.6.1.2.1	Construction of footing BB1-SB-F4	60 days	Tue 3/27/18	Fri 5/25/18	Wed 3/28/18	Sat 5/26/18
58	D.6.1.2.2	Construction of footing BB1-SB-F3	40 days	Sat 5/26/18	Wed 7/4/18	Sun 5/27/18	Thu 7/5/18
59	D.6.1.2.3	Construction of tooting BB1-SB-F2, BB1-SB-F1	60 days	Thu 7/5/18	Sun 9/2/18	Fri 7/6/18	Mon 9/3/18
60	D.6.1.2.4	Construct the drainage from Manhole D701 to D702	40 days	Mon 9/3/18	Fri 10/12/18	Tue 9/4/18	Sat 10/13/18
61	D.6.1.2.5	Construct the drainage from Manhole D702 to D803	60 days	Sat 10/13/18	Tue 12/11/18	Sun 10/14/18	Wed 12/12/...
62	D.6.1.2.6	Relocation of street lighting cables and lighting	90 days	Thu 11/22/18	Tue 2/19/19	Fri 11/23/18	Wed 2/20/19
63	D.6.1.2.7	construction of columns for covered walkway	75 days	Wed 2/20/19	Sun 5/5/19	Thu 2/21/19	Mon 5/6/19
64	D.6.1.2.8	construction of roof structures of covered walkway	80 days	Mon 5/6/19	Wed 7/24/19	Tue 5/7/19	Thu 7/25/19
65	D.6.1.2.9	construction of paving blocks to covered walkway	50 days	Thu 7/25/19	Thu 9/12/19	Fri 7/26/19	Fri 9/13/19
66	D.6.1.2.10	Installation of lighting to covered walkway and bridges	30 days	Fri 9/13/19	Sat 10/12/19	Sat 9/14/19	Sun 10/13/19
67	D.6.1.2.11	Connection of bridge drainage to manholes	20 days	Sun 10/13/19	Fri 11/1/19	Mon 10/14/...	Sat 11/2/19
68	D.6.1.2.12	Construction of water points	20 days	Sat 11/2/19	Thu 11/21/19	Sun 11/3/19	Fri 11/22/19
69	D.6.1.2.13	Connection of water to irrigation pipes	2 days	Fri 11/22/19	Sat 11/23/19	Sat 11/23/19	Sun 11/24/19
70	D.6.1.2.14	Construction of Paving blocks to other area	36 days	Sun 11/24/19	Sun 12/29/19	Mon 11/25/...	Mon 12/30/...
71	D.6.1.2.15	General tidy up	1 day	Tue 12/31/19	Tue 12/31/19	Tue 12/31/19	Tue 12/31/19
72							
73	**D.6.1.3**	**Works in TKOT Carriageway**	**1006 days**	**Fri 3/31/17**	**Tue 12/31/19**	**Wed 1/23/19**	**Tue 12/31/19**
74	D.6.1.3.1	Excavation Permit for drainage works in TKOT carriageway	90 days	Fri 3/31/17	Wed 6/28/17	Thu 10/3/19	Tue 12/31/19
75	D.6.1.3.2	Application of TTA for drainage works in TKOT carrigeway	60 days	Wed 6/21/17	Sat 8/19/17	Wed 1/23/19	Sat 3/23/19
76	D.6.1.3.3	Road works advice	15 days	Sun 8/20/17	Sun 9/3/17	Sun 3/24/19	Sun 4/7/19



Critical Split | Working days | Manual Task | Manual Summary | External Tasks
Critical tasks | Inactive Milestone | Duration-only | Start-only | External Milestone
Non-critical Tasks | Inactive Summary | Manual Summary Rollup | Finish-only | Critical

Section D First Programme

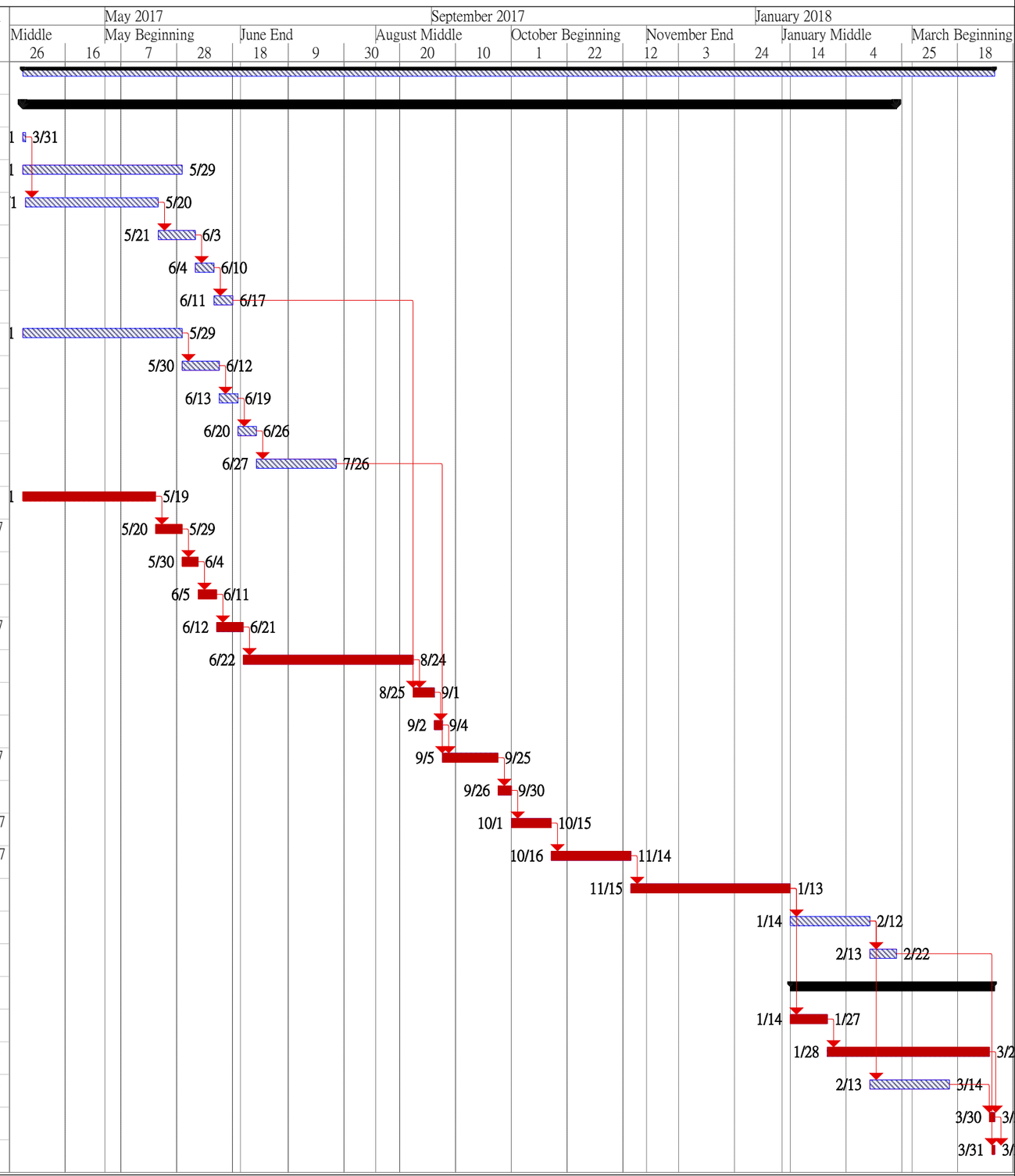
ITEM	ID	TASK NAME	Duration	Early Start	Early Finish	Late Start	Late Finish
77	D.6.1.3.4	Implementation of TTA for drainage works in carriageway	1 day	Mon 9/4/17	Mon 9/4/17	Mon 4/8/19	Mon 4/8/19
78	D.6.1.3.5	Drainage from Manhole D601 to D607	75 days	Tue 9/5/17	Sat 11/18/17	Tue 4/9/19	Sat 6/22/19
79	D.6.1.3.6	Drainage works from Manhole D607 to D803	75 days	Sun 11/19/17	Thu 2/1/18	Fri 10/18/19	Tue 12/31/19
80	D.6.1.3.7	Swabbing of the Autotoll	90 days	Tue 11/14/17	Sun 2/11/18	Tue 6/18/19	Sun 9/15/19
81	D.6.1.3.8	Construction of bus bay island	45 days	Fri 2/2/18	Sun 3/18/18	Fri 9/6/19	Sun 10/20/19
82	D.6.1.3.9	Testing and commissioning of Autotoll	90 days	Mon 2/12/18	Sat 5/12/18	Mon 9/16/19	Sat 12/14/19
83	D.6.1.3.10	Reconstruction of Concrete Pavement	55 days	Mon 3/19/18	Sat 5/12/18	Mon 10/21/...	Sat 12/14/19
84	D.6.1.3.11	Road Marking	17 days	Sun 5/13/18	Tue 5/29/18	Sun 12/15/19	Tue 12/31/19
85	D.6.1.3.12	Completion of Works	1 day	Tue 12/31/19	Tue 12/31/19	Tue 12/31/19	Tue 12/31/19



Critical Split		Working days		Manual Task		Manual Summary		External Tasks	
Critical tasks		Inactive Milestone		Duration-only		Start-only		External Milestone	
Non-critical Tasks		Inactive Summary		Manual Summary Rollup		Finish-only		Critical	

Section E First Programme

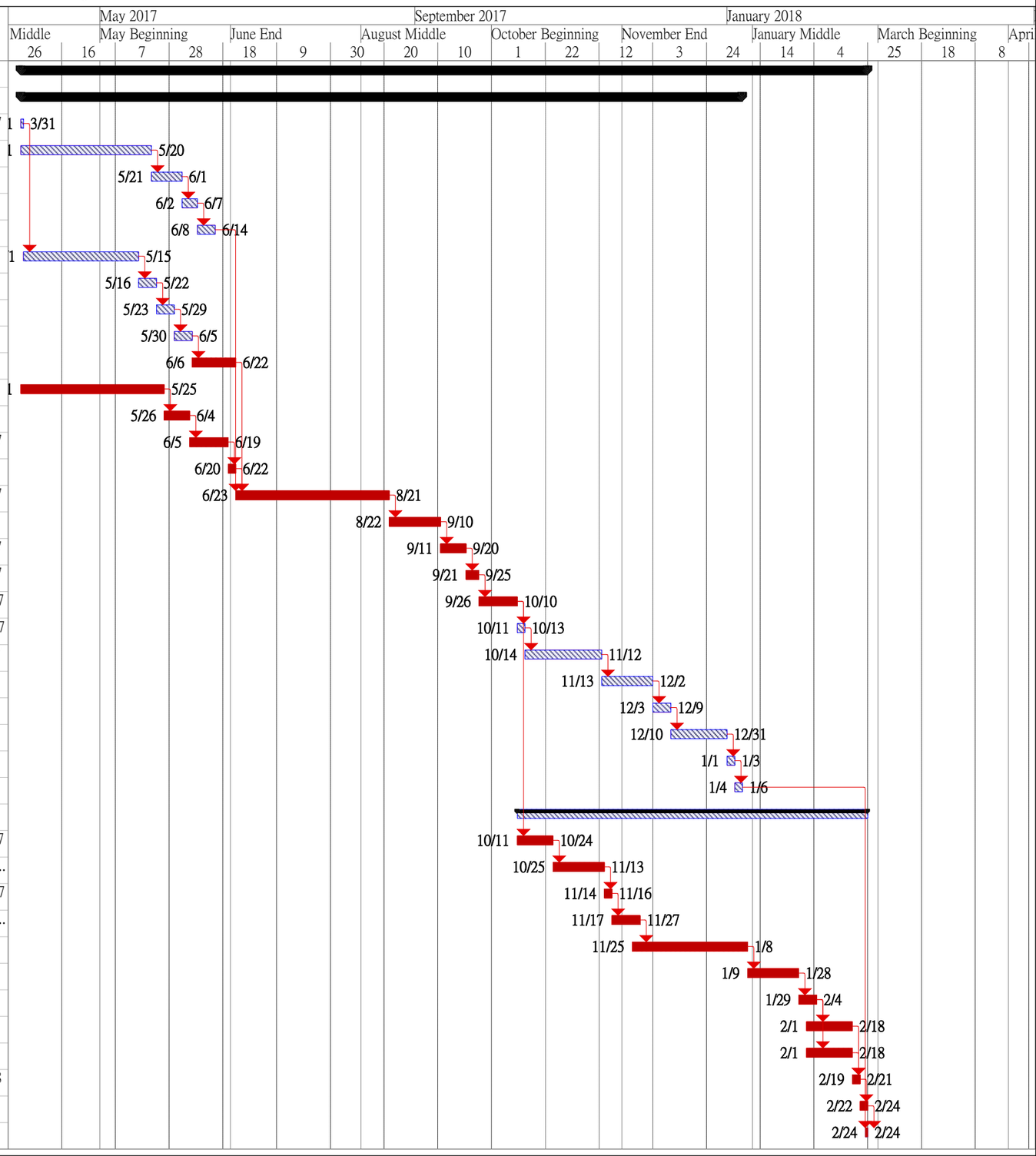
ITEM	ID	TASK NAME	Duration	Early Start	Early Finish	Late Start	Late Finish
1	**E.7.1**	**SECTION E - HIKING TRAILS (JORDAN SECTION & CHOI WAN SECTION)**	**366 days**	**Fri 3/31/17**	**Sat 3/31/18**	**Fri 3/31/17**	**Sat 3/31/18**
2	**E.7.1.1**	**CONSTRUCTION OF HIKING TRAIL (Jordan section)**	**329 days**	**Fri 3/31/17**	**Thu 2/22/18**	**Fri 3/31/17**	**Sat 3/31/18**
3	E.7.1.1.1	Access Date of Portion 7	1 day	Fri 3/31/17	Fri 3/31/17	Wed 6/7/17	Wed 6/7/17
4	E.7.1.1.2	Mobilization of plant, access , equipment, material	60 days	Fri 3/31/17	Mon 5/29/17	Wed 1/31/18	Sat 3/31/18
5	E.7.1.1.3	Submission of Method statement of Soil nailing works	50 days	Sat 4/1/17	Sat 5/20/17	Thu 6/8/17	Thu 7/27/17
6	E.7.1.1.4	Comment of Method statement of soil nailing works	14 days	Sun 5/21/17	Sat 6/3/17	Fri 7/28/17	Thu 8/10/17
7	E.7.1.1.5	Second submission of Method Statement of soil nailing works	7 days	Sun 6/4/17	Sat 6/10/17	Fri 8/11/17	Thu 8/17/17
8	E.7.1.1.6	Approval of Method Statement of soil nailing works	7 days	Sun 6/11/17	Sat 6/17/17	Fri 8/18/17	Thu 8/24/17
9	E.7.1.1.7	Material submission of soil nail system	60 days	Fri 3/31/17	Mon 5/29/17	Wed 5/10/17	Sat 7/8/17
10	E.7.1.1.8	Comment of material submission of soil nail system	14 days	Tue 5/30/17	Mon 6/12/17	Sun 7/9/17	Sat 7/22/17
11	E.7.1.1.9	Second submission of soil nail system	7 days	Tue 6/13/17	Mon 6/19/17	Sun 7/23/17	Sat 7/29/17
12	E.7.1.1.10	Approval of soil nail system	7 days	Tue 6/20/17	Mon 6/26/17	Sun 7/30/17	Sat 8/5/17
13	E.7.1.1.11	Procurement to delivery of soil nails	30 days	Tue 6/27/17	Wed 7/26/17	Sun 8/6/17	Mon 9/4/17
14	E.7.1.1.12	Submission of method statement of excavation of slope	50 days	Fri 3/31/17	Fri 5/19/17	Fri 3/31/17	Fri 5/19/17
15	E.7.1.1.13	Comment of Method Statement of excavation of slope	10 days	Sat 5/20/17	Mon 5/29/17	Sat 5/20/17	Mon 5/29/17
16	E.7.1.1.14	Second submission of method statement of excavation of slope	6 days	Tue 5/30/17	Sun 6/4/17	Tue 5/30/17	Sun 6/4/17
17	E.7.1.1.15	Approval of Method Statement of excavation of slope	7 days	Mon 6/5/17	Sun 6/11/17	Mon 6/5/17	Sun 6/11/17
18	E.7.1.1.16	Construction of Hoarding	10 days	Mon 6/12/17	Wed 6/21/17	Mon 6/12/17	Wed 6/21/17
19	E.7.1.1.17	Excavation of slope and drainage construction	64 days	Thu 6/22/17	Thu 8/24/17	Thu 6/22/17	Thu 8/24/17
20	E.7.1.1.18	Erection of tubular platform for soil nails	8 days	Fri 8/25/17	Fri 9/1/17	Fri 8/25/17	Fri 9/1/17
21	E.7.1.1.19	Setting out of soil nails	3 days	Sat 9/2/17	Mon 9/4/17	Sat 9/2/17	Mon 9/4/17
22	E.7.1.1.20	Construction of soil nails (45nrs)	21 days	Tue 9/5/17	Mon 9/25/17	Tue 9/5/17	Mon 9/25/17
23	E.7.1.1.21	Pull out test	5 days	Tue 9/26/17	Sat 9/30/17	Tue 9/26/17	Sat 9/30/17
24	E.7.1.1.22	Construction of soil nail heads	15 days	Sun 10/1/17	Sun 10/15/17	Sun 10/1/17	Sun 10/15/17
25	E.7.1.1.23	Construction of staircase	30 days	Mon 10/16/...	Tue 11/14/17	Mon 10/16/...	Tue 11/14/17
26	E.7.1.1.24	Construction of hiking trail	60 days	Wed 11/15/...	Sat 1/13/18	Wed 11/15/...	Sat 1/13/18
27	E.7.1.1.25	Construction of Planter walls with planting	30 days	Sun 1/14/18	Mon 2/12/18	Mon 1/29/18	Tue 2/27/18
28	E.7.1.1.26	General tidy up	10 days	Tue 2/13/18	Thu 2/22/18	Wed 3/21/18	Fri 3/30/18
29	**E.7.1.2**	**CONSTRUCTION OF HIKING TRAIL (Choi Wan section)**	**77 days**	**Sun 1/14/18**	**Sat 3/31/18**	**Sun 1/14/18**	**Sat 3/31/18**
30	E.7.1.2.1	Erection of hoarding	14 days	Sun 1/14/18	Sat 1/27/18	Sun 1/14/18	Sat 1/27/18
31	E.7.1.2.2	Construction of hiking trail	61 days	Sun 1/28/18	Thu 3/29/18	Sun 1/28/18	Thu 3/29/18
32	E.7.1.2.3	Construction of planter walls with planting	30 days	Tue 2/13/18	Wed 3/14/18	Wed 2/28/18	Thu 3/29/18
33	E.7.1.2.4	General tidy up	2 days	Fri 3/30/18	Sat 3/31/18	Fri 3/30/18	Sat 3/31/18
34	E.7.1.2.5	Completion of Works	1 day	Sat 3/31/18	Sat 3/31/18	Sat 3/31/18	Sat 3/31/18



Critical Split	Working days	Manual Task	Manual Summary	External Tasks	
Critical tasks	Inactive Milestone	Duration-only	Start-only	External Milestone	
Non-critical Tasks	Inactive Summary	Manual Summary Rollup	Finish-only	Critical	

Section F First Programme

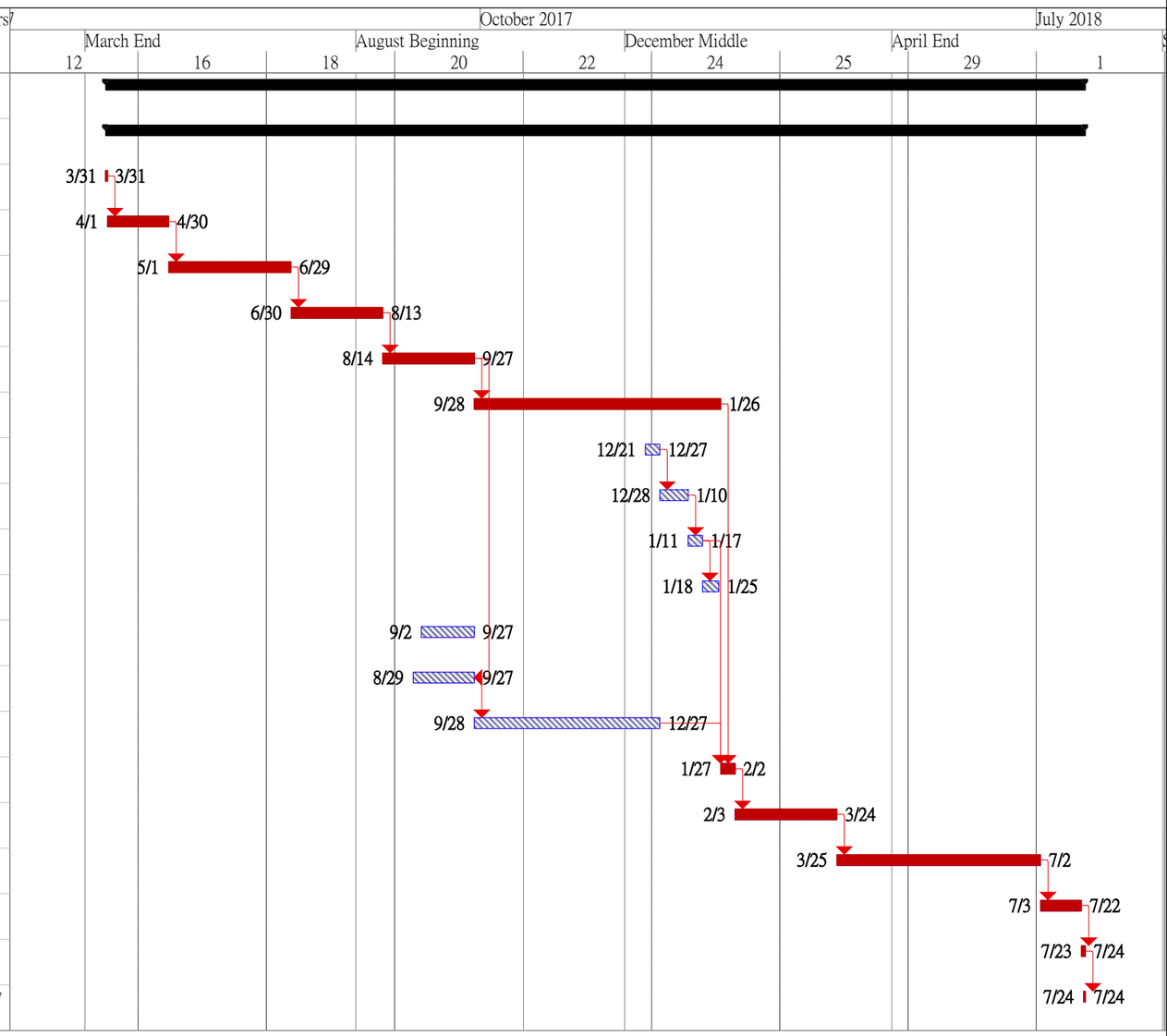
ITEM	ID	TASK NAME	Duration	Early Start	Early Finish	Late Start	Late Finish
1	**F.8.1**	**SECTION F - ENTRUSTED SLOPES (SITE A & SITE B)**	**331 days**	**Fri 3/31/17**	**Sat 2/24/18**	**Fri 3/31/17**	**Sat 2/24/18**
2	**F.8.1.1**	**CONSTRUCTION OF SOIL NAILS IN SITE B**	**282 days**	**Fri 3/31/17**	**Sat 1/6/18**	**Fri 3/31/17**	**Fri 2/23/18**
3	F.8.1.1.1	Access Date of Portion 8	1 day	Fri 3/31/17	Fri 3/31/17	Wed 4/12/17	Wed 4/12/17
4	F.8.1.1.2	Submission of method statement of soil nailing works	51 days	Fri 3/31/17	Sat 5/20/17	Sat 4/8/17	Sun 5/28/17
5	F.8.1.1.3	Comment of method statement of soil nailing works	12 days	Sun 5/21/17	Thu 6/1/17	Mon 5/29/17	Fri 6/9/17
6	F.8.1.1.4	Second submission of method statement of soil nailing works	6 days	Fri 6/2/17	Wed 6/7/17	Sat 6/10/17	Thu 6/15/17
7	F.8.1.1.5	Approval of method statement of soil nailing works	7 days	Thu 6/8/17	Wed 6/14/17	Fri 6/16/17	Thu 6/22/17
8	F.8.1.1.6	Material submission of soil nailing system	45 days	Sat 4/1/17	Mon 5/15/17	Thu 4/13/17	Sat 5/27/17
9	F.8.1.1.7	comment of the material submission of soil nailing system	7 days	Tue 5/16/17	Mon 5/22/17	Sun 5/28/17	Sat 6/3/17
10	F.8.1.1.8	Second submission of material of soil nailing system	7 days	Tue 5/23/17	Mon 5/29/17	Sun 6/4/17	Sat 6/10/17
11	F.8.1.1.9	Approval of material for soil nailing system	7 days	Tue 5/30/17	Mon 6/5/17	Sun 6/11/17	Sat 6/17/17
12	F.8.1.1.10	Procurement to delivery of soil nails system	17 days	Tue 6/6/17	Thu 6/22/17	Sun 6/18/17	Tue 7/4/17
13	F.8.1.1.11	General site clrearance	56 days	Fri 3/31/17	Thu 5/25/17	Fri 3/31/17	Thu 5/25/17
14	F.8.1.1.12	Tree Survey for slope features 11NE-D/C709, C714, C711	10 days	Fri 5/26/17	Sun 6/4/17	Fri 5/26/17	Sun 6/4/17
15	F.8.1.1.13	Erection of tubular Scaffold for slope 11NE-D/C709, C714	15 days	Mon 6/5/17	Mon 6/19/17	Mon 6/5/17	Mon 6/19/17
16	F.8.1.1.14	Setting out of soil nails	3 days	Tue 6/20/17	Thu 6/22/17	Tue 6/20/17	Thu 6/22/17
17	F.8.1.1.15	Construction of soil nail (198nrs)	60 days	Fri 6/23/17	Mon 8/21/17	Fri 6/23/17	Mon 8/21/17
18	F.8.1.1.16	Construction of soil nail heads	20 days	Tue 8/22/17	Sun 9/10/17	Tue 8/22/17	Sun 9/10/17
19	F.8.1.1.17	Construction of sprayed concrete	10 days	Mon 9/11/17	Wed 9/20/17	Mon 9/11/17	Wed 9/20/17
20	F.8.1.1.18	Removal of tubular scaffold and tidy up	5 days	Thu 9/21/17	Mon 9/25/17	Thu 9/21/17	Mon 9/25/17
21	F.8.1.1.19	Erection of tubular scaffold for slope feature 11NE-D/C711	15 days	Tue 9/26/17	Tue 10/10/17	Tue 9/26/17	Tue 10/10/17
22	F.8.1.1.20	Setting out of soil nails	3 days	Wed 10/11/...	Fri 10/13/17	Tue 11/28/17	Thu 11/30/17
23	F.8.1.1.21	Construction of soil nails (92nrs)	30 days	Sat 10/14/17	Sun 11/12/17	Fri 12/1/17	Sat 12/30/17
24	F.8.1.1.22	Construction of soil nails heads	20 days	Mon 11/13/...	Sat 12/2/17	Sun 12/31/17	Fri 1/19/18
25	F.8.1.1.23	Removal of tubular scaffold and tidy up	7 days	Sun 12/3/17	Sat 12/9/17	Sat 1/20/18	Fri 1/26/18
26	F.8.1.1.24	Laying of non-biodegradable control mat	22 days	Sun 12/10/17	Sun 12/31/17	Sat 1/27/18	Sat 2/17/18
27	F.8.1.1.25	hydroseeding of slope	3 days	Mon 1/1/18	Wed 1/3/18	Sun 2/18/18	Tue 2/20/18
28	F.8.1.1.26	General tidy up site	3 days	Thu 1/4/18	Sat 1/6/18	Wed 2/21/18	Fri 2/23/18
29	**F.8.1.2**	**CONSTRUCTION OF SOIL NAILS IN SITE A**	**137 days**	**Wed 10/11...**	**Sat 2/24/18**	**Wed 10/11...**	**Sat 2/24/18**
30	F.8.1.2.1	Erection of Tubular Platform	14 days	Wed 10/11/...	Tue 10/24/17	Wed 10/11/...	Tue 10/24/17
31	F.8.1.2.2	Stripping of 500mm thick top soil	20 days	Wed 10/25/...	Mon 11/13/...	Wed 10/25/...	Mon 11/13/...
32	F.8.1.2.3	Setting out of soil nails	3 days	Tue 11/14/17	Thu 11/16/17	Tue 11/14/17	Thu 11/16/17
33	F.8.1.2.4	Pull Out Test (4 nrs)	11 days	Fri 11/17/17	Mon 11/27/...	Fri 11/17/17	Mon 11/27/...
34	F.8.1.2.5	Construction of soil nail (162nrs)	45 days	Sat 11/25/17	Mon 1/8/18	Sat 11/25/17	Mon 1/8/18
35	F.8.1.2.6	Construction of soil nail heads	20 days	Tue 1/9/18	Sun 1/28/18	Tue 1/9/18	Sun 1/28/18
36	F.8.1.2.7	Removal of tubular scaffold and tidy up	7 days	Mon 1/29/18	Sun 2/4/18	Mon 1/29/18	Sun 2/4/18
37	F.8.1.2.8	Laying of biodegradable control mat	18 days	Thu 2/1/18	Sun 2/18/18	Thu 2/1/18	Sun 2/18/18
38	F.8.1.2.9	Construction of granite stone wall	18 days	Thu 2/1/18	Sun 2/18/18	Thu 2/1/18	Sun 2/18/18
39	F.8.1.2.10	Hydroseeding of slope	3 days	Mon 2/19/18	Wed 2/21/18	Mon 2/19/18	Wed 2/21/18
40	F.8.1.2.11	General tidy up site	3 days	Thu 2/22/18	Sat 2/24/18	Thu 2/22/18	Sat 2/24/18
41	F.8.1.2.12	Completion of Works	1 day	Sat 2/24/18	Sat 2/24/18	Sat 2/24/18	Sat 2/24/18



Critical Split	Working days	Manual Task	Manual Summary	External Tasks	
Critical tasks	Inactive Milestone	Duration-only	Start-only	External Milestone	
Non-critical Tasks	Inactive Summary	Manual Summary Rollup	Finish-only	Critical	

Section F1 First Programme

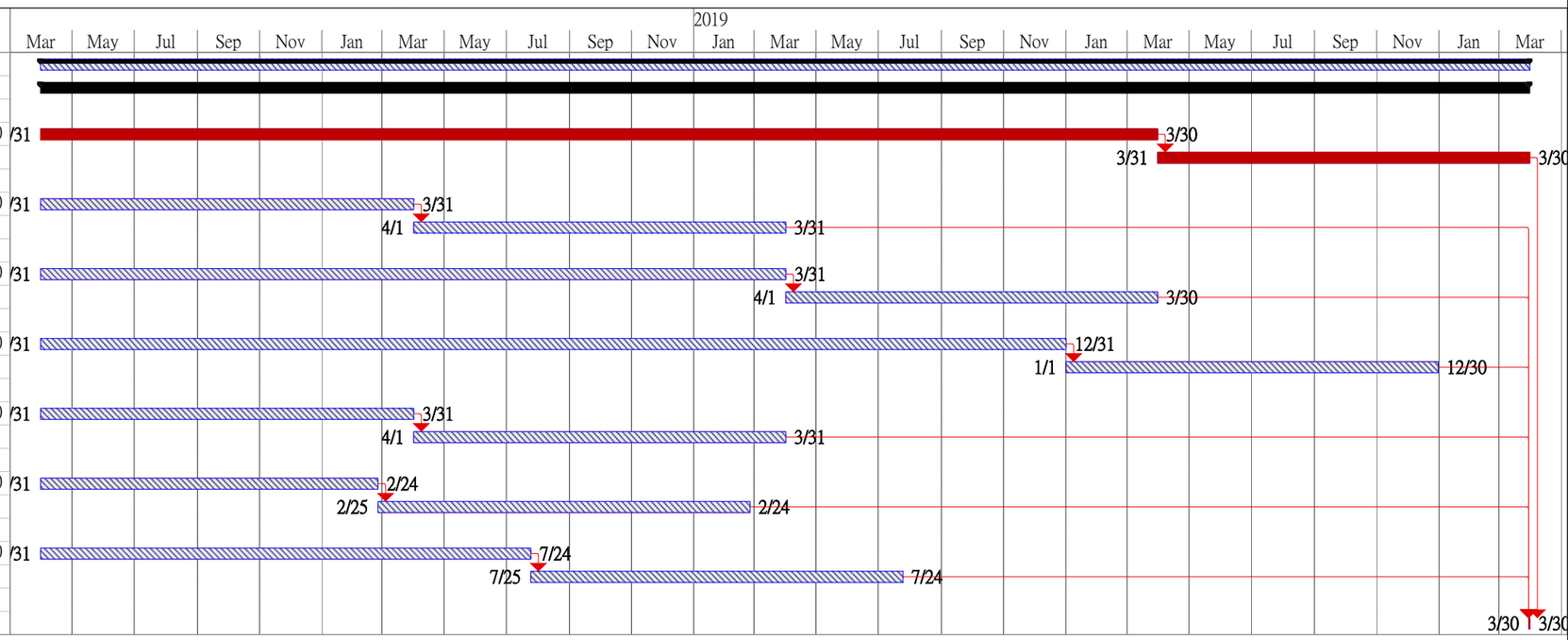
ITEM	ID	TASK NAME	Duration	Early Start	Early Finish	Late Start	Late Finish	Predecessors
1	**F1.9.1**	**SECTION F1 - FLEXIBLE BARRIER**	**481 days**	**Fri 3/31/17**	**Tue 7/24/18**	**Fri 3/31/17**	**Tue 7/24/18**	
2	**F1.9.1.1**	**CONSTRUCTION OF Flexible barriers near Tiu King Leng**	**481 days**	**Fri 3/31/17**	**Tue 7/24/18**	**Fri 3/31/17**	**Tue 7/24/18**	
3	F1.9.1.1.1	Access Date for Portion 9	1 day	Fri 3/31/17	Fri 3/31/17	Fri 3/31/17	Fri 3/31/17	
4	F1.9.1.1.2	Material and design submission for flexible barrier systems	30 days	Sat 4/1/17	Sun 4/30/17	Sat 4/1/17	Sun 4/30/17	3
5	F1.9.1.1.3	Comment to material and design submission for flexible barrier system	60 days	Mon 5/1/17	Thu 6/29/17	Mon 5/1/17	Thu 6/29/17	4
6	F1.9.1.1.4	Address comment and make 2nd submission	45 days	Fri 6/30/17	Sun 8/13/17	Fri 6/30/17	Sun 8/13/17	5
7	F1.9.1.1.5	Approval of material and design submission of flexible barrier system	45 days	Mon 8/14/17	Wed 9/27/17	Mon 8/14/17	Wed 9/27/17	6
8	F1.9.1.1.6	Procurement of flexible barriers	121 days	Thu 9/28/17	Fri 1/26/18	Thu 9/28/17	Fri 1/26/18	7
9	F1.9.1.1.7	Submission of method statement for Flexible barrier construction	7 days	Thu 12/21/17	Wed 12/27/...	Sat 12/30/17	Fri 1/5/18	
10	F1.9.1.1.8	Comment of method statement for flexible barrier construction	14 days	Thu 12/28/17	Wed 1/10/18	Sat 1/6/18	Fri 1/19/18	9
11	F1.9.1.1.9	Second submission of method statement for flexible barrier	7 days	Thu 1/11/18	Wed 1/17/18	Sat 1/20/18	Fri 1/26/18	10
12	F1.9.1.1.10	Approval of method statement of construction of flexible barrier	8 days	Thu 1/18/18	Thu 1/25/18	Tue 7/17/18	Tue 7/24/18	11
13	F1.9.1.1.11	Tree Survey	26 days	Sat 9/2/17	Wed 9/27/17	Fri 6/29/18	Tue 7/24/18	
14	F1.9.1.1.12	Ground Investigation works	30 days	Tue 8/29/17	Wed 9/27/17	Thu 9/28/17	Fri 10/27/17	7FF
15	F1.9.1.1.13	Construction of Baffles	91 days	Thu 9/28/17	Wed 12/27/...	Sat 10/28/17	Fri 1/26/18	14
16	F1.9.1.1.14	General site clrearance for Flexible barriers	7 days	Sat 1/27/18	Fri 2/2/18	Sat 1/27/18	Fri 2/2/18	8,11,15
17	F1.9.1.1.15	Erection of tubular platform for flexible barrier construction	50 days	Sat 2/3/18	Sat 3/24/18	Sat 2/3/18	Sat 3/24/18	16
18	F1.9.1.1.16	Erection of flexible barriers	100 days	Sun 3/25/18	Mon 7/2/18	Sun 3/25/18	Mon 7/2/18	17
19	F1.9.1.1.17	Removal of platform	20 days	Tue 7/3/18	Sun 7/22/18	Tue 7/3/18	Sun 7/22/18	18
20	F1.9.1.1.18	General tidy up	2 days	Mon 7/23/18	Tue 7/24/18	Mon 7/23/18	Tue 7/24/18	19
21	F1.9.1.1.19	Completion of works	1 day	Tue 7/24/18	Tue 7/24/18	Tue 7/24/18	Tue 7/24/18	20FS-1 day



Critical Split	Working days	Manual Task	Manual Summary	External Tasks
Critical tasks	Inactive Milestone	Duration-only	Start-only	External Milestone
Non-critical Tasks	Inactive Summary	Manual Summary Rollup	Finish-only	Critical

Section G First Programme

ITEM	ID	TASK NAME	Duration	Early Start	Early Finish	Late Start	Late Finish
1	G.1	SECTION G	1461 days	Fri 3/31/17	Tue 3/30/21	Fri 3/31/17	Tue 3/30/21
2	G.1.1	Landscape works	1461 days	Fri 3/31/17	Tue 3/30/21	Fri 3/31/17	Tue 3/30/21
3							
4	G.1.1.1	Landscape works in Section A	1096 days	Fri 3/31/17	Mon 3/30/20	Fri 3/31/17	Mon 3/30/20
5	G.1.1.2	Establishment works in Sectior	365 days	Tue 3/31/20	Tue 3/30/21	Tue 3/31/20	Tue 3/30/21
6							
7	G.1.1.3	Landscape works in Section B	366 days	Fri 3/31/17	Sat 3/31/18	Sun 3/31/19	Mon 3/30/20
8	G.1.1.4	Establishment works in Sectior	365 days	Sun 4/1/18	Sun 3/31/19	Tue 3/31/20	Tue 3/30/21
9							
10	G.1.1.5	Landscape works in Section C	731 days	Fri 3/31/17	Sun 3/31/19	Sat 3/31/18	Mon 3/30/20
11	G.1.1.6	Establishment works in Sectior	365 days	Mon 4/1/19	Mon 3/30/20	Tue 3/31/20	Tue 3/30/21
12							
13	G.1.1.7	Landscape works in Section D	1006 days	Fri 3/31/17	Tue 12/31/19	Thu 6/29/17	Mon 3/30/20
14	G.1.1.8	Establishment works in Sectior	365 days	Wed 1/1/20	Wed 12/30/...	Tue 3/31/20	Tue 3/30/21
15							
16	G.1.1.9	Landscape works in Section E	366 days	Fri 3/31/17	Sat 3/31/18	Sun 3/31/19	Mon 3/30/20
17	G.1.1.10	Establishment works in Sectior	365 days	Sun 4/1/18	Sun 3/31/19	Tue 3/31/20	Tue 3/30/21
18							
19	G.1.1.11	Landscape works in Section F	331 days	Fri 3/31/17	Sat 2/24/18	Sun 5/5/19	Mon 3/30/20
20	G.1.1.12	Establishment works in Sectior	365 days	Sun 2/25/18	Sun 2/24/19	Tue 3/31/20	Tue 3/30/21
21							
22	G.1.1.13	Landscape works in Section F1	481 days	Fri 3/31/17	Tue 7/24/18	Thu 12/6/18	Mon 3/30/20
23	G.1.1.14	Establishment works in Sectior	365 days	Wed 7/25/18	Wed 7/24/19	Tue 3/31/20	Tue 3/30/21
24							
25	G.1.2	Completion of Works	1 day	Tue 3/30/21	Tue 3/30/21	Tue 3/30/21	Tue 3/30/21



Critical Split		Working days		Manual Task		Manual Summary		External Tasks	
Critical tasks		Inactive Milestone		Duration-only		Start-only		External Milestone	
Non-critical Tasks		Inactive Summary		Manual Summary Rollup		Finish-only		Critical Split	

Appendix D

Monitoring Locations for Impact Monitoring

HVS in AMS-1 for 24-Hour TSP

AMS-1

AMS-2

AMS-3

N

Legend

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

0 25 50 75 100 125
METRES
1 : 5000

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

Consultant

ARUP

Contract No. and Title

Agreement No. CE 18/2012(CE)

Development of Anderson Road Quarry - Investigation

Drawing title

Locations of Construction Dust Monitoring (Sheet 1 of 3)

Drawing no.	Rev.
227724/E/1045	B

Drawn	Date	Checked	Approved
GL	03/14	TC	ST

Scale: 1:5000 @A3

Status: PRELIMINARY

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

Printed by : 4/8/2014
Filename : G:\env\project\227724-50\13 Drawing Deliverables\08 EM&A\02 Revised draft\Air\227724_E_1045_B - Locations of Construction Dust Monitoring (Sheet 1 of 3).dgn

AMS-3

AMS-4

AMS-5

AMS-6

HVS in AMS-5 for 24-Hour TSP

HVS in AMS-6 for 24-Hour TSP

Legend

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

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

Consultant

ARUP

Contract No. and Title

Agreement No. CE 18/2012(CE)

Development of Anderson Road Quarry - Investigation

Drawing title

Locations of Construction Dust Monitoring (Sheet 2 of 3)

Drawing no.	Rev.
227724/E/1046	B

Drawn	Date	Checked	Approved
GL	03/14	TC	ST

Scale: 1:5000 @A3

Status: PRELIMINARY

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

0 25 50 75 100 125
METRES
(1 : 5000

Printed by : 4/8/2014
Filename : G:\env\project\227724-50\13 Drawing Deliverables\08 EM&A\02 Revised draft\Air\227724_E_1046_B - Locations of Construction Dust Monitoring (Sheet 2 of 3).dgn

Legend

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

AMS-5

AMS-6

AMS-7

HVS in AMS-7 for 24-Hour TSP

0 20 40 60 80 100
METRES
1 : 5000

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

Consultant

ARUP

Contract No. and Title

Agreement No. CE 18/2012(CE)

Development of
Anderson Road Quarry -
Investigation

Drawing title

Locations of Construction
Dust Monitoring
(Sheet 3 of 3)

Drawing no.	Rev.
227724/E/1047	B

Drawn	Date	Checked	Approved
GL	03/14	TC	ST

Scale: 1:5000 @A3

Status: PRELIMINARY

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

Printed by : 4/8/2014
Filename : G:\env\project\227724-50\13 Drawing Deliverables\08 EM&A\02 Revised draft\Air\227724_E_1047_B - Locations of Construction Dust Monitoring (Sheet 3 of 3).dgn

Building layout is assumed for assessment purpose

NMS-3 (Site C2 - R102)

Building layout is assumed for assessment purpose

NMS-1 (Site C2 - School 05)

Proposed NMS-4 (On Tat House)

NMS-2 (Site E - School)

Building layout is assumed for assessment purpose

Legend

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

0 25 50 75 100 125
METRES
1 : 5000

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

Consultant
ARUP

Contract No. and Title
Agreement No. CE 18/2012(CE)
Development of Anderson Road Quarry - Investigation

Drawing title
Locations of Noise Monitoring

Drawing no.		Rev.
227724/E/2400		C
Drawn GL	Date 05/14	Checked TC	Approved ST
Scale 1:5000 @A3		Status PRELIMINARY	

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

Printed by : 6/3/2014
Filename : \\HKGNTS22\acoustic\env\project\227724-50\13 Drawing Deliverables\08 EM&A\03 Final Noise\227724_E_2400_C - Locations of Noise Monitoring.dgn

Appendix E

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

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Chi Yum Ching She
Location ID : AMS1

Date of Calibration: 19-Apr-17
Next Calibration Date: 19-Jun-17
Technician: Mr. Ip Ka Hing

CONDITIONS

Sea Level Pressure (hPa)	1009.1	Corrected Pressure (mm Hg)	756.825
Temperature (ºC)	26.7	Temperature (K)	300

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.11965
Model->	5025A	Qstd Intercept ->	-0.02696
Serial # ->	1941		

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	6.1	6.1	12.2	1.652	53	52.74	Slope = 34.5668
13	4.8	4.8	9.6	1.467	49	48.76	Intercept = -3.1911
10	3.7	3.7	7.4	1.290	42	41.79	Corr. coeff. = 0.9968
7	2.4	2.4	4.8	1.041	33	32.84	
5	1.5	1.5	3	0.826	25	24.88	

Calculations :

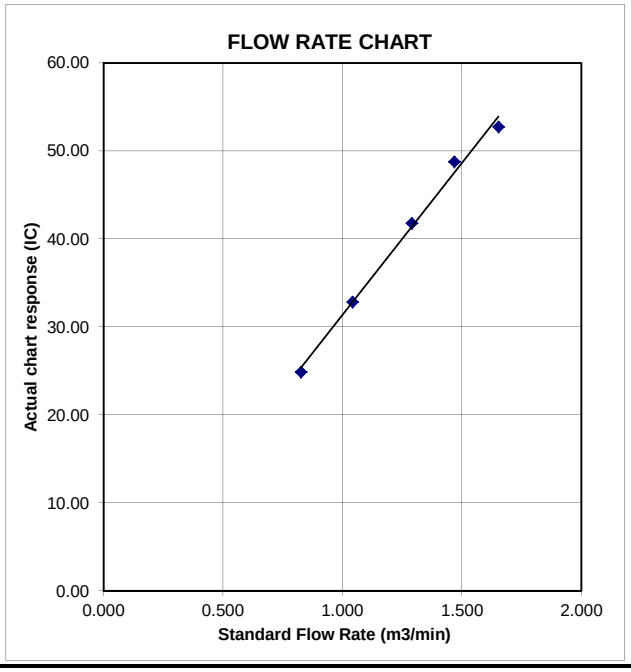
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

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

For subsequent calculation of sampler flow:

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

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



TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Chi Yum Ching She
Location ID : AMS1

Date of Calibration: 16-Jun-17
Next Calibration Date: 16-Aug-17
Technician: Mr. Ip Ka Hing

CONDITIONS

Sea Level Pressure (hPa)	1005.1	Corrected Pressure (mm Hg)	753.825
Temperature (°C)	29.0	Temperature (K)	302

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.11965
Model->	5025A	Qstd Intercept ->	-0.02696
Serial # ->	1941		

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	6	6	12	1.630	54	53.42	Slope = 35.4501
13	4.8	4.8	9.6	1.459	49	48.48	Intercept = -3.8656
10	3.6	3.6	7.2	1.265	42	41.55	Corr. coeff. = 0.9977
7	2.4	2.4	4.8	1.035	32	31.66	
5	1.4	1.4	2.8	0.794	25	24.73	

Calculations :

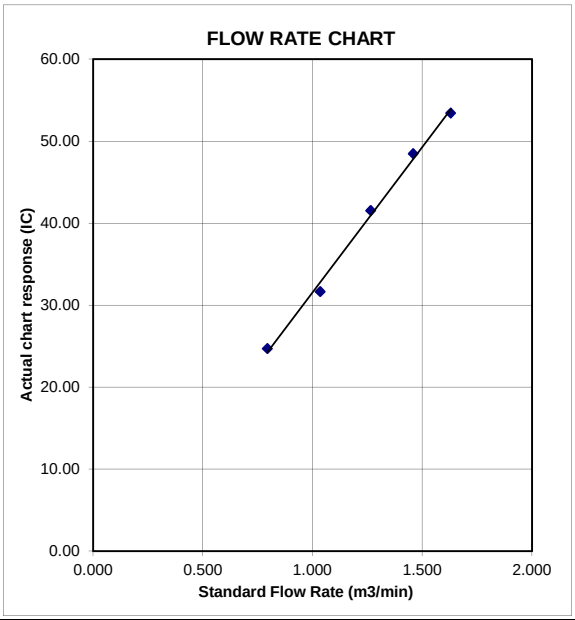
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

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

For subsequent calculation of sampler flow:

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

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



TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location :	Oi Tat House	Date of Calibration:	23-May-17
Location ID :	AMS 5	Next Calibration Date:	23-Jul-17
		Technician:	.

CONDITIONS

Sea Level Pressure (hPa)	1007.8	Corrected Pressure (mm Hg)	755.85
Temperature (°C)	26.1	Temperature (K)	299

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.11965
Model->	5025A	Qstd Intercept ->	-0.02696
Serial # ->	1941		

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	6.3	6.3	12.6	1.680	52	51.76	Slope = 31.4580
13	5	5	10	1.498	44	43.80	Intercept = -2.4072
10	3.9	3.9	7.8	1.324	39	38.82	Corr. coeff. = 0.9943
7	2.5	2.5	5	1.063	30	29.86	
5	1.4	1.4	2.8	0.799	24	23.89	

Calculations :

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

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

Qstd = standard flow rate

IC = corrected chart respones

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)

Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

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

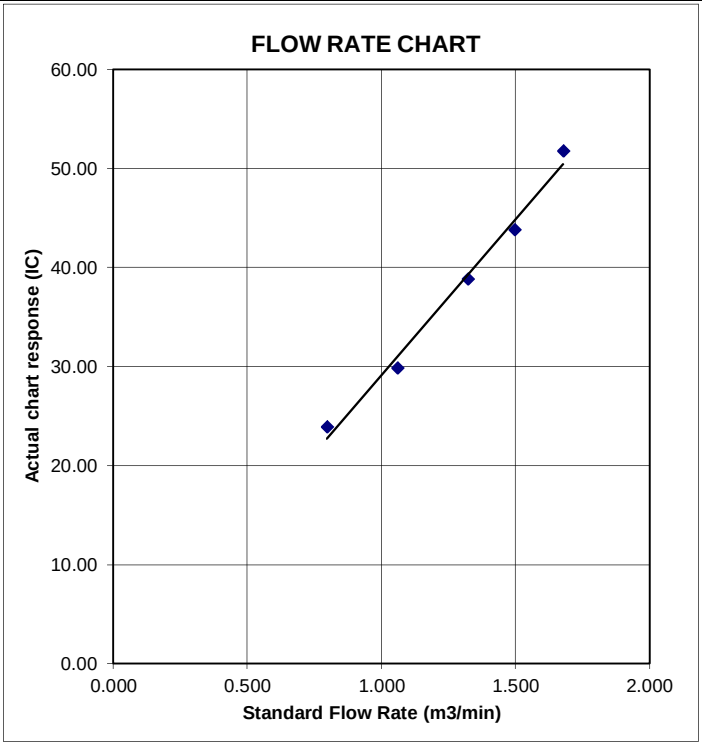
m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure



TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Hau Tat House
Location ID : AMS 6

Date of Calibration: 23-May-17
Next Calibration Date: 23-Jul-17
Technician: Mr. Ip Ka Hing

CONDITIONS

Sea Level Pressure (hPa)	1007.8	Corrected Pressure (mm Hg)	755.85
Temperature (°C)	26.1	Temperature (K)	299

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.11965
Model->	5025A	Qstd Intercept ->	-0.02696
Serial # ->	1941		

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	6.1	6.1	12.2	1.653	56	55.74	Slope = 32.6359
13	4.9	4.9	9.8	1.483	49	48.78	Intercept = 1.1019
10	3.9	3.9	7.8	1.324	44	43.80	Corr. coeff. = 0.9980
7	2.4	2.4	4.8	1.042	36	35.84	
5	1.5	1.5	3	0.826	28	27.87	

Calculations :

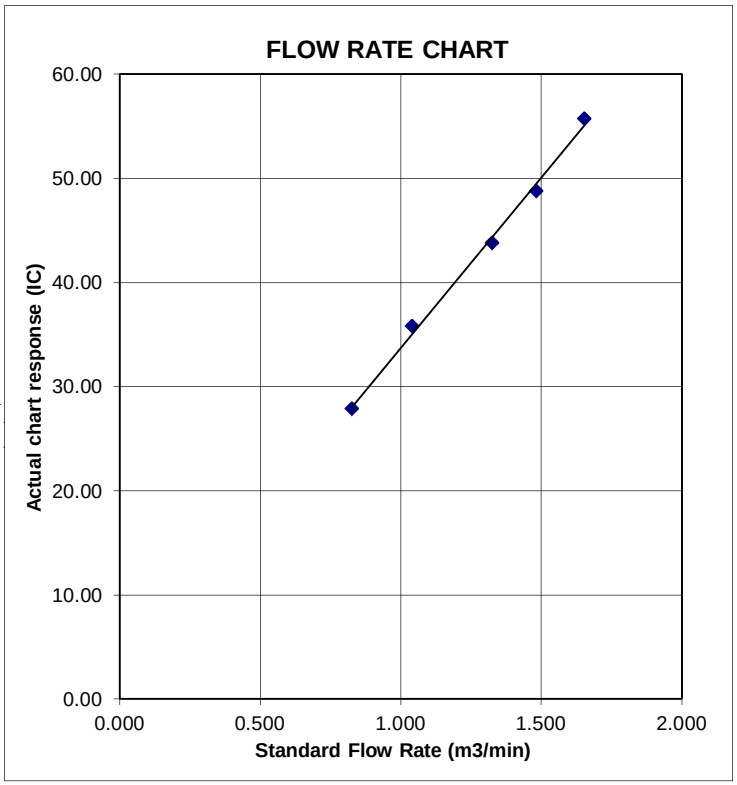
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

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

For subsequent calculation of sampler flow:

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

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



TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Ma Yau Tong Village
Location ID : AMS 7

Date of Calibration: 17-Apr-17
Next Calibration Date: 17-Jun-17
Technician: Mr. Ip Ka Hing

CONDITIONS

Sea Level Pressure (hPa)	1010.9	Corrected Pressure (mm Hg)	758.175
Temperature (°C)	26.0	Temperature (K)	299

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.11965
Model->	5025A	Qstd Intercept ->	-0.02696
Serial # ->	1941		

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	5.8	5.8	11.6	1.615	51	50.85	Slope = 37.0402
13	4.6	4.6	9.2	1.440	45	44.87	Intercept = -9.0774
10	3.6	3.6	7.2	1.275	38	37.89	Corr. coeff. = 0.9948
7	2.3	2.3	4.6	1.022	27	26.92	
5	1.5	1.5	3	0.828	23	22.93	

Calculations :

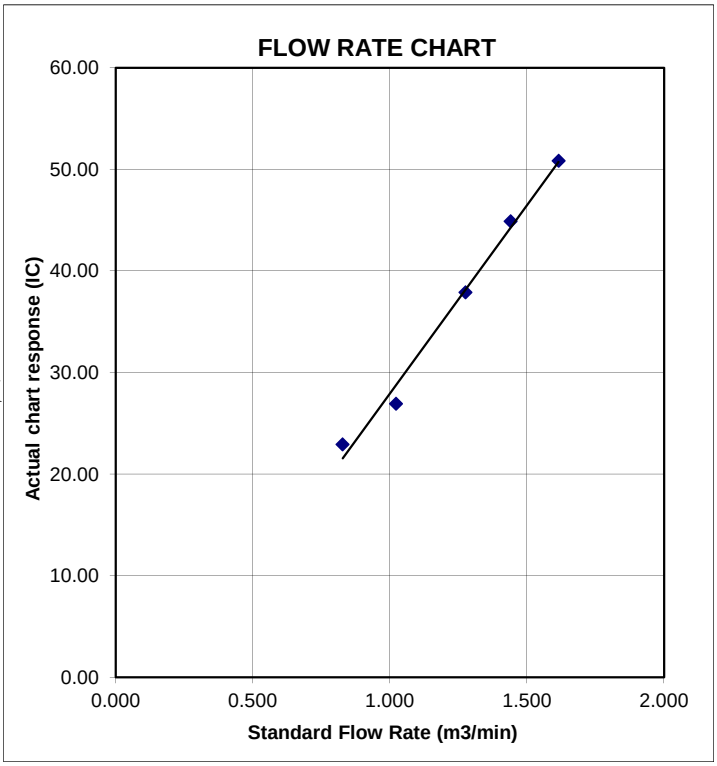
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

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

For subsequent calculation of sampler flow:

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

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



TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Ma Yau Tong Village
Location ID : AMS 7

Date of Calibration: 16-Jun-17
Next Calibration Date: 16-Aug-17
Technician: Mr. Ip Ka Hing

CONDITIONS

Sea Level Pressure (hPa)	1005.1	Corrected Pressure (mm Hg)	753.825
Temperature (°C)	29.0	Temperature (K)	302

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.11965
Model->	5025A	Qstd Intercept ->	-0.02696
Serial # ->	1941		

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	5.9	5.9	11.8	1.616	51	50.45	Slope = 36.0332
13	4.6	4.6	9.2	1.428	45	44.52	Intercept = -7.5498
10	3.5	3.5	7	1.248	38	37.59	Corr. coeff. = 0.9977
7	2.3	2.3	4.6	1.014	28	27.70	
5	1.4	1.4	2.8	0.794	22	21.76	

Calculations :

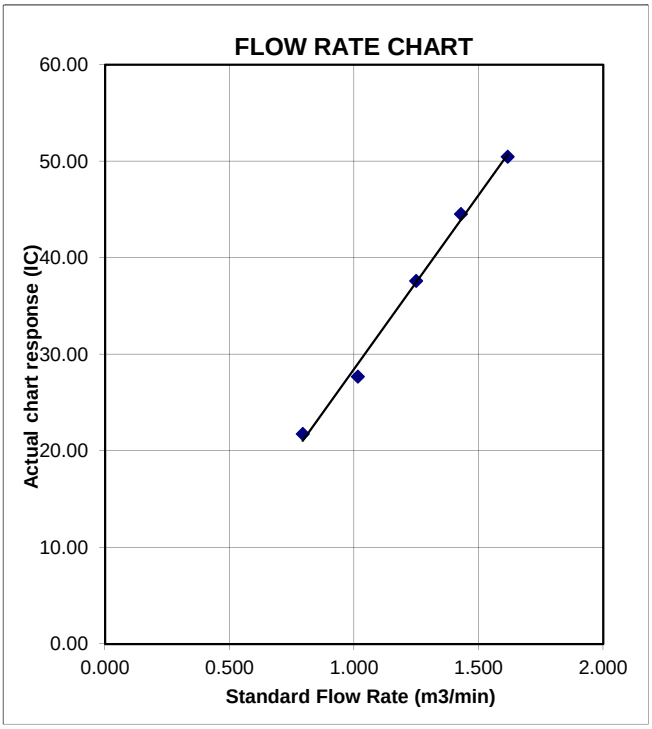
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

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

For subsequent calculation of sampler flow:

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

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



ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

SUB-CONTRACTING REPORT

CONTACT	: MR BEN TAM	WORK ORDER	: **HK1716578**
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 DATE RECEIVED DATE OF ISSUE	: 1 : 20-APR-2017 : 25-APR-2017
PROJECT	: ----	NO. OF SAMPLES CLIENT ORDER	: 1 : ----

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
1/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	: HK1716578
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.
HK1716578-001	S/N: 366418	AIR	20-APR-2017	S/N: 366418

Equipment Verification Report (TSP)

Equipment Calibrated:

Type:	Laser Dust monitor
Manufacturer:	Sibata LD-3B
Serial No.	366418
Equipment Ref:	EQ108
Job Order	HK1716578

Standard Equipment:

Standard Equipment:	Higher Volume Sampler
Location & Location ID:	AUES office (calibration room)
Equipment Ref:	HVS 018
Last Calibration Date:	23 February 2017

Equipment Verification Results:

Calibration Date: 16 March 2017

Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in mg/m³ (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/60min)
2hr02min	09:58 ~ 12:00	17.8	1016.4	0.037	2059	16.9
2hr07min	12:05 ~ 14:12	17.8	1016.4	0.031	1694	13.3
2hr02min	14:20 ~ 16:22	17.8	1016.4	0.026	1351	11.0

Sensitivity Adjustment Scale Setting (Before Calibration) 680 (CPM)

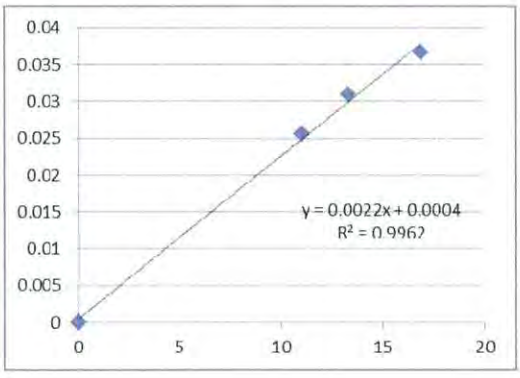
Sensitivity Adjustment Scale Setting (After Calibration) 681 (CPM)

Linear Regression of Y or X

Slope (K-factor): 0.0022

Correlation Coefficient (R) 0.9981

Date of Issue 20 March 2017



Remarks:

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

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

Operator : Martin Li Signature : Date : 20 March 2017

QC Reviewer : Ben Tam Signature : Date : 20 March 2017

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location :	Gold King Industrial Building, Kwai Chung	Date of Calibration:	23-Feb-17
Location ID :	Calibration Room	Next Calibration Date:	23-May-17

CONDITIONS

Sea Level Pressure (hPa)	1017.4	Corrected Pressure (mm Hg)	763.05
Temperature (°C)	17.9	Temperature (K)	291

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.00411
Model->	5025A	Qstd Intercept ->	-0.03059
Calibration Date->	14-Mar-16	Expiry Date->	14-Mar-17

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	6.2	6.2	12.4	1.797	56	56.79	Slope = 36.1509
13	5	5	10.0	1.616	49	49.69	Intercept = -8.0555
10	3.8	3.8	7.6	1.410	43	43.61	Corr. coeff. = 0.9984
8	2.4	2.4	4.8	1.124	33	33.47	
5	1.4	1.4	2.8	0.862	22	22.31	

Calculations :

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

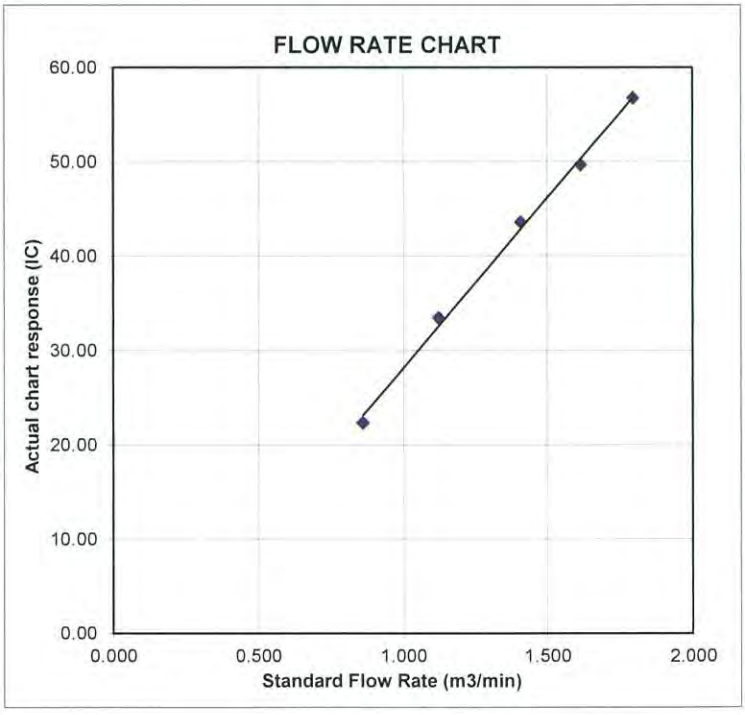
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

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

For subsequent calculation of sampler flow:

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

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



ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

SUB-CONTRACTING REPORT

CONTACT	: MR BEN TAM	WORK ORDER	: **HK1716577**
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 DATE RECEIVED DATE OF ISSUE	: 1 : 20-APR-2017 : 25-APR-2017
PROJECT	: ----	NO. OF SAMPLES CLIENT ORDER	: 1 : ----

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
1/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	: HK1716577
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.
HK1716577-001	S/N: 366407	AIR	20-APR-2017	S/N: 366407

Equipment Verification Report (TSP)

Equipment Calibrated:

Type:	Laser Dust monitor
Manufacturer:	Sibata LD-3B
Serial No.	366407
Equipment Ref:	EQ107
Job Order	HK1716577

Standard Equipment:

Standard Equipment:	Higher Volume Sampler
Location & Location ID:	AUES office (calibration room)
Equipment Ref:	HVS 018
Last Calibration Date:	23 February 2017

Equipment Verification Results:

Testing Date: 16 March 2017

Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in mg/m³ (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/60min)
2hr02min	09:58 ~ 12:00	17.8	1016.4	0.037	2047	16.8
2hr07min	12:05 ~ 14:12	17.8	1016.4	0.031	1678	13.2
2hr02min	14:20 ~ 16:22	17.8	1016.4	0.026	1451	11.9

Sensitivity Adjustment Scale Setting (Before Calibration) 569 (CPM)

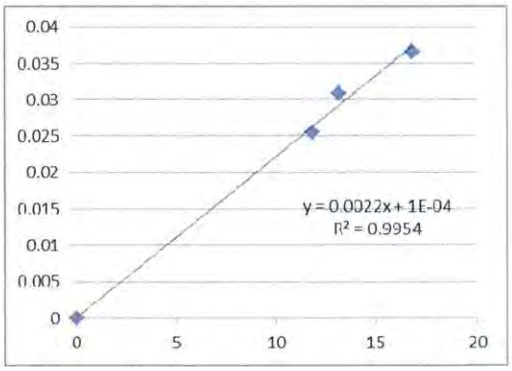
Sensitivity Adjustment Scale Setting (After Calibration) 569 (CPM)

Linear Regression of Y or X

Slope (K-factor): 0.0022

Correlation Coefficient (R) 0.9977

Date of Issue 20 March 2017



Remarks:

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

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

Operator : Martin Li Signature : Date : 20 March 2017

QC Reviewer : Ben Tam Signature : Date : 20 March 2017

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location :	Gold King Industrial Building, Kwai Chung	Date of Calibration:	23-Feb-17
Location ID :	Calibration Room	Next Calibration Date:	23-May-17

CONDITIONS

Sea Level Pressure (hPa)	1017.4	Corrected Pressure (mm Hg)	763.05
Temperature (°C)	17.9	Temperature (K)	291

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.00411
Model->	5025A	Qstd Intercept ->	-0.03059
Calibration Date->	14-Mar-16	Expiry Date->	14-Mar-17

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	6.2	6.2	12.4	1.797	56	56.79	Slope = 36.1509
13	5	5	10.0	1.616	49	49.69	Intercept = -8.0555
10	3.8	3.8	7.6	1.410	43	43.61	Corr. coeff. = 0.9984
8	2.4	2.4	4.8	1.124	33	33.47	
5	1.4	1.4	2.8	0.862	22	22.31	

Calculations :

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

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

Qstd = standard flow rate

IC = corrected chart respones

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)

Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

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

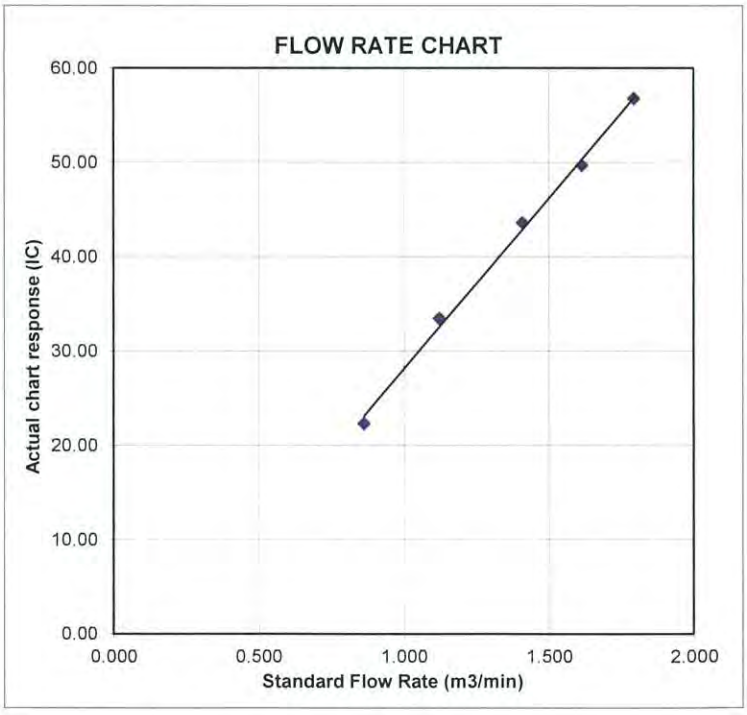
m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure



ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

SUB-CONTRACTING REPORT

CONTACT	: MR BEN TAM	WORK ORDER	: **HK1703460**
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 DATE RECEIVED DATE OF ISSUE	: 1 : 19-JAN-2017 : 23-JAN-2017
PROJECT	: ----	NO. OF SAMPLES CLIENT ORDER	: 1 : ----

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	: HK1703460
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.
HK1703460-001	S/N: 366410	AIR	19-JAN-2017	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	HK1703460

Standard Equipment:

Standard Equipment:	Higher Volume Sampler
Location & Location ID:	AUES office (calibration room)
Equipment Ref:	HVS 018
Last Calibration Date:	25 November 2016

Equipment Verification Results:

Testing Date: 9 January 2017

Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in mg/m^3 (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/60min)
3hr14min	09:10 ~ 12:24	20.6	1016.3	0.145	12401	64.0
1hr57min	12:30 ~ 14:27	20.6	1016.3	0.069	3266	27.9
1hr58min	14:35 ~ 16:33	20.6	1016.3	0.091	4878	41.1

Sensitivity Adjustment Scale Setting (Before Calibration) 677 (CPM)

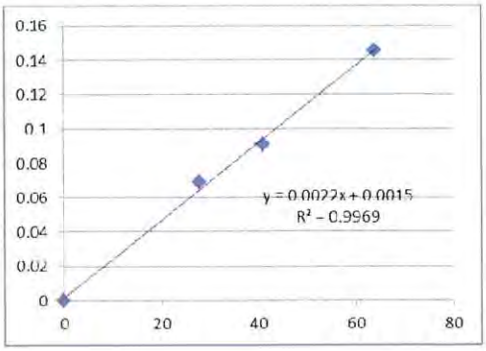
Sensitivity Adjustment Scale Setting (After Calibration) 675 (CPM)

Linear Regression of Y or X

Slope (K-factor): 0.0022

Correlation Coefficient 0.9984

Date of Issue 11 January 2017



Remarks:

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

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

Operator : Martin Li Signature : Date : 11 January 2017

QC Reviewer : Ben Tam Signature : Date : 11 January 2017

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location :	Gold King Industrial Building, Kwai Chung	Date of Calibration:	25-Nov-16
Location ID :	Calibration Room	Next Calibration Date:	25-Feb-17

CONDITIONS

Sea Level Pressure (hPa)	1016.4	Corrected Pressure (mm Hg)	762.3
Temperature (°C)	20.0	Temperature (K)	293

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.00411
Model->	5025A	Qstd Intercept ->	-0.03059
Calibration Date->	14-Mar-16	Expiry Date->	14-Mar-17

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected
18	6.1	6.1	12.2	1.776	56	56.56
13	4.7	4.7	9.4	1.560	49	49.49
10	3.6	3.6	7.2	1.368	43	43.43
8	2.3	2.3	4.6	1.096	34	34.34
5	1.4	1.4	2.8	0.859	23	23.23

LINEAR REGRESSION

Slope = 35.6871
Intercept = -6.1123
Corr. coeff. = 0.9967

Calculations :

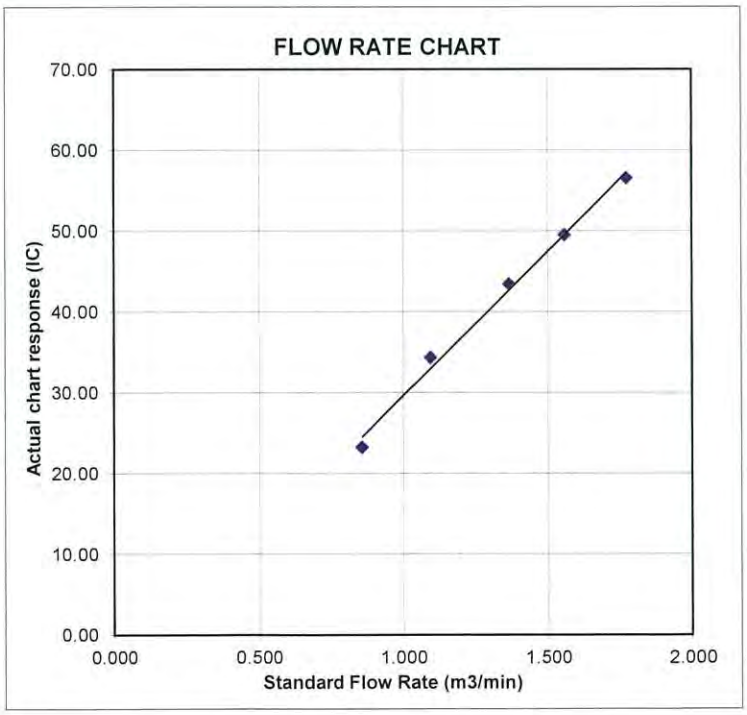
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

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

For subsequent calculation of sampler flow:

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

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



ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

SUB-CONTRACTING REPORT

CONTACT	: MR BEN TAM	WORK ORDER	: **HK1703455**
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 DATE RECEIVED DATE OF ISSUE	: 1 : 19-JAN-2017 : 23-JAN-2017
PROJECT	: ----	NO. OF SAMPLES CLIENT ORDER	: 1 : ----

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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WORK ORDER	: HK1703455
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.
HK1703455-001	S/N: 366409	AIR	19-JAN-2017	S/N: 366409

Equipment Verification Report (TSP)

Equipment Calibrated:

Type:	Laser Dust monitor
Manufacturer:	Sibata LD-3B
Serial No.	366409
Equipment Ref:	EQ109
Job Order	HK1703455

Standard Equipment:

Standard Equipment:	Higher Volume Sampler
Location & Location ID:	AUES office (calibration room)
Equipment Ref:	HVS 018
Last Calibration Date:	25 November 2016

Equipment Verification Results:

Testing Date: 9 January 2017

Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in mg/m^3 (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/60min)
3hr14min	09:10 ~ 12:24	20.6	1016.3	0.145	12487	64.4
1hr57min	12:30 ~ 14:27	20.6	1016.3	0.069	3433	29.3
1hr58min	14:35 ~ 16:33	20.6	1016.3	0.091	4815	40.5

Sensitivity Adjustment Scale Setting (Before Calibration) 523 (CPM)

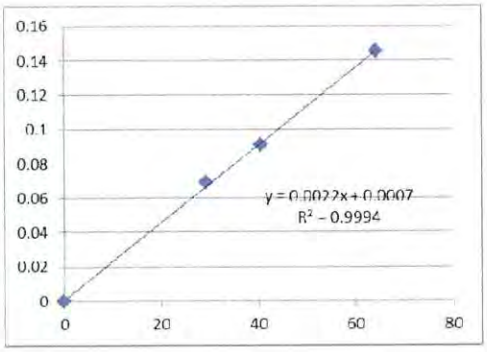
Sensitivity Adjustment Scale Setting (After Calibration) 525 (CPM)

Linear Regression of Y or X

Slope (K-factor): 0.0022

Correlation Coefficient 0.9997

Date of Issue 11 January 2017



Remarks:

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

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

Operator : Martin Li Signature : Date : 11 January 2017

QC Reviewer : Ben Tam Signature : Date : 11 January 2017

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location :	Gold King Industrial Building, Kwai Chung	Date of Calibration:	25-Nov-16
Location ID :	Calibration Room	Next Calibration Date:	25-Feb-17

CONDITIONS

Sea Level Pressure (hPa)	1016.4	Corrected Pressure (mm Hg)	762.3
Temperature (°C)	20.0	Temperature (K)	293

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.00411
Model->	5025A	Qstd Intercept ->	-0.03059
Calibration Date->	14-Mar-16	Expiry Date->	14-Mar-17

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	6.1	6.1	12.2	1.776	56	56.56	Slope = 35.6871
13	4.7	4.7	9.4	1.560	49	49.49	Intercept = -6.1123
10	3.6	3.6	7.2	1.368	43	43.43	Corr. coeff. = 0.9967
8	2.3	2.3	4.6	1.096	34	34.34	
5	1.4	1.4	2.8	0.859	23	23.23	

Calculations :

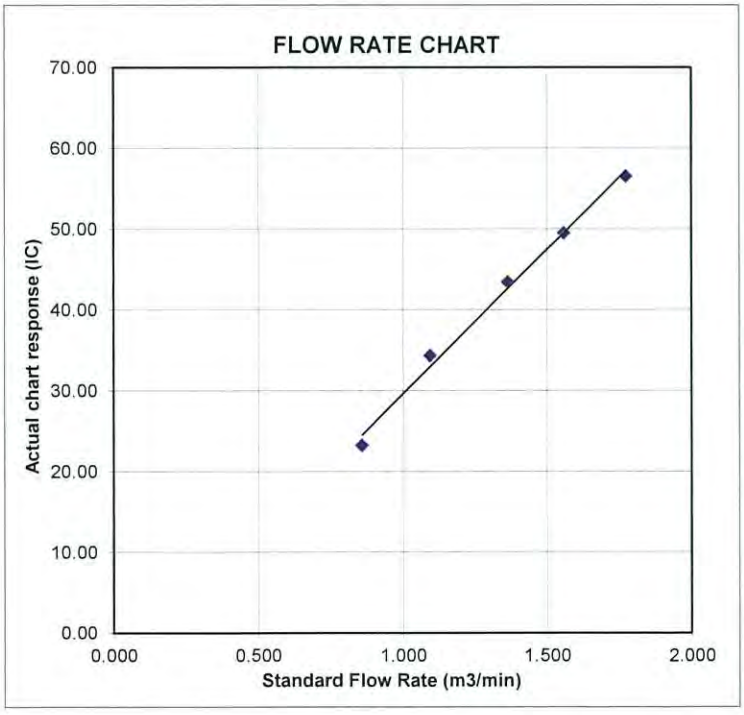
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

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

For subsequent calculation of sampler flow:

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

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



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

Certificate of Calibration
校正證書

Certificate No. : C163603
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : 1C16-0843) Date of Receipt / 收件日期 : 22 June 2016

Description / 儀器名稱 : Integrating Sound Level Meter (EQ008)
Manufacturer / 製造商 : Brüel & Kjær
Model No. / 型號 : 2238
Serial No. / 編號 : 2285690
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 : (55 ± 20)%
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 4 July 2016

TEST RESULTS / 測試結果

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

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

Tested By 測試 : H T Wong
Technical Officer

Certified By 核證 : K C Lee
Project Engineer

Date of Issue 簽發日期 : 5 July 2016

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
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c/o 香港新界屯門興安里一號青山灣機樓四樓
Tel/電話: 2927 2606 Fax/傳真: 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

Certificate of Calibration
校正證書

Certificate No. : C163603
證書編號

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

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

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

4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C160077
CL281	Multifunction Acoustic Calibrator	PA160023

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
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	Reading (dB)
50 - 130	L_{AFP}	A	F	94.00	1	94.5

6.1.1.2 After Self-calibration

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

6.1.2 Linearity

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

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

Sun Creation Engineering Limited – Calibration & Testing Laboratory
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Tel/電話: 2927 2606 Fax/傳真: 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

Certificate of Calibration
校正證書

Certificate No. : C163603
證書編號

6.2 Time Weighting

6.2.1 Continuous Signal

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
50 - 130	L_{AFP}	A	F	94.00	1	94.0	Ref.
	L_{ASP}		S			94.0	± 0.1
	L_{AIP}		I			94.0	± 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	54.7	-39.4 ± 1.5
					63 Hz	67.8	-26.2 ± 1.5
					125 Hz	77.8	-16.1 ± 1.0
					250 Hz	85.3	-8.6 ± 1.0
					500 Hz	90.7	-3.2 ± 1.0
					1 kHz	94.0	Ref.
					2 kHz	95.2	+1.2 ± 1.0
					4 kHz	95.0	+1.0 ± 1.0
					8 kHz	92.9	-1.1 (+1.5 ; -3.0)
					12.5 kHz	89.8	-4.3 (+3.0 ; -6.0)

Sun Creation Engineering Limited – Calibration & Testing Laboratory
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c/o 香港新界屯門興安里一號青山灣機樓四樓
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Certificate of Calibration
校正證書

Certificate No. : C163603
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	91.0	-3.0 ± 1.5
					63 Hz	93.2	-0.8 ± 1.5
					125 Hz	93.8	-0.2 ± 1.0
					250 Hz	93.9	0.0 ± 1.0
					500 Hz	93.9	0.0 ± 1.0
					1 kHz	93.9	Ref.
					2 kHz	93.8	-0.2 ± 1.0
					4 kHz	93.1	-0.8 ± 1.0
					8 kHz	90.9	-3.0 (+1.5 ; -3.0)
					12.5 kHz	87.8	-6.2 (+3.0 ; -6.0)

6.4 Time Averaging

UUT Setting				Applied Value					UUT Reading (dB)	IEC 60804 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Integrating Time	Frequency (kHz)	Burst Duration (ms)	Burst Duty Factor	Burst Level (dB)	Equivalent Level (dB)		
30 - 110	L_{Aeq}	A	10 sec.	4	1	1/10	110.0	100	99.9	± 0.5
						$1/10^2$		90	89.8	± 0.5
			60 sec.			$1/10^3$		80	79.8	± 1.0
			5 min.			$1/10^4$		70	69.8	± 1.0

Remarks : - UUT Microphone Model No. : 4188 & S/N : 2812706

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

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

Certificate of Calibration
校正證書

Certificate No. : C164113
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC16-0843) Date of Receipt / 收件日期 : 15 July 2016

Description / 儀器名稱 : Integrating Sound Level Meter (EQ009)
Manufacturer / 製造商 : Brüel & Kjær
Model No. / 型號 : 2238
Serial No. / 編號 : 2285722
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 : (55 ± 20)%
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 28 July 2016

TEST RESULTS / 測試結果

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

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

Tested By 測試 : H T Wong, Technical Officer

Certified By 核證 : K C Lee, Project Engineer

Date of Issue 簽發日期 : 29 July 2016

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 – 校正及檢測實驗所
c/o 香港新界屯門興安里一號青山灣機樓四樓
Tel/電話: 2927 2606 Fax/傳真: 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

Certificate of Calibration
校正證書

Certificate No. : C164113
證書編號

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

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

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

4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C160077
CL281	Multifunction Acoustic Calibrator	PA160023

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

6.1.1.1 Before Self-calibration

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

6.1.1.2 After Self-calibration

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

6.1.2 Linearity

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

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

Certificate of Calibration
校正證書

Certificate No. : C164113
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			94.2	± 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	54.6	-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	92.9	-1.1 (+1.5 ; -3.0)
					12.5 kHz	89.8	-4.3 (+3.0 ; -6.0)

Certificate of Calibration
校正證書

Certificate No. : C164113
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	91.0	-3.0 ± 1.5
					63 Hz	93.2	-0.8 ± 1.5
					125 Hz	93.9	-0.2 ± 1.0
					250 Hz	94.0	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	93.2	-0.8 ± 1.0
					8 kHz	91.0	-3.0 (+1.5 ; -3.0)
					12.5 kHz	87.8	-6.2 (+3.0 ; -6.0)

6.4 Time Averaging

UUT Setting				Applied Value					UUT Reading (dB)	IEC 60804 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Integrating Time	Frequency (kHz)	Burst Duration (ms)	Burst Duty Factor	Burst Level (dB)	Equivalent Level (dB)		
30 - 110	L_{Aeq}	A	10 sec.	4	1	1/10	110.0	100	100.0	± 0.5
						$1/10^2$		90	89.7	± 0.5
			60 sec.			$1/10^3$		80	79.2	± 1.0
			5 min.			$1/10^4$		70	69.1	± 1.0

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

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

- Uncertainties of Applied Value :

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

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

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

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 – 校正及檢測實驗所
c/o 香港新界屯門興安里一號青山灣機樓四樓
Tel/電話: 2927 2606 Fax/傳真: 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

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

Certificate of Calibration
校正證書

Certificate No. : C172284
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC17-0924) Date of Receipt / 收件日期 : 24 April 2017

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

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C Relative Humidity / 相對濕度 : (55 ± 20)%
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 28 April 2017

TEST RESULTS / 測試結果

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

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

Tested By : H T Wong
測試 Technical Officer

Certified By : K C Lee
核證 Project Engineer

Date of Issue : 2 May 2017
簽發日期

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 – 校正及檢測實驗所
c/o 香港新界屯門興安里一號青山灣機樓四樓
Tel/電話: 2927 2606 Fax/傳真: 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

Certificate of Calibration
校正證書

Certificate No. : C172284
證書編號

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

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

3. Test equipment :

Equipment ID	Description	Certificate No.
CL130	Universal Counter	C163709
CL281	Multifunction Acoustic Calibrator	PA160023
TST150A	Measuring Amplifier	C161175

4. Test procedure : MA100N.

5. Results :

5.1 Sound Level Accuracy

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

5.2 Frequency Accuracy

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

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

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

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

Sun Creation Engineering Limited – Calibration & Testing Laboratory
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輝創工程有限公司 – 校正及檢測實驗所
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Hong Kong Accreditation Service
香港認可處

Certificate of Accreditation
認可證書

This is to certify that
特此證明

ALS TECHNICHEM (HK) PTY LIMITED

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

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

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

This laboratory meets the requirements of ISO / IEC 17025 : 2005 – General requirements for the competence of testing and calibration laboratories and it has been accredited for performing specific tests or calibrations as listed in the HOKLAS Directory of Accredited Laboratories within the test category of
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，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 quality management system (see joint IAF-ILAC-ISO Communiqué).
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（見國際認可論壇、國際實驗所認可合作組織及國際標準化組織的聯合公報）。

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

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

Registration Number : HOKLAS 066
註冊號碼：

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

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

L 000552

Appendix F

Event and Action Plan

Event / Action Plan for construction dust

Event	Action			
	ET	**IEC**	**ER**	**Contractor**
Action Level exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform IEC, ER and Contractor; 3. Repeat measurement to confirm finding; and 4. Increase monitoring frequency to daily.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; and 3. Review and advise the ET and ER on the effectiveness of the proposed remedial measures.	1. Notify Contractor.	1. Identify source, investigate the causes of exceedance and propose remedial measures 2. Rectify any unacceptable practice and implement remedial measures; and 3. Amend working methods agreed with ER if appropriate.
Action Level exceedance for two or more consecutive samples	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform IEC, ER and Contractor; 3. Advise the ER and Contractor on the effectiveness of the proposed remedial measures; 4. Repeat measurements to confirm findings; 5. Increase monitoring frequency to daily; 6. Discuss with IEC, ER and Contractor on remedial actions required; 7. If exceedance continues, arrange meeting with IEC and ER; and 8. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ET and ER on the effectiveness of the proposed remedial measures; and 5. Supervise Implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; and 3. Supervise and ensure remedial measures properly implemented.	1. Identify source, investigate the causes of exceedance and propose remedial measures 2. Submit proposals for remedial actions to ER with a copy to ET and IEC within 3 working days of notification; 3. Implement the agreed proposals; and 4. Amend proposal if appropriate.

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

Event and Action Plan for Construction Noise

Event	Action			
	ET	**IEC**	**ER**	**Contractor**
Action Level Exceedance	1. Notify IEC, ER and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IEC, ER and Contractor; 4. Discuss with the Contractor and formulate remedial measures; 5. Increase monitoring frequency to check mitigation effectiveness.	1. Review the analysed results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; 3. Supervise the implementat-ion of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise problem; 4. Ensure remedial measures are properly implemented	1. Submit noise mitigation proposals to IEC and ER; 2. Implement noise mitigation proposals.
Limit Level Exceedance	1. Identify source; 2. Inform IEC, ER, EPD and Contractor; 3. Repeat measurements to confirm findings; 4. Increase monitoring frequency; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Inform IEC, ER and EPD the causes and actions taken for the exceedances; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring.	1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractors remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; 3. Supervise the implementat-ion of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise problem; 4. Ensure remedial measures properly implemented; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 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
THU	1-JUN-17			
FRI	2-JUN-17			✓
SAT	3-JUN-17		✓	
SUN	4-JUN-17			
MON	5-JUN-17			
TUE	6-JUN-17			
WED	7-JUN-17			
THU	8-JUN-17			✓
FRI	9-JUN-17	✓	✓	
SAT	10-JUN-17			
SUN	11-JUN-17			
MON	12-JUN-17			
TUE	13-JUN-17			
WED	14-JUN-17			✓
THU	15-JUN-17	✓	✓	
FRI	16-JUN-17			
SAT	17-JUN-17			
SUN	18-JUN-17			
MON	19-JUN-17			
TUE	20-JUN-17			✓
WED	21-JUN-17	✓	✓	
THU	22-JUN-17			
FRI	23-JUN-17			
SAT	24-JUN-17			
SUN	25-JUN-17			
MON	26-JUN-17			✓
TUE	27-JUN-17	✓	✓	
WED	28-JUN-17			
THU	29-JUN-17			
FRI	30-JUN-17			✓

✓	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
SAT	1-JUL-17			
SUN	2-JUL-17			
MON	3-JUL-17	✓	✓	
TUE	4-JUL-17			
WED	5-JUL-17			
THU	6-JUL-17			✓
FRI	7-JUL-17			
SAT	8-JUL-17		✓	
SUN	9-JUL-17			
MON	10-JUL-17			
TUE	11-JUL-17			
WED	12-JUL-17			✓
THU	13-JUL-17			
FRI	14-JUL-17	✓	✓	
SAT	15-JUL-17			
SUN	16-JUL-17			
MON	17-JUL-17			
TUE	18-JUL-17			✓
WED	19-JUL-17			
THU	20-JUL-17	✓	✓	
FRI	21-JUL-17			
SAT	22-JUL-17			
SUN	23-JUL-17			
MON	24-JUL-17			✓
TUE	25-JUL-17			
WED	26-JUL-17	✓	✓	
THU	27-JUL-17			
FRI	28-JUL-17			
SAT	29-JUL-17			✓
SUN	30-JUL-17			
MON	31-JUL-17			

✓	Monitoring Day
	Sunday or Public Holiday

Appendix H

Database of Monitoring Result

24-hour TSP Monitoring Data for AMS-1

DATE	SAMPLE NUMBER	ELAPSED TIME			CHART READING			AVG TEMP	AVG AIR PRESS	STANDARD FLOW RATE	AIR VOLUME	FILTER WEIGHT (g)		DUST WEIGHT COLLECTED	24-hr TSP ($\mu g/m^3$)
		INITIAL	FINAL	(min)	MIN	MAX	AVG	(℃)	(hPa)	(m^3/min)	(std m^3)	INITIAL	FINAL	(g)	
2-Jun-17	21084	18090.96	18115.11	1449.00	38	40	39.0	27.3	1007	1.21	1757	2.8062	2.8494	0.0432	25
8-Jun-17	20881	18115.11	18138.91	1428.00	36	38	37.0	27.1	1006.6	1.16	1650	2.7830	2.8138	0.0308	19
14-Jun-17	21164	18138.91	18162.91	1440.00	36	38	37.0	27.9	1008.3	1.15	1663	2.8271	2.8420	0.0149	9
20-Jun-17	21120	18162.91	18186.61	1422.00	36	38	37.0	27.3	1006.3	1.15	1628	2.8190	2.8442	0.0252	15
26-Jun-17	21240	18186.61	18210.61	1440.00	36	38	37.0	28.5	1005.3	1.14	1645	2.8250	2.8716	0.0466	28
30-Jun-17	21128	18210.61	18234.61	1440.00	38	40	39.0	28.7	1006.2	1.20	1726	2.8096	2.8448	0.0352	20

24-hour TSP Monitoring Data for AMS-5

DATE	SAMPLE NUMBER	ELAPSED TIME			CHART READING			AVG TEMP	AVG AIR PRESS	STANDARD FLOW RATE	AIR VOLUME	FILTER WEIGHT (g)		DUST WEIGHT COLLECTED	24-hr TSP ($\mu g/m^3$)
		INITIAL	FINAL	(min)	MIN	MAX	AVG	(℃)	(hPa)	(m^3/min)	(std m^3)	INITIAL	FINAL	(g)	
2-Jun-17	21061	4369.22	4393.37	1449.00	37	39	38.0	27.3	1007	1.28	1849	2.8033	2.8620	0.0587	32
8-Jun-17	20882	4393.37	4417.57	1452.00	36	38	37.0	27.1	1006.6	1.24	1807	2.7970	2.8400	0.0430	24
14-Jun-17	21160	4417.57	4441.57	1440.00	41	41	41.0	27.9	1008.3	1.37	1973	2.8336	2.8736	0.0400	20
20-Jun-17	21119	4441.57	4465.77	1452.00	36	38	37.0	27.3	1006.3	1.24	1806	2.8124	2.8381	0.0257	14
26-Jun-17	21241	4465.77	4489.95	1450.80	41	41	41.0	28.5	1005.3	1.37	1983	2.8464	2.8909	0.0445	22
30-Jun-17	21268	4489.95	4514.27	1459.20	48	50	49.0	28.7	1006.2	1.62	2363	2.6212	2.6485	0.0273	12

24-hour TSP Monitoring Data for AMS-6

DATE	SAMPLE NUMBER	ELAPSED TIME			CHART READING			AVG TEMP	AVG AIR PRESS	STANDARD FLOW RATE	AIR VOLUME	FILTER WEIGHT (g)		DUST WEIGHT COLLECTED	24-hr TSP ($\mu g/m^3$)
		INITIAL	FINAL	(min)	MIN	MAX	AVG	(℃)	(hPa)	(m^3/min)	(std m^3)	INITIAL	FINAL	(g)	
2-Jun-17	21062	9512.18	9536.51	1459.80	37	39	38.0	27.3	1007	1.12	1639	2.8024	2.8733	0.0709	43
8-Jun-17	20883	9536.51	9560.71	1452.00	36	38	37.0	27.1	1006.6	1.09	1586	2.7867	2.8055	0.0188	12
14-Jun-17	20885	9560.71	9584.71	1440.00	47	47	47.0	27.9	1006.3	1.39	2008	2.7969	2.8618	0.0649	32
20-Jun-17	21126	9636.46	9660.66	1452.00	40	48	44.0	28.5	1005.8	1.30	1890	2.7924	2.8286	0.0362	19
26-Jun-17	21269	9660.66	9685.04	1462.80	42	43	42.5	28.5	1005.3	1.26	1837	2.6446	2.6739	0.0293	16
30-Jun-17	21272	9685.04	9709.05	1440.60	38	44	41.0	28.7	1006.2	1.21	1744	2.6338	2.6605	0.0267	15

24-hour TSP Monitoring Data for AMS-7

DATE	SAMPLE NUMBER	ELAPSED TIME			CHART READING			AVG TEMP	AVG AIR PRESS	STANDARD FLOW RATE	AIR VOLUME	FILTER WEIGHT (g)		DUST WEIGHT COLLECTED	24-hr TSP ($\mu g/m^3$)
		INITIAL	FINAL	(min)	MIN	MAX	AVG	(℃)	(hPa)	(m^3/min)	(std m^3)	INITIAL	FINAL	(g)	
2-Jun-17	21060	5111.13	5135.55	1465.20	36	38	37.0	27.3	1007	1.24	1813	2.8039	2.9144	0.1105	61
8-Jun-17	20884	5135.55	5159.84	1457.40	36	38	37.0	27.1	1006.6	1.24	1803	2.8042	2.8392	0.0350	19
14-Jun-17	21163	5159.84	5184.07	1453.80	48	48	48.0	27.9	1008.3	1.53	2226	2.8478	2.9036	0.0558	25
20-Jun-17	20852	5184.07	5208.37	1458.00	36	38	37.0	27.3	1006.3	1.23	1792	2.8195	2.8625	0.0430	24
26-Jun-17	21242	5208.37	5232.37	1440.00	38	39	38.5	28.5	1005.3	1.27	1825	2.8636	2.9377	0.0741	41
30-Jun-17	21127	5232.37	5256.47	1446.00	46	48	47.0	28.7	1006.2	1.50	2171	2.8105	2.8439	0.0334	15

Noise Measurement Results (dB) of NMS2

Date	Start Time	1st Leq (5min)			2nd Leq (5min)			3rd Leq (5min)			4th Leq (5min)			5th Leq (5min)			6th Leq (5min)			Leq30min, dB(A)	Corrected Noise 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)		
9-Jun-17	9:18	59.5	60.5	58.0	59.4	61.0	58.0	59.4	60.5	58.0	59.3	60.0	58.0	59.9	60.5	58.0	60.7	61.5	58.0	60	63
15-Jun-17	13:08	56.0	56.5	52.5	57.5	58.0	52.0	55.5	57.5	51.0	56.3	58.5	53.0	55.8	58.0	52.5	55.4	56.5	51.5	56	59
21-Jun-17	11:23	52.7	56.3	47.5	56.6	57.9	51.2	55.6	58.9	52.1	55.6	58.0	52.1	56.0	59.2	53.7	56.5	59.5	56.0	56	59
27-Jun-17	9:19	63.5	65.0	57.0	52.7	54.0	49.0	54.8	55.5	50.5	55.8	57.0	51.0	54.3	55.5	52.0	67.2	72.0	51.5	62	65

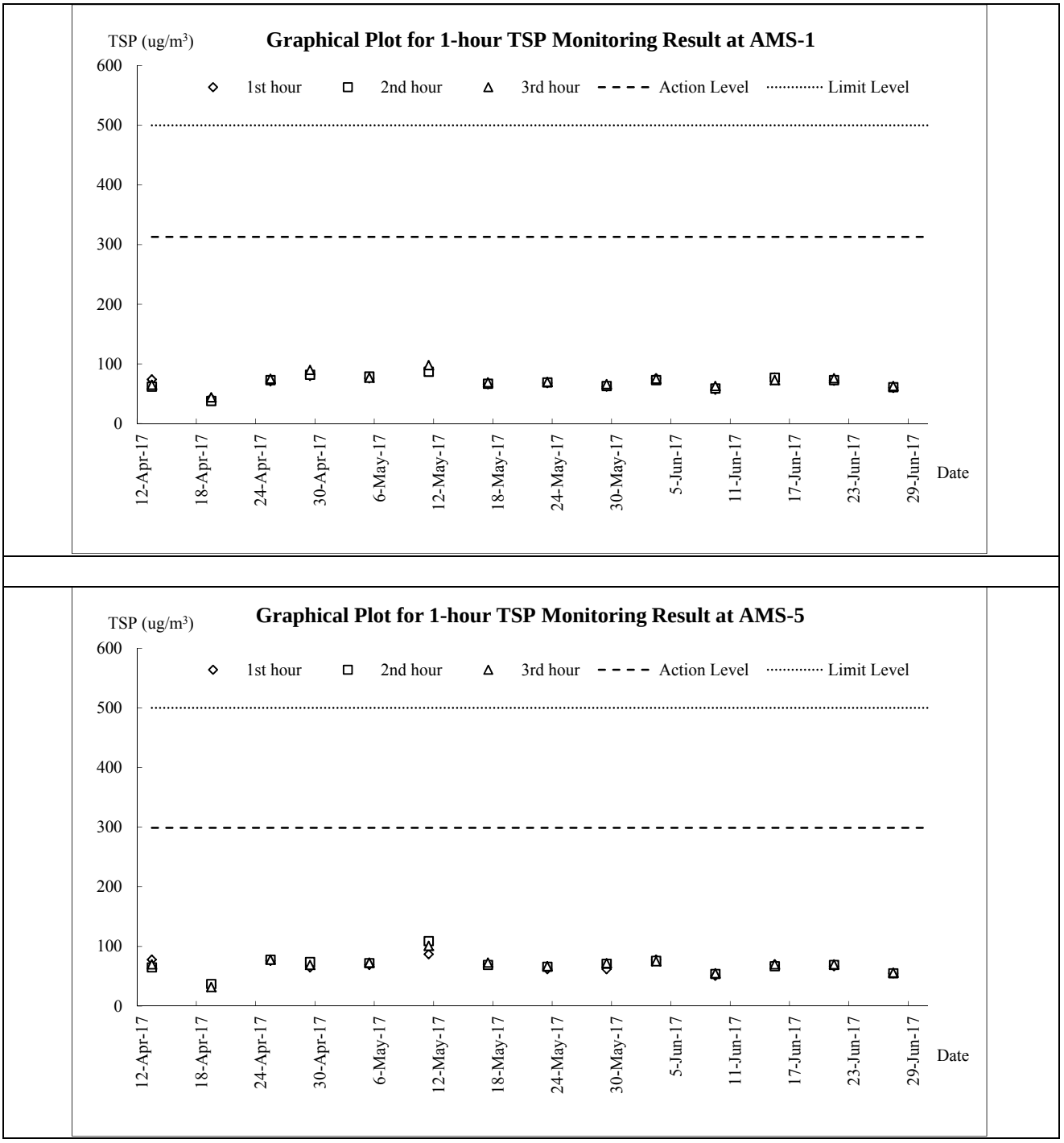
Noise Measurement Results (dB) of NMS4

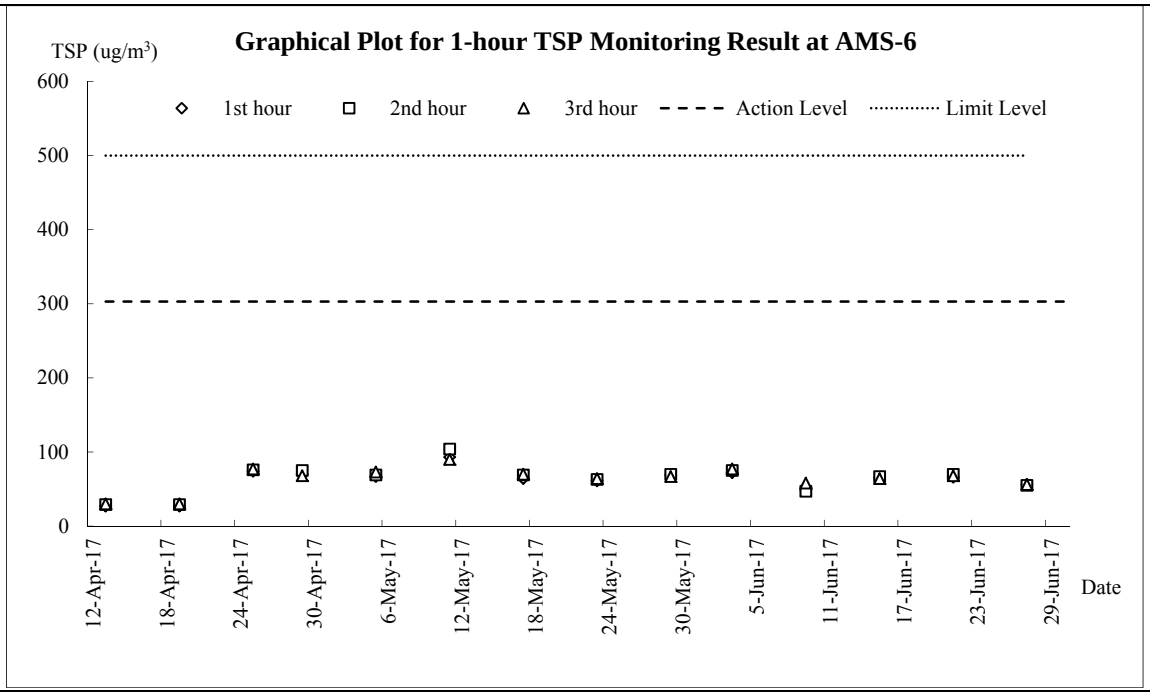
Date	Start Time	1st Leq (5min)			2nd Leq (5min)			3rd Leq (5min)			4th Leq (5min)			5th Leq (5min)			6th Leq (5min)			Leq30min, dB(A)
		Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	Leq, dB(A)	L10, dB(A)	L90, dB(A)	
9-Jun-17	10:36	58.4	59.0	57.5	60.8	62.0	57.5	58.5	59.0	57.5	58.8	59.5	57.5	58.3	58.5	57.5	61.8	63.0	57.5	60
15-Jun-17	13:53	57.5	59.5	51.0	57.8	61.0	51.5	53.8	55.5	50.0	56.3	59.5	50.0	56.3	58.0	49.5	51.8	53.5	47.0	56
21-Jun-17	9:28	57.5	59.3	52.7	57.7	61.2	52.5	57.6	60.2	52.7	56.9	60.5	52.7	56.0	66.0	52.5	56.7	60.0	52.5	57
27-Jun-17	10:03	60.0	60.0	51.5	57.2	59.0	52.0	57.4	59.5	50.5	53.3	55.0	50.0	55.3	58.0	50.5	57.9	59.5	51.5	57

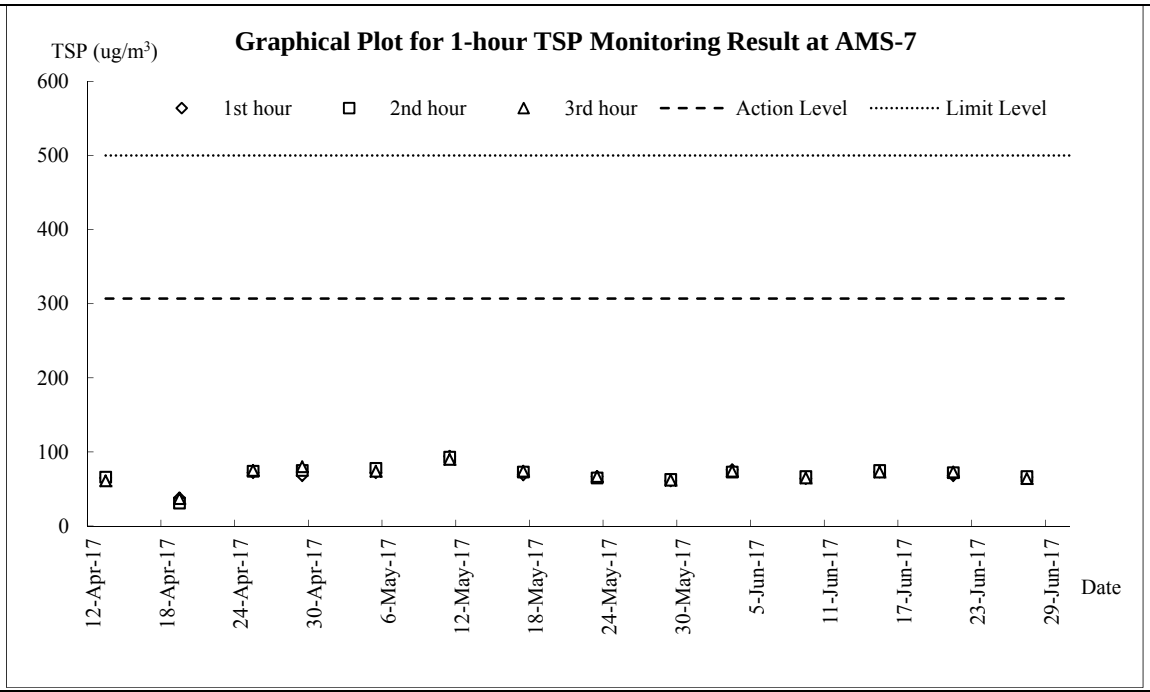
Appendix I

Graphical Plots for Monitoring Result

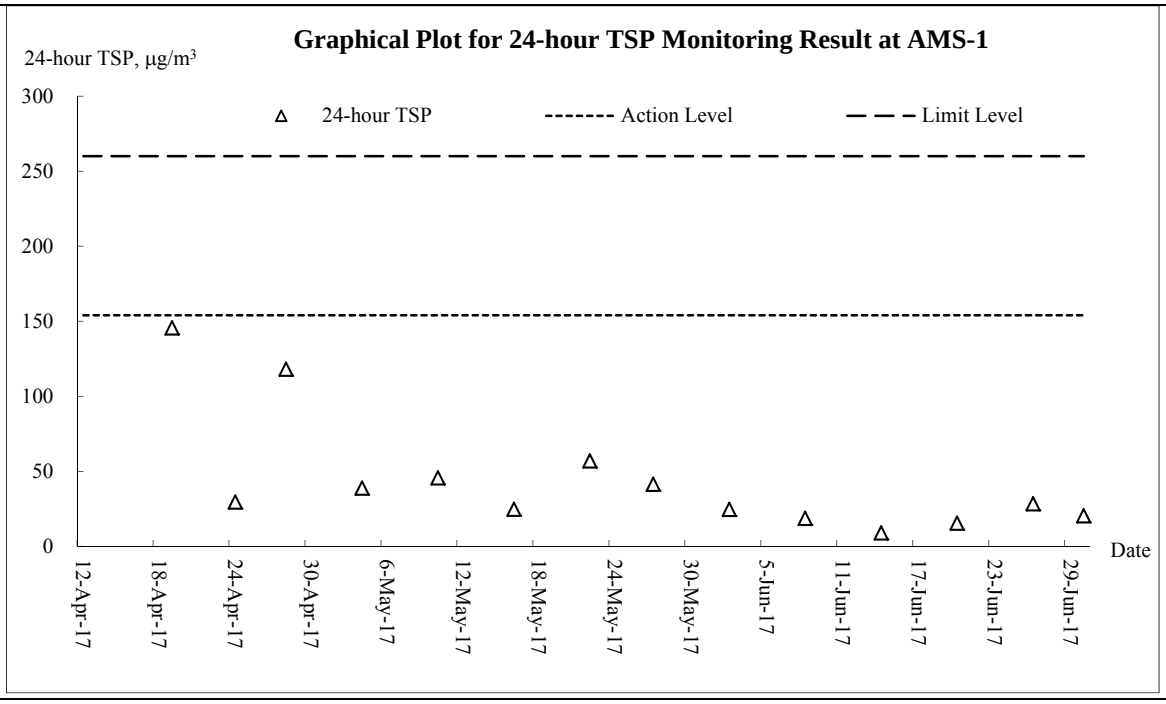
Air Quality – 1-hour TSP

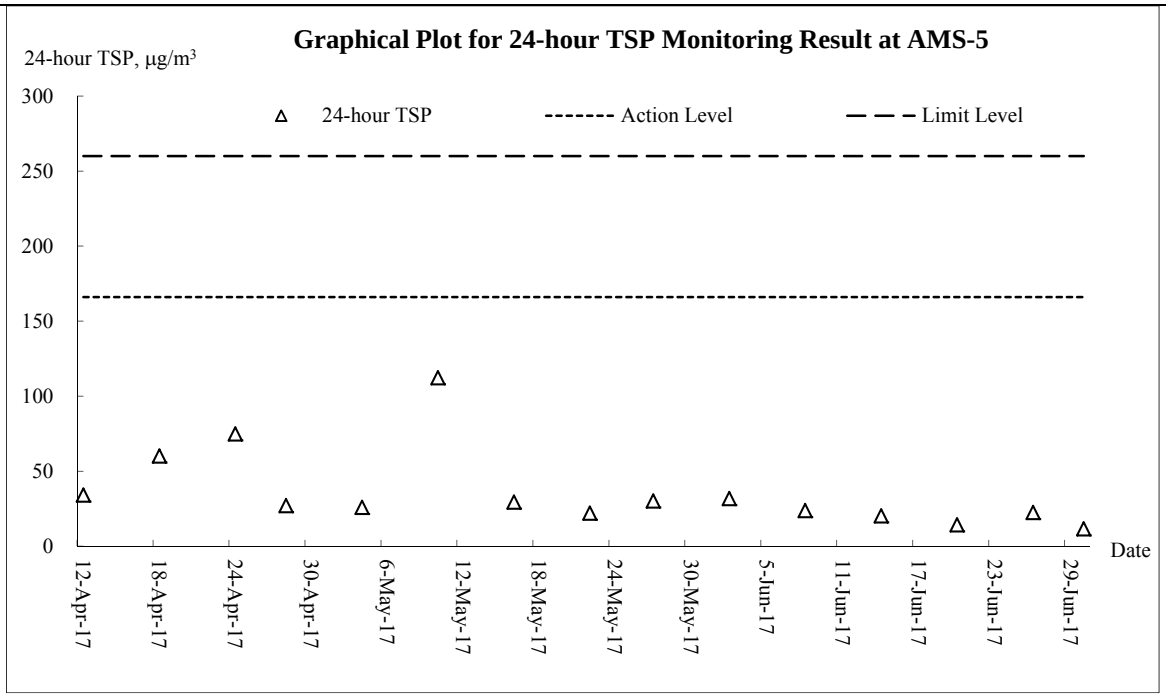


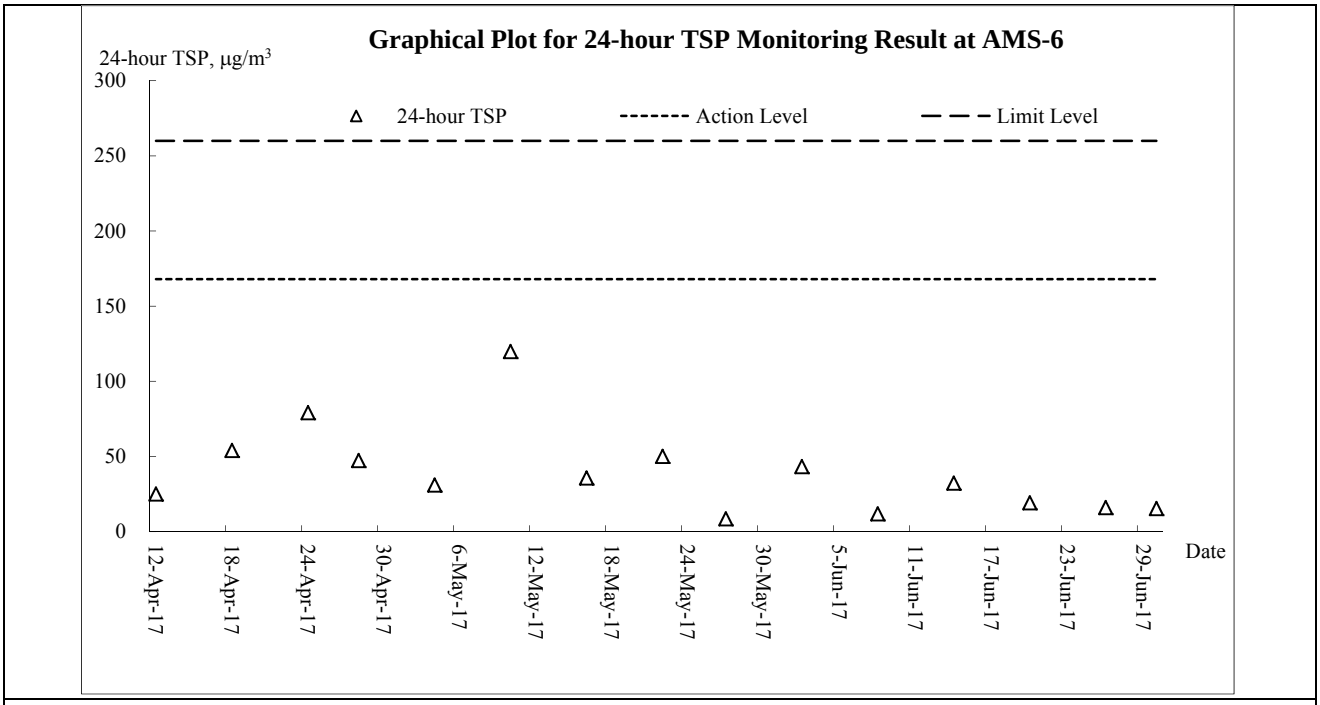

Graphical Plot for 1-hour TSP Monitoring Result at AMS-6
TSP (ug/m3)
600
500
400
300
200
100
0
1st hour
2nd hour
3rd hour
Action Level
Limit Level
12-Apr-17
18-Apr-17
24-Apr-17
30-Apr-17
6-May-17
12-May-17
18-May-17
24-May-17
30-May-17
5-Jun-17
11-Jun-17
17-Jun-17
23-Jun-17
29-Jun-17
Date

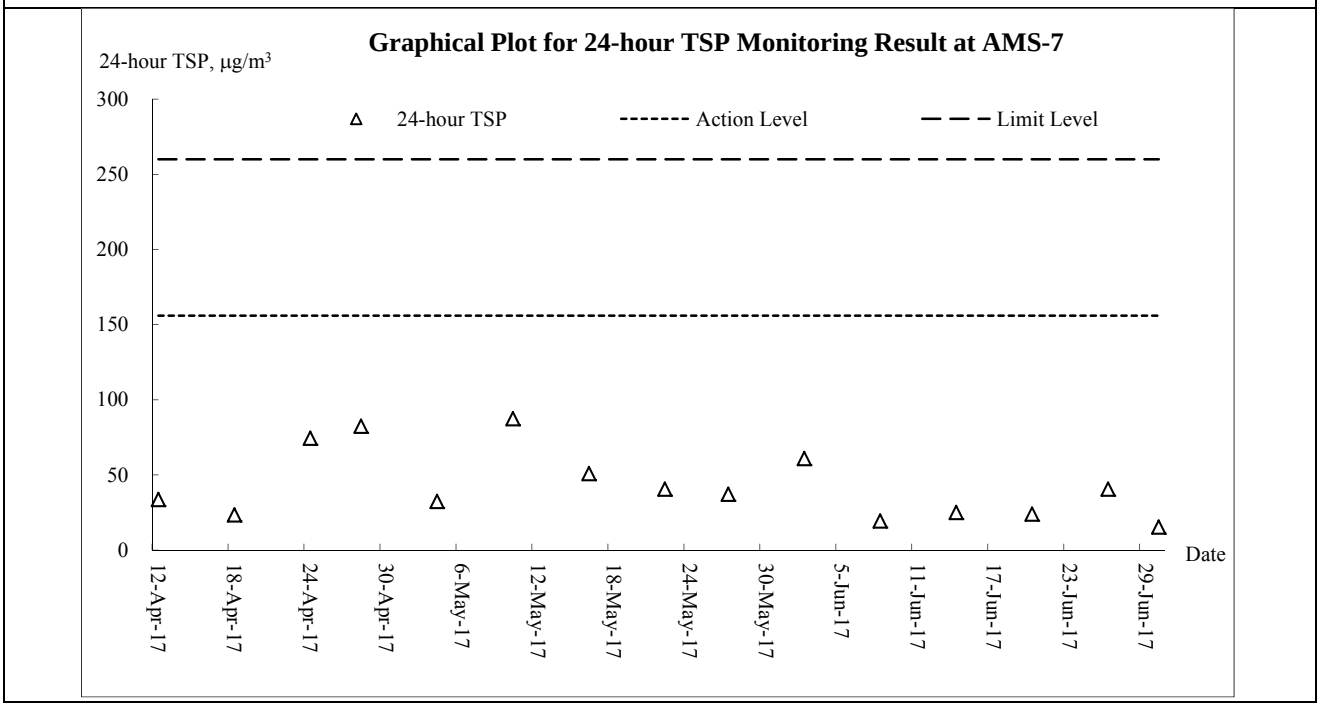

Graphical Plot for 1-hour TSP Monitoring Result at AMS-7
TSP (ug/m3)
600
500
400
300
200
100
0
1st hour
2nd hour
3rd hour
Action Level
Limit Level
12-Apr-17
18-Apr-17
24-Apr-17
30-Apr-17
6-May-17
12-May-17
18-May-17
24-May-17
30-May-17
5-Jun-17
11-Jun-17
17-Jun-17
23-Jun-17
29-Jun-17
Date

Air Quality – 24-hour TSP

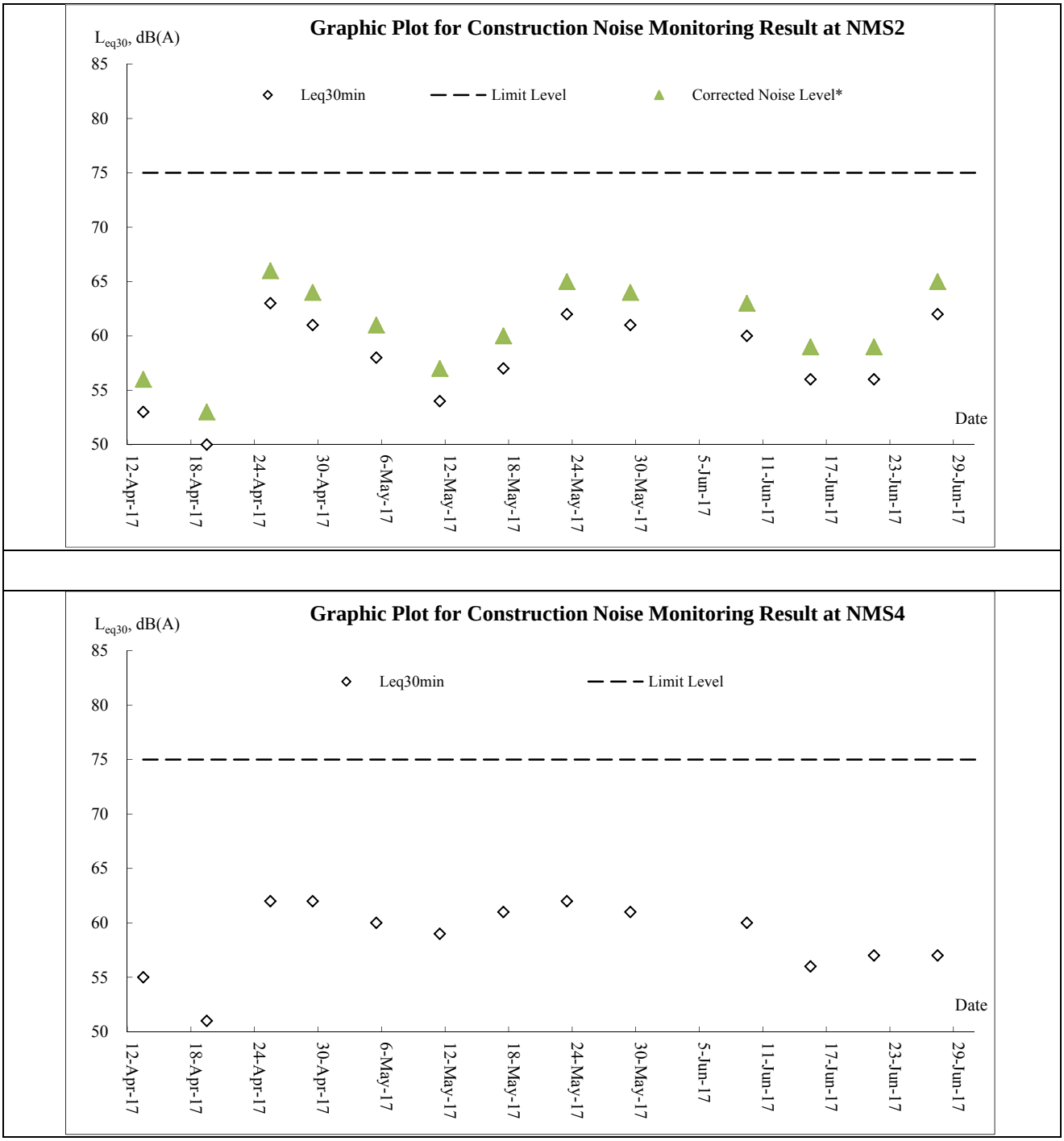





Graphical Plot for 24-hour TSP Monitoring Result at AMS-6
24-hour TSP, µg/m³
24-hour TSP
Action Level
Limit Level
300
250
200
150
100
50
0
12-Apr-17
18-Apr-17
24-Apr-17
30-Apr-17
6-May-17
12-May-17
18-May-17
24-May-17
30-May-17
5-Jun-17
11-Jun-17
17-Jun-17
23-Jun-17
29-Jun-17
Date


Graphical Plot for 24-hour TSP Monitoring Result at AMS-7
24-hour TSP, µg/m³
24-hour TSP
Action Level
Limit Level
300
250
200
150
100
50
0
12-Apr-17
18-Apr-17
24-Apr-17
30-Apr-17
6-May-17
12-May-17
18-May-17
24-May-17
30-May-17
5-Jun-17
11-Jun-17
17-Jun-17
23-Jun-17
29-Jun-17
Date

Noise


Graphic Plot for Construction Noise Monitoring Result at NMS2
L_{eq30}, dB(A)
85
80
75
70
65
60
55
50
Leq30min
Limit Level
Corrected Noise Level*
Date
12-Apr-17
18-Apr-17
24-Apr-17
30-Apr-17
6-May-17
12-May-17
18-May-17
24-May-17
30-May-17
5-Jun-17
11-Jun-17
17-Jun-17
23-Jun-17
29-Jun-17
Graphic Plot for Construction Noise Monitoring Result at NMS4
L_{eq30}, dB(A)
85
80
75
70
65
60
55
50
Leq30min
Limit Level
Date
12-Apr-17
18-Apr-17
24-Apr-17
30-Apr-17
6-May-17
12-May-17
18-May-17
24-May-17
30-May-17
5-Jun-17
11-Jun-17
17-Jun-17
23-Jun-17
29-Jun-17

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-Jun-17	Thu	Moderate southwesterly winds.	Trace	Maintenance	18.6	W/SW	84
2-Jun-17	Fri	Hot during the day.	Trace	29.2	19	W/SW	84.5
3-Jun-17	Sat	Sunny periods and isolated showers. Hot during the day.	0	30.4	20.5	SE	78.9
4-Jun-17	Sun	Sunny periods and isolated showers. Hot during the day.	Trace	30.2	7.5	S/SE	81.5
5-Jun-17	Mon	Moderate southwesterly winds.	Trace	30.1	13.7	E/SE	76
6-Jun-17	Tue	Hot during the day.	Trace	29.8	13.7	E/SE	76.5
7-Jun-17	Wed	Moderate southwesterly winds.	4.3	29.5	9.7	E/SE	75
8-Jun-17	Thu	Hot during the day.	0	29.9	10.5	SE	77.5
9-Jun-17	Fri	Sunny periods and isolated showers. Hot during the day.	1.1	29.9	13	E/SE	79.5
10-Jun-17	Sat	Sunny periods and isolated showers. Hot during the day.	Trace	30	11.2	80.2	SE
11-Jun-17	Sun	Moderate southwesterly winds.	Trace	30.2	12.2	E	73.2
12-Jun-17	Mon	Hot during the day.	37.7	27.8	17.8	E	81.5
13-Jun-17	Tue	Sunny periods and isolated showers. Hot during the day.	219.4	26.1	18.5	W/SW	93.2
14-Jun-17	Wed	Sunny periods and isolated showers. Hot during the day.	15.6	27.4	16	S/SW	86.2
15-Jun-17	Thu	Moderate southwesterly winds.	14.5	28.3	11	SW	82.7
16-Jun-17	Fri	Hot during the day.	13.5	28.2	13.5	SW	88
17-Jun-17	Sat	Sunny periods and isolated showers.	13.8	26.6	15.8	80.5	S/SW
18-Jun-17	Sun	Hot during the day.	24.2	26.2	11.5	W/NW	91
19-Jun-17	Mon	Moderate southwesterly winds.	32.6	26.6	12	W/SW	87.5
20-Jun-17	Tue	Hot during the day.	24.8	26.4	6.5	W/SW	90.7
21-Jun-17	Wed	Sunny periods and isolated showers. Hot during the day.	95.9	26.8	12.3	E/SE	86.7
22-Jun-17	Thu	Sunny periods and isolated showers. Hot during the day.	Trace	30.1	11.1	E/SE	79
23-Jun-17	Fri	Moderate southwesterly winds.	10.5	29.9	9.5	SE	82.5
24-Jun-17	Sat	Hot during the day.	18.3	29.2	11.5	S/SW	85.3
25-Jun-17	Sun	Sunny periods and isolated showers.	4.2	28.7	10.9	SW	74.7
26-Jun-17	Mon	Light to moderate southerly winds.	0.1	29.8	13.2	SW	76.7
27-Jun-17	Tue	Mainly fine and hot apart from isolated showers	1.3	29.9	6	S	81
28-Jun-17	Wed	Hot with sunny periods.	0	29.9	9.4	SW	75
29-Jun-17	Thu	Moderate southeasterly winds.	0	30.7	6	SW	75.5
30-Jun-17	Fri	There will be isolated showers and thunderstorms.	0	30.1	8.2	SE	72.2

Appendix K

Waste Flow Table

Contract No.: NE/2016/01

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

Monthly Summary Waste Flow Table for 2017 (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	0	0	0	0	0	0	0	0	0	0	0
Feb	0	0	0	0	0	0	0	0	0	0	0
Mar	0	0	0	0	0	0	0	0	0	0	0
Apr	0	0	0	0	0	0	0	0	0	0	0.001
May	0	0	0	0	0	0	0.388	0	0	0	0.033
Jun	1.395	0.195	1.200	0	0	0	0	0	0	1.808	0.111
Sub-total	1.395	0.195	1.200	0	0	0	0.388	0	0	1.808	0.145
Jul	0	0	0	0	0	0	0	0	0	0	0
Aug	0	0	0	0	0	0	0	0	0	0	0
Sep	0	0	0	0	0	0	0	0	0	0	0
Oct	0	0	0	0	0	0	0	0	0	0	0
Nov	0	0	0	0	0	0	0	0	0	0	0
Dec	0	0	0	0	0	0	0	0	0	0	0
Total	1.395	0.195	1.200	0	0	0	0.388	0	0	1.808	0.145

Contract No.: NE/2016/01

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

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 (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)
875.389	350.330	510.059	0	15.000	0	100.000	2.000	0.300	10.000	3.500

Notes:

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

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

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

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

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

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

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

Appendix (ii)

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

Monthly Summary Waste Flow Table for 2017 (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											
Feb											
Mar											
Apr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
May	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
June	0.615	0.00	0.002	0.00	0.613	0.00	0.00	0.00	0.00	0.00	0.00
Sub-total	0.615	0.00	0.002	0.00	0.613	0.00	0.00	0.00	0.00	0.00	0.00
July											
Aug											
Sept											
Oct											
Nov											
Dec											
Total											

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

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

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

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

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
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/m2 to achieve the respective dust removal efficiencies.	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	V
S4.7.6	The Contractor shall follow the procedures and requirements given in the Air Pollution Control (Construct ion Dust) Regulation.	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	V
S4.7.6	Following dust suppression measures should also be incorporated by the Contractor to control the dust nuisance throughout the construction phase: • Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile is removed should be wet ted with water and cleared from the surface of roads; • A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones;. • The load of dusty materials on a vehicle leaving a construct 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 construct ion period. • The port ion of any road leading only to construct 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	Minimize dust impact at the nearby sensitive receivers	Contractor	All construction sites	V

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	Implementation Status
	or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; • Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet ; • Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding; • Any skip hoist for material transport should be totally enclosed by impervious sheeting; • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides; • Cement or dry PFA delivered in bulk should be stored in a closed silo fit ted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed; and • Exposed earth should be properly treated by compact ion, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shortcrete or other suitable surface stabiliser within six months after the last construct ion activity on the construction site or part of the construct ion site where the exposed earth lies.				
S4.7.7	Implement regular dust monitoring under EM&A programme during the Construct ion phase.	Control construction airborne noise	Selected Representative dust monitoring station	All construction sites where practicable	V
Noise Impact (Contraction Phase)					
S5.6.9	Implement the following good site management practices: • only well-maintained plant should be operated on-site and plant should be serviced regularly during the construct 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 construct ion equipment should be properly fit ted	Control construct ion airborne noise	Contractor	All construction sites where practicable	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
	and maintained during the construct 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 construct ion activities.				
S5.6.11 to S5.6.13	Use of " Quiet " Plant and Working Methods.	Reduce the noise levels of plant items	Contractor	All construction sites where practicable	@
S5.6.14	Install temporary site hoarding (approx 2.5m high) located on the site boundaries between noisy construct ion activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period.	Reduce the construct ion noise levels at low-level zone of NSRs through partial screening.	Contractor	All construction sites where practicable	NA
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 construct ion sites	Contractor	All construct ion sites where practicable	V
S5.6.19	Sequencing operation of construction plants equipment.	Operate sequentially within the same work site to reduce the construction airborne noise	Contractor	All construct ion sites where practicable	V
S5.6.34	Implement temporary noise barrier along Road L4.	Further reduce the construct ion airborne noise	Contractor	Road L4 of ARQ	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 Representativ e Noise monitoring stations	V
Water Quality Impact (Contraction Phase)					
S6.6.3	<u>Construction Runoff</u> In accordance with the Practice Note for Professional Persons on Construct ion Site Drainage, Environmental Protect ion Department , 1994 (ProPECC PN 1/94), best management pract ices should be implemented as far as	Control construction runoff	Contractor	All construction sites	V

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	Implementation Status
	practicable as below: • At the start of site establishment , perimeter cut -off drains to direct off-site water around the site should be constructed with internal drainage works. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities. • Diversion of natural stormwater should be provided as far as possible. The design of temporary on-site drainage should prevent runoff going through site surface, construction machinery and equipment in order to avoid or minimize polluted runoff. Sediment at ion tanks with sufficient capacity, constructed from preformed individual cells of approximately 6 to 8 m^3 capacities, are recommended as a general mitigation measure which can be used for set t ling surface runoff prior to disposal. The system capacity shall be flexible and able to handle multiple inputs from a variety of sources and suited to applications where the influent is pumped. • 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 construct 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				

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	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 construct 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 construct 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, construct ion materials or debris being washed into the drainage system and storm runoff being directed into foul sewers. • Precautions to be taken at any time of year when rainstorms are likely, act ions to be taken when a rainstorm is imminent or forecasted, and act ions to be taken during or after rainstorms are summarized in Appendix A2 of ***ProPECC PN 1/94***. Particular attention should be paid to the control of silty surface runoff during storm events. • All vehicles and plant should be cleaned before leaving a construct 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 construct 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. • Construct 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.				

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	• Regular environmental audit on the construction site should be carried out in order to prevent any malpractices. Not ices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the rivers.				
S6.6.6 and 6.6.7	<u>Sewage from Workforce</u> • Portable chemical toilets should be provided for handling the construction sewage generated by the workforce. Assume that the capacity of the chemical toilets would be 0.4m3 and suck up twice a day under normal practices, around 45 chemical toilets would be required for the whole site at peak hour. And it should be noted that under normal construction periods, less chemical toilets would be needed. In addition, the total number of the chemical toilets would be subject to later detailed design, the capacity of the chemical toilets, and contractor's site practices. Nevertheless, a licensed contractor should be employed to provide appropriate and adequate portable toilets to cater around 37.5 m3/day sewage and be responsible for appropriate disposal and maintenance. Since portable chemical toilets will be provided, no adverse water quality impact from the workforce sewage is anticipated. • Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment during the construct ion phase of the Project . Regular environmental audit on the construct 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	Handling of site sewage	Contractor	All construction sites	V
S6.6.8 and 6.6.9	<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 construct ion activities. Storage of chemical waste arising from the construct ion activities should be well managed with suitable labels an d warnings while disposal of those chemical wastes should be comply with the requirement states in Waste Disposal Ordinance (Cap 354) as well as Waste Disposal (Chemical Waste)	Prevent ion of accidental spillage	Contractor	All construction sites	V

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	Implementation Status
	(General) Regulations.				
S6.6.11-S6.6.14	Groundwater from Contaminated Area The Contractor should apply for a discharge licence under the WPCO through the Regional Office of EPD for groundwater discharge. Prior to the excavation works within these potentially contaminated areas, the groundwater quality should be reviewed during the process of discharge license application. The compliancy to the TM-DSS and the existence of prohibited substance should be confirmed after further SI. If the review results indicated that the groundwater to be generated from the excavation works would be contaminated, the contaminated groundwater should be either properly treated in compliance with TMDSS or properly recharged into the ground. If wastewater treatment is deployed, the wastewater treatment unit shall deploy suitable treatment process (e.g. oil interceptor / activated carbon) to reduce the pollution level to an acceptable standard and remove any prohibited substances (e.g. Petroleum Carbon Ranges (PCRs)). All treated effluent from wastewater treatment plant shall meet the requirements as stated in TM-DSS and should be discharged into the foul sewers. If groundwater recharging wells are deployed, recharging wells should be installed as appropriate for recharging the contaminated groundwater back into the ground. The recharging wells should be selected at places where the groundwater quality will not be affected by the recharge operation as indicated in the Sect ion 2.3 of TM-DSS. The baseline groundwater quality shall be determined prior to the select ion of the recharge wells, and submit a working plan (including the laboratory analytical results showing the quality of groundwater at the proposed recharge location(s) as well as the pollutant levels of groundwater to be recharged) to EPD for agreement . Pollution levels of groundwater to be recharged shall not be higher than pollutant levels of ambient groundwater at the recharge well. Prior to recharge, any prohibited substances such as PCRs should be removed as necessary by installing the petrol interceptor.	Minimize contaminated groundwater impacts	Contractor	All construction sites	NA
Waste Management (Contraction Phase)					
S8.5.2	Good Site Practice The following good site practices are recommended throughout the construct ion activities: • nomination of an approved personnel, such as a site manager, to be responsible for the implementation of good site practices, arrangements for	Minimize waste generation during construction	Contractor	All construction sites	V

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	Implementation Status
	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 t rucks or by transporting wastes in enclosed containers; • regular cleaning an d maintenance programme for drainage systems, sumps and oil interceptors;				
S8.5.2 (6)	The contractor should submit a Waste Management Plan (WMP) as part of the Environmental Management Plan (EMP) in accordance with the ***ETWB TC(W) No. 19/2005*** for construct 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
S8.5.3	Waste Reduction Measures Waste reduction is best achieved at the planning and design phase, as well as by ensuring the implementation of good site practices. The following recommendations are proposed to achieve reduction: • segregate and store different types of waste in different containers, skip or stockpiles to enhance reuse or recycling o materials and their proper disposal; • proper storage and site practices to minimize the potential for damage and contamination of construct ion materials; • plan and stock construct ion materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste; • sort out demolition debris and excavated materials from demolition works to recover reusable/recyclable port ions (i.e. soil, broken concrete, metal etc.); • provide training to workers on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling.	Reduce waste generation	Contractor	All construction sites where practicable	V
S8.5.5	Storage of Waste The following recommendation should be implemented to minimize the impacts: • waste such as soil should be handled an d stored well to ensure secure containment ; • stockpiling area should be provided with covers and water spraying system	Minimize waste impacts from storage	Contractor Contractor	All construct ion sites	V

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	Implementation Status
	to prevent materials from wind-blown or being washed away; • different locations should be designated to stockpile each material to enhance reuse;				
S8.5.6	Collection and Transportation of Waste The following recommendation should be implemented to minimize the impacts: • 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
S8.5.8	Excavated and C&D Material Wherever practicable, C&D materials should be segregated from other wastes to avoid contamination and ensure acceptability at public filling areas or reclamation sites. The following mitigation measures should be implemented in handling the excavated and C&D materials: • maintain temporary stockpiles and reuse excavated fill material for backfilling; • carry out on-site sorting; • make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; • implement a recording system for the amount of waste generated, recycled and disposed of for checking; The recommended C&D materials handling should include: • On-site sorting of C&D materials • Reuse of C&D materials • Use of Standard Formwork and Planning of Construction Materials purchasing • Provision of wheel wash facilities	Minimize waste impacts from excavated and C&D materials	Contractor	All construction sites	V
S8.5.15	Contaminated Soil As a precaution, it is recommended that standard good site practice should be implemented during the construct ion phase to minimize any potential exposure to contaminated soils or groundwater. The details of mitigation measures to minimize the potential environmental implications arising from the handling of contaminated materials refer to Land Contamination Section.	Remediate contaminated soil	Contractor	All construction sites where applicable	V
S8.5.17	Chemical Waste • If chemical wastes are produced at the construct ion site, the Contractors	Control the chemical waste and ensure proper	Contractor	All construction	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
	should register with EPD as chemical waste producer. Chemical wastes should be stored in appropriate containers and collected by a licensed chemical waste Contractor. Chemical wastes (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while the chemical waste that cannot be recycled should be disposed of at either the Chemical Waste Treatment Cent re, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	storage, handling and disposal.		sites	
S8.5.18	General Waste • General refuse should be stored in enclosed bins separately from construction and chemical wastes. Recycling bins should also be placed to encourage recycling. • Preferably enclosed and covered areas should be provided for general refuse collect ion and routine cleaning for these areas should also be implemented to keep areas clean. • A reputable waste collector should be employed to remove general refuse on a daily basis.	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	V
S8.5.19	Sewage • The WMP should document the locations and number of portable chemical toilets depending on the number of workers, land availability, site condition and activities. • Regularly collect ion by licensed collectors should be arranged to minimize potential environmental impacts.	Minimize production of sewage impacts	Contractor	All construction sites	V
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
.10.7.10	Construction phase in situ mitigation measures to minimize impacts on hydrological condition and water quality of hillside watercourses include: • Temporary sewerage and drainage will be designed and installed to collect wastewater and prevent it from entering nearby watercourses;	Minimize impacts on Hydrological condition and water quality of hillside watercourses.	Contractor	All construction sites	V

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	Implementation Status
	• 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 construct ion 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 t rap 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; • Construct ion effluent, site run-off and sewage will be probably collected and/or treated. Wastewater from any construct 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 t raps will be installed at points where drainage from the site enters local watercourses; • Appropriate sanitary facilities for on-site workers will be provided; • The site boundary will be clearly marked and any works beyond the boundary strictly prohibited, and • Regular water monitoring and site audit will be carried out at suitable points. If the monitoring and audit results show that pollution occurs, adequate measures including temporary cessation of works will be considered.				
S.10.7.11	Implement an emergency contingency plan during the construction phase and the	Minimize impacts on	Contractor	All	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
	plan will include, but not be limited to, the following: • Potential emergency situations; • Chemicals or hazardous materials used on-site (and their location); • Emergency response team; • Emergency response procedures; • List of emergency telephone hot lines; • Locations and types of emergency response equipment , and • Training plan and testing for effectiveness.	Hydrological condition and water quality of hillside watercourses.		construction sites	
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
S11.14.23, Table 11.9, CM2 [3]	Tree Transplantation - Should removal of trees be unavoidable due to construction impacts, trees will be transplanted or felled. Detailed transplanting proposal will be submit ted to relevant government departments for approval in accordance with **LAO GN No. 7/2007**, ***ETWB TCW No. 29/2004*** and ***10/2013***. Final locations of transplanted trees shall be agreed prior to commencement of the work.	Minimize landscape impact and retention of landscape resources	Detailed Design Consultant /	Onsite where possible. Otherwise consider offsite locations	*
S11.14.23, Table 11.9, CM3 [4]	Control of operation night -time glare with well-planned light ing operation system to minimize potential glare impact to adjacent VSRs	Minimize glare impact to adjacent VSRs	Contractor/ CEDD	The whole project area where applicable	N/A
S11.14.23, Table 11.9, CM [4]	Erection of decorative screen hoarding.	Minimize visual impact	Contractor/ CEDD	The whole project area where applicable	N/A
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

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